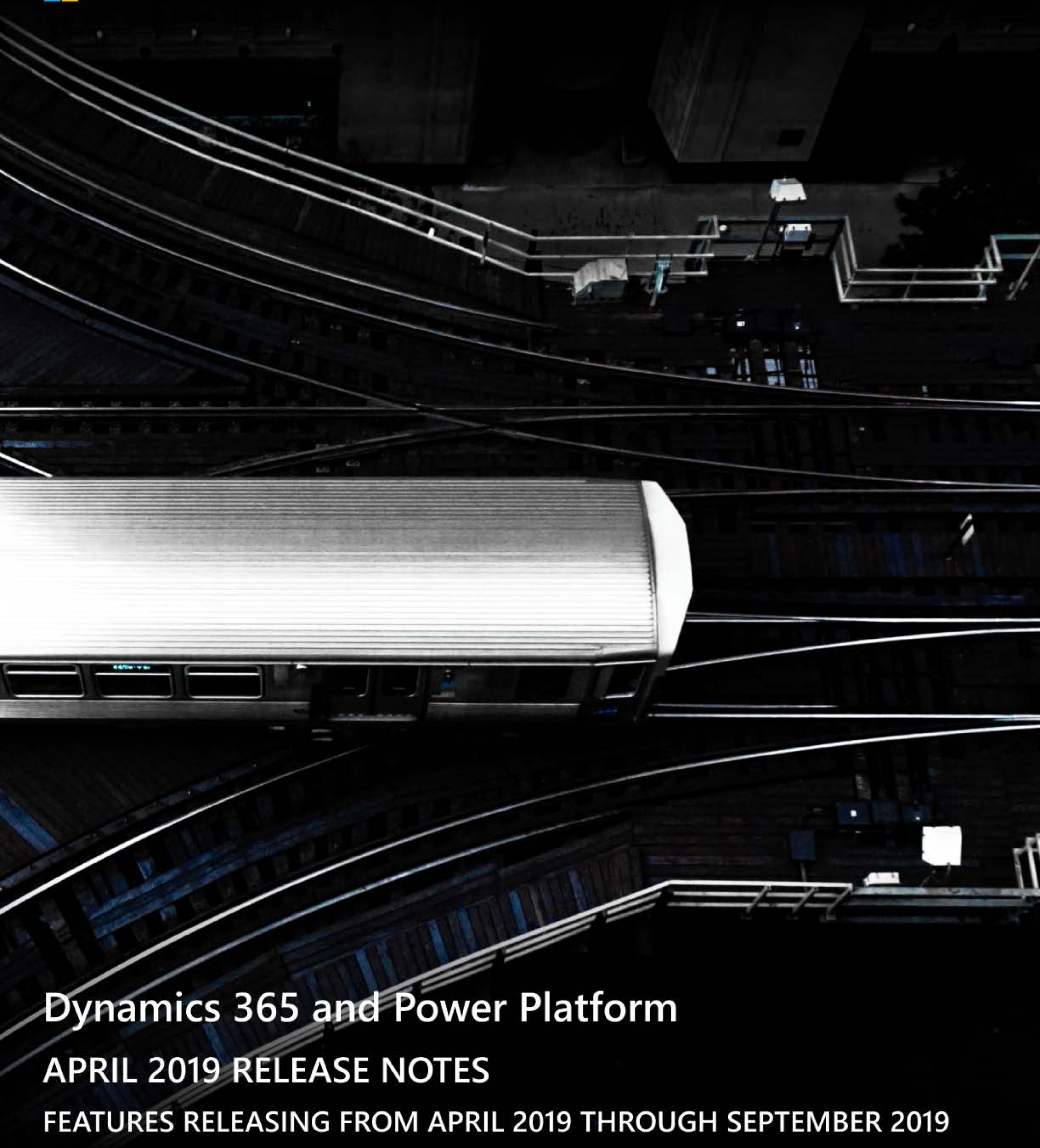


Dynamics 365 and Power Platform

APRIL 2019 RELEASE NOTES

FEATURES RELEASING FROM APRIL 2019 THROUGH SEPTEMBER 2019

Contents

April '19 Release Notes

The April ’19 release notes describe all new features releasing from April 2019 through September 2019 for Dynamics 365 and Power Platform. Previews for some features will start in February 2019. You can either browse the release notes online or download the document as a PDF file.

April ’19 Release Overview

The April ’19 wave of releases for Dynamics 365 and Power Platform provides you with significant capabilities to transform your business.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

Dynamics 365

The enhancements to Dynamics 365 applications in the April ’19 release include hundreds of new capabilities across Sales, Marketing, Customer Service, Portal, Field Service, Project Service Automation, Finance and Operations, Talent, Retail, and Business Central. We're adding a new set of mixed reality experiences using Microsoft Layout and Microsoft Remote Assist.

Microsoft Forms Pro is a brand new enterprise survey app built on top of Microsoft Forms and integrated with Dynamics 365 and Common Data Service.

The April '19 release delivers continued investments in artificial intelligence capabilities that leverage the power of Microsoft AI research, tools, data, and the Power Platform to help organizations transform customer service, sales, and marketing functions. Dynamics 365 Sales Insights provides actionable insights to drive personalized engagement and proactive decision-making. Dynamics 365 Market Insights enables business users to gather actionable insights based on what consumers say, seek, and feel about their brands and products. Dynamics 365 Customer Service Insights optimizes the customer experience through AI enhanced analysis.

The April '19 release introduces three brand new AI apps:

- Dynamics 365 Virtual Agent for Customer Service provides AI-powered chat bots to optimize the customer experience.
- Dynamics 365 Customer Insights enables every organization to unify and understand their customer data to harness it for intelligent insights and actions.

- Dynamics 365 Fraud Protection enables the e-commerce merchants to drive down fraud loss, increase bank acceptance rates to yield higher revenue, and improve the online shopping experience.

The April '19 release signifies a key milestone for Dynamics 365. It is the first major update where all our customers across Dynamics 365 will be on the latest version and on a consistent update schedule. It is also a template of how major updates will be done going forward in April and October every year.

Here are the key dates for the April '19 release.

Milestone	Date	Description
Release notes available	January 21, 2019	Learn about the new capabilities across Dynamics 365 and Power Platform.
Preview available	February 1, 2019	Try new capabilities in the April '19 update before they are deployed in production. Learn more
Release notes updates	February 21, 2019	Updates to release notes with additional apps and capabilities.
Virtual launch event	April 2, 2019	Hear from James Phillips, Alysa Taylor, and the product leaders as they preview what's new. Register now
General availability	April 5, 2019	April '19 update available for production deployment. Learn more

Power Platform

New Power Platform capabilities combine Power BI, PowerApps, Microsoft Flow, and Common Data Service into an unmatched palette of tools to extend, customize, and integrate Dynamics 365 and Office 365 into your environment. The April '19 release provides major improvements to enable business analysts and makers to build higher-quality reports, apps, and workflows more easily, while still supporting more advanced enterprise and administrator requirements.

Data Integration

Data Integration provides built-in connectivity to the Power Platform and more, with data across hundreds of business systems, enabling rich and intelligent experiences. The Common Data

Model provides semantic consistency for canonical business entities across Dynamics 365 and Common Data Service, increasing value and saving time for application developers, ISV partners, and integrators.

We've done this work to help you—our partners, customers, and users—drive the digital transformation of your business on your terms. We're looking forward to engaging with you as you put these new services and capabilities to work, and we're eager to hear your feedback as you dig into the April '19 release.

Japanese era update

On May 1, 2019, a new Japanese era and associated calendar will begin. Microsoft is making our April '19 wave of business applications ready to support the new Japan era in May. This includes Dynamics 365 applications, solutions, and Power Platform components, as well as regulatory features in these products and services for the Japanese market. Updates for new era support will be deployed in a similar way to other critical Dynamics 365 updates.

Tell us what you think

Let us know your thoughts. Share your feedback on a community forum for Dynamics 365 or Power Platform (Power BI, PowerApps, and Microsoft Flow). We'll use your feedback to make improvements.

Change history

This topic is updated when features are added, or when a feature's release date changes. To find out about updates to these release notes, follow us on Twitter @MSFTDynamics365.

Marketing

Release date changed

Feature	Change	Date changed
Mixed reality content	Changed Public Preview date from June 2019 to December 2019	April 17

Sales

Release date changed

Feature	Change	Date changed
Predict revenue accurately and make informed decisions with manual sales forecasting	Changed from General Availability to Public Preview	February 6
Microsoft Teams integration	Changed from General Availability to Public Preview	April 4

Feature description changed

Feature	Change	Date changed
Simplified Sales Navigator installation	Changed topic title from "Out-of-the-box LinkedIn profiles and simplified Sales Navigator installation"	March 20

Feature	Change	Date changed
Microsoft Teams integration	Changed topic title from "Microsoft Teams integration, including Relationship Assistant"	March 5

Features removed from release notes

Feature	Date removed
Out-of-the-box LinkedIn profiles	March 20

Customer Service

Features added to release notes

Feature	Date added
Single Sign On for Unified Service Desk	March 3
Cache specific configurations for agents	March 3
Stack notifications	April 10
Case form UI enhancements	March 29
Timeline enhancements	March 29
Show elapsed and remaining time on SLA Timer	March 29
Show Business and Actual hours on SLA Timer	March 29

Features removed from release notes

Feature	Date removed
Integration with Dynamics 365 Virtual Agent for Customer Service	March 28

Field Service

Features removed from release notes

Feature	Date removed
Self-service scheduling via a portal - Field Service application	February 6
Canvas PowerApps sample app	February 19

Release date changed

Feature	Change	Date changed
Embedded IoT visualizations	Changed from General Availability to Public Preview	April 9
Device provisioning	Changed from General Availability to Public Preview	April 9

Project Service Automation

Features added to release notes

Feature	Date added
Project Service solution	February 1

Finance and Operations

Features added to release notes

Feature	Date added
Clear identification of preview builds	January 22
Ability to recover a user session to its last state	January 25
Platform extensibility enhancements	January 28
Platform extensibility enhancements wave 2	January 28
Enterprise credit management	February 1
Regulatory updates	February 1
Public sector enhancements	February 1
Connected manufacturing	February 8
Enterprise asset management	February 8
Work line details	February 12
System-directed work sequencing	February 12
Advanced wave label printing	February 12
Platform extensibility enhancements wave 3	February 25
Improved "Add filter fields" experience	March 4
Edit bank statement date and view edit history	March 21

Feature	Date added
Electronic reporting - Specify a custom storage location for generated documents	March 14
Business process modeler (BPM) user interface improvements	March 22
Recover vendor invoices	March 26
Client alert notifications by email	March 28

Features removed from release notes

Feature	Date removed
Diagnostic assistant	April 12

Release date changed

Feature	Change	Date changed
Finance and Operations data in Common Data Service	Changed release type to Public Preview; changed target release date to June 2019	February 7
Enhanced grid experiences	Changed release type to Public Preview	February 22
Platform extensibility enhancements wave 2	Changed target release date to April 2019	February 25
Saved views	Changed target release date to July 2019	February 28
Client productivity and usability improvements	Changed target release date to July 2019	February 28

Feature	Change	Date changed
Simplified view - templates	Changed target release date from April 2019 to be Undetermined	February 28
Updated navigation bar that aligns with the Office header	Changed target release date to March 2019	March 4
Clear identification of preview builds	Changed target release date to March 2019	March 4
Revenue recognition	Changed target release date to July 2019	March 14
Automatic ledger settlements	Changed target release date to August 2019	March 14
Reverse journal posting	Changed target release date to August 2019	March 14
Expense client usability	Changed target release date to August 2019	March 14
Billing schedules	Changed target release date to August 2019	March 14
Planning service	Changed target release date to July 2019	March 14
Electronic reporting - Post-processing of generated files	Changed target release date to May 2019	March 14
Bank foreign currency revaluation	Changed target release date to May 2019	March 29

Feature description changed

Feature	Date changed
Planning service	February 6
Client productivity and usability improvements	February 7
Updated navigation bar that aligns with the Office header	February 20
Expanded regional coverage for Regulatory Configuration Service (RCS) deployments	March 21
Platform extensibility enhancements wave 3	March 28
Finance and Operations data in Common Data Service	April 12

Talent

Features added to release notes

Feature	Date added
US compliance reporting	March 29
Advanced compensation security	March 29

Features removed from release notes

Feature	Date removed
Faster offer preparation	March 5
Apply for a job directly from within LinkedIn	March 5

Release date changed

Feature	Change	Date changed
Expand Core HR entities in Common Data Service	Changed from General Availability in April 2019 to General Availability in July 2019	April 8
Leave and absence rules and policies	Changed from General Availability in April 2019 to General Availability in July 2019	April 8
US compliance reporting	Changed from General Availability in April 2019 to General Availability in July 2019	April 8
Create custom recruiting workflows that map to candidate origin (internal vs external)	Changed Public Preview from March 2019 to April 2019	March 29
Take administrative actions on multiple candidates with a single click	Changed Public Preview from April 2019 to May 2019	March 29
Search enhancements	Changed Public Preview from February 2019 to April 2019	March 7
Improve candidate engagement via career site	Changed from Public Preview in April 2019 to General Availability in July 2019	
Easily post your jobs to more sites using Broadbean	Changed from General Availability in April 2019 to Public Preview in April 2019	
Use LinkedIn profile to apply for a job	Changed from General Availability in April 2019 to Public Preview in April 2019	

Feature description changed

Feature	Change	Date changed
Audit your hiring process	Removed references to offer	March 1
Customizable hiring processes for productivity	Removed references to locked stages and added references to programmatically completing activities	March 29
Invitations for prospective candidates	Changed title in table of contents; content changes to file	March 7
Intelligent prospect recommendations	Added to table of contents and upcoming features; content changes to file	March 7
Easily post your jobs to more sites using Broadbean	Feature description changed to add reference to Broadbean	
Provide out-of-the-box integration with Microsoft Forms Pro	Feature description changed to add reference to Form Pro	
Share best practices across your organization using Onboard Teams		March 7
Streamline guide administration by assigning activities to roles		March 7
Expand Core HR entities in Common Data Service		March 29
Leave and absence rules and policies		March 29

Retail

Features added to release notes

Feature	Date added
Omni-channel auto-charges	February 15
List payment instruments in e-commerce integration	April 11

Features removed from release notes

Feature	Date removed
Distributed order management enhancements	March 1

Business Central

Features added to release notes

Feature	Date added
Customize the theme for your organization	February 26
Support for SQL Server data compression	March 18
Configuring query hints for optimizing SQL Server performance	March 18
Removed unnecessary companion table joins	March 18
OData performance improvements	March 18
RDLC report performance on sandboxes	March 18
Event runtime optimization	March 18

Feature	Date added
RapidStart optimization	March 18
Power BI report performance improvements	March 18
Application performance improvements	March 18
Thread dispatcher favors UI threads over background threads	March 18
Database insights in C/AL and AL debuggers	March 18
Multiple unique keys	March 18
Relaxed requirement on 8 KB row size	March 18
Increased maximum allowable length of text and code fields, variables, and text constants	March 18

Release date changed

Feature	Change	Date changed
Notes and links	Changed target release date to be after April 1	February 14
System indicator	Changed target release date to be after April 1	February 14
Improved all-product navigation	Changed target release date to be after April 1	February 14

Artificial intelligence

AI for Sales

Features added to release notes

Feature	Date added
Sales insights	February 28

Features removed from release notes

Feature	Date removed
Customization and extension options for AI for Sales reports	February 28
Access Relationship Assistant from Microsoft Teams (Public Preview)	February 28

Dynamics 365 Virtual Agent for Customer Service

Features added to release notes

Feature	Date added
Easily discover high-volume or emerging support topics that can be automated with virtual agents	February 21
Automate support topics with a virtual agent using an intuitive, no-code, graphical user experience	February 21
Get started with pre-built templates for common support topics in your industry	February 21
Analyze and improve virtual agent performance through actionable dashboards	February 21
Enable actions or access data from back-end systems using Microsoft Flow	February 21

Features removed from release notes

Feature	Date removed
Integration with Dynamics 365 for Customer Service	March 22
Integrate with case management and agent messaging systems of your choice	March 22

Feature description changed

Feature	Change	Date changed
Dynamics 365 Virtual Agent for Customer Service	Name changed	February 27

Dynamics 365 Customer Service Insights

Release date changed

Feature	Change	Date changed
Share insights and workspaces with co-workers	General Availability changed to May 2019	April 24

Dynamics 365 Market Insights

Feature description changed

Feature	Change	Date changed
Bing web search rising topics	Changed topic title from "Bing web search analytics" and removed age, gender, and location data	March 20
Market Insights Alerts	Changed topic title from "Alerts"	March 20
AI assisted query builder	Updated screenshot and example, removed first run feature	March 20

Features removed from release notes

Feature	Date removed
Conversation analytics	March 20
Geographic expansion	March 20

Dynamics 365 Customer Insights

Features added to release notes

Feature	Date added
Data ingestion	February 21
Customer profile unification	February 21
Customer Insights timeline	February 21
Enrich customer profiles with audience intelligence contained within Microsoft Graph	February 21
Customer segmentation	February 21
Create and manage business KPIs using Measures	February 21
Pre-build experiences for Dynamics 365	February 21
Unified customer profile search and discovery	February 21
REST APIs	February 21
Line-of-business apps and insights through Power Platform connectors	February 21

Dynamics 365 Fraud Protection

Features added to release notes

Feature	Date added
Diagnose	February 21
Evaluate	February 21
Implement real-time event APIs	February 21
Bootstrap and manage your data	February 21
Protect	February 21
Artificial intelligence and insights from the fraud protection network	February 21
Rules engine	February 21
Manage lists and cohorts	February 21
Order and manage risk rules	February 21
Virtual fraud analyst	February 21
Recommendations	February 21
Boost bank acceptance rates	February 21
Understand your business	February 21
Graph explorer	February 21
Key Performance Indicator (KPI) dashboard	February 21
Understand your decisions made in Dynamics 365 Fraud Protection	February 21

Feature	Date added
Device fingerprinting	February 21
Support your customers	February 21
Security and compliance	February 21

Mixed reality

Dynamics 365 Remote Assist

Features added to release notes

Feature	Date added
Mobile app	February 21

Features removed from release notes

Feature	Date removed
Persistent sessions	February 21

Release date changed

Feature	Change	Date changed
Improved accessibility	Changed from April 2019 to February 2019; moved to October 2018 Release Notes	April 2
Improved Field Service integration	Changed from April 2019 to March 2019; moved to October 2018 Release Notes	April 2

Dynamics 365 Layout

Features added to release notes

Feature	Date added
Learning cards provide step-by-step instructions for Layout features	March 5
Compatibility with HoloLens 2	March 5

Features removed from release notes

Feature	Date removed
Import and review CAD and other layouts	February 1
Collaborate in real time	February 1

Dynamics 365 Product Visualize

Features added to release notes

Feature	Date added
Product visualization with augmented reality	February 21
3D content manipulation	February 21
Dynamics 365 for Sales integration	February 21
Spatial notes for 3D models	February 21
Mixed Reality image capture and digital inking	February 21
Microsoft Teams integration	February 21
SharePoint integration	February 21

Feature	Date added
3D content gallery	February 21
Automatic posting of activity to opportunity timeline	February 21
3D model layer manipulation	February 21

Dynamics 365 Guides

Features added to release notes

Feature	Date added
No-code guide authoring	February 24
Automatic media optimization	February 24
FBX and GLTF formats automatically transcoded	February 24
Powered by Dynamics 365	February 24
Centralized asset library	February 24
Add images and videos to your instructions	February 24
Set of common 3D models included	February 24
Manage assets, users, and permissions	February 24
Streamlined hologram placement and manipulation	February 24
Styles for 3D assets add emphasis	February 24
Choose between two alignment methods	February 24

Feature	Date added
Simple step-by-step structure ensures nothing is missed	February 24
Hands-free control	February 24
Anchored holograms	February 24
Turn holograms on and off with a glance	February 24
Holographic tethers show where to focus	February 24
Instructions move with you as you work	February 24
Track progress while you work	February 24
Visualize process efficiency with dashboards	February 24
Duplicate (and delete) 3D models	March 26

Microsoft Forms Pro

Features added to release notes

Feature	Date added
Design a survey	February 21
Distribute using multiple channels	February 21
Analyze responses	February 21
Integration with Dynamics 365 and Common Data Service	February 21

PowerApps

Features added to release notes

Feature	Date added
Configure dependent option sets	March 26
Create and view related flows from an entity	March 26
Create custom controls by using PowerApps Component Framework	March 26
Video control supports Microsoft Stream videos	March 26

Features removed from release notes

Feature	Date removed
Test out new updates first in Preview	March 26
New control functionality enables advanced canvas apps	March 26
Canvas-app delegation of aggregate functions in Common Data Service	March 26

Release date changed

Feature	Change	Date changed
View results of formulas and subformulas in canvas apps	Changed from General Availability to Preview	March 26
Better support for many-to-many relationships in canvas apps	Changed from April 2019 to February 2019	March 26
Compose and reuse rich components and controls in canvas apps	Changed from April 2019 to February 2019	March 26

Feature	Change	Date changed
Create canvas apps with responsive layout	Changed from February 2019 to March 2019	March 26

Business intelligence

Power BI Desktop

Features removed from release notes

Feature	Date removed
Connector for LinkedIn Sales Navigator	March 15

Release date changed

Feature	Change	Date changed
New filter experience	Changed from May 2019 to June 2019	April 11

Power BI Service

Features added to release notes

Feature	Date added
Report commenting	January 29
Help and support settings	February 19
Workspace upgrade	April 10
Viewer role	April 10

Release date changed

Feature	Change	Date changed
Third-party BI tool connectivity for read-only scenarios (XML/A)	Changed from February 2019 to March 2019	March 4
SAP variables	Changed from April 2019 to June 2019	March 18
New workspaces	Changed from May 2019 to April 2019	April 10
App navigation	Changed from March 2019 to May 2019	April 10
Shared and certified datasets	Changed from March 2019 to May 2019	April 9

Features removed from release notes

Feature	Date removed
Metadata translations for Analysis Services models	April 9

Power BI Mobile

Release date changed

Feature	Change	Date changed
Home	Changed from April 2019 to September 2019	April 22
Report commenting	Changed from April 2019 to May 2019	April 22

Power BI Report Server

Features removed from release notes

Feature	Date removed
Row-level security for Power BI reports	January 23

CDM and Data Integration

Release date changed

Feature	Change	Date changed
AtScale connector	Changed from General Availability to Public Preview	February 12

Feature description changed

Feature	Change	Date changed
Custom connector CLI for PowerApps and Microsoft Flow	Changed the topic title from "Custom connector SDK and APIs for PowerApps and Microsoft Flow"	April 1

Dynamics 365 features ready for early access

This topic provides a list of all the features that can be enabled in February and March 2019 in your environment for testing.

Dynamics 365 for Customer Engagement apps

These features update the existing user experiences so you should opt in to enable these features early in your environment. This will allow you to test these features and then adopt them across your environments as required. For information on how to opt in to enable these features, see Opt in to April 2019 updates.

IMPORTANT Starting April 5, 2019, the features listed below for PowerApps and Dynamics 365 for Sales will be enabled by default in all of your environments even if you haven't opted in. Dynamics 365 for Marketing features require additional steps to activate.

Microsoft PowerApps

Feature	Release Date
Unified Interface is the experience of choice by users *	February 1, 2019

* This feature in PowerApps impacts all the Dynamics 365 for Customer Engagement apps that are built using **Unified Interface**.

Dynamics 365 for Sales

Feature	Release Date
Playbook enhancements with content recommendations	March 4, 2019

Dynamics 365 for Marketing

Feature	Release Date
Social posting	February 1, 2019

Feature	Release Date
Extensibility for campaigns and segments	March 2019
Integration with content management systems	March 2019
Website personalization	March 2019

IMPORTANT For additional information about activating the Dynamics 365 for Marketing features, see Activate and use preview features for April 2019

Dynamics 365 for Finance and Operations

For a list of the Dynamics 365 for Finance and Operations platform preview features, see Preview features in Finance and Operations platform update 24 (March 2019).

For a list of the app preview features, see Preview features in Finance and Operations version 10.0 (April 2019).

Dynamics 365 for Retail

For a list of the Dynamics 365 for Retail preview features, see Preview features in Dynamics 365 for Retail (April 2019).

Dynamics 365 for Marketing

Overview of Dynamics 365 for Marketing April '19 release

Dynamics 365 for Marketing is a marketing automation solution that can help businesses turn more prospects into business relationships. Since its launch in April 2018, Dynamics 365 for Marketing has seen increasing adoption by organizations looking to nurture more sales-ready leads, align sales and marketing, make smarter decisions and grow with an adaptable platform. The app goes beyond basic email marketing to provide deep insights and generate qualified leads for your sales teams. Its graphical content-creation and design tools make visually rich emails, landing pages, and customer journeys easy to design and execute.

Our customers are increasingly looking to tailor the app to various roles and personas within their organization. They want to keep their user experience simple while achieving business goals through interconnected customer journeys. This requires support for centralized implementation by a few power users while enabling marketers to tweak their campaigns for the best returns. It also requires integrated actionable intelligence at every step to improve decision making and identify the best path forward.

The April '19 release lights up new intelligent scenarios and enhanced extensibility capabilities so customers and partners can tailor the application to specific needs. The application also adds social marketing capabilities beyond its existing social insights and analytics. Here are the key investment areas for the April '19 release:

- **Actionable intelligence** lets you build optimized target segments, craft appealing content for better delivery, and orchestrate effective communications strategies. It leverages rich data sets available with the marketing app to help marketers maximize the impact of their campaigns.
- **Personalized marketing** now extends to landing pages, which can provide content that's personalized for known visitors. Design innovative new marketing experiences that feature mixed reality to help drive richer engagement with potential leads. Marketers can achieve more on social channels by posting right from the app.
- **Easy Onboarding** Trial sign-ups can now be done in a few steps and spun quickly in minutes. New users can get started through the intuitive dashboard and discover value with guided tasks for common marketing scenarios. This comes along with general usability improvements for better experience.
- **Integrate and extend** the solution. Platform extensibility enhancements help customers and partners meet specific needs, deliver turnkey projects, and support vertical scenarios. New APIs will enable you to link journeys to business processes, and to create target

segments programmatically. You can use your own content management system to submit information directly via forms, and to set up event pages or landing pages. Social integration is further enhanced to include social-posting capabilities. Sales users can now influence marketing with a few clicks.

- **Fundamental investments** continue to deliver improved usability, performance, scalability and throughput for campaign execution and email marketing. The segmentation interface has been improved and optimized for frequently used marketing scenarios. Usability improvements in insights provide complete visibility across all campaign elements, form interactions, email messages, and more.

What's new and planned for Dynamics 365 for Marketing

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

NOTE To enable preview features on your Dynamics 365 for Customer Engagement environment, see Activate and use preview features for April 2019.

Feature	Release type	Date
Extensibility for campaigns and segments	Public Preview General Availability	March 2019 April 2019
Integration with content management systems	Public Preview General Availability	March 2019 April 2019
Easy onboarding	General Availability	April 2019
Lifecycle enhancements and deeper insights	General Availability	April 2019

Feature	Release type	Date
Sales integration enhancements	General Availability	April 2019
Social posting	Public Preview General Availability	February 1, 2019 April 2019
Enhanced event registration and check-in experience	General Availability	April 2019
Marketer-friendly segmentation experience	General Availability	April 2019
Smart scheduling	Public Preview	June 2019
Segment boost	Public Preview	June 2019
Spam score	Public Preview	June 2019
Website personalization	Public Preview General Availability	March 2019 April 2019
Mixed reality content	Public Preview	December 2019

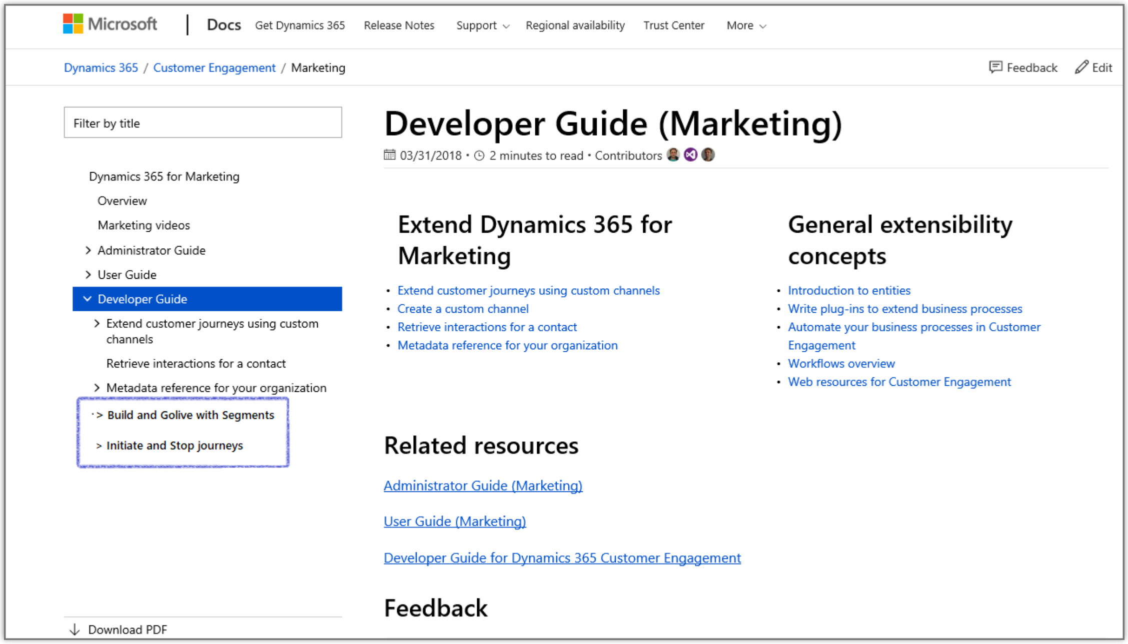
Extensibility for campaigns and segments

This release provides a rich set of APIs for customer journeys and segments. These APIs provide key integration points for external services integration and can easily connect with Microsoft tools like Flow.

For example, you can build a customer journey programmatically and modify its properties as needed—or build a new segment based on any existing segment. You can also control entity lifecycles, such as starting, stopping, or editing a journey.

Customers and partners can use these abilities to extend the marketing app, address self-service and lightweight usage scenarios (such as automating repetitive processes), and enable complex scenarios (such as triggering from external systems).

NOTE The public preview in March will only have the Segmentation API.

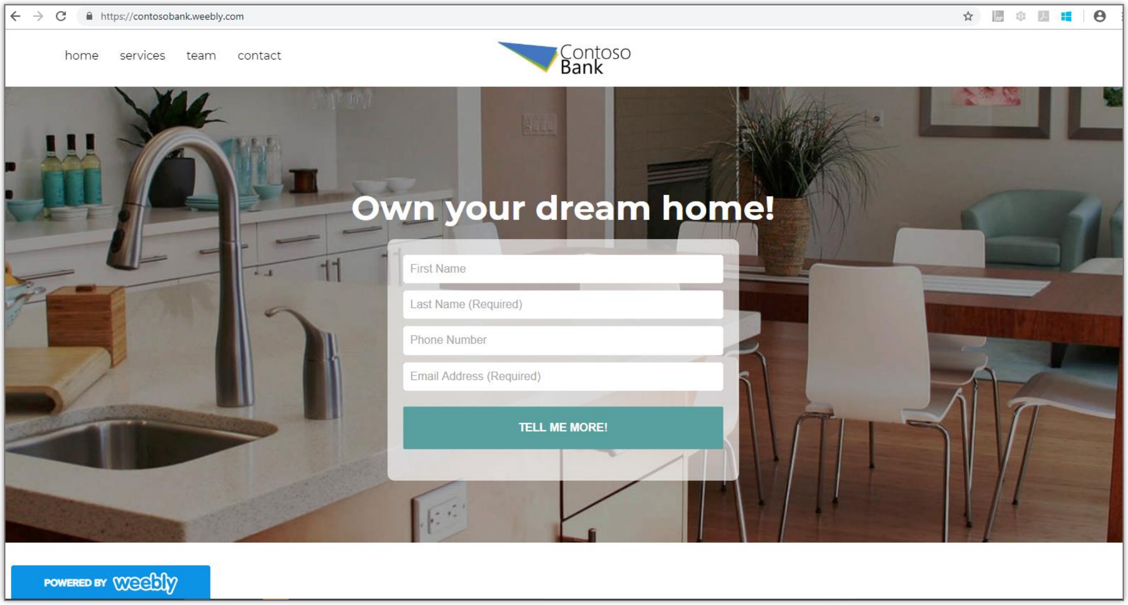


Developer Guide for Marketing

Integration with content management systems

Marketing campaigns need good content with consistent branding, so most organizations already use a content management system (CMS) to help manage and host their online content.

With the April '19 release, Dynamics 365 for Marketing can seamlessly integrate with any third-party content management system while still providing the same level of capabilities and insights. Previously, the application required Dynamics 365 portals to host features like the subscription center and event portal, but in this release, portals will become optional. Now you can choose to host all Dynamics 365 for Marketing forms and content on an external CMS while still collecting rich interaction data like visits, submissions, registrations, and more.



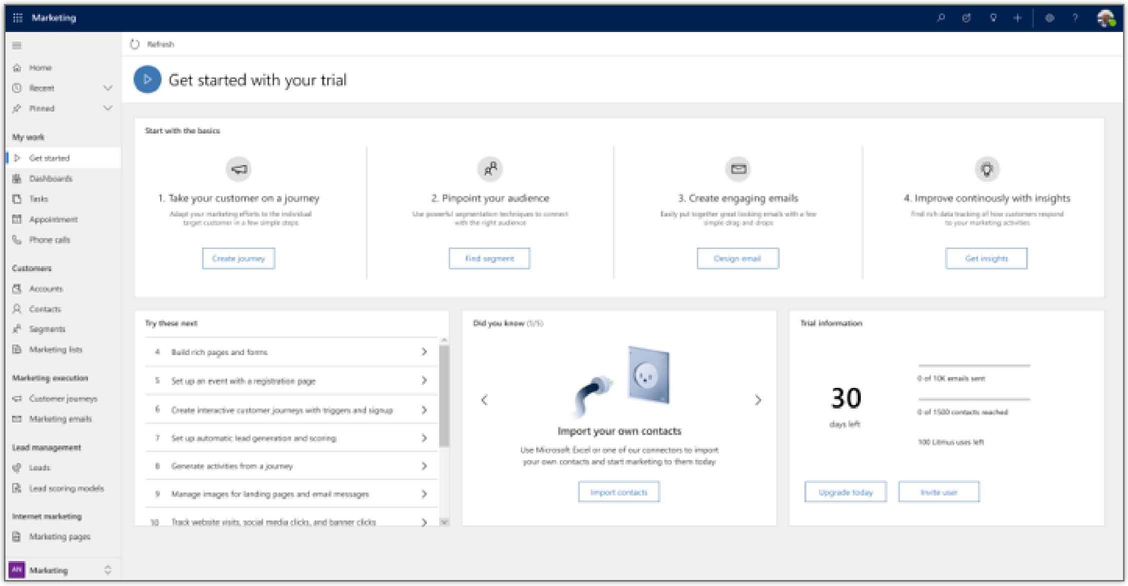
A Dynamics 365 for Marketing form embedded in an external web page

Easy onboarding

We are overhauling the onboarding experience so that new customers can sign up quickly and new users can easily get started on their marketing tasks. The product looks modern and welcoming, and users can discover its value instantly.

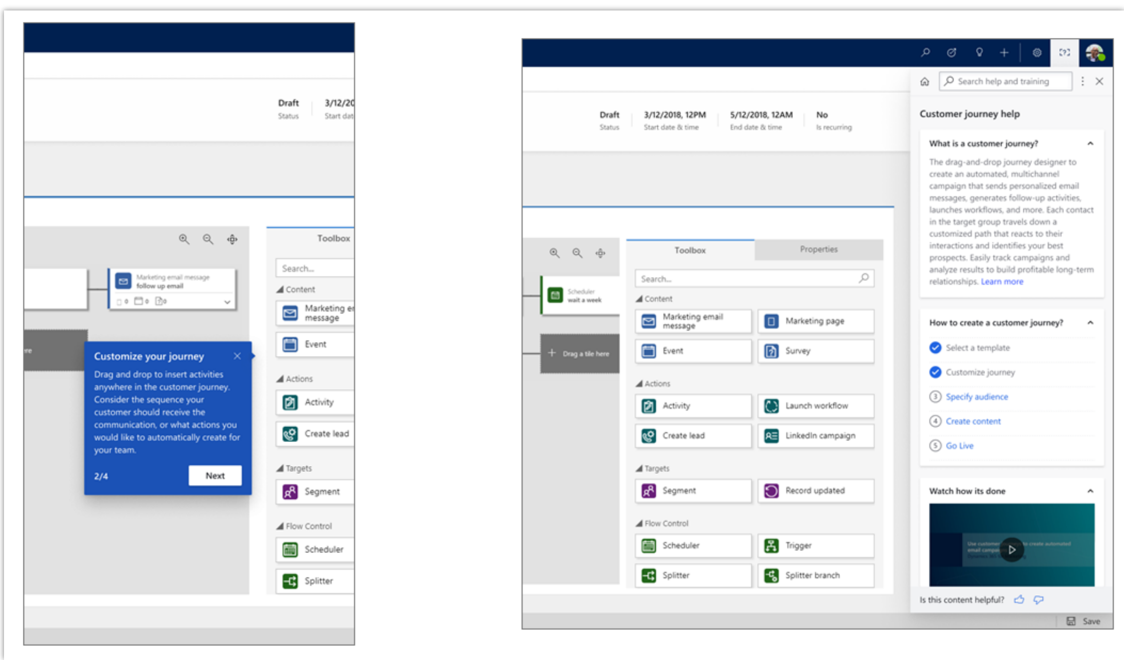
Key improvements include:

- The new *get started dashboard* prominently calls out key marketing tasks like building a campaign and using insights.



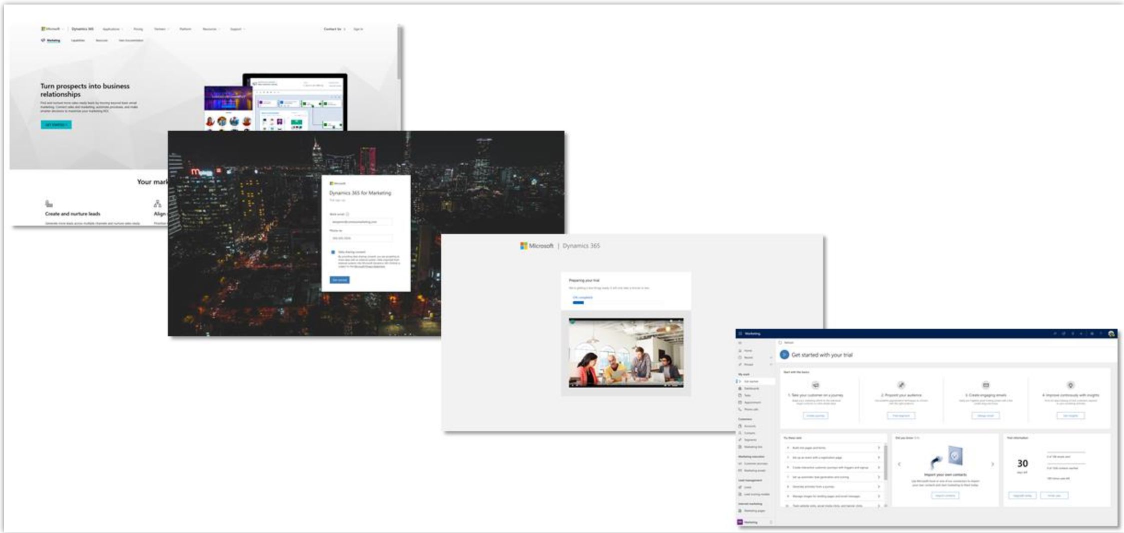
Get started dashboard

- *Guided tasks* provide step-by-step guidance for many scenarios and a context-sensitive help pane.



Guided tasks

- *Simplified trial sign-up* now enables customers to sign up for a trial in just a few steps.

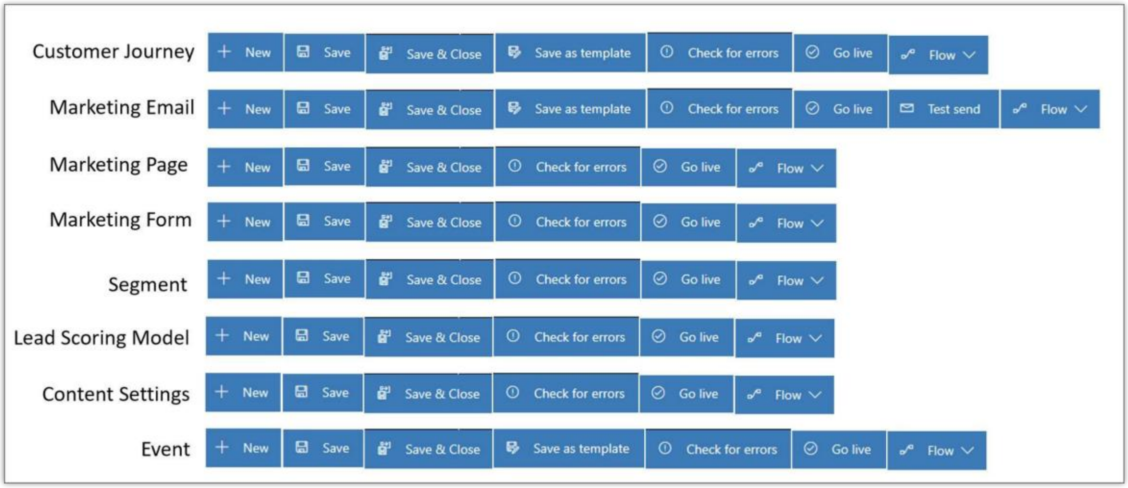


Simplified sign-up

Lifecycle enhancements and deeper insights

Many entities, such as email messages, travel through a lifecycle that takes them, for example, from draft, to live, back to edit, and then live again. We've improved lifecycle management throughout the app to provide a more intuitive and consistent experience across all the phases of a campaign—whether you're drafting an email, crafting a segment, going live with a journey, managing events, or editing a lead-scoring model. This provides a more consistent approach for how and when records can be published, deleted, or deactivated.

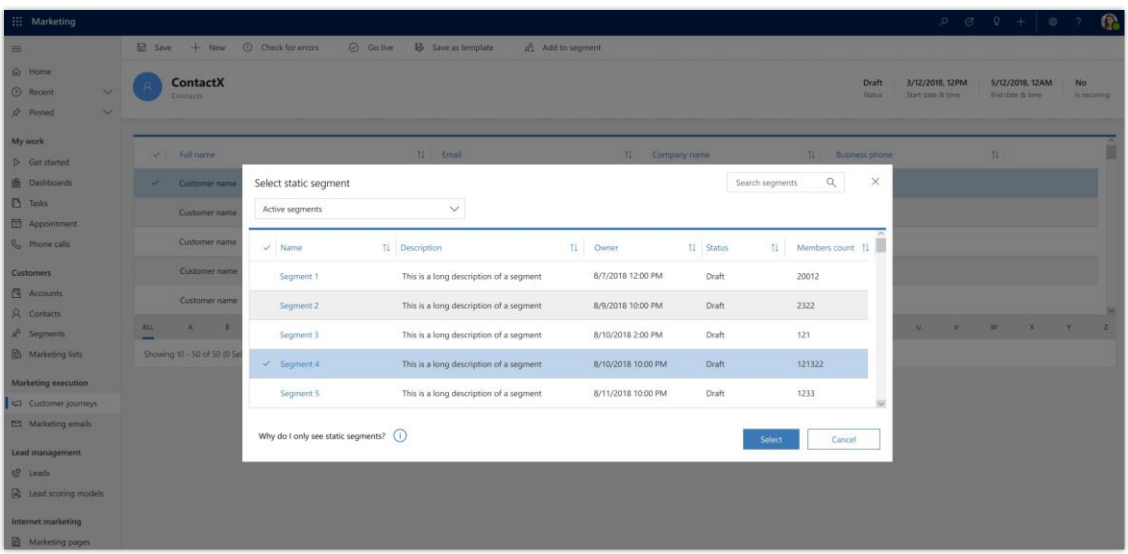
We've also improved our built-in insights pages to make them more comprehensive and easier to use. Marketers can easily understand how journeys are running and see which communications were delivered, which weren't, and why.



Consistent lifecycle

Sales integration enhancements

We continue to break down the silos between sales and marketing departments by enabling salespeople to add contacts to running journeys or specific segments. Dynamics 365 for Sales users could already review some Dynamics 365 for Marketing information through the marketing calendar and contact insights, and now they can influence it, too, with just a few clicks.

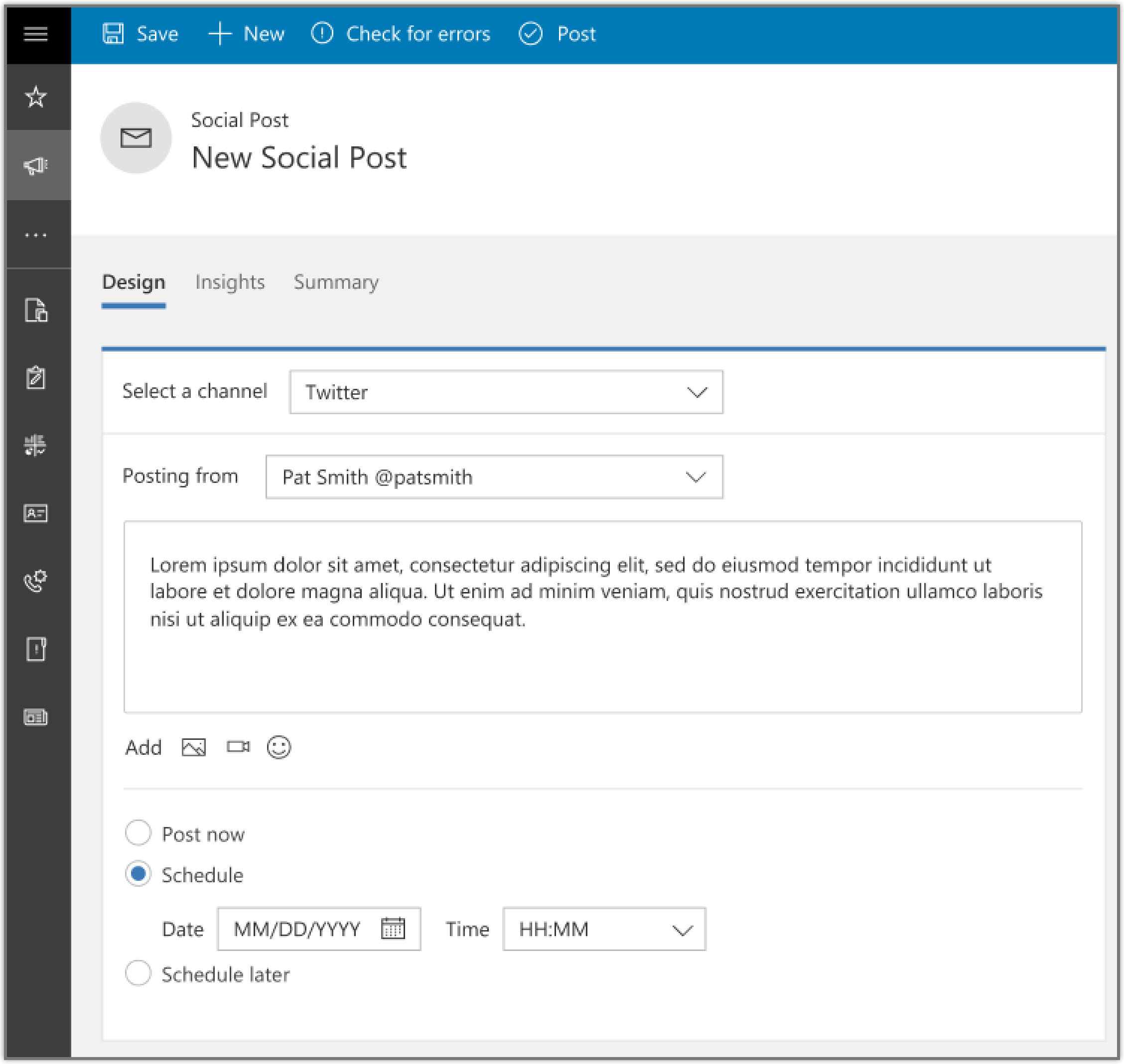


Add to journeys

Social posting

Create social content for multiple channels and schedule social posts to hit the web in sync with your overall campaign. This lets you synchronize audience communication across channels using a single platform.

Social posting is enabled by a new outbound activity that can post directly to your accounts on social-media sites, starting with Twitter and Facebook. We will be adding more channels over time.

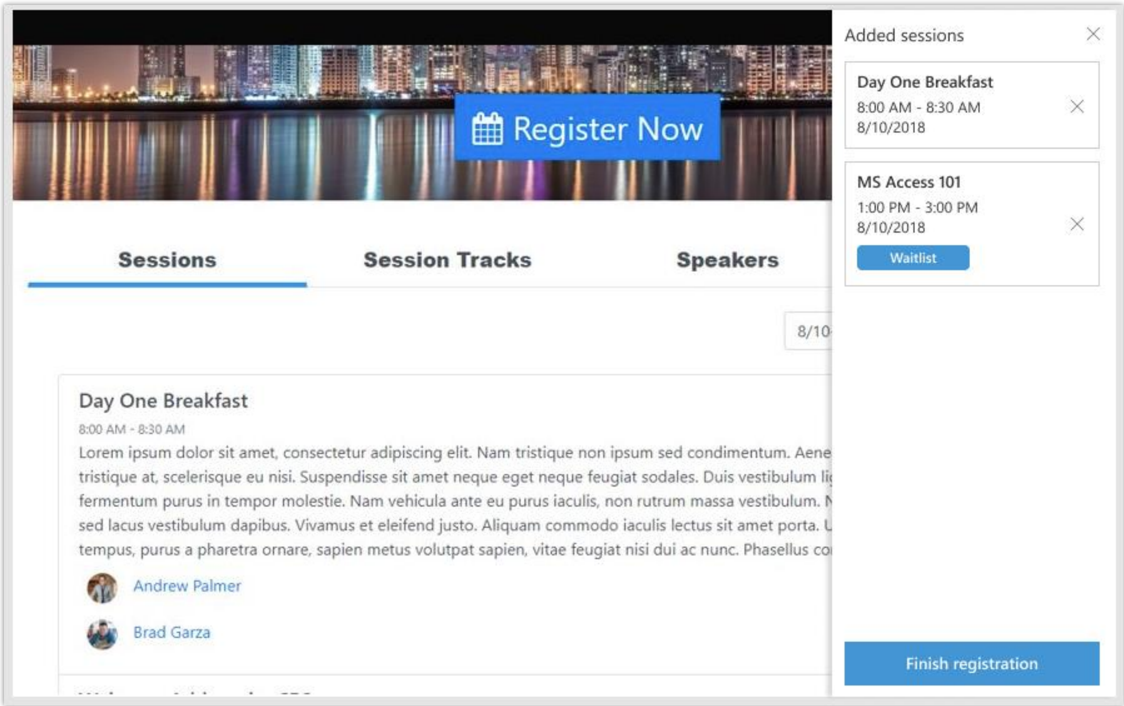


Social posting

Enhanced event registration experience

The event-registration experience is crucial for marketers because it contributes to prospects' early impressions of the related brands or products. Any inefficiencies can result in a potential loss of leads. With this release, we introduce a few enhancements to the event registration experience:

- *Session registration for free events* enables marketers to capture registrations at the session level for free events, which can help you plan room capacities, and indicate sessions already at full capacity.
- *QR codes* for event registration can be embedded into emails, making it easy for registrants to check in using their mobile devices on the day of the event.
- The ability to provide waitlists for events has now been extended to support *Waitlists for individual sessions* (for free events). This provides improved control for event planners, helps them to gauge interest in particular sessions, and helps them plan capacities and services accordingly.



Waitlist for sessions

Marketer friendly segmentation experience

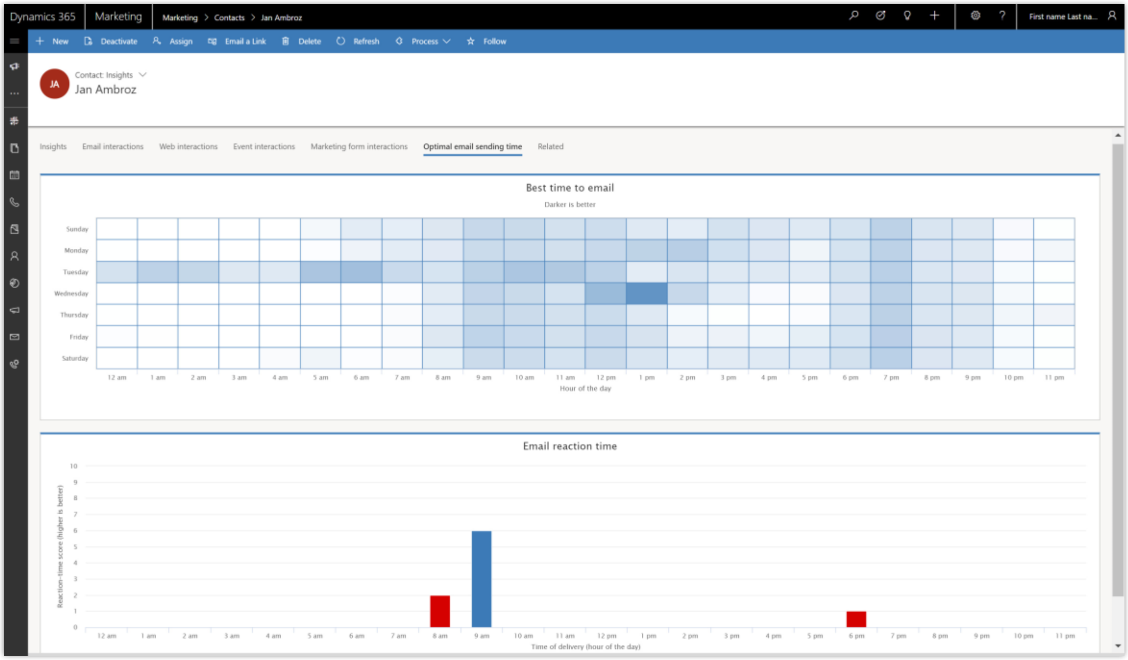
Dynamics 365 for Marketing enables you to create dynamic segments based on rules that combine demographic, firmographic, transactional, and interaction data without requiring technical knowledge or IT support.

In this release, we continue to simplify the process of creating segments. For example, we've made it much easier to traverse complex relationships and build segments based on marketing interactions. We've also improved segmentation performance across the board, so designer load times, segment deployment, and segment provisioning are all significantly faster.

Smart scheduling

People tend to read their email at certain times of the day. Your message is likely to get the most attention if it arrives while the recipient is actively responding to email, but not when their inbox is already full of other messages that also demand attention. Understanding these complex patterns is difficult; they are based on many factors like work profile, demographics, nature of content, time of year, and more. The patterns are hard to predict and practically impossible to schedule manually for each recipient of an email campaign.

This AI feature considers typical patterns and discovers new ones to build a preferred time profile for each contact. Since customer journeys are already capable of sending communications at distinct times, they can schedule emails close to the detected preferred time slots for each recipient. For example, the AI may predict that mid-level managers typically read transactional messages first thing in the morning each day, but typically don't open marketing emails that arrive over the weekend.



Smart scheduling

Segment boost

Segment boost helps you find more prospects who resemble and behave like the best contacts from your current segment.

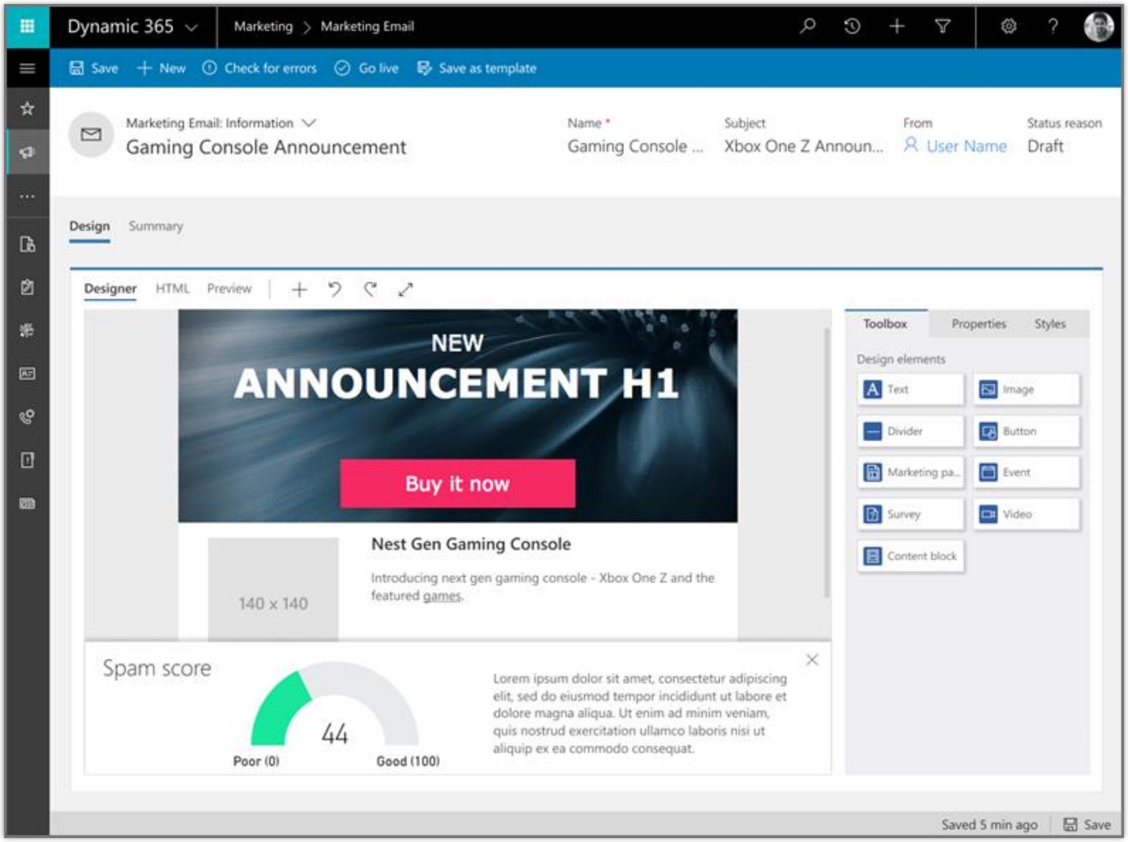
The system works by analyzing an existing segment to find those contacts who have proven to be most successful, and then recommends a new collection of contacts who are "most likely to yield business returns" because they resemble those performing well on the current campaign. The identified contacts are automatically added to the running campaign, and their level of success is then further analyzed for an additional boost. This process will repeat until the campaign reaches its configured size or end date.

For example, if you want to get more subscribers for your newsletter, this technology can analyze your entire Dynamics 365 database to find people who resemble the most engaged of those contacts who already subscribe, and then automatically add them to the segment for a custom journey that sends emails that promote joining the mailing list.

Spam score prediction for emails

As you are creating an email, the system continuously analyzes your content and predicts a spam score based on various factors (such as the sender address, subject line, contents, embedded links, and more). This can help you to craft content that adds value for recipients and avoids a poor response.

This AI feature uses past interactions and other data (including aggregated data from other campaigns and from external sources) to predict the deliverability of each email message.

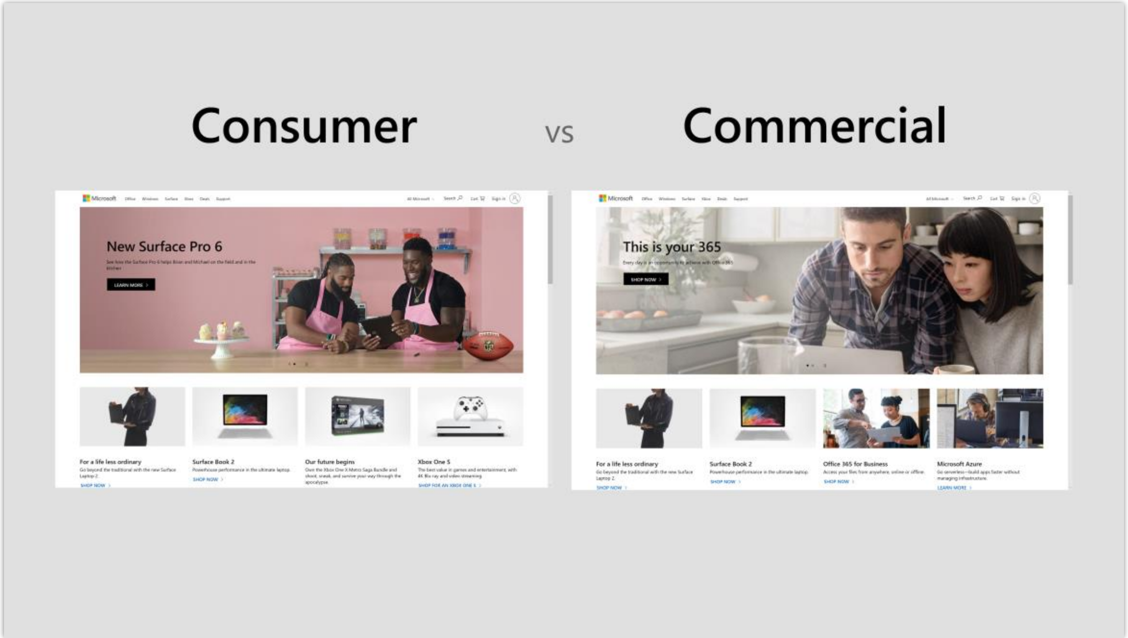


Spam score

Website personalization

Landing pages continue to be the most common call-to-action items within marketing emails. You can now personalize these pages for each prospect based on their attributes and past behavior. This personalization can affect the layout, dynamic content, branding, and more.

For example, a prospect receives a tailored email that shows the logo of their local sports team. When they click a link, the personalization continues by opening a page that shows their local weather and sports news. This maintains a continuum of personalized experience, and is likely to improve demand generation.

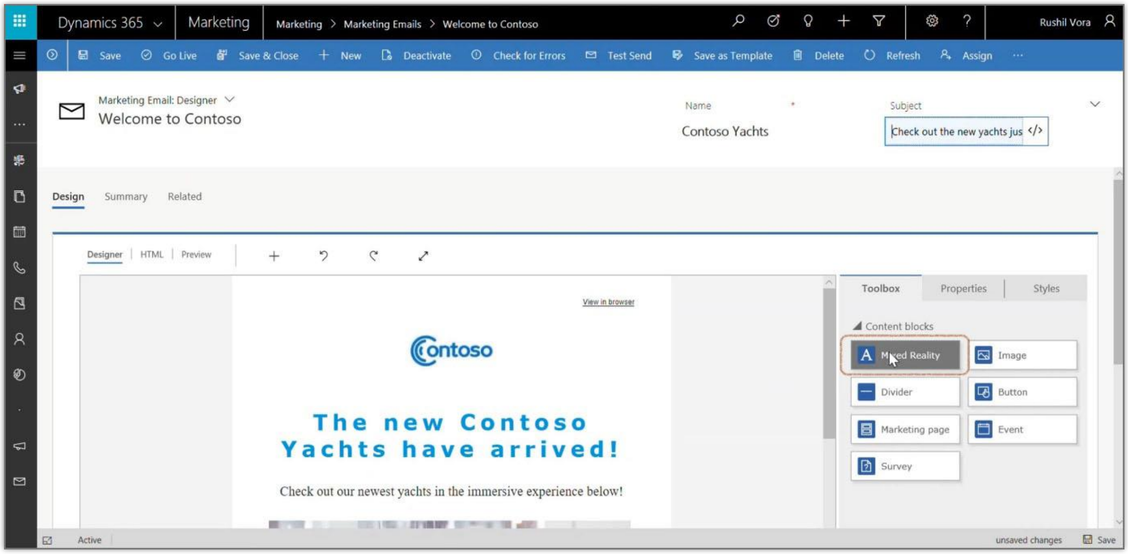


Personalized webpages

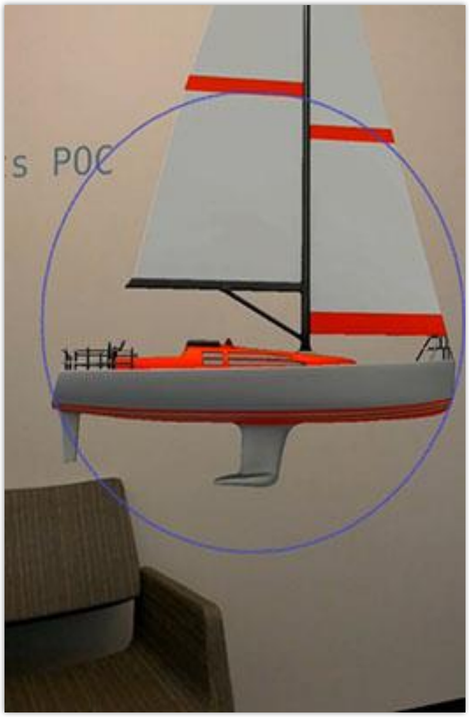
Mixed reality content

Mixed reality is the result of blending the physical world with the digital world. Mixed reality unlocks possibilities that before now were restricted to our imaginations. Marketers would love to use this content that lets their customers experience the products in such an enriched manner.

With this release, marketers can add mixed reality content to their emails and marketing pages. Recipients can open such content on desktop browsers for a rich 3D experience, or on mobile devices for augmented reality, or on mixed reality headsets for a complete mixed reality experience. This would be especially powerful for products that typically need much more of a touch-and-feel experience—luxury goods, for example.



Mixed reality end-user experience



Augmented reality on a camera-enabled mobile device

Dynamics 365 for Sales

Overview of Dynamics 365 for Sales April '19 release

Customer engagement is about more than touchpoints. For sales organization to be successful, it requires creating meaningful connections, building relationships, and nurturing the relationships to establish trust. To build these relationships, sales professionals needs robust and up-to-the-moment customer insights as well as the ability to collaborate effectively to deliver the customer commitments.

Dynamics 365 for Sales and Microsoft Relationship enable sales reps to build deeper customer connections at scale using the power of Dynamics 365, LinkedIn, and Office 365. Sales professionals receive recommended content in addition to activities and notes through the sales playbook when working on an opportunity, helping to ensure they are using the right content for the right context.

Configure-price-quote capability enables sales professionals to efficiently put together the right product solution and quote the solution to customers. The ability to do simple forecasting will help in situations where external checks and adjustments need to be accounted for.

What's new and planned for Dynamics 365 for Sales

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Feature	Release type	Date
Simplified Sales Navigator installation	General Availability	April 20, 2019
Robust customer insights from more data providers	General Availability	April 2019

Feature	Release type	Date
[Microsoft Teams integration]()	Public Preview	April 2019
[Playbook enhancements with content recommendations]()	Public Preview General Availability	March 4, 2019 April 2019
[Seamless configure-price-quote integrated experience]()	General Availability	April 2019
[Predict revenue accurately and make informed decisions with manual sales forecasting]()	Public Preview	April 2019
[Simplified first-run experience to get started with Dynamics 365 for Sales Professional]()	General Availability	April 2019

Simplified Sales Navigator installation

Microsoft Relationship Sales brings together capabilities from Dynamics 365 for Sales and LinkedIn Sales Navigator. It gives sales reps easy access to up-to-date customer insights from LinkedIn.

Out-of-box experience

Installing and configuring the integration with LinkedIn Sales Navigator will now be easier. The two existing packages will be merged into one, and the integration will be made available out of the box. Just a simple toggle in the administration settings is all that's needed to start leveraging Sales Navigator together with Dynamics 365 for Sales.

NOTE This feature is available in both Web Client and Unified Interface. You must be an admin to configure the feature to be available for end users.

Technical documentation: [Enable default LinkedIn Sales Navigator controls]()

Robust customer insights from more data providers

Enrich your customer data using multiple third-party data providers in your geography, business, and industry.

Business value

Sales organizations will now have the choice of selecting from multiple third-party data providers in addition to InsideView and Versium to augment customer data. Customers will have a seamless in-app experience for provisioning selected third-party content with try-and-buy experiences.

Personas

- As a customizer or sales manager, a user will be able to select the third-party data provider to enable customer insights for their orgs. They will be able to choose the sales process/entities at which the customer insights will be available.
- Salespeople will be able to view and use the customer insights data available to them contextually during the sales process.

Features

- Discover multiple third-party data providers from within the Sales applications.
- Seamless in-app try-and-buy experiences for select third-party data provider solutions.

NOTE Third-party data providers are available for both Sales Hub and Sales Professional applications.

This feature is available in both Web Client and Unified Interface.

Microsoft Teams integration

Today's sales process often requires sales reps to collaborate across departments when working on a sales opportunity. McKinsey reports that on average, sales reps need to collaborate with 16 colleagues to close a deal. The Dynamics 365 app for Microsoft Teams enables sales reps to collaborate more effectively using Microsoft Teams.

Business value

The Dynamics 365 app for Microsoft Teams enables a sales team to easily work with Dynamics 365 customer information and share files directly from Microsoft Teams. This helps them to be more productive and get the deal done more effectively.

- **Collaboration hub**: Access records together with the Office applications you need to close deals.
- **Cross-functional collaboration**: Work together with customers and any colleague across functions, including customers that do not have a Dynamics 365 user account.

- **File integration**: Co-author documents using Office 365 and automatically sync to Dynamics 365.
- **Teams mobile app**: Search from Microsoft Teams mobile app using the Dynamics 365 bot while on the go.

Persona

Sales representatives to collaborate with colleagues across different teams.

Features

- Access Dynamics 365 records by adding a Dynamics 365 tab into the Teams channel. Collaborate at scale not only on a single Dynamics 365 record (like a sales opportunity), but also on multiple records with a Dynamics 365 view.
- Seamless document collaboration between Dynamics 365 and Microsoft Teams.
- Collaborate on the set of records (like “active opportunity") through conversation and easily access the records while on the go using the Dynamics 365 bot for Microsoft Teams mobile app.

NOTE This feature is available in Unified Interface only.

Playbook enhancements with content recommendations

The October '18 release introduced a powerful playbook capability that enables a sales organization to capture knowledge and best practices and convert them to scripted lists of activities (including phone calls, tasks, and appointments). Playbook is manually triggered or preconfigured to run based on entity record events (for example, a new opportunity or lead creation).

Business value

With the April '19 release, sales professionals will also be able to receive content recommendations via playbooks. This gives sellers additional details on what content to refer to while working on the activities that are created when playbook is launched.

Personas

- Sales managers want to provide their teams with the sales materials, product training content, and information needed to close any deal. All this information needs to be contextually available within Dynamics 365.

- Sales representatives want the latest information, news, and updated content to be accessible and always ready to support the deals they are working on.

Features

- Dynamics 365 for Sales provides the foundation of sales enablement, which gives sales teams all the necessary content contextually. Having accurate content helps sales reps successfully engage the buyer throughout the buying process and achieve the desired outcome.
- Sales managers can refer and attach sales literature and documents to playbook activities

NOTE Content recommendation through playbooks is expected to be available only for Sales Hub, not for Sales Professional applications.

This feature is available in Unified Interface only.

Seamless configure-price-quote integrated experience

Delight your customers with fast turnaround times to consistently and accurately configure price and quote by leveraging Dynamics 365 for Sales integration with partner configure-price-quote (CPQ) solutions.

Business value

Dynamics 365 for Sales partners with the best CPQ solution providers to deliver deep product integration with Dynamics 365 for Sales. Customers can easily discover and install partner solutions to enable salespersons to quickly identify the right configuration of products that fit their customers' needs and rapidly create accurate quotes and contracts with the right pricing, considering all the variable factors including discounts.

Personas

- Administrators will be able to discover and choose the right CPQ partner solution that fits their needs.
- Sales representatives can quickly generate accurate quotes and win more deals.

Features

- Discover the best of third-party CPQ solution providers from within the Sales applications.
- Enable salespersons to get an immersive and intuitive product configuration experience by bringing together services of the CPQ solution providers and multiple Microsoft services.

- Seamless integrated experience between the selected CPQ solution provider and Dynamics 365 for Sales using Common Data Service as the data glue to both read product catalog data generated by Dynamics 365 Backoffice apps (Dynamics 365 for Finance and Operations and Dynamics 365 Business Central) and write back quotes, discounts, and product configuration data, thereby empowering organizations to build analytical and intelligent applications on top of the data coming from the different sources.
- Enable salespersons to generate, save, and email quote PDF documents (in May-June).

NOTE Partner CPQ solutions are available for both Sales Hub and Sales Professional applications.

This feature is available in Unified Interface only.

Predict revenue accurately and make informed decisions with manual sales forecasting

Forecasting helps users in situations where external checks and adjustments need to be accounted for. It's also a great way for small and midsize organizations to adopt the forecasting process before stepping up to predictive forecasting.

Business value

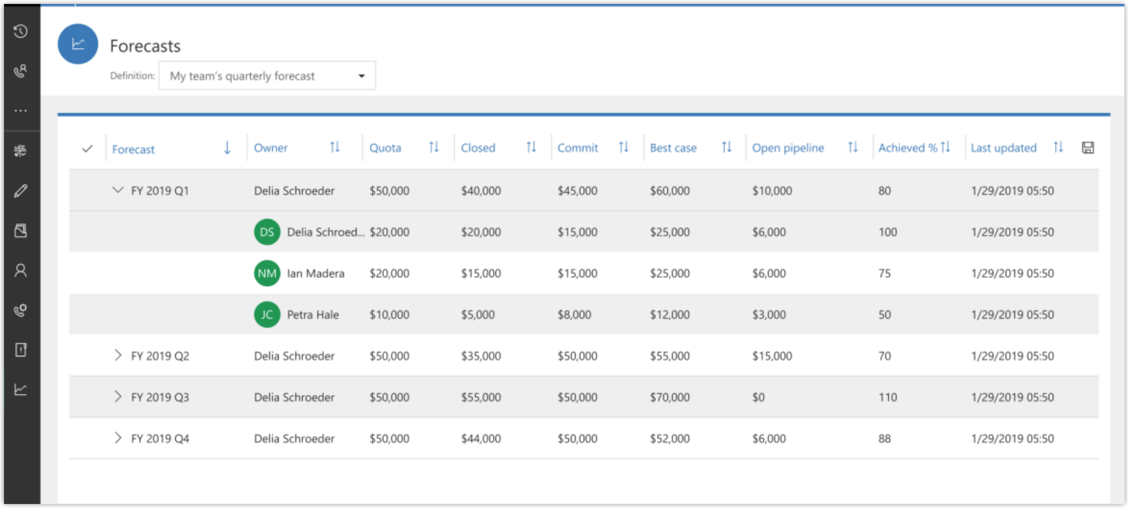
Businesses rely on forecasting to accurately predict revenue for a given period that provides the necessary insights into how a company should manage its workforce, cash flow, and resources.

Personas

- Sales managers want to create a forecast of their team members so they can accurately predict revenue for a given period and make informed business decisions and predict short-term and long-term performance of their teams.
- Salespeople want to create a forecast for themselves to know whether they will reach their quota, quickly spot pipeline risks, and prevent deals from slipping away by identifying cautionary factors before it's too late.

Features

Currently, Microsoft Dynamics 365 has a lot of valuable information around customers and their opportunities. With sales forecasting, sales teams will be able to specify forecast categories for each opportunity and further leverage the information to create or update forecasts manually within the application. They will be able to view, adjust, and submit rollup forecasting values for individuals and their teams.



Sales performance management with forecast

NOTE Simple forecasting is expected to be available only for Sales Hub, not for Sales Professional applications.

This feature is available in Unified Interface only.

Resources

[Project accurate revenue with sales forecasting]

Simplified first-run experience to get started with Sales Professional

The Dynamics 365 for Sales Professional application now provides a simple setup and configuration experience to enable sales teams to be productive from day 1.

Business value

- Quick and easy setup experience.
- Access all relevant application settings from within the Sales Professional application.

Personas

- Sales managers and administrators can quickly configure the Sales Professional application, integrate with Microsoft Office applications, and bring their data to get started.
- Sales representatives can discover how the application can empower them to be productive from day 1.

Features

- Role-based welcome screen.

- Quick setup guide for administrators to configure the Sales Professional application and integrate with Office applications.
- Access to all relevant application settings from within the Sales Professional application.

NOTE This feature is available in Unified Interface only.

Resources

Overview of admin settings

Dynamics 365 for Customer Service

Overview of Dynamics 365 for Customer Service April '19 release

Dynamics 365 for Customer Service aims to enable businesses to differentiate themselves from their competition by providing world-class customer experiences. Customers today value the ease and speed of resolution and they want to receive service on their preferred channel of engagement, at any time, and on any device. We are enabling these capabilities by building an intelligent omni-channel customer experience and an empowered agent experience.

A true omni-channel experience in the product will preserve context and provide a continuous experience as customers seamlessly switch across self-service, peer-to-peer service, and assisted-service channels. An empowered agent experience will provide an application experience that is unified across channels and line of business (LOB) applications, is contextual to the engagement, and comes with productivity tools to resolve issues faster.

Themes for Customer Service April '19 release

- **Channels**: In line with our goal to provide increased channel flexibility to customers, we will provide live chat as a channel for customers to seek real-time support. We will also enable SMS support for customers to receive automatic notifications and engage with support agents at their own pace.

- **Agent experience**: In the October '18 release, we released the Omni-channel Engagement Hub for preview. Omni-channel Engagement Hub is a customizable, high-productivity app built on Unified Service Desk for agents working on multiple channels. In the April '19 release, we will make this generally available. In addition, we will offer a browser-based multi-session, multi-app agent experience built on the Unified Interface framework.

  Case management is a cornerstone capability in customer service. We will rework key experiences to improve usability and productivity. These enhancements include extensibility of the case resolution dialog, improved density of the user interface of the case form, and improved usability of the SLA timer.

- **Knowledge management**: We will make key enhancements to the knowledge base (KB) authoring and analytics experience. KB admins can create KB templates for common scenarios like FAQs, how-to articles, and so on. KB authors can leverage these templates to quickly create standardized KB articles. Knowledge management (KM) analytics can identify usage and respond to gaps in the knowledge base. Knowledge managers will be able to analyze effective and ineffective searches and take appropriate action.

What's new and planned for Dynamics 365 for Customer Service

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Feature	Release type	Date
Core Customer Service		
Case resolution extensibility	General Availability	June 2019
Case form UI enhancements	General Availability	February 2019
Timeline enhancements	General Availability	April 2019
Show elapsed and remaining time on SLA Timer	Public Preview	August 2019
Show Business and Actual hours on SLA Timer	Public Preview	August 2019
Knowledge article templates	Public Preview	March 2019
Knowledge management analytics	Public Preview	April 2019
Knowledge article rating	General Availability	April 2019
Automatic filtering of knowledge articles	General Availability	April 2019

Feature	Release type	Date
Use Chrome Process to host web applications in Unified Service Desk	General Availability	April 10, 2019
Use Channel Integration Framework with Unified Service Desk	General Availability	April 10, 2019
Single Sign On for Unified Service Desk	General Availability	April 10, 2019
Cache specific configurations for agents	General Availability	April 10, 2019
Stack notification	General Availability	April 10, 2019
Omni-channel Engagement Hub		
Multi-session agent experiences (Unified Service Desk)	General Availability	July 2019*
Multi-session agent experiences (Web)	Public Preview	April 2019
Supervisor experiences	General Availability	July 2019*
Unified routing and work distribution	General Availability	July 2019*
Live chat channel	General Availability	July 2019*
Portal messaging	General Availability	July 2019*
SMS	Public Preview	March 2019
Enable customers to bring their bots	Public Preview	April 2019

* Availability in Canada, United States, Government Community Cloud (GCC) regions/countries, and Europe in July 2019, followed by rollout to other geographies.

Overview of Core Customer Service April '19 release

As part of Core Customer Service updates, we are making investments across usability, extensibility, and fundamentals. Key enhancements include usability improvements to the Case form, the timeline control, and SLA timer, providing more choice by supporting Microsoft Edge and Chrome on Unified Service Desk and making the Case Resolution dialog extensible. Knowledge enhancements include the ability to create and leverage knowledge base templates and analytics to empower organizations to keep their knowledge bases up to date.

Admin user enhancements: Case resolution extensibility

Customization of the case resolution dialog is an important feature as it enables organizations to tailor the dialog to meet their unique case resolution processes. As part of this feature, administrators can add, remove, or edit any of the fields on the case resolution dialog and customize it as per their requirements.

Case form UI enhancements

Improved information density on case form will help agents to focus on the most relevant details on a case form.

Timeline enhancements

Enhanced timeline with improved information density and usability will help agents and supervisors visualize activity snapshot in a few clicks.

Show elapsed and remaining time on SLA Timer

Enhanced visualization on SLA Timer will show agents the elapsed and remaining time, helping agents understand if they are meeting key performance indicators.

Show Business and Actual hours on SLA Timer

Visual enhancements to SLA Timer will show time in two modes, Business hours and Actual hours, for agents to easily visualize SLA targets based on their working hours.

Knowledge article templates

Knowledge article templates simplify capturing knowledge by enabling any persona in a customer's organization to easily participate in building a structured knowledge base. These templates help knowledge authors reuse common content and maintain consistent branding, language, and messaging.

Customers will get out-of-the-box templates that they can readily use. They will also have the ability to create, edit, or delete templates as per the needs of the business. Knowledge authors in the customer's organization can use these templates to quickly create knowledge articles.

Knowledge management analytics

Knowledge base analytics help customers easily discover and fix knowledge gaps in their organizations. By analyzing search terms of agents and customers, customers can build an effective knowledge base that in turn contributes to agents' productivity and facilitates end-user self-service by providing relevant knowledge search results.

Using knowledge base analytics, knowledge managers will be able to analyze knowledge search in terms of:

- Total searches
- Failed keyword searches
- Ineffective or effective keyword searches

Knowledge article rating

Knowledge article rating enables customer service agents to provide feedback on knowledge articles within the context of case resolution. The agents will be presented with an option to vote up or down on an article when they open it from Knowledge Base search control. They will also have the option to comment on how an article can be improved.

Empowering agents to easily provide feedback on knowledge articles helps knowledge managers maintain a healthy knowledge base.

Automatic filtering of knowledge articles

As an administrator, you can configure Knowledge Base search control to automatically filter knowledge articles based on case data, without any manual input from the agents.

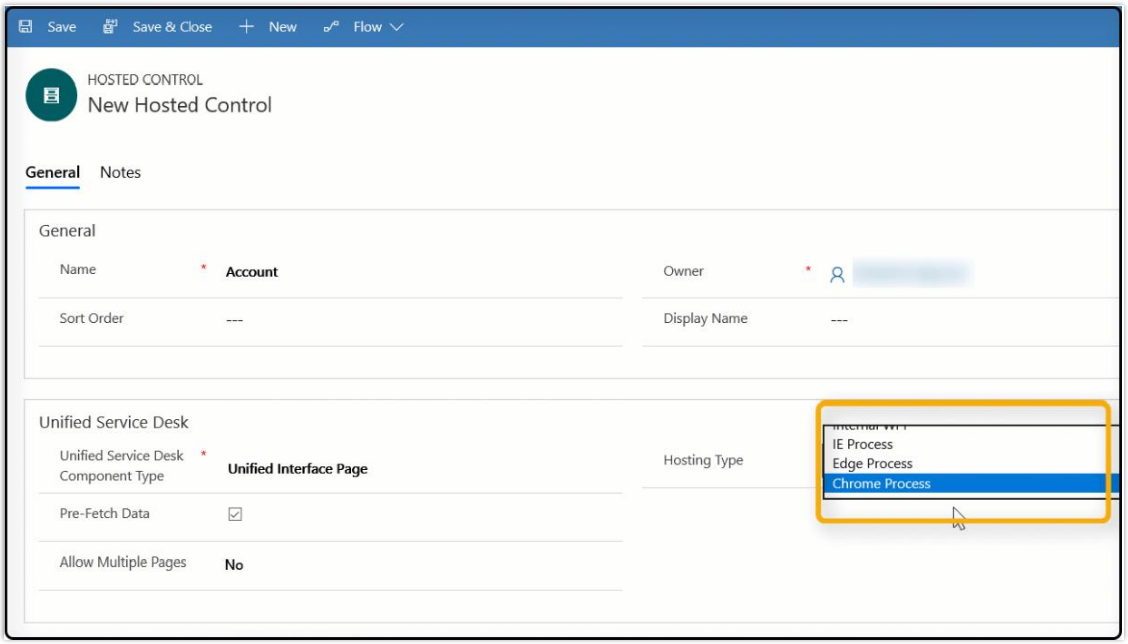
For example, if you set up automatic filtering of knowledge articles on case subject, articles with the same subject as case will be filtered in and shown to the agents. Other articles will be filtered out automatically.

This feature can be extended to automatically filter knowledge articles on any lookup field that is present on both Case and Knowledge Article entity. Administrators and agents will also have an option to turn off automatic filtering and be able to search the entire Knowledge Base.

Use Chrome Process to host web applications in Unified Service Desk

This release enables Unified Service Desk to host web applications using Chrome Process. Chrome Process is based on CefSharp, an open source framework that uses the chromium core that powers many modern browsers. Customers will have the following capabilities:

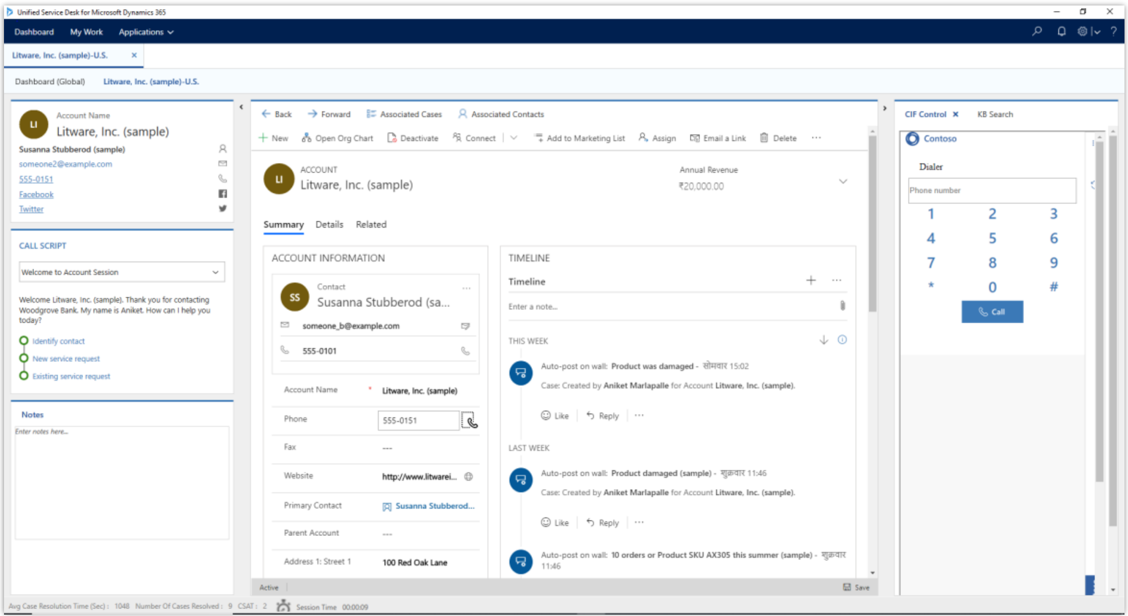
- Ability to select Chrome Process as hosting type for the organization.
- Ability to select Chrome Process as hosting type for select web applications, side by side with Internet Explorer and Microsoft Edge.



Chrome Process

Use Channel Integration Framework with Unified Service Desk

This release will enable a quick onboarding mechanism for communication widgets built with [Channel Integration Framework (CIF)] into Unified Service Desk. This communication widget can be used in Unified Service Desk with minimal configuration experience.



Channel Integration Framework

Single Sign On for Unified Service Desk

Single Sign On (SSO) for Unified Service Desk provides an improved startup performance and user experience by authenticating users to access Dynamics 365 for Customer Engagement apps without the need for entering the credentials multiple times. This eliminates the need for entering the same password again and minimizes the possibility of login errors while ensuring a seamless experience.

Cache specific configurations for agents

The Configuration Cache Version option causes the client caching feature to retrieve the configuration that has undergone change from the Customer Engagement server to the agent's desktop and avoid retrieving all configurations.

Your organization might have several departments and each department has a configuration with agents added to them based on their roles. Whenever you a make a change to one of those configurations, the Configuration Cache Version feature helps to download only the configuration for which you've made a change.

Also, when the agents assigned to other configurations sign in to the client application, the feature doesn't download the configurations and thus improves the startup performance of Unified Service Desk. This is also helpful in better application lifecycle management for Unified Service Desk in cases where organizations want to make changes in their pilot configurations without impacting the production users.

Overview of Omni-channel Engagement Hub April '19 release

The Omni-channel Engagement Hub for Dynamics 365 is a cloud-based service that extends the power of Dynamics 365 for Customer Service to enable organizations to instantly connect and engage with their customers via channels like Live Chat and SMS.

Omni-channel Engagement Hub also provides a modern, customizable, high-productivity app that allows agents to engage with customers across different channels. This app offers contextual customer identification, real-time notification, integrated communication, and agent productivity tools like knowledge base (KB) integration, search, and case creation to ensure agents are effective.

Supervisors get real-time and historical visibility and insights into the operational efficiency of agents and the utilization across various channels.

The enterprise-grade routing and work distribution engine allows customers to configure agent presence, availability, and routing rules, thus ensuring agents are working on the most relevant engagements.

Multi-session agent experiences (Web, Unified Service Desk)

Agents can use Omni-channel Engagement Hub via two immersive experiences:

- Web experience on Dynamics 365 Unified Interface optimized for multi-session capabilities.
- Unified Service Desk-based thick-client experience that allows multi-session capabilities as well as integration with third-party applications.

Agents can serve customers across all channels from a consistent, easy-to-learn, and familiar Dynamics 365 user interface. By providing a consistent experience regardless of the support channel, organizations can maximize agent productivity as well as reduce training needs. The ability to handle multiple sessions simultaneously (while preserving customer context) allows agents to resolve issues faster and achieve higher productivity. The capabilities we are enabling are:

- **Agent dashboard**: Agents can view their work items, pick open items from the queues they are a member of, and view items they have closed during the last 24 hours.
- **Multiple sessions with easy switching**: Agents can simultaneously work on multiple customer issues with the ability to easily switch between them without losing context.
- **Contextual first-party and line-of-business application tabs in sessions**: Agents can find the relevant information pertaining to the service request in the application tabs associated with the session. The application tabs are contextual and can span from first-

party Dynamics 365 pages, first-party web applications like Power BI, to line-of-business web applications.

- **360-degree view of customer**: Agents can see a contextual view of the current customer, recent interactions, issue snapshot, and so on, to get an instant 360-degree view of the situation at hand.
- **Presence management**: Agents can set custom presence status to indicate how occupied they are with work.
- **Screen-pops and notifications**: Agents receive instant notifications whenever new conversations are assigned to them, with additional context information.
- **Search**: Agents can search for customers, issues, and other relevant information required, and link them to the ongoing conversation.
- **Preview and share knowledge articles**: Agents can search for knowledge articles, preview them inline, and quickly send the same to customers. Customers get an inline preview of the knowledge article and also have the option of opening it for a detailed read.
- **Consult with other agents**: Agents can add other agents (such as subject matter experts) to the conversation to consult on the current customer issue without losing context.
- **Transfer conversation to other agents**: Agents can transfer the conversation to other agents.
- **Inline quick replies**: Agents can use preconfigured quick replies to quickly respond to customers, thus adhering to the organization's communication guidelines and reducing typing errors.
- **Send and receive attachments**: Agents can send attachments to the customers and receive attachments from the customer within the conversation control.
- **Inline notes**: Agents can take additional notes related to the conversation, customer, or issue without losing context.

Supervisor experiences

Supervisors need to monitor, manage, and ensure agents remain highly productive for customers to receive excellent support. To manage the agent workforce and the volume of customer requests being handled each day, supervisors require intraday monitoring capabilities.

Supervisor experiences offer several capabilities that enable supervisors to effectively manage the agent workforce, monitor intraday KPIs on agent productivity, and contact center operations to take prompt corrective action.

Unified views for different roles

Supervisor experiences offer relevant and contextual information that caters to the entire organization hierarchy, spanning agent managers, operations managers, and all-up organization heads.

Intraday health tracking

Supervisors can track parameters such as conversations handled, average handling times, and so on to track and monitor agent productivity and performance throughout the day.

Real-time conversation monitoring

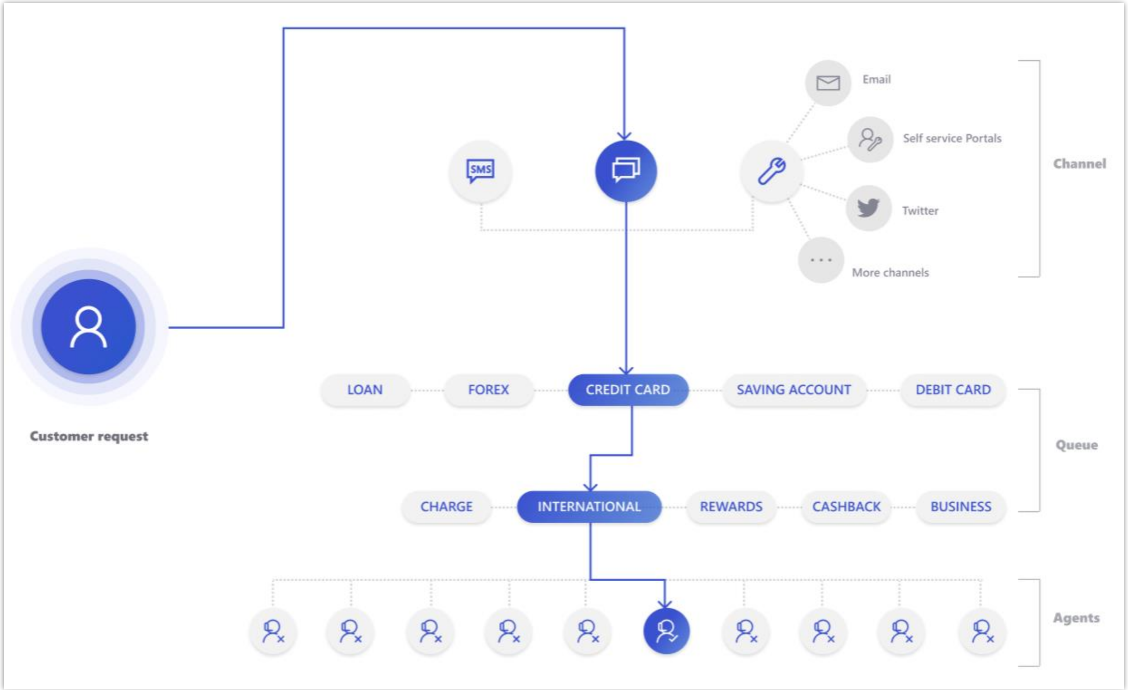
Supervisors can track conversations and assist agents in resolving the issues in real time.

Consult

Supervisors can step in to help agents during their conversation with customers. The supervisor can converse with only the agent or with the agent and the customer.

Unified routing and work distribution

Organizations can leverage the unified routing and work distribution capabilities to route work items originating from channels like chat and messaging as well as entities like Case to different customer service support teams within the organization. Through the configuration interfaces, organizations can tightly define the work profile that their agents are supposed to handle. During run time, the system will automate the flow of work to various agents based on their capacity and availability.



Unified routing and work distribution

The unified routing and work distribution system ensures that the right task is assigned to the right agent. It also unifies the work items and requests across channels and asynchronous work items like cases, leads, and so on.

Live chat channel

Live chat has emerged as one of the primary channels for customers to interact with support agents because of its simplicity and ease of use. Customer service centers prefer customers to connect via the live chat channel because it allows service agents to be more productive by simultaneously engaging with multiple customers.

The Live Chat channel offers several capabilities to ensure the support agents and end users can interact effectively and remain highly productive:

- **Quick and easy provisioning of multiple chat widgets**: Create multiple chat widgets to segregate Portal users and create personalized experiences based on their profile, organizational preferences, and their location on the website.
- **Authenticated and unauthenticated visitor support**: Identify and set up different chat experiences and interaction flows for authenticated and unauthenticated users; for example, different pre-chat questions.

- **Custom theming of chat widgets**: Design chat widgets to match your brand using various customizations available like color, position of widget, title, subtitle, logo, and so on.
- **Inline conversation-based pre-chat questionnaire**: Configure a pre-chat questionnaire, and show it inline in the chat widget to get user inputs and route them to appropriate agents based on the pre-chat answers.
- **Inline conversation-based post-chat feedback experience**: Configure a post-chat questionnaire, and show it inline in the chat widget to get feedback from the user once the conversation has ended.
- **Configure visibility, availability, and offline surveys based on business hours**: Configure business hours to hide the chat widget, show only during specific times, or show an offline survey outside business hours.
- **Set up proactive chat to drive customer engagement**: Anticipate customer issues and address them proactively by creating rule-based triggers to create dynamic call-to-action bubbles on chat widgets. Define rules based on target audience, location, user context, and so on.
- **Data masking to secure sensitive information**: Mask sensitive data within the conversation (credit card numbers, profane words, and so on) using data masking rules to avoid sharing sensitive information with agents, supervisors, or end users.
- **Chat transcripts for users**: Enable customers to download and email the chat transcript at the end of the chat session.
- **Attachments for agents and customers**: Support agents and customers can share attachments during the conversation.

Portal messaging

It's possible today for customers to create cases and request support using Dynamics 365 Portal. With Portal messaging, these work items can be routed to appropriate agents via the unified routing and work distribution system of Omni-channel Engagement Hub.

Agents can use the same multi-session experience to handle these work items alongside those coming in from channels such as Live Chat, SMS, and so on.

SMS

SMS channel is a powerful mechanism for organizations to reach and interact with their customers in a timely and convenient manner. Two-way conversational messaging through SMS can help organizations increase their customer satisfaction, improve agent productivity, and reduce support cost (when compared to phone or voice channel).

Key capabilities of SMS channel are:

- Seamless setup experience of SMS channel inside the application (phone numbers, short codes).
- Two-way texting between customers and agents. Customers can interact with organizations for product inquiry, installation query, support issues, and more through text messages.
- Updating customers with automated SMS notifications, including notifications to customers during case creation, case resolution, appointment reminders, and more.
- Automated response management: welcome messages, thank you messages, and more can be automatically sent to customers.
- Conversational view of SMS messages that will help increase the productivity of support agents.

Customers will need an SMS subscription with Telesign to leverage the two-way texting capabilities.

Enable customers to bring their bots

Today, consumers are increasingly demanding that companies serve their needs and meet their requirements quickly, efficiently, and accurately. At the same time, there is a strategic shift toward use of self-service channels, with customers looking to solve product or service issues themselves.

Recent evolution in machine learning technologies, natural language research, and linguistic analysis, along with the ability to provide scalable, immediate, and contextual assistance, has made self-service tools like chatbots (or virtual agents) a key necessity to be incorporated within an organization's customer service operations.

Apart from the ubiquity and nonstop availability offered by these chatbots, interactions with them could also be analyzed in regard to understanding consumer sentiment, level of engagement, and product feedback. Integration of intelligent bots within customer service operations positively impacts customer service KPIs like average handling time and average number of cases, while simultaneously reducing cost.

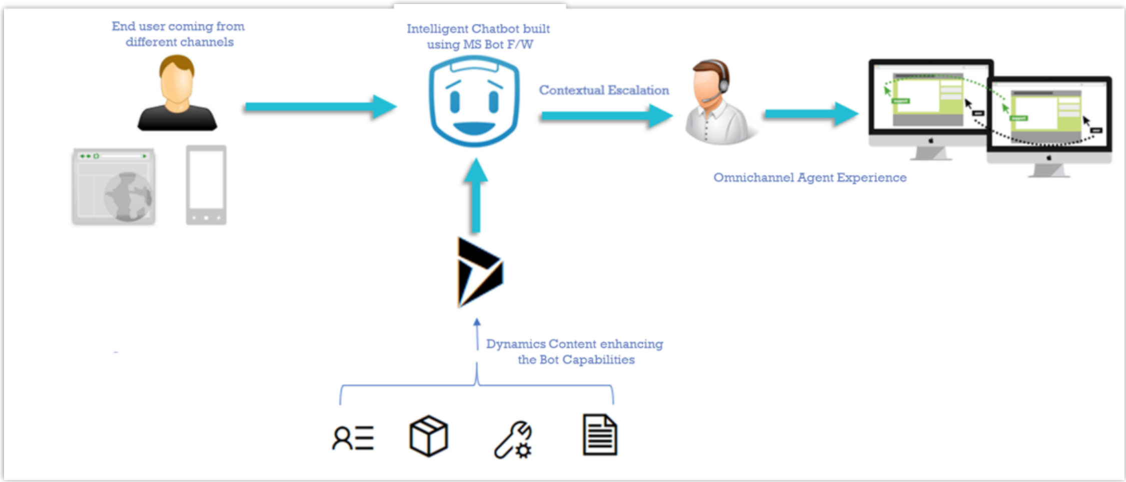
Bring your bot to Omni-channel Engagement Hub

With Omni-channel Engagement Hub, customers can now bring their own bots (built on Microsoft Bot Framework) and connect them with the Omni-channel Engagement Hub ecosystem.

As part of the Bring Your Own Bot feature, customers can now:

- Configure their bots in Omni-channel Engagement Hub through a simplified setup experience to enable routing of conversations to bots.
- Provide seamless, contextual escalation with consistent experience for end users.
- Enable agent productivity with rich bot-user conversation transcript and chat context.

Intelligent conversational bots at the frontline help to deflect the routine queries, while maintaining a natural experience for users. Integration with Omni-channel Engagement Hub enables a smooth, contextual handoff to the agents, helping them to focus on complex queries, while empowering them with relevant information, leading to a good experience for end users.



Schematic representation for customer-owned bots with Omni-channel Engagement Hub

Dynamics 365 for Field Service

Overview of Dynamics 365 for Field Service April '19 release

Dynamics 365 for Field Service empowers organizations to move from being reactive to providing proactive or predictive field service, and to embrace new business models such as outcome-based service or "anything-as-a-service."

The April '19 release includes investments in these areas:

Embedded IoT enhancements: The October '18 release included integration with Azure IoT Central to enable the flow of IoT information between IoT Central and Field Service. Azure IoT Central is a fully managed global IoT software as a service (SaaS) solution that makes it easy to connect, monitor, and manage your IoT assets at scale. Measurements from devices flow into IoT Central where the devices can be monitored. In addition, rules can be created to identify conditions or events that require service action. These come into Field Service as "IoT alerts." IoT alerts can be monitored and tracked in Field Service.

The April '19 release will include the next level of integration with Azure IoT to be fully embedded within the Field Service application. The flow of alerts can be managed through cases and work can be defined based on the details of the alert.

Within context (for example, within alerts, cases, or assets), measurement of current and historical information from Azure IoT will be shown using visualizations. The visualizations provide the capability to manipulate the device data to diagnose alerts and determine next actions. Based on the diagnosis, commands can be triggered from the Field Service application and executed on the device through IoT Central.

Scheduling capabilities: Over the past two years we have made significant investments in automated and optimized scheduling capability for field service through resource scheduling optimization (RSO). In November 2018, we released single resource optimization, which enables organizations to quickly optimize the schedule for a selected resource.

The April '19 release will include the following enhancements to scheduling:

- Variable resource location will enable resources to work from different areas and have schedules reflect that shift in resources.
- Optimization insights will provide service managers and dispatchers an insightful Power BI analytical dashboard to show optimization summarization and statistics to help ensure the desired optimization results.

- Self-service scheduling via a portal will enable engaging customers on their time, and at their convenience.

Technician productivity enhancements: We continue to enhance and improve the Field Service mobile application. In the October '18 release, we released push notifications and real-time geo tracking. In the October '18 release, we also enabled embedded Field Service context within the HoloLens Remote Assist app.

In the April '19 release, we will add embedded IoT data, inspections, and time entry capabilities to the Field Service mobile app.

Service delivery improvements: The April '19 release will include inspections capabilities to enable technicians to quickly and easily account for a checklist of items to meet process, safety, or regulatory requirements. Also, time-tracking capabilities ensure a more accurate accounting for technician time, which helps with calculating cost and revenue.

What's new and planned for Dynamics 365 for Field Service

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Feature	Release type	Date
Embedded IoT		
Embedded IoT visualizations	Public Preview	July 2019
Device commands	General Availability	June 2019
Device provisioning	Public Preview	June 2019
Scheduling		

Feature	Release type	Date
Variable resource location optimization	General Availability	September 2019
Optimization insights	General Availability	September 2019
Optimization objective for as soon as possible (ASAP)	General Availability	September 2019
Technician productivity		
Embedded IoT	General Availability	April 2019
Service delivery		
SLA enhancements	General Availability	June 2019
Enhanced multi-resource work order management	General Availability	June 2019

Embedded IoT

This article describes enhancements to embedded IoT capabilities in the April '19 release.

Embedded IoT visualizations

After an IoT alert is received, the alert needs to be diagnosed. Measurement data from Azure IoT is available to be related to and used throughout field service.

- The current state of the asset or device is the first step to understanding the alert. The current heartbeat with ability to view multiple measurements and adjustable time window will be shown. This gives a picture of what is happening on the device in real time.
- The next level of analysis is to view the history and trending of measurements from the asset. This helps to understand if there are isolated events, or part of a pattern or trend. This will include an adjustable time scale. Recent repair history for the asset will also be included in the historical view. This helps to understand the relationship to repairs, events, and trends.

- Another area of analysis is comparison with similar assets/devices. For example, view the same measurements for other assets in the same category. This is useful to better understand what is normal and determine if similar events or trends are occurring on related assets/devices.

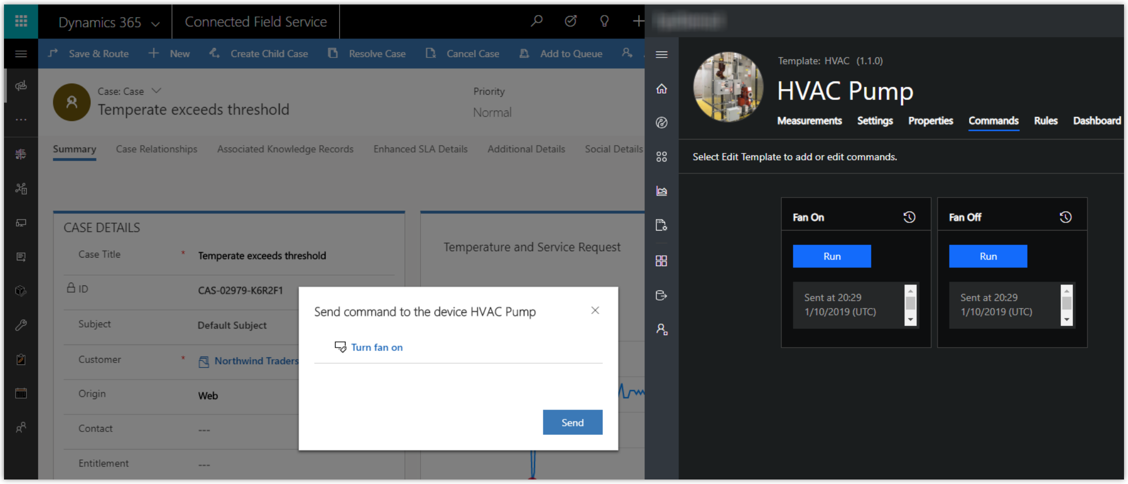
This information will be available through visualizations as a preview within the following contexts:

Case or Work order	Alert	Asset	Mobile
Current and recent history	Current and recent history	Current and recent history	Within Field Service mobile app
Related repair history	View across similar devices	View across similar assets	Current and recent history

Device commands

When an alert is diagnosed, in some cases the alert can be resolved by sending a command to the device. The Field Service application includes the capability to categorize devices and define commands that can be sent to any device within the category. Commands can be originated in field service (manual or automated) and executed on the device through IoT Central.

The command payload is sent from the Field Service application to IoT Central using flows (based on Microsoft Flow templates). After sending a command, the result can be monitored using the IoT visualizations.



IoT visualization

Device provisioning

Mapping between IoT Central devices and Field Service devices or assets is key to using embedded IoT capability, including appropriate mapping to field service accounts.

The capability for synchronized mapping for a device or asset will be available as a preview with the IoT Central integration.

Scheduling capabilities

This article describes the new scheduling capabilities in the April '19 release.

Variable resource location (optimization)

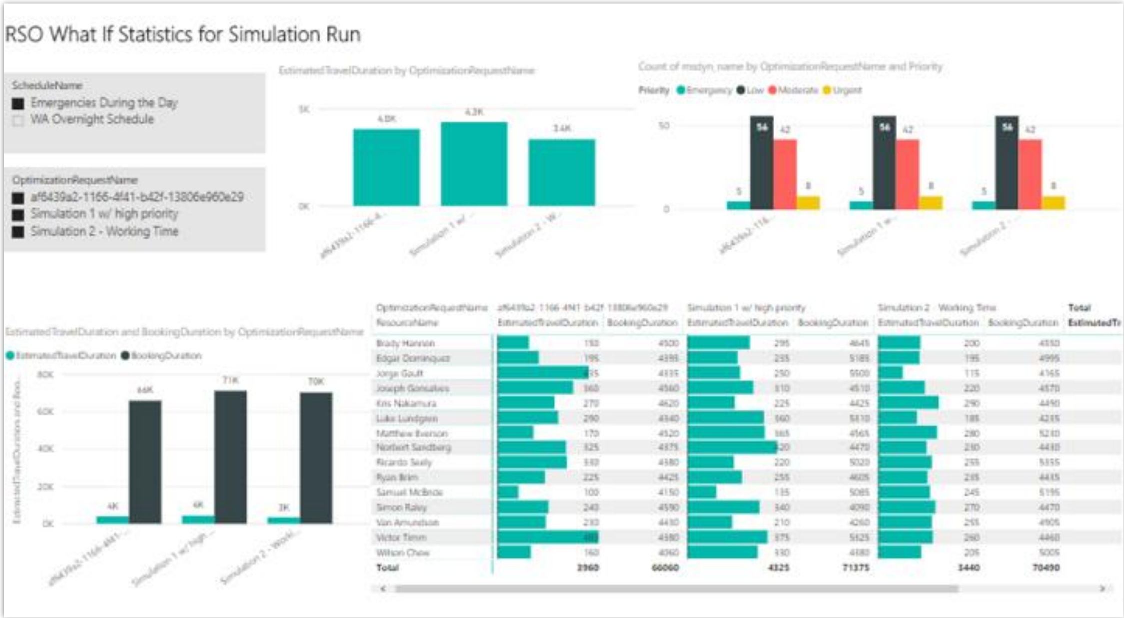
Transform your operation with support for staffing your team in different locations on different days. Based on customer demand, you might need to send resources to different areas. These might be local areas, or even outside the country or region. In some cases, resources might travel to a remote area once a month and perform work in that area, or perhaps your team travels from customer location to customer location without having a home base. Maybe resources pick up their parts at the warehouse every Wednesday but start from their homes on other days. With date-effective location support, you can meet these variant location-based demands interacting with an API that allows you to change your resources' location.

Variable resource location optimization enables setting start and end locations for a technician on a daily basis, which can be done by a service manager, dispatcher, or another employee.

Optimization insights

Service managers and dispatchers are responsible to assure resources are being effectively scheduled and also to assure scheduling results are consistent with their business goals.

This feature provides an insightful Power BI-based analytical dashboard to show optimization summarization and statistics for simple run or across multiple runs to help business evaluate optimization results, measure scheduling objectives and resource usage, and more.



Optimization insights

Optimization objective for as soon as possible (ASAP)

Occasionally, there might be more resource capacity than there is demand for resources (for example, work orders). In these circumstances, there is a business decision about whether to fully book some resources or leave resources with some capacity as a contingency for emergency or unplanned work.

The April '19 release enables a new objective for as soon as possible (ASAP), so that organizations can select and rerank with other scheduling objectives to balance the need to reserve some capacity with the need to keep resources busy all day.

Technician productivity enhancements

The April '19 release includes investments to enhance technician productivity.

Embedded IoT

Leveraging IoT information is key to accurate diagnosis and taking the right corrective action.

The Field Service mobile app will be augmented with IoT data. This data will show the current readings for a given asset or device. It will also show the reading history and trending for that asset or device. In addition, the technician will be able to view this information for related or similar assets/devices.

Service delivery

SLA enhancements

Based on investments in the October '18 release, SLAs can now be defined related to work orders with SLA KPIs that automatically drive work order arrival time, influencing scheduling logic from both the Schedule Assistant and resource scheduling optimization. However, the logic must still be applied either manually or via customer-defined logic.

SLAs can now be automatically applied when a work order is created based on customer-defined parameters.

Enhanced multi-resource work order management

Based on investments in the October '18 release, the Field Service application now supports many multi-resource work order scenarios. For example, an incident type can specify that multiple resources are required to complete the work.

Improvements have been made to crew management and requirement group scheduling to facilitate easy multi-resource work order scheduling, management, and completion.

Dynamics 365 for Project Service Automation

Overview of Dynamics 365 for Project Service Automation April '19 release

The PSA engineering team in collaboration with the Microsoft Project engineering team is focused on building a new Project Service. Microsoft's next generation cloud-based Project Management service will be built on the Power Platform and Common Data Service, leveraging the best components across Project Web App (Project Online service) and current Dynamics 365 or Project Service Automation (PSA) experience. This work is targeted for release in July 2019. This will be a major milestone for our future roadmap to integrate new Project Service and PSA into a single application.

What’s new and planned for Dynamics 365 for Project Service Automation

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Feature	Release type	Date
Project Service solution	General Availability	July-September 2019

Project Service solution

The new Project Service will continue to deliver modern project management experiences and powerful planning capabilities. The new Project Service will be built on Common Data Service. This solid foundation provides a long list of benefits, including access to Microsoft PowerApps and Microsoft Flow for custom business solutions and integration with Power BI for advanced analytics and reporting. View the blog for more information on the new Project Service.

Stay tuned for additional information about upcoming capabilities in a future update.

Dynamics 365 for Finance and Operations

Overview of Dynamics 365 for Finance and Operations April '19 release

Dynamics 365 for Finance and Operations unifies global financials and operations to empower people to make fast, informed decisions. Finance and Operations helps businesses adapt quickly to changing market demands and drive rapid business growth. The April ’19 release will bring users together on One Version (version 10) for Dynamics 365 for Finance and Operations. This release marks a monumental shift in supportability and allows the community to be on a continuous update cadence. The community can continue to build extensible solutions for Dynamics 365 for Finance and Operations.

The core capabilities being introduced in the April '19 release will be made available for customers on a continuous monthly cadence. These core capabilities will be persona opt-in enabled, which allows the customers to implement these new features at their own cadence. The key driver for any core capability is to increase productivity and ROI of the solution.

This release also focuses on the fundamentals to enhance the user experience of the solution with Net Promoter Score (NPS) feedback as a primary driver. The targeted areas of these enhancements include performance, compliance, automation, and supportability of the service.

Financial management

The April ’19 release for financial management focuses on responding to customer feedback for regulatory features and usability. Customers will have the capabilities needed to comply with IFRS 15 and for responding to the guidance on accounting for revenue recognition on contracts. Users will experience an enhanced expense report entry experience with a new header and details expense report, as well as automated settlements in the general ledger, a process completed periodically. A top 10 feature request has been fulfilled by adding bank foreign currency revaluation.

Supply chain management

Product information management and inventory management

The continuous feedback obtained when operating the service allows us to identify specific subprocesses within the inventory management area that can be subject to tangible performance improvements. This is an ongoing effort with broad impact on several areas of the service—it allows for faster feedback, less waiting time, and unblocks resources that otherwise will be waiting for a process to finish. With the April '19 release, the ability to configure and apply unit of measure (UoM) conversions for product variants has also been expanded so that UoM conversions at the product variant level are now supported throughout the application.

In future releases, we will continue to invest in both our product information management and inventory management capabilities. New classes of products and production processes will drive an evolution of the product definition and supporting elements. The inventory valuation capabilities will be expanded to support scenarios where multiple valuation methods and multiple currencies are required—for example, in case of different managerial reporting and statutory reporting requirements. We will also invest in making inventory on-hand information more readily available in distributed scenarios, such as in the retail industry.

Warehouse management

The Warehouse Management System (WMS) is a recent successful addition to the application suite that serves several industries, each with specific requirements on how to operate a warehouse. The solution has been gradually enhanced since its introduction in Microsoft Dynamics AX 2012, and a large suite of enhancements has recently been licensed from an ISV. With the April '19 release, the integration of these enhancements will begin, and the ability to handle catch weight (CW) products in WMS processes will be added.

Going forward, we will continue enhancing the released CW feature by adding capabilities of the second CW purpose-built solutions with the aim of allowing existing customers to upgrade to the April release or its following monthly releases. The solution will fit the needs both of distributors as well as manufacturers. The lack of this integration has been hampering the uptake of the WMS solution at certain customers—this reservation will be removed. The suite of 30-plus distinct features will partially be integrated as preview for the April release and its subsequent monthly releases. For example, a feature like enable label printing during wave adds flexibility in configuration and operation. All feature exposures will be achieved through flighting to allow for a controlled roll-out.

Sales and procurement

The April ’19 release brings usability enhancements in sales and procurement that increase user productivity and satisfaction. Super users will be able to propose filtered views and build forms where unnecessary fields or actions can be removed. As a result, knowledge from the super users can be disseminated to the organization and all skill levels of users can benefit from targeted views, crafted to fit the task at hand.

Going forward, the focus for sales and procurement and sourcing areas will be on improving business support for supplier collaboration, extended self-service, data sharing and maintenance capabilities, and improving business support within integration scenarios covering purchase requisition, request for quotation and purchase ordering relative to data flow and accounting distribution constraints.

Across the sales and procurement areas, the primary focus will be on improvements in our ability to track and account for goods in transit scenarios. Enhancing support of business scenarios within kit to stock, as well as kit to order, and extending our support for sales price and promotion management by adding extended price management flexibility leads to improved efficiency and lower cost of maintenance.

Manufacturing

It is a core priority to leverage the continuous feedback obtained from operating the service to drive tangible performance improvements, as well as to optimize core manufacturing business processes. In the April '19 release, the focus is on optimizing the resilience of master planning toward platform and infrastructure errors, as well as to deliver incremental master planning performance improvements. This is an ongoing effort that will continue in future releases as opportunities for process and performance improvements are identified.

We are also continuously enhancing and evolving our current manufacturing functionality to support the connected, intelligent operations of modern manufacturers. We will integrate with the intelligent Microsoft Azure IoT service to help our manufacturing customers close the digital feedback loop. This will consolidate close to real-time information from the shop floor with business data to generate business events and actionable insights.

Beyond the April '19 release, we will introduce enterprise asset management capabilities that will enable customers to track the total cost of ownership of operations assets, as well as to manage the ongoing maintenance of those assets. Maturing additive manufacturing technologies represent a shift in how to approach manufacturing and will also drive enhancements of how manufacturing processes are defined, planned, and executed.

Globalization

Microsoft Dynamics for Finance and Operations is localized for 37 countries/regions and provided in 42 languages directly by Microsoft. For information about the list of countries/regions localized and languages provided by Microsoft, please refer to Product localization and translation availability guide. The detail information about localization features provided by Microsoft per country/region can be found in Localization and Regulatory features.

For information about localization and translation solutions supported by channel partners which extend the localizations and languages provided by Microsoft please visit AppSource. Microsoft continuously delivers regulatory updates to respond to legislation changes in 37 countries/regions supported by Microsoft. The list of planned and recently shipped regulatory updates can be found at Localization and Regulatory features – Regulatory updates. Alternatively, you can sign into Lifecycle Services (LCS) and view planned and released regulatory updates through the LCS Issue Search tool, where you can search by country, types of features, and releases.

To operate in many countries or regions, businesses need to quickly respond to changing regulatory requirements and meet very specific requirements of industries and verticals. With the April '19 release, we continue to make focused investments in globalization to expand the areas of configurable localization to simplify this process. With configurable engines for both Electronic Reporting and Global Tax, which are accessible through Regulatory Configuration Service, users can extend Microsoft-delivered regulatory configurations or build new configurable features from scratch.

In the April ’19 release, we made several of the most frequently changed features in Brazil and Mexico configurable, specifically electronic invoicing features for Brazil and Mexico and some Brazil Fiscal Books reports. Also, as the invoice layout is one of the most-customized areas by customers who deploy globally, in the April ’19 release we are extending the number of configurable invoice layouts beyond the Free Text Invoice layout that shipped in the October ’18 release. We continue enhancing the configurable engines capabilities in several areas such as performance optimization of customer-built features, simplification of post-processing operations, and improving tax configuration usability. In April ’19, we are also shipping several Russian localization features.

Platform

Between April and July 2019, several improvements to the developer tools will be previewed, making development environments more cost effective and productive. Development of more than one application on the same environment will be possible. Build automation will not require build virtual machines and will enable automated deployment to Lifecycle Services (LCS).

In addition, the Web Client introduces new features guided by user productivity, usability research, and customer feedback. This includes personalization of forms and workspaces, interacting with large data sets (with better filtering), and mobile device responsive capabilities. An improved workflow experience, including integration with Microsoft Flow, will be available.

Analytical Workspaces support new personalization options and power user editing tools of Power BI reports within the Finance and Operations client. Power users can extend reports and do data mashups using PowerBI.com functionality without any developer intervention.

New tools for management of network printers are also introduced. The Entity Store is supported for on-premises deployments.

Integration

With the April ‘19 release, customers will be able to seamlessly link to Common Data Service from Dynamics 365 for Finance and Operations. A breadth of Finance and Operations entities will be available in Common Data Service. Additionally, Entity Store will be staged in a customer’s Azure Data Lake. Microsoft will keep the data fresh with incremental syncs.

Event-driven integrations is a new capability that provides a framework to allow Finance and Operations business and workflow events to be consumed by Microsoft Flow and external systems. For example, this will enable a PO confirmation to trigger fulfillment by the vendor earlier; or enable a receipt of a damaged part to trigger the vendor claim process in real time.

Cloud operations and lifecycle services

Microsoft will manage the continuous updates of Platform, Application (Finance and Operations, Retail), and Financial Reporting with no costly upgrades required. A set of tools and experiences to support this experience (called One Version) will be made available in Lifecycle Services and will enable predictability, reliability, and continuous delivery. The service will be made available in the China Sovereign Cloud with all customer data maintained within the region.

What’s new and planned for Dynamics 365 for Finance and Operations

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

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For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Financial management

Feature	Release type	Cloud or on-premises	Date
Automatic ledger settlements	General Availability	Both	August-October 2019
Reverse journal posting	General Availability	Both	August-October 2019
Revenue recognition	General Availability	Both	July 2019
Bank foreign currency revaluation	General Availability	Both	May 2019
Expense client usability	General Availability	Both	August 2019
Billing schedules	General Availability	Both	August 2019
Credit management	General Availability	Both	August-October 2019
Edit bank statement date and view edit history	General Availability	Both	May 2019
Recover vendor invoices	General Availability	Both	May 2019

Public sector

Feature	Release type	Cloud or on-premises	Date
Accounts Payable			
Associate federal 1099 default value to main account	General Availability	Both	September-November 2019
Payment journal summary report	General Availability	Both	October-December 2019

Feature	Release type	Cloud or on-premises	Date
Restrict ability to edit accounting distributions on accounts payable vendor invoices	General Availability	Both	October-December 2019
Budgeting			
Hourly rate field on forecast positions	General Availability	Both	April-June 2019
Summary budget vs. actual report	General Availability	Both	May-July 2019
Financial dimension allocation on forecast positions	General Availability	Both	May-July 2019
Forecast position reports	General Availability	Both	June-August 2019
Job description update for Forecast position and Position	General Availability	Both	September-November 2019
Remove option to replace budget plans	General Availability	Both	September-November 2019
Cash and bank management			
Escheatment	General Availability	Both	May-July 2019
Cash control	General Availability	Both	June-August 2019
General ledger			
Interest distribution	General Availability	Both	April-June 2019
Update bank balances when posting transactions using advanced ledger entry	General Availability	Both	July-September 2019

Feature	Release type	Cloud or on-premises	Date
Daily statement of treasurer's accountability	General Availability	Both	August-October 2019
Canadian Harmonized Sales Tax	General Availability	Both	December 2019-February 2020
Procurement and sourcing			
Apply general budget reservation to multiple purchase agreement lines	General Availability	Both	May-July 2019
Ability to apply general budget reservation to multiple purchase requisition lines at once	General Availability	Both	April-June 2019
Calculate purchase order delivery dates based on lead times and working days	General Availability	Both	May-July 2019
Vendor bidding – RFQ questions from vendors and summarized responses	General Availability	Both	August-October 2019
RFQ activity	General Availability	Both	July-September 2019
Purchase agreement enhancements	General Availability	Both	July-September 2019
Add RFQ link to purchase order line details	General Availability	Both	July-September 2019
Purchasing card processing	General Availability	Both	May-July 2019
New field on receipt form for entering quantity to receive	General Availability	Both	December 2019-February 2020

Feature	Release type	Cloud or on-premises	Date
[Delegation of multiple purchasing work items]()	General Availability	Both	September-November 2019
Projects			
[Project contract funding limit committed amount detail]()	General Availability	Both	May-July 2019
[Circular A-133 report for grants (SEFA)]()	General Availability	Both	January 2020-March 2020
[Project invoice proposal selection parameter by funding source]()	General Availability	Both	December 2019-February 2020
[Generate earnings statements from project timesheets]()	General Availability	Both	October-December 2019

Product information management and inventory

Feature	Release type	Cloud or on-premises	Date
Inventory performance optimizations	General Availability	Cloud	April 2019
Unit of measure conversions for product variants	General Availability	Both	April 2019

Warehouse management

Feature	Release type	Cloud or on-premises	Date
Catch weight product processing with warehouse management	General Availability	Both	April 2019

Feature	Release type	Cloud or on-premises	Date
Work line details	General Availability	Both	April 2019
System-directed work sequencing	General Availability	Both	April 2019
Advanced wave label printing	General Availability	Both	April 2019

Sales and procurement

Feature	Release type	Cloud or on-premises	Date
Simplified view - templates	General Availability	Both	Undetermined

Manufacturing

Feature	Release type	Cloud or on-premises	Date
Master planning stability and recovery improvements	General Availability	Both	March 8, 2019
Improved removal of obsolete planning data	General Availability	Both	March 8, 2019
Planning service	Public Preview	Cloud	July 2019
Connected manufacturing	Public Preview	Both	July 2019
Enterprise asset management	Public Preview	Both	July 2019

Globalization

Feature	Release type	Cloud or on-premises	Date
Additional configurable invoice layouts	General Availability	Both	July 2019
Configurable e-invoices for Brazil (NF-e and NFS-e)	Public Preview	Both	June 2019
Configurable Mexican e-invoice (CFDI)	Public Preview	Both	August 2019
Additional Russian localization features	General Availability	Both	April and May 2019
Expanded regional coverage for Regulatory Configuration Service (RCS) deployments	Public Preview	Cloud	March 8, 2019
Electronic reporting - Performance optimization of customer-built configurations	General Availability	Both	March 8, 2019
Electronic reporting - Setting up parameters by legal entity	General Availability	Both	March 8, 2019
Electronic reporting - Post-processing of generated files	General Availability	Both	May 2019
Electronic reporting - Post-processing of imported files	General Availability	Cloud	March 8, 2019
Electronic reporting - Generate documents in PDF format by filling in PDF templates	General Availability	Both	March 8, 2019
Electronic reporting - Specify a custom storage location for generated documents	General Availability	Both	March 8, 2019

Feature	Release type	Cloud or on-premises	Date
Global Tax Engine (India) - Improving tax configuration usability with reduced number of lookups	General Availability	Both	March 8, 2019
Global Tax Engine (India) - Simplifying tax setup maintenance with Excel integration	General Availability	Both	March 8, 2019
Global Tax Engine (India) - Enabling tax configuration with tax currency and sales tax codes	General Availability	Both	March 8, 2019
Regulatory updates	General Availability	Both	Continuous
Cash flow management	General Availability	Both	March 8, 2019
Incomes and expenses profit tax registers	General Availability	Both	March 8, 2019
Localization of process industries	General Availability	Both	March 8, 2019

Platform

Feature	Release type	Cloud or on-premises	Date
Analytics			
Entity store support for on-premises deployments	Public Preview	On-premises	May 2019
Web edit tooling for analytical workspaces	Public Preview	Cloud	April 2019

Feature	Release type	Cloud or on-premises	Date
[Personalization options for analytical workspaces]	Public Preview	Cloud	July 2019
[System management of network printers]	Public Preview	Cloud	April 2019
[Client alert notifications by email]	Public Preview	Both	April 2019
Client			
[Enhanced grid experiences]	Public Preview	Both	July 2019
[Saved views]	Public Preview	Both	July 2019
[Client productivity and usability improvements]	General Availability	Both	July 2019
[Improved "Add filter fields" experience]	General Availability	Both	April 2019
[Updated navigation bar that aligns with the Office header]	General Availability	Both	March 8, 2019
[Clear identification of preview builds]	General Availability	Both	March 8, 2019
[Ability to recover a user session to its last state]	Public Preview	Both	April 2019 – July 2019 (Incremental feature releases)
Development			
[Developer tools and application lifecycle management]	Public Preview	Both	April 2019 – July 2019 (Incremental feature releases)

Feature	Release type	Cloud or on-premises	Date
Platform extensibility enhancements	General Availability	Both	March 8, 2019
Platform extensibility enhancements wave 2	General Availability	Both	April 2019
Platform extensibility enhancements wave 3	General Availability	Both	May 2019
Analyze runtime events using Application Tracker	General Availability	Both	May 2019

Integration

Feature	Release type	Cloud or on-premises	Date
Business events for integrations	General Availability	Cloud	June 2019
Finance and Operations data in Common Data Service	Public Preview	Cloud	June 2019
Entity store in your own Business Data Lake	Public Preview	Cloud	June 2019

Cloud operations and Lifecycle Services

Feature	Release type	Cloud or on-premises	Date
Data residency – China cloud	General Availability	Cloud	April 2019
One Version experience	General Availability	Cloud	April 2019
Self-service deployment	General Availability	Cloud	May 2019

Feature	Release type	Cloud or on-premises	Date
Business process modeler (BPM) user interface improvements	General Availability	Cloud	March 4, 2019

Automatic ledger settlements

Ledger settlements let you match debit and credit transactions in the general ledger and mark them as settled. Advanced ledger settlements provided additional capabilities for filtering and selecting transactions. We are adding the ability to create rules that will enable additional filtering of the information and will automatically settle transactions.

Rules filtering

The ledger settlement rules will allow you define how you want to filter transactions. You'll be able to select accounts, dimensions, and other criteria that will define your filter. You can then apply the rule to your ledger transactions and preview the results before matching.

Automatic matching

The ledger settlement rules will also allow you to select from a list of criteria such as accounts, dimensions, and posting types that define which transactions you want to match. When you add the rule to your ledger transactions, not only will the filter be applied but the matching transactions will be selected for settlement. The process will also be available for processing in batch.

Reverse journal posting

Reversals are improved to allow the reversal of multiple general journal lines or an entire general journal. Reversal from the voucher transaction form allows reversal of a limited number of subledger journal entries. Reversals are also allowed from the accounting source explorer.

Revenue recognition

Revenue recognition management provides automation to help accounting and finance professionals comply with International Financial Reporting Standard (IFRS) 15 and Accounting Standards Codification (ASC) 606.

New capabilities will include support for product bundles and kits such as:

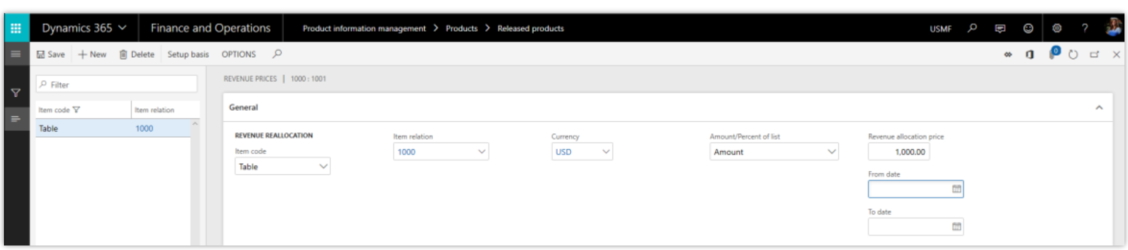
- Software and maintenance
- Software and services
- Software
- Hardware and service

These capabilities will handle the following features:

- Revenue pricing
- Revenue schedules
- Bundle setup
- Multiple sales order reallocation
- Workspace navigation and reporting

Revenue pricing

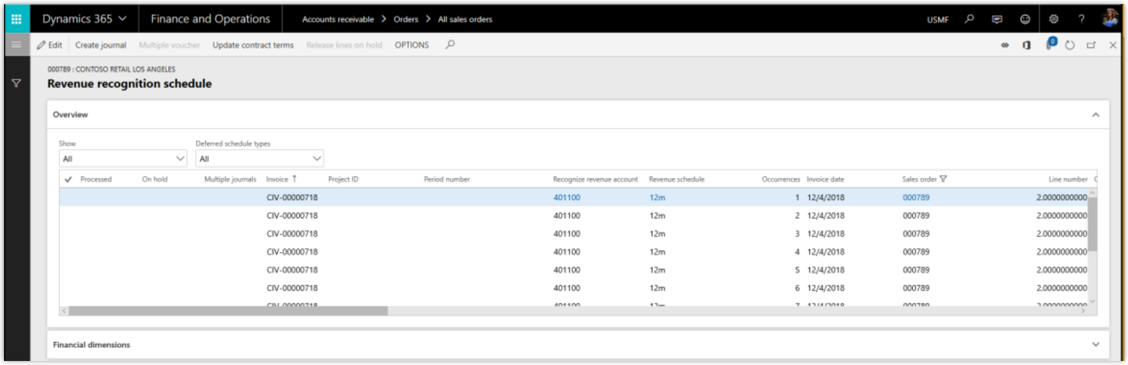
Users can enter a different price that they will recognize that is different than they charge the customer.



Revenue pricing screenshot

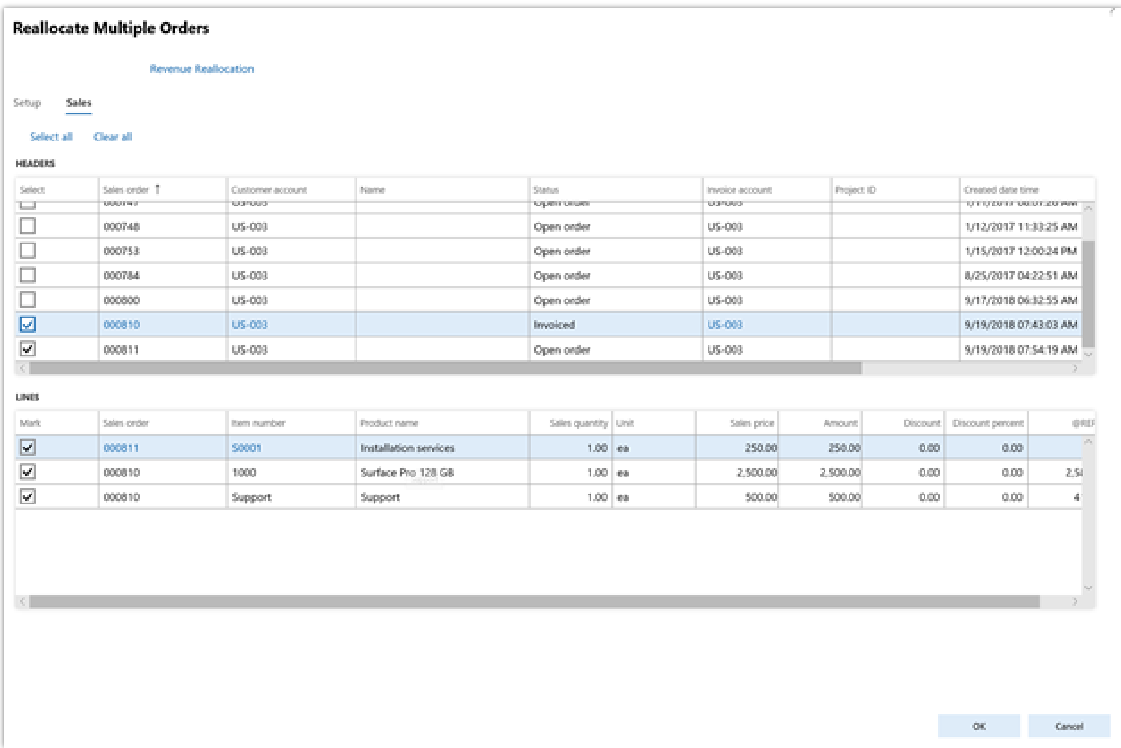
Revenue schedules

Revenue schedules determine the number of months for the revenue deferral. Options are available to create the schedule based on actual days of the month, splitting equally across month or based on a set number of occurrences.



Revenue schedules screenshot

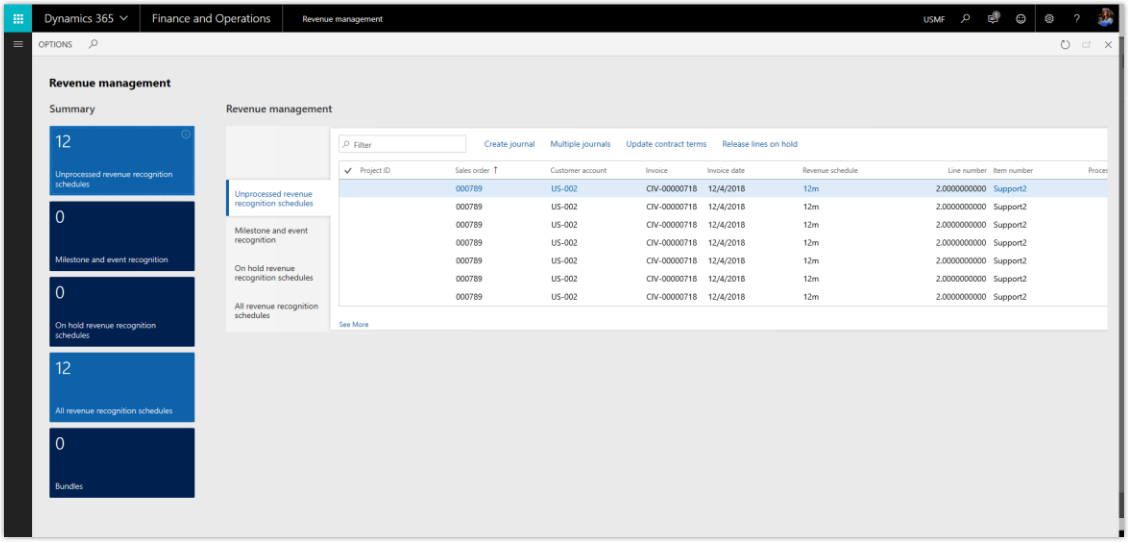
Multiple sales order reallocation



Multiple sales order reallocation screenshot

Workspace

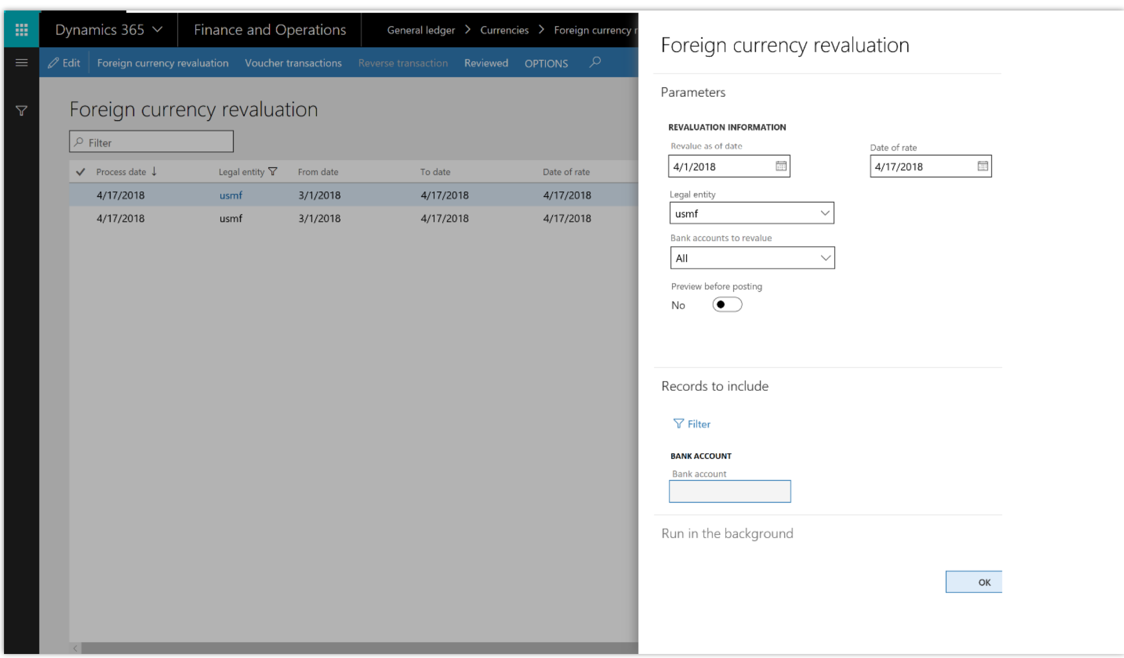
The new workspace is used to look at the status of the revenues schedule records created for deferred revenue.



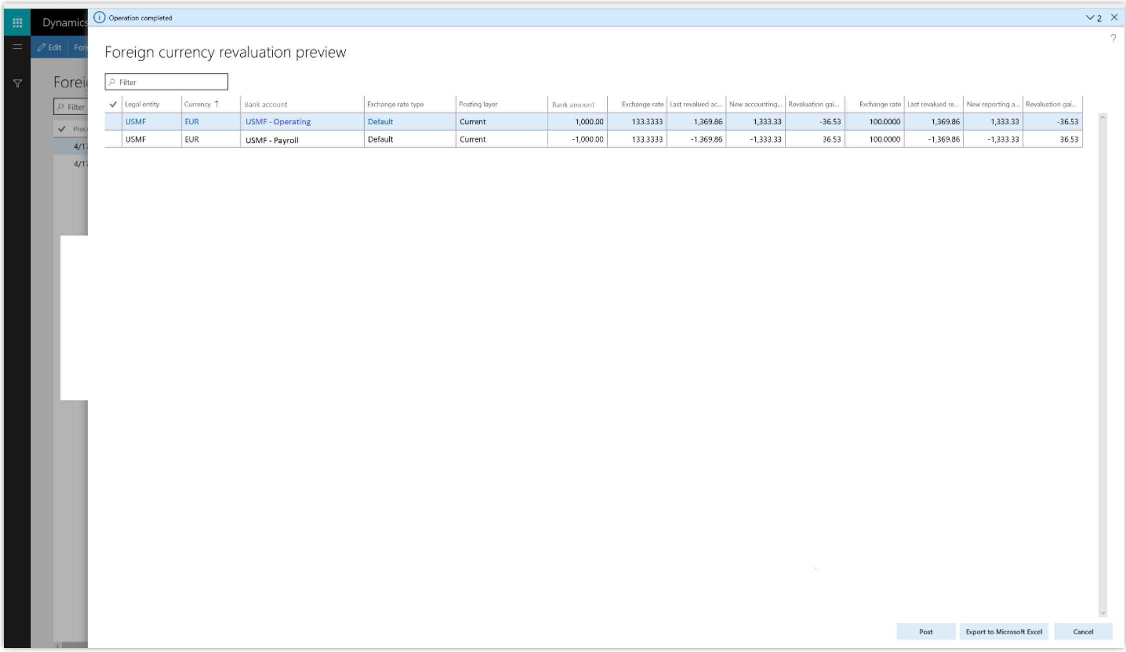
Revenue recognition workspace screenshot

Bank foreign currency revaluation

Users can run foreign currency revaluation for bank balances as part of their periodic processes. Users select the date, currency range, and the accounts they want to include across legal entities. Adjustments will be created based on the difference in exchange rates.



Bank foreign currency revaluation screenshot

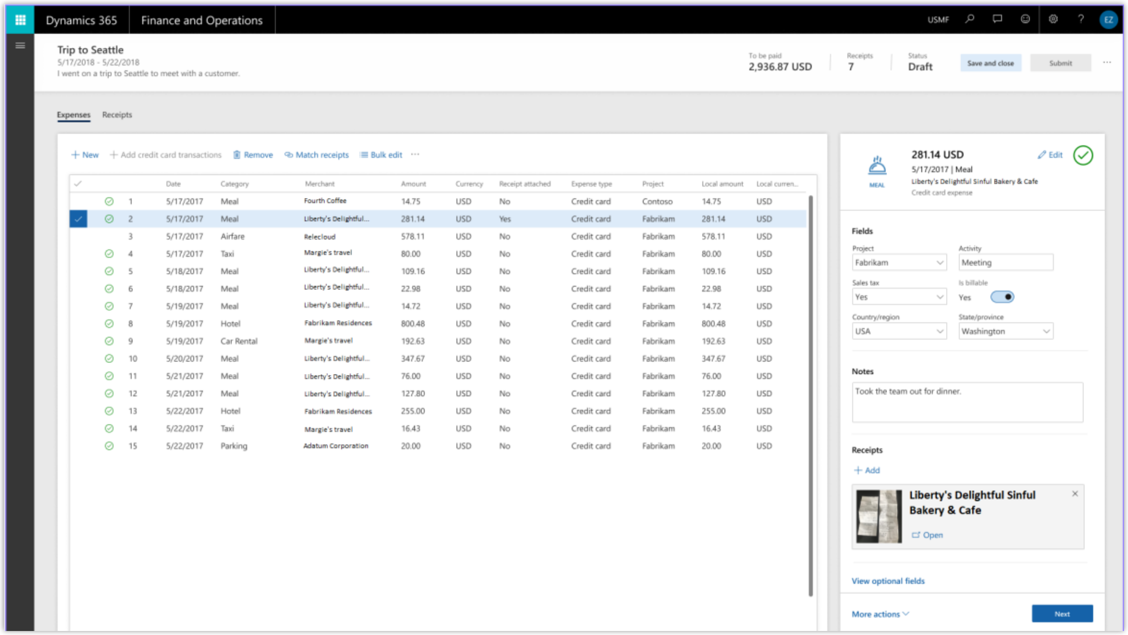


Preview bank foreign currency revaluation screenshot

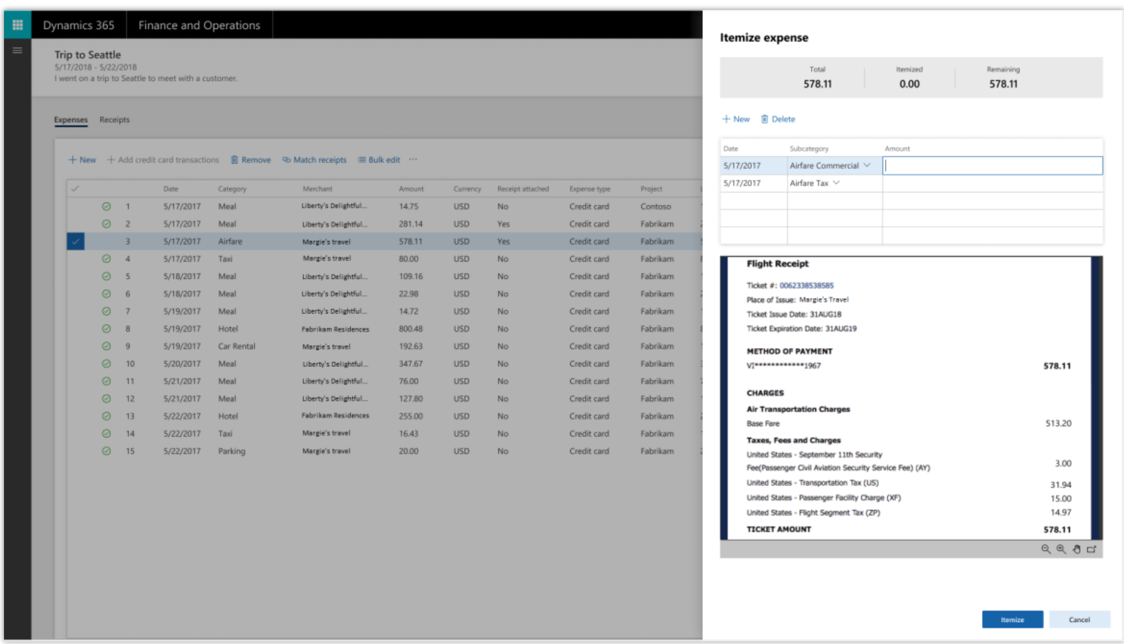
For more information, see the [Bank foreign currency revaluation help topic](#).

Expense client usability

Large numbers of users enter expenses daily in Finance and Operations. Enhancements to the entry experience around adding and modifying expense address requirements such as receipts capture and early visibility for policy violations. This feature also makes it easier to itemize expenses, making the experience quicker and more focused for users.



Mocked-up screenshot of a proposed Expense interface



Receipt details

Billing schedules

Billing schedules allows for flexible billing rules against customer sales orders. Different billing schedules can be defined on each line of the sales order. Currently you can use Payment schedules to immediately post the full amount to Accounts receivable, spread over various periods based on the payment schedule. Billing schedules will instead post to Unbilled accounts receivable, and then create invoices based on the billing schedule. Each invoice will create an accounting entry to move the balance from Unbilled accounts receivable to Accounts receivable. This allows future periods to also remain on hold until the invoice is posted.

Enterprise credit management

Enterprise credit management provides capabilities to automate the credit control management process for accounting and finance professionals.

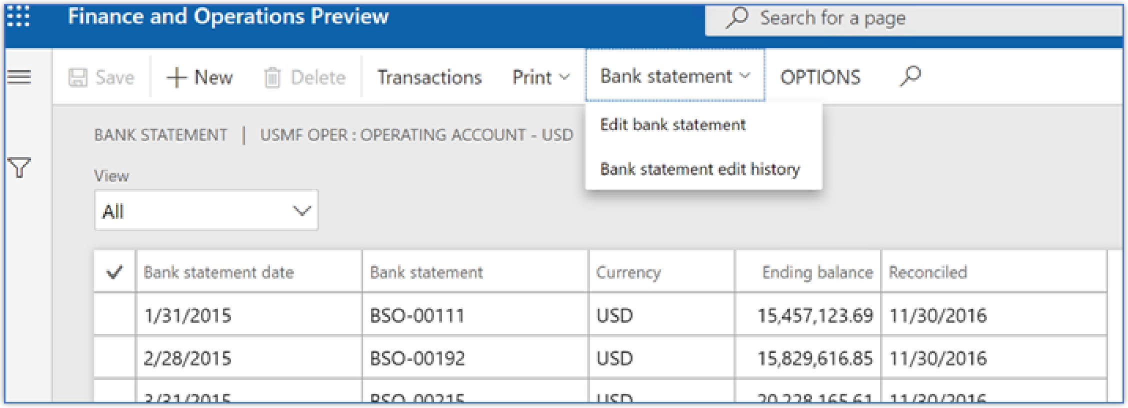
Enterprise credit management will proactively suggest credit control activities, thereby improving cashflow, reducing bad debts, and providing new account risk management.

The capabilities will include:

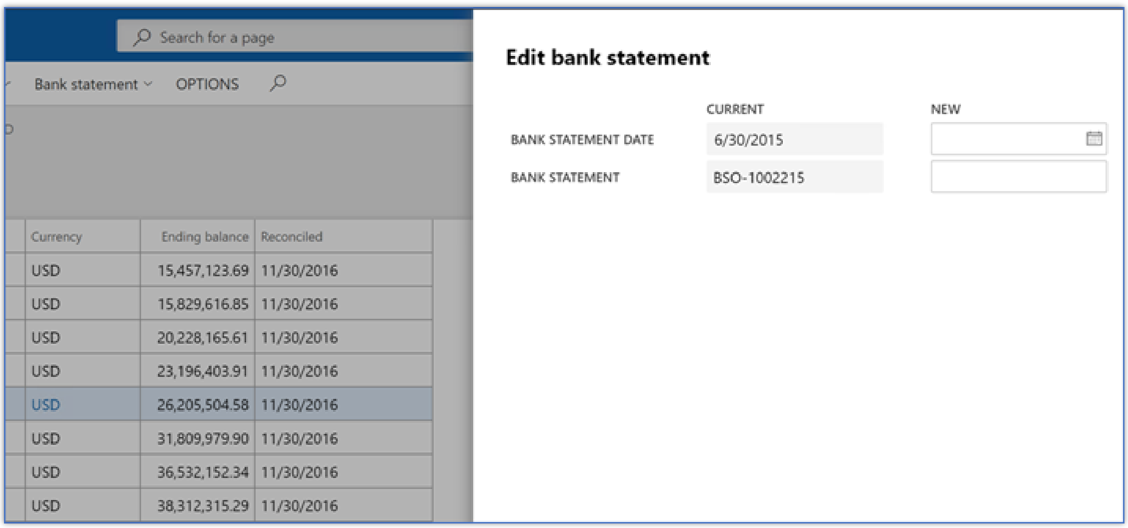
- Management of risk scores
- System-suggested credit limits
- Configurable blocking rules
- Automation of credit cases
- Dynamic release of credit holds
- Credit limit management
- Tracking historical credit limits

Edit bank statement date and bank statement ID

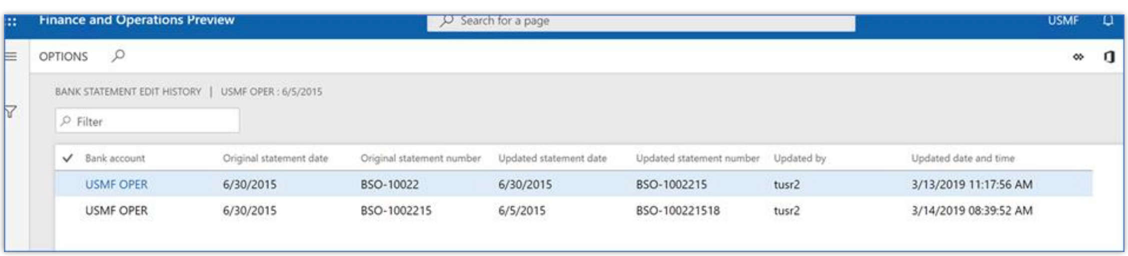
Users can now edit the bank statement date and bank statement ID field for previously reconciled bank statements, if they are using the simple bank reconciliation functionality. This addresses a common request we hear from users when they need to make a correction. The bank statement date cannot be edited to change the order of bank statements, however. Users can also view the edit history on the new bank statement edit history page.



Drop-down list for edit bank statement



Edit bank statement



Filter bank statements

Recover vendor invoices

You can recover vendor invoices that have been in use for more than four hours from the Recover vendor invoices page. While a vendor invoice is in use, it cannot be edited by another user. There are times when an invoice might be in a state that is in use, even when it is not being actively edited.

A vendor invoice might be in use for the following common reasons:

- The application might have stopped responding while the invoice was being edited.
- A user might have inadvertently left the invoice open in the application.

The Recover vendor invoices page can be used to recover or release the vendor invoice, allowing it to be edited. Use the Accounts payable parameters page to enable the Recover vendor invoices page.

For more information, see the Vendor invoices overview help topic.

Associate federal 1099 default value to main account

Some invoice lines identified for 1099 federal tax reporting might be reported for a different 1099 box from the vendor's default box. Because vendors might receive a payment on an invoice that correlates to multiple 1099 boxes, it's preferable that a line funding distribution using a main account be consistently reported in a specific 1099 box. With this new feature, you will be able to recalculate the 1099 box values for vendors to more accurately report the accumulated balances with the Internal Revenue Service (IRS).

Payment journal summary report

Use the Payment journal summary report to print a listing of the invoices that will be included in the next check run. The report displays the vendor account, vendor name, invoice number, any discounts from the vendor, and the amount to be paid. The information is grouped by the bank through which the checks are paid and for each bank, the invoices are grouped by vendor. The report includes invoice amount subtotals for each vendor and displays the number of invoices that are being paid and the number of checks that will be created. The information comes from the vendor and the vendor transactions. The report groups by currency when multiple currencies are present in the report.

Restrict ability to edit accounting distribution on accounts payable vendor invoices

You can set up specific financial dimensions that must match between a purchase order (PO) and an invoice created from that purchase order. For example, matching is required for all financial dimensions between purchase orders and invoices; on invoices associated with a PO, the general ledger accounts on the invoice detail lines cannot be changed from what was entered on the PO lines.

Hourly rate field on forecast positions

You can specify that forecast positions in a particular compensation group have an hourly rate calculated.

Summary budget vs. actual report

Use the Summary budget versus actual report to generate a summarized report comparing budgeted amounts to actual expenses and revenue activity during a time period you specify. For each account, the report lists budgeted amounts, actual expenses or revenues, encumbrance amounts from purchase orders, and pre-encumbrance amounts from purchase requisitions. Additionally, the report lists the remaining budget amount for each account and fund. The report can be sorted by fund and then account number and displays subtotals within each fund based on the financial dimension set you selected to group by. The grouping determines how the Navigation Pane, a tool helpful for reviewing activity, displays activity.

Financial dimension allocation on forecast positions

You can maintain financial dimension default templates for forecast positions on the Forecast position form by using controls on the Financial dimensions FastTab. You can also create a new template directly from the form. You can validate whether a forecast position's default dimensions are legal in your organization's chart of accounts. For any forecast position, click the new Validate button on the Action Pane to see whether the financial dimension setup for your forecast position is valid. The validations are made against the account structure that you identify on the Human resources parameters form. This quick validation can help you catch errors before you attempt to generate a budget plan from a forecast position. You can validate many positions from the Forecast positions list page.

Forecast position reports

Two new forecast position reports are now available. The Forecast position details report contains most of the information displayed on the Forecast position form. The account distributions assigned to the forecast position via financial dimensions and financial dimension templates are shown, along with the costs associated with each distribution combination for the forecast position. The Forecast position summary report shows forecast position costs by account distributions. The forecast position costs are shown, grouped by their assigned account distributions. The cost amounts are factored by the percentage assigned to the account distribution.

Job description update for Forecast position and Position

A new parameter has been introduced that will make the Description field on both the Forecast position and Position read-only and it will remain in sync with the selected Job ID. When Job ID is changed on either form, the description field will be updated to reflect the description associated with the changed Job ID. The new parameter is available on the **Human resources** > **Setup** > **Parameters** > **Human resources parameters** > **General** tab.

Remove option to replace budget plans

Specify the users who can replace existing budget plans. On the **Budget planning configuration form** > **Parameters** tab, select the **Prevent replacement of budget plan scenarios** check box to hide the Replace the existing budget plan scenario option in the Budget plan generation processes, Action field for all users, including the system administrator.

Escheatment

You can set up an account to allow stale-dated warrants or checks to be escheated using the Cash and bank management module. The escheatment process creates an advanced ledger entry to transfer funds from the dormant payment accounts to the unclaimed funds accounts, for possible claim at a future date by the original recipient or a designated representative.

Unclaimed payments are reclassified based on the posting definition for escheatment that is set up in the Posting definitions form, and assigned to the Escheatment transaction that is set up in the Transaction posting definitions form, General ledger tab.

Cash control

Cash control allows you to define a limit for preventing additional transactions from posting if no cash balance is available or if the transaction causes the balance to be reduced below the defined limit. Accounts payable vendor invoices and General ledger advanced ledger entries are validated when they are created, edited, and posted. If the transaction's posting would cause the related cash account's balance to be reduced below the limit defined for the account, the user receives an error message and must change the account to continue.

You can also allow specific users to override cash control. If an authorized user receives a warning that the cash balance for the account will be reduced below the limit, the user can optionally choose to continue with posting the transaction. Users might override the cash control limit when the expenditure must be posted in advance of receiving the funds to cover it; or when an approved transfer must happen, but has not been entered or posted yet.

The cash control limit is compared to the cash control balance (cash account balance minus all posted, unpaid AP invoices). The limit is surpassed when the cash control balance is less than the cash control limit (threshold).

Interest distribution

Your agency can allocate interest on a bank account to specific General ledger accounts, based on the average daily balance in cash accounts. You can use this process to generate an advanced ledger entry for the interest amounts or generate the interest amounts for review without posting.

Before distributing the interest, you must set up your participating cash accounts in the Interest distribution rules form. Each cash account and grant combination can be used to calculate interest for a different interest account.

Update bank balances when posting transactions using advanced ledger entry

You can associate a bank account with one or more main accounts. If a bank account is associated with a main account, the bank account's balances can be updated when advanced ledger entries are posted to the associated main account. Note that the bank account must have an account number and routing number associated with it.

Daily statement of treasurer's accountability

Use the Treasurer's statement of accountability report to generate a trial balance report specifically for the treasurer's fund to be used for reconciliation purposes. For example, you can generate the report on a daily basis to review the activity in selected accounts for the treasurer's fund and compare that to the equity activity in other funds. This daily report allows you to search for discrepancies, unexpected balances, and possible adjustments needed, and to complete other general audit functions.

Canadian harmonized sales tax

Certain Canadian provinces use the Harmonized Sales Tax (HST), which is a combination of the Goods and Services Tax (GST) and Provincial Sales Tax (PST), and which is paid to vendors when products are purchased. Certain portions of the HST can be recovered by public sector entities after having paid them to vendors, depending on what the purpose of the purchase is. The purpose of the purchase is designated by the financial dimension values and main account on the transaction document line (for example, purchase requisitions, purchase orders, or vendor invoices).

Apply general budget reservation to multiple purchase agreement lines at once

You can now streamline data entry for purchase agreements by selecting one or more general budget reservation lines to apply simultaneously to multiple selected lines of a purchase agreement, or to all lines in the purchase agreement.

Ability to apply general budget reservation to multiple purchase requisition lines at once

You can now streamline data entry for purchase requisitions by applying general budget reservation information to multiple lines on the purchase requisition at one time.

Calculate purchase order delivery dates based on lead times and working days

Calculate a delivery date for a line based on a vendor's lead time (Request for quotation reply form, Quotation tab) and your organization's working days calendar. Vendors can enter a lead time for each line. When a purchase order is confirmed, a delivery date for a line is calculated from the confirmation date, based on the lead time and the working days calendar. If no lead time is specified, the delivery date is the confirmation date. The lead time information for a line is available on these forms: Request for quotation reply, Purchase requisitions, Purchase agreements, and Purchase order. The lead time details are not overwritten when delivery dates are calculated for all lines in the form, by using the Delivery dates button on the Calculate tab, on the Action Pane. You can update the lead time details for unconfirmed or unapproved records.

Vendor bidding – RFQ questions from vendors and summarized responses

RFQ questions from vendors and summarized responses. When your agency has sent a request for quotation (RFQ), vendors might have questions. The vendors can ask questions and receive answers through Vendor collaboration. When vendor questions are allowed, the Vendor questions FastTab is available on the Request for quotation form. Users can publish answers to vendor questions to the Vendor portal more than once. After a vendor is selected and the RFQ is awarded, or the cutoff date for questions is reached, vendors can no longer enter questions.

RFQ activity

You can now use Activities with requests for quotations (RFQ) to create tasks, appointments, and events that are assigned to other users in your organization. You can choose to use these activities as a means for gathering feedback on an RFQ from users who might be familiar with the request, but who are not typically involved in any workflow process. Activities for RFQs also appear in the Home modules with activities that have been created for other documents.

Purchase agreement enhancements

The following attributes are added to the Purchase agreement and Purchase agreement classification forms:

- Allow users to identify the employees who are responsible for maintaining purchase agreements.

- Mark a purchase agreement as 'closed' to signal the agreement is no longer actively used, making it so users will not be able to create release orders from the purchase agreement.
- Define an invoice matching policy to use for purchase orders released from a purchase agreement.

Add RFQ link to purchase order line details

When a buying agent converts a purchase requisition into a purchase order (PO), if the requestor has not referenced a purchase agreement (PA) on the requisition line, but the PO should be associated with a PA, the buying agent can link a PO line to a PA line. This ability to link PO line to PA line eliminates the need for canceling the purchase order and generating a new one with the proper purchase agreement information.

Purchasing card processing

Purchasing cards are used by agencies to allow employees to procure goods and services outside of the standard purchase requisition process. The purchasing card forms and fields provide a method for tracking the purchases and the expenses that your agency incurs. Each purchase made by an employee with a card is recorded with a vendor invoice, but the invoice is not paid with a check. Each of these invoices is associated with another vendor invoice that is created to pay the vendor that provides the purchasing card service (the financial institution); the expenses incurred by the card purchases are paid off when the balance owed to the card service provider is paid each month.

New field on receipt form for entering quantity to receive

Sometimes purchase orders are received over multiple shipments. Now it is easier to correctly record the actual quantities received and keep track of what remains to be fulfilled from a partial shipment. The Product receipt form contains the following columns:

- Quantity ordered reflects the original purchase order (PO) quantity, including any change orders processed against it.
- Quantity received (blank by default) requires you to enter a value for the quantity currently being received.
- Quantity remaining displays the quantity from the original PO line reduced by amount of all posted receipts for the line.

Delegation of multiple purchasing work items

You can delegate multiple documents to another user in a single action. This saves time because previously each work item had to be delegated separately.

- Only purchasing documents in workflows that have multiple delegation enabled will allow you to delegate multiple documents from this list page. If delegation is not enabled for a specific workflow, then the Delegate option does not appear in the workflow for that specific document.
- If multiple purchase agreements, purchase orders, purchase requisitions, or vendor invoices are selected from the list page (Work items assigned to me), then when you select to delegate and you select the person to delegate to, the standard workflow process performs the assignment, just as when a single document is selected.
- No other workflow actions are available when multiple documents are selected.

Project contract funding limit committed amount detail

Exposes the details behind the committed values on funding limit records on the **Project contract** page.

Circular A-133 report for grants (SEFA)

Agencies that receive federal funds are subject to audit requirements, also known as single audits, according to Office of Management and Budget (OMB) Circular A-133. The single audit includes the Schedule of Expenditures of Federal Awards (SEFA) report to report expenditures of federal grants on a recurring basis. This report includes the Catalog of Federal Domestic Assistance (CFDA) title and number, grant number, year of grant, name of the federal agency providing the funds, and name of the pass-through entity. The report is for a specific period of time, typically the same as the financial statement period—a fiscal year.

Project invoice proposal selection parameter by funding source

The creation of a project invoice proposal can only be started by first selecting either the project contract or project before the funding source filter is available. As such, if a grant is referenced in more than one project contract, then the creation of a single project invoice proposal will not be possible. Consequently, the grants manager will have to manually sum up the multiple project invoice proposals to determine the amount to be reimbursed.

Generate earnings statements from project timesheets

You can create earnings statements from project timesheets. Earnings statements are created for the workers with approved project timesheets in the timesheet period.

Inventory performance optimizations

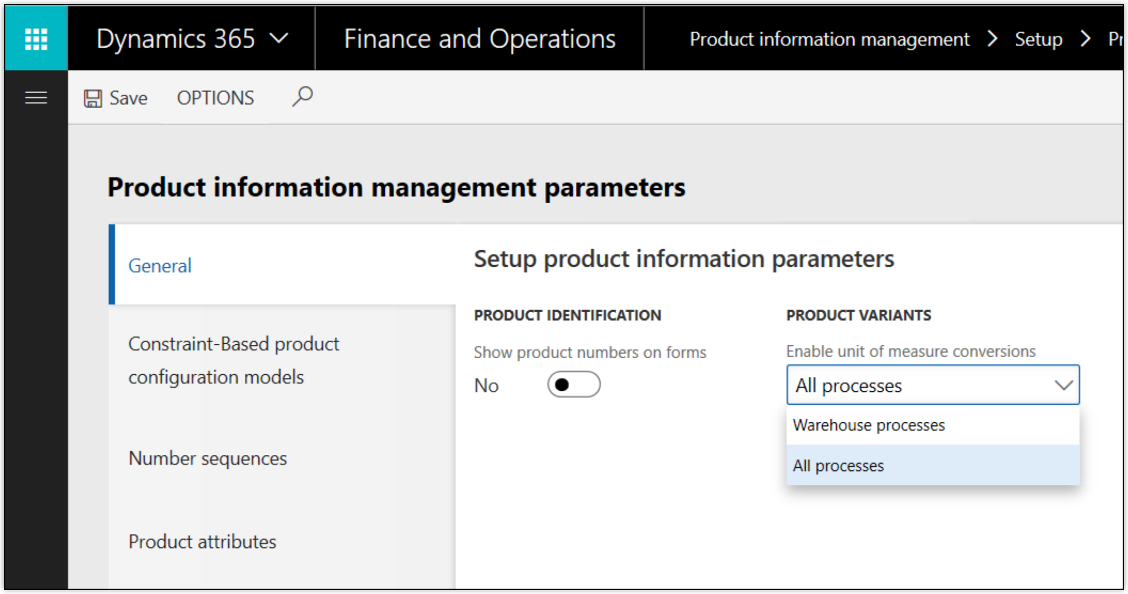
The performance of inventory operations and on-hand lookups will be improved through multiple, incremental enhancements. This will have a positive impact on system performance throughout many parts of the application.

Unit of measure conversions for product variants

Unit of measure (UoM) conversions at the product variant level have previously been supported only in a select set of warehouse management scenarios. This functionality has now been expanded to provide support for UoM conversions at the product variant level throughout the application.

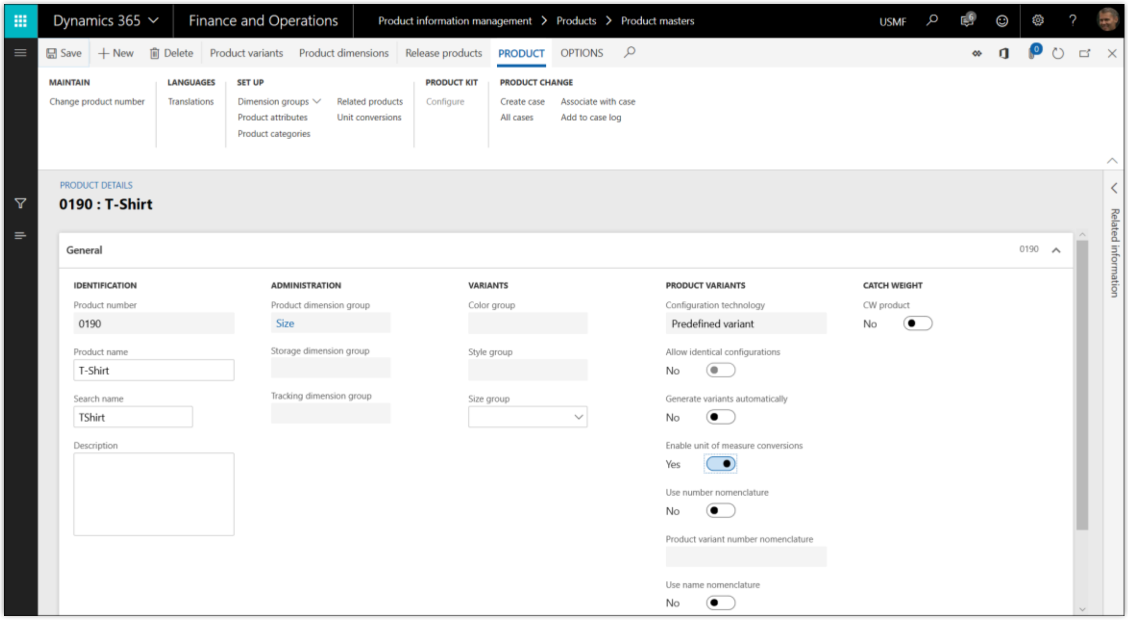
You can use product variants to create variations of a product instead of creating several individual products that have to be maintained. A product variant could, for example, be a t-shirt of a given size and color. So far, it has only been possible to set up the unit conversion on the product master, so all the product variants had the same unit conversion rules. If the t-shirts, for example, are sold in boxes, and the number of t-shirts that can be packed in a box depends on the size of the t-shirts, then this new feature can be used to set up the unit conversions between the different shirt sizes and the boxes used for packaging.

The general use of the feature is enabled in the **Product information management parameters** page. The feature is enabled for all products masters or only for product masters enabled for the warehouse processes.



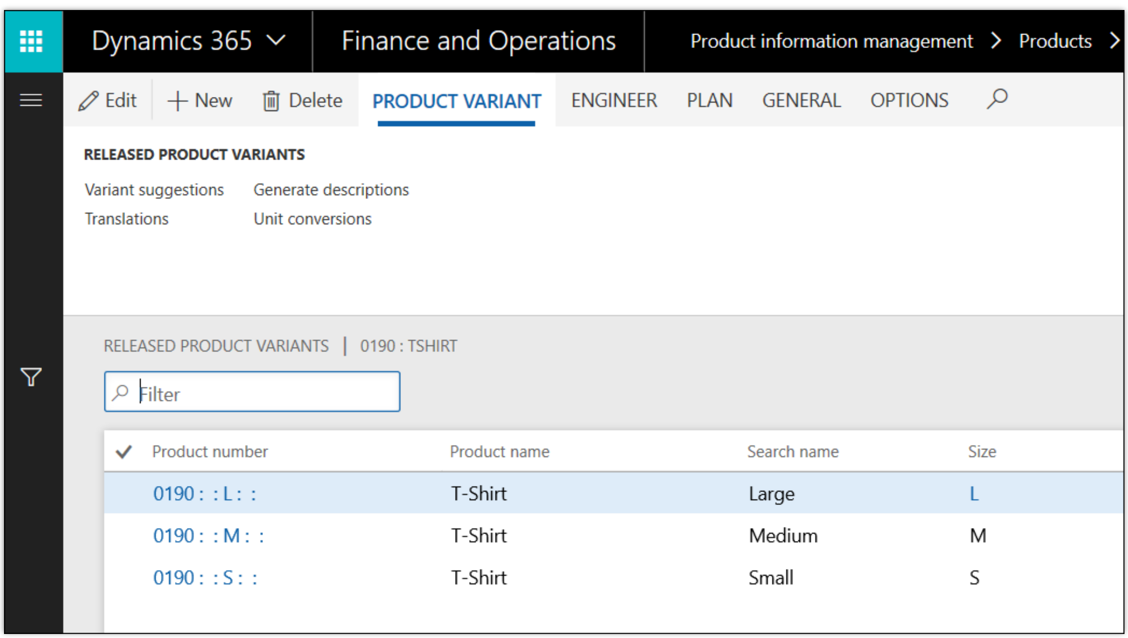
Enabling unit of measure conversions by product variants on the Product information management parameters page

For a specific product master, the feature is enabled by selecting the **Enable unit of measure conversions** field on the **Product details** page.



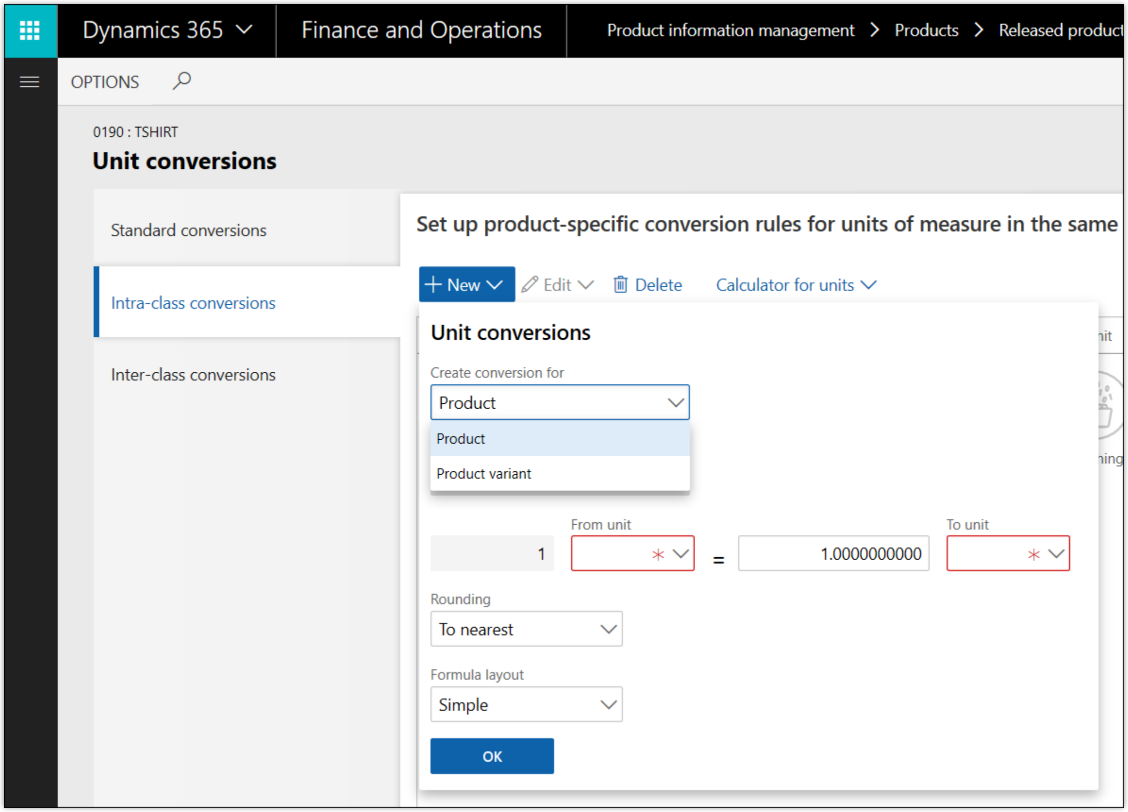
Enabling unit of measure conversions by product variants for a specific product master on the Product details page

In this example the t-shirt has three released product variants: Large, Medium, and Small.



Released product variants page showing three t-shirt variants: Large, Medium, and Small

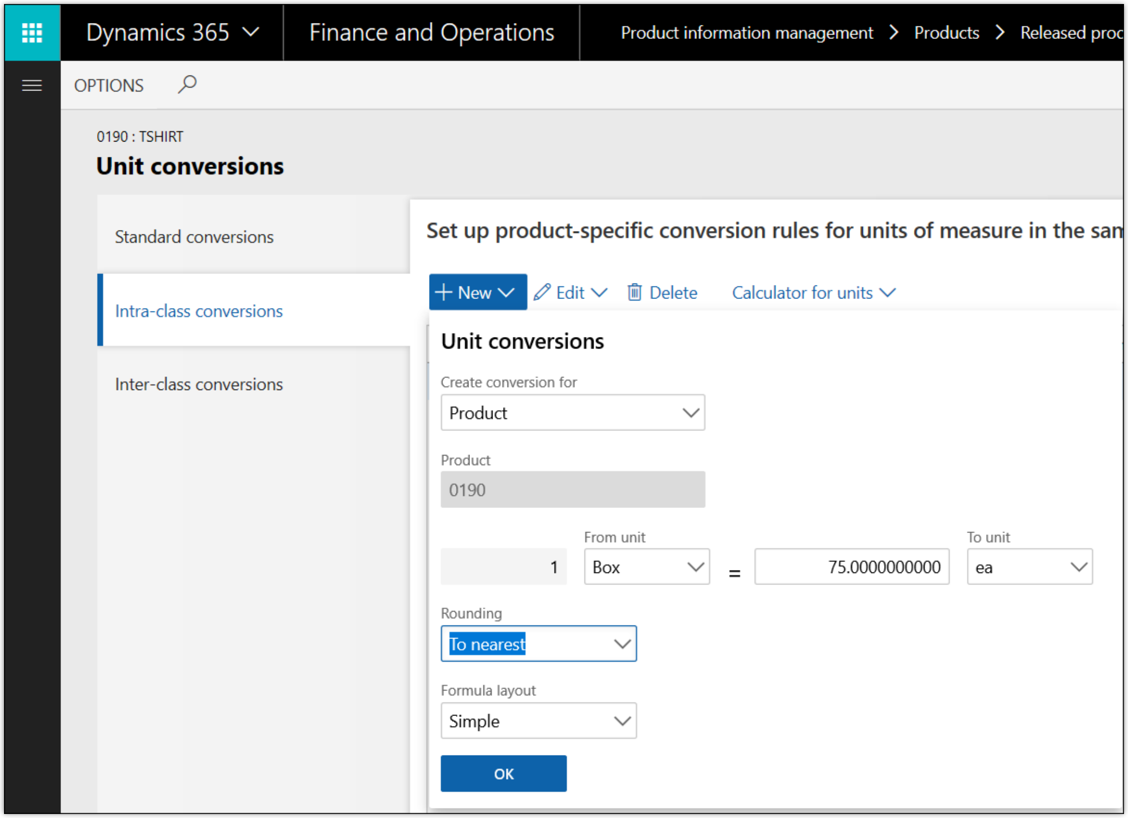
From the Product master you can open the **Unit conversions** page. On this page, you first select whether you are setting up the unit conversion for the product or the product variant.



Selecting whether to set up unit of measure conversions for product variants or the product master on the Unit conversions page

If you select **Product variant**, you set up the unit conversion for a specific product variant. In this example, the unit conversion between the units "Box" and "Ea" is set up for the t-shirt in size small.

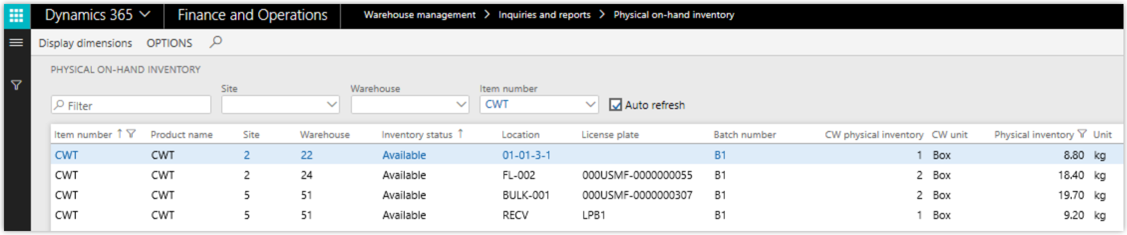
If you select **Product**, you set up the unit conversion for the product master, and this unit conversion will serve as fallback for all product variants that have no unit conversion defined.



Defining fallback unit of measure conversions for the product master on the Unit conversions page

Catch weight product processing with warehouse management

This functionality will provide support for using catch weight products within warehouse management processes. Catch weight products are often used in industries where products vary by weight and/or size, such as the food industry. Catch weight products use two units of measure—an inventory unit (such as kg, lb, or oz) and a catch weight unit (such as box, each, or pallet). The inventory unit is the unit of measure in which the product is weighed and invoiced. The catch weight unit is the unit in which the products are handled, such as received, transferred, and shipped.



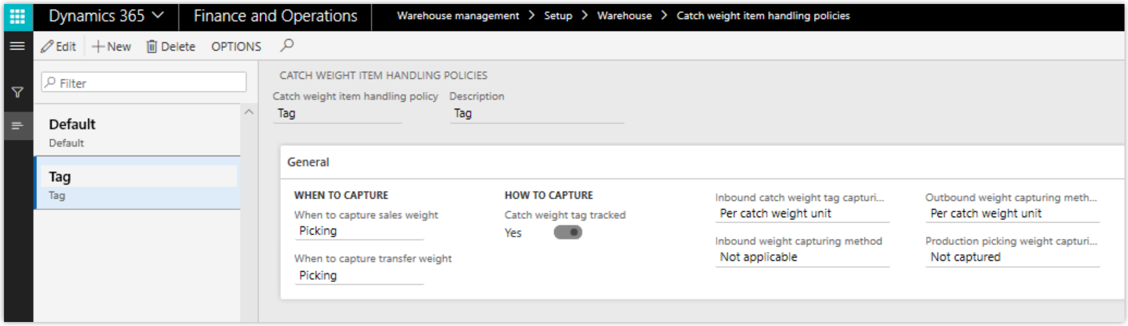
Catch weight quantities shown together with inventory quantities on the Physical on-hand inventory page

Within the warehouse management processes, the catch weight products can be handled in different units, such as pallets and boxes, and the business processes can be granularly defined to, for example, perform the inbound weighing per pallet level and capture the outbound sales process during picking or packing per catch weight quantity (box).

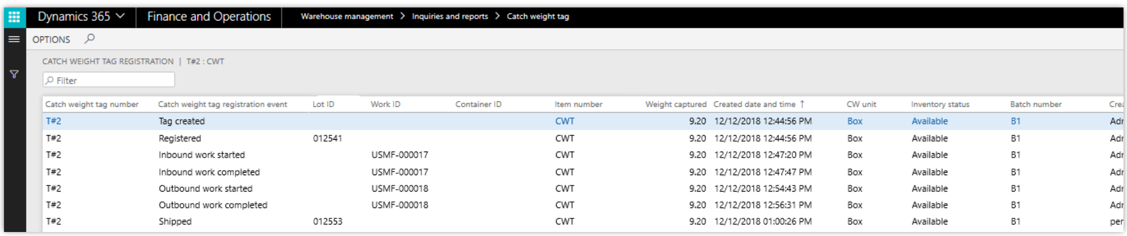
This feature also allows you to use a catch weight tag that will get the captured weight per catch weight unit assigned. The goal of this approach is to weigh the product only once at the time of receipt. This works for products that do not change weight over time (frozen shrimp, for example) and products that have a handling unit of measure that is shippable (such as a box of shrimp).

Mobile warehouse app showing how tag weight is captured

With this approach, the user scans the catch weight tag to identify the weight at the time of picking or packing based on product configuration and then invoicing is based on the weight that is associated with the captured catch weight tag.



Enabling weight tag tracking on the Catch weight item handling policies page



Catch weight registrations shown on the Catch weight tag registration page

Work line details

The new Work line details page gives you an additional overview of work lines. You can view all work lines or only the open work lines for a specific company. You can see the important details that a supervisor would require to successfully manage and adjust workflow within the warehouse, namely work status, item number, location, work quantity, load ID, shipment ID, Work class ID, Container ID, Order number, and others.

System-directed work sequencing

System-directed work sequencing allows you to sort and filter work orders that the system presents to the user for execution. This functionality solves scenarios where additional criteria is required to drive warehouse picking processes. Additional criteria might be the time of shipping, picking zone, and location profile.

This functionality extends the current system-directed picking with the new System-directed query order where the user can set up a sequence and a query or multiple queries that will evaluate all created work orders. It will capture and present only the work orders that meet the specified criteria of the mobile device menu item setup.

Warehouse picking processes can therefore be further optimized as this feature identifies work orders that match the defined criteria and assigns those to the correct mobile device menu item, and consequently presents them to a worker based on a specific skillset, picking equipment, or any other requirement.

Advanced wave label printing

This functionality offers an alternate approach to label printing in Microsoft Dynamics 365 for Finance and Operations by introducing new wave step method. The new method enables creating and printing of the labels directly from the wave template during wave execution process. Therefore, the labels will be available before the work order is executed on the mobile device. This handles scenarios where a different approach to label handling is desirable, enabling the worker to use and attach the required labels during picking and not only after picking.

The feature introduces a new Label layout form where ZPL label layouts are created to be used for every label that is printed via the new functionality. The new label layout is broken into three sections—header, body, and footer—to allow labels with repeating structure to be printed. Label templates, which tell the system what label layout to use, is the second form introduced. Here, the user can also specify which printer to print the label at, or if needed, to print labels at multiple printers at once. To further extend the overview of printed labels, the Label history page is introduced where records of all labels created via this setup are displayed.

With this setup you can print and collate labels based on work headers, print break labels per work header, container content labels, case labels, and other similar labels.

NOTE This functionality does not replace existing label printing functionality via Document routing.

Simplified view - templates

With the April '19 release, you will be able to create, manage, and publish your own personalized views of the pages so that the experience and interaction with the application becomes simple, highly discoverable, and efficient.

Built on this new facility, a set of preconfigured view templates will be available on selected documents and entities. The composition of a template will be driven by information relevant to both a specific user role and a given task performed by the same user role. Types of documents and entities for which view templates will be available are as follows:

Documents

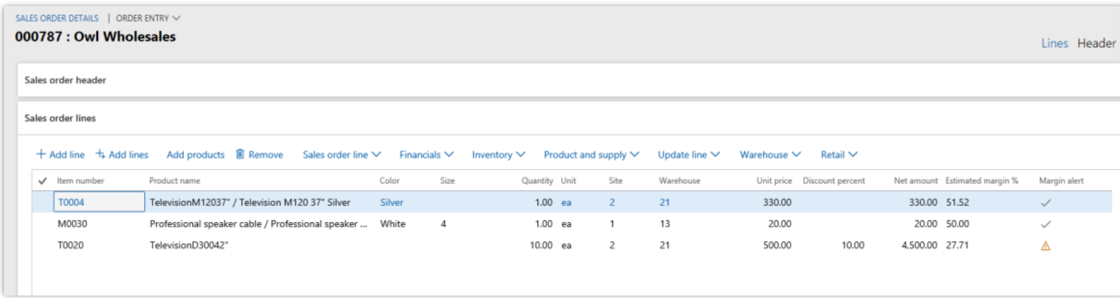
- Sales orders
- Purchase orders
- Purchase requisitions
- (Select) journals

Entities

- Customers
- Vendors
- Products

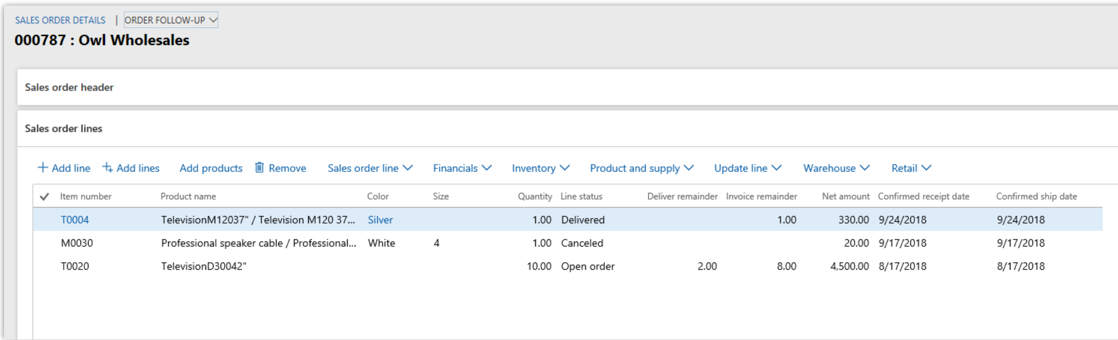
More specifically, two separate views of a sales order detail page will be available out of the box for a customer service representative and A/R clerk, to reflect their different needs for order details relevant to their roles. Two additional page views will be provided for a customer service representative to accommodate the need to see different order information depending on the stage of the order processing and fulfilment.

The **Order entry** view will focus on displaying order line details that are essential to order entry and order preparation, such as product name and attributes, quantity, price- and margin-related values, and total amounts:



Simplified view templates example 1

When an order has moved into fulfilment, and the customer service rep needs to answer the customer's inquiry, the **Order follow-up** view that prioritizes details related to fulfilment status will be of use:



Simplified view templates example 2

Master planning stability and recovery improvements

Master planning will be made more resilient to failures and connectivity issues through multiple, incremental improvements. This will enhance the ability for Master planning to recover from exceptions without being stopped.

If master planning is stopped, it has been necessary to restart the master planning run. This process has been improved so that master planning will now restart automatically from where it was stopped. This will be a significant improvement for customers where master planning is a time-critical process.

Improved removal of obsolete planning data

After a successful master planning run, a clean-up job is scheduled to remove planning data that is no longer necessary. In some cases, however, such as a failed master planning run, the data would not be cleaned up thereby incurring risk of aggregating unnecessary data.

The clean-up job has now been enhanced to remove data from previously failed master planning runs, and the design has been optimized to never block other threads, leaving all helpers available for the master planning run. These improvements also apply to intercompany master planning.

Planning service

A hyper-scalable multitenant real-time distribution requirement planning service. The service enables companies to maintain a dynamic plan that's close to real time and supports high data volume.

Customers today are relying on prompt system reply, and companies that operate close to 24/7 can't afford a planning batch job that runs for several hours every night to generate the needed master plan. Many companies would like to run the planning multiple times during working hours to stay updated on demand and supply changes. The planning service will remove the load of master planning from their ERP system and provide a constantly updated dynamic plan that will give them close to real-time insight to requirement changes and potentially enable them to achieve savings by reduction of the total lead time, as new demands are detected and managed earlier.

Real-time planning

The planning service provides a constantly updated dynamic plan with close to real-time insight to requirement changes on the supply side as well as affected existing orders.

This enables customers to achieve:

- Potential savings and improved sales by reduction of the total lead time, as new demands are detected and managed earlier—order same day because you don't have to wait for the nightly plan.
- Improved customer service and order taking, as the impact of other changes as well as the entered sales order is detected and the plan is fully optimized accordingly.

Performance

If you have long-running master plans in Dynamics 365 for Finance and Operations, will the planning service work for you? Yes, the planning service is specifically designed for very fast calculations with massive data volume. It's built as a hyper-scalable multitenant service, meaning that multiple tenants can cooperate simultaneously to calculate the plan. Also, the planning service will remove the load of master planning from your ERP system and work with a data stream that minimizes the server load.

This enables customers to achieve:

- Greatly improved planning performance with shorter run time.
- Ability to unload master planning from the ERP system.
- More frequent planning runs—not just daily or weekly.
- Comfort that future business growth will not overload the planning system.

Availability

At first the planning service will be available to selected customers via a preview program. Later the preview will open up to a wider range of customers before becoming generally available.

Feature highlights

- The first version of the planning service will address the needs of both distributors and wholesalers.
- Out-of-the-box integration with Dynamics 365 for Finance and Operations to support near real-time planning.
- Support purchase and transfer supply suggestions.
- Ensure supply suggestions to maintain fixed safety stock levels, based on on-hand levels and future demand.
- Time-based safety stock option, to support fluctuation and seasonality in demand.
- Include purchase and transfers lead times, for duration and order date calculation.

- Pegging between supply and demand, providing full visibility for how a given demand is fulfilled or what demand a given supply fulfills.
- Lot-for-lot reordering policy support, combining all demand within a defined period into one supply suggestion.
- Order quantity modifiers that adjust order suggestions to a desired minimum, multiple, and/or maximum quantity.
- Plan just one item or a subset of all products by filtering the products included in a given planning run.
- Multiple plans with specific setup, allowing the planner to simultaneously operate with a daily static plan, a dynamic real-time plan, as well as multiple what-if plans.
- Near real-time dynamic plan.
- Detect and communicate order delays and possible fulfillment dates, when the plan can't be optimized to fit all demands.
- Calendar support to handle available and closed periods related to warehouses, vendors, customers, and more.
- Support for reservations between supply and demand are recorded and respected by the planning engine.
- Option to include demand forecast with reduction based on recorded demand.
- Reordering policy that supports refilling to a predefined maximum inventory level.

Connected manufacturing

Connected manufacturing service will connect the Microsoft Azure IoT service with back-end Dynamics 365 for Finance and Operations, generating insights and actions that will help our manufacturing customers in their digital transformation journey by enabling the following:

- Integration of real-time information from the shop floor and correlating equipment signals to business events and actionable insights in Finance and Operations.
- Monitoring production performance.
- Key insights and metrices to monitor performance and quality.

The solution will be made available as a controlled preview and managed via the early access program in July 2019.

Enterprise asset management

Manufacturers and certain distributors invest and operate assets that help them to perform the needed product transformation to add value to the supply chain they are a part of. With this release, substantial additions will be made to support various types of maintenance (Predictive, Corrective, Condition, and Preventive). This will allow assets-sensitive operations to enroll our base application without investing in additional solutions. The solution will be made available as a controlled preview and managed via the early access program by July 2019.

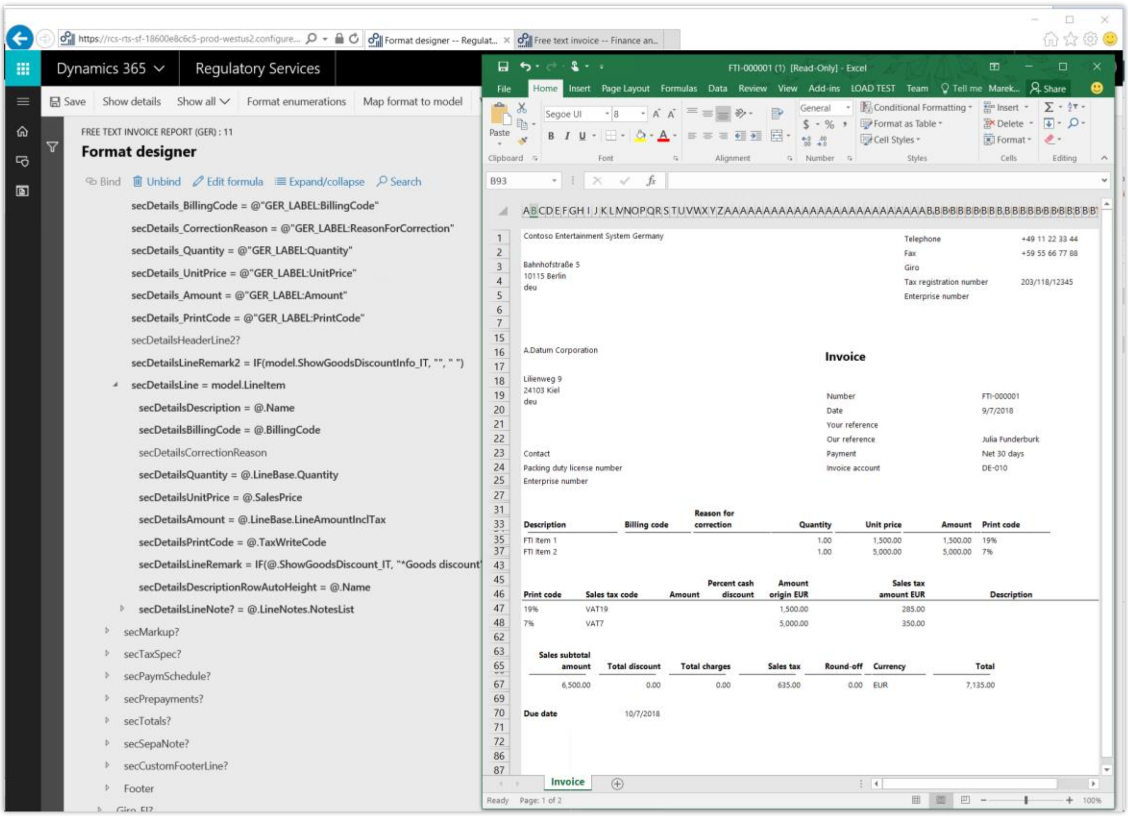
Additional configurable invoice layouts

Invoice layout is one of the most-customized areas by customers who deploy globally. In October '18, we started making it configurable by providing a Free Text Invoice (FTI) layout, which allowed power users to adjust it without developer help. Now, we are extending the number of configurable invoice layouts by providing the following core templates and their localized versions:

- Customer invoice
- Sales advance invoice
- Sales delivery documents

Configurability for other types of documents like project invoice, vendor invoice, or payment advice is planned for future releases.

Example of Electronic reporting format designer for configurable free text invoice layout:



Configurable free text invoice

Configurable e-invoices for Brazil (NF-e and NFS-e)

The Brazil tax authority, also known as SEFAZ, defined an electronic communication standard that all companies must adhere to for e-invoicing. In the Brazilian localization, you can generate a Nota Fiscal Eletrônica (NF-e or NFS-e) to register the movement of items or services between two parties. The generated fiscal document can be submitted as the digitally signed NF-e to the Secretaria da Fazenda (SEFAZ) in an XML message. The NF-e process includes the following steps:

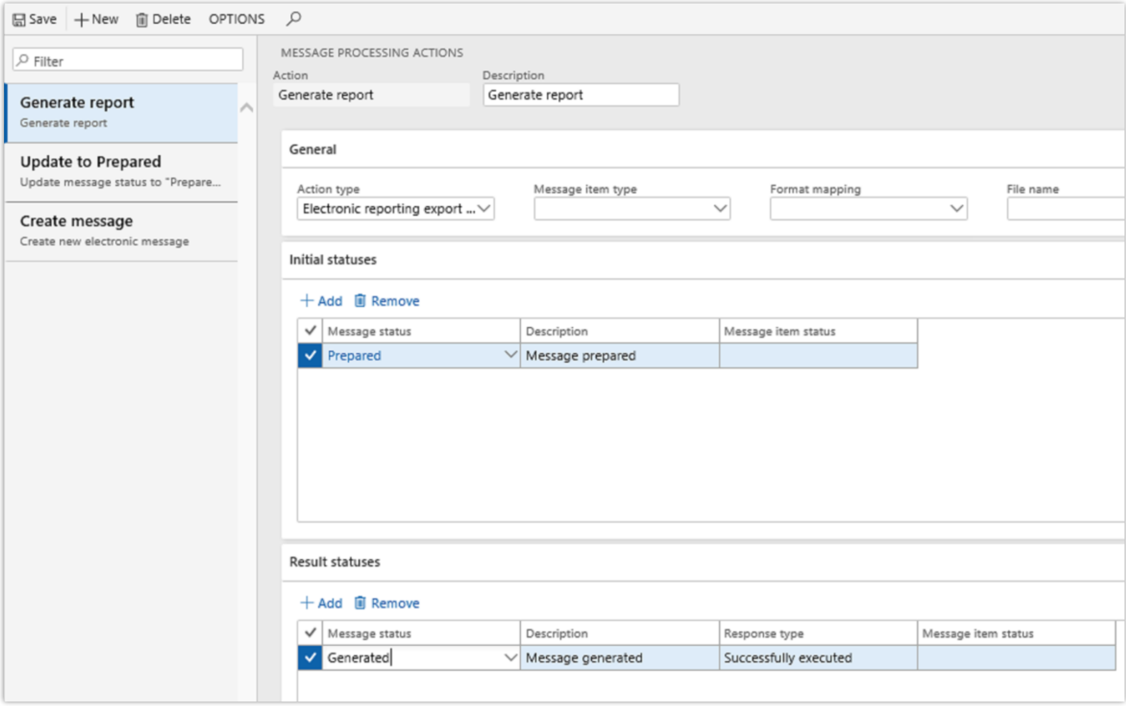
1. The fiscal establishment posts a fiscal document.
2. The NF-e export or import process detects the posted fiscal document and generates an XML message in the specified format. A separate XML message is generated for each NF-e. The XML message is transmitted to SEFAZ.
3. SEFAZ processes the XML message and returns a protocol and status for each NF-e.

Upon the status receipt of the NF-e from SEFAZ, you can perform different sets of actions, like approval, cancellation or correction and resending of the document.

Brazilian NF-e is subject to frequent law changes and there are planned changes in requirements for NFS-e. This feature will make both fully configurable, so it will be quicker for Microsoft to release regulatory updates and for partners and customers to customize integrations and export/import formats, if required, without code changes. In addition, configurable e-invoices will make it simpler for partners to extend localization coverage for non-supported states, cities, and verticals in Brazil.

Configurability goals both for NF-e and NFS-e are planned to be met through integration with Electronic messaging and using Electronic Reporting capabilities.

Message processing actions example



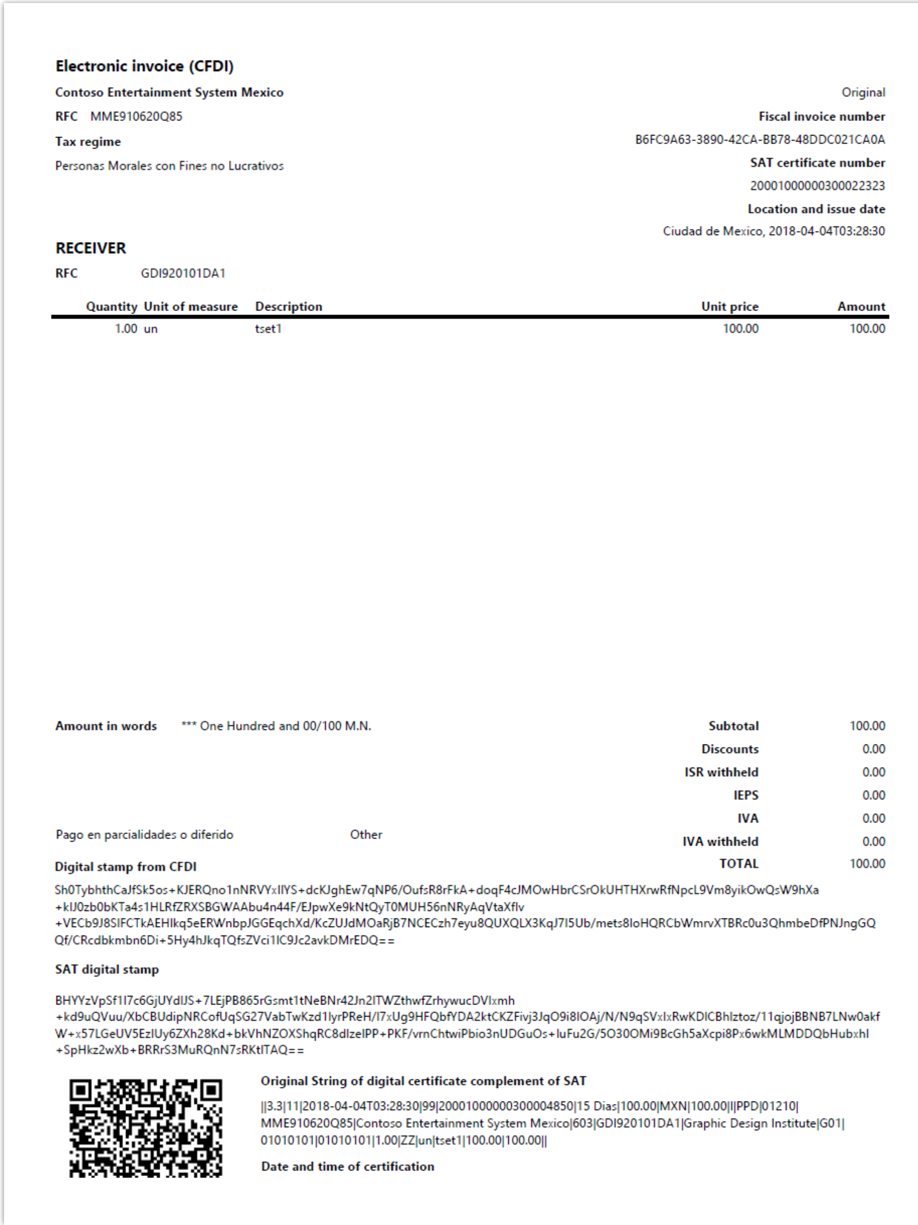
Electronic messaging - Message processing actions

NOTE This feature will replace some parts of already existing non-configurable NF-e and NFS-e functionality. With introduction of the new feature and updated user experience, the old feature will be deprecated and corresponding code will be removed in a future update.

Configurable Mexican e-invoice (CFDI)

Electronic billing in Mexico requires the Comprobantes fiscales digitales por internet (CFDI) electronic invoice format. An electronic invoice is a legally accepted digital tax receipt that your organization submits to the Mexican tax authority - Servicio de Administración Tributaria (SAT).

CFDI is the current method for generating electronic invoices in the format that SAT requires. In this method, the invoices are verified and certified by a digital signature service provider (PAC). Before you can use the CFDI method to generate electronic invoices, your organization must set up a web service connection to an authorized PAC. For the CFDI method, you send an XML message from Finance and Operations to the PAC. The PAC validates each invoice, assigns a folio number, and then incorporates the digital stamp that the service tax authorities provide. After the PAC completes the approval process, your organization receives the approved XML message, and can then submit the invoice to the customer in XML or PDF format. Example of the printable CFDI form:



Electronic invoice (CFDI)

Contoso Entertainment System Mexico Original

RFC MME910620Q85 **Fiscal invoice number**

Tax regime B6FC9A63-3890-42CA-BB78-48DDC021CA0A

Personas Morales con Fines no Lucrativos **SAT certificate number**

20001000000300022323

Location and issue date

Ciudad de Mexico, 2018-04-04T03:28:30

RECEIVER

RFC GDI920101DA1

Quantity	Unit of measure	Description	Unit price	Amount
1.00	un	tset1	100.00	100.00

Amount in words *** One Hundred and 00/100 M.N.

Subtotal	100.00
Discounts	0.00
ISR withheld	0.00
IEPS	0.00
IVA	0.00
IVA withheld	0.00
TOTAL	100.00

Pago en parcialidades o diferido Other

Digital stamp from CFDI

Sh0TybhthCaJfSk5os+KJERQno1nNRVYxIlYS+dcKJghEw7qNP6/OufsR8rFkA+doqF4cJMOwHbrCSrOkUHTHXrwRfNpcL9Vm8yikOwQsW9hXa
+kIJ0zb0bKTa4s1HLRfZRXSBGWAAbu4n44F/EJpwXe9kNtQyT0MUH56nNRyAqVtaXflv
+VECb9J8SIFCTkAEHIkq5eERWnbpJGGEqchXd/KcZUJdMOaRjB7NCECzh7eyu8QUXQLX3KqJ7I5Ub/mets8IoHQRCbWmrvXTBRc0u3QhmbeDfPNJngGQ
Qf/CRcdbkmbn6Di+5Hy4hJkqTQfsZVci1IC9Jc2avkDMrEDQ==

SAT digital stamp

BHYYzVpSf1I7c6GjUYdIJS+7LEjPB865rGsmt1tNeBNr42Jn2ITWZthwfZrhywucDVIxmh
+kd9uQVuu/XbCBUdipNRCofUqSG27VabTwKzd1lyrPReH/I7xUg9HFQbfYDA2ktCKZFivj3JqO9i8IOAj/N/N9qSVxIxRwKDICBhlztoz/11qjojBBNB7LNw0akf
W+x57LGeUV5EzIUy6ZXh28Kd+bkVhNZOXShqRC8dIzeIPP+PKF/vrnChtwiPbio3nUDGuOs+luFu2G/5O30OMi9BcGh5aXcpi8Px6wkMLMDDQbHubxhl
+SpHkz2wXb+BRRrS3MuRQnN7sRKtITAQ==

Original String of digital certificate complement of SAT

||3.3|11|2018-04-04T03:28:30|99|20001000000300004850|15 Dias|100.00|MXN|100.00|I|PPD|01210|
MME910620Q85|Contoso Entertainment System Mexico|603|GDI920101DA1|Graphic Design Institute|G01|
01010101|01010101|1.00|ZZ|un|tset1|100.00|100.00||

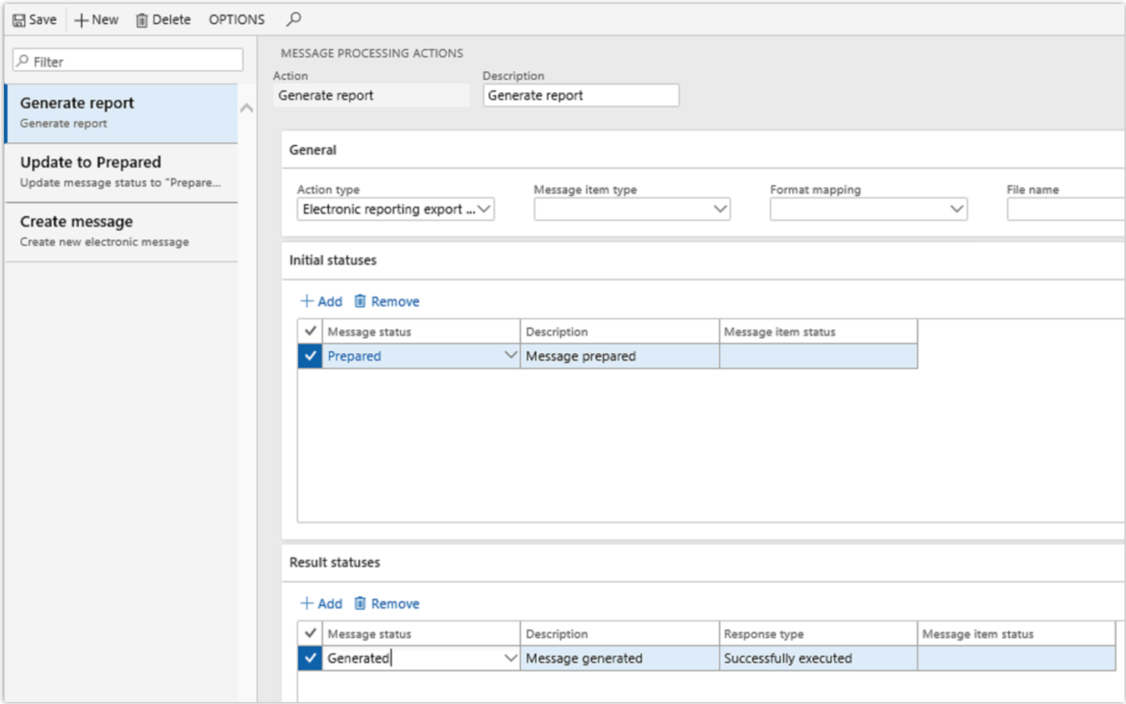
Date and time of certification

Printable CFDI form

Integration with the PAC web service is not part of the Mexican localization. Apart from that, CFDI has recently become a subject to frequent law changes and there is increasing demand for customizing printable CFDI forms. This feature will make it fully configurable, so it will be easier to integrate with PAC web services and to release regulatory updates. Partners and customers will have a better experience to customize integrations, export and import formats and printable forms, if required, without code changes.

Configurability goals are planned to be met through integration with Electronic messaging and using Electronic Reporting capabilities.

Message processing actions example



Electronic messaging - Message processing actions

NOTE This feature will replace some parts of already existing non-configurable CFDI functionality. With introduction of the new feature and updated user experience, the old feature will be deprecated and corresponding code will be removed in a future update.

Additional Russian localization features

The following additional Russian localization features are planned.

Journal of alcohol sales

This functionality includes printing the journal of Alcohol retail sales in statutory format.

Electronic format of profit tax declaration

Electronic reporting configuration is available, which allows you to generate the profit tax declaration in an electronic format that contains data that is calculated based on the configured Financial report.

Electronic format of accounting reporting

Electronic reporting configuration is available, which allows you to generate the accounting reporting in electronic format, and contains data calculated based on the configured Financial report.

You can find more details on how to do the following tasks in the article Financial reporting (Russia):

- Set up financial reports.
- Configure Electronic reporting to use the results of financial report calculations.
- Configure electronic messages to generate the financial report and store the results.

Transport tax registers and electronic format of declaration

This functionality allows you to keep technical and tax information for vehicles, calculate transport tax registers, and generate transport tax declaration in electronic format.

Land tax registers and electronic format of declaration version 5.06 (from 2018)

This functionality allows you to keep technical and tax information for ground areas, calculate land tax registers, and generate land tax declaration in electronic format, applicable from the annual reporting for year 2018.

Assessed tax registers and electronic format of declaration version 5.05 (from 2019)

This functionality allows you to keep technical and tax information for realty assets, calculate assessed tax registers, and generate assessed tax declaration in electronic format, applicable from the reporting for year 2019.

VAT declaration in electronic format version 5.06 (from 2019)

This functionality allows you to generate a VAT statement in XML format that is applicable from the reporting for year 2019.

For more information, see VAT declaration (Russia).

Sales, purchase books, and factures journals in electronic format (from 2019)

This functionality allows you to generate sales, purchase books, and factures journals in electronic format applicable from the year 2019. You can find more details on how to work with sales and purchase books in the article Sales books, purchase books, and invoice-factures journals.

Alcohol sales declaration in electronic format

Electronic reporting configurations are available that will let you print alcohol sales declarations' forms 5,6,7,11,12 in electronic formats.

Indirect taxes declaration on import of goods in electronic format

This functionality allows you to calculate indirect (withholding) taxes return (VAT and Excise) on the import of goods from state members of Customs union and generate tax declaration in an electronic format.

Expanded regional coverage for Regulatory Configuration Service (RCS) deployments

Microsoft is improving the digital workspace by streamlining the power and experiences of business applications, allowing business users to be more efficient while navigating across applications. The Regulatory Configuration Service (RCS) lets power users configure the regulatory reports, e-invoices, payment formats, and tax rules that are frequently affected by changing legal requirements. This configuration can be done in one place rather than writing code in multiple applications.

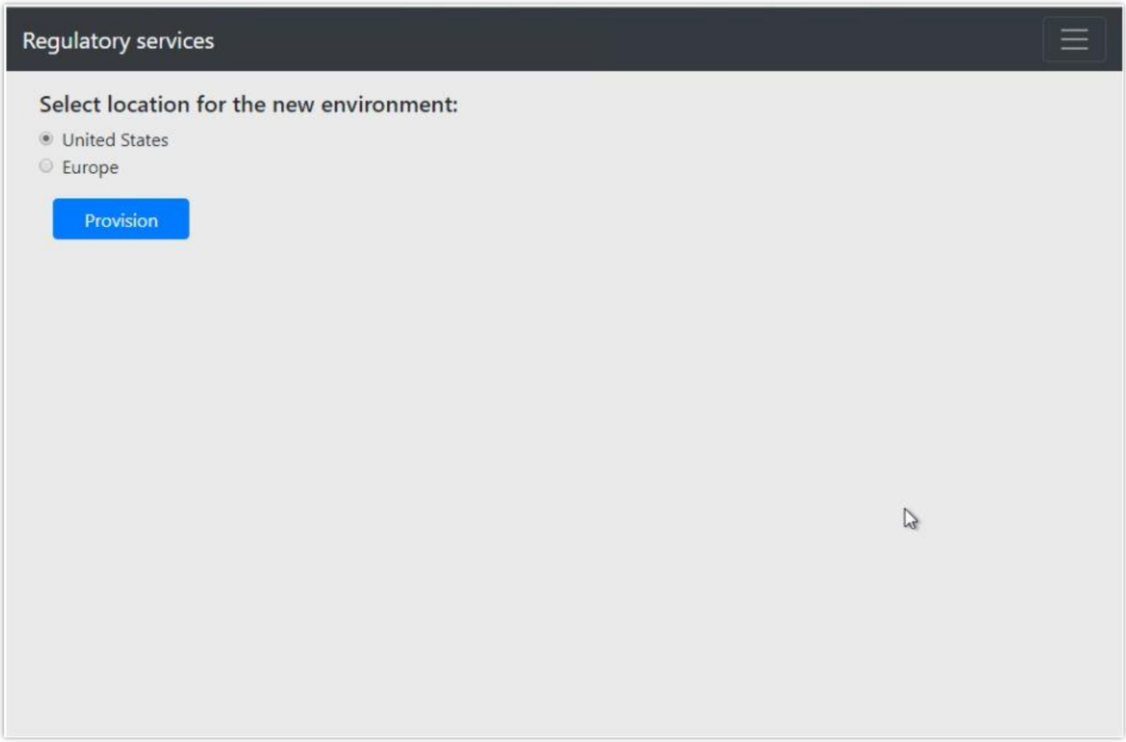
As part of the ongoing enhancements, we are increasing the breadth of regional coverage where the Regulatory Configuration Service environments can be deployed. The system admin, when undertaking the initial service signup, can select to have their RCS environments deployed in the existing supported regions (United States, India), or select to deploy their instance in the new preview regions being supported (China, Europe).

This will allow customers in China and Europe to meet local data residency requirements and use benefits of RCS instead of relying on configuration designers built into Dynamics 365 for Finance and Operations, which has a limited functionality.

As part of the April '19 release, users can select to host their RCS environments in the following countries/regions:

- United States (already available)
- India (already available)
- Europe (Preview from April 2019)
- China (Preview from May 2019)

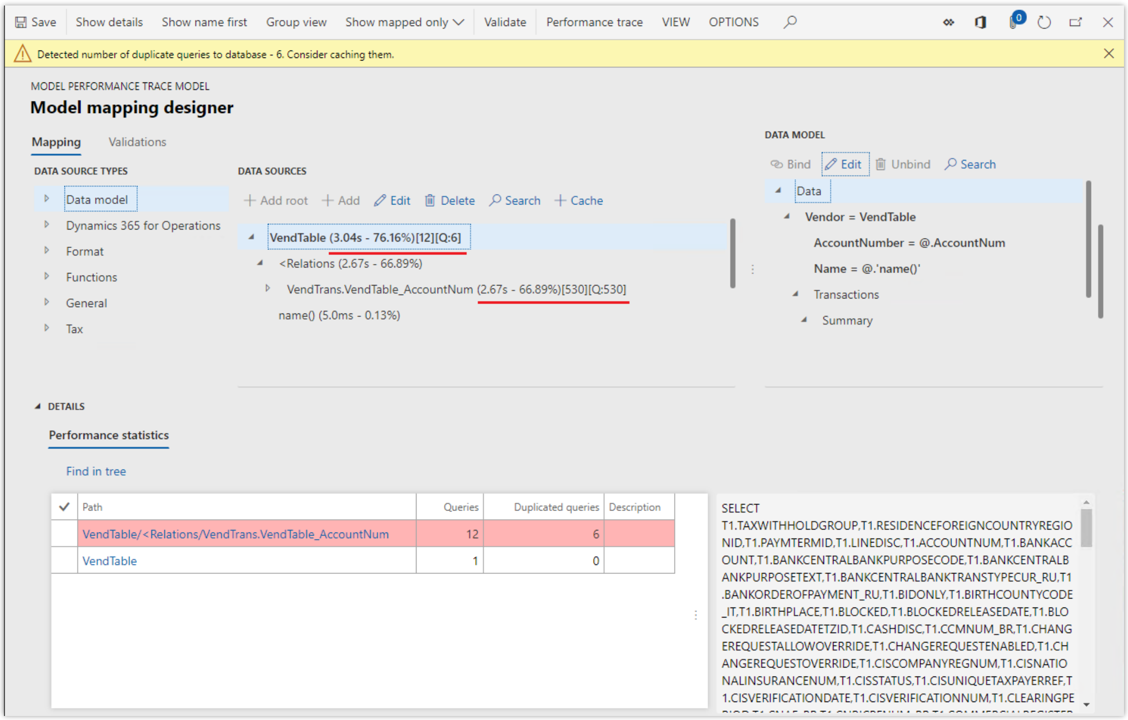
The RCS environment can be provisioned in selected geographic data centers:



RCS environment provisioning

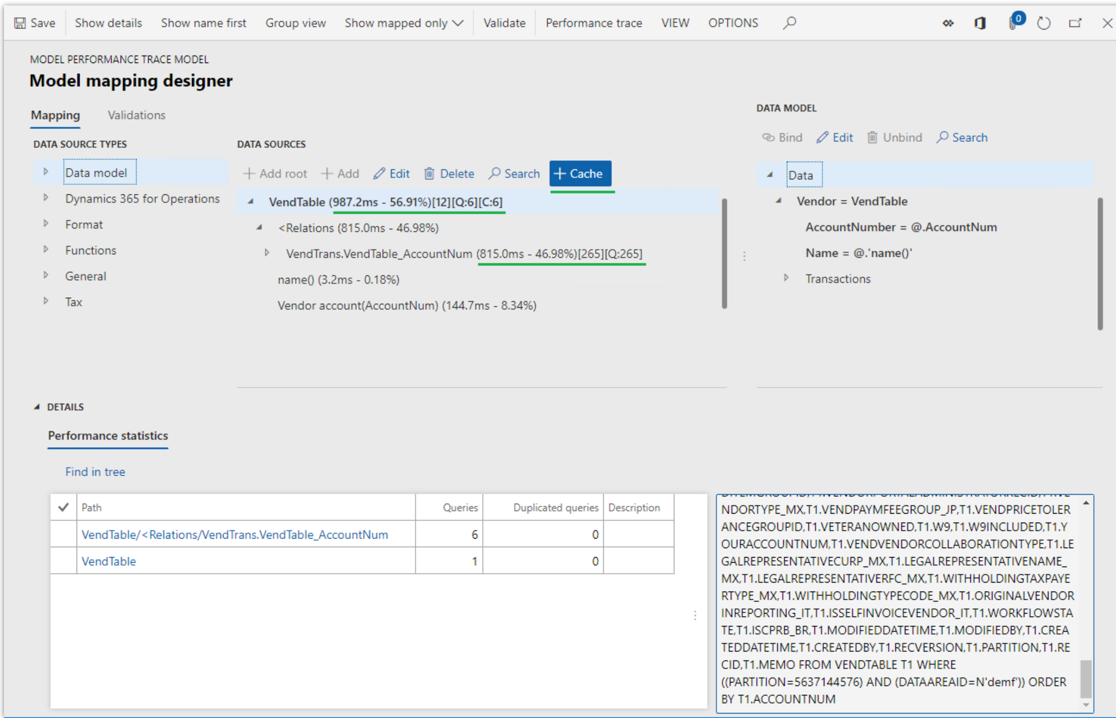
Electronic reporting - Performance optimization of customer-built configurations

A functional consultant persona can enable tracing of execution of electronic reporting configuration. This consultant can also analyze generated trace and optimize electronic reporting configuration performance by setting caching on frequently used nodes.



Model mapping designer

Currently, this caching supports only flat list of records, so any related records are not cached. This feature will allow caching of nested records. It also allows users to enable "lazy" caching, when only referenced records are being cached, not the whole list.



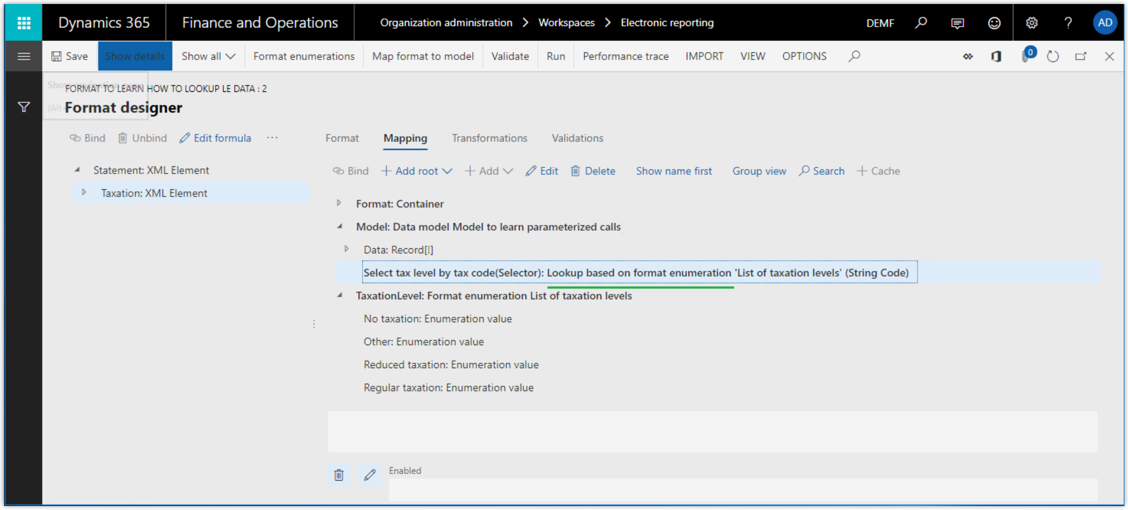
Model mapping designer performance statistics

Electronic reporting - Setting up parameters by legal entity

In many electronic reporting configurations, some data must be filtered based on a set of values that are specific for each legal entity. Currently, a power user can specify such data sets only as part of configured Electronic reporting (ER) model mappings or ER formats. This makes such ER configurations dependent on settings of the particular Microsoft Dynamics 365 for Finance and Operations instance and complicates distribution as well as further maintenance of such ER configurations and their derived copies.

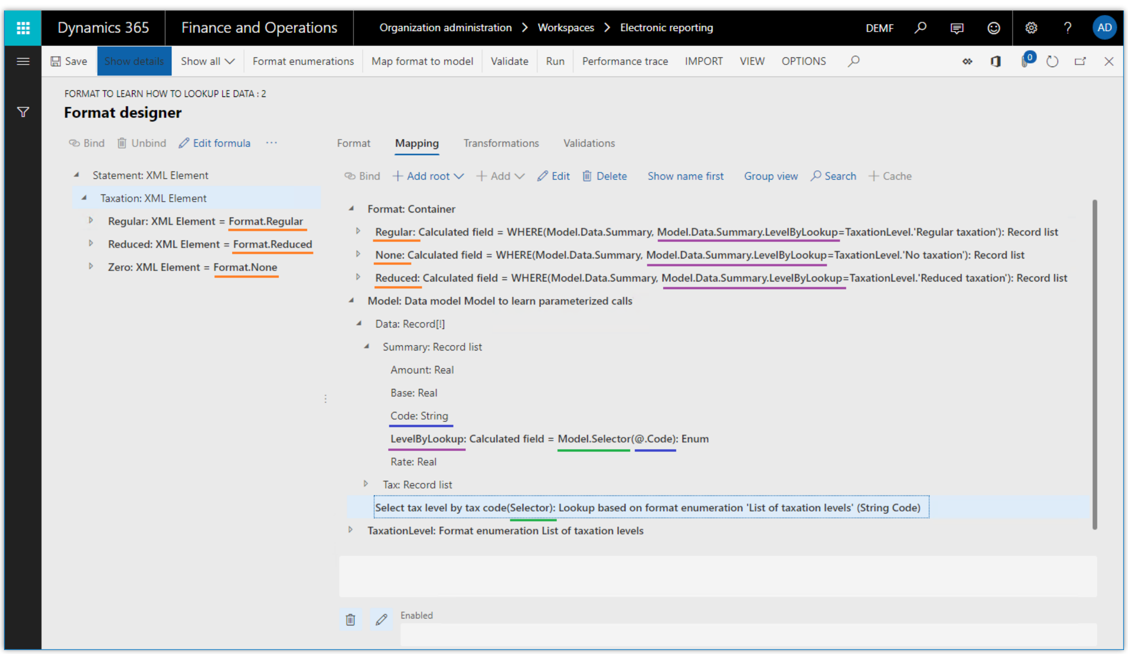
This configuration-specific parameters feature will allow a power user to configure in an ER format an abstract data source specifying how this data source will be filled in by a business user:

- What data will be offered upon request of a business user filling in this data source.
- What type of values will be returned back to an ER format at run time by this data source.



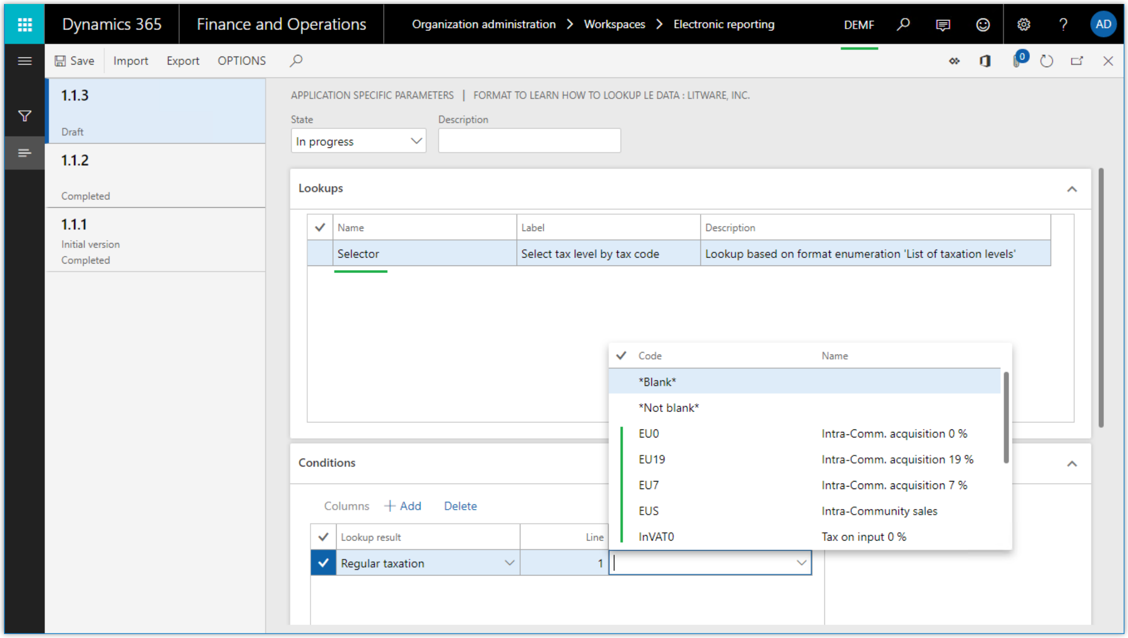
Format designer: Taxation XML Element

By using this data source, a power user may configure data filtering in an ER format as a legal entity independent rule having no references to actual legal entity related data sources.



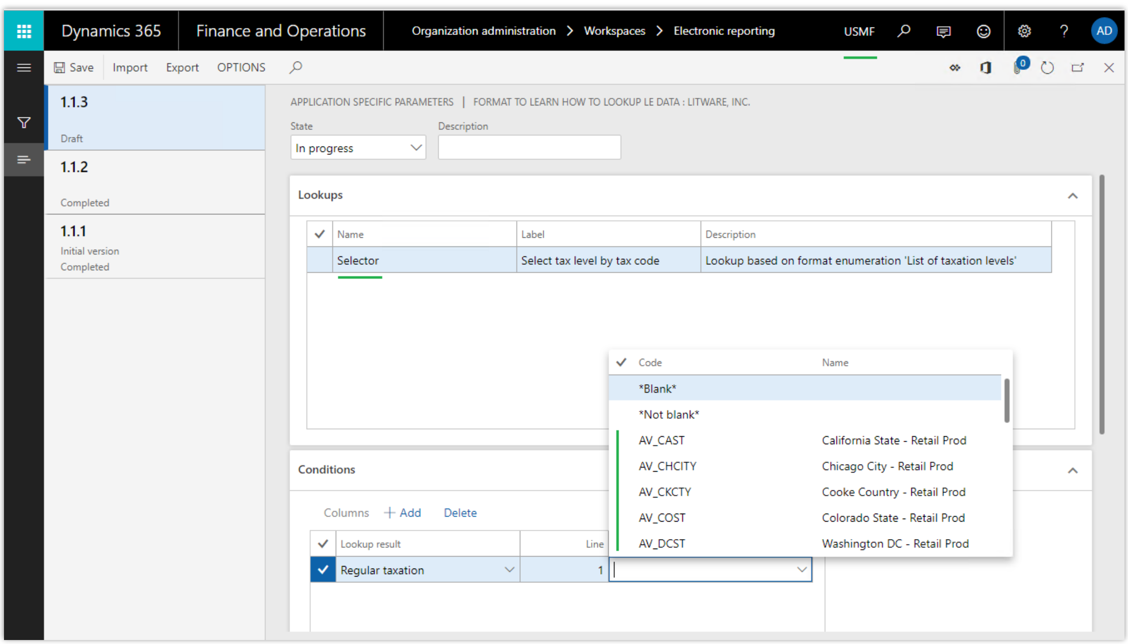
Format designer mapping screenshot

This feature will allow a business user to set up an ER format-specific company master data in the Finance and Operations user interface.



Application-specific parameters: Conditions screen 1

This can be done for any legal entity that might control execution of the corresponding ER format.



Application-specific parameters: Conditions screen 2

While an ER format is run, a legal entity specific set of master data will be used by a corresponding data source of an ER format depending on a legal entity controlling this execution.

This feature also enables a business user to export an ER format-specific company master data from one Finance and Operations instance and import it to another one.

Electronic reporting - Post-processing of generated files

Existing functionality in electronic reporting allows business users to do the following:

- Configure the layout of an electronic document.
- Specify data sources to fill in the document at run time.
- Assign destinations (filing and emailing) for the generated electronic document.

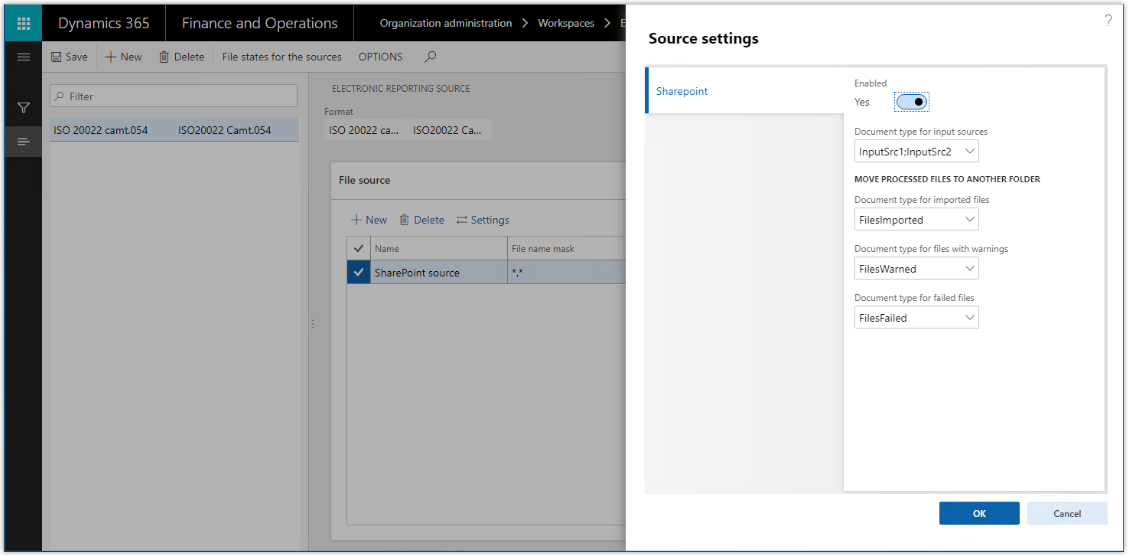
Without this feature, the user can't configure additional destinations for the generated document and can’t apply custom transformations to entirely modify the generated document at run time. To get this functionality before this feature, you had to create a unique and difficult customization. This feature gives more power to business users and allows configuring the required post-processing actions by reusing existing logic of Finance and Operations as well as the functionality of surrounding applications (files encryption, conversion to another format, direct printing, and so on).

Electronic reporting - Post-processing of imported files

Import functionality in electronic reporting (ER) uses SharePoint folders to get the next set of files for processing. As of now, there is no automatic procedure to manage processed files; for example, successfully processed files are automatically deleted from a SharePoint source folder and can’t be moved to another location. It results in additional manual work and potential errors. This feature automates this procedure and allows configuring of the post-processing actions. By changing source settings of an ER format, the user can configure the following actions:

- For successfully processed files:
- Delete files from the source SharePoint folder
- Move files to another SharePoint folder
- For processed-with-warning files:
- Keep files in the source SharePoint folder
- Move files to another SharePoint folder

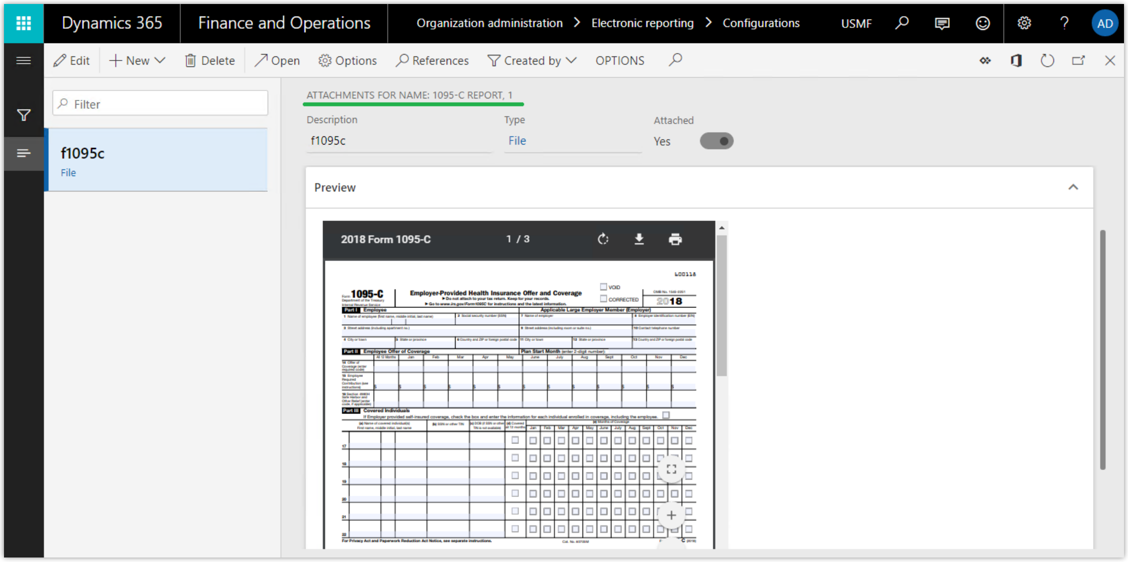
- For failed files:
- Keep files in the source SharePoint folder
- Move files to another SharePoint folder



SharePoint source settings

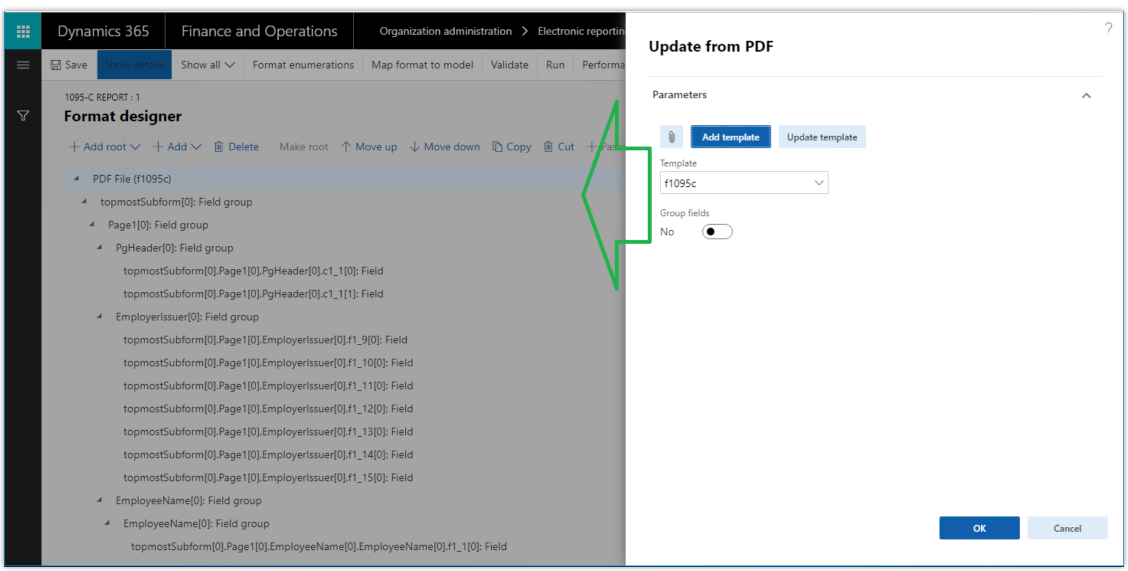
Electronic reporting - Generate documents in PDF format by filling in PDF templates

Existing functionality in electronic reporting (ER) allows business users to design necessary configurations using Microsoft Excel and Microsoft Word documents as templates of electronic documents generating at run time. This feature allows business users to use a fillable PDF document as a template for generation of reports in PDF format.



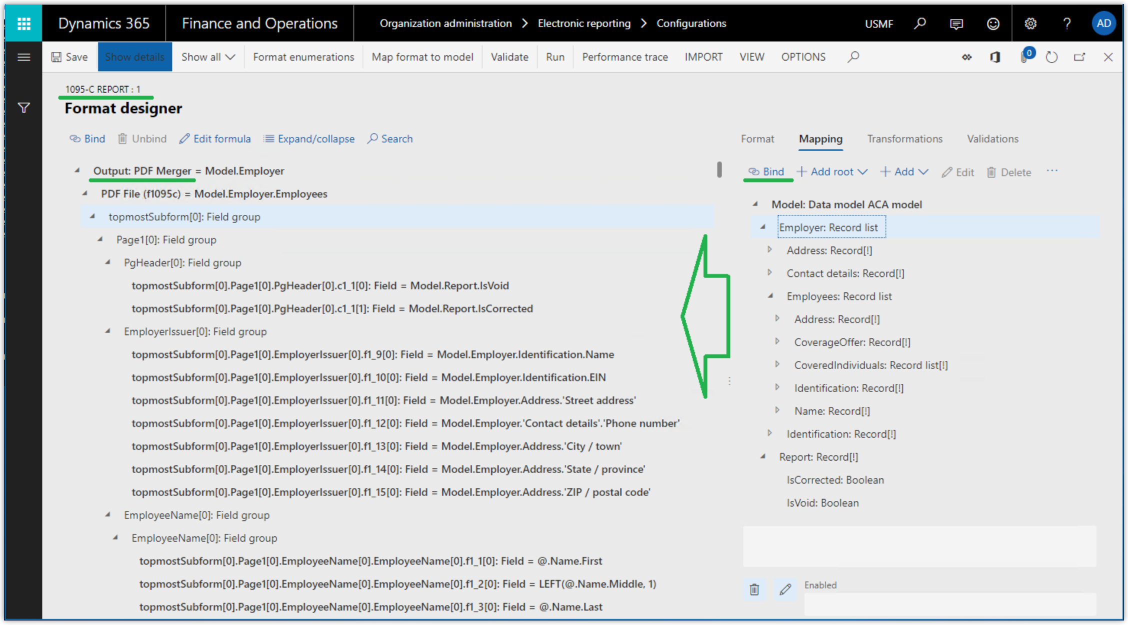
File preview

You can import the PDF at design time to a configured ER format which automatically generates new elements of this ER format for discovered fields that need to be filled in. By adding bindings to generated elements of an ER format, you can fill in necessary fields of the PDF template by running this ER format.

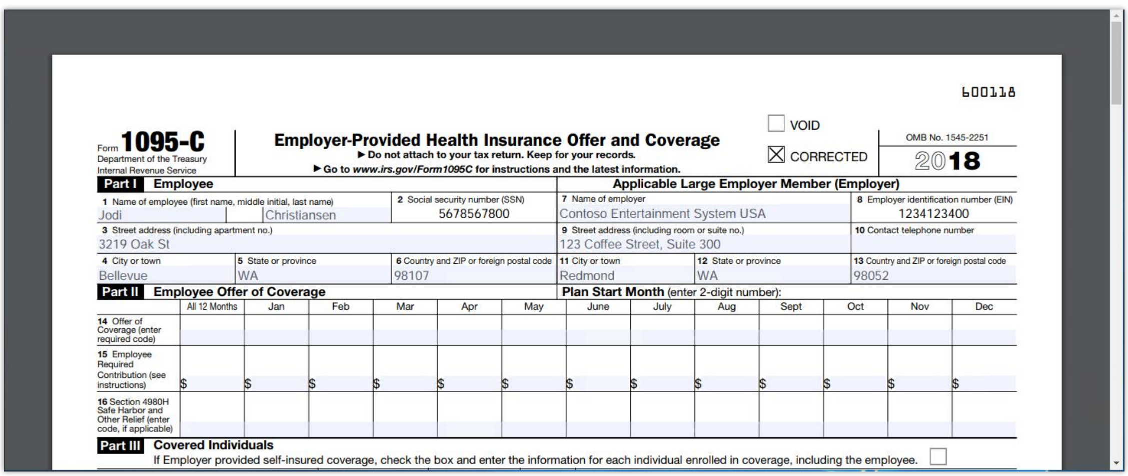


Update from PDF page

This feature also enables users to configure an ER format generating multiple PDF documents and automatically merging them into a single, final PDF document.



Format designer



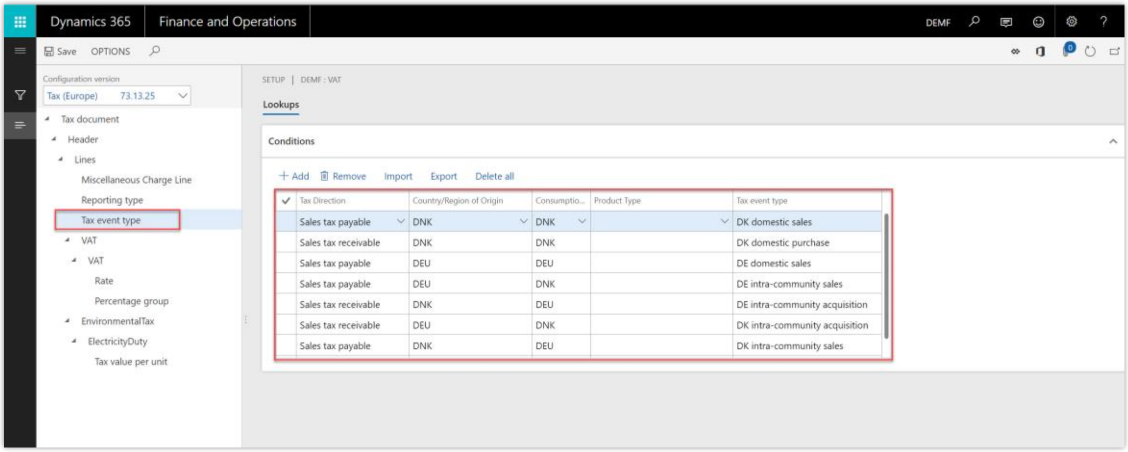
Sample 1095-C form

Global Tax Engine (India) - Improving tax configuration usability with reduced number of lookups

NOTE Currently, GTE is available for India only.

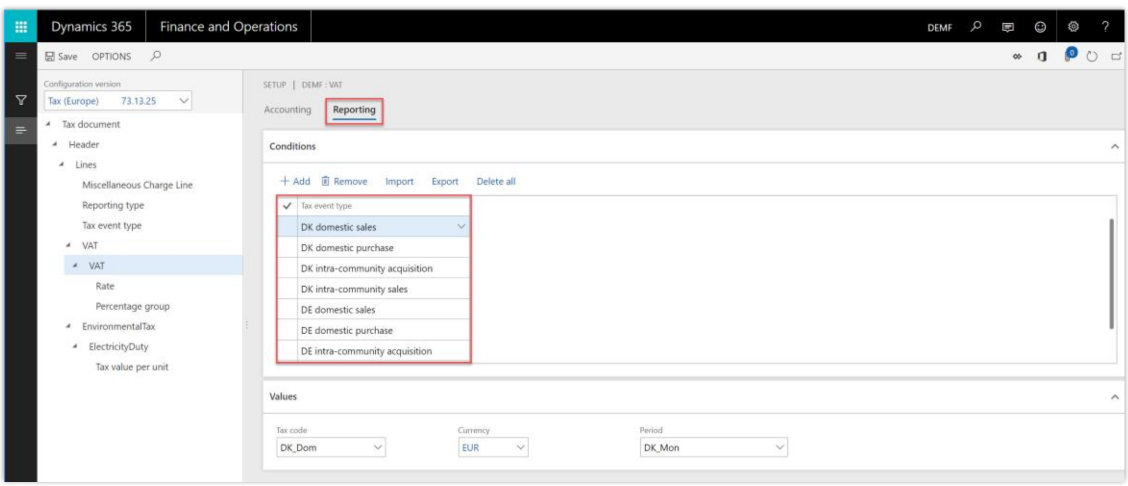
While configuring tax in Global Tax Engine (GTE), users can define multiple tables to look up tax rates, non-deductible percentages, tax components, tax periods, and more. In the real business practice, users want to reduce the number of lookup tables by combining them; for example, such data model properties as Country/Region of Origin, Consumption of Country/Region, and

Product type determine the nature of the tax transaction, which can be reused in many places. In this release, users can add a string-type measure at the line level, which can be a lookup:

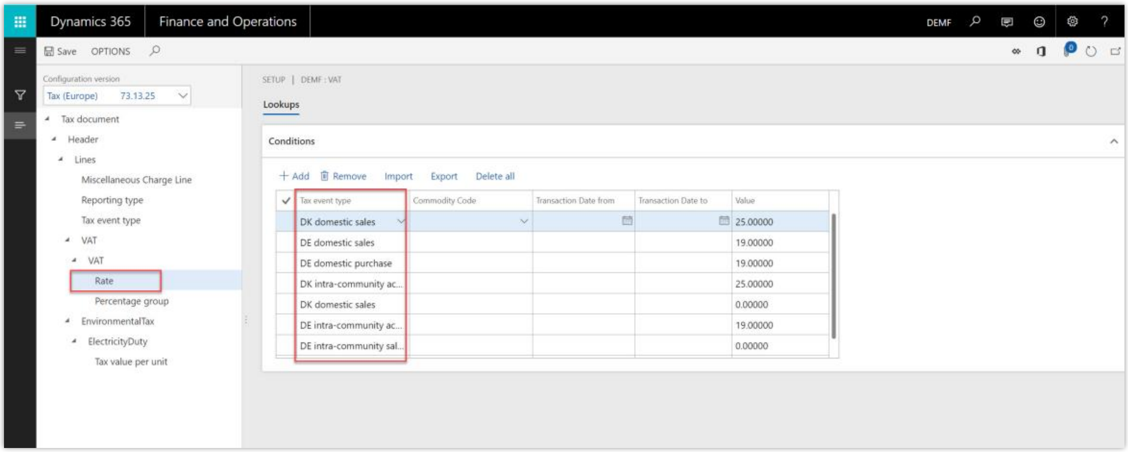


Tax setup event type

This measure can be further used in other lookups, like reporting, rate, and so on.



Tax setup event type reporting



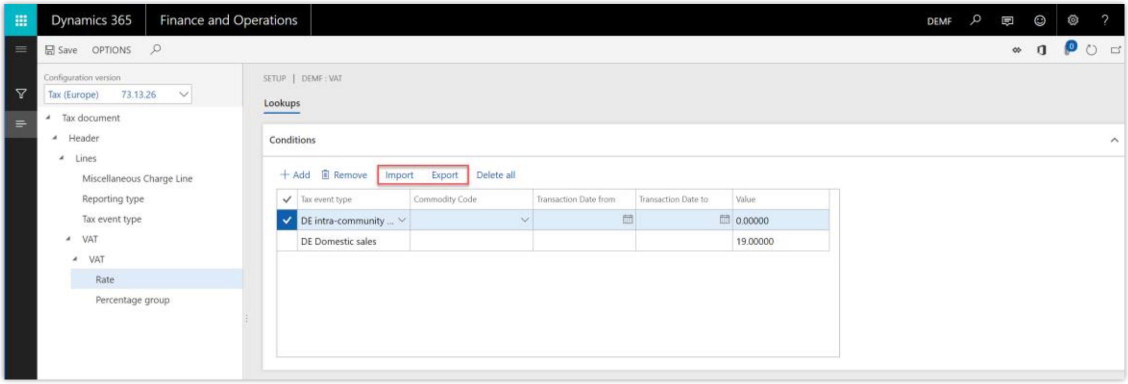
Tax setup event type rate

It will dramatically reduce the number of lookups that users need to maintain and will improve the tax configuration usability. This line-level string-type measure will also be shown in the tax document user interface.

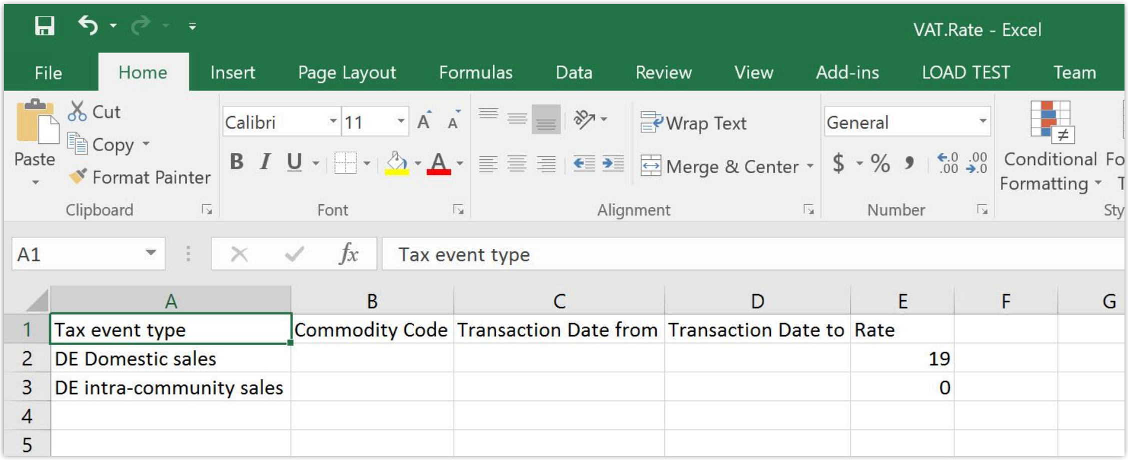
Global Tax Engine (India) - Simplifying tax setup maintenance with Excel integration

NOTE Currently, Global Tax Engine is available for India only.

Maintaining tax setup parameters (tax rates, non-deductible percentages, and so on) for tax configurations can be a very effort-intensive task for some countries/regions and types of businesses. Now users can maintain these parameters in Microsoft Excel files automatically generated based on tax lookup tables and integrated with the tax setup.



Tax setup import/export



	A	B	C	D	E
1	Tax event type	Commodity Code	Transaction Date from	Transaction Date to	Rate
2	DE Domestic sales				19
3	DE intra-community sales				0

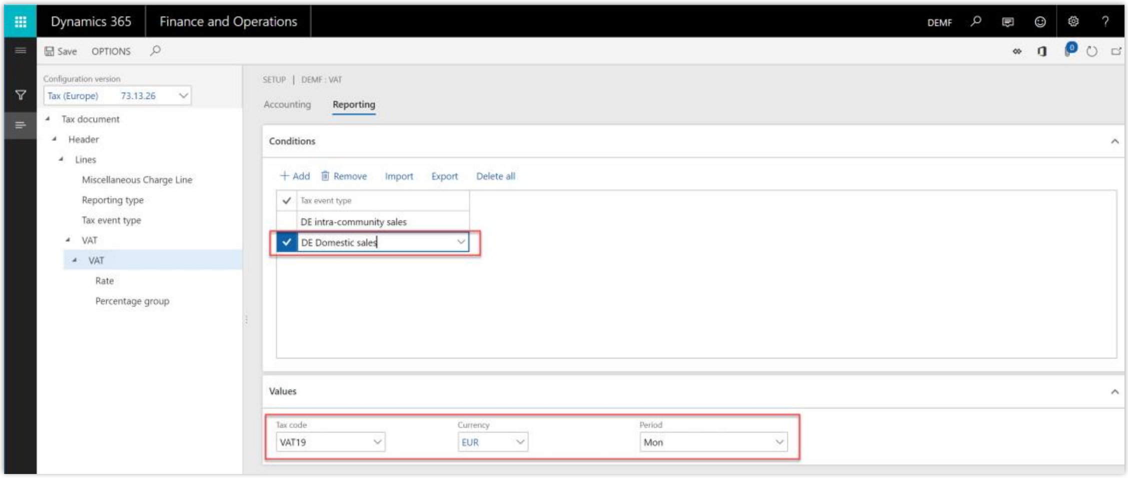
Tax setup import/export Excel

Global Tax Engine (India) - Enabling tax configuration with tax currency and sales tax codes

NOTE Currently, Global Tax Engine is available for India only.

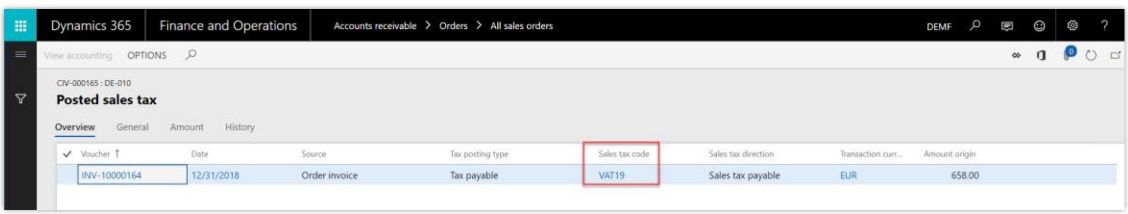
Sales tax code is a mandatory setup for Global Tax Engine (GTE) to integrate with Dynamics 365 for Finance and Operations. Previously, GTE created sales tax code with the same name as the tax component when synchronizing the tax configuration, and it used the accounting currency for the auto-create sales tax codes.

Companies with multiple tax registration across the world need to maintain different tax currencies for tax components used in different countries. With the release of this feature, users can maintain the sales tax code in tax setup, map the tax component to sales tax code in lookup tables, and maintain tax currency and settlement period of these sales tax codes.



Tax setup reporting

With the tax setup, GTE will use the mapped sales tax code, tax currency, and settlement period for posting the tax transactions.



Tax setup reporting posted sales tax

Regulatory updates

For information about the regulatory updates for Finance and Operations, refer to [Localization and Regulatory features – Regulatory updates](). Alternatively, you can sign in to Lifecycle Services (LCS) and view planned regulatory updates through the issue search tool, where you can search by country, types of features, and releases.

Cash flow management for Russia

This functionality will allow you to do the following:

- Obtain a cash flow forecast and perform an analysis.
- Manage payments on a daily basis using payment schedule journals.
- Control the company's cash position.
- Maintain the company's cash flows with centralized control.

For more information, see [Cash flow management for Russia].

Incomes and expenses profit tax registers for Russia

The following tax registers will be available:

- Current period incomes
- Tax expenses
- Other expenses of current period
- Unrealized expenses of current period
- Other unrealized expenses

Localization of process industries for Russia

Basic localization in the following two areas will be available:

- Correspondence of accounts for all new general ledger postings
- Functional coexistence of process industries (PI) features and Russian country context

Entity store support for on-premises deployments

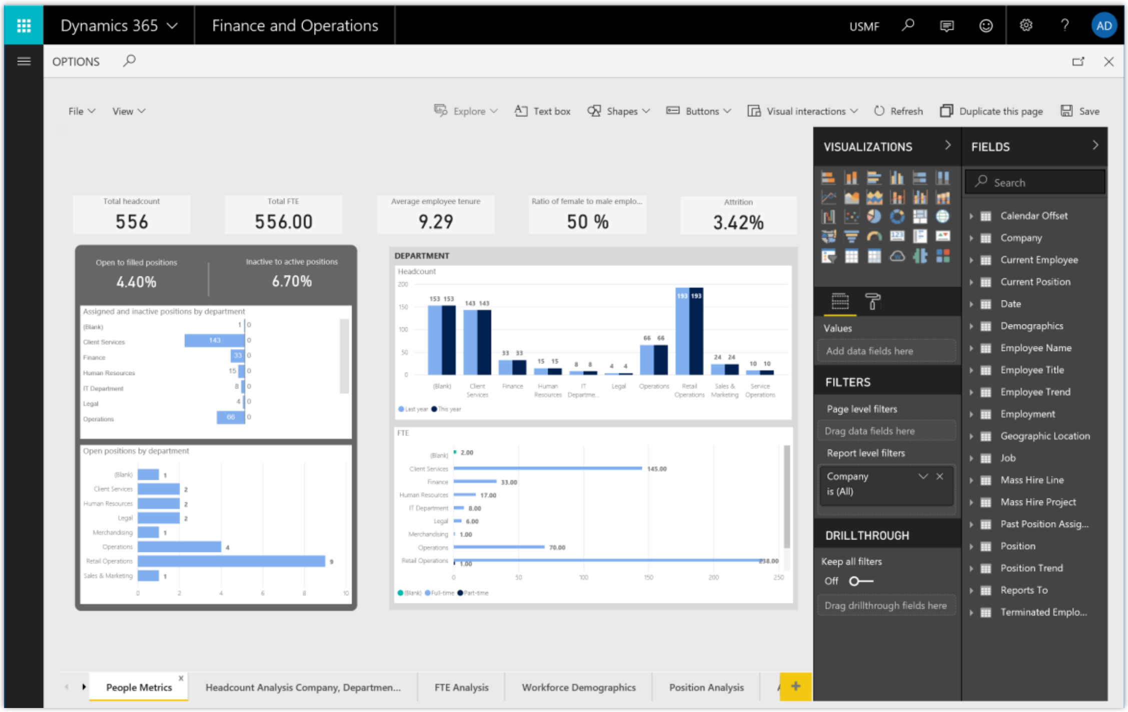
Entity store is an operational data store that lets an administrator or power user stage aggregate measurements in a dedicated data store for reporting and analytics. Customers can use Microsoft Power BI DirectQuery models together with entity store to enable high-volume, near-real-time analytical reporting over large volumes of data. Data from the transactional store is synced in real time and made available in the entity store.

Entity store will be made available to all customers on version 10.0 and later with all default aggregates defined and synced in near real time for on-premises. On-premises customers will get the ability to use the ready-made reports authored against entity store and deploy to their own Power BI subscription. However, on-premises deployments will not contain Analytical workspaces.

Web edit tooling for analytical workspaces

Take advantage of the new Analytical Workspace customization options for power users. Use built-in tooling to extend and enhance the analytical reports that are embedded in the application workspaces. With Dynamics 365 for Finance and Operations, power users are able to customize application workspaces without requiring development support. These updates are available immediately to other users of the workspace, replacing the default solutions.

Customization options include the ability to revert back to the analytical reports that were originally bundled with the application.

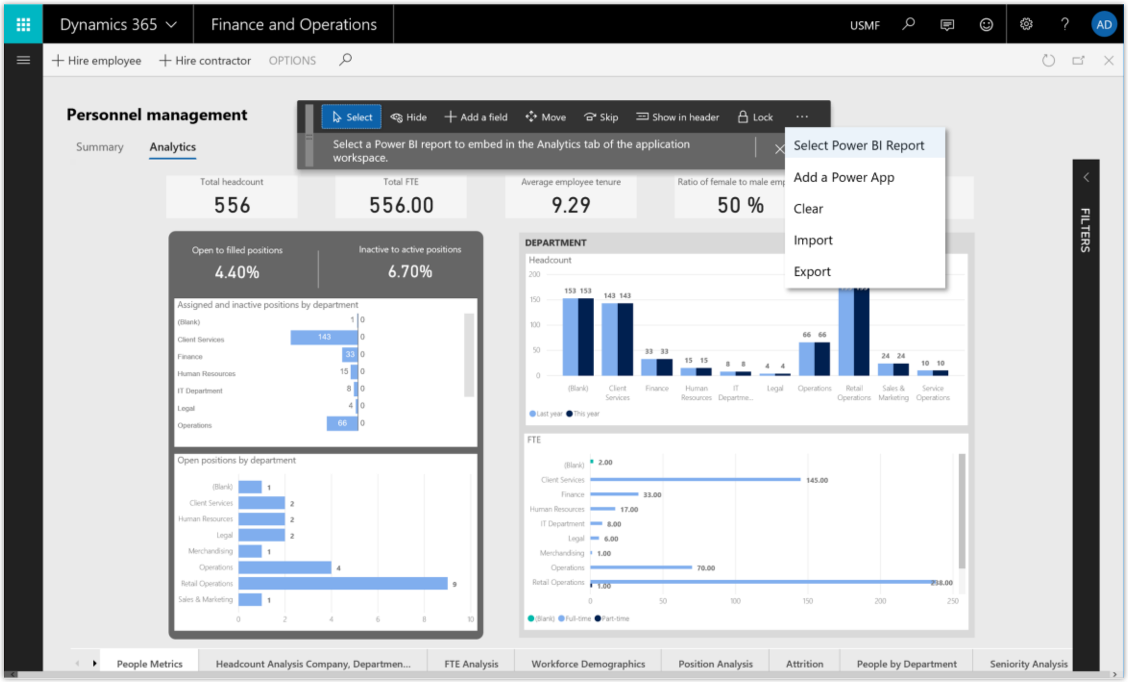


Screenshot of personnel management Analytical Workspace

Make improvements to the embedded analytical reports without the burden of bringing in a developer or waiting months for the next service update. Empower users with flexible tooling that can be used to tailor applications solutions. Create custom solutions to deliver insights targeting the specific needs of your business.

Personalization options for analytical workspaces

We're excited to announce new personalization options available to replace out-of-the-box solutions embedded in analytical workspaces with reports hosted on PowerBI.com. Take advantage of these zero code, application customization options that allow users to replace the standard solutions. Dazzle users with seamless integration of PowerBI.com reports that can include visualizations of data from external sources.

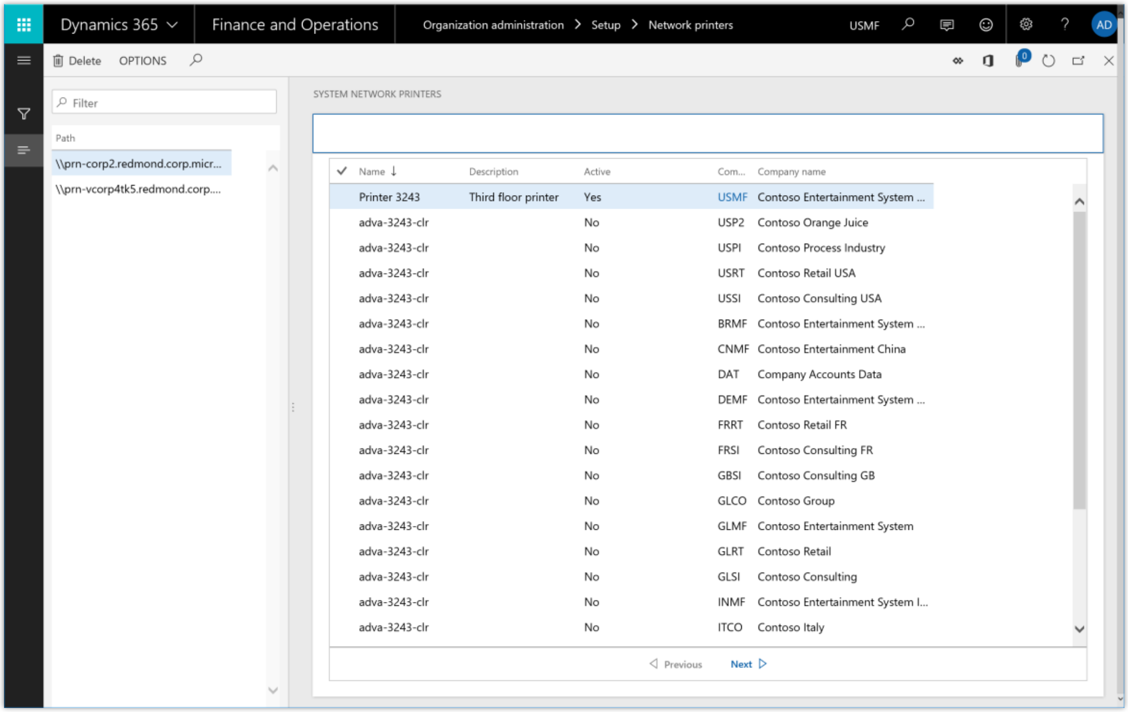


Screenshot of Personalization toolbar for Analytical workspaces

Best of all, these personalization selections can be shared with other members of the organization. Additional options include the ability to revert back to the analytical reports that were originally released with the application.

System management of network printers

Take advantage of a new tool for administrators to use when tasked with managing network printers for the organization. The **System network printers** page allows administrators to update settings and delete network printers across all organizations using a single view. This management utility is designed to simplify the task of configuring network printer devices available within Dynamics 365 for Finance and Operations applications.



System network printers form

Common scenarios

- **A system administrator needs to delete a network printer instance**: This is common for cases where the network printer path is updated or hardware has been replaced.
- **An organization wants to purge all documents in the printer queue**: Documents rendered by the service that are waiting to be printed can be deleted using options available on the **System network printers** page.
- **Quickly toggle availability of network printers for multiple legal entities**: You can manage the printer properties including the active state for a printer in multiple legal entities using a single view.
- **Provide friendly names for network printers for multiple legal entities**: You can establish friendly names and descriptions for printers that make sense to the users associated with individual legal entities.

This is both a recovery tool for cancelling active print instructions and a means of simplifying the task of managing network printer settings across legal entities for the entire organization.

Enhanced grid experiences

The following enhancements are planned for the grid in Microsoft Dynamics 365 for Finance and Operations.

New and improved grid control

A new grid control will be available throughout Finance and Operations that is faster, more usable, and opens the door for more advanced functionality to be built into the grid in the future. Any business scenarios that involve interactions with a grid should benefit from this feature from both a performance and usability perspective.

The grid control will provide improved rendering speed and much faster scrolling through the grid. Users are also able to positionally scroll within the data that has been loaded in the browser.

Totals in grids

Business users will be able to see totals for numeric columns in tabular grids in Finance and Operations. For example, financial users will be able to view totals for a filtered set of transactions for a specific customer.

Grouping in grids

In tabular lists, business users will be able to group data based on the values in one or more columns. Once grouped, users will be able to expand or collapse each group. Also, users will be able to see subtotals in numeric columns for each group.

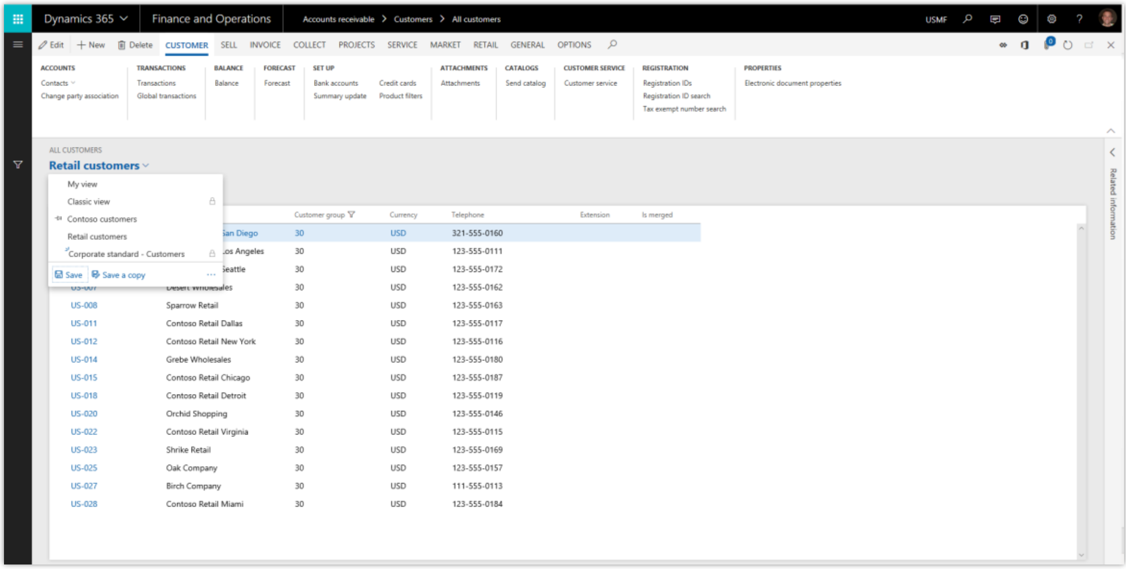
Saved views

Finance and Operations allows users to modify a form via personalization to optimize it for their needs. While previously a user could only have a single set of personalizations per form, the Saved views feature allows users to have multiple, named sets of personalizations per form. This allows a business user to create, save, and share multiple, optimized views of a form, where each view is ideal for a certain group of users or for performing a particular business task.

By default, each of these views will contain any modifications to the form done through personalization. For some forms—list pages, for example—these views might additionally include the query, which allows users to quickly return to commonly filtered datasets.

Because Saved views can be "published" to security roles, new users who join an organization will automatically have access to optimized views targeting the roles given to the new user. This publish capability allows organizations to define and publish corporate, standard views that are optimized for their business.

Saved views has the potential to significantly ease the management of personalizations for administrators, greatly simplify the user experience, and improve user productivity.



View selector on the Customer page

Client productivity and usability improvements

Customers have ever-increasing expectations of their user experience in ERP systems. Users want modern interfaces that are attractive, easy to use, informative, intuitive, and customizable. Users expect these systems to have features that allow them to maximize their productivity regardless of the device they are using.

To this end, Dynamics 365 for Finance and Operations is committed to continued investment in improvements to its web client that are targeted at increasing usability, user productivity, and overall user satisfaction with the product.

Some enhancements that will be included are:

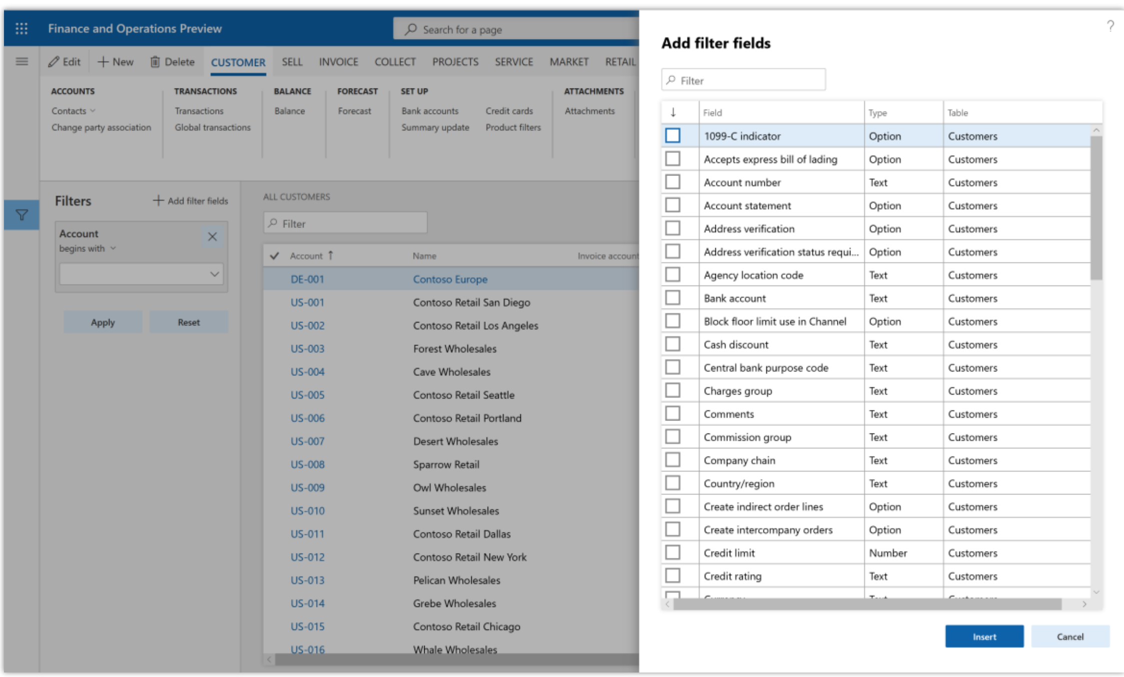
- A continued focus on enriching our personalization capabilities to better enable customers to create and manage simplified and optimized user experiences targeting their organization and their users.
- Continued improvements in data filtering to help users more easily find the data they are interested in.
- Progressive work toward increased usability of the web client on mobile devices, by building more responsive and adaptive capabilities into various controls and form patterns.

- Improved usability of the attachments experience including increased visibility of document attachments on a page.

Improved "Add filter fields" experience

If you have ever used the filter pane and needed to add a filter field to find the data you were interested in, the experience might have been more challenging than you expected. Now, the "Add filter fields" experience in the filter pane has been significantly improved in Platform update 25 to more align with the "Insert fields" personalization experience.

Now when you select **Add filter fields**, you are brought into a dialog experience that includes a QuickFilter for easy filtering. The column headers in the grid of available filter fields also now allow filtering and sorting. With this change, you can add all the filter fields you want at once, instead of having to add them one by one.



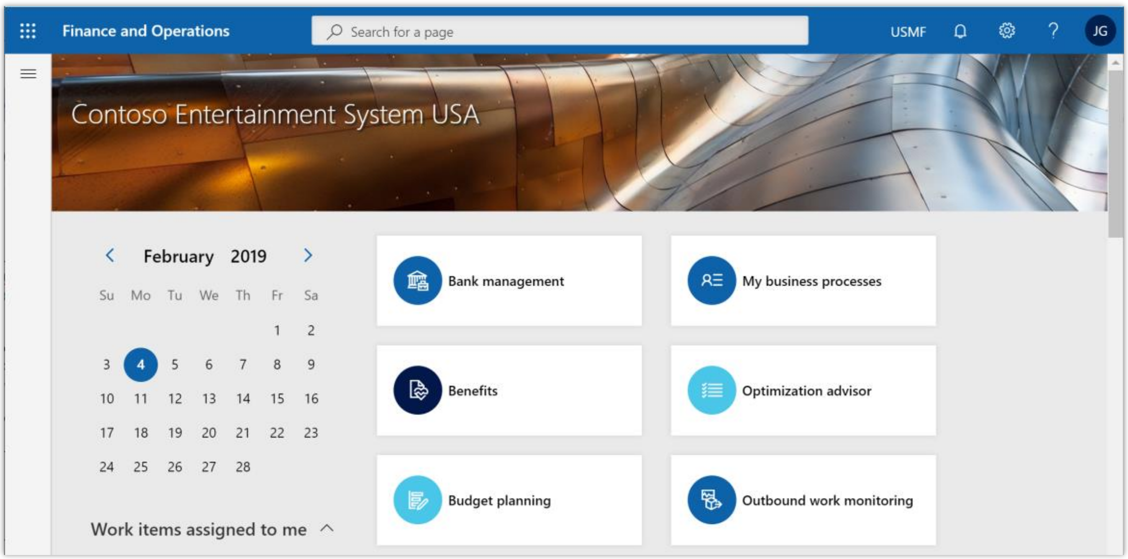
Updated Add filter fields experience

Updated navigation bar that aligns with the Office header

Dynamics 365 products are working to align their respective headers with the Office header to provide a more cohesive shell experience for users across Microsoft products. For Finance and Operations users, this header update will be seen as a completely restyled navigation bar that more prominently features navigation search. Notably, the new design does not include a breadcrumb.

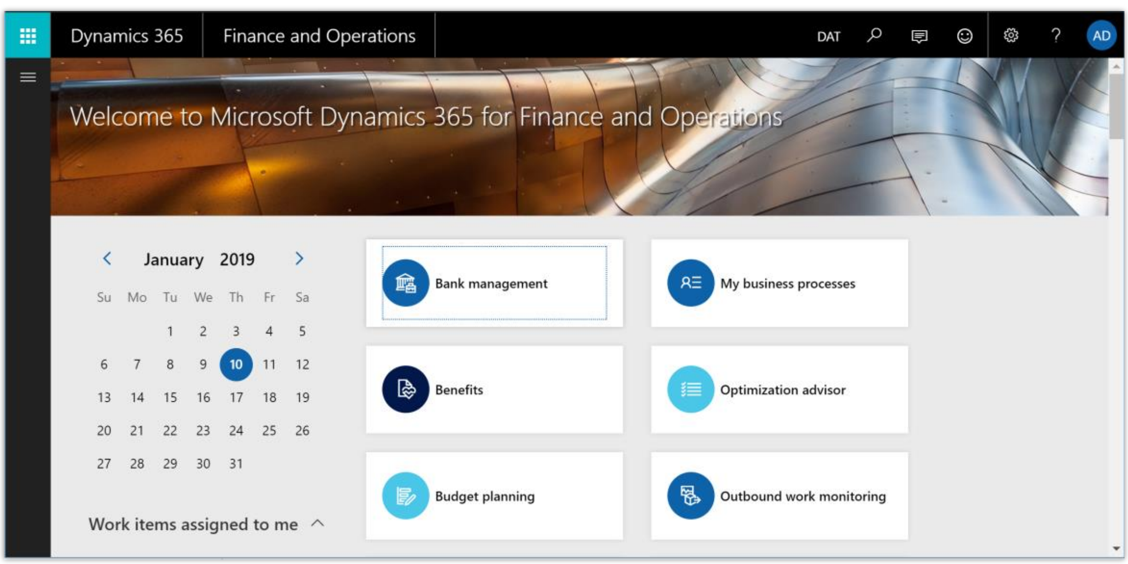
The updated navigation bar is shown by default in Platform update 24. For customers wanting to continue using the older navigation bar, this can temporarily be done via the **Client performance options** page, specifically using the **Enable legacy navigation bar** toggle. Note that we plan to make this toggle available through Platform update 28 only, at which time all customers will see the updated navigation bar.

The following image shows the updated navigation bar in Platform update 24.



Updated navigation bar in Platform update 24

The following image shows how the navigation bar appeared in Platform update 23.



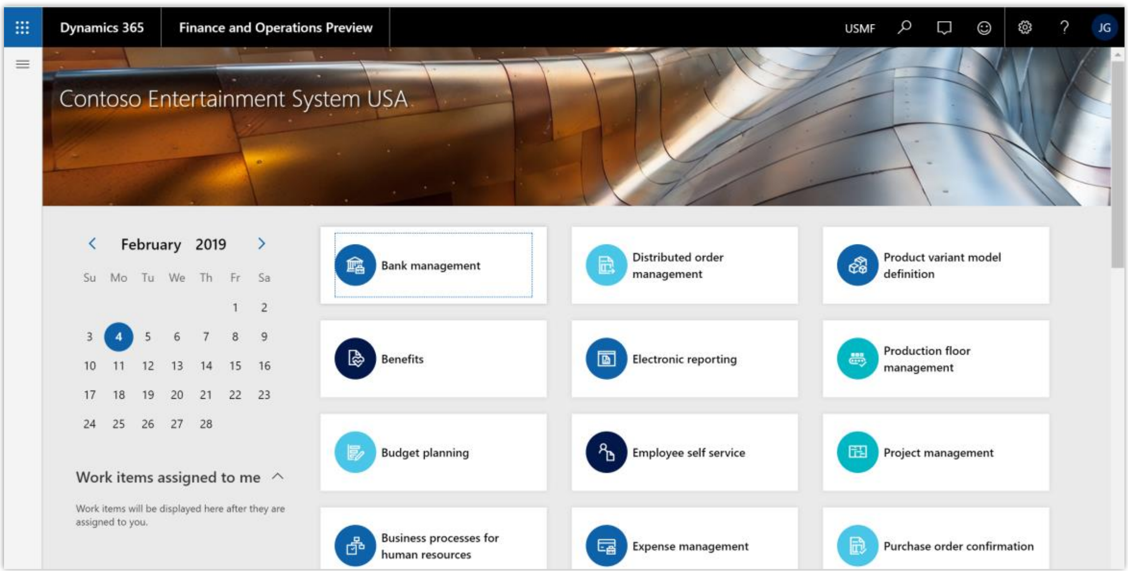
Navigation bar in Platform update 23

Clear identification of preview builds

Some partners, ISVs, and customers have access to preproduction builds of Finance and Operations by being part of the Preview Early Access Program (PEAP) or by using public previews of the service. This preview phase is intended as a mechanism for feedback on the latest features and for validation of customizations. These early releases, however, are not authorized to be used in production. See the Standard and First release service updates topic for more information about the Finance and Operations release process.

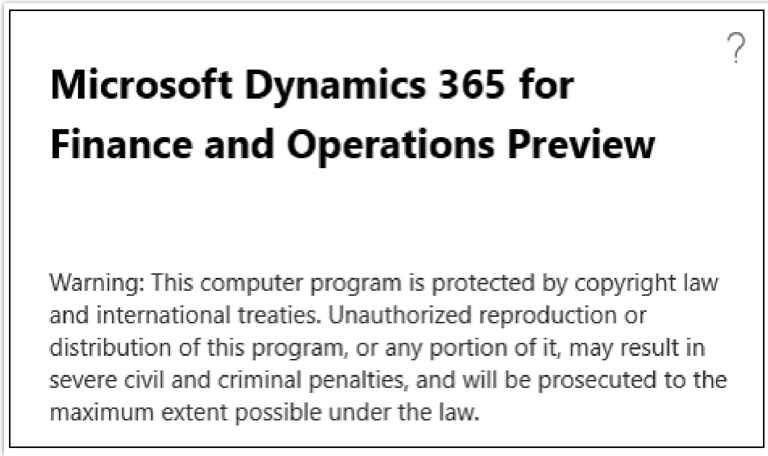
Starting in Platform update 24, each preproduction build is tagged in two different ways to make the **preview** status clear to users:

1. Users see the word "Preview" as a suffix to the product name in the navigation bar.



Preview indicator in the navigation bar

2. The title of the **About** box includes the word *Preview*.



Preview is also indicated in the About box

Ability to recover a user session to its last state

Customers have ever-increasing expectations of their user experience in the web applications that support their business. To this end, Dynamics 365 for Finance and Operations is committed to continued investment in improvements to the end-user experience.

We are introducing the ability for a user session (through the web client) to recover to its last state, in the event that the service becomes temporarily unavailable. Currently, if a user tries to interact with the system within the same session, an error will pop up. Once closed by the user, the page will be refreshed.

With the new feature, the user session will smoothly recover from temporary unavailability of the service, and this recovery will be seamless to the user.

Note This feature will be rolled out first to a select group of customers before it becomes generally available.

Developer tools and application lifecycle management

Setting up a Unified Operations (Finance and Operations, Retail) development environment is simple and reliable through the availability of ready-to-use cloud and on-premises virtual machines (VMs). This great feature has, however, proven costly to customers and partners because they need to manage many development environments as their development team grows or when they are developing multiple applications or multiple versions of the same application. In addition, our automated build framework also relies on similar VMs (in addition to Azure DevOps) and does not provide automatic deployment of builds to Lifecycle Services (LCS) and sandbox environments.

The Unified Operations development tools, application metadata, and platform will be componentized into standard modules to enable the development of more than one application on the same environment. This will set the stage to remove the dev tools' dependency on preconfigured VMs and will improve the development experience on local computers.

In addition, the build automation framework will not require a VM and will solely rely on Azure DevOps build capabilities. Builds that are release candidates can be automatically deployed to LCS and sandbox cloud environments.

For new customers, preconfigured development environments (VMs) in LCS will be hosted in the customer’s Azure subscription and will not be managed by Microsoft. New LCS features will be introduced to reduce the cost of running these environments. Tier-1 environments managed by Microsoft (which are currently dev/test environments) will become test and configuration environments only (no RDP access) and will align in architecture with other types of cloud environments.

Platform extensibility enhancements

Enhanced extensibility capabilities in Platform update 24:

- Add an 'OnClicking' event for form button controls (Ref# 215644).
- Allow Chain of Command (CoC) on methods that aren't overrides of kernel methods on types inside forms (controls and data sources) (Ref# 238379).
- Allow the addition of reference datasources via form extensions (Ref# 224810).
- Allow setting a fixed value in a table relation (Ref# 198778).
- Allow the addition of form datasource display and edit methods via extension (Ref# 261093).
- Allow access to email messages before sending by extracting SysEmailTable.getMessageBody from SysEmailTable.sendMail, and by allowing CoC on EventNotificationWorkflow.sendMail (Ref# 269551, 262554).
- Enable influencing of the creation of work items in SysWorkflowWorkItem.createWorkItems via the new SysWorkflowWorkItemHelper class (Ref# 246996).
- Improve extensibility of number sequence through changes to NumberSeqScope, NumberSeqDatatype, NumberSequenceTable (Ref# 262867, 259702, 245745).
- Improve extensibility of various classes including SysChartTitle, PowerBIControlBuild, EventNotificationBatch (Ref# 280964, 280963, 275376).

For more information about all extensibility capabilities, see the Extensibility home page.

Platform extensibility enhancements wave 2

Enhanced extensibility capabilities in Platform update 25:

- Downgrade Chain of Command (CoC) on an InternalUseOnlyAttribute method from an error to a warning (Ref# 289075). For more information about the InternalUseOnlyAttribute, see the Extensibility FAQ.
- Enable adding 'order by' fields into a query via extension (Ref# 198811).
- Improve defaulting of style property values on sibling form controls added via extension (Ref# 198824).
- Allow changing DisplayHeight on EDTs (Ref# 247167).
- Enable function formHasMethod to work for methods in an ExtentionOf class (Ref# 199220).
- Adjust the SysSystemDefinedButtons.addButtonsToActionPane method to protected to allow addition of custom buttons via CoC (Ref# 272356).
- Extracted methods from NumberSequenceDetails.updateFormat, EventContextDrillDown.drillDown, SysEmailTable.showEmailBody to allow targeting of key pieces via CoC (Ref# 270780, 278611, 269568).
- Add finalFormatMessageText delegate to WorkflowDocumentField.substitutePlaceholderAsUser to allow formatting of workflow emails (Ref# 262556).
- Change NumberSeqScope.getParameterValue to protected to allow for CoC targeting (Ref# 262866).
- Add class variable parmTxt to SysPickList to provide extensibility (Ref# 235796).
- Remove InternalUseOnlyAttribute from WorkflowDocIsQueueEnabledAttribute to allow for CoC targeting (Ref# 264119).
- Add initializeMessageBuilder method to SysEmailDistributor to provide access to emails prior to sending (Ref# 256434).

For more information about all extensibility capabilities, see the Extensibility home page.

Platform extensibility enhancements wave 3

Enhanced extensibility capabilities in Platform update 26:

- Support adding new full text indexes to table extensions (Ref# 198846).
- Enable changing TitleField1 and TitleField2 property values via table extensions (Ref# 245614).
- Enable form datasource method extensions added via Chain of Command (CoC) to be executed by direct calls from X++ code (Ref# 282172).
- Add support for cross company queries in extensible data access classes (Ref# 299444).
- Add the ability to change labels on Enum extensions (Ref# 266024).
- Fix the ViewMethod property on View Extensions so the Method property workaround is not needed (Ref# 198807).
- Allow Chain of Command (CoC) method extensions to target other CoC method extensions (extension of an extension) (Ref# 198848).

For more information about all extensibility capabilities, see the Extensibility home page.

Application Tracker - Code quality tooling

Dynamics 365 for Finance and Operations now allows developers to take advantage of analytical tools powered by Microsoft Azure's Application Insights to monitor the health and performance of custom extensions. With these tools, you can improve the quality of your solutions by using detailed process event attributes extracted through the service's built-in telemetry infrastructure. The Application Tracker provides primitive instrumentation information that offers detailed procedural analysis. The tools also allow you to complete the following common diagnostic procedures:

- Gather insights from SQL operations
- Track modules that house the Form and extensions (Forms only)
- Count access to metadata tables, direct SQL statements, and GlobalObjectCache
- Monitor the creation and disposal of UserConnections

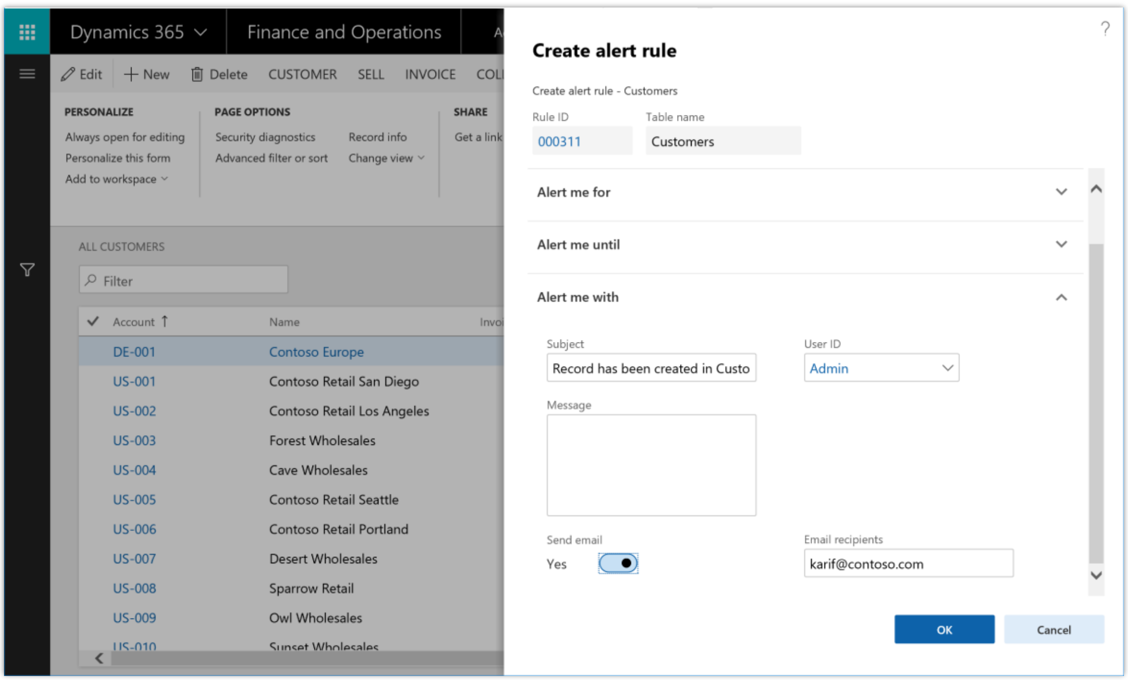
Additional capabilities include actionable insights into runtime service activities and the ability to define custom telemetry attributes by using standard application extensions. While active, the Application Tracker is an effective diagnostic utility that doesn't incur any observable overhead on the performance of the process.

Client alert notifications by email

Stay on top of your business data with integrated change tracking tools. With Platform Update 25, users are able to create alert rules that automatically dispatch email notifications to internal and external contacts when triggered by an event.

Move beyond the burden of constantly checking reports for changes to business data and let the Dynamics 365 for Finance and Operations intelligent change detection service do the monitoring for you. System administrators can now use alert rules to send email notifications in response to changes in the status field of system batch jobs.

The following screenshot shows the new user controls for sending notifications by email.



Create alert rule form

NOTE Users will continue to receive notifications in the Action Center with the email option enabled.

With Dynamics 365 for Finance and Operations, users can define custom alert rules to monitor filtered views of their data. Email notifications are available for all supported alert types and can be enabled for existing alert rules. To learn more about this feature, see [Client alert notifications by email](#).

Business events for integrations

Events exist in Finance and Operations, but their consumption was previously confined within Finance and Operations. This new capability provides a framework that will allow business processes in Finance and Operations to capture business events as business processes are executed, and send the events to an external system or application.

This will allow, for example, a purchase order approval to trigger a fulfillment in the vendor organization sooner than later; a receipt of a damaged part to trigger the vendor claim process in real time; and so on. Since these events happen in the context of business processes, they are called *business events* that enable *business process integration*.

External business processes will subscribe to specific business events from Finance and Operations to get notified when they occur. The business events can also be consumed as "triggers" in the Finance and Operations connector.

More details on this capability can be found in the feature documentation on Business events.

Finance and Operations data in Common Data Service

Get your Dynamics 365 for Finance and Operations data in Common Data Service and keep it up to date.

You will now be able to configure your Finance and Operations environment and link it to Common Data Service as part of the environment deployment flow in Lifecycle Services. You will have the option to configure to an existing Common Data Service environment or a new one will be provisioned for you. Everything will be configured out of the box and with a few clicks, customers will be able to edit the configurations from within the Finance and Operations environment. Changes in Finance and Operations will propagate to Common Data Service, and vice versa, with little to no work required for configuration.

In the June-July timeframe, we will support a set of out-of-the-box entity mappings in the areas of customer configuration, vendor configuration, product configuration, and organizational security that syncs data bi-directionally. The set of entities supported will increase over time.

In addition, Finance and Operations administrators will be able to customize an entity and field mappings, and add source data filtering and transformation. It will also be possible to enable custom entities.

Entity store in your own Business Data Lake

Customers appreciate the analytical workspaces that are built in to Dynamics 365 for Finance and Operations due to:

- **Embedding with Finance and Operations context**: Security and data filters are based on the user's context. Users can drill through to take action.
- **Predictable pricing**: Customers get the experience when they license Finance and Operations.

However, a common requirement is to extend embedded reports often by adding KPIs, calculations, or to merge with their own data. The cost of modifying embedded reports are high (in other words, developer involvement is required). Therefore, customers also use BYOD and export data into their own databases for reports—often duplicating the same report with a few changes. While Data Management will continue to support exporting data into SQL databases (such as BYOD), we want to reduce the administrative overhead associated with exporting data and managing exceptions.

To reduce pain and to simplify the experience, we're leveraging the Business Data Lake (ADL Gen2) infrastructure along with Power BI dataflows. The feature is as follows:

Customers can bring their own Data Lake (Azure Data Lake Storage Gen2) and configure within Finance and Operations. Data Lake is a cost-effective option compared to SQL databases.

Transactional and master data in the Entity store will be published to customer's Data Lake. Microsoft will keep the data fresh on a real-time basis. While the initial focus is to enable aggregate measurements and aggregate dimensions in the Data Lake, we will enable staging regular data entities in the Data Lake as feature improvements.

Customers can also bring their own PowerBI.com subscription and configure within Finance and Operations. This feature is already available in the system. When the customer provides this information, Power BI reports contained in analytical workspaces will also be published into the customer's own PowerBI.com subscription. Power users and consumers of PowerBI.com can use as well as extend reports and dashboards. They can also use the full features available in PowerBI.com, including use of Power Q&A and mobile dashboards.

While this feature will eliminate current pains associated with developing operational reports, it also accrues to strategic benefits:

- Transactional and master data available in the Entity store will be accessible via a Data Lake. No need to export the same transactional data into BYOD. Ready-made integration with PowerBI.com via data flows will enable easy data mash-ups.
- Customers can bring their own data into the Data Lake and achieve mash-up scenarios easily without having to download the data onto on-premises data warehouses. The cost of storing data in a Data Lake is much lower than storing it in a SQL database.
- Enable building analytic apps across applications within the Dynamics domain. For example, customers will be able to combine data between Customer Engagement applications and Finance and Operations.
- Reduction in COGS for customers (reduce usage of BYOD).

Data residency - China cloud

Companies in China are looking to keep their data within the China region to comply with government regulations. As Dynamics 365 for Finance and Operations and Dynamics 365 for Retail expands global availability, we'll include the China sovereign cloud with all customer data resident within the Azure China cloud.

Customers in China can now set up an implementation project and start building solutions using Lifecycle Services (LCS), which has a dedicated instance within the China datacenter with a new endpoint (dynamics.cn). Customers can request development/test, sandbox, and production environments, which can also be deployed within China datacenters. Customer operational and Lifecycle Services data does not leave the China region boundary.

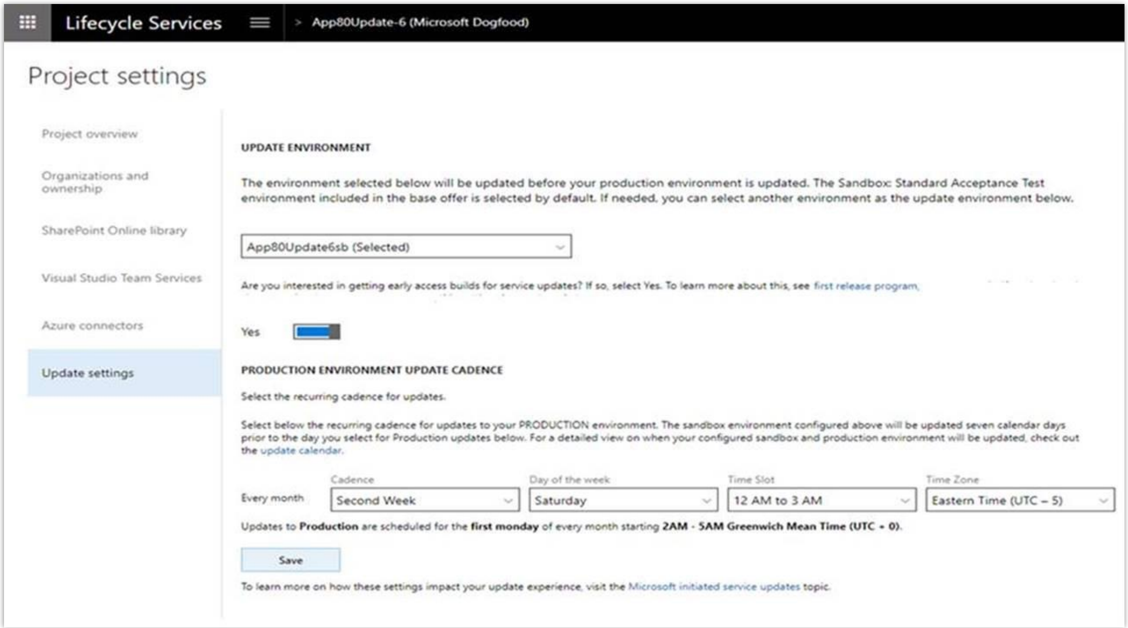
One Version experience

Several changes to the update experience will be made available in Lifecycle Services (LCS) to support continuous service updates with predictability.

The true value of a cloud service is realized through continuous updates that can provide both improved reliability and new features, while minimizing operational impact. We are optimizing the way we deliver updates for a more consistent, predictable, and seamless experience for every customer. Our monthly update cadence aims to provide predictability, lower upgrade costs, user access to the latest product capabilities and performance improvements, and a better support experience.

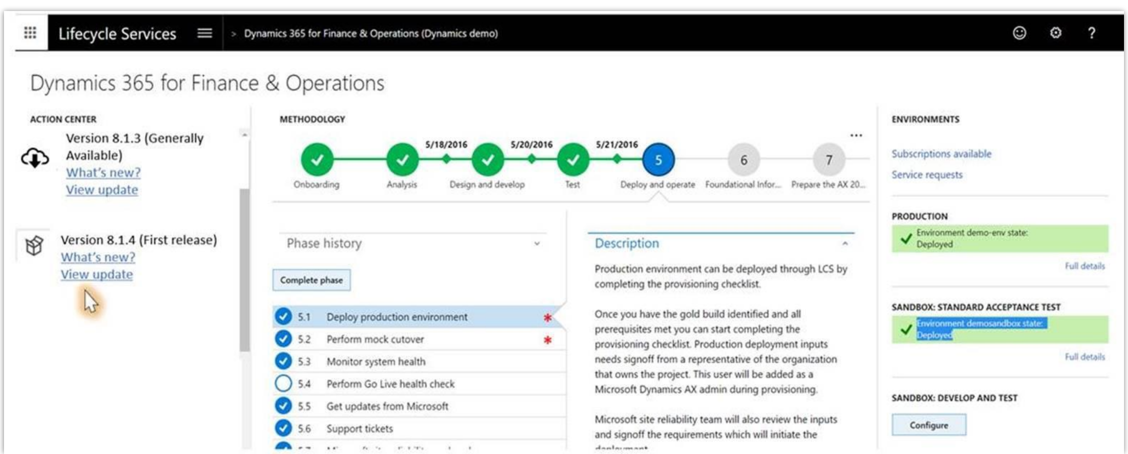
To support One Version, we will be making the **ONE-V** update experience available to customers and partners.

- **O**nboard: This is a one-time activity where the customer or partner can come to LCS **Project Settings** and configure the environments for the update, configure the date and time for their production update, select to pause updates up to three months, and sign up for any first-release programs.

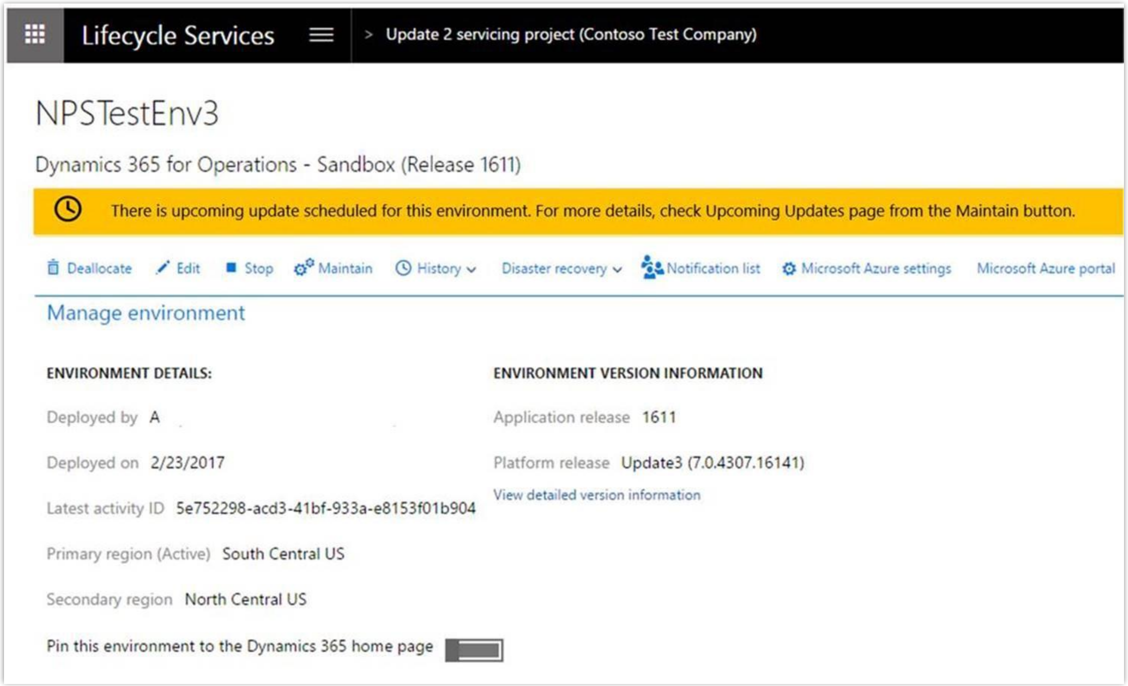


LCS Project Settings

- **N**otify: This is a monthly activity where a customer or partner can see the monthly service updates released by Microsoft in the LCS project action center, access the *What's new* for the update being made available, and get upcoming update notifications through email as well as through LCS.



View updates

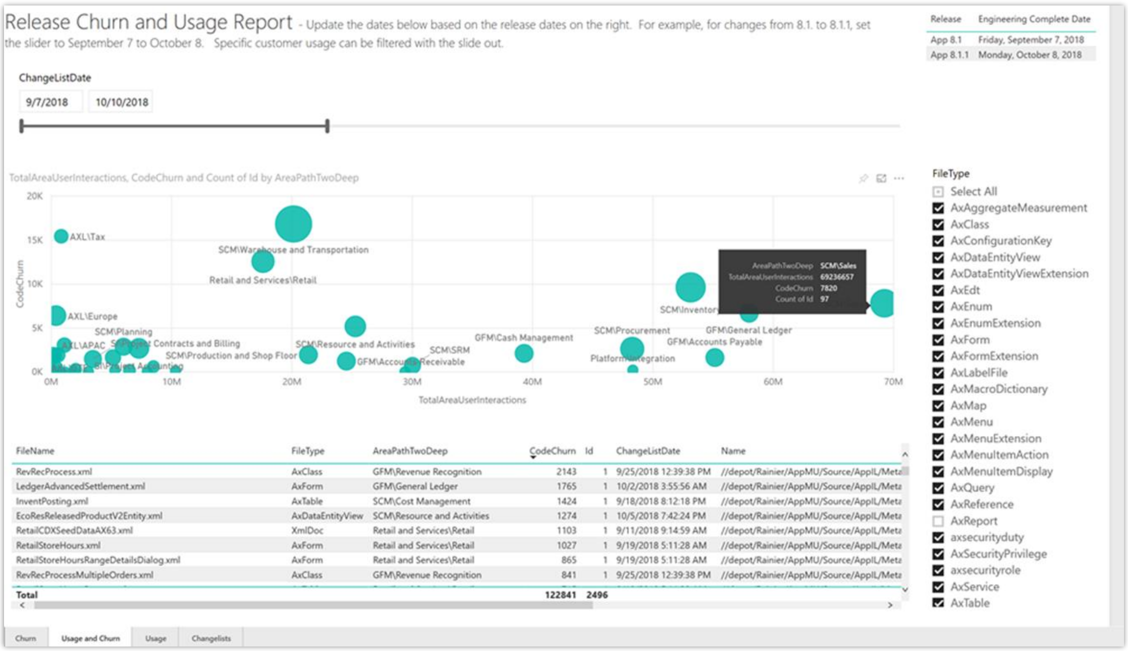


List of updates

- **E**xecute: This is a monthly activity where customers can either **self-update** their environments, or their environments will be **auto-updated** by Microsoft. With a self-update, customers can take the monthly service update and apply it to their sandbox and production environments using the regular servicing flows. With auto-update, Microsoft will apply the update at the configured cadence. Microsoft notifies the customer five days prior to updating the configured sandbox environment and five days prior to updating the production environment.

- **V**alidate: With this optional activity, customers can use the tools made available by Microsoft to validate the monthly service updates. The tools available are:

  – **Impact analysis tool**: This tool provides insight into the usage, churn, and feature areas that can help assess risk and drive smarter testing.



Impact analysis tool

- **Regression Suite Automation Tool (RSAT)**: Customers and partners can use this tool to validate business processes by using the web client without having to write code. This tool relies on the task recording framework that allows functional users to record business flows and play them back.

- **Data Task Automation**: This tool allows the automation of data import and export tasks by using a data task manifest and data project definition, which therefore provides a robust framework for regression testing of data integration scenarios.

Self-service deployment

The self-service deployment option for new implementation projects was released with limited availability in December 2018. We are now adding support for production environments. Production environments can now be deployed for all Lifecycle Services (LCS) projects that are configured for self-service deployments.

Currently only a small percentage of new projects are onboarded to the self-service deployment option. We will incrementally increase the percentage of new projects onboarded over time. There is no impact to any pre-existing projects and environments. We will work with the customers, not on self-service deployment, to bring the new experience to their environments.

All features applicable to Tier 2+ sandbox environments will be consistent with the production environments.

Production environments

1. You will be able to deploy production environments as a self-service action. You will no longer need to raise a Microsoft service request.
2. Deployments will be complete in less than 3 hours, or a third of the time taken to deploy using the current method.
3. In order to apply updates, the combined deployable package will be applied to the Tier 2 sandbox environment. Once the package is applied and validated, it will be promoted to the production environment.

Tier 1 through Tier 5 sandbox environments

Configure Tier 1 build environment

You will need to configure a Tier 1 build environment to be able to apply updates to Tier 2+ and production environments. Using the Tier 1 build environment, you will need to create a single, deployable update package that combines ISV solutions and customizations. Whatever is supplied in the package is applied to the environment and it overwrites what is already present in the environment.

Remote desktop access

Today there is no remote desktop access to production environments. Going forward, you will not have remote desktop access to the Tier 2 to Tier 5 sandbox environments. However, you will continue to have access to the Azure SQL database associated with the Tier 2, Tier 3, Tier 4, and Tier 5 sandbox environments. The access will not be persistent; but rather, it will be granted as and when needed.

To access the Azure SQL database:

1. From Lifecycle Services (LCS), add the IP address of the machine that you will use to connect to the Azure SQL database using SQL Server Management Studio.
2. Use LCS to request access to see the database credentials. You must provide a reason for requesting access.

As soon as you submit the request, it's automatically approved. Within a minute or two, you will be able to see the database access credentials on the **Environment Details** page in LCS. You can use the credentials to connect to the SQL database.

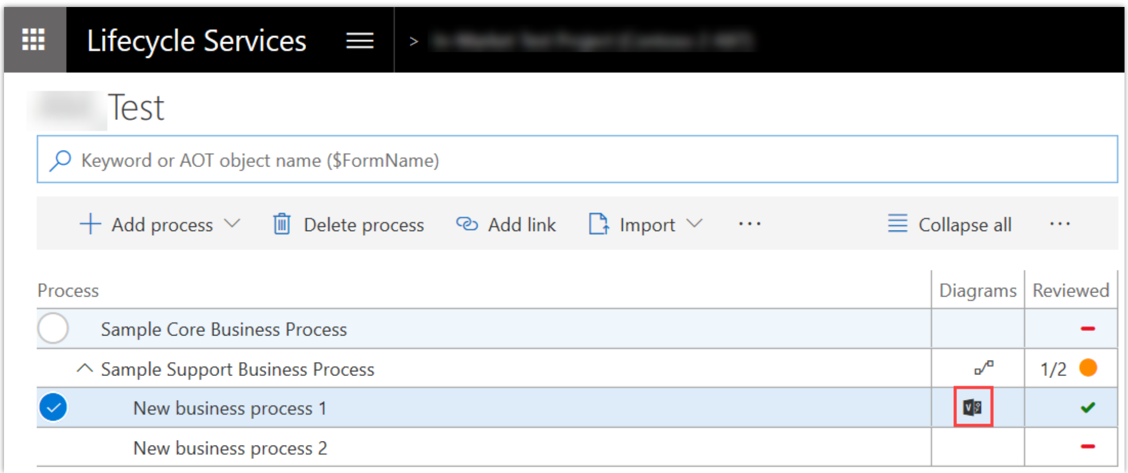
NOTE The credentials are valid for eight hours, and then they expire. After the credentials expire, you will have to request access again.

All other actions that require remote access into the machine, such as database movement across environments, seeing the health metrics such as CPU and memory consumption, getting access to the failure logs, and running regression tools, will be made available through LCS or in a way that does not require remote access into the machine.

Business process modeler (BPM) user interface improvements

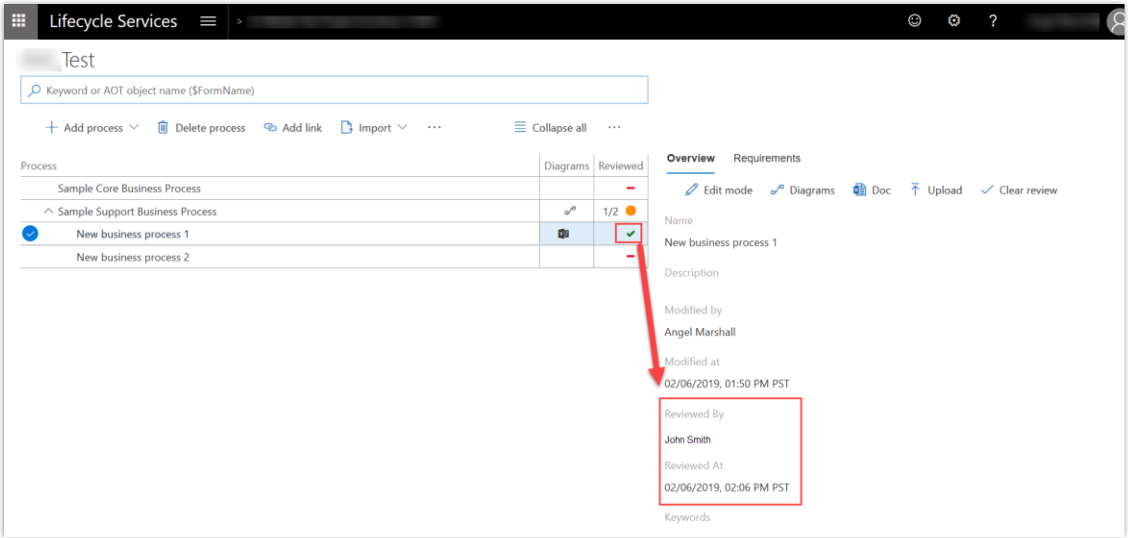
To support feature parity between the default user interface and the legacy user interface, the following features are enabled in the new Business process modeler (BPM) experience:

- **Visio attachment indicator**: If there's a Visio diagram attached to a business process, there will be a Visio icon added as a visual cue.



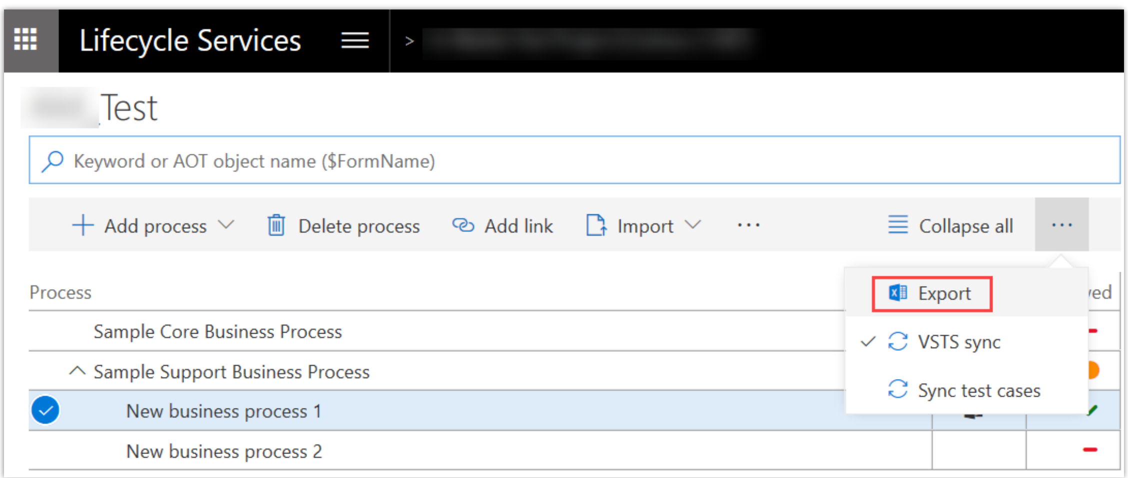
Visio attachment

- **Reviewed By and Reviewed At fields**: After a process is marked as reviewed, the reviewer's name will appear in the **Reviewed By** field and the reviewed date/time appear in the **Reviewed At** field.



Reviewed

- **Export to Microsoft Excel**: Exporting processes from a BPM library is supported from the new BPM user interface.



Export to Excel

For information about removal of the legacy user interface, see the LCS blog.

Dynamics 365 for Talent

Overview of Dynamics 365 for Talent April '19 release

We continue to invest the majority of our energy on the talent acquisition and onboarding portion of the broad Human Capital Management (HCM) space. Our investments currently rise up in two applications that are separate but complementary to one another: Attract and Onboard. We are also making incremental investments in Core HR to support our ongoing customer deployments.

Attract – Hire the right people, faster

The April '19 release will be focused on moving the Attract application from being something that would be considered a basic application tracking system into something that is more powerful and differentiated. We've identified a set of themes that represent big areas of investment in the Attract application for FY19. The remainder of this overview will be organized by these themes.

Better together, with LinkedIn

LinkedIn is the world's premier source for candidates, jobs, and professional communities. We are partnering closely with LinkedIn to build bridges between Attract and LinkedIn that let users seamlessly transition from LinkedIn to Attract and back again while completing workflows that are common to talent acquisition. Here are a few examples to make this more real:

With the recent Recruiter integration, a recruiter can use LinkedIn to search the vast database of candidates and then, with a single click, mark those candidates in a way that has them surface in our Attract application in the context of a specific job where they can be compared to other candidates, get scheduled for interviews, and eventually receive an offer.

As a hiring manager, you can use Attract to craft a compelling job description and then, with a few clicks, publish that job opening to LinkedIn. Once the job has been posted, the recruiter can go to LinkedIn to do a search for candidates that are a good match for that job description.

Candidates don't want to take a lot of unnecessary steps to apply for a job. If applying is too tedious, they might just move on. Using Apply with LinkedIn, candidates will now be able to easily use their full LinkedIn profile to auto-fill applications for jobs within the Attract career site. This capability streamlines the application for the candidate and removes one of the largest barriers that candidates face when applying. If the candidate comes across the job posting on LinkedIn, they will be able to apply for the job directly in LinkedIn using LinkedIn Easy Apply.

This rich integration between Attract and LinkedIn enables LinkedIn to surface Attract-specific questions and fields to the candidate to complete within the application pages in LinkedIn.

Wide net, fast funnel

Finding the best candidates for a role generally involves searching broadly. In some sense, a company's chances of successfully finding the best person for a role is directly proportional to the number of candidates that they look at and evaluate. Our LinkedIn integration is a great first step, but we will continue to add support for popular third-party job boards. This job board support will allow you to post jobs directly to their board and eventually import candidates directly into Attract.

Casting a wide net increases your chances for success, but it could become a detriment if we don't provide the right tools to quickly narrow in on the small set of candidates that are a good fit. This rapid focus is what fast funnel is all about. We will leverage AI, features that streamline workflow, support for third-party screening tools, and Office collaboration tools to reduce the amount of time recruiters and hiring managers spend selecting, analyzing, and collaborating on candidates.

Internal mobility

In some ways, it is easier to find and hire external candidates than it is to hire internal candidates. External hiring is more expensive, involves a longer ramp-up period, and in some cases, encourages people to leave the company when internal opportunities are regularly given to external candidates.

Internal employees can be searched against job requirements, added to talent pools, and go through custom workflows that are tailored toward internal applicants.

The profile view of an internal applicant is rich and can contain data that comes from core HR systems, Office 365 Delve and Graph, and external sites like LinkedIn.

Analytics and actions

Data and action are the fuel that power the digital feedback loop and digital transformation. As we think about the problems Attract seeks to solve, there's an opportunity to leverage data and analytics to evolve our software and the recruiting processes of the hiring managers, recruiters, and candidates using our software. Here are a couple of examples:

Attract is about streamlining the talent acquisition process. If we see that the hiring pipeline has stalled, we will notify the hiring manager and provide easy actions that will move things along.

Attract seeks to improve the efficiency of hiring. We will use hire/no-hire decisions on candidates and machine learning to continuously tune and improve our highlighted candidate feature.

Onboard – Set up new hires for success

Frictionless onboard guide creation and administration

Most hiring managers have not traditionally used a dedicated onboarding tool to get their employees ramped up. For the onboarding application to be impactful, the manager must put some up-front effort into the creation of an onboarding guide. If it takes too much effort to create this guide, hiring managers will fall back to their old ways and just not use our onboarding application. We must find creative ways to enable hiring managers to create powerful, impactful guides, with the least amount of effort. To that end we are focusing on building templates, reusable content, and the ability for managers to enlist the help of others on the team in the guide creation and overall onboarding process.

Drive to completion

Creating a great onboarding guide is only useful if the new hires complete the tasks that were assigned to them. We are looking at creative ways to ensure a high percentage of completion for onboarding guides. We are creating gentle nudges that remind new hires that they have more work to do, reports that let the manager see how all their new hires are tracking with respect to completion, and gamification elements that play on people's sense of accomplishment, completion, and maybe even their competitive nature.

Analytics and actions

Data and action are the fuel that power the digital feedback loop and digital transformation. As we think about the problems Onboard seeks to solve, there's an opportunity to leverage data and analytics to drive change into our software and the onboarding processes of the customers using our software.

Our approach will entail identifying pairs of analytics with suggested actions. Analytics or actions alone don't really deliver on the promise—both are required. Here are a couple of examples:

Onboarding templates and reusable content will be available in a marketplace. Some of the templates and content will be more usable to specific disciplines and departments. Rather than presenting a flat list, we will use usage data to highlight the templates and content that are likely to be most useful to the hiring manager creating an onboarding guide.

Onboarding is a team sport. During the creation of an onboarding guide, we will use the people graph to suggest contacts who should meet with the new hire during their first few weeks and automatically schedule meetings. If the hiring manager picks someone who was not in the suggested list, we will use that information and machine learning to tune the recommendation engine.

Core HR – Extending core capabilities and deepening leave and absence

Greater data entities on Common Data Service

Integration and extension are key areas within Core HR that will enable customers and partners to meet regulatory requirements, fill the white space in their HR business processes, and drive digital transformation in their organizations. Broadening the footprint of the data available in Common Data Service allows customers and partners to continue leveraging the power of the Dynamics 365 and Common Data Service data connectors. Users can create rich canvases and model-driven applications with PowerApps, build powerful workflow automation using Microsoft Flow, as well as drive intelligent insights and analytics with Power BI—unlocking the power of the data in Dynamics 365 for Talent.

The areas where entities will be expanded include competencies, job, benefits, compensation, organization management, and tasks.

Leave and absence

Effective leave and absence management is key to not only being compliant, but also to having an engaged workforce. Enhancements in this area of Talent will allow organizations to configure leave and absence plans and policies to meet regulatory and company policies and provide additional insight into employee time off.

Each organization and region has unique business requirements related to leave and absence management. These might include policies on how employees can take time off or accrue time off. Allowing organizations to configure leave and absence to fit their unique business needs helps them stay compliant and streamlines the leave and absence management process.

What's new and planned for Dynamics 365 for Talent

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Attract

Feature	Release type	Date
Wide net, fast funnel		
Easily post your jobs to more sites using Broadbean	Public Preview	April 2019
Improve candidate engagement via career site	General Availability	July 2019
Source tracking	Public Preview	March 2019
Take administrative actions on multiple candidates with a single click	Public Preview	May 2019
Create customizable job and profile forms	Public Preview	April 2019
Create custom recruiting workflows that map to candidate origin (internal vs external)	Public Preview	April 2019
Search enhancements	Public Preview	April 2019
Provide out-of-the-box integration with Microsoft Forms Pro	Public Preview	April 2019
Track silver medalists	Public Preview	March 2019
Analytics and actions		
Use analytics for hiring process insights	Public Preview	April 2019
Internal mobility		
Organize internal candidate pipeline	Public Preview	March 2019
Better together with LinkedIn		

Feature	Release type	Date
Use LinkedIn profile to apply for a job	Public Preview	April 2019
Sourcing and Talent relationship management		
Intelligent prospect recommendations	Public Preview	March 2019
Invitations for prospective candidates	Public Preview	July 2019
Talent pool enhancements	Public Preview	May 2019
Administration and compliance enhancements		
Audit your hiring process	Public preview	May 2019
Create customized email templates and accounts for candidate communications	Public preview	June 2019
Customize hiring processes for productivity	Public Preview	June 2019

Onboard

Feature	Release type	Date
Analytics and action		
Use action-oriented dashboards to streamline your daily tasks	Public Preview	April 2019
Leverage rich analytics to get insight into your new hires and processes	Public Preview	April 2019
Drive to completion		

Feature	Release type	Date
Encourage guide completion with new hire reminder emails	Public Preview	March 2019
Get your new hire integrated quickly by automatically scheduling 1:1s with relevant team members	Public Preview	May 2019
Quickly view a list of all your onboarding guides	Public Preview	April 2019
Solicit new hires for feedback on their onboarding guides	Public Preview	March 2019
Frictionless guide creation and administration		
Streamline guide administration by assigning activities to roles	General Availability	April 2019
Share best practices across your organization using Onboard Teams	General Availability	April 2019
Accelerate guide creation by importing an existing template into yours	General Availability	April 2019
Jumpstart your onboard journey through a quick zero-to-guide experience	Public Preview	April 2019

Core HR

Feature	Release type	Date
Expand Core HR entities in Common Data Service	General Availability	July 2019
Leave and absence rules and policies	General Availability	July 2019
US compliance reporting	General Availability	July 2019

Feature	Release type	Date
Advanced compensation security	General Availability	April 2019

Easily post your jobs to more sites using Broadbean

Hiring teams want to get their open positions in front of as many qualified candidates as possible. Job sites are one of the key ways to reach a lot of potential qualified candidates, at scale. Hiring teams also want to spend advertising dollars on channels that deliver the best outcomes. Integration with external job sites for job postings helps organizations achieve this goal. By publishing jobs through these sites, organizations improve efficiency and save time by multi-posting jobs to a network of thousands of job sites with a single click. By automating this process, recruiters can focus their time on screening candidates and identifying the right fit, instead of the mechanics of job posting.

To achieve this result, Attract is building integration with Broadbean, a global, market-leading job-posting system that enables organizations to instantly distribute job postings to thousands of job boards and social media channels.

This feature enables recruiters to:

- Post new jobs to one or more external job sites.
- Edit jobs posts and repost to one or more external job sites.
- Remove posts from one or more external job sites.

Improve candidate engagement via career site

The average tenure of employees with organizations worldwide has been steadily reducing across industries worldwide. In this environment, to win the competition for talent, organizations must start continuously engaging with potential candidates as they might not be ready to apply the first time they discover your organization. Having a compelling career site that attracts the right candidates and helps them stay engaged is one significant way to achieve the above goal. By using the Attract career site, organizations can provide a world-class experience for candidates, without writing any code.

Investments in this area would allow candidates to:

- Find open jobs posted to the Attract career site via direct search from popular search engines.
- Save job search and filter criteria and create email alerts to get notified when new jobs matching the criteria are posted.

- View recommended jobs based on profile and application history.
- View a list of similar jobs as they are viewing a particular job.
- Tag any open job as a favorite as they are browsing through jobs and revisit their favorites to proceed further.

Track the source of candidate profiles and applications

As job markets become increasingly competitive, organizations need to be nimble and efficient in the way they source talent. Organizations need to be able to continuously monitor the effectiveness of various sourcing channels so that they can pivot and correct course as needed, investing monetary and human resources in channels that have the highest returns. Having a mechanism to keep track of the sources for candidate profiles and applications is a key capability for doing so.

This feature enables recruiters and admins to:

- View the source of a candidate profile, tracing back to the origin of the candidate in Attract. How did the organization first learn about this candidate?
- View the source of a specific application. Where did the applicant find out about this job and decide to apply?
- Automatically track source information from candidate profiles and applications from sources such as the Attract career site, social media posts, and LinkedIn.
- Add and edit source information for a candidate's profile or that of a specific application.

Take administrative actions on multiple candidates with a single click

Many industries have the need to process multiple candidates and applicants at one time. Whether this is moving multiple people through the hiring stages or completing their journey in the hiring process, recruiters need to work quickly and efficiently.

This feature enables recruiters to:

- Select multiple individuals and advance their stage or disposition them.
- Select the appropriate disposition reason to apply to a group.
- Optionally select a preformatted email template.
- Have insight into the last hiring stage of dispositioned applicants.

Create customizable job and profile forms

Businesses have complex hiring needs and want to capture various kinds of data for positions and the candidates who apply for them. The ability to add custom fields empowers recruiters and hiring managers to define what kind of additional data needs to be tracked for any given job. Be it a certification requirement or a required start date, you can use custom fields to embellish the base entities in Attract.

This feature allows:

- Recruiters and hiring managers to capture additional data about a job or applicants by adding additional fields.
- Admins to predefine a library of custom fields for their organization to use to enforce standard naming and format conventions.

Create custom recruiting workflows that map to candidate origin (internal vs. external)

The recruiting process can vary depending on whether the applicants are internal or external. Hiring managers and recruiters often have access to additional information regarding internal employees and therefore can skip steps in the process. Alternatively, external candidates may require additional screening and require more steps in the process. Recruiters need a low-maintenance hiring process that is flexible and provides a seamless flow for applicants whether they are internal or external.

This feature allows recruiters to:

- Select whether a hiring activity applies to an internal or external candidate.
- Select whether to provide additional content such as a video, web form, or Microsoft Form to an internal or external candidate.
- Completely track activities.

Search enhancements

A powerful search is essential to any recruiting tool. We have made improvements to the search experience in talent pools that will make it more intuitive and efficient.

These enhancements will enable the hiring team to:

- Search through candidate documents and attachments in addition to their profiles.
- See match highlights in the search results based on the search query.

Provide out-of-the-box integration with Microsoft Forms Pro

Attract will support the use of Microsoft Forms Pro out of the box to provide organizations with a straightforward low-friction mechanism to set up and administer candidate assessments. View Microsoft Forms Pro release notes for more details about Microsoft Forms Pro capabilities.

With this capability:

- Recruiters and hiring managers can set up Microsoft Forms Pro-based candidate assessments against job templates and applications.
- Recruiters and hiring managers can share links to Microsoft Forms Pro-based candidate assessments with candidates via Attract.
- Candidates can complete the Microsoft Forms Pro-based candidate assessment right from their application status page.
- Recruiters and hiring managers can view the status of Microsoft Forms Pro-based candidate assessments and the actual results in context of the application in Attract.

Designate silver medalists to track high-value candidates

Organizations spend considerable resources as well as time in assessing and evaluating candidates. Several candidates are considered for a single position yet only one of them is eventually converted into an employee. Other candidates who perform well in their evaluation and who might be a perfect fit for a similar or identical position are often lost because there is no way to earmark them. These candidates, termed silver medalists, are high value and should be on top of the recruiter's list the next time a similar position opens. Hiring managers too are interested in tracking such candidates for consideration in the future or in case the candidate who received an offer declines. Being able to track such assets can help save on resources and reduce time to fill.

With this feature, recruiters and hiring managers will be able to:

- Keep track of candidates who are a great fit for a role and did well in their evaluations for consideration in the future by designating them silver medalists for a particular job.
- Easily add high-value or high-potential candidates to talent pools and identify/search for them.

Intelligent prospect recommendations

Every time a new job is created, the recruiter starts sourcing by looking through past applicants for similar positions as well as scouting for new talent in order to create a short list of prospects. This is a time-intensive task and, often, past applicants for similar positions are not reconsidered.

Attract can make this process easier by using machine learning algorithms that scour your global talent pool and recommend candidates who would be a good fit for the job the recruiter just finished creating. The global talent pool is comprised of all past applicants as well as any candidates sourced by recruiters for your organization.

The recommendations are based on the skills and experience required for the job as listed in the job description, cross-referenced with those highlighted by candidates in their resumes/profiles. This capability drastically reduces the time spent in looking through profiles of past candidates, and can help recruiters reduce the time to a successful hire.

This feature will allow recruiters to:

- View recommendations based on an intelligent matching of the job details and responsibilities with candidate profiles from the global talent pool. These recommended candidates can easily be added to the list of prospects for the job.
- See a recommended candidate's skills and education information at a glance.
- Provide feedback on the recommendations so that our intelligent algorithms can be improved over time to surface more tailored recommendations for your organization.

Use analytics for hiring process insights

Hiring teams want to understand the status of their pipeline and what levers to pull to improve the hiring process. Analytic reports aggregate data and raise key metrics, highlighting potential areas for process improvement. The integrated analytics experience of Attract brings transactional data and key hiring metrics together to give hiring teams the insights they need to hire the best talent, faster.

This feature will provide:

- A dedicated Analytics Hub to help your pipeline aggregate across all jobs.
- Job Analytics to take a snapshot of the hiring process for a job.
- Key process metrics such as yield rate, offer accept rate, and time to hire.
- Interactive reports with cross-filtering for insights into how key metrics relate.

Organize internal candidate pipeline

Internal mobility is an essential part of retaining employees by empowering them to achieve their career goals while aligning with the goals of your organization. This capability aims to simplify the search and application experience for internal candidates, helps hiring teams organize themselves when internal candidates express interest in their open jobs, and overall, streamlines the movement of talent internally within the organization. Some of the features to enable internal mobility are:

- Enable interview schedulers to view internal candidate's calendars and get schedule recommendations for faster interview scheduling.
- Unique job posting view for internal candidates and enabling internal candidates to reach out to the hiring team.
- Enable hiring team members to organize all internal candidates who have contacted the hiring team as prospects.

Use LinkedIn profile to apply for a job

Providing relevant information about themselves is one of the largest hurdles that candidates must go through when applying for jobs. Completing multiple forms is tedious and might lead to qualified candidates dropping off before application submission. Using Apply with LinkedIn, candidates will now be able to easily use their full LinkedIn profile to auto-fill applications for jobs within the Attract career site. This capability streamlines the application for the candidate and removes one of the largest barriers that candidates face when applying. Additionally, for the hiring organization, the LinkedIn Apply Starters feature helps to keep track of candidates that started their application with LinkedIn data but did not submit. This allows recruiters to add these candidates to talent pools and nurture them for opportunities across the organization.

This feature enables candidates to:

- Apply to a job posting in the Attract career site using LinkedIn profile data.
- Add/modify the data synced from a LinkedIn profile before submitting the application.

This feature enables recruiters to:

- View and engage with candidates who started to apply to a job posting in the Attract career site but did not submit the application.

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- See a recommended candidate's skills and education information at a glance.
- Provide feedback on the recommendations so that our intelligent algorithms can be improved over time to surface more tailored recommendations for your organization.

Invitations for prospective candidates

Getting a carefully identified prospect to apply for a position entails making the barrier to creating an application as low as possible. Often, an email invitation is the best medium to persuade a prospect to apply, as it can provide them a shortcut to the application page for a particular job. Usually, recruiters have to craft and send such invitations for every prospect using their email client, making for a tedious and repetitive workflow. Attract can help make this process of sending invitations to prospects quick and easy, right from the list of prospects for a job.

With this feature, recruiters can:

- Extend an email invitation to a prospect with a direct link to the job page. Any candidate who applies using the link will automatically be promoted to the applicants list.
- Edit the invitation email before sending it to add in their personal touch.
- Use admin-defined templates for invitation emails.

Enhancements for talent pools

Attract will support additional capabilities for talent pools.

These enhancements will enable recruiters and hiring managers to:

- Add the results from a candidate search to a talent pool.
- Add candidates to talent pools from a job's applicants list.
- Add candidates to a particular job from a talent pool.

All of these interactions will also be supported over multiple selections.

Audit your hiring process

Organizations need to understand each detail of their hiring process from beginning to end. They should know who created, posted, or edited job details and processes, the different stages that a candidate went through, and the notes and feedback from the entire hiring team. From a compliance perspective, businesses need to go through audits to make sure they have the complete history on all jobs and candidates. Some of the auditing capabilities could include:

- Audit reports about a candidate's history, in context of a job or their application in general context of the organization they applied to.
- Audit reports for all activities related to a job.

Create customized email templates and accounts for candidate communications

Recruiting communications are a prospect's first interaction with an organization. Being able to visually represent and instill company culture in emails is an essential part of making a great first impression. Attract supports the customization of all system- and user-sent emails, allowing an organization to create compelling narratives that best represent their values and brand.

With this capability:

- Admins can curate a library of email templates and standardize the look and feel of all recruiting communications.
- Admins can control whether hiring managers or recruiters can modify the text content of user-sent emails.
- Admins can configure AAD service accounts, allowing them to use custom mailboxes for their organization's recruiting team.

Customizable hiring processes for productivity

Currently, recruiters need to manually review every activity in an application before being able to advance the stage for the candidate. With multiple activities and stages across multiple applications, recruiters can spend a large amount of time managing the application process. Furthermore, the current dashboard in Attract lists all activities in a stage as being open until the stage is advanced.

The ability to have items marked complete provides clarity in the hiring process. Recruiters can spend more time focusing on candidates and less time inquiring about the status of tasks. Furthermore, the recruiter's dashboard will more accurately reflect what needs to be done, and the recruiter can easily see which candidates are ready to advance to the next stage.

This feature includes the following:

- Allows activities to be marked as completed
- Updates the dashboard with an indication of the completeness of activities

Use action-oriented dashboards to streamline your daily tasks

A hiring manager wants to understand what tasks and individuals need more focus than others. Our new dashboard uses onboarding data to surface relevant insights and allows managers to act on those insights.

Dashboards will consist of signals such as, but not limited to:

- Managers that have not sent guides to their existing new hires
- Managers that have not sent guides to their existing new hires
- New hires that have not opened their guide
- New hires that have not completed their guides
- New hires that have late activities in their guides

Leverage rich analytics to get insight into your new hires and processes

Organizations and managers have an increasing desire to be data-driven. Once organizations make the leap to digitally transforming their onboarding, the next step is to understand the impact of such an initiative. Are new hires more engaged? Are they more likely to complete their required training? Are they building out their networks? We will provide these reporting capabilities both within the product and through self-service reporting using Power BI.

Key features include:

- Team-based analytics for departmental admins.
- Individual manager effectiveness analytics.
- Power BI content pack.

Encourage guide completion with new hire reminder emails

Onboarding can be hard. It can also be very busy. It's easy to get lost in the swarm of emails, appointments, and documents that need to be addressed in the first few weeks. With Onboard, we want to help you succeed by making sure that none of the important activities slip through the cracks. We're addressing this by sending out reminder emails and notifications to new hires at important junctures in their onboarding journey. We will also allow hiring managers to customize the frequency and timing of these emails.

Key features include:

- Activity completion reminder emails relative to due date.
- Guide opening reminder emails.

Get your new hire integrated quickly by automatically scheduling 1:1s with relevant team members

Starting a new job can be overwhelming. In order for the new hire to feel prepared to succeed, they need to feel engaged with their team. This is primarily achieved by introductory meetings that a new hire participates in during their first few weeks. Although it is essential that everyone have a 1:1 with their manager, there can be anywhere from two to 20 other people that need to be met. We want to help automate this process by leveraging the power of the Office 365 productivity suite.

Key features include:

- Hiring managers/new hires can set up appointments in Onboard.
- Hiring managers/new hires can export calendar invites as iCal.

Quickly view a list of all your onboarding guides

Employee onboarding begins as soon as an offer is accepted. But it can last until weeks and even months after a new hire starts the job. In addition, the set of processes performed during onboarding can also be applied to transfer and offboarding scenarios. This creates a situation where a new hire can have multiple onboarding guides during their tenure at the company. Also, each guide might not be accessed weeks and months into a role. We're addressing this by allowing new hires to sign using the app URL and access all the guides that have been assigned to them.

Key features include:

- New hires can sign in directly using our app URL.
- New hires can look at all the guides that have been assigned to them.

Solicit new hires for feedback on their onboarding guides

Managers want to make sure their onboarding templates stays relevant and useful. However, things change with time. Documentation becomes outdated, trainings are not as useful, or adopted technologies change. New hires want to be able to communicate this back to their managers in a simple and intuitive fashion. We will enable this feedback by allowing new hires to rate the content on their guide and relay that back to the hiring manager. Future iterations of guides can incorporate this feedback to improve the new hire experience.

Key features include:

- New hires can upvote/downvote activities in their guide.
- New hires can upvote/downvote resources in their guide.
- Managers can see activity rankings within a guide/template.

Streamline guide administration by assigning activities to roles

In any onboarding guide, there exist activities that are meant to be completed *for* a new hire, but not *by* the new hire. This is why we introduced a notion of an assignee. Depending on the activity, it might need to be completed by the onboarding buddy, IT admin, or even the hiring manager. To build a repeatable motion, managers want to be able to assign these activities to those specific roles but might not know in advance who that might be for a given new hire. The assignee placeholders feature will allow users to create a template with activities assigned to specific roles that can then be filled at the time of guide creation.

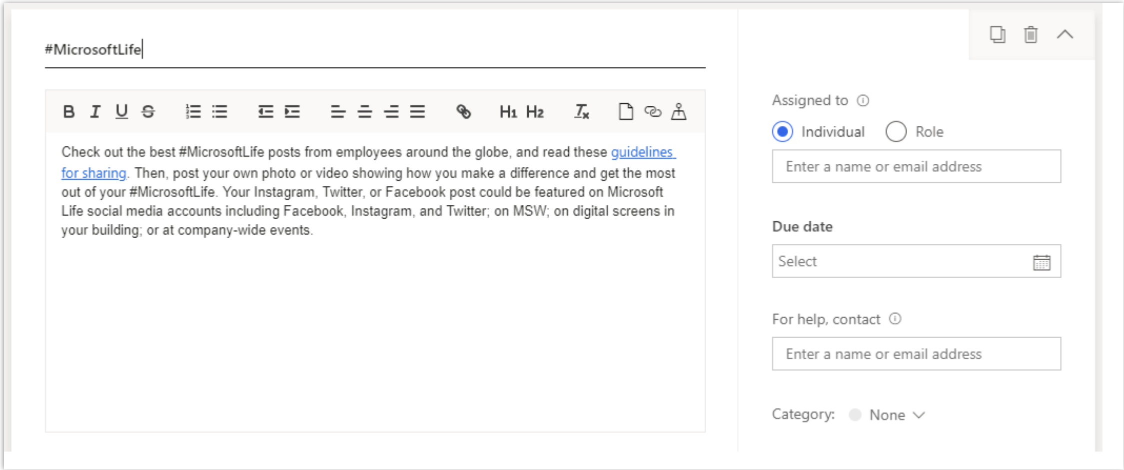
Roles can be created in an ad-hoc manner. Think of them as placeholders that can later be assigned to an individual. Roles live within the context of a template or guide.

Creating a new role

Navigate into an activity within a template. Under the assignee field, you have two options:

- Assigning to an individual: Activity is assigned to a specific user.
- Assigning to a role: Activity is assigned to a placeholder that will later be assigned to a specific user.

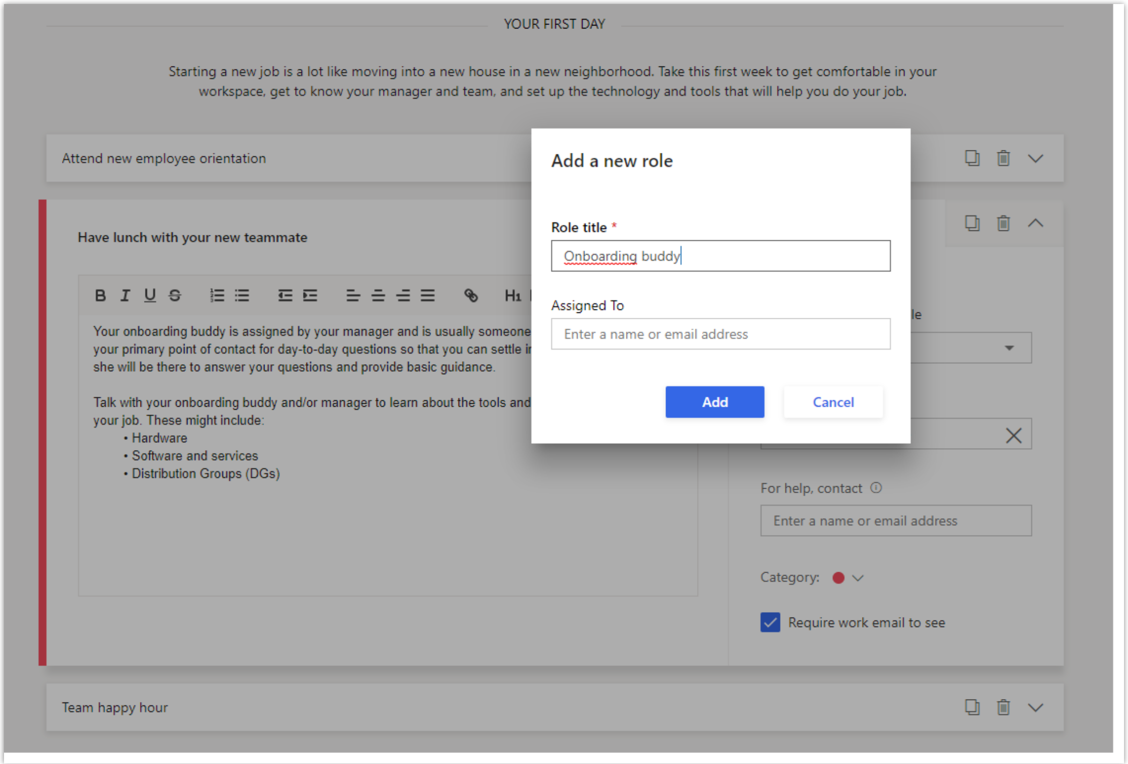
Selecting **Role** exposes a new drop-down field. The drop-down field will expose all of your existing roles within a template/guide. If you don't have any existing roles, you can choose the **Add new** option to create a new role.



Add new assignee drop-down field

To create a new role, do the following:

- Assign a role title (Required).
- Assign the role to an individual (Optional).



Creating an assignee role

Assigning an existing role

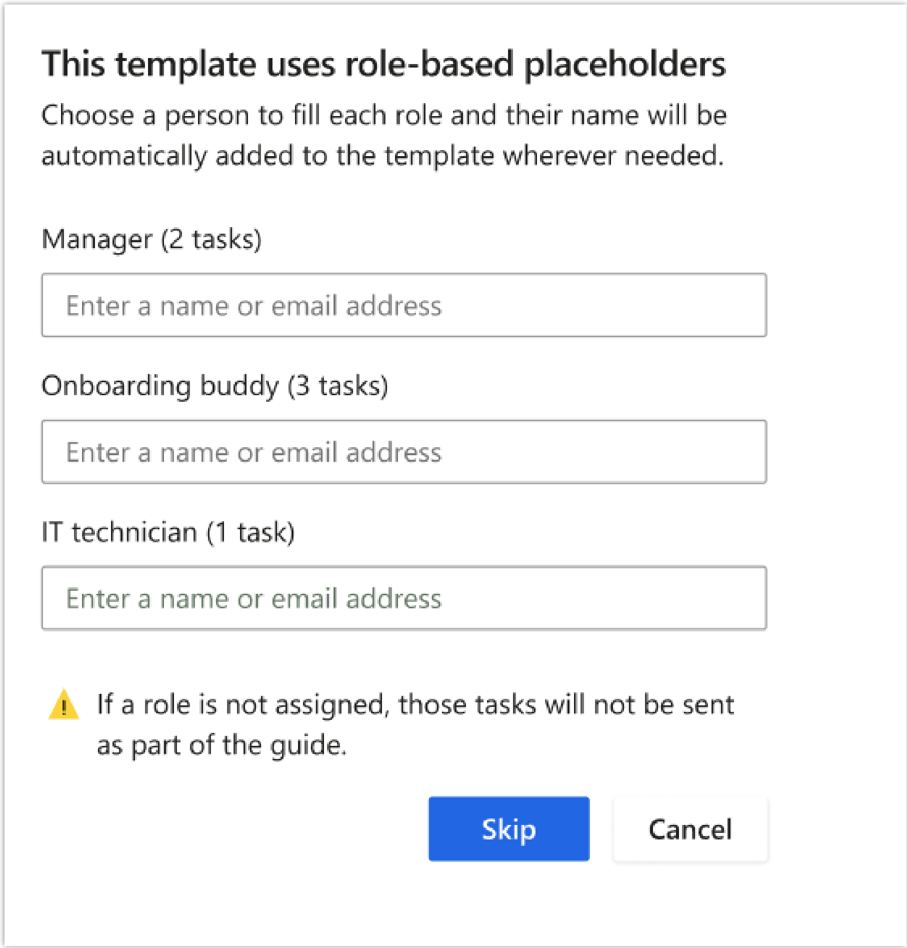
Once you have a role created, the next step is to assign the role to an individual. By doing so, all tasks that were assigned to the role will also be assigned to the individual mentioned above.

Creating a guide

As part of the guide creation process, you'll have the opportunity to assign the roles to individuals. You arrive on this step once a new hire and start date have been selected.

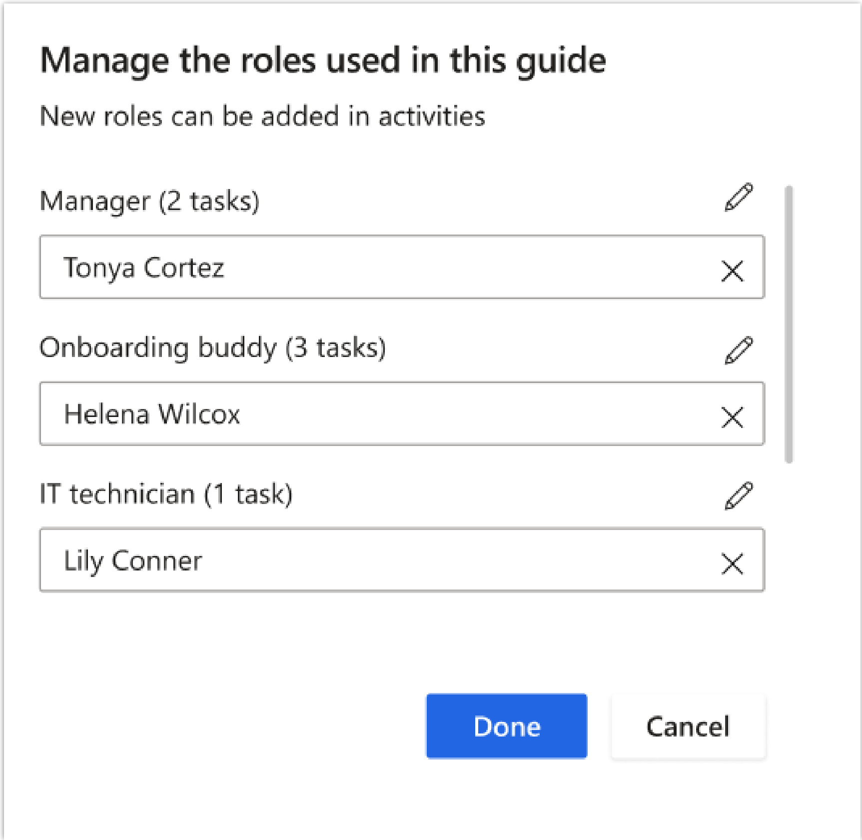
Manage these roles

Another way to assign roles to individuals is using the **Manage these roles** option.



Manage assignee roles

WARNING Activities assigned to roles that are unassigned will not be sent.



Manage assignee roles completed

Share best practices across your organization using Onboard Teams

It takes a village to onboard a new employee. Content is shared across multiple levels, departments, or geographies. Department leaders want the ability for seamless content sharing within their department or team. They also want visibility into onboarding progress and manager engagement. However, the boundaries of a department might not always be documented in an easily consumable form. With Onboard Teams, department leaders can define their team or department members to streamline collaboration, content sharing, and reporting.

Memberships

The following can be members of a team:

- Team owner
- Team member

Team owners are able to edit the team name and delete the team. All other rights are shared across both owners and members.

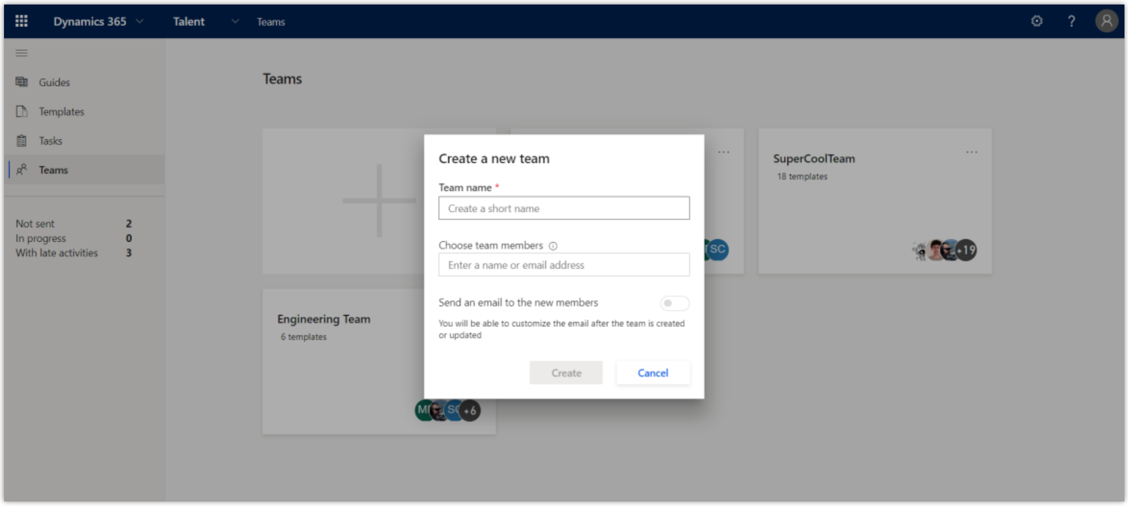
Creating a team

To create a team, you need to do the following:

1. Add a team name.
2. Add members to your team.

You can decide if you'd like to send out an email invitation to the members being added to your team. The email invitation will contain a link that redirects the user to the team. This email can also be customized before it's sent.

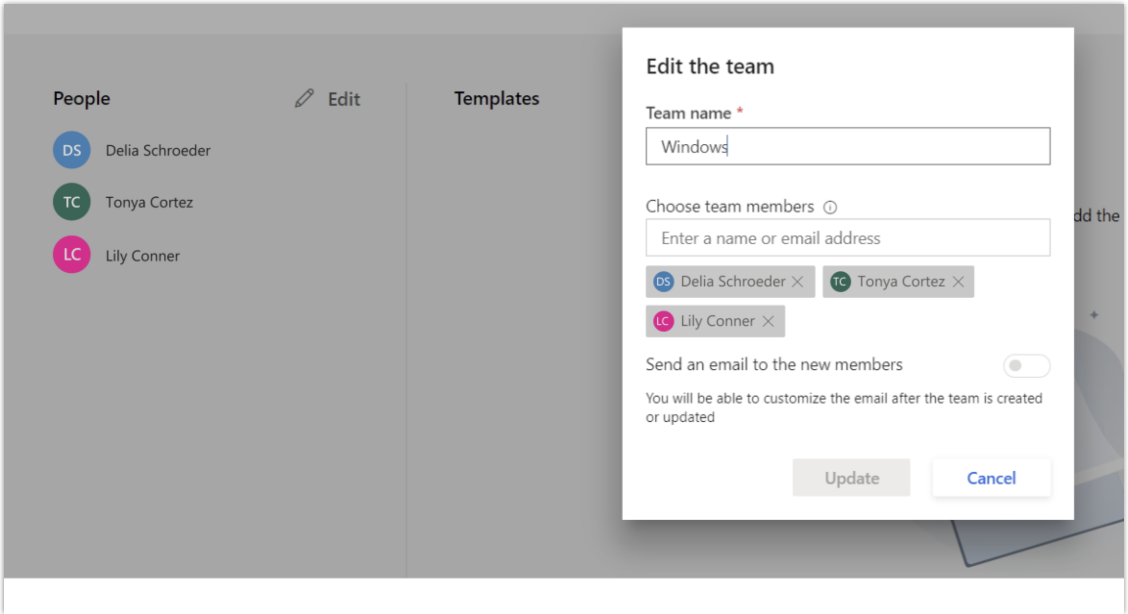
Once a team has been created, you can add or remove members from the team. All the existing members in the team are visible in the **People** section in the left pane.



Creating a team

Adding a member to a team

To add a team member, select **Edit** in the **People** section of the page. In the dialog that pops up, highlight the text box under the **Choose team members** label. Here, you can add as many new members to the team as you'd like.

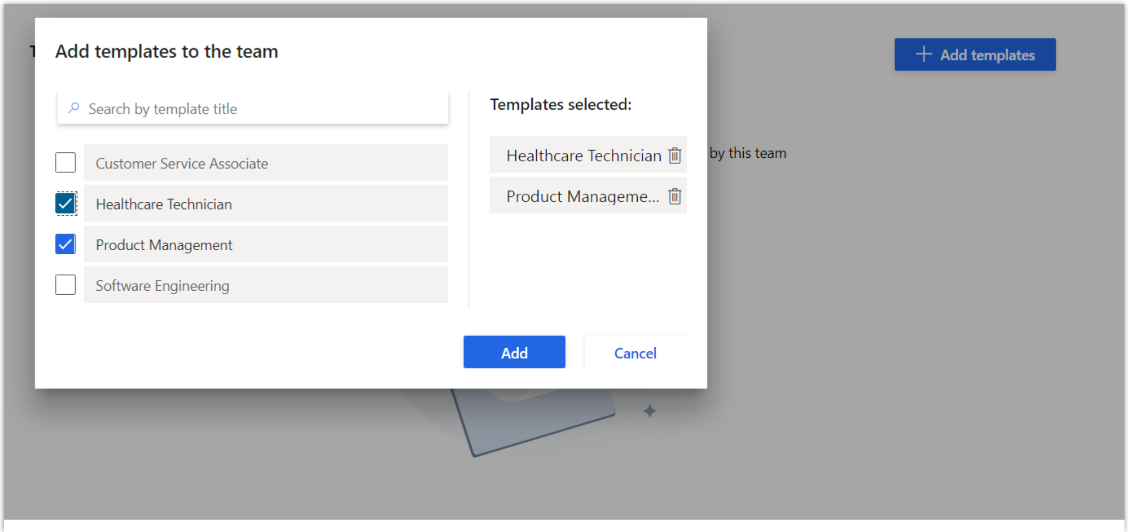


Adding team members

Sharing a template with a team

Once you've defined what your team looks like, you can share your templates with all the newly added team members. Onboard allows you the ability to share multiple templates with all the members of the team with one click.

To add templates to the team, select **Add templates** on the right side of the page. Select all the templates you'd like to share. Once you're done, select **Add** and the templates will be shared.



Adding templates to the team

Frequently asked questions

Can I share my template with only a subset of the team members?

Sharing a template with a team will share with *all* members of the team. You can share templates individually with anyone you'd like.

Do I have to navigate into a team to access the templates?

No, the templates will be visible in the templates dashboard as well. Navigate to the **Templates** tab in the left navigation pane to access your templates dashboard.

Accelerate guide creation by importing an existing template into yours

Hiring managers can import content from other guides or templates to ensure that the latest content is always reflected. This helps their hires get started quickly and makes it easier to include the latest content from their manager or department leader.

- Managers can import activities from another template into their own.
- All changes on activities in imported template can be pushed downstream.
- Managers can choose to detach relationship on activities.

Jumpstart your onboard journey through a quick zero-to-guide experience

Creating something out of a blank slate is very challenging. Our goal is to ensure that a first-time user never has to land on a blank page. By leveraging the corpus of knowledge built in our template gallery, we will navigate a new user into the most relevant template and use that as a starting point for their journey.

- All new users will land on a guided first-run experience.
- The experience will land the user on the most relevant template to their role.
- The experience will end with the user having a personalized guide.

Expand data entities in Common Data Service

Customers need efficient means to drive the digital transformation of their HR and Talent experiences to attract and retain critical talent. Having a single and coherent view of people is one of the critical foundations to achieve this. Most Core HR entities are already available in Common Data Service. Other areas will now also be made available to drive this digital transformation.

Customer and partners have more data available for the unmatched palette of tools to extend, customize, and integrate provided by Common Data Service. This includes tools such as Power BI, PowerApps, and Microsoft Flow.

The following areas will be made available or expanded in Common Data Service

- Employee competencies
- Tasks
- Job competencies
- Education

Maximize employee productivity through leave and absence management

Updating time off

Employee time-off requests might need to be updated or canceled after they've been approved through workflow. In many cases, the HR person or the employee's manager makes these updates. Talent will provide managers and HR the ability to update or cancel an employee's time-off request after it’s been approved. This helps to streamline the process and keep time-off data up to date.

Book future time off

In employee self-service, employees now see both their current time-off balances and what their time-off balances will be in the future. They can also submit time-off requests for the next leave period. This helps employees meet company policy. It also helps them understand how much time off they have in the next leave period and how much they will or won't carry over.

Include reason codes with leave requests

Organizations might need additional information related to time-off requests. They might also require reason codes for specific leave types when employees submit time off. This could be due to a regulatory requirement in their country or a company policy. To provide this information, employees can include a reason code on their time-off requests.

Additional reporting for leave and absence

Time off is a benefit many organizations provide to employees. Tracking employee time off and understanding how time off is being calculated is essential. This helps organizations answer employee questions and ensures accurate time-off awards are given to employees.

Leave suspension

Organizations might have policies around what happens to leave when employees aren't at work for long periods of time. For some, this might mean suspending leave accruals during time away. HR professionals will be able to create rules around suspending leave when employees are on unpaid leave.

US compliance reporting

Meeting government or industry compliance requirements can be labor intensive and error prone. Time spent by HR professionals manually collecting data, inputting information, and working through inefficient processes could instead be spent on growing the company's greatest asset, its people. This feature will allow HR to collect and print necessary information to complete OSHA 300 and OSHA 301 reports.

Advanced compensation security

In many organizations, compensation and benefits managers might only have access to certain compensation records. These could be for executives or regional employees. With this change, HR can manage and maintain the compensation plans for different employee groups in the organization. You can assign security roles to fixed and variable plans that determine access to the plans and the employee data related to the plans, such as salary or bonus records. Only the roles granted with access can process compensation for these employees.

Dynamics 365 for Retail

Overview of Dynamics 365 for Retail April '19 release

Today's consumers demand great and integrated shopping experiences across channels. Traditional channels are getting disrupted while new ones are emerging constantly. Retailers need a modern, flexible cloud solution that will help them be nimble, compete better, and build lasting relationships with their shoppers.

Dynamics 365 for Retail provides an end-to-end integrated solution for retailers that includes back office processes (merchandising, inventory, and so on) as well as front office channels (in-store, call center). In addition, Dynamics 365 for Retail also provides an omni-channel, fully extensible "headless" commerce engine that is leveraged by all channels including partner-led e-commerce channels.

The investments will span the following core pillars.

Unified commerce

- Customer-centric experiences that honor and differentiate a retailer's brand.
- Enhanced in-store experiences building on current solution capabilities.
- Omni-channel capabilities including payments, loyalty, and more to enhance experiences across channels.

Core capabilities and fundamentals

- Retail Cloud Scale Unit: Multiple scale units spanning multiple Azure regions with active-active support to deliver scalability, reduced latency, and downtime during servicing and phased rollouts.
- Extensibility and improved developer experiences: Enhanced extensibility across all channels and components.
- Broadcast and push updates for retail cloud-deployed components.
- Regulatory and compliance-related enhancements to provide service in all supported countries and regions.

Intelligence and insights

- Distributed Order Management enhancements that provide intelligent order orchestration capabilities to reduce costs for retailers while improving speed of delivery for shoppers.

What's new and planned for Dynamics 365 for Retail

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Feature	Release type	Date
List payment instruments in e-commerce integration	General Availability	April 2019
Retail cloud scale unit – multi-region	General Availability	April 2019
Retail broadcast updates	General Availability	April 2019
Retail extension platform and developer experience enhancements	General Availability	April 2019
Extension of fiscal printer integration sample for Italy	General Availability	April 2019
Fiscal service integration sample for Austria	General Availability	April 2019
Fiscal printer integration sample for Poland	General Availability	April 2019
Fiscal service integration sample for Czech Republic	General Availability	May 2019
Omni-channel auto-charges	General Availability	April 2019

Feature	Release type	Date
Product discoverability enhancements	Public Preview	September 2019

Product discoverability enhancements

Business value

All retailers consider product discovery as a primary tool for customer interaction across all retail channels.

Retail customers are used to web search engines, sophisticated e-commerce websites, and social apps that offer great relevance, search suggestions as they type, faceted navigation, highlighting, and more, all with near-instantaneous response times. If they don't find the right product quickly, they don't hesitate to move to the next best e-commerce store, because it is that easy.

This investment for enhancing product discoverability in Dynamics 365 for Retail will help retailers continue to grow their share of consumer retention and conversion rates across all channels.

Feature description

With this investment, we will be able to leverage the power of Azure Search across all of our existing end-user-facing clients and provide a consistent experience across all channels.

Browse and search

Search relevance and performance is key to our omni-channel experience as product discovery relies primarily on search for information retrieval and content navigation. An effective and efficient search helps increase conversion.

Refiners and faceted navigation

Faceted navigation helps users browse for content more easily by filtering on refiners that are tied to terms in a term set. By using faceted navigation, you can configure different refiners for different terms in a term set without having to create additional pages.

List payment instruments in e-commerce integration

Business value

It is common in e-commerce scenarios to support a customer’s ability to save a payment instrument for subsequent transactions and to later use that payment instrument when creating orders. This feature adds the ability for the merchant to include customer context in authorization requests that can be used to map that customer to payment instruments previously used with the same payment processor.

Feature description

The payment experience for e-commerce scenarios in Dynamics 365 for Retail or Finance and Operations is driven by the "Payment Accept Page" (which is a URL to an external payment flow) or "Payment Accept Content" (which is HTML content for an external payment flow). The URL or HTML content is generated by the payment gateway/processor on the fly based on a new payment session and set of parameters that are sent to the payment connector.

When this feature is turned on within Retail Shared Parameters, authenticated customers who are creating an order in an e-commerce storefront will be given the option to save their card for the next visit. When a customer opts to save a card during the checkout process, that card will be presented as a payment option the next time the customer visits that web storefront. Customers must opt in to save cards. Customers using guest checkout will not be able to save cards.

With this feature turned on, the customer context is passed to the payment gateway along with the request for the card payments page. If the processor has the ability to return saved customer cards, and is able to map the customer to previously saved payments, those payments will be selectable as part of checkout.

Retail cloud scale unit – multi-region

Retail organizations with channel operations across wide, geographically distributed locations find themselves unable to provide low latency, highly responsive user experiences for their employees in locations farther away from the primary cloud region for their environment.

To mitigate high network latency in such cases, IT administrators today typically deploy the environment in a hybrid topology, with some components installed on-premises (in a physical retail store) or in a regional private data center. This, however, imposes additional capex and operational burdens on these organizations.

Multi-region support for retail alleviates this pain and enables administrators to leverage Microsoft's global network of cloud data centers to serve each of their stores from cloud regions within much closer proximity, and thereby provide improved latency and user-perceived responsiveness.

Business value

This feature allows for reduced latency for point of sale (POS) operations in a retail organization operating across geographically distributed locations. By serving requests from cloud regions closest to the retail channel, latency and performance at point of sale can be considerably better than otherwise, and prevent long checkout lines and purchase abandonment during peak hours and seasons.

Feature description

Retail IT administrators can serve channels from multiple different cloud regions and provide improved network latency and overall faster response times for their point of sale operations in the store. This allows retail organizations to operate in a cloud-first model and alleviates the need for local deployment of in-store components (such as RSSU and POS offline) to experience low improved latency.

IT administrators can configure one or more channels to be served from a specific cloud region. IT administrators still retain control on data residency and can control which regions their data can be served from.

Retail broadcast updates

Seamless and automatic updates are a key element of any software as a service (SaaS) solution. In our evolution from a legacy on-premises solution to a modern cloud-operated SaaS solution, we've made considerable strides, including progressive lockdown (with regard to invasive customizations) of all key Retail components, including Commerce Runtime (CRT), Channel Database, Point of Sale, and at the same time invested considerably in developing specific extension points (based on direct feedback to unblock each of our customer implementations). We are now at a point where Microsoft updates to a customer environment can be applied with no need for code merge with a customer's customization. Customers, however, are still expected to explicitly initiate update deployment. This feature takes things to the next level and automatically applies the updates in customer environments.

Business value

Keeping retailers up to date has benefits for all stakeholders. Retailers benefit from the latest improvements from Microsoft, across the fundamentals (availability, reliability, performance, and security) as well as functional innovations in the product. They are much less likely to be affected by issues that have previously been discovered and fixed in other retailers' environments and thereby avoid preventable disruptions to their business.

Feature description

This feature will auto-update cloud-hosted Retail components. Updates will be rolled out in a staged fashion across various exposure rings and allow retailers to validate the changes in preproduction environments before these get rolled out to their production environments. Retailers will have 30 days for regression testing and the ability to delay updates in production by up to 90 days, in case of any regressions or other impacts discovered during testing in the preproduction environment.

Retail extension platform and developer experience enhancement

We are making major enhancements in our Retail extensibility framework to simplify the customization, packaging, and deployment experience by introducing new features like Order attributes and more extension points (APIs, triggers, and overridable handlers).

Business value

The new framework and extension point will reduce the effort required to customize and upgrade to the new version easily.

Development enhancements

We added many new extension points to support different extension scenarios. Developers can now extend the user interface with custom controls, app bar buttons, and custom columns, or build custom views. Many new overridable requests and triggers have been added in the POS to support different extension scenarios. We added support for custom comment in cart and journal view, and more dialog and POS controls to simplify the POS UI extensions. Also, the POS screen layout designer has been enhanced to support custom columns on the deliverable tab, and custom controls and custom fields in the totals panel.

For the full list of new extension points, see the following topics:

POS APIs

POS Views

POS Triggers

CRT Services

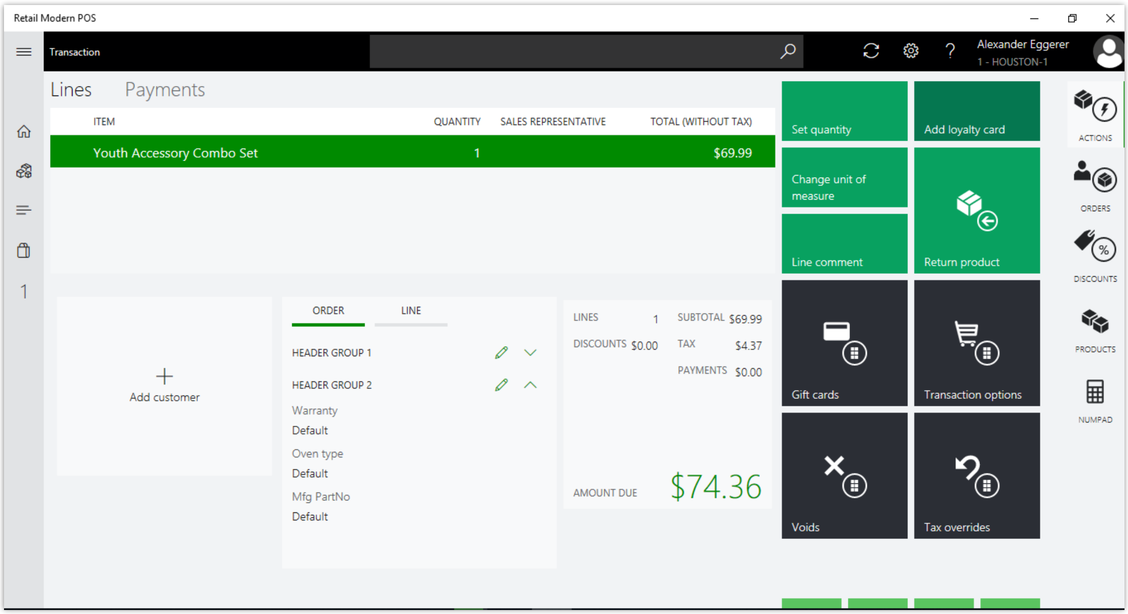
POS Custom column

POS Custom field

Order attributes

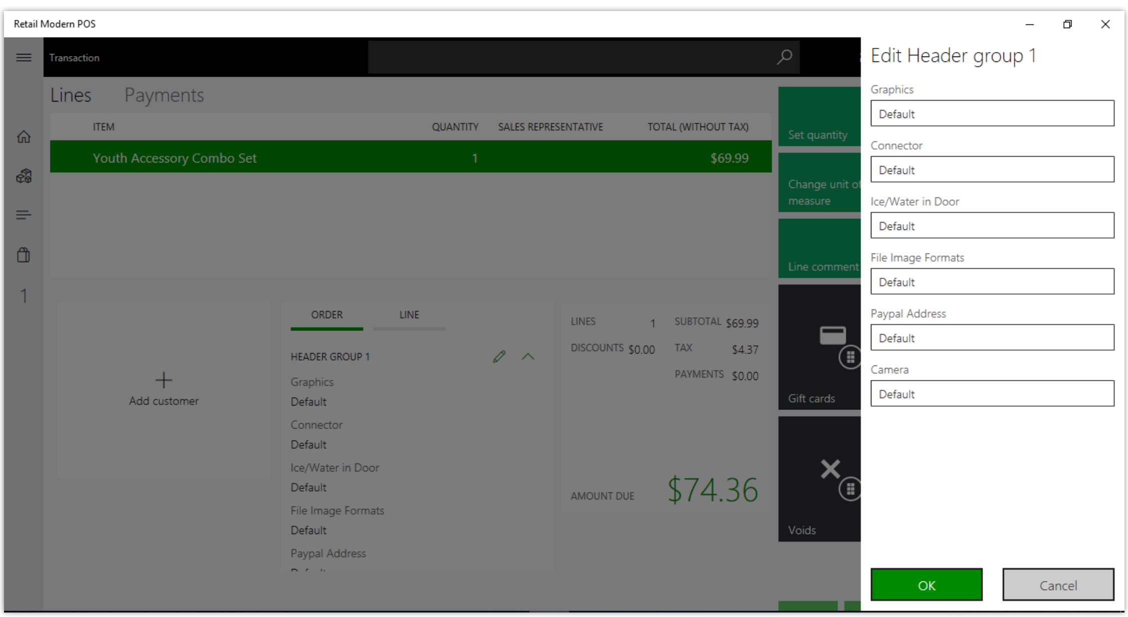
We are enhancing the order attribute framework to show and update the attribute values for the cash-and-carry (C&C) transaction and customer order directly from the POS. With this new feature, retailers can configure the attribute control layout position in the Retail headquarters screen layout designer and access it in the POS to set the attribute values for both C&C transaction and customer order header and lines without any code.

Display attribute in POS



New attribute control in POS transaction view

Edit attribute in POS



Dialog control to edit the attribute value in POS

Extension of fiscal printer integration sample for Italy

The fiscal printer integration sample for Italy is extended to support customer order scenarios, issuing and refilling gift cards, Italy-specific representation of discounts, as well as some advanced error handling scenarios (such as printing a receipt for a previously completed transaction that was not previously registered in the fiscal printer). In addition, the sample now supports Electronic Transmission of daily revenues (Registratore Telematico).

Fiscal service integration sample for Austria

Microsoft Dynamics 365 for Retail now contains a sample of the integration of POS with fiscal services for Austria. The integration sample supports one of the popular fiscal services available on the Austrian market and enables registration of sales in various cash-and-carry and customer order sales scenarios in stores in Austria. It also provides options for error handling in basic scenarios (such as when retry is possible) as well as more advanced scenarios, such as registering a previously completed transaction that was not previously registered in the fiscal service. The sample is a part of the Retail SDK and can be built and used as is. Implementation partners can also extend the integration functionality to cover all required retail scenarios or build integration with other fiscal services based on the sample.

Fiscal printer integration sample for Poland

Microsoft Dynamics 365 for Retail now contains a sample of the integration of POS with fiscal printers for Poland. The integration sample supports one of the popular fiscal printer models available on the Polish market and enables printing sample fiscal receipts in various cash-and-carry and customer order sales scenarios in stores in Poland. It also supports running end-of-day reports (so-called X- and Z-reports) and provides options for error handling in basic scenarios (such as when retry is possible) as well as more advanced scenarios, such as printing a receipt for a previously completed transaction that was not previously registered in the fiscal printer. The sample is a part of the Retail SDK and can be built and used as is. Implementation partners can also extend the integration functionality to cover all required retail scenarios or build integration with other fiscal printer models based on the sample.

Fiscal service integration sample for Czech Republic

Microsoft Dynamics 365 for Retail now contains a sample of the integration of POS with fiscal services for the Czech Republic. The integration sample supports one of the popular fiscal services available on the Czech market and enables Electronic Registration of Sales (EET - Elektronická evidence tržeb). This is the online transmission of the sales data to a fiscal web-service of tax authorities. The integration ensures online registration of sales in various cash-and-carry and customer order sales scenarios in stores in the Czech Republic. It also provides options for error handling in basic scenarios (such as when retry is possible) as well as more advanced scenarios, such as registering a previously completed transaction that was not previously registered in the fiscal service. The sample is a part of the Retail SDK and can be built and used as is. Implementation partners can also extend the integration functionality to cover all required retail scenarios or build integration with other fiscal services based on the sample.

Omni-channel auto-charges

Retailers need the ability to have predefined charges applied to a customer's sales transaction based on the characteristics of the sales order, including the types of items purchased and the delivery modes applied to the order. Often these charges to the customer are additional fees related to the cost of shipping (but could be related to other fees).

The existing auto-charges features of Dynamics 365 for Finance and Operations will be enhanced and extended to be available for all Retail sales transactions regardless of sales channel.

Additional calculation logic will be added. If configured, this new logic will allow for a more detailed calculation of charges based on the individual sales lines and their related delivery modes. This allows for a more accurate calculation of delivery fees based on mode of delivery for each item and allows for more detailed tracking of the charges at the line level, which can be useful when processing returns.

Our goal with this feature is to provide a consistent set of configurations and calculation logic that will work in every Retail sales channel.

Dynamics 365 Business Central

Overview of Dynamics 365 Business Central April '19 release

Since its launch in April 2018, Dynamics 365 Business Central has seen increasing adoption by organizations looking to digitally transform their businesses. In October '18, we launched Business Central as also available in on-premises deployments. April '19 brings an update to Business Central that aims to enhance current customer satisfaction with the product.

Powerful new features for business users

We are pushing productivity to the next level by delivering a smooth and fresh experience to all customers of Business Central — those using the web interface in the browser or the modern Windows App for desktop. Combining modern trends around web-based applications and the complex requirements of a Business Central customer resulted in several improvements addressing productivity of a busy professional.

Among those many changes, we have enabled even more keyboard-centric scenarios around the important features of the product, keeping in mind speed of data entry and analysis, such as quick entry usage and personalization, sorting lists using the keyboard, and navigating around data fields and groups. We have introduced several improvements to features related to the customer context, such as a contextual work date indicator. We have also added options enabling advanced users to be even more productive - such as the focus mode, improved search, and the new option of inspecting the table data behind a page (formerly *About This Page*). We have also addressed feedback related to filters in Excel export (adding an easy Open in Excel option), common auto-save experience (which includes a new autosave indicator), and modern interface elements, such as the refreshed action bar and all-product navigation.

Additionally, Business Central becomes more intuitive thanks to an advanced personalization experience and better discoverability of new features — that includes refreshed action menus and groups across the product but also the ability to personalize those to suit the user's preference.

Performance, reliability, and scalability enhancements

No matter the industry or size of a small or medium-sized business (SMB), business users expect a dependable service and platform on which to run their business, collaborate, and get work done. Along with our wave of innovative new features, we've invested heavily in boosting performance, reliability, and scalability of Business Central, across the platform and business application.

Business Central runs much faster with a focus on typical business scenarios and usage patterns. The experience in the browser is more responsive thanks to on-demand loading of page elements, server resources are optimized for fast user interaction, and the database has been tuned to handle more data and load it faster.

Users experience a more stable service because upgrades are scheduled to suit the individual business, users are no longer interrupted by maintenance during work hours, and we've also matured service health practices to ensure maximum uptime. Users requiring assistance now have a single screen through which to find self-help material, share ideas with the community, and request support that has also been streamlined to reduce response time.

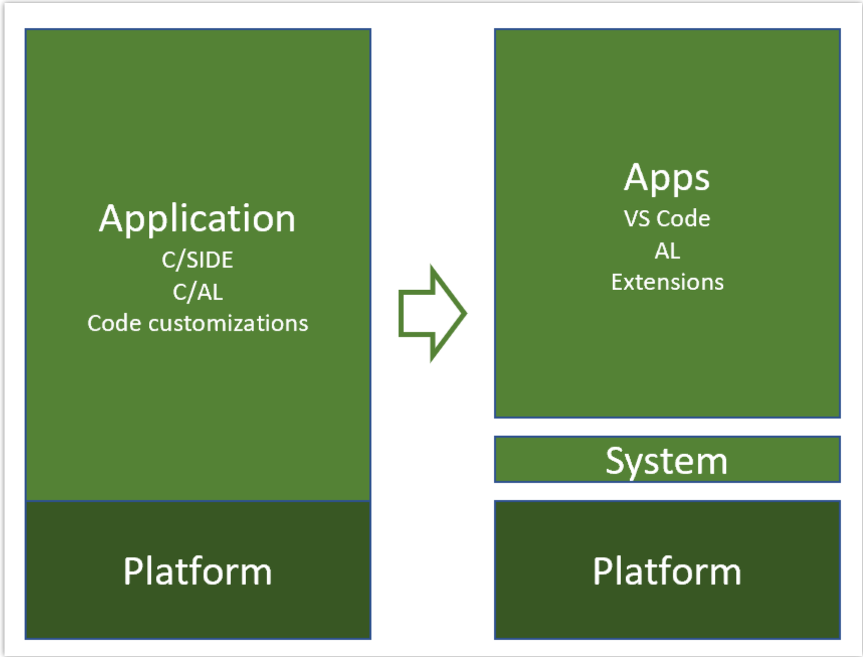
The Business Central security team works tirelessly behind the scenes to safeguard the security of your data. In addition to continual improvement of our security infrastructure and processes, we ensure Business Central continues to meet ISO27001, ISO27017, ISO27018, SOC 1 & 2 Type 2, HIPPA BAA, and FERPA industry security and privacy compliance standards. For more details and a list of all certificates, see https://aka.ms/d365-compliance-list.

Accessibility

Business Central is ready to support the diversity of your workforce where both the desktop and mobile interfaces are now highly accessible.

Base application as an app

We are making investments in the platform to make it easier for ISVs to get into the cloud. We will achieve this by splitting the big application that we have today into a system app and an app on top of that as an extension, compiled in AL using Visual Studio Code.



Moving the application to AL

Data and AI

The last major investment for the April release is starting our course into the Data and AI future. The only platform that will matter in the next decade is the data platform and the only cloud that will matter is the AI cloud. We need to ensure that we have data sanity, which means that we need to make investments into storing the product data into Common Data Service. The first will be to strengthen and prepare integration with Dynamics 365 for Sales through Common Data Service, then ensure Business Central data contributes to intelligent insights (notes synching, late payment prediction) in AI for Sales apps, and finally that Business Central users get intelligent insights generated by Dynamics 365 Sales Insights (predictive opportunity scoring).

What's new and planned for Dynamics 365 Business Central

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see [Microsoft policy](https://)).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Application enhancements

Feature	Release type	Online vs on-premises	Date
Write longer names and descriptions	General Availability	Both	April 2019
Use physical inventory orders to better structure your physical inventory counting	General Availability	Both	April 2019
Select multiple items to add to a sales or purchase document	General Availability	Both	April 2019
Use a sales quote validity policy to control when sales quotes expire	General Availability	Both	April 2019
Control item creation from lookups on documents	General Availability	Both	April 2019
Copy customer dimensions to jobs created for the customer	General Availability	Both	April 2019
Copy templates used to create customers, vendors, and items	General Availability	Both	April 2019
Merge duplicate customers, vendors, or contacts	General Availability	Both	April 2019
Dynamically set shortcut dimension columns in lists, documents, and journal lines	General Availability	Both	April 2019
Bulk import item pictures	General Availability	Both	April 2019
View payment information on customer and vendor statistics FactBoxes	General Availability	Both	April 2019

Feature	Release type	Online vs on-premises	Date
Look up SWIFT codes	General Availability	Both	April 2019
Ensure that approval users are set up to run approval workflows	General Availability	Both	April 2019
Configure reports for warehouse documents	General Availability	Both	April 2019
View vendor invoice number on purchase invoice and credit memo lists	General Availability	Both	April 2019
View time information on registers	General Availability	Both	April 2019
Reference external document numbers on posted sales documents	General Availability	Both	April 2019
View item description, customer name, and vendor name in ledger entries	General Availability	Both	April 2019
Find G/L account setup fields in base, local, and custom features	General Availability	Both	April 2019
View document attachments on customer and vendor ledger entries and during payment application	General Availability	Both	April 2019
Set up default ship-to addresses	General Availability	Both	April 2019
Schedule background jobs with a date formula	General Availability	Both	April 2019
Check for total amount credited when creating a corrective credit memo for a posted sales invoice	General Availability	Both	April 2019
Change descriptions on G/L entries	General Availability	Both	April 2019

Feature	Release type	Online vs on-premises	Date
Add ISO codes as attributes for countries and currencies	General Availability	Both	April 2019
Review and export errors in RapidStart configuration packages	General Availability	Both	April 2019
Review data imported from Excel to a configuration package	General Availability	Both	April 2019
Preview prepayment posting	General Availability	Both	April 2019
Email and resend remittance advice from the payment journal and vendor ledger entries	General Availability	Both	April 2019
Show all G/L accounts on posting setup pages and in G/L account lookups	General Availability	Both	April 2019
Use more Role Center activity groups	General Availability	Both	April 2019
Personalize the UI to skip over the Address field on documents	General Availability	Both	April 2019
Check the Business Central platform version number	General Availability	Both	April 2019

Productivity enhancements for business users

Feature	Release type	Online vs on-premises	Date
Save and personalize list views	General Availability	Both	After April 2019

Feature	Release type	Online vs on-premises	Date
Notes and links	General Availability	Both	After April 2019
Focus mode on document pages	General Availability	Both	April 2019
Work date indicator	General Availability	Both	April 2019
Context or system indicator	General Availability	Both	After April 2019
Quick Entry	General Availability	Both	April 2019
New keyboard shortcuts	General Availability	Both	April 2019
Autosave indicator	General Availability	Both	April 2019
Improvements to scrolling in lists	General Availability	Both	April 2019
Improved contextual search experience	General Availability	Both	April 2019
Improved all-product navigation	General Availability	Both	After April 2019
Personalization enhancements	General Availability	Both	April 2019

Self-help and support

Feature	Release type	Online vs on-premises	Date
Simplified Help and Support experience	General Availability	Both	April 2019
Page inspection (formerly 'About This Page')	General Availability	Both	April 2019

Productivity enhancements for administrators

Feature	Release type	Online vs on-premises	Date
Hardening the integration between Business Central and Dynamics 365 for Sales	General Availability	Both	April 2019
Customize the theme for your organization	General Availability	Cloud	April 2019
Enhancements for application lifecycle management	General Availability	Both	April 2019
Enhancements to the intelligent cloud for Dynamics SMB and Dynamics 365 Business Central	General Availability	Both	April 2019

Powerful features for developers

Feature	Release type	Online vs on-premises	Date
Designer enhancements for developers	General Availability	Both	April 2019
Visual Studio Code and AL	General Availability	Both	April 2019
New list views API	General Availability	Both	April 2019
Application as an app	General Availability	Both	April 2019
Standard Web API	General Availability	Both	April 2019

Performance improvements

Feature	Release type	Online vs on-premises	Date
Support for SQL Server data compression	General Availability	Both	April 2019
Configuring query hints for optimizing SQL Server performance	General Availability	Both	April 2019
Removed unnecessary companion table joins	General Availability	Both	April 2019
OData performance improvements	General Availability	Both	April 2019
RDLC Report performance improvements on sandboxes	General Availability	Cloud	April 2019
Event runtime optimization	General Availability	Both	April 2019
RapidStart optimization	General Availability	Both	April 2019
Power BI report improvements	General Availability	Both	April 2019
Application performance improvements	General Availability	Both	April 2019

Server improvements

Feature	Release type	Online vs on-premises	Date
Multiple unique keys	General Availability	Both	April 2019
Relaxed requirement on 8 KB row size	General Availability	Both	April 2019
Increased maximum length of text and code fields, variables, and text constants	General Availability	Both	April 2019

See also

[Summary of what's new in Dynamics 365 Business Central October 2018]

Application enhancements

We will continue to enhance the application through our focus on performance in the most used areas. Proficient users will experience faster entry of data through the optimization with focus mode. At the same time, they will experience faster responses as a result of optimizing the application code, such as optimizing how quickly the Home page loads, and performance improvements in key application scenarios that are used on a daily basis.

We will continue to improve the application to make it easier for ISVs to build extensions on top of our applications, such as extensibility for default dimensions, better handling of messages during unit test execution, refactoring production and planning engines so that it can be easily extended, and many more. The Business Central Ideas site continues to be a source for application enhancements. This release includes the following enhancements:

Write longer names and descriptions

You can now enter up to 100 characters in all **Description** and **Name** fields across Business Central. In earlier versions, the character limit was 50. This change applies to:

- The **Name** and **Description** field on master data cards, such as customer, vendor, item, contact, and resource cards.
- The **Name** and **Description** field on documents, such as sales and purchase orders, invoices, and quotes.
- The **Description** field on journals, such as general journal and item journal.
- The **Description** field on ledger entries, such as customer, vendor, and item ledger entries.

In addition, you can now enter up to 50 characters in the **Unit of Measure Description** field. In earlier versions, the character limit was 10.

We'd like to thank customers and partners who voted and contributed to this idea.

Use physical inventory orders to better structure your physical inventory counting

Physical inventory counting is one of core inventory processes happening in all distribution companies either once a year or multiple times per year. The existing functionality for this process is based on journals, which makes it difficult to track the process and distribute work in larger-scale inventory counting. The **Physical Inventory Order** and **Physical Inventory Recording** pages increase productivity and address gaps in the existing functionality. The new feature is based on the popular German local functionality, which has been widely used in practically all implementations where larger-scale inventory counting is needed.

For more information, see Count Inventory Using Documents.

Select multiple items to add to a sales or purchase document

You can now select multiple items at once from the items list to add to sales or purchase documents. On any sales or purchase document, choose the **Select Items** line action.

TIP: If you select the **Default Item Quantity** check box on the **Sales & Receivables Setup** page, the **Quantity** field on sales lines will be prefilled for all selected items as they get added to the sales document.

Use a sales quote validity policy to control when sales quotes expire

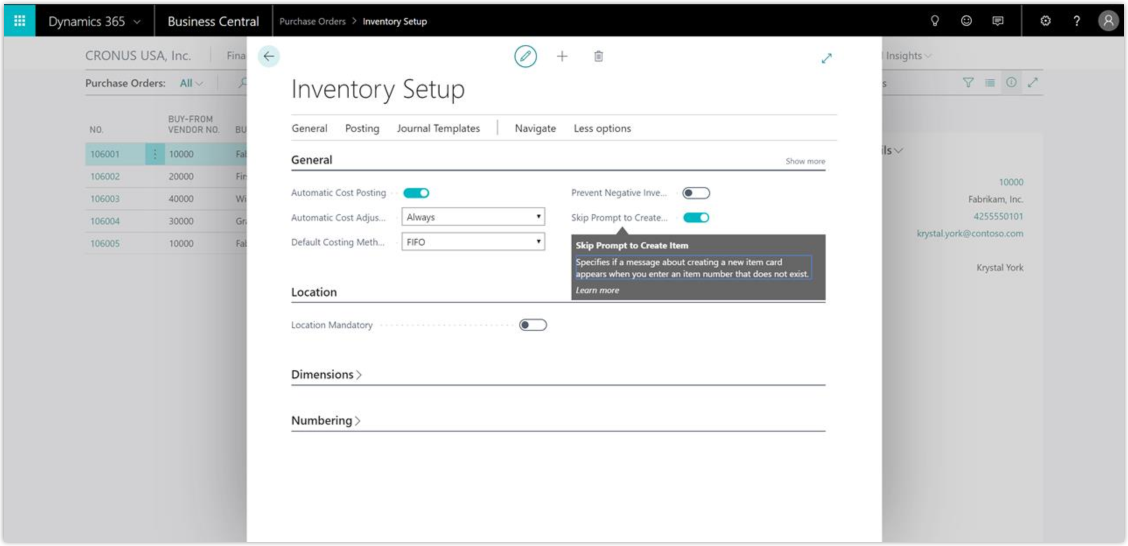
You can now set date formula in the **Quote Validity Calculation** field on the **Sales & Receivables Setup** page that will be used to calculate the **Quote Valid Until Date** field on sales quotes.

TIP: To make sure that sales quotes with expired quote validity dates are deleted, you can run the **Delete Expired Quotes** batch job. And if you enable sales quote archiving (**Sales & Receivables Setup** page), deleted sales quotes will also be archived, so you can restore them from the archive if customers calls again.

We'd like to thank customers and partners who voted and contributed to this idea.

Control item creation from lookups on documents

When you enter an item that does not exist on a document line, you are prompted to either create a new item card or select an existing item. In some cases, such as when importing many new items, this prompt blocks the process. Therefore, you can now select to skip the prompt. On the **Inventory Setup** page, select the **Skip Prompt to Create Item** check box.

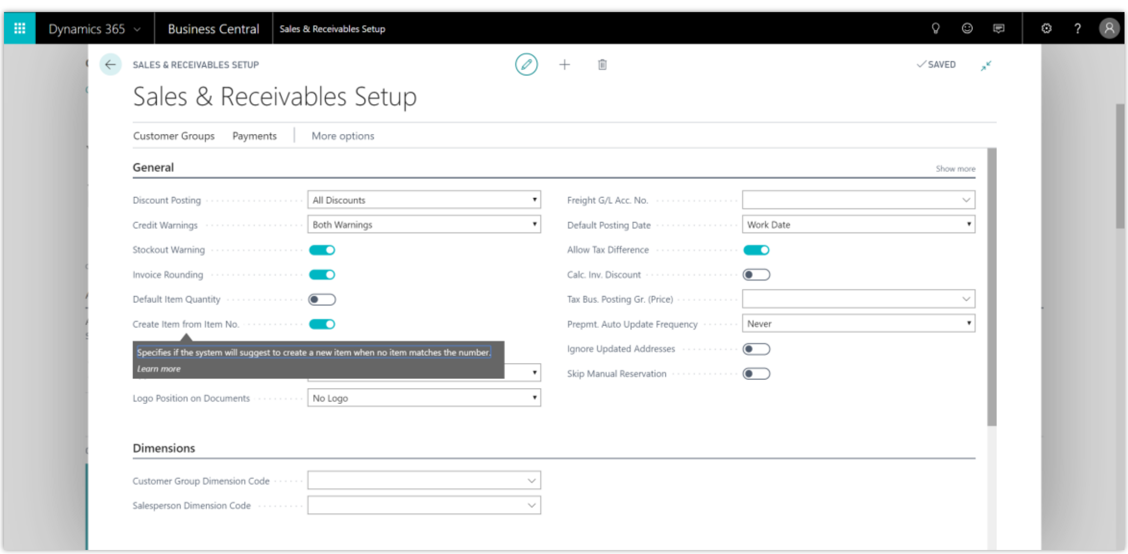


Inventory setup page showing the new Skip Prompt to Create Item setting

On the **Sales & Receivables Setup** page, we already have the **Create Item from Description** check box, which you can deselect to allow users to fill the **Description** field on a sales line with an item that does not exist in the system.

Now you can use the **Create Item from Item No.** check box to allow users to fill the No. field on a sales line with an item that does not exist in the system. The same field is added to the **Purchases & Payables Setup** page for purchase lines.

Note that the **Skip Prompt to Create Item** check box on the **Inventory Setup** page merely defines if the message about the missing item appears. It does not allow or disallow the activity.



Sales & Receivables Setup page showing the new Create Item from Item No. setting

We'd like to thank customers and partners who voted and contributed to this idea.

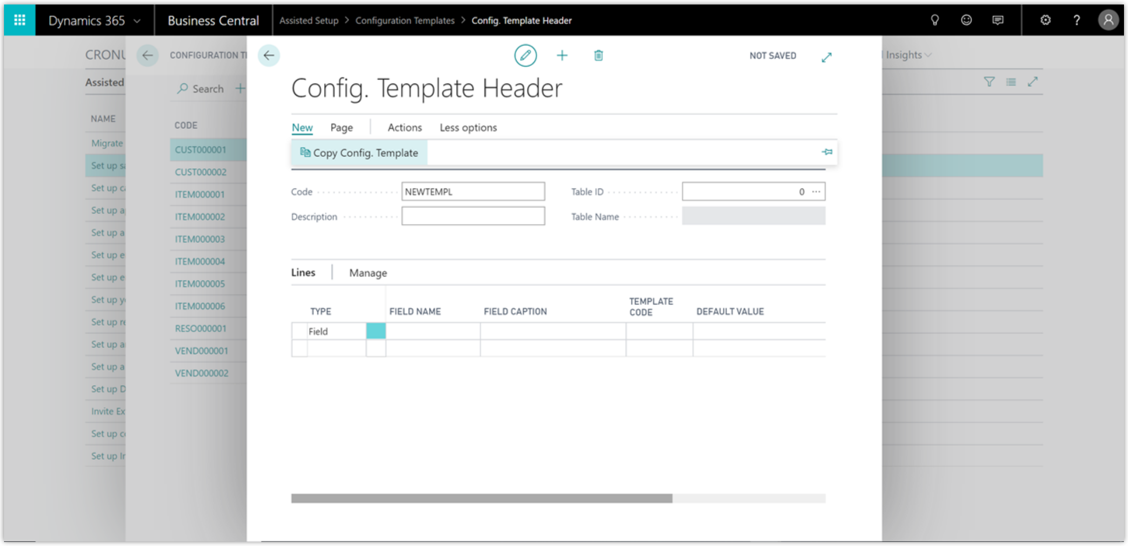
Copy customer dimensions to jobs created for the customer

When a job is created and a customer is assigned to the job, default dimension values from the customer are copied to the job. This means that users only have to modify the dimension values of the job, if needed, and that reporting is consistent because the customer's existing dimensions are assigned to a job.

We'd like to thank customers and partners who voted and contributed to this idea.

Copy templates used to create customers, vendors, and items

You can now copy existing data templates when you create new ones. Data templates (configuration templates) can be used to quickly create cards for customers, vendors, items, or contacts. To copy an existing data template, choose the **Copy Config. Template** action on the **Config. Template Header** page.

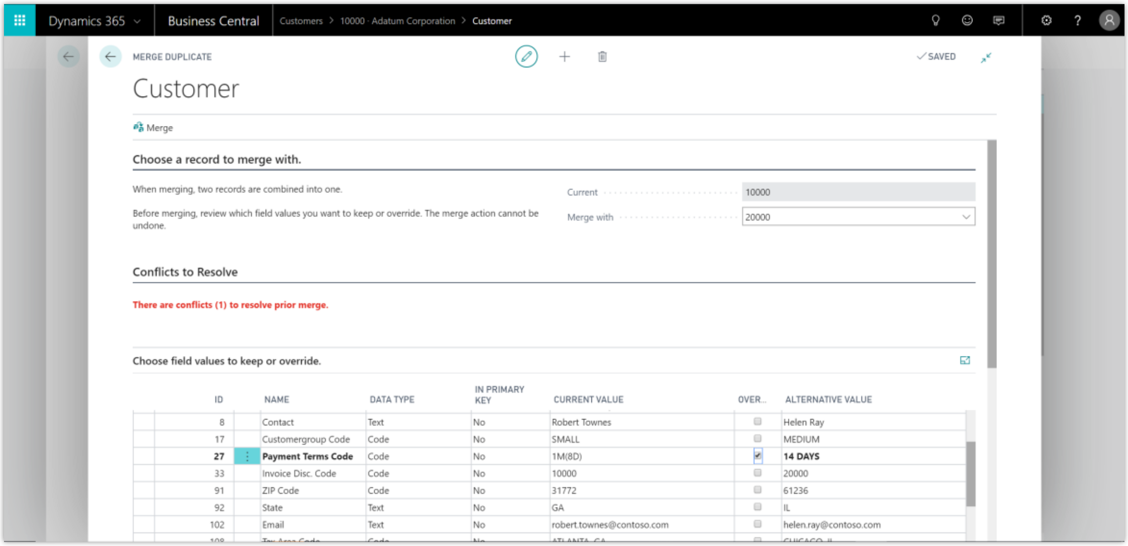


Config. Template Header page showing the Copy Config. Template action

For more information, see To create a new data template.

Merge duplicate customers, vendors, or contacts

When a duplicate customer, vendor, or contact record is created by mistake, you can now merge such duplicate records to a single record, given that you have the MERGE DUPLICATES permission set.



Merge customer page showing merge conflicts and overwrite capabilities

For more information, see [Merge Duplicate Records].

We'd like to thank customers and partners who voted and contributed to this [idea].

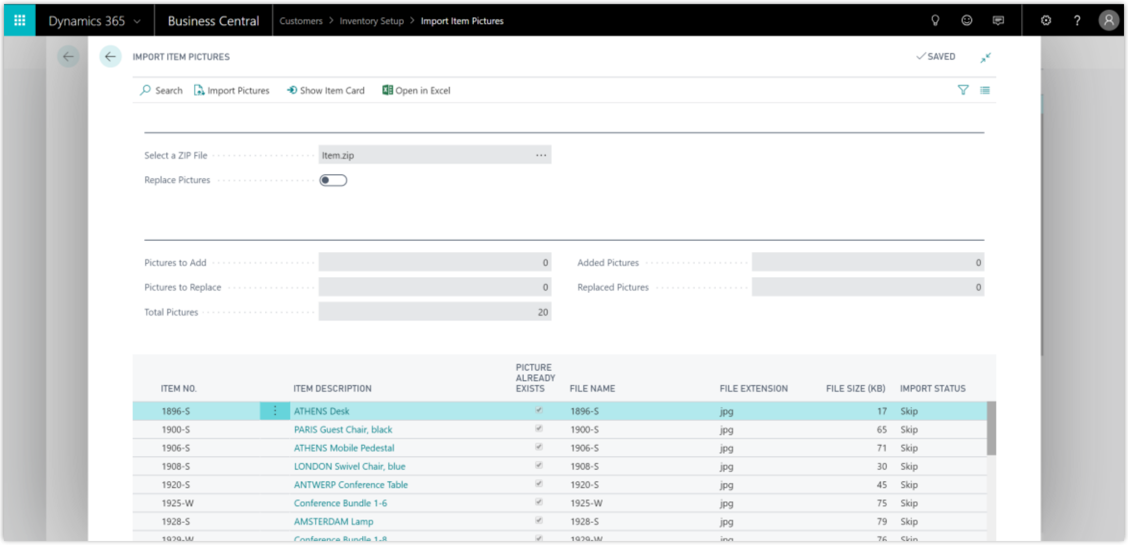
Dynamically set shortcut dimension columns in lists, documents, and journal lines

Fields for the two global dimensions that you set up on the **General Ledger Setup** page are always available on journal and document lines. Now, also the shortcut dimensions that you define on the setup page are always available as fields. This means that you can also add shortcut dimension values directly to journal and document lines without opening the **Dimensions** page.

For more information, see [Working with Dimensions].

Bulk import item pictures

You can now import multiple item pictures in one go. Simply name your picture files with a name corresponding to your item numbers, compress them to a zip file, and then use the **Import Item Pictures** page.



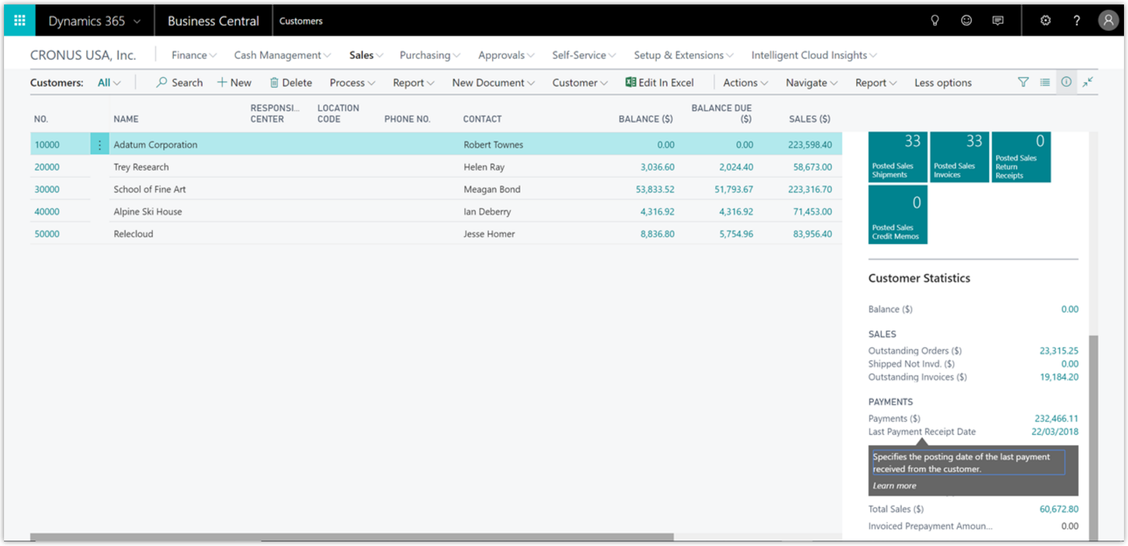
Import Item Pictures page showing the Import Pictures action

For more information, see [Import Multiple Item Pictures](#).

We'd like to thank customers and partners who voted and contributed to this [idea](#).

View payment information on customer and vendor statistics FactBoxes

Information about payments and last payment dates is now available on customer and vendor statistics FactBoxes.

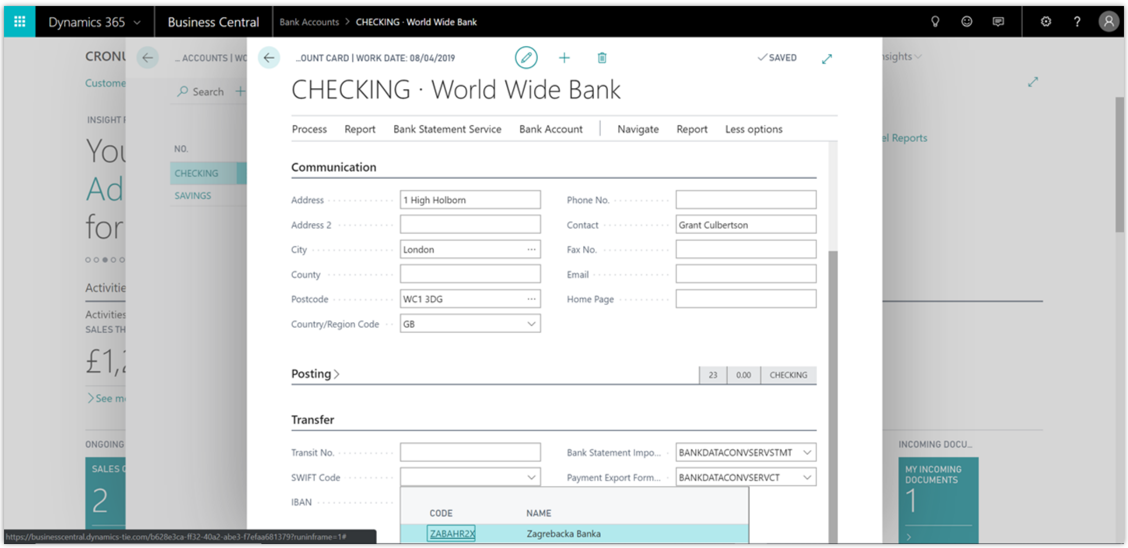


Customer list page showing FactBox with information about payments received and last payment date

We'd like to thank customers and partners who voted and contributed to this idea.

Look up SWIFT codes

You can now keep a list of SWIFT codes for banks that you work with and use it on pages where you use bank accounts. This allows for accurate preparation of payments and forces users to pick from predefined lists of SWIFT codes rather than entering SWIFT codes as free text.



Bank Account page showing lookup on SWIFT Code field

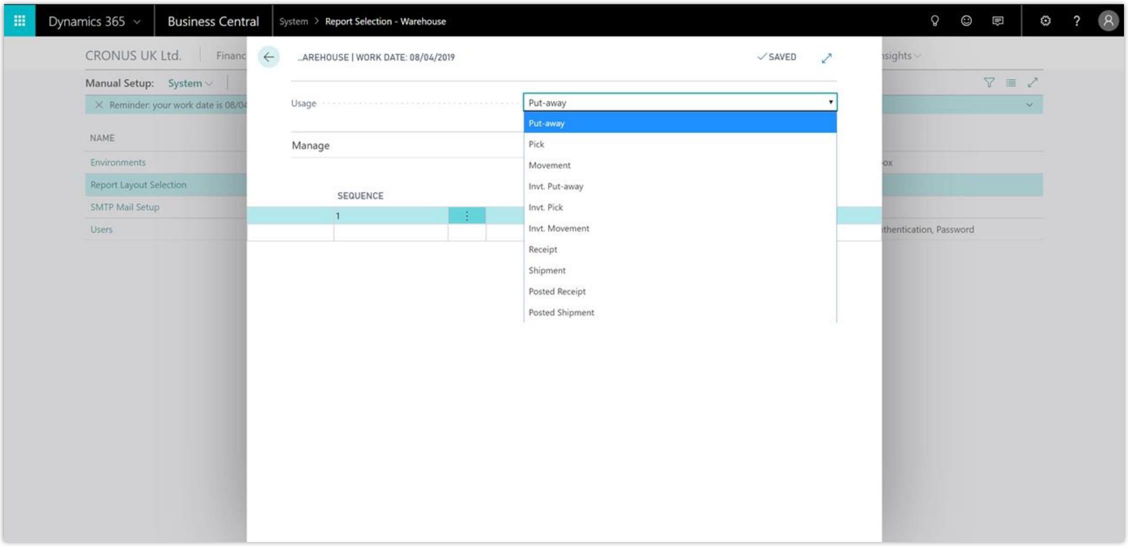
We'd like to thank customers and partners who voted and contributed to this idea.

Ensure that approval users are set up to run approval workflows

A check is added to ensure that the user is set up on the **Approval Users** page before they can initiate an approval workflow.

Configure reports for warehouse documents

You can now configure which reports will be printed for warehouse documents such as **Pick**, **Put-away**, and **Shipment** by using the Report Selection feature as for documents in other areas.



Report select page showing reports available for selection in warehouse management

View vendor invoice number on purchase invoice and credit memo lists

The Vendor Invoice Number column is now shown on the Purchase Invoices and Purchase Credit Memos pages.

We'd like to thank customers and partners who voted and contributed to this idea.

View time information on registers

You can now view time information on various Register pages, such as **G/L Register**, **Item Register**, and **Job Register**. This allows you to find transactions in registers faster, not just by date but also by the time that the transactions were created.

We'd like to thank customers and partners who voted and contributed to this idea.

Reference external document numbers on posted sales documents

When a customer calls to inquire about the status of their order, you typically search through the list of posted sales invoices and shipments by the customer's purchase order number.

The purchase order number is stored in the **External Document Number** field on the related sales order. This field content is now transferred to posted sales invoices and shipments, so that you can search by external document number.

We'd like to thank customers and partners who voted and contributed to this idea.

View item descriptions, customer and vendor names in ledger entries

When analyzing ledger entries, it is useful to also see the item description, customer names, or vendor names. The **Description** and **Name** fields can now be added to the ledger entries, such as **Item Ledger Entries**, **Customer Ledger Entries** or **Vendor Ledger Entries** page by selecting:

- **Copy Item Desc. to Entries** check box on the **Inventory Setup** page for Items
- **Copy Customer Name to Entries** check box on the **Sales & Receivables Setup** page for Customers
- **Copy Vendor Name to Entries** check box on the **Purchases & Payables Setup** page for Vendors

We'd like to thank customers and partners who voted and contributed to this idea.

Find G/L account setup fields in base, local, and custom features

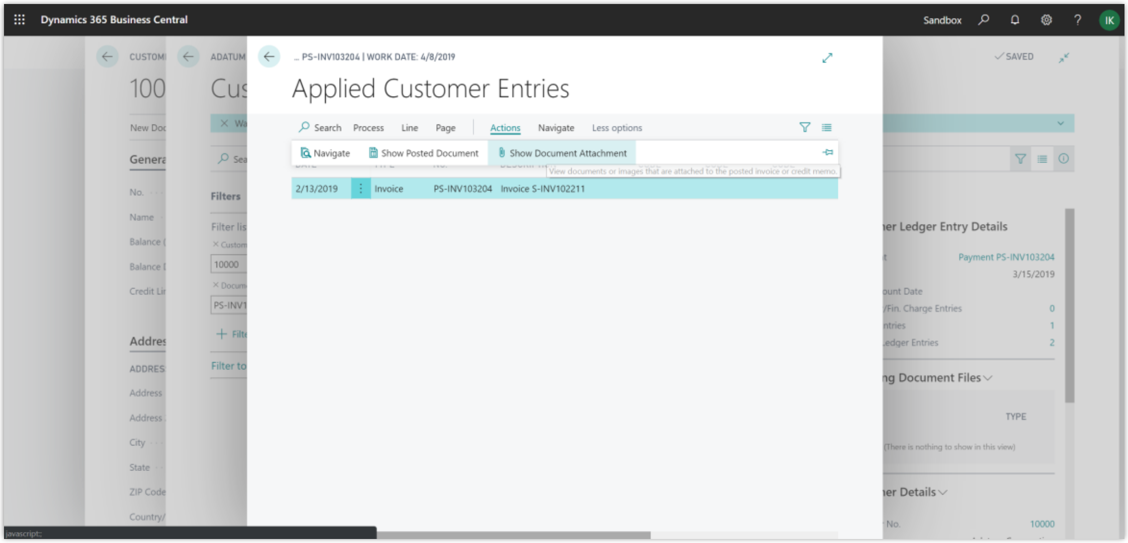
With the Where-Used function on the **G/L Account Card** and **Chart of Accounts** pages, you can find out where a particular G/L account is used in base setup areas.

Now, the Where-Used function considers all relevant setup areas, both in the base version, in local versions, and in any features introduced through extensions. The improved function uses an event that new features can subscribe to track the table relation on the **G/L Account** table to the created setup so that a complete list of setup for a particular G/L account can be provided.

View document attachments on customer and vendor ledger entries and during payment application

The Document Attachments feature allows you to attach any type of file to a sales or purchase document within Business Central. This is useful, for example, when settling vendor payments so that you can quickly view the original invoice that the vendor sent you.

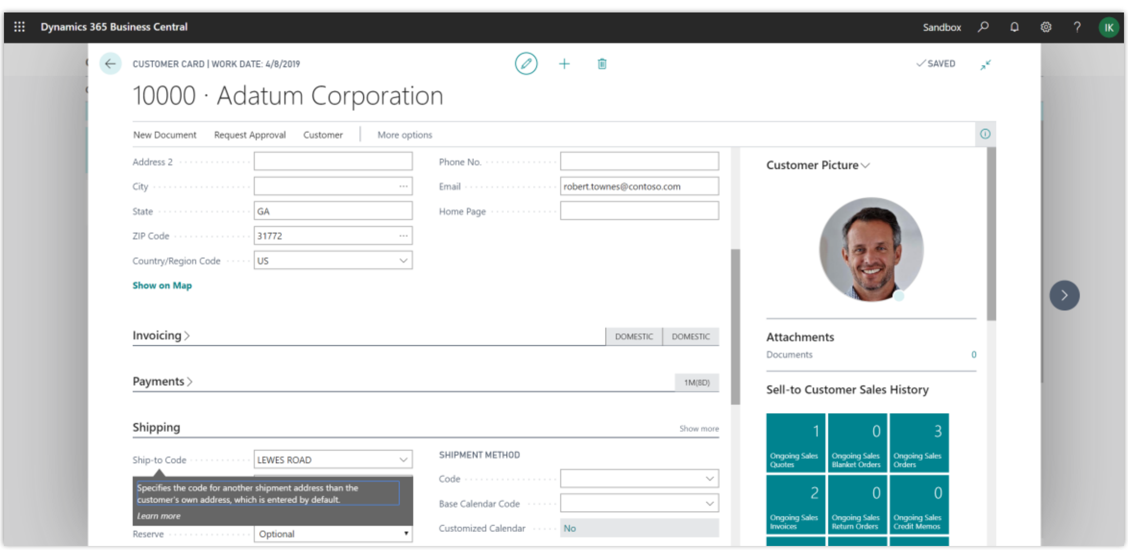
Now, attachments on sales and purchase documents can be viewed on the resulting **Customer Ledger Entries** and **Vendor Ledger Entries** pages and you can view them on the **Apply Entries** pages as you apply payments to ledger entries.



Showing document attachments action on applied entries page

Set up default ship-to addresses

Customers can have multiple addresses but they usually have a central warehouse that goods must be shipped to. You can now define a customer's default ship-to address in the **Ship-to Code** field on the customer card, which will automatically be inserted on sales documents for the customer. You can still change the ship-to address on sales documents.

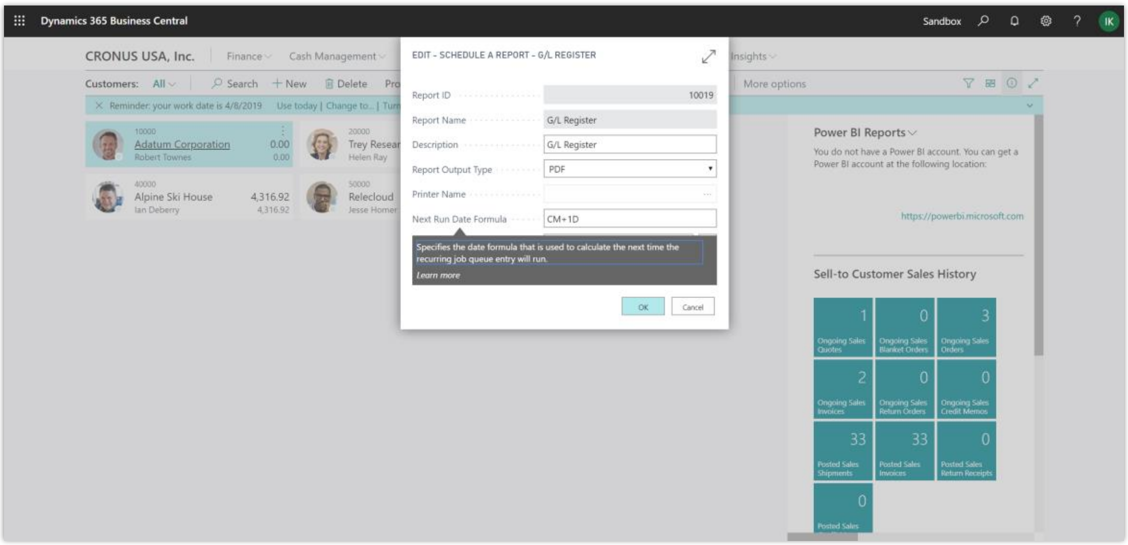


Showing Ship-To Code field on customer card

We'd like to thank customers and partners who voted and contributed to this idea.

Schedule background jobs with a date formula

You can now schedule background jobs or reports by defining a date formula, meaning a relative date, instead of defining a fixed day. For example, instead of running a report every Monday, you can define to run it at the beginning of each month by entering CM+D1. You define this in the **Next Run Date Formula** field on the **Job Queue Entry Card** page or **Schedule Report** page.



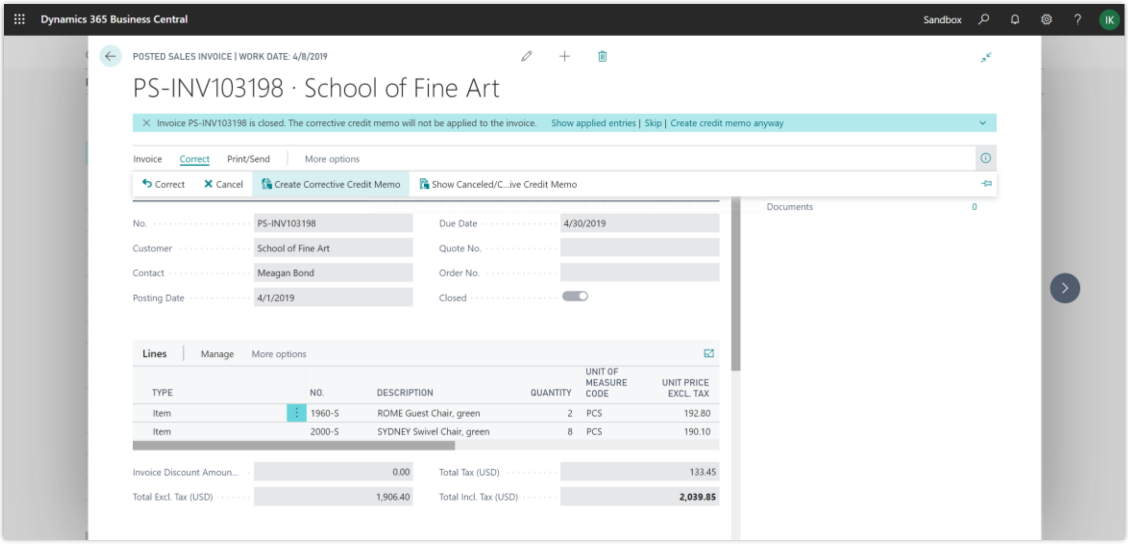
Showing Next Run Date Formula on schedule report page

For more information, see [Use Job Queues to Schedule Tasks](#).

We'd like to thank customers and partners who voted and contributed to this [idea](#).

Check for total amount credited when creating a corrective credit memo for a posted sales invoice

When correcting posted sales invoices, you are now notified if a corrective credit memo has already been created for a posted sales invoice and whether it is fully or partially applied. From the notification, you can view which documents have already been applied to the posted sales invoice, and you can choose which documents and amounts to apply it to. This helps to avoid duplication and to see if posted sales invoices to correct have been fully or partially applied.

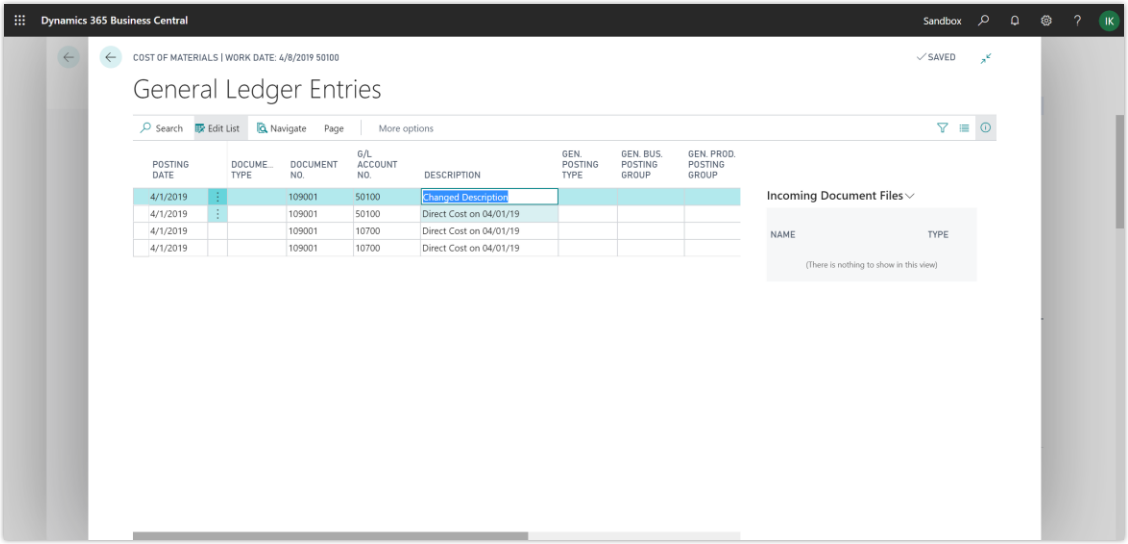


Showing notification user gets when trying to create corrective credit memo for already corrected posted sales invoice

We'd like to thank to customers and partners who voted and contributed to this idea.

Change descriptions on G/L entries

If you entered the wrong description during posting or if you just need to change a description on an earlier G/L entry, you can now edit the **Description** field on the **General Ledger Entries** page to overwrite the original posting description. On the **Change Log Entries** page, you can view a log of changes made to the **Description** field.

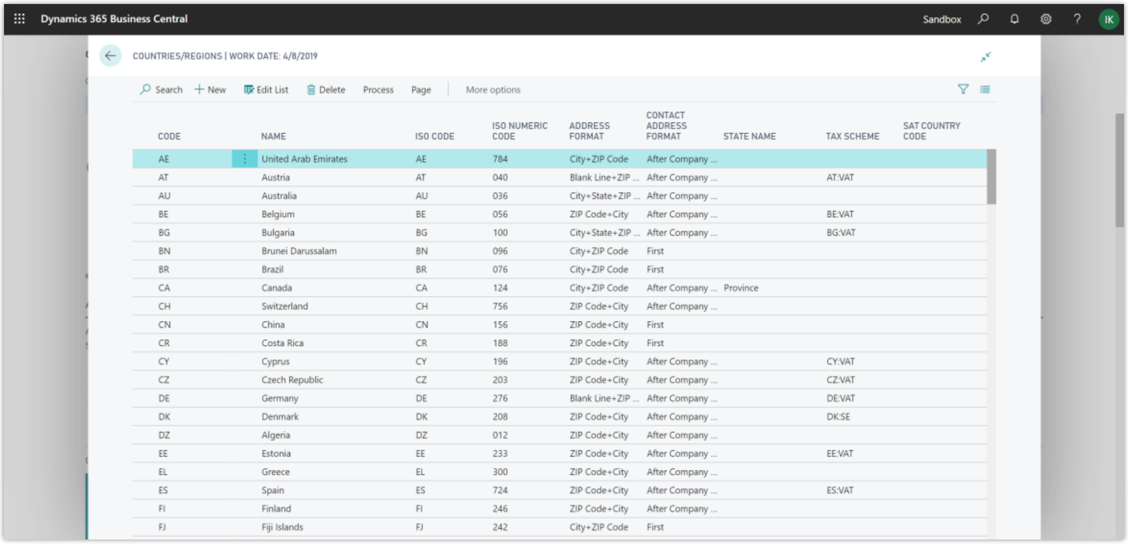


Showing general ledger entry with changed description

We'd like to thank customers and partners who voted and contributed to this idea.

ISO Codes added as attributes for Countries and Currencies

Regulatory reporting, electronic invoicing, and electronic banking standards usually require ISO country and currency codes in addition to descriptions in order to comply with regulations or standards. You can now add ISO 3166-1 standard numeric (three-digit) and alpha numeric (two-letter) codes for countries and regions. You can also add ISO 4217 standard numeric (three-digit) and alpha number (three-letter) codes for currencies.



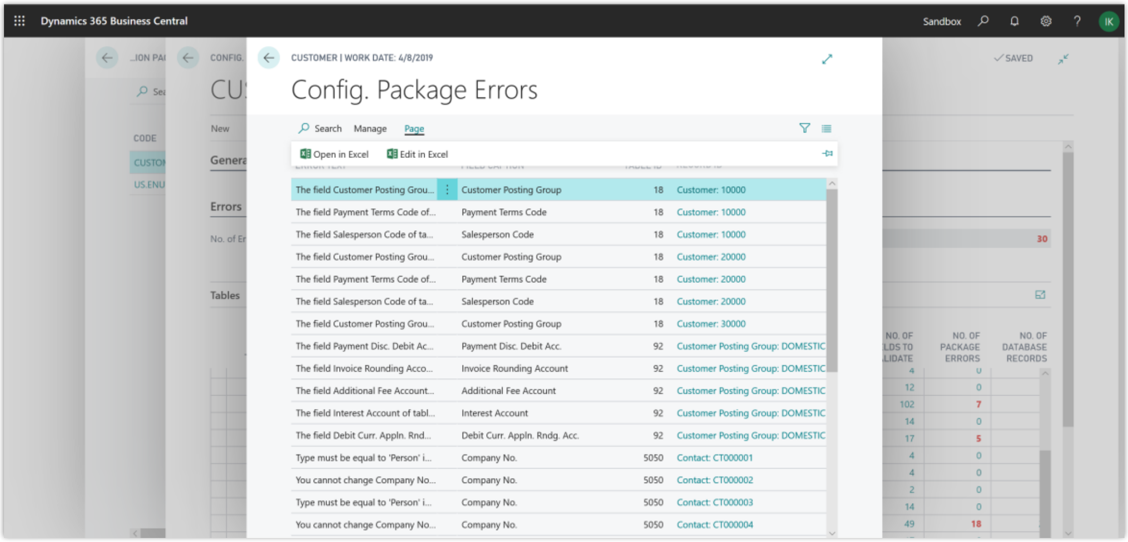
CODE	NAME	ISO CODE	ISO NUMERIC CODE	ADDRESS FORMAT	CONTACT ADDRESS FORMAT	STATE NAME	TAX SCHEME	SAT COUNTRY CODE
AE	United Arab Emirates	AE	784	City+ZIP Code	After Company ...			
AT	Austria	AT	040	Blank Line+ZIP ...	After Company ...		AT:VAT	
AU	Australia	AU	036	City+State+ZIP ...	After Company ...			
BE	Belgium	BE	056	ZIP Code+City	After Company ...		BE:VAT	
BG	Bulgaria	BG	100	City+State+ZIP ...	After Company ...		BG:VAT	
BN	Brunei Darussalam	BN	096	City+ZIP Code	First			
BR	Brazil	BR	076	City+ZIP Code	First			
CA	Canada	CA	124	City+ZIP Code	After Company ...	Province		
CH	Switzerland	CH	756	ZIP Code+City	After Company ...			
CN	China	CN	156	ZIP Code+City	First			
CR	Costa Rica	CR	188	ZIP Code+City	First			
CY	Cyprus	CY	196	ZIP Code+City	After Company ...		CY:VAT	
CZ	Czech Republic	CZ	203	ZIP Code+City	After Company ...		CZ:VAT	
DE	Germany	DE	276	Blank Line+ZIP ...	After Company ...		DE:VAT	
DK	Denmark	DK	208	ZIP Code+City	After Company ...		DK:SE	
DZ	Algeria	DZ	012	ZIP Code+City	After Company ...			
EE	Estonia	EE	233	ZIP Code+City	After Company ...		EE:VAT	
EL	Greece	EL	300	ZIP Code+City	After Company ...			
ES	Spain	ES	724	ZIP Code+City	After Company ...		ES:VAT	
FI	Finland	FI	246	ZIP Code+City	After Company ...			
FJ	Fiji Islands	FJ	242	City+ZIP Code	First			

Showing countries/regions page with ISO codes filled in

Review and export errors in RapidStart configuration packages

While migrating your data to Business Central with RapidStart Services, it is useful to see errors that occurred for a specific table within the configuration package. This works fine when you are importing a low number of tables. However, when you are importing a large number of tables, you may need to distribute data-cleaning tasks to different teams because it is cumbersome to do this for each table.

When importing and validating your configuration packages, you can now see errors per package. You can choose the **Show Errors for Configuration Package** action to see all errors in a configuration package. On the new **Config. Package Errors** page, you can filter by error text, field, or table, and you can export such filtered lists to Excel. You can also drill down to a specific error to see the exact data that is causing an error.

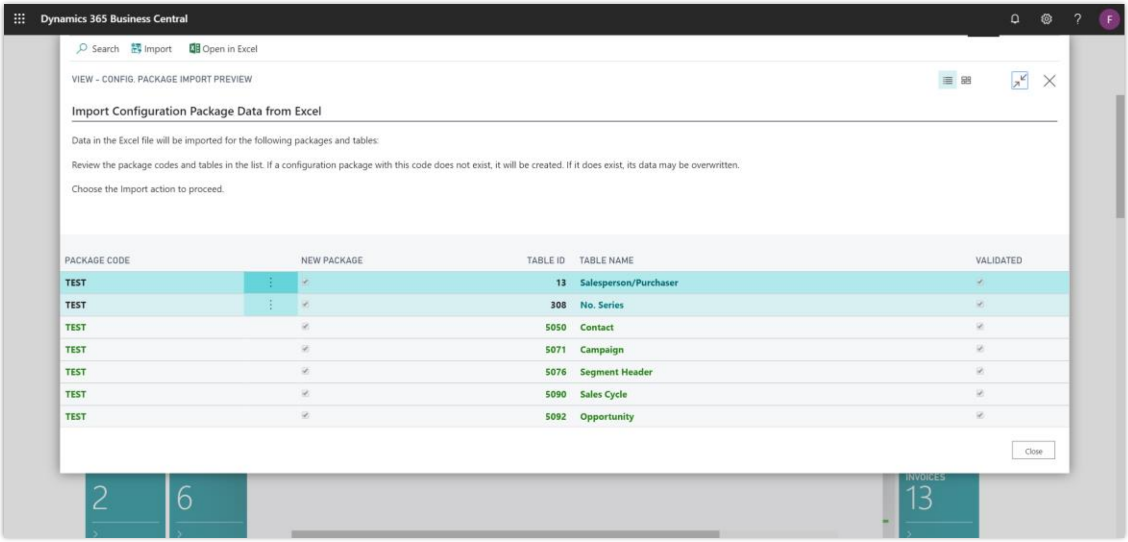


Showing Config. Package Errors page

Review data imported from Excel to a configuration package

The three different **Import from Excel** actions on the **Configuration Packages** page, the header of the **Config. Package Card** page, and the lines of the **Config. Package Card** page all import data from Excel, but they require different levels of preparation of the configuration package. The first one can be used before a configuration package is created, the second one requires that a configuration package exists, and the third one requires that a configuration package with lines exist.

To avoid confusion and unnecessary retries when using these actions, you can now use the **Config. Package Import Preview** page to get an overview of the Excel file content to be imported. The page opens when you choose any of the three actions and shows the list of configuration packages and tables, organized on different sheets, in the Excel file that you are trying to import. The page also explains if the Import from Excel action will create a new configuration package or update the existing one, and if the action will create new configuration package lines (tables) or update existing ones.

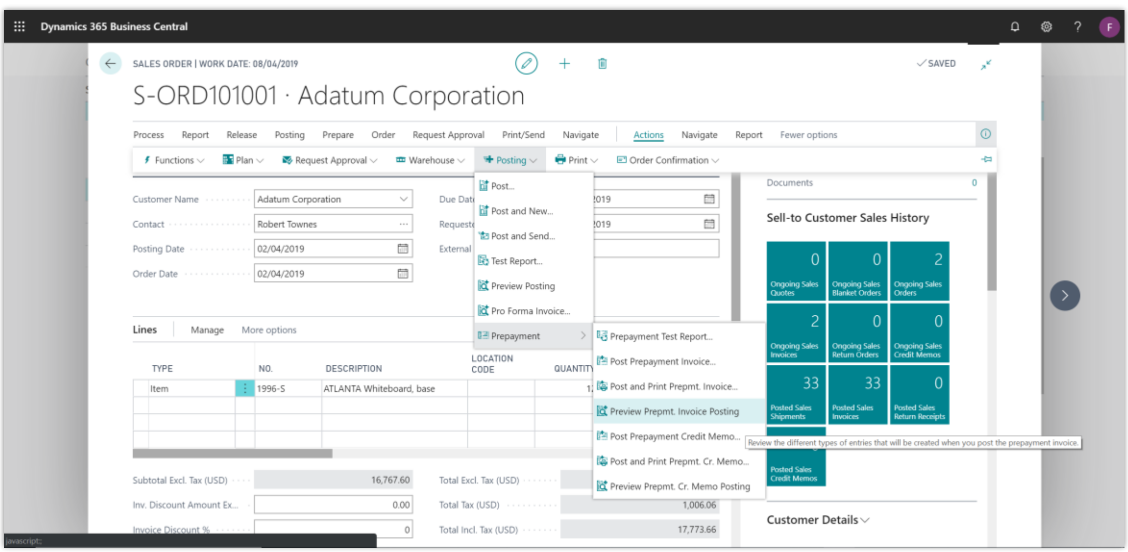


Showing Config. Package Import Review page

For more information, see [To import customer data](#).

Preview prepayment posting

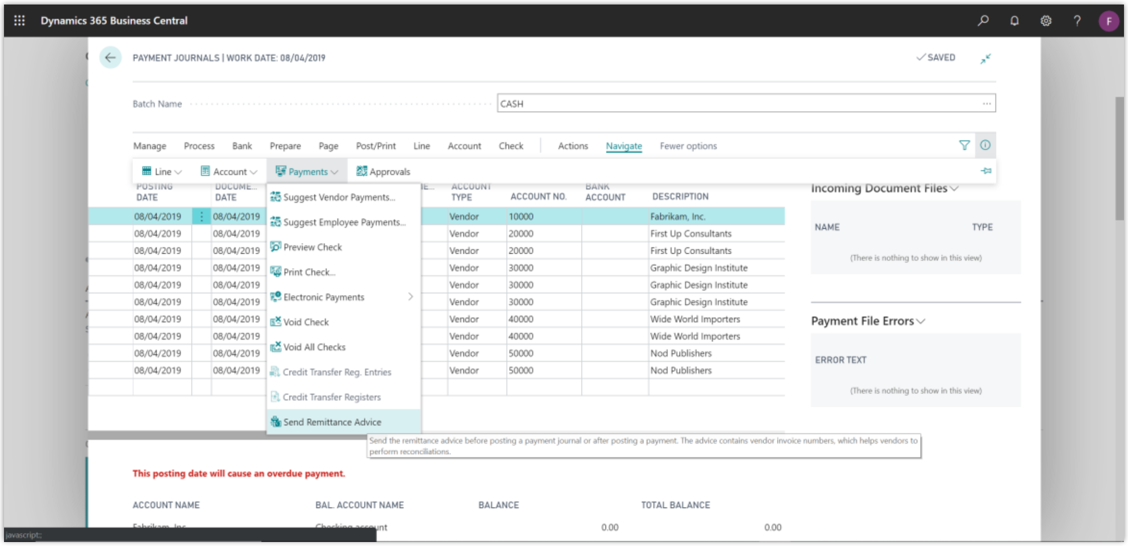
You can now choose the **Preview Prepmt. Invoice Posting** or **Preview Prepmt. Cr. Memo Posting** action to review the different types of entries that will be created when you post a prepayment invoice or credit memo from sales or purchase orders.



Showing Prepayment Preview Posting actions on Sales Order page

Email and resend remittance advice from the payment journal and vendor ledger entries

In the UK, US, CA, AU, NZ, and ZA versions where remittance advice is used to notify vendors of payments being made, you can now email remittance advice in bulk from the payment journal as well as resend after payments are made from vendor ledger entries by using document sending profiles.



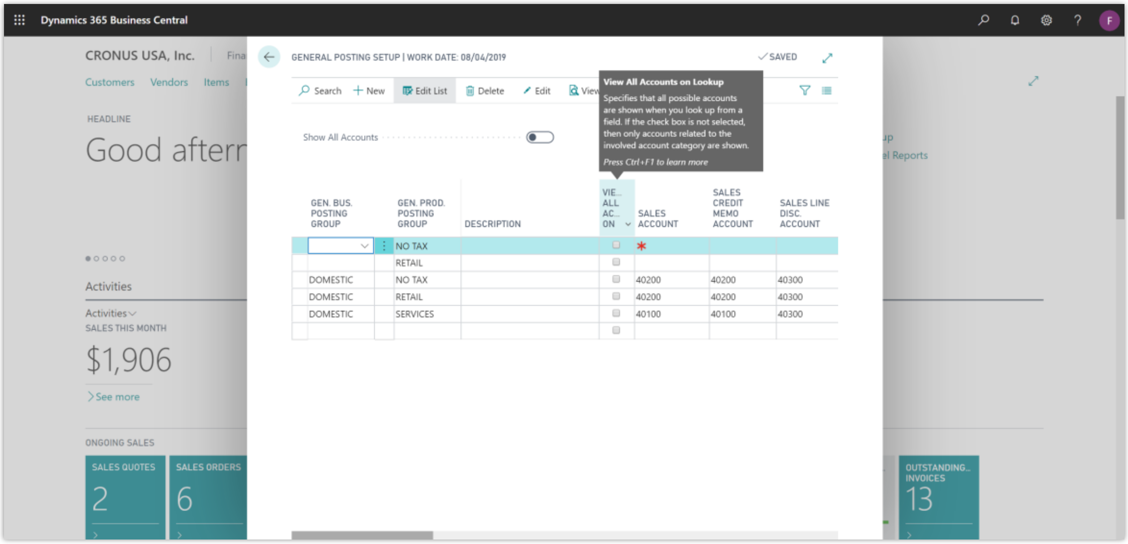
Showing Send Remittance Advice action on payment journal page

We'd like to thank customers and partners who voted and contributed to this idea.

Show all G/L accounts on posting setup pages and in G/L account lookups

Posting setup pages, such as **Customer Posting Groups**, **General Posting Setup**, and others, are used to define which G/L accounts will be used to post amounts to the general ledger. As you turn on features, such as Discount Posting, additional columns for specific G/L accounts that are used by the feature automatically become visible on the posting setup pages. You can now select the **Show All Accounts** check box on posting setup pages to see all available G/L accounts on the setup page even if the involved feature is not enabled. This makes it easier to perform the initial posting setup.

When you look up to select a G/L account to be used in a posting setup, you only see G/L accounts filtered by the account categories where such accounts normally exist. You can now select the **View All Accounts on Lookup** check box on posting setup pages to see all available G/L accounts when you look up to select, not just those filtered to the involved account categories.



Showing General Posting Setup page with Show all accounts and View all accounts on lookup options

Use more Role Center activity groups

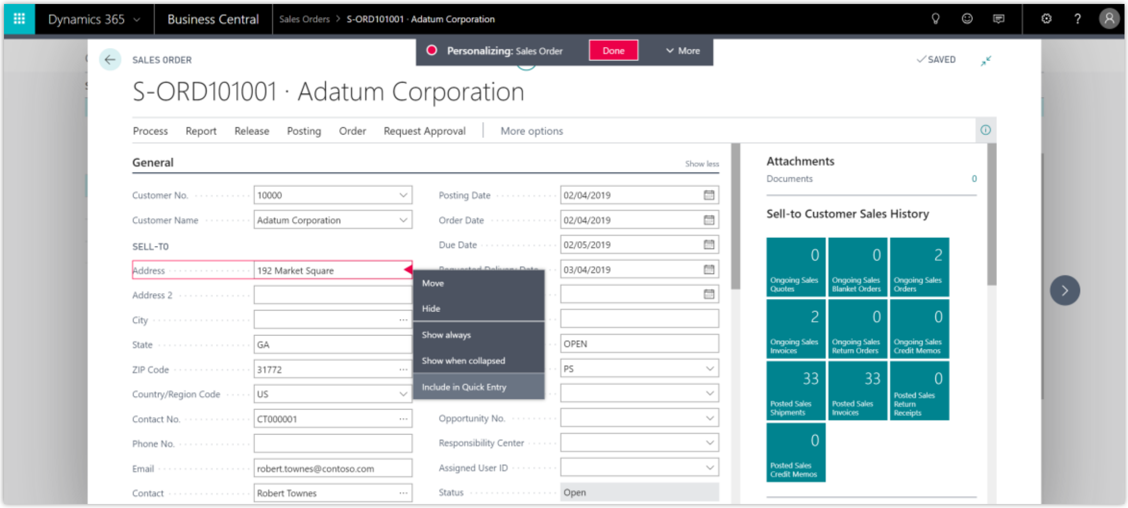
Selected Role Centers have been refreshed as follows:

- Headlines and other common elements are added where these were missing.
- The **Setup & Extensions** group is more consistent. For example, it now includes **Workflow**.
- The **Self-Service** group is standardized to show only as cues/tiles so that user can see counts.

Personalize the UI to skip over the Address field on documents

Address information on document pages is typically auto-filled based on the selected customer or vendor. In most cases, users therefore want to skip over the **Address** field when keyboarding through documents.

With the Quick Entry feature, you can now define that the cursor skips over the **Address** field on sales and purchase documents when you press the Enter key.

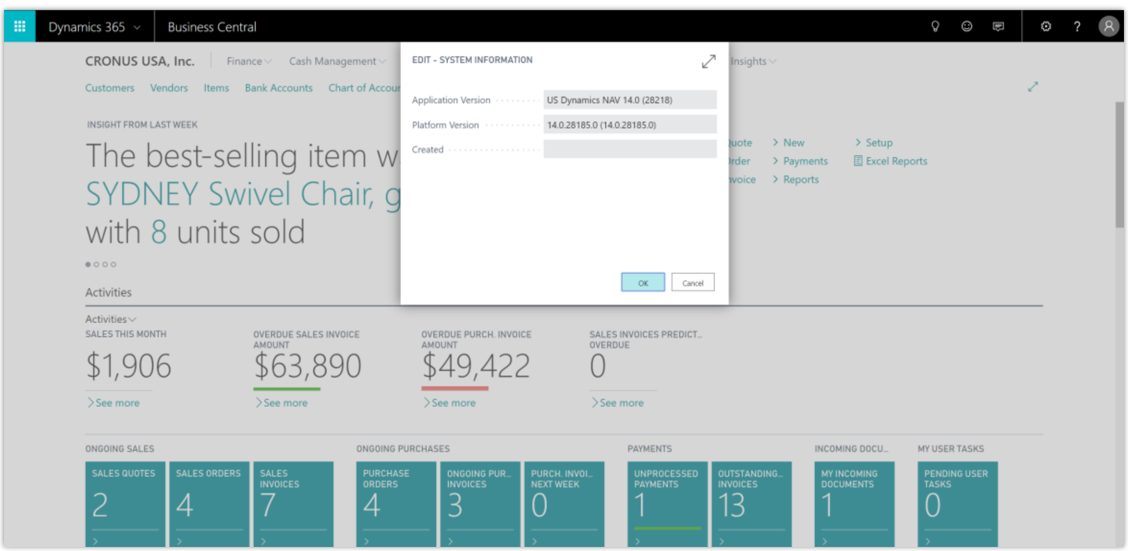


Page showing personalization of quick entry fields

For more information, see [Accelerating Data Entry Using Quick Entry](#).

Check the Business Central platform version number

When troubleshooting or reporting an issue to support, you can now see the version number of the Business Central platform on the **System Information** page to help speed up support process.



Page showing platform version on System information page

Tell us what you think

Help us improve Dynamics 365 Business Central by discussing ideas, providing suggestions, and giving feedback. Use the Business Central forum at https://aka.ms/businesscentralideas.

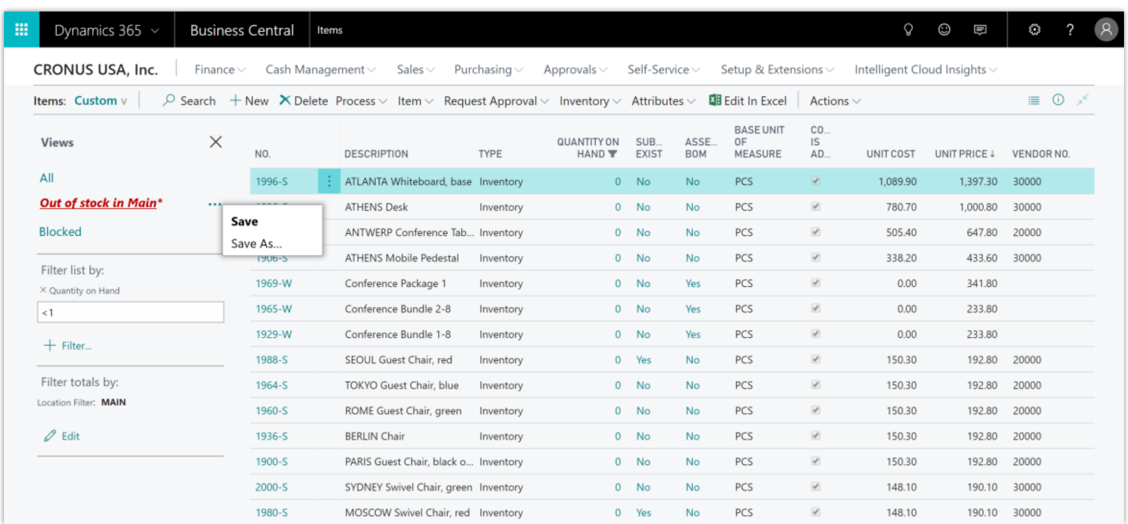
List views

A new view API for developers

Developers have a new, simple and intuitive model to build custom list views in Visual Studio Code for the modern clients. Not only does it empower developers to create alternate views of a list with each their own custom column layout, but the new views also overcome most of the shortcomings with the earlier model. For example, views now appear on a list page irrespective of how you navigate to it.

Saving and personalizing list views

Available in a minor update after April '19, users will be able to save their list filters and similar personalizations to create different ways of slicing their data. List views are given a name, such as "Items I sell," and might include filters on totals and dimensions, filter tokens (such as %MyCustomers) to dynamically filter to the right data, as well as different sorting allowing more complex and tailored views of a list. Users can quickly switch between different views of a list, which includes their own personal views or views that come as standard in their business application or for their role. Similar to other personalizations, list views roam with the user, no matter which device or browser they sign in to.



Concept design illustrating how changes to a list view could be saved using a menu in the filter pane

Notes and links

We are enabling the ability to add internal notes to business data captured and processed in Business Central. Notes are displayed next to the card data, and users have the ability to add, edit, and delete notes. Users can also include Internet links accessible from data cards, opening more advanced extensibility scenarios.

Business value

An ability to add notes representing a slightly more unstructured data is essential in the modern ERP system. Notes and links are available for on-premises deployments of Business Central already, and we are bringing them to the online world as well - enriching its capabilities to store data in the cloud.

Development status

In development

Target timeframe

After April 2019

Tell us what you think

Help us improve Dynamics 365 Business Central by discussing ideas, providing suggestions, and giving feedback. Use the Business Central forum at https://aka.ms/businesscentralideas.

Focus mode on document pages

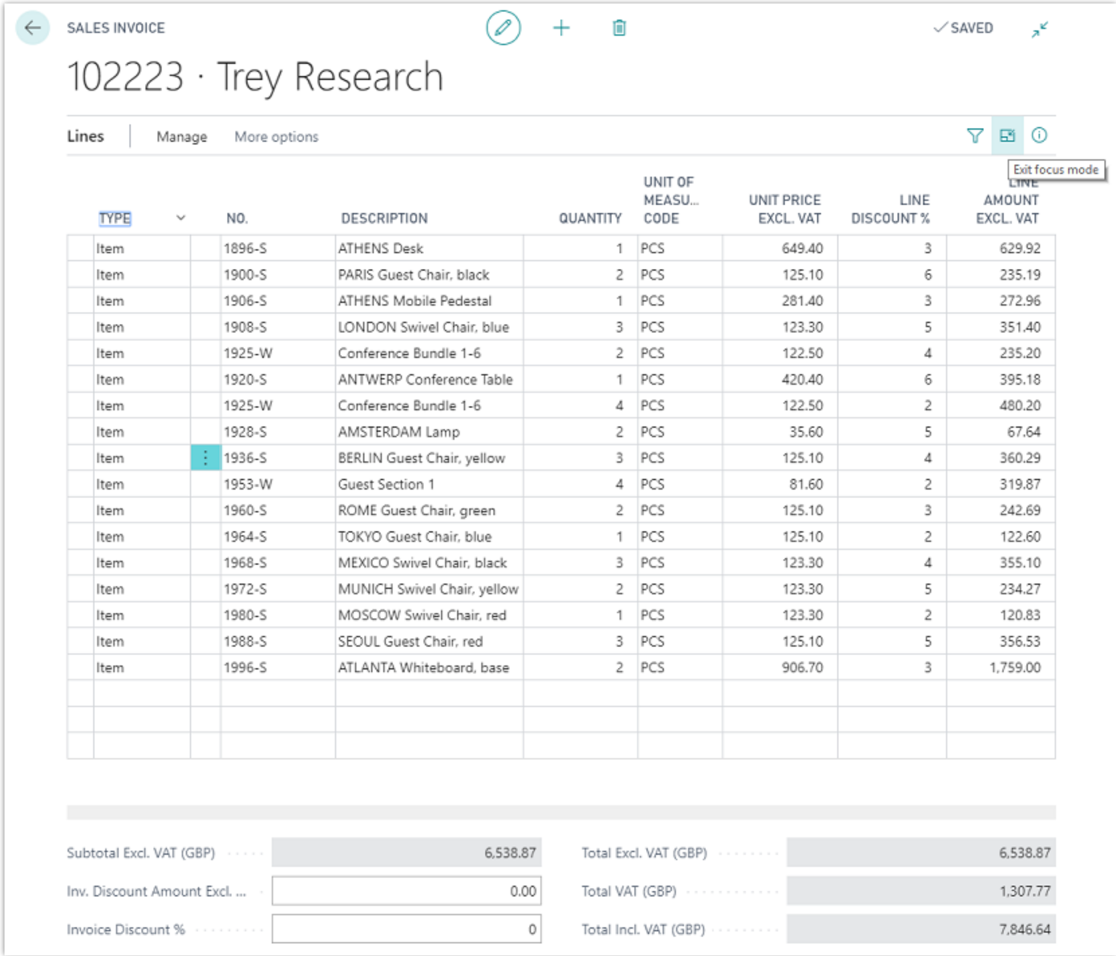
Business value

For those of our customers who often edit long and demanding documents, we have created a special view expanding the line items section of the document to take a larger part of the screen and leave more room for productive and fast data entry. When viewing documents with the lines section in that mode, you can now use advanced filtering, so browsing and searching through longer documents becomes easier.

Switching focus mode on and off

While you're working on your long sales document, it is now easy to switch the focus mode on or off, either by using the on-screen button or by using the keyboard shortcut (Ctrl+Shift+F12). Because you can sometimes have several line-items/subpage sections on a given document, the keyboard shortcut applies to the subpage that you are on, such as when you navigate to line items first. Obviously, the on-screen button takes effect when you choose it. But in the same way if you'd have more subpages with lines on your screen, you may have two or more focus mode buttons, and only the part that you clicked will go into focus mode.

- Expands subpage section
- Takes more screen estate vertically
- Switches off fact box if present
- Works best in wide page mode
- Works even when there are more subpages
- Expands the focused subpage
- Enables advanced filter pane for subpage
- Reacts on a keyboard shortcut Ctrl+Shift+F12



TYPE	NO.	DESCRIPTION	QUANTITY	UNIT OF MEASU... CODE	UNIT PRICE EXCL. VAT	LINE DISCOUNT %	LINE AMOUNT EXCL. VAT
Item	1896-S	ATHENS Desk	1	PCS	649.40	3	629.92
Item	1900-S	PARIS Guest Chair, black	2	PCS	125.10	6	235.19
Item	1906-S	ATHENS Mobile Pedestal	1	PCS	281.40	3	272.96
Item	1908-S	LONDON Swivel Chair, blue	3	PCS	123.30	5	351.40
Item	1925-W	Conference Bundle 1-6	2	PCS	122.50	4	235.20
Item	1920-S	ANTWERP Conference Table	1	PCS	420.40	6	395.18
Item	1925-W	Conference Bundle 1-6	4	PCS	122.50	2	480.20
Item	1928-S	AMSTERDAM Lamp	2	PCS	35.60	5	67.64
Item	1936-S	BERLIN Guest Chair, yellow	3	PCS	125.10	4	360.29
Item	1953-W	Guest Section 1	4	PCS	81.60	2	319.87
Item	1960-S	ROME Guest Chair, green	2	PCS	125.10	3	242.69
Item	1964-S	TOKYO Guest Chair, blue	1	PCS	125.10	2	122.60
Item	1968-S	MEXICO Swivel Chair, black	3	PCS	123.30	4	355.10
Item	1972-S	MUNICH Swivel Chair, yellow	2	PCS	123.30	5	234.27
Item	1980-S	MOSCOW Swivel Chair, red	1	PCS	123.30	2	120.83
Item	1988-S	SEOUL Guest Chair, red	3	PCS	125.10	5	356.53
Item	1996-S	ATLANTA Whiteboard, base	2	PCS	906.70	3	1,759.00

Screen grab of a page in focus mode

Using advanced filtering while in focus mode

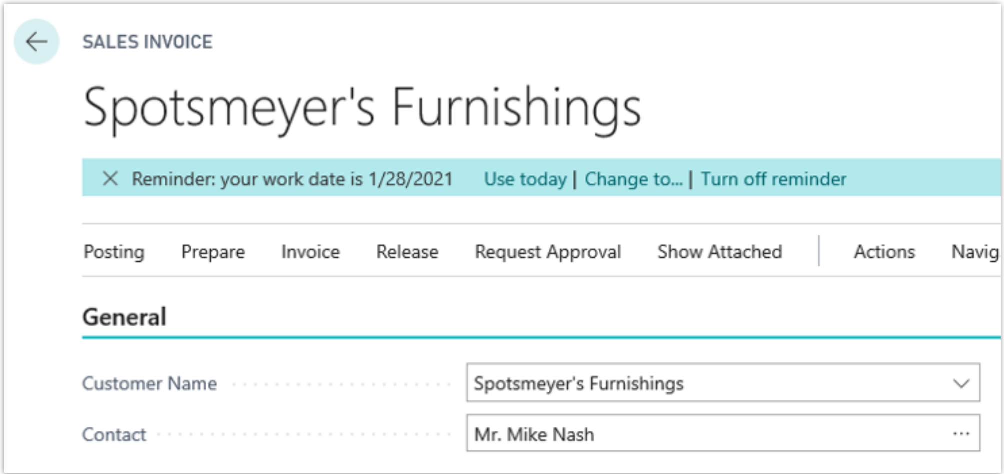
When in focus mode on a document, you can now enable the advanced filter experience just as on any other list. This helps especially when viewing and analyzing longer documents. Imagine you can open a posted sales invoice and filter the line items to all that have the individual discount above 5%. Or filter to only bike accessories with 'pro' in the name.

Tell us what you think

Help us improve Dynamics 365 Business Central by discussing ideas, providing suggestions, and giving feedback. Use the Business Central forum at https://aka.ms/businesscentralideas.

Work date indicator

We are bringing a set of features allowing advanced users to understand the work context in an easy and quick way. That includes a work date presented directly on-screen in relevant scenarios to easily understand the context of the current view.



Work date indicator

The new work date indicator is displayed only when you need it and when the work date is different from today. As expected, most users won't see anything because they use *today* as the work date. But advanced users will get a notification and then they can easily:

- Adjust the work date.
- Switch the work date to today.
- Switch notification off.

System indicator

This feature is coming after April 2019. More details will be provided in due time.

Development status

In development

Target timeframe

After April 2019

Tell us what you think

Help us improve Dynamics 365 Business Central by discussing ideas, providing suggestions, and giving feedback. Use the Business Central forum at https://aka.ms/businesscentralideas.

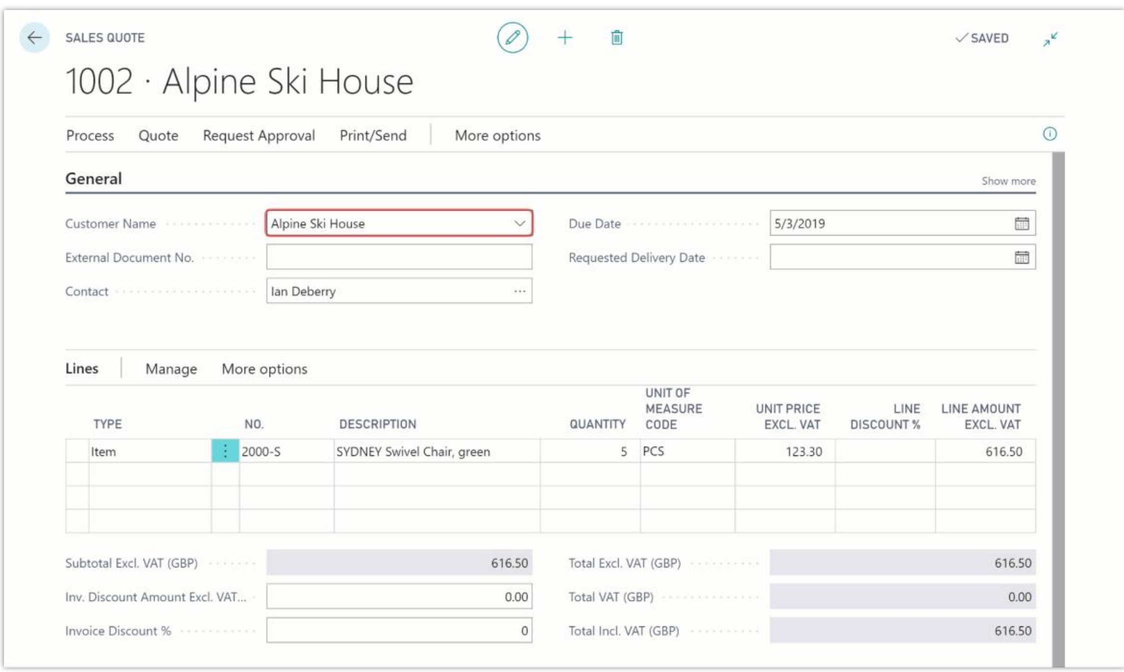
Quick Entry

Accelerate repetitive entry of records with the powerful Quick Entry feature for the desktop browser and Windows desktop app.

Business value

Desktop users spend significant time on repeatedly typing in information to create records in sequence, such as taking orders over the phone, digitizing receipts or registering new items. While users want to view as much detail as possible on a page, only a fraction of those fields must consistently be filled in when creating the record. Navigating to those essential fields becomes cumbersome when working mouse-free, as users are forced to follow the standard tab order of fields on the page.

Quick Entry is a powerful and simple feature that provides an alternate path through editable fields on a page. It changes the behavior of the Enter key to be different from the Tab key, moving the focus to the next Quick Entry field across the page and skipping over non-essential fields.



Screen grab of a page with multiple fields, artificially highlighting those included in Quick Entry

Including or excluding fields from the Quick Entry path

Quick Entry can be personalized using the modern and immersive personalization experience, empowering users to tailor Business Central to how they or their department typically enters data.

Developers can define an initial path of Quick Entry fields per page in their application, customize that in extensions, and also tailor it to specific role profiles. Furthermore, the Quick Entry AL property supports expressions to create dynamic Quick Entry paths to different fields.

A truly productive experience

Carefully designed for the needs of intensive users, Quick Entry includes improvements over the earlier Quick Entry feature in Dynamics NAV, such as:

- Moving to any Quick Entry field across the page, including moving in and out of editable parts such as list parts, by using a powerful combination of keys: **Enter**, **Shift+Enter** and **Shift+Ctrl+Enter**.
- Expanding a collapsed FastTab (field group) if the next Quick Entry field is in that group.
- Cycling from the last Quick Entry field to the first Quick Entry field on the page.

Tell us what you think

Help us improve Dynamics 365 Business Central by discussing ideas, providing suggestions, and giving feedback. Use the Business Central forum at https://aka.ms/businesscentralideas.

New system keyboard shortcuts

The tremendously popular list of keyboard shortcuts already available in the web (desktop) experience of the Business Central October '18 release has been expanded with many additional combinations. Examples include:

- Slim/wide page mode (Ctrl+F12)
- Show/hide fact box (Alt+F2)
- Add new item (Alt+N)
- Previous/next navigation (Ctrl+LeftArrow and Ctrl+RightArrow)

On top of that we have added an easily accessible list of keyboard shortcuts to the documentation page and made it easier for users to discover available shortcuts.

The detailed list of existing and new keyboard shortcuts will be available at https://aka.ms/bckeys.

Development status

In development

Target timeframe

April 2019

Tell us what you think

Help us improve Dynamics 365 Business Central by discussing ideas, providing suggestions, and giving feedback. Use the Business Central forum at https://aka.ms/businesscentralideas.

Autosave indicator

Current Business Central customers as well as customers of Dynamics NAV are very familiar with the concept of autosave common in our products. This is a very much loved and welcomed feature, but we heard from many of our customers moving from other ERP systems that they are not aware data is saved and secured in Business Central—even without explicitly using any save function. It is for those customers that we have built a smart autosave indicator showing when the data is being saved for them.

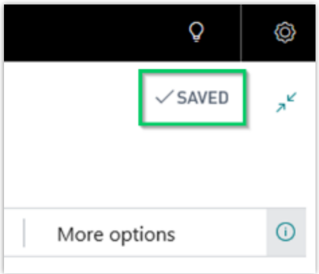
Business value

This new element indicates directly the state of card or document data being saved in the background and provides any user with a clear indication that the entered information is secure.

Autosave indicator appearance

The indicator is shown on the right side of the card on screen and changes values when the computer communicates with the server and saves the data. The indicator can display **Saving** or **Saved** depending on current state. In case a data validation error appears, it would also display **Not saved**.

An example of the indicator in action can be seen below:



The new Autosave indicator in Business Central

Tell us what you think

Help us improve Dynamics 365 Business Central by discussing ideas, providing suggestions, and giving feedback. Use the Business Central forum at https://aka.ms/businesscentralideas.

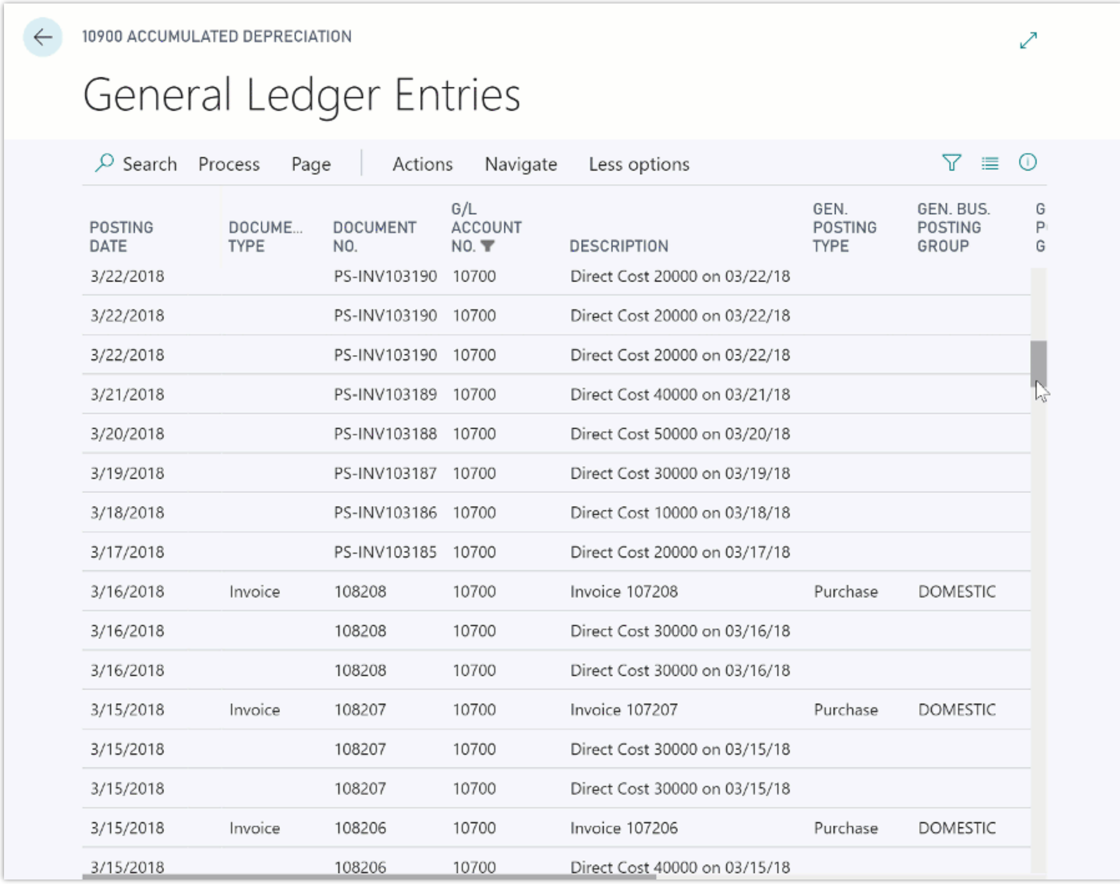
Improvements to scrolling in lists

Work efficiently in lists in Dynamics 365 Business Central with improved grid performance, scrolling, and keyboard navigation.

Back-office information workers spend significant time working with lists: analyzing trends and anomalies or entering and modifying data. As the business database grows, the experience must remain performant and enable users to continue working efficiently.

Improved scrolling and load time

We've rewritten how rows are displayed in a list and how they fetch data, improving the initial display time as well as the snappiness of navigating across cells. Users can now scroll unhindered to any position in the list using the keyboard or scroll bar, without ever pausing at the "fetching more rows" message. The scrolling experience is seamless when scrolling at a pace where rows can be comfortably read. Rows are always loaded on demand to ensure that larger lists do not degrade the experience. In the April '19 update to Business Central, there is no change to records displayed as bricks.



Scrolling through a list

Improved keyboard navigation

Using the keyboard cursor keys to go up or down to the next row is snappy and you can also hold down the keys to navigate unhindered. Selecting multiple rows has significantly less delay.

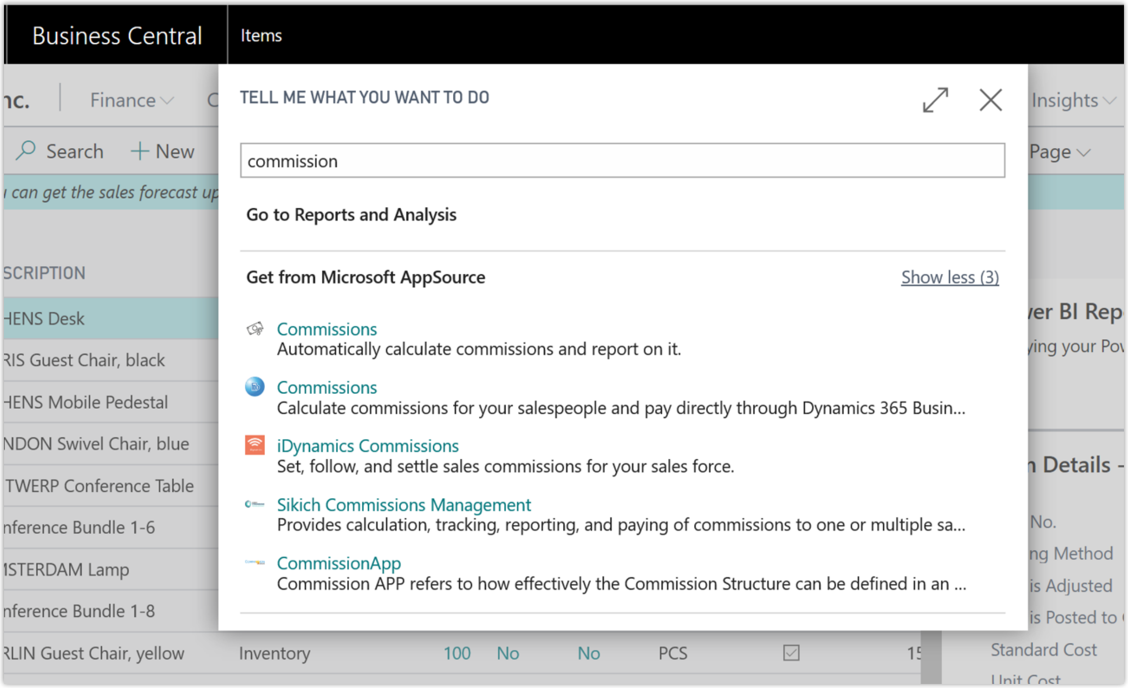
Tell us what you think

Help us improve Dynamics 365 Business Central by discussing ideas, providing suggestions, and giving feedback. Use the Business Central forum at https://aka.ms/businesscentralideas.

Improved contextual search experience

Search results from AppSource

We have improved the Tell me (Alt+Q) feature by allowing more flexible terms and surfacing results for partner solutions on AppSource. This allows users to seek help and easily extend Business Central with the many solutions that are available from the partner community.



Screenshot of search results from AppSource

Additional search terms

New users often use different business terms than those used to name the related entities in Business Central. For example, they might use "product" instead of "item," or "client" instead of "customer."

Developers can now add alternate search terms to pages and reports to make it easier for users to find what they are looking for. In the AdditionalSearchTermsML property on pages and reports, developers can add company-specific terms that users can then enter in the Tell me box to find the page or report in question.

Business Central is published with around 200 such alternate search terms for selected pages and reports, such as "product" to find the Items page and "kit" to find the Assembly BOM page.

Improved all-product navigation

Finding the features in the product easily is essential for all users. So is getting an overview of what’s in the product. For the April '19 update, we are making it easier to find functionality by providing a full overview of features in the product based on the content of RoleCenters. This makes it much easier for our customers to navigate and find the right features in the product while also giving an overview of RoleCenters and their content. As a supplement to using the current RoleCenters navigation bar, the command bar, or Tell-Me searches, this new overview brings the actions or modules you need and use closer to you so that you can stay focused and productive.

Development status

In development

Target timeframe

After April 2019

Tell us what you think

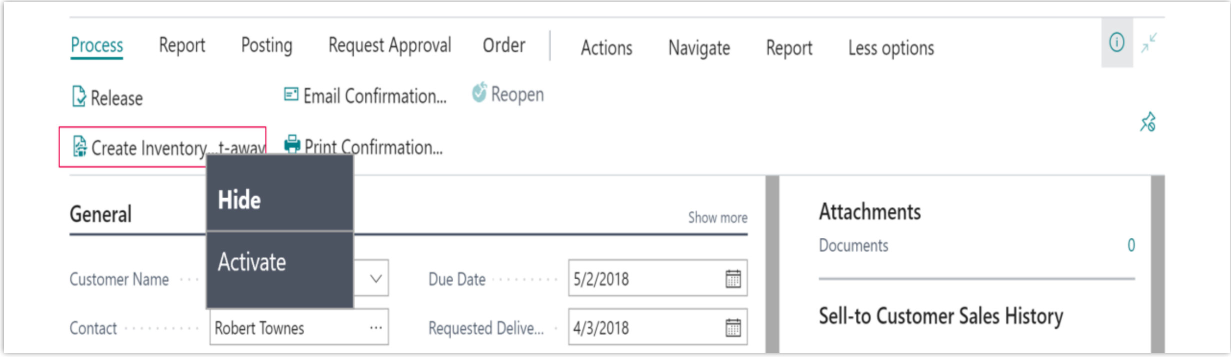
Help us improve Dynamics 365 Business Central by discussing ideas, providing suggestions, and giving feedback. Use the Business Central forum at https://aka.ms/businesscentralideas.

Personalization enhancements

We are giving our users the ability to personalize their workspaces even further with a number of enhancements in April '19. All personalizations in Business Central continue to roam with the user, no matter which device or browser they work on.

Optimize for productivity by adjusting the action bar

One size does not fit all. Users can make minor adjustments the layout of their actions on any list, worksheet, card or document page to optimize for precisely how they work. Hide away any actions that are not relevant to your tasks, role or department. Move actions across groups and hide or re-order groups. Subtle visual indicators guide users to what is possible with the April '19 release of Business Central.



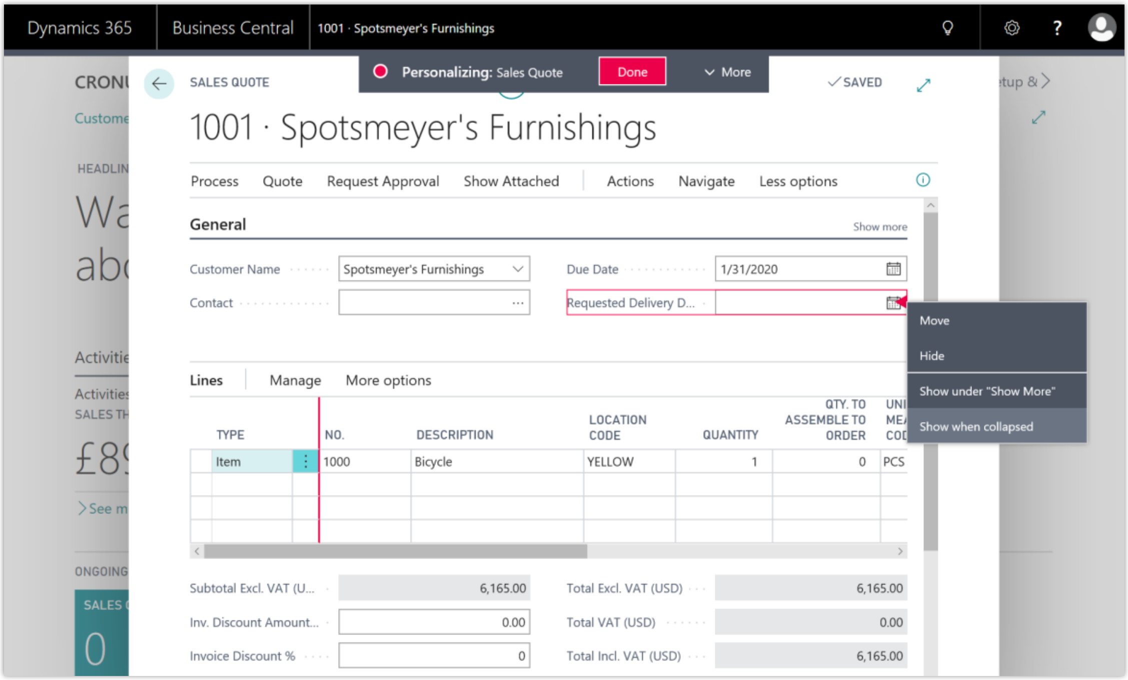
Concept design for a menu allowing personalization of an individual action in the action bar of a page

Optimize for data input with Quick Entry

Quick Entry is a productivity feature for desktop users that accelerates repetitive entry of records. When Enter is pressed on a field, the focus moves to the next editable Quick Entry field, skipping over other fields that are auto-filled or occasionally specified. On any page, users can personalize how fields behave and optimize for how they or their department typically works when entering records. Simply use the personalization menu to include or exclude fields in Quick Entry.

Optimize readability by adjusting field importance

Some fields are needed only occasionally, while others are so important that business users need them visible at all times. Fields on card and document pages can now be personalized to adjust whether they are hidden until choosing **Show more** or are displayed in the FastTab summary when the FastTab is collapsed. Combined with the ability to move, hide, and show fields, this provides maximum flexibility to optimize each page for readability. Clicking a field in a FastTab summary will conveniently expand the FastTab and focus on that field.



Screenshot of a sales quote undergoing personalization where a field is being customized to show when its group is collapsed

Personalize alternate views of a list

Available shortly after the April '19 update, users will be able to edit, save and personalize list views. Saving your filters on any list is a great productivity feature that reduces the need for re-typing common or complex filters. Business Central gives you even more control over your lists: personalize each view independently by adjusting column layout and column sorting to create the perfect overview of your data. Optimize the filter pane on any list by choosing which views can be removed or hidden, and drag an important view to display it at the top of the pane for convenient access.

For additional information, see List Views.

Optimize your business tasks by adjusting the navigation bar

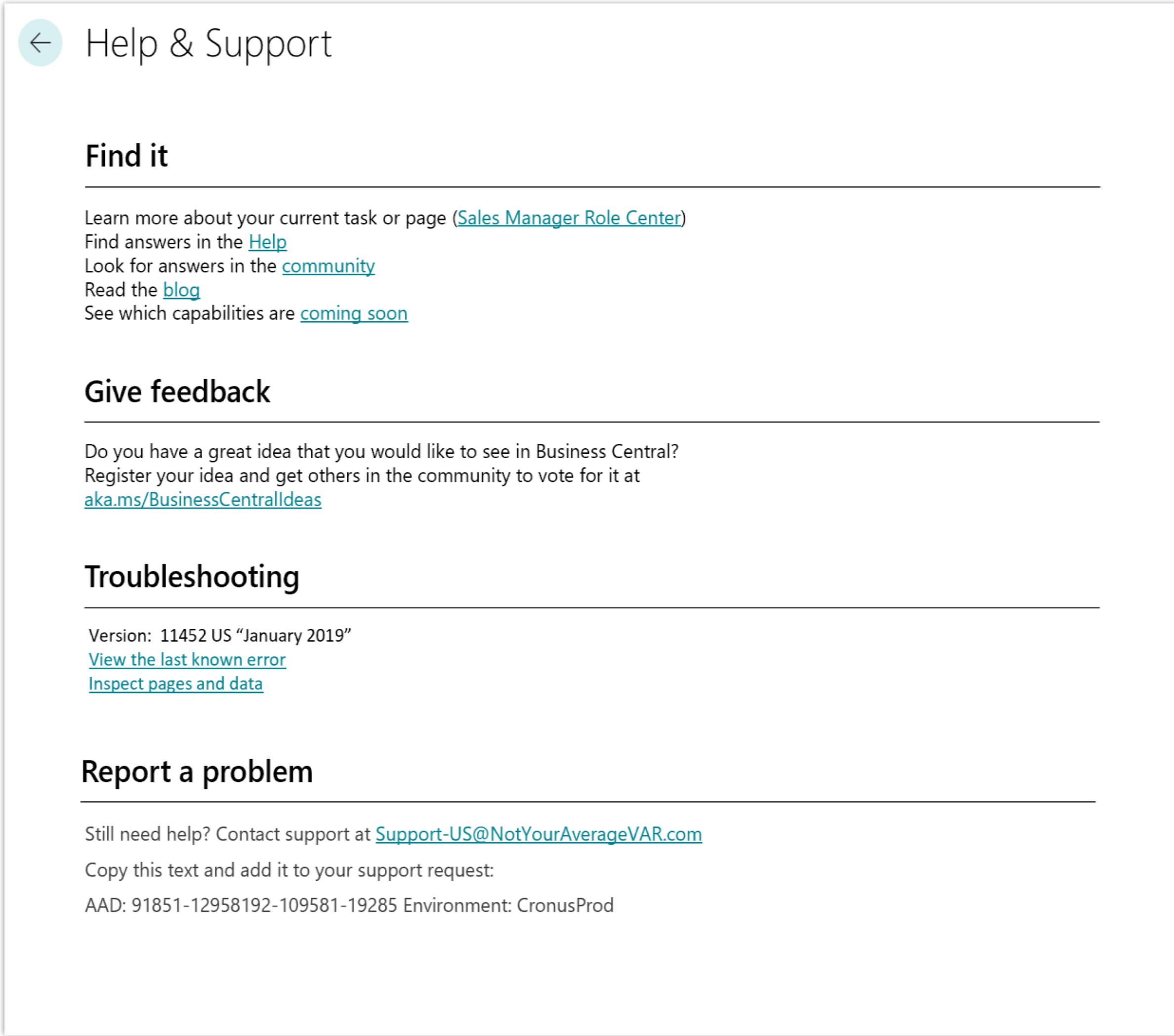
Coming later this year after the April '19 update to Business Central, users will have full control over their links in the navigation bar. By pinning any list to the navigation bar, users can quickly navigate to often-visited collections of records to begin their business tasks without having to search for that list each time. Modifications directly on the navigation bar also include dragging links to re-order them, hiding links that are not relevant, and regrouping links.

Tell us what you think

Help us improve Dynamics 365 Business Central by discussing ideas, providing suggestions, and giving feedback. Use the Business Central forum at https://aka.ms/businesscentralideas.

Simplified Help and Support experience

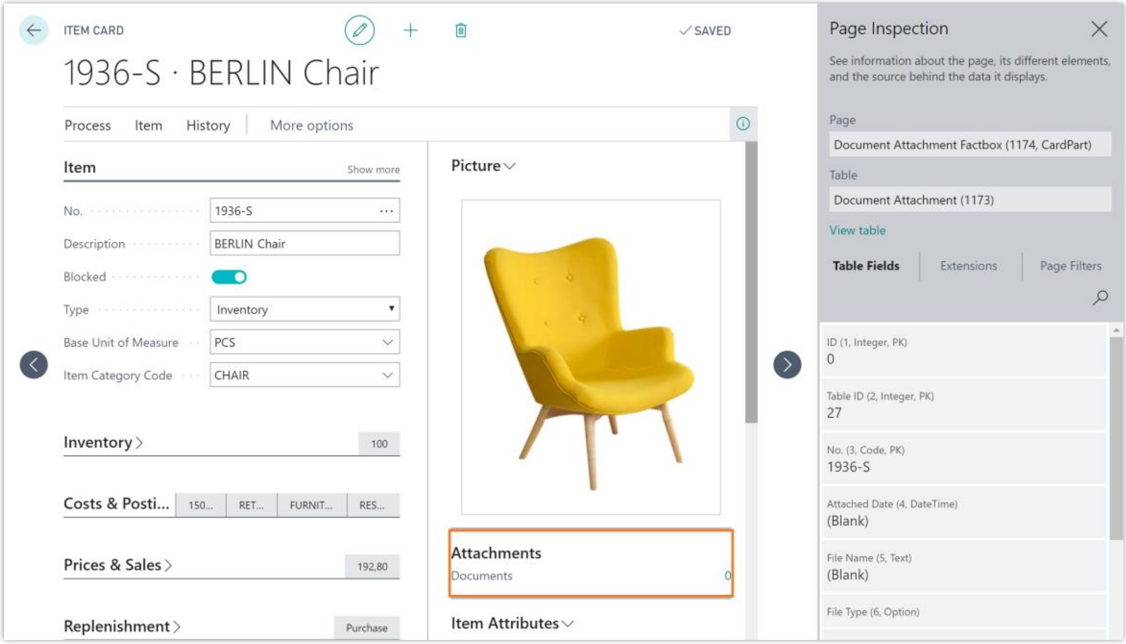
Get unblocked using the new unified Help and Support experience that brings together our breadth of tools and links when assistance is needed. Users will now find links to self-help content and documentation, commonly requested troubleshooting information to self-diagnose or hand over to Support, seek advice from the community, or post new ideas. Administrators can configure a single support email address for the customer's organization that allows any user to contact their IT administrator or supporting partner to receive support.



Concept design for the new in-app Help and Support screen showing a number of links for self-help, giving feedback, troubleshooting issues or contacting support

Page inspection (formerly *About This Page*)

Troubleshooting errors in business data or feature configuration often requires an additional level of insight beyond what is shown on the page. Power users and support staff can now inspect any page (or the page parts within a page), revealing the entire contents of the current record including fields that are not shown on the page.



Inspecting an Item factbox

Getting started

Start inspecting the page you are currently viewing in the desktop browser or Windows desktop app by choosing **Inspect** from the top menu or use the **Ctrl+Alt+F1** keyboard shortcut.

An evolution of the toolset

Unlike its predecessor in Microsoft Dynamics NAV, commonly known as "About this Page," page inspection is an immersive and highly interactive, point-and-click experience that conveniently displays information alongside your page without interrupting how you interact with the page itself. Apart from the improved clarity on precisely what you are inspecting, you can now view which extensions affect the page and/or underlying table, and learn which pages and fields were added by those extensions.

Feature highlights

Depending on the page you are inspecting, some or all of the following is displayed:

- The page or page part name and identifier.
- The underlying table name and identifier.
- The entire set of table fields for the current record, including their caption, value, field identifier, primary key indicator, and which extension has introduced them.

- Which extensions extend the page or the underlying table.
- Which filters are currently applied to the table.

Tell us what you think

Help us improve Dynamics 365 Business Central by discussing ideas, providing suggestions, and giving feedback. Use the Business Central forum at https://aka.ms/businesscentralideas.

Hardening the integration between Business Central and Dynamics 365 for Sales

As an increasing number of Business Central users use Dynamics 365 for Sales, the Business Central integration with Dynamics 365 for Sales has to deliver reliable synchronization, improved sales order integration, and shared AI insights with Dynamics 365 for Sales.

For more information, see Integrating with Dynamics 365 for Sales.

Business value

To avoid duplicated entry of data, data is synchronized between Business Central and Sales. When the synchronized data is changed in both Business Central and Sales, synchronization conflicts can occur. Sales people must be made aware of such conflicts and must be able to resolve them easily without involving the IT department or a partner.

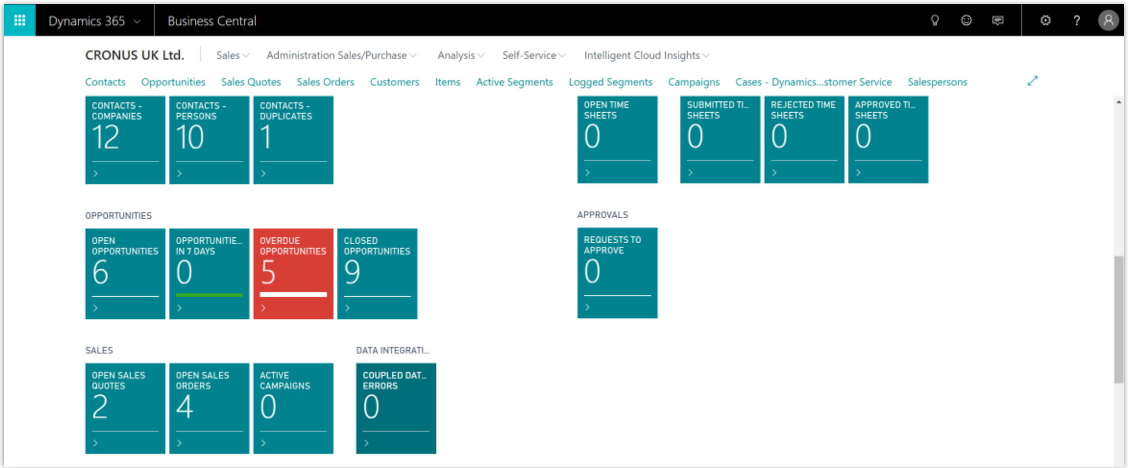
To enable work on the go, sales people must be able to work in a modern mobile app with a responsive user experience, both for Business Central and Sales.

During the fulfillment of sales orders, order processors may update prices, read notes entered by sales people, enter substitute items, or change expected shipment dates. It is important that such changes are available to sales people who work in Sales so that they can quickly notify customers.

Sharing AI-based insight generated from Business Central and Sales data helps sales people focus on the opportunities that are most likely to be closed and it reduces the risk with customers who are expected to be late with payments.

Self-service in resolving synchronization conflicts

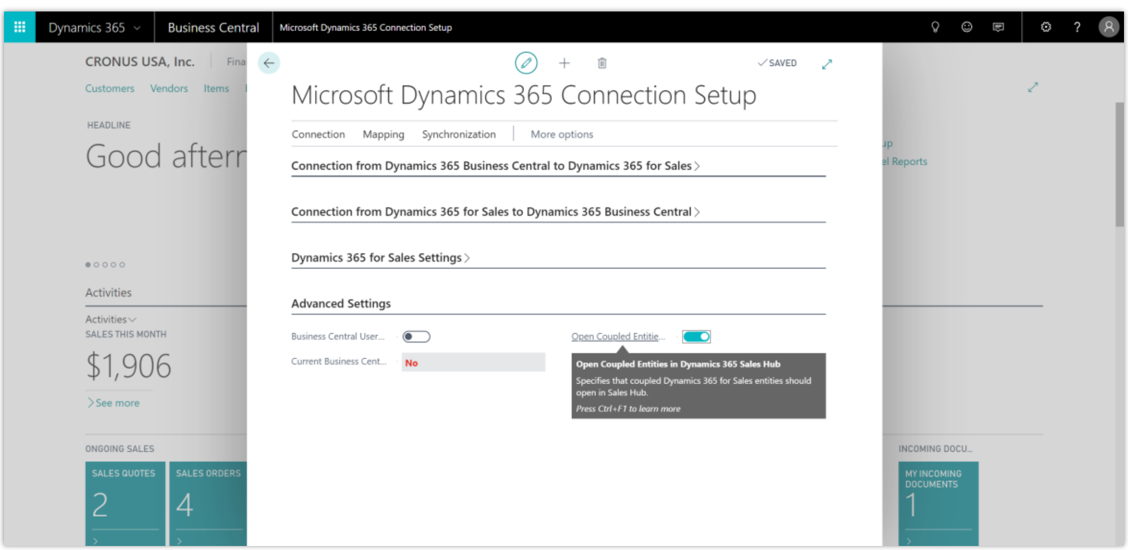
Surfacing actionable synchronization issues on sales-related Role Centers, such as the Sales and Relationship Manager Role Center, enables sales people to decide how to resolve them, for example in bulk, because they are the owners of such data.



Synchronization conflicts tile

Open coupled sales records from Business Central in Unified Interface

You can now open coupled Sales entities from Business Central in the new Unified Interface. If you have the Dynamics 365 Sales Hub app installed, you can select the **Open Coupled Entities in Dynamics 365 Sales Hub** check box on the **Microsoft Dynamics 365 Connection Setup** page. This will open coupled Dynamics 365 for Sales entities in Unified Interface when you choose actions, such as **Accounts**, **Contacts**, and **Products**.

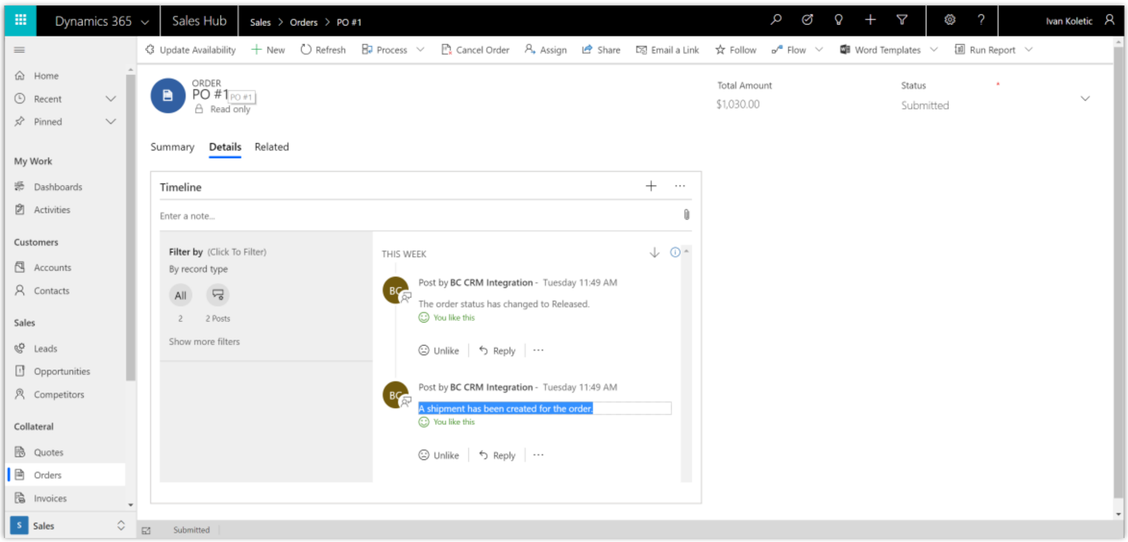


Open Coupled Entities in Dynamics 365 Sales Hub

When the connection to Sales is established, Business Central checks if the Unified Interface Sales app (Sales Hub) is installed and then automatically selects the **Open Coupled Entities in Dynamics 365 Sales Hub** check box on the **Microsoft Dynamics 365 Connection Setup** page.

Sales order synchronization

Once a sales order has been submitted in Sales and created in Business Central, various changes can occur. Such changes can be synchronized back to Sales. You can now synchronize notes that your sales people make in Sales to Business Central.

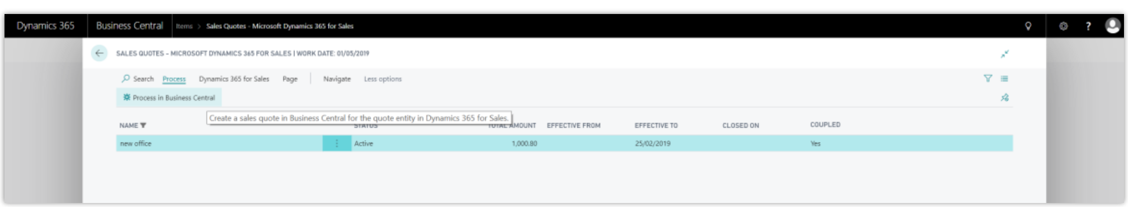


Business Central updates submitted Sales order in Dynamics 365 for Sales

For more information, see [Handling Sales Order Data](#).

Sales quote synchronization

Once a sales quote has been activated in Sales, you can now pick it up and create it in Business Central. As revisions of quotes can occur in Sales, such revisions are synchronized back to Business Central by archiving and updating previously synchronized quotes in Business Central.



Process activated quotes from Dynamics 365 for Sales

For more information, see [Handling Sales Quote Data](#).

Shared AI between Business Central and Sales (post April 2019)

Sales people working in Business Central can consume intelligence generated by AI for Sales, and sales people working in Sales can consume intelligence generated by Business Central.

Tell us what you think

Help us improve Dynamics 365 Business Central by discussing ideas, providing suggestions, and giving feedback. Use the Business Central forum at https://aka.ms/businesscentralideas.

Customize the theme for your organization

Dynamics 365 apps are working to align their respective headers with a new unified header that is shared with Office 365, to provide a more streamlined experience for users working across Microsoft apps. In Business Central, the updated header provides similar functionality and navigation, including links to help and support, personalize Business Central, and adjust your settings. Most notably, the design does not include breadcrumbs.

Office 365 administrators can now change the default theme of the header by specifying a company logo and background color that match company brand. The custom theme is shown in Business Central's header and in other applicable apps such as SharePoint.

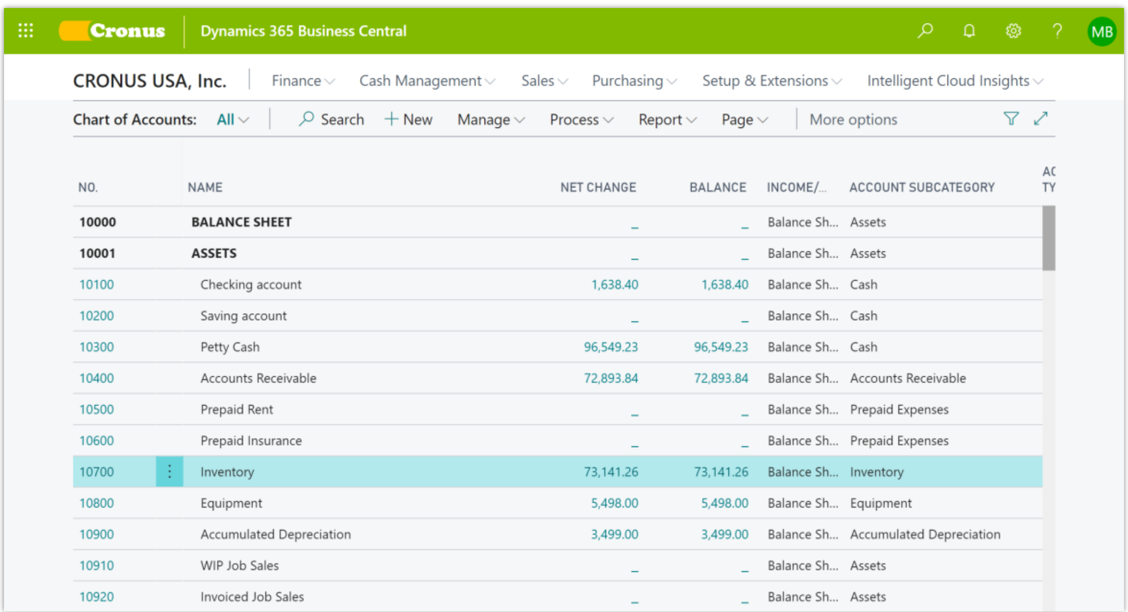


Illustration of Business Central with an organization theme applied to the header

For more information, see [Customize the Office 365 theme for your organization]()

Tell us what you think

Help us improve Dynamics 365 Business Central by discussing ideas, providing suggestions, and giving feedback. Use the Business Central forum at https://aka.ms/businesscentralideas.

Enhancements for Application Lifecycle Management

The April'19 release for Business Central brings enhancements for how you can manage your customers' Business Central tenants.

Manage upgrade schedule

Visibility and control of the upgrading of your Business Central environments is improved with the April '19 release. Business Central tenants will now be scheduled for upgrade on a predetermined date, allowing users and admins to better plan for the upgrade. Admins will also have the option in the Business Central Admin Center to reschedule the upgrade for a different date, or select to have the environment upgraded immediately by choosing an *Upgrade now* action. The admins can also view errors in telemetry that may be causing the upgrade to fail.

Monitoring and notifications

Business Central admins can subscribe to receive notifications of more events happening in their environments. The admins can use the Business Central Admin Center to select recipients that should receive notifications for each of the different event types. The new event notifications include details about upcoming upgrades, upgrade schedules, upgrade results, and available extension upgrades. Admins can also use a new page in the Business Central Admin Center to view the list and details of all notifications.

Version previews

Release candidates of new application versions will be available in sandbox environments. Tenant administrators and ISVs can upgrade a sandbox environment to the new release candidate version, or create a new sandbox environment on the new version. This will allow administrators and ISVs to do testing, verify extension compatibility, and review new application functionality in a sandbox environment prior to the upgrade happening in the production environment.

Multiple sandboxes

Sandbox environments are critical for successfully creating, testing, and upgrading extensions for Business Central. In many scenarios, there is the need to have more than one sandbox environment. In the April '19 release, admins will be able to create multiple sandbox environments for their tenant. Each sandbox is a different environment and can be modified, upgraded, and removed independently, without affecting the production environment.

Enhanced sandbox management

The April '19 release provides enhancements to the sandbox management experience in the Business Central Admin Center. The environment overview will display additional information about the sandbox environment and provide the ability to upgrade sandbox environments to preview versions of the application. The administrators can also upload and deploy per-tenant extensions to a sandbox just as they do with the production environment. The per-tenant extensions and AppSource apps that are deployed to a sandbox will also be upgraded in the same way they are upgraded in production, enabling the administrators to fully test the upgrade in a sandbox environment.

Enhanced extension management

Keeping per-tenant extensions and AppSource apps up to date and making sure they work with upcoming versions is critical. The April '19 release includes a number of features that help administrators with this task. The first is an automated service that validates per-tenant extensions against upcoming versions of the base application and notifies the admins/developers when an incompatibility is found. Notifications will also be sent to admins when a new version of an installed AppSource app is available. The administrator can then select to upgrade the app from the extension management page on their schedule.

Lifecycle Services (Preview)

Business Central ISVs can receive support for the lifecycle of their apps through Lifecycle Services (LCS). Lifecycle Services will be the portal for ISVs to perform full lifecycle management of their solutions, including deployment, upgrade, surfacing preview versions for early testing and evaluation, approval of VARs, monitoring, live site troubleshooting, and more.

Enhancements to the Intelligent Cloud for Dynamics SMB and Dynamics 365 Business Central

The April '19 release of Business Central adds a number of new business value opportunities in the intelligent cloud for our customers.

Dynamics SL 2018 and the intelligent cloud

With Dynamics SL 2018 CU1, existing customers can leverage the features and functionality that the Business Central Intelligent Cloud provides.
Customer can replicate open transactional and master record data from their existing Dynamics SL 2018 on-premises solution to their Business Central cloud tenant. Once data replication is completed, the Dynamics SL data can be used in cloud services such as PowerApps, Microsoft Flow, Power BI, and Azure.

Dynamics GP 2018 R2 historical data available in the intelligent cloud

The April '19 release adds support for additional data from Dynamics GP 2018 R2 to be replicated to the Business Central intelligent cloud.
The October '18 release introduced the availability for Dynamics GP 2018 R2 customers to

replicate open transactional and master record data to their Business Central cloud tenant. We have heard your feedback, and beginning in with the April '19 release, historical data will also be supported in the data replication process.

Dynamics NAV 2018 and the intelligent cloud

To complete the data replication support for all Dynamics SMB products in the intelligent cloud, Dynamics NAV 2018 will be fully supported as part of the April '19 release for Business Central. Dynamics NAV 2018 customers can replicate virtually all on-premises tables to their Business Central cloud tenant, except for customized tables.

Improved data replication services

We are also hardening the data replication service and improve performance and telemetry of the same service.

SmartLists

We're adding SmartLists for simplified business intelligence within Business Central (online) and build a foundation for creating a SmartList Designer tool in a later release.

With SmartLists, users can view query information within Business Central (online) list pages that dynamically renders data on the page based on the query definition.

We expect the October '19 release to introduce the SmartList Designer that will enable users to create new queries or modify existing queries.

Designer enhancements for developers

The Designer accompanies Visual Studio Code and is a convenient way for developers to test and rapidly adjust visual content on page objects.

Designing no longer automatically adds dependencies to all deployed extensions on the test environment. When exiting the Designer, extensions upon which no dependency was taken are silently removed.

Designing actions

When extending a list, worksheet, card or document page, use the Designer to make minor adjustments to the layout of page actions. Hide away actions that are not relevant, move actions across groups and hide or re-order groups. Subtle visual indicators guide developers to what is possible with the April '19 release of Business Central.

Designing Quick Entry

Quick Entry is a productivity feature for desktop users that accelerates repetitive entry of records. When the Enter key is pressed on a field, the focus moves to the next editable Quick Entry field or cell, skipping over other fields that are not always needed or are auto-filled. You can include or exclude fields from the Quick Entry path in the Designer using the menu on any field, and immediately test the outcome of your changes across the page. This is far more efficient than fine-tuning Quick Entry in Visual Studio Code.

Designing field importance

Some fields are only needed occasionally, while others are so important that business users need them visible at all times. Along with the ability to move, hide, and add fields, the Designer now also allows developers to fine-tune a field's Importance property in a highly visual and interactive way.

Designing list views

Available shortly after the April '19 update, developers will be able to design alternate views of list pages within extensions. Author, test, and refine filters using your test data in real time and then save the view to your extension. The Designer also makes it easy to satisfy the more demanding requirements from your customers, including designing specific column layouts and column sorting for each individual view.

For additional information, see List Views.

Designing the navigation bar

Coming later this year after the April '19 update to Business Central, developers will be able to design navigation links and groups of links directly on each role center page. Start with an empty navigation bar and pin any list to build up the set of links to commonly-used tables. Learn more about Designing Role Centers

Tell us what you think

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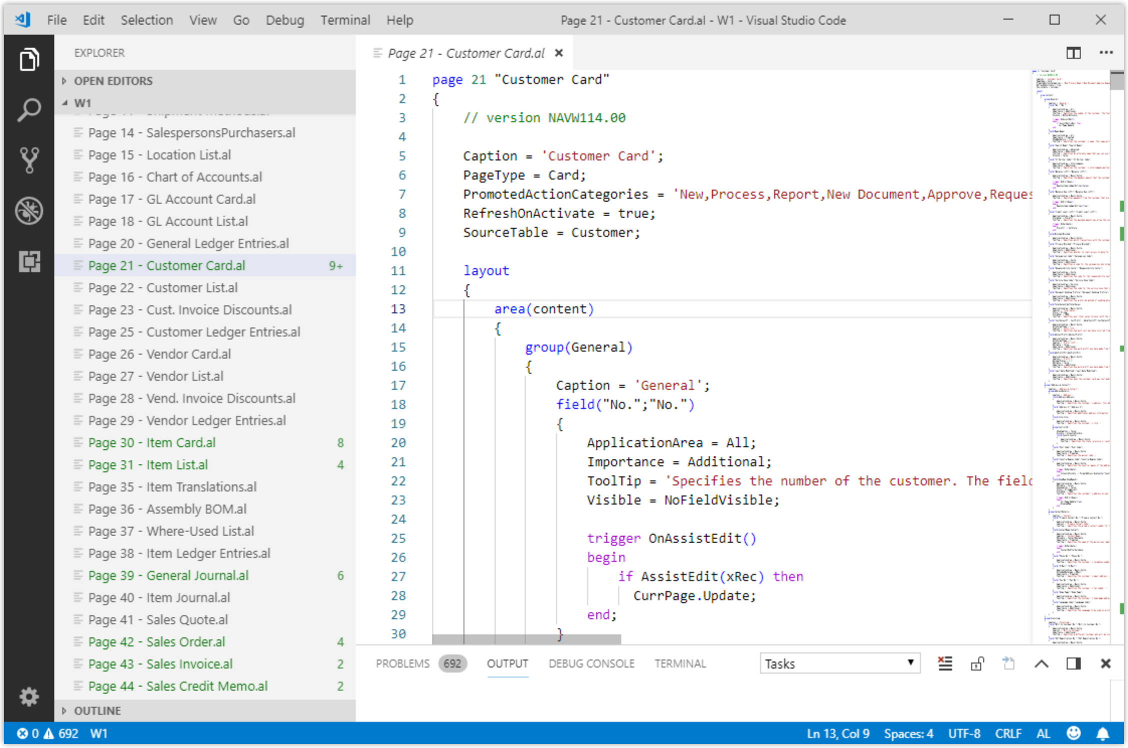
Visual Studio Code and AL

The April '19 release focuses on preparing to move the base application and country modifications from C/AL to AL, on optimizations for working with large projects (such as the base app on AL), as well as on additional productivity features addressing feedback from internal and external developers.

Application as an app

As shown at the Directions 2018 conferences in North America and EMEA, we are working on moving the base application and tests from C/AL to AL. We will be running these in parallel internally and are planning to ship these in preview mode on Docker images before or as part of the April '19 release. The April '19 release is based on C/AL and C/SIDE, and plans are on track to switch to AL and Visual Studio Code as the supported platform for new releases within 12-24 months from our October '18 release.



W1 application converted to AL

Supporting larger projects

In parallel to converting the base application to AL, we are focusing on optimizing the developer experience when working with large projects such as the base application. Some of the investments involve improving:

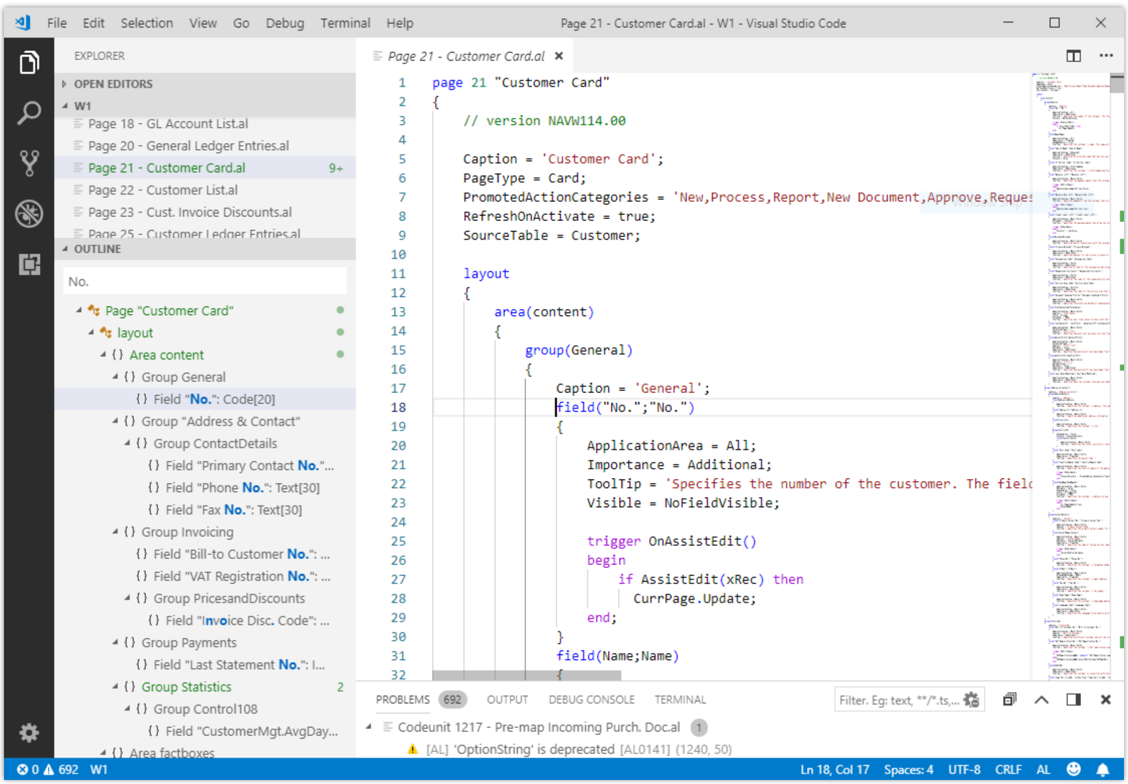
- Performance on the internal metadata repository used by compiler and IntelliSense.
- Load, compile, and build times for large projects.
- Partial compile and deploy for rapid application development roundtrips.

Force sync when deploying applications

You can now create and deploy breaking changes during development without version update or creating upgrade code, by using the new "force" schema synchronization, similar to C/SIDE. This mode permits all changes, both additive and destructive, and applies destructive changes, such as dropping a column, without destroying all other data.

Outline View

We are adding support for the standard Outline View in Visual Studio Code. This allows developers to get an overview of the symbol tree of the currently active editor and navigate to locations in code editor. There are different sort-by modes—you can find or filter on symbols as you type, and errors and warnings are also shown in Outline View, letting you see a problem's location at a glance. You can also use the Breadcrumbs view to easily navigate the structure in an AL file.



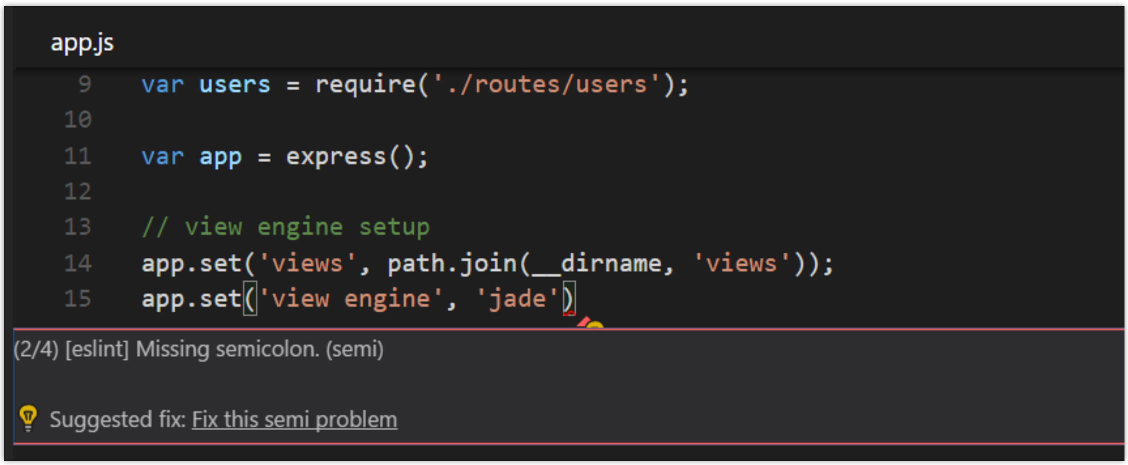
Outline View

Designer no longer takes dependencies on all extensions

The In-Client Designer used to take dependencies on all the extensions installed. This is no longer the case—it only takes dependency on the extensions that are necessary, removing the need to edit these in Visual Studio Code after consultants or customers have used the Designer for small changes.

Code Actions support

Visual Studio Code has a framework, Code Actions, for quickly fixing errors or performing refactoring. We are adding support for this framework in AL projects, and will also be releasing some quick fixes for common problems.



Code Actions

Multiple objects ID ranges in app.json

With this release, you can now add multiple ID ranges in the app.json file to have the compiler issue warnings if IDs are outside of those ranges.

Standard web API

The standard web API is moving out of beta. The API has been in beta while evolving based on feedback from the partner community. This release integrates final improvements and several new entities in the API as version 1.0.

Developer improvements

- Developing APIs in AL using custom namespaces
- Open API Specification 3.x

Changes from beta to v1.0 APIs

- Deep entity nesting

- Simple keys
- Employee timesheet registration API

Business value

The standard web API exposes more than 48 entities, enabling loosely coupled integrations to Business Central. If you use the web API, you don't need development or deployment within Business Central. Key design objectives have been to provide APIs that do not require deep knowledge of Business Central and to provide a fixed versioned contract, which enables a standardized way to integrate across localizations and deployments of Business Central.

The standard API is enabled by default in Business Central online and can be enabled for on-premises deployments as well.

Developing APIs in AL

Extensions can expose APIs, which takes advantage of the API platform in Business Central. This means that custom APIs have the same capabilities as the standard APIs. This includes support for webhooks, OAS 3.0, OData v4, and versioning.

Developing APIs leverages *custom namespaces*—a way to segment APIs into groups. This requires the API to specify APIPublisher, APIGroup, and APIVersion properties.

```
page 50100 ApiPageExpenses
{
    PageType = API;
    Caption = 'apiPageName';
    APIPublisher = 'contoso';
    APIGroup = 'expenses';
    APIVersion = 'v2.0';
    EntityName = 'Receipt';
    EntitySetName = 'Receipts';
    SourceTable = ContosoReceipt;
    InsertAllowed = true;
    DeleteAllowed = true;
    layout
    {
        area(Content)
```

At deployment time, the example shown above causes routing tables to be updated, and with that exposes the endpoint in the specified namespace.

```
GET https://api.businesscentral.dynamics.com/v1.0/api/contoso/expenses/v2.0/companies(7d0b2f2d
-150e-4596-b064-e66f3491811c)/Receipts
```

Open API Specification 3.x

Business Central will provide support for generating OAS 3.0. OAS provides a common metadata format from which SDKs can be generated for most programming languages.

After April 2019, Business Central API documentation will also generate via OAS.

Deeper entity nesting

Due to limitations in Part Pages, it isn't possible to have an entity structure deeper than two levels. An example is:

```
/journal({id})/journalLine(id)
```

Having that limitation, for this specific example, makes **attachments** to **journalLines** cumbersome to use, as there is no way to address the resource directly:

```
/journal({id})/journalLine(id)/attachment(id)
```

Current beta implementations have **attachments** in the root.

Simple keys

Multipart/complex keys are making the APIs harder to use, as constructing requests can require several parameters. By April 2019, APIs will use simple keys.

Employee timesheet registration API

Employee timesheets will be enabled through the standard API. Timesheets within Business Central currently support employee time registration on resources. With current implementation, a resource can represent several machines and persons. By April 2019, using employee timesheet registration will require the resource to which time is registered to point to one employee.

Personas

End users, admins, customizers, citizen developers, developers

Status

Currently all APIs are in beta. By April 2019, v1.0 APIs will be published, containing improvements described above.

Availability

SaaS, on-premises

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Support for SQL Server data compression

As of Business Central April 2019, the use of SQL Server data compression is a supported configuration.

You can use data compression to help reduce the size of selected tables in the database. In addition to saving space, data compression can help improve performance of I/O intensive workloads because the data is stored in fewer pages and queries have to read fewer pages from disk. This is especially useful if your storage system is based on disks and not SSD.

By using the CompressionType property in AL, you can either configure compression in metadata for a table, and let the Business Central table synchronization process handle the changes to SQL Server tables, or you can choose to control data compression directly on SQL Server.

Because SQL Server supports data compression on the partition level, you can combine SQL Server data compression with table partitioning to achieve flexible data archiving on historical parts of a large table without having the CPU overhead on the active part of the table.

NOTE Prior to SQL Server 2016 SP1, compression was not available in every edition of SQL Server.

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Configuring query hints for optimizing SQL Server performance

On its own, SQL Server query optimizer will try to select the best execution plan for queries. Most of the time, query optimizer makes the right choice. Query hints are strategies that can be enforced by the SQL Server query processor to override any execution plan that the query optimizer might select for a query. The Business Central Server instance includes the following configuration settings that let you enable or disable the use of hints on queries in the database:

Hint	Description	Used by default
FORCE ORDER	Instructs the query optimizer to preserve the join order that is indicated by the query syntax.	No
LOOP JOIN	Instructs the query optimizer to use LOOP JOIN for all join operations in the whole query.	No

Hint	Description	Used by default
OPTIMIZE FOR UNKNOWN	Instructs the query optimizer to use statistical data instead of the initial values for all local variables when the query is compiled and optimized, including parameters created with forced parameterization.	Yes

We have made the use of SQL Server query hints in the execution plans of Business Central query objects.

These features have also been made available in Dynamics NAV 2017 and 2018.

Tell us what you think

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Removed unnecessary companion table joins

When executing AL methods COUNT or ISEMPTY on a table that is extended by an extension, if no filters have been set on the fields extending the table, then the Business Central Server will not join the companion table that is storing the extra fields. This gives a twofold performance improvement.

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OData performance improvements

Looking at telemetry, we realized that our OData stack in Business Central server was not performing optimally. First of all, OData's $top query option was not passed on to the TOP clause in SQL Server queries, which meant that the database did not benefit from the $top query option. Second, we noticed that many OData queries in total returned many more rows than the default 1,000 rows defined in the Business Central server OData stack. Therefore, we have changed the default number of rows to 20,000.

OData resource constraints

From telemetry, we also noticed that a few tenants used more than a fair amount of resources on the Business Central clusters. Therefore, we have implemented settings in the Business Central server OData stack to limit the amount of concurrent calls to OData on a server and also control per-tenant governance of resources used.

The following new server settings have been added:

ODataServicesOperationTimeout	Specifies the maximum amount of time that the server instance can allocate to a single OData request.
ODataMaxConnections	Specifies the maximum number of simultaneous OData requests on the server instance (for all tenants).
ODataMaxConnectionsPerTenant	Specifies the maximum number of simultaneous OData requests per tenant.

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(RDLC) Reporting performance on sandboxes

Before we shipped Dynamics NAV 2013 R2, we discovered a huge performance regression in the runtime for RDLC reports. This was because we upgraded to .NET version 4.0, and we needed to set the .NET runtime to use legacy code access security policy to make RDLC reports work with no performance degradation. Fast forward five years, when we enabled debugging in Business Central sandboxes. This required us to disable code access security on sandbox clusters. Unfortunately, this introduced the old regression on RDLC report performance. In the Business Central April 2019 release, we got rid of the performance problem by running RDLC reports fully in a different .NET AppDomain.

Solved memory leak in RDLC reporting

The old implementation of RDLC in the Business Central server had a small memory leak with report executions. In the Business Central April '19 release, we no longer have this memory leak, because we regularly recycle the .NET AppDomain that is used for reporting.

Tell us what you think

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Event runtime optimization

The event subsystem inside the Business Central server is the core of the runtime for the AL extension programming model. In the April 2019 release, we have optimized the subsystem so that it is now 1.5 to 2.5 times faster.

Tell us what you think

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RapidStart optimization

The performance of configuration packages, also known as RapidStart, has been improved. Instead of processing each table node serially, we now send nodes with many rows to a background session in parallel, and throttle the number of simultaneous background sessions so we don't overload the system. The impact of this optimization is that the import of a RapidStart package is approximately 2 times faster, and the deletion of a package is more than 3 times faster.

Tell us what you think

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Power BI report performance improvements

The use of Power BI reports has been optimized for better performance of page loads. In the April 2019 release, Power BI reports are lazy-loaded to disperse requests. Reports are deployed and the initial refresh happens only when users visit their default page for the first time. Auto-deployment of list page reports that was introduced in the October 2018 release has been removed, because the reports were too demanding on resources for larger data sets. Role Center reports have been optimized, and finance data is now cached in the Account Schedule KPI.

Tell us what you think

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Application performance improvements

From user telemetry, numerous performance issues in the Business Central application have been identified and fixed:

- Analysis of long running SQL queries yielded key optimizations, and unexpected locking issues were discovered and removed.
- Locking issues in SIFT indexes on the Sales- and Purchase Line tables have been fixed.
- Data is now cached on the Customer top 5/10 chart, Activities parts, and Mini Trial Balance.

- Dedicated lookup pages for Items, Vendors, and Customers have been added to make these lookups faster.
- Static code analysis yielded several under-indexed or non-indexed FlowFields, which are now much faster to read from.
- In the Edit Sales and Purchase Documents pages, recalculation of all lines for every field has been removed to speed up data entry.
- The workflow subsystem has been optimized to run faster.
- My Customer, My Vendor, My Item, and My Account run faster.

Tell us what you think

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Thread dispatcher favors UI threads over background threads

Inside the Business Central server, a component called the thread dispatcher ensures that all user threads (related to UI or background tasks) get a fair share of the CPU resources on the server. Prior to the April 2019 release, all threads were given time slices of 50 milliseconds to execute work. On a busy system with many background tasks, threads serving UI will sometimes be queued for a short time and yield to threads serving background tasks. In the April 2019 release, UI threads will not be put to sleep because of background threads that need to run, unless there are more UI threads than cores available on the server, in which case they will run in a round-robin priority.

Tell us what you think

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Database insights in C/AL and AL debuggers

Debugging SQL behavior

Traditionally, debugging AL has been about examining behavior of the language runtime—for example, looking into the content of local variables at a breakpoint. As of the Business Central April 2019 release, the C/AL and AL debuggers also offer you the capability to examine the impact that your AL code has on the Business Central database. In the **variables** box of the debugger, expand the **<Database statistics>** node to get insights such as the current network latency between the Business Central Server and the Business Central database, the total number of SQL statements executed, the total number of rows read, as well as insights into the most recent SQL statements executed by the server.

The following insights are part of the database statistics:

Current SQL latency (ms)	**When the debugger hits a breakpoint, the server will send a short SQL statement to the database and measure how long it takes. The value is shown in milliseconds.**
Number of SQL Executes	This shows the total number of SQL statements executed in the debugging session since the debugger was started.
Number of SQL Rows Read	This shows the total number of rows read from the Business Central database in the debugging session since the debugger was started.

Database insights also make it possible for you to peek into the most recent and the latest long running SQL statements executed by the server. To get a list of these in debugger, expand either the **<Last Executed SQL Statements>** or the **<Last Long Running SQL Statements>** node.

The following insights are part of the SQL statement statistics:

Statement	**The SQL statement that the AL server sent to the Business Central database. You can copy this into other database tools, such as SQL Server Management Studio, for further analysis.**
Execution time (UTC)	The timestamp in UTC of when the SQL statement was executed. You can use this to infer whether the SQL statement was part of the AL code between the current and last breakpoint (if set).
Duration (ms)	The duration in milliseconds of the total execution time of the SQL statement measured inside the Business Central Server. You can use this to analyze if you are missing indexes (Business Central keys), or to experiment with performance of database partitioning and/or compression.
Approx. Rows Read	This shows the approximate number of rows read from the Business Central database by the SQL statement. You can use this to analyze whether you are missing filters.

The number of SQL statements tracked by the debugger can be configured in the Business Central Server. The default value is 10.

Tell us what you think

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Multiple unique keys

In AL, a key definition now includes the Unique property that you can use to create a unique constraint on the table in SQL Server. A unique key ensures that records in a table do not have identical field values. With a unique key, when a table is validated, the key value is checked for uniqueness. If the table includes records with duplicate values, the validation fails. Another benefit of unique indexes is providing information to the query optimizer that helps produce more efficient execution plans.

Like primary keys, you can create unique secondary keys that are composed of multiple fields. In this case, it's the combination of the values in the secondary key that must be unique. For example, if you have a Customer table, you could create a unique key for the Name, Address, and City fields to make sure that there are no customers that have the same combination of values for these fields. Unlike primary keys, it is possible to define multiple unique secondary keys on a table.

Tell us what you think

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Relaxed requirement on 8 KB row size

Within the 8060-byte size limitation for a record, a variable-length text field now only accounts for 26 bytes in the record.

Tell us what you think

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Increased maximum length of text and code fields, variables, and text constants

The maximum allowed characters for text and code type table fields, variables, and text constants has expanded.

The new limits are as follows:

Table fields	**Code maximum specified length: 2048** **Text maximum specified length: 2048**
Variables	Code maximum specified length: 2048 Text maximum specified length: 2048
Text constants	Text constant maximum length: 2048

NOTE Text variables still have an unlimited length if no length is specified. This is actually controlled by Int32.MaxValue.

Tell us what you think

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Artificial intelligence

Overview of artificial intelligence (AI) capabilities in the April '19 release

The April '19 release delivers continued investments in AI capabilities that leverage the power of Microsoft AI research, tools, data, and the Power Platform to help organizations transform customer service, sales, and marketing functions.

AI for Sales enhancements

Whether embedded or standalone, these AI for Sales capabilities will now allow sales organizations to adapt the experience to their unique business needs. Organizations will be able to customize the experience, create and configure actions for the Relationship Assistant, and access it from Microsoft Teams. Additionally, managers will be able to customize and extend their AI for Sales reports. With predictive forecasting, managers will be able to leverage AI-based models to accurately predict their team's revenue.

The call intelligence capabilities surface customer sentiment, keywords, and conversational KPIs such as talk-to-listen ratio and speaking speed to sales managers. Using this data, sales managers can provide targeted coaching to their sellers and improve how they engage with customers.

AI for Customer Service enhancements

Dynamics 365 Customer Service Insights will become generally available with the April '19 release, with key new functionality such as enabling data connection directly to Salesforce, Zendesk, and ServiceNow, combined analytics across human and virtual agents in a single dashboard, and more.

In addition, we are releasing the Public Preview of Dynamics 365 Virtual Agent for Customer Service. Virtual Agent for Customer Service makes it possible for customer service domain experts and IT departments in companies of all sizes to create their own virtual agents. Through close integration with Customer Service Insights, support teams can identify high-volume support topics that can be automated using the Virtual Agent conversation editor without the need for AI experts, data scientists, or teams of professional developers.

Dynamics 365 Market Insights enhancements

Dynamics 365 Market Insights will enable business users to gather actionable insights based on what consumers say, seek, and feel about their brands and products.

The April '19 release will empower organizations to answer the important questions, beginning with suggesting related topics while creating searches. Data analytics will become more powerful and sophisticated by relating Bing search data with information found on social media. Additionally, alerts—an email service for daily or weekly updates—keeps users up to date on topics that matter to them.

Dynamics 365 Customer Insights enhancements

Dynamics 365 Customer Insights enables every organization to unify and understand their customer data to harness it for intelligent insights and actions. The April '19 release includes enhancements that allow organizations to unify and enrich customer data, take advantage of AI-powered experiences to cleanse and standardize customer data across sources, embed contextual customer "cards" within Dynamics 365 business process workflows, customize predictive models, build your own customer app and dashboards, and more.

Dynamics 365 Fraud Protection availability

Dynamics 365 Fraud Protection will initially focus on payment fraud protection and related scenarios in e-commerce. It will help enable an e-commerce merchant to drive down fraud loss, increase bank acceptance rates to yield higher revenue, and improve the online shopping experience of its customers.

Overview of AI for Sales April '19 release

The AI for Sales apps help organizations improve their sales force automation process, drive more revenue and ultimately become a best-in-class sales organization. In 2018, AI for Sales started the journey to bring sales organizations to the next level with AI-driven insights. In April '19, the journey will continue with best-in-class artificial intelligence for every sales organization, either embedded directly in Dynamics 365 for Sales or as a standalone offering. Our **embedded experience** is predominantly focused on driving sales execution to the next level. AI for Sales also enables sales managers to lead proactively throughout the entire sales cycle with the purpose-built **Sales Insights** application.

What's new and planned for AI for Sales

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Dynamics 365 Sales Insights: embedded capabilities for sellers

Dynamics 365 Sales Insights further enriches existing Dynamics 365 for Sales functionality by infusing AI.

Relationship Assistant enhancements

The Relationship Assistant empowers sellers with actionable insights during every phase of the sales journey. Going forward, it will guide sellers by providing them with the next best action.

Feature	Release type	Date
Create and configure suggested actions for Relationship Assistant	Public Preview	April 2019

Dynamics 365 Sales Insights: Sales Insights application for sales managers

Sales Insights is built so that any organization can use new AI capabilities. The application is focused on providing the insights that sales managers need to improve their business.

Pipeline and team management

Dynamics 365 Sales Insights provides interactive reports that include key performance indicators (KPIs) for pipeline and deals. On top of KPIs and reports, AI for Sales gives sales managers AI-driven insights and actions to take.

Feature	Release type	Date
KPIs, visuals, and reports	General Availability	July 2019
Sales insights	Public Preview	July 2019
Improved search experience	Public Preview	July 2019
Predictive forecasting	Public Preview	April 2019

Call intelligence

The call intelligence capabilities enable smarter coaching to boost sales conversion rates. By connecting call center telephony recording systems to the app, call center managers can generate conversation insights that help them better understand how sellers are engaging with customers.

Feature	Release type	Date
Enrich existing call intelligence functionality and user experience	Public Preview	July 2019

Embedded AI capabilities in Dynamics 365 for Sales for sellers

Relationship Assistant enhancements

Currently, Relationship Assistant provides sellers with contextual, embedded insights from Dynamics 365 for Sales that reveal the next best step to move each customer relationship forward. It suggests new records to create, such as contacts and activities, or deadlines that were missed. Through contextual and embedded insights, Relationship Assistant helps sellers find information before they reach out to their customers. This helps them be better informed and not miss anything pertinent. Going forward, these capabilities will be more extensible to fit every business need.

Create and configure suggested actions Relationship Assistant (Public Preview)

With the April 2019 release, admins can create their own suggested actions easily and directly from the Relationship Assistant settings experience. They can use events and conditions to customize the circumstances on when the suggestion is created. This capability gives organizations the flexibility to push information into the seller's workflow, helping them close deals faster.

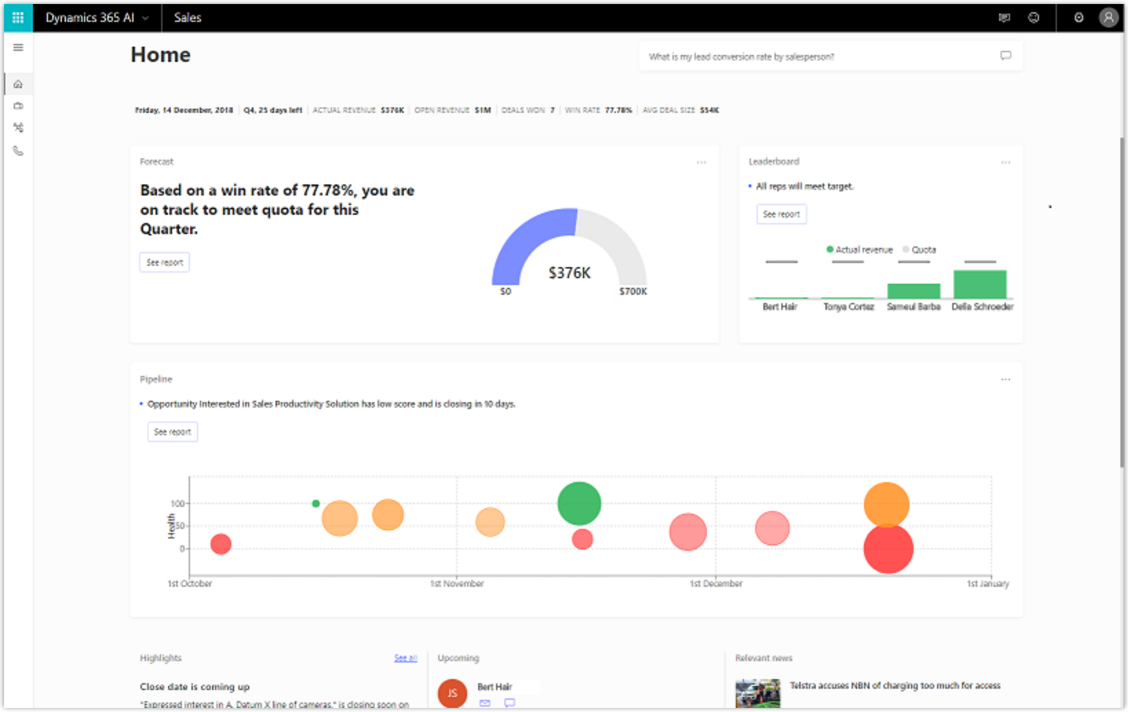
Sales Insights application for sales managers

Pipeline and team management

AI for Sales provides interactive reports that include key performance indicators (KPIs) for pipeline and deals. On top of KPIs and reports, AI for Sales gives sales managers AI-driven insights and actions to take.

KPIs, visuals, and reports generally available

In October 2018, we released a preview of the Sales Insights application, which provides sales managers with interactive reports that include key performance indicators to help monitor and manage pipeline and deals. They can drill down into individual reports and analyze their team's behavior. The *Highlights* section shows relevant deal insights and customer news, providing managers with the information they need to run their business. If something is not available as a chart, sales managers can use natural language to query it with embedded Q&A.



Dynamics 365 Sales Insights: standalone experience homepage

We also enabled sales managers to generate call insights and coach their reps for better business outcomes.

In July 2019, we plan to open the Sales Insights application capability to sellers to ensure transparency of information to both parties who are involved in "smart coaching." As we tie together Dynamics 365 sales outcomes and process data with Office 365 activity data and sales call data, a sales assistant will surface out-of-the-box coaching insights to managers and sellers directly in the app. Reviewing conversations will get even better with emotion detection and automatic detection of brands. With managers having the ability to provide coaching comments right at the transcript for a specific conversation, we will empower them to close the coaching loop. We will open the doors for conversational and sales data exploration through natural language querying via Business Q&A. Finally, the onboarding experience for customers to bring in their call data will be made easier via recording platform partnerships.

Improved search experience

Sales managers can find the information and insights they are looking for more quickly with improvements to the search experience within the standalone experience for sales managers. Answers to most common and important questions are provided through curated results that help sales managers quickly open and filter interactive reports including the best key performance indicators to answer their questions.

Additionally, for less common questions, the best available data that might help sales managers get to the insight they are looking for can be automatically located and visualized. To help sales managers understand the best questions to ask, the search experience also provides improved auto-complete and a comprehensive library of recommended questions.

Predictive forecasting

By removing the manual and error-prone steps from the forecasting process, sales managers will be able to leverage AI-based models to accurately predict their team's revenue at the end of each period. They'll be able to visualize these predictions against quotas to identify opportunities for coaching and course correction. Predictive forecasting will allow managers to deliver even more accurate forecasts and focus on the right deals.

Call intelligence

The call intelligence capabilities enable smarter coaching to help boost sales conversion rates. By connecting call center telephony recording systems to the app, call center managers can generate conversation insights that help them better understand how sellers are engaging with customers.

Enrich existing call intelligence functionality and user experience

In October 2018, the call intelligence product capability enabled inside sales managers to generate call insights and increase the output of their reps. In the April '19 release we plan to provide additional functionality and an enhanced user experience.

Overview of AI for Customer Service April '19 release

AI for Customer Service focuses on digitally transforming customer care at scale through the power of artificial intelligence (AI).

The April '19 release marks a major milestone for the AI for Customer Service offerings: Dynamics 365 Customer Service Insights is now generally available, and we are releasing the Public Preview of Dynamics 365 Virtual Agent for Customer Service.

These offerings in AI for Customer Service can be seamlessly extended by professional developers and integrate with a variety of business systems beyond Dynamics 365.

Dynamics 365 Customer Service Insights

Dynamics 365 Customer Service Insights gives you an actionable view into critical performance metrics, operational data, and emerging trends for your customer service organization. Built-in dashboards, interactive charts, and visual filters provide insights into support operations across channels, automatically highlighting areas for improvement with the greatest impact on customer satisfaction levels.

Customer Service Insights uses AI technology to detect emerging support topics as they arise, allowing you to proactively deliver better customer service experiences. The AI-driven technology enables targeted actions to improve resolution rates, reduce wait times, and decrease customer service costs.

Starting with the April 2019 release, Customer Service Insights is now generally available.

Key new functionality will include:

- **Artificial intelligence (AI) continuously improves support topic clustering based on human feedback**: Users can improve the AI topic clustering by providing input to the AI model. They are now able to rename topics, combine them, separate them or control cluster granularity to tailor the AI model to their business.

- **Get a 360-degree view of the customer service experience**: Users now get combined analytics across their virtual and human agents in a single dashboard. This 360-degree view enables them to improve the customer service experience holistically. Users also get detailed contextual insights with new dashboards for agent performance, escalated cases, and SLA compliance.

- **Bring your data from data sources such as Salesforce, Zendesk, ServiceNow or others**: Users can take advantage of Dynamics 365 Customer Service Insights by connecting to case data in other systems such as Salesforce, Zendesk, and ServiceNow. Additional case management systems can be connected to Common Data Service.

- **Get insights directly from Dynamics 365 for Customer Service**: Users can access Dynamics 365 Customer Service Insights directly within the Dynamics 365 for Customer Service application through embedded insights dashboards.
- **Ready for organizations of all sizes**: Dynamics 365 Customer Service Insights now supports collaboration and other enterprise capabilities such as sharing dashboards, using custom entities or fields, and more. The service is now deployed in additional regions allowing customers to locate their deployments closer to their data.

Dynamics 365 Virtual Agent for Customer Service

Virtual agents—AI-powered bots that chat with customers to help them with support topics—are a new opportunity to digitally transform and improve customer service. Virtual agents free up valuable cycles of the support team, allowing them to focus on more complex cases. In addition, virtual agents can greatly improve customer satisfaction because they are always available, require no hold times, and allow customers to get help immediately.

Typically, creating a virtual agent has been a complex and time-intensive undertaking, requiring a team of developers and AI experts. As a result, only very large companies have been able to take advantage of virtual agents. Even then, they frequently struggle with long content update cycles.

Virtual Agent for Customer Service makes it possible for customer service domain experts and IT departments in companies of all sizes to create virtual agents. Through close integration with Dynamics 365 Customer Service Insights, support teams can identify high-volume support topics that can be automated using the Virtual Agent conversation editor without the need for AI experts, data scientists, or teams of professional developers.

Virtual Agent for Customer Service enables any customer service manager to create a powerful custom virtual agent using an easy, code-free graphical interface and templates, without the need for AI experts or teams of developers. The Virtual Agent for Customer Service can chat with customers, ask the appropriate clarifying questions to identify issues, and guide them to a resolution.

Key capabilities in the April 2019 release include:

- **WYSIWYG graphical experience that empowers customer service teams**: Using a simple, no-code graphical experience, customer service managers and subject matter experts can easily build, manage, and maintain their own virtual agents without requiring AI knowledge, coding skills, or extensive engineering effort. As resolutions change or new support topics arise, the virtual agent can be updated in minutes without code.
- **Continually identifying new topics**: The virtual agent not only helps customers with solutions, it continuously identifies new topics raised by customers who need solutions.

This insight allows customer service managers to quickly roll out solutions to new topics, creating a virtuous cycle improving customer experience.

What's new and planned for AI for Customer Service

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Dynamics 365 Virtual Agent for Customer Service

Feature	Release type	Date
Easily discover high-volume or emerging support topics that can be automated with virtual agents	Public Preview	May 2019
Automate support topics with a virtual agent using an intuitive, no-code, graphical user experience	Public Preview	May 2019
Get started with pre-built templates for common support topics in your industry	Public Preview	May 2019
Analyze and improve virtual agent performance through actionable dashboards	Public Preview	May 2019
Enable actions or access data from back-end systems using Microsoft Flow	Public Preview	May 2019

Dynamics 365 Customer Service Insights

Feature	Release type	Date
Artificial intelligence (AI) continuously improves topic clustering based on human feedback	General Availability	April 2019

Feature	Release type	Date
Get a combined overview of human and virtual agents	Public Preview	August 2019
Agent overview, escalated cases, and SLA compliance dashboards	General Availability	June 2019
Improve virtual agents via automation suggestions	Public Preview	August 2019
Bring your data from data sources such as Salesforce, Zendesk, ServiceNow or others	General Availability	August 2019
Get insights within the Dynamics 365 for Customer Service application	General Availability	August 2019
Personalize the Customer Service Insights experience	General Availability	August 2019
Share insights and workspaces with co-workers	General Availability	May 2019
Generate insights from support data stored in custom entities and fields	General Availability	April 2019
Export data to Azure Data Lake v2 for further analysis	General Availability	September 2019
Set up organizational workspaces	General Availability	August 2019

Overview of Dynamics 365 Virtual Agent for Customer Service April '19 release

Dynamics 365 Virtual Agent for Customer Service is a new cloud service launching in Public Preview in April 2019. Built on the lessons learned by supporting multiple worldwide deployments of customer service bots, the Dynamics 365 Virtual Agent for Customer Service puts the power of deploying solutions to problems through a virtual agent in the hands of the subject matter experts—your customer service team.

Virtual Agent for Customer Service will be available in Public Preview in April 2019 and will be generally available in the second half of 2019.

The key features coming in the Public Preview include:

- **Quickly discover support topics to automate**: Using the integrated Dynamics 365 Customer Service Insights dashboards, quickly see where your human agents are spending the most time, and which issues are most costly or trending. Get suggestions from artificial intelligence on which issues to automate to have the most impact on the system.
- **Automate support topics with a virtual agent**: Easily create a virtual agent to help automatically answer and resolve common issues using a simple, no-code graphical interface. You can create conversations from scratch, or use rich, industry-specific templates to get your virtual agent ready in minutes.
- **Variables**: You can extract entities from the conversation and use them to populate variables that can be used within or passed on to other dialogs.
- **Actions**: Not only can the virtual agent chat with users to troubleshoot their problems, it can also take actions on their behalf. Using Microsoft Flow, a customer service manager can enable an action or access data in your back-end systems, leveraging hundreds of connectors to common services shipping as part of the Power Platform.
- **Work together with your human agents**: When the virtual agent can't handle a problem, or a user asks for a human agent, the virtual agent pulls in a human agent to help. Either use the integration with Dynamics 365 for Customer Service or integrate with your specific case management and agent messaging system.
- **AI-powered analytics for continuous improvement**: You can always see how well the virtual agent is doing, which topics are handled, and which topics require human intervention. Virtual Agent for Customer Service continually provides analytics and recommends actions to improve the customer service experience, helping you free up time from your human agents to focus on more complex cases.

Beyond Public Preview, we will continue to add functionality. Here are some highlights of what to expect:

- **AI-driven dialogs**: Virtual agent can have multi-turn conversations without using a rigid step-by-step script authored by a customer service manager. Given a set of valid solutions and conditions, Virtual Agent for Customer Service automatically uses the next best question to ask—guiding the user to the appropriate solution.
- **Support for additional languages**: Virtual Agent for Customer Service will be able to understand multiple languages, including English, French, German, Spanish, and Italian.
- **Support for additional channels**: The same Virtual Agent for Customer Service will connect to all Microsoft Bot Framework channels, including Teams, Skype, Facebook, Slack, and others, helping your customers regardless of how they choose to communicate with you.
- **Support for telephony**: Telephone calls are one of the costliest forms of customer service. You'll be able to let your agent handle calls coming in to your call center using Microsoft's speech recognition and text-to-speech technology. If the virtual agent can't help, it will redirect the call back to the appropriate call queue and pass along what it has learned so a human agent can pick up the conversation where the virtual agent left off.

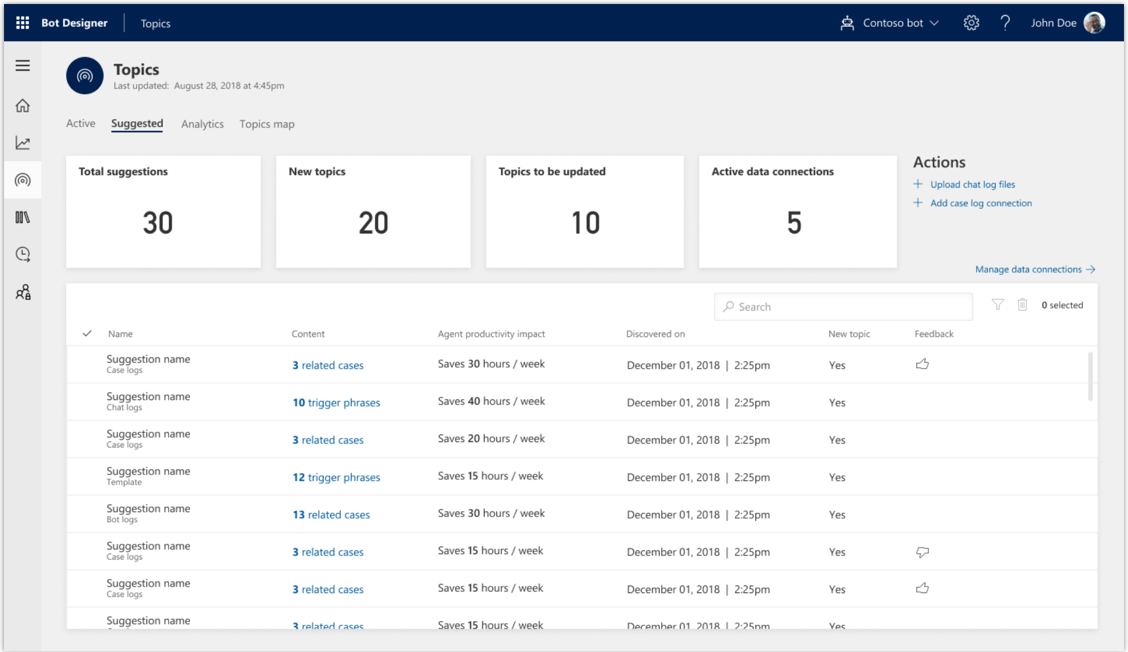
Easily discover high-volume or emerging support topics that can be automated with virtual agents

On most customer service teams, human agents are overloaded, and organizations need them to stay focused on high-impact cases. Dynamics 365 Virtual Agent for Customer Service helps customer service managers identify and then automate high-volume and common support topics, letting human agents focus on high-complexity, high-impact topics, and improve the overall customer service experience.

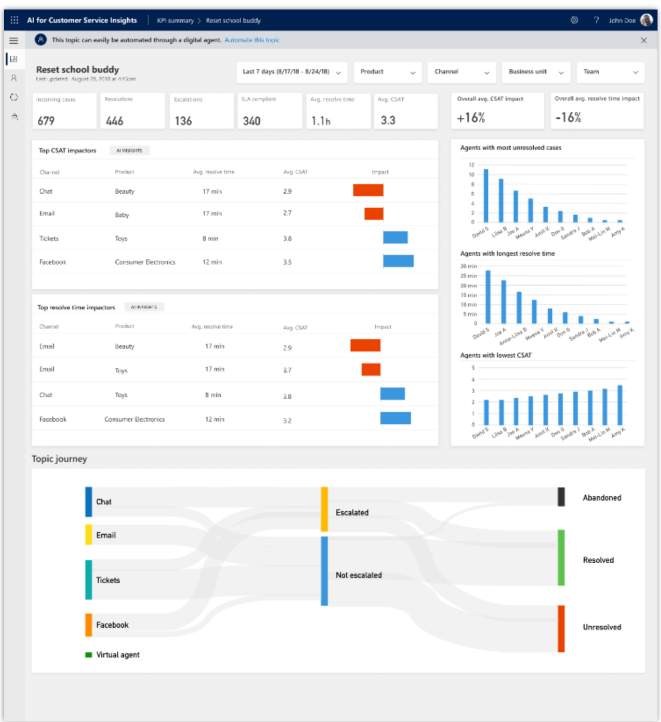
Virtual Agent for Customer Service and Dynamics 365 Customer Service Insights use support case data from the Dynamics 365 for Customer Service application, or a case management system of your choice, to identify high-volume and emerging support topics that can be automated. These recommendations are surfaced in the virtual agent authoring experience. The customer service manager can then choose to author solutions for these topics in the virtual agent.

In Public Preview

The customer service manager will be able to automate the top and emerging issues being discovered from support case incidents and virtual agent chat transcripts.



Topics page

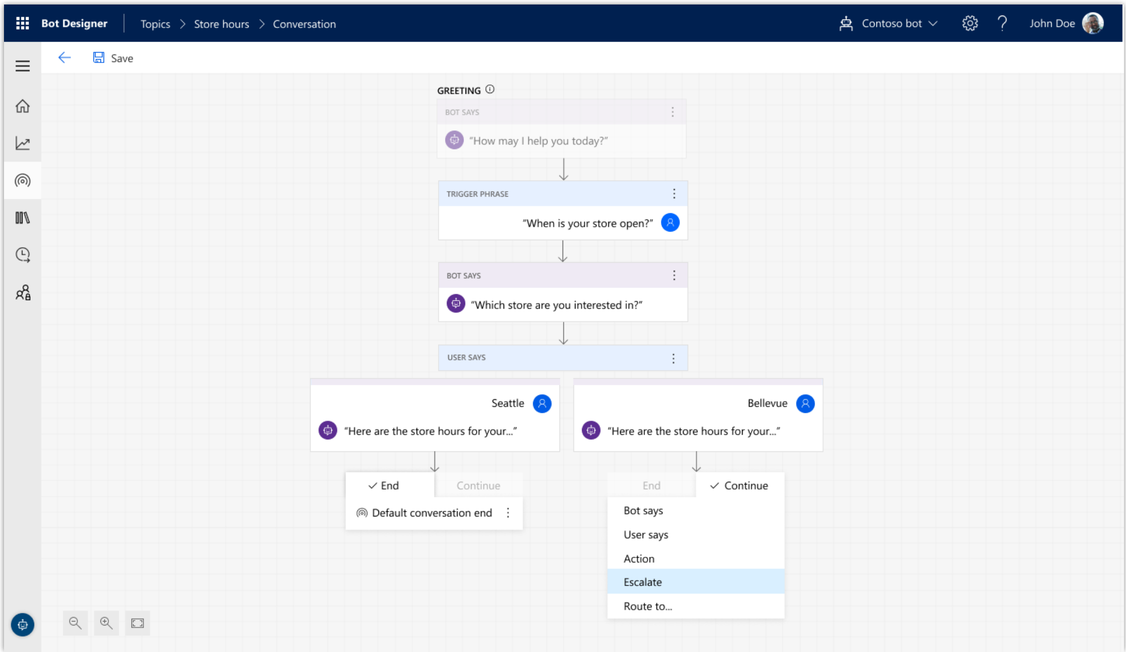


Topic details dashboard

Automate support topics with a virtual agent using an intuitive, no-code, graphical user experience

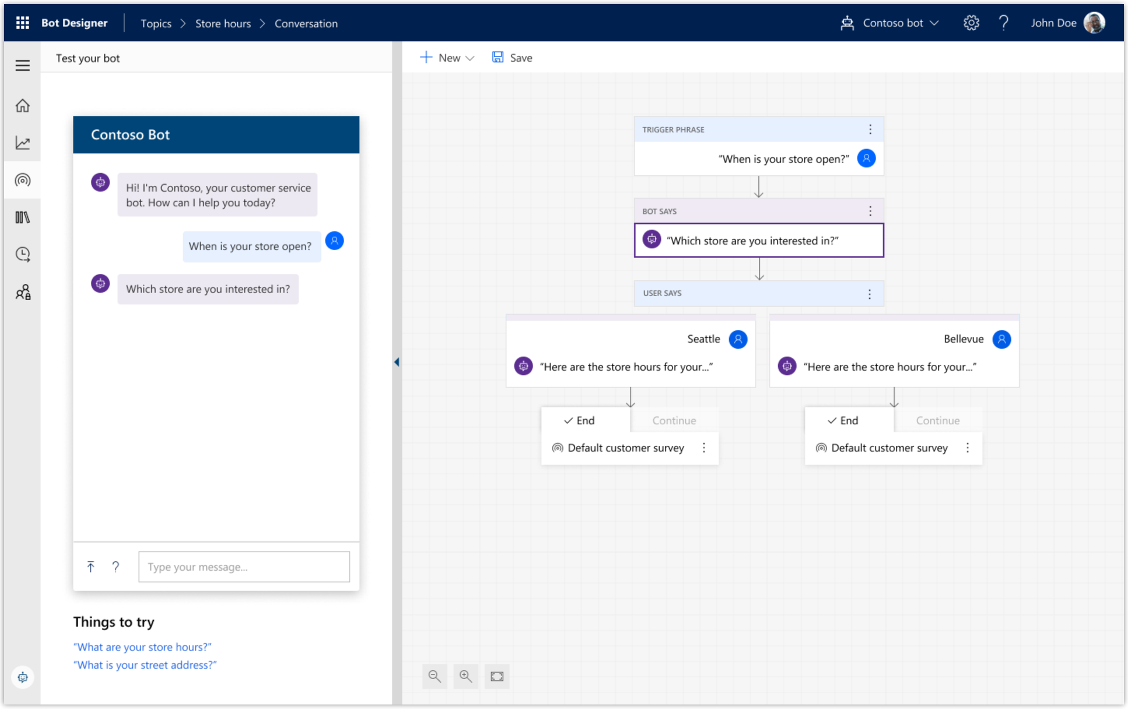
Developing and deploying a virtual agent today requires significant investments in time and technical expertise. Tools and bot development frameworks are oriented toward developers, with the bot's dialog scripts encapsulated in lines of code. Developing a bot requires extended development timelines, internal IT departments, or hiring external system integrators.

Dynamics 365 Virtual Agent for Customer Service offers a graphical designer where a customer service manager can build complex dialog trees and curate an end-to-end conversation between the customer and virtual agent. This empowers individuals to encapsulate their business understanding and conversational best practices—without requiring coding or artificial intelligence expertise.



Conversation editor

In addition, you have access to the test bot within Customer Service Virtual Agent to verify functionality before deploying it broadly. The test canvas allows authors to trace conversations through dialog trees, while interactive chat bubbles allow quick navigation to a specific node within a dialog.

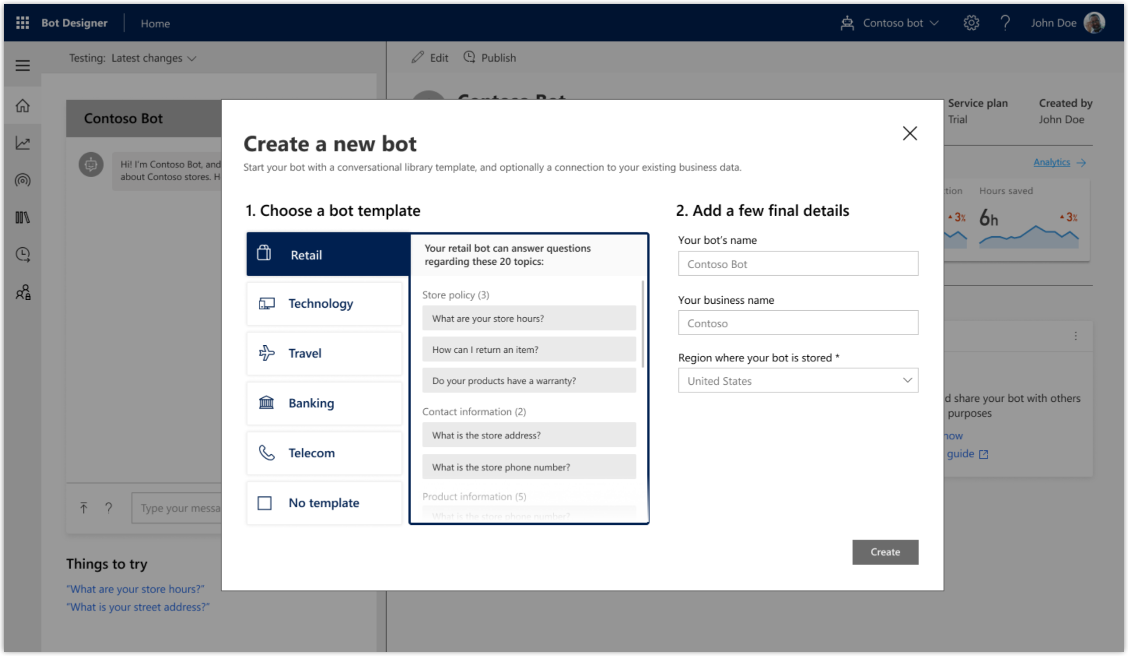


Test Bot

Get started with pre-built templates and models with common support topics for your industry

The steep investment curve associated with building a virtual agent using traditional methods is further amplified by the lack of industry-specific support content and artificial intelligence models.

Dynamics 365 Virtual Agent for Customer Service comes pre-loaded with comprehensive templates that have significant support requirements. These templates empower a customer service manager to build a virtual agent that is pre-trained with key support topics for a specific industry, establishing a base for building conversations that cover industry-specific issues.

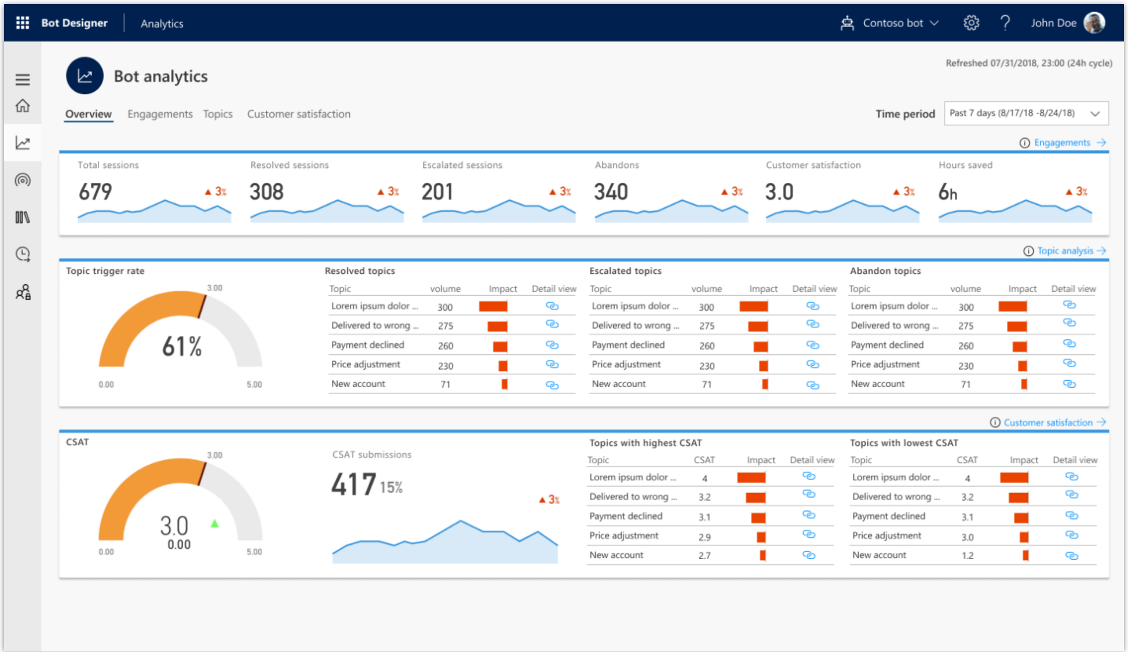


Create a new bot screen

Analyze and improve virtual agent performance through intuitive and actionable dashboards

Virtual Agent for Customer Service integrates with Dynamics 365 Customer Service Insights, which provides detailed dashboards, allowing customer service managers to have a clear view of how their virtual agent is addressing customer service issues, resolution rates, abandonment, and successful hand-off to human agents.

Customer Service Insights also provides analytics and recommendations on how to continuously improve the virtual agent.



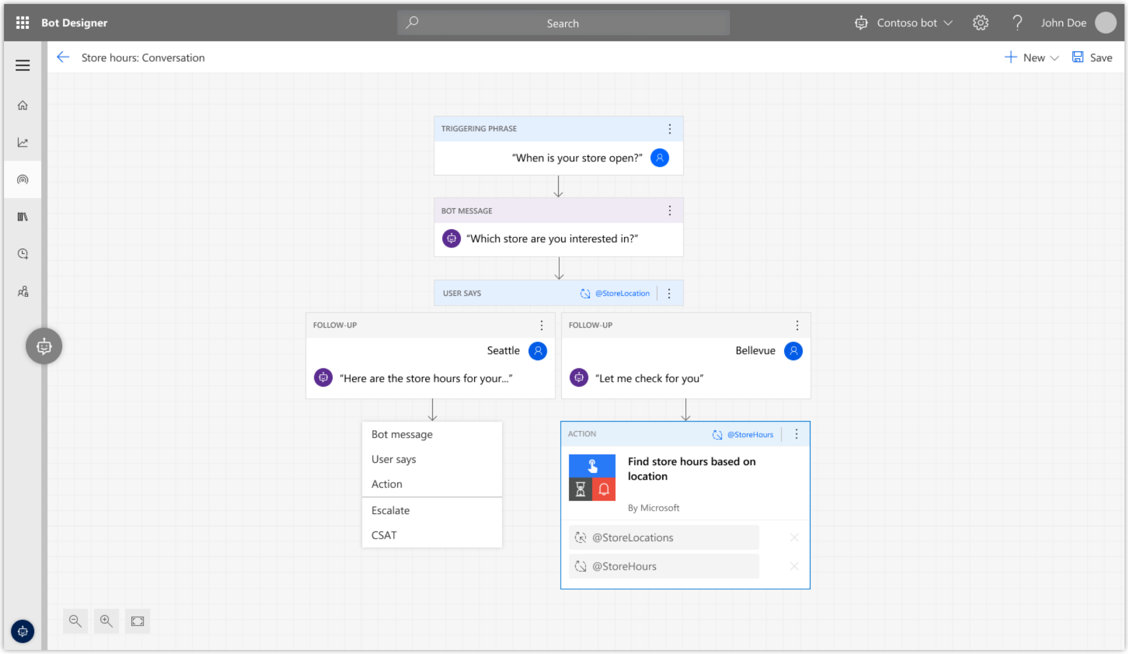
Analytics page

Enable actions or access data from back-end systems using Microsoft Flow

Solutions sometimes require the virtual agent to trigger a back-end workflow or business process on behalf of the user; for example, a query about a gift card balance.

Dynamics 365 Virtual Agent for Customer Service integrates with Microsoft Flow, empowering customer service managers to trigger existing flows or create new ones that call back-end systems without writing code.

Microsoft Flow has hundreds of connectors to common services available, which can be used to automate existing internal workflows. These can then be called directly from dialogs authored in Virtual Agent for Customer Service, adding functionality to the virtual agent. Even custom code and connections to legacy systems can be supported through custom connectors, providing extensibility as the virtual agent's capabilities grow.



Conversation path with flow

Overview of Dynamics 365 Customer Service Insights April '19 release

Dynamics 365 Customer Service Insights gives you an actionable view into critical performance metrics, operational data, and emerging trends for your customer service organization. Built-in dashboards, interactive charts, and visual filters provide insights into support operations across channels, automatically highlighting areas for improvement with the greatest impact on customer satisfaction levels.

Dynamics 365 Customer Service Insights uses AI technology to detect emerging support topics as they arise, allowing you to proactively deliver better customer service experiences. The AI-driven technology enables targeted actions to improve resolution rates, reduce wait times, and decrease customer service costs.

Starting with the April '19 release, Dynamics 365 Customer Service Insights is now generally available.

Key new functionality will include:

- **Artificial intelligence (AI) continuously improves support topic clustering based on human feedback**: Users can improve the AI topic clustering by providing input to the AI model. They are now able to rename topics, combine them, separate them or control cluster granularity to tailor the AI model to their business.
- **Bring your data from data sources such as Salesforce, Zendesk, ServiceNow or others**: Users can take advantage of Dynamics 365 Customer Service Insights by connecting to case data in other systems such as Salesforce, Zendesk, and ServiceNow. Additional case management systems can be connected to Common Data Service.
- **Get insights directly within Dynamics 365 for Customer Service**: Users can access Customer Service Insights directly within the Dynamics 365 for Customer Service application through embedded Customer Service Insights dashboards. There is no need to switch context.
- **Ready for organizations of all sizes**: Dynamics 365 Customer Service Insights now supports collaboration and other enterprise capabilities such as sharing dashboards, using custom entities or fields, and more. The service is now deployed in additional regions allowing customers to locate their deployments closer to their data.

Artificial intelligence (AI) continuously improves topic clustering based on human feedback

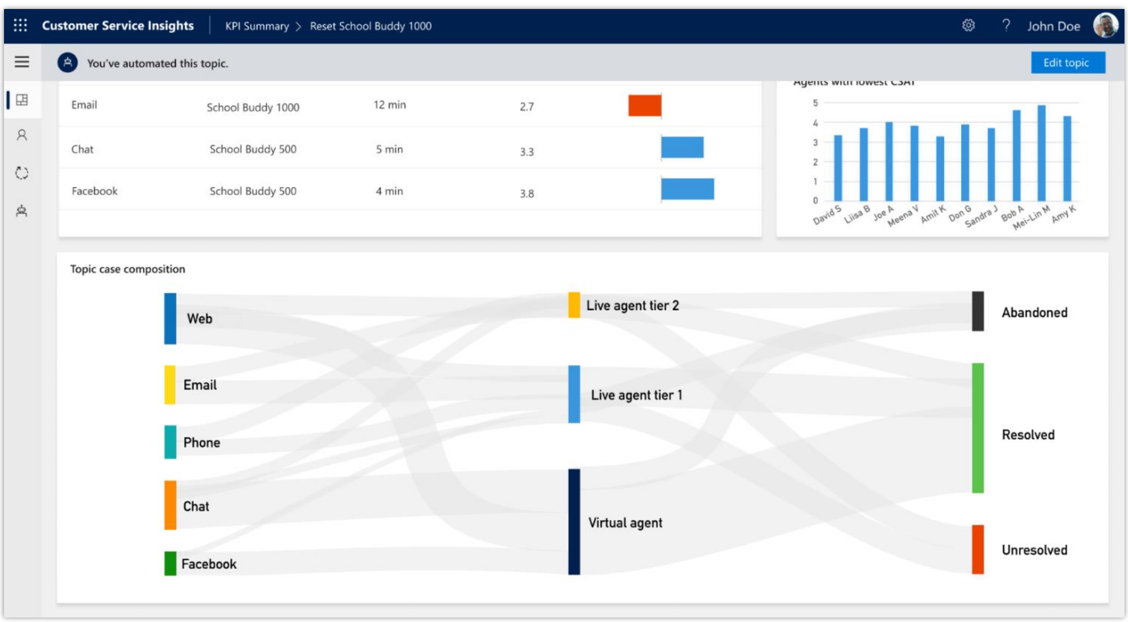
Users can improve the results of topic clustering by managing the generated topics. AI models learn from feedback to improve topic clustering and personalize topic generation over time.

A variety of new capabilities are available to help improve topic clustering:

- Generated topics are kept stable over time to ensure that users can correlate them over time.
- Users can rename topics to suit their business requirements.
- Users can provide quick feedback on cases within a topic to indicate which cases should or shouldn't be included in the topic.
- Users can combine or split generated topics to achieve the desired granularity.
- Users can control the overall granularity of topic generation.

Get a combined overview of human and virtual agents

Improve the entire customer service experience with a 360-degree view of both human and virtual agents. Further improve the virtual agent using drilldown into performance metrics such as topic trigger rate and human agent escalation rate.



Combined overview

Dashboards provide an aggregated single view of the support team's overall performance, giving you a full picture of how the support team is performing without going back and forth between different services. You can view:

- The overall metrics for the whole support team, including human and virtual agents, for case volume, resolution rates, handling time, escalation rate, and customer satisfaction.

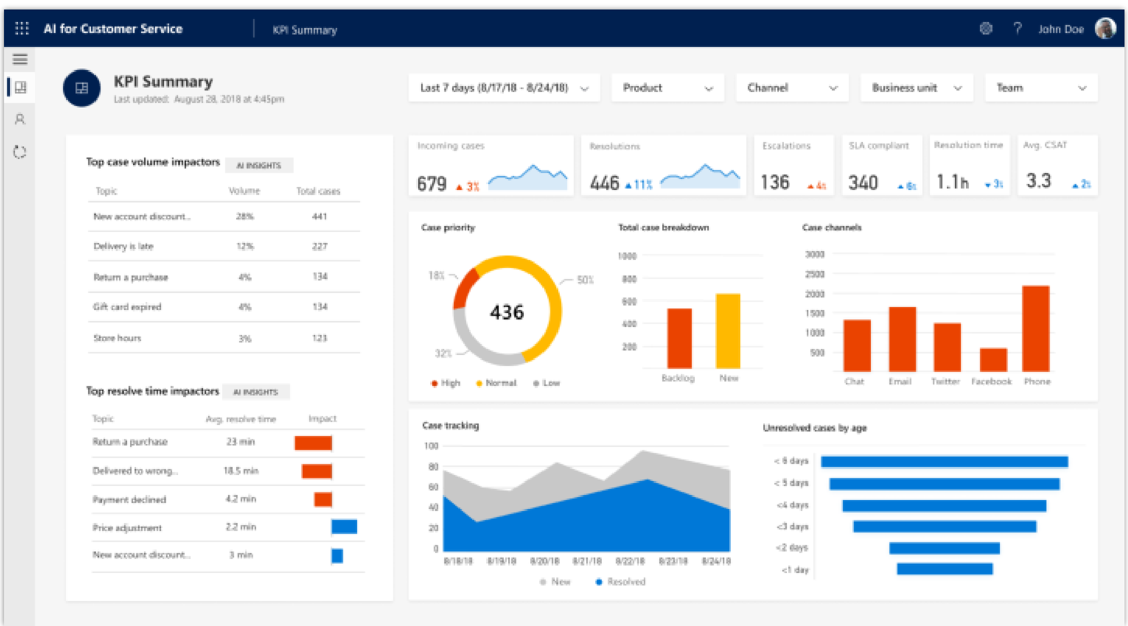
- An overview of how virtual agents impact the overall metrics.
- What can be improved in human and/or virtual agents to improve the overall support team's performance.

In addition to combined views, you can drill down into virtual agent metrics to get deeper insights into the performance of virtual agents, including:

- The topic triggering performance of virtual agents, and new trigger phrase suggestions to improve trigger rate.
- The solution delivery performance for each topic.
- The human agent escalation path and escalation rate.

Agent overview, escalated cases, and SLA compliance dashboards

In addition to the existing dashboards for KPI summary, incoming cases, case resolutions, and customer satisfaction available since public preview, users can get contextual insights into agent performance, escalated cases, and service level agreement (SLA) compliance.



The KPI summary dashboard gives you a snapshot of key performance indicators for measuring customer service

- The agent overview dashboard gives visibility into agent performance such as average resolution times, customer satisfaction (CSAT), SLA compliance, and response times. You can get AI-driven insights across multiple channels, highlight the areas of strengths and performance impact, and identify opportunities for training and improvement.

- The escalated cases dashboard provides AI-driven insights into the common trends and patterns among customer case escalations. You can identify emerging topics in escalated cases, letting you proactively address problems before they have a wide impact. A set of out-of-the-box metrics, charts, and historical comparisons help you visualize and assess the impact of escalations on customer service performance.
- The SLA compliance dashboard helps users understand how well their customer service team is meeting SLA obligations. AI-driven insights along with out-of-the-box metrics, charts, and historical comparisons help assess SLA compliance levels, identify trends, and highlight common topics that result in SLA breaches.

Improve Dynamics 365 Virtual Agent for Customer Service through topics for automation

Customer Service Insights identifies the topics that are best suited for automation using Virtual Agent for Customer Service. You can review the list of suggestions, import the suggested topics into a virtual agent, and deploy the virtual agent in minutes using the integrated experience with the Virtual Agent for Customer Service Designer. Every AI-produced suggestion includes the topic name, related triggers, and potential business impact on metrics, letting you focus on high-impact areas.

- Discover all potential topics from support data, and efficiently identify high-business-value topics best suited for virtual agents.
- Analyze and present the potential business impact for each suggested topic; for example, the impact on customer satisfaction (CSAT), or agent handling time.
- Select and import suggested topics into virtual agents with an integrated one-click experience. Import all topic metadata discovered or produced by the service from support data, including the topic name and related triggers.

Bring your data from data sources such as Salesforce, Zendesk, ServiceNow or others

Dynamics 365 Customer Service Insights works with more than just Dynamics Customer Service data. You can connect to other case management systems like Salesforce, Zendesk, ServiceNow, or other data sources. Once connected:

- Dynamics 365 Customer Service Insights understands the source schema and converts it into the Common Data Model automatically without manual input.
- The newly supported data sources can be imported into any new or existing workspace and are refreshed daily.

- Users can continue to use Common Data Service to get insights on other data sources.

Embed Customer Service Insights within the Dynamics 365 for Customer Service application

Dynamics 365 Customer Service Insights can be embedded within the Dynamics 365 for Customer Service application, letting you get insights in context. Customer Service Insights can be embedded within the Unified Interface on the web or the Unified Service Desk client.

You can select the set of dashboards from Customer Service Insights that you want to embed.

Personalize the Customer Service Insights experience

Customer service managers can now focus on the areas that they care most about by personalizing their experience. You can set default filters once and they will be consistently applied to all dashboards across sessions.

Share insights and workspaces with co-workers

Insights can be shared across the organization by inviting others to access your workspaces.

- Allow invited users to view all the data within the workspace, or limit access based on rules.
- Control invited users' permissions, contributor or reader, for access.
- Users that are allowed to contribute can manage topics in the workspace.

Generate insights from data stored in custom entities and fields

While Customer Service Insights works out of the box with data stored in the Common Data Model, or default Dynamics 365 entities and data fields, the data mapping wizard also allows importing data from custom entities and fields.

- Users can map their custom entities and fields to the Customer Service Insights schema.
- The wizard lets you filter the data being imported based on time or other properties.

Export data to Azure Data Lake v2 for further analysis

In addition to what Dynamics 365 Customer Service Insights provides out of the box, you may require further analysis or correlating with other data. With this release, you can export data from Dynamics 365 Customer Service Insights to your own Azure Data Lake v2 storage. The exported data is based on the Common Data Model, which provides a consistent schema and contains both AI-generated topics and business intelligence (BI) aggregated data.

Set up organizational workspaces

Use the admin experience to create organizational workspaces and grant specific privileges to users. Organizational workspaces provide a more holistic and consistent view to all users, and reduce the load on a Dynamics 365 instance by consolidating data pulls. The tenant admins get a central view to review and manage all the workspaces in the organization. In addition, with support for more geographies, customer data now remains in the region of their choice.

Overview of Dynamics 365 Market Insights April '19 release

Business transformation occurs when organizations make better decisions and drive efficiency through data-driven insights. Dynamics 365 Market Insights enables business professionals to gather actionable insights based on what consumers **say, seek and feel** about their brands and products. With these actionable insights, customers can stay on top of the emerging trends in their market and react quickly to them. Through AI-powered insights on social signals and Microsoft's unique web and search data, Market Insights provides a comprehensive and accurate understanding of consumer sentiment, search trends, audience interests, and product feedback, keeping customers regularly updated with relevant news stories and search and social insights.

The April '19 release of Dynamics 365 Market Insights empowers customers to answer the following questions, beginning with **suggesting relevant topics** (companies, brands, products, entities—existing and emerging) they should be monitoring to get relevant insights.

Industry insights:

- What **trends are emerging** in their market that they should be paying close attention to?
- Who and what are the **top and emerging influencers** (people and web destinations) used by these consumer groups for doing their research on their products?
- What are the **relevant news stories and social insights** on their monitored topics?

Competition insights:

- How is search and social **interest** trending on their products **compared to competitors**?
- What is the **sentiment** on their products **compared to competitors** in the web and on social media?

Consumer insights:

- What **issues sought or spoken of** on their consumer products online should they address?
- What **consumer groups and segments are most and least interested** in their brand, product or topic of research, or that of their competitor?
- What is the **impact of their product marketing activities** (for example, product promotions, pricing, and launches) on consumer interest online (search and social buzz, influencer blogs, and so on)?

What's new and planned for Market Insights

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

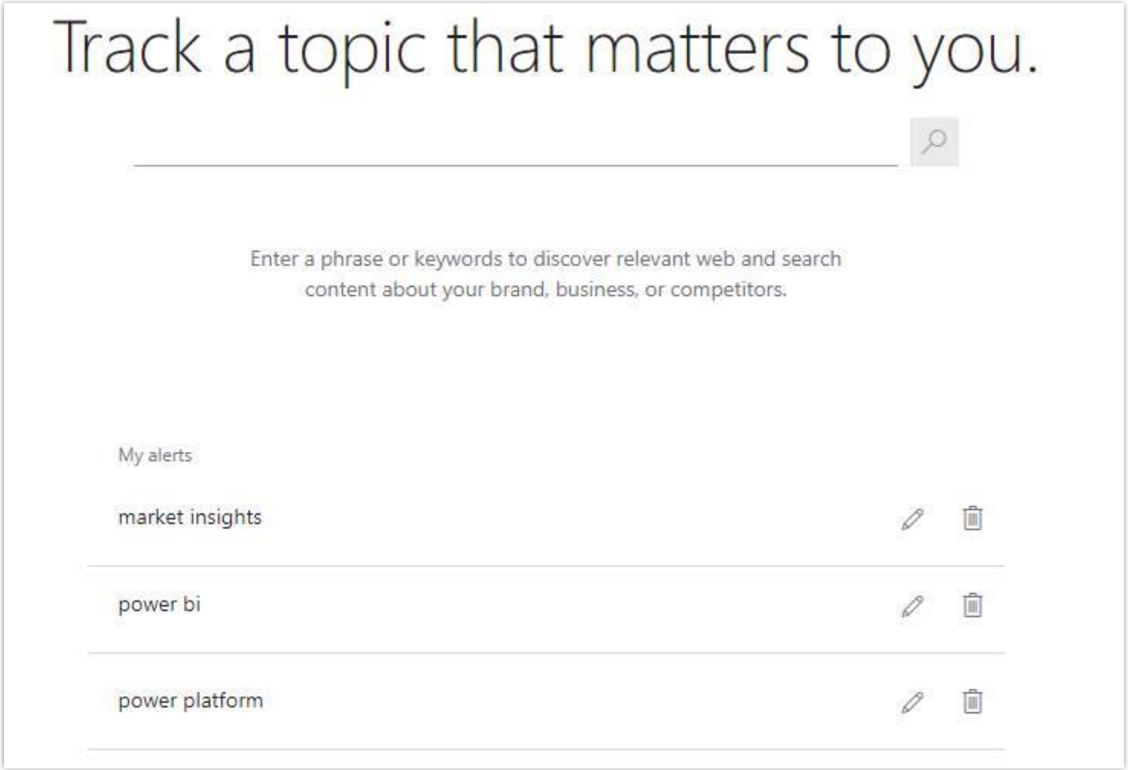
For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Feature	Release type	Date
Daily or weekly alert notifications	Public Preview	April 2019
AI assisted query builder	Public Preview	April 2019
Bing web search rising topics	Public Preview	April 2019

Market Insights Alerts

Alerts is a service through which users can monitor the web for topics of their interest. Users can create an alert simply by typing in a topic they want to monitor and providing their email address. The alert is sent in the form of an email and will contain relevant news and key insights based on online searches and web activity. These could be new emerging competitors, customer issues, PR issues, things likely to go viral, increasing interest in specific products from customers, and more.

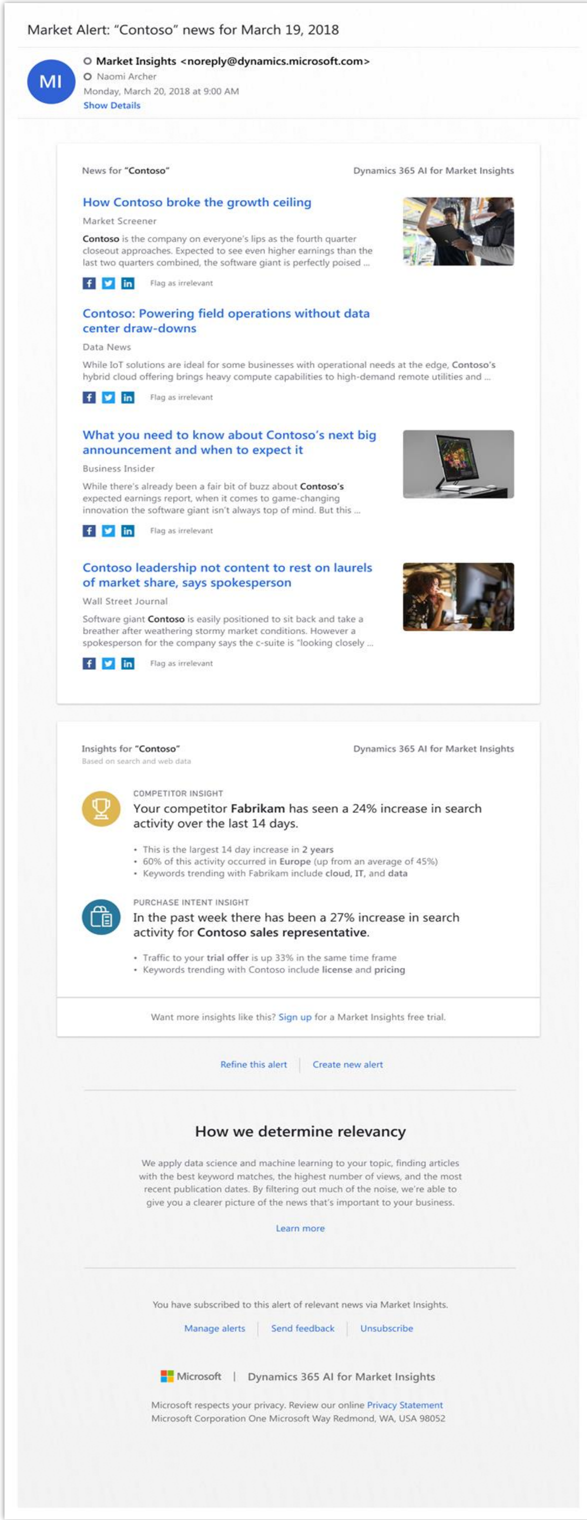
This service is the eyes and ears of business professionals to stay better informed about what's happening in the online landscape related to their monitored topics, so they can rest assured that critical information related to their topics is delivered directly to their inbox.



Alert management settings

Users can customize the alert frequency (daily or weekly) as well as other preferences to suit their specific needs. Additionally, they can refine their search topic by providing granular details to make the news and insights even more tailored.

NOTE Initially, users can track what's happening with their products, brands, or companies in the United States only. The service currently focuses on news published in the United States and web activity by people in the United States.



Sample screenshot for an alert

AI assisted query builder

To get relevant market insights, it is extremely important to ensure that search rules are set up correctly to provide insights on brands, products, and topics that are very relevant and precise to the user's needs. Currently, it can be difficult for users to get the configuration of search rules correct on the first run because it typically takes weeks of iterations before the rules are refined to the level of precision required.

A few reasons make this difficult:

- Consumers search for and mention brands in many ways (for example, Chevy for Chevrolet, FB for Facebook).
- Brand names can conflict and refer to entities in more than one industry (for example, Dove is a soap and a chocolate brand).
- Users often want to exclude specific entities from their topics (for example, a user might want to track trends on "Nike Air Jordan 1" but not the "High Zip" model).
- Users can't always anticipate what related topics are worth monitoring (for example, consumers who searched for Nike Air searched for what else?).

As a result, the relevance and cost of generating insights heavily depend on cutting out the noise and getting your search set up right.

Assisted query suggestions

Our AI-powered assisted query builder solves this core problem. As users start typing their search term, they will be presented with suggested terms most relevant to them. For example, if a user types “Eag...,” they can choose from “Eagle” (the bird), “Philadelphia Eagles” (the football team), “Eagle Scout” (the Boy Scouts), and more. By providing users with a highly relevant list of brands, products, and entities to select, the assisted query builder helps to reduce the cognitive load of search setup so that they spend less time setting up their searches and more time acting on the insights.

Bing web search rising topics

This feature provides users with insights on search query trends from Microsoft proprietary search signals in alert emails.

Marketers can leverage search trends for **understanding new trends in the market** to predict demand for their product and monitor their brand awareness.

Overview of Dynamics 365 Customer Insights April '19 release

Customer experience is at the very core of every organization's digital transformation ambitions. To compete in today's market, organizations need to build meaningful relationships with their customers on a personal level. The ability to effectively personalize at scale requires a complete, unified view of customers. Build a deep understanding of customers by connecting customer data from various transactional, behavioral and observational sources to create a 360-degree customer view to deliver insights that drive customer-centric experiences and processes.

With Customer Insights, organizations can:

- **Eliminate data silos and unify customer data**
  - Connect and unify your data with ease—bring in transactional, observational, and behavioral data from popular data sources by leveraging prebuilt connectors.
  - Transform customer data intelligently—build unified customer profiles conforming to the Common Data Model. Resolve customer identities with recommendations driven by artificial intelligence and machine learning.
- **Enrich with audience intelligence contained within Microsoft Graph**
  - Build richer customer profiles by incorporating audience intelligence contained within Microsoft Graph.
- **Power your business processes and personalized customer experiences**
  - Drive personalized engagement across channels—empower marketing, sales, and service professionals with out-of-the-box, contextual customer insights and tailored customer profile cards infused into the business applications they already use every day.
  - Automate customer-centric experiences and processes based on customizable profiles, business measures, and segments.
  - Enable and extend line-of-business experiences built on the Microsoft Power Platform. Quickly build custom business applications with embedded customer insights using a powerful, click-and-point approach from PowerApps.

The release will include capabilities for the following key users:

- **Data analysts and admins:**
  - Access to a rich collection of Power Platform connectors to ingest all your customer data.

  - Ability to unify customer data and transform it into the Common Data Model format.
  - Enrich customer information with insights from audience intelligence contained within Microsoft Graph such as brand affinity and interests.
  - "Clicks-not-code" configuration and debugging experience to help easily configure customer insights and identify potential issues.
  - Cleanse and standardize customer data across disparate sources with AI-powered recommendations.

- **Business users:**
  - Insights into 360-degree customer profile and end-to-end view of the customer journey.
  - View 360-degree customer data within Dynamics 365 business processes with prebuild packages.

- **Business analysts:**
  - Build customizable profiles, define measures, and create segments to get a 360-degree view of your customer specific to your organization.
  - Use out-of-the-box connectors for PowerApps, Power BI, or REST API to surface customer insights in your business applications or BI solutions.

What's new and planned for Dynamics 365 Customer Insights

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

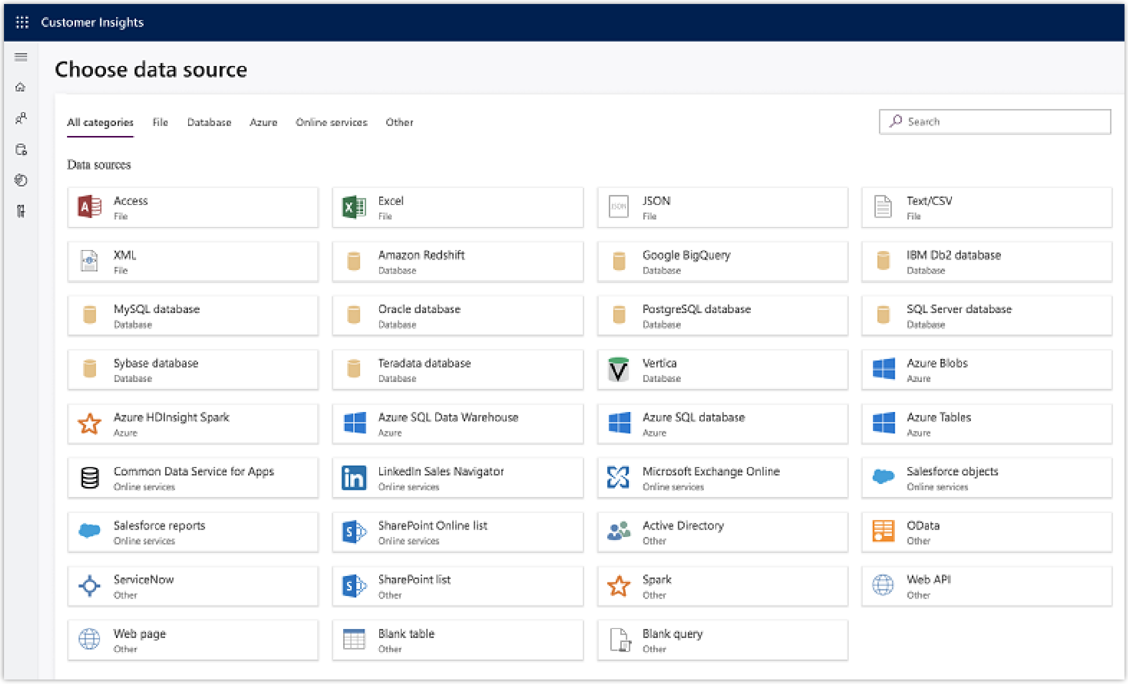
For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Feature	Release type	Date
Eliminate data silos and unify customer data		
Data ingestion	Public Preview	February 21, 2019
Customer profile unification	Public Preview	February 21, 2019
Customer Insights timeline	Public Preview	February 21, 2019
Enrich customer profiles		
Enrich customer profiles with audience intelligence contained within Microsoft Graph	Public Preview	February 21, 2019
Power your business processes and customer experiences		
Customer segmentation	Public Preview	February 21, 2019
Create and manage business KPIs using Measures	Public Preview	February 21, 2019
Pre-build experiences for Dynamics 365	Public Preview	February 21, 2019
Profile search and discovery		
Unified customer profile search and discovery	Public Preview	February 21, 2019
Extensibility		
REST APIs	Public Preview	February 21, 2019
Line-of-business apps and insights through Power Platform connectors	Public Preview	February 21, 2019

Eliminate data silos and unify customer data

Data ingestion

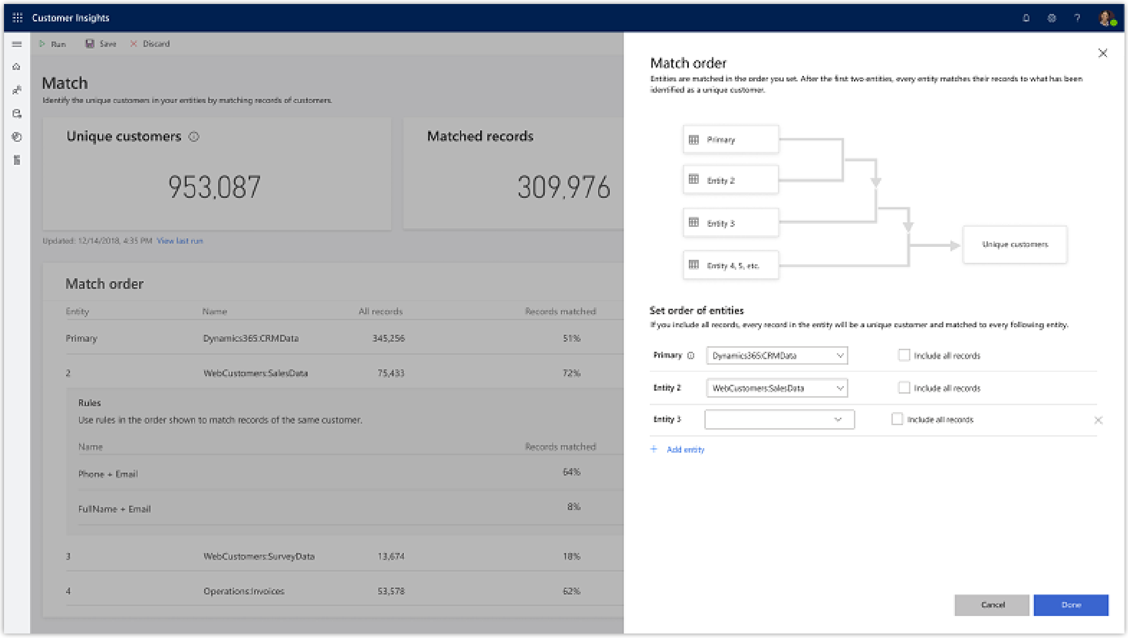
Administrators and data analysts can ingest data from various sources using more than 30 out-of-the-box connectors available in Customer Insights. The CSV/OData connector can be used to ingest data sources that are not supported by an out-of-the box connector.



Customer Insights data ingestion screen

Customer profile unification

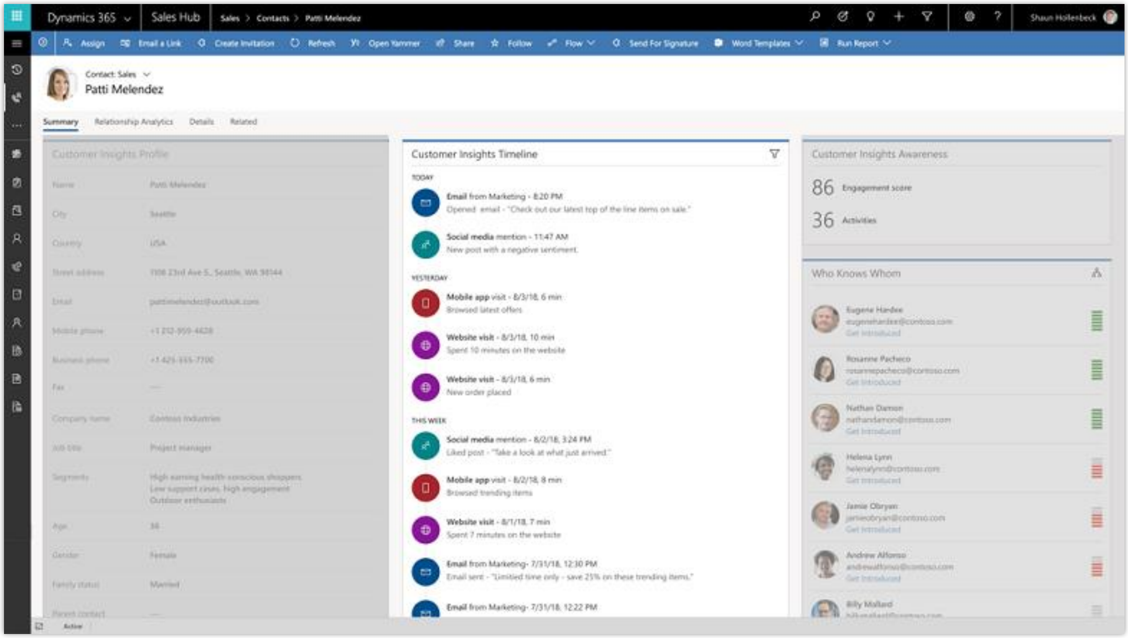
Customer Insights provides powerful capabilities for unifying data into one comprehensive customer profile by mapping all customer records into the Common Data Model and by applying AI to automatically match and merge data from different data sources.



Sample illustration of match pairs and rules associated with them

Customer Insights timeline

The Customer Insights timeline capability helps consolidate customers' activities from various data sources, to create a timeline view of all customer interactions. Business analysts can preselect the type of interactions to be displayed on the timeline view, which will be displayed in the customer profile dashboard and can be embedded in Dynamics 365.

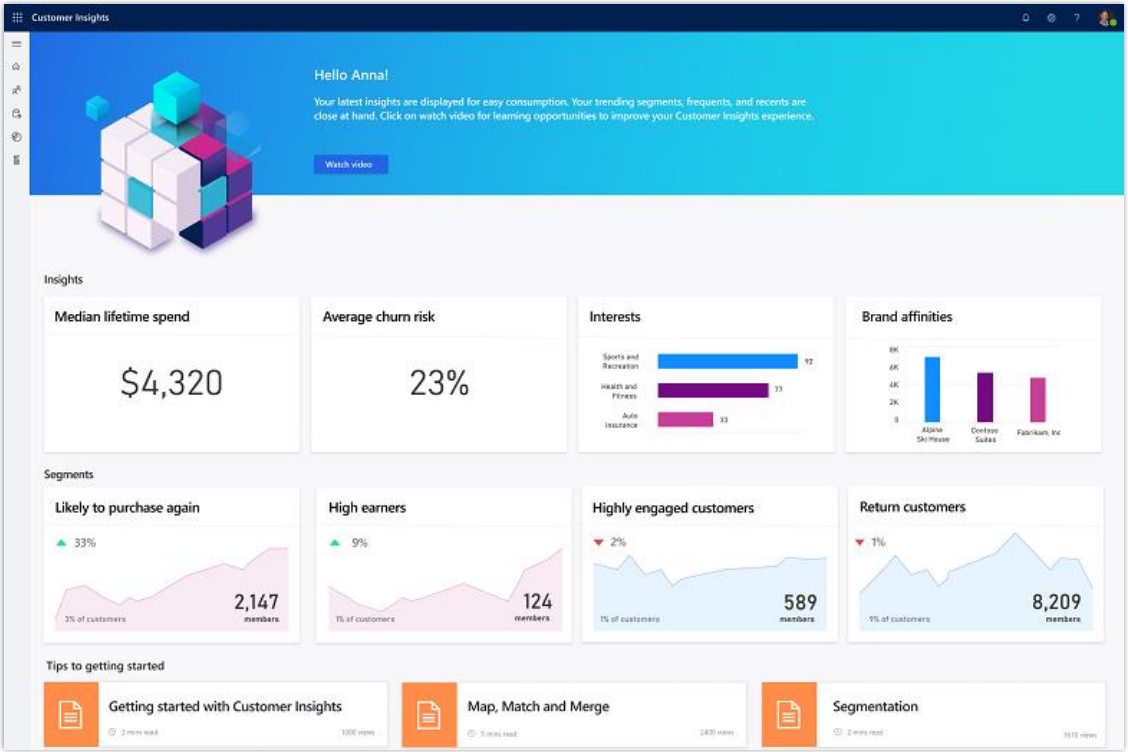


The Customer Insights timeline

Enrich customer profiles

Enrich customer profiles with audience intelligence contained within Microsoft Graph

Enrich unified profiles by adding Microsoft-provided data such as brand affinity and interests from audience intelligence contained within Microsoft Graph. These signals are generated for the generic predictive profile/persona for an age, gender, and location combination.

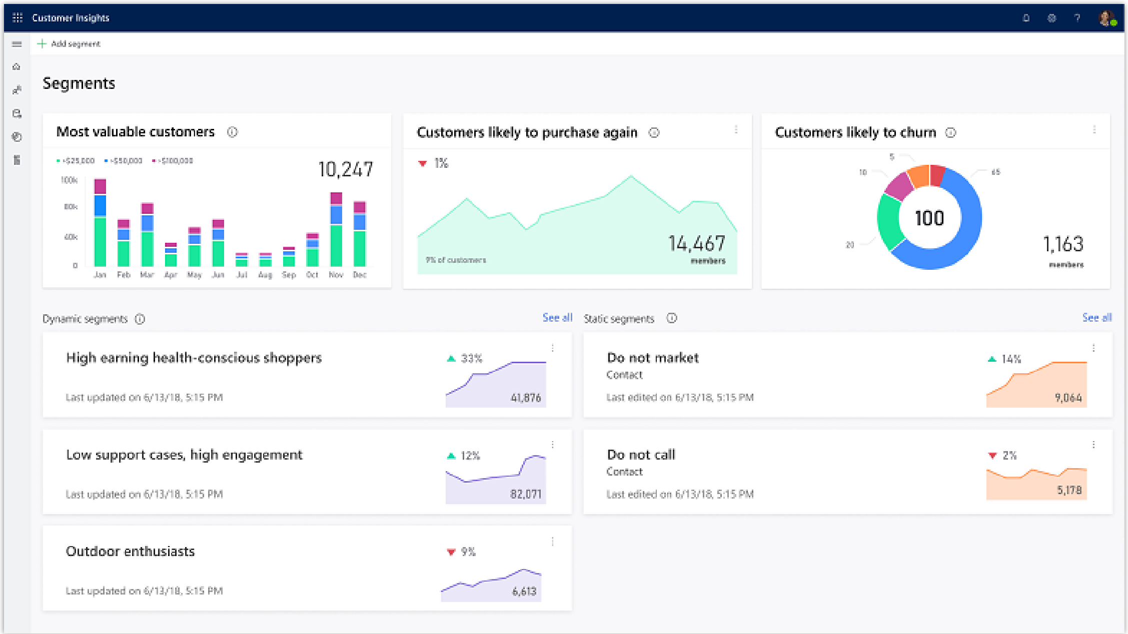


Sample Customer Insights home page with KPIs related to brand affinities and interests

Power your business processes and personalized customer experiences

Customer segmentation

Business analysts can easily create static or dynamic customer segments based on a combination of common attributes and interactions associated with the unified customer profile. These segments can be used to better understand your customers based on common characteristics and help target each group appropriately through marketing campaigns.

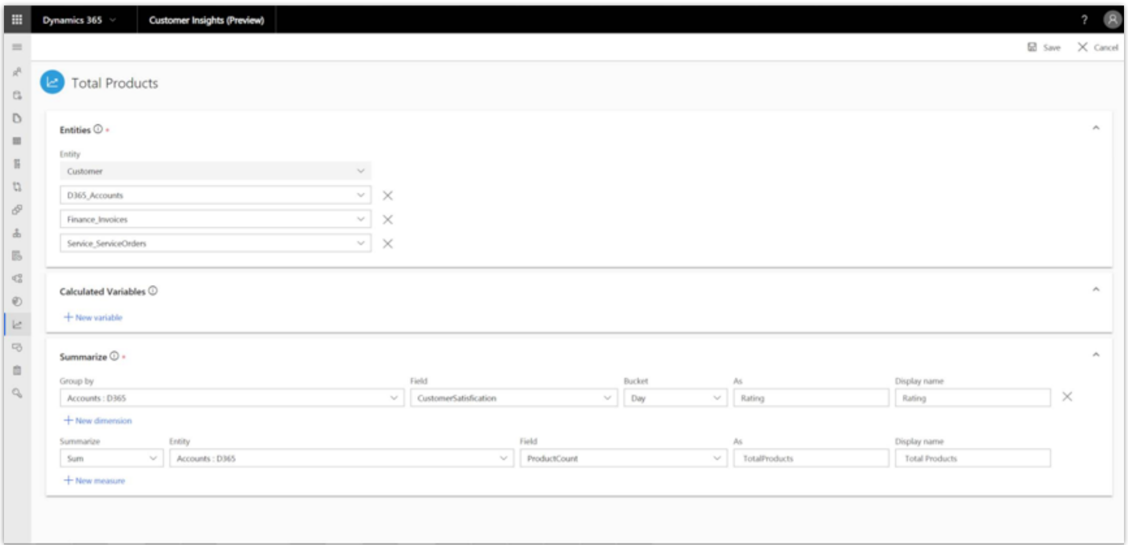


Customer Insights Segmentation screen

Customer segments can be easily shared with Dynamics 365 or exported to be used in other marketing solutions.

Create and manage business KPIs using Measures

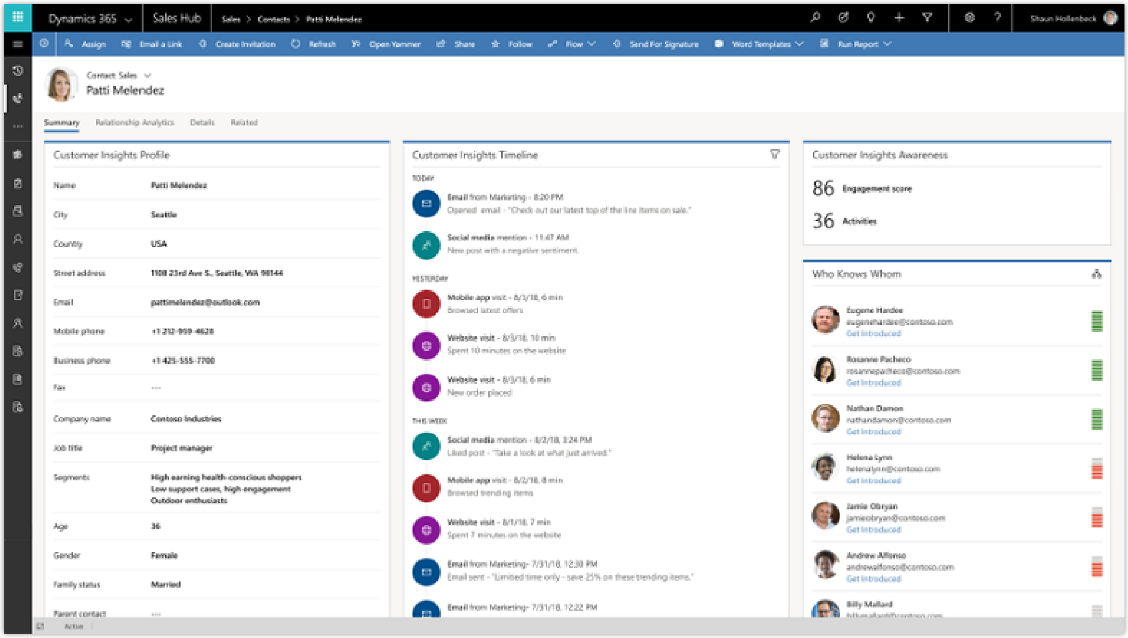
Business analysts can use the intuitive query builder wizard to easily create measures based on attributes and interactions from the unified customer profiles. Examples of different types of measures can be customer-related like customer lifetime spent, or business-related such as Monthly Active Users.



Use Measures to manage KPIs

Pre-build experiences for Dynamics 365

Customer Insights provides pre-build experiences for Dynamics 365 to surface relevant and contextual unified customer information like customer timeline views, KPIs, and insights directly within the business application. The information from Customer Insights provides business users with contextual insights across the entire customer lifecycle, thereby helping business users increase the quality of engagement.

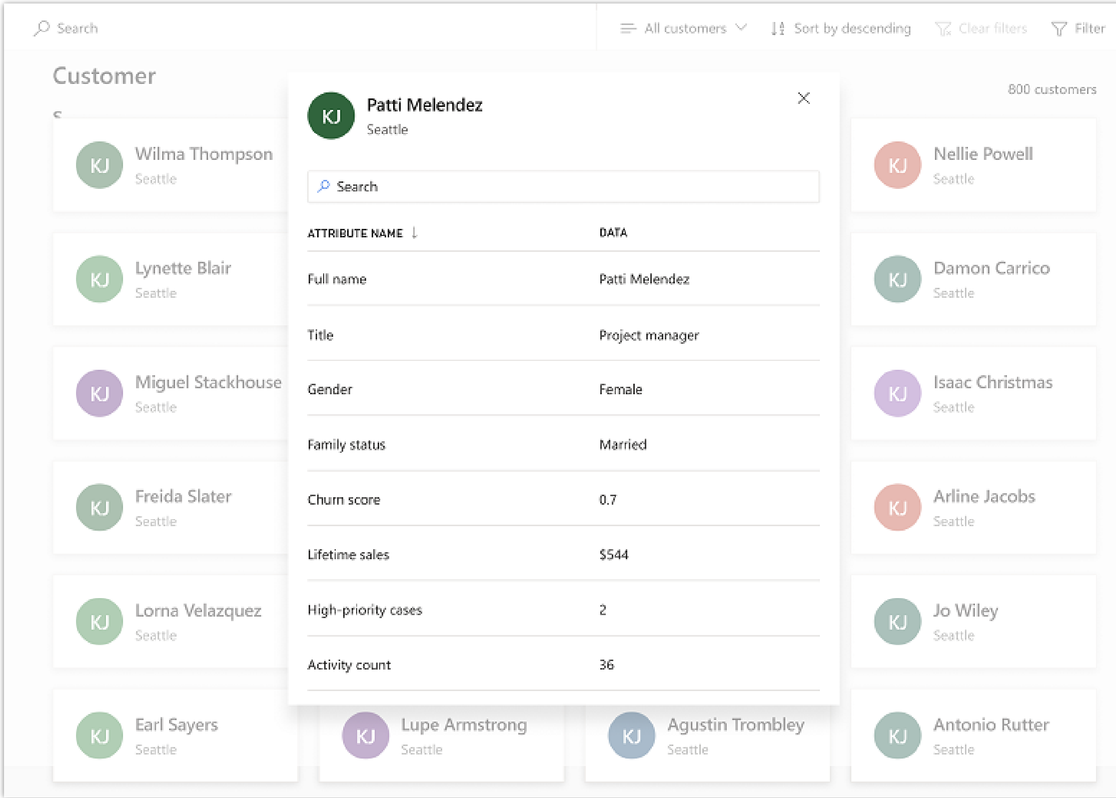


Customer Insights "card" embedded within Dynamics 365

Profile search and discovery

Unified customer profile search and discovery

Customer Insights includes a powerful search and discovery experience that can be used to easily find unified profiles. Search and discovery experience can be used to find customer profiles based on demographic data, business measures, customer interactions or aggregated audience insights from Microsoft Graph.



Using search and discovery for customer profiles

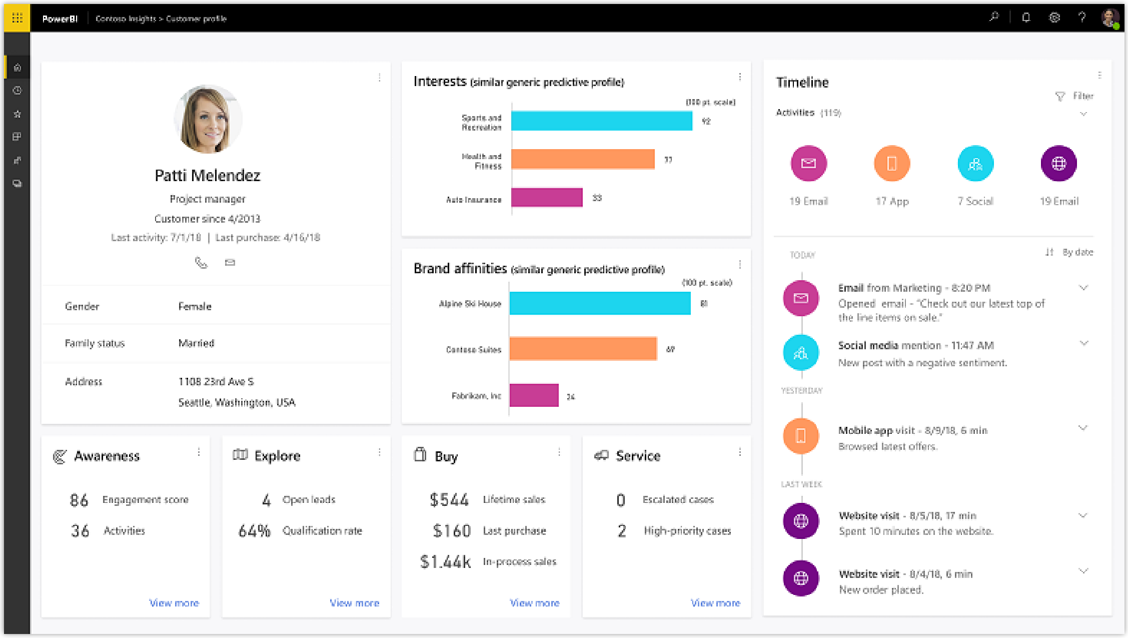
Extensibility

REST APIs

Customer profiles and insights can be consumed by a variety of user roles in many ways. Customer Insights provides a collection of REST APIs to allow organizations to integrate insights into other business applications or create custom workflows.

Line-of-business apps and insights through Power Platform connectors

Customer Insights ships with out-of-the-box connectors for PowerApps and Power BI. Customers can use the PowerApps connector to quickly build rich applications tailored for their business needs based on data from Customer Insights. Using the Power BI connector, customers can author custom reports and dashboards to share insights within their organization.



Custom report built using Customer Insights Power BI connector

Overview of Dynamics 365 Fraud Protection April '19 release

Today's digitally transformed enterprise conducts most of its business online and in real time with little human intervention. This reduces costs and improves the customer experience, but it also exposes the enterprise to serious threats from sophisticated fraudsters who attempt to take advantage of the online channel's relative anonymity and accessibility.

For example, in e-commerce, fraudsters attempt to use compromised accounts and stolen payment instruments to commit payment fraud. They also attempt other nefarious activities like account takeover, free-trial abuse, fake product reviews, warranty fraud, refund fraud, reseller fraud, abuse of program discounts, and many more—all of which impact the enterprise's profitability and reputation.

Some types of fraud even have grave consequences to society at large. Examples include laundering money and posting fake news. Because the ROI for online fraud is so high, it is highly likely that every vulnerability of an enterprise will ultimately be discovered and fully exploited. Moreover, unlike during the nascent years of the internet, today's fraudsters are well-funded and well-equipped rings of professionals. Fraud protection professionals are best equipped to fight them.

It is our mission to help digitally transformed enterprises to fight fraud while keeping their doors open for genuine customers and partners.

Dynamics 365 Fraud Protection will initially focus on payment fraud protection and related scenarios in e-commerce. It will help enable an e-commerce merchant to drive down fraud loss, increase bank acceptance rates to yield higher revenue, and improve the online shopping experience of its customers.

Microsoft has many years of experience protecting our own e-commerce businesses from fraud. We have developed a sophisticated technology stack that uses connected big data across multiple lines of business and applies cutting-edge artificial intelligence (AI) to help provide more accurate decisions in real time. We have core differentiators, such as device fingerprinting, operations research, a fraud protection network, and a trust knowledge exchange with banks.

Using Dynamics 365 Fraud Protection, you can help protect your business from fraud using innovative and advanced capabilities, including:

- Artificial intelligence and insights from the fraud protection network
- A rules engine and virtual fraud analyst
- Graph explorer and KPI dashboard
- Transaction acceptance booster

These are part of a comprehensive set of features grouped into three user experiences that will accelerate your journey into full production.

- Gain insights into fraud issues in your environment using the **Diagnose** experience in Dynamics 365 Fraud Protection.
- Assess and evaluate the effectiveness of Dynamics 365 Fraud Protection relative to your incumbent fraud protection solution using a guided **Evaluate** experience.
- Obtain recommendations for your e-commerce transaction decisions by customizing business rules using the **Protect** experience in Dynamics 365 Fraud Protection.

NOTE You can enter any of these three experiences at any time.

Capability	Diagnose	Evaluate	Protect
Be secure and compliant, and have full transparency on data handling and privacy.	X	X	X
Understand the conditions of your business. Diagnose and analyze the state of your fraud protection.	X	X	
Send transactions through APIs in real time and gain risk insights with inline evaluation, including explanations.		X	X
Use the KPI dashboard to understand the performance of Dynamics 365 Fraud Protection. Compare it to your incumbent fraud solution.		X	X
Bootstrap your historical data to tune the machine learning model to your business scenarios. Extend and tailor Dynamics 365 Fraud Protection to the needs of your business.		X	X
Reap benefits of AI and derive insights from the fraud protection network.		X	X
Configure the rules engine to create decision rules across safe, block, and watch lists. Customize rules and lists.		X	X
Use the virtual fraud analyst to configure optimal risk score thresholds.		X	X

Capability	Diagnose	Evaluate	Protect
Use the graph explorer to investigate fraud with linkage analysis.		X	X
Use device fingerprinting to help identify devices that engage with your business, while respecting customer privacy.		X	X
Use the customer support tool to evaluate and act on customer escalations for risk-related rejections.		X	X
Use the transaction acceptance booster to help improve bank acceptance.			X
Make Dynamics 365 Fraud Protection your solution of record.			X

What's new and planned for Dynamics 365 Fraud Protection

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Feature	Release type	Date
Diagnose	Public Preview	April 2019
Evaluate		
Implement real-time event APIs	Public Preview	April 2019
Bootstrap and manage your data	Public Preview	April 2019

Feature	Release type	Date
Protect	Public Preview	April 2019
Artificial intelligence and insights from the fraud protection network	Public Preview	April 2019
Rules engine		
Manage lists and cohorts	Public Preview	April 2019
Order and manage risk rules	Public Preview	April 2019
Virtual fraud analyst		
Recommendations	Public Preview	July 2019
Boost bank acceptance rates	Public Preview	April 2019
Understand your business		
Graph explorer	Public Preview	April 2019
Key Performance Indicator (KPI) dashboard	Public Preview	April 2019
Understand your decisions made in Dynamics 365 Fraud Protection	Public Preview	July 2019
Device fingerprinting	Public Preview	April 2019
Support your customers	Public Preview	April 2019
Security and compliance	Public Preview	April 2019

Diagnose

Dynamics 365 Fraud Protection offers a *Diagnose* experience where you can preview the product's ability to detect fraud. After analyzing a representative dataset from your business, the product will generate risk evaluation reports that provide an array of valuable risk insights. These reports summarize the fraud patterns that exist in your business and will give you a quantitative analysis of fraud and revenue opportunity. Even within the scope of your limited sample data, the Diagnose experience can identify opportunities to improve your fraud protection capabilities.

Evaluate

The *Evaluate* experience enables you to use your real-time transactional traffic to compare Dynamics 365 Fraud Protection with your existing fraud solution. Send transactions through real-time APIs to get an inline evaluation. You can also upload your historical data and load asynchronous data (for example, chargebacks) to tune the model to your business scenarios.

Implement real-time event APIs

To ingest your real-time transaction data, Dynamics 365 Fraud Protection provides an event API. For fast ramp-up, we provide sample code that calls the risk event APIs, adds device fingerprinting tags, and enables you to configure decision rules in the rules engine. These rules can consume a risk score evaluated by the risk model in the fraud protection network. With minimal effort, you can implement Dynamics 365 Fraud Protection APIs to ensure your product is properly integrated.

Bootstrap and manage your data

Data is the cornerstone of good decisions. You can bootstrap your historical data into Dynamics 365 Fraud Protection to increase the accuracy of your risk decisions. Bootstrapping includes data containing purchase, chargeback, and other key signals, like merchant and bank decisions, that help improve fraud detection. Using this historical data accelerates the process of priming our machine learning model.

You can choose to bring data streams from your Microsoft Azure repository into Dynamics 365 Fraud Protection, map them to the base/extended ontology, and set up a one-time or recurring bulk data ingestion jobs to populate the knowledge graph. With Dynamics 365 Fraud Protection, you can monitor the reliability of these recurring bulk ingestion jobs, detect missing or malformed data, and get alerted about failures.

Protect

The Protect experience embeds Dynamics 365 Fraud Protection into your full production environment. Dynamics 365 Fraud Protection can provide risk-related recommendations for your transactions. Consequently, you can leverage it to make your own decisions to accept or reject. (You can choose to do this on a small fraction of traffic and ramp up gradually.) Use the customer support tool to efficiently adjudicate any escalations from customers regarding rejections, and leverage the trust knowledge feature to share pertinent information about transaction trustworthiness with banks and issuers to boost their acceptance rates.

Artificial intelligence and insights from the fraud protection network

At its core, Dynamics 365 Fraud Protection embodies a responsive and highly available online service that enables you to evaluate, in real time, whether an incoming purchase transaction should be approved, rejected, or manually reviewed. Dynamics 365 Fraud Protection assesses a transaction's likelihood of fraud using Microsoft's industry-leading AI platform. This platform operates on a wide range of features about the transaction (for example, the device, location, payment instrument, and product) and the linkages of these entities to known instances of legitimate and illegitimate customer behavior across all participating merchants. These linkages are obtained through the fraud protection network, a cooperative of participating merchants. Participating in the fraud protection network enables you to derive insights from the collective experience of other merchants who use Dynamics 365 Fraud Protection, and can help your business tackle emerging fraud vectors.

Rules engine

Using the rules engine, you can create *decisioning rules* to help manage your transactions. Your rules operate across *lists* (safe, block, and watch lists of customers) and *cohorts* (built off geolocation, payment instrument, digital goods, and many other entities). These capabilities are designed to help you manage the trade-offs inherent in preventing fraud while minimizing false positives. You can also enforce various types of business policies such as government-prescribed trade embargos, geofencing, and control of reseller activity.

Manage lists and cohorts

In Dynamics 365 Fraud Protection, you can create, name, and manage lists of customers, products, payment instruments, and other customized cohorts, then use them in rules configured in the rules engine. Safe, block, and watch lists enable you to ensure your legitimate customers can make purchases without friction. You can also create and populate custom lists by defining Boolean conditions on your data.

Order and manage risk rules

By ordering and managing rules in Dynamics 365 Fraud Protection, you can finely control the balance between false positives and false negatives. In addition to a standard rule (which applies the risk score threshold provided by the fraud protection network), you can use the extra knowledge in cohorts to build a custom rules stack (which delivers a final decision to approve or reject a transaction). The rules can include your safe, block, or watch lists, as well as custom lists. The risk score threshold applied in the standard rule, and the specific risk rule that gets triggered for a decision, are automatically annotated in the knowledge graph. You can see these features when you use the graph explorer to browse the transaction. This helps your customer-support team investigate risk-related customer escalations.

Virtual fraud analyst

Using innovative AI technology, the virtual fraud analyst provides a compelling view of your historical data and helps you set up and adjust the optimal risk score thresholds. This information can then be transformed into rules, enabling you to make appropriate decisions about accepting or rejecting your customer transactions.

Recommendations

The machine learning models in the fraud protection network help find emerging fraud patterns and risky cohorts across all participating merchants. The virtual fraud analyst can leverage these findings to make recommendations to all Dynamics 365 Fraud Protection merchants about improving the configuration of their rules. To maximize the product's impact, the virtual fraud analyst also makes recommendations about how to augment existing data by adding attributes into the knowledge graph (for example, chargeback data, margins, and COGS).

Boost bank acceptance rates

Microsoft fraud detection technology has a proven track record with banks and issuers based on many years of experience protecting our own multi-billion-dollar business. Dynamics 365 Fraud Protection helps you boost your acceptance rates with banks and reduce wrongful declines. This market differentiator, called the transaction acceptance booster, shares information about the risk exposure of the transaction to banks and issuers, who can incorporate this information in their own evaluation to make a more informed assessment. The transaction risk exposure is shared to banks and issuers by one of the following methods:

- Signaling a Dynamics 365 Fraud Protection-verified transaction through a dedicated Merchant Identification Number (MID).
- Sharing select data points about the transaction, called trust knowledge, with banks and issuers in a programmatic way using an API.

Understand your business

In addition to the core risk assessment provided by Dynamics 365 Fraud Protection, we provide several rich customer experiences in the form of Microsoft PowerApps to help you configure, customize, and manage fraud protection for your business. The customer experiences include a graph explorer, Key Performance Indicator (KPI) dashboard, a customer support tool for handling escalations from fraud rejections, and compliance tools.

Graph explorer

Dynamics 365 Fraud Protection provides a graph explorer for easy viewing of your e-commerce data. While this data is primarily used to make automatic recommendations for incoming transactions in real time, you can also use the graph explorer to manually search and find linkages between entities (for example, Payment Instrument, Users, Addresses, Devices, and many others). This includes connections to valid purchases by legitimate accounts, and connections to fraudulent transactions from illegitimate accounts (for example, a fraudster may have used a stolen payment instrument to make purchases across several user accounts). The graph explorer can therefore be a powerful fraud investigation tool.

Key Performance Indicator (KPI) dashboard

Use the KPI dashboard and its embedded scorecards to understand the month-by-month performance of your fraud protection. In the Evaluate experience, a scorecard enables you to compare your incumbent risk solution with Dynamics 365 Fraud Protection. In the Protect experience, another scorecard enables you to monitor the performance of Dynamics 365 Fraud Protection as your system of record along dimensions such as impact, efficacy, fraud pressure, and scale. An additional scorecard displays the lift obtained in bank acceptance rates using the transaction acceptance booster. The scorecards can be filtered and pivoted on predefined attributes, markets, and product categories. You also get access to daily interactive reports derived from these scorecards that provide snapshots of KPI trends. You can control access to these dashboards and reports through role-based security.

Understand your decisions made in Dynamics 365 Fraud Protection

To either accept or reject a transaction, you use Dynamics 365 Fraud Protection's risk score as one input, along with your own risk threshold and any other business policies and rules you choose to apply. Dynamics 365 Fraud Protection records an explanation of that score as well as other contextual information about the transaction, such as the bank response and chargeback. With this approach, Dynamics 365 Fraud Protection provides key intelligence behind every decision you make that can be accessed later.

Device fingerprinting

Based on cutting-edge machine learning and artificial intelligence, Dynamics 365 Fraud Protection offers device fingerprinting. This enables the service to identify the devices that engage with protected merchants. Device fingerprinting runs on Azure. It is cloud-scalable, reliable, and provides enterprise-grade security. A major advantage over similar products in the marketplace is that device fingerprinting is being continually tested against the latest fingerprinting-evasion fraudster tools.

Support your customers

Customer support within Dynamics 365 Fraud Protection enables your support representative or fraud investigator to evaluate customer escalations, unblock purchase attempts that are being improperly declined, and block suspicious purchases as appropriate. Your fraud investigators can search and investigate your customers' past transactional history with your business, providing an accelerated turnaround for decisions.

Security and compliance

Microsoft runs on trust. Dynamics 365 Fraud Protection is built upon the four Microsoft Trusted Cloud foundational principles: security, privacy, compliance, and transparency. Microsoft safeguards your business knowledge as if it were our own.

For additional resources related to Dynamics 365 Fraud Protection, see Microsoft Trust Center and Microsoft Runs on Trust.

Mixed reality

Overview of mixed reality April '19 release

We introduced Dynamics 365 Layout and Dynamics 365 Remote Assist for General Availability on October 1, 2018. These two new mixed reality applications help employees work smarter, faster, and more efficiently with information they can access in a real-world context. The apps also improve cross-team collaboration with technology that enables employees to work together from a shared perspective.

In April, we're introducing two new mixed reality applications:

Dynamics 365 Guides is available in preview for HoloLens devices. Guides enables employees to learn by doing. Enhance learning with step-by-step instructions that guide employees to the tools and parts they need and how to use them in real work situations. Create interactive content, attach photos and videos, import 3D models, and customize training to turn institutional knowledge into a repeatable learning tool. Pull employee performance data into real-time Power BI dashboards, making it easier to identify where instruction is needed, and improve process.

Dynamics 365 Product Visualize will be available in public preview for iOS devices. Use Dynamics 365 Product Visualize to improve customer understanding by visualizing ideas in augmented reality. Dynamics 365 Product Visualize empowers sellers to showcase and customize product visuals in their actual environment, so buyers can interact with the product as if it's already theirs. Captivate customers, create shared understanding, and simplify complex sales processes.

The following table outlines our April '19 focus areas:

Application	Focus areas	Learn more
Dynamics 365 Layout	- Hologram stability - Improved asset importing process - Measurement tool improvements - Learning cards for Layout features - Compatibility with HoloLens 2	- Detailed overview - Summary of new features
Dynamics 365 Remote Assist	- An expert on the mobile version of Microsoft Teams can annotate the space of a Microsoft HoloLens user (Android and iOS devices) - Group calling with two or more experts to	- Detailed overview - Summary of new features

Application	Focus areas	Learn more
	solve problems faster - Improved integration with Dynamics 365 for Field Service - Improved accessibility	
Dynamics 365 Guides in preview	- New Guides app offered for public preview	- Detailed overview - Summary of new features
Dynamics 365 Product Visualize	- New Dynamics 365 Product Visualize app offered for public preview	- Detailed overview - Summary of new features

Overview of Dynamics 365 Remote Assist April '19 release

Dynamics 365 Remote Assist empowers technicians to solve problems faster the first time. With heads-up, hands-free video calling on Microsoft HoloLens, technicians can collaborate with remote experts on a PC or mobile device to troubleshoot issues in context.

New features in the April release provide capabilities customers have asked for, including our two most frequent customer requests — mobile annotations and group calling. With mobile annotations, experts around the world will be able interact with a field service worker on a HoloLens by using an iOS or Android mobile device. Group calling will expand calling to multiple experts in a single call session. Two examples of scenarios that group calling will make possible are:

- Inspections with multiple inspectors.
- Field service calls where multiple experts are required to complete the maintenance.

We're also improving the usability and value for customers using Dynamics 365 for Field Service together with Remote Assist. New additions, such as automatic call reports and more robust booking interactions, will help field service workers using Remote Assist to get more done, faster.

Finally, we'll continue to improve compliance and accessibility for the HoloLens platform.

What's new and planned for Dynamics 365 Remote Assist

This topic lists features that are planned to release between April and September 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

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For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

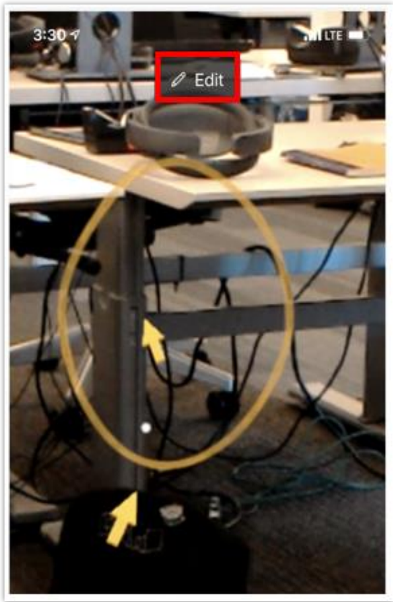
Feature	Release type	Date
Mobile annotations	General Availability	April 1, 2019
Group calling	General Availability	April 1, 2019

Feature	Release type	Date
Mobile app	Public Preview	April 1, 2019
Localization	General Availability	September 2019

Mobile annotations

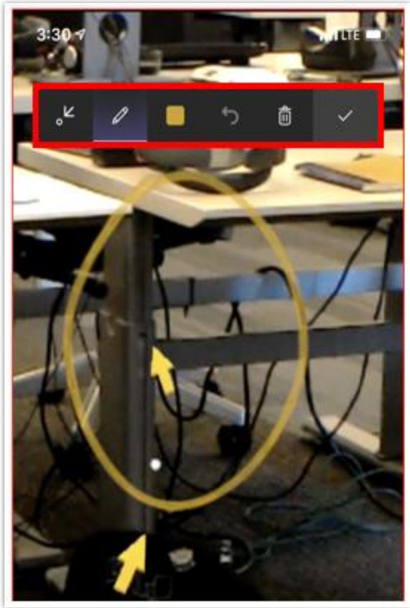
When a Remote Assist user contacts an expert, they need to be able to reach the expert no matter where they are worldwide, including times when the expert is out of the office without a PC. With this feature, experts using the mobile version of Microsoft Teams on an iOS or Android device can fully participate in a Remote Assist call. The expert can add arrows and ink for the Remote Assist user, and can insert files through OneDrive.

When a Remote Assist user on HoloLens calls an expert on Teams mobile, the expert will see an **Edit** button at the top of their screen.



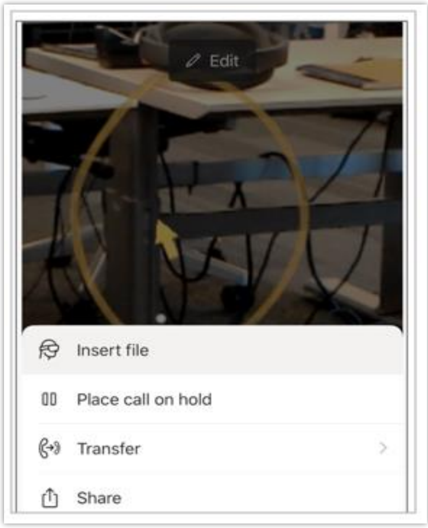
Edit button

Selecting this **Edit** button takes a freeze frame of the video feed. The expert can then annotate using ink or arrows from the Mixed Reality toolbar. They select the **Check Mark** button when they're done.



Mixed Reality toolbar

To insert an image, select the **More actions** (...) button at the bottom of the screen, select **Insert file**, and then select an image from OneDrive or the device.



Insert file

At this time, we only support mobile annotations in one-to-one calls. You can join a group call from a mobile device, but the Mixed Reality toolbar will not be enabled.

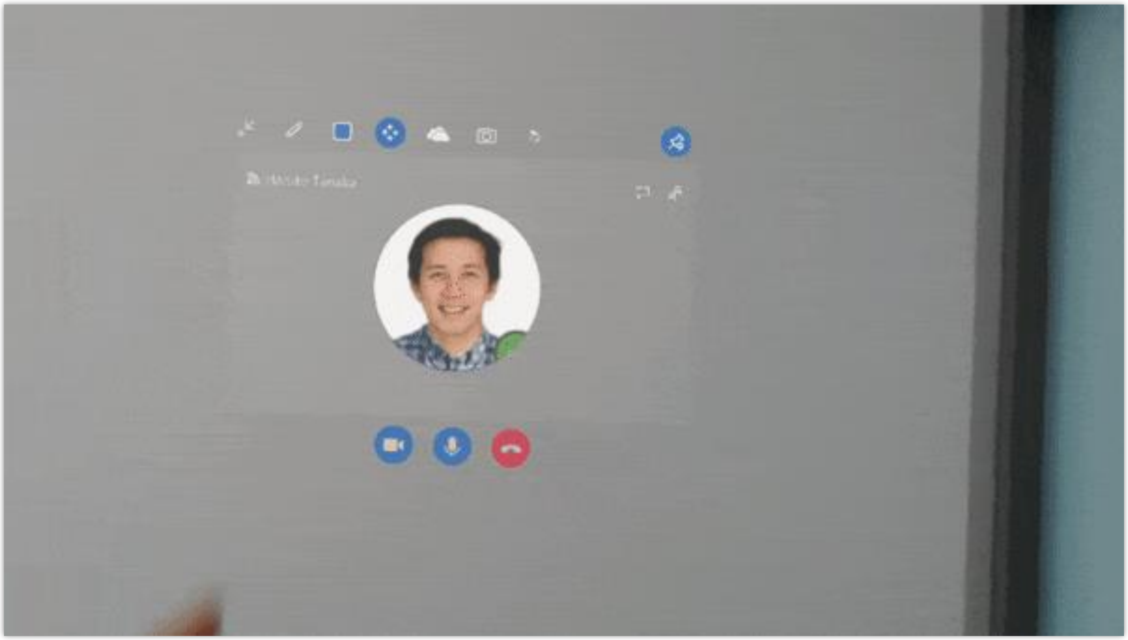
Group calling

Group calling is our #1 customer request. Previously Remote Assist calls could include just two users — one on HoloLens (the first-line worker, such as a field service worker) and one on Microsoft Teams (the expert). With group calling, up to 50 experts on Microsoft Teams can connect and annotate in a single call to help the Remote Assist user figure out a difficult solution.

Scenarios enabled by group calling include:

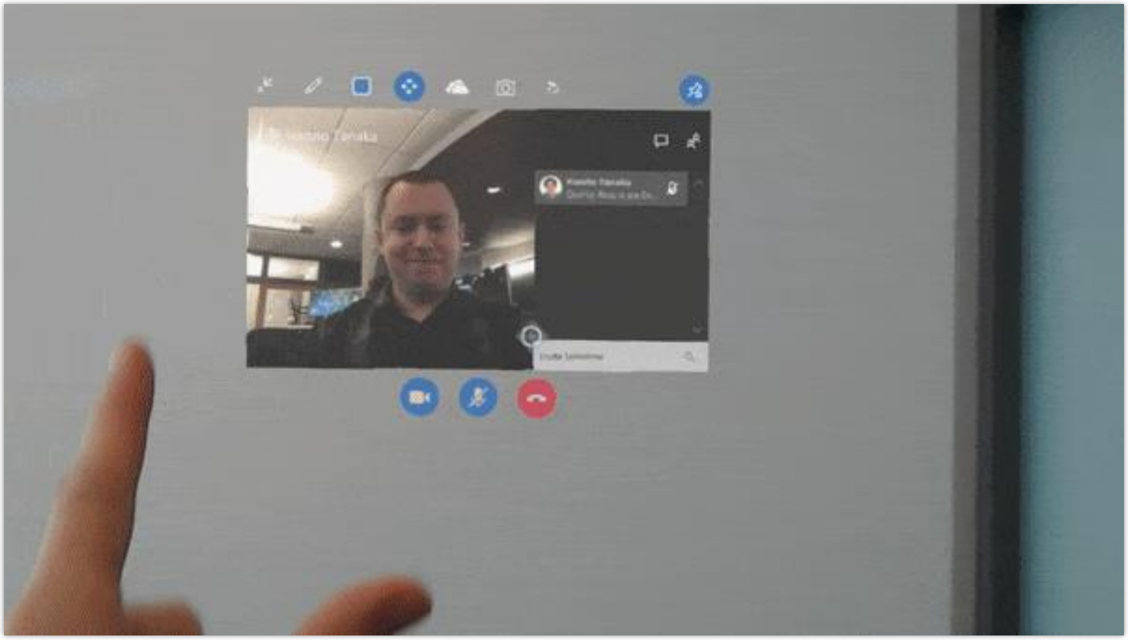
- Maintenance involving multiple experts.
- Inspections where multiple inspectors on the same call can improve the quality of the remote inspection or work together on complex inspections.
- Live training involving multiple experts. For example, watch a repair to learn how to solve a problem.

Here's how it works. From any one-to-one call on HoloLens, select the **Open Participants** button in the upper-right corner of the video feed.



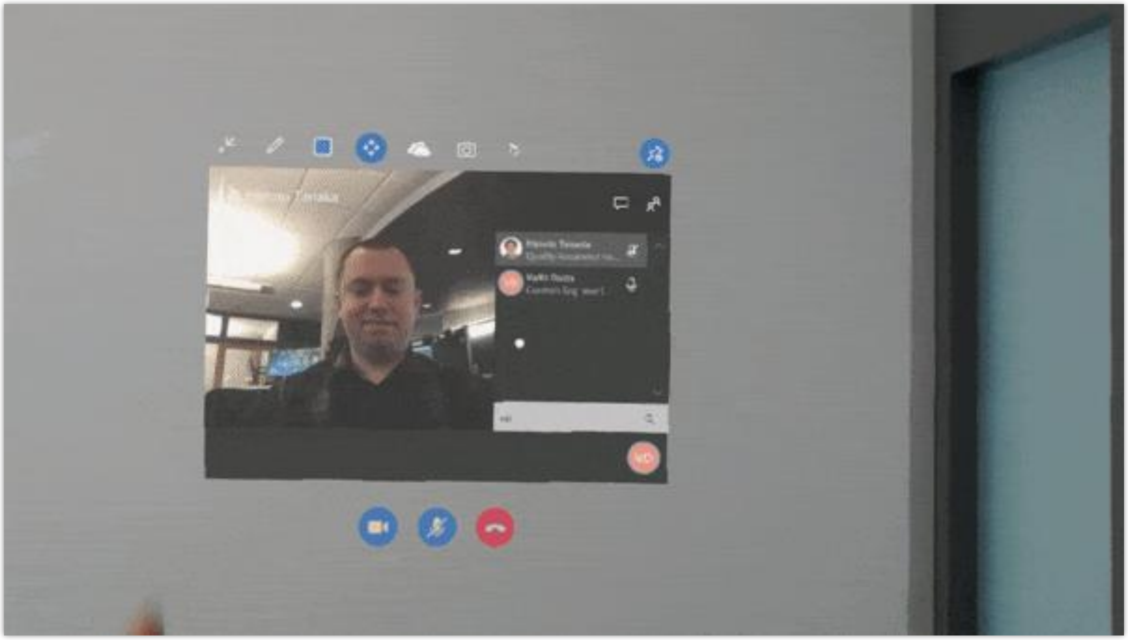
Animation of selecting Open Participants

In the list that appears, you'll see a list of the participants currently in the call. To add another participant, select **Invite Someone** at the bottom of the list. You'll see a list of your recent contacts appear. If the list doesn't contain the person you'd like to call, enter a name using the holographic keyboard to search for the contact, and then select their name to add them to the call.



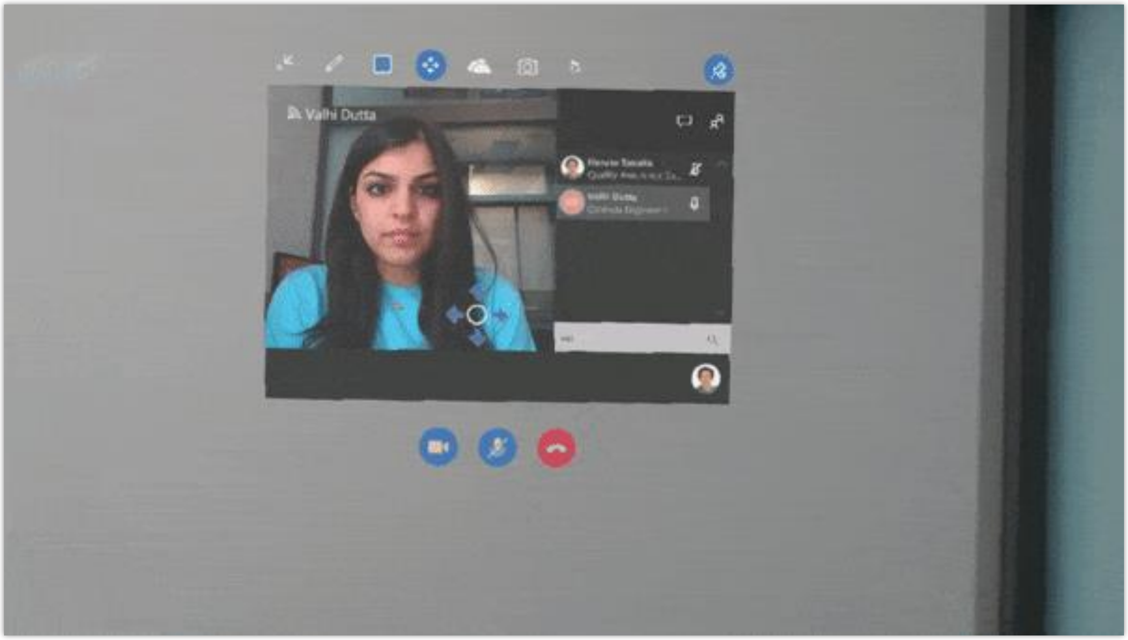
Animation of searching for a call

After you have several participants in your call, you can switch between video feeds by selecting a name in the participants list.



Animation of video feed switch

You can also do this from the area below the video feed by selecting an avatar.



Animation of tray switch

You can do the same thing from Teams Desktop. In any one-to-one call, select the **Show Participants** button and invite additional participants to the call, just like you normally would in Teams. You can also call HoloLens from any existing Teams one-to-one or group call.

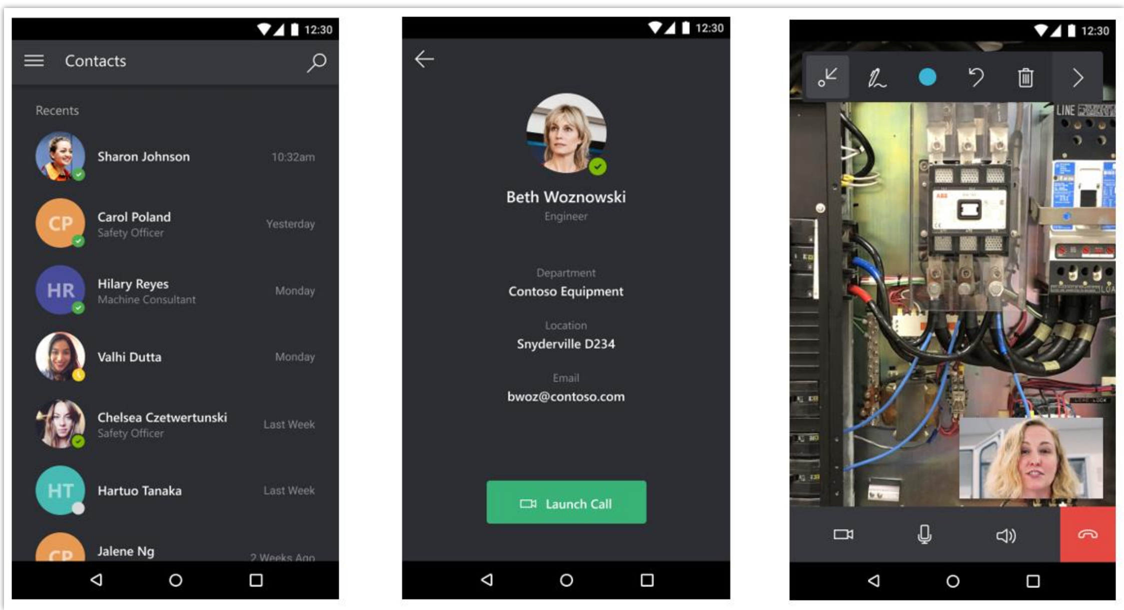
Keep in mind that we don't support meetings yet.

For more information on using group calling with Remote Assist, see the [Remote Assist User Guide](#).

Mobile app (in preview)

The Microsoft Dynamics 365 Remote Assist mobile app is now available for public preview.

Users already familiar with Remote Assist on HoloLens can access many of the same collaboration tools with just their cell phones. The Remote Assist user on any AR-enabled Android phone can place a one-to-one call with an expert using Microsoft Teams to solve complex problems together. Both devices on the call can create mixed reality annotations, such as inking and placing arrows, that appear spatially locked in the real world of the mobile device user.



Mobile app screens

General Availability release of Android and iOS-compatible applications will follow at a later date.

For more information on setting up and using the Remote Assist mobile app, see the [Mobile app User Guide](#).

Localization

Remote Assist will be localized into multiple languages.

Overview of Dynamics 365 Layout April '19 release

Microsoft Dynamics 365 Layout provides a new way for space planners to bring designs from concept to completion with confidence and speed. Lay out spaces with imported or gray box assets and view high-quality holograms overlaid in the real world with Microsoft HoloLens or in a virtual representation in Windows Mixed Reality. Import 3D models and experience designs as high-quality holograms.

The list of capabilities for the April '19 release includes:

- Hologram stability
- Improved importing process
- Improved measuring tools

What's new and planned for Dynamics 365 Layout

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Feature	Release type	Date
Hologram stability	General Availability	April 2019
Improved importing process	General Availability	April 2019
Measurement tool improvements	General Availability	April 2019
Learning cards provide step-by-step instructions for Layout features	General Availability	May 2019
Compatibility with HoloLens 2	General Availability	July 2019

Hologram stability

Customers have noted that some holograms appear to “drift” as they move through space. In the April release, we're addressing hologram drift to make sure holograms are stable.

Improved importing process

Space planners often need to import their own assets into Dynamics 365 Layout. For individual, complex assets, space designers will be able to make simple trade-offs to quickly upload their content so they can maximize their time designing spaces.

We’re also adding the ability for customers to provide feedback in case assets aren’t imported correctly.

Measurement tool improvements

Measurement tool improvements for April include the following:

- Ability to do precise perpendicular measurements between objects and walls, and between walls and ceilings
- Ability to connect a new measurement to the end point of a previous measurement
- Ability to measure the shortest distances between assets to increase space planning accuracy

Learning cards provide step-by-step instructions for Layout features

Use learning cards to discover new Layout features or to get support on features. Learning cards, which offer step-by-step instructions, will be attached to the **Help** menu. There will be learning cards for select features, such as duplicating an asset, multiselect, resizing an asset, and using measurement tools.

Compatibility with HoloLens 2

Layout will be fully compatible with HoloLens 2 (when available), and will be able to take advantage of new HoloLens 2 capabilities.

Overview of Dynamics 365 Product Visualize

A salesperson's ability to achieve a shared understanding with the customer as early as possible in the sales process is critical for faster deal closure, reduced changed orders, and increased customer trust. Microsoft Dynamics 365 Product Visualize will empower salespeople to convey the true potential of their products to their customers by harnessing the power of augmented reality on their mobile devices (iOS devices only for the April release).

Deep integration with Dynamics 365 for Sales ensures salespeople have a continuous workflow between opportunity management and product visualization. Additional tools for creating notes with spatial context and integration with Microsoft Teams ensures the full context of the conversation can be captured and shared with colleagues across the organization.

What's new and planned for Dynamics 365 Product Visualize

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Feature	Release type	Date
Product visualization with augmented reality	Public Preview	April 2019
3D content manipulation	Public Preview	April 2019
Dynamics 365 for Sales integration	Public Preview	April 2019
Spatial notes for 3D models	Public Preview	April 2019
Mixed Reality image capture and digital inking	Public Preview	April 2019
Microsoft Teams integration	Public Preview	April 2019

Feature	Release type	Date
SharePoint integration	Public Preview	April 2019
3D content gallery	Public Preview	April 2019
Automatic posting of activity to opportunity timeline	Public Preview	June - Sept 2019
3D model layer manipulation	Public Preview	June - Sept 2019

Product visualization with augmented reality

A core capability of Microsoft Dynamics 365 Product Visualize is the ability to view digital, 3D content in the physical world by using the camera and other sensors in the user's mobile device. For April, we'll support iPhone and iPad devices compatible with ARKit. The user places the device in the environment plane where they want to view the 3D content. They can select whether they want to see the content rendered at life-size scale (dimensional data stored within the 3D file) or at some other size.

3D content manipulation

After placing digital content in the environment using Microsoft Dynamics 365 Product Visualize, users can move, rotate, lift, and resize 3D objects.

Action	Description
Move	Move the content across a vertical plane.
Lift	Move the content across a vertical plane.
Rotate	Spin the object 360 degrees while in a fixed location in space.
Resize	Increase or decrease the size of the object.

Dynamics 365 for Sales integration

Creating a Microsoft Dynamics 365 Product Visualize account is as seamless as logging into a user's current Dynamics 365 for Sales account with their Active Azure Directory credentials. The sales opportunities associated with that user are automatically pulled into the Dynamics 365 Product Visualize mobile application, which makes it effortless to locate the 3D content they want to share. Users can also launch the Dynamics 365 Product Visualize mobile application directly from the Dynamics 365 for Sales opportunity page. This will refresh the 3D content gallery with just the 3D models associated with that opportunity.

Spatial notes for 3D models

In Microsoft Dynamics 365 Product Visualize, users can capture notes on specific points on a 3D model (spatial notes). These notes provide deeper context for the model and can include text or images. They can use the Notes browser to easily navigate through the notes. They can also delete notes. All notes created are saved in a notes file in the Documents folder of the corresponding Dynamics 365 for Sales opportunity.

Mixed Reality image capture and digital inking

In Microsoft Dynamics 365 Product Visualize, users can capture an image of the digital content placed in the physical environment. This composite of both the physical world and digital content embedded within it allow for deeper context to be captured and shared. Users can use digital ink in a select set of colors to highlight certain aspects of the captured image, and can add descriptive text and Alt text to provide further context.

Microsoft Teams integration

If Dynamics 365 for Sales users have associated an opportunity with a Teams conversation channel, they can post spatial notes captured in Microsoft Dynamics 365 Product Visualize to that associated Teams conversation channel. The post includes the text note, the image (including any digital ink), and a link to launch Dynamics 365 Product Visualize. Other team members in the organization can see these posts if they have access to that specific conversation channel. Replies to posts are not sent to Dynamics 365 Product Visualize.

SharePoint integration

Some users and organizations may store 3D content in SharePoint. By using the same Azure Active Directory credentials used to access Dynamics 365 for Sales, users have the ability to access their associated SharePoint sites to import 3D content into Microsoft Dynamics 365 Product Visualize.

NOTE The 3D model and associated notes captured on that model will be saved to the associated Dynamics 365 for Sales product and opportunity, not the SharePoint site from which the model was imported.

3D content gallery

In the Microsoft Dynamics 365 Product Visualize application, the user can view the 3D content gallery associated with that sales opportunity. The number of 3D models displayed and made available to the user to digitally place in the world is dependent on which products the salesperson has associated with that opportunity.

Automatic posting of activity to opportunity timeline

Most salespeople service more than one customer, and each customer is interested in more than one product. This complexity can grow by orders of magnitude quickly, which makes it challenging for sales people to know which customers have seen which products. Automating this data capture with Microsoft Dynamics 365 Product Visualize saves them from the step of having to record the activity so they can focus on higher-value activities.

3D model layer manipulation

It's common for 3D models, particularly CAD models, to have multiple layers. Enabling the user to toggle the visualization of these layers on and off with Microsoft Dynamics 365 Product Visualize opens the door to richer conversations and inspection of the 3D model. For example, a 3D model of an engine with different layers would allow the customer to view the exterior of the engine, to get a feel for what it looks like and how it might fit in their environment. Toggling off the exterior layer would allow for a more technical conversation as individual components of the engine could be exposed, providing the customer with a deeper appreciation of the sophistication of the product.

Overview of Dynamics 365 Guides in preview

Dynamics 365 Guides in preview is a mixed reality application for HoloLens that enables employees to learn in the flow of work by providing holographic instructions when and where they need them. Dynamics 365 Guides:

- Engages employees through hands-on learning.
- Helps organizations improve training efficiency.
- Generates data to improve processes.

Guides addresses the needs of three key personas: content authors, operators, and managers/analysts.

Content authors

Authoring includes two steps:

- **Step 1: Create the guide.** Using the Guides PC app, create the guide by defining the steps required to perform a task and attach 2D images/videos and/or 3D assets to each step from a central content library. Media files are automatically optimized for best quality and performance on HoloLens.
- **Step 2: Preview the guide and place the objects.** Using the Guides HoloLens app, preview the guide flow and place the instruction cards and 2D/3D assets in the appropriate place in the physical world. Add aids such as 3D tethers and styles (such as a warning or caution).

Operators

The Guides HoloLens app provides employees both first-time training or on-the-job assistance—by placing the information employees need in the physical space where they work. Users gaze at icons to navigate through the app, allowing them to control the experience completely hands-free. Instructions follow users around but don't get in the way, and when users don't need the instructions anymore, they can turn them off with a glance.

Managers/analysts

Guides Analytics provides insight into details behind every step of each guide, which can be used to assess production line processes, measure improvements, and drive efficiencies by modifying processes and updating the corresponding guide.

What's new and planned for Dynamics 365 Guides in preview

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Authoring on PC

Feature	Release type	Date
No-code guide authoring	Public Preview	February 24, 2019
Automatic media optimization	Public Preview	February 24, 2019
FBX and GLTF formats automatically transcoded	Public Preview	February 24, 2019
Powered by Dynamics 365	Public Preview	February 24, 2019
Centralized asset library	Public Preview	February 24, 2019
Add images and videos to your instructions	Public Preview	February 24, 2019
Set of common 3D models included	Public Preview	February 24, 2019
Manage assets, users, and permissions	General Availability	July 2019

Authoring on HoloLens

Feature	Release type	Date
Streamlined hologram placement and manipulation	Public Preview	February 24, 2019

Feature	Release type	Date
Styles for 3D assets add emphasis	Public Preview	February 24, 2019
Choose between two alignment methods	Public Preview	February 24, 2019
Duplicate (and delete) 3D models	Public Preview	March 26, 2019

Operating on HoloLens

Feature	Release type	Date
Simple step-by-step structure ensures nothing is missed	Public Preview	February 24, 2019
Hands-free control	Public Preview	February 24, 2019
Anchored holograms	Public Preview	February 24, 2019
Turn holograms on and off with a glance	Public Preview	February 24, 2019
Holographic tethers show where to focus	Public Preview	February 24, 2019
Instructions move with you as you work	Public Preview	February 24, 2019
Track progress while you work	Public Preview	February 24, 2019

Analytics

Feature	Release type	Date
Visualize process efficiency with dashboards	Public Preview	February 24, 2019

No-code guide authoring

Creating a guide is very easy. Add tasks and steps, name them, drag and drop one or more assets from the library, and write your instructions. You can do all of this without writing a single line of code. WYSIWYG features ensure that what you see as an author is what an operator will experience. When you're done, go to the Outline page to visualize your whole guide and make any structural changes. After authoring on the PC, use the HoloLens to place your content in the physical world. Upon saving, your changes will be mirrored on both platforms automatically.

Automatic media optimization

Images and videos are automatically transcoded and optimized for Microsoft HoloLens upon library upload.

FBX and GLTF formats automatically transcoded

FBX and GLTF files are automatically transcoded into the right format for Microsoft HoloLens (GLB) upon library upload.

Powered by Dynamics 365

Microsoft Dynamics 365 Guides in preview is built on Common Data Service, which enables customers and partners to access the data via the Common Data Model that extends the application to other Dynamics 365 applications for deeper operational understanding.

Centralized asset library

Import and gather all your media and 3D models in a single place, and then use them as needed in any guide you create.

Add images and videos to your instructions

Use images and videos to illustrate a step and help others better understand the task.

Set of common 3D models included

3D models such as rings, arrows, and holographic hands are preloaded so you can get started right away.

Manage assets, users, and permissions

Access and manage your assets, guides, dashboards, users, roles, and permissions.

Streamlined hologram placement and manipulation

After creating a guide on a PC, switch to HoloLens and enter the authoring mode to preview the flow, place your holograms, and add refinements such as visual tethers and styles. Dynamics 365 Guides in preview combines the simplicity of standard HoloLens hologram manipulation with a new precision mode to perfectly align your holograms with the physical world.

Styles for 3D assets add emphasis

Apply a specific treatment (style) to your holograms to communicate additional information to your operators. For example, apply a “warning” style to communicate that the operator needs to be careful. Dynamics 365 Guides in preview comes with nine predefined styles.

Choose between two alignment methods

Select the alignment method that best fits your needs and environment before you start authoring your guide:

- **Marker-based alignment** (provided through the app) enables you to refer to a single printed artifact as a reference point for your guide. You position a marker in your physical environment as part of the process so that the holograms are placed appropriately in the real world, in reference to this marker position.
- **Manual alignment** enables you to refer to a single virtual artifact as the reference point for your guide. For example, use a digital twin of a product part and manually align it to the physical world with HoloLens to set your guide.

Simple step-by-step structure ensures nothing is missed

Access step-by-step instructions and attached media through holographic instruction cards.

Hands-free control

Keep hands-free by gazing to control the interface. Operators can also use air tap, if desired.

Anchored holograms

Holograms are anchored to the real world, showing you the exact spot where the work needs to be done.

Turn holograms on and off with a glance

If you don’t need the holograms for a step anymore, disable them with a glance. Turn them back on the same way if you need them again.

Holographic tethers show where to focus

Holographic tethers link instruction cards to the place where the work gets done.

Instructions move with you as you work

Keep your holographic instructions with you as you move around your work area. The instructions understand your movements and never obstruct your view.

Track your progress while you work

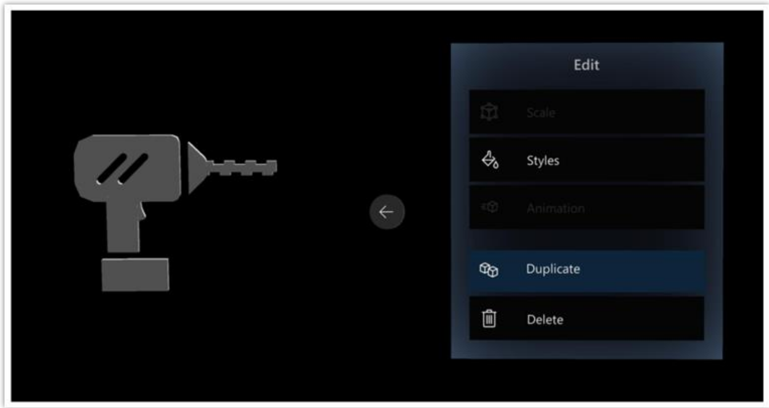
The progress bar at the top of the instruction card helps inspire confidence and provide a sense of accomplishment.

Visualize process efficiency with dashboards

Get valuable insights, such as the time required for each user to complete a task or step, by using the built-in telemetry provided through a Power BI dashboard. Data can be aggregated to put the focus on process performance.

Duplicate (and delete) 3D models

You can duplicate 3D models placed in space by selecting **Duplicate** from the **Edit** menu. The duplicate keeps the original style and rotation settings. You can also delete 3D models.



Duplicate models

Dynamics 365 Portal

Overview of Dynamics 365 Portal April '19 release

Dynamics 365 Portal enables organizations to easily extend entities, features, and functions of Dynamics 365 to external audiences like customers and partners. As part of the October '18 release, we embarked on a journey to make Dynamics 365 Portal an external customer-facing platform for all Dynamics 365 applications.

The April '19 release would be a step toward realizing that vision, where we continue to:

- Drive improvements in *fundamentals*.
- Invest in *integration* with other Microsoft services.
- Provide new *extensibility* patterns to enhance capabilities.
- And most importantly, extend Power Platform to external users.

Fundamentals

The Portal self-service diagnostic tool, released in the October '18 wave, would be enhanced to detect and troubleshoot additional scenarios like identifying incorrect site markers, issues with data visibility due to incorrect entity permissions, and so on.

We will also be launching a new maintenance mode capability in Portal to allow organizations to display maintenance messages on the portal.

Integration

Building on Power BI integration launched during the October '18 wave, we will be enhancing it to support Power BI Embedded capabilities.

Extensibility

A recurring theme among our customers is the need to access data storied in external line-of-business applications. With the enhancements in this release, Portal users can now access data stored in external applications by using client-side API calls secured via OAuth Implicit Grant Type flow.

Extend Power Platform

One of the key promises of Portal is to extend your business processes to external users. With the enhancements in this release, organizations using Common Data Service would be able to connect a portal to their Common Data Service organization.

What's new and planned for Dynamics 365 Portal

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Feature	Release type	Date
Enhancements to portal diagnostics tool	General Availability	April 2019
Maintenance mode for portals	General Availability	April 2019
Displaying external data in portals	General Availability	April 2019
Power BI Embedded support for Portal	Public Preview	April 2019
Common Data Service starter portal	Public Preview	April 2019

Enhancements to portal diagnostics tool

Business value

The portal self-service diagnostic tool released in the October '18 wave looks at portal configuration and identifies potential configuration problems as well as provides solutions on how to resolve the issues. Portal customizers can use this tool to quickly resolve common issues and reduce the amount of time spent on diagnosing issues. As part of this feature enhancement, we will be adding enhancements to identify more scenarios.

Persona

Portal administrators

Features

The feature enhancements allow users to:

- Identify incorrectly configured site markers.
- Identify performance impacting entity permissions and slow running queries.
- Identify portal solution installation and update failures and suggestions.

Maintenance mode for portals

Business value

Customers can display a "Website under maintenance" message during routine maintenance or major upgrade activities on their portal.

Maintenance mode lets portal administrators avoid showing intermittent service unavailability errors to end users during portal maintenance that otherwise can impact user satisfaction and portal search rankings.

Persona

Portal administrators

Features

This feature provides the ability to:

- Enable and disable maintenance mode from the portal admin center.
- Specify a custom message that is shown to portal users when the website is in this mode.

We'd like to thank

Thank you for submitting this idea with votes and comments that helped us prioritize it.

Displaying external data in portals

Business value

One of the recurring themes for portal customers is to be able to get data from external applications and display it in portals in a secure manner. This feature will allow customers to make client-side calls to external APIs and secure them by using OAuth Implicit Grant Type flow.

Personas

- Portal administrators
- Portal customizers

Features

This feature will provide an endpoint to obtain secure access tokens that will contain user identity information that external APIs can use for authorization following OAuth Implicit Grant Type flow.

Power BI Embedded support for Portals

Business value

In a recent release of Dynamics 365 Portal, we added support for Power BI integration. In this feature, we are extending Portal's support for Power BI Embedded services.

With Power BI Embedded, customizers can provide access to Power BI dashboards and reports to users who don't have a Power BI account.

Persona

Portal customizers

Feature

Ability to surface Power BI reports and dashboards to portals users who don't have a Power BI account.

Common Data Service starter portal

Business value

Since the launch of Common Data Service in 2018, one of the recurring asks is to provide the ability to connect a portal to the Common Data Service environment. This feature brings in the ability to connect a portal to a Common Data Service environment that does not have any Dynamics 365 applications (Sales, Service, or Marketing) preinstalled.

Persona

Portal administrators

Features

This feature will allow customers to:

- Use a new template, CDS Starter, which can be installed in Common Data Service organizations.
- Provision a portal for Common Data Service organizations.

Microsoft Forms Pro

Overview of Microsoft Forms Pro April '19 release

Today's business depends on how well organizations understand their customers while continually responding to and improving the customer journey. Microsoft Forms Pro is an enterprise survey tool built on top of Microsoft Forms with additional features that make it easy for organizations to collect feedback across customer touchpoints, correlate the feedback with business transactions, and derive actionable insights from the combined data.

Forms Pro capabilities include:

- **Design**: Easy-to-use survey designer with built-in question suggestions that helps business users create effective surveys and increase the survey response rates.
- **Distribute**: Flexible options such as email, Microsoft Flow, embed in portals or in Dynamics 365, and PowerApps to reach the right audience where they are.
- **Analyze**: Derive actionable insights from the survey questionnaire and response data.

What's new and planned for Microsoft Forms Pro

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

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For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

Feature	Release type	Date
Design a survey	Public Preview	March 2019
Distribute using multiple channels	Public Preview	March 2019

Feature	Release type	Date
Analyze responses	Public Preview	March 2019
Integration with Dynamics 365 and Common Data Service	Public Preview	March 2019

Design a survey

Forms Pro designer is built on top of Forms to provide enterprise-grade capabilities while retaining its simplicity as follows:

- Question types (such as NPS, smiley ratings, Likert, file upload) can be used to create effective surveys to maximize response and business insights.
- Survey designers will be provided with branching capabilities that can control what questions to show or hide based on the responses to previous questions.
- New questions will be suggested automatically based on the title and existing questions as soon as a user starts typing a survey question.
- A multi-lingual supported survey is provided to create and distribute surveys in multiple regions (for example, multiple language versions of the same survey).

Business value

Business owners use surveys to get accurate, measurable feedback directly from stakeholders. Low response rates would mean that this data may be biased, and conclusions drawn from it may be erroneous. Forms Pro provides intelligent design-time suggestions with branching capabilities to help survey designers create effective surveys that will have higher response rates.

Persona

Business users

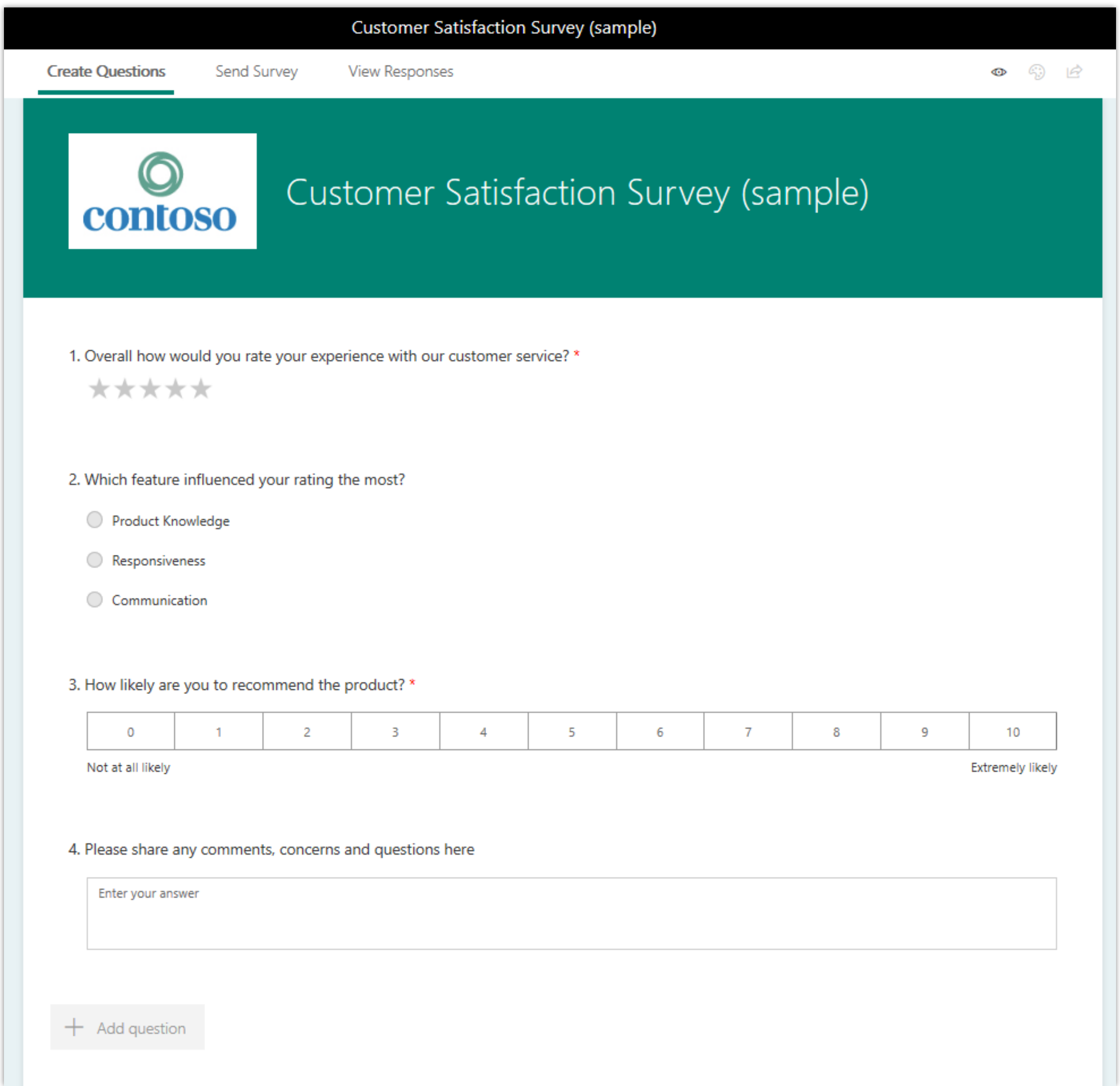
Features

- **Advanced question types**: Support for question types such as smiley rating, Likert, and file upload has been added to enable survey designers to get the needed feedback from the responders.
- **Branching logic**: Users can design surveys where they can control what questions are shown or hidden from the respondents based on their responses to previous questions.

- **Survey design suggestions**: Forms Pro provides intelligent inputs about the type of questions to use and can auto-fill suggestions to help survey designers create a survey that will attract maximum responses.
- **Survey translation**: Users can translate a survey in multiple languages to enable enterprises to cater to multi-lingual markets.

NOTE The capability to translate a survey will be released in March 2019 as public preview.

- **Piping data**: As part of the survey questions, designers can display contextual data from business apps, such as fetching order information, customer case title, or related product information.



Survey designer

Distribute using multiple channels

- Users will be able to distribute a survey to their contacts or lists in Dynamics 365, Outlook, or their company distribution lists or via an import from a CSV file, all in a familiar and easy-to-use email interface within Forms Pro.
- Users will be able to distribute a survey through QR code or just take the link to distribute using their own channel or through popular social media platforms like Twitter, Facebook, Yammer, and LinkedIn.
- Users will be able to embed a survey on their customer portals to allow seamless feedback collection.
- With Microsoft Flow integration, survey distribution will start based on business events from Dynamics 365 apps or your own business app (for example, a survey will be sent automatically to the customer when an order is fulfilled or a case is closed).

Business value

To get the most authentic feedback, it is important to reach the audience where they are. Forms Pro enables customers to send surveys or embed them in web pages, PowerApps, or Dynamics 365 apps, and copy the link to share via their own channels.

Personas

Business users, citizen developers

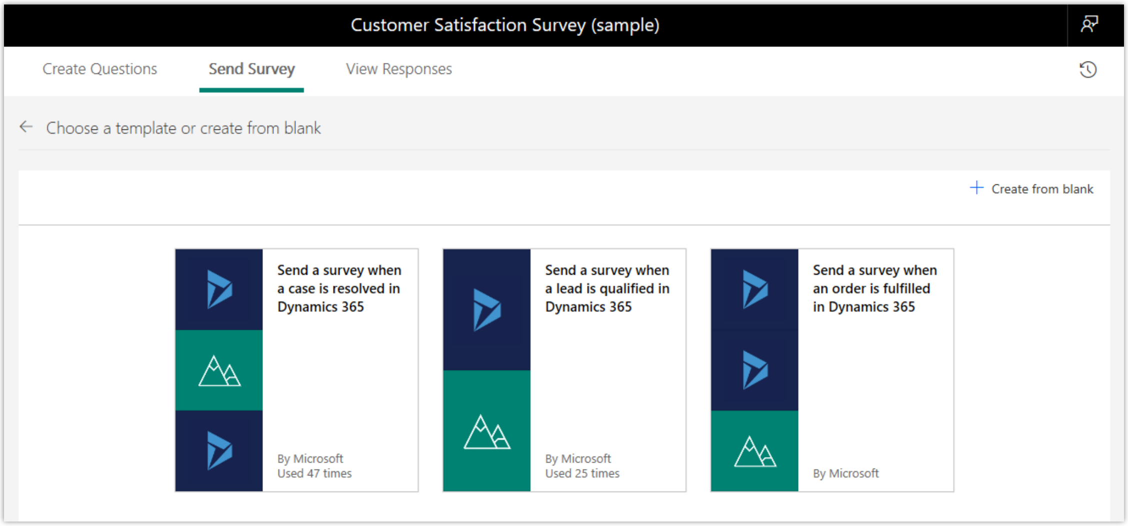
Features

- **Survey distribution using built-in email channel**: Use the capabilities of Forms Pro to send surveys to your contacts. Various options are available either by sending direct to an email address or picking contacts from Dynamics 365 or Outlook stores or importing your target recipients from a CSV file. You can craft an email message using a rich text editor and save it as part of your personal templates for future use.
- **Survey distribution using flow integration**: Forms Pro provides an out-of-the-box Flow connector, action, and ready-to-use templates to send surveys on a business event or trigger in your business application. For example, you can send a survey when a case is resolved in Dynamics 365 using a ready-to-use Flow template or you can create your own custom trigger and use the Forms Pro Send Survey action to send the selected survey using a specified email template.
- **Surveys embedded in your web portals**: Users can copy a code snippet from Forms Pro and embed it in the webpage. The survey will be displayed on the webpage. Forms Pro also

provides the flexibility to display the survey to the responder on demand or programmatically and pass the context from business app to Forms Pro for better analysis.

- **Survey distribution using your own channels**: Users can copy the link and distribute the survey through their own channel or by popular social media platforms like Twitter, Facebook, Yammer, LinkedIn, and so on.
- **Survey distribution from Dynamics 365**: Users can distribute surveys from Dynamics 365 apps by using Microsoft Flow. Developers can create a flow by using the Forms Pro connector and embed it in the Dynamics 365 apps as per the business requirement.
- **Embedded surveys in PowerApps**: Users can embed surveys in the business apps created by using the PowerApps platform. Users can embed the survey runtime experience in PowerApps enabling responders to respond in PowerApps directly.

NOTE The capability to embed surveys in PowerApps will be released in March 2019 as public preview.



Distribute a survey using Microsoft Flow

Analyze responses

- Users will have reports and dashboards for invitation and response analysis including an invitation summary, question-wise summary, responder information, and response details.
- Response intelligence to provide correlation across questions based on their responses. For example, whenever NPS of case closure is high, responsiveness of the customer service agent is also rated high.
- Users will get sentiment analysis of a survey based on the responses.

- Developers can use response data stored in Common Data Service to create custom workflows to enable the desired business processes or furnish data in dashboards using Power BI.

Business value

Most of the relevant and actionable insights are available when the survey responses are viewed in context of the business responses. When using Forms Pro, sophisticated response analytics becomes very easy and is available anytime, anywhere without needing complicated statistical packages. Forms Pro leverages the rich capabilities of Power BI to uncover meaningful insights and correlations among the survey responses.

Personas

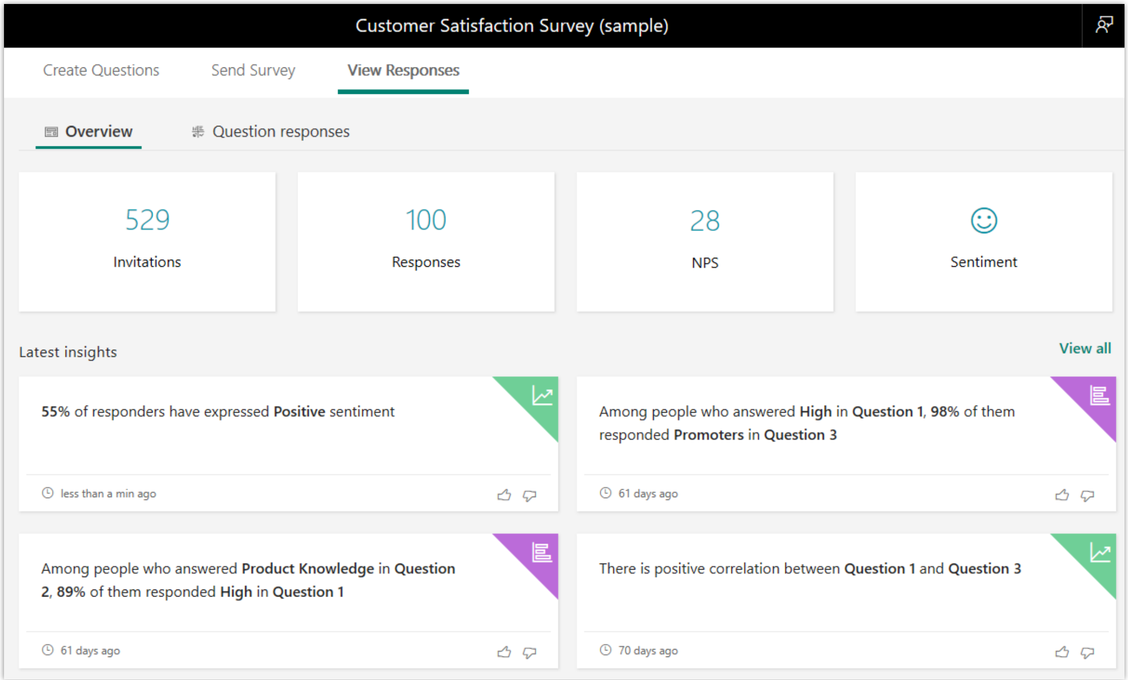
Business users, citizen developers

Features

- **Greater business insights**: Forms Pro provides rich business insights such as correlations and sentiment analysis. Since the survey responses and business data reside in the same Common Data Service, it provides richer insights about the business processes.

- **Rich out-of-the-box dashboards**: Forms Pro provides rich question, invitation, and survey response analytical charts and dashboards for quick reporting of survey response trends.

- **Leverage Power BI to build custom reports and dashboards that are unique to your business**: Each business has some unique analytics requirements. While Forms Pro standard Power BI reports and dashboards will take care of most of the business needs, business users can use their Power BI license to build custom reports and dashboards of their choice.



Survey analytics

Integration with Dynamics 365 and Common Data Service

Forms Pro is deeply integrated with the Common Data Service platform and any app created on top of it. A survey user can choose to connect to a specific Common Data Service environment or Dynamics 365 organization while creating a new survey. All data including survey questions, invites, and responses will be available in the selected environment or organization, thus enabling powerful scenarios that combine the observational data of Forms Pro with the user's transactional data.

Business value

Business users can now connect the surveys to the Dynamics 365 or Common Data Service apps to leverage the integration between the survey and business data. This will enable them to distribute and analyze the survey within the context of the business data, providing a richer view of the survey analysis.

Personas

Business users, developers

Features

- **Send survey data to business contacts or lists**: Forms Pro can fetch business contacts or lists from Common Data Service to enable you to send survey invitations to customers from Forms Pro itself. Alternatively, users can send the survey emails from the business Common Data Service app itself by leveraging Microsoft Flow.
- **Business and survey data together**: Since the business and survey data are stored in the same Common Data Service, you can create Power BI dashboards and workflows to create follow-up actions to improve the business processes.
- **PowerApps integration**: Forms Pro embeds surveys into PowerApps natively. This will enable leveraging PowerApps data into the survey and vice versa.

Microsoft PowerApps

Overview of Microsoft PowerApps April '19 release

PowerApps is a suite of apps, services, connectors, and a data platform that provides an environment for rapidly developing applications and building custom apps for your business needs. Using PowerApps, you can quickly build custom business apps that connect to your business data stored either in the underlying data platform (Common Data Service) or in various online and on-premises data sources (SharePoint, Excel, Office 365, Dynamics 365, SQL Server, and so on). Use PowerApps documentation to get expert information and answers to address your needs, regardless of how you use PowerApps.

The April '19 release provides major improvements across the themes in this list to enable app makers to build higher-quality apps more easily, while still supporting more advanced enterprise and administrator requirements. Improvements in PowerApps focus not only on introducing capabilities but also on simplifying existing concepts to improve maker productivity. They include:

- New and improved capabilities for app makers
- Better platform for administrators
- Unified Interface for everyone
- Enhanced platform capabilities
- Embed apps everywhere
- Build apps at scale with ISV Pro Dev Tooling

What's new and planned for Microsoft PowerApps

This topic lists features that are planned to release between April 2019 and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see Microsoft policy).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the International availability guide.

New and improved capabilities for app makers

New capabilities and improvements to existing features to support more productive makers of canvas and model-driven apps.

Feature	Release type	Date
New view designer for Common Data Service is generally available	General Availability	April 2019
App-licensing requirements presented to makers while building apps	General Availability	April 2019
App usage reports in your inbox	General Availability	April 2019
Improved inline help for makers and admins	General Availability	April 2019
Improved solution checking capabilities	General Availability	April 2019
Embedding canvas apps in model-driven forms is generally available and enhanced	General Availability	June 2019
New Common Data Service form designer is generally available	General Availability	June 2019
Create custom controls by using PowerApps Component Framework	General Availability	August 2019
Better support for many-to-many relationships in canvas apps	Public Preview	February 6, 2019
Compose and reuse rich components and controls in canvas apps	Public Preview	February 27, 2019
Configure dependent option sets	Public Preview	March 2019
Create canvas apps with responsive layout	Public Preview	March 6, 2019

Feature	Release type	Date
View results of formulas and subformulas in canvas apps	Public Preview	April 2019
One unified control framework for PowerApps	Public Preview	April 2019
Create and view related flows from an entity	Public Preview	April 2019
Leverage views from Common Data Service in canvas apps	Public Preview	May 2019

Better platform for administrators

Admin experiences are key to the adoption of any trusted platform.

Feature	Release type	Date
Improved supportability for admins	General Availability	April 2019
New storage-consumption and trend reports	General Availability	April 2019

Unified Interface for everyone

The Unified Interface is the mainline experience for Common Data Service.

Feature	Release type	Date
Sign in more easily to Dynamics 365 on a mobile device	General Availability	April 2019
Unified Interface as the default experience	General Availability	April 2019
Unified Interface is the experience of choice by users	General Availability	April 2019*

* This feature will be available for preview on February 1, 2019. Read more about previewing upcoming features.

Enhanced platform capabilities

App makers can use enhanced platform capabilities to support lifecycle, integration, and sharing in PowerApps.

Feature	Release type	Date
Access data from Common Data Service offline in model-driven apps	General Availability	April 2019
Office value-adds in Dynamics 365	General Availability	April 2019
Streamlined PowerApps experience	General Availability	April 2019
Using security roles with security groups in Azure Active Directory	General Availability	April 2019
Video control supports MS Stream videos	General Availability	May 2019
Improved solution support for canvas apps and flows	General Availability	June 2019
Seamless image support in Common Data Service	Public Preview	June 2019

Embed apps everywhere

End users can find PowerApps in more places, including Teams.

Feature	Release type	Date
Teams is a first-class distribution channel	Public Preview	April 2019

Build apps at scale with ISV Pro Dev Tooling

Feature	Release type	Date
Tooling update for ISVs and professional developers	Public Preview	April 2019

New and improved capabilities for app makers

Improvements for makers are focused on improving productivity by introducing capabilities and simplifying existing concepts to remove barriers while still providing rich capabilities for advanced users. PowerApps will introduce capabilities for reusable components, formula and error handling improvements, and experience improvements for form and view designers. In addition to improvements to the general app-building experience, canvas apps will also introduce capabilities in working with Common Data Service to simplify working with data and more advanced relationship concepts.

New view designer for Common Data Service is generally available

The new view designer for Common Data Service lets makers more quickly build new system views. Some notable new features with the view designer include the ability to:

- Add fields to the entity directly within the view designer.
- Drag in new columns from the field drawer.
- Add advanced filtering in the property pane.
- Select columns to change the header name and to define a specific column width.

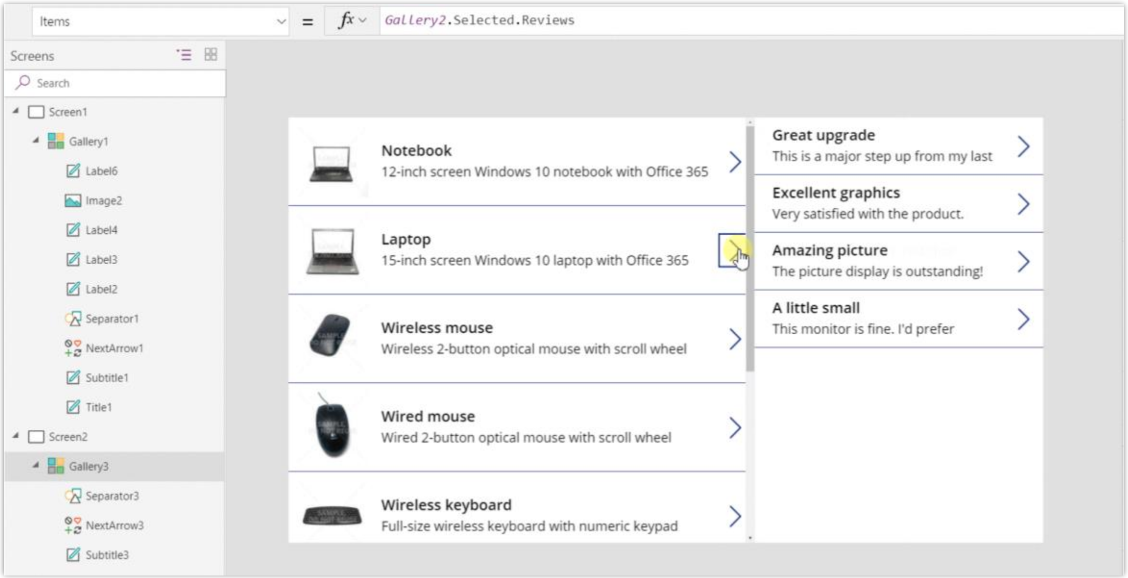
Leverage views from Common Data Service in canvas apps (Public Preview)

In canvas apps, makers can sort and filter a gallery based on a view in Common Data Service. This unlocks the power of the modern View Designer, in which you can centrally define a more complex set of filter, sort, and related entity fields. The canvas designer then provides a guided experience on the gallery or data table controls. It improves the selection of data sources in Common Data Service by recommending entities to use and selecting the public views for the entity. The maker can then extend the **Items** property with app filtering and sorting, which is merged with the view. This allows app-specific behavior while getting the value of a shared view.

Better support for many-to-many relationships in canvas apps (Public Preview)

Business data is relational. Customers, employees, suppliers, shippers, products, and inventory inter-relate through orders and purchase orders. In Common Data Service, these relationships are modeled as one-to-many, many-to-one, or many-to-many relationships.

Makers can walk all of these types of relationships in Common Data Service by using a simple object-dot notation, just as they have previously done with many-to-one relationships. For example, Orders.Employees.Name walks from the Orders entity across a many-to-one relationship to the Employees entity and retrieves the Name field. Conversely, Employees.Orders returns the table of orders that this employee has assigned, and many-to-many relationships are handled in the same manner. In addition, many-to-many relationships aren't based on a lookup field in either entity, so makers can relate and unrelate records by using new functions.



Walking from the Products entity to the reviews of a selected product with a simple formula

Configure dependent option sets (Public Preview)

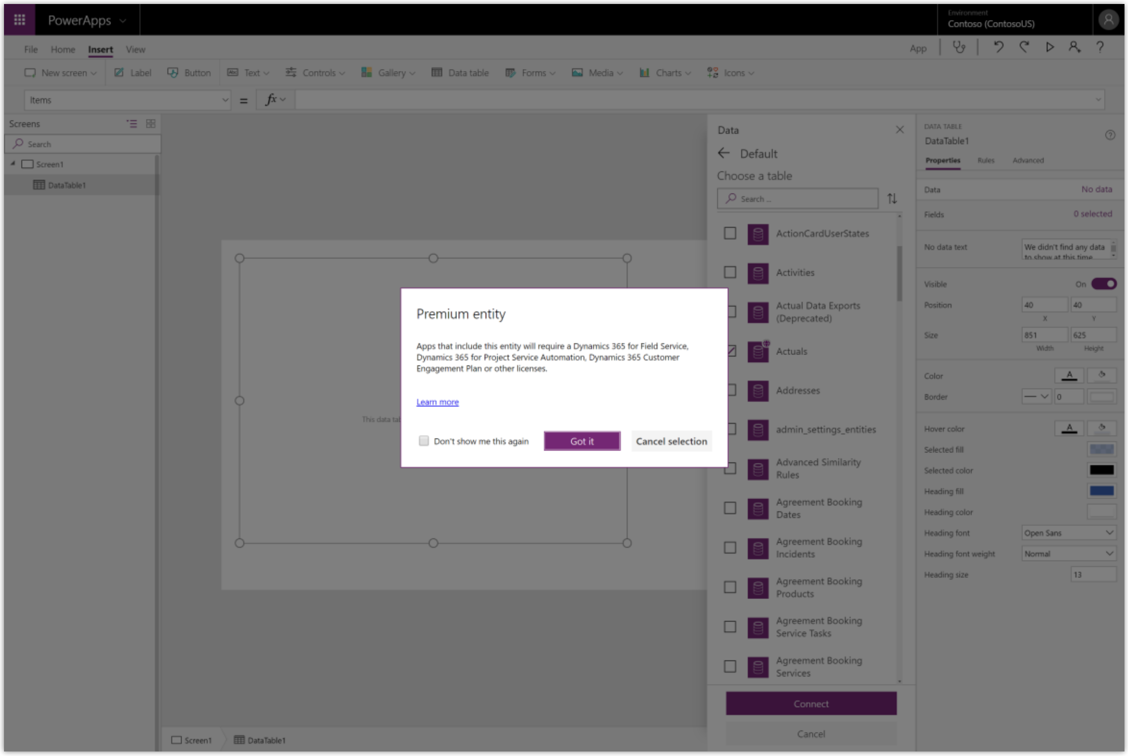
By creating dependent option sets, you can easily set rules between option sets to make sure that selected values make sense. As an example, you can create a **Country/region** option set and a **States** option set. If a user selects **United States** in the drop-down list for the first option set, the drop-down list for the second option set should show only those states that are in that country/region. You can ensure that data is consistent and accurate by defining this structure at the entity level for consumption in all apps.

Create and view related flows from an entity (Public Preview)

With the rich support in Microsoft Flow for Common Data Service, you can see all flows that relate to a specific entity directly from PowerApps. You can also create flows for data that's stored within Common Data Service.

App-licensing requirements presented to makers while building apps

If a maker adds a complex or restricted entity to a canvas app, users might need a different license to run the app (https://powerapps.microsoft.com/pricing/). Therefore, makers are notified if they add an entity that will affect the app's license requirements, and a summary of requirements for an entity appears before makers include it in the app.



Makers are prompted when they add entities or connections to their app that require a higher license level

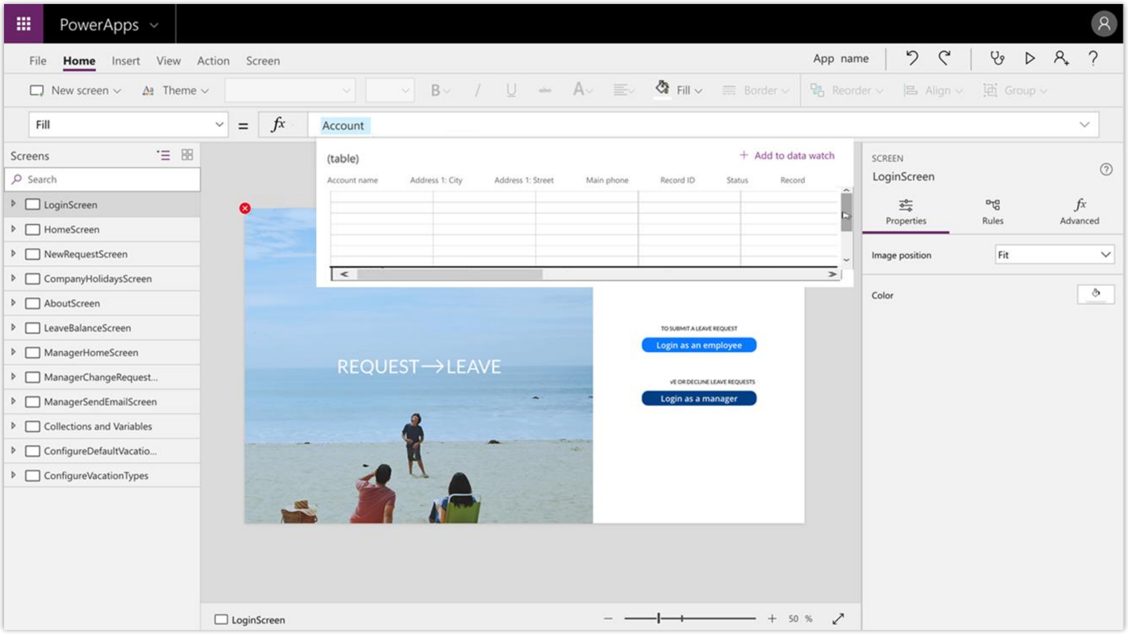
View results of formulas and subformulas in canvas apps (Public Preview)

Canvas apps operate by composing functions, such as **Filter** and **Sort**, to form powerful formulas. The result is often fed directly into a control, such as a gallery, which can interpret it further.

As compositions get more complex, it can become difficult to understand the impact of each function on the result. Makers will sometimes capture intermediate results into variables or create separate debug screens to display them. The lack of transparency makes it difficult to understand what's happening and debug issues.

This feature helps you get into the middle of the formula and understand what's happening. As in many other programming environments, you can select the entire formula or parts of the formula directly from the formula bar and see the data that's flowing from just that portion. Understanding and debugging apps get a lot easier and quicker.

Here is an early conceptual sketch that shows the contents and type of account simply by selecting it in the formula bar:



In an early conceptual sketch, Result View shows the value of what is selected in the formula bar, in this case the contents of Account table

One unified control framework for PowerApps (Public Preview)

PowerApps Control Framework (PCF) is the fundamental building block for all new controls across PowerApps, whether you're building controls on a canvas or for model-driven apps. First- and third-party developers can build, package, and deploy their own custom controls. PCF is available in public preview for model apps and private preview for canvas apps. Developers have access to a rich framework API set and can build production-grade controls due to continued investments in framework capabilities. Dev tools support building PCF controls, rule-based validation, faster testing and debugging, and solution deployment.

Embedding canvas apps in model-driven forms is generally available and enhanced

With embedded canvas apps, makers can now easily create custom visual sections and layouts in their forms using the low-code, WYSIWYG canvas app designer. They can also bring in and display data from 200-plus data sources on their forms. The embedded canvas apps also provide a deep contextual integration with the host model-driven form.

Following the preview release, embedded canvas apps now include additional new capabilities that enable deeper integrations between model-driven forms and embedded canvas apps. Some of these capabilities include:

- Trigger methods on the host model-driven form from the embedded canvas app.
- Enhanced and streamlined authoring experience via the new model-driven form designer.

NOTE This feature is available on Unified Interface only.

Create canvas apps with responsive layout (Public Preview)

The screens of a canvas app are usually scaled to fit the space that the app host provide. This makes it easy to create an app and know that it will look proportionally correct on any screen in which it's used. But it comes at a price - as screens get bigger, the app can't adapt to take advantage of the additional real estate. Many websites today are "responsive" in that they adjust to the size of the screen on which they appear, adapting from small screens on phones to large screens on desktops.

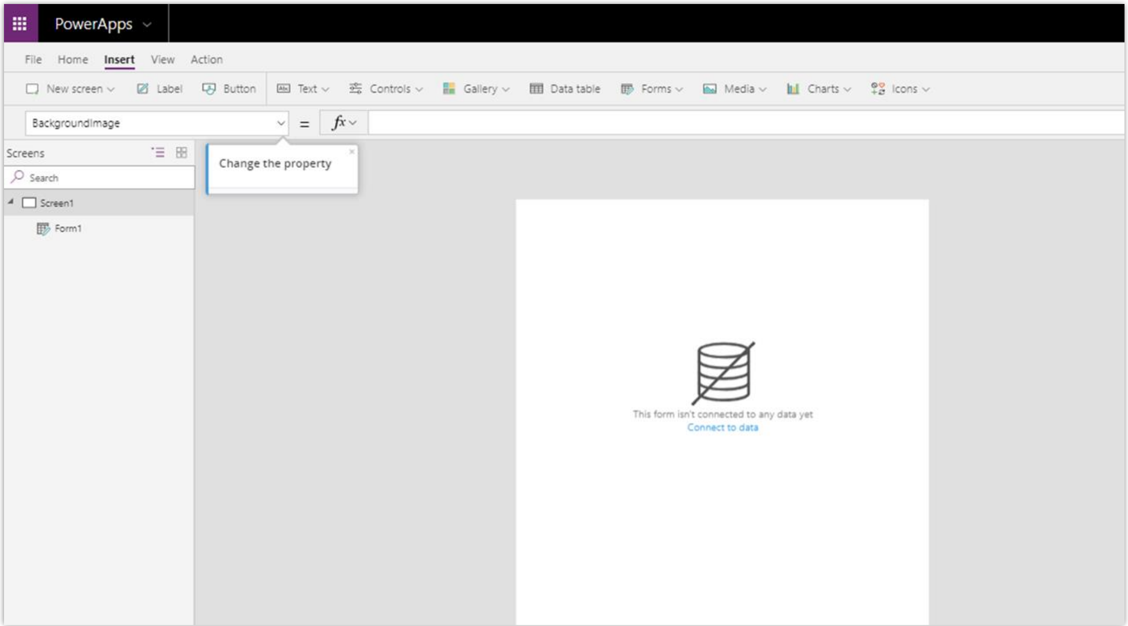
With this feature, experienced app makers can create responsive canvas apps. You must write formulas that adapt the size and position of controls based on the size of the screen at runtime. You can turn off the default scaling behavior. As a result, screens show more information with more appropriate font sizes, all making for a better app experience.

Improved inline help for makers and admins

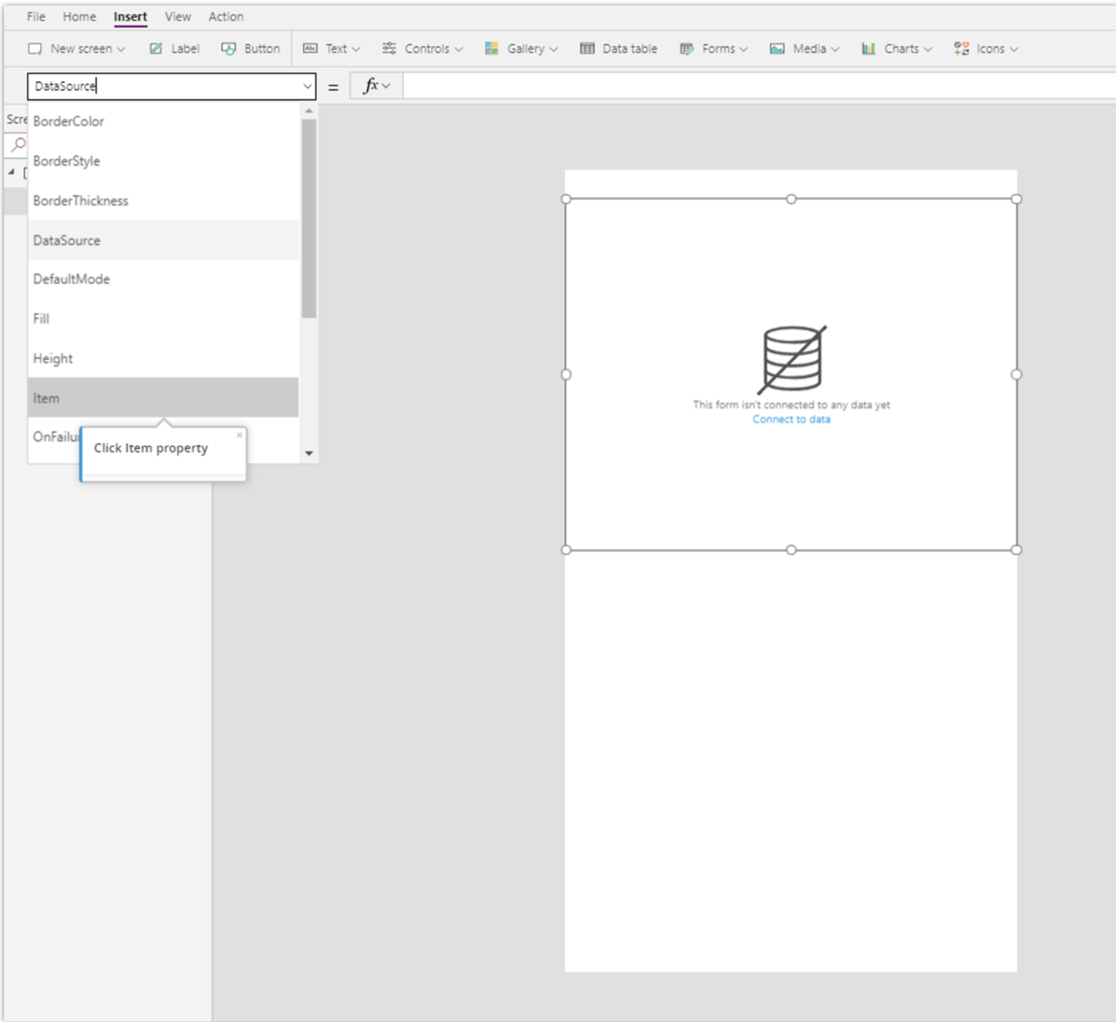
Makers and admins can now get step-by-step, guided-learning help in context for common scenarios. Guided help will be available in PowerApps Studio, the Power Platform admin center, and Microsoft Flow.

Guided-learning help will be available for these common scenarios, among others:

- In Microsoft Flow, create an approval process.
- In the Power Platform admin center, enable a mailbox to use server-side sync.
- In PowerApps Studio, use sample apps.



Guided help in PowerApps Studio - change property



Guided help in PowerApps Studio - click property

App usage reports in your inbox

Makers now receive regular reports (by email and in-product) about end-user app usage, including recommendations on how to improve experiences after apps are first published. This communication is tailored based on the apps that a maker is building and includes targeted recommendations for learning resources.

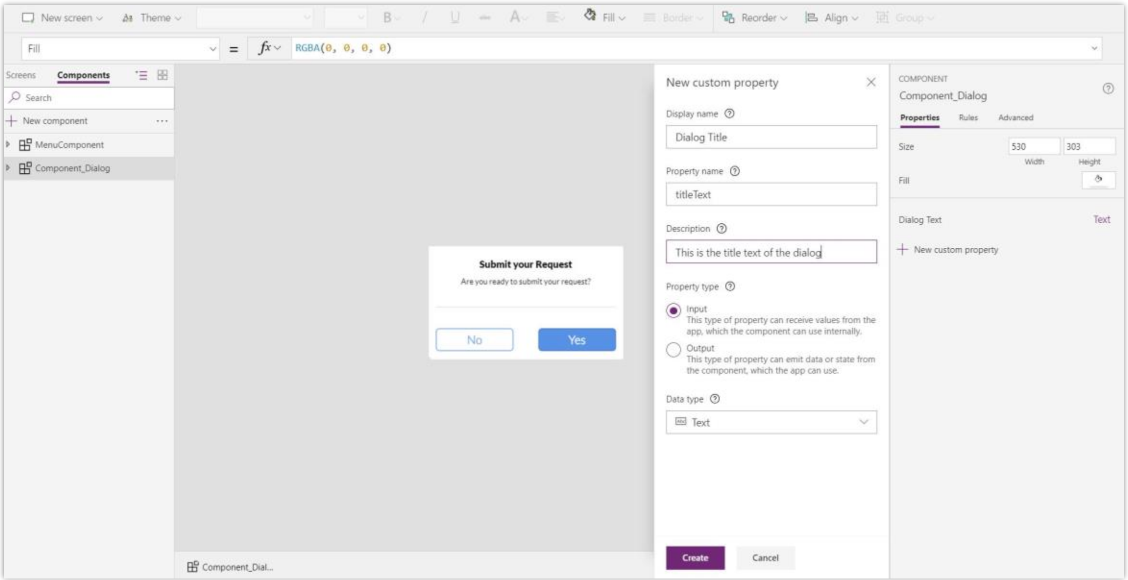
Compose and reuse rich components and controls in canvas apps (Public Preview)

Makers can build and share elements, such as menus or calendars, on multiple screens of the same app or in multiple apps. Makers can build these reusable components and composite controls in PowerApps Studio, just as they build canvas apps.

These improvements include:

- Use PowerApps Studio to build components by using canvas controls and expressions.
- Use a component multiple times within a single app.
- Use a component across different apps.
- Define the inputs and outputs that are required when a component is consumed.
- Update components in a single location, and manage updates and versions of components that are consumed in apps.
- Export and import components from environments.
- Consume built-in components for common scenarios.

By using canvas components, makers can quickly create, consume, and share their building blocks across screens and apps, build apps more quickly, and maintain apps more easily.



Create canvas component

New Common Data Service form designer is generally available

The new Common Data Service form designer offers a major experience improvement from the legacy Dynamics 365 experience of authoring forms.

Following the preview release, this designer includes new capabilities to help makers productively author model-driven forms. Some of these capabilities include:

- Drag-and-drop support to add fields and controls.
- Authoring Quick create, Quick view, and Card forms.
- Support for adding sub-grid and Quick view controls to the form.
- Controls pane to easily discover and add custom controls to forms and deliver rich end-user experiences.
- Ability to add embedded canvas apps in model-driven forms using the new model-driven form designer.

Improved solution checking capabilities

Building on the October preview, Solution Checker is now generally available with improved capabilities for parsing and acting on results at PowerApps.com, as well as new performance and stability checks implemented so you can quickly identify problematic patterns in your solutions.

Create custom controls by using PowerApps Component Framework

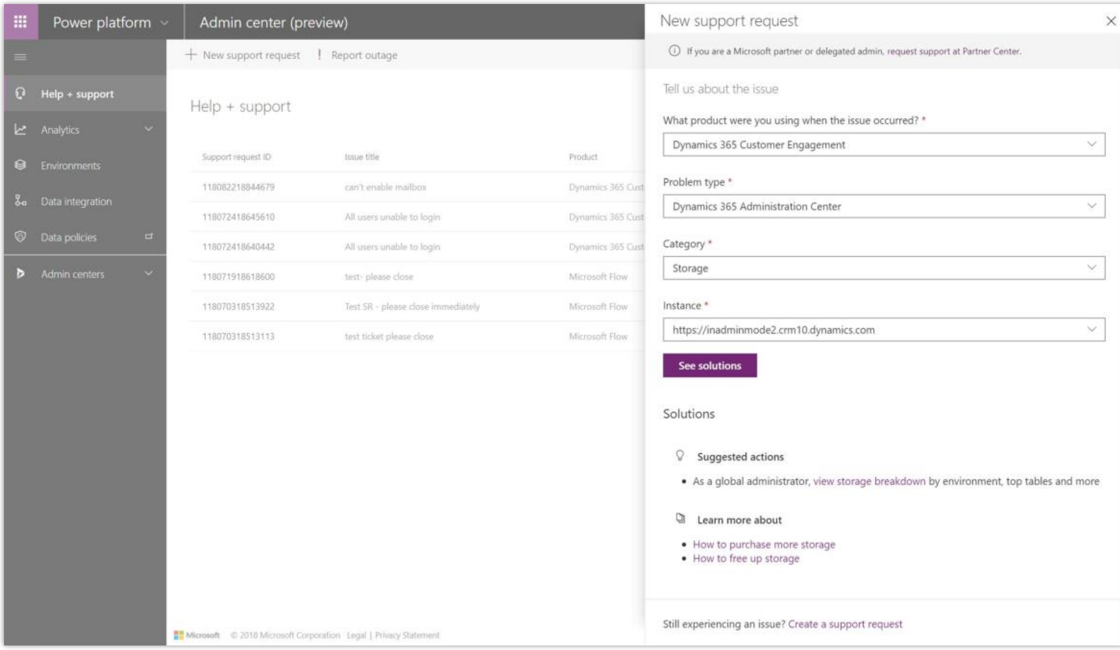
PowerApps Component Framework (PCF) is the fundamental building block for new controls across both canvas and model-driven apps. Due to continued investments in the framework capabilities, first-party and third-party developers can access the framework API set and build, package, and deploy custom controls. Developer tools support building PCF controls, creating rule-based validation, faster testing and debugging, and deploying solutions.

Better platform for administrators

PowerApps makes maintaining and managing apps across your organization easier than ever. The Power Platform admin center offers admins and partners a more reliable, unified experience to manage storage capacity, environments, and deployments. Powerful analytics empowers admins to investigate and diagnose issues with their deployments, and the integrated Help & Support experience allows them to find the help they need and escalate to Microsoft Support when necessary.

Improved supportability for admins

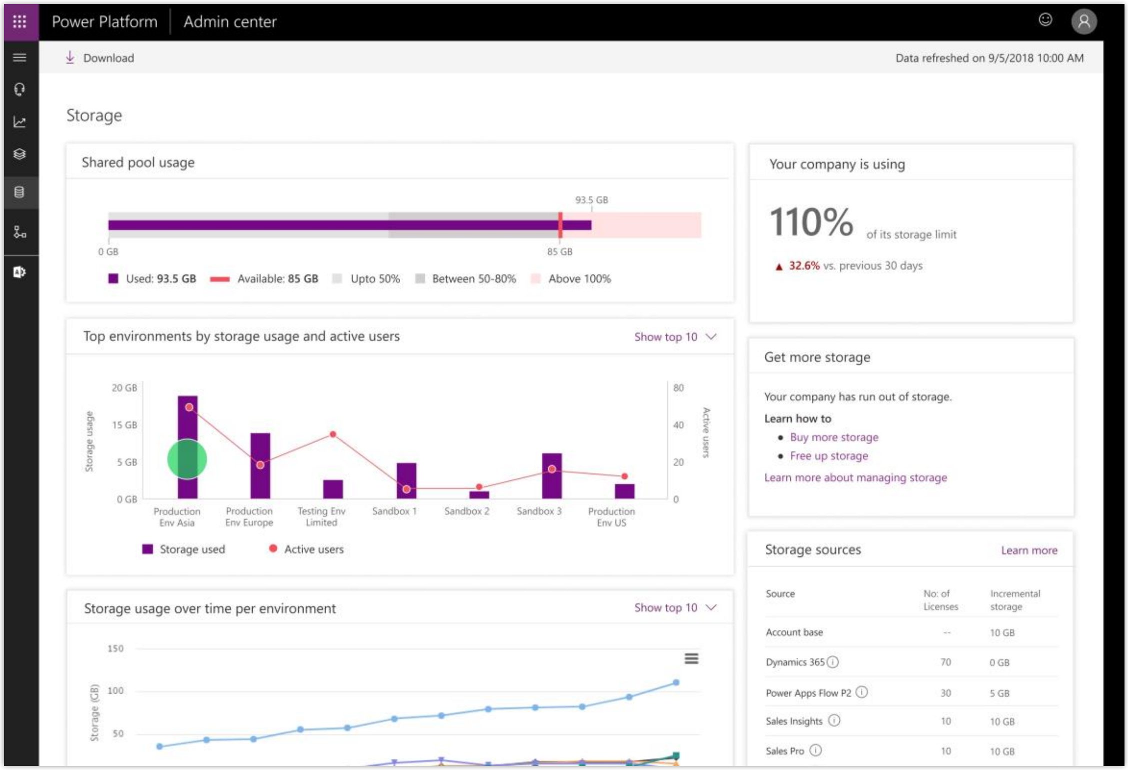
Power Platform admins now have a unified support experience across all apps and support plans. In the Power Platform admin center, all admins not only have a seamless experience to connect with Microsoft support agents, but they also have an option to get quick help in case of a system-wide issue impacting all users. Admins can get contextual self-help recommendations to diagnose or resolve issues on their own.



New support request

New storage-consumption and trend reports

Admins have more visibility than ever into how their organizations consume storage capacity. New (and accessible) storage-consumption reports are available for all Common Data Service environments, by default, directly from the admin center. The data in these reports is refreshed periodically to provide the most up-to-date information.



Storage usage report

Unified Interface for everyone

Unified Interface is the mainline experience for Common Data Service.

Unified Interface as the default experience

System administrators and customizers can now set Unified Interface as their default web client. This improves the user's home page experience to show all available model-driven apps, and gives them the ease of working in simple purpose-built apps. All the PowerApps model-driven apps as well as deep-linked URLs run in the Unified Interface, so users can take advantage of the many features and experiences that make Unified Interface better and more capable than the legacy web experience. In addition, system administrators and customizers can choose to hide the monolithic Dynamics 365 - custom tile on the apps home page, to give their users a truly modular apps-only interface.

Find more information at [Enable Unified Interface Only](#)

Unified Interface is the experience of choice by users

Users can navigate with an updated sitemap, leverage enhanced filtering on grids, save the filters to existing or new personal views, expand sub-grids to full view, quickly find records across searchable columns in grids, create personal charts, reset default dashboards, see appointment conflicts, customize their timelines, receive improved form notifications, and more.

Sign in more easily to Dynamics 365 on a mobile device

Users of Dynamics 365 Online or model-driven apps on PowerApps can sign in to the Dynamics 365 app on an Android or iOS device by using their email addresses instead of server URLs. After users sign in, they can see and access apps across all their available online organizations and environments.

Enhanced platform capabilities

Building apps is supported by enterprise capabilities to facilitate sharing, offline data access, and full lifecycle support for canvas apps, model-driven apps, and Microsoft Flow across environments.

Access data from Common Data Service offline in model-driven apps

Users of model-driven apps can access their data even while offline.

Office value-adds in Dynamics 365

Live Profile Cards are standard for inline People experience in Microsoft 365, across 30-plus endpoints for both Work and Life. Dynamics 365 users are part of this coherent experience, as their contact management in Unified Interface is enhanced by a seamless integration with live profile cards.

Seamless image support in Common Data Service (Public Preview)

PowerApps that are built on Common Data Service offer seamless support for images from all app types. Apps for scenarios such as mobile inspections in the field are easier to build, and users can provide richer data in addition to attaching files and notes.

Improved solution support for canvas apps and flows

Solution support for canvas apps and flows has several key improvements over the October preview. You can track dependencies and, when a managed solution is uninstalled, remove apps.

Other improvements include:

- Parameters in environments.

- Moving custom connectors in solutions.
- Adding canvas apps and flows to a solution even if they weren't created in a solution.

Streamlined PowerApps experience

Users now have a more consistent way of completing common actions and can move more seamlessly between key experiences on the platform. New modern experiences working with Common Data Service are moving into one streamlined portal experience. Users will be able to move between form, entities, solution, and view designers in one shared web experience. This new modern experience will be faster than moving between tabs and popups of the past.

Using security roles with security groups in Azure Active Directory

You can share data in Common Data Service with one or more security groups in Azure Active Directory. To share this data, create one or more custom security roles for your entities and assign those roles to security groups instead of to individual users. You can, for example, share apps, flows, and entities with the same security group.

Video control supports Microsoft Stream videos

App makers can show a Microsoft Stream video in an app by setting the **Media** property of the **Video** control to the video's URL.

Embed apps everywhere

End users can find PowerApps in more places, including Teams.

Teams is a first-class distribution channel (Public Preview)

A new deep integration into Microsoft Teams is another example of how the platform will help ISVs scale with greater democratization of app distribution, discovery, and consumption. Deeper integration with Teams will allow IT admins to seamlessly publish any app built on the Microsoft Business Application Platform to the Teams App Catalog for broad app distribution in the enterprise through Teams.

Build apps at scale with ISV Pro Dev Tooling

Tooling update for ISVs and professional developers (Public Preview)

For the professional developer, we will deliver an updated set of tooling experiences. In particular, we will focus on delivering enhanced experiences for developing plug-ins and for packaging of solutions.

Microsoft Flow

Overview of Microsoft Flow April '19 release

Microsoft is modernizing business processes across productivity: CRM and ERP applications. It's easier for every business (and business function) to transform how people work. Microsoft Flow, Microsoft's workflow and business process management platform, is core to the success of this mission.

Microsoft Flow offers rich workflow and business process capabilities for the Business Application platform, and for the Dynamics 365 and Office 365 services that build on that platform. This April, Microsoft Flow is doubling down on the platform integration by releasing key capabilities that enhance the power of all the above products.

Microsoft Flow is the connective glue that's used by end users and app developers alike for digital transformation, no matter what application they are using.

What's new and planned for Microsoft Flow

This topic lists features that are planned to release between April 2019 and September 2019. Previews for some features will start in February 2019.

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AI-enabled experiences

Microsoft Flow will help users across a range of skillsets increase their overall productivity by more easily digitizing processes through expansion of our built-in AI advisors and smart process designers.

Feature	Release type	Date
Action center for business process flows	General Availability	April 2019

Feature	Release type	Date
Change actions that have dependencies	General Availability	April 2019
Copy and paste flow actions	General Availability	April 2019
Diet designer for all templates	General Availability	May 2019
Improved Flow checker and remediation steps	General Availability	June 2019
Deactivate actions in flows	General Availability	June 2019
Microsoft Learn integration	General Availability	June 2019
Leverage device signals on mobile devices	Public Preview	April 2019
Extract structured data from emails, HTML, and PDF	Public Preview	June 2019

Unified platform across Dynamics 365 and Office 365

Microsoft Flow will help organizations automate and extend processes directly from business and productivity apps like Microsoft Teams, Excel, and OneDrive.

Feature	Release type	Date
Automated flows can call any Common Data Service action	General Availability	April 2019
Dynamics 365 applications building features on Flow	General Availability	April 2019
OneDrive for Business Flow launch panel	General Availability	April 2019
OneDrive for Business request sign-off	General Availability	April 2019

Feature	Release type	Date
Flow for SharePoint admin scenarios	General Availability	April 2019
Seamless flow creation in PowerApps	General Availability	June 2019
Contextual flows power automation in Microsoft Teams	General Availability	June 2019
Use Microsoft Flow in OneDrive for consumers	General Availability	June 2019
Integrated alert creation in Power BI	General Availability	June 2019
Improved Power BI connector	General Availability	June 2019
Automated flow parity with classic Common Data Service workflows	General Availability	June 2019
Automated flows support change sets in Common Data Service	General Availability	June 2019
Automated flows support batch operations in Common Data Service	General Availability	June 2019
Custom controls in business process flows	Public Preview	January 1, 2019
Design flows in Visio	Public Preview	March 2019

Enterprise-grade governance and compliance

Microsoft Flow will help organizations with data security, application lifecycle management, and supportability.

Feature	Release type	Date
Support for guest users in approvals	General Availability	April 2019
General availability of solution capabilities	General Availability	April 2019
Analytics enhancements	General Availability	April 2019
Connect to Azure services from custom connectors	General Availability	May 2019
Support for Azure AD and Office 365 groups in approvals	General Availability	June 2019
Attachments for flow approvals	General Availability	June 2019
Microsoft Flow US Government – GCC High	General Availability	June 2019
Data Loss Prevention enhancements	General Availability	June 2019
Increased flow run duration	General Availability	June 2019

AI-enabled experiences

In October 2018, Microsoft Flow released features like the Flow checker and rich, contextual remediation actions to help users build and fix flows. We've continued to invest in the intelligence of the checker and have added even more use cases to the remediation steps. We've made several UI changes to streamline specific experiences and made investments in many of the top ideas on the Microsoft Flow ideas forum, such as supporting guest users for approvals.

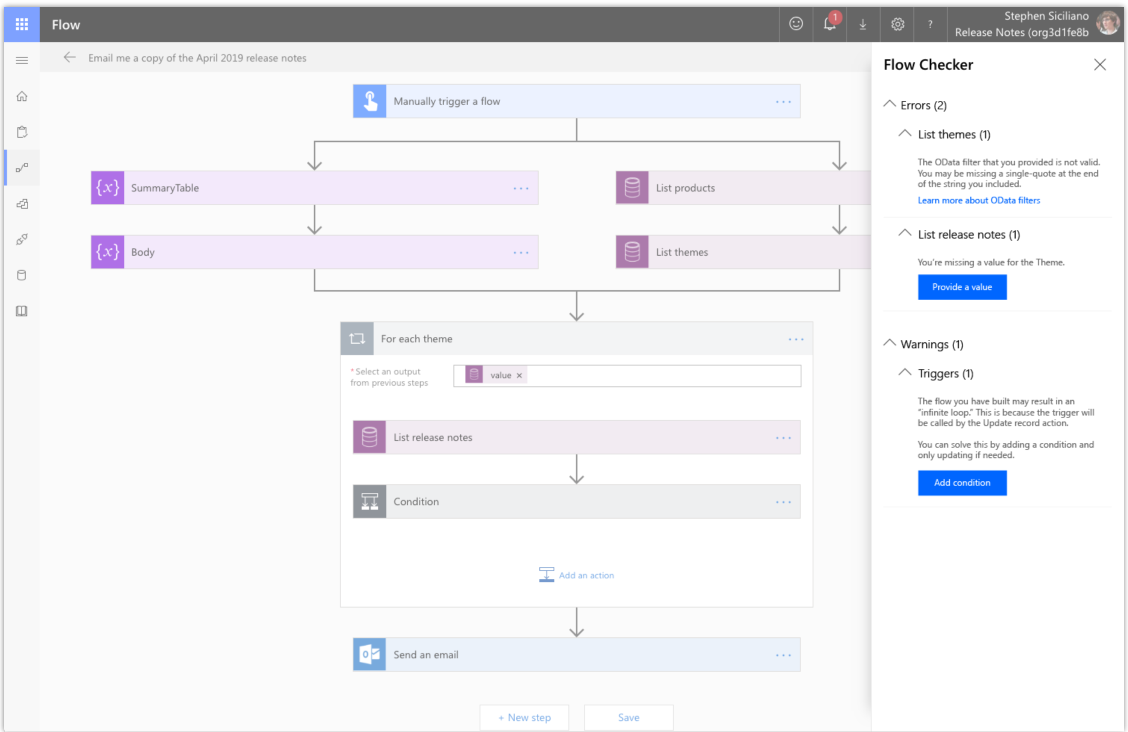
Improved Flow checker and remediation steps

In October 2018, Microsoft Flow released features like the Flow checker and rich, contextual remediation actions to help users fix common errors and build reliable flows. By running the checker, makers can answer questions such as:

- What areas of my implementation pose a performance or reliability risk?
- Am I using the 200-plus connectors appropriately?

- Have I made any errors in the Flow expressions that I've entered?

Makers can access an actionable scorecard that lists top issues. For each issue identified, the scorecard points to specific occurrences within the flow experience where improvements may be required. Most importantly, makers can discover how to implement these improvements by following detailed guidance.



Improved Flow checker

We have continued to invest in the intelligence of the advisor and added even more use cases to help users build reliable and robust flows. These improvements have come from learnings based on the AI capabilities in the platform. With hundreds of additional rules, and deeper static analysis, makers can get feedback on all the risks they may encounter before publishing their flows.

Microsoft Learn integration

Microsoft Learn is a new approach to learning for Microsoft products, including Microsoft Flow. We have built Microsoft Learn because the skills required to advance your career and earn your spot at the top do not come easily. Now there's a more rewarding approach to hands-on learning that helps you achieve your goals faster. You can earn points, levels, and achieve more.

We are now launching new trainings, new learning paths, and tutorials for Microsoft Flow. In addition, the Microsoft Flow learning paths now include interactive environments that provide free access while you are walking through a tutorial. As a part of these tutorials, we offer contextual tips throughout the product, pointing at exactly what the user needs to do next.

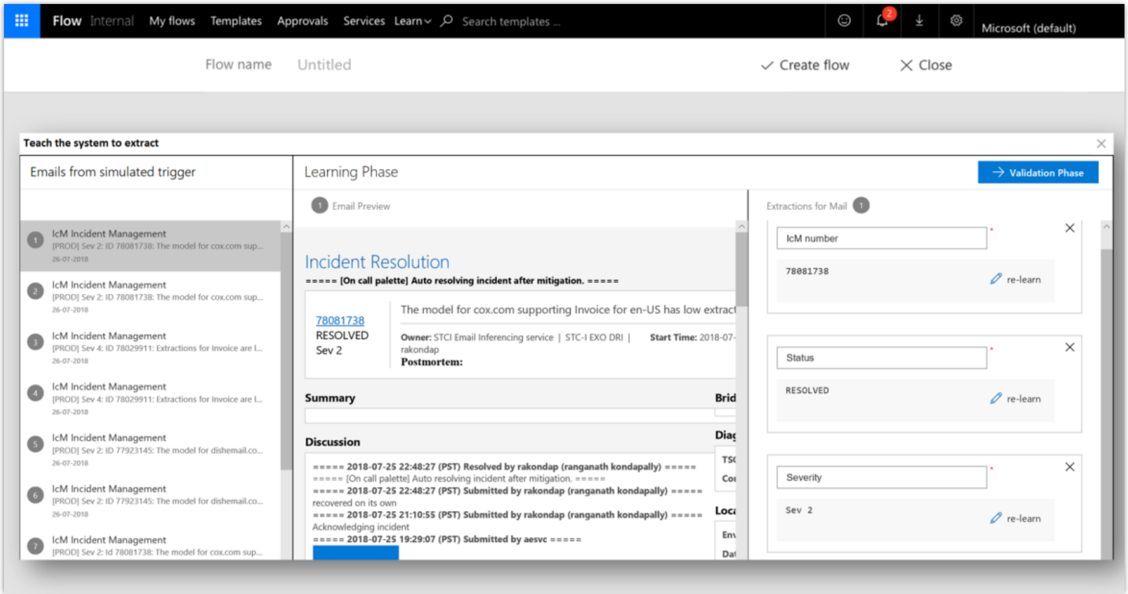
Extract structured data from emails, HTML, and PDF (Public Preview)

We have integrated new intelligence features into Microsoft Flow that allow users to parse content from email, HTML files, and PDFs. This allows users to retrieve structured data that can drive logic in a flow and be used in downstream connectors.

Historically, working with email is the No. 1 task that happens with Automated Flows. However, our ability to parse and reason over the content of the body of an email has been extremely limited. Users can receive hundreds of emails in a day and need to be able to respond to them quickly. Now, with the intelligence features in Microsoft Flow, it's possible to extract content even from the body of an email. Users can now:

- Extract **tables** contained in emails. For example: vendor price lists.
- Extract **specific entities** from an HTML/text document. For example: extract ID and status from a service incident.
- If email contains a **repeating pattern**, extract all the instances of it. For example: flight tickets with multiple legs.

All you do is select the content you want from one or more example documents or emails, and then in the future that content will be extracted on future documents that have the same characteristics.

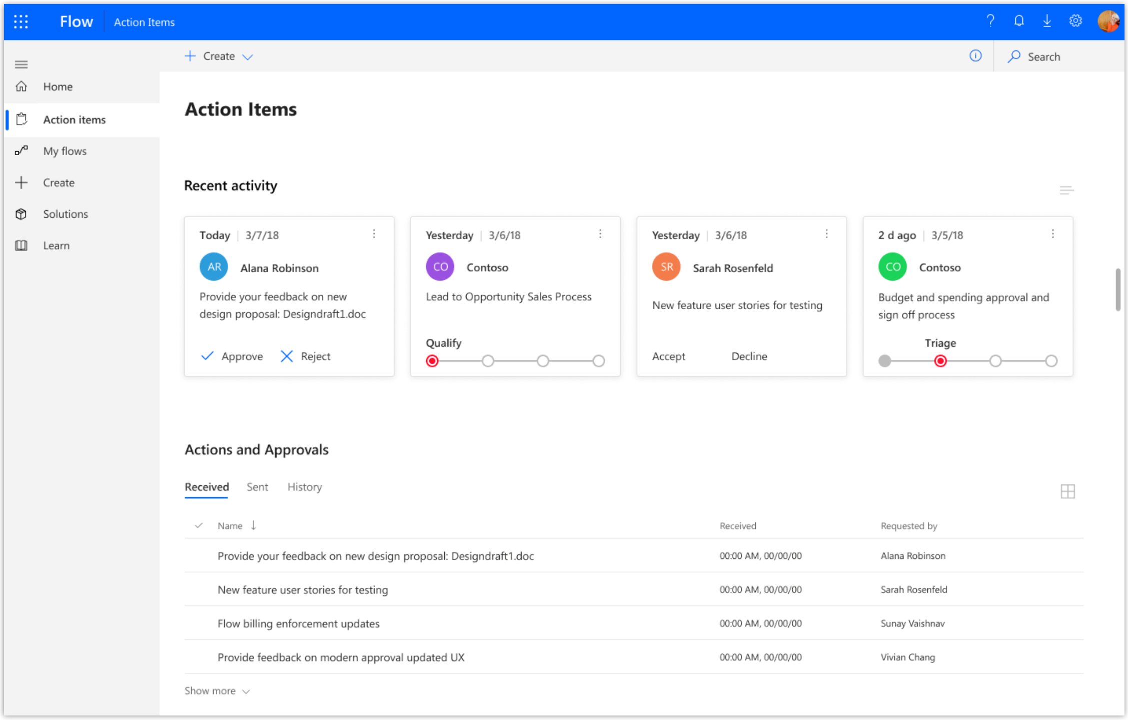


Configuring email extraction

Action center for business process flows

Currently, Microsoft Flow approvals allow a user to have multiple business process flows on a single record. However, there is no way for users to have a single view of all the processes that await action from them.

Microsoft Flow now provides a unified landing page for approvals and business process flows. This page allows the user to view approval requests pending their action and active business processes they own.



Microsoft Flow Action Center

In addition to having a consolidated view of all the pending actions, users can take actions—including bulk actions—from this view, including:

- Launch the items into another window.
- For business process flows—finish, abandon, restart, or email a link.
- For approvals—approve or reject, cancel, or email a link.

Change actions that have dependencies

One of the powerful aspects of automated flows is that any action can use data output by any trigger or action above it in the flow. However, this presents a challenge if you want to change a step at the top of the flow on which other actions depend. Previously, the flow designer would block you from making such a change because doing so would break other actions in the flow.

The new **Flow checker** highlights actions within a flow that need to be repaired. Now, you can delete or rename actions on which other steps depend. Use the **Flow checker** to fix the issues that arise.

Diet designer for all templates

Introducing a new and improved experience for creating flows from templates. With this new update, you don't need to worry about the internal logic for enabling a business scenario or how to create a workflow for it. Just choose the template that fits your needs, provide configuration inputs and connections, and you will be automating business scenarios in a minute or less.

Leverage device signals on mobile devices (Public Preview)

As proposed by this customer idea, customers can now use their location as a connector. This feature allows users to create a location range that triggers a flow when a mobile device enters or leaves it. This enables certain flows to run automatically without needing activation from the user, further adding to the mobile application's efficiency.

Copy and paste flow actions

If you want to duplicate actions inside of the flow designer, you can now copy and paste them. For example, if you are building a condition and want similar actions in the **If yes** side and the **If no** side, instead of creating both actions from scratch you can build the first action in one side and then copy it to the other.

To copy an action, select the action menu (the **...** at the upper-right of the action) and choose **Copy to my clipboard**. Then select **New step** where you want your action to go. There is a new **My clipboard** tab that lets you choose from all of the actions that you have previously copied.

Deactivate actions in flows

As covered by this suggestion from the community, you might sometimes have an action that's failing in your flow. However, it might not be essential for the flow to perform its core tasks. Thus, instead of spending the time to fix that particular action you can specify **Static results** for that action. This allows you to continue building out and testing the rest of your flow. If any other action in your flow needs data from that action it will use the **Static results** you have defined, instead of calling the Connector (and failing).

Unified platform across Dynamics 365 and Office 365

Microsoft Flow is reaching more users than ever with its rich integrations into other Microsoft products, primarily Microsoft Teams, Microsoft OneDrive, and Microsoft SharePoint. In Microsoft Teams, Microsoft Flow is now the easiest way for any user to have rich automatic behaviors like Microsoft Outlook rules. This works through both the Teams app, as well as contextually on file views.

Additionally, we're making additional investments in SharePoint, including powering the modern alerts feature. We're also investing in integrations with other Microsoft Power Platform products like PowerApps and Power BI. Finally, Microsoft Flow reaches more people by leveraging its rich community. For example, through the Microsoft Flow champions program, we now recognize evangelists who encourage use of the service elsewhere.

OneDrive for Business Flow launch panel

Similar to the Flow Launch Panel in SharePoint, users will be able to run flows on selected files from OneDrive for Business. This feature enables invokers to bring in their own credentials, especially for flows that may have been created by IT. Invokers will get prompts for runtime inputs like **Approver** or **Message**, which can be of type text, file, email, boolean, or number.

OneDrive for Business request sign-off

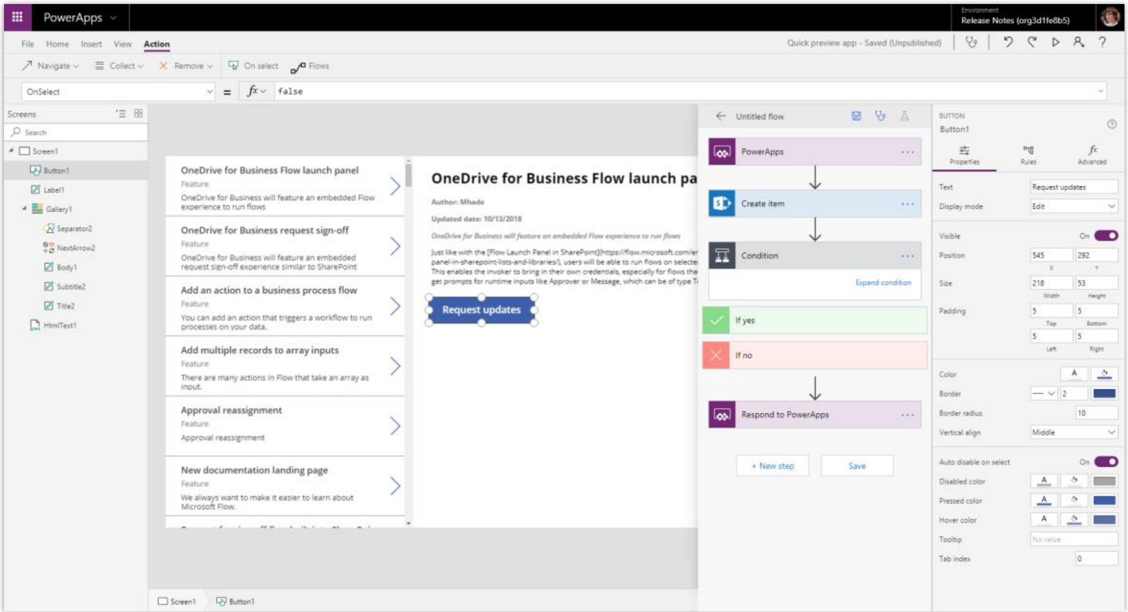
Through an embedded Flow launch panel experience, users will be able to create and run an out-of-box flow to send sign-off requests to any user in their tenant, along with a message. Once the approver responds, the initiator receives a confirmation email with feedback from the approver.

Seamless flow creation in PowerApps

Microsoft Flow is the best way to design logic for your model-driven and canvas-based PowerApps. Instead of writing code, you can use the point-and-click flow designer to build out your business logic. Easily run flows in your app with buttons, actions, and data inputs. These flows can fire-and-forget, or return data back to your app to display information to the user.

Moreover, with business process flows, you can keep users on track and ensure data consistency regardless of where it's entered across multiple stages. For example, you can create a flow to have everyone handle customer service requests the same way, or to require approvals before submitting an order.

Now, we are providing a seamless authoring experience for building flows—both business process flows and instant flows—in the context of model-driven and canvas-based apps. All you do is select **Flow** in the command bar and you’ll have the full flow authoring experience right inside the PowerApps studio. Once you’re done working on your flow, you’re still in context of your app, so you can easily continue working on building it out. If you ever want more real-estate to design your flows, you can pop out to a new tab to work in the full Flow designer, and your flow will be preserved.



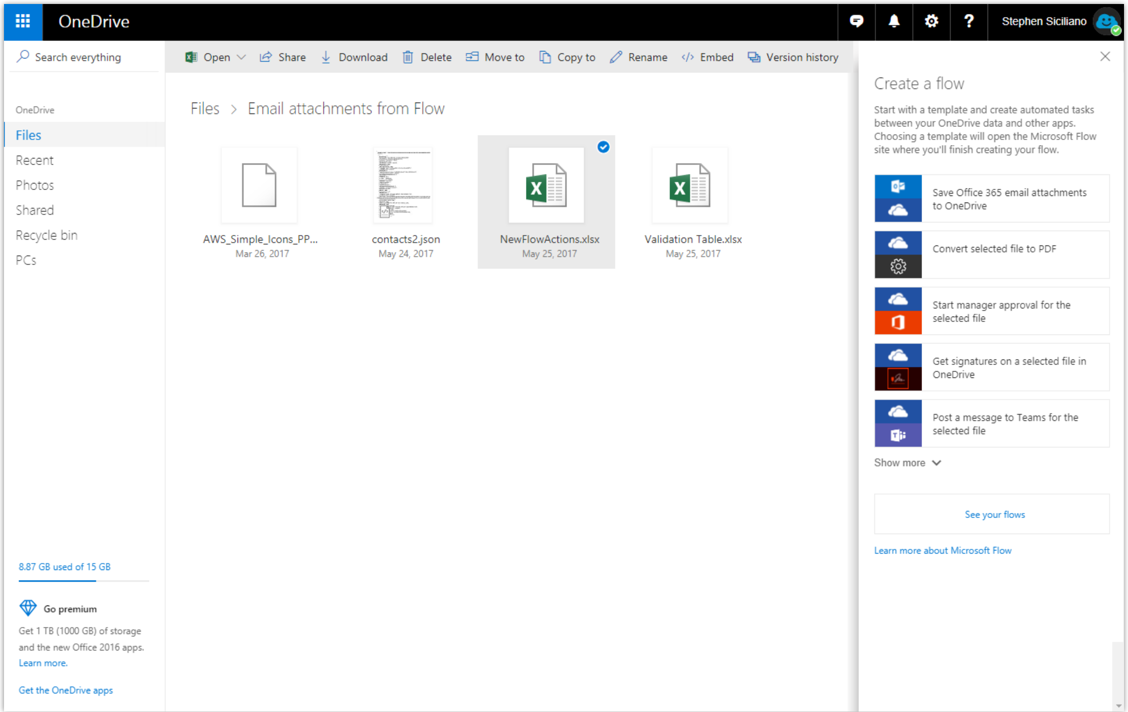
Create inside PowerApps canvas studio

Beyond just improving the authoring experience, there are these key, functional improvements:

- **Easily define complex data types**: When you use an instant flow to return data to a PowerApps-created app, you can now easily define complex data types (such as nested tables and records), rather than having to understand JSON format.
- **Bind flows to a data gallery**: In addition to invoking a flow on demand, you can now use flows to populate data in a gallery—for example, by calling a stored procedure in SQL and returning that data.

Use Microsoft Flow in OneDrive for consumers

The rich Microsoft Flow experiences in SharePoint Online, including Request-Sign Off and Convert to PDF, are now available for all OneDrive users. This means, without any additional configuration or setup, OneDrive users can have someone else review and collaborate on their documents. We have also included educational "coachmarks" that help users learn about the different scenarios that Microsoft Flow supports.



Flow inside of OneDrive

- **Request-Sign Off**: This flow lets you send an item to others to get their approval. Any one of the approvers can approve. You can track the status for this request in email.
- **Convert to PDF**: When you select a file, you can get a PDF copy sent to yourself or any of your contacts.

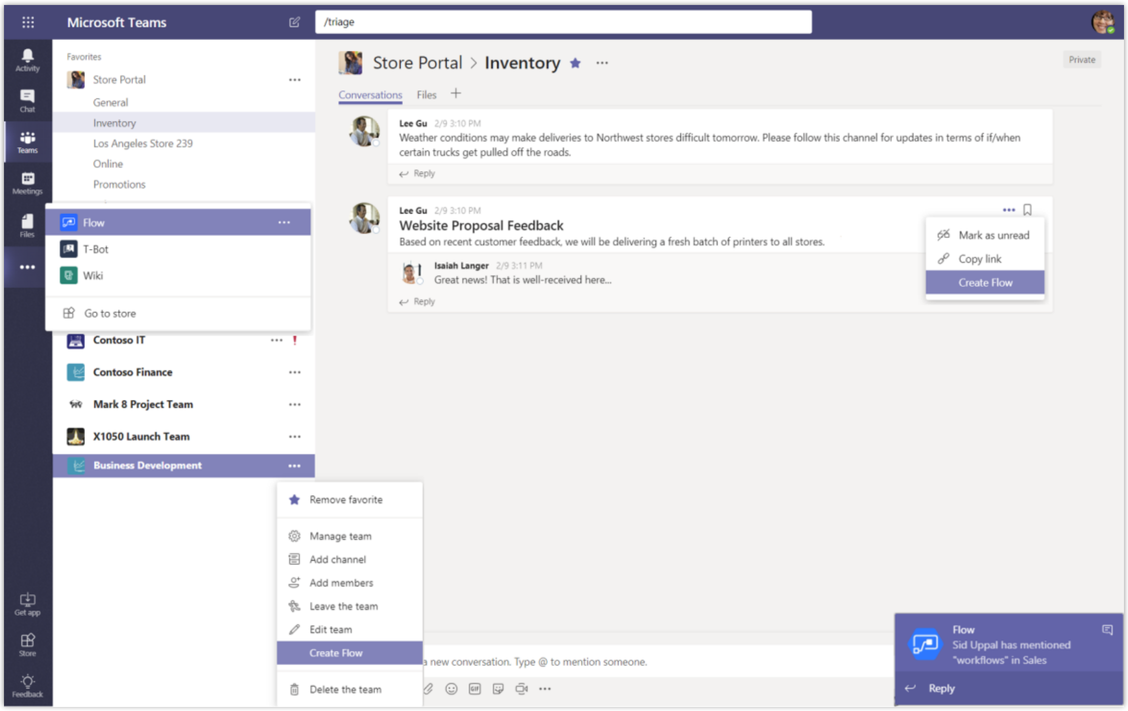
Finally, these capabilities are available for all OneDrive users, including consumers, not just OneDrive for Business users.

Contextual flows power automation in Microsoft Teams

Microsoft Flow is now the way that any user can have rich automatic behaviors in Microsoft Teams. Our vision is to deliver a world-class experience—like Outlook rules—for Microsoft Teams. This means that users can:

- Get notified about important updates in their teams from external services and act on them.
- Interact with services through commands and actions directly built into the Teams experience.
- Automate teamwork by setting up workflows based on Teams events.

These new capabilities are enabled through both the Teams *apps* (for example, a dedicated Flow tab) as well as contextually via menu items from entities like messages or files:



Microsoft Teams integration points

Beyond just easier setup, Microsoft Flow now supports channel notifications with adaptive cards, personal notifications, and even the ability to create workflows for Team or channel events. Some example scenarios include:

- As a project lead, you can get notified when someone talks about your project in a team.
- As a team admin, you can send out a welcome message, which includes links to onboarding resources to new users when they join your team.

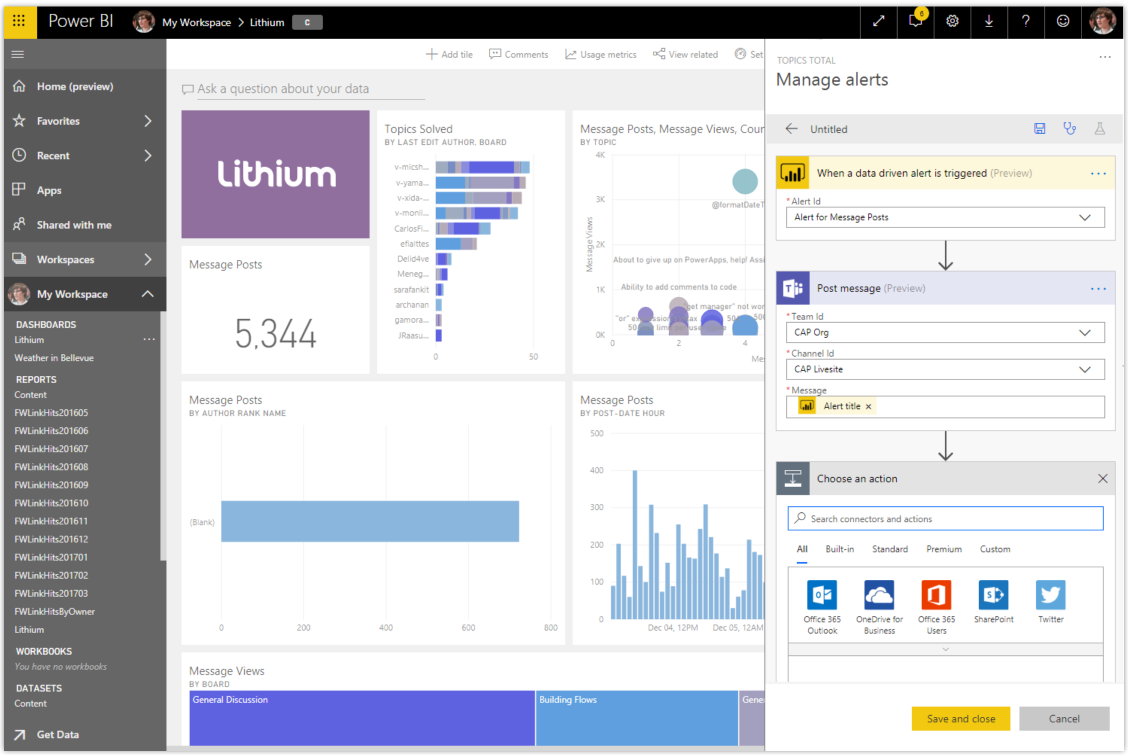
Improved Power BI connector

There are two key improvements for the Power BI connector. First, you can trigger data refresh of a dataset in Power BI, perfect if your flow updates underlying data sources and you want your reports always to be up to date.

Second, we are adding an action that performs a query against a Power BI dataset so you can use that result later in your flow execution.

Integrated alert creation in Power BI

Power BI is expanding its integration with Microsoft Flow to make it even easier to go from insight to action. Data alerts keep you up to date through notifications in the web and mobile apps as well as emails. And with Microsoft Flow plus Power BI integration, alerts can trigger actions in other systems such as Microsoft Teams, the Flow mobile app, the SharePoint mobile app, and text messages for endless opportunities to enable collaboration and automation.

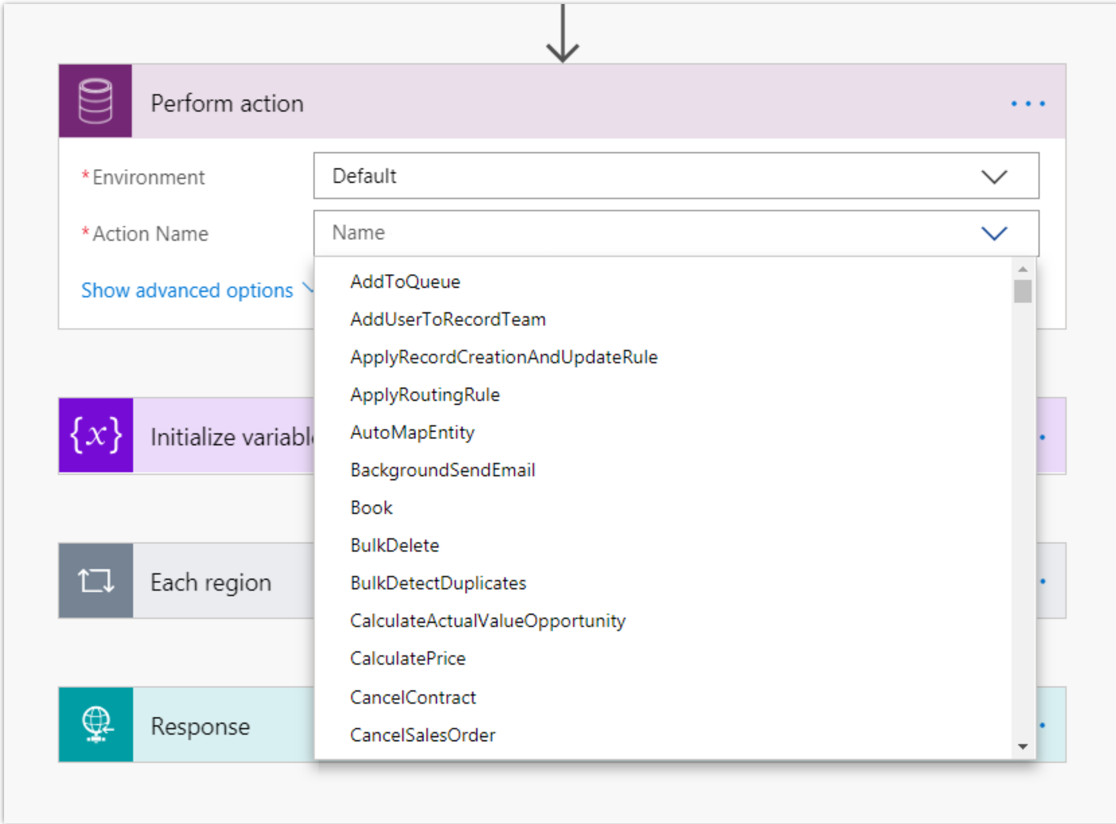


Create flows in Power BI

We have simplified the process of creating a flow from a data alert to make this process even simpler.

Automated flows can call any Common Data Service action

As a part of reaching parity with the Classic Common Data Service Workflows, automated flows can now call all actions that are available in Common Data Service. This includes everything from fulfilling a sales order to exporting an Excel file. Actions represent operations that might have side effects in the database, such as creating or updating records. An Action might require parameters and might return a value, and can be associated with certain records.



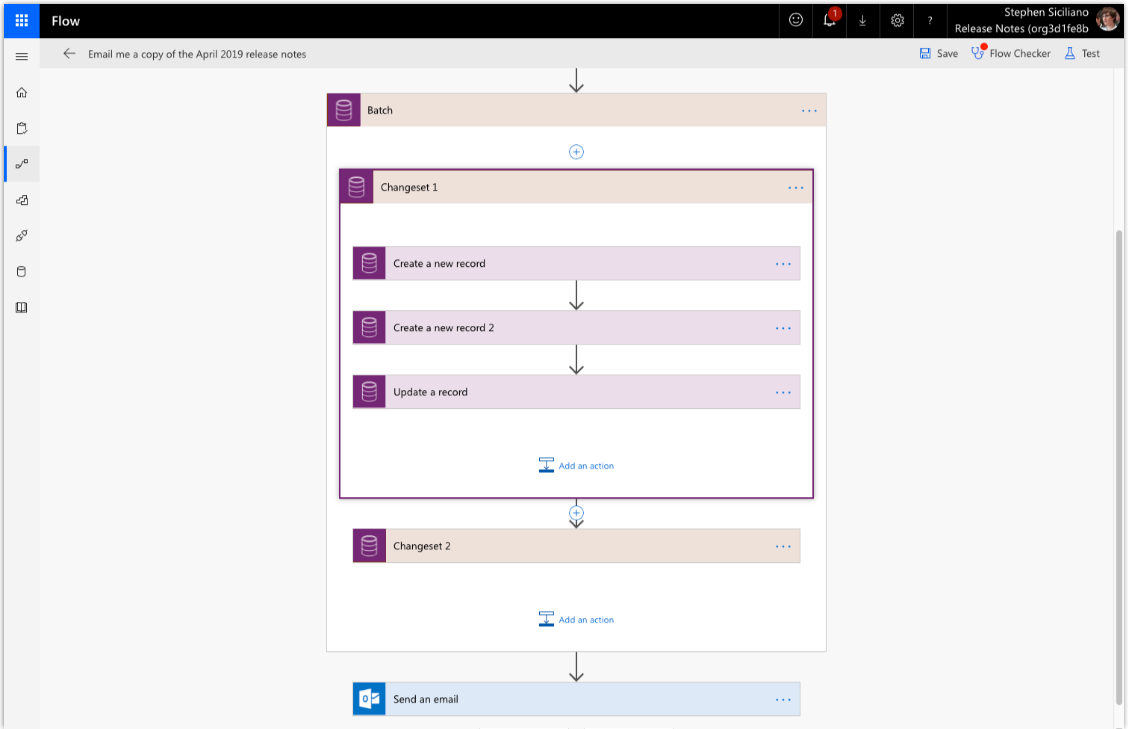
Flow calling Common Data Service actions

These actions include the **out-of-box SDK messages**, **process and custom actions**, and even **custom workflow activities**.

Automated flows support change sets in Common Data Service

Change sets are an important part of working with Common Data Service because all operations are considered atomic, which means that if any one of the operations fails, any completed operations will be rolled back. This is often referred to as a *transaction*.

We have now added native understanding of Change set scopes to the Flow designer so that users can replace classic Common Data Service workflows that previously needed atomic transactions.



Change sets in Flow

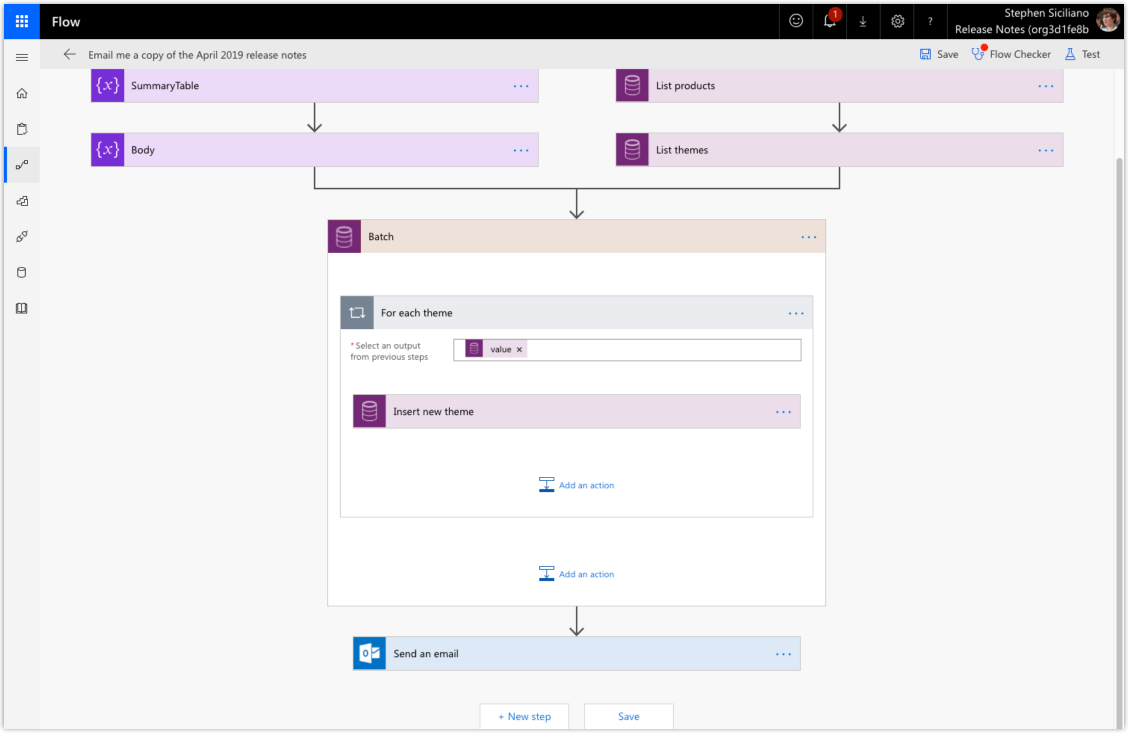
Change sets can be added inside of **Batch** scopes. To use this, search for **Change set** under the **Common Data Service** connector. Once you add this scope into the Microsoft Flow designer, you can add Common Data Service create, update, or delete actions inside of it (read operations cannot be in a change set).

NOTE You cannot include actions for other services inside of a change set scope. Instead, you will need to perform those other actions before or after the Batch.

Automated flows support batch operations in Common Data Service

If you want to perform many different actions in Common Data Service at once—such as inserting 100 different records at once—normally Microsoft Flow will make many different calls to Common Data Service. Although this works fine, it can often take a long time for such a flow to run.

Now, you can add a **Batch** scope to your flows that will group all these different operations into a single call to Common Data Service to dramatically improve performance. To use this, search for **Batch** under the **Common Data Service** connector. Once you add this scope into the Microsoft Flow designer, you can then add any Common Data Service action inside of it. You cannot include actions for other services inside of a Batch scope. Instead, you will need to perform those other actions before or after the Batch.



Batch scope in Flow

Remember, batch requests are best used when performing operations on entities that aren't associated with each other. Some operations on associated records, such as getting the primary contact of an account, can be performed in a single operation without using batching.

Dynamics 365 applications building features on Flow

In addition to the strong platform and standalone capabilities that Microsoft Flow provides, Dynamics 365 applications are now building many of their features directly on top of Flow. Two examples include:

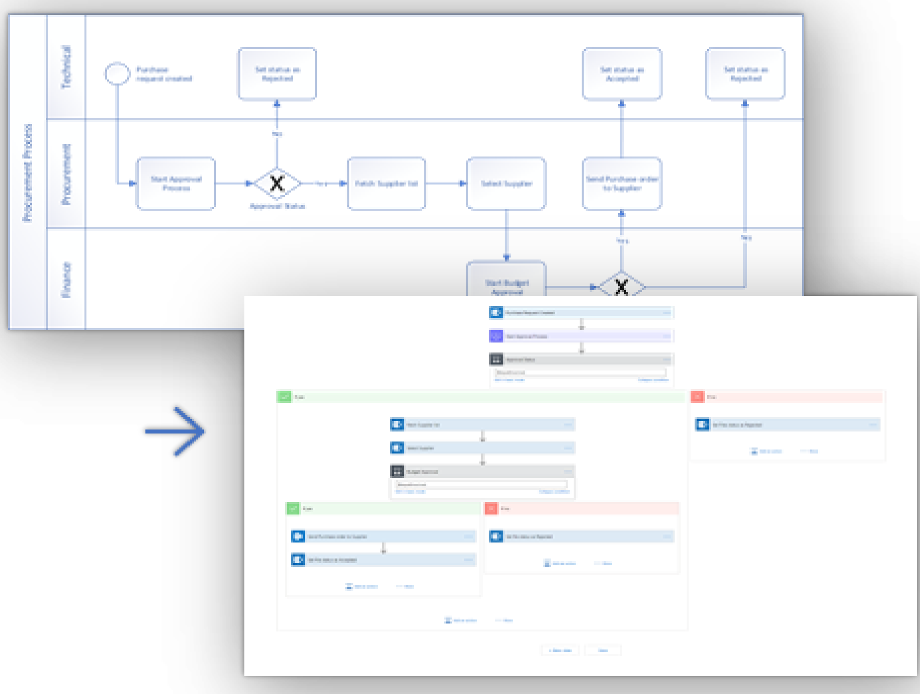
- The Service application helps organizations to track their SLAs. These SLAs were previously built on classic Common Data Service workflows, which meant they had very limited connectivity. Now, you can configure SLA actions with any of the 230-plus services that Flow can connect to.
- The Sales application has a new playbook feature for tracking sales plays. These playbooks now leverage business process flows so they can leverage the rich conditional logic that business process flows support.

Microsoft Flow for SharePoint admin scenarios

As proposed by this customer idea, site owners will receive a prompt to create and run an approval process whenever they want to join a hub site in their tenant. Furthermore, for organizations that have turned off self-site creation, users can now request a site to be provisioned. This request goes to the SharePoint administrators before provisioning.

Design flows in Visio (Public Preview)

Microsoft Visio enables enterprises to capture their business processes using its rich modeling capabilities. Anyone who creates flowcharts or SharePoint workflows can now use Visio to design flows. Use Visio's sharing and commenting capabilities to collaborate with multiple stakeholders and arrive at a complete workflow in little time. You can publish the workflow to Microsoft Flow, and then supply parameters to activate it.



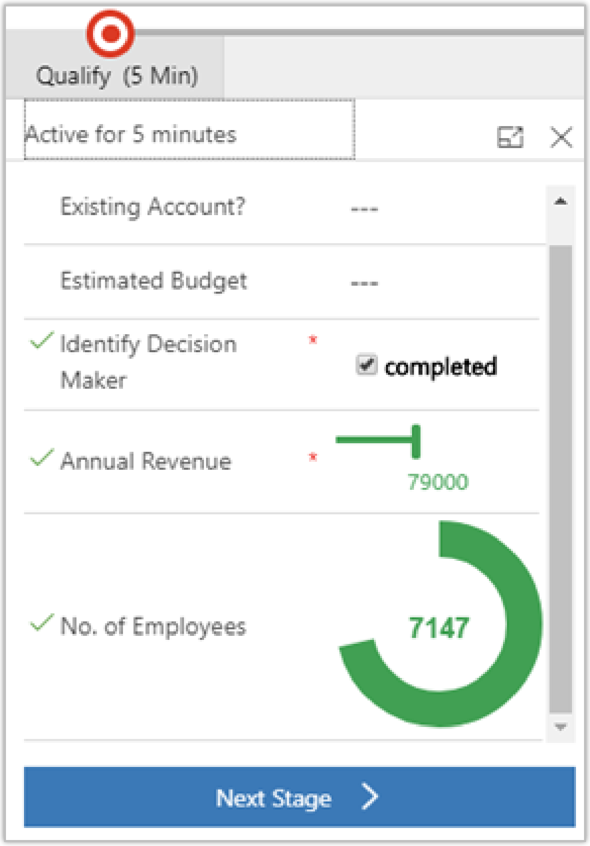
Screenshot of Visio

Many processes share a common model but have minor variations throughout an organization. This allows an organization to create a master workflow model and adjust instances with specialized parameters.

This feature is available to Visio Online Plan 2 subscription users. Learn more about how to set up and use the Visio integration.

Custom controls in business process flows (Public Preview)

Business process flows provide a guided way to get work done in stages and steps. Stages tell you where you are in the process, while steps are action items that lead to a desired outcome. Steps are bound to fields in a Common Data Service entity and until now, steps only allowed default visualizations for the field type (text boxes, drop-down lists, numbers, and so on). With this release, business process flow steps support custom controls for rich visualizations in the form of sliders, radial knobs, the LinkedIn control, and more. This feature is available in the Unified Interface.



Example of custom controls

This feature increases the potential for intuitive and immersive process runtime experiences.

Automated flow parity with classic Common Data Service workflows

Automated flows will, over time, replace the existing Classic Common Data Service for Apps workflows (formerly known as Dynamics workflow). With this release, it is now possible to accomplish all scenarios that asynchronous classic Common Data Service workflows supported with automated flows. Several capabilities, including action support and batching support, are covered elsewhere in the release notes. Here's a list of the new features in automated flows:

- **Provide filters to triggers**: You can control exactly which records trigger your automated flows. By including triggers in the middle of flows, you can leverage them as **Wait conditions** inside of a flow.
- **Run As** capabilities: Automated flows that are triggered by Common Data Service can run with either an account defined by the owner of the flow, or with the identity of the user who performed the change that caused the trigger.
- **Resume flows from a failed action**: If a flow fails on an action, makers can resume the flow right from that action once they've repaired the error.
- **Support for multiple trigger types**: Flows can now both be automated (triggered by events in the system), and instant (triggered on-demand) at the same time.
- **Call other flows**: Flows can now call other flows and pass parameters to them.

Finally, we are also providing migration guidance for our customers, although there is no automatic migration at this time.

Enterprise-grade governance and compliance

Microsoft Flow has a number of new features for enterprise scenarios and it will be available for sale in more markets, including the United States government cloud and the US Department of Defense. In addition, we've ensured that automated flows now have virtual parity with the classic Common Data Service workflows.

This parity allows us to start transitioning users from the classic workflow infrastructure to Microsoft Flow. To do this, Microsoft Flow now has a native understanding of Common Data Service and supports it in the Microsoft Flow designer. Specifically, features like transactional atomicity across Common Data Service actions and batching operations are now supported. With these improvements, first-party Dynamics 365 applications are now building their features on automated flows, including the SLA feature.

Support for guest users in approvals

Before, approvals could only be sent to others within an organization. This is problematic for many businesses because processes often span organizational boundaries. Now, you can assign approval requests to people in other organizations.

This feature is enabled through support for Azure Active Directory (Azure AD) guest users. Approvals remain in the original organization so that they can be managed by their tenant administrators. However, users from other tenants can be invited as *guests*, and then assigned roles, giving them the permissions to participate in approvals.

Flow is available in more geographies

Users in several new markets can now purchase Microsoft Flow, including Microsoft Flow for the US government and Microsoft Flow for the US Department of Defense (DoD).

Increased flow run duration

Some business processes take a very long time. We are now extending the available lifetime of automated flows from 30 to 90 days.

Data Loss Prevention enhancements

Data Loss Prevention (DLP) policies provide organizations with the ability to group connectors into Business and Non-Business Data Groups. This allows organizations to build flows that contain only *Business* data sources and prevent business data from leaking to non-business data sources. A common example is: *I don't want my SharePoint data to end up on Twitter*.

In addition to these capabilities, users have wanted the ability to respect data classifications and the direction of data flow. By supporting this, the number of flows that people build will increase because we can be more specific about what scenarios are blocked.

For example, in many environments, Twitter is classified as *non-business* and SharePoint as *business*. Under the current model, this means that people can't gather sentiment analysis data and put it in a SharePoint list—something highly useful for product teams around events and collecting feedback.

With our new enhancements to DLP, this would now be enabled. There are two important aspects to this:

- First, administrators can now choose the direction that data can travel between connectors. For example, an organization might be comfortable with Twitter data to enter a flow, but they don't want that data leaving the flow and onto Twitter.
- Second, Data Classification is enforced by Microsoft Flow at both design time and run time. For example, you can't take data from a Highly Confidential SharePoint site and send it to a

public SharePoint site. However, you can take data from the public site and move it to the Highly Confidential site.

Analytics enhancements

Analytics reports now include more details about who owns flows across environments that have been used, created, shared, or have errors. Additionally, we'll be providing a connectors report that will outline which connectors are being used within an environment.

We have provided more granular access to analytics reports so that environment admins have access to reports without requiring tenant administration privileges.

Finally, we are now providing aggregated tenant-level analytics so that admins can see summary-level information across their entire tenant.

General availability of solution capabilities

In October 2018, we offered the basic capability to import and export solutions that contain automated, instant or scheduled flows. Now, we are adding several additional solution capabilities so that makers and ISVs can more easily move assets between environments. For example, Microsoft Flow now supports parameterization of solutions so that their configuration can be varied from environment to environment. If a flow points to a SharePoint list, you can have the test environment point to a different SharePoint list than the production environment. We've also added a feature that adds support for custom connectors in solutions.

Support for Azure AD and Office 365 groups in approvals

You can now send an approval request to an Azure Active Directory (Azure AD) or Office 365 group, as well as to specific users. Previously, you could send an approval request to any number of your colleagues, but now instead of sending it to each person individually, you can send requests to an Azure AD security group, or Office 365 modern group. Each user in the group sees the request in their approval center. If anyone in the group approves, the approval completes.

Attachments for flow approvals

You can now create an approval request and attach any number of files to that approval request. This makes it possible, for example, to attach receipts to an expense report. Attachments, like all other aspects of approvals, are stored in Common Data Service.

Connect to Azure services from custom connectors

Today, when Microsoft Flow or PowerApps users want to create a custom connector using one of their Azure resources, they must leave the respective portal, go to the Azure portal, select the API definition they'd like to use, and export it into Microsoft Flow.

This new feature will not only simplify and improve a user's experience by allowing them to create a custom connector with Azure all in one place, but the integration will also make these services more visible to Microsoft Flow users that it's possible to create custom connectors using what they already have in Azure.

Business intelligence

Overview of business intelligence April '19 release

This topic describes the theme areas for the April '19 release.

Power BI makes it very simple to derive insights from transactional and observational data and then get those insights into the hands of every employee to support decision making. This helps organizations **create a data culture** where every employee can make decisions based on facts, not opinions. Through integration with PowerApps and Microsoft Flow and embedding in applications, we close the loop from insight to action.

We're making investments in five areas key to driving a data culture:

- **Simple, fast, intuitive experiences** that get every employee motivated to participate.
- **Support for large-scale, enterprise-wide BI with self-service.**
- **Enabling agile, self-service, big data prep with Azure** so business analysts can participate in the synthesis and enrichment of digital signals and so organizations can accumulate data of analytical value in Azure Data Lake Storage.
- **Pervasive application of AI** to make the inherently difficult task of determining what truly matters easier for business users by automatically uncovering hidden insights, and helping business analysts with data preparation.
- **Enabling solution developers** to embed insights within the applications where actions are taken.

Simple, fast, intuitive experiences

We will focus on:

- **A streamlined content consumption experience.** Streamlined viewing, navigation, and collaboration for end users. As Power BI is increasingly used for large-scale enterprise deployments, usability for end users is critical. With a redesign of the consumption interface in Power BI, end users will have a simpler, more intuitive experience. Additional features such as personal user bookmarks, commenting on reports, and improvements to Power BI Home will provide additional capabilities highly requested by end users.
- **Richer authoring control, ensuring the best experience for your users.** With the ability to drill through to another report in the Power BI service, report authors will be able to create separate reports that drill into a specific area. End users can navigate between

reports with the filter context passed along with it. In addition, authors will have full control over the filtering experience in Power BI. This includes hiding specific filters from end users, locking filters from being modified as well as control over the look and feel within the report. Formatting options will continue to evolve—from usability additions including PowerPoint-like smart alignment guides on the canvas to powerful expression-based formatting, leveraging the DAX formula language to dynamically format visual properties in the report.

- **Performance profiling of reports.** Report authors will be able to profile their reports created in Power BI Desktop using the Performance Analyzer. This will provide visibility into load time of reports and how that time is being spent, and offer tips to improve to ensure the best experience for end users of the report.

Support for large-scale, enterprise-wide BI with self-service

- **Enabling enterprise-grade semantic models.** Building an enterprise-wide BI solution is more complex than departmental or self-serve use cases and it demands more of the platform. By adding support for the XMLA protocol, the data models in Power BI can be accessed by pretty much any BI tool. XMLA support also brings the community of Application Lifecycle Management tools for SQL Server Analysis Services to Power BI. The Power BI Desktop will have a redesigned relationship view, optimized for models with a large number of tables. In addition, SAP connectors will now enable end users to modify variable selection both in Power BI Desktop and in the Power BI service.

- **Worldwide scale.** Multinationals must operate globally, while also ensuring that local regulations and performance needs are met. With Premium Multi-Geo, we allow capacity to be deployed in any of our nine public geos to ensure data residency.

Agile, self-service big data prep with Azure

Data preparation is the most expensive step in BI, typically accounting for 60-80% of the cost of a typical BI project. Today we have a powerful data preparation tool, Power Query, that's a shared experience across Excel, Power BI, PowerApps, and Flow. While it's a great tool for many self-service scenarios, it has constraints in terms of enterprise manageability and scale.

- The data preparation logic is bound to a single BI data model, so it's not reusable.

- Scale is limited by a single computer on which the logic was created.

- Data is not schematized so applications cannot easily leverage the data.

We are making self-service data preparation more manageable for the enterprise with:

- **Reusable data-prep.** The data preparation logic is elevated as a first-class artifact that can be reused across multiple BI models.
- **Big-data scale.** We are addressing the scale limitations to enable business analysts to ingest, transform, integrate, and enrich big data.
- **Common Data Model.** Business analysts can bring data in Common Data Model (CDM) form within Power BI.
- **Extensibility through Azure data services.** We will land data in Azure Data Lake Storage Gen2 to facilitate collaboration and reuse between business analysts, data engineers, and data scientists.

We're fueling collaboration across roles by unifying access to data between Power BI and Azure Data Lake Storage. Business analysts can seamlessly operate on data stored in Azure Data Lake Storage with the self-service capabilities in Power BI, while data engineers, data scientists, and other professionals can extend access to insights with advanced analytics and AI from complementary Azure data services like Azure Data Factory, Azure Databricks, and Azure Machine Learning.

For example, data engineers can add, enrich, and orchestrate data; data scientists can build machine learning models; and business analysts can benefit from the work of others and the data available in Azure Data Lake Storage while continuing to use the self-service tools in Power BI to build and share insights broadly.

Pervasive application of AI

AI can aid in data exploration, comb through the data to automatically find patterns, help users understand what the data means, and predict future outcomes to help business drive results.

Power BI has been a pioneer in applying AI through capabilities such as natural language, which enables users to get answers by asking questions in plain English, or Quick Insights, which automatically finds patterns in data. We're making another major step forward in bringing AI to business intelligence and delivering several new AI features in Power BI:

- Q&A is simpler than ever with a better autosuggest and "Did you mean" feature to catch and correct natural language queries.
- Users can now get capabilities such as image recognition and text analytics directly in Power BI.
- Key driver analysis helps users understand what influences key business metrics.

- Users can create machine learning models directly in Power BI using automated machine learning.
- Users now have seamless integration of Azure Machine Learning within Power BI.

All these new AI capabilities require no code. This enables all Power BI users to discover hidden, actionable insights in their data and drive better business outcomes with easy-to-use AI.

Enabling solution developers

- **Power BI service apps** to enable customers and partners to create, share, market, sell, and grow their business faster. We will enable a Power BI user to become a 'service app creator' that can create and package analytical content. The resulting package can be deployed to other Power BI tenants through AppSource, or through a self-maintained web service.
- **Power BI Embedded** analytics enables developers of SaaS services and enterprise portals to embed stunning interactive reports and dashboards in a fraction of the time and cost. We will add more security, scalability, and features to support application lifecycle management for data models, to make embedded analytics ready for the enterprise. We will improve the interaction between embedded analytics and the hosting application or web portal. We will enhance capacity management for scaling resources and improve monitoring by integrating with common Azure tools for health, availability, and usage. We will also bring Power BI to Visual Studio to allow developers to easily integrate Power BI code and ship their applications faster.

What's new and planned for business intelligence

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see [Microsoft policy]).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the [International availability guide].

NOTE For information about Power BI features releasing before April 2019, see the October 2018 release notes.

Power BI Desktop

Feature	Release type	Date
Improved relationship view	General Availability	April 2019
New filter experience	General Availability	June 2019
Drill through to another report	Public Preview	April 2019
Expression-based formatting	Public Preview	April 2019
Performance analyzer for reports	Public Preview	May 2019

Power BI Service

Feature	Release type	Date
End user consumption		
Power BI Home and global search	General Availability	September 2019
App navigation	Public Preview	May 2019
Management, collaboration, and distribution		
New workspaces	General Availability	May 2019
Shared and certified datasets	Public Preview	May 2019
Viewer role	General Availability	July 2019
Upgrade classic workspaces to the new workspace experience	General Availability	September 2019
Enterprise BI		

Feature	Release type	Date
Third-party BI tool connectivity for read-only scenarios (XML/A) *	Public Preview	March 2019
Paginated reports feature updates *	Public Preview	April 2019
Enhanced email subscriptions	General Availability	April 2019
Premium metrics *	General Availability	August 2019
Report commenting	General Availability	April 2019
SAP variables	General Availability	June 2019
Additional Power BI geos and regions *	General Availability	September 2019
Help and support settings	Public Preview	March 2019
Power BI Dataflows		
Self-service data prep with dataflows	General Availability	April 2019
Azure integration	Public Preview	April 2019
Computed entities *	General Availability	April 2019
Incremental dataflow refresh *	General Availability	April 2019
Dataflows on Premium capacity *	General Availability	April 2019
Linked entities *	General Availability	April 2019
Large-scale data compute engine *	Public Preview	April 2019
New diagram view to visualize dataflow dependencies	Public Preview	April 2019

Feature	Release type	Date
Pervasive Artificial Intelligence for BI		
Azure ML Integration	General Availability	April 2019
Automated ML: Binary and multiclass classification models *	Public Preview	April 2019
Cognitive Services Integration (Premium) *	General Availability	April 2019
Insights – Key influencers	General Availability	April 2019
Q&A - AutoSuggestions	General Availability	April 2019
Q&A - Did you mean	General Availability	April 2019
Q&A - Follow-up questions	General Availability	April 2019
Python support in the service	General Availability	April 2019

* This feature requires Power BI Premium.

Power BI Mobile

Feature	Release type	Date
B2B support	General Availability	April 2019
Home	General Availability	September 2019
Report commenting	General Availability	May 2019
Portrait orientation in tablet experience	General Availability	April 2019

Power BI Template Apps

Feature	Release type	Date
Self-service builder experience for template apps	Public Preview	February 22, 2019
Self-service creation of a Power BI template app in AppSource	Public Preview	February 22, 2019
Power BI tenant admin control (Governance)	Public Preview	February 22, 2019
Template app customization and personalization	Public Preview	February 22, 2019

Power BI Custom Visuals

Feature	Release type	Date
Custom visual policy in desktop	General Availability	April 2019
Custom visual favorites	General Availability	April 2019
Freemium visuals enabled through AppSource	General Availability	April 2019
Power BI admins can restrict usage to certified visuals only	General Availability	April 2019

Power BI Embedded

Feature	Release type	Date
Multi-geo **	General Availability	April 2019
Dataset sharing and dynamic binding **	General Availability	April 2019
Themes API	General Availability	April 2019

Feature	Release type	Date
Report loading time improvements	General Availability	April 2019
Developer tools	General Availability	April 2019
Export data programmatically	General Availability	April 2019
Embed Q&A with row-level security	General Availability	April 2019
Scheduled refresh API	General Availability	April 2019
Service principal authentication **	Public Preview	April 2019

** This feature requires Power BI Premium or Power BI Embedded (A SKU). More information: FAQs for Power BI Embedded

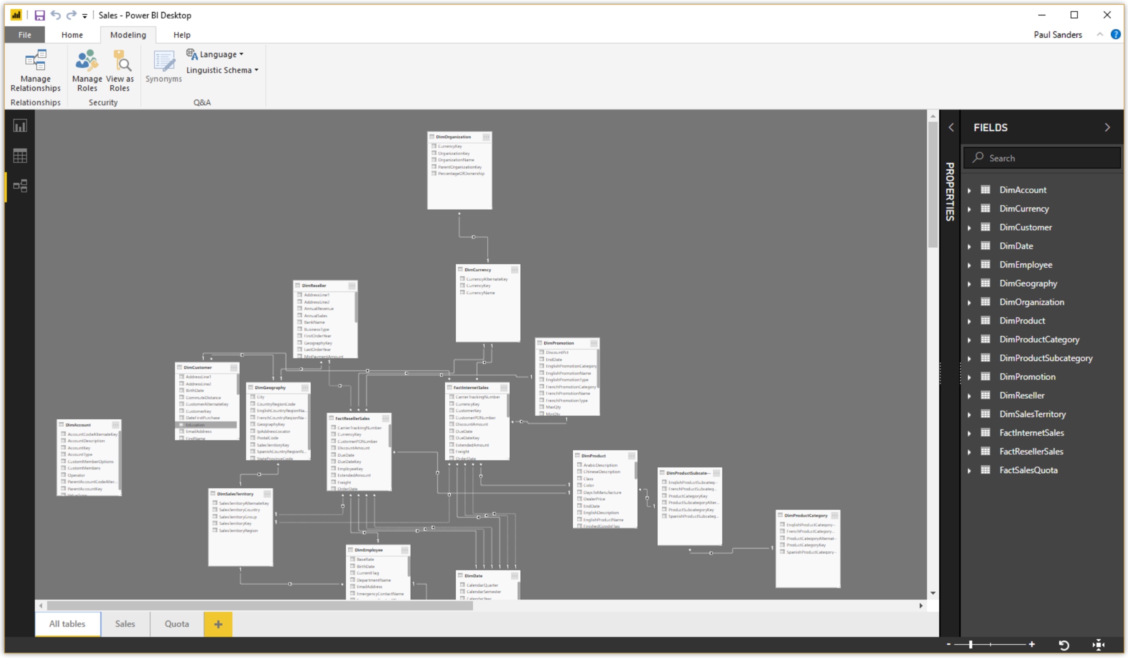
Power BI Report Server

Feature	Release type	Date
Power BI Report Server May 2019 Update	General Availability	May 2019
Export to Excel for Power BI reports	General Availability	September 2019
PowerPivot model refresh	General Availability	September 2019

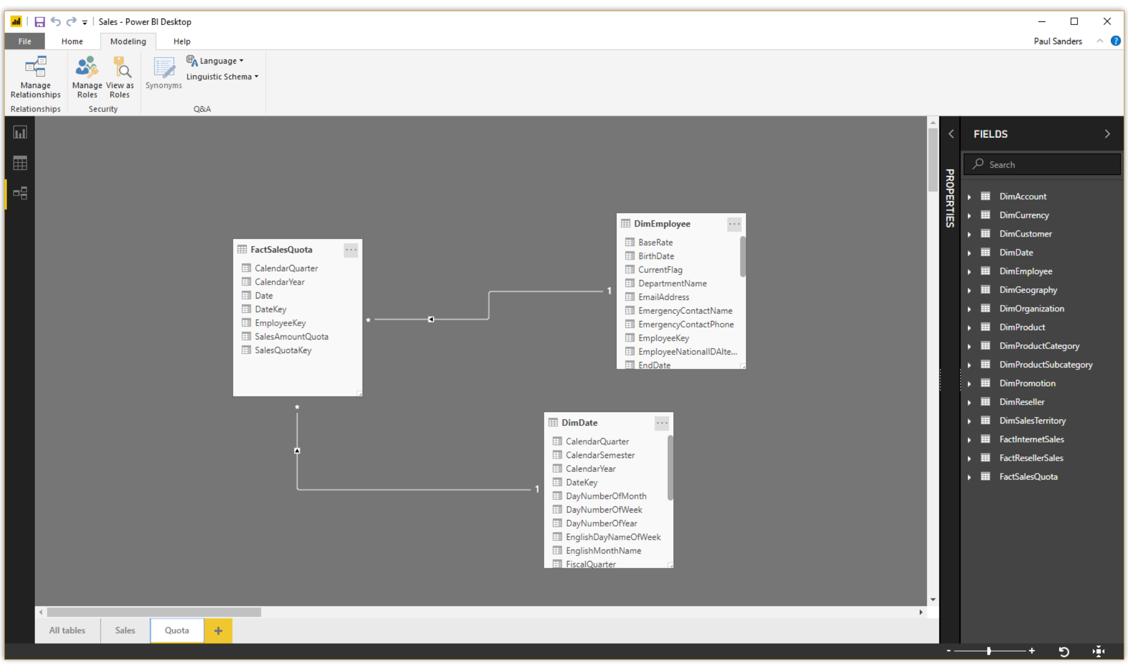
Improved relationship view

Report authors can create reports that contain dozens of tables and hundreds of fields. We will be improving the relationship view to make it easier to deal with large-scale models. As the number of tables grows, it becomes increasingly difficult to understand and maintain the network of relationships in a single diagram. The improved relationship view will allow multiple layouts to be created, each of which can show a subset of the tables, and the relationships between them. It will be possible to have separate diagrams containing just the tables that are relevant to a subject area.

In the following example, while the main layout “All tables” includes all 16 tables in the model, the “Quota” layout includes just the three tables relevant to Quota. Tables can be added to a layout by dragging from the field list, or by including all tables that are related to a chosen table that is already included in the layout.



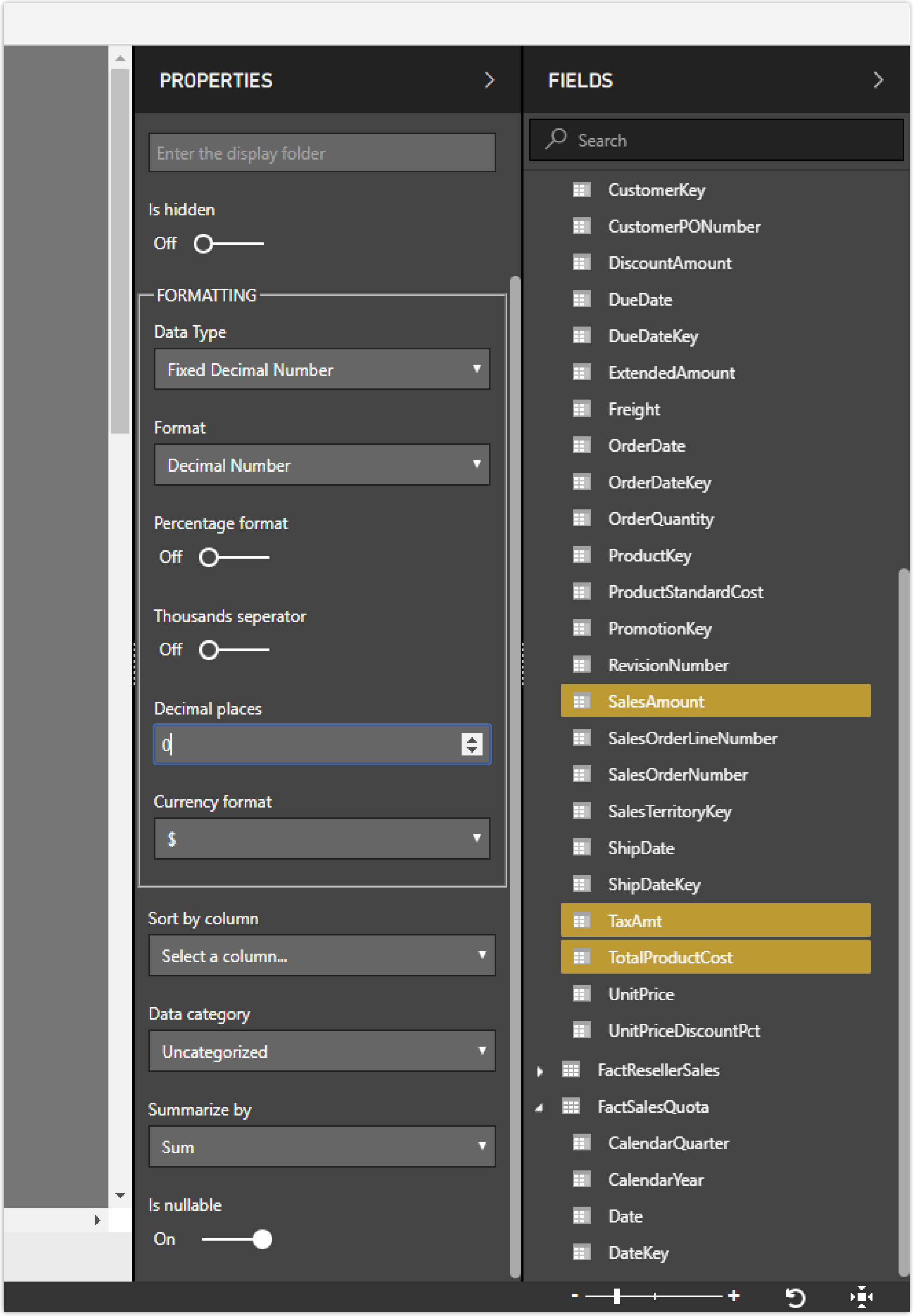
A model with many tables in the improved relationship view



Improved relationship view showing a subset of the tables in your model

The new relationship view will also make it easier to set properties on tables and columns as the model size grows. When an object (table, column, measure, and so on) is selected in the field list, then all the properties (visibility, formatting settings, default summarization etc.) of that object will be displayed in the property pane, where the values can be changed. In addition, it will be possible to select multiple objects in the field list, and then change the value of properties for *all* of the selected objects, in a single edit.

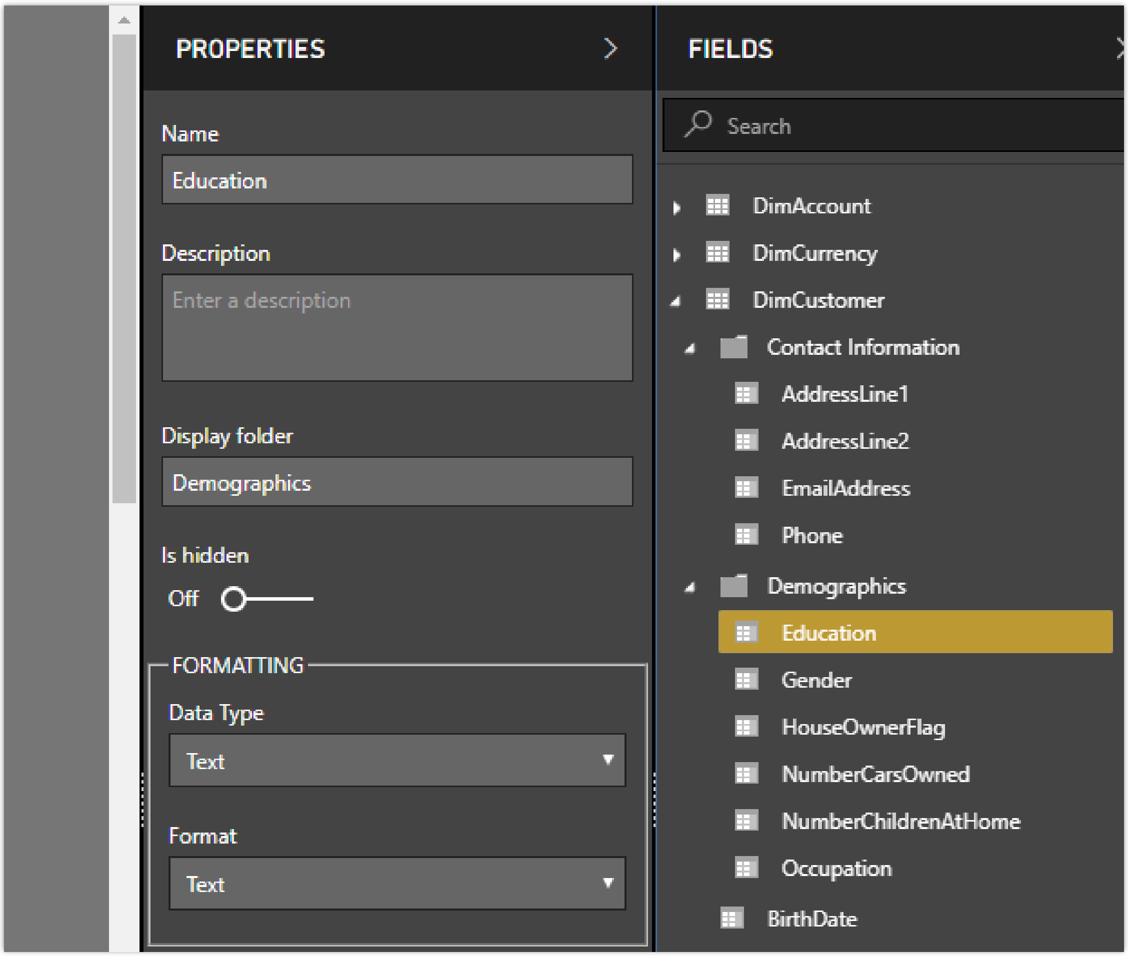
In the following example, the formatting options for use of a thousand's separator, and the number of decimal places to display, can easily be changed in one edit for the three selected fields "SalesAmount", "TaxAmt", and "TotalProductCost".



Formatting of properties can easily be modified with bulk edit in the improved relationship view

It will be possible to use search to find tables and fields, as is the case for the field list in the report view.

Finally, properties will include a new “Display folder” property. This allows the model author to organize fields into folders to avoid dozens of fields being presented as a single flat list. In the following example, some fields on the Customer table have been organized in folders for “Contact Information” and “Demographics”. This organization will then be used when displaying the fields, both within the Power BI Desktop and after publishing the report to the Power BI service.



Display folders can be created in Power BI Desktop

New filter experience

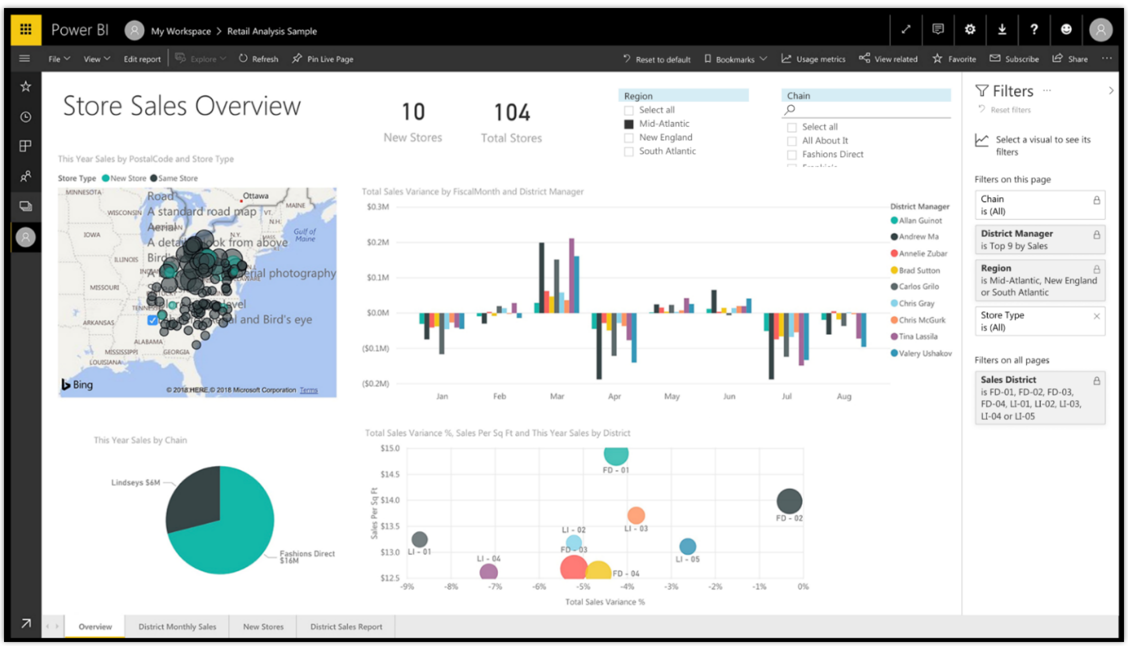
This public preview of the revamped filter experience went live with the November 2018 release of Power BI Desktop. This experience helps consumers of reports to better understand which filters are affecting a visual. It also helps with discoverability and gives report authors full control over the look and feel.

- Authors can hide a filter card from end users even though it is applied to the report.

- Authors can apply a filter and lock it, so end users will not be able to modify the filter but will show it to them for their information.

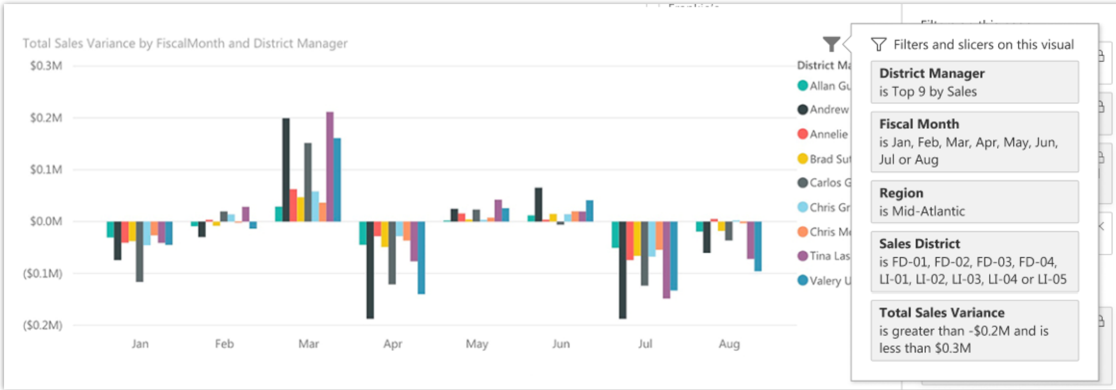
The redesigned filter pane includes the ability to:

- Hide individual filters or the entire filter pane from report consumers.
- Lock filters as read-only for report consumers.
- Format the filter pane to make it feel like a part of the report design.
- Define the default experience, expanded or collapsed, at report load time for report consumers.
- Understand what filters are being applied to a visual, including slicers, filters, and cross-highlighting.
- Search for filter values.



Report showing new filter pane

In addition to the changes to the filter pane, we are also giving authors the flexibility to show filters (including slicers) that are affecting a visual. Authors can enable a filter icon as a visual header and all the filters affecting that visual will show up when the end user hovers or clicks on that filter icon. This will help end users to understand which filters are impacting the visual to better interpret the insights.



Hover to display filters applied to a visual

We are actively listening to feedback from users of the public preview and improving the experience before making it generally available. The following capabilities are planned and will ship before or alongside general availability of the new filtering experience:

- Accessibility for end users and report authors.
- Additional formatting capabilities.
- Consolidating the filtering experience to a single pane.
- Ability for authors to sort and reorder filter cards.

The new filter experience addresses the following Power BI Ideas requests:

- Active filter indication
- Search options in filter
- Hide filter
- Prevent user from changing filters

Drill through to another report

Report authors can now set up drillthrough actions across reports published to the Power BI service. This is important because sometimes an author will have multiple reports, with additional information or levels of detail, and would like to contextually transition from one report to another. The end users' experience allows easy contextual jumps by simply selecting a source visual in a report and drilling into another report that is now filtered to the same context as the source visual. Provided that the schema of the reports match, the following filter context will get applied to the destination report:

- Report, page, and visual level filters affecting the source visual

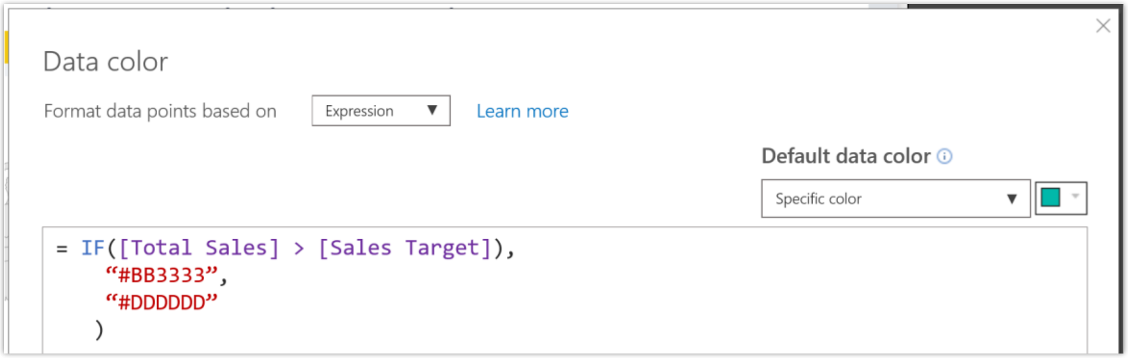
- Cross-filtering and cross-highlighting that impacts the source visual
- Slicers on the page and sync-slicers
- URL parameters

This feature addresses the following Power BI Ideas requests

- Drill to a report
- Drillthrough functionality for reports
- Cross-report drill

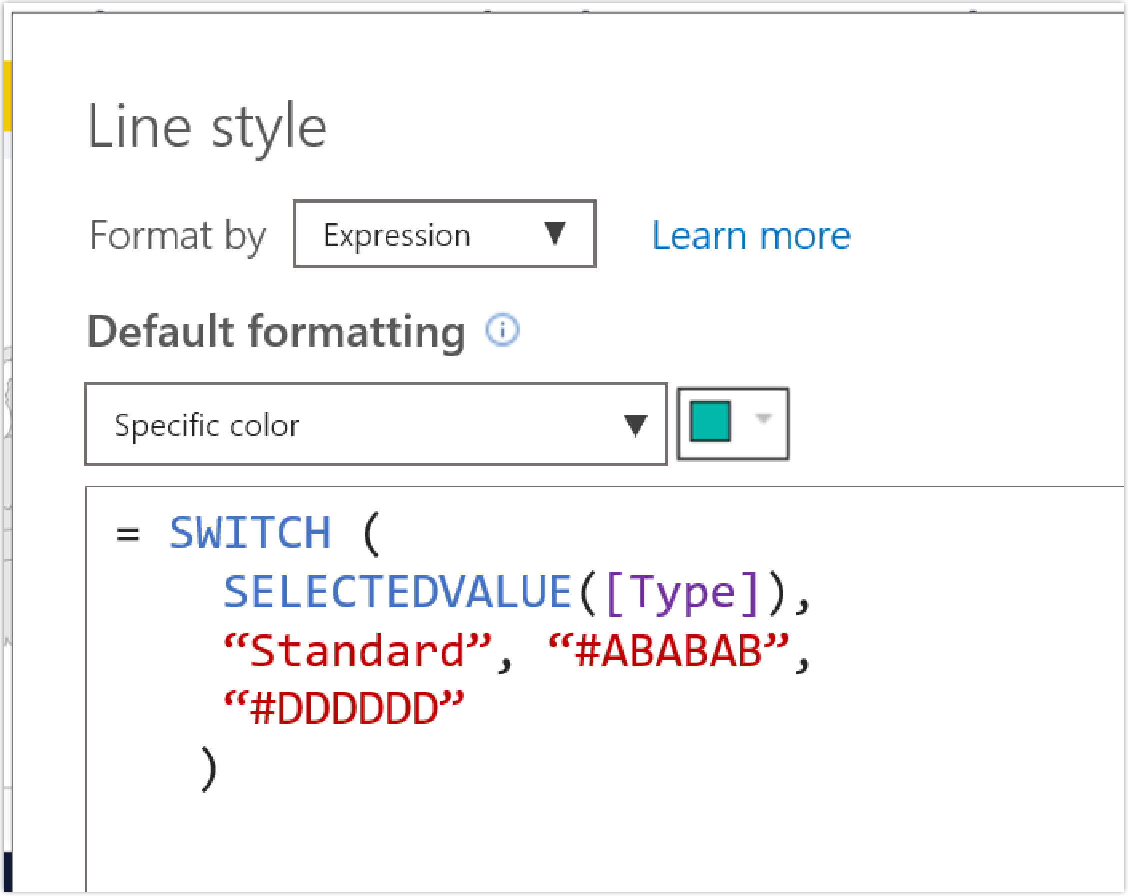
Expression-based formatting

Power BI provides a variety of formatting options for all its visuals, and this semester we're adding more advanced controls for report authors to dynamically change formatting based on the data in their model. Analysts can define expressions that modify the color, style or visibility of all elements within their charts. For example, they might change the color of a datapoint when the amount exceeds a target:



Data colors using expression-based formatting

Or they might adjust the style of one line in a series to call attention to it:



Line styles using expression-based formatting

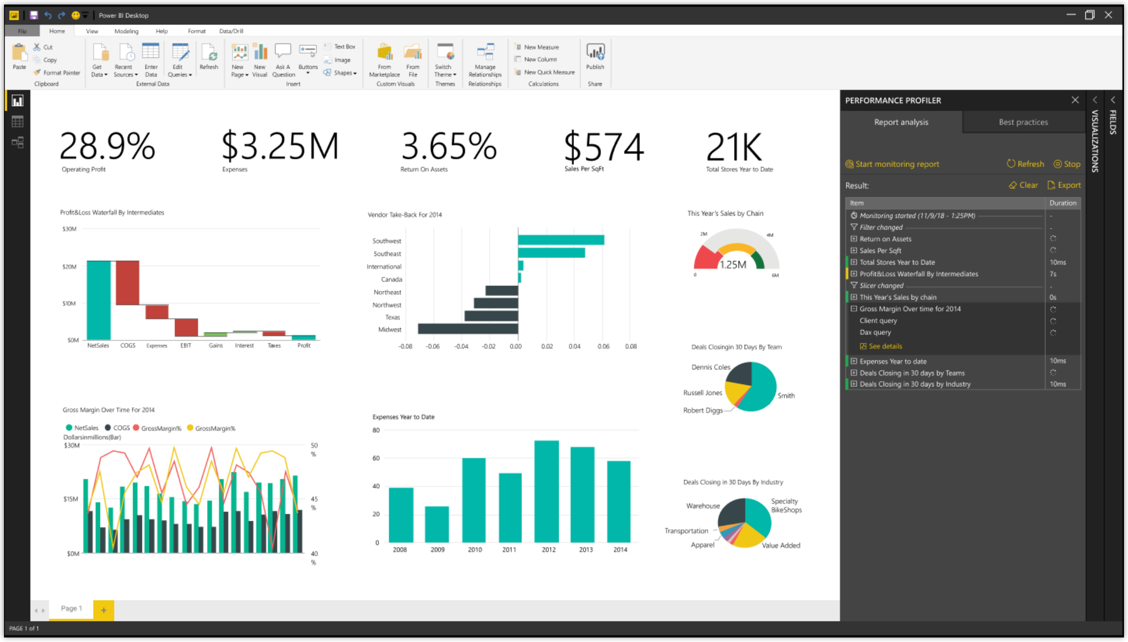
Formatting can be based on any DAX expression and is affected by the context of any filters in the report.

This feature addresses the following Power BI Ideas requests:

- Conditional formatting throughout
- Better conditional formatting tools
- Conditional formatting for text
- Dynamically specify data color using column e.g. #A66999

Performance analyzer for reports

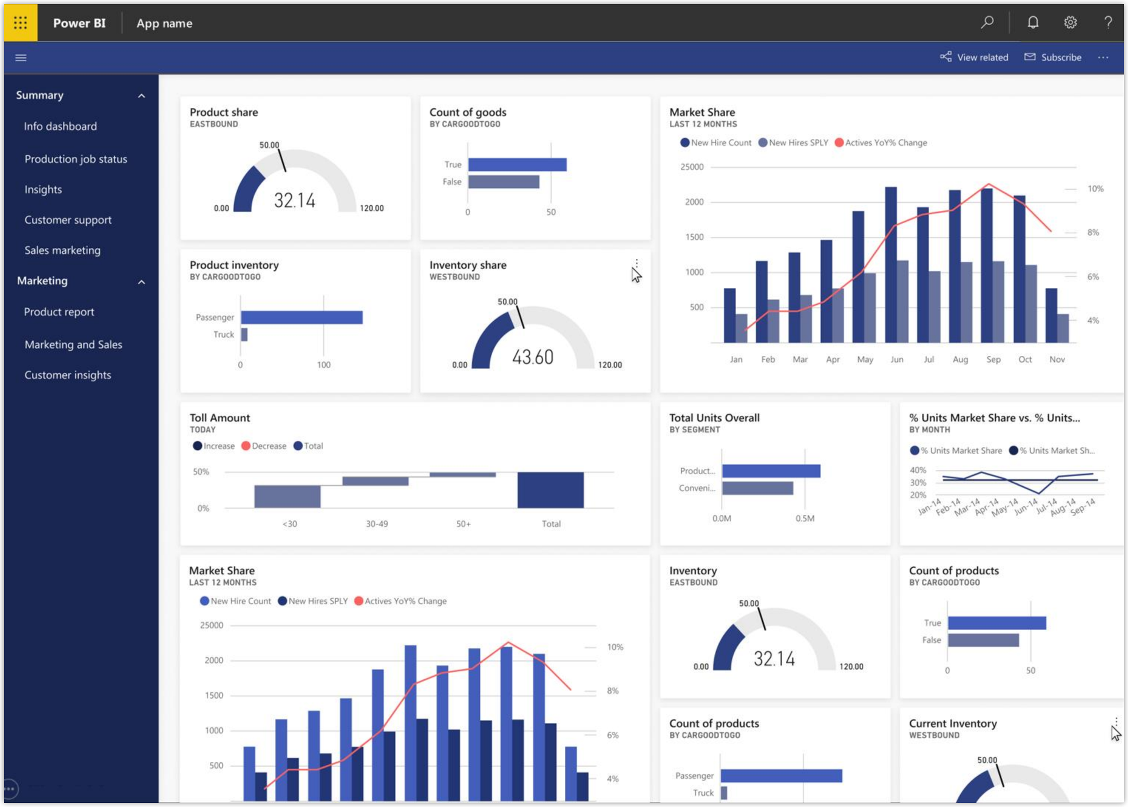
Performance analyzer will allow report authors to easily see the effect of every interaction on a page. This includes how long each visual takes to refresh and where the time is going. By using this tool, authors will be able to produce reports that are much more responsive for their end users.



Performance analyzer

App navigation

In large-scale deployments, end users often need to navigate between different reports. With app navigation, we are giving reporting teams the power to customize navigation for end users, so they can find content quickly and understand the relationships between different reports and dashboards.



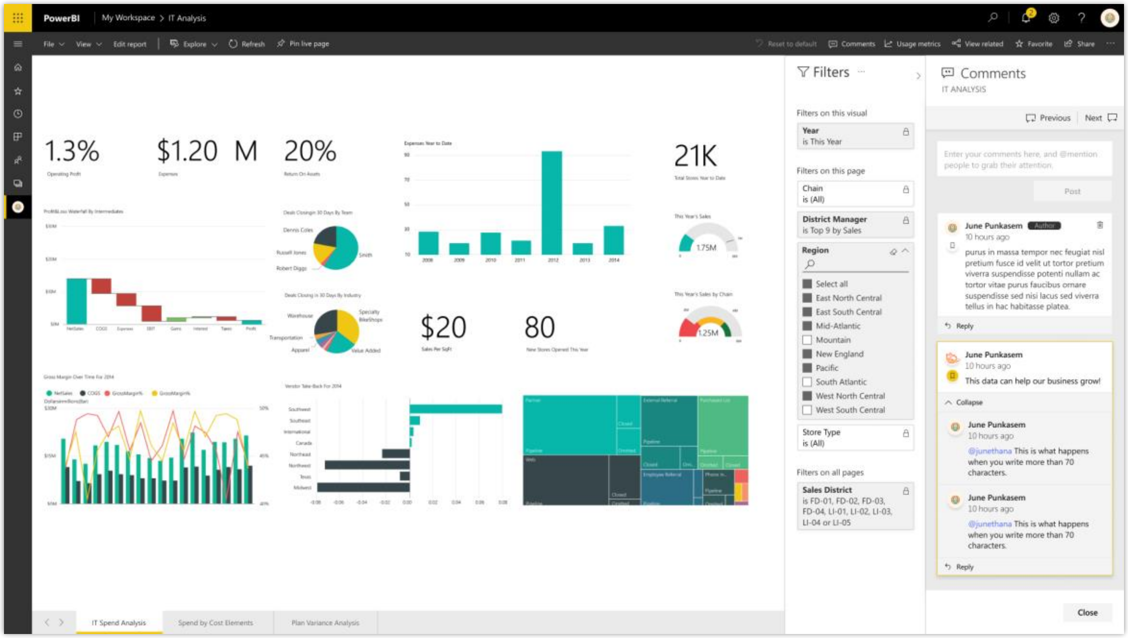
Easy navigation for report consumers

Report commenting

In September 2018, we released dashboard commenting in Power BI. Users could directly add comments to dashboards and **specific visuals** to discuss their data. With **@mentions**, users could pull others into the conversation with automatic emails and push notifications.

Continuing our work in this area, we will release commenting for reports. In addition to the features of dashboard commenting, with reports we will capture the current filter and slicer values, so users can return to the same report view when they later interact with a comment.

We are also updating commenting for both dashboards and reports based on user feedback. We will automatically @mention the owner of the report or dashboard when a user leaves a comment and send a periodic email digest to owners so they can stay up to date with comments on content they own. Additionally, we will update the comments button to show when a user has unread comments.



Commenting example

Additional Power BI geo regions

Customers use Power BI in conjunction with other Azure data services. To help optimize performance and user experience, Power BI is expanding to several new regions, so data can be located close to reporting. Additionally, we are adding several new geos for customers who have specific data residency requirements. A summary of the regions (and geos) is shown below. Geos in parentheses marked with **NEW** are new geos for Power BI.

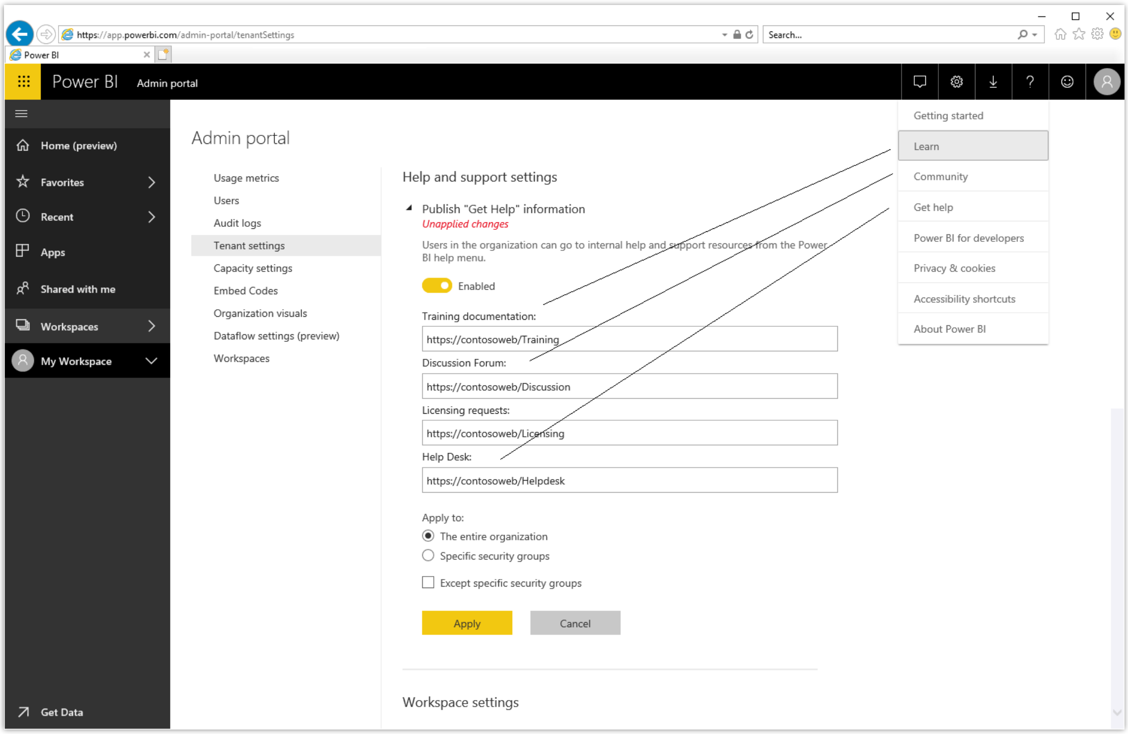
- Korea Central (Korea **NEW**)
- France Central (France **NEW**)
- South Africa North (South Africa **NEW**)
- UAE North (UAE **NEW**)

New Power BI customers will automatically be placed in these new regions based on tenant location. Existing customers can take advantage of the new regions using Power BI Premium Multi-Geo.

Power BI help and support settings

Organizations can now customize the help and support links in the Power BI help menu to point their users to specific in-house resources rather than the default Microsoft sites for Guided

Learning, the Power BI community, and the Power BI support forum. Sign in to Power BI as a service admin, go to the admin portal, display the Tenant settings page, expand Publish "Get Help" information, toggle the Disabled button to Enabled, and then provide the appropriate URLs to your company's sites for training documentation, discussion forums, and help desk. Respectively, these parameters change the behavior of the Learn, Community, and Get help menu items in the main Power BI user interface.



Power BI help and support settings

Note also that organizations can customize the link to acquire a Power BI license to direct their Power BI users to an internal website or application for license management. By specifying a URL for licensing requests, the target URL of the Upgrade account button changes, which a user without a Power BI Pro license can find in the Update to Power BI Pro dialog box as well as in the Manage personal storage page. Moreover, Power BI no longer offers the Try Pro for free button in this dialog box or storage page when a custom license request URL is specified to ensure that Power BI users go to the organization's license management solution.

Power BI Home and global search

Following the preview of Power BI Home and global search in October '18, we are adding new capabilities based on user feedback.

Some of these capabilities include:

- Showing workspaces on Power BI Home, both in the Favorites & Frequents area as well as with a new Workspaces area. Workspaces will be shown based on how frequently a user accesses the content list for that workspace.
- Support for more types of visuals in the pinned tiles area.
- Organizational branding, allowing administrators to set the background image, color, and default content in the pinned tiles area on Home for their users. By setting default content, an organization can ensure that users have a consistent and standardized experience for navigating to content.
- Allowing administrators to configure the documentation links in the "Learn how to use Power BI" section for their tenant.
- Migrating featured dashboards to make Home the default landing page for all users.

New metrics for Premium

In August 2018, we released Power BI Premium Capacity Metrics service app for Power BI Premium, giving capacity admins visibility into the use and health of their Premium nodes. We have since released a few versions of the app with additions as query metrics: max/average duration, max/average wait times, top datasets by duration/wait times, and query histograms.

We will add other capabilities in the next versions of the app, including:

- Additional metrics to effectively manage the following Power BI datasets to improve report usability:
- Total active datasets in memory
- Active memory
- Dataset load time
- Dataset load wait time
- Datasets failure to load
- Metrics to manage additional Premium workloads, including dataflows, paginated reports, and AI.
- Support for national clouds.

Publish SSRS paginated reports to Power BI Premium workspaces

In November 2018, we released a preview of Paginated reports in the Power BI service. With feedback from the public preview, we are releasing additional capabilities:

- Ability to build Paginated reports based on Power BI datasets, allowing authors to reuse the same data model between both their Interactive and Paginated reports.
- Ability to distribute Paginated reports as part of Power BI apps.
- Ability to subscribe to Paginated reports.

Support for SAP variables

Power BI supports connecting to both SAP Business Warehouse (BW) and SAP HANA. It is commonly the case that the SAP BW or SAP HANA objects being used have variables or parameters defined on them. For example, an SAP BW Infocube or SAP HANA Analytical View might have variables defined for country and year that restrict the data available to the selected country or year. Such variables might be defined as either required or optional in the SAP BW or SAP HANA source. An example of a parameter might be TaxRate, which determines the TaxRate that will be used in calculations.

Power BI Desktop will add support for such variables and parameters, for both SAP BW and SAP HANA, when importing the data and when connecting using DirectQuery. This allows the report author to set the values, such as the country and year to be used, that then restricts the data shown in the report to the selection made. The report author sets the values upon first connecting and can then change the selections later if required.

After the report is published to the Power BI service, it is not possible to change the selections made for the report in the Power BI service. As a result, all users who open the report would see the same data, reflecting the selections made by the report author.

For reports that use DirectQuery, we will be improving this by adding the ability for the users who open the report to make their own selection of these variables and parameters. For example, a user opening a report might choose to see data for France/2018, while another user opening the same report might choose to see USA/2017. The choices made by each user will be remembered and reused when they next open the report, much like slicer selections are today.

Enhancements to email subscriptions

While Power BI already supports email subscriptions, we will be extending the capabilities in this area, so they are more suited for centrally managed distribution. Specific enhancements include:

- Scheduled distribution, allowing emails to be sent at specific times of day, independent of the refresh schedule for the dataset.

- Support for paginated reports, including the ability to include attachments to email distributions in the various formats supported for paginated reports in the Power BI service.
- Setting filters or parameters for email subscriptions to paginated reports so they can be customized for a specific audience.

Third-party BI tool connectivity

With the support of the XMLA protocol, for datasets in the Power BI service, customers will have more flexibility in how they deliver their BI deployments. XMLA will allow connectivity to Power BI datasets from third-party applications. Since XMLA is the same protocol used for managing SQL Server Analysis Services and Azure Analysis Services models, a variety of Microsoft and third-party tools can be used with Power BI datasets.

Improvements to Power BI workspaces

In August 2018, we released a preview of the new Power BI workspaces, which allowed you to:

- Manage access using **security groups**, **distribution lists**, and even multiple **Office 365 Groups**.
- Create a workspace in Power BI without creating an Office 365 group.
- Effectively manage workspaces, with tools and APIs for Power BI admins.

Now, we are taking the next step by making these new workspaces generally available, which will include the following additional features:

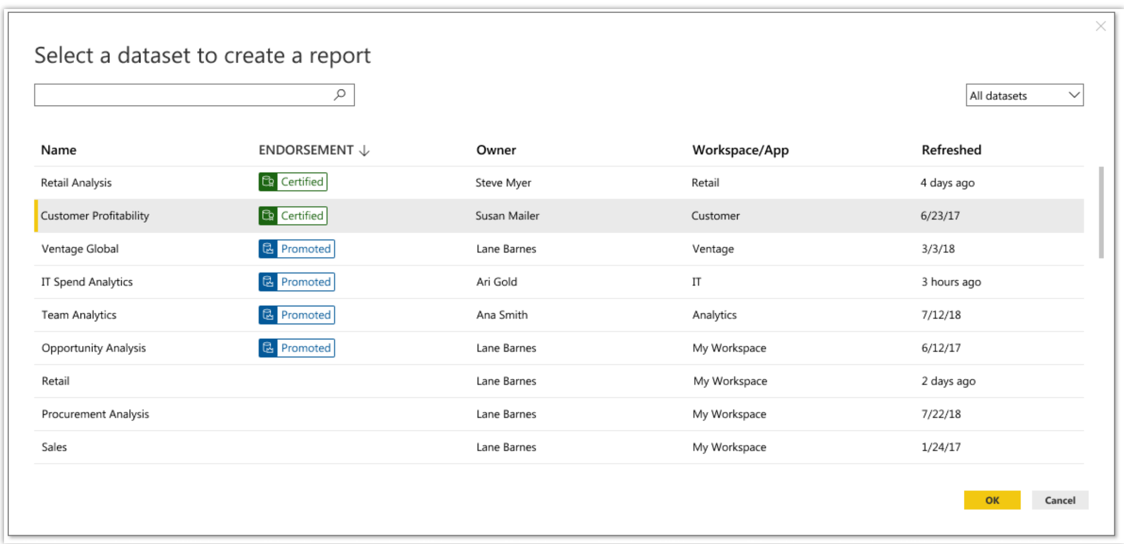
- A new **viewer role**, perfect for users who need to view content within workspaces without the ability to modify. This additional role will be available at a time later than the initial General Availability.
- Quick access in “Get Data” to specific file storage locations, making it faster to import reports.
- Migration of existing workspaces to become new workspaces. Migration will be available at a time later than the initial General Availability.
- Support for usage metrics in new workspaces.
- Support for the SharePoint Web Part with new workspaces.
- Admin Portal support to view all workspaces in the tenant and recover workspaces with no owners.

Shared and certified datasets

In many cases, data already exists to answer your business question. The challenge for the data provider is to share it in a way that encourages reuse and preserves a single version of the truth. For the report author, the challenge is to find reliable and high-quality data quickly and easily in both the service and Power BI Desktop.

With shared datasets in Power BI, we are allowing a single dataset to be used by multiple reports, across workspaces. As part of this work, we are expanding the Power BI permission model to add a new “explore” permission, separating out the permission to view pre-created reports on a dataset from those with “explore”, which will allow the creation of new content, whether that is through the Power BI service (reports, Q&A), Desktop, Analyze in Excel, or third-party BI tools.

To help users discover shared datasets relevant to them, we are introducing a new dataset discovery experience in the Power BI service and Desktop that makes it easy to browse and search to find content (see the following screenshot). Organizations will be able to certify datasets that are the authoritative source for critical information, which will be prominently featured in the discovery experience.



Shared and certified datasets

New Viewer Role for Power BI Workspaces

We will add a new **Viewer Role** to the new workspace experience, perfect for users who need to view content within workspaces without the ability to modify.

If your workspace is in Premium, free users can view the workspace in the workspaces list, navigate to the workspace, and view the content without getting a Pro Trial prompt.

This has several benefits:

- It will be easier to navigate in Power BI for users with read-only access.
- It will help smaller teams that want stakeholders to have read-only access to all workspace content, but do not want to publish and maintain a Power BI app for this purpose.
- Any row-level security (RLS) you have defined on the datasets in the Power BI workspace is enforced for users viewing the report directly in the workspace. Before this, users needed to share a report with the user or publish an app from the workspace to the desired users.
- You can stop using classic workspaces based on Office 365 Groups if you needed the Members to only view Power BI content option.

Upgrade classic workspaces to the new workspace experience

In April 2019, we released the general availability of the new Power BI workspaces, which allowed you to:

- Manage access using **security groups**, **distribution lists**, and even multiple **Office 365 Groups**.
- Create a workspace in Power BI without creating an Office 365 group.
- Effectively manage workspaces with tools and APIs for Power BI admins.

Now, we are enabling upgrade of existing classic workspaces to become new workspaces. Workspace and Power BI Admins will be able to opt in to upgrade their workspaces on demand.

At a later time, Power BI will require the upgrade of classic workspaces to the new workspace experience. This will not start until after all classic workspaces can be upgraded through opt-in.

General availability of Power BI dataflows

Power BI introduces dataflows to help organizations unify data from disparate sources and prepare it for modeling. Analysts can easily create dataflows using familiar, self-service tools. Dataflows are used to ingest, transform, integrate, and enrich big data by defining data source connections, ETL (extract, transform, load) logic, refresh schedules, and more. Data is stored as entities in Common Data Model-compliant folders in Azure Data Lake Storage Gen2. Dataflows are created and managed in app workspaces by using the Power BI service.

You can use dataflows to ingest data from a large and growing set of supported on-premises and cloud-based data sources, including Dynamics 365, Salesforce, Azure SQL Database, Excel, SharePoint, and more.

You can then map data to known Common Data Model entities, modify and extend existing entities, and create custom entities. Advanced users can create fully customized dataflows using a self-service, low-code/no-code, built-in Power Query authoring experience, similar to the Power Query experience that millions of Power BI Desktop and Excel users already know.

Once you've created a dataflow, you can use Power BI Desktop and the Power BI service to create datasets, reports, dashboards, and apps that leverage the power of the Common Data Model to drive deep insights into your business activities.

Dataflow refresh scheduling is managed directly from the workspace in which your dataflow was created, just like your datasets.

Power BI dataflows include more than 40 connectors to common data sources such as Excel, SQL Server, Oracle, Azure SQL Data Warehouse, Dynamics 365, and Salesforce.

Azure integration

Power BI can be configured to store data in Common Data Model-compliant folders in your organization's Azure Data Lake Storage Gen2 account where data developers and data scientists can access that data via Azure services. Over time, more and more Azure services (such as Azure Machine Learning, Azure Databricks, and Azure Data Factory) will introduce built-in support to read and write Common Data Model-compliant folders.

Power BI can also connect to Common Data Model-compliant folders created by Azure services in your organization's Azure Data Lake Storage account, enabling analysts to work seamlessly with this data in Power BI.

Computed entities

Dataflow entities are stored in Common Data Model-compliant folders (CDM folders) in Azure Data Lake Storage Gen2. After your entities have been loaded to CDM folders, you can generate new insights by transforming, modifying, and enriching entities, and aggregating large-scale data. These newly created entities are also stored in CDM folders. Static analysis of Power Query M expressions makes it possible to identify dependencies between entities automatically, so they'll always be updated in the optimal order, with no need for manual orchestration.

Support for computed entities allows third parties to build Power BI apps leveraging dataflows with richer insights and AI capabilities. For example, you could enrich a customer account entity from Dynamics 365 for Sales with information from open service tickets in Dynamics 365 for Service, and relevant customer meeting information from Office 365.

Refreshing computed entities requires Power BI Premium.

Incremental dataflow refresh

Power BI supports advanced dataflow refresh features, including incremental dataflow refresh, to streamline and speed the dataflow refresh process and to support the ingestion of larger data sets. Incremental refresh requires Power BI Premium.

Dataflows also support full data refresh either using scheduled refresh or refresh now that does not require Power BI Premium.

Dataflows on Premium capacity

Power BI administrators can easily assign workspaces with dataflows to Premium capacity and manage usage as part of a Power BI Premium subscription. Once capacity is allocated, dataflows will have access to the Power BI Premium storage (100 TB per P1 node), and dedicated capacity. Dataflow workload resource utilization metrics are available in the Power BI Premium Capacity Monitoring app, allowing capacity admins to monitor, manage, and adjust dataflow resource utilization within their organization.

Dataflows hosted on Premium capacity will support advanced features, such as calculated entities, linked entities, incremental refresh, and more.

Linked entities

Power BI makes it possible to link entities from one dataflow to another without duplicating them. Linked entities can be used in the transformation, enrichment, or calculation of new entities. Avoiding duplication with linked entities makes it possible to maintain a single source of truth across your organization. Refreshing linked entities requires Power BI Premium.

Large-scale data compute engine

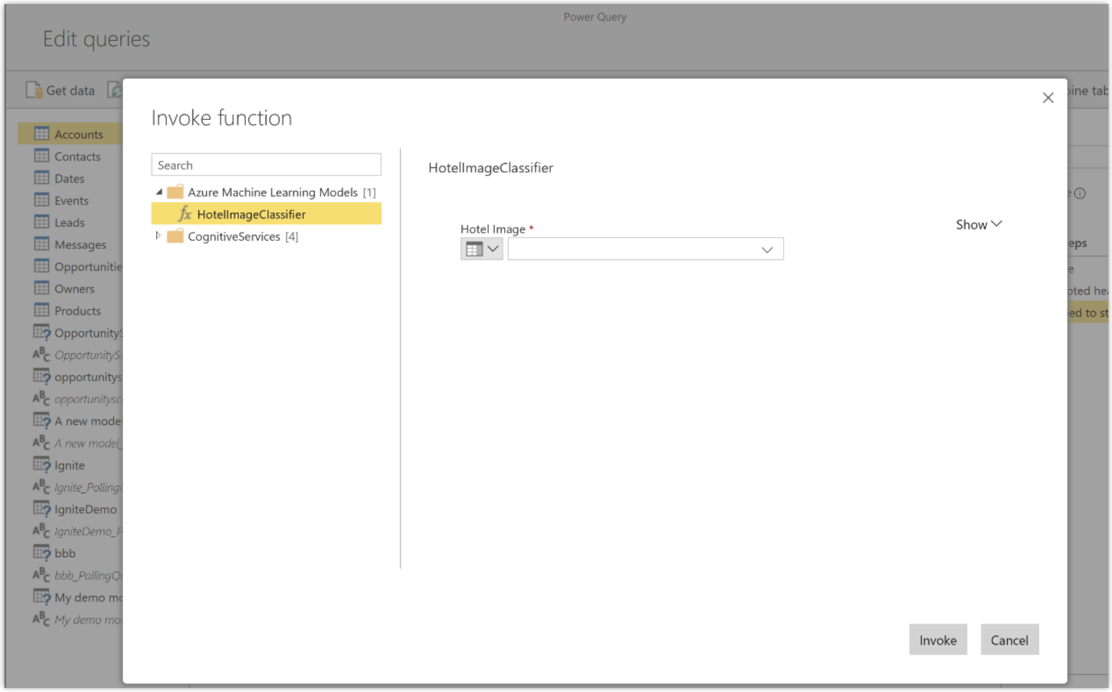
We are enhancing the dataflow calculation engine in Power BI Premium to enable high-performing large-scale data transformations (TBs of data).

New diagram view to visualize dataflow dependencies

BI professionals can use dataflows to handle complex data preparation tasks, reusing work with linked entities and dependencies. We are introducing a new user experience for visualizing dataflow dependencies and connections between entities, making it easier for analysts to understand how entities relate to each other and to manage their ETL (extract, transform, load) projects.

Azure Machine Learning integration

How Azure Machine Learning functions are exposed in Power BI, in a low-code way, is a key collaboration feature between data scientists and analysts. Once a Power BI user is given access to an Azure Machine Learning function, the function will be automatically discovered and shown to that user in Power Query Online and in the Power BI Desktop, with the function parameter requirements.

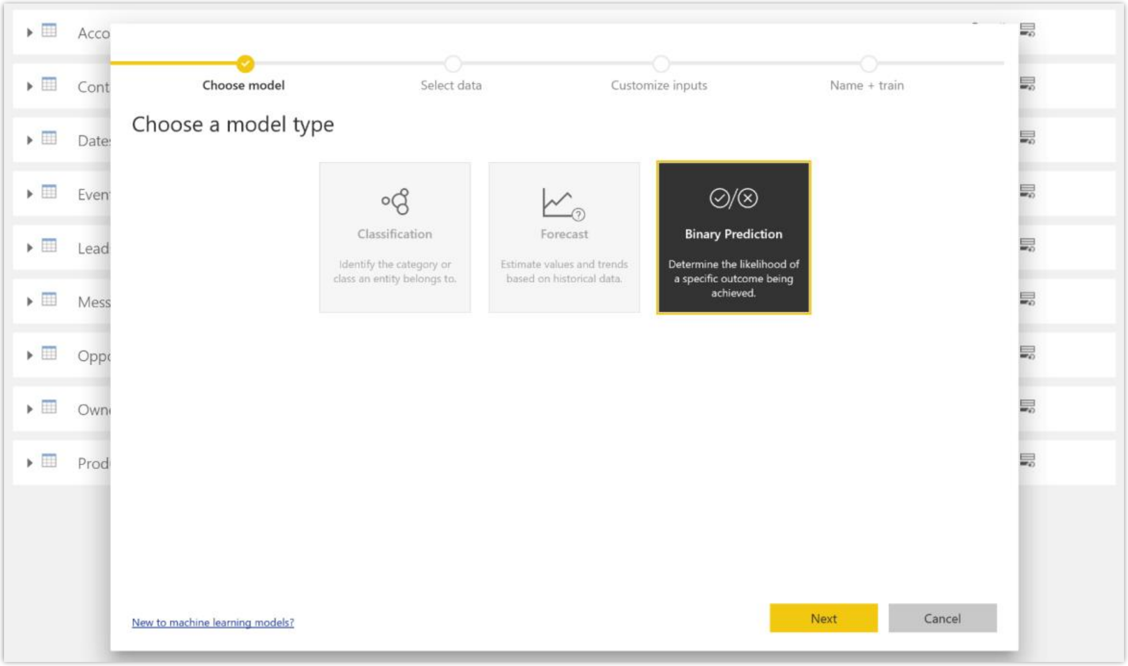


Azure Machine Learning integration

AutoML: Binary and Multinomial Classification Models

BI pros and data analysts can now build machine learning inside Power BI with just a few clicks. AutoML uses Azure Machine Learning technology to perform highly specialized tasks such as feature selection, algorithm selection or hyper-parameter optimization. These models can be customized via Power Query with filters or feature engineering.

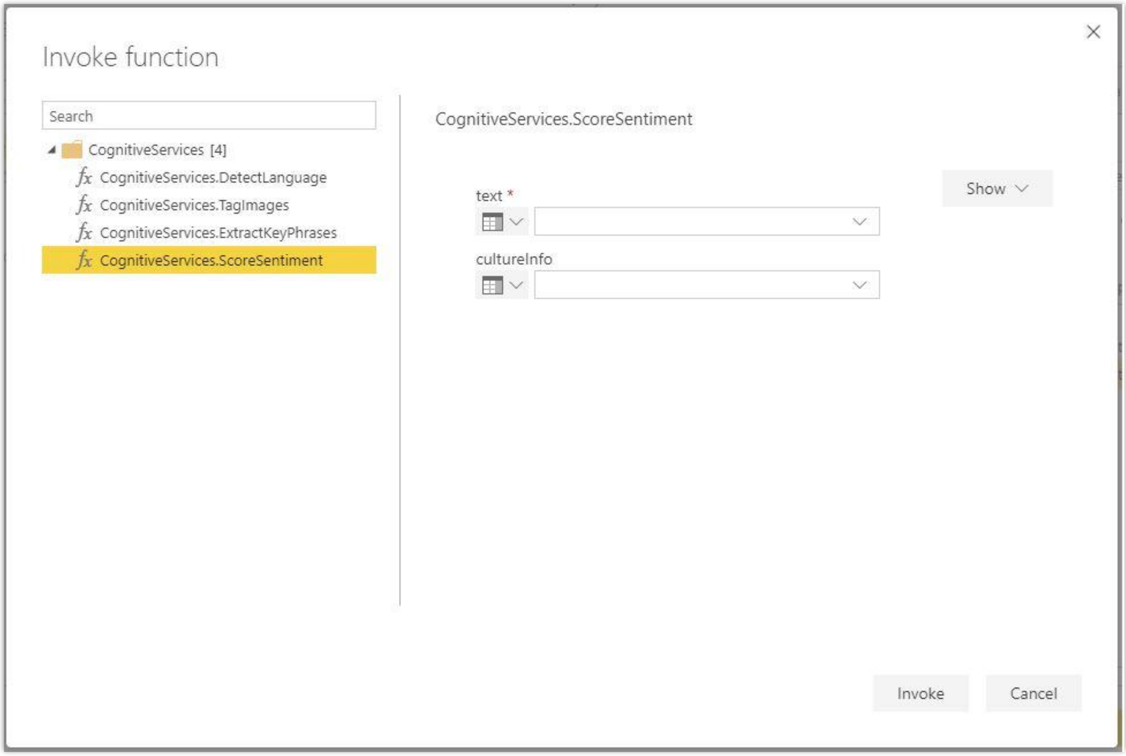
Models are applied automatically during data ingestion and refresh. Rich Power BI reports are generated for each model, describing the performance of the model, as well as explaining the key influencers' impact on the predictions generated by the model.



AutoML: Binary and Multinomial Classification Models

Cognitive Services integration (Premium)

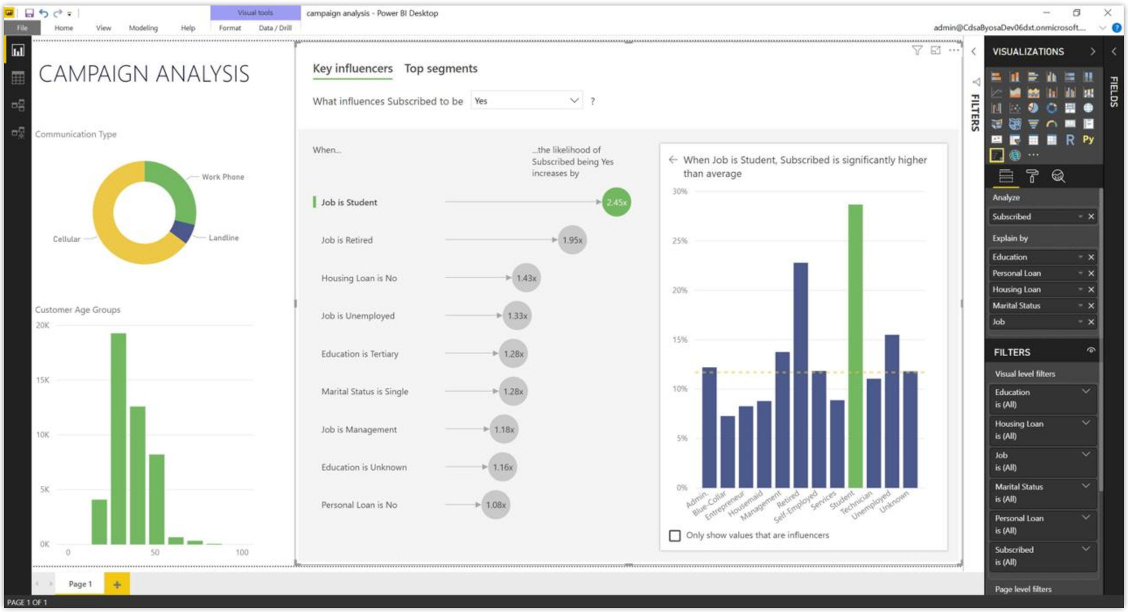
Power BI users can now use intelligent algorithms to understand and interpret unstructured data. A set of Azure Cognitive Services are exposed as Power Query functions and can be used to perform tasks such as key phrase extraction, language detection or sentiment analysis for text, as well as tagging for images. The set of Cognitive Services exposed in Power BI will be extended in subsequent releases.



Cognitive Services

Insights - Key influencers

Analysts and end users are interested in what drives their business results. The new Key influencers visual surfaces what increases or decreases the likelihood of a business event occurring or what influences a KPI's rise or fall. Machine learning is used to rank influencers, from most to least impactful, and a likelihood score and natural language description is provided to explain the impact. Users can also drill into a factor to see the distribution of their data for that variable/category.



Insights - Key influencers

As users interact with their reports, either through filtering or selecting visuals, the key drivers are re-evaluated and updated in real time.

Q&A – AutoSuggestions

Q&A will now automatically deliver suggested questions to all Q&A users. This will help first-time users and give existing users the ability to ask a range of questions they might not have known they could ask before. The suggested questions will appear underneath the existing saved questions that a user can define.

Q&A – Did you mean

Q&A will now try to assist users when they ask questions. For example, it will help users fix spelling errors and ambiguity in their questions. When Q&A detects these types of errors, it will assist the user with a search-like experience and ask for clarification or confirmation, with suggested corrections on whether this is what the user meant.

Q&A – Follow-up questions

Q&A provides the means for customers to ask natural language questions of Power BI. Q&A Follow-up questions supports questions in the context of past questions, so customers can have a dialog with Power BI. Follow-up questions can add more detail, such as filters, or ask for quick insights on the prior question.

Python support in the service

Power BI enables analysts and data scientists to leverage Python scripts and Python visuals inside Power BI Desktop.

The new Python visuals support in the service allows consumers of dashboards and reports to see Python-generated visuals. We will initially support Python version 3.x and support five of the most commonly used packages in Python and plan to continue expanding this feature over the year.

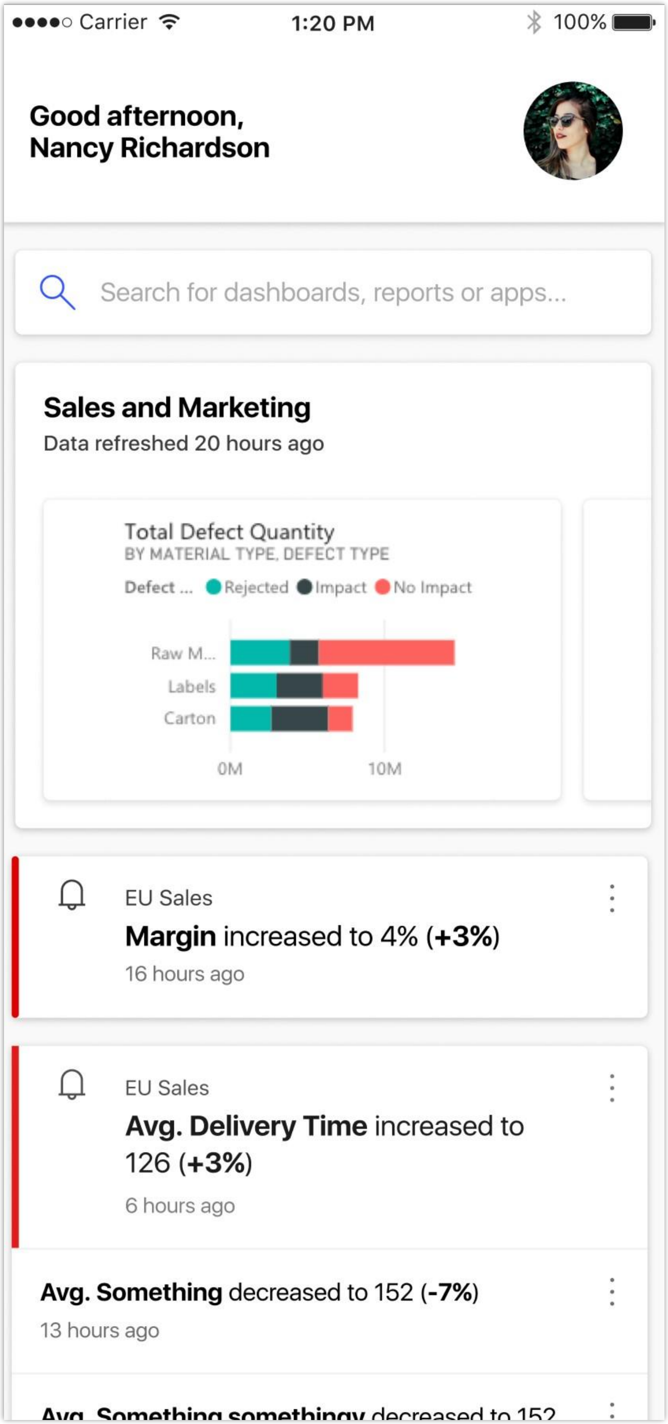
Business to Business (B2B) Support

Business to business collaboration is relevant for many organizations and scenarios, such as holding companies that have a central organization and multiple affiliate brands, or supply chain companies that work with multiple partners. Azure Active Directory B2B (Azure AD B2B) enables that collaboration, and with Power BI and Azure AD B2B integration, Power BI users can distribute and share Power BI apps, dashboards, and reports to users outside of their organization. The Power BI Mobile app will allow external users who received a “shared artifact” email to access those artifacts directly from the mobile app by clicking on the artifact link.

This feature addresses the following customer request in Power BI Ideas: https://ideas.powerbi.com/forums/265200-power-bi-ideas/suggestions/32393443-azure-ad-b2b-guest-users-able-to-open-power-bi-app

Home

Home will be a Power BI mobile user’s landing experience, providing an at-a-glance view of a user's most important metrics and a launching point to their content. Home will be personalized and contextual to the user, presenting their most viewed dashboards and a feed with activities relevant to the user, such as recent commenting, data refresh notifications and alerts. Users will be able to navigate to their content directly from Home.



Home phone view

Report commenting

Collaboration around data is key for organizations. It allows business managers and workers to share findings, discuss their meaning, and provide business context and ideas for improving business results. Power BI now provides a platform to collaborate around data in reports by enabling commenting and conversations on **reports** in addition to commenting and conversations on dashboards and tiles.

Users can start a conversation or join an existing one to add their insights and comments from their web browser or their **mobile app**. Report commenting will include @mention and mobile push notification features to keep recipients up to date with the discussion, directly from their mobile app.

Portrait Orientation in tablet experience

Many tablet users are using their tablet in portrait orientation (especially for midsize tablets). Those users expect the Power BI Mobile app to render a report's phone layout (which is optimized for portrait orientation) to better use the device real estate and provide a better user experience.

Self-service builder experience for template apps

Power BI enables its users to go into a template app builder mode to create template apps and switch existing workspaces into Power BI template apps that can then be packaged and deployed to other tenants. The template app package consists of one artifact per type (one dashboard, one report, one dataset, one dataflow). As a template app creator, you can configure your app to block content from being available for editing by those who install the app.

There are several scenarios where such a deployment package could be used. In the enterprise, you can promote content between your test, preproduction, and production environments. As a system integrator, you can create a template app to deliver an analytics solution based on 'M' code running during data ingest as part of a dataflow, or dataset that is used to deliver unique insights for your customers.

More information: [What are Power BI template apps?]

Self-service creation of a Power BI template app in AppSource

We are adding a new offer type to the Cloud Partner Portal, so partners can register their template apps and market them through AppSource to the millions of Power BI users searching for apps within Power BI.

Power BI tenant admin control (Governance)

As a Power BI tenant admin, you will have the ability to govern and control who in the organization is authorized to create template apps.

Template app customization and personalization

After installing a template app, users will have the ability to personalize and customize the installed content to suit their needs. The template app installation automatically creates a workspace and deploys the package content into that workspace. It then automatically publishes the workspace as an app, available by default only to the installer. Post-installation, an installer can modify the content in the workspace and choose when and what to publish to the organization, just like they would for any other workspace.

Custom visual policy in Desktop

Today the custom visuals setting in the admin portal is enforced only in the Power BI service. This feature will enable admins to control custom visual usage in Power BI Desktop using Group Policy.

Custom visual favorites

Custom visuals can be pinned to the visualization pane and can be saved side-by-side with the "pre-packed" visuals. Report creators won't need to download custom visuals for each report because they will have their favorite visuals in their visualization pane.

Freemium visuals enabled through AppSource

Adding support for visuals with the “May Require Additional Purchase” price tag in AppSource. Today, only free visuals are allowed in our marketplace. ISVs are selling premium visuals separately. Enabling freemium visuals in the marketplace will increase the number of visuals and will help our partners with marketing.

Power BI admins can restrict usage to certified visuals only

Enable admins to limit custom visual usage in the organization to certified visuals only. Report creators will only be able to pick certified visuals in the marketplace. Private visuals will continue to be enabled and consumed through the organization store.

Multi-geo

Multi-geo for compliance in Azure capacities will be generally available.

Dataset sharing and dynamic binding

Dataset sharing will allow cross-workspace usage of certified and reliable datasets, reducing redundancy and the overhead of managing duplicated datasets. Dynamic binding will allow developers to define the connection between a report and a dataset programmatically, using the embed token. These capabilities will enable ISVs to use a single report for multiple customers, while binding it in real time to the relevant data for each user, ensuring the security of their customers' data.

Themes API

Apply a theme to your entire report using the Power BI Embedded Themes API. Themes include corporate, seasonal, or any other colors you might want to apply to your visuals. When you apply a theme, all visuals in a report, or tiles in a dashboard, will use the colors from your selected theme. Also use APIs to apply and change the theme at a session level for an embedded object.

Report loading time improvements

The loading time of analytic visuals plays a crucial role in application users' experience and willingness to engage and explore data. We are planning significant infrastructure work on report loading time, to reduce the mean load time by up to 50 percent, giving end users a smoother experience and enabling developers to add analytics to pages they were reluctant to before.

Developer tools

We plan to add tools for developers integrating Power BI Embedded into their applications, making it faster and easier. Some of the capabilities we plan to release include:

- An interactive tool to explore REST API capabilities without writing code.
- More conceptual articles for Power BI Embedded best practices.
- New samples, in different languages, for the main use-cases for integrating analytics in your application.
- New showcases in the Power BI Embedded Playground.

Export data programmatically

Power BI Embedded supports session-level JavaScript configuration of options and context menu actions, separately for each visual in a report. This provides more control over which actions a user can perform in a Power BI Embedded visualization, such as export data, drill through, and more.

Embed Q&A with row-level security (RLS)

Power BI Embedded supports row-level security for Q&A. This allows different users to ask questions about their data and get answers based on their specific data view. This means each user of a Power BI Embedded application gets answers to questions based on the data they have permission to view.

Scheduled refresh API

The Power BI Embedded Scheduled Refresh REST API enables dynamic configuration of the data refresh schedule. This allows dataset owners to make fast, automated changes, or to update many datasets at once by defining the frequency of data refresh.

Service principal authentication

To enhance deployment, security, and application lifecycle management of applications using Power BI Embedded, support for service principal is planned. This recommended authentication approach allows applications to authenticate without a user context and use Power BI APIs. To use service principal in Power BI API, an Azure Active Directory web application needs authorization by a Power BI admin.

New features from Power BI Desktop

The May 2019 release of Power BI Report Server will include new data sources, modeling, and reporting features from Power BI Desktop releases.

Export to Excel from tabular visuals

Ability to export data to Excel from a tabular visual in the Power BI Report Server so that users can analyze data.

PowerPivot model refresh

You can refresh Excel workbooks that contain PowerPivot models.

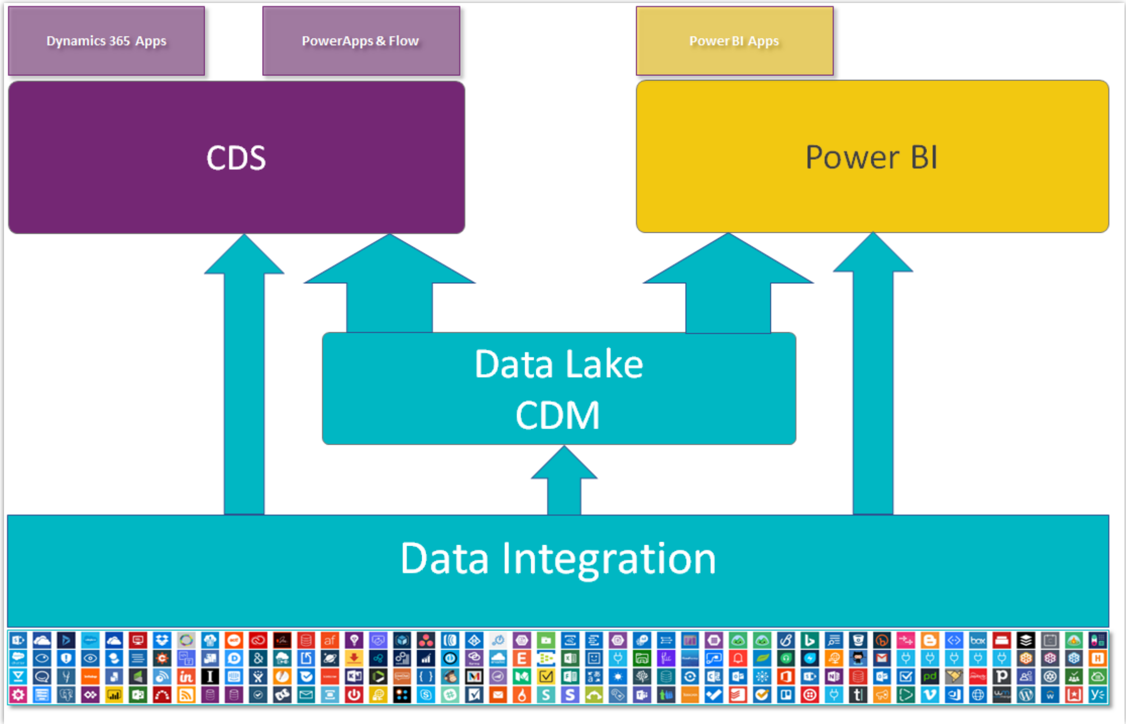
CDM and Data Integration

Overview of Common Data Model and Data Integration April '19 release

The Data Integration team delivers experiences and services to bring data into Common Data Service, Power BI dataflows, and Azure Data Lake Storage Gen2 from a wide variety of sources to help accelerate our data-gravity strategy. As part of this vision, we worked within Microsoft and with third parties to form the Common Data Model and worked with Adobe, SAP, and others on the Open Data Initiative.

As a result of this effort, we will deliver:

- An extensible platform that supports a rich ecosystem of ISVs and partners who develop hundreds of connectors to new sources.
- The Common Data Model, which is used and extended by ISVs and industry (and which is evolving into One Data Model as part of the Open Data Initiative).
- Power Query as the data prep solution through Microsoft products, including Power BI, PowerApps, Logic Apps, Microsoft Flow, and Analysis Services (both Azure-based and SQL Server Analysis Services), and Microsoft Excel.
- Hybrid connectivity via the on-premises data gateway.
- Dual-write and Data Integration solutions.



The Data Integration team delivers experiences and services to bring data into a variety of products and services

What's new and planned for Common Data Model and Data Integration

This topic lists features that are planned to release between April and September 2019. Previews for some features will start in February 2019.

These release notes describe functionality that may not have been released yet. Delivery timelines and projected functionality may change or may not ship (see [Microsoft policy](#)).

When a month is used in the **Date** column, the feature will be delivered sometime within that month. The delivery date can be any day within that month, not just on the first day of the month.

For a list of the regions where Dynamics 365 business applications are available, see the [International availability guide](#).

The April '19 release has four themes for these areas: Power Query, Connector Platform and Extensibility, Common Data Model, Dual Write (Link to Common Data Service), CDS Data Integrator, Data Export Service, Data Integration Templates, and Gateway.

Power Query Desktop

Area	Feature	Release type	Date
New and enhanced connectors	We're working on connectors for PDF, Essbase, and IBM DB2 DirectQuery. April 2019		
New and enhanced connectors	We're adding a connector for AtScale. April 2019		
New and enhanced data preparation capabilities	Based on customer feedback, we'll improve "Smart Data Prep" Power Query Desktop features and make them generally available over the next six months. April 2019		
Connectivity Platform	We're adding support for developer-signed custom connectors.	Public Preview	April 2019

Power Query Online

Area	Feature	Release type	Date
New and enhanced get data capabilities	We're making it possible to create tables by typing or copy-pasting data into Power Query Online and to browse OneDrive for Business when connecting to file sources in Power Query Online.	General Availability	April 2019
SAP data connectivity	Support for modifying SAP HANA and BW variables in PowerBI.com for a published report.	Public Preview	June 2019
New data connectors	We're working on new data connectors, including Amazon Redshift, Impala, Apache Spark, HDInsight Spark, HDInsight Hive Interactive Query, Vertica, Google BigQuery, Teradata,	Public Preview	April 2019

Area	Feature	Release type	Date
	Informix, Sybase, MySQL, and PostgreSQL.		
Fundamentals and compliance	Power Query Online support in new regions and GCC.	Public Preview	April 2019
Mapping entities to CDM schema	Includes support for mapping to Common Data Service data types when creating new entities via Power Query Online Data Integration and improved experiences for browsing entities when mapping entities to Common Data Model schema.	Public Preview	April 2019
Common Data Service	Includes support for lookup import using natural keys when creating new entities via Power Query Online Data Integration.	Public Preview	April 2019

Common Data Model

Feature	Release type	Date
Updated documentation and quick-start guides for developing with the Common Data Model	General Availability	April 2019
Extensions to CDM schema documents such as versioning	Public Preview	April 2019
SDK and tooling in multiple languages for CDM schema documents, CDM folders, and model.json files	Public Preview	April 2019
New CDM entity definitions covering key scenarios from popular Dynamics offerings, including Finance, Operations, and Marketing	Public Preview	April 2019
CDM entity packs for industry solutions such as education, non-profit, and retail	Public Preview	April 2019

Dual Write

Feature	Release type	Date
Frictionless experience that enables Dynamics 365 for Finance and Operations customers to natively get their data in Common Data Service	Public Preview	May 2019
Ability to write initial data prior to turning on Dual Write	Public Preview	May 2019
Making Dual Write resilient to planned or unplanned maintenance	Public Preview	May 2019
Support for multiple legal entities in Dual Write	Public Preview	May 2019

CDS Data Integrator

Feature	Release type	Date
Enhancements in Error handling and troubleshooting	Public Preview	April 2019
Ability to propagate template updates to projects	Public Preview	June 2019
Richer dashboard with meaningful insights and views	Public Preview	April 2019
Guidance for performance tuning and integration write patterns	Public Preview	April 2019
Compliance for government cloud	Public Preview	June 2019

Unlock insights from Common Data Service

Feature	Release type	Date
Extract intelligence from your Common Data Service data through first-party analytics apps	Public Preview	June 2019

Feature	Release type	Date
Frictionless experience to connect and hydrate your Azure Data Lake Storage	Public Preview	July 2019
Support for initial and incremental writes	Public Preview	June 2019
Support for data and metadata changes in Azure Data Lake	Public Preview	June 2019

Data Export Service

Feature	Release type	Date
Show count of records from Dynamics 365 for Sales (CRM) and Azure SQL	General Availability	August 2019
Show trend of records from Dynamics 365 for Sales (CRM) and Azure SQL	General Availability	August 2019
Notifications on write failures	General Availability	August 2019
Minimize write failures by prioritizing metadata before data	General Availability	August 2019
Reduce latency and improve perf on processing deletes	General Availability	April 2019
Show unsupported entities for change tracking	General Availability	April 2019

Data Integration templates

Feature	Release type	Date
New templates and updating existing templates (Dynamics 365 for Finance and Operations, Field Service, Project Service, Dynamics 365 for Talent, and Salesforce)	General Availability	April 2019

Connector Platform and extensibility

Feature	Release type	Date
New and enhanced connectors for PowerApps and Microsoft Flow	Public Preview	April 2019
Rich documentation and guides for developing connectors	General Availability	April 2019
Custom connector CLI for PowerApps and Microsoft Flow	Public Preview	April 2019
Support for policy templates in custom connectors for PowerApps and Microsoft Flow	Public Preview	April 2019
Open source connector development for PowerApps and Microsoft Flow	General Availability	April 2019
Improved connector certification process	General Availability	April 2019

Gateway

Feature	Release type	Date
OOTB certified data connectors support (Extensibility support)	Public Preview	April 2019
Multiple credentials for an on-premises data source	General Availability	June 2019
Gateway administration across a tenant	Public Preview	April 2019
Gateway management enhancements	Public Preview	May 2019
Improved reliability, supportability, and diagnostics	General Availability	April 2019
SAP BW single sign-on (Kerberos) in Power BI Service (via On-premises data gateway), for SAP BW Application and Message Server	Public Preview	April 2019

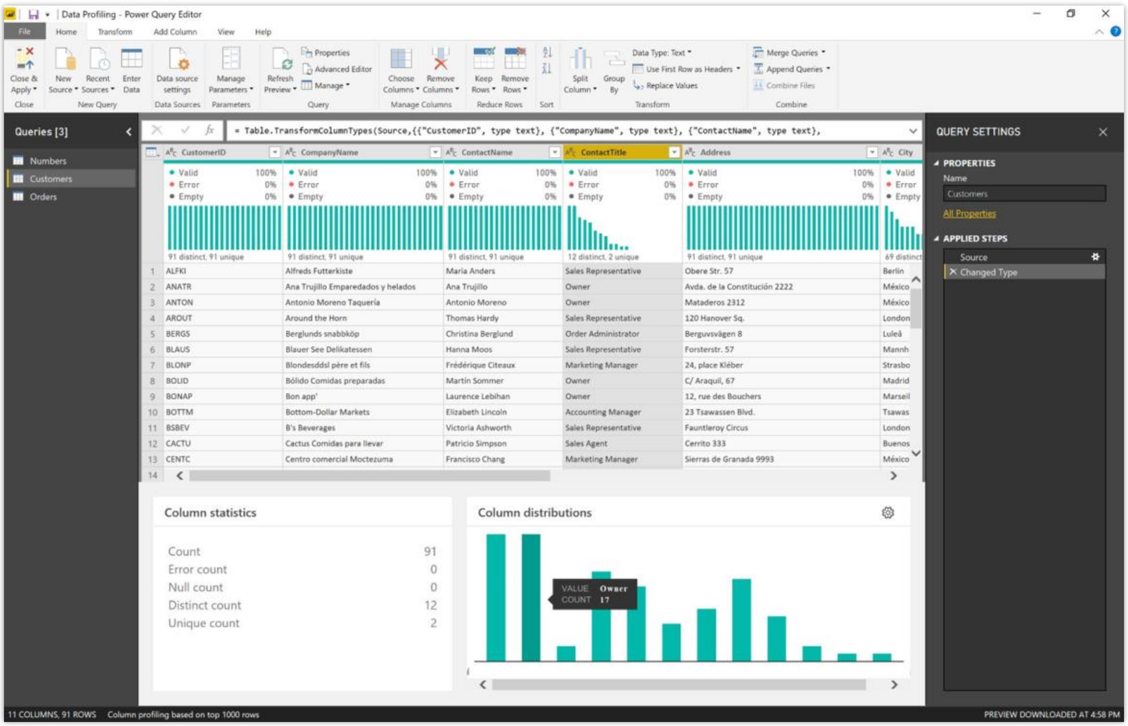
Feature	Release type	Date
SAP HANA single sign-on (SAML) in Power BI Service (via on-premises data gateway)	Public Preview	April 2019

Power Query becomes smarter and more powerful

One of the major trends within the self-service data preparation space is *smart data preparation*. It brings the power of AI into the hands of the data analyst, democratizing access to AI algorithms to enrich and enhance data, whether that is automatic (such as built-in recommendations) or by means of user interaction (such as calling in to AI/ML functions).

Over the last 6-12 months, Power Query added a lot of smart data preparation capabilities to its core experiences, including:

- **By example data extraction capabilities**: Allows users to extract data from existing table columns or from HTML pages. This is based on letting users specify a set of sample output values, having Power Query infer the users' intent, and then extracting the remaining values by applying AI algorithms.
- **Fuzzy merge**: Allows users to easily combine data from multiple tables using fuzzy matching algorithms instead of strict matching.
- **Data profiling**: Helps users easily identify error, empty, and outlier values within their Power Query Editor data previews.
- **Built-in browsing and invocation experiences in Power Query Online**: Uses Azure Machine Learning models and Azure Cognitive Services functions as regular data preparation steps in Power BI dataflows. This brings together the out-of-the-box Cognitive Services capabilities built in to the Azure cloud platform, as well as the ability to consume Azure Machine Learning models created by an organization's data scientists, and shared with data analysts for consumption.



Data profiling image

In the upcoming months, we will continue building on this foundation to make Power Query's smart data preparation capabilities even more powerful, helping data analysts achieve more from their data with even less effort.

High enterprise value connectors become generally available for Power BI customers

By April '19, many of the recently shipped Public Preview capabilities for enterprise-grade connectors in Power BI will become generally available, including:

- SAP BW single sign-on (Kerberos) in Power BI service (via on-premises data gateway)
- SAP HANA single sign-on (SAML) in Power BI service (via on-premises data gateway)
- PDF connector
- Essbase connector
- IBM DB2 DirectQuery

In addition, the following connector will go into Public Preview:

- AtScale connector

Additionally, Power BI is enabling a new Public Preview capability on top of the SAP HANA and BW connectors based on enterprise customer feedback, allowing report consumers to modify SAP HANA/BW variable values within the PowerBI.com report consumption experiences.

Power Query Online adds several new data connectivity and preparation capabilities

Power Query is available as a Windows/Desktop embeddable component (currently integrated with Power BI Desktop, Excel Desktop, and SQL Server Data Tools) as well as a web-based, Azure-hosted service (currently integrated with Power BI dataflows, Common Data Service, and Microsoft Flow).

Over the next six months, we'll add the following data connectors to Power Query Online:

- Amazon Redshift
- Impala
- Apache Spark
- HDInsight Spark
- HDInsight Hive Interactive Query
- Vertica
- Google BigQuery
- Teradata
- Informix
- Sybase
- MySQL
- PostgreSQL

Increased support for developers on the Power Query platform

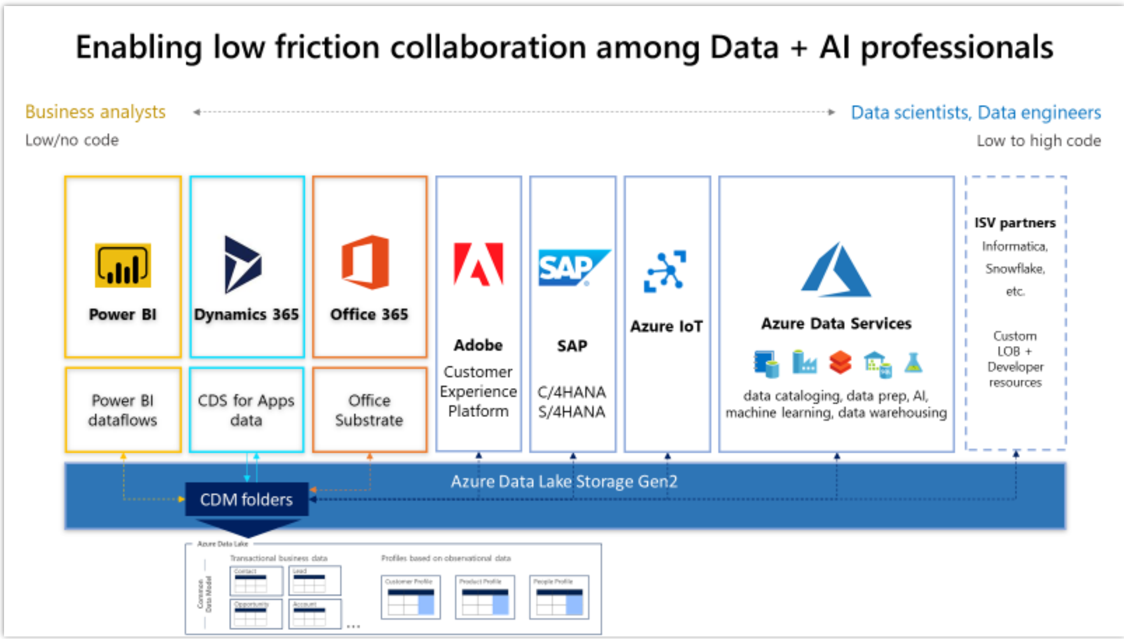
With the general availability of certified connectors and custom connector development for Power BI, the Power Query platform has made the same tools that we use to develop connectors available to developers around the world.

Over the next six months, we will continue to expand our offerings to developers and the ability for anyone to connect their data to the Power Query platform.

Developers have asked us to support a way to deliver connectors that have been signed with their certificate, rather than going through Microsoft's process. We will be introducing a method to enable developers and users to use connectors signed by third parties.

Common Data Model (CDM)

Today's Common Data Model (CDM) provides modular and extensible business entities (account, lead, opportunity, and so on) as well as observational data concepts (such as Link clicks and Email opens). It unifies data in a well-known schema with semantic consistency across data silos, applications, and deployments.



CDM allows producers and consumers to interoperate within the data lake

The span of products, platforms, and services that implement, produce, and consume data in CDM form continues to grow, inside and outside Microsoft.

Additional capabilities and features as part of the Open Data Initiative

As part of the Open Data Initiative, "one data model" across the founding partners supports a customer-owned shared data lake for intelligence and knowledge creation scenarios with direct access to the underlying data and metadata. The founding partners (and additional ones) will land their data with well-defined semantic metadata in that data lake and pull from it. This resembles the first version of "CDM folders" in Azure Data Lake Storage Gen2 but requires significant evolution, with multiple Azure data services and partners (for example, Informatica) building toward it.

With the huge volume of existing customer data and applications on the existing transactional platforms (such as Common Data Service), it is not a tractable problem to converge those onto the same "one data model." We need to ensure we make landing the data in the lake seamless and automatic. Similarly, it must be easy to gain insights from the shared data lake and bring those insights back into the platforms. This also extends the effort to include data assets from Adobe and SAP in our AI and intelligence offerings.

Updated developer and consumer documentation

The Common Data Model continues to evolve in scope and capabilities, which increases the importance of the public documentation for both consumers and developers. The release of additional quick starts, best practices, and more to the public documentation set provides a destination where anyone interested in CDM can learn how best to leverage its power.

CDM schema documents

The CDM schema definition continues to improve based on the ecosystem's needs. For example, we've released a versioning scheme for the CDM schema documents. This scheme ensures that producers and consumers can report and identify the versions they support.

SDK and tooling

In order to create and leverage the data in CDM shape, we've released an SDK and tooling to explore, read, modify, and create content in CDM form. These tools make the initiative approachable to developers across a wide range of platforms and services. These tools open their data to the growing set of services and experiences that understand data in CDM form.

New entity definitions

CDM continues to expand with the release of new industry accelerators and concepts from core Dynamics 365 solutions. For example, the release of accelerators from the education and non-profit industries, as well as updates to the healthcare accelerator, have brought more than 100 new entities to the CDM model. Additionally, entity definitions from Dynamics 365 for Finance and Operations, Marketing, Talent, and more continue to make CDM relevant to customers and partners of all sizes.

Dual Write

Customers should be able to adopt business applications from Microsoft and expect they speak the same language and seamlessly work together. Dual Write allows our customers to not think about these apps as different systems to write to independently; rather, the underlying infrastructure makes it seamless for these apps to write simultaneously.

Frictionless experience that enables Dynamics 365 for Finance and Operations customers to natively get their data in Common Data Service

With a few clicks, customers will be able to seamlessly link to Common Data Service from Dynamics 365 for Finance and Operations. Changes in Dynamics 365 for Finance and Operations will propagate to Common Data Service and vice versa without much configuration. We will support a subset of entities at first and will grow this over time.

Optionally, Dynamics 365 for Finance and Operations admins will be able to use an advanced version of the setup in which they can customize entities and field mappings and also do source data filtering and transformation.

Ability to write initial data prior to turning on Dual Write

With this feature, we will write data that exists prior to turning on Dual Write, and keep this data updated.

Making Dual Write resilient to planned or unplanned maintenance

If data writes fail, administrators want to be notified and empowered to take action immediately. This feature provides administrators with additional capabilities to define the experiences that suit their organization's needs.

Administrators will be able to define rules that provide email notifications and/or take actions on their behalf for specific error types and thresholds. This also provides the functionality to switch to async mode in case of unexpected failures.

Support for multiple legal entities in Dual Write

Dynamics 365 for Finance and Operations allows certain data to be striped by Legal Entity (LE). Each legal entity has its own customers. Products may be released per company while prices may be defined per legal entity for a customer.

While integrating data from Dynamics 365 for Finance and Operations, the appropriate products and prices must be sent to Common Data Service while ensuring visibility to the right users.

Similarly, opportunities in Common Data Service need to be created in the appropriate legal entity in Dynamics 365 for Finance and Operations.

While workarounds exist, there is a need to provide out-of-box support for multiple legal entities. With this feature, you will be able to use the same project across multiple legal entities.

CDS Data Integrator

The CDS Data Integrator (for Admins) is a point-to-point integration service used to integrate data into Common Data Service. It supports integrating data from multiple sources into Common Data Service. It supports process-based integration scenarios like Prospect to Cash that provide direct synchronization between Dynamics 365 for Finance and Operations and Dynamics 365 for Sales. The Prospect to Cash templates that are available with the data integration enable the flow of data for accounts, contacts, products, sales quotations, sales orders, and sales invoices between Finance and Operations and Sales. We continue to enhance this service based on customer use and feedback by making the following investments for April '19.

Enhancements in error handling and troubleshooting

With these features, we show active lists of errors across projects and provide the ability to retry failed records.

Ability to propagate template updates to projects

In the past, when you updated a template, you had to manually update the projects that used the old template. With this feature, you can push updates to projects if the source template is updated.

Richer dashboard with meaningful insights and views

Based on customer feedback, we provided an admin dashboard that served as a one-stop, real-time view of all executions and their status. This view allowed you to view details of executions.

With this release, we further enhance the dashboard with richer views, such as the top five data integration projects by execution, and the number of projects by execution state.

Guidance for performance tuning and integration write patterns

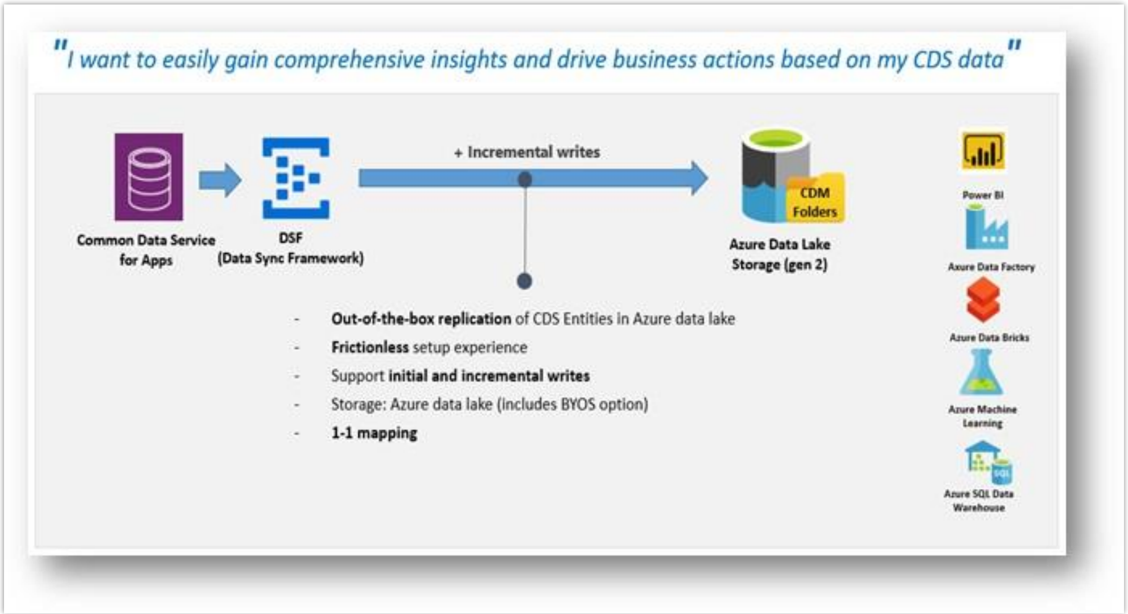
Based on our experience and interaction with customers, we are providing documented guidance on how to optimize performance for high-volume integration. Additionally, we are publishing guidance around write patterns for integrations that covers common requests around moving entity data for many-to-one and one-to-many patterns.

Compliance for government cloud

We are also making the Data Integrator compliant to GCC so that our government customers can adopt and use the benefits of our service.

Unlock insights from Common Data Service

Our vision is to empower our customers to gain comprehensive insights and drive business actions based on their data in Common Data Service. To be able to achieve this, to run analytics and extract intelligence from your data, there is a need to push the data to Azure Data Lake, which enables best-in-class analytics performance along with the fundamental availability, security, and durability capabilities of Azure Storage. With this effort, we will enable first-party analytics apps to run rich analytics by pushing data from Common Data Service to Azure Data Lake. Additionally, we will also support Bring your own lake/Bring your own storage functionality where customers can link their existing Azure Data Lake to their Common Data Service environment. This will enable customers to run rich analytics on their Common Data Service data.



Common Data Service to Azure Data Lake Storage

Extract intelligence from your Common Data Service data through first-party analytics apps

If you are a salesperson interested in the complete interaction history of a customer, a sales manager looking to gain insights into your team, or a customer service manager looking to anticipate needs and improve performance with insights into case trends, our first-party analytics apps such as Dynamics 365 Customer Insights, Sales Insights, and Customer Service Insights lets you do just that. This feature lets you hydrate Azure Data Lake with your Common Data Service data to avail of rich insights driven by empowering first-party analytics apps.

Frictionless experience to connect and hydrate your Azure Data Lake Storage

With this feature, you can easily bring and hydrate your own Azure Data Lake (BYOL – Bring Your Own Lake) or, we will create one for you with data from your Common Data Service. This gives you the ability to create rich reports using Power BI and other powerful analytics and Machine Learning (ML) services.

Support for initial and incremental writes

This feature enables writing existing and incremental Common Data Service data to the lake. Customers don't want a full copy of their data at every refresh and it is imperative that we support this critical ask for incremental data refreshes.

Support for data and metadata changes in the Azure Data Lake

We understand that, with every business, data is constantly changing, and we will provide complete support for data and metadata changes to propagate to the Azure Data Lake along with support for CRUD (Create Read Update Delete) operations.

Data Export Service

Microsoft Dynamics 365 Data Export Service (DES) is a free add-on from Microsoft AppSource that synchronizes Microsoft Dynamics 365 (online) data to a Microsoft Azure SQL Database in a customer-owned Microsoft Azure subscription.

The supported target destinations are Microsoft Azure SQL Database and Microsoft SQL Server on Microsoft Azure virtual machines. The Data Export Service does a full write, followed by delta changes on a continuous basis, as they occur in the Microsoft Dynamics 365 (online) system. This helps enable several analytics and reporting scenarios on Dynamics 365 data.

Per feedback from our customers, we continue to improve the Data Export Service to be more reliable and performant by making the following investments for April '19.

Show count and trend of records to validate and notify on convergence status

Showing the count and trend of records from Dynamics 365 for Sales (CRM) and Azure SQL Database has been a top request from our customers who want to view the counts from both source and destination to ensure that their changes were written successfully. Additionally, this feature provides a trend of record counts by comparing the number of records by entity in both Dynamics 365 for Sales (CRM) and Azure SQL Database on an hourly basis. We are also providing a comparison of the latest version and the version of metadata of records by entity in both Dynamics 365 for Sales (CRM) and Azure SQL Database.

These investments will let our customers predict convergence (or divergence) of records and take appropriate measures, as necessary. We are also adding more alerting mechanisms to inform users when the entity records have failure notifications because the data is out of sync.

Minimize write failures by prioritizing metadata before data

One of the common failures we have seen in customers' environments is when the data shows up prior to the metadata, causing write failures. With the help of this feature, we implement a queue to prioritize the metadata messages over the data messages and pause the processing of data messages when metadata message processing fails. We also validate the "metadata version coming" part of the data message and, if it is different from the one in SQL, do not process the data messages and put them in the queue.

Show unsupported entities for change tracking

In the past, there was no easy way to identify entities that don't have change tracking enabled. These entities weren't supported. With this change, we will show all entities in the user interface and gray out the unsupported ones for change tracking. This provides a more intuitive experience.

Reduce latency and improve performance

Data Export Service maintains a single delete log per profile. This log is used to track deletes along with their timestamps. Based on discussions with customers, especially in larger profiles with many entities, a single delete log causes performance bottlenecks. With this change, we split the delete log for each entity, creating one per entity and thereby drastically reducing latency to process deletions. An additional index on the delete log table further improves performance on queries.

Data integration templates

Integrating data from various sources requires a business user or administrator to have intricate knowledge about the source and destination entities and field mappings. More importantly, they need to know how these entities are to be mapped from source to destination. They also have business needs that require them to transform the data before importing it.

An integration template serves as a blueprint that provides predefined entities and field mappings to enable the flow of data from source to destination. It also provides the ability to transform the data before importing it. Often, the schema between the source and destination apps is different. The template with the predefined entity and field mappings serves as a great starting point for an integration project.

Integration templates make it easy to integrate data from various data sources

Over the last few months, we worked closely with the application teams to ship out-of-the-box templates for Dynamics 365 Finance and Operations, Field Service, and Project Service applications. We also shipped a Salesforce preview template to bring data into Common Data Service.

We will continue this momentum and partner with the Dynamics 365 for Talent, Dynamics 365 for Sales, and other application teams to bring more out-of-the-box templates, which will help expedite integrating data and reducing overall burden and cost. See the release notes for the corresponding application teams to understand the rich, process-based integration and analytics scenarios that these templates will help with.

Connector platform and extensibility

A critical part of Data Integration and the suite of products it supports—PowerApps, Microsoft Flow, Power BI, and Power Query—is connectivity to external data sources. While we continue to invest in a set of enterprise-grade data sources, there are a growing number of databases and services many users come to depend on outside of that set. To ensure our users can connect to the data they need, we continue to invest in our extensibility points throughout the platform. Developers and ISVs looking to develop connectors have a way to build connectors and certify the connectors for the products they are targeting.

New and enhanced connectors for PowerApps and Microsoft Flow

Connectors for PowerApps and Microsoft Flow are added continuously as we engage partners and ISVs to build them. As the ecosystem grows, we expect more partners to build connectors and get them certified. These connectors will also continue to be updated on an ongoing basis as new features are added to the connectors.

Connectors released in October 2018

- Rencore
- Parseur
- Dynamics 365 Business Central (on-premises)
- Dynamics 365 Business Central

Connectors released in November 2018

- Stormboard
- Imprezian360-CRM

- Encodian
- Soft1
- Zahara
- Yeelight
- Windows Defender Advanced Threat Protection (ATP)
- Cloud App Security
- Webex Teams

Connectors released in December 2018

- OneBlink
- TDox
- CandidateZip
- Expiration Reminder
- Plumsail HelpDesk
- Acumatica

Connectors released in January 2019

- TxtSync
- Ally
- Word Online (Business)
- Microsoft Graph Security

Connectors released in February 2019

- XooaDB
- Chainpoint
- Projectwise Share
- Ahead
- Document Merge

Connectors released in March 2019

- SignNow
- Dynamics 365 Customer Insights
- Microsoft Forms Pro

Rich documentation and guides for developing connectors

While we already have partners building connectors today, there is often a great deal of handholding for some of the advanced capabilities to ensure a good end-user experience. This leads to increased load on our certification engineers and a long lead time during development. Common feedback from our partners and customers has been about improving the documentation we have around building custom connectors.

This release includes an updated set of reference documentation on developing connectors. A developer guide is also provided along with the documentation that helps ISVs and partners developing connectors on the guidelines for a certified connector as well. Multiple samples and guided learning documents will help developers on specific topics as well. This will lead to decreased development time while building connectors.

Custom connector CLI for PowerApps and Microsoft Flow

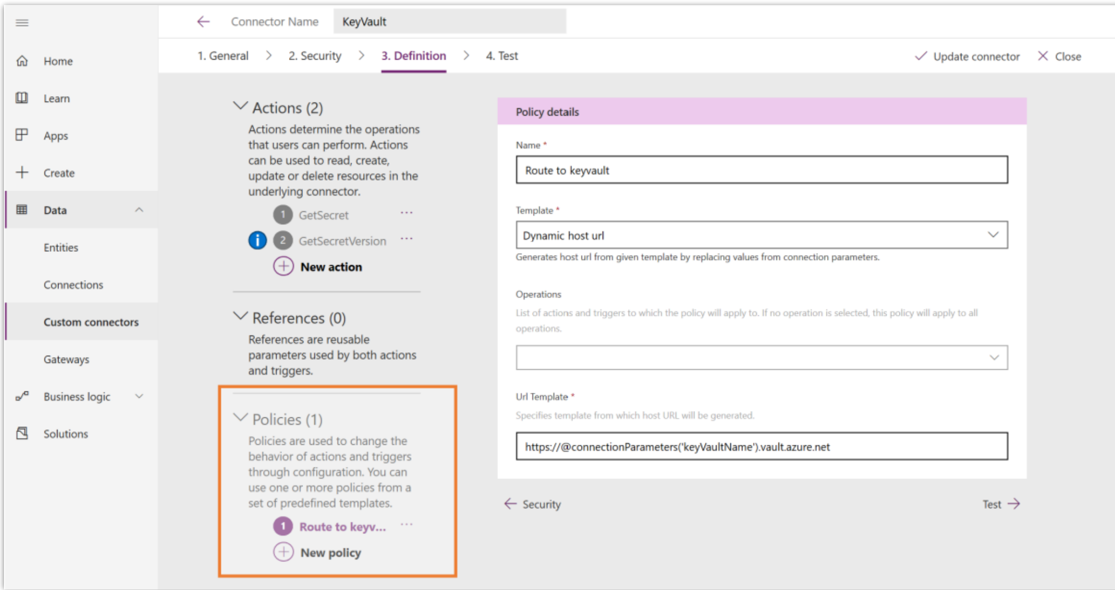
While developers can use the Power Query SDK to build rich data connectors for Power BI and Power Query Online, this release also includes a command-line interface (CLI) that developers can use to deploy custom connectors for PowerApps and Microsoft Flow.

Support for policy templates in custom connectors for PowerApps and Microsoft Flow

While building a connector for PowerApps and Microsoft Flow, we often need to modify certain behaviors for the underlying API. These behavioral modifications can be achieved today using Azure APIM policies for any of the standard built-in connectors. Many connectors rely on these policies today. The biggest drawback for the APIM policies, however, is that they are not available for custom connectors. This means any modification to any of these custom connectors must be done in-house. Partners who built these connectors rely on us for any modification to their connectors—even to try out and test them. This leads to a high-touch development model that often frustrates our partners.

With this release, we now enable policies to be applied on your custom connector for your PowerApps or flows. A policy can be used to modify a certain behavior of the connector. For instance, policies will allow you to limit the number of calls from a connection on one or more operations in your connector. Other policies can be used to fix header or query parameter, or even modify a field or a parameter. Policies can be used to improve the overall user experience of your connector.

This release includes a set of fixed policy templates for use in custom connectors. Over time, we will add more policy templates that will provide more functionality.



Mockup of policy templates in connector authoring experience

Open source connector development on GitHub for PowerApps and Microsoft Flow

Microsoft is also leading by using open source for many connectors on its GitHub repository. With this, the developer ecosystem will have access to the source code behind real examples of connectors and contribute changes that improve the connectors.

Microsoft is encouraging partners to adopt an open source connector development model and leverage the developer ecosystem for maintaining their connectors.

Improved certification process

As we work with various developers and partners, the certification process needs to be improved so that there is a predictable SLA, visibility into status, decrease in human errors, and an overall improvement in the time and process for certification.

With support for the rich tools and open source development model on GitHub, ISVs and partners who want to certify their connectors now have an option to use a simpler certification process. This process eliminates the need for manual handoff—instead, it relies on a common source code repository. This cuts down the time for certification and additional verification for deploying those connectors.

Gateway

On-premises data gateway supports out-of-box certified data connectors

Certified custom connectors will be available out of the box on the on-premises data gateway. This will help developers and gateway admins select certified custom connectors as data sources with minimal or no configuration changes.

The user can discover Microsoft-certified custom connectors and add them as new data sources in the manage gateway experience. This eliminates the need to manage these certified connectors across all gateways in a gateway cluster.

Ability to create multiple credentials for an on-premises data source

Different security levels implemented for the same on-premises gateway data source will help gateway admins manage security efficiently by granting access to end users based on their allowed access level. Gateway management today supports only one credential per data source in each gateway. Due to this restriction, users can connect to unauthorized data from a data source if the data source credential has superior access and vice versa. To resolve this issue, gateway admins had to spin up a new gateway. With this new capability, they can now create multiple data sources connecting to the same source, each with a different credential, and add users to each of these data sources based on their access level.

Gateway administration across a tenant

- **Tenant admin portal**: The tenant administrator can review and manage all on-premises gateways installed within their organization via this portal.

  There is currently no single place where tenant administrators can manage all gateways that other users have installed and configured unless all users in the organization add the tenant admin as an administrator to every gateway they install. To mitigate this issue, tenant admins can now see all gateway clusters and also individual gateway machines listed under each gateway cluster and gateway admin information.

- **Tenant admin to restrict users from installing on-premises gateway**: This lets tenant administrators allow selective users in the company to install the on-premises gateway for better manageability.

Management enhancements

- **Centralized gateway management**: Gateway admins will have a standard experience for managing configuration for gateway clusters, individual gateway machines, and associated data sources across the Power Platform including Power BI, PowerApps, and Microsoft Flow. This will also help gateway admins view and manage gateways within each cluster.
- **Deprecation of older versions of a gateway**: Gateway admins and report users using older versions of the on-premises gateway will be notified to upgrade to the latest version of the gateway. This will help gateway admins plan for upgrades to the latest version and improve supportability. Report users and gateway admins will also benefit from the updates and latest features shipped with the most recent releases of the on-premises gateway.

Improved reliability, supportability, and diagnostics

These are some improvements related to the fundamentals:

- Actionable messaging for errors in multiple areas like installation and data refreshes.
- Faster releases and improved reliability of the gateway metadata service.
- Improved gateway logging related to usage, refreshes, data sources, and connectivity.

SAP BW single sign-on (Kerberos) in Power BI service (via on-premises data gateway), for SAP BW Application and Message Server

This feature will enable users to leverage Kerberos-constrained single sign-on delegation when publishing DirectQuery-based reports on top of SAP BW Application and Message Server data.

SAP HANA single sign-on (SAML) in Power BI service (via on-premises data gateway)

You've been able to use single sign-on leveraging Kerberos when connecting to SAP HANA in DirectQuery mode from Power BI. With this feature, you will now also be able to connect to SAP HANA using single sign-on leveraging SAML.

Got feedback?

Share your feedback on a community forum for Dynamics 365 or Power Platform. We'll use your feedback to make improvements. To find out about updates to these release notes, follow us on Twitter @MSFTDynamics365.

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