

Deploy a demo environment

Article • 08/22/2023

This article explains how to deploy a demo environment on Microsoft Azure using Microsoft Dynamics Lifecycle Services (LCS). This article applies to deploying a demo environment for:

- Dynamics 365 Finance
- Dynamics 365 Supply Chain Management
- Dynamics 365 Human Resources
- Dynamics 365 Commerce

Prerequisites

Before you begin your deployment, the following prerequisites must be in place:

- Verify that you have an Azure subscription, and that you are a co-administrator on it.
- Verify that you have access to an LCS project and permissions to deploy an environment.
- Verify that you've connected your Azure subscription to your LCS project by using the information in the [Complete the Azure Resource Manager \(ARM\) onboarding process](#) article.

Deploy a demo environment

Use this procedure to deploy a demo environment on Azure using LCS.

1. In LCS, open your project, and then, in the **Environments** section, click the plus sign (+).
2. Select the Azure environment topology, and then select **Demo**.
3. Select a topology.
 - For finance and operations, select the most recent Azure Resource Manager (ARM) topology for finance and operations.
 - For Commerce, select **Dynamics 365 for Commerce - Demo**.
4. In the **Deploy environment** dialog box, enter the name of the environment. This name should be unique in the Azure subscription. To make environments easy to

Cloud deployment overview

Article • 07/20/2023

Working with Microsoft to deploy finance and operations apps in the cloud requires that you understand the environment and subscription that you're deploying to, who can perform which tasks, and the data and customizations that you need to manage. We recommend that you sign up for the Full Microsoft FastTrack for Dynamics 365 to help speed your deployment and implementation - it's a program that provides training and consulting to help you realize business value faster. For more information, see [Microsoft FastTrack](#). If you choose to use the Essentials FastTrack program instead, you'll be using the Implementation Project Methodology in Microsoft Dynamics 365 Lifecycle Services to help you manage your implementation project.

Customer lifecycle, subscriptions, and environment types

Microsoft assumes that all customers will follow a lifecycle similar to the following for all cloud deployments, and therefore need different environment topologies at each phase.

- Evaluate
- Develop customizations, if needed.
- Curate a "golden configuration" environment that contains only module configurations without master or transactional data. This is to be the baseline for your data migration testing and eventual go live.
- Install and test customizations and partner solutions on a tier-1 sandbox (Development or test environment).
- Test customizations, partner solutions and data configuration on a tier-2 sandbox environment.
- Deploy customizations and data configurations to a production environment with high availability.

At some phases of a project, you may have all of the environments live at once. For more information, about the default licenses and tiers that are available, see the [Dynamics 365 Licensing Guide](#).

You may notice the terms cloud hosted or Microsoft subscriptions. A *cloud hosted subscription* means that the customer or partner brings their own Azure subscription and deploys finance and operations apps to it, for evaluation and development purposes only. The customer or partner pays for the resources deployed to their Azure subscription based on the Azure price list. A *Microsoft subscription* means that the

Self-service deployment overview

Article • 07/01/2022

Important

Functionality noted in this article will be made available to users based on the geographic location recognized by Microsoft Azure.

Self-service deployment is available for cloud environments. Self-service deployment enables easier deployment and significantly reduced deployment times.

Important

The functionality for this feature will be released incrementally, based on your Microsoft Azure country/region. However, this functionality is currently available only for **new customers** who are in the process of signing up for finance and operations apps. There is no change in existing environments for current customers.

Note that not all new customers will see this functionality. However, the number of new customers who have access to it will gradually increase.

What's new or changed

Customers using the self-service capabilities will see the following changes in their Lifecycle Services (LCS) experience.

- Deployment is self-service and can be completed within an average time of 1-2 hours, depending on the type of environment (sandbox or production). There are no longer lead times and wait times for deployment. You can control when you deploy, and verify that the environment is deployed. This experience is the same as the current experience. For more information, see [Self-service deployment FAQ](#).

Deploy a new environment

Article • 07/19/2023

ⓘ Important

Functionality noted in this article will be made available to users based on the geographic location recognized by Microsoft Azure.

This article walks through the process of deploying sandbox (Tier 2 and above) and production environments with the [self-service deployment](#) experience. Refer to the following procedure to deploy these environments.

1. Select **Configure** on the project dashboard page.
2. Select the **Application** and **Platform** version for the environment that you want to deploy.
3. Provide a **unique name** for the environment.

ⓘ Note

`sandbox` and `trial` are reserved and cannot be used for your environment name. Additionally, environment names are limited to 20 characters due to the total length of the resulting URL.

4. Select the **region** where you want this environment to be deployed.

ⓘ Note

Starting July 2023 customers can deploy Microsoft managed finance and operations environments to any region from any Lifecycle Services instance (apart from US GCC and 21Vianet in China). Earlier it was only possible to deploy to regions which were data resident to the Lifecycle Services endpoint itself, for example France Lifecycle Services only allowed deployment in France geo. For more information about which regions are available and what you must consider when you make a selection, see [Available geographies for Dynamics 365 finance and operations apps](#).

5. Select whether you want to load demo data in your environment or whether you want an empty database.

Manage sandbox environments across implementation projects

Article • 06/08/2024

Management of sandboxes across implementation projects is an important aspect of the implementation of finance and operations apps. By following the steps that are outlined in this article, you can ensure that you stay within your purchased sandbox limits.

When you implement finance and operations apps, it's crucial that you have the appropriate number of sandboxes for your development, testing, and training purposes. Sandboxes let you test modifications to finance and operations apps before you affect your production environment. Microsoft provides one production environment and one sandbox environment with the purchase of 20 user licenses for finance and operations apps. However, many customers require more than one sandbox. Therefore, you can purchase more sandboxes from the Microsoft 365 portal.

Sandbox add-ons

The extra sandboxes that you purchase are referred to as sandbox add-ons. Sandbox add-ons come in different performance levels, from Tier 2 through Tier 5. Tier 5 is the highest-performing option. In the past, sandbox add-ons were shown in all projects simultaneously. Therefore, it was difficult to keep track of how many sandboxes were deployed. To help you stay within your purchased limits, Microsoft is changing this behavior. Sandbox slots now disappear from other projects as they're deployed.

Managing sandboxes across implementation projects

This section explains the steps that you can take to manage sandboxes across implementation projects.

Step 1: Determine your sandbox requirements

The first step in managing sandboxes across implementation projects is to determine your sandbox requirements. You must understand the number of sandboxes that are required for development, testing, and training purposes. Microsoft provides one production environment and one sandbox environment for each implementation

Delete a production finance and operations apps environment

Article • 03/08/2024

ⓘ Important

Functionality noted in this article will be made available to users based on the geographic location recognized by Microsoft Azure.

This article explains the process of deleting a production [self-service environment](#). Deletion of a production self-service environments is rarely done after a customer goes live with the software. However, it might be done several times as part of the preparation for the final deployment. In many cases, customers will go through the motions of deploying the production environment, applying code, bringing in data, and capturing how long each step of the process takes. If you want to delete and repeat the steps, this article will help you accomplish that task.

ⓘ Important

Deletion of a production environment that's used for your business can have severe consequences. To help safeguard against mistakes, this process is available only to project owners in the Microsoft Dynamics Lifecycle Services project who are also from the same Microsoft Entra tenant that owns the project.

Delete a production environment

You can delete an environment that's in the deployed state directly through the environment details page. To delete an environment, go to the environment details page, and select the **Delete** button on the action bar. A confirmation dialog box prompts you to enter the name of the environment that you want to delete.

Self-service deployment FAQ

Article • 12/05/2023

This article provides answers to some frequently asked questions about [self-service deployment](#). Refer to the [known issues](#) list if your scenario isn't listed here.

Access the Azure SQL database

You can access the Microsoft Azure SQL database by following these steps.

1. From LCS, add a safe list of the IP address of the machine that you use to connect to the Azure SQL database using SQL 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 are able to see the database access credentials on the LCS environment details page. 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 have to request access again.

What are the outbound IP ranges for my finance and operations environment?

For any of your external components that have special handling for the outbound IP addresses of requests originating from the AOS, such as a firewall, you can find the outbound IP addresses by using the Service Tag Discovery API or using the downloadable JSON files. For example, an outbound IP address may be explicitly included in a firewall outside your AOS, or an external service may have an allowed list that contains the outbound IP address for your AOS.

The inbound IP address to the AOS is dynamic. This can, and will, change over time as infrastructure changes occur.

Note

Known issues with self-service deployment

Article • 08/16/2022

ⓘ Important

Functionality noted in this article will be made available to users based on the geographic location recognized by Microsoft Azure.

ⓘ Important

As part of the [One Dynamics One Platform](#) work effort, some Microsoft Dynamics 365 Lifecycle Services (LCS) features have been deprecated. For more information, see [Removed or deprecated platform features](#).

This article describes the known issues with [self-service deployment](#).

Lifecycle Services (LCS)

Features not intended to be implemented

The following LCS features will not be implemented in self-service deployment.

- **System diagnostics** - All data and functionality provided by system diagnostics today will be available through other features in the product and LCS.
- **Service requests** - Service requests are being replaced with self-service actions.

Known issues in this release

Known issues are bugs that will be addressed in upcoming releases. Every 2 weeks there is a new release of LCS.

Finance and operations apps

ⓘ Note

Maintenance operations for deployments

Article • 07/01/2022

Important

Functionality noted in this article will be made available to users based on the geographic location recognized by Microsoft Azure.

This article explains how to perform maintenance operations for an environment that was deployed by using the [self-service deployment](#) experience.

Restart services

You can use the restart services functionality to restart individual services that are associated with a Tier 2, Tier 3, Tier 4, or Tier 5 standard acceptance test (sandbox) environment that is deployed in a Microsoft subscription. The services that you can restart are **finance and operations apps service**, **Data management workspace**, and **Financial reporting service**.

To restart a service, follow these steps.

1. In Microsoft Dynamics Lifecycle Services (LCS), on the environment details page, select **Maintain > Restart service**.
2. Select the service to restart, and then select **Confirm**.

During the restart, the environment's status is updated to **Restarting service**, and you can't start any other maintenance operations. After the service has been restarted, the environment's status is returned to **Deployed**.

Maintenance mode

finance and operations apps includes a system-wide setting that is named [maintenance mode](#). Maintenance mode gives system admins a safe way to make system changes that might affect system functionality. For example, configuration keys can be turned on or off. While maintenance mode is on, only the system admin and users who are assigned to the **Maintenance mode** user role can sign in to the system. By default, maintenance mode is turned off.

Update an environment

Article • 06/03/2022

ⓘ Important

Functionality noted in this article will be made available to users based on the geographic location recognized by Microsoft Azure.

This article walks through the process of applying updates to an environment that was deployed by using the [self-service deployment](#) experience.

ⓘ Important

In the next-generation infrastructure, updates are applied differently than they are applied in the current flow. *Whatever is provided in the package is applied to the environment, and it overwrites whatever is already present in that environment.*

Therefore, you **must** create a single deployable package that contains all customizations and independent software vendor (ISV) solutions from your build environment. If the list of models in the environment differs from the list of models in the package, you receive a warning before the update is applied. For information about how to create a single package, see [Manage third-party models and runtime packages by using source control](#).

Applying updates to self-service environments

Self-service environments use a special approach to performing updates, because the container-based image process is used to build the environment's runtime. When these images are applied to a sandbox environment, the customer gives an **Update name** value to them, and they are shown in the environment history. An update image consists of three parts:

- **Microsoft binaries** that Microsoft releases on a regular basis, and that include new platform and application software updates. These binaries are available from the environment details page for your environment in Microsoft Dynamics Lifecycle Services (LCS). You will see a **single tile** that shows a cumulative binary update of all the application and platform fixes. To apply this update, select the package, and then select **Save package** to save the Microsoft update to the project asset library.

Troubleshoot environments deployed through self-service deployment

Article • 06/03/2022

ⓘ Important

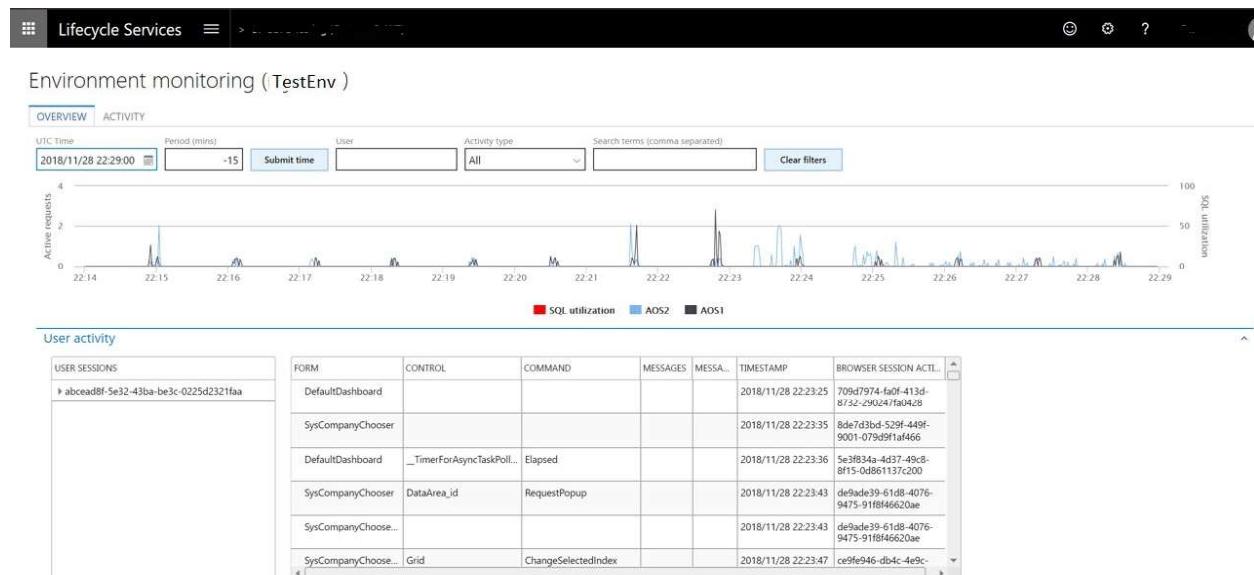
Functionality noted in this article will be made available to users based on the geographic location recognized by Microsoft Azure.

This article explains how you can troubleshoot issues on an environment that was deployed using the [self-service deployment](#) experience. When a user reports an issue, you can use various tools in Lifecycle Services (LCS) for troubleshooting. The rich set of telemetry data helps you build a storyboard view that shows what that user and other users were doing when the issue was reported.

To open the **Environment Monitoring** dashboard, follow the steps listed below:

1. Open LCS and navigate to the appropriate project.
2. In the **Environments** section, select the environment that you want to view, and then click **Full details**.
3. On the **Environment details** page, click **Environment monitoring** to open the Monitoring and diagnostics portal.

On the Environment Monitoring dashboard, you will see two tabs: **Overview** and **Activity**.



Maintenance in self-service environments FAQ

Article • 03/21/2024

Because of the changing nature of technology, the continual appearance of new security threats, and compliance requirements, environments must be updated with all critical security and quality updates. Microsoft built a framework for performing all maintenance activity during the dark hours of the geographic region where your environment is deployed. This maintenance activity includes operating system patching, deployment of security hotfixes, and deployment of quality updates. To minimize application downtime, upgrades occur in batches. Therefore, most capacity is always online, and only a subset is upgraded at a time. This approach enables servicing that involves a small window of service degradation instead of complete downtime.

Infrastructure maintenance in self-service environments

Infrastructure maintenance is the process of updating the environments with the latest security updates and critical hotfixes. Microsoft must complete this process on your environments to ensure security, availability, reliability. This article provides answers to frequently asked questions about Microsoft planned maintenance in self-service environments.

What are the types of planned maintenance activities that are performed on an environment?

Some of the common planned maintenance activities performed by Microsoft are:

- Operating system (OS) security updates
- Security hotfixes
- Microsoft quality updates

What are the planned maintenance windows?

A planned maintenance window is typically during the dark hours of the geographic region that your environment is deployed in. The following table lists the maintenance

Business continuity and disaster recovery

Article • 03/13/2025

ⓘ Note

The [new and improved Power Platform admin center](#) is now in public preview! We designed the new admin center to be easier to use, with task-oriented navigation that helps you achieve specific outcomes faster. We'll be publishing new and updated documentation as the new Power Platform admin center moves to [general availability](#).

Businesses expect their applications and customer data to be protected and resilient during unavoidable outages and disruptions. It's important to have a documented business continuity plan that aims to minimize the effects of outages. Be sure the plan includes stakeholders, processes, and specific steps to be taken to recover and resume operations.

Microsoft provides business continuity and disaster recovery (BCDR) capabilities to all [production type environments](#) in Dynamics 365 and Power Platform software as a service (SAAS) applications. This article describes details and practices Microsoft takes to ensure your production data is resilient during outages.

The following diagram shows a typical architecture of a geography that serves a single or multiple countries. Although the geography location is all your Power Platform administrators need to be concerned with, within the geography, Microsoft deploys more infrastructure to provide scale and added protection for your data.

Available geographies for Dynamics 365 finance and operations apps

Article • 01/22/2025

Microsoft Dynamics 365 finance and operations apps are generally available to support data residency in specific geographies. These deployment options serve customers in regulated industries and commercial organizations that do business with entities in specific geographies that might require local data residency.

Data residency

Data residency for finance and operations apps environments and Microsoft Dynamics Lifecycle Services isn't necessarily the same. You can view the supported regions when you deploy environments. Only regions that are marked **Data resident region** store the data in the same geography as Lifecycle Services. Regions that aren't marked in this way are *not data resident* (that is, the data isn't located in the same geography as Lifecycle Services). Customers who require that neither Lifecycle Services data nor environment data should leave the geographic boundary must ensure that they use the correct Lifecycle Services endpoint and the correct region for environment deployment when they create the Lifecycle Services Implementation project. For more information about which geographies store Lifecycle Services data, see the [Supported geographies and endpoints](#) section of this article.

Supported geographies and endpoints

Dynamics 365 finance and operations apps environments can be deployed across many geographies. For a complete list of available regions, see the [Feature availability across geographies](#) section of this article. Lifecycle Services is used to deploy the environments, and several instances are available globally to provide data residency for the data that's stored in Lifecycle Services.

The following table lists the Lifecycle Services geographies and endpoints.

 Note

In the URLs in the "Environment URL" column, **NAME** represents the unique customer-defined environment name.

 Expand table

| Geography | Lifecycle Services portal | Lifecycle Services API endpoint | Environment URL |
|------------------------------------|---|---|---|
| United States | https://lcs.dynamics.com/ | https://lcsapi.lcs.dynamics.com | https://NAME.operations.dynamics.com/ |
| Europe | https://eu.lcs.dynamics.com/ | https://lcsapi.eu.lcs.dynamics.com | https://NAME.operations.eu.dynamics.com/ |
| France | https://fr.lcs.dynamics.com/ | https://lcsapi.fr.lcs.dynamics.com | https://NAME.operations.fr.dynamics.com/ |
| Norway | https://no.lcs.dynamics.com/ | https://lcsapi.no.lcs.dynamics.com | https://NAME.operations.no.dynamics.com/ |
| South Africa | https://sa.lcs.dynamics.com/ | https://lcsapi.sa.lcs.dynamics.com | https://NAME.operations.sa.dynamics.com/ |
| Switzerland | https://ch.lcs.dynamics.com/ | https://lcsapi.ch.lcs.dynamics.com | https://NAME.operations.ch.dynamics.com/ |
| United Arab Emirates | https://uae.lcs.dynamics.com/ | https://lcsapi.uae.lcs.dynamics.com | https://NAME.operations.uae.dynamics.com/ |
| US Government Community Cloud | https://gov.lcs.microsoftdynamics.us/ | https://lcsapi.gov.lcs.microsoftdynamics.us | https://NAME.operations.gov.microsoftdynamics.us/ |
| US Government Community Cloud High | https://high.lcs.microsoftdynamics.us/ | https://lcsapi.high.lcs.microsoftdynamics.us | https://NAME.operations.high.microsoftdynamics.us/ |

Feature availability across geographies

Dynamics 365 Finance and Supply Chain Management in US Government Community Cloud (GCC)

Article • 03/24/2025

Select Microsoft Dynamics 365 United States (US) Government products are available to qualified government and private entities. Those entities are limited to the following types:

- US federal, state, local, tribal, and territorial government entities
- Private entities that use Dynamics 365 US Government to provide solutions to government entities or to qualified members of the cloud community
- Private entities that have customer data that is subject to government regulations, and Dynamics 365 US Government is the appropriate service to meet the regulatory requirements

For information, see [Dynamics 365 US Government](#).

Onboarding

To complete the initial onboarding for an implementation project in Microsoft Dynamics Lifecycle Services, follow the instructions in [Onboard an implementation project](#). However, don't use the link to public Lifecycle Services that is provided in those instructions. Instead, use the following URL to open Lifecycle Services for US Government Community Cloud (GCC): <https://gov.lcs.microsoftdynamics.us>.

After the initial onboarding is completed, follow the instructions in [Project onboarding](#). Once again, use [Lifecycle Services for GCC](#) instead of public Lifecycle Services.

Environment deployment

After you've completed project onboarding, you can review the additional capabilities of Lifecycle Services that are described in [Lifecycle Services for finance and operations apps customers](#). Then move on to environment deployment.

- To deploy Microsoft-managed environments via Lifecycle Services, follow the instructions in [Lifecycle Services for finance and operations apps customers](#).
- For cloud-hosted environments, see [Deploy and access development environments](#). You must also complete the Resource Manager onboarding process

Dynamics 365 Finance, Supply Chain Management, and Commerce operated by 21Vianet in China

Article • 09/29/2023

Microsoft Dynamics 365 online services that are operated by 21Vianet are designed to comply with regulatory requirements in China. They are a physically separated instance of cloud services that's operated and transacted by a local operator, Shanghai Blue Cloud Technology Co., Ltd ("21Vianet"). This operator is a wholly owned subsidiary of Beijing 21Vianet Broadband Data Center Co., Ltd., which is located in China. This deployment option meets the demands of customers who prefer to use online services that are provided by a local company that stores their data inside China. These services are subject to Chinese laws.

Data residency

Finance and operations apps that are operated by 21Vianet support data residency in China. This deployment option serves customers in regulated industries and commercial organizations that do business with entities in China that require local data residency. All required services and related data are deployed in the corresponding data centers of the geography. These services and data include Microsoft Dynamics Lifecycle Services, telemetry, databases, and environments. Customer data doesn't leave the geographic boundary.

Compliance

Customers in China can choose 21Vianet's sovereign cloud deployment offering, but they can also deploy to the public cloud offering that's managed by Microsoft. The Microsoft-managed public cloud offering is globally connected over the public internet and has data centers outside China. One advantage of choosing this public cloud offering is that if the customer purchases Azure, Dynamics 365, and Microsoft 365, these products and services can coexist on the same Microsoft Entra tenant.

The final choice of a deployment option depends on the customer's assessment of how it should operate to meet regulatory requirements in China. Customers who are wondering how to be compliant should ask their internal compliance team to review the regulatory requirements for the industry that they belong to and the mode of operation

Complete the Azure Resource Manager onboarding process

Article • 07/01/2022

This article explains how to complete the Microsoft Azure Resource Manager onboarding process for your connectors.

To deploy Azure Resource Manager topologies, you must complete the onboarding process for your connectors. To start the onboarding process, you must have the following items:

- The Azure subscription ID that you're deploying to
- Ownership of the Azure subscription, or access to the subscription owner, so that you can add contributor workflows, and the Upload Management certificate
- The tenant administrator, to work through the admin consent workflow

Azure Resource Manager onboarding process

You can consider Azure Resource Manager onboarding a two-step procedure, where each step has its own sub-procedures. You must complete all these procedures for every subscription that you add to the Microsoft Dynamics Lifecycle Services (LCS) project.

1. Authorize the LCS deployment service to work on the Azure subscription.
 - a. Authorize the workflow.
 - b. Set the contributor workflow.
2. Enable the Azure subscription to deploy Azure Resource Manager resources.
 - a. Enable the Azure connector, and add an LCS user.
 - b. Optional: Upload the Management certificate.
 - c. Configure deployment settings.

Authorize the LCS deployment service to work on the Azure subscription

Complete the following procedures to authorize the LCS deployment service to work on the Azure subscription.

Authorize the workflow

The administrator of the tenant must complete the following procedure.

Complete the Azure Resource Manager onboarding process for US government Lifecycle Services projects

Article • 03/08/2024

This article explains how to complete the Microsoft Azure Resource Manager onboarding process for your connectors.

To deploy Azure Resource Manager topologies, you must complete the Resource Manager onboarding process for your connectors. To start the onboarding process, you must have the following items:

- The Azure subscription ID that you're deploying to.

(!) Note

For US government Microsoft Dynamics Lifecycle Services projects, only Azure Government–specific Azure subscriptions are supported.

- Ownership of the Azure subscription, or access to the subscription owner, so that you can configure the Azure subscription tag.
- The tenant administrator, so that you can work through the admin consent workflow.

Resource Manager onboarding process

You can consider Resource Manager onboarding a two-step procedure, where each step has its own subprocedures. You must complete all these subprocedures for every subscription that you add to the Lifecycle Services project.

1. Authorize the Lifecycle Services deployment service to work on the Azure subscription.
 - a. Authorize the workflow.
 - b. Set the contributor workflow.
2. Enable the Azure subscription to deploy Resource Manager resources.
 - a. Enable the Azure connector.
 - b. Configure the Azure subscription tag.

Azure ExpressRoute and finance and operations apps

Article • 07/01/2022

Customers can use Microsoft Azure ExpressRoute with finance and operations apps to connect to their on-premises infrastructure. This article provides the information that you need to get started with ExpressRoute.

Microsoft Azure ExpressRoute lets you create dedicated, readily available, highly reliable, low latency connections between Azure datacenters and your on-premises locations. An ExpressRoute circuit is a logical connection between a customer's on-premises network and Microsoft cloud services through a connectivity provider. ExpressRoute is configured separately from finance and operations apps. To get an ExpressRoute circuit for your implementation, you must contact a network service provider directly. After ExpressRoute is configured, in addition to connecting to finance and operations apps, customers can connect to apps such as Microsoft 365 and supported Azure services, such as connecting to virtual machines and cloud services deployed in virtual networks. To learn more about other supported services, see [ExpressRoute FAQ](#). Before purchasing an ExpressRoute circuit, you will need to know the following information:

- The datacenter that your finance and operations apps are located in.
- The region where you will be connecting from.

This information is necessary to determine whether a standard or premium offering of ExpressRoute is required.

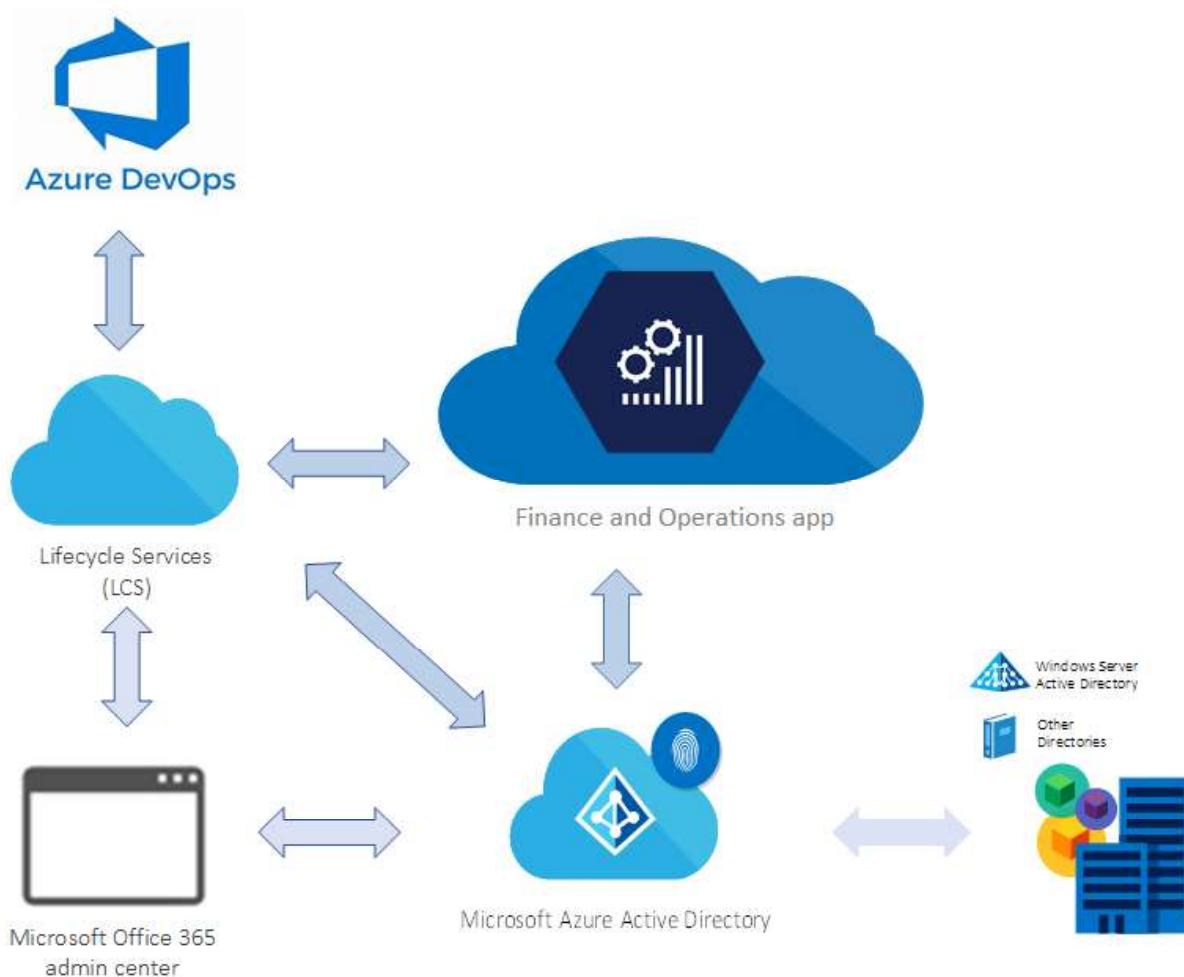
Resources for getting started

- [ExpressRoute service page](#)
- [ExpressRoute technical overview](#)
- [ExpressRoute partners and peering locations](#)
- [ExpressRoute pricing](#)

Finance and operations application architecture

Article • 03/08/2024

The finance and operations application cloud architecture contains all the elements that are common to all Microsoft cloud offerings, as described in [Subscriptions, licenses, accounts, and tenants for Microsoft's cloud offerings](#). Beyond this, it also includes services that automate software deployment and provisioning, operational monitoring and reporting, and seamless application lifecycle management.



The cloud architecture consists of these conceptual areas:

- **Subscription** – A subscription to finance and operations apps gives you an online cloud environment (or multiple environments) and experience.
- **Licenses** – Customers must purchase subscription licenses (SLs) for their organization, or for their affiliates' employees and on-site agents, vendors, or contractors who directly or indirectly access finance and operations apps. These apps are licensed through Microsoft Volume Licensing and the Microsoft Cloud

Apply updates to cloud environments

Article • 03/17/2025

This article describes how you can use Microsoft Dynamics Lifecycle Services (LCS) to automatically apply updates to cloud environments.

Important

Updates are applied using deployable packages. Applying updates causes system downtime. All relevant services are stopped, and you won't be able to use your environments while the package is being applied. You should plan accordingly.

Supported environments

All customer-managed and Microsoft-managed environments deployed through Lifecycle Services are supported. For more information about self-service environments, see [Update an environment](#).

Note

If you have a build environment, you can only use LCS to apply Binary updates and Data upgrade packages. You can't use LCS to apply an Application Deployable package.

For other environments (listed below), you must use Remote Desktop Protocol (RDP) to connect to the environment and install from the command line. For information about manual package deployment, see [Install deployable packages from the command line](#).

- Local development environments (Downloadable virtual hard disk [VHD])
- Multi-box dev/test environments in Microsoft Azure (Partner and trial projects)

Key concepts

Before you begin, you should understand *deployable packages*, *runbooks*, and the *AXInstaller*. A deployable package is a unit of deployment that can be applied in any environment. A deployable package can be a binary update to the platform or other runtime components, an updated application (AOT) package, or a new application (AOT) package. The AXInstaller creates a runbook that enables installing a package. Learn

Apply updates and extensions to Commerce Scale Unit (cloud)

Article • 08/12/2022

If you are updating a Tier-2 sandbox or production environment on application version 8.1.2 or newer and have initialized Commerce Scale Unit (CSU), you will also need to update channel components. This article shows how to apply updates and extensions to CSU.

Updates to CSU are cumulative. This means that any update that you apply will include all previously released changes. Applying a Dynamics 365 Commerce deployable package for extensions is also a cumulative process and will replace the previously deployed version of the extension.

Prerequisites

Before you proceed, you must first apply updates and extensions (if applicable) to the environment. For more information, see [Apply updates to cloud environments](#).

To update CSU, complete the following steps for each:

1. On the **Environment details** page, go to **Environment features > Retail and Commerce**.
2. On the **Commerce deployment setup** page, select **Update**.
3. In the selection panel, select the version to update to.
4. You can choose to update to the newest service update to access the latest features, or you can update to the latest quality update to apply quality improvements for the currently deployed service update. For more information, see [Download updates from Lifecycle Services \(LCS\)](#).
5. You can choose to apply an extension at the same time.

To apply an extension to a CSU, complete the following steps:

1. On the **Commerce deployment setup** page, select **Apply Extension**.
2. In the selection panel, select the extension to apply.

Note

You must first upload the Commerce deployable package to the project asset library in Microsoft Dynamics Lifecycle Services (LCS) before you can select to

Auto-update for Commerce Scale Unit (cloud)

Article • 03/14/2025

This feature currently applies to cloud-hosted Commerce Scale Unit (CSU). Self-hosted CSU isn't included and must be self-updated.

CSU updates are a part of [One Version](#) auto-update. All One Version processes, policies, and schedules apply to auto-update for CSU.

[Auto-update configurations](#) for environments also apply to CSUs. To [pause auto-updates](#), CSUs must be on the current release (N) or the previous one (N-1). Releases older than N-1 must be updated to be compliant.

Limitations

The following limitations currently exist. Microsoft plans to resolve them in upcoming updates.v

- In-app notifications aren't available.
- Auto-update for CSU isn't currently available for First Release customers, and isn't currently applicable for Preview builds.

Downtime duration and impact

Updates to Commerce headquarters and CSU (cloud) are applied sequentially.

Downtime duration is typically one hour, but varies by data volume and region. To estimate downtime duration in your production environment, you can either self-update a CSU in your sandbox user acceptance testing (UAT) environment, or review the total update duration for both Commerce headquarters and CSU in Lifecycle Services (LCS).

Note

Downtime duration varies for each update and data volume. To estimate a realistic downtime duration, ensure that your sandbox UAT environment has the same data as your production environment by following the steps in [Refresh database](#). You also need to apply the same update in the sandbox UAT environment that you plan to estimate the downtime duration for.

Initialize Commerce Scale Unit (cloud)

Article • 09/19/2024

This article explains how to initialize Commerce Scale Unit (CSU) (cloud) in Microsoft Dynamics 365 Commerce.

If you're using a Tier-2 sandbox or production environment that has application version 8.1.2.x or later, you must initialize CSU (cloud) before you can use retail channel functionality either for point of sale (POS) operations or for e-commerce operations that use Retail Server in the cloud. Initialization deploys a CSU (cloud).

Prerequisites

- Before deploying a CSU, ensure that you have one or more of the required licenses (for example, CSU, device, or e-commerce licenses). If you don't have one or more of the required licenses, you see the following message:

"The current licenses do not allow for the deployment of this Commerce Scale Unit. Contact support or your sales associate for assistance."

For more information about licenses, see [D365 Licensing Guide](#). You can also contact your [Microsoft account team](#), your [Dynamics Certified Partner](#), or a [Dynamics 365 sales expert](#).

- Deploy a Tier-2 sandbox or production environment using a [supported release](#).
- If you have the required licenses, you can self-deploy up to two CSUs per environment. If you have licenses for more than two CSUs and want to deploy them in an environment, you must create a support request. To create a support request, sign in to Microsoft Dynamics Lifecycle Services (LCS), select **Request for additional Commerce Scale Unit**, and enter the environment ID, number of CSUs, and desired datacenter regions. The request will be completed within five business days.
- You must have project owner permissions in LCS before you can initialize CSU.
- Ensure that Retail license configuration keys are enabled in your environment. For more information, see [License codes and configuration keys report](#).
- You must have the following keys turned on to use CSU.
 - RetailBasic
 - RetailCommerce - If you plan to use Dynamics 365 Commerce e-commerce.

Geo to geo migration overview

Article • 05/11/2023

To support data residency, Microsoft Dynamics 365 finance and operations apps and Microsoft Dynamics Lifecycle Services are generally available in specific geographies. Customers can migrate their workload from one geography to another. This article provides an overview of the process and the considerations.

Movement between geographies involves two separate processes:

- [Finance and operations apps environment migration](#) – Use this feature to move your finance and operations apps environments between geographies.
- [Lifecycle Services project migration manager](#) – Use this feature to move your Lifecycle Services project data between geographies.

To start planning for the migration, assess whether you want to migrate only environments, only Lifecycle Services projects, or both.

General considerations

Organizations that want to migrate environments and data from one geography to another must consider the following aspects before actual migration.

Feature parity

Be sure to review the [availability of features in the selected target geography](#) before you decide which geography to deploy in. If any features aren't available in the target geography, associated functionality won't work in that geography after migration. Therefore, plan the migration activity accordingly.

Dynamics 365 Commerce isn't available in all target geographies. If you have Commerce components enabled, your Lifecycle Services project migration won't be scheduled if you're migrating to one of the target geographies where Commerce isn't available.

Sovereign data resident geographies

Migrations into or out of a sovereign cloud environment (for example, US Government Community Cloud [GCC] and China) aren't supported.

Lifecycle Services project migration considerations

Finance and operations apps environment migration

Article • 10/28/2023

Microsoft continues to open data centers for business service in both existing regions and new regions. The Geo migration feature lets you move your finance and operations apps environments that are in a single tenant from one geography (or geo) to another. No changes to the user interface (UI) or version occur as part of the move.

Microsoft 365 and Dynamics 365 are separate services. If you move your finance and operations apps environments, your Microsoft 365 service isn't moved. Your finance and operations apps environments continue to appear alongside the Microsoft 365 environment in your tenant.

When a finance and operations apps environment is deployed in a geography, multiple Azure resources are associated with it. As part of the migration process, these resources are also moved from the source geography to the target geography.

Considerations

Organizations that want to migrate environments from one geography to another must consider the following aspects before actual migration.

Supported scenarios

- Sandbox and production environments can be migrated between geographies.
- Migration of cloud-hosted environments isn't supported.
- Migrations into or out of a sovereign cloud environment (for example, US Government Community Cloud [GCC] and China) aren't supported.

Feature parity

Be sure to review the [availability of features in the selected target geography](#) before you decide which geography to deploy in. If any features aren't available in the target geography, associated functionality won't work in that geography after migration. Therefore, plan the migration activity accordingly.

Integration impact and updates with other services

Project migration manager

Article • 09/22/2023

The Microsoft Dynamics Lifecycle Services Project migration manager lets you move your project data from one geography (or geo) to another geography that Lifecycle Services supports. This article describes the terminology and supported scenarios for this functionality, and provides answers to frequently asked questions.

Move projects to new geographies

The Project migration manager lets you move your Lifecycle Services project from one geography to another geography that meets your requirements. However, it's important that you understand why you might want to move your project in this way.

Originally, Lifecycle Services supported only one instance (<https://lcs.dynamics.com/>), which served as the global endpoint for all customers. However, because of recent regulatory trends across the industry, customers and software vendors are now required to keep data within a geographic boundary. Therefore, Lifecycle Services has started to deploy geography-specific instances, so that customers can have all their project data in the desired location. For more information about the different geographies that are available, see [Available geographies for Dynamics 365 finance and operations apps](#).

Considerations

Organizations that want to migrate Lifecycle Services projects from one geography to another must consider the following aspects before actual migration:

- Migration can take up to two hours when Lifecycle Services projects and environments are unavailable.
- As part of the migration, a new Lifecycle Services project is created. The new project will have a different project URL and Lifecycle Services project ID.
- Dynamics 365 Commerce isn't available in all target geographies. If you have Commerce components enabled, your migration won't be scheduled if you're migrating to one of the target geographies where Commerce isn't available. Be sure to review the [availability of features in the selected target geography](#) before you decide which geography to deploy in.
- All project environments (sandbox and production) must be on supported versions before migration is scheduled.
- The Project migration manager feature is available only to Lifecycle Services project owners.

Region migration to support zone redundancy FAQ

Article • 07/04/2024

Microsoft Azure provides multiple regions that support [zone redundancy](#). Zone redundancy enables environments to continue to operate seamlessly even when a data center failure or other unforeseen incidents. Zone redundancy enhances the resilience of an environment and helps improve overall service continuity. To use these capabilities, an environment must reside in a [region that supports zone redundancy](#).

As part of our commitment to Dynamics 365 customers, we plan to proactively migrate all environments to regions that provide robust zone redundancy support.

This article answers frequently asked questions about the migration process and the considerations for supporting zone redundancy.

Which Azure geographical regions are part of this migration?

[\[\] Expand table](#)

| Current (source) | New (target) |
|---------------------|----------------|
| Canada East | Canada Central |
| Australia Southeast | Australia East |
| South India | Central India |
| Japan West | Japan East |
| UK West | UK South |
| China North 2 | China North 3 |
| China East 2 | China North 3 |

Note

As part of the migration effort, the current regions aren't available to finance and operations apps customers for new sandbox and production environment provisioning using Lifecycle Services. Microsoft continues to support all customer

Migrate channels to a different Commerce Scale Unit

Article • 06/28/2023

This article explains how to migrate Microsoft Dynamics 365 Commerce store channels from the Commerce Scale Unit (CSU) that they are currently working with to a different CSU. You might want to migrate channels to a different CSU for better load isolation and resource governance between channels, to reduce latency to your stores, or to manage different update/extension deployment schedules for staged roll-out and pilots.

Migration to a different CSU involves downtime for the channels.

This article describes best practices that will help you minimize business disruption and downtime while you migrate channels. It applies to the migration of channels between cloud-hosted CSUs, between self-hosted CSUs, from cloud-hosted CSUs to self-hosted CSUs, and from self-hosted CSUs to cloud-hosted CSUs.

ⓘ Note

If you migrate channels between CSUs, temporary sales data that was used for journal records and point of sale (POS) reports before the migration will no longer be available at the POS after migration. After the migration is completed, journals and channel reports will be started afresh by using new data.

In the following procedures, the terms *origin* and *destination* are used to distinguish the CSUs and corresponding channel databases that are involved in the migration.

Planning for downtime

When you follow the procedures that are described in this article, all long-running system processes that are involved are run before the actual migration, while the stores are still operational. These processes including synchronization of master data for products, prices, and customers. Then, during the migration, the critical period when you must take planned downtime in your environment involves data synchronization of a very small payload of channel configuration data to the new CSU. In most cases, this synchronization can be completed in under 10 minutes. However, from an operational perspective, you must plan for a longer downtime window to ensure that all prerequisite steps have enough time to be completed. These steps include closing all shifts, syncing transactions to Commerce headquarters, and posting statements. The amount of time that is required will vary by organization.

Commerce data residency

Article • 08/12/2022

Choose a region

When you initialize a Commerce Scale Unit (cloud), you need to select a data center location to host. To minimize network latency and improve performance, you should choose a datacenter location that is in proximity to the channels that you plan to serve using the RCSU. To reference approximate locations of each datacenter, see [Azure regions](#). You can also reference a web-based utility, such as [Azure speed reference](#), and measure latency to Azure datacenters from each store location. This can help you to make the right choice of datacenter when you initialize the RCSU.

Data between regions

If you initialize RCSU in a data center that is different than where your head office is located, the data will travel between these data centers with periodic synchronization. The system is pre-configured to transfer specific types of data. You can modify this configuration to synchronize different data.

To view the data synchronization configuration, go to **Retail and Commerce > Headquarters setup > Commerce scheduler > Scheduler jobs** to view the data synchronization jobs and sub-jobs. To view the fields being synchronized, click through a sub-job.

Synchronize specific segments of records

You can configure Commerce Data Exchange (CDX) so that only specific segments of records are synchronized to specific RCSUs.

Prerequisites

Before you configure the record segments that will be synchronized, you need to configure Channel database groups. These database groups must be configured for each CSU where you want to synchronize segmented data. All CSUs in the same Channel database group receive the data that is needed to serve all the channels in that CSU. You will need to create a separate database group for each CSU channel database where you plan to synchronize segmented data. To do this, perform the following steps:

On-premises deployment home page

Article • 06/07/2024

You can deploy Dynamics 365 Finance + Operations (on-premises). When you choose an on-premises deployment type, the system requirements, hardware sizing, and functionality differ from a cloud deployment. This article provides links to content that contains information specific to on-premises deployments.

Get started

- [On-premises deployment overview](#)
- [Plan and prepare for on-premises deployments](#)
- [System requirements for on-premises deployments](#)
- [Microsoft Dynamics 365 Finance + Operations \(on-premises\) supported software](#)
- [Hardware sizing requirements for on-premises environments](#)
- [Buy Finance + Operations \(on-premises\)](#)
- [Comparison of cloud and on-premises features](#)

Onboard

- [Set up on-premises projects in Lifecycle Services \(LCS\)](#)
- [Configure the infrastructure scripts for your Finance + Operations \(on-premises\) deployment](#)
- [Set up and deploy on-premises environments \(Application 10.0.32 and later\)](#)
- [Set up and deploy on-premises environments \(Platform update 41 through 55\)](#)
- [Install network printer devices in on-premises environments](#)
- [Configure SQL Server Reporting Services for on-premises deployments](#)
- [Develop and deploy custom models to on-premises environments](#)

Work in your on-premises deployment

- [Configure high availability for SQL Server Reporting Services \(SSRS\) nodes](#)
- [Configure document management](#)
- [Import Electronic reporting \(ER\) configurations](#)
- [Document generation, publishing, and printing in on-premises deployments](#)
- [Configure proxies for on-premises environments](#)
- [Set up technical support for finance and operations apps](#)
- [Client internet connectivity](#)
- [Apply updates to on-premises deployments](#)

On-premises deployment overview

Article • 01/29/2025

Microsoft Dynamics 365 Finance + Operations (on-premises) supports running business processes in customer data centers. With this deployment option, application servers and the Microsoft SQL Server database run in the customer's data center. Customers and partners utilize Microsoft Dynamics Lifecycle Services (LCS) to manage their on-premises deployments. LCS is an application management portal that provides tools and services for managing the application lifecycle of your implementations in the cloud and on-premises. LCS features, such as business process modeling, software deployment and patching, and monitoring and diagnostics, are used to help support on-premises deployments.

Important

Dynamics 365 Finance + Operations (on-premises) isn't supported on any public cloud infrastructure, including Microsoft Azure Cloud services. However, it's supported to run on [Microsoft Azure Stack HCI](#) and [Microsoft Azure Stack Hub](#).

Architecture

The on-premises deployment option uses cloud components running on-premises using Microsoft Azure Server Service Fabric standalone clusters. Service Fabric is the next-generation Microsoft middleware platform for building and managing enterprise-class high-scale applications. Service Fabric standalone clusters can be deployed on any computer that's running Windows Server.

On-premises deployment defines two types of Service Fabric standalone clusters: clusters for production environments and clusters for sandbox environments. The following roles or node types are deployed into both types of clusters:

- Application Object Servers (AOS) – Provides the ability to run the application functionality in client and batch.
- SQL Server Integration Services (SSIS) – Provides import/export scenarios functionality as part of the Data Management Framework (DMF\DIKF).
- Management Reporter (MR) – Provides financial reporting functionality.
- SQL Server Reporting Services (SSRS) – Provides document reporting functionality.

Plan and prepare for on-premises deployments

Article • 01/29/2025

Dynamics 365 Finance + Operations (on-premises) supports running business processes in customer data centers. With this deployment option, application servers and the Microsoft SQL Server database run in the customer's data center.

This article helps you plan and prepare for your on-premises deployment.

ⓘ Important

Dynamics 365 Finance + Operations (on-premises) isn't supported on any public cloud infrastructure, including Microsoft Azure Cloud services. However, it's supported to run on [Microsoft Azure Stack HCI](#) and [Microsoft Azure Stack Hub](#).

Differences between cloud deployments and on-premises deployments

The features in cloud deployments and on-premises deployments differ. These differences affect your planning. The differences are described in the following topics:

- [Deployment options](#)
- [Comparison of cloud and on-premises features](#)
- [Removed or deprecated features for finance and operations](#)

How LCS is used with on-premises deployments

Microsoft Dynamics Lifecycle Services (LCS) is an application management portal that provides tools and services for managing the application lifecycle. Customers and partners use LCS to manage both cloud and on-premises deployments. You can use LCS for the following tasks:

- Deploy cloud and on-premises environments.
- Service your environments.

Microsoft Dynamics 365 Finance + Operations (on-premises) supported software

Article • 01/30/2025

This article explains which versions of dependent software are compatible with different versions of Microsoft Dynamics 365 Finance + Operations (on-premises).

Microsoft Windows Server

Both Microsoft Windows Server Standard and Microsoft Windows Server Datacenter are supported.

[\[+\] Expand table](#)

| Version | Supported since | End of life |
|-------------------------------|------------------|---------------|
| Microsoft Windows Server 2022 | 10.0.38 | Not available |
| Microsoft Windows Server 2019 | 10.0.17 | 10.0.41 |
| Microsoft Windows Server 2016 | Original release | 10.0.26 |

Note

Only en-US operating system installations are supported. These software requirements are relevant to all non-Microsoft managed environments, including development boxes, cloud-hosted environments, and similar setups.

Microsoft SQL Server

Software

Both Microsoft SQL Server Standard Edition and Enterprise Edition are supported.

This section covers the following SQL Server components:

- Database Engine
- SQL Server Reporting Services (SSRS)

Hardware sizing requirements for on-premises environments

Article • 01/29/2025

Before you begin the hardware and infrastructure sizing process for an on-premises environment, familiarize yourself with the [System requirements for cloud deployments](#) and [Setup and deployment instructions](#) to gain a solid understanding off the underlying infrastructure.

ⓘ Note

Pay close attention to the system setup best practices for optimum performance.

After you have reviewed the documentation, you can start the process of estimating your transactional and concurrent user volume and sizing your environment based on the average core throughput.

Factors that affect sizing

All the factors shown in the following illustration contribute to sizing. The more detailed information that is collected, the more precisely you can determine sizing. Hardware sizing, without supporting data, is likely to be inaccurate. The absolute minimum requirement for necessary data is the peak transaction line load per hour.

Authentication in Dynamics 365 Finance + Operations (on-premises) environments

Article • 06/19/2024

This article explains authentication in Dynamics 365 Finance + Operations (on-premises). This article also provides background information about how the process works so that if you encounter issues with authentication you can work to resolve them.

The URL for Active Directory Federation Services (AD FS)

The first part of the authentication process is to provide the URL for Active Directory Federation Services (AD FS). This URL will be similar to:

`https://adfs.contoso.com/adfs/.well-known/openid-configuration`

You'll find this URL in the deployment instructions found in [Configure AD FS](#). During deployment, the URL is used to set various options in the AOS startup variables of each AOS instance. These startup variables reside in an .XML config file located in a Service Fabric directory. This directory will vary from machine to machine, but the path should look similar to:

C:\ProgramData\SF\AOS_10\Fabric\work\Applications\AXSFType_App218\AXSF.Package.1.0.xml

XML configuration file

There is a file called AXSF.Package.Current.xml. This file will be a copy of the AXSF.Package.1.0.xml in finance and operations deployments. The AXSF.Package.Current.xml file represents the variable that have been used to initialize the currently running AOS instance (AxService.exe).

Within this configuration file (which is on each AOS machine), you'll find some sections that are set from the Lifecycle Services (LCS) deployment setting for AD FS.

XML

```
<Section Name="Aad">
    <Parameter Name="Microsoft Entra IDIssuerNameFormat"
```

Set up on-premises projects in Lifecycle Services (LCS)

Article • 06/19/2024

You must use Microsoft Dynamics Lifecycle Services (LCS) to deploy and update an instance of Dynamics 365 Finance + Operations (on-premises). After you purchase a server and user license through the Volume Licensing flow or the Dynamics Price List flow, see the article, [Buy Finance + Operations \(on-premises\)](#), to create an Microsoft Entra account or use an existing Microsoft Entra account, and then complete all the sign-up steps. You will be redirected to LCS, where an on-premises implementation project will be provisioned for you.

On-Premise implementation project

METHODOLOGY

1 Analysis 2 Design and develop 3 Test 4 Deploy 5 Operate ...

Phase history

Complete phase

| | |
|---|---|
| 1.1 Complete LCS project configuration | * |
| 1.2 On-Premise license | * |
| 1.3 Invite your project team | |
| 1.4 Sign up for ProQ project quality monitoring | |
| 1.5 Deploy demo environment | |
| 1.6 Capture Business processes and requirements | * |
| 1.7 Perform Fit/Gap analysis | * |
| 1.8 Download templates | |
| 1.9 Sign off requirements and business processes | * |
| 1.10 Estimate setup infrastructure needs | * |
| 1.11 Upload first iteration of setup and configurati... | |
| 1.12 Publish Plan and Milestone Dates | * |

Description

Before you start, complete the LCS project configuration. This includes two key areas, Microsoft SharePoint and Microsoft Visual Studio Team Services.

Visual Studio Team Services :
Lifecycle Services uses Visual Studio Team Services for iteration management, work items tracking, upgrade, developer experience and other features.

Setup Visual Studio Team Services

Attached documents

Task history

The on-premises project has all the tools that you require in order to implement, maintain, and operate an on-premises solution. Here are some of the tools that are available in the on-premises project:

- **Methodology** – The on-premises methodology provides best practices that will help customers implement and manage on-premises projects.

Set up and deploy on-premises environments (Application 10.0.32 and later)

Article • 11/08/2024

This article explains how to plan, set up, and deploy Microsoft Dynamics 365 Finance + Operations (on-premises) with Application version 10.0.32 later. Application version 10.0.32 includes platform update 56.

The [Local Business Data Yammer group](#) is available. There, you can post any questions or feedback that you have about the on-premises deployment.

Finance + Operations (on-premises) components

The Finance + Operations (on-premises) application consists of four main components:

- Application Object Server (AOS)
- Business Intelligence (BI)
- Financial Reporting/Management Reporter
- Data Management Framework (DMF)

These components depend on the following system software:

- Windows Server (Only English-language operating system installations are supported.)
- SQL Server

Important

Full-text search must be enabled.

- SQL Server Reporting Services (SSRS)

SSRS is deployed on BI virtual machines (VMs). The SSRS nodes should also have a Database Engine instance that's running locally.

- SQL Server Integration Services (SSIS)

Set up and deploy on-premises environments (Platform update 41 through 55)

Article • 09/13/2024

This article explains how to plan, set up, and deploy Microsoft Dynamics 365 Finance + Operations (on-premises) with Platform update 41 through. Platform update 41 is available with version 10.0.17. Platform update 55 is available with version 10.0.31.

The [Local Business Data Yammer group](#) is available. There, you can post any questions or feedback that you have about the on-premises deployment.

Finance + Operations components

The Finance + Operations application consists of three main components:

- Application Object Server (AOS)
- Business Intelligence (BI)
- Financial Reporting/Management Reporter

These components depend on the following system software:

- Microsoft Windows Server (Only English-language operating system installations are supported.)
- Microsoft SQL Server

Important

Full-Text Search must be enabled.

- SQL Server Reporting Services (SSRS)

SSRS is deployed on BI virtual machines (VMs). The SSRS nodes should also have a Database Engine instance that is running locally.

- SQL Server Integration Services (SSIS)

SSIS is deployed on AOS VMs.

- SQL Server Management Studio

Configure Lifecycle Services connectivity for Finance + Operations (on-premises) deployments

Article • 02/21/2025

An on-premises local agent is used to orchestrate the deployment and servicing of Microsoft Dynamics 365 Finance + Operations (on-premises) through Microsoft Dynamics Lifecycle Services. To establish connectivity from Lifecycle Services to the Finance + Operations (on-premises) tenant, you must configure a certificate that enables the local agent to act on behalf of your Microsoft Entra tenant (for example, contoso.onmicrosoft.com).

Use either the on-premises agent certificate that you acquired from a certification authority (CA) or the self-signed certificate that you generated by using the infrastructure scripts. The on-premises agent certificate could previously be reused across multiple sandbox and production environments per tenant. However, we no longer recommend that approach for the new authentication process.

First-time setup

The user who runs the script must have privileges to create Microsoft Entra applications in their tenant. The script creates a new application and service principal in the tenant. It then registers a certificate. This certificate serves as the credential that is used for authentication.

To help reduce the impact of a security incident that is caused by a compromised certificate, we recommend that every environment has its own Microsoft Entra application, service principal, and certificate.

To create the Microsoft Entra application and service principal, and to register the certificate, follow these steps.

1. Run the following command to create the Microsoft Entra application and service principal, and to register the certificate.

PowerShell

```
# If you have issues downloading the Azure PowerShell Az module, run  
# the following:  
# [Net.ServicePointManager]::SecurityProtocol =  
# [Net.SecurityProtocolType]::Tls12
```

Installation steps for Retail channel components in an on-premises environment

Article • 09/23/2022

This article covers the installation steps for Commerce channel components in an on-premises environment.

Important

There is currently a known issue where self-service packages aren't correctly applied to on-premises environments. Therefore, we recommend that you pull the installers directly from Microsoft Dynamics Lifecycle Services and use them as needed. In this case, Commerce headquarters will no longer be used to download the installers but will be used to download only the configuration files as needed.

Channel functionality, in an on-premises environment, is enabled exclusively via use of Commerce Scale Unit (self-hosted). For an overview, see [Commerce Scale Unit \(self-hosted\)](#).

Unlike a cloud deployment, an on-premises environment does not enable seamless, high-availability deployment of channel components via Lifecycle Services. The only way to use channel components is by installing Commerce Scale Unit (self-hosted).

Prerequisites

Before you can start installation of channel components, you must first complete all prior installation steps for an on-premises environment. These steps are listed in [Set up and deploy on-premises environments \(Platform update 41 and later\)](#). At least version 8.1.1 must be installed in order for Commerce to have full functionality. We recommend that you update to the latest application version that is available.

Note

It is critical to ensure that a secure network, that is not publicly accessible, is used to connect Commerce Scale Unit to Headquarters. You must also restrict network access to Headquarters, so access is only allowed to known Commerce Scale Unit

Develop and deploy custom models to on-premises environments

Article • 08/12/2022

This article describes how to develop customizations and extensions, and deploy them to an on-premises environment. On-premises environments are also referred to as local business data (LBD) environments. This article focuses on the ways that this process differs from the process in a run-time cloud environment.

The process has the following main steps:

1. Deploy your development and build environments.
2. Create a deployable package of your code and customizations.
3. Upload the deployable package to your project in Microsoft Dynamics Lifecycle Services (LCS).
4. Configure and deploy an on-premises runtime environment that includes your deployable package. This environment can be either a sandbox environment or a production environment.

The following sections provide more information about this process.

Development tools and platform

Whether you're developing, extending, or customizing cloud applications or on-premises applications, the development platform, tools, and environments (virtual machines [VMs]) are the same. Your custom code is developed on the same development VMs, regardless of whether your target runtime environments are in a cloud environment or an on-premises environment.

For detailed information about development, see the [Develop and customize home page](#). For information about extensibility and customization, see the [Extensibility home page](#). For information about building, testing, and continuous delivery, see the [Continuous delivery home page](#).

Deploy development and build environments

You can use an on-premises LCS project to deploy build and development environments on Microsoft Azure by using your own Azure subscription. Alternatively, you can download a virtual hard disk (VHD) for local development.

Add an SSIS node to an existing environment

Article • 02/07/2025

This article explains how to add a Microsoft SQL Server Integration Services (SSIS) node in an on-premises environment. SSIS nodes were introduced in version 10.0.32 (Platform update 56) and are used by the Data management framework.

Installation steps

1. Confirm that your environment is on version 10.0.32 (Platform update 56) or later.
 2. Download and extract the latest setup scripts from Microsoft Dynamics Lifecycle Services. For more information, see [Download the infrastructure scripts](#).
-  **Important**
- The scripts must be run from a computer that's in the same domain as the on-premises infrastructure.
3. Update the infrastructure scripts. For more information, see [Update the infrastructure scripts](#).
 4. In the *ConfigTemplate.xml* file, in the `ssisNodeType` section, modify the SSIS nodes. Confirm that the `disabled` parameter is set to *false*.

XML

```
<NodeType name="SSISNodeType" primary="false" namePrefix="SSIS"
purpose="SSIS" disabled="false">
    <!-- Do not place hassSSIS on this node type. -->
    <VMList>
        <VM name="ssis1" ipAddress="10.179.108.22"
faultDomain="fd:/fd0" updateDomain="ud0" />
        <VM name="ssis2" ipAddress="10.179.108.23"
faultDomain="fd:/fd1" updateDomain="ud1" />
    </VMList>
</NodeType>
```

5. Create the Data import/export framework (DIXF) group managed service account (gMSA). For more information, see [Step 8. Create gMSAs](#). Option 1 creates just the new DIXF gMSA.

Apply updates to on-premises deployments

Article • 01/03/2025

This article explains how to apply supported updates to Dynamics 365 Finance + Operations (on-premises). All updates to on-premises environments are done through Microsoft Dynamics Lifecycle Services.

Search for and download updates

For more information about how to find the updates that you can apply to your on-premises environment, see [Issue search in Lifecycle Services \(LCS\)](#). For information about how to download updates from the tiles in the **Updates** section of the **Environment details** page in Lifecycle Services, see [Download updates from Lifecycle Services \(LCS\)](#).

Update an on-premises deployment

You can apply updates to an on-premises environment either during deployment or after the deployment is completed.

While an on-premises environment is being deployed, you can select to deploy a custom package in the **Advanced** settings. For more information about how to apply customizations or application X++ updates, see [Develop and deploy custom models to on-premises environments](#).

Note

Merged packages, which include both platform and custom code, are restricted to use during quality updates only. They can't be utilized when updating to a newer service update. For instance, if you are updating from Dynamics 365 finance version 10.0.41 to 10.0.42, the service update must be applied before using a merged package.

To apply updates to an on-premises environment after it's deployed, follow these steps.

1. In Lifecycle Services, open the **Environment details** page for the environment.
2. Under **Maintain**, select **Apply updates**.

Certificate rotation

Article • 02/07/2025

You may need to rotate the certificates used by your Dynamics 365 Finance + Operations (on-premises) environment as they approach their expiration date. In this article, you learn how to replace the existing certificates and update the references within the environment to use the new certificates.

⚠ Warning

The certificate rotation process should be initiated well before the certificates expire. This is very important for the Data Encryption certificate, which could cause data loss for encrypted fields. For more information, see [After certificate rotation](#).

Old certificates must remain in place until the certificate rotation process is complete, removing them in advance causes the rotation process to fail.

The certificate rotation process should not be carried out on Service Fabric clusters running 7.0.x and 7.1.x.

Upgrade your Service Fabric cluster to 7.2.x or later before attempting certificate rotation.

Preparation steps

1. Update your infrastructure scripts by following the steps in [Update your Infrastructure Scripts](#).
2. In the **ConfigTemplate.xml** file, configure certificates as you require. Follow the steps in [Configure certificates](#). Specifically, follow these steps.

PowerShell

```
# Only run the first command if you have not generated the templates yet.  
.\\New-ADCSCertificates.ps1 -ConfigurationFilePath .\\ConfigTemplate.xml  
-CreateTemplates  
.\\New-ADCSCertificates.ps1 -ConfigurationFilePath .\\ConfigTemplate.xml
```

ⓘ Note

Client internet connectivity

Article • 01/19/2024

The configuration of the local network for a deployment of Dynamics 365 Finance + Operations (on-premises) can affect the features that are available in the web client. If the network configuration doesn't allow a client machine to access the internet, the following degradations in the web client occur:

- The Office app launcher and Dynamics 365 in the navigation bar isn't clickable.
- The Help pane isn't accessible.
- The Ideas portal isn't accessible from the web client.
- Users see their initials instead of a user image.
- The favorite icon shown in the browser tab is the browser's default favorite icon instead of the application icon.
- The Open in Excel options are hidden because the Excel Add-in won't run.

There also maybe application features that rely on an internet connection that developers need to hide or turn-off. Developers can use the `clientHasRestrictedInternet()` method that's added to the `Session` class. This method returns true if the client doesn't have access to the internet.

Client internet connectivity options

Client internet connectivity options allow administrators to manually turn-off the external connections that the client makes even when internet connectivity is available. This can be used for troubleshooting issues or to see what the client looks like when internet connectivity isn't available.

The client internet connectivity options can be found on the [System administration > Setup > Client performance options](#) page.

- **Internet connectivity enabled** - Allows an administrator to turn off external connections that the web client would make.
- **(Obsolete) Skype presence enabled** - Allows an administrator to turn off external connections to Skype that the web client would make.

Feedback

Was this page helpful?



Configure Batch-only and Interactive-only AOS nodes in on-premises deployments

Article • 02/07/2025

ⓘ Important

This feature is supported starting in application update 10.0.12, Platform update 36.

This article explains how to configure your environment so that you can deploy batch-only and interactive-only Application Object Server (AOS) nodes.

To make this feature available, Microsoft has introduced two new Microsoft Azure Service Fabric node types. For batch-only AOS nodes, the new node type is **BatchOnlyAOSNodeType**. For interactive-only AOS nodes, the new node type is **InteractiveOnlyAOSNodeType**.

ⓘ Note

The traditional deployment option, where an AOS node is interactive and is running batch jobs, is still supported and isn't affected by these changes.

Sizing

For sandbox environments, we recommend that you have at least two nodes of each type.

For production environments, there should be at least three nodes of each type.

New deployments

1. When you're describing your configuration as explained in [Set up and deploy on-premises environments](#), edit the `configtemplate.xml` file to enable the new node types. When you are done, the template should resemble the following example.

XML

Configure high availability for SQL Server Reporting Services (SSRS) nodes

Article • 06/19/2024

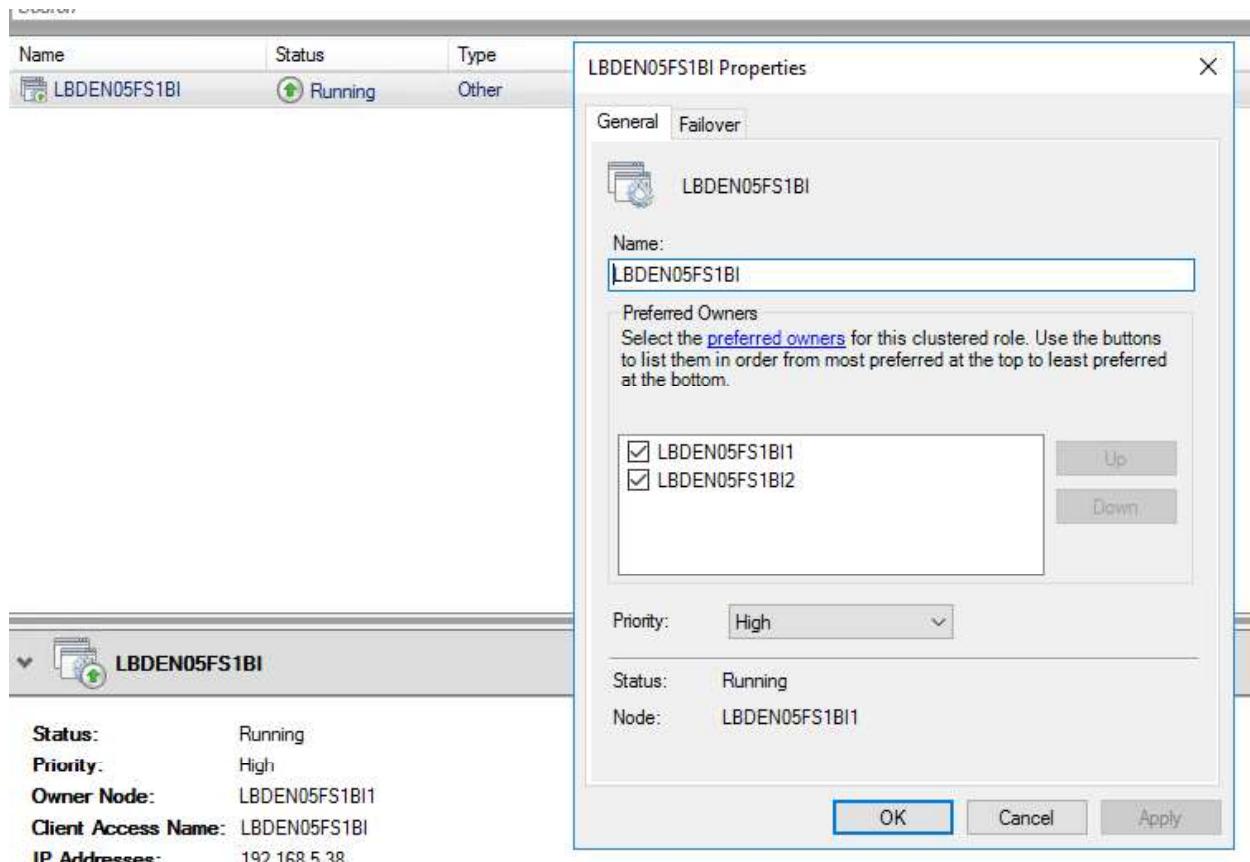
This article explains how to configure multiple Microsoft SQL Server Reporting Services (SSRS) nodes for Dynamics 365 Finance + Operations (on-premises) deployments.

High availability with Windows failover clusters

This scenario uses Windows failover clusters. Therefore, you will have one active node that receives all requests and one passive node that is idle. If the active node becomes unavailable, the cluster will detect this event, and the passive node will start to receive all network traffic.

This article doesn't cover the setup of Windows failover clusters. For information, see [Create a failover cluster](#).

After the cluster is set up, you can configure your installation. The examples below will be based on the information displayed in the following illustration.



1. Update your configuration file (**ConfigTemplate.xml**):

Configure proxies for on-premises environments

Article • 06/19/2024

Some organizations require that all server traffic goes through a proxy server for tracking or packet inspection. This section describes how we recommend configuring your environment in these cases.

Configure the proxy

Perform the following steps in **each** node of type **OrchestratorType** in the Microsoft Azure Service Fabric cluster.

1. Use remote access to connect to the Orchestrator virtual machine (VM).
2. Execute the following PowerShell script to retrieve the path of the `machine.config` file.

```
PowerShell  
[System.Runtime.InteropServices.RuntimeEnvironment]::SystemConfiguration  
nFile
```

3. Edit the `machine.config` file to add the following code example.

```
XML  
<system.net>  
  <defaultProxy>  
    <proxy usesystemdefault="true"  
proxyaddress="http://<PROXYADDRESS>:<PROXPORT>" bypassonlocal="true"  
/>  
  </defaultProxy>  
</system.net>
```

4. Save the file.
5. Restart the virtual machine.

The above procedure must be performed for all Orchestrator node VMs.

Configure your environment with a dedicated Data Management Framework service

Article • 01/30/2024

You can have dedicated nodes that contain Microsoft SQL Server Integration Services (SSIS), or you can install SSIS on other node types. If you want dedicated SSIS nodes, specify which machines host the node type by entering the details for the nodes in your ConfigTemplate.xml file.

If your use of the Data Management Framework (DMF) is low, you might not want to have dedicated nodes. Instead, you can specify which nodes SSIS is installed on. In the **ServiceFabricCluster** section of your ConfigTemplate.xml file, update the **hasSSIS** attribute to **true** for each virtual machine (VM). In this case, you should set the **disabled** attribute to **true** for the **SSISNodeType** node type in the ConfigTemplate.xml file.

ⓘ Note

If you disable the **SSISNodeType** node type but don't set the **hasSSIS** attribute on any node, the scripts and installation logic provision the DMF service to all nodes of the **BatchOnlyAOSNodeType** type. If that node type doesn't exist, the DMF service is provisioned to all nodes of the **AOSNodeType** type.

New environments (10.0.32 and later)

If you deploy an environment as of Application Version 10.0.32, it contains a dedicated service for DMF.

Existing environments (10.0.31 and earlier)

If you deployed your Dynamics 365 for Finance + Operations (on-premises) environment before Application Version 10.0.32, you can manually configure it to use a dedicated service for DMF.

ⓘ Important

Enable RSAT in Finance + Operations (on-premises) environments

Article • 06/19/2024

The Regression suite automation tool (RSAT) significantly reduces the time and cost of user acceptance testing (UAT) in Finance + Operations (on-premises). For more information, see [Regression suite automation tool \(RSAT\)](#).

Generate and deploy the certificate

Before you begin, make sure that you have at least version 2.15.0 of the infrastructure scripts.

1. Go to the file share location that contains your **Infrastructure** folder, and open the **ConfigTemplate.xml** file.
2. In the certificates section, find the certificate of the **RSAT** type, and set the **disabled** option to **false**.
3. Generate the RSAT certificate by running the following command.

PowerShell

```
.\New-SelfSignedCertificates.ps1 -ConfigurationFilePath  
.\ConfigTemplate.xml
```

ⓘ Note

The RSAT certificate must be self-signed, because Active Directory Certificate Services (AD CS) certificates and certificates from a certification authority (CA) can't be used.

4. Export the certificate.

PowerShell

```
.\Export-Certificates.ps1 -ConfigurationFilePath .\ConfigTemplate.xml
```

5. Export the scripts.

Install network printer devices in on-premises environments

Article • 07/28/2022

This article explains how to connect an on-premises deployment of Microsoft Dynamics 365 Finance + Operations (on-premises) to existing network printer devices. Network printing in the on-premises application is supported by the [Print and Document Services](#) feature in Microsoft Windows Server 2016. This feature lets you centralize tasks that are related to printer management. To install and configure Print and Document Services, you must have administrative access to the server that hosts the primary instance of Application Object Server (AOS).

Two roles are associated with the configuration of network printing services:

- **Service Administrator** – The person who has this role is responsible for installing and configuring components of the platform infrastructure. Traditionally, this role is an Active Directory account that has elevated domain privileges. It has enough privileges to install components of Microsoft Windows Server.
- **Organization Administrator** – The person who has this role manages application security privileges. This Active Directory account is assigned to the [System Administrator](#) role.

Before the organization administrator can begin to add network printers, the service administrator must install and configure Print and Document Services on the server that hosts the primary AOS instance. The organization administrator can then begin to use built-in tools to configure network printer devices.

Install and configure Print and Document Services

The environment administrator uses the information in this section to enable network printing services.

1. Install Print and Document Services by following the instructions in [Install Print and Document Services](#).
2. Configure Print and Document Services by following the instructions in [Configure Print and Document Services](#).
3. Follow these steps for each server that is used to host the AXService application:
 - a. On the local server, start the [Local Users and Groups](#) manager.
 - b. Select the [Groups](#) node.

On-premises diagnostics

Article • 06/19/2024

The Microsoft Dynamics 365 team monitors the health and performance of the Azure Services that provide functionality for our cloud-based customers by using state-of-the-art Azure diagnostic tools. For customers who have implemented Finance + Operations (on-premises) and would like to have the ability to monitor the health and performance of their on-premises solution, there are several third-party offerings available.

This article describes the setup and configuration of Elastic Stack, a third-party product, and one of many choices that can provide diagnostic monitoring of your on-premises solution.

When you consider a diagnostic solution, consider the following fundamentals of your implementation:

- Your diagnostic system should be able to collect and store 30 days' worth of diagnostic information.
- Your diagnostic repository should be set up in a central location that is sharable among many client computers.
- Create structured diagnostics events, including event type, classification, and data.
- Events stored in raw text (deserialized) can be easily queried and searched.
- Avoid storing sensitive or personal data in events.

Note

By default, communication in an Elastic Stack cluster is not sent over HTTPS. Don't set up the Elastic Stack unless you've considered the risks, and prepared or implemented mitigations for those risks. The paid version of X-Pack can be used to encrypt communication in the Elastic Stack. For setup information, see [Setting up TLS on a cluster](#). There is also an open source Elasticsearch plug-in. Although Microsoft hasn't tested this plug-in, according to the documentation, it can enable HTTPS. Microsoft recommends that you always utilize encrypted communication using HTTPS, VPN, or another secure, encrypted protocol. Many industry certifications and laws require the use of encrypted transmission if your content includes end user, customer, personal, or sensitive data.

Diagnostic data guidelines

On-premises disaster recovery configuration

Article • 06/19/2024

Disaster recovery is an important consideration for on-premises deployments of Dynamics 365 Finance + Operations (on-premises) to protect from events that could put your organization's operations at risk. Examples of such events include equipment failures, datacenter break downs due to cyberattacks, electrical, physical, or other disasters.

The core concept of disaster recovery involves the use of a second datacenter including a data recover environment. We recommend that you plan, document, and test disaster recovery as carefully as your production setup.

Limitations of this content

This article does not cover specific configuration details for disaster recovery of the following components:

- Active Directory Federation Services (AD FS)
- File storage
- SQL Server

Note

High availability configuration isn't covered in this article. For more information about the minimum setup required for high availability, see [System requirements for on-premises deployments](#).

Recommendations

Remember to keep your disaster recovery environment updated with the latest Windows Updates. Your environment should have the latest security updates and not require updates during a disaster event.

Ensure that you're applying new prerequisites that are specified by Microsoft. Also, keep your Service Fabric cluster updated and perform certificate rotations as required.

After you've read through this article, document the steps that need to be taken by your team. After you've done that, go through the steps multiple times to ensure that you

PowerBI.com integration with on-premises environments

Article • 02/02/2023

The cloud version provides several features that allow for deeper integration with Microsoft Power BI. Some of these features haven't yet been implemented for on-premises deployments. However, the availability of Entity Store in on-premises deployments lets customers use PowerBI.com to report on and analyze data.

This article outlines the analytical capabilities that are available in on-premises deployments that run Microsoft Dynamics 365 Finance platform update 26 (May 2019) and later.

[] [Expand table](#)

| Feature/capability | Cloud | On-premises (Platform update 26 or later) |
|--|-----------|---|
| Analytical workspaces | Available | Not yet implemented Customers can use the reports that are built on Entity Store together with PowerBI.com. |
| Pin reports, tiles, and dashboards from PowerBI.com into the client. | Available | Not yet implemented |
| Author and distribute Power BI reports that use application data. | Available | Available Customers can modify ready-made reports and create new reports by using Entity Store on-premises. |
| Extract application data into data warehouses. | Available | Available |

Enable Entity Store on-premises

This article supplements the [Set up and deploy on-premises environments \(Platform update 12 and later\)](#) article. The section numbers that follow correspond to the section numbers in that article.

3. Plan your users and service accounts

Reconfigure environments to take a new platform or topology

Article • 06/03/2022

This article provides information about how to reconfigure your environment with a new platform or topology and how to update the configuration of your existing environment.

Prerequisites

Before you complete the steps in this article, you must update your local agent. For more information, see the article, [Update the local agent](#). The procedure in this article will only work with local agents that are on or above version 1.1.0.

Reconfigure your environment

1. In Lifecycle Services (LCS), navigate to your on-premises project and open the **Environments** blade.
2. Do one of the following based on whether you are going to reconfigure or take a new deployment.
 - If you need to reconfigure your environment, click **Reconfigure**.
 - If you need to take a new deployment or topology, select the new topology for your platform and enter the environment name. You can use the same name or enter a new one.
3. Click **Advanced Settings** to update your configuration. The configuration from your previous deployment will be saved.

Feedback

Was this page helpful?



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Redeploy on-premises environments

Article • 06/19/2024

At some point, you might have to redeploy your on-premises environment. This could be to apply a new platform update or because of changes or issues in your implementation. Before you delete the environment you are currently working with, you should save your configuration setting information to use when you redeploy. This article describes how to save configuration settings and how to redeploy your environment.

Save your configuration

Before you delete the environment you plan to update, use the following steps to save your configuration.

1. In LCS, navigate to **Project Settings > On-prem Connectors**.
2. Select the connector to your environment, and then click **Edit**.
3. On the **Edit connector** tab, navigate to **Configure Agent > Enter Configuration**.
4. Copy the value of the Download Fileshare location in the **Configuration Settings** section. You will need this later.
5. Log in to the on-premises environment file share machine and copy the `\agent\wp<environment name>\StandaloneSetup\config.json`. You can use the configuration settings in this json file to redeploy your environment.

Configuration settings

The following tables provide information about configuration settings. Use the **Configuration setting** value from the .json file that you saved in the previous procedure.

Active Directory Federation Services settings

[] Expand table

| Field | Configuration setting |
|--|--|
| The email address of the user who will be the initial administrator (such as, <code>adminuser@yourdomain.com</code>) | <code>components.(AOS).parameters.provisioning.adminPrincipleName.value</code> |
| ADFS OpenID metadata endpoint for the Dynamics 365 Application group. (such as, <code>https://[federation-service-name]/adfs/.well-known/openid-configuration</code>) | <code>components.(AOS).parameters.activeDirectory.adfsMetadata.value</code> |
| ADFS OpenID Connect client ID | <code>components.(AOS).parameters.activeDirectory.adfsClientId.value</code> |

Add or remove a node from an existing environment

Article • 02/07/2025

This article explains how to add or remove a node in your existing Microsoft Dynamics 365 Finance + Operations (on-premises) environment. It describes the generic procedures that can be used for any node type. Specific node types might require further steps. In this case, refer to the documentation for the node type or the service.

Add a node

To add one or more nodes to your existing environment, follow these steps.

1. Ensure that you download the latest infrastructure scripts. Learn more in [Update the infrastructure scripts](#). To complete this procedure, you must have version 2.23.1 or later of the scripts.
2. Update the ConfigTemplate.xml file with the new node information.
3. Run the following command to ensure that your cluster has all the node types defined in the ConfigTemplate.xml file.

PowerShell

```
.\Update-SFClusterConfig.ps1 -ConfigurationFilePath .\ConfigTemplate.xml -  
AddNodeTypes
```

4. If the previous command generates a configuration file and doesn't state that all node types already exist in the cluster, you must update the Azure Service Fabric cluster with the new configuration file. Learn more in [Update the Service Fabric cluster configuration](#).
5. Run the following commands to generate the prerequisites for the new node.

PowerShell

```
.\Export-Certificates.ps1 -ConfigurationFilePath .\ConfigTemplate.xml  
.\Export-Scripts.ps1 -ConfigurationFilePath .\ConfigTemplate.xml -  
D365FOVersion <version of fno currently installed>
```

6. Run the following command to update the group managed service account (gMSA) account so that the new node can use it.

PowerShell

Reuse the same AD FS instance for multiple environments

Article • 06/19/2024

This article explains how to use the same instance of Active Directory Federation Services (AD FS) in multiple Microsoft Dynamics 365 Finance + Operations (on-premises) environments.

Setup

ⓘ Important

This procedure assumes that you've previously configured AD FS for one environment by following the instructions in the [Set up and deploy on-premises environments](#) content. It also assumes that that environment is running without any issues.

1. In AD FS Manager, go to **AD FS > Application groups**, and open **Microsoft Dynamics 365 for Operations On-premises**.
2. In the **Native application** section, follow these steps:
 - a. Open **Microsoft Dynamics 365 for Operations On-premises - Native application**, and add the redirect URI of the new environment (<https://ax.contoso.com/namespaces/AXSF>).
 - b. Open **Microsoft Dynamics 365 for Operations On-premises - Financial Reporting - Native application**, and add the redirect URI of the new environment (<https://ax.contoso.com/FinancialReporting/ApplicationService/soap/>).
3. In the **Web API** section, follow these steps:
 - a. Open **Microsoft Dynamics 365 for Operations On-premises - Web API**, and add two entries for the redirect URI of the new environment (<https://ax.contoso.com/namespaces/AXSF> and <https://ax.contoso.com>).
 - b. Open **Microsoft Dynamics 365 for Operations On-premises - Financial Reporting Web API**, and add the redirect URI of the new environment (<https://ax.contoso.com/FinancialReporting>).
4. Optional: In the **Server** section, open **Microsoft Dynamics 365 for Operations On-premises - Retail**, and add the redirect URI of the new environment

Upgrade Windows Server in Microsoft Dynamics 365 Finance + Operations (on-premises) environments

Article • 02/03/2025

This article explains how to upgrade Windows Server in your Microsoft Dynamics 365 Finance + Operations (on-premises) environments.

Prerequisites for upgrading Windows Server

Upgrade from Windows Server 2019 to Windows Server 2022

- The Dynamics 365 Finance + Operations (on-premises) environment must be on application version 10.0.38 or later.

Upgrade from Windows Server 2016 to Windows Server 2019

- The Dynamics 365 Finance + Operations (on-premises) environment must be on application version 10.0.17 or later.
- The local agent must be on version 3.0.0 or later.

Upgrade Active Directory Federation Services

Upgrade paths

Upgrade a single AD FS instance

1. Schedule enough downtime to complete this operation, because users won't be able to sign in to Finance + Operations (on-premises) while it's occurring.
2. On your Active Directory Federation Services (AD FS) server, run the following command.

PowerShell

Upgrade or replace the SQL Server instance of Microsoft Dynamics 365 Finance + Operations (on-premises) environments

Article • 10/25/2022

This article explains how to upgrade the Microsoft SQL Server instance or cluster that your environment is using. You must complete this process if you want to upgrade from one major version of SQL Server to another but don't want to do an [in-place upgrade](#). If you choose to do an in-place upgrade, you can still follow the guidance in this article although some of the steps won't apply.

Prerequisites for upgrading the SQL Server version

Upgrade from SQL Server 2016 to SQL Server 2019

- The environment must be on application version 10.0.21 or later.
- The local agent must be on version 2.7.0 or later.

Preparation

1. Deploy your new SQL Server instance on a virtual machine (VM), or create a new SQL cluster.
2. Configure the new instance or cluster as described in [Set up SQL Server](#).
3. If you're using self-signed certificates, make sure that they have been imported into the Application Object Server (AOS), Management Reporter (MR), and Orchestrator nodes in your Azure Service Fabric cluster.

Database operations

1. Make sure that users aren't connected, because your downtime will begin.
2. Back up all your databases from your current SQL Server instance or cluster.
3. Restore the database backups into the new SQL Server instance or cluster.
4. After your databases are restored, run the scripts in [Configure the databases](#).

Obtain the infrastructure scripts for your Finance + Operations (on-premises) deployment

Article • 06/19/2024

This article explains how to download or update the infrastructure scripts for your deployment of Microsoft Dynamics 365 Finance + Operations (on-premises) from one version to another.

Download the infrastructure scripts

To download the infrastructure scripts, follow these steps.

1. Sign in to [Microsoft Dynamics Lifecycle Services](#).
2. On the dashboard, select the **Shared asset library** tile.
3. Select **Model** as the asset type.
4. Find assets that are labeled **Microsoft Dynamics 365 Finance + Operations (on-premises), Deployment scripts version X.X.X**.
5. Download the latest version that's available.
6. After the zip file has been downloaded, select and hold (or right-click) it, and then select **Properties**. In the **Properties** dialog box, select the **Unblock** checkbox.
7. Create a file share, and copy the zip file into it.
8. Unzip the files into a folder that's named **Infrastructure**.

Important

It's important that you put the **Infrastructure** folder in a file share (for example, `\LBDEN01FS01\Install`). In this way, the scripts can be run on any machine without requiring that the folder be copied to each machine. Make sure that all edits are made to the `ConfigTemplate.xml` file in this folder.

Update the infrastructure scripts

1. Rename the original **Infrastructure** folder that you created as part of the download process **InfrastructureOld**.
2. Download the latest setup scripts by following the instructions in the previous section. Unzip the files into a file share that can be accessed by all machines in the

Configure the infrastructure scripts for your Finance + Operations (on-premises) deployment

Article • 09/10/2024

This article explains how to configure the infrastructure scripts that are provided to deploy Microsoft Dynamics 365 Finance + Operations (on-premises). It describes what information is present in the different configuration files and what information must be supplied. A practical example is provided, in which Contoso Corporation must fill in the information for its production environment.

Configuration files available in the infrastructure scripts

The infrastructure scripts use the following configuration files to drive the setup. The subsections that follow describe the contents of each file.

- infrastructure\ConfigTemplate.xml
- infrastructure\D365FO-OP\NodeTopologyDefinition.xml
- infrastructure\D365FO-OP\DatabaseTopologyDefinition.xml
- infrastructure\D365FO-OP\FileShareTopologyDefinition.xml

ConfigTemplate.xml

The ConfigTemplate.xml configuration file describes the following details. You must fill in this file to use the infrastructure scripts. For more information, see the [Filling in the ConfigTemplate.xml file](#) section of this article.

- The service accounts that are required for the application to work
- The certificates that are required to help secure communications
- The database configuration
- The Azure Service Fabric cluster configuration
- The file shares that are required for the application to work
- The SQL Server cluster information

 **Important**

AD FS Microsoft 365 compatibility

Article • 06/19/2024

ⓘ Important

This feature is only fully supported starting with application update 10.0.8, Platform update 32, and LocalAgent 2.2.0. For details, see [Partial support](#).

This article explains how to use the same instance of Active Directory Federation Services (AD FS) for a Dynamics 365 Finance + Operations (on-premises) environment and for Microsoft 365.

Existing deployments

1. Download the new local agent version from Microsoft Dynamics Lifecycle Services (LCS). It should be version 2.2.0 or later.
2. Update your agent configuration in LCS by setting the deployment option to **Enable AD FS Microsoft 365 Compatibility**.
3. Download the new version of the local agent configuration file.
4. Run the following command to uninstall the old local agent version from your cluster.

PowerShell

```
.\LocalAgentCLI.exe Cleanup '<path of localagent-config.json>'
```

5. Run the following command to install the new local agent version.

PowerShell

```
.\LocalAgentCLI.exe Install '<path of localagent-config.json>'
```

6. Perform any servicing operation with Platform update 28 or later to make the new configuration available.
7. After servicing is completed, run the following script.

PowerShell

Local agent pre-deployment and post-deployment scripts

Article • 06/19/2024

Local agent 2.3.0 supports the execution of pre-deployment and post-deployment scripts. Therefore, customers can now set up Microsoft Windows PowerShell scripts that are run before and after the environment is deployed. This feature applies to deployments and redeployments, and also to servicing operations.

To make this feature available, you must create a Scripts folder in the agent file share. To run a pre-deployment script, create a **PreDeployment.ps1** file in the Scripts folder. To run a post-deployment script, create a **PostDeployment.ps1** file. The following examples show the folder structure:

- \\fileserver\agent\scripts\PreDeployment.ps1
- \\fileserver\agent\scripts\PostDeployment.ps1

If these files don't exist, the deployment continues as usual. The following examples show the new deployment flow.

Deployment or redeployment:

1. Get unhealthy modules. In this step, the health of existing services is obtained to find which are unhealthy. This step applies only to redeployment scenarios.
2. Clean up modules. In this step, the services are removed and the contents of the **wp** folder are deleted. This step applies only to redeployment scenarios.
3. Link download artifacts. In this step, download, extraction, and processing of artifacts from Microsoft Dynamics Lifecycle Services (LCS) takes place.
4. Pre-deployment script. In this step the **PreDeployment.ps1** script is executed (if it exists).
5. Set up modules. In this step, the new services are deployed.
6. Post-Deployment script. In this step the **PostDeployment.ps1** script is executed (if it exists).

Servicing:

1. Prepare for servicing. In this step, the package is prepared in LCS and gets downloaded to the environment.
2. Clean up modules. In this step, the services are removed and the contents of the **wp** folder are deleted.

Deployment configurations for the local agent

Article • 06/19/2024

This article explains which deployment configurations can be specified, when deploying the local agent, to indicate a special configuration related to the environment.

There is a section in the localagent-config.json file that is labeled deploymentOptions. This can be modified before installing the local agent.

```
JSON

...
"deploymentOptions": {
    "office365AdfsCompatibility": {
        "value": "false"
    },
    "sqlServerVersion": {
        "value": "2016"
    },
    "isMultiSubnetFailoverEnabled": {
        "value": "false"
    },
    "skipCRLCheck": {
        "value": "false"
    },
    "rsatEnabled": {
        "value": "false"
    },
    "rsatCertificateThumbprint": {
        "value": ""
    }
},
...
```

Specify the version of Microsoft SQL Server

If your environment has Microsoft SQL Server 2019 installed throughout the different components, change **sqlServerVersion** from the default of 2016, to 2019.

For a list of compatible SQL Server versions, see [Microsoft Dynamics 365 Finance + Operations \(on-premises\) supported software](#).

Update the local agent

Article • 02/04/2025

This article explains how to update the local agent. The latest version of the local agent is version 3.3.0, which was released in January 2024.

ⓘ Important

Do not update the local agent during a servicing operation, even if the preparation phase has been completed.

[+] Expand table

| Local agent version | Capability | Release Date | Expiration date |
|---------------------|--|---------------|-----------------|
| 3.4.0 | This version upgrades the Microsoft Azure Service Fabric SDK and the Azure Storage libraries. | February 2025 | Not applicable |
| 3.3.0 | This version adds node tag management capabilities to the local agent. | January 2024 | Not applicable |
| 3.2.3 | This version fixes a few bugs and removes the need for manually updating the config.json after a certificate rotation. | August 2023 | Not applicable |
| 3.2.2 | This version fixes a bug with the local agent not able to clean up the workspace directory due to the directory containing files with long paths. | June 2023 | Not applicable |
| 3.2.1 | This version fixes some bugs with the local agent not being able to download artifacts correctly from Azure Storage. Upgrades the Azure Storage libraries. | June 2023 | Not applicable |
| 3.2.0 | This version upgrades the Service Fabric SDK, upgrades the Azure Storage libraries, introduces file hash validation | March 2023 | Not applicable |
| 3.1.0 | This version upgrades the Service Fabric SDK and adds a new deployment option. | June 2022 | Not applicable |
| 3.0.0 | This version includes support for Edge Scale Unit Application Lifecycle Management. | November 2021 | June 30, 2023 |
| 2.7.2 | This version includes a fix for deploying older application versions. | October 2021 | June 30, 2023 |

Configure the Warehousing app for on-premises deployments

Article • 06/19/2024

This article describes how to configure Dynamics 365 Finance – Warehousing app for on-premises deployments.

Prerequisites

The Warehouse Management mobile app is available for Microsoft Windows, Google Android, and Apple iOS operating systems. Before you can use the app, one of the following operating systems must be installed on your mobile devices.

[] [Expand table](#)

| Platform | Version |
|---------------|--|
| Android | 4.4 or later |
| Windows (UWP) | Windows 10 (Universal Windows Platform [UWP]) October 2018 update 1809 (build 10.0.17763) or later |
| iOS | 13.0 or later |

To be able to reach your on-premises resources by using the app, you must create Domain Name System (DNS) records for your Application Object Server (AOS) and for Active Directory Federation Services (AD FS). For guidance, see [Create DNS zones, and add a record](#).

Certificates

Make sure that the devices where the app is installed have the correct certificates to access the resources. If you're using self-signed certificates, you must install them on each device by importing the Dynamics 365 Finance + Operations (on-premises) certificate and the AD FS certificate into the trusted root of the computer account/user account. For more information, see [Create and export a self-signed certificate](#).

ⓘ **Important**

User-based authentication for the Warehouse Management mobile app in on-premises deployments

Article • 02/06/2024

The Warehouse Management mobile app supports the following types of user-based authentication:

- Device code flow authentication
- User name and password authentication

Device code flow authentication

When you use device code flow authentication, the Warehouse Management mobile app generates and shows a unique device code. The user who is setting up the device must enter this device code. They must also enter credentials (a user name and password) for a Microsoft Active Directory user account that represents either the device itself or the user who is signing in, depending on how the admin implemented the system. In addition to the unique device code, the mobile app shows the URL where the user must enter the code and the credentials for the Active Directory user account.

Device code flow authentication simplifies the authentication process, because users don't have to manage certificates or client secrets. However, it introduces a few extra requirements and restrictions:

- You should create a unique Active Directory user account for each device or user. In addition, *these accounts should be strictly limited so that they can perform only warehouse mobile device user activities.*
- The way that you configure your Active Directory Federation Services (AD FS) server determines how long your device is authenticated.
- The device code flow isn't fully supported by mobile mass deployment (MDM) systems such as Intune.

Important

All active directory accounts that are used to sign in via the device code flow must be granted only the minimum set of permissions that they require to perform their

User-based authentication FAQ

Article • 08/15/2024

This article provides answers to many of the most frequently asked questions about user-based authentication (such as device code flow) for the Warehouse Management mobile app.

When do I have to switch to user-based authentication?

Support for service-based authentication (client secret and certificate) will be removed from the Warehouse Management mobile app on July 15, 2024. After that date, you'll have to use user-based authentication (such as device code flow) to connect the Warehouse Management mobile app to Microsoft Dynamics 365 Supply Chain Management. Learn more in [Removed or deprecated features in Dynamics 365 Supply Chain Management](#).

Where can I learn more about user-based authentication?

More information about user-based authentication and the deprecation of service-based authentication methods is available in the following articles:

- [User-based authentication for the Warehouse Management mobile app](#)
- [Mass deploy the mobile app with user-based authentication](#)
- [Install the Warehouse Management mobile app](#)
- [Removed or deprecated features in Dynamics 365 Supply Chain Management](#)

Why is Microsoft deprecating service-based authentication for the Warehouse Management mobile app?

User-based authentication offers the following advantages over service-based authentication for the Warehouse Management mobile app:

- User-based authentication is easier to configure and use.

Service-based authentication for the Warehouse Management mobile app in on-premises deployments

Article • 02/06/2024

Important

The authentication methods that are described in this topic are now deprecated. We strongly recommend that you authenticate with [device code flow](#) instead. For more information about this deprecation, including the deprecation schedule, see [Removed or deprecated features in Dynamics 365 Supply Chain Management](#).

Authentication with Microsoft Active Directory Federation Services (AD FS) provides a secure way of authenticating a mobile device with Dynamics 365 Finance + Operations (on-premises) environments. The Warehouse Management mobile app supports the following types of service-based authentication:

- Certificates
- Client secret

If you'll import connection settings, we recommend that you use a certificate instead of a client secret. Because the client secret must always be stored securely, you can't import it from a connection settings file or a QR code.

Each device should have its own unique certificate or client secret.

Certificates can be used as secrets to prove the application's identity when a token is requested. The public part of the certificate is uploaded to the app registration in the AD FS application, whereas the full certificate must be deployed on each device where the Warehouse Management mobile app is installed. Your organization is responsible for managing the certificate in terms of rotation and so on. You can use self-signed certificates, but you should always use nonexportable certificates.

You must make a certificate locally available on each device where you run the Warehouse Management mobile app. For information about how to manage certificates for Intune-controlled devices (if you're using Intune), see [Mass deploy the mobile app for service-based authentication](#).

Create an application entry in AD FS

Troubleshoot on-premises deployments

Article • 02/03/2025

This article provides troubleshooting information for deployments of Microsoft Dynamics 365 Finance + Operations (on-premises).

Access Service Fabric Explorer

You can access Service Fabric Explorer in a web browser by using the default address, <https://sf.d365ffo.onprem.contoso.com:19080>.

To verify the address, note the value that was used in the "Create DNS zones and add A records" section of the appropriate setup and deployment article for your environment:

- [Application 10.0.32 and later](#)
- [Platform update 41 through 55](#)

You can access the site only if the client certificate is in cert:\CurrentUser\My on the machine that you're accessing the site on. (In Certificate Manager, go to Certificates - Current User > Personal > Certificates.) When you access the site, select the client certificate when you're prompted.

Monitor the deployment

Identify the primary orchestrator

To determine the machine that is the primary instance for stateful services such as a local agent, in Service Fabric Explorer, expand Cluster > Applications > <*intended application example*> LocalAgentType > fabric:/LocalAgent/OrchestrationService > (GUID).

The primary node is shown. For stateless services or the remaining applications, you must check all the nodes.

Note the following points:

- OrchestrationService orchestrates the deployment and servicing actions for Finance + Operations.
- ArtifactsManager downloads files from Microsoft Azure cloud storage to the local agent file share. It also unzips the files into the required format.

Review the orchestrator event logs

From the primary OrchestrationService orchestrator machine, in Event Viewer, go to Applications and Services Logs > Microsoft > Dynamics > AX-LocalAgent.

 Note

To view the full error message, you must select the **Details** tab.

The following modules must be installed:

- Common
- ReportingServices
- AOS
- FinancialReporting

The following commands must be run:

- Setup
- Dvt – This command runs a deployment verification test.
- Cleanup – This command is used to service and delete an environment.

The following folders contain more information:

- AX-SetupModuleEvents

Microsoft Dynamics 365 Finance + Operations (on-premises) automated diagnostics collection

Article • 10/03/2023

This article explains how to quickly collect information that's required to troubleshoot issues in your environment. Diagnostics collection uses a new set of PowerShell scripts that are available as of version 2.19.0 of the infrastructure scripts. For more information about how to update your scripts, see [Update the infrastructure scripts](#).

The new scripts don't replace other scripts, such as `Test-ADFSConfiguration.ps1` or `Test-D365FOConfiguration.ps1`. Instead, they're intended to complement those scripts. Eventually, those other scripts will be updated so that they generate output in a similar format to the new scripts.

The new scripts only collect information that's required to troubleshoot issues in your environment. They don't perform any troubleshooting or remediation steps.

ⓘ Important

The scripts collect information from your environment and conveniently package it for analysis by Microsoft. However, the scripts don't send any information to Microsoft. You must manually provide the information to Microsoft by using a support ticket.

Collect node-specific diagnostics

To collect information from a specific node, you can use the following command.

PowerShell

```
.\\Get-NodeSpecificDiagnostics.ps1
```

ⓘ Note

Scripts for resolving issues in on-premises environments

Article • 12/02/2024

This article serves as a central repository for scripts that you can use to fix issues in on-premises environments. These scripts must usually be run as predeployment or post-deployment scripts.

For more information about how to resolve issues in on-premises environments, see [Troubleshoot on-premises deployments](#).

Prepare your environment for script execution

1. Configure the execution of predeployment and post-deployment scripts. For more information, see [Local agent predeployment and post-deployment scripts](#).
2. Add the following code to your Predeployment.ps1 script.

PowerShell

```
# This has to be filled out
# $agentShare = '<Agent-share path>' # E.g. '\\LBDContosoShare\agent'

$agentShare = '\\servername\D365FF0Agent'
Write-Output "AgentShare is set to $agentShare"

# The scripts make the assumption that the wp folder only contains one
# folder for the environment name.
# If you have multiple folders in there from older deployments, then
# please remove those.
# It is not recommended to use the same agent share for multiple
# environments.

#& $agentShare\scripts\TSG_UpdateFRDeployerConfig.ps1 -agentShare
$agentShare

#& $agentShare\scripts\TSG_WindowsAzureStorage.ps1 -agentShare
$agentShare

#& $agentShare\scripts\TSG_SysClassRunner.ps1 -agentShare $agentShare

#& $agentShare\scripts\TSG_RemoveFilesFromZip.ps1 -agentShare
$agentShare -filesToRemove
'Packages\TaxEngine\bin\Microsoft.Dynamics365.ElectronicReportingMapping.dll', 'Packages\TaxEngine\bin\Microsoft.Dynamics365.ElectronicReportingMapping.pdb', 'Packages\TaxEngine\bin\Microsoft.Dynamics365.ElectronicReportingServiceContracts.dll', 'Packages\TaxEngine\bin\Microsoft.Dynamic
```

Create deployable packages of models

Article • 08/12/2022

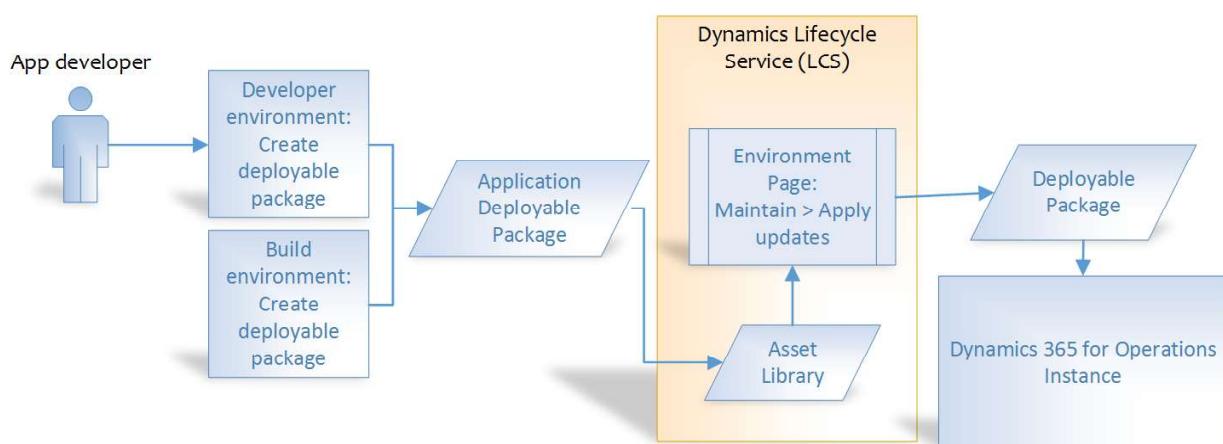
An AOT package is a deployment and compilation unit of one or more models that can be applied to an environment. It includes model metadata, binaries, reports and other associated resources. One or more AOT packages can be packaged into a deployable package, which is the vehicle used for deployment of code (and customizations) on demo, sandbox, and production environments. This article guides you through the process of creating and applying a deployable package.

Overview of the process

In order to deploy your code and customizations to a runtime environment (demo, sandbox, or production), you must create deployable packages of your solution or implementation. Deployable packages can be created by using **Visual Studio dev tools** or by using the **build automation process** that is available on build environments. These deployable packages are referred to as Application Deployable Packages or AOT Deployable Packages. The following image shows an overview of the process. After a deployable package is created, it must be uploaded to the Lifecycle Services (LCS) project's asset library. An administrator can then go to the LCS environment page and apply the package to a runtime environment using the **Maintain > Apply updates** tool.

ⓘ Note

Custom payment connector for Commerce needs to be packaged using a combined AOT deployable package. For more information, see [Create payment packaging for Application Explorer in Service Fabric deployments](#).



ⓘ Note

Schema changes for shorter downtime during custom package deployments

Article • 11/15/2023

This article describes best practices and guidelines that can help you achieve near-zero downtime while you apply table schema changes when you plan custom package deployments.

Deployment phases

During any custom package deployment, environments go through the following phases:

1. **Pre-servicing** – The system is accessible to the users, and the environment can be used. Many online table schema changes can be made.
2. **Servicing** – The downtime starts, and all the online unsupported schema changes are made.
3. **Post-servicing** – Index-related schema changes are applied with online options. The customer can start to use their environment.

Online supported changes

SQL provides online schema change that can be done without exclusive locks on the table. Finance and operations app deployments are modified so that they use these online options to make most of the schema changes without causing downtime for the users.

The following table lists the changes that are supported online and the related phase.

[] Expand table

| Supported changes | Phase |
|--|---------------|
| All new field additions to the table. | Pre-servicing |
| All field changes that involve increases in the string size. Decreases in the string size are ignored, because they can cause data truncation. | Pre-servicing |
| All string to memo field changes that don't require dependent index drops. | Pre-servicing |

Install deployable packages from the command line

Article • 08/12/2022

This article walks you through the steps for using the command line to apply either a binary update or an application (AOT) deployable package that was created in your development or build environment.

Important

For most types of environments, you can apply a deployable package to an environment directly from Microsoft Dynamics Lifecycle Services (LCS). For more information, see [Apply updates to cloud environments](#). Therefore, this article applies primarily to environment types that don't support the application of updates via LCS. Examples include local development environments (downloadable virtual hard disks [VHDs]), multi-box development/test environments in Microsoft Azure (LCS Partner and trial projects), and build environments. However, you can also use this article any time that you want to install deployable packages by using the command line instead of LCS.

Key concepts

- **Deployable package** – A deployable package is a unit of deployment that can be applied to any environment. It can consist of a binary hotfix to the runtime components of Application Object Server (AOS), an updated application package, or a new application package.
- **AXUpdateInstaller** – AXUpdateInstaller is an executable program that is bundled in the deployable package. When the package is downloaded to a computer, the installer is available.
- **Runbook** – The deployment runbook is a series of steps that is generated and used to apply the deployable package to the target environment. Some of the steps are automated, and some are manual. AXUpdateInstaller enables these steps to be run one at a time and in the correct order.

Install an application (AOT) deployable package on a development environment

Uninstall a package

Article • 06/03/2022

Occasionally, you might have to uninstall a deployable package. For example, you might be reorganizing your source code. Alternatively, you no longer require an independent software vendor (ISV) product and haven't renewed the license. Therefore, you must remove the package.

Remove a model

A model is a design-time concept that is part of a package. When a model isn't the only model in a module, you can just remove it from the source code. No other steps are required, because when you deploy the updated module, the old module is overwritten. All overlayer models fall into this category. For more information, see [Deleting a model](#).

Prerequisites

- If any models reference the module that will be removed, the references must be removed from them. For information about how to find the references that must be removed, see [Viewing model dependencies](#).
- Build and deploy any modules that references were removed from.
- All references to and from the modules must be removed before you begin to uninstall the module. To remove all a module's references, add a single class to the model. This class should contain no code. It should contain only a reference to the application platform.
- A Microsoft module cannot be removed. If this is attempted, a validation error will be shown on the package in Lifecycle Services.
- A module cannot be removed if it is part of the AOT deployable package being installed. If you want to remove a module, be sure that it is not part of the package before adding the name to the ModuleToRemove.txt file.

Uninstall a package

1. Create a file that is named **ModuleToRemove.txt**.
2. In the file, put the name of each module that you want to remove on a separate line. Make sure that you've completed the prerequisites for each module that you're removing.
3. Create a valid deployable package, and put the **ModuleToRemove.txt** file in the **package\AOSService\Scripts** folder.

Run custom X++ scripts with zero downtime

Article • 01/30/2025

This feature lets you upload and run deployable packages that contain custom X++ scripts without having to go through Microsoft Dynamics Lifecycle Services (LCS) or suspend your system. Therefore, you can correct minor data inconsistencies without causing any disruptive downtime.

The benefit of using an X++ script to correct minor data inconsistencies is that the system will automatically adjust all related tables as required when it runs the script. This approach helps ensure the integrity of the correction and helps minimize the risk of introducing new inconsistencies.

Important

This feature is intended for correction of minor data inconsistencies only. It must not be used for the following purposes or any other purpose:

- Data collection
- Schema changes
- Data migration or other long-running processes
- Correction of data that can be corrected through other means, such as regular business processes, data consistency tools, or other self-service tools

The feature lets authorized users change entities and their records directly, without having to run the business logic that is associated with those entities. These changes can cause data integrity issues. Therefore, your organization might require that you obtain approval and sign-off from internal and external auditors (or other equivalent stakeholders) before and/or after you run a script. For compliance reasons, changes that affect some characteristics might also have to be disclosed in external reports (such as financial statements) or reported to government authorities. Your organization is solely responsible for any changes that are made to its data via this feature, any approval and sign-off or disclosure of those changes, and compliance with applicable laws. You bear all the risks of using this feature.

All deployable packages that are uploaded into the system go through a mandatory workflow. As a safety precaution, and to help ensure segregation of duties, the user who

Troubleshoot package application issues

Article • 06/03/2022

This article provides detailed information that will help you troubleshoot issues that might occur when you apply packages on your Tier 1 or Tier 2 through Tier 5 environments. For information about how to apply a package, see [Apply updates to cloud environments](#).

General troubleshooting and diagnostics

If a package isn't successfully applied, you have two options:

- Retry the operation that failed.
- Use the logs.

Retry the failed operation

If package application fails, and you want to retry the operation, select **Resume**.

Use the logs

If package application fails, and you want to use the logs, follow these steps.

1. Download and then unzip the log files.
2. Select the role that a step failed for, such as **AOS** or **BI**.
3. Select the virtual machine (VM) where the step failed. You can find this information in the **Machine name** column in the **Environment updates** section.
4. In the VM logs, select the folder that corresponds to the step where the issue occurred. The folder name identifies the step that each folder corresponds to.

For example, if the issue occurred during the execution of a step, select the **ExecuteRunbook** folder. The step number is highlighted and is the number after the globally unique identifier (GUID).

Package application issues

Issue: The package that was applied isn't valid

Custom Help overview

Article • 08/14/2024

ⓘ Important

Customers using Human Resources, the functionality noted in this article is currently available in both the stand-alone Dynamics 365 Human Resources and the merged Finance infrastructure. Navigation might be different than noted while we make updates. If you need to find a specific page, you can use Search.

Finance and operations apps are often customized and extended to fit an organization's needs. If your solution is based on Microsoft Dynamics 365 Finance, Dynamics 365 Supply Chain Management, or Dynamics 365 Commerce, you can connect solution-specific and customer-specific Help content to the [Help pane](#) in the finance and operations client. This article describes the main steps and decision points.

ⓘ Note

Users of finance and operations apps can create custom task guides to supplement conceptual content that describes the functionality of their solution. These conceptual descriptions are also referred to as Help and can be provided by Microsoft, partners, and an organization itself. For more information, go to [Help system](#).

The following illustration, and this article in general, use the term *Help* for conceptual descriptions that either include or exclude how-to guides. The term *task guides* refers to in-product task guides.

Connect a custom Help website to the Help pane

Article • 07/17/2024

If you deliver custom Help content for a finance and operations solution, you can extend the **Help** pane so that it consumes that content. You complete this one-time configuration by using the finance and operations development environment in Microsoft Visual Studio. After you've finished, users can select among tabs for task guides, Microsoft Help content, and your Help content.

The process for connecting your [custom Help website](#) to the in-product **Help** pane involves the following steps:

1. Extend the **Help** pane in Visual Studio.
2. Assign an index to a language.
3. Customize language fallback.

Important

The procedures that follow require the development tools for finance and operations apps in Visual Studio. For more information, see [Development tools in Visual Studio](#).

Extend the Help pane and assign the custom Help indexes to languages

The tools you need to complete this process are available in the <https://github.com/microsoft/dynamics365f-o-custom-help/> repo as a downloadable release. You can find them under **Releases**.

The **Help Pane extension** folder contains the **AzureSearchCustomHelp** solution that you can open in the finance and operations development environment. That folder also contains the **HelppaneOption.axpp** project that you can then import into the solution in Visual Studio.

Extend the Help pane

Language and locale descriptors in Help

Article • 08/14/2024

The client that finance and operations apps use supports multiple languages and locales. To add Help content for one or more locales to the in-product **Help** pane, you must make sure that the following conditions are met:

- The value of the `ms.locale` property in each HTML file matches the locale of the content.

For example, the German (Germany) content must have a setting of `ms.locale: de-de`.

- The content on the Help website is in a folder that has the same name as the locale.

For example, the German (Germany) content must be in a folder that is named `de-de`.

Languages and descriptors

The following table lists the languages that the finance and operations Help supports.

[] Expand table

| Language/locale | Language/region name |
|-----------------|-------------------------------|
| ar | Arabic (Saudi Arabia) |
| ar-ae | Arabic (United Arab Emirates) |
| cs | Czech |
| da | Danish |
| de | German (Germany) |
| de-at | German (Austria) |
| de-ch | German (Switzerland) |
| en-au | English (Australia) |
| en-ca | English (Canada) |

Contribute to the Help

Article • 08/14/2024

This article describes how to contribute to our content in our [MicrosoftDocs/Dynamics-365-Unified-Operations-public](#) GitHub repo.

For information about how to deploy custom Help, see [Custom Help overview](#).

Contribute to the content

One benefit of GitHub is that you can contribute to the core content that the Microsoft team provides in the [MicrosoftDocs/Dynamics-365-Unified-Operations-public](#) repo. For example, you have a new article that you think will be helpful to other users, or you have a correction to an existing article. If you want to contribute to the Dynamics-365-Unified-Operations-public repo, you can create a *pull request* from your repo to the Dynamics-365-Unified-Operations-public repo. The Microsoft team will then review the request and include your changes as appropriate.

You can also contribute and make edits to the existing documentation. To get started, select the **Edit** button (pencil symbol) in a article. The following video shows how you can contribute to the Microsoft documentation.

<https://learn-video.azurefd.net/vod/player?id=beb8146a-fbc8-4dbb-a78d-2a38039e6981&locale=en-us&embedUrl=%2Fdynamics365%2Ffin-ops-core%2Fdev-itpro%2Fhelp%2Fcontributor-guide>

Note

Microsoft currently accepts pull requests only to the source files in English (US).

Learn how to get started with Markdown files in GitHub repos in the [Microsoft Learn contributor guide](#). Find tips and tricks that are particular to Dynamics 365 documentation at [Contribute to Dynamics 365 documentation](#).

Tip

You aren't required to make your GitHub repos public. When you fork a public repo, in the settings for the new repo, you can specify whether the repo is public, private, or available only to specific GitHub accounts.