



Cumulative Update 12 Installation Guide

Microsoft Dynamics AX 2012 R3

Microsoft Corporation

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Install cumulative update 12 for Microsoft Dynamics AX 2012 R3

This document explains how to install cumulative update 12 for Microsoft Dynamics AX 2012 R3.

Two methods are available to install CU 12. Choose a method based on whether Microsoft Dynamics AX 2012 R3 is already installed in your environment. If Microsoft Dynamics AX 2012 R3 is already installed, you must use the Update wizard and complete the update process to apply CU 12. If you are installing Microsoft Dynamics AX 2012 R3 for the first time, you can use the Setup wizard and the slipstreaming process to install CU 12 together with the rest of the product. When updates are slipstreamed, Setup automatically detects and applies them.

Before you install

Regardless of the installation method that you use, before you install CU 12, we recommend that you review the documentation.

Review the release documentation

Review the following documentation before you install CU 12.

Release notes

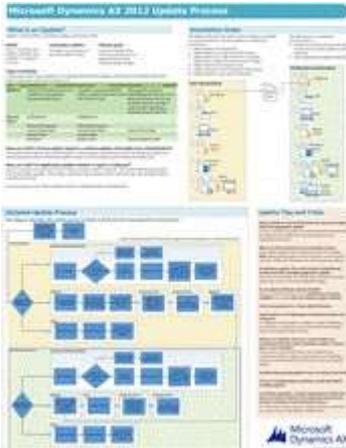
The Knowledge Base article for CU 12 contains the release notes for the update. The release notes include information about the updates and enhancements that are included in CU 12. The following information is included in the release notes:

- Enhancements to modules or feature areas
- Country-specific updates
- Application hotfixes
- Binary hotfixes

Update documentation on TechNet

If you are applying CU 12 as an update to an existing installation, we recommend that you review [Apply updates and hotfixes](http://technet.microsoft.com/en-us/library/hh335183.aspx) (http://technet.microsoft.com/en-us/library/hh335183.aspx) on TechNet. This documentation contains an overview of the update process and includes best practices for updating.

You can also view or download a detailed poster of the update process.

Title	Description
<p>Microsoft Dynamics AX 2012 Update Process</p>  <p>Zoom in to the diagram at full detail by using Zoom.it from Microsoft (http://go.microsoft.com/fwlink/?LinkId=306777)</p> <p>Downloadable PDF and Microsoft Visio versions (http://go.microsoft.com/fwlink/?LinkId=306776)</p>	<p>This poster describes the types of updates, the recommended installation order, and the detailed update process for AX 2012. The poster also provides tips and tricks for managing updates.</p>

Installation Guide

If you are including CU 12 in a new slipstream installation, we recommend that you review the [Microsoft Dynamics AX 2012 Installation documentation](http://technet.microsoft.com/EN-US/library/dd362138.aspx) (http://technet.microsoft.com/EN-US/library/dd362138.aspx). This documentation contains detailed installation instructions for all components of Microsoft Dynamics AX.

Apply CU 12 as an update to an existing Microsoft Dynamics AX 2012 R3 installation

This part of the documentation describes how to install CU 12 if the release version of Microsoft Dynamics AX 2012 R3 is already installed. To install CU 12 in this scenario, you must use the Update wizard and complete the update process.

Prepare the environment for updates

We strongly recommend that you complete the following procedures before you install updates in your environment.

- Before you begin, back up your business and model store databases, and make sure that you understand the time that is required for the update.
- Back up the database that is being updated. By backing up the database, you can roll back to a known, reliable version if you have to. In this manner, you can reduce downtime if an unexpected error occurs. For more information, see [Back up and recover databases \(SQL Server\)](#).
- Schedule a time when the fewest system users, or no users, are affected. As a best practice, announce the time of the update in advance, to make sure that users are aware of the pending update and the

expected downtime. By notifying all users of the time of the update, you can minimize data loss, data corruption, and loss of productivity.

- Make sure that the system runs in single-user mode while the hotfix is installed, and that only the administrator is designated to perform the update. Because changes to the code can affect the Application Object Server (AOS), the changes can affect users who are currently working with the system.

 **Caution**

Changes to the application may require a compilation or synchronization of the application. These operations increase downtime.

- If your environment includes tax integration for China, you must export external invoices before you install updates.
 1. Click **Accounts receivable > Periodic > Tax integration > Export to file.**
 2. On the **Batch** tab, enter a description for the batch, and then click **OK**. By default, all invoices are selected.
- Install Report Viewer 2012 RunTime (<http://www.microsoft.com/en-us/download/details.aspx?id=35747>) if it is not already installed.
- If you are using Visual Studio 2010, you must uninstall it as it is no longer supported.

Download the Update installer and the package for CU 12

The Update installer and CU 12 are available for download from [PartnerSource](#), or from [Microsoft Dynamics Lifecycle Services](#). You can then install the entire package or select a subset of the package to apply.

We strongly recommend that you complete this procedure before you apply updates.

1. For each environment that you manage, create a project in Lifecycle Services. For more information, see [Projects \(Lifecycle Services, LCS\)](#).
2. Install and run the System diagnostic service for each environment, so that the information about your project in Lifecycle Services is accurate.

There are two ways to install CU 12 from Lifecycle Services. The first way is to install CU 12 directly from LCS. The second way is to use the Dynamics AX 2012 R3 Installer available on both LCS and PartnerSource.

Install CU 12 directly from LCS

1. Select the diagnostic-enabled environment for AX 2012 R3 within the LCS project.
You should see a new tile for CU 12.
2. Select the tile to view the fixes that are available in CU 12. The fixes that are already reported as installed by diagnostics will not be included in the list.
The hotfixes listed here will show the details, as well as the impact of the hotfixes on your environment.
3. Select and download all of the fixes, and select and download only those that you are interested in.
For ISV's, we recommend selecting all hotfixes.
A review page will open where you can view a summary of impact for all of the selected hotfixes on your environment.
4. Select download, and when prompted, click **Save package** and download the zip file (Package.zip).
This will take some time to download due to the package size.

5. Extract the zip file on a local folder on a machine where the updates need to be applied.
6. Run the OneClickAxUpdate.exe and install the different components.
Note that this will not ask for model store and does need to be run on the machine where model store is present.

Install CU 12 using Dynamics AX 2012 R3 installer

1. Download the most recent version of the Update installer.
 - a. Log on to Lifecycle Services, open the project that is associated with the environment that you are updating, and then click **Updates**.
 - b. Under **Update installer for Microsoft Dynamics AX 2012 R3**, click **Download**.
2. Save the Update installer to a network location that you can access from the computers in your environment.
3. Extract the Update installer to every computer in the environment that you might have to apply updates to.

Note

To extract the Update installer, you must be an administrator on the local computer.

For information about the recommended installation order when you apply updates, see [Apply updates and hotfixes](#).

4. Verify that you have appropriate permissions. To run the Update installer, you must have administrator rights on the local computer and you must be assigned to the System Administrator role in Microsoft Dynamics AX.

To install application hotfixes, you must have the following additional rights in Microsoft SQL Server:

- Member of the **Securityadmin** server role on the SQL Server instance.
- Assigned to the **db_owner** role in the model database.

Evaluate, save, and install CU 12 using Dynamics AX 2012 R3 installer

We recommend that you first complete this procedure on an instance of Microsoft Dynamics AX Application Object Server (AOS) that is connected to the appropriate database instance, and select both binary and application hotfixes. In this way, you create as few custom update packages as possible.

1. On any AOS, client, or database computer in the environment, run the Update installer (AXUpdate), and accept the license terms.
2. On the **Download or install updates** page, click **Download updates**.
3. Lifecycle Services opens in a browser window. Log on, and select the appropriate update package.
4. Optional: If you have access to a project in Lifecycle Services that contains business processes that you want to use to help select appropriate updates, click **Get business process information for a Lifecycle Services project**. Select the appropriate project, and then click **OK**.
5. After the package downloads, the **Select update type** page opens. Select binary updates, application updates, or both. For more information about hotfix types, see the Hotfix type section of [Apply updates and hotfixes](#)
6. If binary updates are available for the computer that you are installing on, we strongly recommend that you select them in addition to the application updates.
7. If you selected to install application updates, follow these steps:

- a. On the **Choose a model store** page, select a local instance to update, or click **Find a different model store** to enter the name of a remote database instance.
 - b. On the **Select application updates** page, you can select **All updates**, or **Applicable updates**. You can optionally use the **Fix type**, **Module**, **License code**, **Region/Country**, or **Business process** field list to filter the application updates.
 - c. You can group application updates by fix type, number of conflicts, business process, or configuration key.
 - d. For any hotfix, the **Details** pane displays the KB number and title of the hotfix, the model and layers that the hotfix applies to, and any updates that are included. Review the hotfix details, and then click the **Conflicts** tab to view the conflict summary. Use **Get conflict details** to view additional detailed information or open the Impact Analysis Wizard for a single hotfix.
 - e. The **Review conflicts** page lists the number of conflicts that are associated with each model file that will be installed. To review conflicts in detail, click **Impact Analysis Wizard**. For information about how to run the Impact Analysis Wizard, see the Impact Analysis section.
 - f. On the **Review updates** page, click **Next**.
8. Optional: On the **Save updates** page, click **Save custom update package**. You can then reuse the installation package that you have created on another computer in your environment. After the custom update package has been created, you can open the location where it is stored.

 Note

If you have selected binary updates, all binary updates are saved to the custom update package that you create, regardless of the computer or components that you have chosen to update.

9. To immediately install the selected updates on the current computer, click **Install selected updates on this computer**, and then click **Next**.
10. On the **Review components** page, validate that the correct components are selected, and then click **Next**.
11. On the **Ready to install** page, review the summary, and then click **Install**. When installation is complete, you can see whether each component was installed.
12. Continue with the [Post installation steps](#) section of this document.
13. Use the instructions in the [Install a saved update package](#) section of this document to install the same set of updates on all appropriate computers in your environment.

Analyze updates

1. The **Welcome to Microsoft Dynamics AX Update Setup—Impact Analysis Mode** page lists all hotfixes that you previously selected. Click **Next**.
2. On the **Select client configuration** page, select a client configuration or a configuration file to use for comparison with the updates that you plan to install, and then click **Next**.
3. On the **Select model store** page, select a model store to analyze, and then click **Next**.

 Note

The model store that you select must be the same model store that is used by the client configuration that you selected.

4. On the **Select baseline model store** page, select a baseline model store to use for the impact analysis, and then click **Next**.

 Note

You can also select a non-local baseline model store or create a new baseline model store.

The baseline model store that you select must be the same model store that is used by the client configuration that you selected.

The Impact Analysis Wizard deletes the existing contents of the baseline model store to perform the analysis.

5. The **Review the impact analysis configuration** page displays the selected configuration. For the **Select layers to analyze** field, select whether to analyze all layers or only layers that include changes, and then click **Start Analysis**.

The **Select layers to analyze** field is not available unless you have installed application hotfix KB 2885584, compiled the application, and started the Impact analysis wizard.

The **Analyzing impact** page is displayed until the analysis is completed.

6. The **Results** page lists the objects that are affected and the number of cross-references. Click **Open the impact analysis results log file** to view the results.
7. Click **Advanced** to open the AX 2012 R3 client to view the details of the impact analysis.
8. Close the AX 2012 client.
9. Close the Impact Analysis Wizard.

Install a saved update package

By saving a custom update package, you can streamline the update process. When you create a custom update package, you no longer have to download an update package or select the application hotfixes to install when you install updates. Instead, the parts of the update package that you have already selected can be applied quickly in a new location.

1. Run the Update installer on the computer where you want to install a saved update package.
2. On the **Download or install updates** page, click **Install updates**, and then enter or browse to the location of the update package that you previously saved.
3. On the **Select update type** page, select binary updates, application updates, or both.
4. If you chose to install application updates, follow these steps:
5. On the **Choose a model store** page, select a local instance to update, or click **Find a different model store** to enter the name of a remote database instance.
6. The **Review conflicts** page lists the number of conflicts that are associated with each model file that will be installed. To review conflicts in detail, click **Impact Analysis Wizard**. For information about how to run the Impact Analysis Wizard, see the Impact Analysis wizard section.
7. On the **Review updates** page, click **Next**.
8. On the **Review components** page, validate that the correct components are selected, and then click **Next**.
9. On the **Ready to install** page, review the summary, and then click **Install**.
When installation is completed, you can see whether each component was installed.
10. Continue with the Perform post-installation steps section of this document.

Perform post-installation steps

The procedures in this section must be performed after the installation has been successfully completed.

Reinitialize the model store

Many hotfixes require that you reinitialize the model store after installation. You should assume that all cumulative updates require reinitializing. The hotfix description indicates whether this step is required. You can use either Windows PowerShell or AXUtil to perform this step.

1. On the **Start** menu, point to **All Programs**, point to **Administrative Tools**, and then click **Microsoft Dynamics AX Management Shell**.

- At the Windows PowerShell command prompt, **PS C:\>**, type the following command, and then press ENTER.

```
Initialize-AXModelStore
```

This command reinitializes the default model store

For more information, see [Initialize-AXModelStore](#).

Restart AOS and Internet Information Services (IIS)

You must restart both the AOS and IIS after the installation is completed.

- Restart the AOS service for the instance.

Note

If labels are not displayed correctly after you start the client, you may not have restarted the AOS instance.

If you did restart the AOS and you are still not seeing correct labels, you may need to remove the .ald (label) files from the folder C:\Program Files\Microsoft Dynamics AX\60\Server*instancename*\bin\Application\Appl\Standard, and then restart the AOS.

- If Enterprise Portal for Microsoft Dynamics AX is deployed in your environment, open a Command Prompt window on the Enterprise Portal server, type **iisreset**, and then press ENTER.

Caution

If you do not restart IIS, you receive the following message, and Enterprise Portal is not deployed to other servers if you try to redeploy: "Could not load type 'Microsoft.Dynamics.Framework.Portal.EPSoapSecurity'"

Complete the software update checklist

Before the changes to the model store that were included in the update can be fully implemented, you must complete additional tasks. The software update checklist helps you complete these tasks.

The **Merge code automatically** feature simplifies the process of installing hotfixes and fixing conflicts between hotfixes and the customizations in an environment. It compares the model elements in the customization layer with the corresponding elements in the hotfix and SYS layers. Where there are differences in the code between these elements, the feature attempts to resolve the differences in a way that preserves both the customization and hotfix functionality. This is not always possible, and some conflicts will require manual effort to resolve. All changes are made in the active customization layer.

When conflicts are resolved, all of the code from each layer involved in the merge appears in the customization layer with appropriate annotations. Code that the tool does not evaluate as applicable is commented, while code that is applicable and should be included in the result is left uncommented. This preserves the information used to make the merge decision so that it can be easily reviewed while still fixing compilation and functional issues in the code that resulted from hotfix installation.

When conflicts cannot be resolved automatically, a TODO comment is added to the code and the code is annotated.

The typical process for using this feature is:

- After installing an update, open the client in the lowest layer with customizations that you want to merge hotfix changes into.
- Run the software update checklist.
- Compile the application.
- Click **Merge code automatically**.
- Specify the title for the project to be created when prompted, and then run the tool.

After the comparison has completed, a form displays the results of the merge. For changes that were merged successfully, the changes should be reviewed to ensure that they are correct. For changes that remain in conflict, the user must manually investigate and merge conflicts.

6. After resolving all conflicts, compile the application again and perform whatever functional testing is required to ensure that all conflicts have been merged.
7. Repeat for each layer that contains customizations.

Run the software update checklist

1. Start the Microsoft Dynamics AX client.
When you start the client, you receive the following message: "The model store has been modified."
2. Click **Start the software update checklist**.
3. Complete the items on the checklist, in the order in which they are listed.

Checklist section	Option and description
Upgrade preparation	<p>Restart Application Object Server</p> <p>We recommend that you restart the AOS instance before you start the client. However, if you did not restart the AOS instance, restart it now, and then mark this task complete.</p>
Code upgrade	<p>Compile application</p> <p>This option compiles X++ code for the application. Compilation can require an hour or longer.</p>
	<p>Detect code upgrade conflicts</p> <p>This option creates upgrade projects that contain conflicting model elements.</p>
	<p>Merge code automatically</p>
	<p>Compile into .NET CIL</p> <p>After you have resolved any conflicts for the code upgrade, you can use this option to compile the application into common intermediate language (CIL) code for the Microsoft .NET Framework.</p>
	<p>Restart all AOS instances automatically</p> <p>We recommend that you restart all AOS instances to make sure that the code used to run batch processing is up to date.</p>
Data upgrade	<p>Detect update scripts (Required)</p> <p>This option finds and registers update scripts that require additional processing.</p> <p>The appearance of the checklist varies, depending on whether update scripts are detected.</p>
	<p>Pre- synchronize</p> <p>This option appears only if upgrade scripts were detected.</p>
	<p>Synchronize database</p>

Checklist section	Option and description
	This option is required even if update scripts were not detected.
	<p>Launch data upgrade (required)</p> <p>This option appears only if upgrade scripts were detected. This option opens the data upgrade checklist. For information about how to complete the data upgrade, see Launch data upgrade.</p>
	<p>Upgrade additional features</p> <p>This option appears only if upgrade scripts were detected. This option opens the Data upgrade cockpit form. For more information, see Data upgrade cockpit (form).</p>

Next steps

In your test environment, after you have installed updates on the database, AOS instance, and client, you should deploy required updates to the report server, Enterprise Portal, and retail components. For more information, see the following resources:

- [Deploy updated reports to a report server](#)
- [Deploy updates to Enterprise Portal](#)
- [Deploy updates in a retail environment](#)

Validate the update

After an update has been successfully installed, check the install log to make sure that there are no error messages and warnings that can affect the operation of the system. Test the system for the following conditions:

- The change that was implemented by the update is working as you expected.
- The change has not affected other areas of the system.
- The Microsoft Dynamics AX application as a whole is working as you expected.

Roll an update forward to the production environment

After the update has been tested, you must install the update in the production environment. You must install all binary and pre-processing hotfixes, but should roll the application changes forward to the production environment by importing and exporting the model store. Use the methodology that is described in [Deploying Customizations Across Microsoft Dynamics AX 2012 Environments \(White paper\)](#) and [How to: Export and Import a Model Store](#). By exporting and importing the model store, you can avoid having to compile code in the production environment.

Deploy updates to Enterprise Portal

Update an existing Enterprise Portal deployment

1. Install the update on the Microsoft Dynamics AX database, Application Object Server (AOS), and the Microsoft Dynamics AX client, and complete the Software update checklist.
2. Install the update on all Enterprise Portal servers.
3. Run the Enterprise Portal update utility, `AXUpdatePortal.exe`, on all Enterprise Portal web servers. The utility deploys web-related items from the Application Object Tree (AOT) to all Enterprise Portal sites on a web server. For more information, see [AxUpdatePortal Utility](#).
 - a. Open a Command Prompt window.

b. Change the working directory by entering the following

```
cd C:\Program Files\Microsoft Dynamics AX\60\Setup
```

c. Run the Enterprise Portal update utility by entering the following

```
AxUpdatePortal -updateall -websiteurl -iisreset -verbose > "C:\EPUUpdate.log"
```

Initialize Role Center profiles

You must complete this procedure from a computer that is running a Microsoft Dynamics AX client.

1. Open the Initialize user profiles form. Click **Organizational administration** > **Setup** > **Role center** > **Initialize role center profiles**.
2. Select the profiles that your organization uses, and then click **OK**.
3. When you are asked whether you want to overwrite a profile record, click **No to all**.
4. When you are asked whether you want to overwrite a cue, click **No to all**.
5. When you are asked whether you want to overwrite a quick link, click **No to all**.
6. When you are asked whether you want to overwrite a time period, click **No to all**.

Deploy updated reports to a report server

To deploy updated reports to a report server, you must follow standard procedures for Microsoft Dynamics AX. For information, see the following topics:

- [Deploy the default reports](#)
- [How to: Deploy Reports to a Report Server](#)

Deploy updates in a retail environment

This topic includes information about features that were added or changed for Microsoft Dynamics AX 2012 R3 CU 12.

If you are running a retail environment, there are additional steps that you must perform to deploy updates and hotfixes to computers that are running Retail POS, Commerce Data Exchange components, or a channel database. Retail software at the store can be updated in any order or at the same time.

Updates for retail environments may be either binary or application updates. Application updates are installed like other Microsoft Dynamics AX application updates, by installing to a database server, and then recompiling. Only binary updates require additional steps.

We recommend that you first perform these steps in a test environment local to your headquarters, validate that all fixes perform as expected, and then roll them out to your stores. These steps are in addition to the processes described in the topics [Apply updates and hotfixes](#) and [Apply updates to database, AOS, and clients](#).

Important: Updates included in a hotfix should be applied to all computers that host the updated components. For example, you should run the same version of Commerce Data Exchange: Synch Service at all stores and at headquarters. Environments that run different versions of the same Retail component are not supported. In some cases, deployed fixes will not be fully available until all components included in the hotfix have been updated. For example, a Commerce Data Exchange: Real-time Service update might also require a code change at headquarters.

If you apply a binary hotfix that was released after AX 2012 R3 CU 8 to a Retail environment in which the channels are running a later version of the software than the head office (N+1), you must update all components offered in the update wizard EXCEPT the Real-time Service.

You should update the Real-time Service only if the Microsoft Dynamics AX application code has been upgraded to at least AX 2012 R3 CU 8 (6.3.1000.309).

In AX 2012 R3 CU10, the Real-time Service was modified to reference AX methods that are available only after you are running AX 2012 R3 CU 8 or later at the head office.

General guidance

The following guidance applies to any update that affects retail components.

Before you begin

Before you deploy updates to Retail components, you must complete the following tasks.

1. At the store, install [Microsoft Sync Framework hotfix 2703853](#) on all computers on which you have installed Retail POS or Retail Modern POS.

Important

This hotfix can prevent potential data loss when synchronizing Retail offline databases with the channel database.

2. At the store, bring offline registers online and make sure that offline transactions have been synchronized with the channel database.
Caution: If you skip this step, severe data damage and possible financial losses can occur. After you upgrade the channel database, you can no longer synchronize transactions from existing offline databases.
3. At headquarters, run P jobs to synchronize store transactions with headquarters. For more information, see [Schedule and run jobs in Retail Scheduler](#).
4. Back up the channel database by using Microsoft SQL Server Management Studio or another tool.

Merge any existing code changes with POS and redeploy

When updates are applied to POS, they may overwrite your customized assemblies. If you have customized Retail POS, you must re-merge your code changes to services and triggers, compile, and then re-deploy the customized assemblies. For more information about how to handle customizations in an update, see the blog post [AX for Retail: Managing and Maintaining POS Customizations](#) from the Microsoft Dynamics AX Support team.

Update the Retail Channel Configuration Utility (Retail Store Database Utility) on one computer

If a retail database update is included in the update that you are applying, an updated version of the Retail Channel Configuration Utility is included in the update.

Note

In Dynamics AX 2012 R2 and AX 2012 Feature Pack, the Retail Channel Configuration Utility is called the Retail Store Database Utility.

At the store, start by updating the Retail Channel Configuration Utility on one computer. If other Retail software is installed on this computer, you can also update that software.

1. Browse to the location where you extracted the files for the update, and then double-click AxUpdate.exe.
2. Install updates.

Upgrade the channel database by using the Retail Channel Configuration Utility (Retail Store Database Utility)

If an update includes a schema change, the updated version of Retail POS will not run until the channel database has been upgraded.

To upgrade retail databases, you must run an updated version of the Retail Channel Configuration Utility. Upgrade the channel database before you upgrade offline databases on POS registers.

1. Start the Retail Channel Configuration Utility.
2. Select the **Create/Upgrade channel database** option, enter the information for the channel database, and then click **Apply** or **Continue**.

Database upgrade scripts are executed. If there is an offline database on the computer where the utility is installed and run, you are prompted to provision again, and then the offline database is also upgraded.

Apply updates on remaining computers and upgrade offline databases

After the channel database has been updated, you can upgrade offline databases and update all other retail software at the store.

Caution

It can take several hours to upgrade offline databases. Offline mode is not available until the channel database has been provisioned and an offline database has been created on at least one register. If your environment relies heavily on offline mode, consider these factors when you plan the update.

1. On each computer in the environment, including POS registers, update all Retail components that are offered in the hotfix installer. This makes sure that the local copy of the Retail Channel Configuration Utility is updated with the latest offline database schema.
2. On each computer where offline mode will be available, run the Retail Channel Configuration Utility to upgrade offline databases.

For more information, see [Create a channel database or an offline database \(AX 2012 R3\)](#) or [Create a store database or an offline database \(AX 2012 R2 and AX 2012 Feature Pack\)](#).

Move from AX 2012 R3 to AX 2012 R3 CU 12

This section lists issues to consider before applying AX 2012 R3 CU 12 and describes how to update retail components.

Plan to move to AX 2012 R3 CU 12

Most retail organizations are not able to update all their channel locations and the head office on the same day. This means that you must have a plan for updating to AX 2012 R3 CU 12 in a staggered manner. Microsoft Dynamics AX supports the following two scenarios:

- [Update the head office first \(N-1\)](#)
- [Update some or all channels first \(N+1\)](#)

For both of these scenarios, there are special considerations for offline mode.

Important

We strongly recommend completing any previous upgrade before moving to Dynamics AX 2012 R3 CU 12. All channel deployments should be running the same release when you begin the upgrade to AX 2012 R3 CU 12

If you plan to update the head office first (N-1)

In this scenario, components at the head office are updated to AX 2012 R3 CU 12 before any updates are deployed for your channels (stores and online stores). We call this scenario N-1. The most important considerations for this scenario are communication with your channels and offline mode.

Important

When you apply AX 2012 R3 CU 12 to the head office environment, you should upgrade all Retail components, including head office components such as Async Server and Real-time Service.

Communication with channels

If AX 2012 R3 CU 8 is not installed in your stores and you are instead running pre-CU8 components, you must reinitialize Retail (click **Retail > Setup > Retail parameters > Initialize**) and use the N-1 jobs to communicate with your AX 2012 R3 RTM channels.

To resume communications with pre-CU8 channels, you must deploy head-office support for the previous schema, set up a new data group or groups, and run upgrade classes to create a new set of N-1 jobs for the AX 2012 R3 RTM schema. For more information, see [Update the head office](#) on TechNet.

If AX 2012 R3 CU8 is installed at your stores, and you are running components at your stores that have a build version after 6.3.1000.309, you have the following two options:

- Rename your existing jobs and subD-jobs to preserve the existing jobs, and then reinitialize Retail. After reinitializing, your CU8 channels should use the renamed set of jobs. Channels that you update to CU12 should use the new set of jobs created when you reinitialize. Note that after you reinitialize, channels that are still running a release prior to AX 2012 R3 CU8 can no longer communicate with the AX 2012 R3 CU12 business database by using existing Retail scheduler jobs. This is why renaming the jobs is necessary. This includes channels that are running the RTM release of AX 2012 R3.
- Alternatively, wait to reinitialize until all stores are updated to CU12. You won't have full CU12 functionality at the updated stores, but this saves the effort of operating with two sets of jobs.

Note: In general, reinitializing Retail does not cause data loss. Your customized receipt formats, layouts, and so on will not be affected when you reinitialize. Similarly, any custom fields that you have added to out-of-the-box sub-jobs and your custom sub-jobs will not be modified. However, if you have customized the table distribution, that customization will need to be preserved.

Offline mode in N-1 scenarios

In AX 2012 R3 CU 8, we added support for maintaining multiple offline profiles. After updating to AX 2012 R3 CU 8 or later, you can choose to maintain offline profiles for both the RTM release of Retail POS and the post CU 8 release of Retail POS.

To help you take advantage of this new support, as part of AX 2012 R3 CU 8 we set up two offline profiles for you:

1. **Default pr** – This is the offline profile for AX 2012 R3 RTM. It is preserved during upgrade (even if it has been customized).
2. **Dynamics AX 2012 CU 8** – This is the new offline profile for AX 2012 R3 CU 8 or later. This profile includes all scopes from the AX 2012 R3 RTM profile (including custom scopes) plus scopes for the new tables added in AX 2012 R3 CU 8. The 1095 job sends offline profile and scope information to channel databases. The job can be run for all locations, regardless of the target release of the channel database in each location; each channel database receives its assigned offline profile.

Support for multiple offline profiles is applicable only for AX 2012 R3 releases (RTM, CU8, CU9, CU10, and CU12). In releases prior to AX 2012 R3 CU8, you cannot add the same offline scope to more than one profile.

If you plan to update channels first (N+1)

In this scenario, components at some or all channels are updated to AX 2012 R3 CU12 before the head office components are updated to AX 2012 R3 CU12. We call this scenario N+1. The most important considerations for this scenario are channel data and functionality, update of the Retail SDK, and offline mode.

Important

In the N+1 scenario, you must update all components offered in the update wizard EXCEPT the Real-time Service.

You should update the Real-time Service only if the Microsoft Dynamics AX application code has been upgraded to at least AX 2012 R3 CU8 (6.3.1000.309). This is required, because in AX 2012 R3 CU8, the Real-time Service was modified to reference AX methods that are available only after you are running AX 2012 R3 CU8 or later at the head office.

Channel data and functionality

When you update a channel database to AX 2012 R3 CU12, the database is modified to include additional tables, additional columns, and new or modified stored procedures, views, and more. These changes support AX 2012 R3 CU9 and CU10 functionality. Some of this functionality will be available to you immediately, and some is not yet available (since data in support of that functionality does not yet exist). As part of channel database update, new tables and columns are populated with default values that keep your functionality virtually the same as it was before update. You can take advantage of new features in AX 2012 R3 CU12 after you have updated your head office components and have completed distribution of your new data (when needed to enable new functionality) to the respective channels.

Updating Retail SDK and merging customizations

When you update the Retail SDK to AX 2012 R3 CU12, the existing SDK files on the computer are not modified. Instead, the updated Retail SDK is installed to a folder named "Retail SDK CU8", located in the Documents folder of the user who ran the original install. Your customizations need to be merged into this new code.

Offline mode

In the N+1 scenario, because the head office has not been updated and reinitialized, the offline profile in the channel database remains the same (the AX 2012 R3 RTM offline profile), even after re-provisioning. This means that only the tables and columns that existed prior to the upgrade are present and synchronized in the AX 2012 R3 CU12 offline channel database. As a result, any new AX 2012 R3 CU12 functionality that relies on new data being defined in the head office will not be available.

How to update retail components

The process for updating most Retail components to AX 2012 R3 CU12 is similar to the update process for other components in AX 2012 R3. This section describes the differences and additional requirements for those Retail components that have special considerations or steps for updating to AX 2012 R3 CU12.

Important: We recommend that you complete any previous upgrade prior to updating to AX 2012 R3 CU12. All channel deployments should be running the same release when you begin the upgrade to AX 2012 R3 CU12.

As always, AxUpdate.exe will only update the default instance of each component configured using AxSetup.exe and will not update components that have been manually installed (such as through Windows PowerShell scripts).

Update the head office

This section describes the special considerations for updating the head office with AX 2012 R3 CU12.

We strongly recommend completing any previous upgrade prior to updating to AX 2012 R3 CU12. All channel deployments should be running the same release when you begin the upgrade to AX 2012 R3 CU12.

Reinitialize Retail

Open the **Retail parameters** form (**Retail > Setup > Retail parameters**), and click **Initialize**. For more information about what this step does and why it is required, see [Plan to move to AX 2012 R3 CU12](#). The process remains quite similar to the process used to move to CU8.

Configure N-1 support

If needed, you can set up N-1 support for channels that are still using previous releases of AX 2012, including the RTM release of AX 2012 R3. For more information, see the following documentation:

- [Support for Previous POS Versions White Paper for Microsoft Dynamics AX 2012 R2](#)
- [Plan to move to AX 2012 R3 CU12](#)

Update the Retail online channel (eCommerce)

When you update the Retail online channel by using AxUpdate.exe wizard, only the installation binaries are updated. The update will not redeploy the online storefront to SharePoint. You can skip this procedure if all of your channels have already been updated to AX 2012 R3 CU12, or if you have any new channels that you want to deploy with AX 2012 R3 CU12 versions of the Retail components.

1. Uninstall the online store. For details, see the Uninstall section in the [Install a Retail online store \(e-commerce\)](#) topic.
2. Uninstall the online channel web applications. For details, see the section [Uninstall an online channel](#).
3. Reinstall the online channel. For details, see the topic [Install a Retail online store \(e-commerce\)](#).

Plan the timing for updating your online store based on the availability requirements and customizations in the existing system.

The recommended topology is to separate the computer running the head office components and the online channel components. In a topology that has head office components and online channel components on the same computer, the Commerce Runtime and SharePoint DLLs in the Global Assembly Cache (GAC) must be the latest version of the DLLs. This topology is not a supported production topology and should only be used for demonstration or development purposes. The assembly version of the DLLs for AX 2012 R3 RTM and AX 2012 R3 CU12 are the same and will require that you remove the existing DLLs from the GAC before AxUpdate.exe is run. For more information, see [How to Uninstall an Assembly from the GAC](#).

The assembly versions for the AX 2012 R2 and AX 2012 R3 releases are different and can co-exist

Other topology options include setting up a new AX 2012 R3 CU12 channel database connected to an existing online channel. Such a topology can use Commerce Data Exchange to publish (distribution schedule changes) only to the new channel and bring back orders from both channels. This method requires installing the online store. For more information, see [Install the online store](#).

Uninstall an online channel

The following procedure describes how to uninstall the Retail Online Channel. You must be a Farm administrator in SharePoint to complete this procedure.

1. In SharePoint Central Administration, go to **System Settings > Manage Farm features**.
2. Deactivate the following features, if they are present:
 - Claims provider
 - Logging service
 - Publishing jobSite level features will be automatically uninstalled when the parent solutions are removed.
3. Under **Manage Farm features**, retract the following solutions immediately, and then click **OK**.
 - PublisherJob
 - StoreFront
 - CommonGlobalModulesThis package is shared across all instances of storefront. Removing it triggers an IIS reset, so the Central Administration site may not be available. Wait and try again.
4. After all of the solutions have been retracted (undeployed), remove the entry for each solution.
5. In SharePoint Central Administration Manage Web applications, delete the retail web applications. You must delete the content database and the IIS web site for each web application.

Update the Retail SDK

To update the Retail SDK, select it in AxUpdate.exe.

This update does not modify the pre-AX 2012 R3 CU 8 SDK files that are already installed on your system. Instead, a folder named Retail SDK CU 8 will be used. If this folder does not exist, it will be created. If you have already deployed AX 2012 R3 CU 8 or later on that computer, you must rename the existing folder, from "Retail SDK CU 8," to a different name to avoid deployment conflicts between old and new version of the SDK. After this, you must merge your customizations with the newer version of the SDK. See the section [Deploy updates in a retail environment](#).

Update Retail POS and Retail Channel Configuration Utility

To update the store server or a register computer, select the Retail POS and the Retail Channel Configuration Utility components in AxUpdate.exe.

After the installation is complete, follow these steps:

1. On the store server, run the Retail Channel Configuration utility to complete the upgrade of the channel database.
2. On each register computer, either run the Retail Channel Configuration utility or run the Retail POS application as an administrator. This will update the Retail POS configuration file to add the new elements that are required for AX 2012 R3 CU 8 or later.

For more information about how to run the Retail Channel Configuration utility, see [Configure database connections for a POS register by using the Retail Channel Configuration Utility](#).

Important: After any upgrade of the channel database, you must follow these steps:

1. Re-provision the channel database for offline mode.
2. Create a new offline database for each register.

3. Configure Retail POS to update the offline configuration to reference the new offline database details.
4. Wait for the offline synchronization process to finish.

While this work is in progress, offline mode is not available in the store. You can resume use of offline mode on a register only after that register's offline database is created and synchronized. For more information, see the section [Apply updates on remaining computers and upgrade offline databases](#).

Update Retail Modern POS

AX 2012 R3 CU8 included the RTM release of Retail Modern POS. This was the first supported release of this application and is a prerequisite for running the AxUpdate installer to update Retail Modern POS to the CU 12 release. Alternatively, you can install the CU 12 release of Modern POS directly by using the slipstream option described later in this document.

For more information about Retail Modern POS, see [Retail Modern Point of Sale](#).

Uninstall pre-release versions of Retail Modern POS

If you installed a pre-release copy of Retail Modern POS, you must uninstall the pre-release application before installing the RTM version.

If you installed the RTM release of Modern POS (included in AX 2012 R3 CU 8), you do not need to remove it. Instead, you can update to the CU 12 release by running the AxUpdate installer.

You can uninstall the pre-release copy of Retail Modern POS either by running AxSetup.exe and selecting the component for removal, or by uninstalling it from Add or Remove Programs in Control Panel.

If multiple Windows users have been using an installation of Retail Modern POS, we recommend that you start over with a reimaged computer whenever possible.

To uninstall, you must explicitly remove the application for every user who logged onto the computer. Have each user right-click the application on the Start screen, and then click Remove. After you have removed all instances, you can remove the installer from Add or Remove Programs in Control Panel.

Install the CU12 version of Retail Modern POS

To install the RTM release of Retail Modern POS (included in CU 8), you must be running Windows 8.1 Update or Windows 10 (November update or later)

You must be running one of the following editions of Windows

1. Windows 8.1 Update
 - a. Pro
 - b. Enterprise
 - c. Embedded (including Industry Pro)
2. Windows 10
 - a. Pro
 - b. Enterprise
 - c. Enterprise LTSB

The equivalent versions of Windows Server are also supported.

Update to the CU12 version of Retail Modern POS by running the AxUpdate installer on a machine where the RTM release (included in AX 2012 R3 CU8) is already installed. Select Retail Modern POS in the installer.

If you are installing Retail Modern POS for the first time, you can install the CU 12 version directly by slipstreaming both AX 2012 R3 CU 12 with AxSetup.exe. For more information about slipstream installation of

Microsoft Dynamics AX components, see [Include cumulative updates and hotfixes in a new installation \(slipstreaming\)](#).

Include CU 12 in a new installation of Microsoft Dynamics AX 2012 R3

If you are installing Microsoft Dynamics AX components for the first time, and cumulative updates, binary hotfixes, or service packs for Microsoft Dynamics AX are available, you can incorporate the updates into the installation by using a process that is known as *slipstreaming*. When updates are slipstreamed, Setup automatically detects and applies them. In this way, the time that is required to install the whole Microsoft Dynamics AX solution is reduced.

Note

Components that were previously installed are not updated during a later slipstream installation. For example, an instance of Application Object Server (AOS) is installed on a server. Later, you add updates to the installation source, and you also install another Microsoft Dynamics AX component on the same server. In this scenario, the existing AOS instance is not updated.

You can slipstream the following kinds of updates:

- Cumulative updates
- Binary hotfixes
- Help content updates
- Service packs

Application (database) hotfixes cannot be included in the slipstreaming process. They must be installed by using AxUpdate.exe.

The Updates folder

Before you install Microsoft Dynamics AX, you copy the DVD to a network location. This lets you modify the installation media to create a slipstream installation.

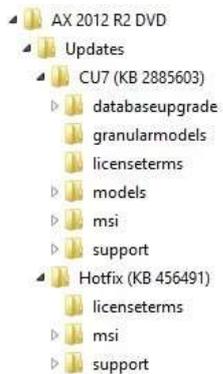
Incorporate updates into the installation process by copying files to the Updates folder in the shared network location.

Note

For more information about how to install Microsoft Dynamics AX from a shared network folder, see [Create a shared directory for installation](#).

In the Updates folder, create a subfolder for each update package that you download. We recommend that you use the Knowledge Base article numbers of the updates as the names of the subfolders. For example, for the update that is associated with Knowledge Base article number 123456, create a subfolder that is named KB123456.

Extract each update into the appropriate subfolder. The following illustration shows an example of the recommended folder structure.



Any time that you apply a cumulative update package or a binary hotfix to your environment, we strongly recommend that you add the installation package to the Updates folder. This practice ensures that you can quickly deploy new servers, clients, and other components of the correct version. You should also make a copy of the updated installation media per your system recovery strategy.

The slipstreaming process

The following is a high-level overview of the slipstreaming process:

1. To find cumulative updates for AX 2012 R3, go to Microsoft Dynamics Lifecycle Services, and after selecting a project, click **Updates**. In the **Updates to include with new installations** section, select the slipstreamable update package that you want, and download it. Logon is required.
2. Create a shared network location from which to install Microsoft Dynamics AX.
3. In the Updates folder, create a subfolder for each update package that you download. Extract each update into the appropriate subfolder.
4. Run Setup and select the components that you want to install. Setup detects and installs the updates.

Follow the usual installation procedures to install Microsoft Dynamics AX components. For detailed installation instructions for each Microsoft Dynamics AX 2012 component, see [Install Microsoft Dynamics AX](#).

To install updates for Help content, you must select the **Help Server** component, and then select the updated content sets on the **Language and content selection** page.