

Microsoft SharePoint 2010 Products Upgrade Approaches

For more information about planning for upgrade, see the [Upgrade Planning](#) model.

Basic upgrade approach "building blocks"

When you are planning an upgrade from Microsoft® Office SharePoint® Server 2007 or Windows SharePoint Services 3.0 to Microsoft SharePoint 2010 Products, think of the different upgrade approaches as building blocks that you can use to create your own optimal upgrade approach. The following upgrade approaches are available in SharePoint 2010 Products.

Note that the diagrams on this page use the same topology for simplicity. Your beginning and ending topologies will depend on your current topologies and on the capacity planning work you do for SharePoint 2010 Products.

In addition, this standard topology is based on Office SharePoint Server 2007. Windows SharePoint Services 3.0 topologies are similar, but do not contain the Application server layer or SSP databases.

Farm before upgrade

Topology in transition

Upgrade complete

In-place upgrade

Description

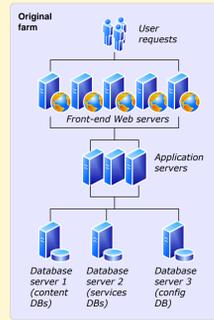
You use in-place upgrade to install the new version of SharePoint 2010 Products on the same hardware that you used for the previous version. You upgrade the content and settings in the server farm as part of a single process.

Advantages

- Farm-wide settings are preserved and upgraded.
- Customizations are available in the environment after the upgrade, although manual steps may be required to upgrade or rework them.

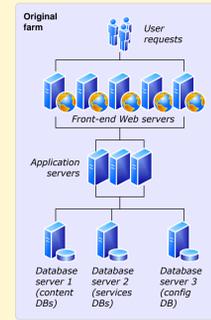
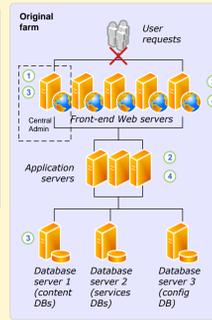
Disadvantages

- Servers and farms are offline while the upgrade is in progress.
- The upgrade proceeds continuously; consequently, you must allow time for all content to be upgraded in turn.



Upgrade sequence

- Run Setup on the first front-end Web server in the farm.
- Run Setup on the remaining front-end Web servers and application servers.
- Run the SharePoint Products Configuration Wizard on the front-end Web server that is running the SharePoint Central Administration Web site. This server, the configuration database, the services, and the content databases are upgraded sequentially.
- Run the SharePoint Products Configuration Wizard on the remaining servers.



Visual Upgrade

Preview sites in the SharePoint 2010 Products look. Complete the change to the SharePoint 2010 Products look when you are ready.

Database attach upgrade to a new farm

Description

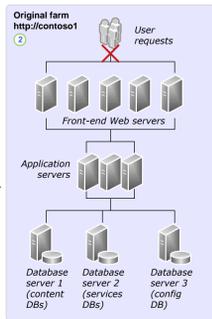
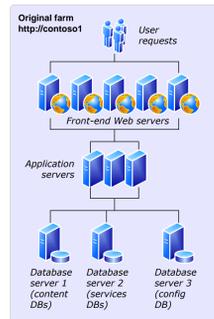
You can use a database attach upgrade to upgrade the content for the environment on a separate farm. The result is that you do not upgrade any of the services or farm settings. You can upgrade the content databases in any order and upgrade several databases at the same time. You can attach a Shared Services Provider (SSP – Office SharePoint Server 2007 only) database during database attach upgrade, and it will upgrade the profile information in the database. You cannot upgrade a Search database by using this method.

Advantages

- You can upgrade multiple content databases at the same time, which results in faster upgrade times overall than an in-place upgrade.
- You can use a database attach upgrade to consolidate multiple farms into one farm.

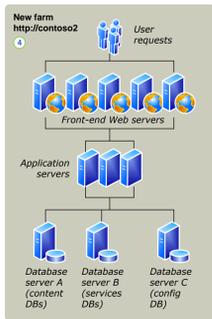
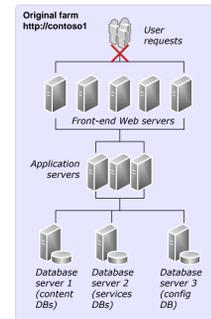
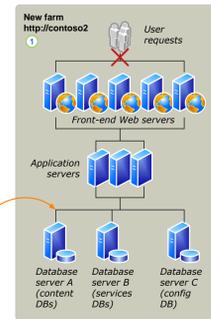
Disadvantages

- The server and farm settings are not upgraded. You must manually transfer settings that you want to preserve from the old farm to the new farm.
- Any server-side customizations must also be transferred and upgraded manually. Any missing customizations may cause unintended loss of functionality or user experience issues.
- Copying databases across the network takes time and bandwidth. You must plan for that.
- You need direct access to the database servers.



Upgrade sequence

- Set up and configure the new farm. Transfer customizations to the new farm and test the environment.
- Detach the content database from the old farm and take the old farm offline.
- Attach the content databases to the new farm and upgrade the content.
- Start serving requests on the new farm at the new URL.



Hybrid approaches: combine building blocks

Improve upgrade efficiency

A hybrid approach lets you take advantage of in-place upgrade's ability to upgrade content and settings, while you take advantage of the speed of a database attach upgrade.

When you combine in-place and database attach upgrade techniques:

- Farmwide settings can be preserved and upgraded.
- Customizations are available in the environment after upgrade, although manual steps may be required to upgrade or rework them.
- You can upgrade multiple content databases at the same time, which results in faster upgrade times overall than an in-place upgrade.

The following techniques can be used in a hybrid approach:

- Set databases to read-only while the upgrade is in progress on another farm.
- Perform database upgrades in parallel:
 - Upgrade databases in a temporary farm (this can be a small farm for efficiency), and then reattach to the original farm.
 - Upgrade databases in the same farm, but in parallel.
- For complex, long-running upgrades, use alternate access mapping to redirect requests. Map sites from the new farm to the old farm while the upgrade is in progress.

Minimize downtime during an upgrade

What is downtime?

If users cannot connect to their content or data, they are experiencing downtime.

What affects downtime during an upgrade?

Factors that affect downtime include the following:

- The upgrade approach you choose
- The size, number, and shape of databases in the environment
- How effective and accurate your upgrade testing was
- Server performance

What can I do to mitigate downtime?

Optimize the environment before you upgrade

- Follow all recommendations in the pre-upgrade checker to clean up orphans and address other issues in the environment.
- Consider splitting large databases.
- Transition to faster hardware before you upgrade (64-bit hardware and a Microsoft SQL Server® 64-bit edition is required).

Use Visual Upgrade

- By using Visual Upgrade, site owners can determine when they are ready to switch to the new look.

Test, test, test, and test again

- Testing is the only way to estimate how much time is needed for upgrade.
- Test by using comparable hardware to gauge upgrade speed.
- Test by using real data (preferably, you can use copies of your current data).

Choose an upgrade approach that is optimized for speed

- Database attach or hybrid upgrade

Farm before upgrade

Topology in transition

Upgrade complete

Hybrid approach 1: Read-only databases

Hybrid techniques used

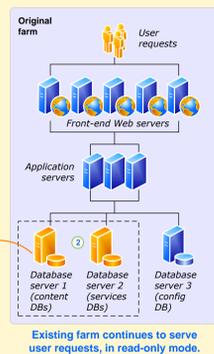
- Set databases to read-only while the upgrade is in progress on another farm.
- Perform database upgrades in parallel:
 - Upgrade databases in a separate farm
 - Upgrade multiple databases in parallel

Advantages

- The existing farm can continue to host non-upgraded sites (in read-only mode) while you upgrade the content. As a result, users will experience minimal downtime.
- You can upgrade multiple content databases at the same time, which results in faster upgrade times overall than an in-place upgrade.
- You can upgrade hardware in addition to software.

Disadvantages

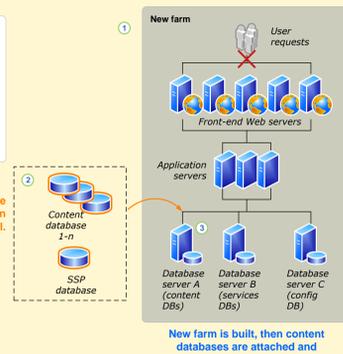
- The server and farm settings are not upgraded. You must manually transfer settings that you want to preserve from the old farm to the new farm.
- Any customizations must also be transferred and upgraded manually. Any missing customizations may cause unintended loss of functionality or user experience issues.
- Copying databases across the network takes time and bandwidth. You must plan for that.
- You need direct access to the database servers.



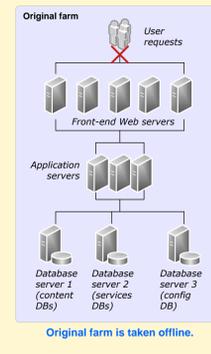
Upgrade sequence

- Set up and configure the new farm. Transfer customizations to the new farm and test the environment.
- On the original farm, change content databases to read-only. Back up and restore the content databases to the new farm.
- On the new farm, attach the content databases to run the upgrade on the content.

Upgrade multiple databases in parallel.



Upgrade databases in a separate farm.



Original farm is taken offline.

New farm begins to process user requests.

Hybrid approach 2: Detach databases

Hybrid techniques used

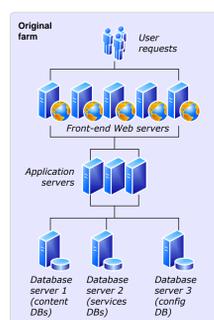
- Use an in-place upgrade to upgrade the farm and settings.
- Detach and upgrade multiple databases in parallel.
- Alternative upgrade sequence: Upgrade databases on a temporary small farm.

Advantages

- The existing farm settings are upgraded and do not have to be manually transferred to a new farm.
- You can upgrade multiple content databases at the same time, which results in faster upgrade times overall than an in-place upgrade.

Disadvantages

- Copying databases across the network takes time and bandwidth. You must plan for that.
- You need direct access to the database servers.



Upgrade sequence

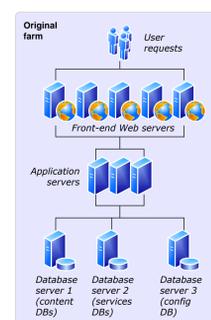
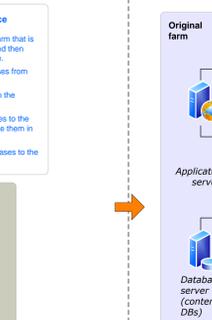
- Take the original farm offline.
- Detach the content databases from the original farm.
- Run an in-place upgrade on the original farm servers, services, and configuration database.
- Attach the content databases to the original farm and upgrade the content.

Use an in-place upgrade to upgrade the farm and settings.

Alternative upgrade sequence

- Set up a temporary small farm that is running the new version, and then take the original farm offline.
- Detach the content databases from the original farm.
- Run an in-place upgrade on the original farm.
- Attach the content databases to the temporary farm and upgrade them in parallel.
- Reattach the content databases to the original farm.

Alternative upgrade sequence: Temporary small farm.



Visual Upgrade

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