How to test upgrade
For SharePoint 2013

Goals for test upgrades

You should test upgrade to find out:

- Whether the upgrade plan will work or if you need **adjustments**.
- **Customizations** that you have in your environment, so that you can plan for how to deal with them during upgrade.
- Whether you should upgrade your **hardware** to make upgrade more efficient and/or faster.
- Timing, or **how long** upgrade will take for your environment.
- Operationally, what do you need to **plan** for?

Also, understand the process and what to expect:

- What does the upgrade UI look like?
- Where are the log files and how do you read them? What information do they provide?
- Do you need to adjust any scripts or commands?
- Do you have the right plan to address outages?

Steps to test upgrade

① Set up a test farm, either physical or virtual.

② Identify customizations and install them on the test farm.

③ Copy real data to the test environment and upgrade databases.

④ Review database upgrade results.

⑤ Upgrade site collections and My Sites

⑥ Review site collection results.

Repeat the testing process until you are sure that you have found all the issues that you may face and that you know how to deal with them. Your goal is to identify your plan as if it is 4:00 P.M. on Sunday, you have to be back online Monday morning, and it is not going well. Is there a point of no return? Test your rollback plan and make sure that it works before you begin your real upgrade.

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① Set up test environment

You can use either virtual or physical hardware to test the upgrade process. Because every environment is unique, there are no general guidelines for how long upgrade will take or how difficult a particular customization will be to upgrade. The best way to predict how long your upgrade will take is to perform a series of trial upgrades.

Your test farm

- Make your test farm as similar as possible to your real farm — for example, hardware, software, and available space.
- Use the same URLs in your test farm as in your real farm.
- Use different computer names for your web servers and application servers.
- Use separate servers for SQL Server databases in your test environment.
- Use the same database names.
- Transfer all your settings and customizations to the test farm.

Virtual test farms

When you test by using a virtualized environment, you do not need much hardware. You can replicate your environment by using just two servers that are running Hyper-V® . One server has images for the front-end web servers and application servers, and the other server has images for the database servers.

Virtual Server: Web and Application Servers

Virtual Server: Database Servers

Physical test farms

Replicate your server farm environment as closely as possible. If you simplify the number of web servers, application servers, or database servers, you cannot get an accurate estimate of the duration of the upgrade process. In addition, you may not account for complications that arise from interactions between servers in the same role. If you have multiple servers in a role in your original farm, use at least two servers for that role in the test farm to test for such issues.

Production Farm

Test Farm
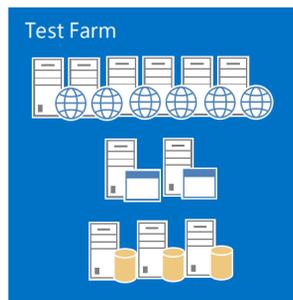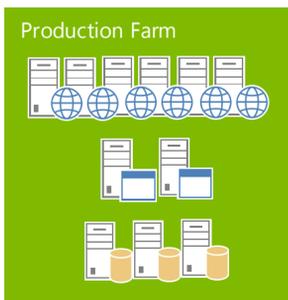
② Identify and install customizations

To have an accurate test process, you must find all the customizations in your current environment.

- Use **Stsadm –o enumallwebs** (with the **includefeatures** and **includewebparts** parameters) in the SharePoint 2010 Products environment to identify specific customizations in subsites.
- Use a tool such as WinDiff to compare your production environment servers to your test farm servers.
- Check the web.config files for changes and look for custom controls.
- Use SPDiag to find deployed solutions.
- Create a list of all customizations that you find. Identify the source of the customizations, if possible. For example, are there third-party add-ins or templates that were customized in-house? If you identify the source, you can check for updated or upgraded versions of the customizations.

After you identify all the customizations, install them to the appropriate servers in your test farm.

- Use the Windows PowerShell® cmdlet **Test-SPContentDatabase** before you attach a database to SharePoint 2013 Products to determine whether any customizations are missing from the environment.

③ Copy and upgrade databases

You cannot achieve your testing goals unless you use your actual data. Therefore, you need to use the Microsoft SQL Server® backup and restore tools to create a copy of your content databases and all other databases that you want to upgrade.

Database servers

Content databases

Service application databases

After you copy the databases. try the upgrade process to see what happens. This is just the preliminary round.

See the model poster "SharePoint 2013 Upgrade Process" for information about how to perform the test upgrade.

④ Review database upgrade results

Review the log files and check out your customizations. How did it work? What did you learn? What do you need to rethink about your upgrade plan?

Review upgrade log files

The upgrade log files are in %COMMONPROGRAMFILES%\Microsoft Shared\Web server extensions\15\LOGS. Named Upgrade-*YYYYMMDD-HHMMSS-SSS*.log.

Review sites in 2010 mode

Verify that site collections that were not upgraded work as expected in 2010 mode.

⑤ Upgrade site collections

After you validate the database upgrade, you can try to upgrade site collections and My Sites.

See the model poster "SharePoint 2013 Upgrade Process" for information about how to perform the test upgrade.

Site A in 2010 mode → Site A in 2013 mode

⑥ Review site upgrade results

Review site upgrade log files

The upgrade log files are in the site collection (_catalogs\ Upgrade document library) and a more detailed log file is in %COMMONPROGRAMFILES%\Microsoft Shared\Web server extensions\15\LOGS. Named SiteUpgrade-*YYYYMMDD-HHMMSS-SSS*.log.

Review upgraded sites

Web Parts

To test your Web Parts quickly, you can build a new page that contains all of your custom Web Parts before you test your upgrade, and then review the page for missing or broken Web Parts after the upgrade test.

- ☐ Do all the Web Parts from your original site show up in your upgraded site?
- ☐ Are there broken Web Parts pages?
- ☐ Are the Web Parts displayed correctly (in the correct zone, location, and size)?
- ☐ Are there extra or missing Web Parts?
- ☐ Do the Web Parts work correctly?
- ☐ Are any pages still checked out?
- ☐ Are your Excel Web Access Web Parts working correctly? Did you create your connections again correctly? Are external data sources still working?

Large lists

- ☐ Are there any large lists in your environment that must be reworked?

Styles and appearance

Most issues in this section can be solved by correcting a link to the item.

- ☐ Are all images on your pages displayed correctly?
- ☐ Are the appropriate cascading style sheet colors and styles used in the appropriate places?
- ☐ Theme choices are different in SharePoint 2013 – which theme do you want to use?
- ☐ Do you have any JavaScript controls that are not working?
- ☐ Are your pages displayed correctly in the browser?
- ☐ Are there any script errors displayed on any pages?

Customized (unghosted) pages

- ☐ Are your customizations still in place?
- ☐ Can you still get to the editing controls on the pages?
- ☐ Are your customizations still appropriate in the new environment, or do you want to update to the new functionality and look?
- ☐ Are any pages still checked out?

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