

**Best Practice Recommendations:
Guidelines for Implementing a Rolling Upgrade from
MailSite Collaborator 8 SP to MailSite Fusion 9 SP**

A guide for MailSite Administrators

Technical White Paper

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Introduction

This white paper provides best practice recommendations for implementing an in-place upgrade of a clustered MailSite environment from MailSite 8 to MailSite 9. Thorough analysis of the current operating environment and detailed step-by-step planning of the upgrade is essential to ensure a successful upgrade. The steps in this guide have been proven to work on standard MailSite clustered deployments on MailSite Software, Inc servers.

MailSite, Inc. suggests that when implementing a rolling upgrade project MailSite administrators print this guide and check off each step when it has been successfully completed to ensure that no steps are overlooked.

Upgrade Overview

There are three methods for upgrading a clustered MailSite SP environment. A side-by-side upgrade involves replicating the existing MailSite SP cluster. This method is usually employed when the upgrade to the new version includes a hardware upgrade. This method provides the easiest and most reliable recovery in case of a problem with the upgrade as the old cluster is always available.

The remaining two methods are called in-place upgrades since the upgrade is taking place using the existing hardware. These are the more common and slightly more difficult upgrade scenarios. This white paper discusses in-place rolling upgrades which allow for the shortest amount of downtime while maximizing the ability to recover from a disaster.

In a rolling upgrade, the MailSite SQL database is upgraded along with one of the existing mail servers. At this point users may connect to either the MailSite 9 server or the old MailSite 8 servers in order to retrieve their mail. Users may not take advantage of the new MailSite 9 functionality until the entire platform has been upgraded to MailSite 9.

Note: The core MailSite SP 8 mail server is compatible with and will run against the default MailSite SP 9 database. However, the MailSite 9 web services such as MailSite Express, ExpressPro, WSS and so on are not compatible with MailSite 8 (see section [Restrictions on Performing a Rolling Upgrade of MailSite Web Services](#)).

Analyzing Your Current Environment

The first step and most important step in performing a successful upgrade is analyzing the current environment. The MailSite administrators should work with their network administrator and database administrator counterparts to ensure

that the existing documentation for the MailSite platform is complete and up to date. We suggest that at a minimum the following information be compiled.

- Configuration information for any routers, load balancers, network switches or other network hardware that supports the mail server platform.
- Location of backups and disaster recovery procedure for the MailSite SQL database.
- Quantity and configuration of MailSite servers including:
 - Which MailSite services are running on which servers
 - MailSite Express configuration files
 - MailSite configuration obtained via MSBACK utility that is located in the MailSite installation directory.
 - Version numbers of MailSite services and associated files including installed hotfixes obtained via the FILEEVER utility that is located in the MailSite installation directory.
- Quantity and configuration of file servers that hold the MailSite message store.
- Details of customizations performed on the default MailSite 8 SP database
- Details of customizations performed on the default MailSite 8 Express webmail files
- Usernames and passwords for local and domain accounts used to run MailSite Services
- Usernames and passwords for local and domain accounts used to allow anonymous access to MailSite Express webmail via Internet Information Server (IIS).
- Operating system version including installed services packs and hotfixes for the MailSite servers, file server, SQL server and web servers.
- IIS configuration for MailSite Express websites.

Managing the Upgrade of Customized Components

Special care must be taken when customizations have been made to the MailSite SQL database or the MailSite Express webmail. In order to ensure a successful

upgrade each customer must analyze their environment to see if these kinds of customizations have been made and, if so, the customizations must be thoroughly tested with MailSite SP 9. MailSite Software, Inc. offers Professional Services to assist customers who have customized the MailSite platform and require additional assistance in completing an upgrade.

MailSite SQL database

The flexible, open nature of the MailSite SQL database allows for significant customization and integration with third-party software products and in-house developed systems. This white paper does not provide guidance for the upgrading of customized MailSite SQL databases. Customers need to contact their third-part software vendor or their in-house development teams in order to account for the effect of customizations.

MailSite Express

Some customization of MailSite Express can be performed by changing the settings contained in the `expresscfg.asp`. Any changes to the default `expresscfg.asp` file should be documented as part of the analysis of the current environment. These same changes must be reapplied after each MailSite Express server has been upgraded. In most cases making changes to `expresscfg.asp` is a trivial task and the backup and restore of this file is covered under the section [Upgrading Your Server](#).

Customers who have performed complex customizations to the graphics, user interface or functionality of the default MailSite Express product must work with their third-party vendors or in-house development teams to ensure that these changes are extended to include the new features available in MailSite Express. We recommend thorough testing of all customizations before proceeding with an upgrade.

MailSite ExpressPro

MailSite ExpressPro customization is usually accomplished by modifying one of the existing Themes, or creating a new one. Themes are typically found under `..\MailSite\ExpressPro\Web\App_Themes`. Some images are found in the `..\MailSite\ExpressPro\Images` folder. Another common customization is to adjust the login page, which is done with the files at `..\MailSite\ExpressPro\Web\Images\Login`. If these files or any other have been adjusted, this should be documented as part of the analysis of the current environment. The same changes must be reapplied after each MailSite ExpressPro server has been upgraded.

As with MailSite Express, complex customizations to the graphics, user interface or functionality of the default ExpressPro product will require more testing before proceeding with an upgrade. The changes to the user interface from MailSite 8 to MailSite 9 are relatively minor and so this should be a fairly minor task.

Preparing for the Upgrade

At this point you have completed the hardest part of the upgrade process by ensuring that your network documentation is complete and investigating the effects of any customizations. However, before starting the upgrade procedure a few more things should be done.

Read the Release Notes

The latest release notes can be accessed via the MailSite Customer Portal <http://www.mailsite.com/portal/>

Operating System Updates

MailSite SP 9, as MailSite SP 8, has a minimum installation requirement of Windows 2000 Server with Service Pack 4. Any servers running Windows NT 4.0 or Windows 2000 pre-SP4 must be upgraded before continuing with the MailSite upgrade.

Internet Explorer Updates

Microsoft Internet Explorer is a critical component of the operating system. For security reasons we recommend updating Internet Explorer to the latest version available from <http://www.windowsupdate.com> including all service packs and security patches. This is a required upgrade when using the anti-virus and anti-spam features of MailSite.

MailSite Server Updates

We recommend upgrading from the latest version of MailSite SP 8. Customers can check the MailSite Customer Portal for the latest version and any available hotfixes and then compare this information to the data gathered during the analysis of the current environment. Customers upgrading from earlier major versions of MailSite SP are also advised to upgrade from the latest available release for their major version though they do not need to go to MailSite SP 8.

Deciding on a Maintenance Window and Disaster Recovery Plan

Many customers have established maintenance windows during which the

MailSite upgrade will take place. Customers without established maintenance times should decide upon an appropriate window and notify their users of the planned upgrade. Through internal testing and field experience, we have found that an in-place rolling upgrade results in approximately 15 minutes of downtime. The amount of downtime may increase in customized scenarios and testing should be performed to accurately estimate amount of downtime.

The Upgrading Your Server section of this white paper discusses disaster recovery options and steps that must be taken to failback to the previous version of MailSite should problems occur during the upgrade. Customers should discuss and agree upon the amount of additional downtime that is permissible should problems occur before a failback is initiated. For example, if the upgrade takes 15 minutes, a failback takes 15 minutes and the maximum permitted downtime is 1 hour then a maximum of 30 minutes should be allowed to resolve problems before failing back.

Restrictions on Performing a Rolling Upgrade of MailSite Web Services

MailSite Express webmail servers can be configured to talk to IMAP and SMTP servers that reside on the same machine or to talk to a remote IMAP and SMTP server. This setting is configured in the `expresscfg.asp` and `pocketcfg.asp` files by setting the IP addresses of the IMAP and SMTP servers to either localhost or a network IP address.

A rolling upgrade of a MailSite Express server is only possible when the webmail servers are configured to connect to localhost because MailSite Express 8 or earlier is unable to communicate with a MailSite 9 mail server. For performance reasons and to enable a rolling upgrade, MailSite, Inc suggests that all webmail servers be configured to talk to localhost and that a firewall be used to restrict external access to the MailSite services.

Restrictions on Using MailSite 9 Features during a Rolling Upgrade

A rolling upgrade allows for minimal downtime and reduced risk during an upgrade. The rolling upgrade process is not intended to allow MailSite 8 and MailSite 9 servers to run side-by-side indefinitely. New MailSite 9 features such as ActiveSync should not be used until after the entire MailSite cluster has been upgraded to the new version.

Upgrading Your Server

The steps outlined in this section must be completed in sequence to ensure a successful upgrade. Markers indicate the beginning of the mail server outage as

well as disaster recovery stages. A failback is performed by initiating the steps for the current disaster recovery stage.

- Set a time for the upgrade and notify customers of the outage. Downtime is required while upgrading the database, applying custom modifications
- At the predetermined time take down the MailSite servers and stop the access of the MailSite SQL database by any custom systems.

THIS MARKS THE BEGINNING OF THE OUTAGE

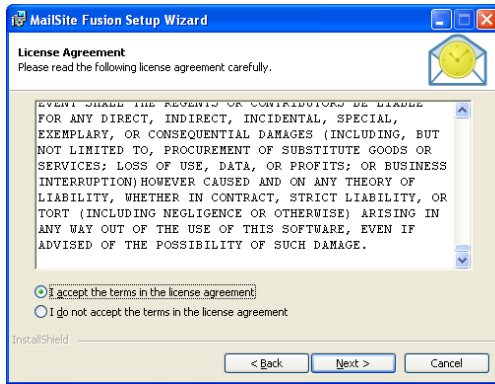
START OF DISASTER RECOVERY STAGE 1

- Perform a full backup of the MailSite SQL database.
- Restore the database backup to create a new cloned database and verify that the restore completed successfully. This cloned database may be used in case of a disaster.
- We recommend that you configure your load balancing switch or firewall to block external users from accessing the mail and webmail servers until after the first mail server has been upgraded and tested.
- Stop the MailSite services on all of the mail and webmail servers.

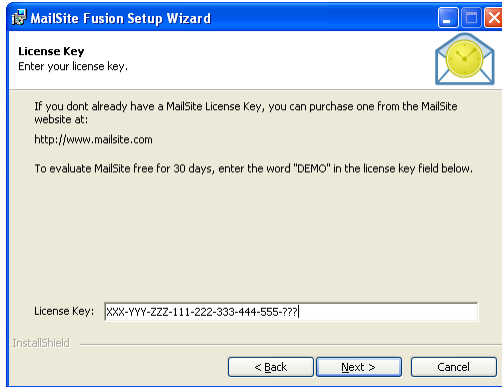
END OF DISASTER RECOVERY STAGE 1

START OF DISASTER RECOVERY STAGE 2

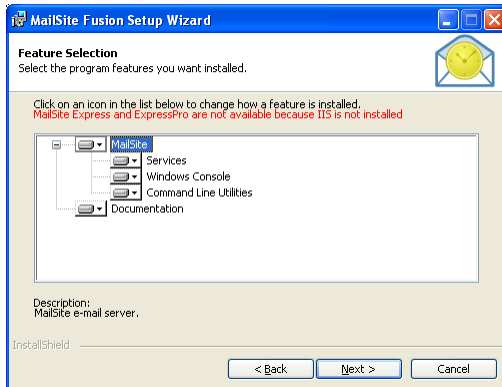
- Choose a MailSite server and use the MSBACK utility to create a backup of the configuration of the server.
- If this is a webmail server, save a copy of the expresscfg.asp and pocketcfg.asp files.
- Run the MailSite 9 setup program. After running the installer the MailSite server will not be properly configured until the SQL Connector Wizard is run and the database is updated. Use the following settings during the installation process:
 - Accept the terms of the license agreement



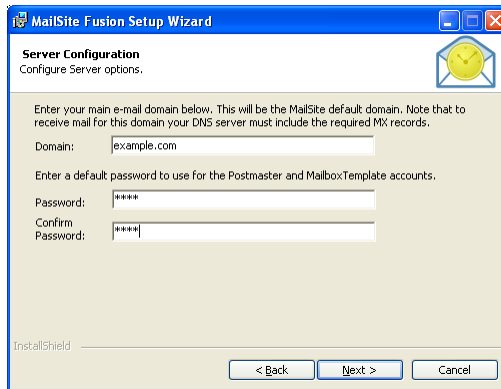
- ❑ Enter your new MailSite Fusion SP 9 license key



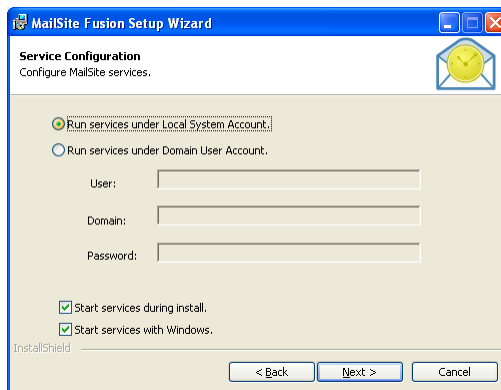
- ❑ If this is a webmail server that is running IIS, select MailSite ExpressPro and/or MailSite Express and/or MailSite Pocket. If IIS is not installed, Web Service options will not be shown.



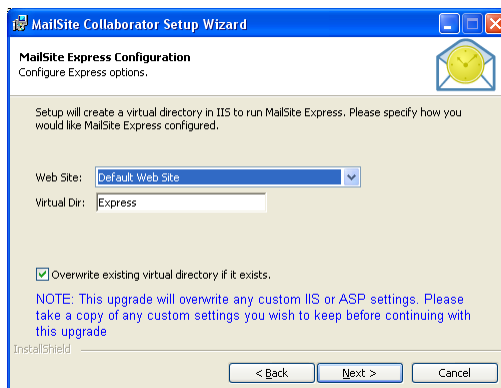
- ❑ Enter the default domain name and password for the administrator account. This is used for MailSite Fusion SP in registry mode and it will be ignored once the SQL Connector Wizard has been run.



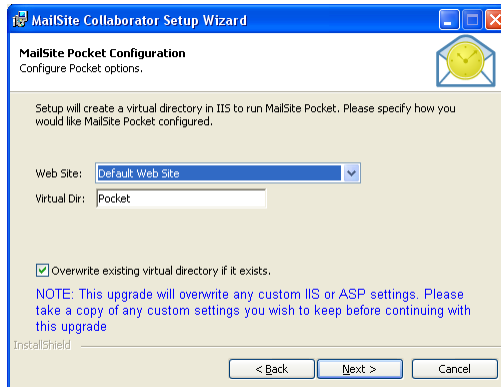
- ❑ Unselect **Start MailSite services during install** as we will start them after running the SQL Connector Wizard.



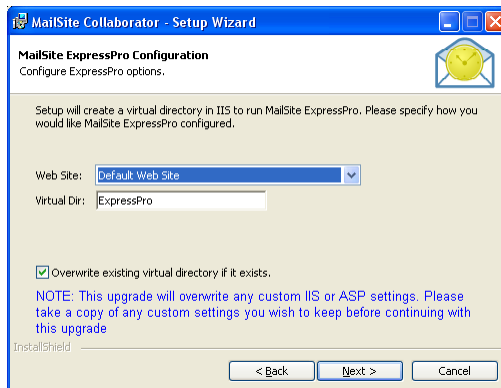
- ❑ If you chose to install MailSite Express then enter the default website and virtual directory for Express. If you are keeping the same website and virtual directory then choose to **Overwrite existing virtual directory**.



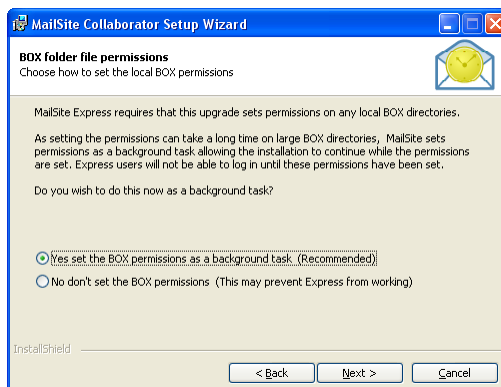
- ❑ If you chose to install MailSite Pocket then enter the default website and virtual directory for Pocket. If you are keeping the same website and virtual directory then choose to **Overwrite existing virtual directory**.



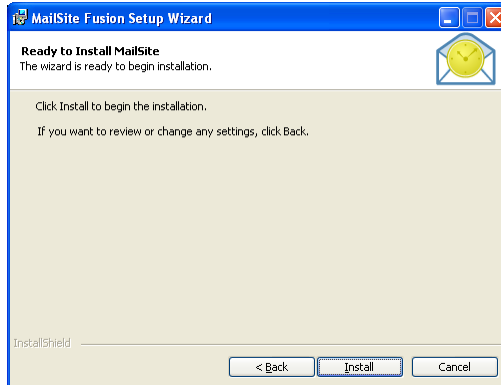
- ❑ If you chose to install MailSite ExpressPro then enter the default website and virtual directory for ExpressPro.



- ❑ Select whether the installer should set the BOX folder file permissions. Clustered installations will almost always use a shared location with permissions already set, in which case select **No**.



- The following screen is presented.



- Click Install to begin the upgrade process. The installer will stop the MailSite services.
- Run the MailSite Console. You may see an error message that the server does not have sufficient licensing for anti-virus or anti-spam. Ignore this error message as it will be resolved after the SQL Connector Wizard has been run.
- Run the SQL Connector Wizard. Configure the server to connect to the MailSite SQL database. Choose to refresh both the tables and stored procedures. Review the generated logs to ensure that no errors occurred during the upgrade process.
- Verify that you can view the domains and mailboxes using MailSite Console and that the anti-virus and anti-spam settings are correct.
- Apply any necessary customizations to the MailSite SQL database.
- If you installed MailSite Express, MailSite ExpressPro or MailSite Pocket, then apply any necessary customizations and configuration changes to the Express, ExpressPro and Pocket websites.
- Restart the MailSite services. At this point the server should be ready to send and receive email so we will test it to verify that the upgrade was successful.
- Using the telnet utility or your favorite email client, verify that you can connect to the upgraded mail server and view the contents of your mailbox.
- If this is a webmail server verify that you can login and view the contents of your mailbox using MailSite ExpressPro or MailSite Express.

- Stop any MailSite services that you do not wish to run on the upgraded mail server. For example, if the server does not service IMAP clients then stop the IMAP4A service.

END OF DISASTER RECOVERY STAGE 2

START OF DISASTER RECOVERY STAGE 3

- If you are performing a rolling upgrade, then configure your firewall to allow external users to resume connections to the mail servers and webmail servers. If you are upgrading the entire platform at once then proceed to step 20 and reconfigure your firewall after all servers are upgraded.

THIS MARKS THE END OF THE OUTAGE

- Upgrade your remaining mail and webmail servers by following the procedure outlined in steps 7 through 18 with the following exception:
 - In step 11 when running the SQL Connector Wizard, do not refresh the MailSite SQL database tables or stored procedures.

END OF DISASTER RECOVERY STAGE 3

Disaster Recovery

Stage 1 Disaster Recovery

Problems backing up and restoring the MailSite SQL database or configuring the network load balancers may require a failback during steps 3-6 of the upgrade procedure. At this point neither the MailSite SQL database nor any MailSite servers have been upgraded. To perform a failback:

- Restart the MailSite services
- Restore the configuration of any load balancing switches and firewalls.

Stage 2 Disaster Recovery

Problems upgrading the MailSite server, running the SQL Connector Wizard or sending/receiving email during testing may require a failback during steps 7 to 18 of the upgrade procedure.

If problems occur upgrading the MailSite server:

- Restart the MailSite services on the remaining mail and webmail servers in the cluster.
- Restore the configuration of any load balancing switches and firewalls. Ensure that traffic is not directed to the affected server.
- Uninstall MailSite SP 9 from the problem server and reinstall MailSite SP 8. Restore the configuration of the mail server using the backup created during step 7.

If problems occur running the SQL Connector Wizard and upgrading the database:

- Check the logs generated by the SQL Connector Wizard while refreshing the tables and stored procedures to determine the source of the problem.
- If the problem can not be found or resolved, restore the MailSite SQL database using the backup created in step 3 and test using one of the remaining MailSite 8 servers.
- Continue with the steps outlined in the previous paragraph.

If problems occur testing the sending and receiving of mail using the upgraded server:

- Check the MailSite error and operations logs and try to determine the source of the problem.
- If the problem cannot be found or resolved, test one of the MailSite 8 mail servers is able to send and receive email using the upgraded database. The MailSite 9 SQL database is backwards compatible with MailSite 8.
- If tests using MailSite 8 are successful then the problem is likely with the upgraded mail server. Restart the MailSite services on the remaining mail servers, reconfigure your load balancing switches and firewalls and contact MailSite Software, Inc. Support for further assistance.
- If tests with MailSite 8 fail, restore the MailSite SQL database using the backup created in step 3 and restart the MailSite services on the remaining MailSite 8 servers, reconfigure your load balancing switches and firewalls and contact MailSite Software, Inc. Support for further assistance.

Stage 3 Disaster Recovery

A disaster during stage 3 is unlikely because of the testing that is performed during the earlier stages when problems are easier to fix. However, it is also problematic because users have been using the system and changes have occurred in the data stored in the MailSite SQL database. This means it is not possible to simply restore the backup of the MailSite SQL database without losing data.

The MailSite 9 database is backwards compatible with MailSite 8 mail servers and it is possible to indefinitely run MailSite 8 mail servers against an upgraded database. In the case of a disaster during stage 3, we recommend that you attempt to run MailSite 8 servers against the upgraded database and contact MailSite Software, Inc. Support for further assistance. Be sure to capture any error logs or messages that have occurred.

Monitoring Platform Performance

A combination of the Microsoft Performance Monitor (Perfmon) and the SQL Profiler should be used to measure the performance of the upgraded platform for at least one-hour before usage begins to climb and one hour after peak-usage occurs. The results of this profiling should be compared with existing baseline results from the previous version.

Appendix

Related Links

[10445: SQL Connector Database Changes between 7.0 and 8.0](#)

What changes have been made to the SQL Tables and SQL Stored Procedures between MailSite SP v7.0.x and v8.0.x?

<http://www.mailsite.com/portal/download.asp>

Download the latest Release

Access the latest Release Notes

<http://www.mailsite.com/support/>

Access MailSite Technical Support Services

Disclaimer

This document is intended as a guide to assist MailSite Software, Inc. customers with the task of upgrading their MailSite servers. It is provided free of charge by MailSite, Inc. and has been prepared and validated on MailSite, Inc. test and production platforms. MailSite, Inc. disclaims all warranties, either express or implied, regarding this document and MailSite, Inc. is not liable for any damages arising directly or indirectly from the information in this document.

Professional Services

MailSite Professional Services can assist with the planning and implementation of your upgrade. To discuss your requirements and arrange for a quote please contact your Account Manager or email sales@mailsite.com .