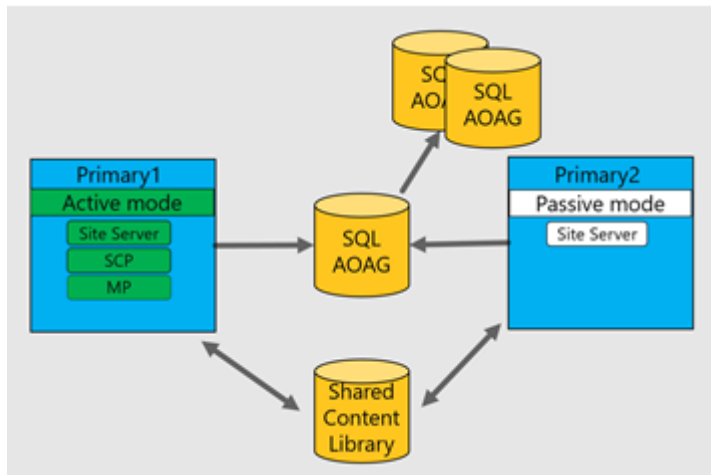


The release of ConfigMgr 1806 introduced the concept of high availability of the Site server by adding an additional primary site as passive node.

This post takes you through a step by step journey in configuring a highly available Site Server.

Here's a high-level architecture overview of the configuration which depicts a remote SQL AlwaysOn availability group hosting the ConfigMgr database and a remote shared Content Library.



#### Prerequisites and Recommendations–

##### Remote SQL

As you plan to prepare your site for HA, the first thing to ensure is your SQL is also HA. This can be a SQL AlwaysOn or a SQL Cluster.

You can also start with a remote standalone SQL and later add it to an Availability Group. Refer [this link](#) for guidance.

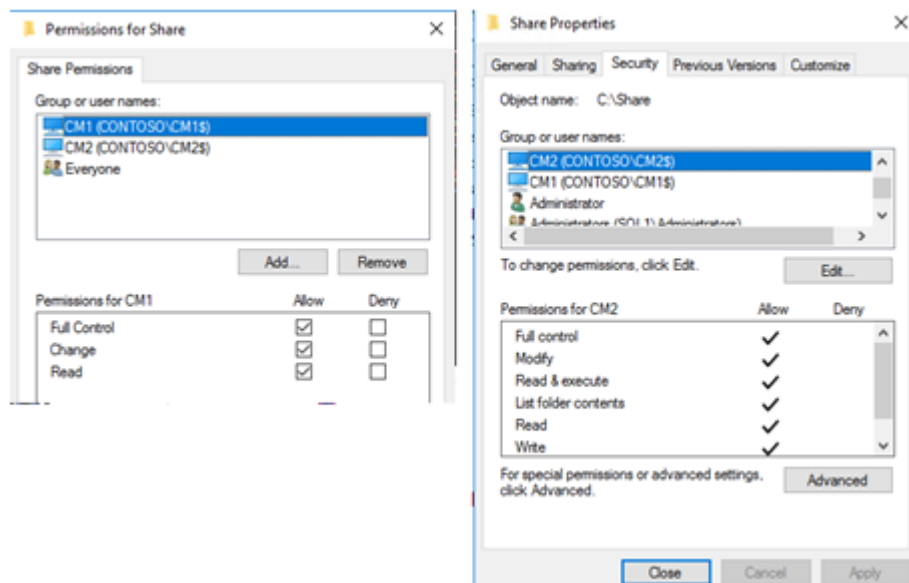
##### Remote Content Library

**Note** - Make sure the Distribution Point role is not installed locally on the primary site and needs to be removed before proceeding.

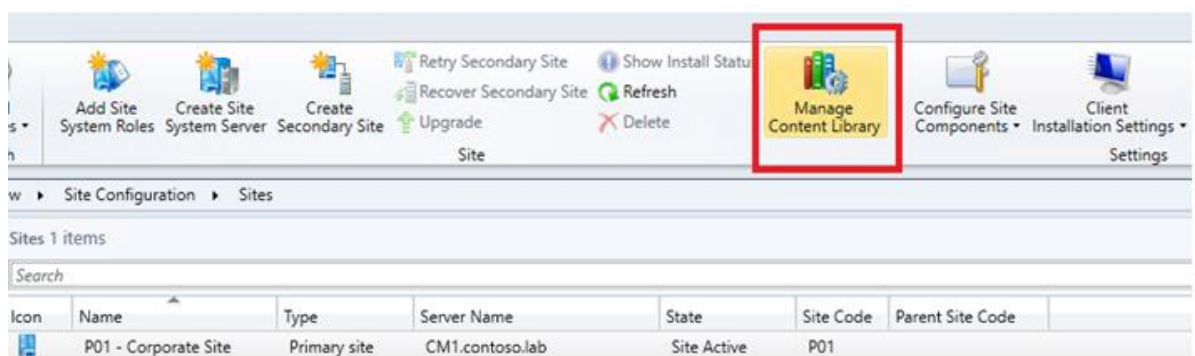
The Content Library also needs to be moved off the primary to a centralized location which can be a network/SAN share.

##### Moving Content Library –

- Create a Shared Folder
- Add the System/Computer Accounts of the both the Site Server (Active and Passive) with full permissions to this share.

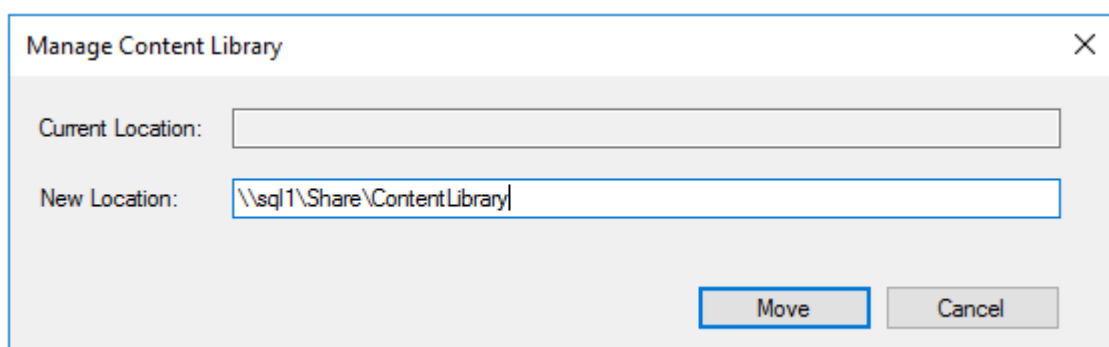


- Open ConfigMgr Console > Administration > Site Configuration > Sites
- Click **Manage Content Library** from the ribbon menu



- From the dialog, specify a folder inside the share (**Not the root of the share**) and click **Move**.

*Selecting the root of the share will result in the following error - CContentDefinition::SyncFolder failed; 0x800700a1 SMS\_DISTRIBUTION\_MANAGER*



- The console will show the move in-progress. You can also refer to the DistMgr.log

Corporate Site			
General		Content Library	
Site Code:	P01	Location:	In progress
Server Name:	CM1.contoso.lab	Status:	11
Install Directory:	C:\Program Files\Microsoft Configuration Manager	Move Progress (%):	
Build Number:	8692		
State:	Site Active		

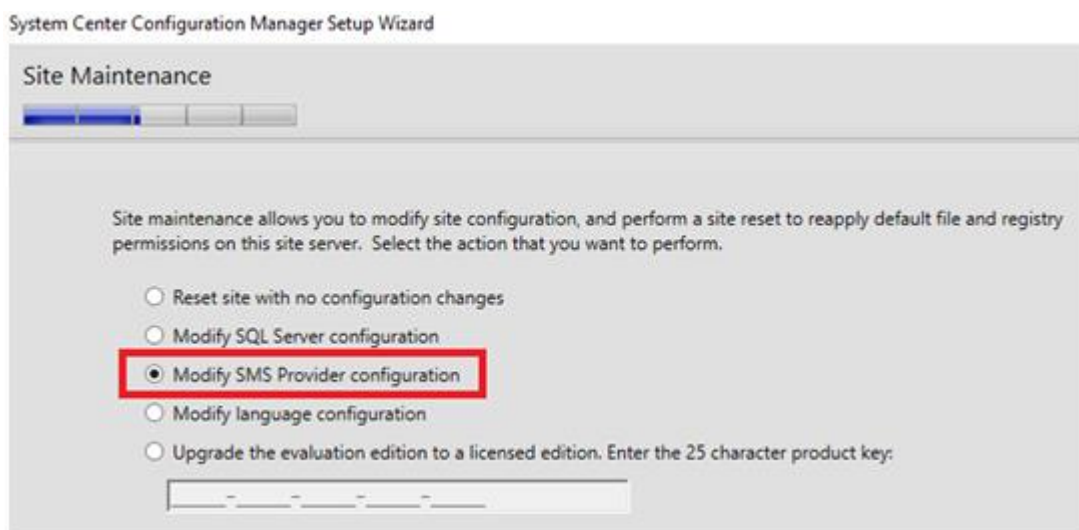
Corporate Site			
General		Content Library	
Site Code:	P01	Location:	\\sql11\Share\ContentLibrary
Server Name:	CM1.contoso.lab	Status:	Complete
Install Directory:	C:\Program Files\Microsoft Configuration Manager	Move Progress (%):	100
Build Number:	8692		
State:	Site Active		

## Remote SMS Provider

If the SMS provider is not already remote, install an additional SMS Provider [do not choose the passive site server] which is not local to the Primary Site.

Note – [ADK](#) is a prerequisite for SMS Provider

- Run the ConfigMgr setup and choose **Modify SMS Provider configuration**



- Add the FQDN of the remote server [do not choose the passive site server] where you plan to install the SMS Provider and click **Next**

System Center Configuration Manager Setup Wizard

### Manage SMS Providers

SMS Providers are used by the Configuration Manager console to communicate with the site database.

☒ Add a new SMS Provider

Specify the server where the SMS Provider will be installed.

SMS Provider (FQDN):      Example: server1.contoso.com

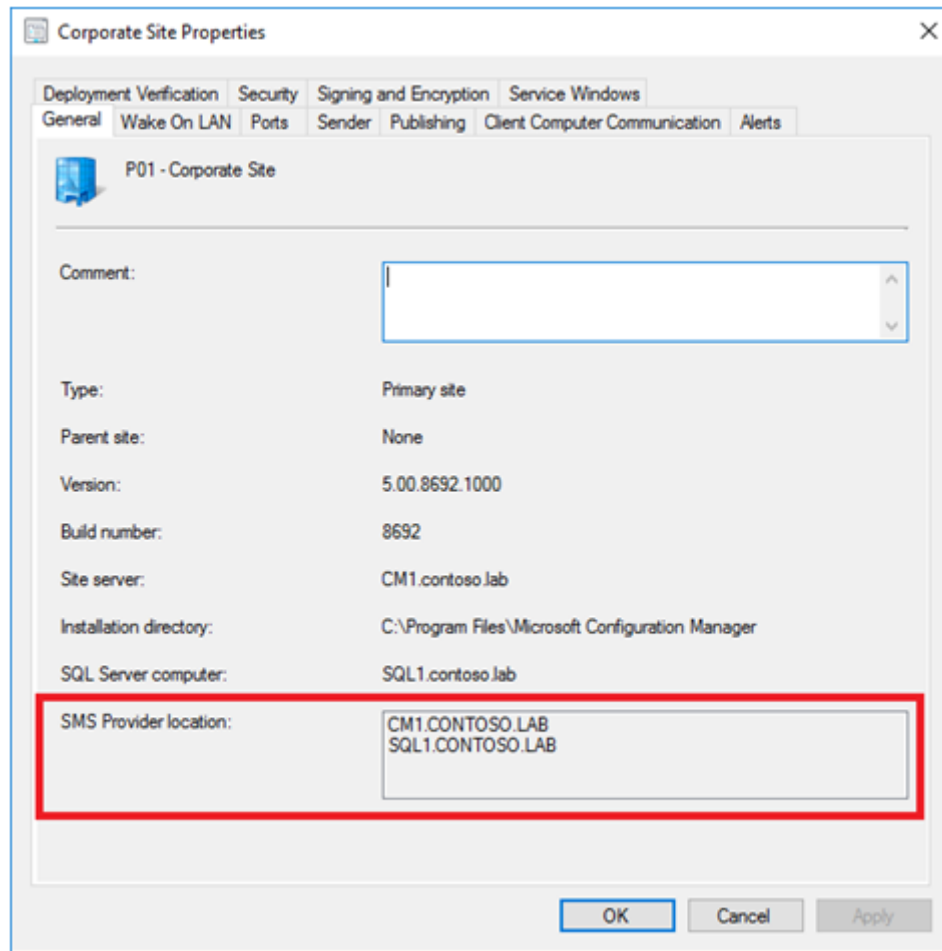
Note: The SMS Provider cannot be installed on a server that is configured for SQL Server clustering.

☐ Uninstall the selected SMS Provider

SMS Provider server:

< Previous      Next >      Cancel

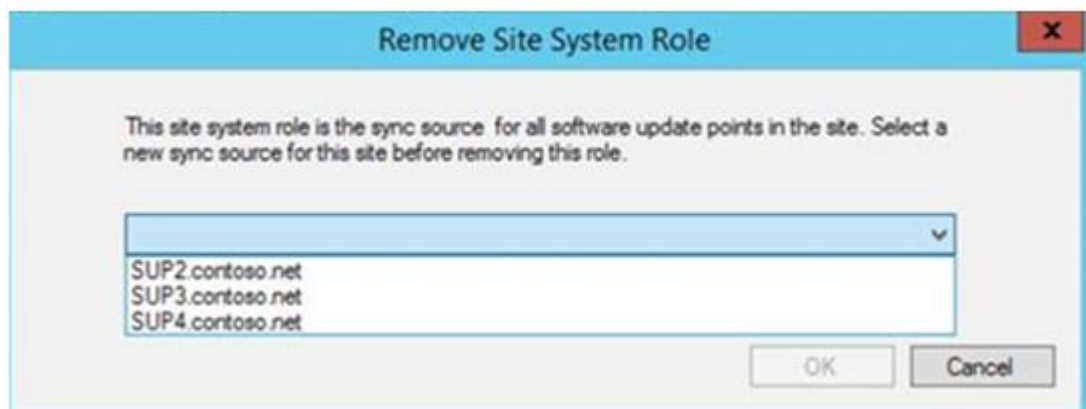
- Validate a successful install from the console.



## Remote SUP

If the SUP role is not already remote, do plan to offload it from the Primary Site Server to a remote Server.

- Add additional SUP Server/s
- Remove SUP role from Primary Site and choose one of the remote SUP's as the new active source.



## Passive Site Server - Prerequisites

Operating System:

The passive site server can run [any supported OS](#) and doesn't need to match the existing Primary Site Server OS.

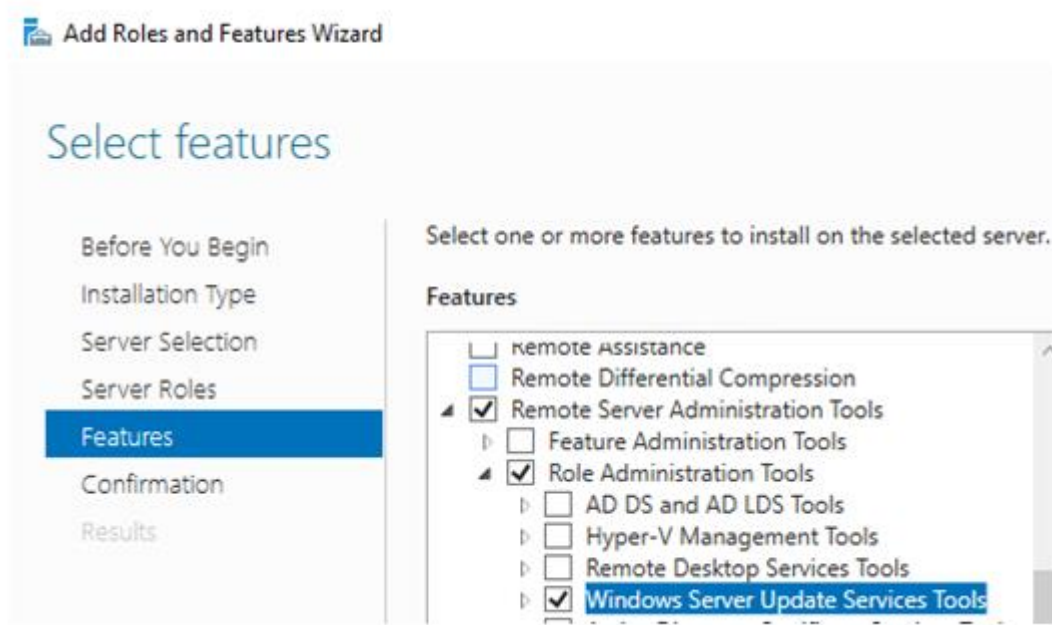
This enables the scenario where you might want to move to a new OS for your Primary Site without performing an in-place upgrade or a backup/restore.

OS Features and ADK

- Download and Install [ADK](#)

Install the following features –

- Remote Differential Compression
- Remote Server Administration Tools > **Windows Server Update Services Tools** [WSUS sync will fail without this]

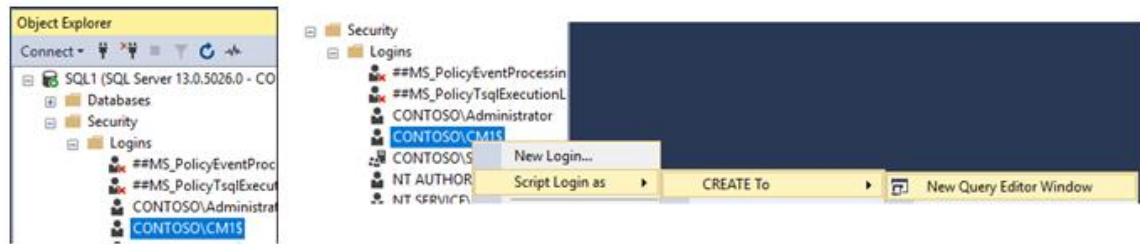


Permissions:

Add the System/Computer account of the Passive Site Server to the following locations –

- Content Library Share – In case you missed from the previous step of moving the content library.
- Administrators Group of Active/Current Primary Site Server.
- Administrators Group of SQL Server (All nodes for SQL Clusters/AlwaysOn).
- SMS Admins group on all SMS Providers.
- System Management Container in AD.
- SysAdmin on SQL Server (All nodes for SQL AlwaysOn). – Follow the instructions below –
  - Launch SQL Server Management Studio
  - Expand **Security** and select the machine account of the current Active Primary Site (Contoso\CM1\$)

- Right click and choose **Script Login as > CreateTo > New Query Editor Window**



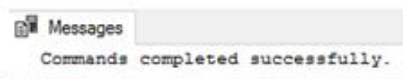
- Replace the computer account of the Active Primary Site to the Passive Primary Site and click **Execute**.

```
USE [master]
GO

CREATE LOGIN [CONTOSO\CM2$] FROM WINDOWS WITH DEFAULT_DATABASE=[master], DEFAULT_LANGUAGE=[us_english]
GO

ALTER SERVER ROLE [sysadmin] ADD MEMBER [CONTOSO\CM2$]
GO

ALTER SERVER ROLE [securityadmin] ADD MEMBER [CONTOSO\CM2$]
GO
```




- Expand Databases > ConfigMgr DB CM\_P01 > Security
- Select the machine account of the current Active Primary Site (*Contoso\CM1\$*)
- Right click and choose **Script Login as > CreateTo > New Query Editor Window**



- Replace the computer account of the Active Primary Site to the Passive Primary Site and click **Execute**.

```
USE [CM_P01]
GO

CREATE USER [CONTOSO\CM2$] FOR LOGIN [CONTOSO\CM2$] WITH DEFAULT_SCHEMA=[dbo]
GO
```

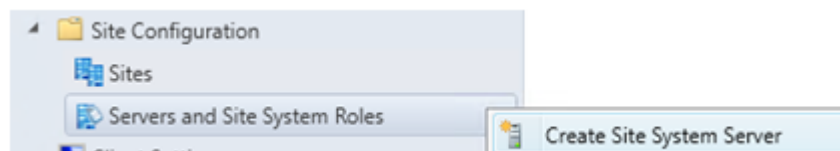
 Messages

Commands completed successfully.

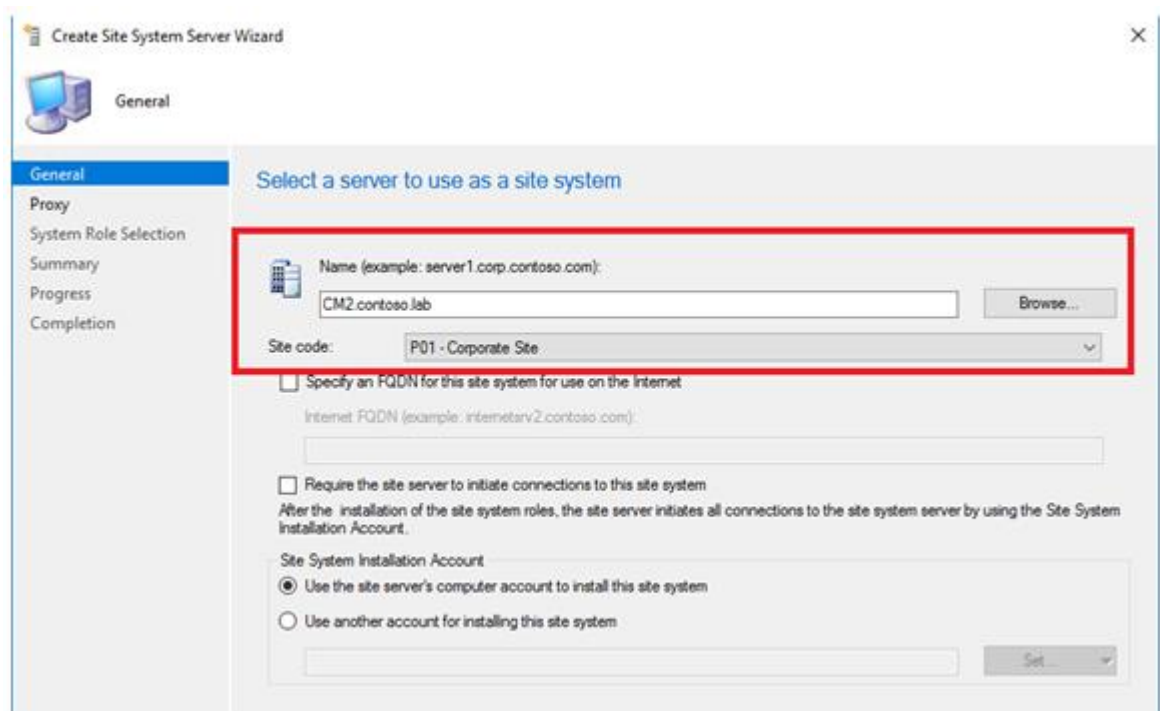
## Installing Passing Site Server

Adding the Passive Site Server system is straight forward.

- Create a new Site System Server from the Administration node.



- Browse the desired Passive Primary Site Server FQDN and click **Next**

A screenshot of the 'Create Site System Server Wizard' window, specifically the 'General' page. The window has a title bar 'Create Site System Server Wizard' and a close button. On the left is a navigation pane with 'General' selected, followed by 'Proxy', 'System Role Selection', 'Summary', 'Progress', and 'Completion'. The main area is titled 'Select a server to use as a site system'. It contains a text box for 'Name (example: server1.corp.contoso.com):' with the value 'CM2.contoso.lab' and a 'Browse...' button. Below this is a 'Site code:' dropdown menu showing 'P01 - Corporate Site'. There are three checkboxes: 'Specify an FQDN for this site system for use on the Internet' (unchecked), 'Require the site server to initiate connections to this site system' (unchecked), and 'Use the site server's computer account to install this site system' (selected). Below the last checkbox is a text box for 'Use another account for installing this site system' and a 'Set...' button. A 'Next' button is at the bottom right.

- From the Role Selection page, choose **Site server in passive mode** and click Next



Create Site System Server Wizard

System Role Selection

General  
Proxy  
**System Role Selection**  
Site Server In Passive Mode  
Summary  
Progress  
Completion

### Specify roles for this server

Available roles:

- ☐ Application Catalog web service point
- ☐ Application Catalog website point
- ☐ Asset Intelligence synchronization point
- ☐ Certificate registration point
- ☐ Cloud management gateway connection point
- ☐ Data Warehouse service point
- ☐ Distribution point
- ☐ Endpoint Protection point
- ☐ Enrollment point
- ☐ Enrollment proxy point
- ☐ Fallback status point
- ☐ Management point
- ☐ Reporting services point
- ☒ Site server in passive mode
- ☐ Software update point
- ☐ State migration point

Description:

A site server in passive mode adds fault tolerance to your site by creating a copy of your active site server and keeping it in sync. You can manually promote the site server in passive mode to active mode.

< Previous   **Next >**   Summary   Cancel

- Choose your desired option to provide the Source files.
- Specify the Installation directory. [do not choose the root of the Program Files, it must be a directory inside and doesn't needs to be already present]

Create Site System Server Wizard

Site Server In Passive Mode

General  
Proxy  
System Role Selection  
**Site Server In Passive Mode**  
Summary  
Progress  
Completion

Specify the location of the Configuration Manager installation source files and directory to use

The Configuration Manager installation and source files will be obtained from the following location to install a site server in passive mode.

☒ Copy installation source files over the network from the site server in active mode

☐ Use the source files at the following location on the site server in passive mode

Local path: Example: C:\SourceFiles

☐ Use the source files at the following network location

UNC path: Example: \\Server1\SourceFiles

Specify the installation folder for the new site server:

< Previous **Next >** Summary Cancel

- Click Next to complete and finish the wizard.

Create Site System Server Wizard

Summary

General  
Proxy  
System Role Selection  
Site Server In Passive Mode  
**Summary**  
Progress  
Completion

The wizard will create a new site system server with the following settings

Details:

Create a site system server with the following settings:

- Site System Name
  - CM2-contoso-lab
- Site Code
  - P01 - Corporate Site
- Settings
  - Public FQDN: Not specified
  - Installation Account: Computer Account
- Roles
  - Site server in passive mode
- Proxy Settings
  - Proxy will not be enabled

Create Site System Server Wizard

Completion

General  
Proxy  
System Role Selection  
Site Server In Passive Mode  
Summary  
**Completion**  
Progress

The Create Site System Server Wizard completed successfully

Details:

Create a site system server with the following settings:


- Success: Site System Name
  - CM2-contoso-lab
- Success: Site Code
  - P01 - Corporate Site
- Success: Settings
  - Public FQDN: Not specified
  - Installation Account: Computer Account
- Success: Roles
  - Site server in passive mode
- Success: Proxy Settings
  - Proxy will not be enabled

- Validate the progress in the FailOverMgr.log



The Scheduler and Sender creates job to copy the files to the Passive Site Server. You can also check the ConfigMgrSetup.log on the root of the Passive Site Server.

Refer the [Installation Workflow](#) in this link.

- Validate the successful completion on the console. Both the Active and Passive Site Servers with status OK

Sites 1 items						
Search						
Icon	Name	Type	Server Name	State	Site Code	Parent Site Code
	P01 - Corporate Site	Primary site	CM1.contoso.lab	Site Active	P01	

Corporate Site				
Icon	Server Name	Site Code	Mode	Status
	\\CM1.contoso.lab	P01	Active	OK
	\\CM2.contoso.lab	P01	Passive	OK

The following Registry Keys are created which reflects the Passive Site Server –

- HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\SMS\Identification

Value name:

Value data:

- HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\SMS\Site Failover


Value name:

Value data:



## Troubleshooting Installation

If you experience issues while installation, let's say you missed a prerequisite and the installation failed, refer the below steps.

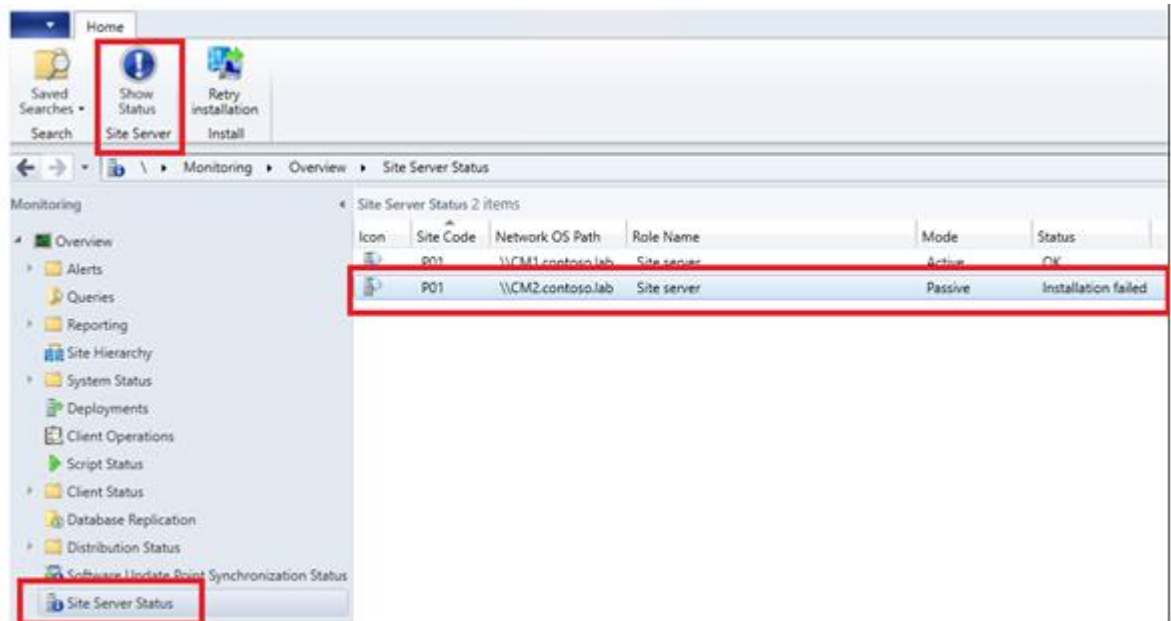
- The Console status shows the Passive Site Server as Installation failed. You will get the right click option to Retry Installation

HW > Site Configuration > Sites							
Sites 1 items							
Search							
Icon	Name	Type	Server Name	State	Site Code	Parent Site Code	
	P01 - Corporate Site	Primary site	CM1.contoso.lab	Site Active	P01		

Corporate Site					
Icon	Server Name	Site Code	Mode	Status	
	\\CM1.conto...	P01	Active	OK	
	\\CM2.conto...	P01	Passive	Installation failed	

- The reason for the failure is available under Monitoring > Site Server Status
- Click on Show Status to view the reason of failure.



### Site Server Installation Status

Detailed status of adding a site server in passive mode to the site P01

Refresh

Name	Status	Last Update Time
❌ Prerequisite Check	Failed	8/31/2018 10:06:53 AM
Preparation	Not started	
Installation	Not started	
Post Installation	Not started	
Promotion	Not started	

Name	Status	Last Update Time	Description
✅ Primary FQDN	Completed	8/31/2018 10:06:42 AM	Checks if the FQDN p
✅ Domain membership	Completed	8/31/2018 10:06:42 AM	Verifies that the compu
✅ Administrative share (Site system)	Completed	8/31/2018 10:06:42 AM	Verifies that the requi
✅ Site Server FQDN Length	Completed	8/31/2018 10:06:42 AM	Checking Site Server
✅ Existing Configuration Manager server components on sit...	Completed	8/31/2018 10:06:42 AM	Checks if the target sit
✅ SQL Server sysadmin rights	Completed	8/31/2018 10:06:53 AM	Verifies that the user a
✅ Unsupported site server operating system version for Set...	Completed	8/31/2018 10:06:53 AM	Starting with version 1
✅ Free disk space on site server	Completed	8/31/2018 10:06:42 AM	Checks that the site se
✅ Pending system restart	Completed	8/31/2018 10:06:42 AM	Checks if a system res
❌ Microsoft Remote Differential Compression (RDC) library r...	Failed	8/31/2018 10:06:42 AM	Verifies that the Micro
✅ Windows Deployment Tools installed	Completed	8/31/2018 10:06:42 AM	Checks whether the V
✅ Windows Preinstallation Environment installed	Completed	8/31/2018 10:06:42 AM	Checks whether the V
✅ User State Migration Tool (USMT) installed	Completed	8/31/2018 10:06:42 AM	Checks whether the L
✅ Setup source files and directory access	Completed	8/31/2018 10:06:42 AM	Verifies if the machine

Description:

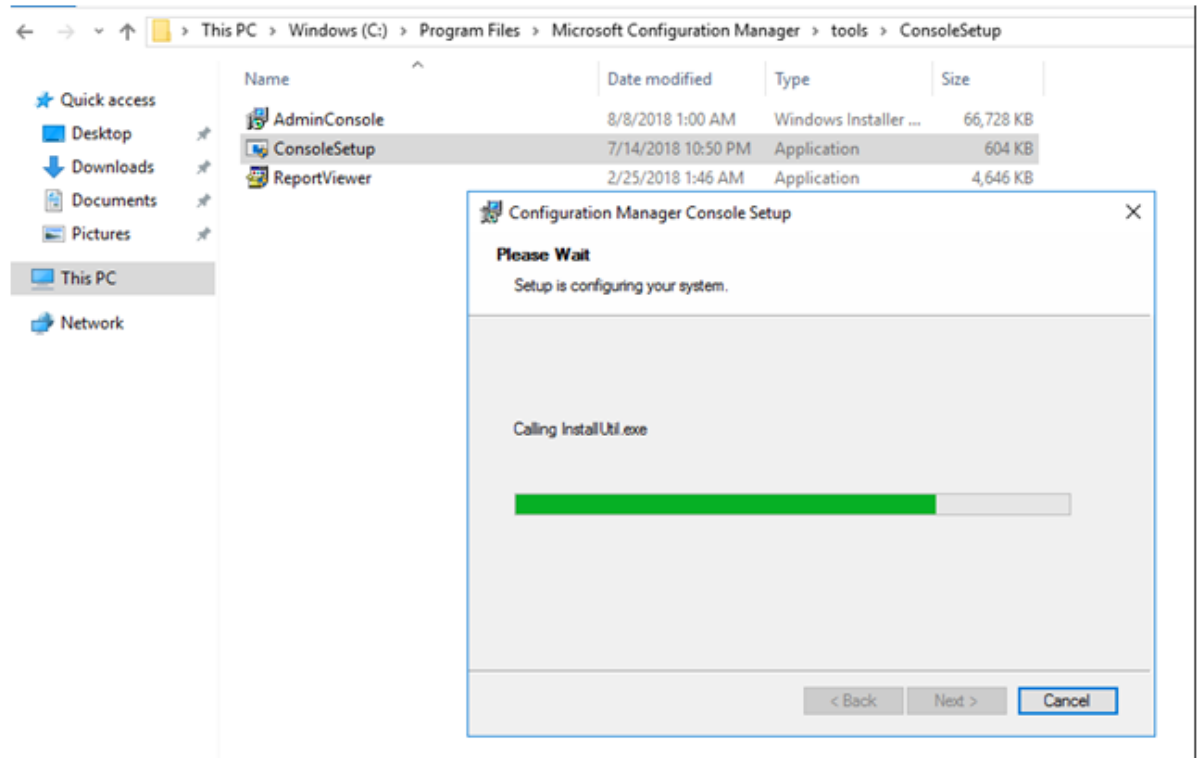
[Completed].Checks if the FQDN provided for the site system uses the primary DNS hostname for the computer.

- Once you resolve the issue, click Retry Installation.

## Console

The ConfigMgr console is not installed as a part of the Passive Site Server installation and needs to be manually installed.

- Go to Installation directory > Tools > ConsoleSetup folder to initiate the installation.

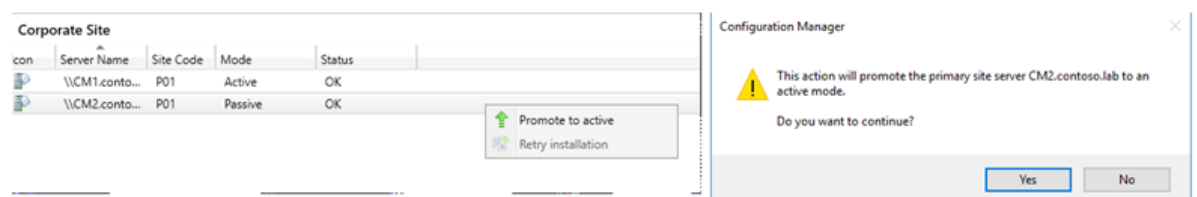


- Connect to the Passive Primary Site Server



## Promote Passive Site Server - Planned

Its now time to test the Passive Site Server by promoting it as Active.



- Console > Administration > Site Configuration > Sites > Nodes Tab
- Select Passive Site Server > Right click and choose Promote to Active and confirm.





- Note the change in Status from OK to **Promoting** (Passive to Active) and **Installing** for the Active to Passive site.

Icon	Server Name	Site Code	Mode	Status
	\\CM1.conto...	P01	Passive	Installing
	\\CM2.conto...	P01	Active	Promoting

Subsequent failover will only change to Promoting for the Passive Site as it doesn't need to install any components

Icon	Server Name	Site Code	Mode	Status
	\\CM1.conto...	P01	Active	Promoting
	\\CM2.conto...	P01	Passive	OK

- Review the FailOverMgr.log on both the nodes.
- The **Mode** (Active/Passive) switches between the two Site Servers and Status to **OK**.

Icon	Server Name	Site Code	Mode	Status
	\\CM1.conto...	P01	Passive	OK
	\\CM2.conto...	P01	Active	OK

- The Primary Site Server name changes to the Passive Site Server which we just promoted to Active.

Administration

Overview

Site Configuration

Sites

Administration

Overview

Updates and Servicing

Hierarchy Configuration

Cloud Services

Site Configuration

Sites

Servers and Site System Roles

Client Settings

Security

Distribution Points


Distribution Point Groups

Migration

Management Insights

Sites 1 items

Search

Icon	Name	Type	Server Name	State	Site Code	Parent Site Code	
	P01 - Corporate Site	Primary site	CM2.contoso.lab	Site Active	P01		

Corporate Site

General

Content Library

Site Code:

Server Name:

Install Directory:

Build Number:

State:

P01

CM2.contoso.lab

C:\Program Files\Microsoft Configuration Manager

8692

Site Active

Location:

Status:

Move Progress (%):

\\sql11share\ContentLibrary

Complete

100

Here's a [Flowchart - Promote site server \(planned\)](#)

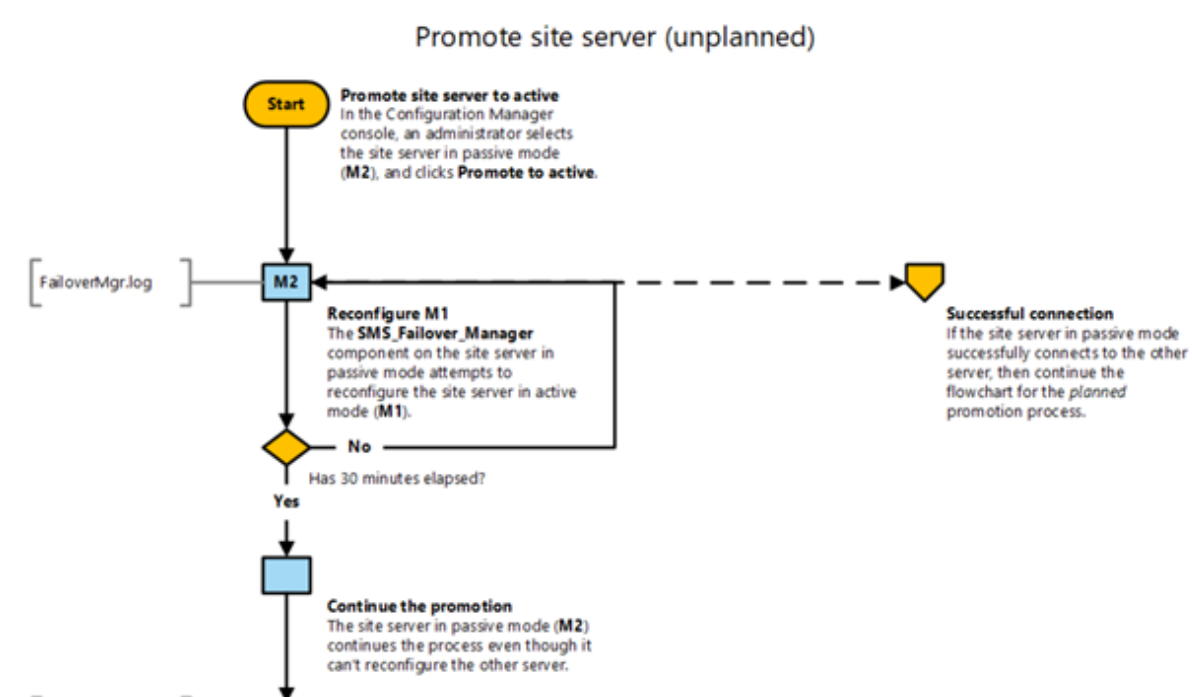
Promote Passive Site Server – Unplanned [30-minute delay]

This will be an actual disaster scenario where the Active Primary Site Server is offline, and you need to promote the Passive Site Server to Active. There is no automatic failover.

The steps are same as above to switch a Passive Site Server to Active via the ConfigMgr Console.

**Note** – There is a 30-minute wait before the Passive Site Server switches to Active mode. Refer the [Unplanned Workflow](#) snippet below. The time start when you click Promote Active and not since the server is actually offline which could be longer.

I had to restart the Site Server to fully initialize and act as an Active Site Server.



#### Limitations and Non-HA Site System Roles

- Refer the Site Server HA Limitations in [this link](#).
- Certain Site System roles do not support high availability (example – Service Connection Point), the option is to Uninstall and Reinstall the role on a new server. Refer [this link](#) for guidance on each role.
- When you have two primary sites(active/passive), it may get confusing when you are troubleshooting and looking at logs. Always check the time stamps to be sure.