



LEGACY INSTALLATION GUIDE

# Network Configuration Manager

Version 7.6 and earlier

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# Installation overview

Use this installation guide to install **NCM 7.6 and earlier**. For **NCM 7.7 and later**, use the [SolarWinds Orion Installer](#).

 If you have SolarWinds Network Configuration Manager 7.5 or later, use the [SolarWinds Orion Installer](#) to upgrade one or more Orion Platform products simultaneously.

The SolarWinds Orion Installer supports only direct upgrades. You can use it to upgrade NCM 7.5 and later to NCM 7.7. If you run the SolarWinds Orion Installer to upgrade NCM from version 7.4 or earlier, the installer provides links to manually install the version from which the direct update is possible, and asks you to re-run the installer after you finish the manual update. Use this guide to perform the manual installation.

 To get started using SolarWinds NCM, see the [NCM Getting Started Guide](#).

## Single server standalone: Installation or upgrade

This option installs or upgrades NCM on a host by itself, without any other Orion Platform products.

## Single server integrated: Upgrade only

This option installs SolarWinds NCM on a host with another Orion Platform product, integrating those products so that you can access their features from a single Orion Web Console.

Installing or upgrading SolarWinds NCM involves these processes:

- Installing the software
- Configuring the database, website, and services
- Discovering network devices

Whether you are installing or upgrading SolarWinds NCM, in order to ensure its best performance on your server host, determine the [files and directories to exclude from anti-virus scanning](#).

SolarWinds NCM installation software is in your [customer portal](#).

# NCM 7.6 Requirements

Requirements vary based on:

- The number of nodes
- The frequency of configuration downloads
- The length of time that configurations are maintained in the database



## Port requirements


The following ports may be needed for the Orion Web Console, depending on how SolarWinds NCM is set up to download and upload configurations:


PORT	TYPE	DESCRIPTION
22	SSH/SCP	Default port for NCM to transfer configs
23	Telnet	Default port for NCM to transfer configs
25	TCP	SMTP email default that NCM uses for notification (If SSL/TLS encryption is set up on SMTP server, default port is 465)
69	UDP	TFTP server listens on this port
80	TCP	HTTP default for Orion Web Console
161	UDP	SNMP statistics collection, the default for polling in NCM
162	UDP	Trap messages listened for and received by the Trap Server
443	TCP	Default port for HTTPS binding.
465	TCP	The port used for SSL-enabled email alert actions
514	UDP	Syslog Service listens for incoming messages
587	TCP	The port used for TLS-enabled email alert actions
1801	TCP	MSMQ WCF binding (for more information see <a href="#">this article from Microsoft</a> )
5671	TCP	For encrypted RabbitMQ messaging (AMQP/TLS) into the main polling engine from all Orion servers
17777	TCP	Orion module traffic. Open the port to enable communication from your poller to the Orion Web Console, and from the Orion Web Console to your poller. The port used for communication between the Orion Web Console and the poller.
17778	HTTPS	Required for access to the SWIS API and agent communication
17779	HTTP	SolarWinds Toolset Integration over HTTP

Ports 4369, 5672, and 25672 are opened by default. These ports can be blocked by the firewall.

## Server requirements

TYPE	REQUIREMENTS						
Operating System	<ul style="list-style-type: none"> <li>Windows Server 2012 and Windows Server 2012 R2</li> <li>Windows Server 2016</li> </ul> <p>For evaluation purposes only:</p> <ul style="list-style-type: none"> <li>Windows 7 SP1</li> <li>Windows 8 (except Standard edition)</li> <li>Windows 8.1 including Update 1 (except Standard edition)</li> <li>Windows 10</li> </ul> <div data-bbox="305 747 1513 846" style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p> Installing SolarWinds Orion on Windows Server 2012 R2 Essentials is not supported.</p> </div>						
Operating System Language	<ul style="list-style-type: none"> <li>English</li> <li>German</li> <li>Japanese</li> <li>Simplified Chinese.</li> </ul> <div data-bbox="305 1062 1513 1161" style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <p> NCM does not support using locales outside the group of supported operating system languages.</p> </div>						
SolarWinds NCM Server Hardware	<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">CPU Speed</td> <td style="width: 30%;">3 GHz dual core dual processor</td> </tr> <tr> <td>Memory</td> <td>4GB</td> </tr> <tr> <td>Hard Drive Space</td> <td>30GB</td> </tr> </table> <p style="margin-top: 10px;">This version of SolarWinds NCM holds a searchable config index on local disk that adds 6-10GB additional disk space to the previous requirement.</p>	CPU Speed	3 GHz dual core dual processor	Memory	4GB	Hard Drive Space	30GB
CPU Speed	3 GHz dual core dual processor						
Memory	4GB						
Hard Drive Space	30GB						
Installing Windows Account	Requires administrator permission on the target server.						
File System Access Permissions	Ensure the Network Service account has modify access to the system temp directory: %systemroot%\temp.						
SolarWinds Orion Syslog Server	If you want real time change detection triggered through devices sending Syslog messages, the executable must have read and write access to the Orion Platform database.						

TYPE	REQUIREMENTS
SolarWinds Orion Trap Service	If you want real time change detection triggered through devices sending SNMP traps, the executable must have read and write access to the Orion Platform database.
Microsoft SNMP Trap Service	Must be installed if you want real time change detection triggered through devices sending SNMP traps.
Microsoft IIS	Version 7.5 or later. DNS specifications require hostnames to be composed of alphanumeric characters (A-Z, 0-9), the minus sign (-), and periods (.). Underscore characters (_) are not allowed.
<div style="border: 1px solid #ccc; padding: 5px;"> <p> SolarWinds neither recommends nor supports the installation of SolarWinds NCM on the same server or using the same database server as a Research in Motion (RIM) Blackberry server.</p> </div>	
Microsoft ASP .NET 2.0 Ajax Extension	Version 1 or later If this is not found on the target computer, the setup program downloads and installs the component.
Microsoft .NET Framework	Version 4.5 (and compatible with 4.6.1) If the required version is not found on the target computer, the setup program downloads and installs it. Ensure that .NET is turned on in Windows Features.

TYPE	REQUIREMENTS
Database	<p>You must create the SolarWinds Orion database with the SolarWinds Configuration Wizard. Creating the database another way is not supported.</p> <p>SolarWinds supports using NCM with database servers set up in these languages: English, German, Japanese, and Chinese, but only supports storing characters in the UTF-8 set.</p> <p>The following database servers are supported:</p> <ul style="list-style-type: none"><li>• SQL Server 2014 and SQL Server 2014 with SP1 , and with Always On Availability Groups</li><li>• SQL Server 2012, with or without SP1 and SP2, Standard or Enterprise</li></ul> <div data-bbox="305 604 1513 663" style="border: 1px solid #ccc; padding: 5px;"><p> NCM local SQL database uses SQL 2014 Express.</p></div> <p>You can use the following database select statement to check your SQL Server version, service pack or release level, and edition:</p> <pre>select SERVERPROPERTY ('productversion'), SERVERPROPERTY ('productlevel'), SERVERPROPERTY ('edition')</pre> <p>The following SQL server collations are supported:</p> <ul style="list-style-type: none"><li>• English with collation setting SQL_Latin1_General_CP1_CI_AS</li><li>• English with collation setting SQL_Latin1_General_CP1_CS_AS</li><li>• German with collation setting German_PhoneBook_CI_AS</li><li>• Japanese with collation setting Japanese_CI_AS</li><li>• Simplified Chinese with collation setting Chinese_PRC_CI_AS</li></ul> <p>Your database server must support mixed-mode authentication or SQL authentication and have the following protocols enabled:</p> <ul style="list-style-type: none"><li>• Shared memory</li><li>• TCP/IP</li><li>• Named Pipes</li></ul> <p>SQL Server 2008 Express Edition does not enable these protocols.</p> <p>The following x86 components must be installed:</p> <ul style="list-style-type: none"><li>• SQL Server System Common Language Runtime (CLR) Types</li><li>• Microsoft SQL Server Native Client</li><li>• Microsoft SQL Server Management Objects</li></ul> <p>If the components are not found on the target computer, the setup program downloads and installs the components.</p>
Browser	<ul style="list-style-type: none"><li>• Microsoft Internet Explorer 11 (standard and mobile views) and Microsoft Edge</li><li>• Mozilla Firefox 45, or latest supported versions</li><li>• Google Chrome 49, or latest supported versions</li></ul>



## Additional information

- The SolarWinds NCM Information Service requires that the Net.TCP Port Sharing service be enabled and port 17777 open for TCP traffic to the SolarWinds NCM server. By default, this service is disabled. The setup program sets the service to manual. Resetting the service setting to disabled is not recommended.
- To take advantage of the numerous integration points in SolarWinds NCM, install the SolarWinds Engineer's Toolset on the same server. You can also take advantage of integration points built into the Web Console by installing the Toolset on computers used to access the Web Console.

## About the SolarWinds Orion database

Microsoft SQL Server 2014 Express Edition is distributed with SolarWinds NCM. SQL Server 2014 Express Edition supports a maximum database size of 10GB, is limited to 1GB of RAM use, and takes advantage of only 1 CPU in a multiprocessor server, according to information published by Microsoft.

SolarWinds recommends that you create the database on a separate SQL Server host, and not the SolarWinds NCM host. To increase performance, we recommend using a remote SQL Server host if you are installing SolarWinds NCM on the same host as SolarWinds NPM.

The following characters cannot be included in the database name:

- Asterisk (\*)
- Closing square bracket (])
- Colon (:)
- Semicolon (;)
- Single quote (')
- Double quote (")
- Backward slash (\)
- Forward slash (/)
- Less than (<)
- Greater than (>)
- Question mark (?)

The following characters cannot be included in the user name or password of the database account:

- Semicolon (;)
- Single quote (')

# Install SolarWinds NCM

An Orion Platform product is one whose features and functions can be accessed and managed through the Orion Web Console. Integrating SolarWinds NCM with another Orion Platform product on a single server makes all features accessible from the same Orion Web Console.

## Orion platform products: Integration support

After installing SolarWinds NCM in a standalone deployment, installing and integrating another Orion Platform product can only be done on the SolarWinds NCM server. The other Orion product shares the Orion Platform database established with the SolarWinds NCM installation.

Because they share a single database, you cannot integrate SolarWinds NCM with an Orion Platform product installed on a different host. For the same reason, you cannot separate SolarWinds NCM from another Orion Platform product once they are integrated.

If you are integrating a new deployment of SolarWinds NCM with another Orion Platform product, the other product must be installed first on the host.

SolarWinds NCM version 7.6 integrates with the following Orion Platform products and versions:

- SolarWinds Network Performance Monitor (NPM) version 12.1
- SolarWinds Server and Application Monitor (SAM) versions 6.2.x, 6.3.x, 6.4
- SolarWinds Enterprise Operations Console version 1.6.3
- SolarWinds IP Address Manager (IPAM) versions 4.3.x
- SolarWinds User Device Tracker (UDT) version 3.2.4
- SolarWinds VNQM (IPSLA) versions 4.2.x
- SolarWinds Engineer's Toolset version 11.0.3

SolarWinds NCM shares common components with all Orion Platform products. Installing and configuring SolarWinds NCM involves shutting down and restarting all Orion services. Choose a time to install when your IT operation can tolerate a short period of downtime for Orion Platform products.

## About the Orion Platform database

Microsoft SQL Server 2014 Express Edition is distributed with SolarWinds NCM. SQL Server 2014 Express Edition supports a maximum database size of 10GB, is limited to 1GB of RAM use, and takes advantage of only 1 CPU in a multiprocessor server, according to information published by Microsoft.

SolarWinds recommends that you create the database on a separate SQL Server host, and not the SolarWinds NCM host. To increase performance, we recommend using a remote SQL Server host if you are installing SolarWinds NCM on the same host as SolarWinds NPM.

## Install SolarWinds NCM

1. Log in to the host server with a local administrator account. Do not install on a domain controller.
2. Launch the executable from the download location.
3. Select Send Usage Statistics to SolarWinds to help improve SolarWinds products.
4. If you agree, accept the License Agreement, and click Next.
5. Accept the default target directory, or set a custom path.
6. Click Next to start copying files.
7. Click Finish. The Configuration Wizards starts.
8. Click Next to begin configuring the Orion Platform database, website, and services.
9. Specify the SQL Server instance you want to use for your database.
10. Enter the database authentication method, Windows or SQL Server Authentication, and click Next.
  - The SQL Server instance must support SQL authentication or mixed mode.
  - If you are using a local instance of SQL Server Express, use the following syntax to use the default instance: `(local)\SQLEXPRESS`.
  - If you select SQL Authentication, provide an account with sufficient rights to create new databases on the server instance. For example, specify the SQL administrator account: `SA`.
11. Select your existing Orion Platform database, and click Next.
12. Select an existing account with administrator rights on the database, and click Next. You must supply a strong password.
13. Click Next to set up the website with default settings, or adjust the settings.
14. Click Yes if a website exists with the same settings.
15. Click Next after reviewing the settings and overview configuration plan.
16. Click Finish when the wizard completes.

## License your product with Internet access

1. Click Enter Licensing Information.
  2. Enter your Activation Key, and click Next.
  3. If applicable, select I Access the Internet Through a Proxy Server.
  4. Enter registration information, and click Finish.
- If licensing fails, the software enters evaluation mode for 30 days.

## License your product without Internet access

1. Click Enter Licensing Information.
2. You need a customer ID and password to install the key. For more information, see [Obtain a software license key](#).

# Additional polling engine and web console

You can add an additional polling engine or website to your SolarWinds NCM deployment. An additional website adds versatility in accessing SolarWinds NCM information and an additional polling engine adds scalability to the regular backup of device configs.

## Install or upgrade an additional polling engine

If you are upgrading to SolarWinds NCM 7.6 before you attempt to install an additional polling engine on another server, you must first [upgrade SolarWinds NCM](#).

1. Visit the [Customer Portal](#) and download the `SolarWinds-Orion_AdditionalPoller.exe` file.
2. Launch the `SolarWinds-Orion_AdditionalPoller.exe` file from the download location on the server that will host your additional polling engine.
3. Click Next on the Welcome screen.
4. If you agree, accept the end user agreement, and then click Next.
5. Click Next to accept the default target directory, or set another that you prefer.
6. Click Next to start copying files.
7. Click Finish when the files are finished being copied.
8. If prompted to license the additional poller, click Enter Licensing Information.
9. Review the Welcome text, and then click Next.
10. Specify the SQL Server instance where the Orion Platform database is located.
11. Enter the database authentication method, Windows or SQL Server Authentication, and then click Next.
  - The SQL Server instance must support SQL authentication or mixed mode.
  - If you are using a local instance of SQL Server Express, use the following syntax to use the default instance: `(local)\SQLEXPRESS`.
  - If you select SQL Authentication, provide an account with sufficient rights to create new databases on the server instance. For example, specify the SQL administrator account: `SA`.
12. Click Use an Existing Database, select the Orion Platform database in the list, and then click Next.
13. Click Use an Existing Account, select the Orion platform database in the list, and then click Next.
14. Click Use an Existing Account, and then select the account credentials from the list.
15. Click Next.
16. Review the services to install, and then click Next.
17. Click Yes to acknowledge that the SNMP Trap Service will be disabled while the Trap Service is installed.


18. Review the Database and Services to be configured, and then click Next.
19. Click Launch Orion Web and Finish.

## Install or upgrade an additional web console

If you are upgrading to SolarWinds NCM 7.6, before you attempt to install an additional web console on another server, you must first [upgrade the main server](#).

1. Visit the [Customer Portal](#) and download the SolarWinds-Orion\_WebOnly.exe file.
2. Launch the SolarWinds-Orion\_WebOnly.exe file from the download location on the server that will host your additional website.
3. Click Next on the Welcome screen.
4. Accept the end user agreement, and click Next.
5. Click Next to accept the default target directory, or set another that you prefer.
6. Click Next to start copying files.
7. Click Finish when the files are finished being copied.
8. If prompted to license the additional website, click Enter Licensing Information.
9. Review the Welcome text, and click Next.
10. Specify the SQL Server instance where the Orion Platform database is located.
11. Enter the authentication method, Windows or SQL Server Authentication, and click Next.
  - The SQL Server instance must support SQL authentication or mixed mode.
  - If you are using a local instance of SQL Server Express, use the following syntax to use the default instance: (local)\SQLEXPRESS.
  - If you select SQL Authentication, provide an account with sufficient rights to create new databases on the server instance. For example, specify the SQL administrator account: SA.
12. Click Use an Existing Database, select the Orion Platform database in the list, and click Next.
13. Click Use an Existing Account, and then select the account credentials from the list.
14. Click Next.
15. Accept the default for Website Settings, and click Next.
16. Click Yes to acknowledge that the website already exists and that you want to proceed.
17. Click Yes to acknowledge that the SNMP Trap Service will be disabled while the Trap Service is installed.
18. Review the services to install, and click Next.
19. Review the Database, Website, and Services to be configured, and click Next.
20. Click Launch Orion Web and Finish.

# Repair SolarWinds NCM

 If you install or make changes to the Orion Platform website, the Configuration Wizard reboots your IIS server, shutting down all SolarWinds products on the server during the configuration operation. Any websites hosted by the server are stopped and restarted during this process.

1. Launch the SolarWinds Configuration Wizard.
2. Specify the SQL Server instance and authentication method, and click Next.
  - The SQL Server instance must support SQL authentication or mixed mode.
  - If you are using a local instance of SQL Server Express, use the following syntax to use the default instance: `(local)\SQLEXPRESS`.
  - If you select SQL Authentication, provide an account with sufficient rights to create new databases on the server instance. For example, specify the SQL administrator account: `SA`.
3. Select the Orion Platform, and click Next.
4. Create a new database account and password or select an existing account on the database server. You must supply a strong password. For more information about strong passwords, see the [Microsoft website](#).
5. Click Next.
6. Review the services to install, and click Next.
7. Review the configuration to change, and click Next.
8. Review the Configuration Summary, and click Finish.



## Move SolarWinds NCM to another computer

1. Log in to the SolarWinds NCM server host with an administrator account.
2. Start Database Manager in the SolarWinds Orion program folder.
3. Select your Orion Platform database in the left pane of the Database Manager window.
4. Click Database > Backup Database.
5. Type a description of the database backup and specify a path and file name for the backup file. Save your database backup to a temporary storage area. Ensure the target location has sufficient available disk space.
6. Click OK.
7. Start SolarWinds License Manager in the SolarWinds program folder to reset your current license. This makes it available for your new implementation.
8. Log in to the new computer and install SolarWinds Network Configuration Manager.

# SolarWinds NCM licensing

SolarWinds Network Configuration Manager can manage almost any network device, including routers, switches, and firewalls. Most CLI-capable devices with a command menu can provide configuration files to SolarWinds NCM. It is licensed by the number of nodes. A node is defined as an entire device, such as a router, switch, server, access point, or modem.

There are seven types of licenses available:

- Up to 50 devices (DL50)
- Up to 100 devices (DL100)
- Up to 200 devices (DL200)
- Up to 500 devices (DL500)
- Up to 1000 devices (DL1000)
- Up to 3000 devices (DL3000)
- Unlimited devices (DLX)

For more information about licensing, see the following topics:

- [License keys](#)
- [Review your license](#)

## License keys

Versions of the SolarWinds NCM software that are released during the release candidate period have a limited license. When upgrading, even if the software does not change from the release-to-manufacture (RTM) to the general availability (GA) distribution, you must reapply your license upon the official release.

From the server in your deployment, go to the [customer portal](#) to obtain your activation key.

- If you are deploying SolarWinds NCM on one server and integrating with Orion platform products on a different server, then you must install the SolarWinds NCM license on the server running the other Orion Platform product. For example, if SolarWinds NCM and SolarWindsNPM are integrated but installed on different machines, install the SolarWinds NCM license on the machine that is hosting SolarWinds NPM.
- If you are deploying SolarWinds NCM standalone or on a single integrated server, you must install the SolarWinds NCM license on that server.

## Review your NCM license

1. Click Settings > All Settings.
2. Under Details, click License Details.
3. View the information under NCM.