

AT&T Cabling Systems

CablingGuard™ V5 Installation Guide

September 2019



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Version Control – Version 2019-09-10

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1.0 Welcome

This document serves to provide guidance to the system administrator to install CablingGuard™ Version 5 (CablingGuard™ V5) on a machine with a Windows Server 2016 operating system. For first time installation, all sections of the Installation Guide must be completed.

The directions in this guide include:

- Required configuration of Windows Server (server roles, IIS configuration)
- SQL Server Express installation
- .NET Framework V4 installation
- Installation Instructions for third party software required to support and view the CablingGuard™ Application (SAP Crystal Reports, Java Runtime)
- CablingGuard™ Installation Instructions (CablingGuard™ Site License Server, CablingGuard™ Application Server, CablingGuard™ Scanner Application)

IMPORTANT! The steps in this document require administrator privileges on the CablingGuard™ Server and the network on which CablingGuard™ is installed.

User actions to click on buttons are denoted in **Bold** type.

Notes:

- Read the entire document before starting
- This document assumes the person installing CablingGuard™ software is generally familiar with installation and configuration of the Microsoft products required for CablingGuard™
- All screenshots are based on an installation using Windows Server 2016 and SQL Server 2016 Express
- This document assumes the CablingGuard™ Site License Server and CablingGuard™ Application are installed on the same computer.

2.0 CablingGuard™ V5 Prerequisites

Please refer to the document *“CablingGuard™ V5 Prerequisites”* for information on server, web client, and network environment aspects that are required prior to installing CablingGuard™ software or associated 3rd-party software. Required elements for the CablingGuard™ server include: Microsoft Windows Server with Internet Information Server (IIS), Microsoft SQL Server Express, Microsoft .NET Framework 4, SAP Crystal Reports developer version for Microsoft Visual Studio, and Java Runtime. AT&T recommends Microsoft Windows Server 2016 and SQL Server 2016 Express. All web clients require Microsoft Silverlight.

3.0 CablingGuard™ Server Configuration – Windows Server 2016

The following steps for configuring the CablingGuard™ server are based on a Windows Server 2016 and SQL Server 2016 Express installation. This document assumes the Microsoft operating system and appropriate patches have been installed on the server. Screenshots are based on a server that does not have the Application Server role and Web Server role installed.

3.1 Operating System Prerequisites

Please ensure that the following elements have been configured on the server before proceeding with the server configuration:

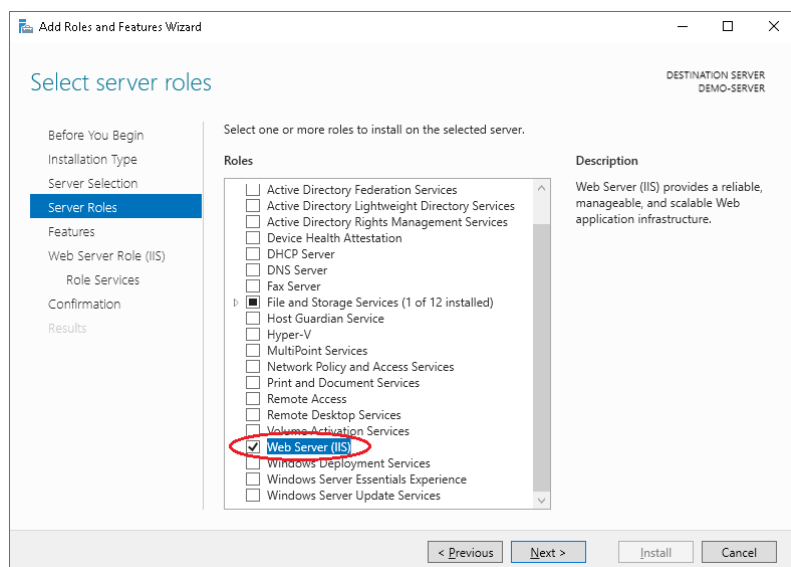
- Server Name
- Server IP address

AT&T recommends disabling any firewall and antivirus applications running on the server before proceeding with the installation.

3.2 Add Server Roles

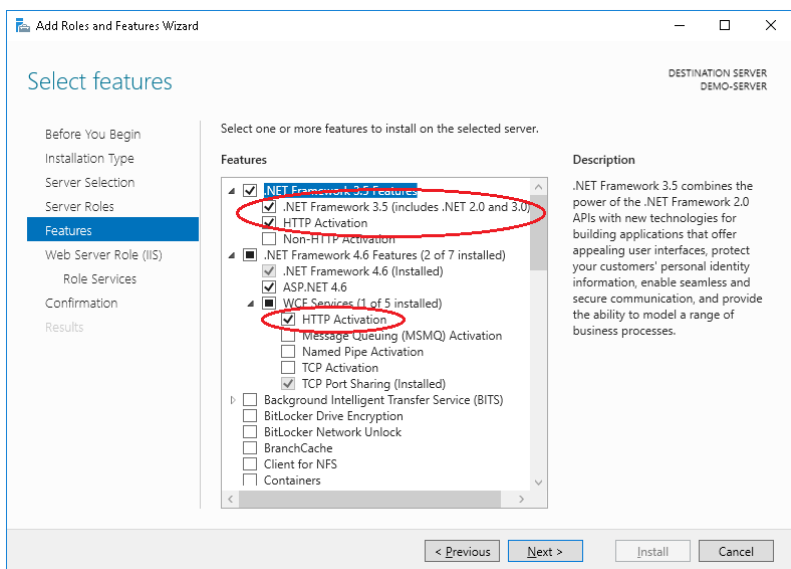
Run the Add Roles Wizard from the initial Windows configuration screen or from within the Server Manager Program.

Select the Web Server (IIS) Role and click on the **Add Features** button when prompted to add features.



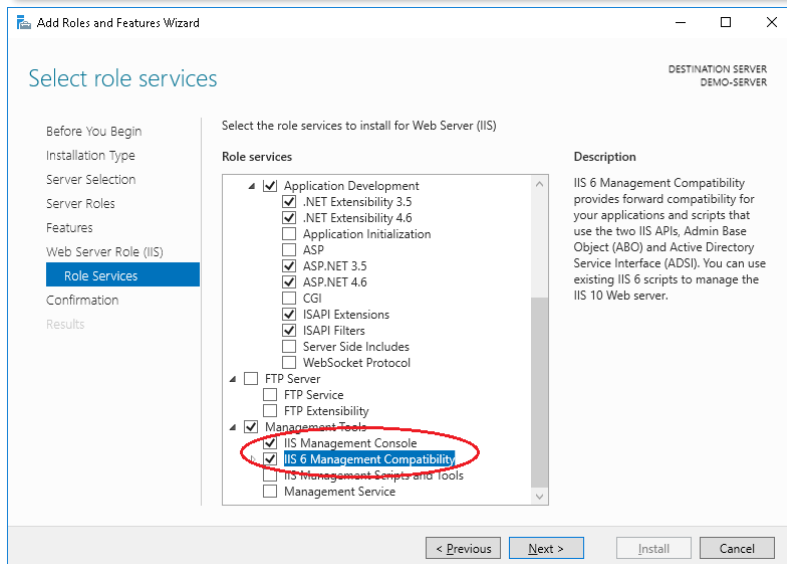
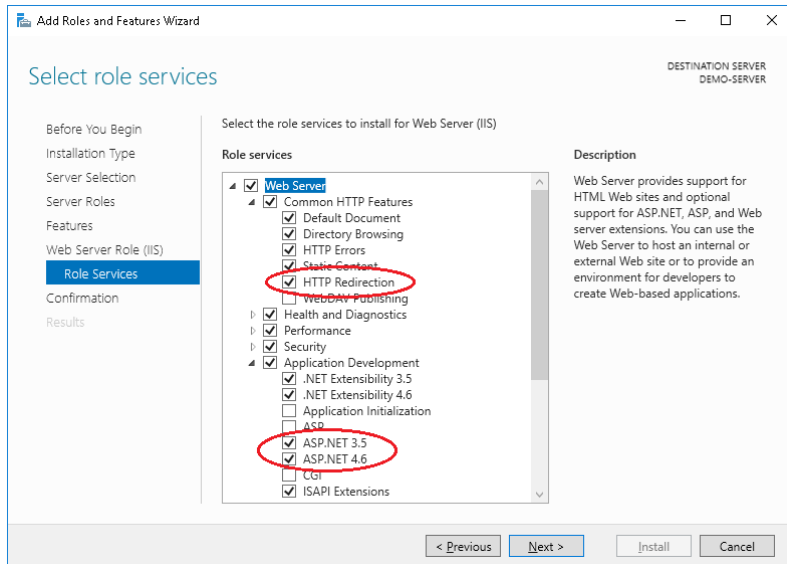
Insure the following Features are checked:

- .Net Framework 3.5 Features > .Net Framework 3.5
- .Net Framework 3.5 Features > HTTP Activation
- .Net Framework 4.6 Features > HTTP Activation



Insure the following Roles for Web Server (IIS) are checked:

- Web Server > Common HTTP Features > HTTP Redirection
- Web Server > Application Development > ASP.NET 3.5
- Web Server > Application Development > ASP.NET 4.6
- Management Tools > IIS Management Console
- Management Tools > IIS 6 Management Compatibility



Accept all other default services and click **Next**.

Close out of the Add Roles wizard after installation is complete.

4.0 SQL Server 2016 Express Installation and Configuration

SQL Server Express must be installed on the same machine as the CablingGuard™ application with the default instance name SQLEXPRESS.

SQL Server 2016 Express is available at Microsoft's website.

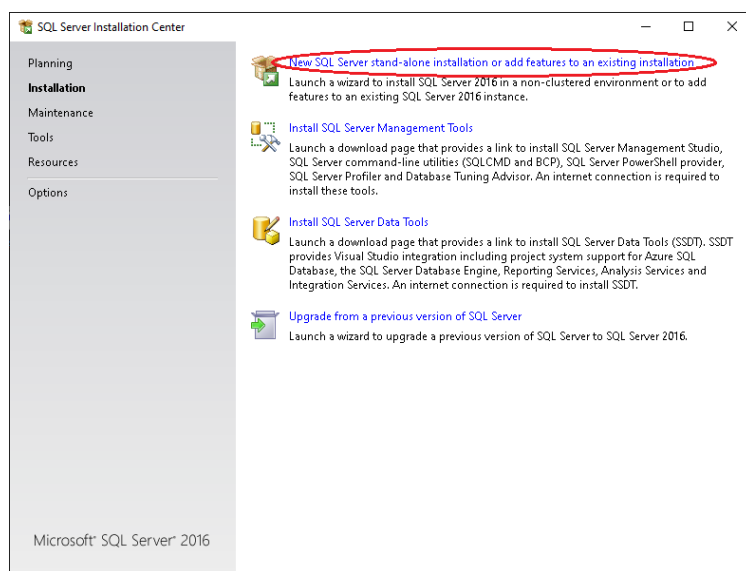
SQL Server 2016 may be used in place of SQL Server Express. Refer to the document Install Guide for SQL Server 2016 in place of the instructions in section 4.1 for SQL Server Express.

The following steps for configuring SQL Server Express are based on a SQL Server 2016 x64 Express installation.

4.1 SQL Server Express Installation

Click on the SQL Express installation file.

Select "New SQL Server stand-alone installation or add features to an existing installation".

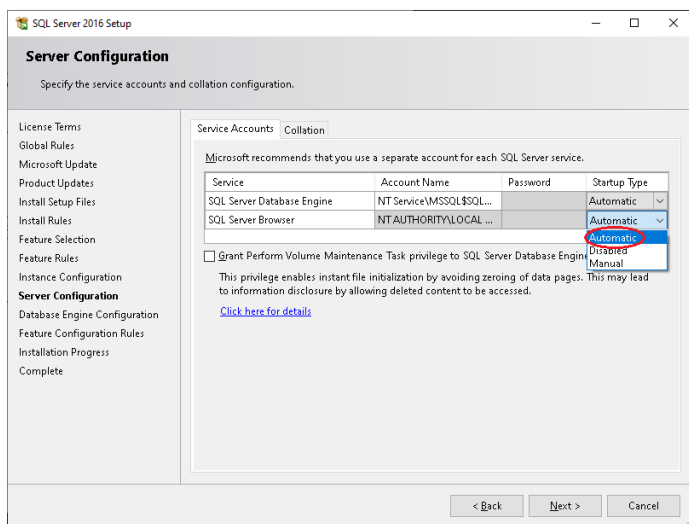


License Terms Screen - Accept the License Terms. Click **Next**.

Feature Selection Screen - Accept the defaults for Feature Selection. Click **Next**.

Instance Configuration Screen - Accept Named instance of SQLExpress. Click **Next**.

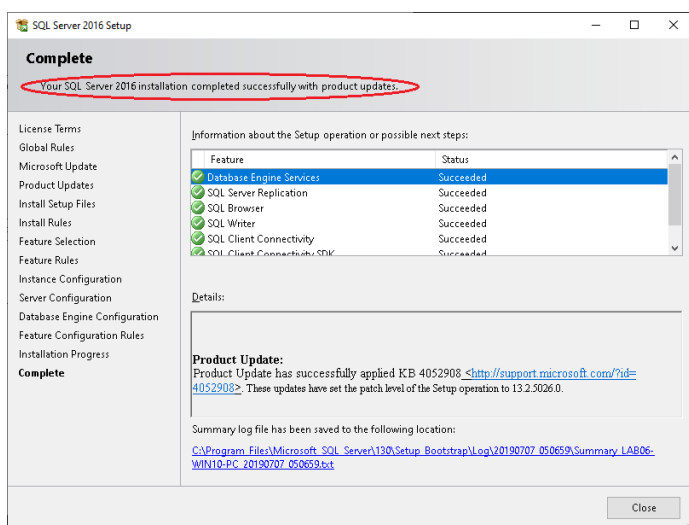
Server Configuration Screen - change the SQL Server Browser Startup Type to Automatic and click **Next**.



Database Engine Configuration Screen - Accept Windows Authentication mode. Click **Next**.

Error Reporting Screen - Configure Error Reporting as desired (Unchecked is recommended). Click **Next**.

Confirm the install completes without errors.

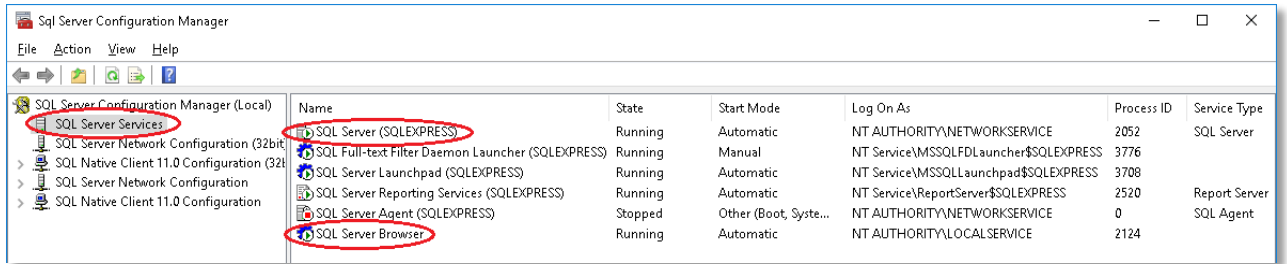


Close the installation program. Click **Close**.

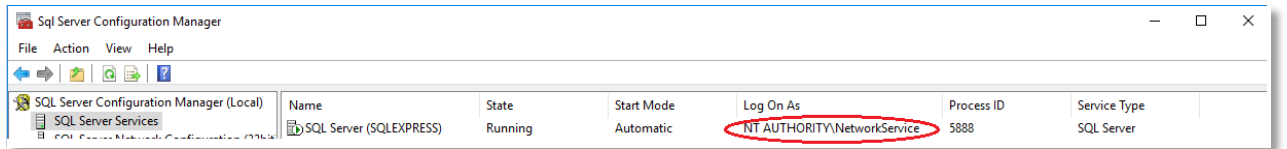
4.2 Configure and Verify SQL Express Installation

Access SQL Configuration Manager

Verify SQL Server Browser and SQL Server (SQLEXPRESS) services are running. Click on SQL Server Services.

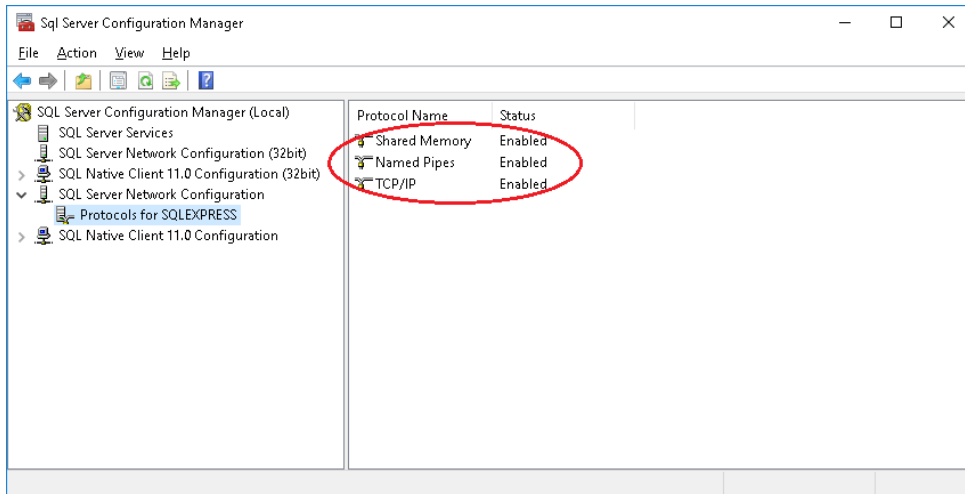


Verify the SQL Server (SQLEXPRESS) service is log on as Network Service



Click on SQL Server Network Configuration > Protocols for SQLEXPRESS.

Enable Shared Memory, Named Pipes and TCP/IP Protocols in SQL Server Network Configuration. Enabling protocols requires restarting SQLEXPRESS.

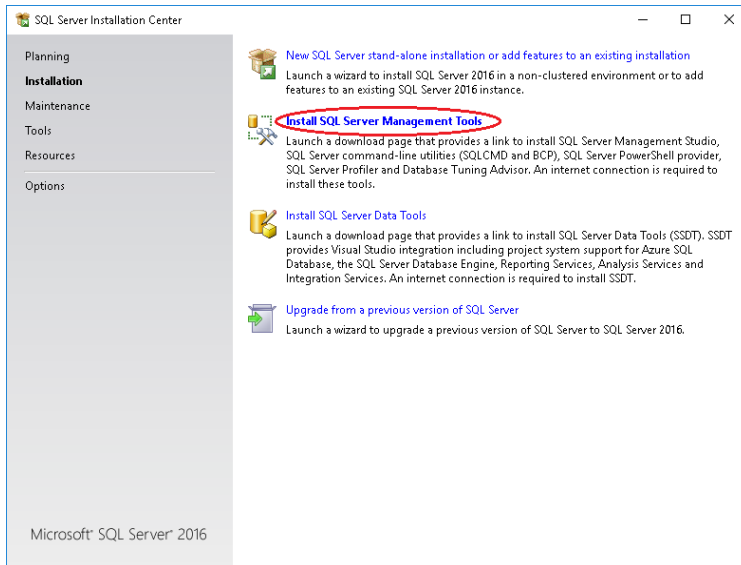


Exit SQL Configuration Manager.

4.3 SQL Server Management Studio Installation

Click on the SQL Express installation file.

Select “Install SQL Server Management Tools”.



Download the installation of SQL Server Management Studio (SSMS) 18.1 from the Microsoft website and install it. After installation, restart the computer.

After installation, the following lines will be added to the “Programs and Features” list:

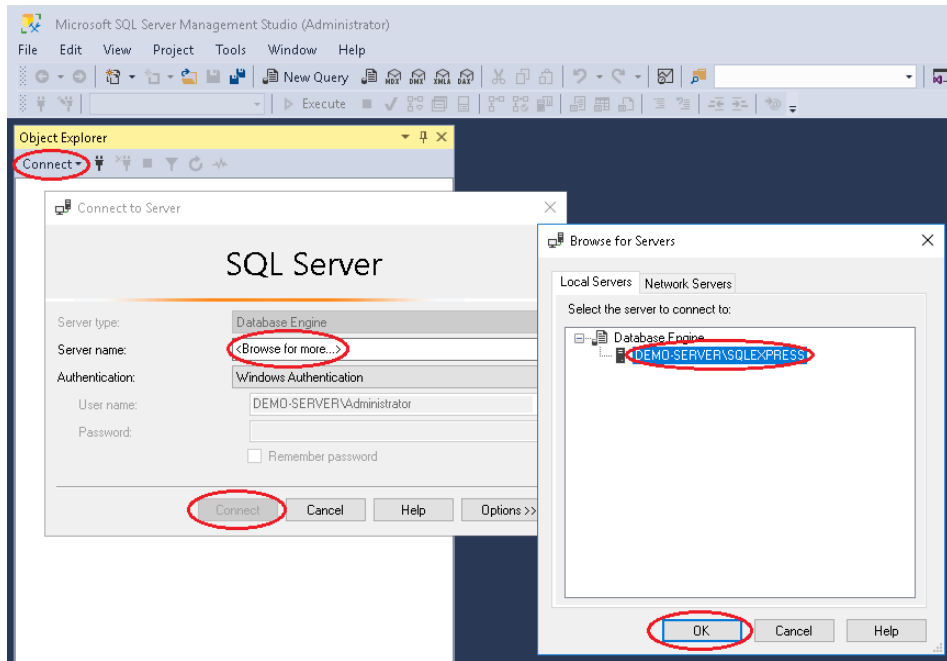
Microsoft SQL Server Management Studio - 18.1	Microsoft Corporation	7/9/2019	2.23 GB	15.0.18131.0
---	-----------------------	----------	---------	--------------

Access SQL Server Management Studio

Click on “**Connect**” to connect to a server.

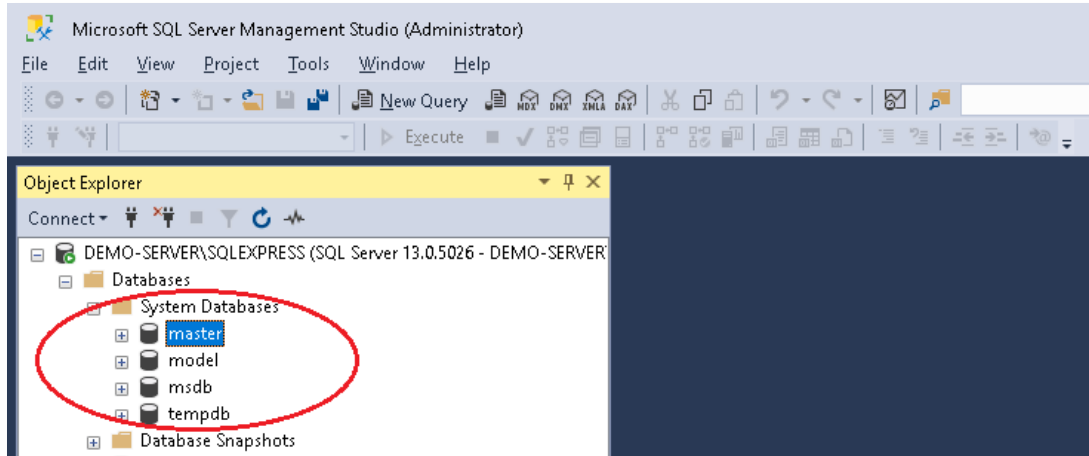
Under Server name, choose **Browse for more...**

In the Network Servers tab, select the CablingGuard™ server and click **OK**.



Click on **Connect**.

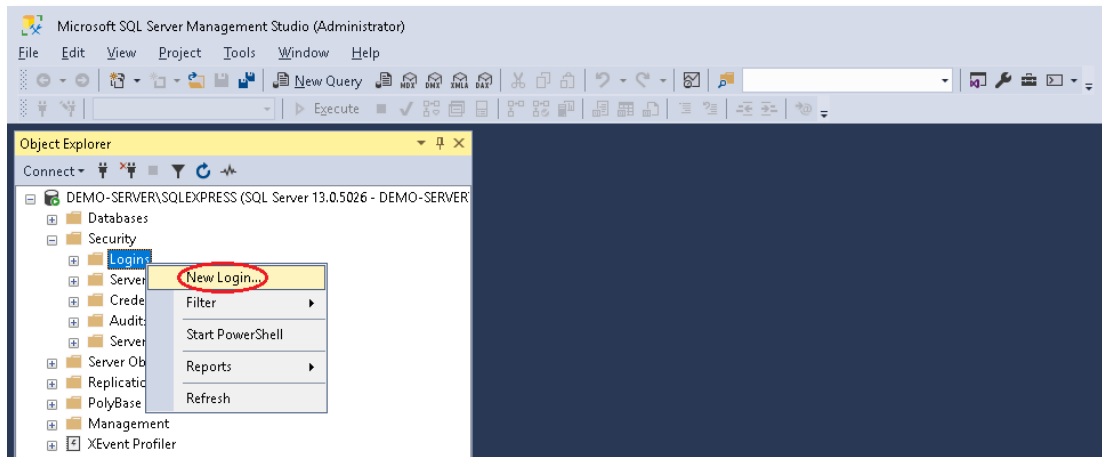
Confirm default databases are available. Click on Server Name > Databases > System Databases. System databases should be visible.



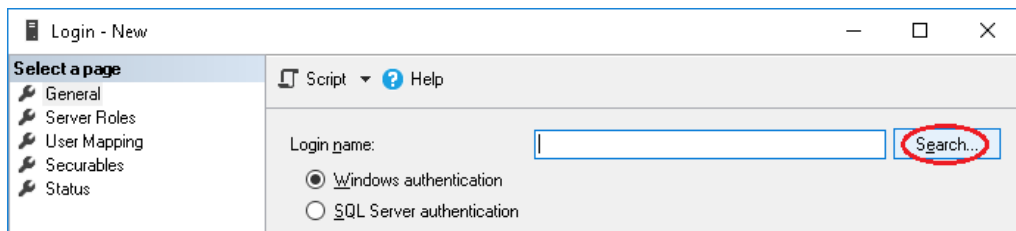
Create the NT Authority user for Network Service

Click on Security > Logins.

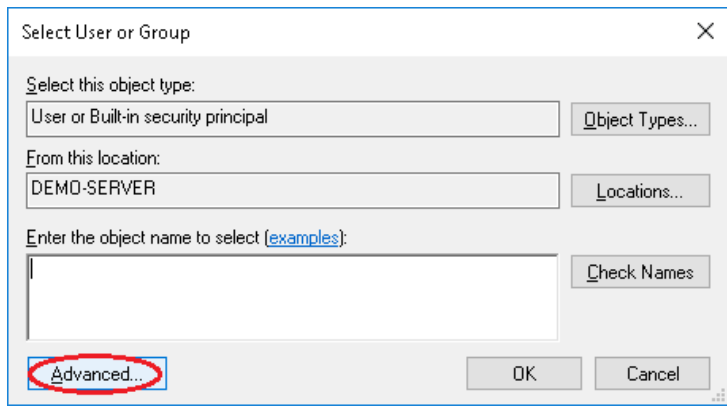
Right Click on Logins. Select **New Login** from the drop down box.



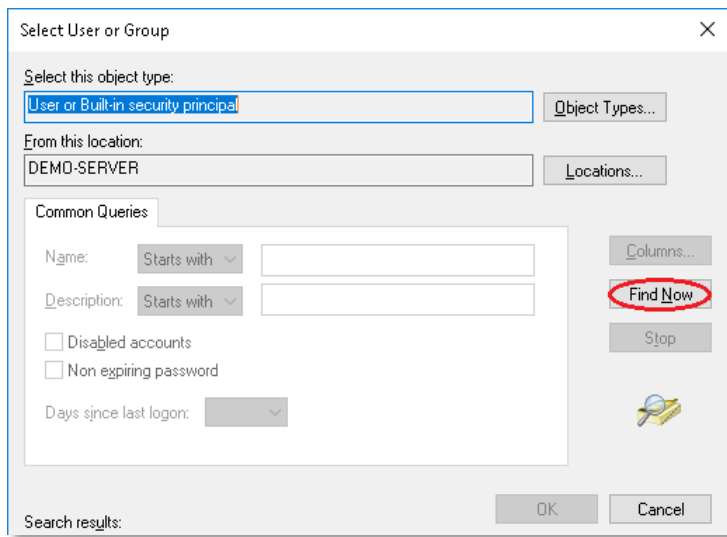
Click on **Search** for the Login name box.



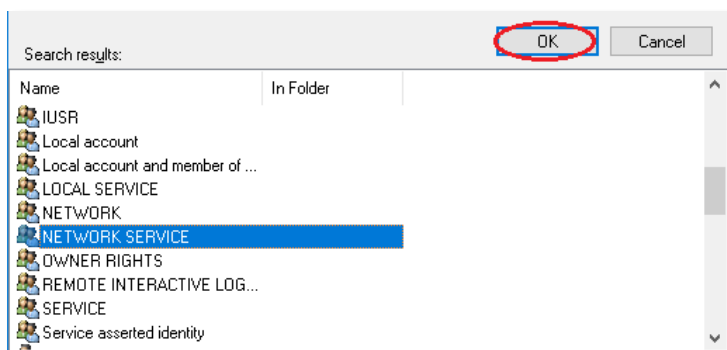
Enter NT Authority in the Object Name box and click the **Advanced...** button.



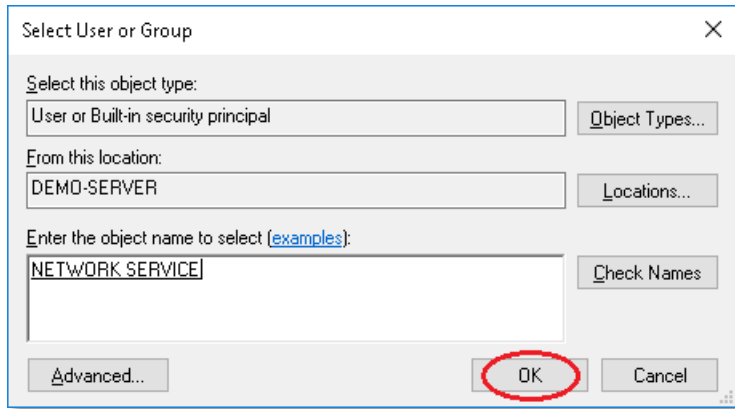
Click on the **Find Now** button.



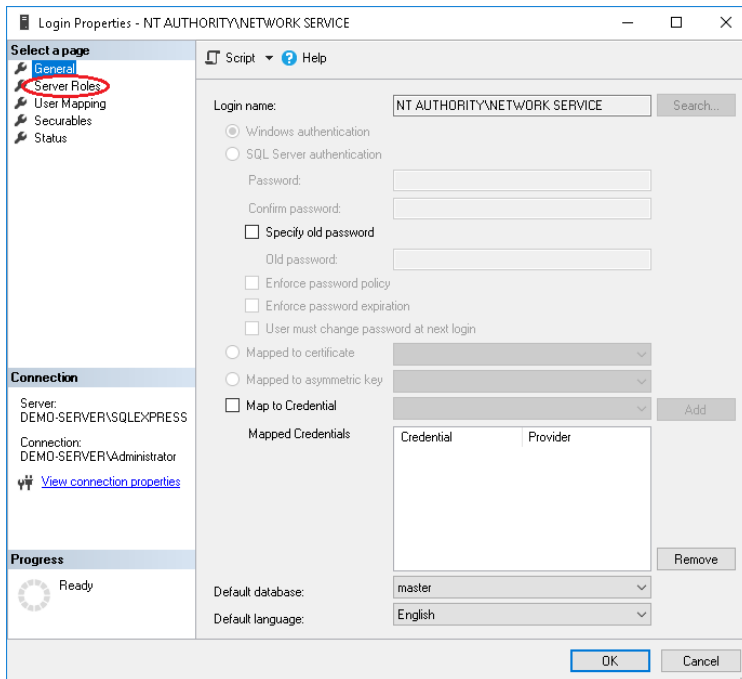
Select Network Service and click **OK**.



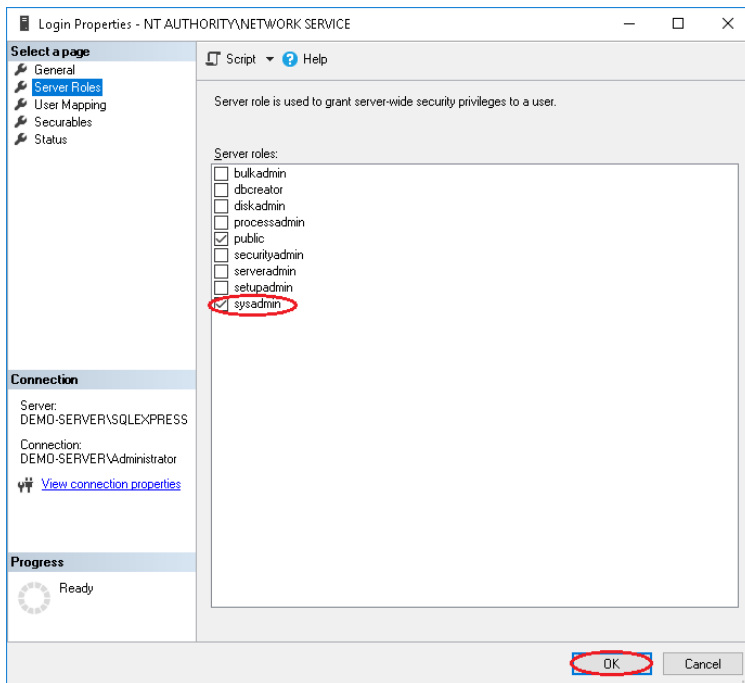
Click **OK**.



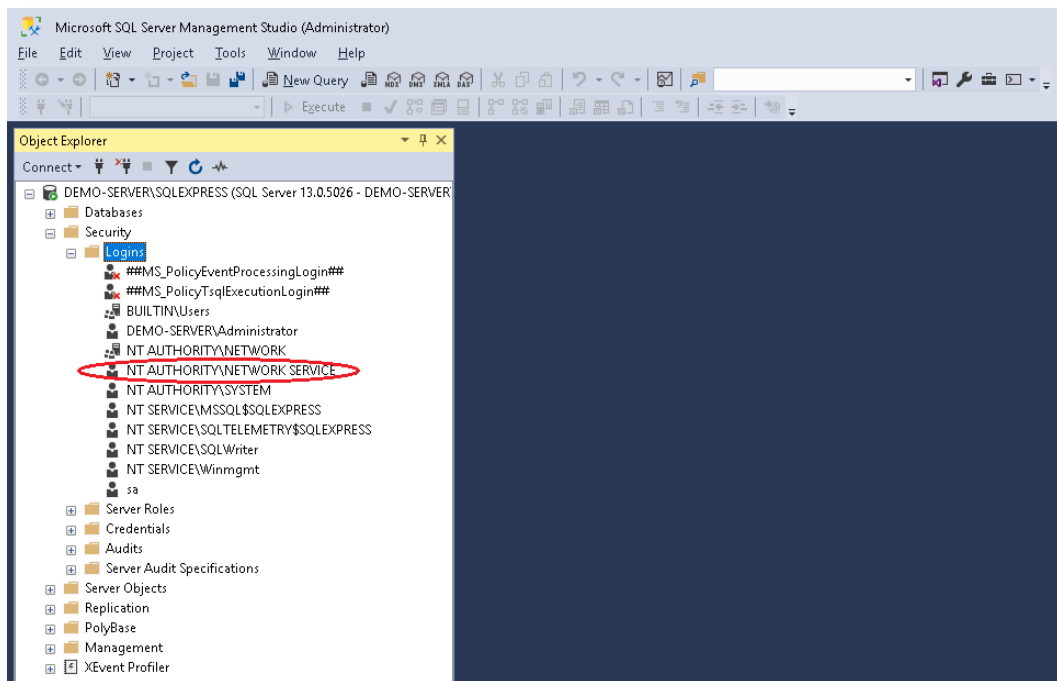
Click on **Server Roles**.



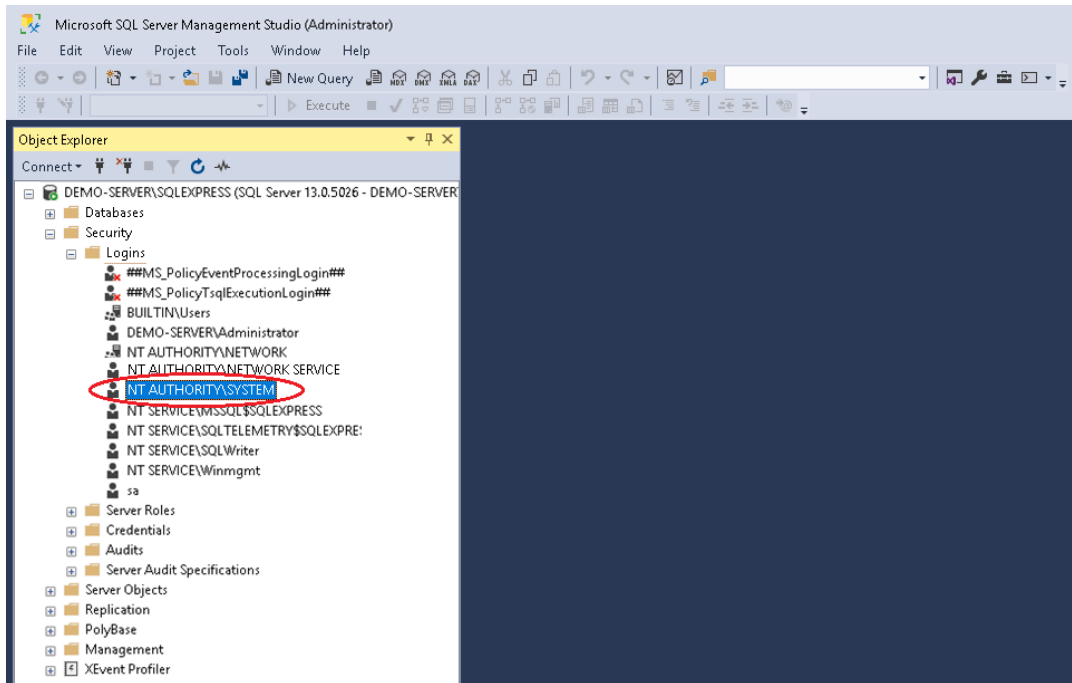
Check the “sysadmin” and click **OK**.



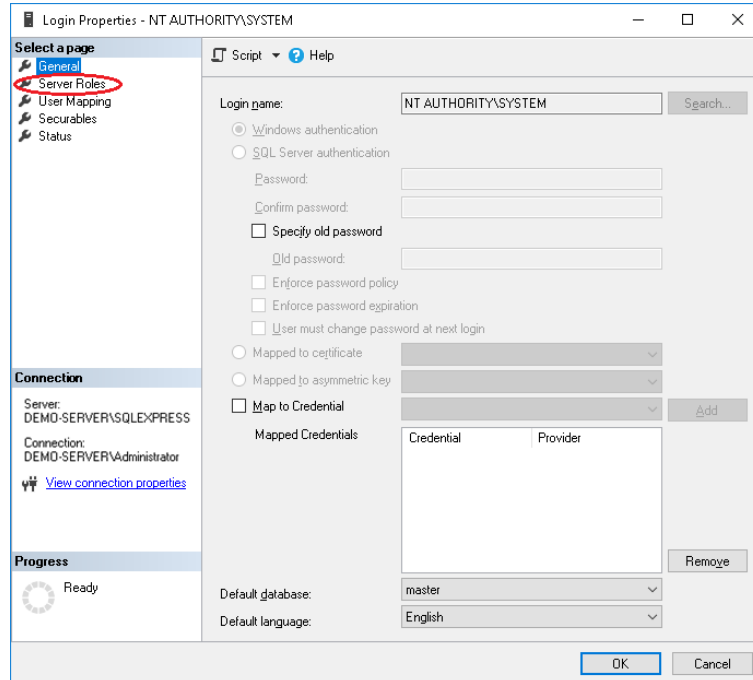
Confirm the list includes “NT Authority\Network Service”



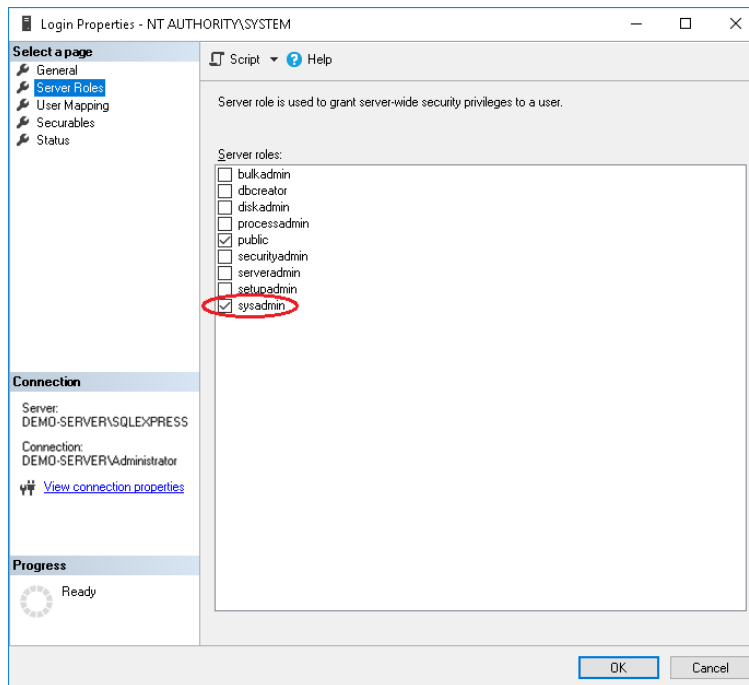
Double-click on “NT Authority\System”



Click on Server Roles.



Check the “sysadmin” and click **OK**.



Exit SQL Server Management Studio.

After role configuration of the server and installation of SQL Express is complete, verify these lines have been added to the “Programs and Features” list by clicking Start > Control Panel > Programs > Programs and Features:

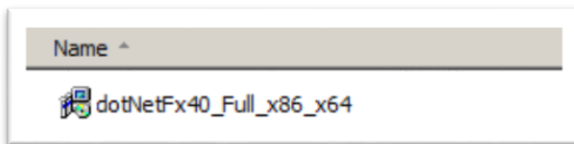
Microsoft SQL Server 2008 Setup Support Files	Microsoft Corporation	6/22/2019	78.0 MB	10.3.5500.0
Microsoft SQL Server 2012 Native Client	Microsoft Corporation	6/22/2019	13.6 MB	11.4.7462.6
Microsoft SQL Server 2016 (64-bit)	Microsoft Corporation	6/22/2019		
Microsoft SQL Server 2016 Setup (English)	Microsoft Corporation	6/22/2019	82.7 MB	13.2.5026.0
Microsoft SQL Server 2016 T-SQL Language Service	Microsoft Corporation	6/22/2019	14.5 MB	13.0.14500.10
Microsoft SQL Server 2016 T-SQL ScriptDom	Microsoft Corporation	6/22/2019	14.7 MB	13.2.5026.0
Microsoft SQL Server Data-Tier Application Framework...	Microsoft Corporation	6/22/2019	25.5 MB	13.0.3225.4

5.0 Microsoft .NET Framework 4 Installation

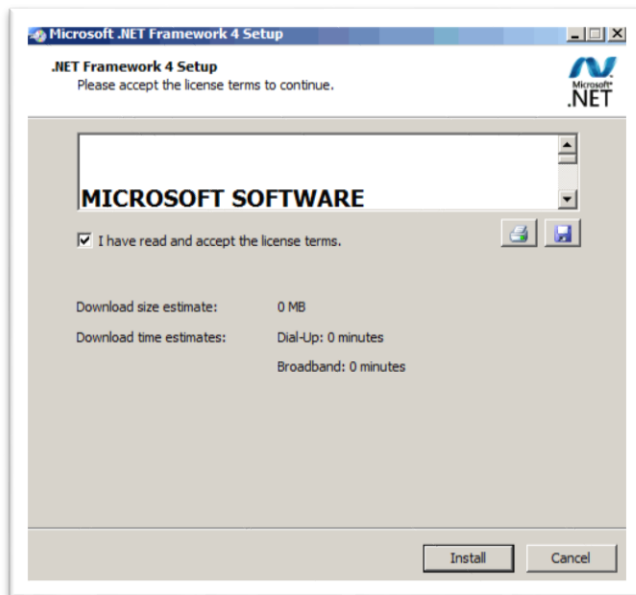
Ensure that Microsoft .Net Framework V4 is installed on the windows server 2016 machine, if not,

Ensure that the .Net Framework V4 program is available for installation per the “*CablingGuard™ V5 Prerequisites*” document.

Click on the dotNet file to start the installation process.



At the License Terms Screen - Accept the License Terms. Click **Install**.



At the Finish Screen, click **Next** to exit the installation.

After installation, verify these lines have been added to the “Programs and Features” list by clicking Start > Control Panel > Programs > Programs and Features:

Microsoft .NET Framework 4 Client Profile	Microsoft Corporation	11/4/2011	38.8 MB	4.0.30319
Microsoft .NET Framework 4 Extended	Microsoft Corporation	11/4/2011	51.9 MB	4.0.30319

6.0 SAP Crystal Reports Installation

Ensure that the proper versions for both the 32 bit and 64 bit Crystal Reports developer version for Microsoft Visual Studio for .Net Framework 4 are available for installation per the “CablingGuard™ V5 Prerequisites” document.

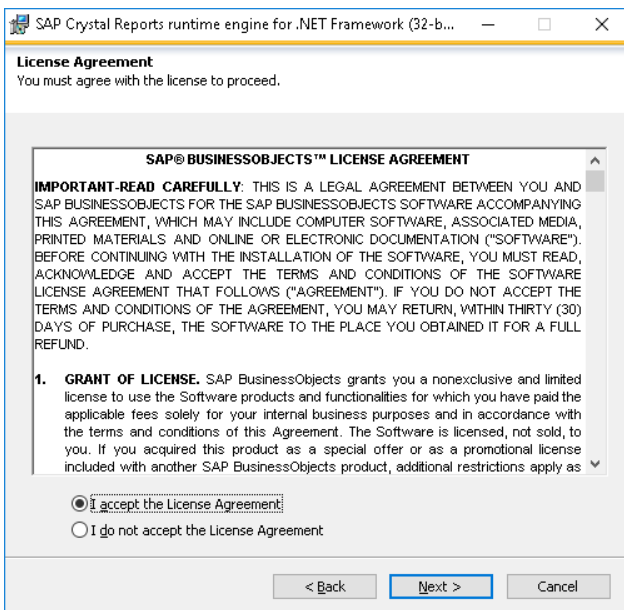
Software version 13.0.20 is supported.

Copy the Crystal Reports program files to a directory on the CablingGuard™ Application Server and install the program.

Click on the installation program for the 32 bit version of Crystal Reports.

Welcome Screen – Click **Next**.

License Agreement Screen - Accept the License Agreement. Click **Next**.





Start Screen. Click **Next**.

At the Finish Screen, click **Next** to exit the installation.

Repeat the previous steps to install the 64 bit version.

After installation, these lines will be added to the “Programs and Features” list:

 SAP Crystal Reports runtime engine for .NET Framework (32-bit)	SAP	7/10/2019	205 MB	13.0.20.2399
 SAP Crystal Reports runtime engine for .NET Framework (64-bit)	SAP	7/10/2019	236 MB	13.0.20.2399



7.0 Java Runtime Installation

Ensure that the proper versions of Java are available for installation per the “*CablingGuard™ V5 Prerequisites*” document. Both x86 and x64 versions must be installed on the CablingGuard™ Server.

Install both Java Runtime x86 and x64 by clicking on the installation files.

Accept all defaults and complete the installation.

After installation, the following lines will be added to the “Programs and Features” list:

	Java 8 Update 211 Oracle Corporation	105 MB 6/24/2019
	Java 8 Update 211 (64-bit) Oracle Corporation	123 MB 6/24/2019

8.0 IIS Configuration, Directory, and Group Permissions

CablingGuard™ V5 requires additional configuration to IIS, directory permissions for the inetpub directory, and the IIS_IUSRS group.

8.1 IIS Configuration

CablingGuard™ requires changes to certain default settings within IIS. These changes include:

- Change Output Caching Settings
- Change Selected Application Pool Attributes in the Default Web Site
- Enable Forms Authentication and Anonymous Authentication in the Default Web Site
- Disable HTTP Keep-Alive in the CablingGuard™ Server site

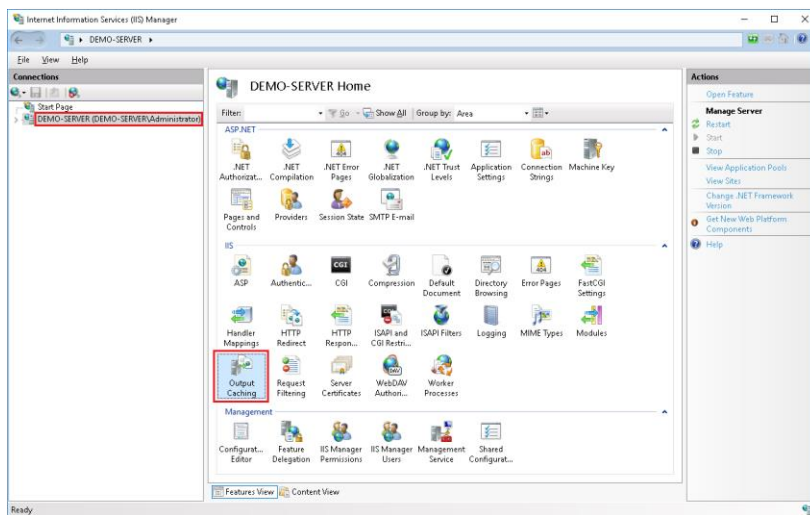
Open Windows Server Manager.

Change Output Caching Settings

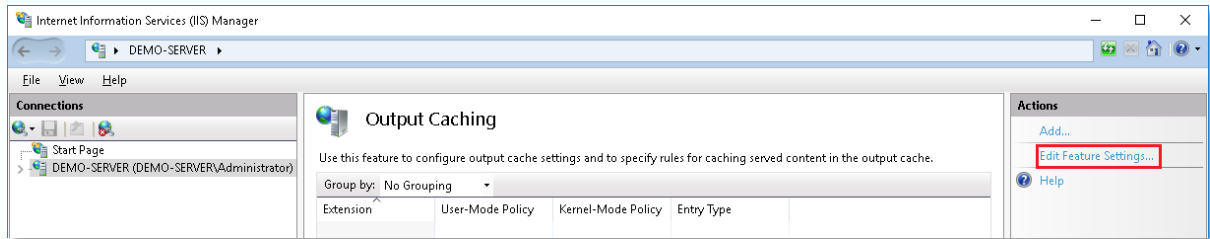
Open IIS Authentication for the Default Web Site by clicking on Roles >Web Server (IIS) > IIS Manager.

In the IIS Manager frame, click on CablingGuard™ Server Name.

Double-click the **Output Caching** icon in the IIS section.



In Actions, click on **Edit Feature Settings....**



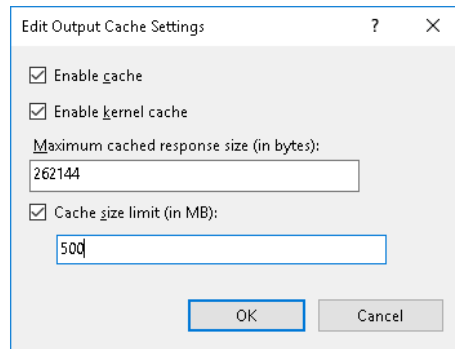
Check Enable cache.

Check Enable kernel cache.

Set Maximum cached response size to 262144.

Set Cache Size limit to 500.

Click **OK**.

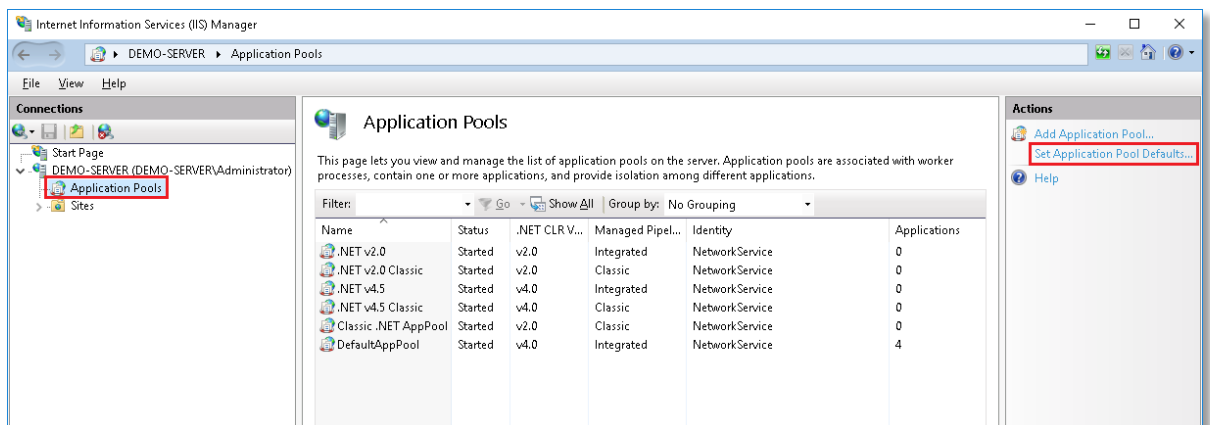


Change Selected Application Pool Attributes in the Default Web Site

Open IIS Authentication for the Default Web Site by clicking on Roles >Web Server (IIS) > IIS Manager.

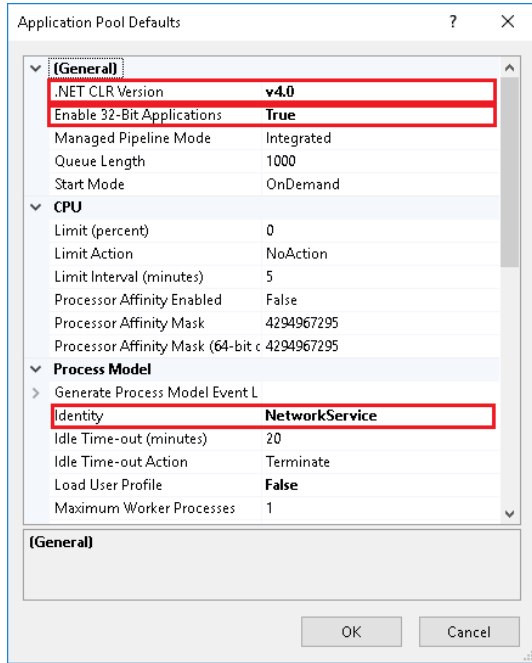
In the IIS Manager frame, click on CablingGuard™ Server Name > **Application Pools**.

Click on **Set Application Pool Defaults**.



Change the following Application Pool Default attributes:

- Change .Net Framework Version to V4.0
- Change Enable 32-Bit Applications to True
- Change Identity to NetworkService

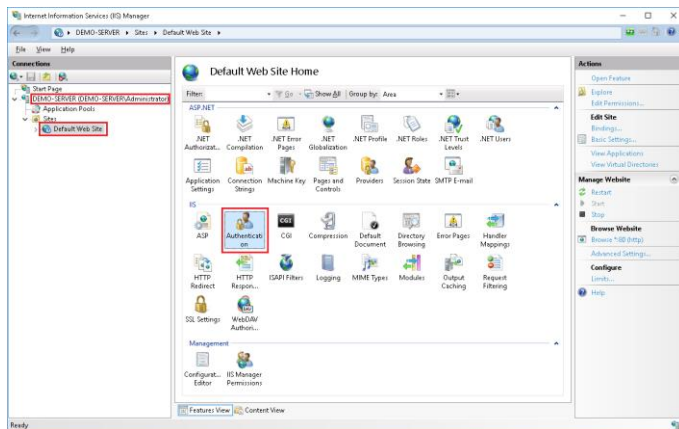


Enable Forms Authentication and Anonymous Authentication in the IIS Default Web Site

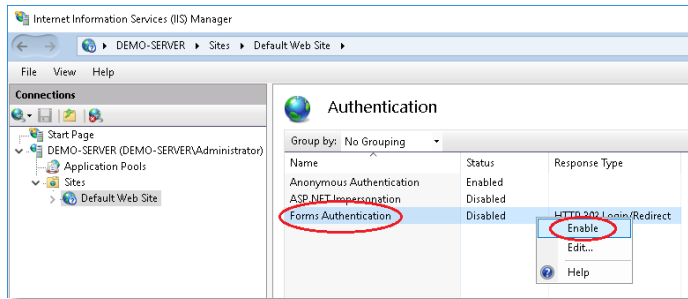
Open Internet Information Services (IIS) Manager.

In the Internet Information Services (IIS) Manager, click on CablingGuard™ Server Name > Sites > Default Web Site.

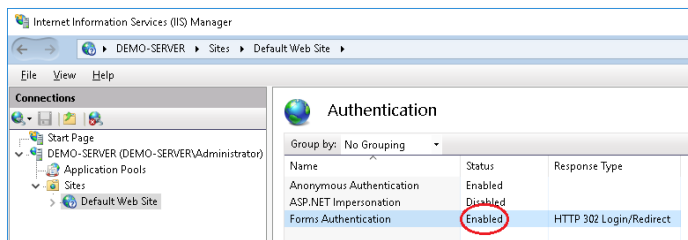
Click on **Authentication** in the IIS section.



In IIS Authentication, right click on Forms Authentication and click **Enable**.



Forms Authentication is now enabled.

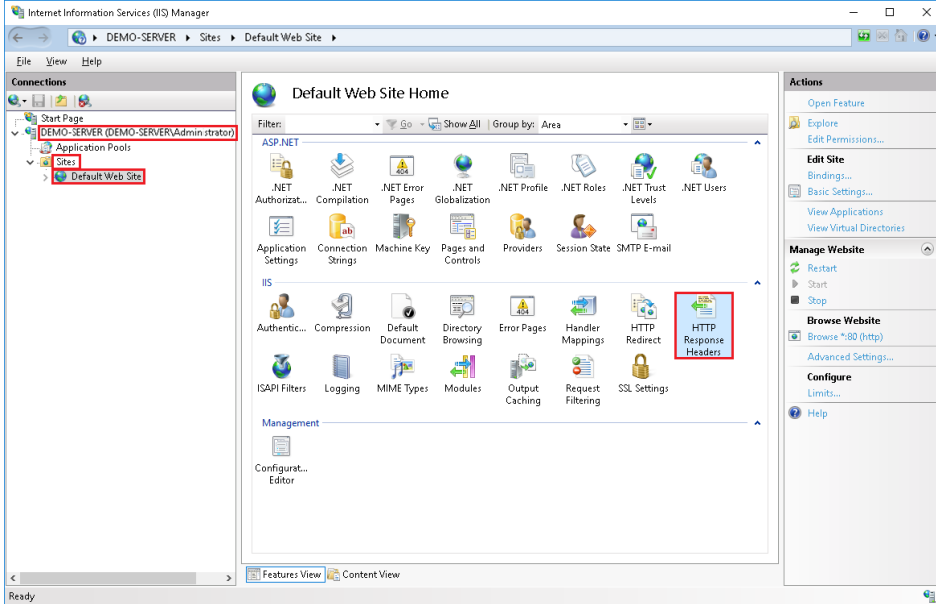


If Anonymous Authentication is disabled, click on Anonymous Authentication and click **Enable**.

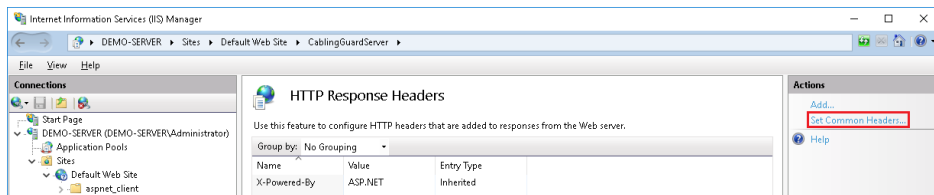
Disable HTTP Keep-Alive in the CablingGuard™ Server Site

In the Internet Information Services (IIS) Manager, click on CablingGuard™ Server Name > Sites > Default Web Site.

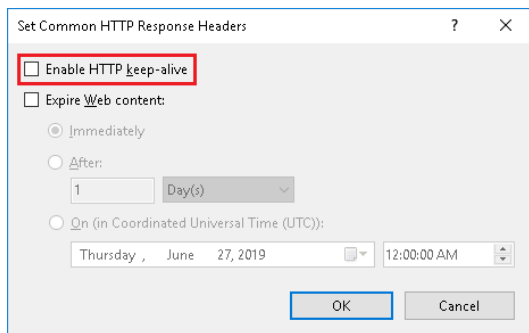
In the IIS Section, double-click on **HTTP Response Headers**.



Click on **Set Common Headers...**



Uncheck "Enable HTTP keep-alive".



Click **OK** and exit Server Manager.

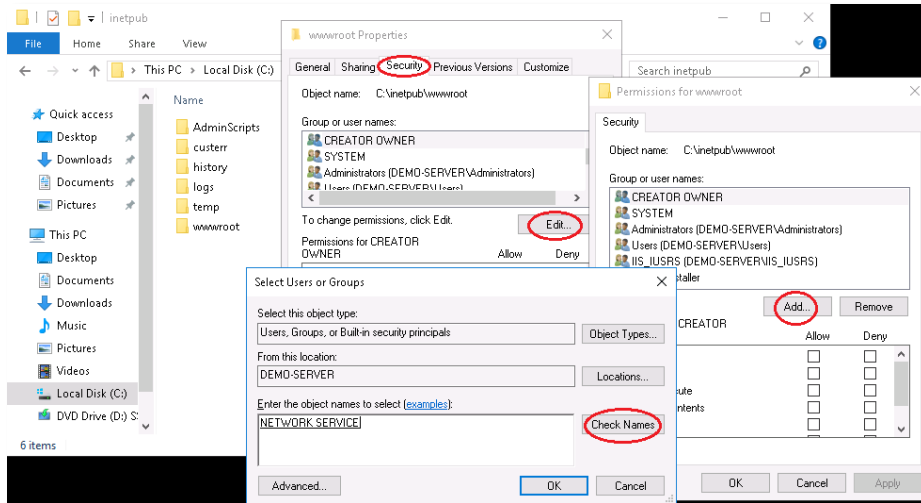
8.2 Configure wwwroot Directory Permissions

In Windows Explorer, right click on the `C:\inetpub\wwwroot` directory and choose **Properties**.

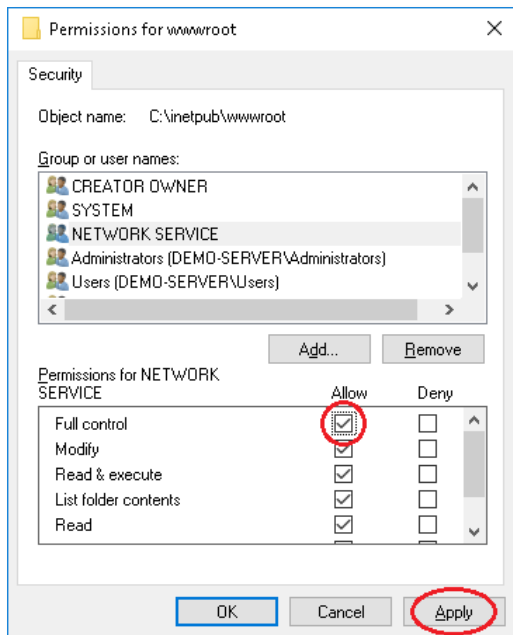
Choose the Security tab in wwwroot Properties and click **Edit**.

In Permissions for wwwroot, click on **Add**, and add the Network Service user.

Confirm the Network Service user is recognized by clicking on **Check Names**. The Network Service name will be underlined. Click on **OK** to continue.



Grant Full Control rights to the Network Service user by checking the Full Control box and clicking on the **Apply** button.



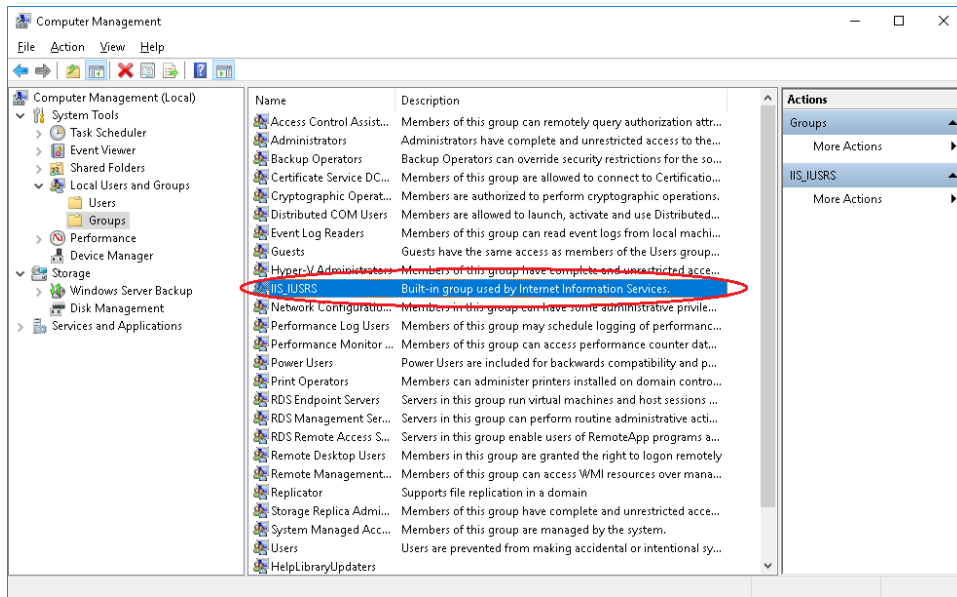
Click **OK** to exit.

8.3 Configure IIS_IUSRS Group Permissions

Open Computer Management Tool from Server Manager.

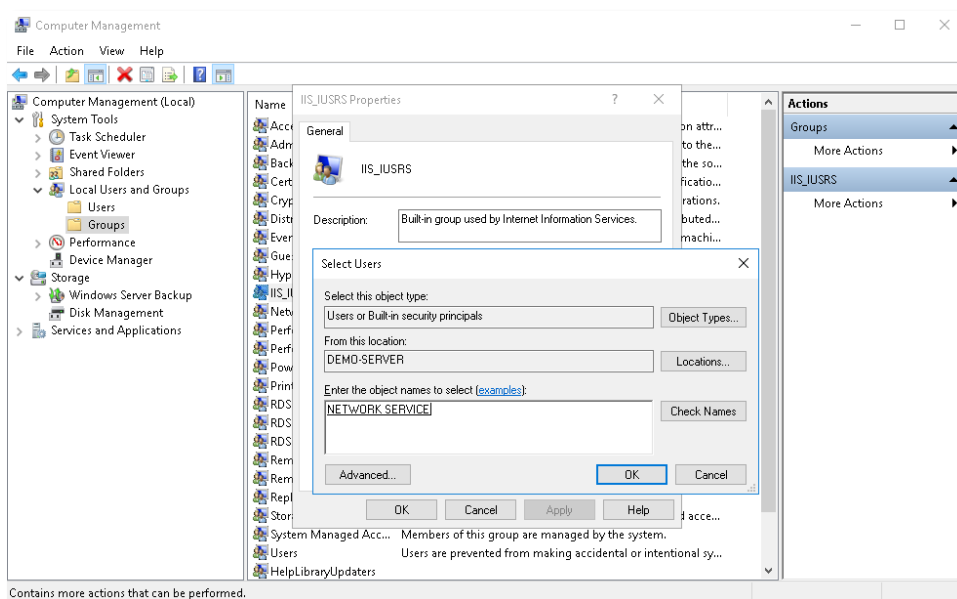
Click on System Tools > Local Users and Groups> Groups.

Right click on IIS_IUSRS and choose **Properties** from the drop down menu.

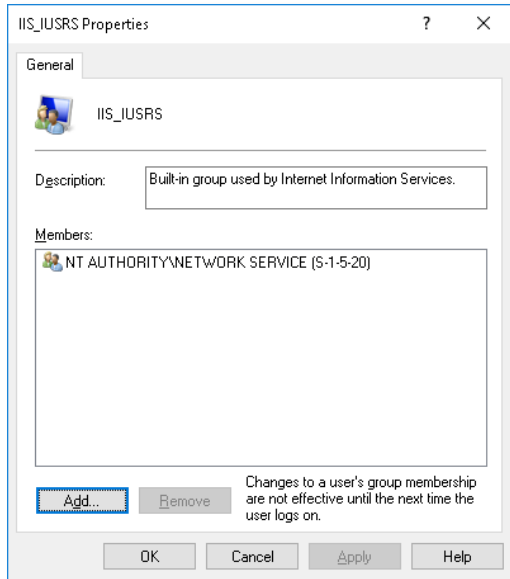


In Properties, click on **Add**, and add the Network Service user as a member.

Confirm the Network Service user is recognized by clicking on **Check Names**. Click on **OK** to continue.



The Network Service User is added to the group.



8.4 Check for Additional Microsoft Updates

Complete a Microsoft Update to download any additional patches or other updates recommended for the server.



AT&T recommends rebooting the server before continuing with the installation process.

9.0 CablingGuard™ Site License Server Installation

The following steps must be completed before installing CablingGuard™ server components on the server:

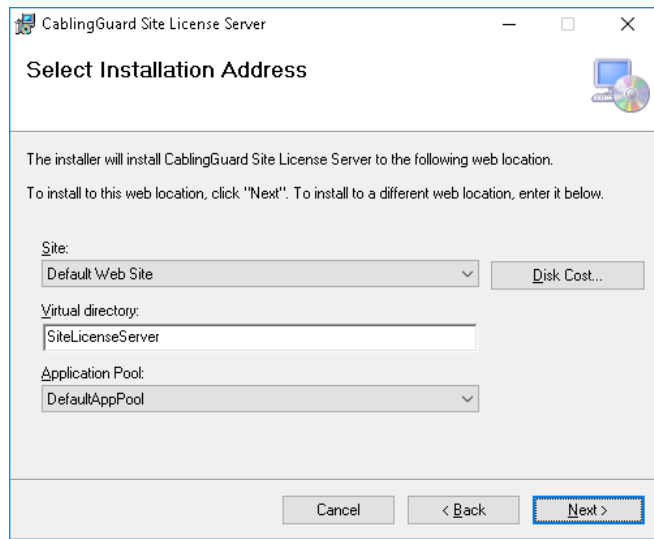
- Complete installation of Windows Server 2016 operating system
- Complete SQL Server 2016 Express installation
- Complete configuration of the server and network
- Complete installation of Java.

Install the CablingGuard™ Site License application by clicking on the setup application file.

Name	Date modified	Type	Size
 ATTSiteLicenseServerSetup_5_2_0.msi	6/24/2019 4:11 PM	Windows Installer ...	496 KB
 ATTSiteLicenseServerSetup-5_2_0.exe	6/24/2019 4:11 PM	Application	501 KB

Click **Next** in the Welcome screen


Accept defaults for Site, Virtual Directory, and Application Pool locations. Click **Next**.



Click **Next** to confirm the install.

Click **Close** after the installation is complete.

After installation, the following lines will be added to the “Programs and Features” list:

 CablingGuard Site License Server	AT&T	6/25/2019	184 KB	5.2.0
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10.0 CablingGuard™ Server Application Installation

Install the CablingGuard™ server application. The SNMP Proxy application, Discovery modules and Help file will also be installed as part of the CablingGuard™ application.

Click on setup.exe.

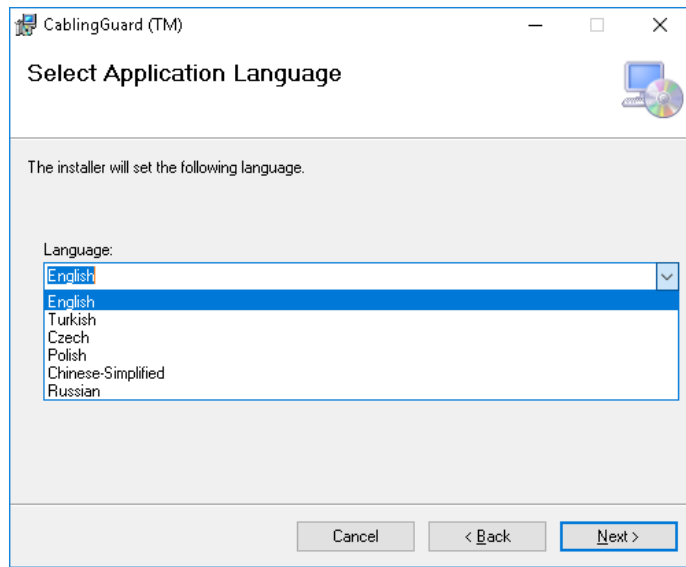
Name	Date modified	Type	Size
ATTWebSetup_5_2_0.msi	6/24/2019 4:04 PM	Windows Installer ...	47,927 KB
ATTWebSetup-5_2_0 .exe	6/24/2019 4:03 PM	Application	501 KB

Accept all defaults for installation.

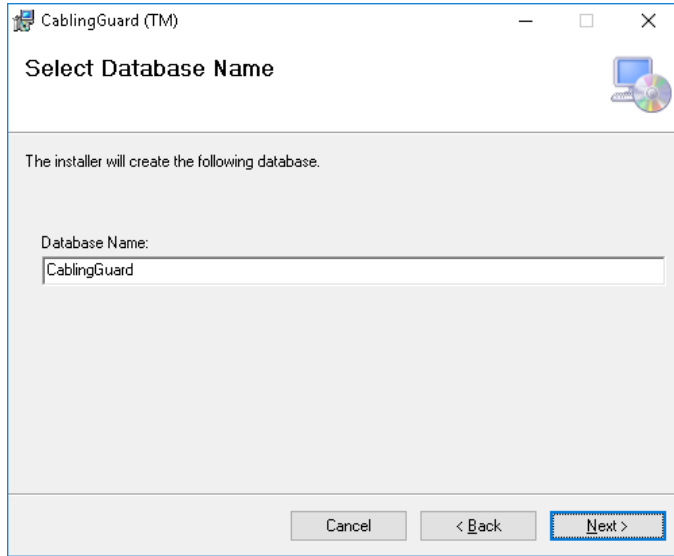
Click **Next** in the Welcome Screen.

Agree to license terms – Click **Next**.

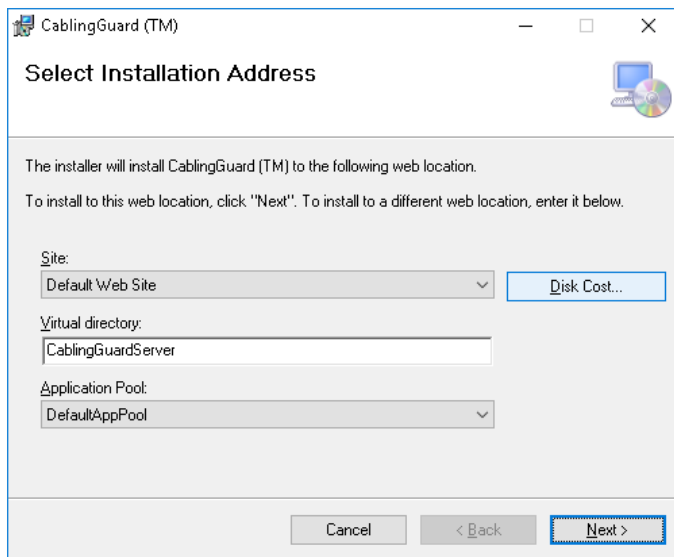
Choose the desired installation language – Click **Next**.



New Installations - Accept the default database name of CablingGuard in the Select Database Name Screen – Click **Next**.



Accept the defaults for Site, Virtual Directory, and Application Pool – Click **Next**.



Click **Next** in the Confirm Installation screen.

Click **Next** in the Welcome to SNMP Proxy screen to start the SNMP Proxy Wizard.

Accept the default destination directory location for SNMP Proxy – Click **Next**.

Note for Upgrades: Click **OK** to accept installation of SNMP Proxy in the existing directory.

Accept the default components for installation – Click **Next**.

Accept the default for the Start Menu folder - Click **Next**.

Click **Finish** to complete the SNMP Proxy setup.

Click **Close** in the Installation Complete screen to complete the CablingGuard™ Application installation.

After installation of the CablingGuard™ Site License Server and the CablingGuard™ Application, the following lines will be added to the “Programs and Features” list:

 CablingGuard (TM)	AT&T	6/25/2019	132 MB	5.2.0
 SNMP Proxy 1.0.5.4		6/25/2019	93.7 MB	1.0.5.4

11.0 Scanner Application Update

CablingGuard™ V5 requires specific version of scanner application software. The scanner application software included with the distribution file must be applied to each scanner that has older revisions of software. This document assumes scanners have been configured and attached to the network.

Access the scanner by opening a web browsing session to the IP address of the scanner. Make sure the scanner is a trusted site in the IE web browser.

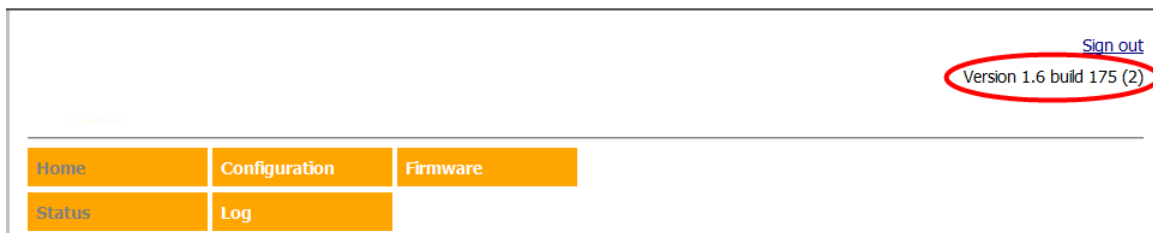
Click on the Sign In link to display the sign in screen. The default User Name and Password is admin / admin.



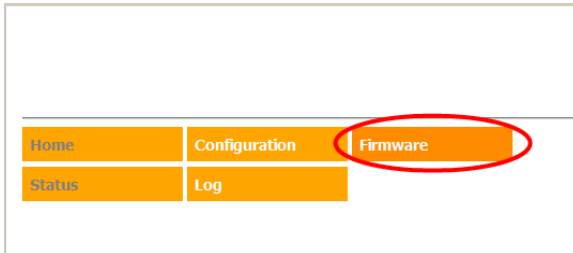
The screenshot shows a sign-in form with a grey background. At the top, it says "Enter username and password to sign-in". Below this are two input fields: "User name" with the text "admin" and "Password" with masked characters "••••". A "Sign in" button is located below the password field.

11.1 Scanner Software Version Check and Update Process

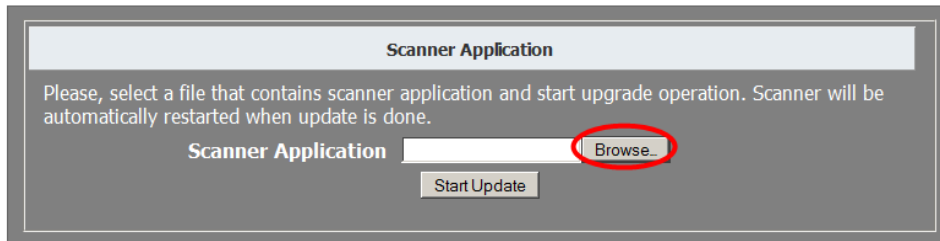
Check the version of the scanner application. The application version is displayed at the top of the scanner home screen. CablingGuard™ V5 requires scanner application version 1.10.xxx. Any other version of the scanner application must be updated.



To update the scanner software, click on Firmware on the scanner home page.



In the Scanner Application box, click the **Browse** button.



Choose file ATTScannerSetup_1_10_xxx.CAB.

Name	Date modified	Type	Size
ATTScannerSetup_1_10_001.CAB	8/10/2017 10:24 AM	WinRAR archive	1,684 KB

Click **Start Update**.



The scanner update should complete within 90 seconds. After the update has completed, the scanner will automatically reboot and begin communicating to the server with its previous configuration. Click **Sign out** and open a new session to login to the scanner.

To verify the scanner application version has updated, return to the scanner homepage. The scanner should display the updated version of the scanner application (Version 1.10 build xxx).

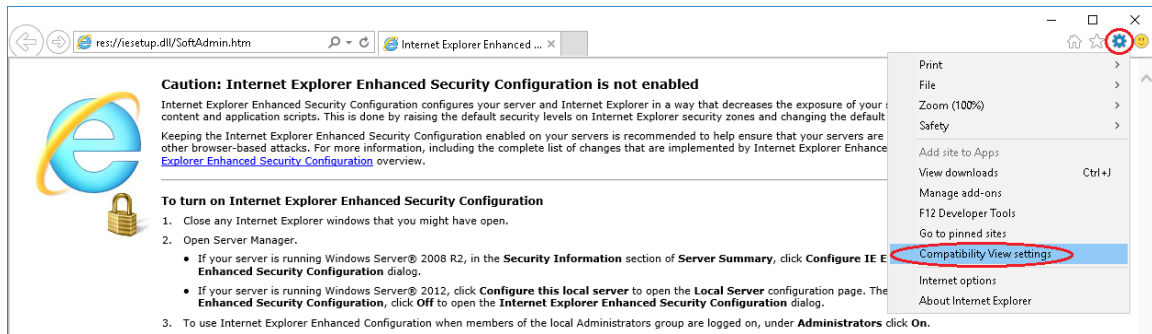


12.0 Accessing and Licensing the CablingGuard™ Server Application

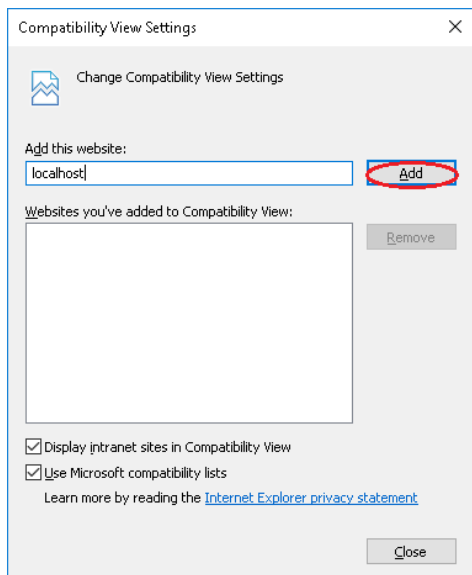
The licensing process is implemented through the CablingGuard™ application, which is accessed from a web client. See the “CablingGuard™ V5 Prerequisites” document for web client requirements.

12.1 Adding CablingGuard™ Server URL to Compatibility Mode

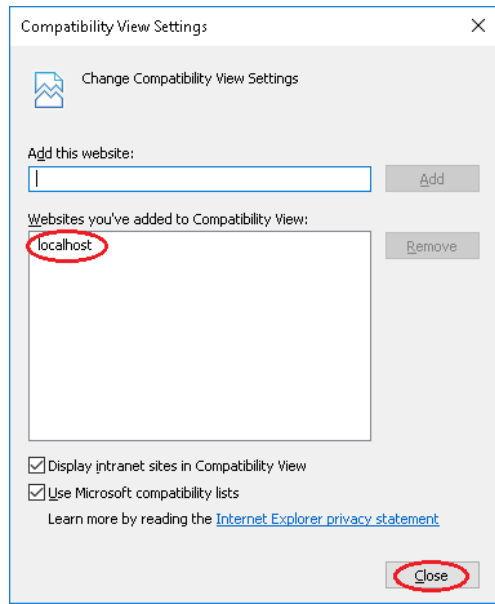
Open Internet Explorer and click on Settings icon > click on **Compatibility View Settings**



Insert <CablingGuard™_SERVER_NAME> or IP address and click **Add**



Ensure <CablingGuard™_SERVER_NAME> or IP address is in the list and click **Close**



12.2 Accessing the CablingGuard™ Site License Server

Make sure that the CablingGuard™ application server license file is available on a directory that can be accessed from the web browser.

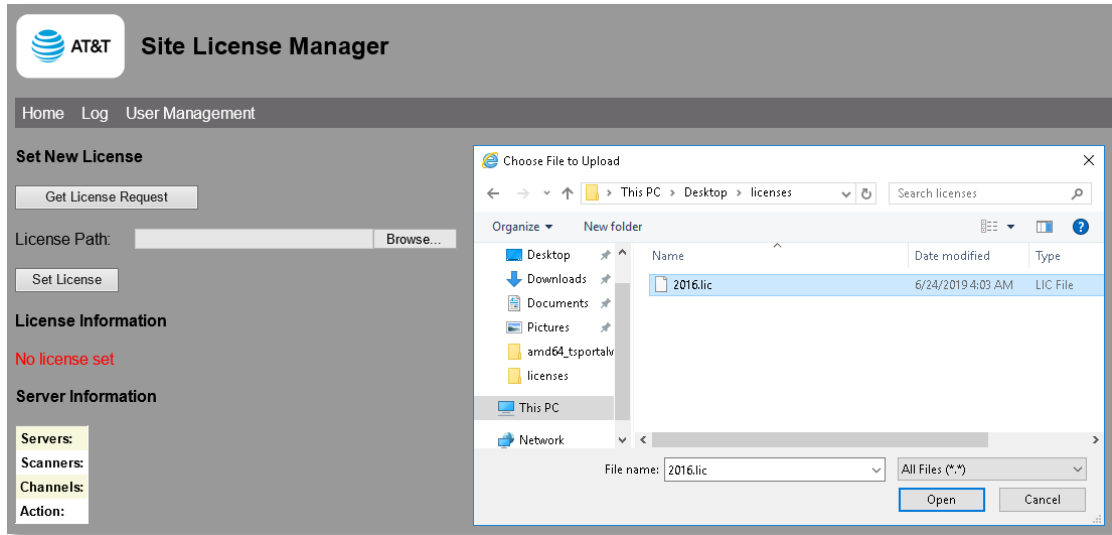
Browse to the CablingGuard™ Site License Server address:

http://<CablingGuard™_SITE_LICENSE_SERVER_NAME>/SiteLicenseServer



The default Login and Password on the Site License Server is admin / admin.

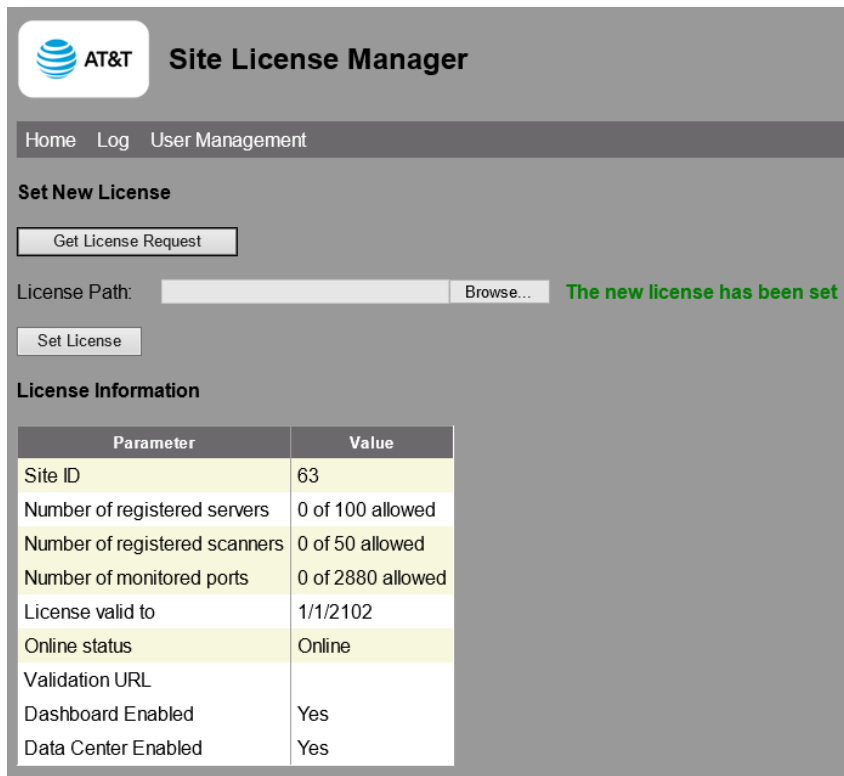
To install the server license, click on the **Browse** button and navigate to the directory containing the application server license. The server license will have a .lic extension (i.e.CablingGuardLicense.lic).



Choose the server license file and click **Open**.

Click the **Set License** button on the site license manager to install the license.

Confirm the license has been set.



License information is updated with the number of available servers and scanners licenses and the number of monitored ports available for checkout from the license manager.

Click on **User Management** to change the default password for the Admin user and add additional users if desired.



Click on **Log Out** to exit the Site License Manager.

12.3 Accessing the CablingGuard™ Application Server from a Browser

Important note for users upgrading from an interim version of CablingGuard™ V5.

Clearing the browser cache on the web client is required before accessing the new installed version of the CablingGuard™ Application.

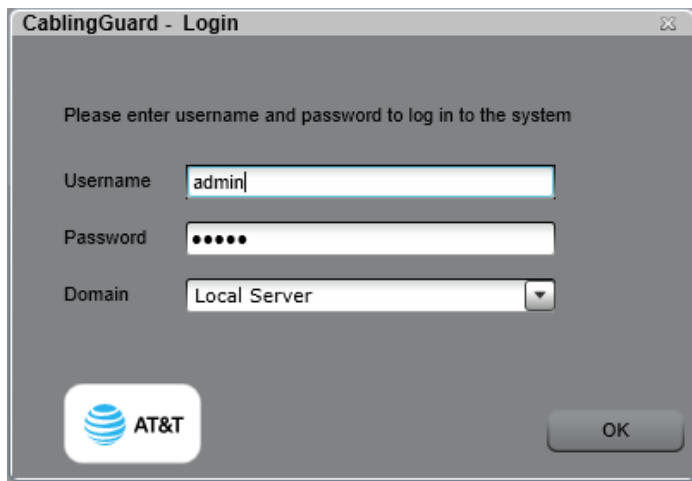
Browse to the CablingGuard™ Server address:

http://<CablingGuard™ SERVER_NAME>/CablingGuardServer



If the login screen does not load, refer to the “*CablingGuard™ V5 Prerequisites*” document section 7, Web Client for information on installation of Silverlight.

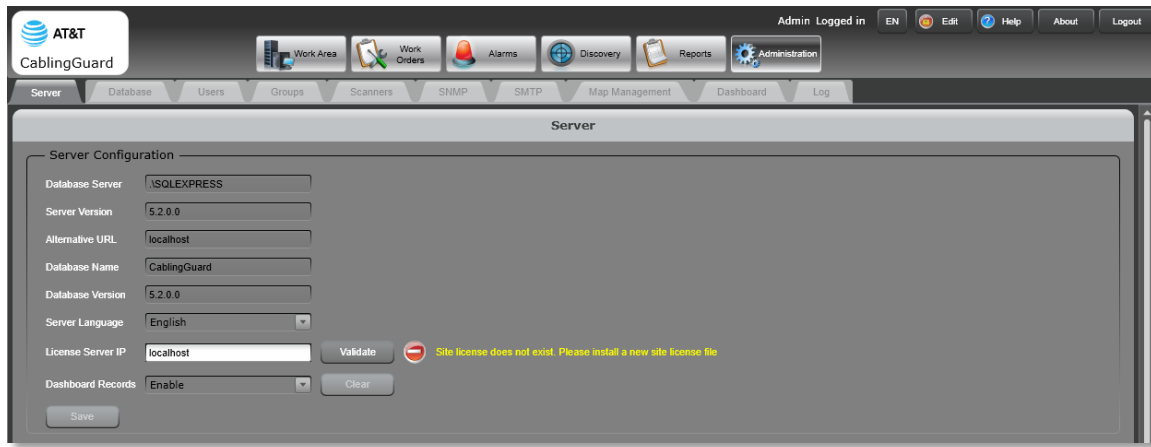
The default User Name and Password is admin / admin. AT&T recommends changing the default password for the admin user.



12.4 Server License Validation

Verify the CablingGuard™ application has authenticated with the license server. Click the **Edit** button to activate editing mode. Click the **Administration** button and the **Licensing** button to access the licensing screen. The License Server IP should contain an IP address or server name and have a green check next to the Validate button.

If the CablingGuard™ application has not authenticated to the Site License Server, enter the IP address or DNS name of the CablingGuard™ Site License Server in the License Server IP field and click the **Validate** button. Localhost is a valid address if the CablingGuard™ Site License Server and CablingGuard™ Application are on the same computer.



A green check displays when the server license is validated.



In the Administration Tab, go to the Database screen. Confirm the CablingGuard™ database appears correctly in the Database List.



13.0 Congratulations!

This completes the installation of the CablingGuard™ server. Refer to the online help to add scanner licenses, users, groups, and to build the asset tree.

