



Installation Guide

Touchstone · Touchstone Re 2023 (11.0)

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1 Introduction

Installing Touchstone/Touchstone Re

This document provides step-by-step instructions to install Touchstone® and Touchstone Re™.

Related reading

A number of documents contain information related to the configuration of Touchstone/Touchstone Re; they are available on the Release Documentation landing pages on the [Client Portal](#). In particular, take note of the *System Recommendations: Touchstone/Touchstone Re*.

- [Touchstone 2023 Release Documentation](#)
- [Touchstone Re 2023 Release Documentation](#)

Installation package

The installation package is available from the AIR Download Manager (available on the [Client Portal](#)).

The following is the list of installable components.

Table 1. Installation packages

Touchstone/Touchstone Re Databases
Property Exposure Databases
Analysis Management Server (head node)
Analysis Server (compute node)
Application Server (IIS)
Client
Models
Models Previous

Touchstone/Touchstone Re Databases

The Touchstone/Touchstone Re databases **must** be installed or upgraded before all other components. Multiple instances are supported.

Property Exposure Databases

The Property Exposure databases may be installed on the same server as the Touchstone/Touchstone Re databases or on a different server entirely.

Analysis Management Server (head node)

The Analysis Management Server is the single point of job management for the HPC cluster.

Analysis Server (compute node)

The Analysis Server is the HPC server cluster's analysis engine. It carries out the computational tasks assigned to it by the Analysis Management Server.

Application Server

The Application Server, also known as the Internet Information Service (IIS) server, enables client workstations to connect to Touchstone and Touchstone Re services.

Touchstone/Touchstone Re Client

The Client is the application on the user's workstation desktop. Touchstone and Touchstone Re do not store any persistent data or perform any analyses on the Client machine; it is a user interface through which the user interacts with the databases and with Verisk services.

Models

Models include catalogs of data for Verisk models and perils. This data is integral for the running of both Touchstone and Touchstone Re. It is necessary to dedicate sufficient space for this data.

Models Previous

Models Previous is an optional installation that includes previous catalogs of data for Verisk models and perils. This includes the previous version models that were upgraded for this release.

2 System requirements

General recommendations

The following tables include recommendations for running Touchstone and Touchstone Re.



Review the following information carefully.

Your installation may have different requirements and some portfolio sizes may need larger configurations; feel free to contact the Technical Services Group for more information. Other considerations include:

- Machine names must be uppercase for all machines running Touchstone and Touchstone Re.
- All model files should be installed on the model share rather than on the local drive for space considerations.
- The recommendation is one model share for every 32 compute cores.
- SSAS (SQL Server Analysis Services) must be installed in multi-dimensional mode for Touchstone installations.
- Clients that license APIs must run the head node and the Application Server on separate servers.
- Due to the complexity of the model, Verisk recommends running each Verisk Severe Thunderstorm Model for the United States analysis in Touchstone one at a time.

Recommendations for installation

While model files can be deployed locally on the Analysis Server (compute node) the recommendation is to use a model share for cost savings and efficiency.

Table 2. Recommendations for Touchstone/Touchstone Re 2023 (11.0) installation

	Client Machine UI	Application Server IIS	Analysis Manager HPC head node	Analysis Engines HPC compute node	Model Share
Cores	4 cores 8 GB RAM 250 GB storage	4 cores 8 GB RAM 250 GB storage	4 cores 8 GB RAM 250 GB storage	8 cores 128 GB RAM ¹ 500 GB storage ² Up to 5 TB storage ³	4 cores 16 GB RAM Up to 5 TB storage

¹ For smaller use cases like single peril or a smaller portfolio (< 1 million locations), a 1:8 CORE:RAM ratio is still viable to run Touchstone.

² Space requirements may change based on the number of cores in the compute node.

³ If models are deployed locally, storage requirements are directly related to licensed models.

	Client Machine UI	Application Server IIS	Analysis Manager HPC head node	Analysis Engines HPC compute node	Model Share
Operating System	Windows 10 Windows Server 2019 Standard	Windows Server 2019 Standard	Windows Server 2019 Standard	Windows Server 2019 Standard	
Third-party Software		HPC 2019 Update 1 Microsoft IIS 10.0	HPC 2019 Update 1	HPC 2019 Update 1	
Scaling	Scales with the number of users	Scales with the number of users	Supports HPC Pack fail-over clustering	Scales based on number of required concurrent analyses	
Notes		Load balance options F5 Load Balancer manual (round robin)		HPC automatically handles redundancy and fail-over	

Note

- For small installations, leave some space on the compute nodes for the operating system.
- If you wish to make adjustments for your particular installation contact the Technical Services Group.

Recommendations for database servers

Database guidelines for this release.

No updates were made for release 2023.

Table 3. Recommendations for Touchstone/Touchstone Re 2023 (11.0) database servers

	Touchstone*	Touchstone Re only	Touchstone & Touchstone Re
Cores	8 cores 64 GB RAM 5 TB storage	8 cores 64 GB RAM 5 TB storage	16 cores 128 GB RAM 7 TB storage
Operating System	Windows Server 2019 Standard	Windows Server 2019 Standard	Windows Server 2019 Standard
Third-party Software	SQL Server 2019 Standard (2019 (CU19))	SQL Server 2019 Standard (2019 (CU19))	SQL Server 2019 Standard (2019 (CU19))
Scaling	Support SQL fail-over clustering		

Note

Expandable storage is recommended for the database server. Additional storage may be required depending on the regions and perils your company licenses, the number of CLF files used, and loss results retained. For high computing needs, please reach out to the Technical Services Group as you may need a larger environment.

3 Pre installation

Read first

Review the following information very carefully before installing the Touchstone and Touchstone Re applications.

- Verify that all computers meet or exceed the minimum system requirements for processor speed, memory, and disk space.
- For installation, obtain an account that has local administrative and SQL sysadmin privileges.
- The service account must be defined on the same domain as that used by the servers hosting Touchstone and HPC.
- Machine names must be uppercase for all machines running Touchstone and Touchstone Re.
- Ensure that the Touchstone/Touchstone Re service account has local administrative privileges on all servers.
- Ensure the service account is an interactive user.
- Ensure that the Touchstone/Touchstone Re service account has sysadmin privileges on all SQL database servers.
- Verify that the SQL Server service account has server administrative privileges on your SQL Server Analysis Service.
- The SQL Server service should be configured to run under a domain account that has read access to CLF network folder.
- Be sure to add a Touchstone/Touchstone Re service account and account running SQL Server service to the location Touchstone Re DB MDF/LDF with Full Control access to allow import of company (.cmp) data. The Touchstone Re DB MDF/LDF location refers to the SQL Server Default MDF/LDF paths configured in the user interface Administrative Console > Server Administration pane.
- Ensure SQL Server service has Full Control permission to the ...\\ModelData\UserClfFiles\ location. This allows use of the Touchstone Re Company Loss Set Cleanup tool.
- On the database server, set full control permissions on the C:\temp folder for the SQL Server account where Touchstone Re is running.
- The compute node(s), head node, and Application Server machines must have Microsoft NET Framework 3.5 and Microsoft NET Framework 4.7 installed **in full**. In addition, the Application Server needs all of Web Server IIS installed **in full**.
- SSAS (SQL Server Analysis Services) must be installed in multi-dimensional mode for Touchstone installations (not required for Touchstone Re).
- During installation, PowerShell scripts are executed to add the service account to HPC and this account assumes the identity of all jobs submitted to HPC. The script caches the password inside HPC so there is no need to include the password in the IIS configuration files. This allows the application to submit jobs by only specifying the username, and HPC internally finds the password in its cache. For this to work Windows Remote Shell needs to be enabled on the servers.
- The SQL Server xp_cmdshell must be set to "True".

Note

The install package will NOT start the Microsoft SQL Agent service when the installation is complete. You must manually start the service through SQL Configuration Manager. This service is required for deletions and purge jobs.

Obtain your license

Your license file automatically detects the Touchstone/Touchstone Re components you are licensed to install.

The license was emailed to your primary shipping contact when the application package was shipped. If you cannot find your license file, send an email to Client Support at TouchstoneSupport@verisk.com.

Client Support will review your request and send you a new copy of your application license by email with instructions.

Back up best practices

It is very important to back up Touchstone and Touchstone Re.

It is the responsibility of the client to perform these database and user data backups on a regular basis and retain them for future use. Verisk clients are encouraged to maintain backups for immediate recovery in both local and remote locations. Contact Verisk if you need assistance.

Back up databases

Back up both read-only and writable databases.

Pay special attention to the type and the data that is residing in the SQL server. This information will be useful in the event you need to restore one or more databases.

Back up read-only databases

Read-only databases are databases supplied by Verisk which cannot be updated by the client. A *one-time* backup is required of these databases, and the backup should be readily available in case a database needs to be restored. Examples of read-only databases include:

AIRAddressServer	AIRLossCost
AIRDBAdmin	AIRMap
AIRDQIndustry	AIRMapBoundary
AIREventInfo	AIRPropertyExposure <i>*if licensed</i>
AIREvx	AIRPSold
AIRGeography	AIRReference
AIRIndustry	AIRSpatial

Back up writable databases

Databases that are not Verisk-supplied read-only databases contain client data and should be backed up regularly. Examples of working databases include:

AIRCompanyLoss	AIRReinsurance
AIREvents	AIRResult
AIREvents 50k	AIRResultRe
AIREvents HIST	AIRSecurity
AIRExposure	AIRSpatialWork <i>*if licensed</i>
AIRExposureRe	AIRUserMap <i>*if licensed</i>
AIRExposureSummary	AIRUserSetting
AIRGlobalSetting	AIRUserSpatial <i>*if licensed</i>
AIRMapBoundary	AIRUserSpatialWork <i>*if licensed</i>
AIRProject	AIRWork
AIRPropertyExposureHelper <i>*if licensed</i>	

Verisk recommends:

- Results databases be in a simple recovery state at all times.
- Avoid running periodical transactional or differential backups on a Results database.
- Perform a full back up of Results databases at the end of the analysis to save the results for the future.

Back up user data

Back up user data regularly.

To find user data locations go to your Application Server and browse to [INSTALLDIR]\AIR\IIS\web.config.

- *User Spatial Files* (if Geospatial is licensed): In web.config, search for "UserSpatialDataDirectory" and to find the SpatialData share needed to be backed up.
- *User CLF Files* (if Touchstone Re is licensed): In web.config, search for "Clf.Catalog.Repository" and to find the UserCLFFiles share needed to be backed up.
- UserModels folder.

Manage the Windows firewall

The Windows firewall impacts how components residing on different computers communicate.

Touchstone and Touchstone Re process tasks (e.g. import, export, analysis, geocoding) across multiple computers. To enable this distributed functionality, disable the Windows firewall on each Analysis engine.

Note

The following instructions are for Windows 10.

Disable the firewall

The Windows firewall should be disabled for Touchstone and Touchstone Re installations.

Only users with admin-level permission should tinker with the firewall.

1. Click the **Start** menu.
2. Select **Control Panel**.
3. In the **Control Panel**, go to **Windows Firewall Settings**.

If your Control Panel is set to Category View, you must first click **System and Security**, then click **Windows Firewall**.



If your Control Panel is set to Small Icon View, find **Windows Firewall** and click it.



4. In the Windows Firewall dialog, click **Turn Windows Firewall on or off** (located in the left-hand pane).



Windows firewall should be disabled on all levels.

Domain network settings

Turn on Windows Defender Firewall

Block all incoming connections, including those in the list of allowed apps

Notify me when Windows Defender Firewall blocks a new app

Turn off Windows Defender Firewall (not recommended)

Private network settings

Turn on Windows Defender Firewall

Block all incoming connections, including those in the list of allowed apps

Notify me when Windows Defender Firewall blocks a new app

Turn off Windows Defender Firewall (not recommended)

Public network settings

Turn on Windows Defender Firewall

Block all incoming connections, including those in the list of allowed apps

Notify me when Windows Defender Firewall blocks a new app

Turn off Windows Defender Firewall (not recommended)

Leave the firewall on

Running Touchstone and Touchstone Re with the firewall enabled.

If it is against company policy to turn off the firewall, there are certain ports that can be opened in the firewall to allow Touchstone and Touchstone Re to function properly. There are two different types of ports to pay attention to:

- Dynamically assigned ports
- Statically assigned ports

Assigned ports

Dynamically assigned ports

Dynamically assigned ports change constantly.

The target port will be allocated and assigned, dynamically, and, because of the fluid nature of the assignment, there is no way to come up with the listing of port numbers.

All the subsystems will perform any network connection, including:

- Client to Application Server
- Application Server to Analysis Management Server
- Analysis Server to Analysis Management Server
- Any machine that will need to access the SQL Server

However, with the exception of the Client to Application Server, these ports are in the context of intranet communication; since they are in an internal domain, there is no need to configure any firewall setting. For this reason, there should not be any concern about these dynamically assigned ports. Refer to the tables below.

Table 4. Database/Geospatial/Property Exposure Servers (Dynamic Ports)

Port	Purpose	Communicating with
Dynamic	To get Map(s) from the Geospatial Service	Geospatial Database Server
Dynamic	To communicate with the Property Exposure Server	Property Exposure Server

Table 5. Client (UI)

Port	Purpose	Communicating with
Dynamic	To communicate with the target IIS (through port 443)	The target IIS Server

Statically assigned ports

Static ports are assigned a number.

If you are going to statically assign ports, use the following information to guide your port assignments.

Table 6. Analysis Management Server (head node)

Port	Purpose	Communicating with
1801	MSMQ	All the Analysis Servers, in this particular HPC cluster, through the MSMQ infrastructure
1856	HpcNodeManager.exe	All HPC Job Manager Client UI(s) that currently connect to the HPC head node, invoking the Management functionality
5800	HpcScheduler.exe	All the Verisk services that are running on the Application Server (those that submit the Job to the Analysis Management Server)
5999	HpcScheduler.exe (AM Service)	The Activity Monitor Service (on the HPC head node)
5974	HpcDiagnostics.exe	All HPC Job Manager Client UI(s) that currently connect to the HPC head node, invoking the Diagnostic functionality
8888	OutputManagerService	The Analysis Management Server OutputManagerService for UI view log functionality
6080	Push Notifications Service	The Analysis Management Server push notification service for Activity Monitor auto refresh

Table 7. Analysis Server (compute node)

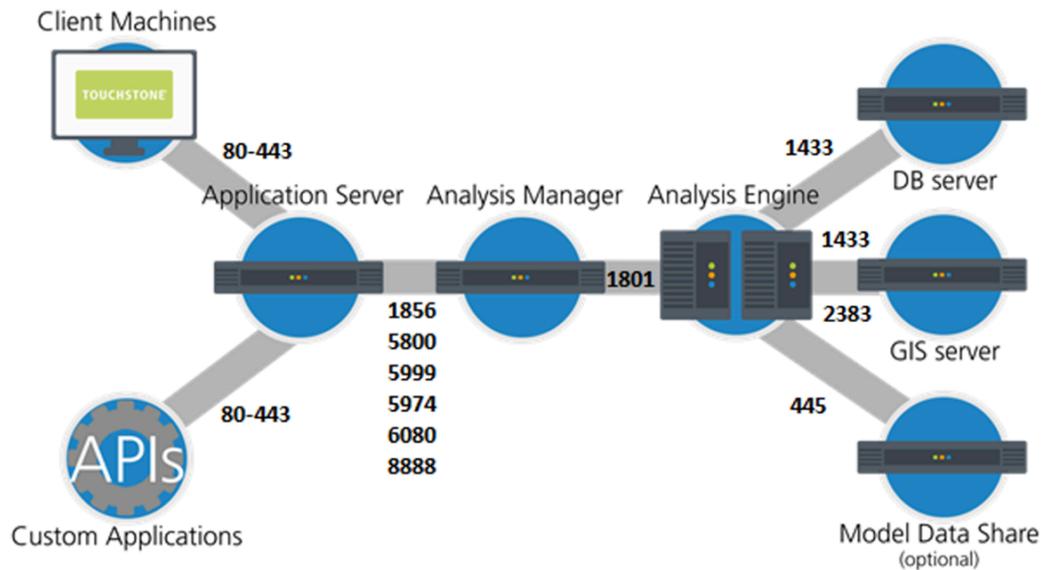
Port	Purpose	Communicating with
1801	MSMQ	The HPC head node, for this particular HPC cluster through the MSMQ infrastructure

Table 8. Application Server (IIS)

Port	Purpose	Communicating with
80	HTTP	For any client that is invoking the services that are running on the IIS Server, under the non-SSL mode (Not currently in use)
443	HTTPS	For any client that is invoking the services that are running on the IIS Server, under the SSL mode (Currently in use)

Table 9. Database/Property Exposure Servers (Static Ports)

Port	Purpose	Communicating with
1433	SQL Server	Application Server, Analysis Server(s), and Analysis Management Server

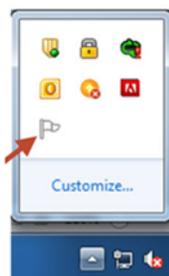
**Figure 1.** Touchstone/Touchstone Re Data Flow and Ports

Disable user account control

For Touchstone and Touchstone Re to function properly, User Account Control needs to be disabled across all of the machines in the environment.

If you are on a Server OS or if you installed the Touchstone or Touchstone Re Client on a Windows 10 machine, you can simply type User Account Control in the search bar. Then, locate the control settings. If you installed the Touchstone or Touchstone Re Client on a Windows 7 machine, use the procedure provided below.

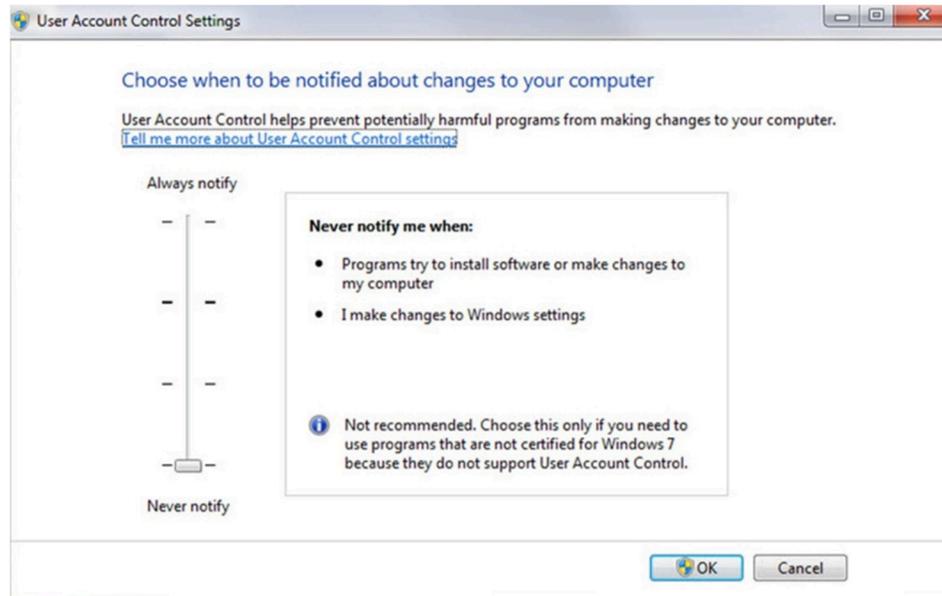
1. In the system tray on the right-hand side of your taskbar, click the white flag.



2. Click **Open Action Center**.
3. In the Action Center, click **Change User Account Control settings** in the left-hand bar.



4. Move the slider down to **Never notify** and reboot the machine before continuing.



5. Click **OK**.

Manage antivirus software

Antivirus software should be turned off for Touchstone and Touchstone Re installations.

When accessing local Catalog files during analyses, both Touchstone and Touchstone Re perform intensive read/write operations on the local disk. Antivirus scans slow down these operations.

If your company policy requires antivirus software be turned on, you can exclude Touchstone and Touchstone Re product folders from antivirus scans. You can also exclude the Microsoft HPC recommended locations from antivirus scans.

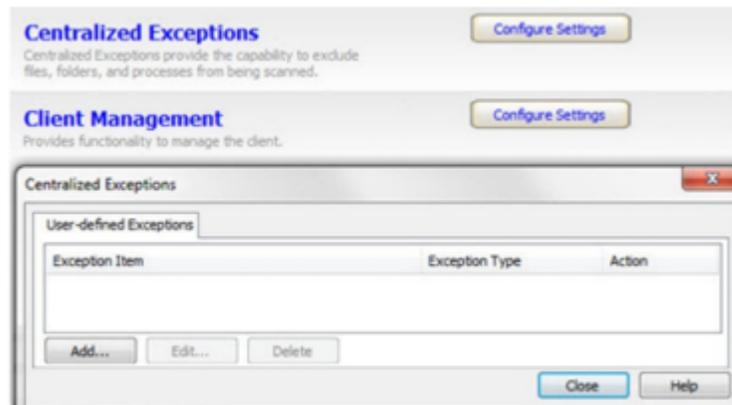
Exclude product folders from antivirus scans

Use Symantec Endpoint Protection to manage antivirus software.

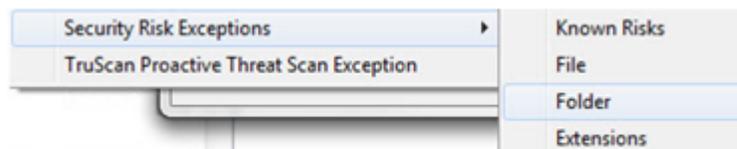
1. Open Symantec Endpoint Protection and click **Change settings** on the left-hand side.



2. Click **Configure Settings** in the **Centralized Exceptions** section. The following screen appears.



3. Click **Add**.
4. Select the folder where the Verisk products reside (normally in C:\Program Files\AIR).



5. Click **Close** to exit Symantec Endpoint Protection.

Fix duplicate names

Run script to fix duplicate names in Touchstone Re .

In previous iterations of Touchstone Re it was possible, in certain circumstances related to Company Import, to create multiple companies with the same name. This loophole has been closed with the 2022 release; any duplicate company names must be fixed and made unique. The installation package includes a SQL script that will identify duplicates. It is recommended you run this script and correct any duplicate names *before* upgrading to Touchstone Re.

2022. If the upgrade process identifies any duplicate names, it will automatically rename the companies with **%_DUPLICATE_% <Company Name>** so that they are easily identifiable.

Configure databases (SQL server): what you need to know

Prepare for installation of your databases.

The supported SQL collation is SQL_Latin1_General_CP1_CI_AS. The Touchstone/Touchstone Re database installation creates two SQL accounts:

- airadmin (sysadmin privileges)
 - airuser (database owner of Verisk-specific databases)
1. Determine the location where the Touchstone databases, SQL server data, and log files will be installed.
 2. Verify that the SQL Server Analysis Services are also installed along with SQL Server.
 3. Ensure Named Pipes and TCP/IP are enabled.

Configure property exposure databases (SQL server): what you need to know

Prepare for installation of property exposure database(s).

The supported SQL collation is SQL_Latin1_General_CP1_CI_AS. The Touchstone/Touchstone Re database installation creates two SQL accounts:

- airadmin (sysadmin privileges)
 - airuser (database owner of Verisk-specific databases)
1. Determine the location where the Touchstone databases, SQL server data, and log files will be installed.
 2. Ensure Named Pipes and TCP/IP are enabled.

Analysis Management Server (head node): what you need to know

Prepare for installation of analysis management server(s).

Microsoft HPC stores its information in a set of SQL databases. When installing HPC on the head node, you are presented with a choice of SQL server destination. By default, HPC installs SQL Express. If SQL Server Express Edition is not supported within your organization, you have the option of installing SQL Server Standard or Enterprise edition.

Analysis Servers (compute node): what you need to know

Prepare for installation of the analysis server(s).

1. Verify that compute nodes are on the same enterprise network and associated with the same analysis management server (in HPC).

2. Verify that the Touchstone/Touchstone Re service account has administrative login permissions.

Tune the Analysis Server OS

Configure settings for improved application performance.

Use the steps below to disable TCP Offload Engine (TOE) and RSS in the Network Adapter Settings. For a physical server, the settings on each NIC should also be disabled.

1. Open the Device Manager Control Panel Applet from the command line by typing `mmc devmgmt.msc`.
2. Expand the Network Adapters selection.
3. Right-click the first network adapter and select **Properties**.
4. Switch to the **Advanced** tab.

Note



Not all the options below may be present for an adapter. This depends on the adapter type, but all possibilities have been listed here for completeness.

5. Locate Receive Side Scaling and set the value to disabled.
6. Locate TCP Offload Engine (TOE) and set the value to disabled.
7. Locate TCP/UDP/IP Checksum Offload (IPv4) and set the value to disabled.
8. If this TCP/UDP/IP Checksum Offload (IPv4) property is present, it overrides and disables the TCP Checksum Offload (IPv4), UDP Checksum Offload (IPv4), and IPv4 Checksum Offload properties.
9. Locate TCP Checksum Offload (IPv4) and set the value to disabled.
10. Locate TCP Checksum Offload (IPv6) and set the value to disabled.
11. Locate UDP Checksum Offload (IPv4) and set the value to disabled.
12. Locate UDP Checksum Offload (IPv6) and set the value to disabled.
13. Locate IPv4 Checksum Offload and set the value to disabled.
14. Go back to the Network Adapters Applet, choose the next Network Adapter in the list, and repeat the steps above. Continue until you have updated all listed Network Adapters.

Application Server (IIS): what you need to know

Prepare for installation of the application server.

1. If the Data Quality module is licensed, verify that internet access is available.
2. Determine the model data and user model shares for installation. These are centralized locations for User Models, User CLF Files, and User Spatial Data.
3. Verify that the Touchstone/Touchstone Re service account has administrative login permissions.

Smart Clients: what you need to know

Prepare for installation of your smart clients.

Internet access is required on the smart client machines/servers. Touchstone/Touchstone Re accesses two sites:

Verisk	RSS feeds for ALERT event sets download and news
ESRI ArcGIS	For base maps, satellite maps, etc.

1. If a proxy server is being used to block http websites, add the links below to the exceptions in order for maps to display properly:

https://www.air-worldwide.com
https://alert.air-worldwide.com
https://server.arcgisonline.com/ArcGIS/rest/services

2. Determine which of the following options will be used for client access to the back end:
 - RDP
 - Terminal Server
 - Local desktops
3. Finalize the certificate to be used—Verisk default or client acquired.

When opening the Touchstone or Touchstone Re application, the application attempts to grab the SSL certificate from the IIS server and upload it into the "Trusted root" of the client machine. Users require permission to do so.

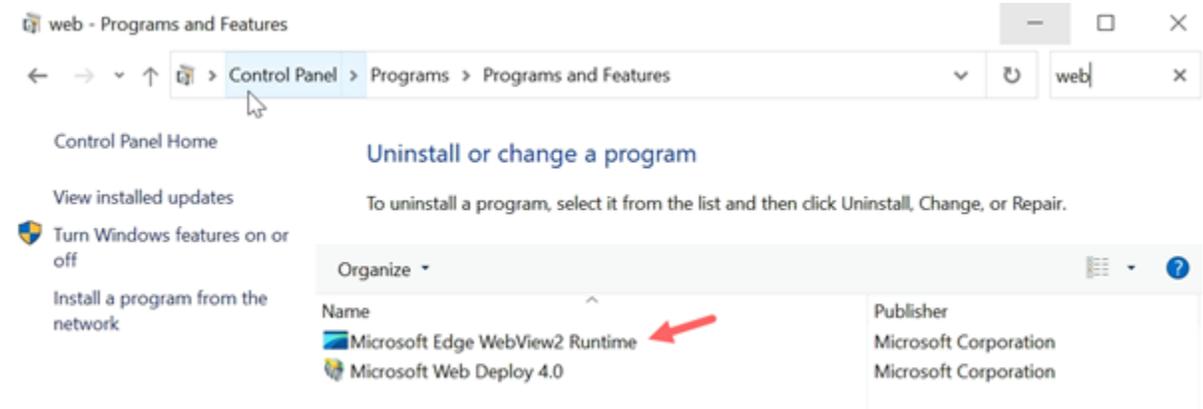
Install Microsoft Edge WebView2 Runtime

Update browser to view online help.

Microsoft Edge WebView2 Runtime is now required to view online help from the Touchstone, Touchstone Re, and Touchstone Model Builder applications running on Windows 10 and Windows Server 2019 on remote desktops, or similar remote terminal applications.

To download and install Microsoft Edge WebView2 Runtime:

1. In a browser, load <https://developer.microsoft.com/en-us/microsoft-edge/webview2/#download-section>
2. Click the Evergreen Bootstrapper **Download**.
3. Run the download, **MicrosoftEdgeWebview2Setup.exe**.
4. Open the Control Panel and search for 'web' in **uninstall programs** to verify this runtime is installed.



Verify browser includes PDF Viewer

To view the Remodeling Guide associated with each catbond company import, a web browser with a PDF viewer must be installed on the local Touchstone Re client.

Verify the browser on the local Touchstone Re client includes a PDF Viewer, if it does not, install one.

4 Installation

Before you begin

Review all of the installation material before you proceed.

- Carefully review the section *Pre-installation* earlier in this document.
- Close all open documents and applications that may be running on each workstation.
- Copy the contents of your Touchstone/Touchstone Re installation download to a location on the network that can be accessed by all of the machines on which Touchstone and Touchstone Re components are installed.
- Locate your Verisk license file (Verisk.Touchstone.xml). You must reference this file during installation.

Installation highlights

Complete checklist then proceed with installation/upgrade.

- Touchstone/Touchstone Re databases
- Property Exposure databases
- Analysis Management Server (head node)
- Analysis Server (compute node)
- Application Server (IIS)
- Touchstone/Touchstone Re Client
- Model Data (local or network share)

Installation instructions for each component are provided in the following chapters.

Note



Remote SQL Server installation is not supported.

Warning



Be sure to review the installation logs once your installation is complete and check for any errors.

Tip



You can install the other components in any order, but the Analysis Management Server (HPC head node) may be installed only after you install or upgrade the Touchstone/Touchstone Re databases.

To improve product and data security, the SQL server accounts associated with the Touchstone/Touchstone Re databases should be assigned new, unique passwords immediately after installation.

5 Databases

Database overview

Databases required for this installation include databases specific to Touchstone/ Touchstone Re and to property exposure.

Important note on setting up multiple SQL servers

If you are working with multiple SQL servers make sure to set up AIRProject.dbo.tDataServer accordingly.

AIRProject.dbo.tDataServer has one entry in the master server with Master SQL Server Instance name as DataServerName and IsMaster = 0.

DataServerName	IsMaster
<i>MasterInstance-DB1\SQL2017</i>	0

AIRProject.dbo.tDataServer has two entries in the child server with Child SQL Server Instance name as DataServerName and IsMaster=0, and Master SQL Server Instance name as DataServerName and IsMaster = 1.

DataServerName	IsMaster
<i>ChildInstance-DB1\SQL2017</i>	0
<i>MasterInstance-DB1\SQL2017</i>	1

Install Touchstone/ Touchstone Re databases

Steps to install the Touchstone/ Touchstone Re databases.

Important



To avoid locking the database, it is important to shut down any default Verisk database connections before you proceed. If the database becomes locked, use the [Password Reset Utility](#) to unlock it.

1. Verify that you have the necessary prerequisites, as identified in earlier topics.
2. Make sure no database connections are open to any default Verisk databases before you proceed.
 - a) Shutdown IIS on the Application Server.
 - b) Shutdown all Verisk services on the Analysis Management Server.
3. Navigate to the folder where the Touchstone/Touchstone Re database setup files are located.
4. Run setup.exe by right-clicking this file and selecting **Run as administrator**.

5. When presented with the Welcome screen, click **Next**.
6. Locate the license file (e.g., Verisk.Touchstone.xml) and select it.
7. Click **OK**.
8. Enter the name of the database server. If you click **Browse**, make a selection from the servers listed in the pop-up window.

Database server that you are installing to:

OBSERVER\INSTANCE

Connect using:

Windows authentication

SQL Server authentication using Login ID and password below

Login ID:

Password:

9. Enter the user name and password for the default product administrator for this environment; if you click **Browse**, make a selection from the choices in the pop-up window.

Please enter a default product administrator for this environment. This account will be used to initially login and setup users.

Product Account Domain\Username

DOMAIN\PRODUCTADMIN

Password:

●●●●●●●●●●

10. Click **Next**.
11. Indicate whether this is a typical or advanced location installation.

Click the type of setup you prefer.

Typical:
Data and Log files will be installed to a single location selected below.

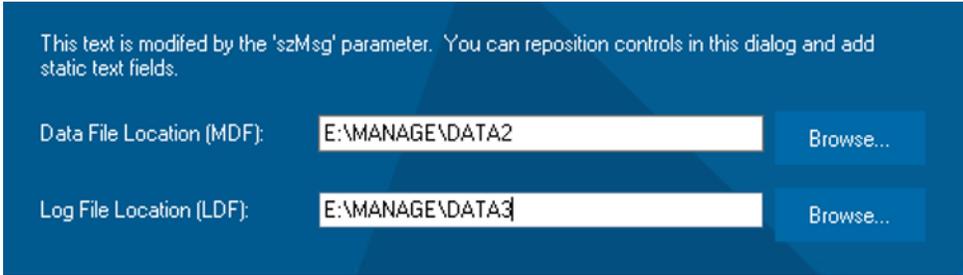
Advanced:
Data and Log files will be installed to separate directories chosen on the next dialog.

Destination for Typical Installations

C:\Program Files\Microsoft SQL Server\MSSQL12.MSSQLSERVER...\

12. Advanced location installation only:
 - Enter a data file location; click **Browse** if necessary.

- Enter a log file location; click **Browse** if necessary.



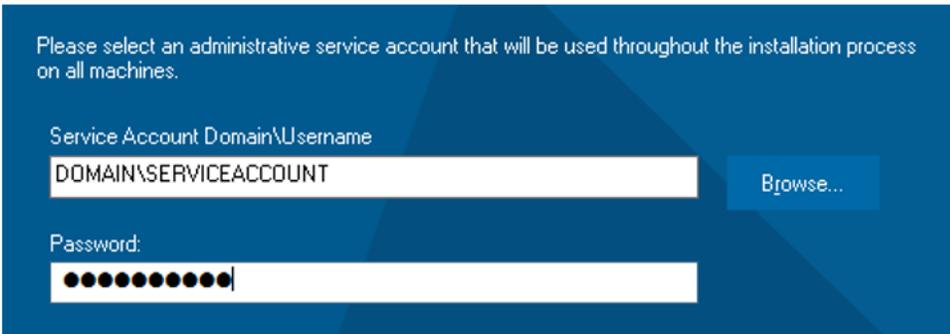
This text is modified by the 'szMsg' parameter. You can reposition controls in this dialog and add static text fields.

Data File Location (MDF):

Log File Location (LDF):

13. Enter an administrator service account and password; this login is used throughout this installation process. If you click **Browse**, choose an administrator from the pop-up window; you may select a user from another domain or server.

The service account must be defined on the same domain as that used by the servers hosting Touchstone and HPC.



Please select an administrative service account that will be used throughout the installation process on all machines.

Service Account Domain\Username

Password:

14. Click **Next**.

15. If prompted, indicate if this is your default database server.

The installation initiates; progress is indicated by the blue coloring filling the progress bar.

16. When the installation is complete, click **Finish**.

If the installation generates any errors, do not continue. Contact Verisk.

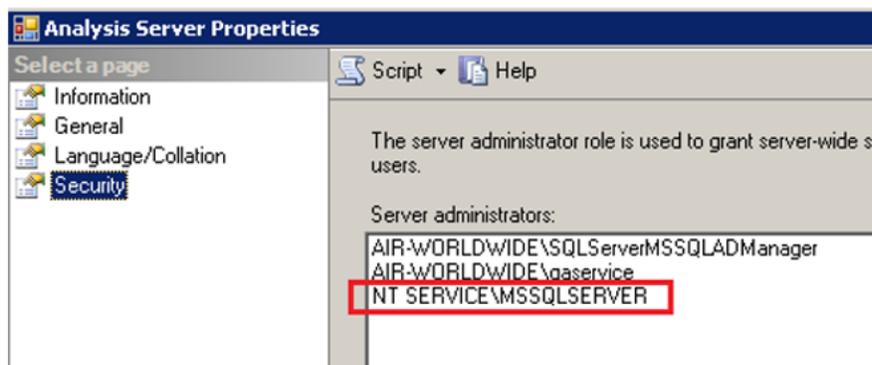
SSAS security permissions

Access to data from SSAS cubes requires certain permissions be granted so that the client (.net/sql server) can gain access to the cube and pull the data.

As part of the installation process, make sure that the following steps are taken so that SSAS cube data can be pulled from the SQL Server linked server connection.

Set up SSAS security permissions for Touchstone and Touchstone Re applications to enable some of the SSAS components incorporated into these applications. SSAS components include the ability to generate map clusters and to build spatial advanced table and charts.

1. Connect to the SSAS server using SSMS.
2. Right-click the SSAS server in the list.
3. Select the **Security** page.
4. Add NT SERVICE\MSSQLSERVER for default instances.

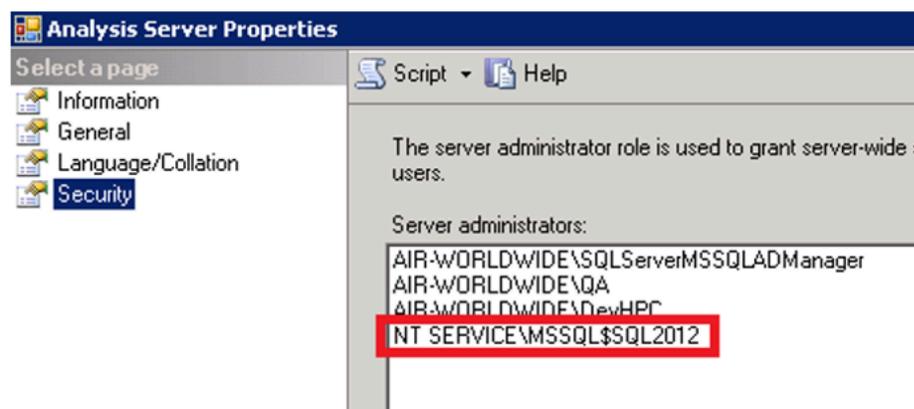


5. Add the account NT SERVICE\MSSQL\$SQL2012 to the SSAS security.

Note



The naming convention for SSAS named instances is NT SERVICE\MSSQL\$NAMEDINSTANCE.



Install property exposure databases

Steps to install your property exposure databases.

Verify that you have the necessary prerequisites, as identified in the earlier topic *System requirements*.

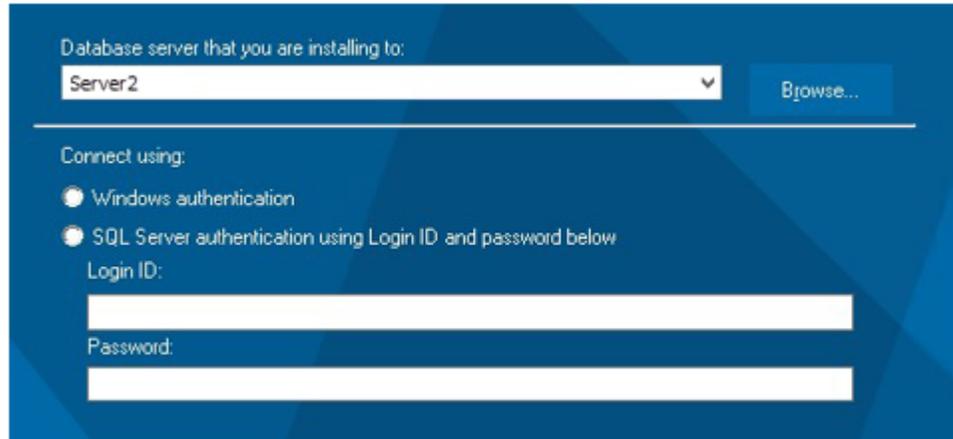
Note



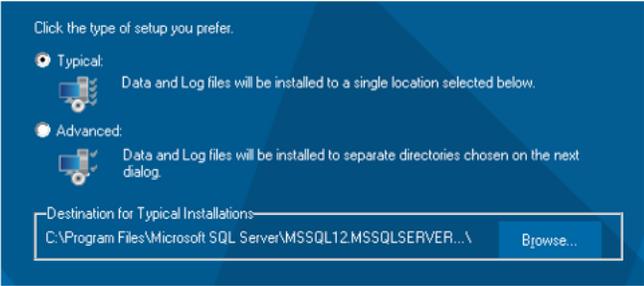
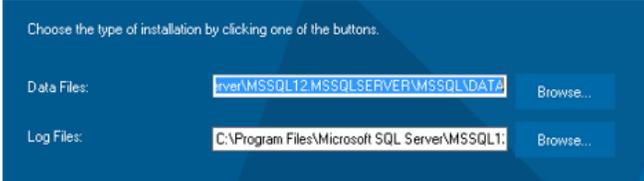
The Property Exposure Databases are only required for Touchstone installations which license Data Quality. For Touchstone Re installations and for Touchstone installations which do not license Data Quality, proceed to the next chapter.

1. Navigate to the application folder where the Touchstone/Touchstone Re setup files are located.

2. Run setup.exe by right-clicking this file and selecting **Run as administrator**.
3. When presented with the Welcome screen, click **Next**.
4. Locate the license file and then click **OK**.
5. Enter the name of the database server. If you click **Browse**, make a selection from the servers listed in the pop-up window. Remote SQL Server installation is not allowed.



6. Select SQL Server authentication and enter a login ID and password.
7. Click **Next**.
8. Indicate whether this is a single or multiple location installation.

Option	Description
<p>For a single location</p>	<p>Select a destination folder for the database server installation.</p> <p>If you click Browse, choose a destination from the pop-up window.</p> 
<p>For a multiple location</p>	<p>Select a data file location and a log file location.</p> <p>Click the Browse buttons if necessary and make selections from the corresponding dialogs.</p> 

The installation initiates; progress is monitored by the blue coloring filling the progress bar.

9. When the installation process completes, click **Finish**.

6 Models

Install your models

Steps to install your licensed models.

Note



New, updated, and previous models must be installed with each installation.

1. Verify that you have the necessary prerequisites, as identified in earlier topics.
2. Navigate to the models folder where the models msi file is located.
3. Run Touchstone Models.msi by right-clicking this file and selecting **Run as administrator**.
4. When presented with the Welcome screen, click **Next**.
5. When prompted, supply the appropriate Touchstone license.
6. Click **Next**.
7. Select the destination folder for this installation.
8. Click **Next**.
9. Click **Install**.
10. When the installation process completes, click **Finish**.

Install previous models

Steps to install your "previous" (older) models.

Verify that you have the necessary prerequisites, as identified in the earlier topic *System requirements*.

1. Navigate to the modelsprevious folder where the models msi file is located.
2. Run Touchstone Models Previous.msi by right-clicking this file and selecting **Run as administrator**.
3. When presented with the Welcome screen, click **Next**.
4. When prompted, supply the appropriate Touchstone license.
5. Click **Next**.
6. Select the destination folder for this installation.
7. Click **Next**.
8. Click **Install**.
9. When the installation process completes, click **Finish**.

7 Analysis Management Server (head node)

Install the Analysis Management Server

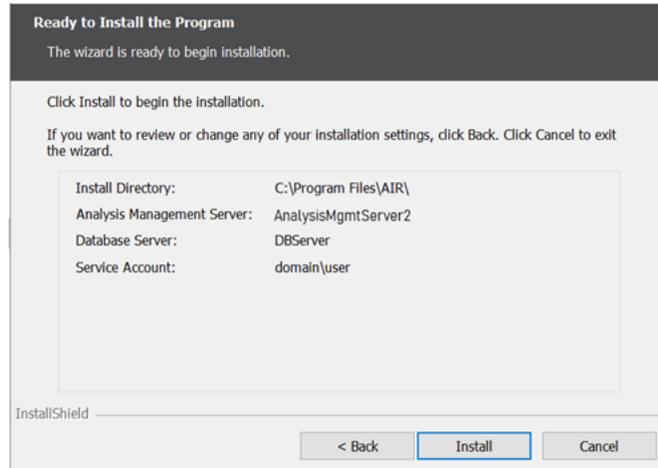
Steps to install the Analysis Management Server.

Note



The Analysis Management Server (HPC head node) may be installed *only after* you install or upgrade the Touchstone/Touchstone Re databases.

1. Verify that you have the necessary prerequisites, as identified in earlier topics.
2. Navigate to the application folder where the application setup files are located.
3. Run AnalysisManagementServer.exe by right-clicking this file and selecting **Run as administrator**.
4. When presented with the Welcome screen, click **Next**.
5. Select the folder where you would like to install the Analysis Server; if you click **Change**, choose a destination from the pop-up window.
6. Click **Next**.
7. Enter the name and instance of the Touchstone/Touchstone Re database server to which you would like to connect and the application server for this environment.
8. Click **Next**.
9. Enter the service account (administrator) user name, password, and domain; this login is used throughout this installation process.
The service account must be defined on the same domain as that used by the servers hosting Touchstone and HPC.
10. Click **Next**.
11. Review your configuration and when satisfied, click **Install**. Otherwise, click **Back** to return to a previous screen.



The installation initiates; progress is monitored by the green coloring filling the progress bar.

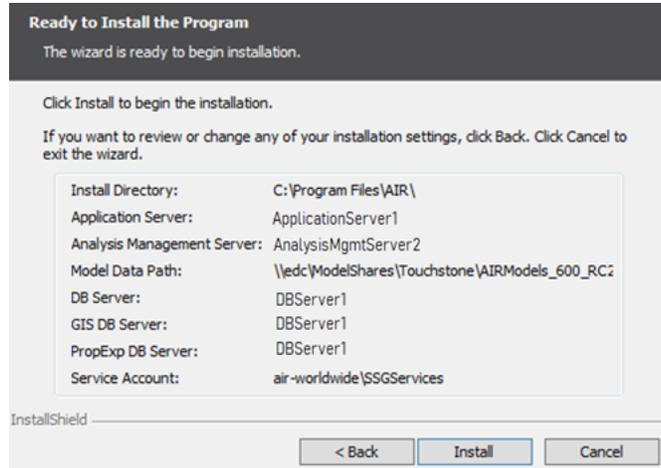
12. When the installation process completes, click **Finish**.
13. If prompted, choose if you would like to restart your computer.

8 Analysis Server (compute node)

Install the Analysis Server

Steps to install the Analysis Server.

1. Verify that you have the necessary prerequisites, as identified in earlier topics.
2. Navigate to the application folder where the application setup files are located.
3. Run AnalysisServer.exe by right-clicking this file and selecting **Run as administrator**.
4. When presented with the Welcome screen, click **Next**.
5. Select the folder where you would like to install the Analysis Server; if you click **Change**, choose a destination from the pop-up window.
6. Click **Next**.
7. Enter the name and instance of the Touchstone/Touchstone Re database server to which you would like to connect.
8. If different than the Touchstone/Touchstone Re database server, enter the name and instance of the Property Exposure database server to which you would like to connect.
9. Click **Next**.
10. Enter the name of the Application Server.
11. Enter the name of the Analysis Management Server.
12. Enter the model data location.
13. Click **Next**.
14. If you are setting up a model share:
 - a) Enter location of the user model share.
 - b) When applicable, enter the location of the Touchstone Re user CLF share.
15. Enter the service account (administrator) user name, password, and domain.
The service account must be defined on the same domain as that used by the servers hosting Touchstone and HPC.
16. Click **Next**.
17. Review your configuration and when satisfied, click **Install**. Otherwise, click **Back** to return to a previous screen.



The installation begins.

18. When the installation process completes, click **Finish**.
19. If prompted, indicate if you would like to restart your computer.

9 Application Server (IIS)

Install the Application Server

Steps to install the Application Server.

1. Verify that you have the necessary prerequisites, as identified in earlier topics.
2. Navigate to the application folder where the application setup files are located.
3. Run ApplicationServer.exe by right-clicking this file and selecting **Run as administrator**.
4. When presented with the Welcome screen, click **Next**.
5. Select the folder where you would like to install the Application Server; if you click **Change**, choose a destination from the pop-up window.
6. Click **Next**.
7. Enter the name and instance of the Touchstone/Touchstone Re database server to which you would like to connect.
If different than the Touchstone/Touchstone Re database server, enter the name and instance of the Property Exposure database server to which you would like to connect.
8. Click **Next**.
9. Enter the following information:
 - a) Name of the Application Server
 - b) Name of the Analysis Management Server
 - c) Model data location
10. Click **Next**.
11. Enter the following share information, if different from the info provided:
 - a) User models
 - b) GIS user data share
 - c) (Touchstone Re only) User CLF

12. Click **Next**.

13. Enter the following share paths:

- a) User models
- b) CLF files
- c) (Touchstone Re only) Spatial files

Note



Clients are responsible for creating the file share for Touchstone Re spatial files. This file share cannot be local.

Required Information
Enter the required fields below.

User Model Share Path:

CLF File Share Path:

TSRe Spatial File Path:

InstallShield

< Back Next > Cancel

14. Click **Next**.

15. Enter the service account (administrator) user name, password, and domain.

The service account must be defined on the same domain as that used by the servers hosting Touchstone and HPC.

16. Click **Next**.

17. Review your configuration and, when satisfied, click **Install**. Otherwise, click **Back** to return to a previous screen.

Ready to Install the Program
The wizard is ready to begin installation.

Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.

Install Directory:	C:\Program Files\AIR\
Application Server:	SSGTS4AS
Analysis Management Server:	SSGTS4HN
Model Data Path:	\\edc\ModelShares\Touchstone\AIRModels_600_RC2
DB Server:	SSGTS4DB1
GIS DB Server:	SSGTS4DB1
PropExp DB Server:	SSGTS4DB1
Service Account:	air-worldwide\SSGServices

InstallShield

< Back Install Cancel

The installation initiates; progress is indicated by the green coloring filling the progress bar.

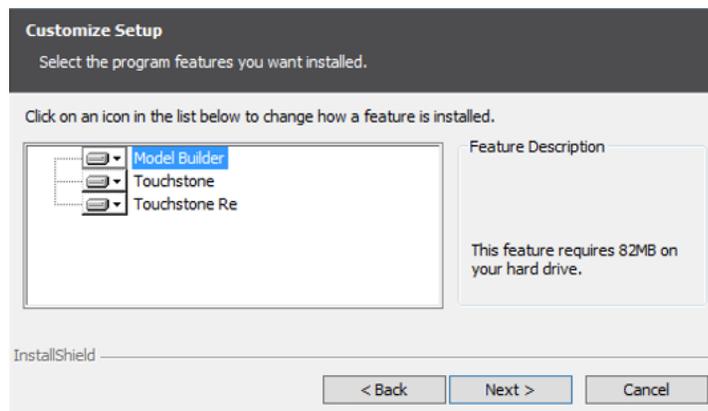
18. When the installation process completes, click **Finish**.
19. If prompted, indicate if you would like to restart your computer.

10 Client

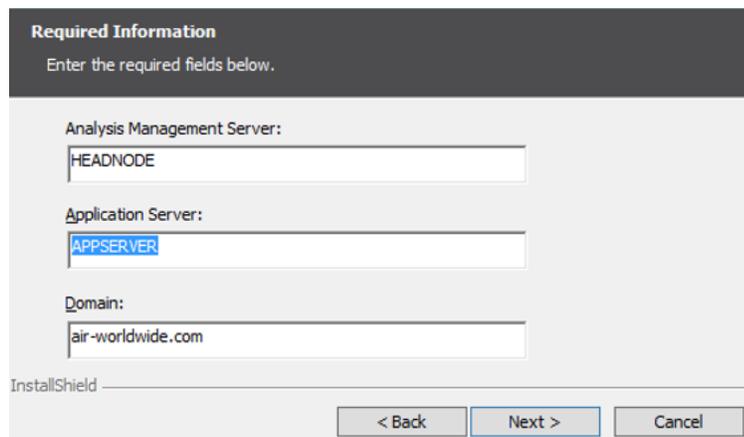
>Install the application client

Steps to install the Touchstone/ Touchstone Re client.

1. Verify that you have the necessary prerequisites, as identified in earlier topics.
2. Navigate to the application folder where the application setup files are located.
3. Run Client.exe by right-clicking this file and selecting **Run as administrator**.
4. When presented with the Welcome screen, click **Next**.
5. Select the folder where you would like to install the Client; if you click **Change**, choose a destination in the directory C:\Program Files\Verisk.
6. Click **Next**.
7. Customize your setup by choosing which product to install. By default, Model Builder, Touchstone and Touchstone Re are selected.

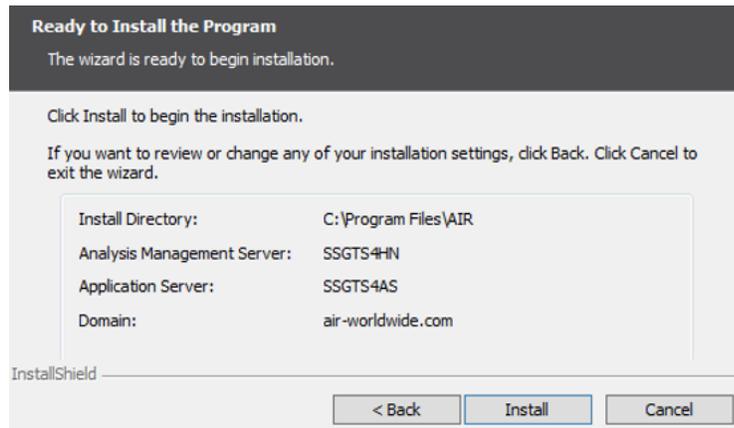


8. Click **Next**.
9. Enter the names of both your Application Server and your Analysis Management Server.



10. Click **Next**.

11. Review your configuration and, when satisfied, click **Install**. Otherwise, click **Back** to return to a previous screen.



The installation initiates; progress is indicated by the green coloring filling the progress bar.

12. When the installation process completes, click **Finish**.
13. If prompted, indicate if you would like to restart your computer.

11 Password reset

When to use the Password Reset Utility

Use the [Password Reset Utility](#) to assign unique passwords to the SQL server accounts associated with the Touchstone/Touchstone Re databases.

Important



Use this utility only after you have installed Touchstone and/or Touchstone Re and verified that the product is running properly.

You can also use this utility to update these passwords according to your company's security policies.

Default accounts and passwords

Notes on permissions and access.

The Touchstone/Touchstone Re database installation [utility](#) creates two SQL accounts used for internal communication:

- airadmin (which is assigned sysadmin privileges)
- airuser (the database owner of Verisk-specific databases)

These accounts are assigned default passwords during installation. To improve product and data security, these accounts should be assigned new, unique passwords immediately after installation.

Accessing the Password Reset Utility

The Password Reset Utility is only available on the Application Server. You can only access the Application Server using an account with system administrator privileges.



This password reset utility is for Touchstone and Touchstone Re installations only. It is run on the Application Server by those with admin access only.

You may need to install updates for HPC Pack 2019 depending on what version is installed.

Set the registry key "CertificateValidationType" value to 0.

Remember to reset the registry key back to the default setting (1) once you are done updating the passwords.

Reset the default password

Steps to reset the default password.

1. On the Application Server, go to **Programs > Verisk > PasswordResetUtility**.

On the Application Server, you may also browse to: C:\Program Files\AIR\PasswordResetUtility\AIR.Core.PasswordResetUtility.exe.

2. Double-click the PasswordResetUtility executable to access the utility.
3. Verify the names of your Application Server, Analysis Management Server, and SQL Database Server.
4. Select the default accounts, airadmin and airuser, for which you want to change the default password.
5. Enter the new password.

The new password is automatically encrypted.

Touchstone/TouchstoneRe Password Reset Utility

This information is required to update the TS/TS Re administrator and user passwords.

Application Server: **Application Server**

Analysis Management Server: **Analysis Management Server**

Database Server: **Database Server**

airadmin Password: AIRAdmin Password
Encrypted Password: 1mLvVd7Kh/PhwWniDptADRGxRJNsMA2z571oUZ7K4EM6doTz1yz5Of

airuser Password: AIRUser Password
Encrypted Password: qirsGmY5il4qI6onN48DCb/JeGziTB6LgvhbY/1RFEPikCUVHsywmmP suo.

Service Account:
UserName: **Service Account**
Password:

Update Cancel

6. Enter the password for the Touchstone service account.

The Touchstone service account is a domain service account which is used throughout the installation for communication, for example, to connect to the HPC server and compute nodes.

7. Click **Update** to initiate the change.

Upon successful update, review the log file. The log file lists the files updated in the Analysis Management Server, Analysis Servers, SQL database servers, and Application Server. The log file also records the encrypted version of the password.

All the Touchstone services affected by the password change are automatically restarted.

12 Post installation

Customize your installation

Use **Administration Console** tools to customize your installation.

Once you have completed your installation, open the Touchstone or Touchstone Reuser interface and use the Administration Console (**Admin > Administration Console**) to add new users, create new business units, and assign resources to those units. You may divide and restrict access to resources as needed.

Note



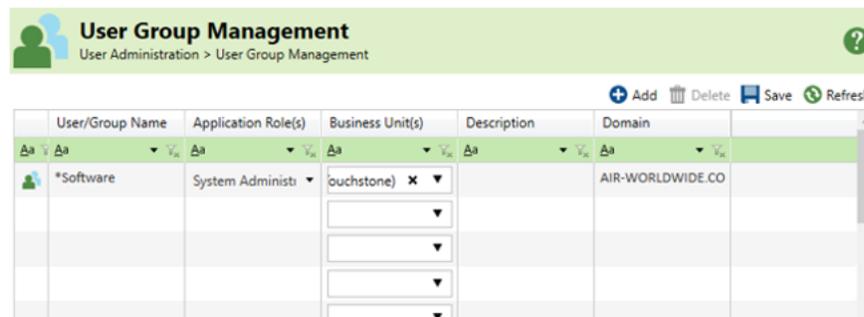
The Data Source Management function in Touchstone can be used to upgrade the default AIRExposure and AIRResult database, as well as additional custom exposure and Result databases.

Add a user

Manage users.

1. In the main application window, select **Admin > Administration Console** from the global navigation bar to open the **Administration Console**.

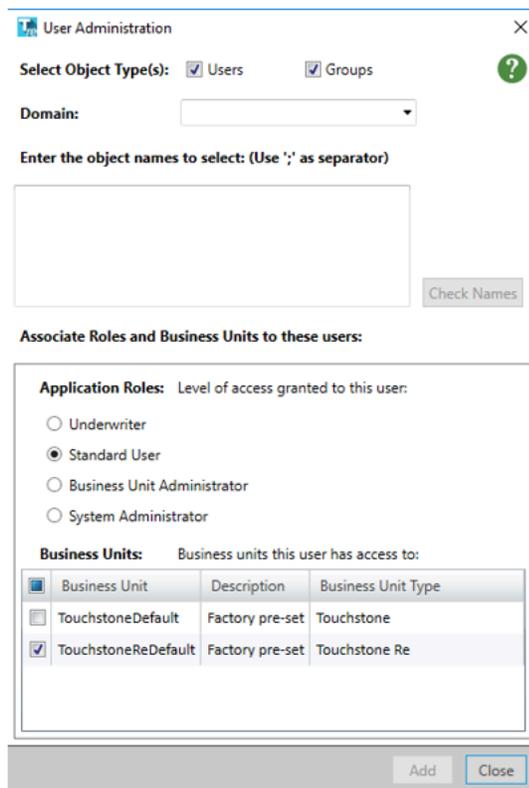
The **User Group Management** pane is displayed.



2. To add a new user or user group, click **+**.
3. The following options are available in the **User Administration** pane:

Option	Description
Select Object Type(s)	The default setting is for both Users and Groups to be checked.
Domain	Choose the domain name (populated during the installation process) from the drop-down menu.
Names	Enter the names of the groups to be searched in the domain. When entering multiple names, separate them with a semicolon. Click Check Names when done. When a dialog presents the matches, select the user(s) that you

Option	Description
	want to add; press Ctrl to select multiple names. Click OK when done.
Application Roles	Assign each user or group a role by business unit: Underwriter, Standard User, Business User Administrator, System Administrator.
Business Units	Check the business units (see next section) to which the user(s) has (have) access. You can also select business units for each user in the main console window.

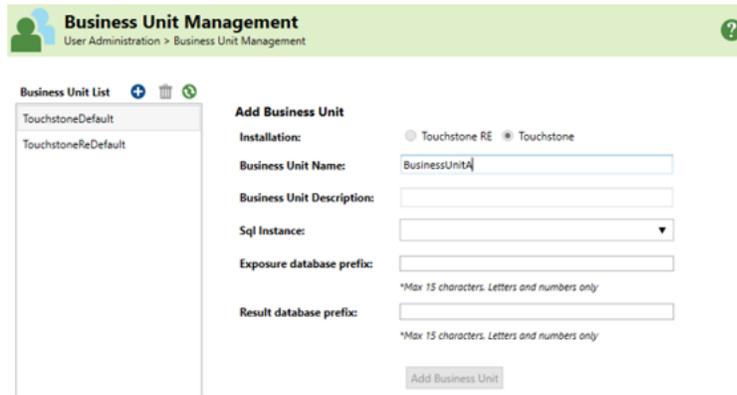


4. When finished, click **Add**.
5. Repeat to add more users.

Create a business unit

Manage business units.

1. In the main application window, select **Admin > Administration Console** from the global navigation bar to open the **Administration Console**.
2. Select **Business Unit Management** from the left-hand menu.
3. To add a new business unit, click **+**.



4. Enter the name (Only A-Z, 0-9, -, & and are valid.) and description for the business unit.
5. Choose a SQL database instance that will be used by users assigned to this business unit.
6. [Optional] Enter an Exposure database prefix. Type the prefix to prepend to the name of the exposure database when it is created; the prefix is limited to alphanumeric characters with a maximum length of 15 characters.
7. [Optional] Enter a Result database prefix. Type the prefix to prepend to the name of the result database when it is created; the prefix is limited to alphanumeric characters with a maximum length of 15 characters.
8. Click **Add Business Unit**.
9. To associate users with this business unit, select **User Group Management** in **User Administration**.

Assign resources to a business unit

Manage business units.

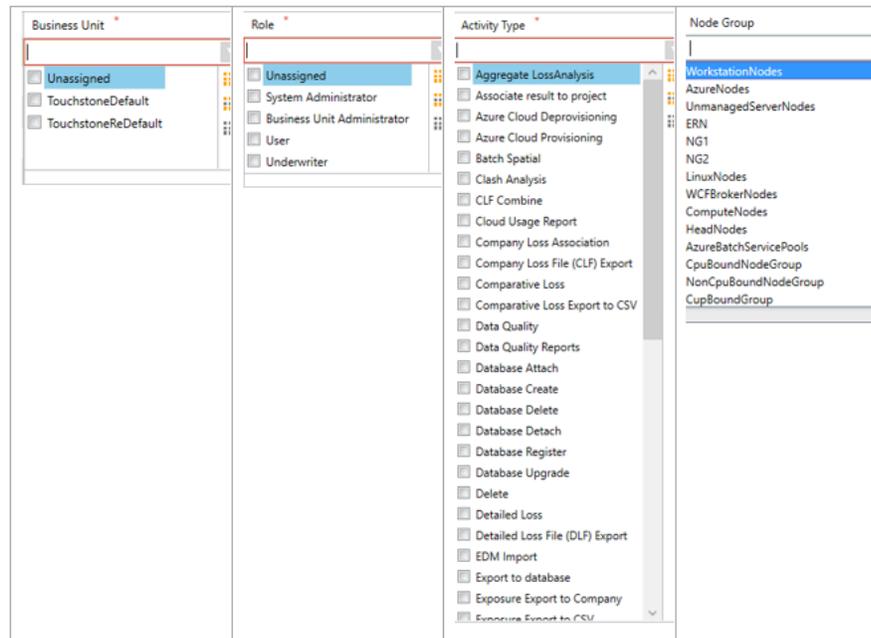
1. From the global navigation bar, select **Admin > Administration Console > HPC Resource Management**.
2. In the **HPC Node Group Association** pane, enter data into fields in the green row and then press **Enter**.



3. Make selections from the pull-down menus (see the following table):

Option	Description
Business Unit	Pick one or more business units.
Role	Pick one or more roles.

Option	Description
Activity Type	Pick one or more activity types.
Minimum and Maximum Cores	Enter the minimum and maximum cores you want this group to use.
Node Group	Pick one or more Node Groups; the node group is created in HPC.



4. To save your changes, click **Save**.

Configure permissions on folder shares

Manage access to folder shares.

The installer assigns everyone permissions to the folder shares below:

- \\HNMachineName\AIRWork
- \\ModelShare\AIRModelData
- \\CNMachineName\AIRWork

If you need to restrict permissions on the above folder shares due to company policies, you can restrict the permissions based on the following requirements.

Minimum Permissions required (Full Control):

- Windows Service Account
- HNMachineName\$

About Verisk

Verisk Analytics (Verisk) provides risk modeling solutions that make individuals, businesses, and society more resilient to extreme events. In 1987, a Verisk subsidiary founded the catastrophe modeling industry and today models the risk from natural catastrophes, terrorism, pandemics, casualty catastrophes, and cyber incidents. Insurance, reinsurance, financial, corporate, and government clients rely on Verisk's advanced science, software, and consulting services for catastrophe risk management, insurance-linked securities, longevity modeling, site-specific engineering analyses, and agricultural risk management. Verisk (Nasdaq:VRSK) is headquartered in Jersey City, New Jersey with many offices throughout the United States and around the world. For information on our office locations, visit <https://www.verisk.com/about/locations/>.

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