

Getting Started with Neverfail SCOPE

For
Version 5.3.0



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About this Book

Getting Started with Neverfail SCOPE Data Collector Service provides information about installing and removing upgrading, and the day-to-day administration tasks to manage Neverfail SCOPE Data Collector Service, including how to measure bandwidth, read Neverfail SCOPE Data Collector Service Reports, and manage Neverfail SCOPE Data Collector Service files. To help ensure the success of your Neverfail Heartbeat installation, this guide provides an overview of the Neverfail SCOPE Data Collector Service process, and identifies how Neverfail SCOPE Data Collector Service can provide benefits over the life of a server.

Intended Audience

This guide assumes a working knowledge of networks including the configuration of the TCP/IP suite of protocols and a sound knowledge of domain administration on the Windows 2003 and 2008 platforms.

Document Feedback

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Technical Support and Education Resources

The following sections describe the Technical Support resources available to you. To access the current version of this book and other books, go to <http://extranet.neverfailgroup.com>.

Online and Telephone Support

To use online support to submit Technical Support Requests, view your product and contract information, go to <http://extranet.neverfailgroup.com/support>.

Support Offerings

To find out how Neverfail Support offerings can help meet your business needs, go to <http://www.neverfailgroup.com/services/technical-support.html>.

Neverfail Professional Services

Neverfail Professional Services courses offer extensive hands-on labs, case study examples, and course materials designed to be used as on-the-job reference tools. Courses are available on site, in the classroom, and live online. For the day-to-day operations of Neverfail Heartbeat, Neverfail Professional Services provides offerings to help you optimize and manage your Neverfail Heartbeat servers. To access information about education classes, certification programs, and consulting services, go to: <http://www.neverfailgroup.com/services/professional-services.html>.

Chapter 1

Overview

Neverfail SCOPE Data Collector Service Overview

To ensure the success of a Neverfail product implementation, Neverfail uses the custom tool, Neverfail SCOPE Data Collector Service, to provide current, accurate, and complete information about the server environment. SCOPE is an acronym for Server Check, Optimization, and Performance Evaluation. Neverfail SCOPE Data Collector Service is a combination of both software and process that ensures maximum success with the Neverfail Heartbeat product.

The Neverfail SCOPE Data Collector Service process uses advanced, automated tools to provide:

- Detailed information about the current running state of your server environment
- Recommendations for optimizing your servers before installing Neverfail products

Neverfail SCOPE Data Collector Service provides a comprehensive look at the system. Neverfail SCOPE Data Collector Service diagnoses the overall health, stability, and reliability of an existing server environment before implementing a High Availability or Disaster Recovery solution. You can use Neverfail SCOPE Data Collector Service over the life of the server. Neverfail SCOPE Data Collector Service performs a thorough interrogation of the server environment and provides a comprehensive analysis of the configuration, environment, and performance profile. To optimize success with Neverfail's products and to improve reliability, it also:

- Analyzes workload characteristics
- Provides change recommendations

The Neverfail SCOPE Data Collector Service process normally takes 24 hours to complete and is required before implementing Neverfail Heartbeat . The Neverfail SCOPE Data Collector Service functions as the main interrogator of the server environment. It collects a wide range of configuration and performance data from the Primary, Secondary, and if deployed, Tertiary servers. Information gathered from a server is stored in a .CAB file for upload to the Neverfail Extranet for analysis. You can review this file before upload, if desired.

The report generated from the analysis can be used to determine the suitability of the server environment for installation and successful implementation. You can use the information in the report should a support request be raised. It provides accurate and complete information about your server environment.

When Neverfail SCOPE Data Collector Service is installed at both local and remote server sites, it can be used to measure available network bandwidth between servers. It reflects network data back to the local Neverfail SCOPE Data Collector Service, measuring the actual speed of the link between sites.

Note: *In this document, the term “Cluster” refers to a Neverfail Heartbeat Cluster. Refer to the Glossary for more information about Neverfail Heartbeat Clusters.*

Chapter 2

Installing, Upgrading, and Removing Neverfail SCOPE

Installing Neverfail SCOPE Data Collector Service

This procedure describes steps to perform an initial installation of Neverfail SCOPE Data Collector Service.

Prerequisites

If Neverfail SCOPE Data Collector Service was not installed as part of Neverfail Heartbeat installation, it can be installed and removed independently.

Important: *Neverfail SCOPE Data Collector Service requires that Microsoft™ .Net Framework 4.0 be installed prior to running `Neverfail SCOPE Data Collector Service.msi`. If .Net Framework 4 is not installed when you attempt to initiate `Neverfail SCOPE Data Collector Service.msi`, Neverfail SCOPE Data Collector Service will prevent installation until .Net Framework 4.0 is installed.*

Windows Server 2003 must have Windows Imaging Component (WIC) installed prior to installing Microsoft .Net Framework 4.

Procedure

There are separate installer packages for the 32-Bit and 64-Bit versions of Windows.

1. Download Neverfail SCOPE Data Collector Service from the Neverfail Extranet Neverfail web site by going to **Products / Downloads > SCOPE** and select the appropriate version.
2. Save the downloaded .zip file to the desired location.
3. Right-click the .zip file and select **Extract All**.
4. Follow the instructions in the *Extraction Wizard* to select a destination for the extracted files.
5. Navigate to the extracted files and read the `Readme.txt` file for additional information that may affect your installation.
6. Double-click the `Neverfail SCOPE Data Collector Service.msi` installer file to start the installation wizard.

The *InstallShield Wizard* starts in a new window and the *Welcome* screen is displayed.

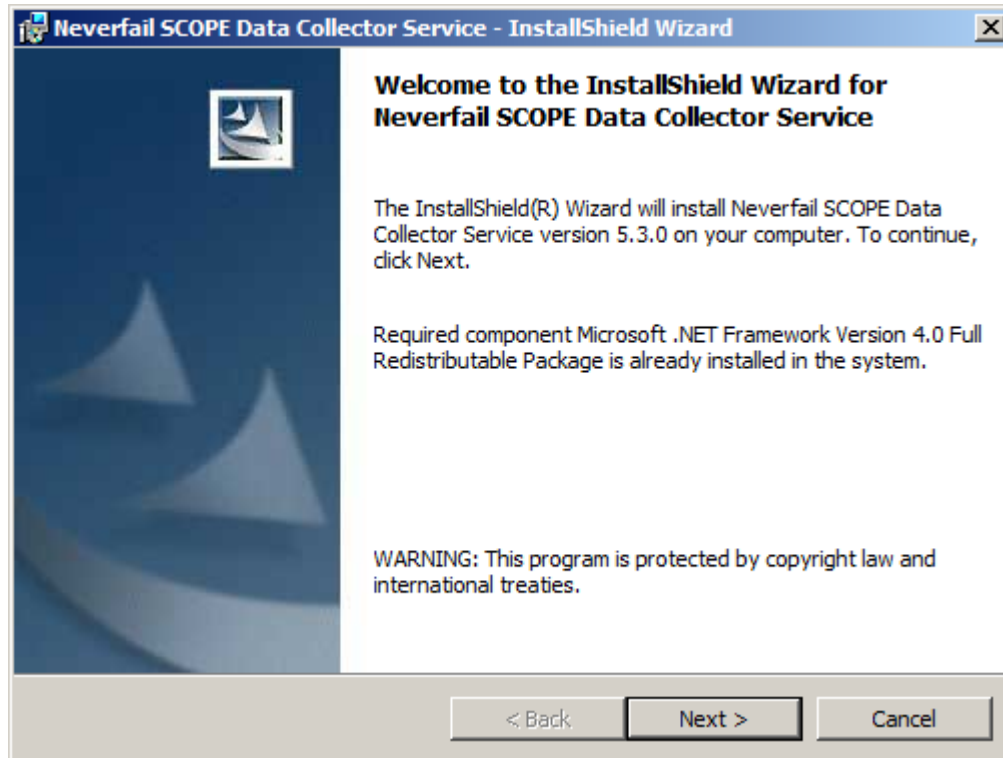


Figure 1: Neverfail SCOPE Data Collector Service Install Wizard Welcome page

7. Click **Next**.

The *Destination Folder* page is displayed and identifies the default installation paths for the application and data files.

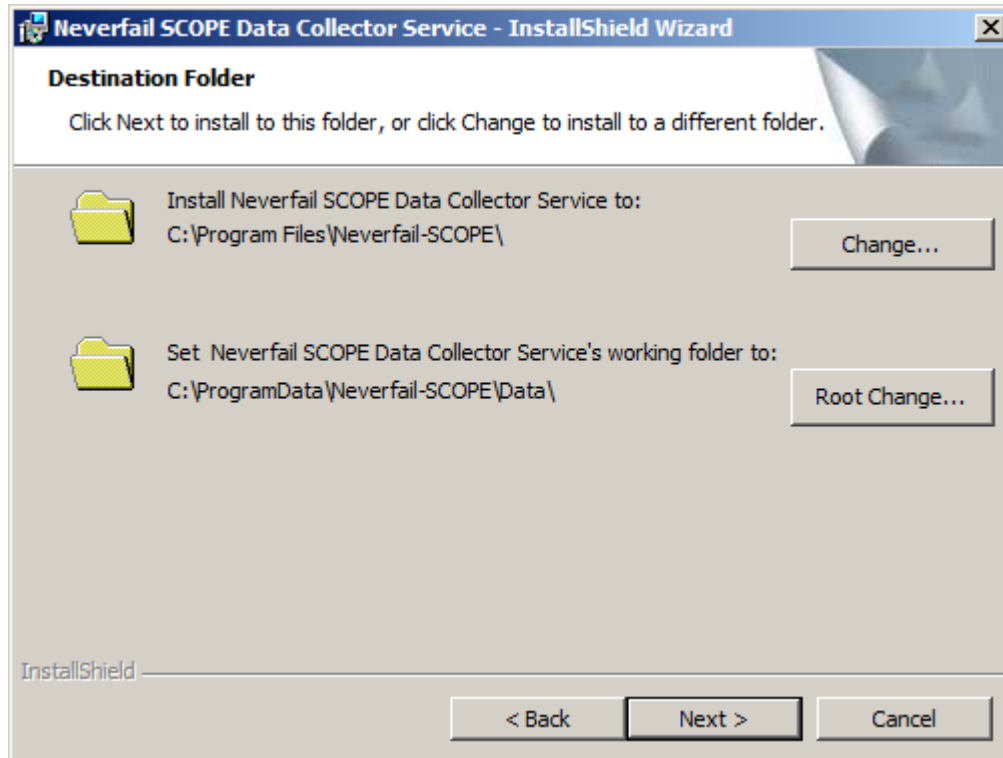


Figure 2: Destination Folder page

8. You can accept the default installation locations for application and data files, or you can change one or both.
 - a) To accept the default installation locations, click **Next** and proceed to [Step 9](#).
 - b) To select a custom location for the application files, click **Change**.
The *Change Current Destination Folder* screen is displayed.

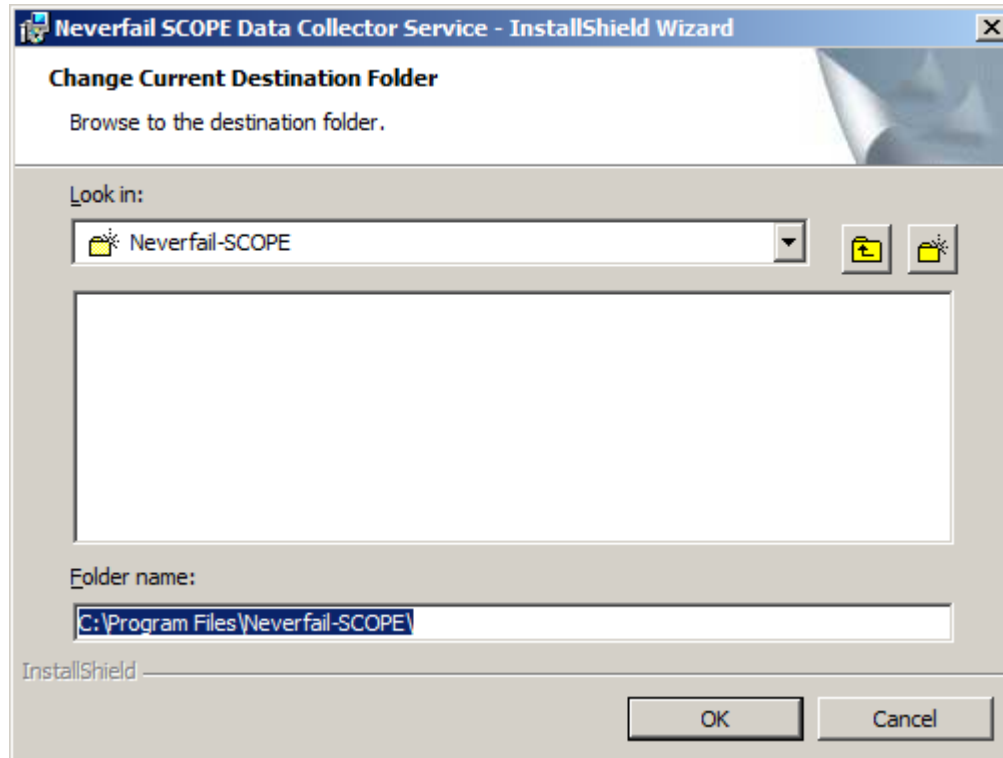


Figure 3: Change Current Destination Folder page

- c) Browse to the new location and click **OK**.
The *Destination Folder* screen is displayed.
- d) To select a custom location for the data files, click **Root Change**.
The *Change Current Working Folder* screen is displayed.

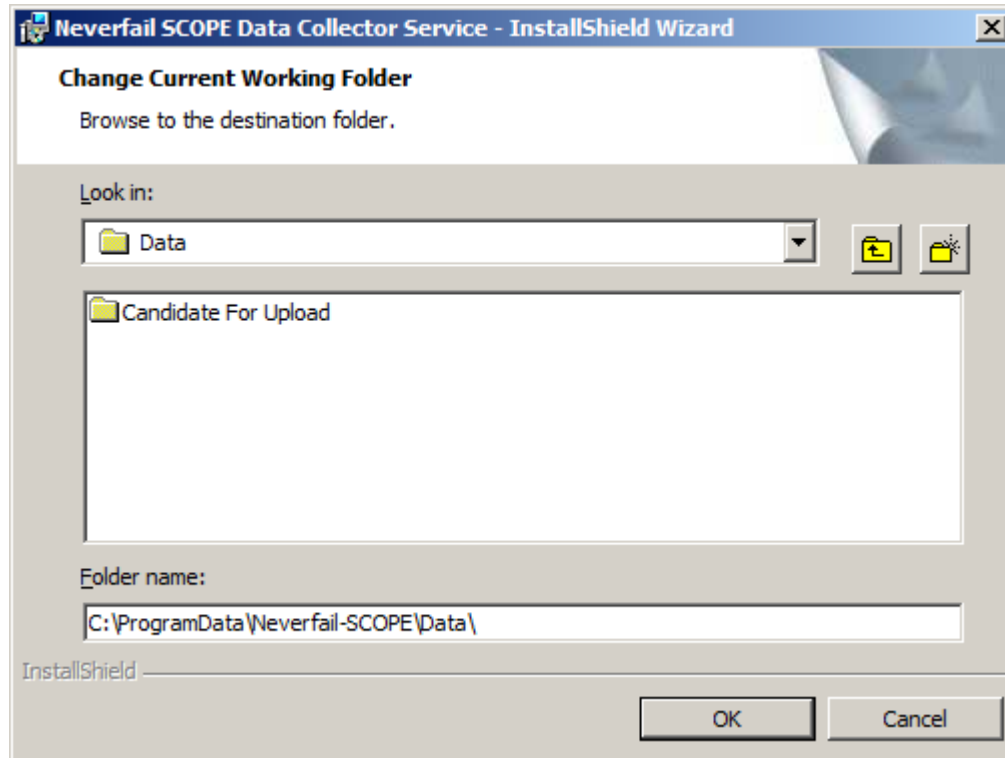


Figure 4: Change Current Working Folder page

- e) Browse to the new location and click **OK**.
The *Destination Folder* screen is displayed.
- f) When finished selecting custom installation locations, click **Next**.
The *Neverfail Model* page of the *Neverfail SCOPE Data Collector Service Setup* wizard is displayed.

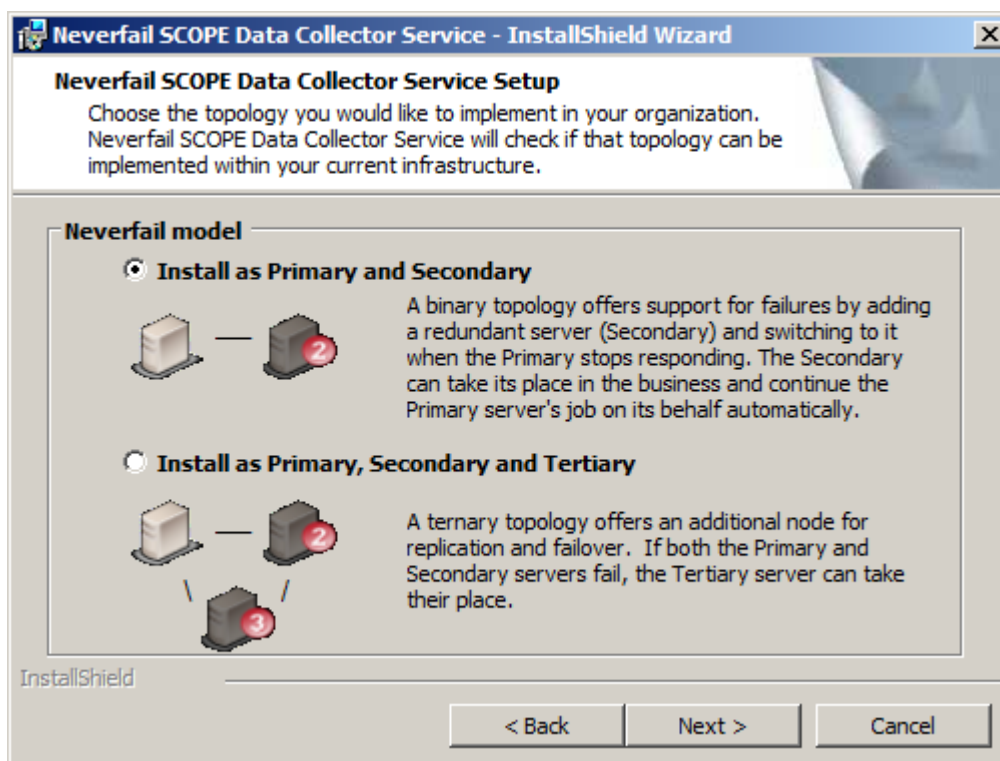


Figure 5: Neverfail SCOPE Data Collector Service Setup page

9. Select the topology your organization intends to implement and click **Next**.

The *Local computer identity* pane is displayed inside the *Neverfail SCOPE Data Collector Service Setup* page. The topology selected in step 9 determines the selections available in the *Local computer identity* pane.

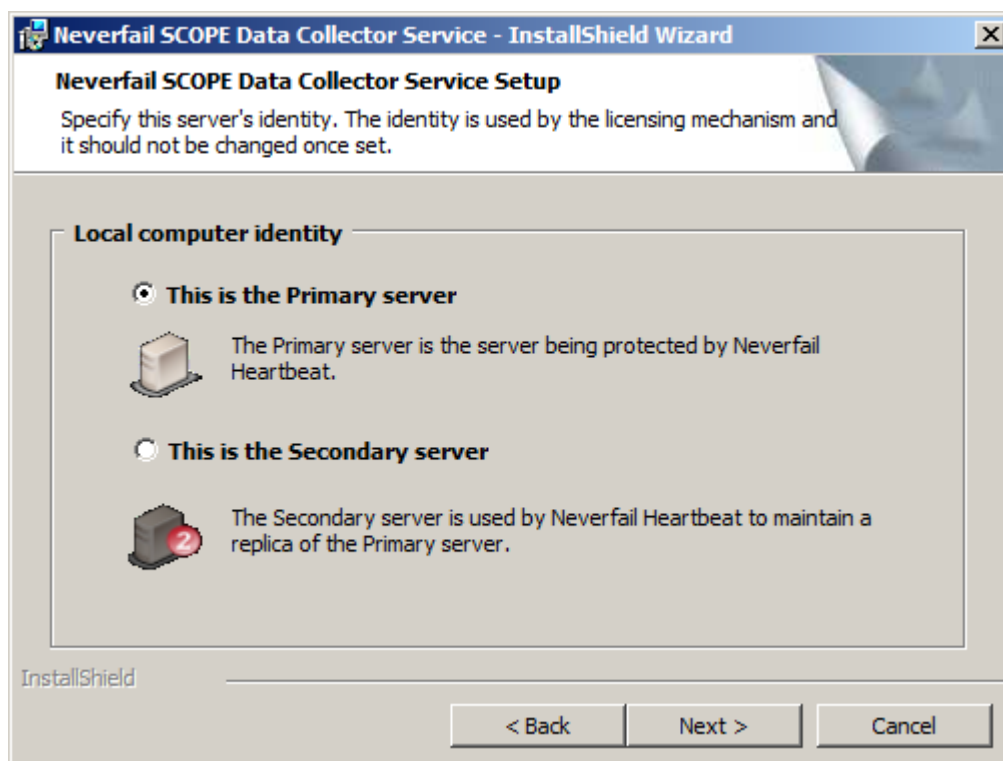


Figure 6: Local Computer Identity page (Primary + Secondary)

10. Since this is a new installation of Neverfail SCOPE Data Collector Service, select *This is the Primary server*.

The *Local Configuration* and *Remote Configuration* panes are displayed inside the *Neverfail SCOPE Data Collector Service Setup* page. The Neverfail model selected in [Step 9](#) determines the selections available in the *Remote Configuration* pane. The Neverfail SCOPE Data Collector Service installer automatically populates the available Local IP addresses in the *Local Configuration* pane.

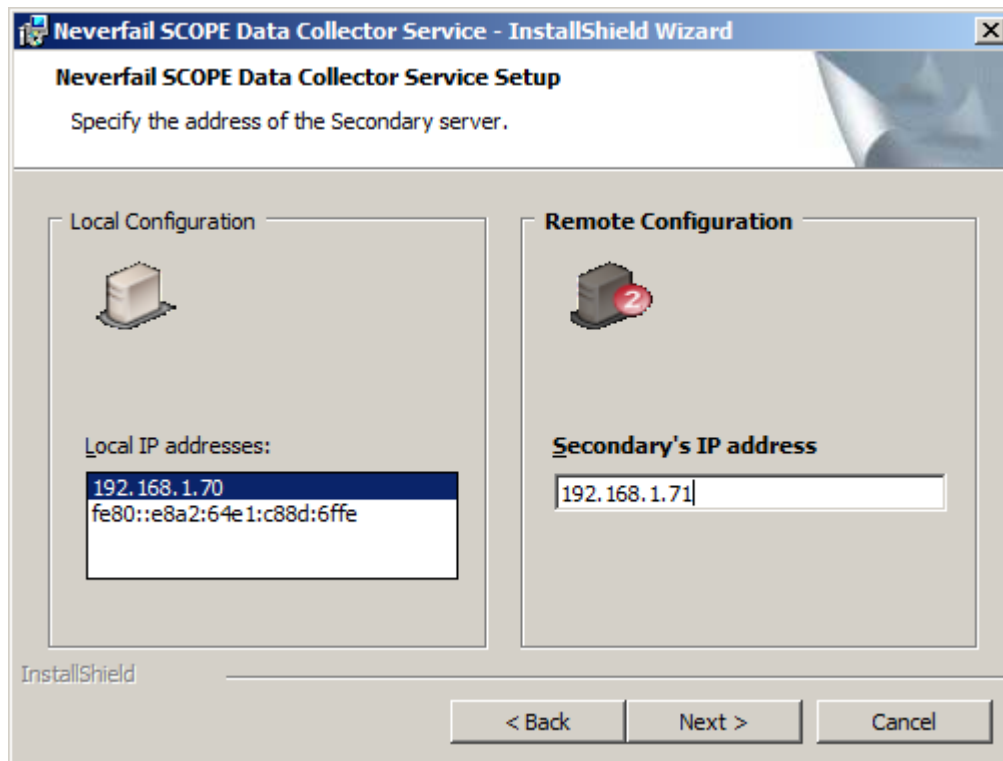


Figure 7: Local and Remote Configuration page (Primary + Secondary)

11. In the *Remote Configuration* pane, type an IP address for the Secondary and Tertiary servers, if you selected this topology in Step 9. Click **Next**.

The *Ready to Install the Program* page is displayed. At this point, you have completed all of the required configuration steps and the wizard is ready to install the Neverfail SCOPE Data Collector Service.

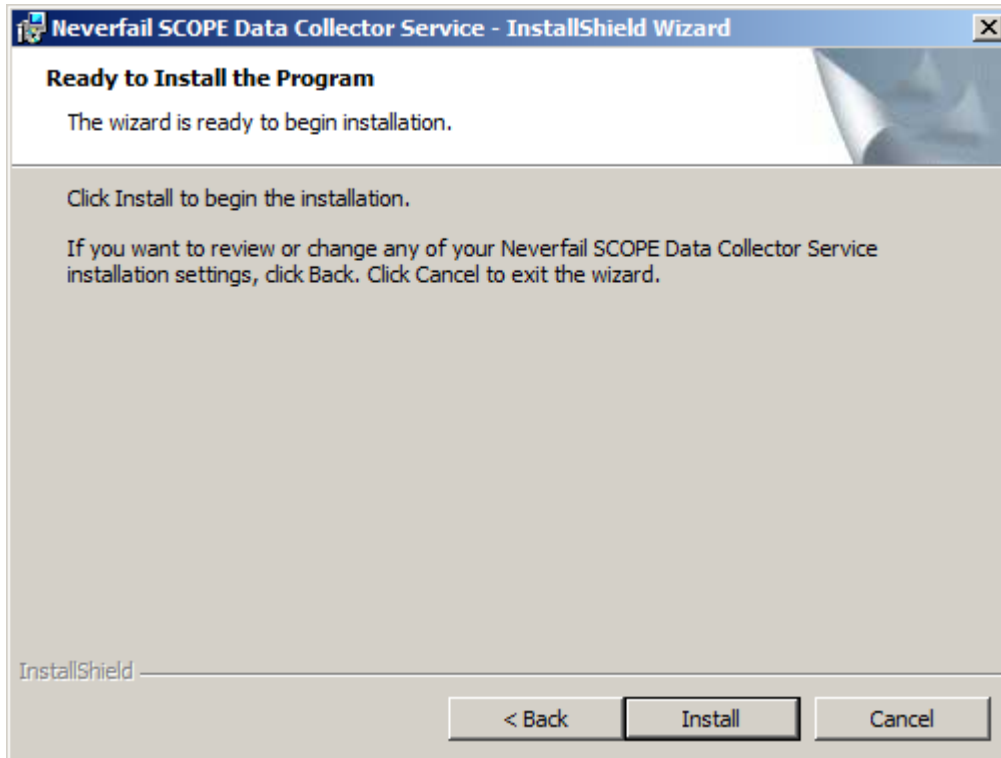


Figure 8: Ready to Install the Program page

12. Click **Back** to review your settings or click **Install** if you are ready to continue with the installation. After you click **Install**, the *Installing Neverfail SCOPE Data Collector Service* page is displayed.

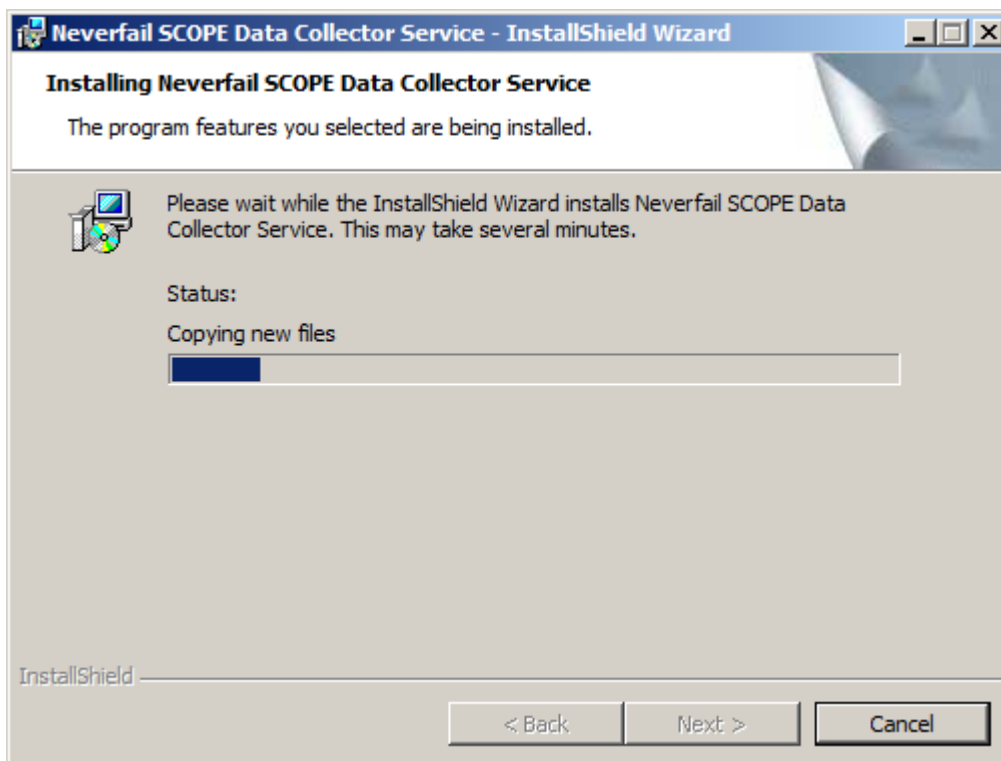


Figure 9: Installing Neverfail SCOPE Data Collector Service page

When the installation is complete, the *InstallShield Wizard Completed* confirmation is displayed.

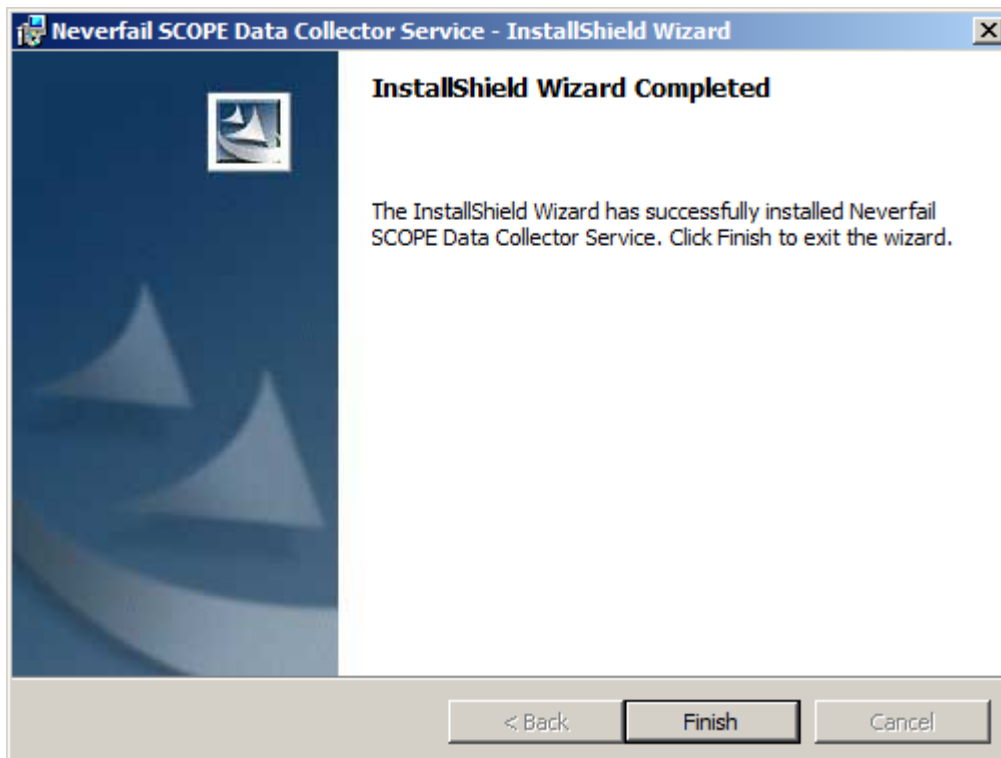


Figure 10: InstallShield Wizard Completed page

13. Click **Finish** to exit the *InstallShield Wizard*.

Upgrading Neverfail SCOPE Data Collector Service

The procedure describes the steps to upgrade Neverfail SCOPE Data Collector Service from a previous version.

Prerequisites

Neverfail Heartbeat has not been installed and a version of Neverfail SCOPE Data Collector Service been previously installed.

Note: *If Neverfail Heartbeat is installed after Neverfail SCOPE Data Collector Service, Neverfail Heartbeat will automatically upgrade Neverfail SCOPE Data Collector Service to the current version as part of the Neverfail Heartbeat installation process*

Procedure

1. Navigate to **Products / Downloads > SCOPE** on the Neverfail Extranet and select the appropriate version of Neverfail SCOPE Data Collector Service for download.
2. Save the downloaded .zip file to the desired location.
3. Right-click on the .zip file and select *Extract All*
4. Follow the instructions in the *Extraction Wizard* to select a destination for the extracted files.
5. Navigate to the extracted files and read the `Readme.txt` file for additional information that may affect your installation.
6. Double-click on the Neverfail SCOPE Data Collector Service.msi installer file to start the installation wizard.

The *InstallShield Wizard* starts in a new window and the *Welcome* screen is displayed.

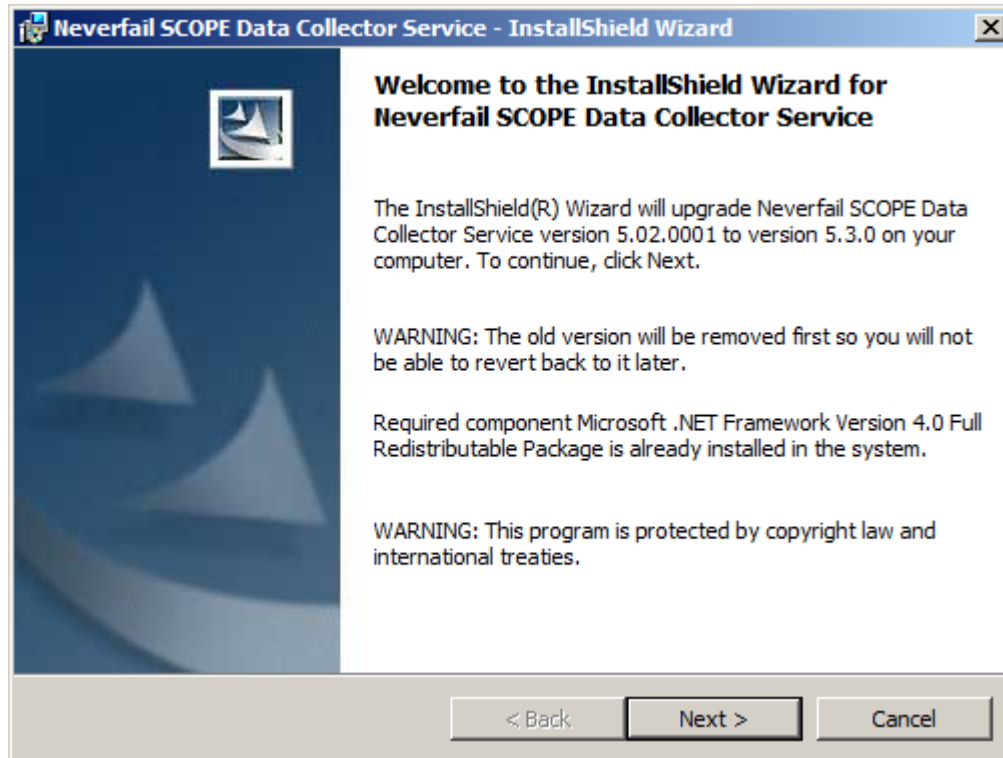


Figure 11: Install Wizard Welcome page

7. Click **Next**.
The *Destination Folder* page is displayed and identifies the default installation paths for the application and data files.

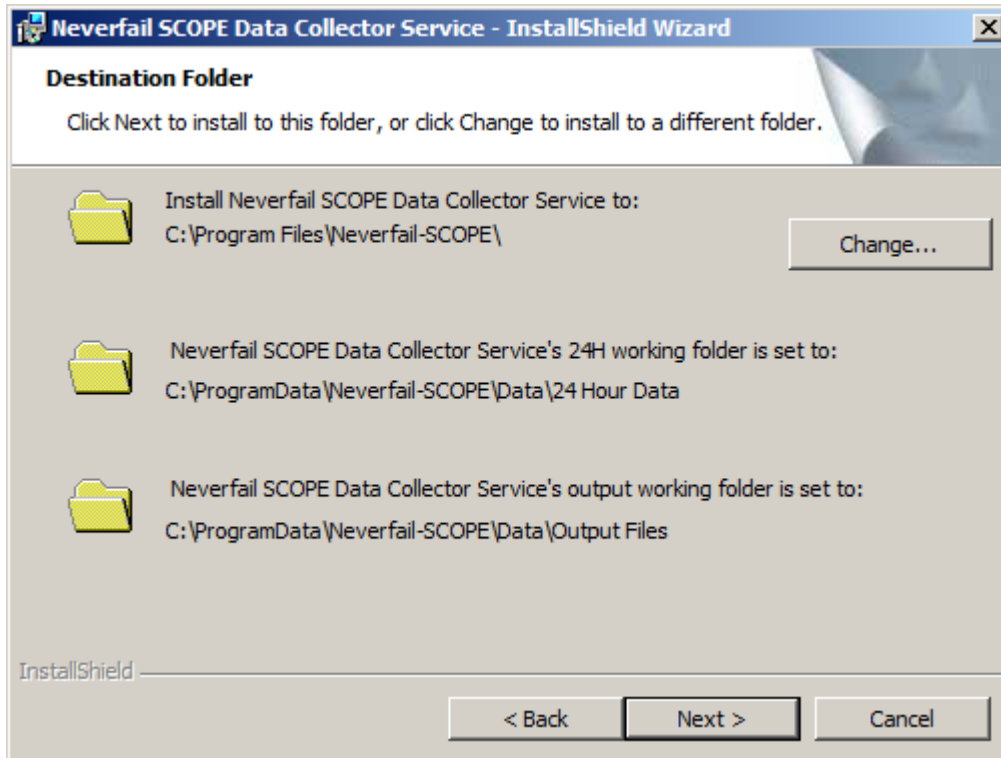


Figure 12: Destination Folder page

8. You can accept the default installation location for the Neverfail SCOPE Data Collector Service, or you can change this location.
 - a) To accept the default installation locations, click **Next** and proceed to Step 9.
 - b) To select a custom location for the application files, click **Change** .
The *Change Current Destination Folder* screen is displayed.

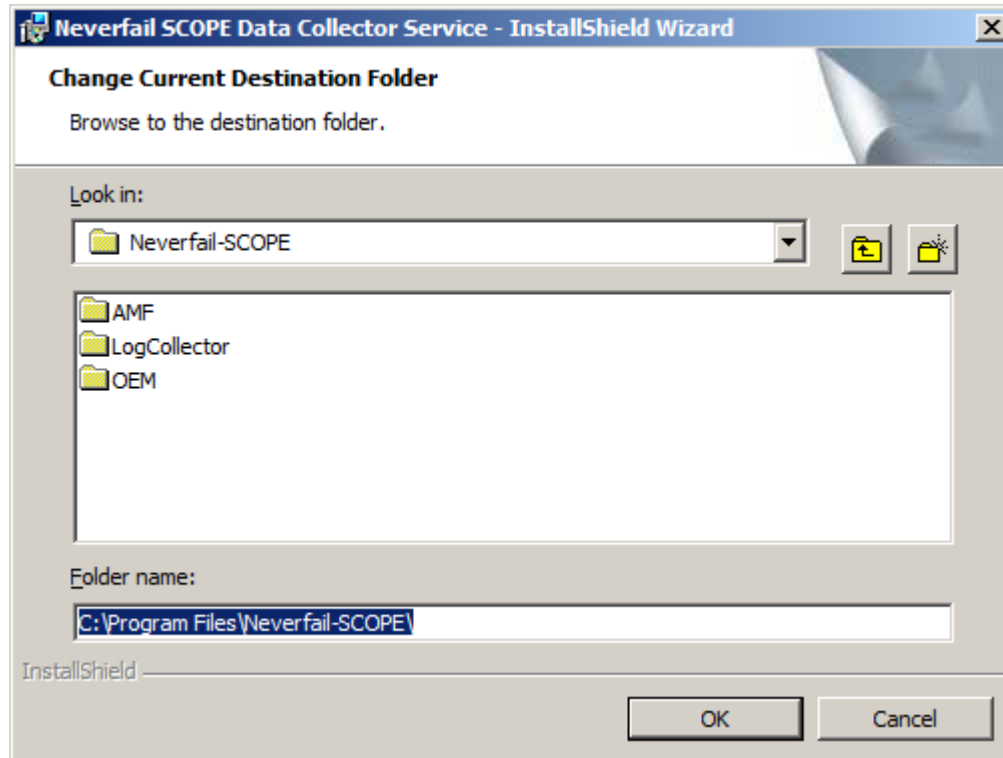


Figure 13: Change Current Destination Folder page

- c) Browse to the new location and click **OK**.
The *Destination Folder* screen is displayed.
- d) Click **Next**.
The *Ready to Install the Program* page is displayed.

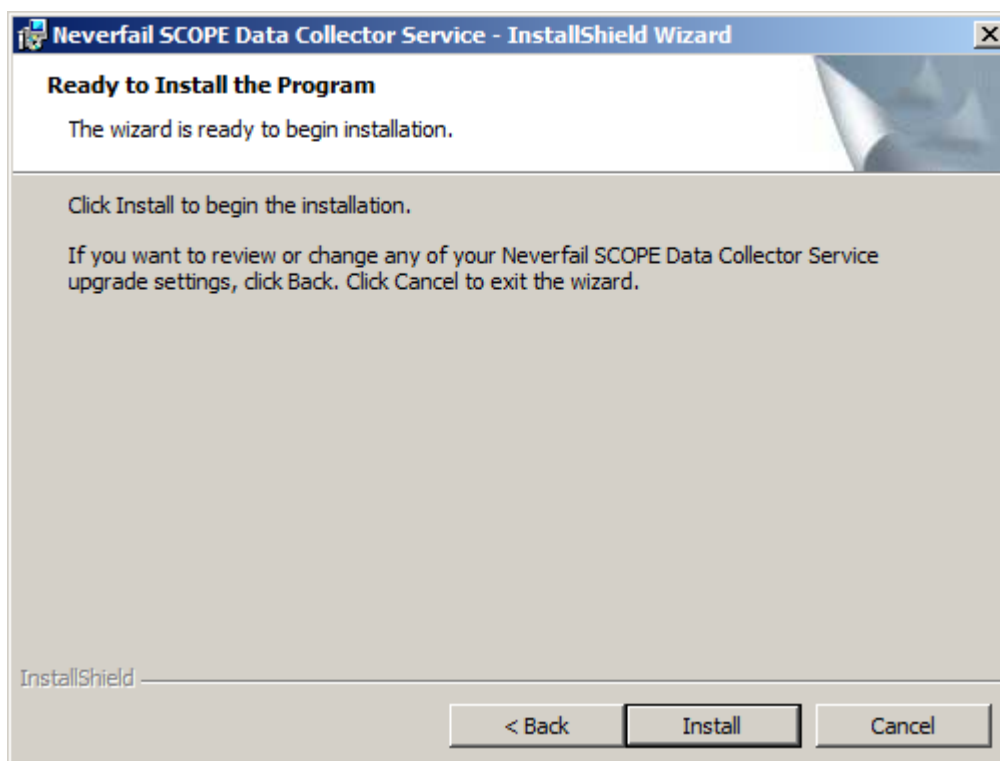


Figure 14: Ready to Install the Program page

At this point, you have completed all of the required configuration steps and the wizard is ready to install the Neverfail SCOPE Data Collector Service.

9. Click **Back** to review your settings or click **Install** if you are ready to continue with the installation. After you click **Install**, the Neverfail SCOPE Data Collector Service gathers the required information and displays the *Installing Neverfail SCOPE Data Collector Service* page.

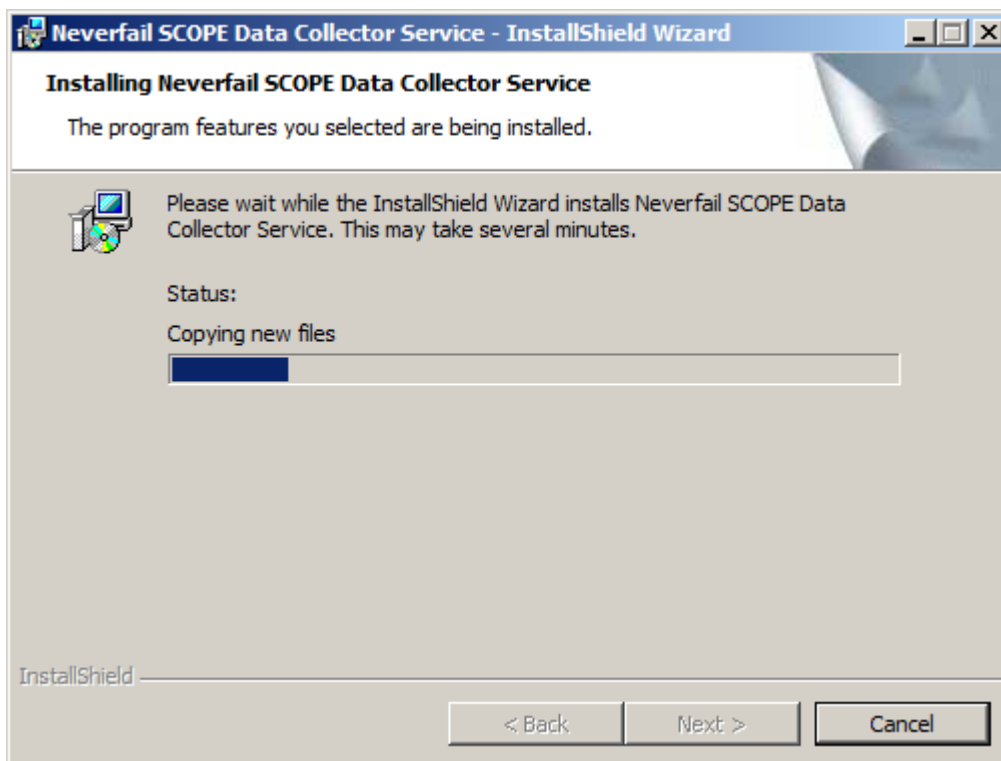


Figure 15: Installing Neverfail SCOPE Data Collector Service page

The *Installing Neverfail SCOPE Data Collector Service* page provides installation status. When the installation is complete, the *InstallShield Wizard Completed* confirmation page is displayed.

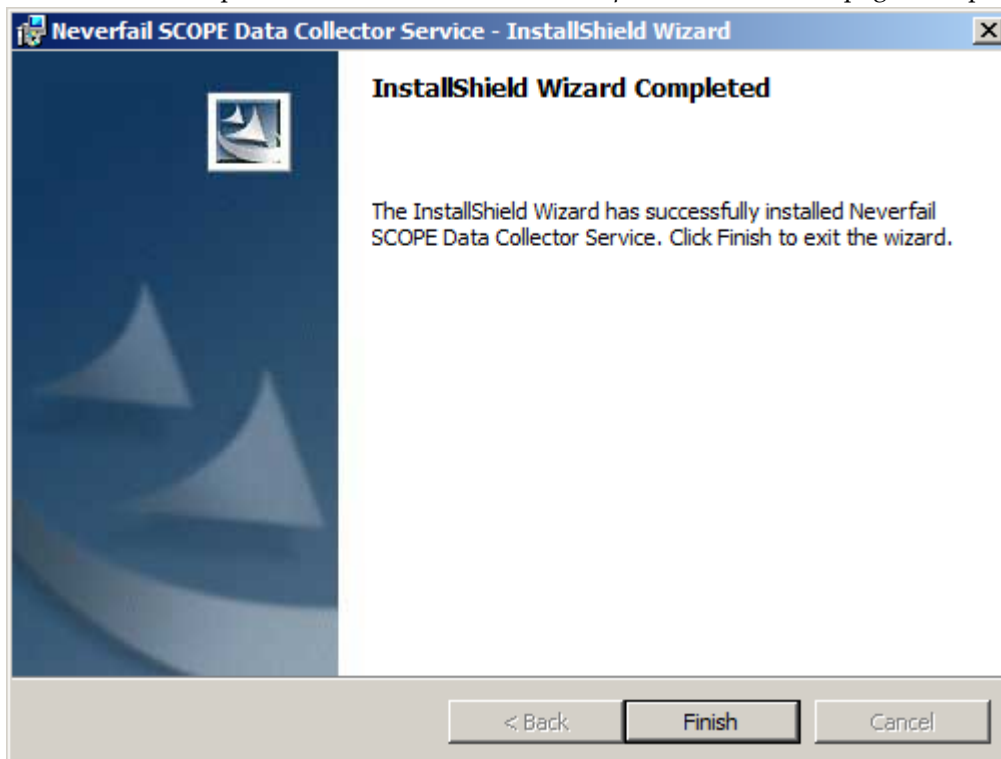


Figure 16: InstallShield Wizard Completed page

- Click **Finish** to exit the installation wizard.

Uninstall Neverfail SCOPE Data Collector Service

This procedure describes the steps to uninstall Neverfail SCOPE Data Collector Service.

Prerequisites

Neverfail SCOPE Data Collector Service is installed on the server.

Procedure

- Navigate to **Start > Control Panel > Programs and Features** and select *Neverfail SCOPE Data Collector Service*.
The *Programs and Features* page is displayed.

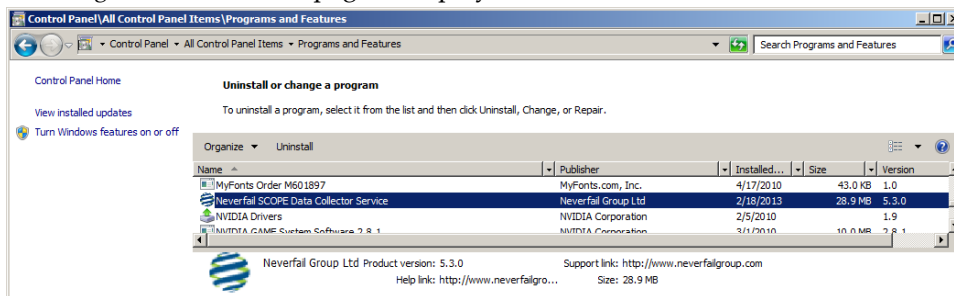


Figure 17: Programs and Features page

- Click **Uninstall**.
A dialog is displayed asking if you are sure you want to uninstall Neverfail SCOPE Data Collector Service.
- Click **Yes** to complete the removal of the Neverfail SCOPE Data Collector Service application.

Note: The Neverfail SCOPE Data Collector Service data files are left in place to facilitate later reinstallation or upgrade. When Neverfail SCOPE Data Collector Service is uninstalled, the following registry values are not deleted:

- `HKEY_LOCAL_MACHINE\SOFTWARE\Neverfail Group\SCOPE Machine ID`
- `HKEY_LOCAL_MACHINE\SOFTWARE\Neverfail Group\SCOPE GroupID`

These registry keys are used by Neverfail SCOPE Data Collector Service to identify the server and Cluster. If these keys are deleted, the next time Neverfail SCOPE Data Collector Service is installed, a new Neverfail SCOPE Data Collector Service license may be needed.

Uploading Neverfail SCOPE Data Collector Service Data Manually

If the server does not have an Internet connection, you must upload the data file to the Neverfail Extranet manually.

Procedure

- Look for a file named <ServerName>-<Role>-<Date>.cab in the default location:
 - On Windows 2003 installations: C:\Documents and Settings\All Users\Application Data\Neverfail-SCOPE\Data
 - On Windows 2008 installations: C:\ProgramData\Neverfail-SCOPE\Data\Candidate For Upload
 - On Windows 2012 installations: C:\ProgramData\Neverfail-SCOPE\Data\Candidate For Upload

If the default location has been changed, you can find the file location by running **Start > All Programs > Neverfail > SCOPE > SCOPE Configuration Tool > Data Files** and looking at the value of the *Candidate For Upload* parameter or simply click **Locate** in the **SCOPE Configuration Tool > General** (See Manual Configuration for more details).

Chapter 3

Using Neverfail SCOPE Data Collector Service

Daily Usage

The Neverfail SCOPE Data Collector Service collects configuration and performance data for pre-implementation analysis, license key generation, and assisting in support of Neverfail Heartbeat.

The Neverfail SCOPE Data Collector Service runs as a service that requires no user intervention to log daily configuration and performance data. There is no need for any day-to-day user interaction with Neverfail SCOPE Data Collector Service. Log files can be collected and sent to Neverfail Support for analysis if desired.

Collecting Log Files

The Neverfail SCOPE Data Collector Service can be used both pre and post implementation of Neverfail Heartbeat.

Pre-Implementation

Neverfail SCOPE Data Collector Service maintains a single file which is needed to obtain a pre-implementation report and to generate a license key. This data file created by Neverfail SCOPE Data Collector Service may be available as soon as 15 minutes after installing the collector service, but on systems with many shared files and folders the collection process can take an hour or more. If you require a full performance report you should wait at least 24 hours before collecting the file and sending it to Neverfail Support. The file contains the latest configuration data and the most recent 24 hours worth of performance data.

Post-Implementation

To receive configuration or performance analysis you must collect the `Candidate for Upload` files and manually forward to Neverfail Support for analysis and report creation.

Configuring Neverfail SCOPE Data Collector Service

The SCOPE Configuration Tool

Neverfail strongly recommends contacting Neverfail Support staff to change these settings.

Procedure

- To use the SCOPE Configuration Tool, select **Start > All Programs > Neverfail > SCOPE > SCOPE Configuration Tool**.

The SCOPE Configuration Tool opens in a new window.

The SCOPE Configuration Tool consists of four tabs: **General**, **Connectivity**, **Data Files** and **Support**. The features of each tab are described in the associated sections of this document.

Additionally, a link to *Neverfail SCOPE Data Collector Service Online Help* can be found in the lower left corner of the window.

Configure the General tab

The **General** tab features controls for manually configuring IP addressing of the Secondary and Tertiary (if installed) servers, specifying the active server in the cluster, and enabling automatic update checking. The **General** tab also allows you to start the Neverfail SCOPE Data Collector Service Windows service, to upload collected Neverfail SCOPE Data Collector Service data to the Neverfail Extranet, to download configuration settings from the Neverfail Extranet and to locate the .CAB file for manual uploading.

Procedure

1. Select the **General** tab.

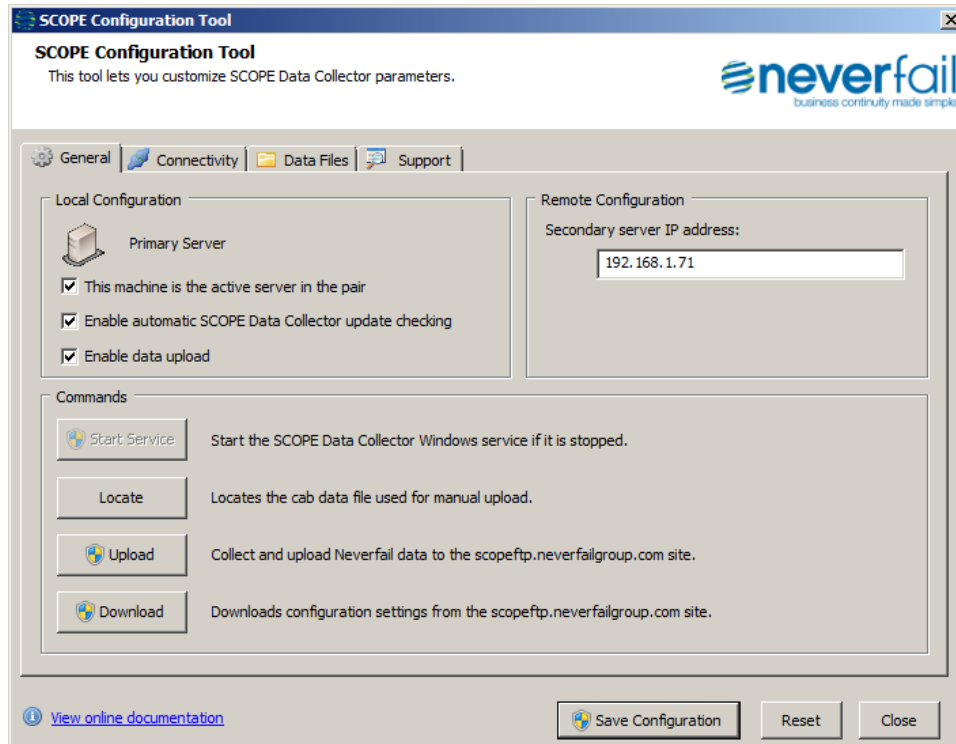


Figure 18: SCOPE Configuration Tool - General tab

Option	Description
Start Service	Starts the Neverfail SCOPE Data Collector Service Windows service if it is stopped.
Upload	<p>Uploads the current .cab file typically located in the default location:</p> <ul style="list-style-type: none"> On Windows 2003 installations: C:\Documents and Settings\All Users\Application Data\Neverfail-SCOPE\Data On Windows 2008 installations: C:\ProgramData\Neverfail-SCOPE\Data On Windows 2012 installations: C:\ProgramData\Neverfail-SCOPE\Data <p>See expanded description below for more information about this feature.</p>
Download	Downloads configuration and Neverfail SCOPE Data Collector Service updates, if available, from the Neverfail Extranet.
Locate	Locates the .cab files for manual upload.

When you click **Upload**, Neverfail SCOPE Data Collector Service gathers all data. Do not close the application until it has finished gathering the data. After all data is gathered, Neverfail SCOPE Data Collector Service uploads it.

- After making configuration changes, click **Save Configuration** to save your changes, or click **Reset** to restore the default configuration.

Configure the Connectivity tab

The **Connectivity** tab features controls for scheduling automated uploads of Neverfail SCOPE Data Collector Service data, downloads of Neverfail SCOPE Data Collector Service configuration data, and to configure bandwidth measurements.

Procedure

1. Select the **Connectivity** tab.

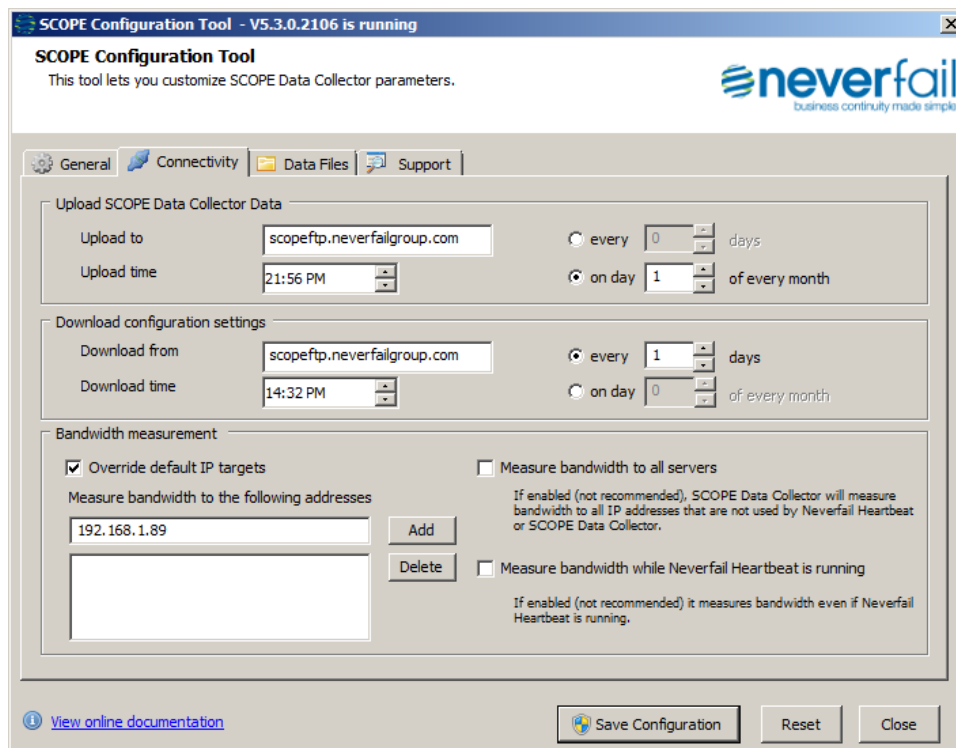


Figure 19: SCOPE Configuration Tool- Connectivity tab

The *Upload SCOPE Data Collector Data* pane in the **Connectivity** page provides ways to manually configure the upload destination address and select a schedule for automated uploads of Neverfail SCOPE Data Collector Service data. Scheduled uploads can follow a regular schedule of a set number of days (for example, every 7 days), or on a specified day (for example, on the 15th of the month). You also specify the time to perform the upload.

The *Download configuration settings* pane in the **Connectivity** page provides similar configuration settings to schedule automated downloads of Neverfail SCOPE Data Collector Service configuration data.

The *Bandwidth measurement* pane in the **Connectivity** page is used to configure bandwidth measurements. If you need to measure bandwidth using IP addresses other than the ones used for the Neverfail Channel, select the *Override default IP targets* check box and add new IP addresses by typing them into the text box and clicking **Add**. Remove IP addresses by selecting them from the list and clicking **Delete**.

Use the two check boxes on the right side of the *Bandwidth measurement* pane to measure the bandwidth between the local server and any other servers on the network running Neverfail SCOPE Data Collector Service but not running Neverfail Heartbeat, or to measure bandwidth while Neverfail Heartbeat is running.

By default, Neverfail SCOPE Data Collector Service does not measure bandwidth when Neverfail Heartbeat is running to avoid overloading the busy Neverfail Channel. You can run Neverfail SCOPE Data Collector Service while Neverfail Heartbeat is running if you use network connections for Neverfail SCOPE Data Collector Service that are separate from those used by Neverfail Heartbeat.

After configuring separate network connections for use by Neverfail SCOPE Data Collector Service, select the *Measure bandwidth while Heartbeat is running* checkbox.

To measure bandwidth to all servers in the Cluster using the Neverfail Channel, add their IP addresses and select the *Measure bandwidth to all servers* checkbox to prevent those IP addresses from being filtered out by default.

2. After making configuration changes, click **Save Configuration** to save your changes, or click **Reset** to restore the default configuration

Configure the Data Files tab

The *Data Files* section allows you to configure the file locations for Neverfail SCOPE Data Collector Service.

Procedure

1. Select the **Data Files** tab.

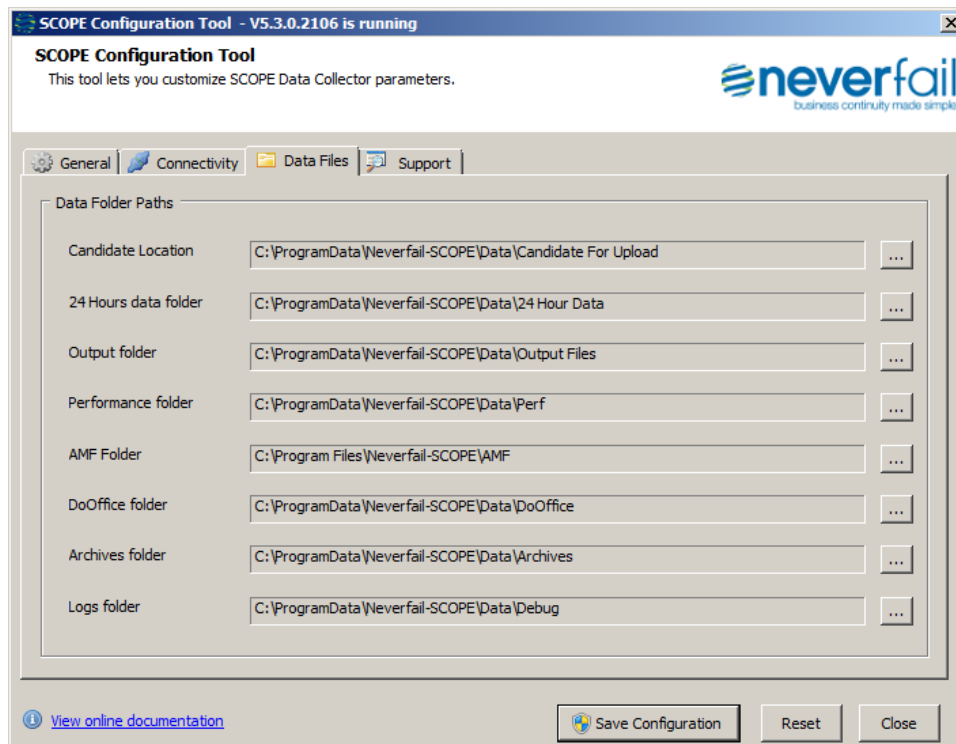


Figure 20: SCOPE Configuration Tool - Data Files tab

Use the **Data Files** page to change the location where data files are stored.

2. After making configuration changes, click **Save Configuration** to save your changes, or click **Reset** to restore the default configuration.

Configure the Support tab

Use the controls on the **Support** tab to associate a Support Request number (S.R. number) with a specific set of Neverfail SCOPE Data Collector Service data, to control how this data is stored, and to select the logging level.

Procedure

1. Select the **Support** tab.

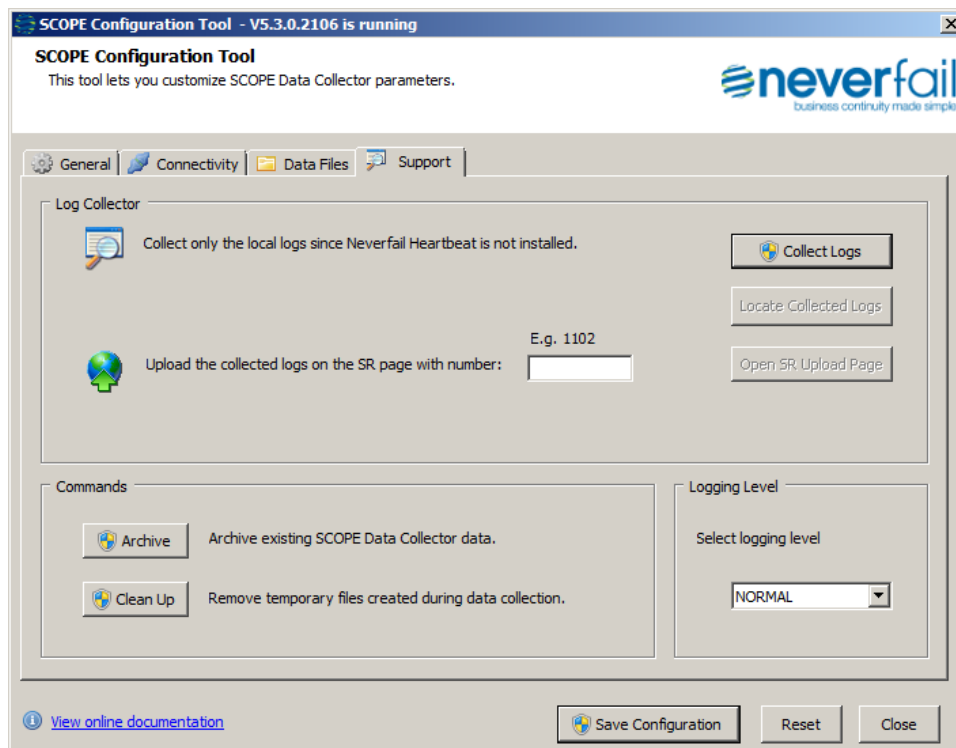


Figure 21: Neverfail SCOPE ConfigurationTool - Support tab

In the *Log Collector* pane of the **Support** page, type the SR (Support Request) number into the *Upload the collected logs on the SR page with number:* text box, then click **Open SR Upload Page**. The collected Neverfail SCOPE Data Collector Service data is uploaded to the SR.

Note: This action requires the server to have internet access, as the <http://www.neverfailgroup.com> page is opened to facilitate the upload.

Click **Collect Logs** to re-gather the Neverfail SCOPE Data Collector Service logs manually upon command. After re-gathering the logs, the **Locate Collected Logs** button becomes active and when clicked, automatically navigates to the location of the .CAB file.

In the *Commands* pane, click **Archive** to archive the existing Neverfail SCOPE Data Collector Service data, and click **Clean Up** to remove temporary files created during data collection.

In the *Logging Level* pane, select a logging level (*DEBUG* or *NORMAL*) from the drop-down list.

2. After making configuration changes, click **Save Configuration** to save your changes, or click **Reset** to restore the default configuration

Automatic Configuration

If *Enable automatic SCOPE Data Collector update checking* is selected on the **General** page, the service connects at the intervals specified and to the address specified in the *Download configuration settings* pane of the **Connectivity** page and downloads a `global.cfg` file (if available), which contains

overrides for the default parameters. The values in the `global.cfg` file are stored in the registry and will override the existing local values.

The service then looks for the `<machineID>.cfg` file, where `<machineID>` is the globally unique ID (GUID) of the server, which was set when the machine first ran Neverfail SCOPE Data Collector Service. If the file is found, then the values in `<machineID>.cfg` file are stored in the registry and will override any existing values.

When *Enable automatic SCOPE Data Collector update checking* is selected, any manual configuration changes made using the local SCOPE Configuration Tool will be overridden by the `global.cfg` and/or `<machineID>.cfg` files. If you prefer to use a customized manual configuration instead of accepting automatic configuration, use the methods described below in *Manual Configuration*.

Manual Configuration

Neverfail SCOPE Data Collector Service can be configured manually to adjust the Neverfail SCOPE Data Collector Service parameters using the procedures below.

Procedure

- If the server has no Internet access, use the SCOPE Configuration Tool to set the required parameters.
- If the server has Internet access and you do not wish to use the global settings, create a machine-specific `.CFG` file using the **SCOPE Configuration** page on the Neverfail Extranet, or clear the *Enable automatic SCOPE Data Collector update checking* check box on the **General** page of the SCOPE Configuration Tool.

Neverfail SCOPE Data Collector Service Parameters

The Neverfail SCOPE Data Collector Service uses values stored in the registry to control its operational parameters.

These values can be adjusted by using the SCOPE Configuration Tool and/or through automatic configuration. It is important to understand these parameters and the interaction between the SCOPE Configuration Tool and the automatic configuration feature.

Note: The parameters on the following pages are designed to work with the online analyzer. Always consult Neverfail Support before adjusting.

Table 1: Neverfail SCOPE Data Collector Service Parameters

Parameter Name	Default Value	Description
AdditionalFilesForUpload		Additional files to be added to the auto-uploaded <code>.CAB</code> file.
Current Version		Neverfail SCOPE Data Collector Service version
ForcedTimeStampStart		Timestamp data gathering started
ForcedTimeStampStop		Timestamp data gathering stopped
Gathering Percent	0x00000064(100)	Percent of data gathered
Last File ID		The ID of the last generated <code>.cab</code> file
Last Job Status	StoreData	Last job done

Parameter Name	Default Value	Description
Last Upgrade	never	Last Neverfail SCOPE Data Collector Service autoupgrade timestamp
LastForcedFilename		Last Neverfail SCOPE Data Collector Service data file - used by log collector
24 Hour Data Location	C:\ProgramData\Neverfail-SCOPE\Data\24 Hour Data	The 24 Hour Data file location
Amf Folder	C:\Program Files\Neverfail\SCOPE\AMF	AMF plug-ins location
Archives Folder	C:\ProgramData\Neverfail-SCOPE\Data\Archives	The archives location
Bin Folder	C:\Program Files\Neverfail\SCOPE	Location of Neverfail SCOPE Data Collector Service binaries
Candidate Location	C:\ProgramData\Neverfail-SCOPE\Data\Candidate For Upload	Location of the file to be uploaded
DB Root Path	C:\Document and Settings\All Users\Application Data\Neverfail\SCOPE\Data\WebServiceDB	The location where Neverfail SCOPE Data Collector Service stores data
DoOffice Location	C:\ProgramData\Neverfail-SCOPE\Data\DoOffice	The DoOffice measurement location
Log Dir	C:\ProgramData\Neverfail-SCOPE\Data\Debug	The logs directory
Output File Path	C:\ProgramData\Neverfail-SCOPE\Data\OutputFiles	The midnight files location
Performance Output Path	C:\ProgramData\Neverfail-SCOPE\Data\Perf	The performance and history files location
Root Folder	C:\ProgramData\Neverfail-SCOPE\Data	The root folder of all the data subfolders
Auto Logs Cleanup (Days)	90	Timeout for log files
Bandwidth IPs		Selected bandwidth IP addresses
ManagedMemoryThreshold (MB)	1024	Management threshold in MB - if reached, Neverfail SCOPE Data Collector Service service is restarted
PrivateMemoryThreshold(MB)	1024	Management threshold in MB - if reached, Neverfail SCOPE Data Collector Service service is restarted
Proxy Encrypted Method	PlainText	How the proxy credentials should be encrypted
Proxy Password		Password used for the proxy server
Proxy Server		The proxy servers IP address
Proxy UserName		Username used for the proxy server
Reference GMT	0	Used to generate random upload time
Time window	5	Used by upload time randomization to randomly select a time in GMT+0 from 24:00 to 05:00 (Windows time value)
Active Server	True	Server Role
AMF Periodic Rules (Minutes)	15	Used to trigger AMF tasks

<i>Parameter Name</i>	<i>Default Value</i>	<i>Description</i>
Config Frequency (Hours)	24	Static data gathering
Config Time		Set to an hour when the static data should be gathered
Download Frequency	01,00	The frequency at which updates will be downloaded (See note below)
Download Time	02:25	The time at which updates will be downloaded in a 24 Hour format
Download URL	scopeftp.neverfailgroup.com	The URL where program up
Identity	PrimaryServer	Neverfail SCOPE Data Collector Service's Identity
Max Walk Time (Minutes)	60	Timeout for parsing the file system - Shares
ModelType	True	The type of Cluster (pair or trio)
Performance Interval (Minutes)	15	The frequency for collecting performance data (5, 10, 15, 30)
Primary's IP	<IP_address_of_primary_server>	The IP address of the Primary server (blank on the Primary server)
Secondary's IP	<IP_address_of_secondary_server>	The IP address of the Secondary server (blank on the Secondary server)
Socket Bandwidth Port	61000	The port on which the service will listen for connections from remote management utilities [this can be customized if needed]
Socket Forward Port	62000	The port used to send and receive remote data
Tertiary's IP	<IP_address_of_tertiary_server>	The IP address of the Tertiary server (blank on the Tertiary server)
Upload Frequency	07,00	The frequency which data will be uploaded at (See note below)
Upload Time	01:20	Scheduled time of upload
Upload URL	scopeftp.neverfailgroup.com	The URL of the FTP server to upload data to
AMFDisableInfoLogging	True	Disable AMF message logging from Neverfail SCOPE Data Collector Service
AMFJobDisable	False	Disable the AMF from Neverfail SCOPE Data Collector Service
Auto Update Enabled	1	Enable updating of local configuration and binaries
Auto Upload Enabled	1	Enable automatic upload of data
CheckForSplitBrain	True	Checks if two Neverfail servers in a Cluster are both active
CheckMemoryConsumption	True	Checks memory consumption and if they exceed the threshold, Neverfail SCOPE Data Collector Service service is restarted

Parameter Name	Default Value	Description
EnableFtpSSL	False	Send ftp data using secured sockets (SSL)
EnableManagementServices	False	Operates as a management server for SLM
EnableOutputCompressing	True	Compress the midnight files that are older than 1 month to a <monthName> <year> . cab file
EnableServerDataHistory	False	Keep the remote servers data in case one goes down for 1 day and append it to the Neverfail SCOPE Data Collector Service data file
LimitEventsTo24h	False	Limit events to 24 hours
Randomized	1	Randomize upload time/download time
Remote Management Enabled	1	Enable remote management
Upgrade On Server Activation	1	Perform Neverfail SCOPE Data Collector Service configuration and binaries auto-update in case the server becomes active
Veto HB Settings Constraint	0	Disregard the 'Heartbeat must be stopped to measure bandwidth' constraint
Veto SCOPE Bandwidth All	False	Measure bandwidth to all given IP addresses
Veto SCOPE Bandwidth IPs	0	Measure bandwidth only to IPs from the same Cluster (set in Neverfail Heartbeat and Neverfail SCOPE Data Collector Service)

Note: The performance frequency is currently locked to 900 seconds (15 minutes) in order to maintain compatibility with the analyzer. Changes to this value will be ignored.

The upload and download frequencies are specified as two pairs of digits separated by a comma. Such as 01,00 or 00,08. The first pair designates a period in number of days between uploads/downloads, the second pair specifies the day of the month on which uploads/downloads should take place. Only one of these pairs of digits should be specified and the other must be 00. For example, 07,00 means every 7 days, 00,07 would mean on the 7th of every month.

Configure Bandwidth Measurement

Neverfail SCOPE Data Collector Service can measure the bandwidth between servers in the cluster but must be configured prior to initiating the measurement.

Prerequisites

To calculate the bandwidth available between two servers, you must install Neverfail SCOPE Data Collector Service on both servers.

Procedure

1. Configure one server as the Primary server and the other as the Secondary server.

2. Connect the two network cards to one another in the same way you propose to configure the dedicated channel link between your Neverfail server pair. This connection may be a dedicated crossover cable, or it may be set up over a LAN or WAN.
3. Configure the two network cards with appropriate static IP addresses to allow network traffic between them. You should test the link before running Neverfail SCOPE Data Collector Service.
4. On the Primary server, configure the correct IP address for the Secondary server, and on the Secondary server, configure the correct IP address for the Primary server.
On the Primary server:
5. Start the SCOPE Configuration Tool application by navigating to **Start > All Programs > Neverfail > SCOPE > SCOPE Configuration Tool**.
6. Select the **General** tab.
7. Set the server role to active by selecting the *This machine is the active server in the pair* check box.
8. Enter the IP Address of the Secondary server in the *Remote Configuration* pane.
9. Save and exit the SCOPE Configuration Tool.
On the Remote (Secondary) server:
10. Start the SCOPE Configuration Tool application by navigating to **Start > All Programs > Neverfail > SCOPE > SCOPE Configuration Tool**.
11. Select the **General** tab.
12. Select the Secondary server role by clearing (un-checking) the *This machine is the active server in the pair* check box.
13. Save and exit the SCOPE Configuration Tool.

Neverfail SCOPE Data Collector Service Network Ports

The Neverfail SCOPE Data Collector Service service uses the network ports listed in the following table. For full operation of Neverfail SCOPE Data Collector Service, these ports must be opened on any firewalls.

Table 2: Network Ports Used by Neverfail SCOPE Data Collector Service

Ports	Default Use
62000	Inter-process communications between the Primary and Secondary servers and remote management. This port is customizable.
61000	Bandwidth calculations between the Primary and Secondary servers. This port is customizable.

Daylight Savings Time

Neverfail SCOPE Data Collector Service does not use an internal time but instead uses the server's clock to operate.

Since Neverfail SCOPE Data Collector Service uses the server's clock, manually adjusting the server time may result in longer or shorter periods between data capture.

For example, if Neverfail SCOPE Data Collector Service is configured to gather data at 17:15, but an administrator or automated process resets the server's clock

at 17:02 to 16:02 (-1 hour), Neverfail SCOPE Data Collector Service still gathers the data at 17:15 by the server's clock. In the performance data, the timestamp will contain 17:15 resulting in 25 hours worth of data.

Chapter 4

Neverfail SCOPE Analysis Reports

Neverfail SCOPE Reports

The Neverfail SCOPE Report provides the results of a detailed interrogation of the server environment.

Neverfail SCOPE Analysis Report

As stated previously, Neverfail SCOPE is a combination of both software and process, designed to ensure a stable server environment and a successful Neverfail Heartbeat implementation. The information collected must be uploaded to the Neverfail Extranet for analysis. If Neverfail SCOPE is configured for automatic upload, this task is accomplished automatically and requires no user input. If Neverfail SCOPE is not configured for automatic upload, you must upload the collected information manually.

Once uploaded, the raw data file is immediately analyzed and a Neverfail SCOPE Report is available for viewing using a standard web browser.

The Neverfail SCOPE Report provides information about:

- Windows version, including Service Packs and Hotfixes
- System memory (RAM)
- Disk size, type, partition structure, and available space
- Shared folders
- Windows services
- Third-party application services
- Optional available bandwidth measurement and replication bandwidth estimate if Neverfail SCOPE runs for at least 24 hours
- A detailed performance report
- Recommended changes (in red)

Note: The required bandwidth estimate is based upon an actual network measurement using server disk activity. You can use the estimate as a guide to determine bandwidth requirements for the dedicated Neverfail Channel link between servers.

The Neverfail SCOPE Analysis Report provides an overview of the analyzed criteria and identifies any areas of the current environment that are likely to pose problems when implementing Neverfail Heartbeat. Problems that must be resolved before installing Neverfail Heartbeat are highlighted in red for easy identification. This report should be reviewed in its entirety to ensure that the current server environment is adequate for a successful Neverfail Heartbeat installation.

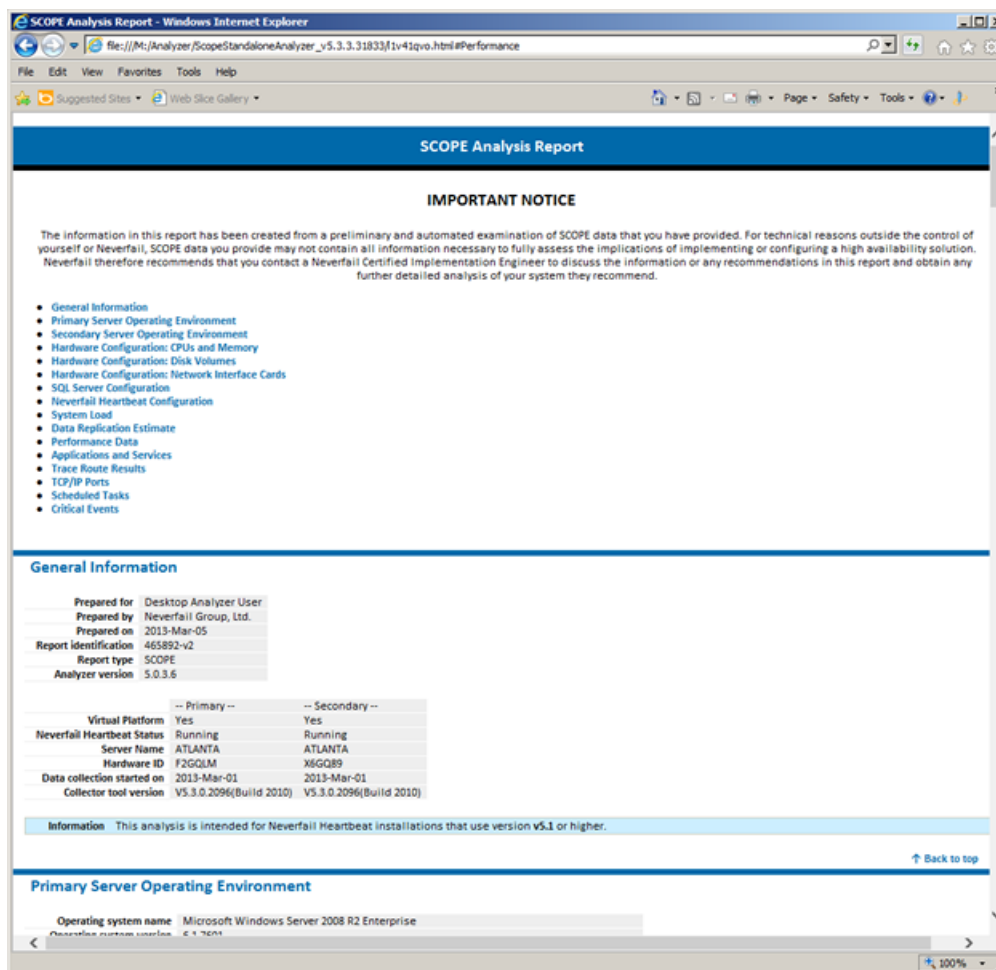


Figure 22: SCOPE Analysis Report

Neverfail SCOPE Graphs

The Neverfail SCOPE Analysis Report provides an overview of the analyzed criteria and identifies any areas of the current environment that are likely to pose problems when implementing Neverfail Heartbeat. Problems that must be resolved before installing Neverfail Heartbeat are highlighted in red for easy identification. This report should be reviewed in its entirety to ensure that the current server environment is adequate for a successful Neverfail Heartbeat installation.

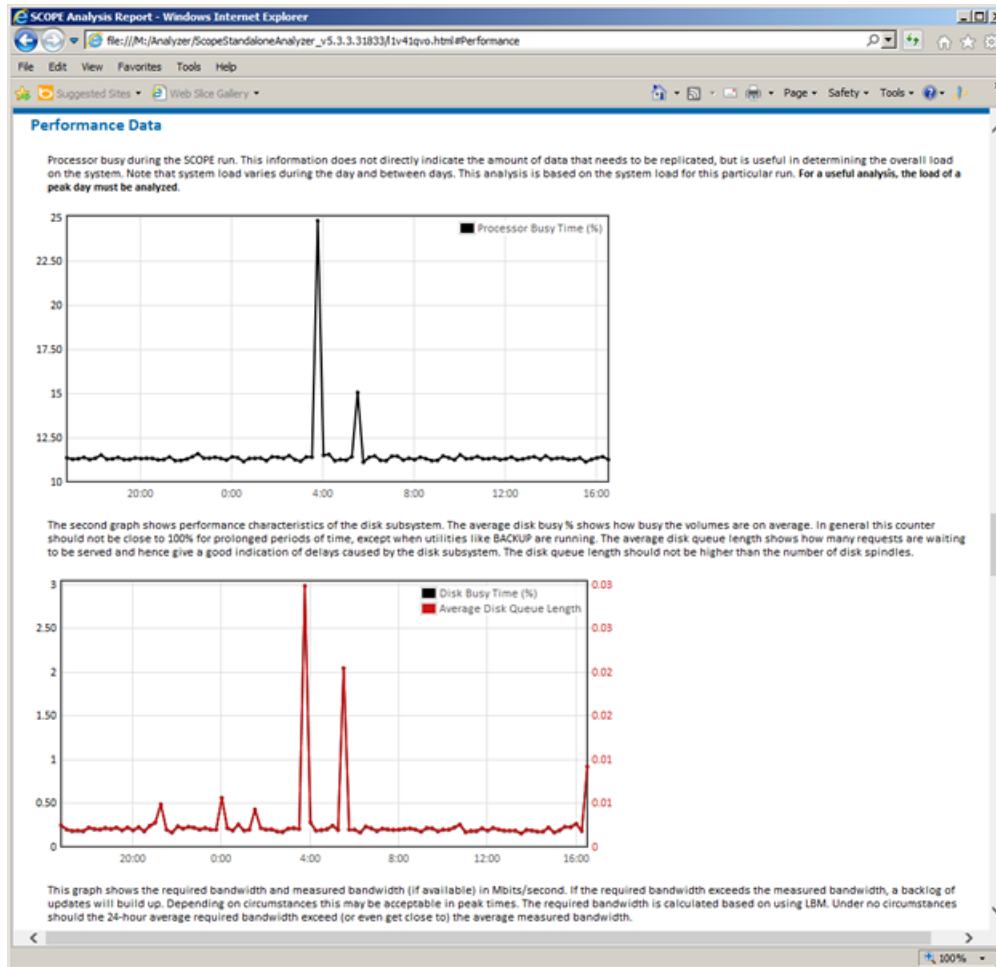


Figure 23: Neverfail SCOPE Graphs

Neverfail SCOPE Performance Counters

The Neverfail SCOPE Performance Counter graph provides for selection of a variety of counters and permits comparison between servers. Placing the cursor over a data point displays the exact value of the counter.

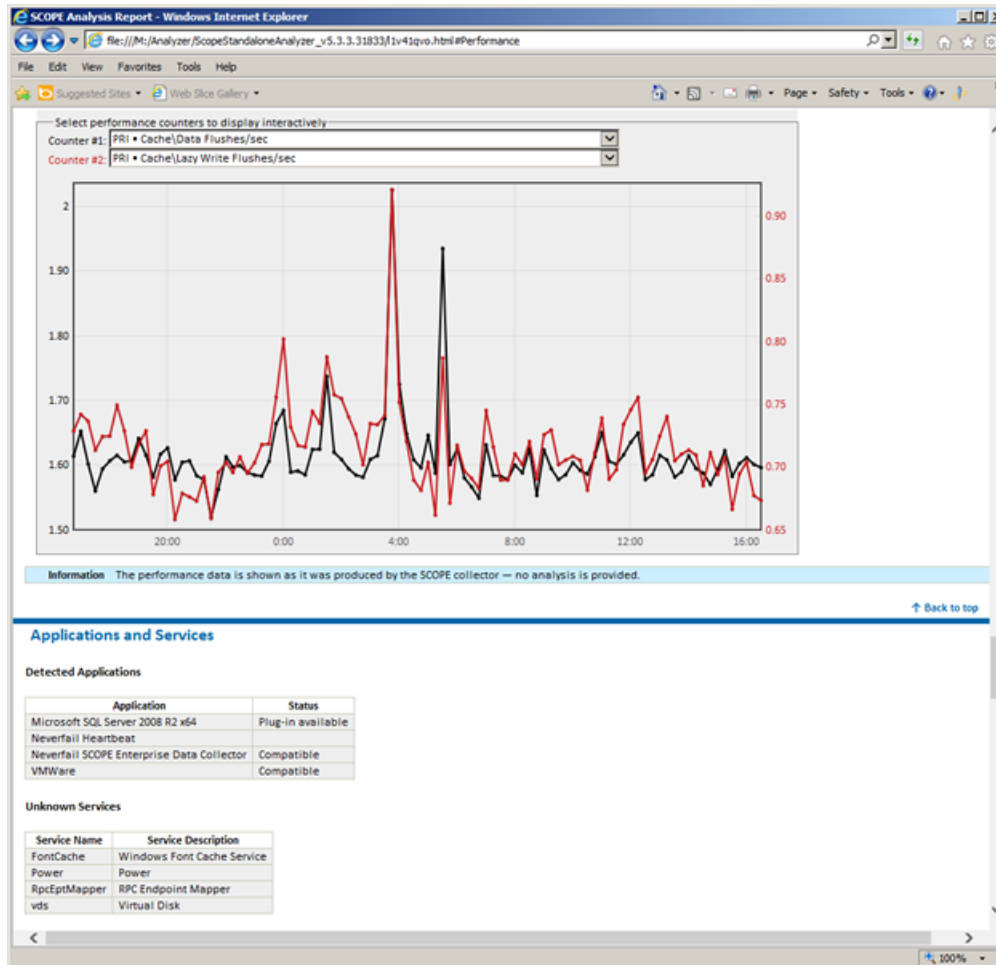


Figure 24: Neverfail SCOPE Performance Counters

Glossary

Active

The functional state or role of a server when it is visible to clients through the network, running protected applications, and servicing client requests.

Active Directory (AD)

Presents applications with a single, simplified set of interfaces so users can locate and use directory resources from a variety of networks while bypassing differences between proprietary services. Neverfail Heartbeat switchovers and failovers require no changes to AD resulting in switchover/failover times typically measured in seconds.

Active Server Queue

The staging area of the active server used to store intercepted data changes before being transported across the Channel to the passive server.

Active–Passive

The coupling of two servers with one server visible to clients on a network and providing application service while the other server is not visible and not providing application service to clients.

Advanced Configuration and Power Interface (ACPI)

A specification that dictates how the operating system can interact with the hardware especially where power saving schemes are used. The Primary, Secondary, and Tertiary servers must have identical ACPI compliance.

Alert

A notification provided by Neverfail Heartbeat sent to a user or entered into the system log indicating an exceeded threshold.

Asynchronous

A process whereby replicated data is applied (written) to the passive server independently of the active server.

Basic Input/Output System (BIOS)

The program a personal computer's microprocessor uses to get the computer system started after you turn it on. It also manages data flow between the computer's operating system and attached devices such as the hard disk, video adapter, keyboard, mouse, and printer.

Cached Credentials

Locally stored security access credentials used to log into a computer system when a Domain Controller is not available.

Channel Drop

An event in which the dedicated communications link between servers fails, often resulting in the passive server becoming active and consequently creating a split-brain syndrome.

Channel NIC (Network Interface Card)

A dedicated subnet used by the Neverfail Channel.

Checked

The status reported for user account credential (username/password) validation.

Cloned Servers

Servers that have identical configuration settings, names, applications, Security Identifiers (SIDs) and IP addresses, following the installation of Neverfail Heartbeat.

Cloning Process

The Neverfail Heartbeat process whereby all installed programs, configuration settings, and the machine name, Security Identifier (SID), and IP address are copied to another server.

Cluster

A generic term for a Neverfail Heartbeat Pair or Trio and the set of machines (physical or virtual) involved in supporting a single protected server. A Neverfail Heartbeat Cluster can include the machines used in a VMware or Microsoft cluster.

Connection

Also referred to as Cluster Connection. Allows the Neverfail Heartbeat Management Client to communicate with a Neverfail Heartbeat Cluster, either on the same machine or remotely.

Crossover Cable

A network cable that crosses the transmit and receive lines.

Data Replication

The transmission of protected data changes (files and registry) from the active to the passive server via the Neverfail Channel.

Data Rollback Module

A Neverfail Heartbeat module that allows administrators to rollback the entire state of a protected application, including files and registry settings, to an earlier point-in-time. Typically used after some form of data loss or corruption.

Degraded

The status reported for an application or service that has experienced an issue that triggered a Rule.

Device Driver

A program that controls a hardware device and links it to the operating system.

Disaster Recovery (DR)

A term indicating how you maintain and recover data with Neverfail Heartbeat in event of a disaster such as a hurricane or fire. DR protection can be achieved by placing the Secondary server (in a Pair) or the Tertiary server (in a Trio) at an offsite facility, and replicating the data through a WAN link.

DNS (Domain Name System) Server

Provides a centralized resource for clients to resolve NetBIOS names to IP addresses.

Domain

A logical grouping of client server based machines where the administration of rights across the network are maintained in a centralized resource called a domain controller.

Domain Controller (DC)

The server responsible for maintaining privileges to domain resources; sometimes called AD controller in Windows 2003 and above domains.

Dualed

A way to provide higher reliability by dedicating more than one NIC for the Neverfail Channel on each server.

Failover

Failover is the process by which the first passive server assumes the active role when it no longer detects that the active server is alive as a result of a critical unexpected outage or crash of a server.

First Passive

The passive server in a Neverfail Heartbeat Pair or Trio communicating with and receiving replicated data directly from the active server.

Full System Check (FSC)

The internal process automatically started at the initial connection or manually triggered through the Manage Server GUI to perform verification on the files and registry keys and then synchronize the differences.

Fully Qualified Domain Name (FQDN)

Also known as an absolute domain name, a FQDN specifies its exact location in the tree hierarchy of the Domain Name System (DNS). It specifies all domain levels, including the top-level domain, relative to the root domain. Example: somehost.example.com., where the trailing dot indicates the root domain.

Graceful (Clean) Shutdown

A shutdown of Neverfail Heartbeat based upon completion of replication by use of the Neverfail Heartbeat Neverfail Heartbeat Management Client, resulting in no data loss.

Group

An arbitrary collection of Neverfail Heartbeat Clusters used for organization.

Hardware Agnostic

A key Neverfail Heartbeat feature allowing for the use of servers with different manufacturers, models, and processing power in a single Neverfail Heartbeat Cluster.

Heartbeat

The packet of information issued by the passive server across the channel, which the active server responds to indicating its presence.

High Availability (HA)

Keeping users seamlessly connected to their applications regardless of the nature of a failure. LAN environments are ideally suited for HA.

Hotfix

A single, cumulative package that includes one or more files that are used to address a problem in a product.

Identity

The position of a given server in the Neverfail Heartbeat Cluster: Primary, Secondary, or Tertiary.

Install Clone

The installation technique used by Neverfail Heartbeat to create a replica of the Primary server using NTBackup or Wbadmin and to restore the replica to the Secondary and/or Tertiary servers.

Low Bandwidth Module (LBM)

A Neverfail Heartbeat module that compresses and optimizes data replicated between servers over a WAN connection. This delivers maximum data throughput and improves application response time on congested WAN links.

Machine Name

The Windows or NETBIOS name of a computer.

Management IP Address

An additionally assigned unfiltered IP address used for server management purposes only.

Many-to-One

The ability of one physical server (hosting more than one virtual server) to protect multiple physical servers.

Network Monitoring

Monitoring the ability of the active server to communicate with the rest of the network by polling defined nodes across the network at regular intervals.

Neverfail Channel

The IP communications link used by the Neverfail system for the heartbeat and replication traffic.

Neverfail Extranet

The Neverfail web site dedicated to supporting partners and customers by providing technical information, software updates, and license key generation.

Neverfail Heartbeat

The core replication and system monitoring component of the Neverfail solution.

Neverfail Heartbeat Packet Filter

The network component, installed on all servers, that controls network visibility.

Neverfail License Key

The key obtained from the Neverfail extranet that allows the use of components in the Neverfail suite; entered at install time, or through the Configure Server Wizard.

Neverfail Pair

Describes the coupling of the Primary and Secondary server in a Neverfail solution.

Neverfail Plug-ins

Optional modules installed into a Neverfail Heartbeat server to provide additional protection for specific applications.

Neverfail SCOPE

The umbrella name for the Neverfail process and tools used to verify the production servers health and suitability for the implementation of a Neverfail solution.

Neverfail SCOPE Report

A report provided upon the completion of the Neverfail SCOPE process that provides information about the server, system environment, and bandwidth.

Neverfail Switchover/Failover Process

A process unique to Neverfail in which the passive server gracefully (switchover) or unexpectedly (failover) assumes the role of the active server providing application services to connected clients.

Neverfail Trio

Describes a set of three coupled servers (Primary, Secondary, and Tertiary) in a Neverfail solution.

Pair

See Neverfail Heartbeat Pair above.

Passive

The functional state or role of a server when it is not delivering service to clients and is hidden from the rest of the network. For a Neverfail Heartbeat Trio, see also First Passive and Second Passive.

Passive Server Queue

The staging area on the passive server used to store changes received from the active server before they are applied to the disk/registry on the passive server.

Pathping

A route-tracing tool that works by sending packets to each router on the way to a final destination and displays the results of each hop.

Plug-and-Play (PnP)

A standard for peripheral expansion on a PC. On starting the computer, PnP automatically configures the necessary IRQ, DMA and I/O address settings for the attached peripheral devices.

Plug-in

An application specific module that adds Neverfail Heartbeat protection for the specific application.

Pre-Clone

An installation technique whereby the user creates an exact replica of the Primary server using VMware vCenter Converter or other 3rd party utility prior to the initiation of installation and uses the replica as a Secondary and or Tertiary server.

Pre-Installation Checks

A set of system and environmental checks performed as a prerequisite to the installation of Neverfail Heartbeat.

Primary

An identity assigned to a server during the Neverfail Heartbeat installation process that normally does not change during the life of the server and usually represents the production server prior to installation of Neverfail Heartbeat.

Principal (Public) IP Address

An IP address used by clients to contact the server through drive mappings, UNC paths, DNS resolved paths, etc., to gain access to the server's services and resources.

Principal (Public) Network

The network used by clients to connect to server applications protected by Neverfail Heartbeat.

Principal NIC

The network card which hosts the Principal IP address.

Protected Application

An application protected by the Neverfail Heartbeat solution.

Quality of Service (QoS)

An effort to provide different prioritization levels for different types of traffic over a network. For example, Neverfail Heartbeat data replication may have a higher priority than ICMP traffic, as the consequences of interrupting data replication are more obvious than slowing down ICMP traffic.

Receive Queue

The staging area on a server used to store changes received from another server in the replication chain before they are applied to the disk/registry on the passive server.

Remote Desktop Protocol (RDP)

A multi-channel protocol that allows a user to connect to a computer running Microsoft Terminal Services.

Replication

The generic term given to the process of intercepting changes to data files and registry keys, transporting the changed data across the channel, and applying them to the passive server(s) so the servers are maintained in a synchronized state.

Role

The functional state of a server in the Neverfail Heartbeat Cluster: active or passive.

Rule

A set of actions performed by Neverfail Heartbeat when defined conditions are met.

Second Passive

The passive server in a Neverfail Heartbeat Trio communicating with and receiving replicated data directly from the first passive server.

Secondary

An identity assigned to a server during the Neverfail Heartbeat installation process that normally does not change during the life of the server and usually represents the standby server prior to installation of Neverfail Heartbeat.

Security Identifier (SID)

A unique alphanumeric character string that identifies each operating system and each user in a network of 2003/2008 systems.

Send Queue

The staging area on a server used to store intercepted data changes before being transported across to a passive server in the replication chain.

Server Monitoring

Monitoring of the active server by the passive server, using a heartbeat message, to ensure that the active server is functional.

Shared Nothing

A key feature of Neverfail Heartbeat in which no hardware is shared between the Primary, Secondary, and Tertiary servers. This prevents a single point of failure.

SMTP

A TCP/IP protocol used in sending and receiving e-mail between servers.

SNMP

Simple Network Management Protocol (SNMP) is an Internet-standard protocol for managing devices on IP networks.

Split-Brain Avoidance

A unique feature of Neverfail Heartbeat that prevents a scenario in which Primary and Secondary servers attempt to become active at the same time leading to an active-active rather than an active-passive model.

Split-Brain Syndrome

A situation in which more than one server in a Neverfail Heartbeat Cluster are operating in the active mode and attempting to service clients, resulting in the independent application of different data updates to each server.

Storage Area Network (SAN)

A high-speed special-purpose network or (subnetwork) that interconnects different kinds of data storage devices with associated data servers on behalf of a larger network of users.

Subnet

Division of a network into an interconnected but independent segment or domain, intended to improve performance and security.

Switchover

The graceful transfer of control and application service to the passive server.

Synchronize

The internal process of transporting 64KB blocks of changed files or registry key data, through the Neverfail Channel, from the active server to the first passive server or from the first passive server to the second passive server to ensure the data on the passive server is a mirror image of the protected data on the active server.

System Center Operations Manager (SCOM)

System Center Operations Manager is a cross-platform data center management server for operating systems and hypervisors.

System State

Data that comprises the registry, COM+ Class Registration database, files under Windows File Protection, and system boot file; other data may be included in the system state data.

Task

An action performed by Neverfail Heartbeat when defined conditions are met.

Tertiary

An identity assigned to a server during the Neverfail Heartbeat installation process that normally does not change during the life of the server and usually represents the disaster recovery server prior to installation of Neverfail Heartbeat.

Time-To-Live (TTL)

The length of time that a locally cached DNS resolution is valid. The DNS server must be re-queried after the TTL expires.

Traceroute

A utility that records the route through the Internet between your computer and a specified destination computer.

Trio

See Neverfail Heartbeat Trio above.

Ungraceful (Unclean) Shutdown

A shutdown of Neverfail Heartbeat resulting from a critical failure or by shutting down Windows without first performing a proper shutdown of Neverfail Heartbeat, resulting in possible data loss.

Unprotected Application

An application not monitored nor its data replicated by Neverfail Heartbeat.

Virtual Private Network (VPN)

A private data network that makes use of the public telecommunication infrastructure, maintaining privacy through the use of a tunneling protocol and security procedures.

Windows Management Instrumentation (WMI)

A management technology allowing scripts to monitor and control managed resources throughout the network. Resources include hard drives, file systems, operating system settings, processes, services, shares, registry settings, networking components, event logs, users, clusters, and groups.

