



Neverfail SCOPE Data Collector Service Overview

Neverfail Continuity Engine 2021 (v9.0)

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About This Book

The Neverfail SCOPE Data Collector Service Overview document provides information about configuring and using the Neverfail SCOPE Data Collector tool and report analysis.

Intended Audience

This guide assumes a working knowledge of networks including the configuration of TCP/IP protocols and a sound knowledge of domain administration on the Windows TM 2008 R2, 2012, 2012 R2, 2016 and 2019 platforms, notably in Active Directory and DNS.

Using the Neverfail SCOPE Data Collector Service Overview Guide

This guide is designed to provide an overview of Neverfail SCOPE Data Collector Service and its operation. It also provides usage instructions and outcome analysis.

Document Feedback

Neverfail welcomes your suggestions for improving our documentation and invites you to send your feedback to docfeedback@neverfail.com.

Abbreviations Used in Figures

The figures in this book use the abbreviations listed in the table below.

Abbreviation	Description
Channel	Neverfail Channel
EMS	Engine Management Service
CE	Neverfail Continuity Engine
NIC	Network Interface Card
P2V	Physical to Virtual
V2V	Virtual to Virtual

Abbreviation	Description
P2P	Physical to Physical
SAN	Storage Area Network type datastore

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 <https://www.neverfail.com/services-and-support/>.

Online and Telephone Support

Use online support to view your product and contract information, and to submit technical support requests. Go to <https://www.neverfail.com/services-and-support/>.

Support Offerings

To find out how Neverfail Support offerings can help meet your business needs, go to <https://www.neverfail.com/services-and-support/>.

Neverfail Professional Services

Neverfail Professional Services courses offer extensive hands-on labs, case study examples, and course materials designed for use 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 Continuity Engine, Neverfail Professional Services provides offerings to help you optimize and manage your Neverfail Engine servers. To access information about education classes, certification programs, and consulting services, go to <https://www.neverfail.com/services-and-support/>.

Neverfail Continuity Engine Documentation Library

The following documents are included in the Neverfail Continuity Engine documentation library:

Document	Purpose
Installation Guide	Provides detailed setup information.

Document	Purpose
Using Neverfail EMS	Provides detailed usage instructions for Engine Management Service.
Administrator's Guide	Provides detailed configuration and conceptual information.
Deploying to AWS Cloud Environment	Deploying Neverfail Engine in Amazon Web Services Cloud Environment.
SCOPE Data Collector	Neverfail SCOPE Data Collector Service Overview.
Release Notes	Provides late-breaking information, known issues, and updates. The latest Release Notes can be found at https://www.neverfail.com/services-and-support/ .

Conventions

The documentation uses consistent conventions to help you identify items throughout the printed and online library.

Convention	Specifying
Bold	Window items including buttons.
<i>Italics</i>	Book and CD titles, variable names, new terms, and field names.
Fixed font	File and directory names, commands and code examples, text typed by you.
Straight brackets, as in [value]	Optional command parameters.
Curly braces, as in {value}	Required command parameters.
Logical OR, as in value1 value2	Exclusive command parameters where only one of the options can be specified.

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 Continuity Engine.

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.

- **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. The 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.

To use the *SCOPE Configuration Tool*, select **Start > All Programs > Neverfail > SCOPE > SCOPE Configuration Tool**. The *SCOPE Configuration Tool* opens in a new window.

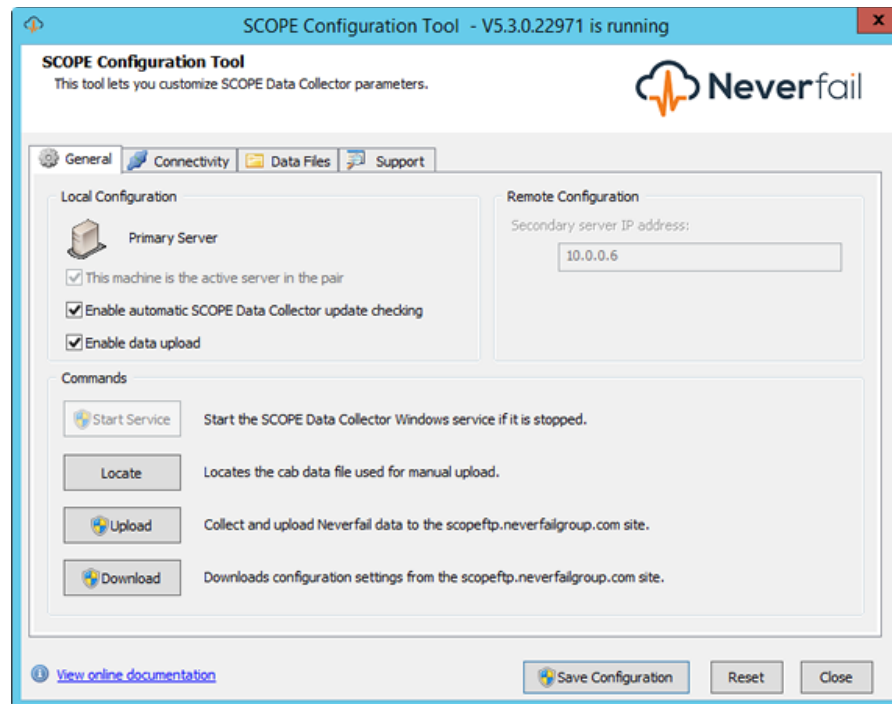
The SCOPE Configuration Tool consists of four tabs: **General** , **Connectivity**, **Data Files** and **Support**. The features of each tab are described in the associated sections of this document.

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 download configuration settings from the and to locate the .CAB file for manual uploading.

1. Select the **General** tab.



Option	Description
Start Service	Starts the Neverfail SCOPE Data Collector Service Windows service if it is stopped.
Upload	Uploads the current .cab file typically located in the default location: - On Windows 2008 installations: C:\ProgramData\Neverfail-SCOPE\Data
- On Windows 2012 installations: C:\ProgramData\ Neverfail-SCOPE\Data	
See expanded description below for more information about this feature.	
Download	Downloads configuration and Neverfail SCOPE Data Collector Service updates, if available, from the Neverfail Extranet
Locate	Locates the .cab files for manual upload

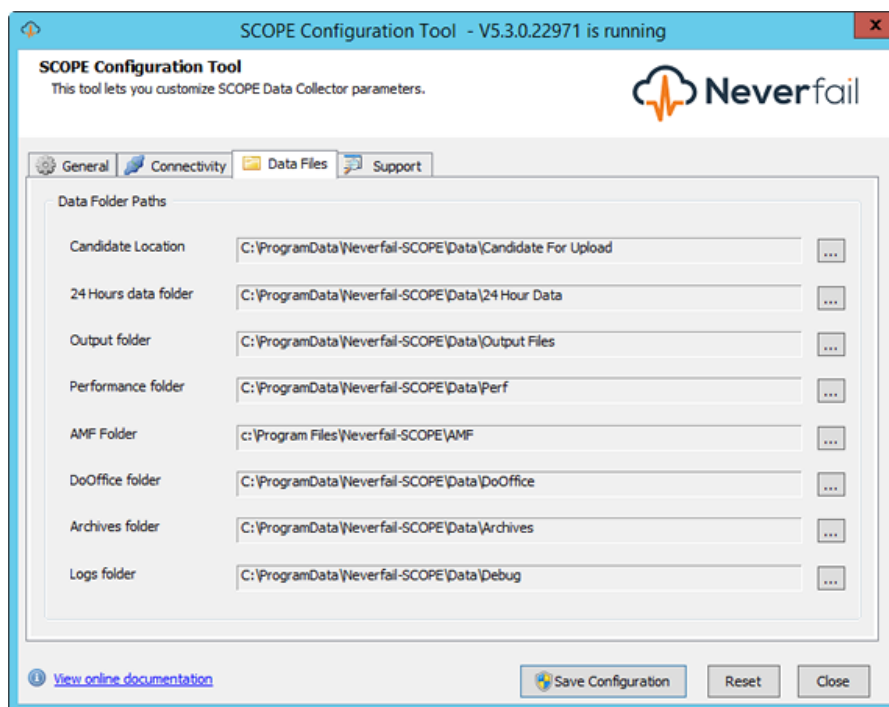
When you click **Upload**, Neverfail SCOPE Data Collector Service gathers all data. Do not close the application until it has finished gathering the data. After all data is gathered, Neverfail SCOPE Data Collector Service uploads it.

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.

1. Select the Data Files tab.



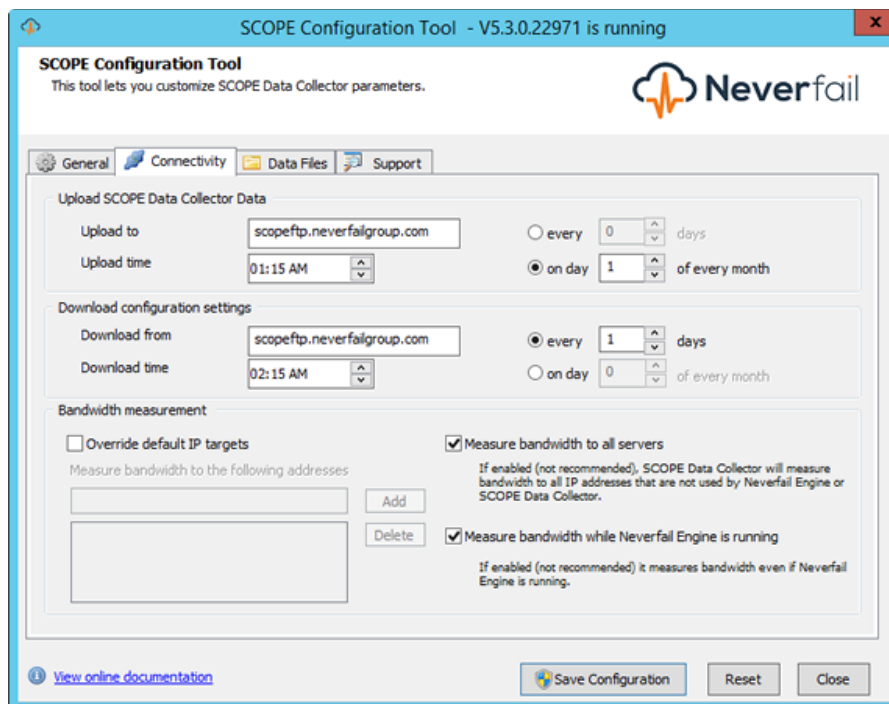
Use the *Data Files* page to change the location where data files are stored.

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

Configure the 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.

1. Select the **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 Engine, or to measure bandwidth while Neverfail Engine is running.

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

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

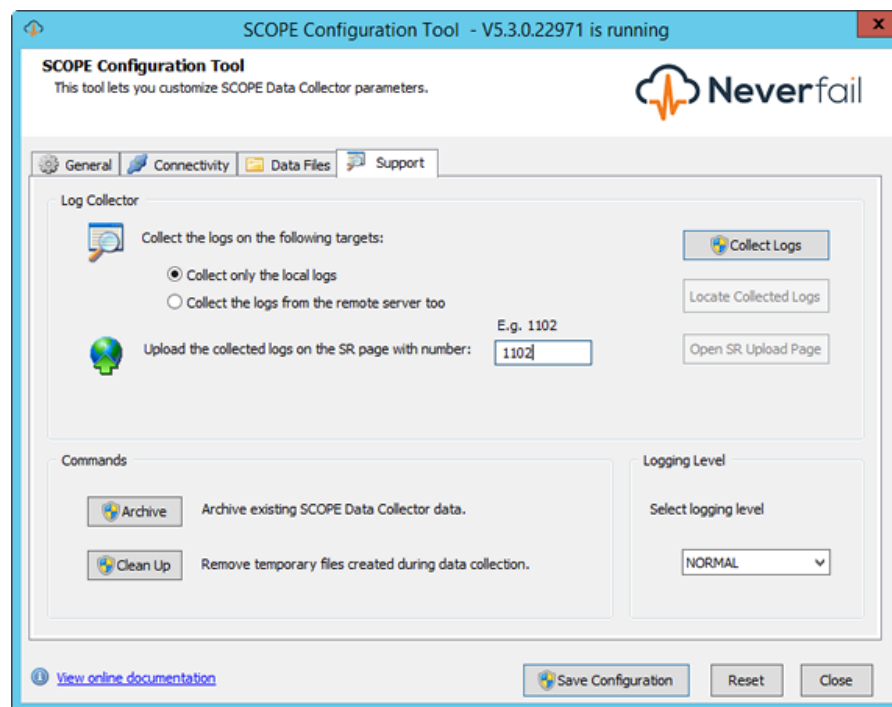
To measure bandwidth to all servers in the Cluster using the Neverfail Channel, add their IP addresses and select the *Measure bandwidth to all servers* checkbox to prevent those IP addresses from being filtered out by default.

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

Configure the 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.

1. Select the **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 <https://neverfail.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.

- 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 on-line analyzer. Always consult Neverfail Support before adjusting.

Parameter Name	Default Value	Description
AdditionalFilesForUpload		Additional files to be added to the auto-uploaded .CAB 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 .cab file

Parameter Name	Default Value	Description
Last Job Status	StoreData	Last job done
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\ApplicationData\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 sub-folders
Auto Logs Cleanup (Days)	90	Timeout for log files

Parameter Name	Default Value	Description
Bandwidth IPs		Selected bandwidth IP addresses
Managed-MemoryThreshold (MB)	1024	Management threshold in MB - if reached, Neverfail SCOPE Data Collector Service service is restarted
Private-MemoryThreshold(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
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

Parameter Name	Default Value	Description
Download URL	scopeftp.neverfailgroup.com	The URL where program updates are located
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

Parameter Name	Default Value	Description
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
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 <month-Name> <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

Parameter Name	Default Value	Description
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 Engine 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

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

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

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.
5. On the Primary server: 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.
10. On the Remote (Secondary) server: 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.

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.

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 Engine 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

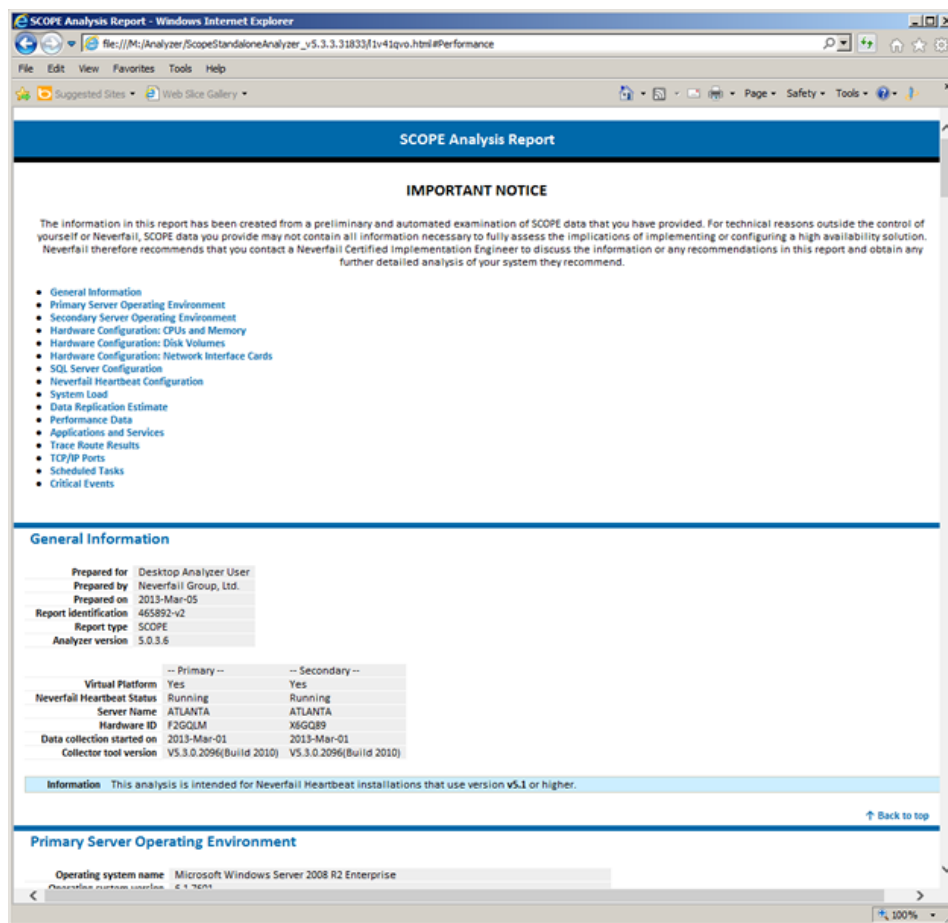
Once uploaded, the raw data file is immediately analyzed and a Neverfail SCOPE Report is available for viewing using a standard web browser

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.

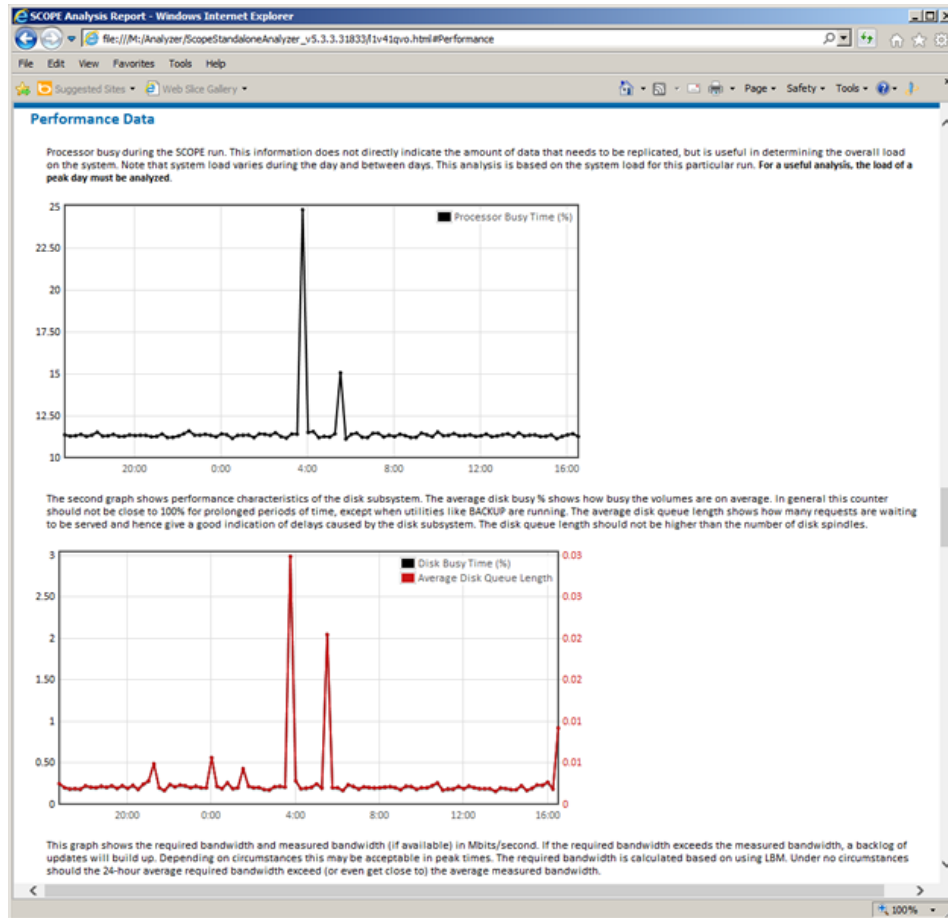
The Neverfail SCOPE Analysis Report provides an overview of the analyzed criteria and identifies any areas of the current environment that are likely to pose problems when implementing Neverfail Engine. Problems that must be resolved before installing Neverfail Engine are highlighted in red for easy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



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 Engine. Problems that must be resolved before installing Neverfail Engine are high-

lighted 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 Engine installation.



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.

