MN152132EN Effective January 2022 Foreseer 7.5.800

Foreseer Message Manager Configuration Guide

Powering Business Worldwide

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Introduction

Message Manager is a Windows service designed to provide alarm notifications to defined recipients. When an alarm is detected by Foreseer and the channel reference is configured for Message Management, the Message Manager service proceeds to notify each recipient/subscriber defined within its configuration definition. Message Manager can send alarm notifications to multiple services such as email and printers.

Message Manager is designed to be used either on the same application server where Foreseer resides, or, on a remote server for distributed architectures. Message Manager connects to Foreseer using a secure, encrypted connection using TLS 1.2 and TLS 1.3.

System Requirements

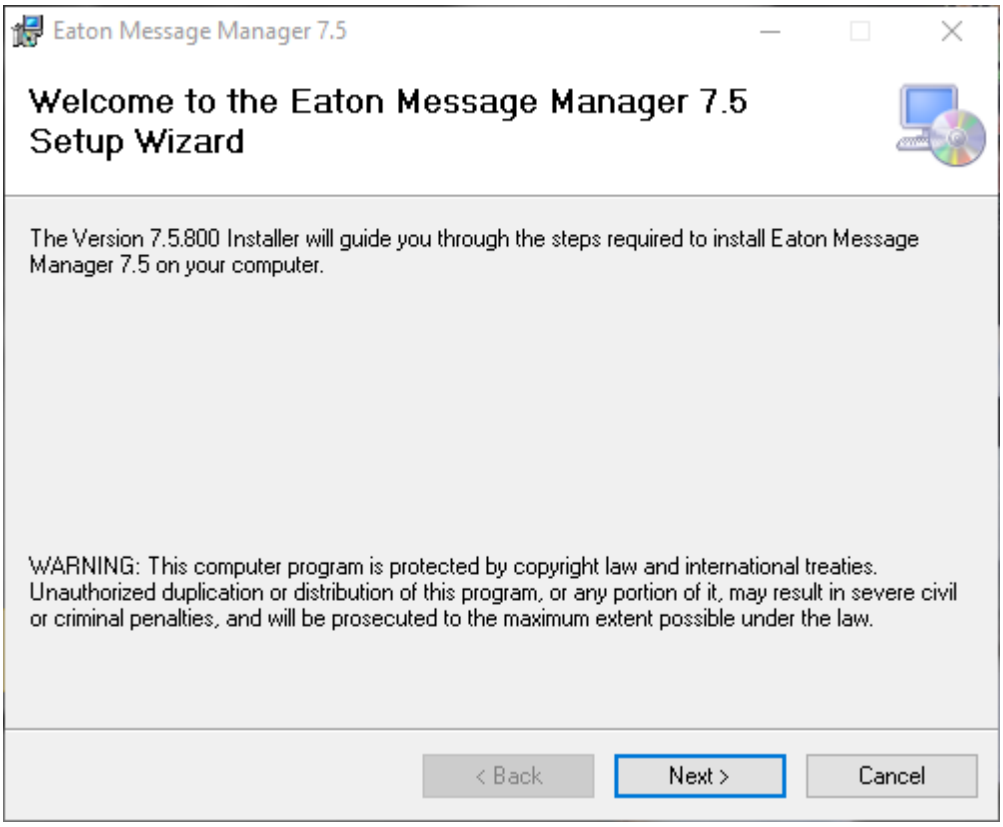
As an add-on component to Foreseer, Message Manager must be installed in accordance with the software system requirements. Please refer to the *Foreseer Installation and Upgrade Guide (MN152126EN)*.

Installing Message Manager Software

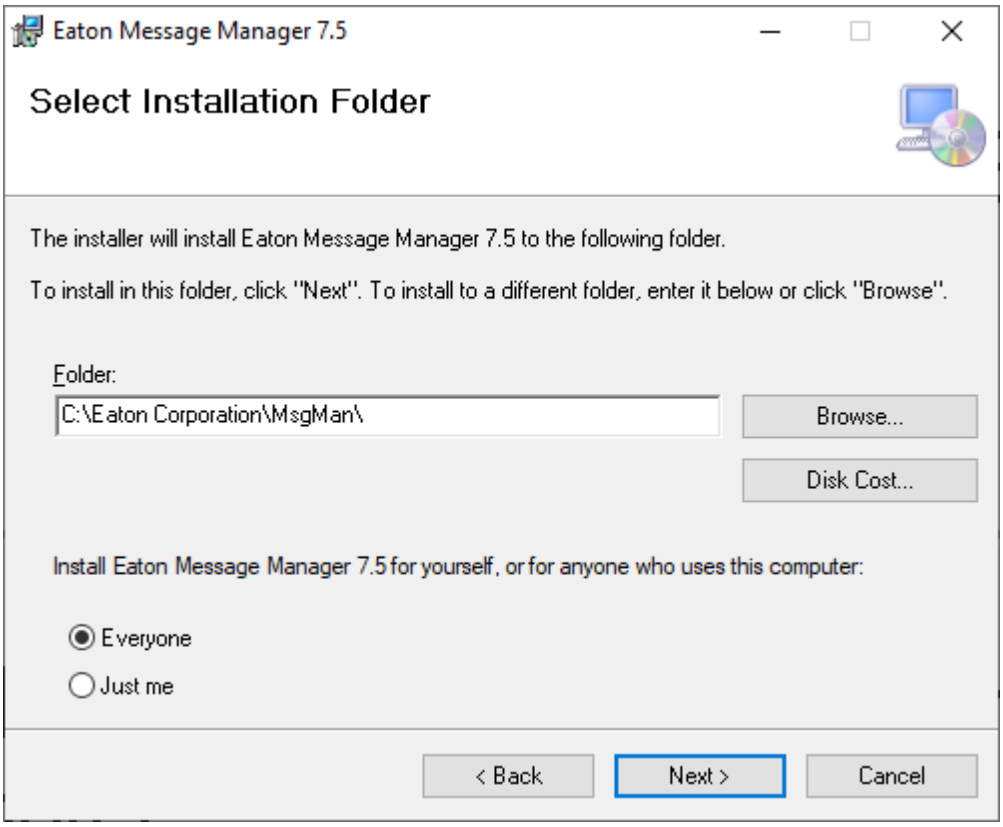
> If you are upgrading from a prior release of Message Manager, please uninstall the existing version of Message Manager prior to proceeding.

To install Message Manager, perform the following steps:

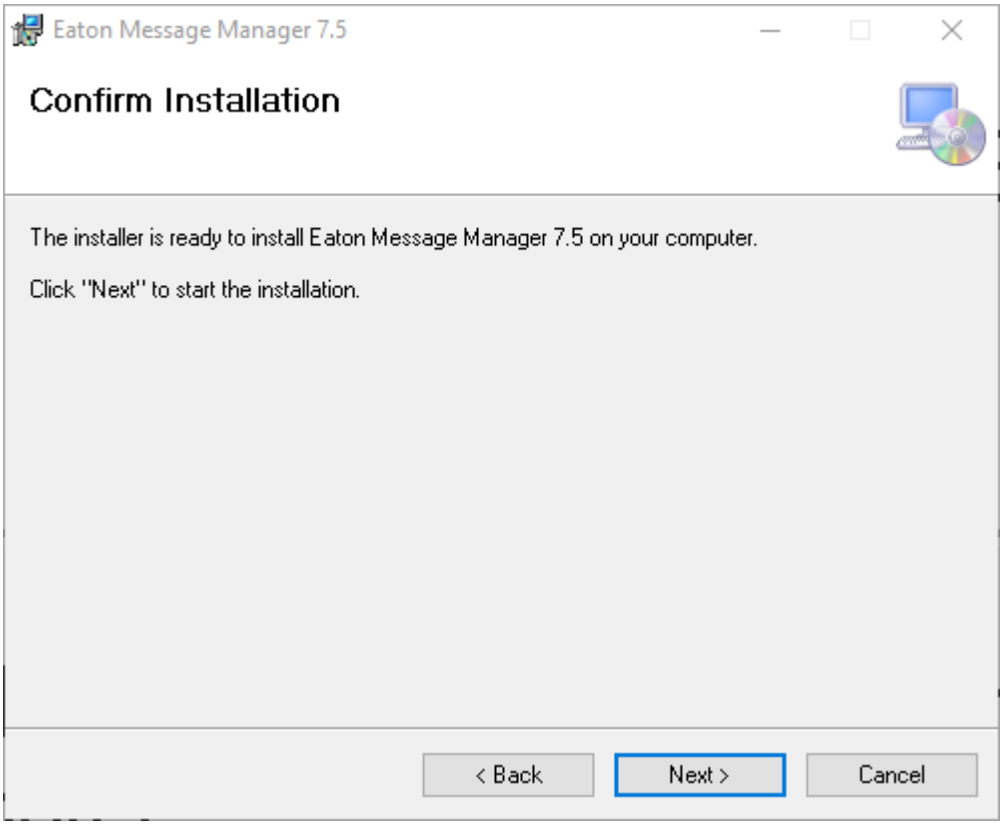
1. Run the installer by launching the MsgManInstaller.msi file located on the Foreseer DVD or ISO image. You will be greeted by the Setup Wizard's Welcome Screen. Click ***Next*** to continue.



2. Select the folder where you wish to install Message Manager. By default, the setup wizard will select C:\Eaton Corporation\MsgMan. You can click Browse to select a different drive or folder. Be sure that the Everyone radio button is selected. Click ***Next*** to continue.

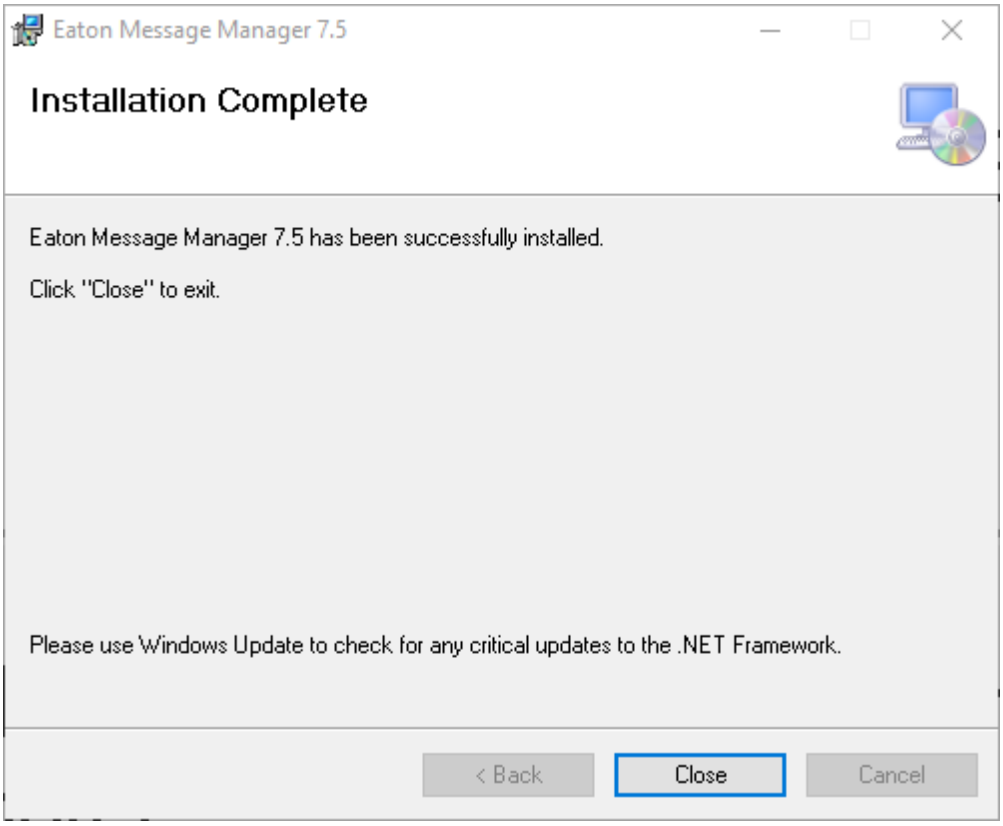


3. Confirm the installation and click *Next* to continue.



4. The Setup Wizard will begin to copy all files onto the server. This process may take a few moments.

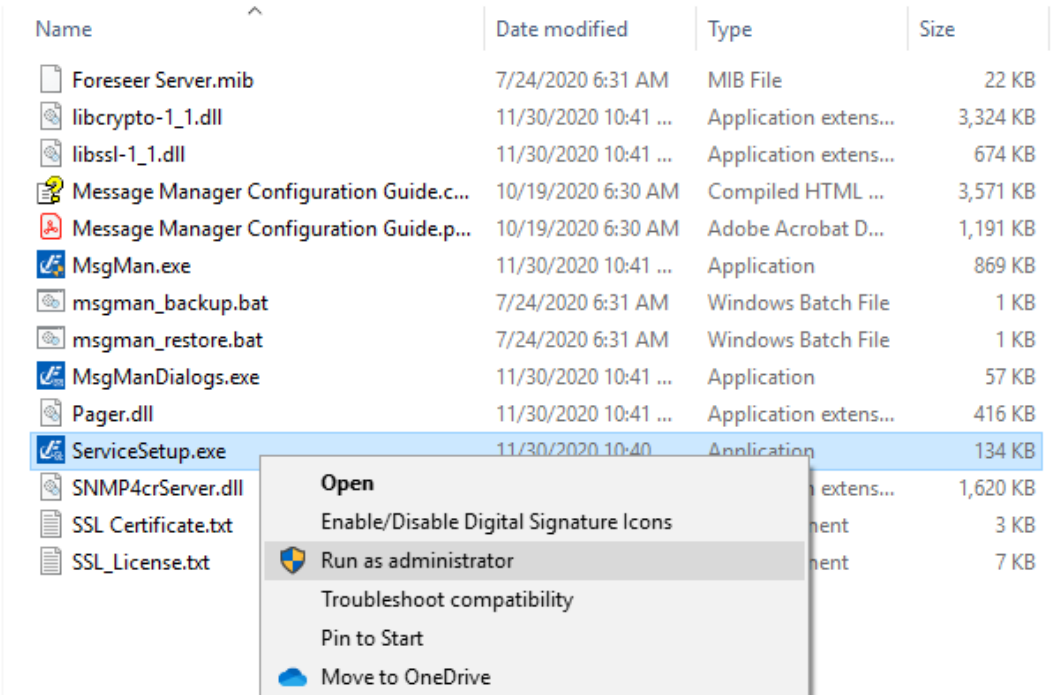
5. The Installation Complete screen will appear once done. Click ***Close***.



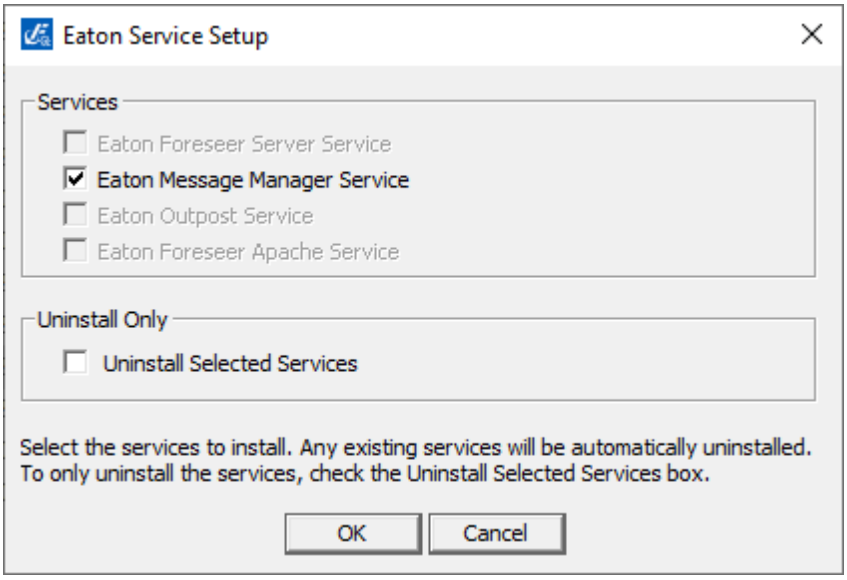
Install the Windows Service

Message Manager runs as a Windows operating system service. Prior to initial setup and configuration, you need to install the Message Manager service. Perform the following steps:

1. Using Windows Explorer, navigate to the Message Manager installation directory (typically *C:\Eaton Corporation\MsgMan*. Right-click the ServiceSetup.exe program and select Run as Administrator.

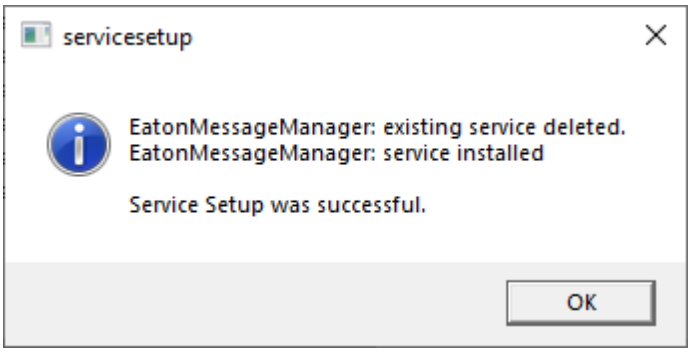


2. Click to check the *Eaton Message Manager Service* checkbox. Click ***OK*** to proceed with installation.



3. A status dialog will return with information on the installation process. If you are upgrading from a prior revision of Message Manager, ServiceSetup.exe may indicate that the existing service was delete and the new service installed in its place.

   When finished, click ***OK***.



If Service Setup fails to install the Message Manager service, confirm with your organization's IT group that your Windows user account has the necessary permissions to run an executable with elevation.

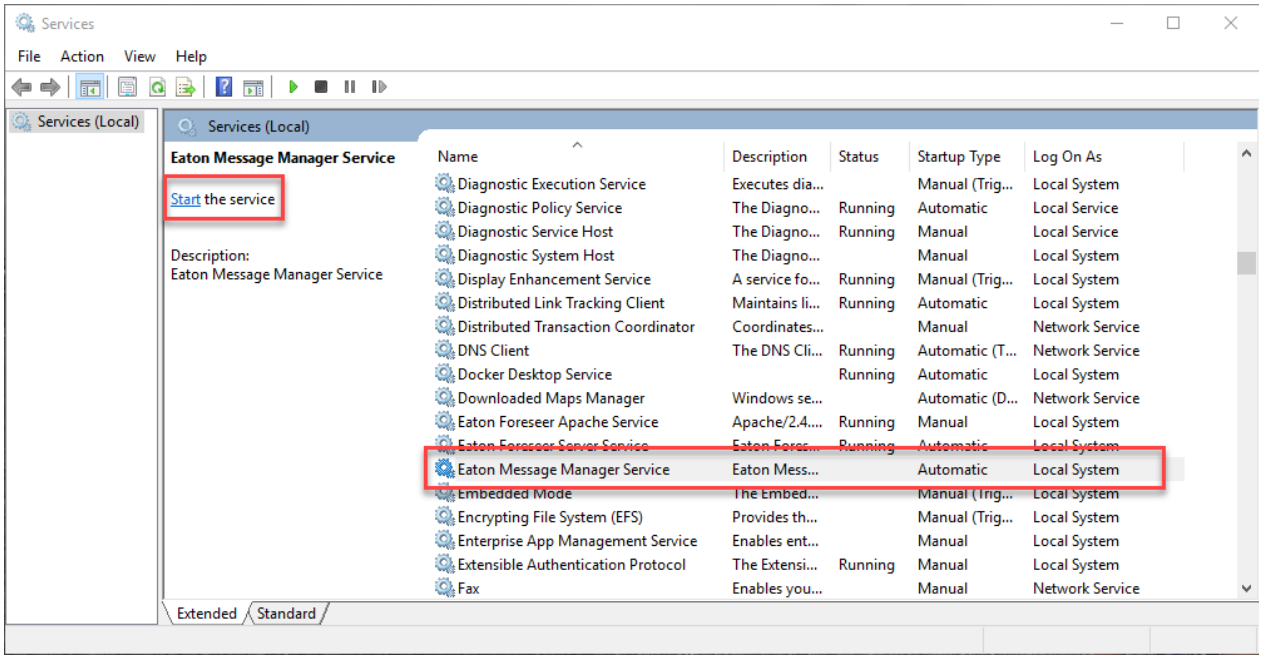
Controlling the Message Manager Service

As a Windows service, Message Manager's status can be checked using the Windows Service application, available from *Administrative Tools*. Alternatively, you can run *Services* from *Windows Start>Run* or the *Search Windows* bar on modern editions of the operating system.

Starting the Message Manager Service

To start the Message Manager service, find the Eaton Message Manager Service listing in the Services application. When initially installed, the service will not be actively running, but will be configured for Automatic Start-up on boot.

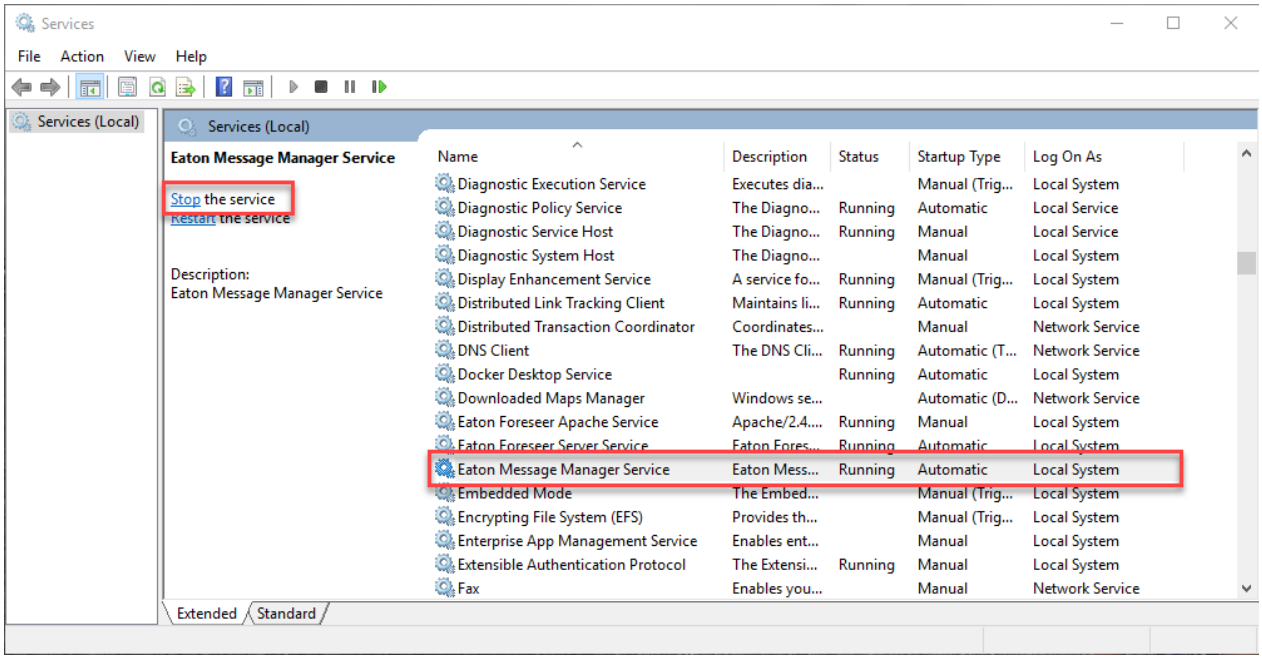
Click to select the Eaton Message Manager Service listing. From the left pane, click the ***Start*** link.



If the Eaton Message Manager Service fails to start, your server may be security hardened to prevent the Local System account from executing services. Consult with your local IT group for assistance with obtaining a service account to run the Eaton Message Manager Service.

Stopping the Message Manager Service

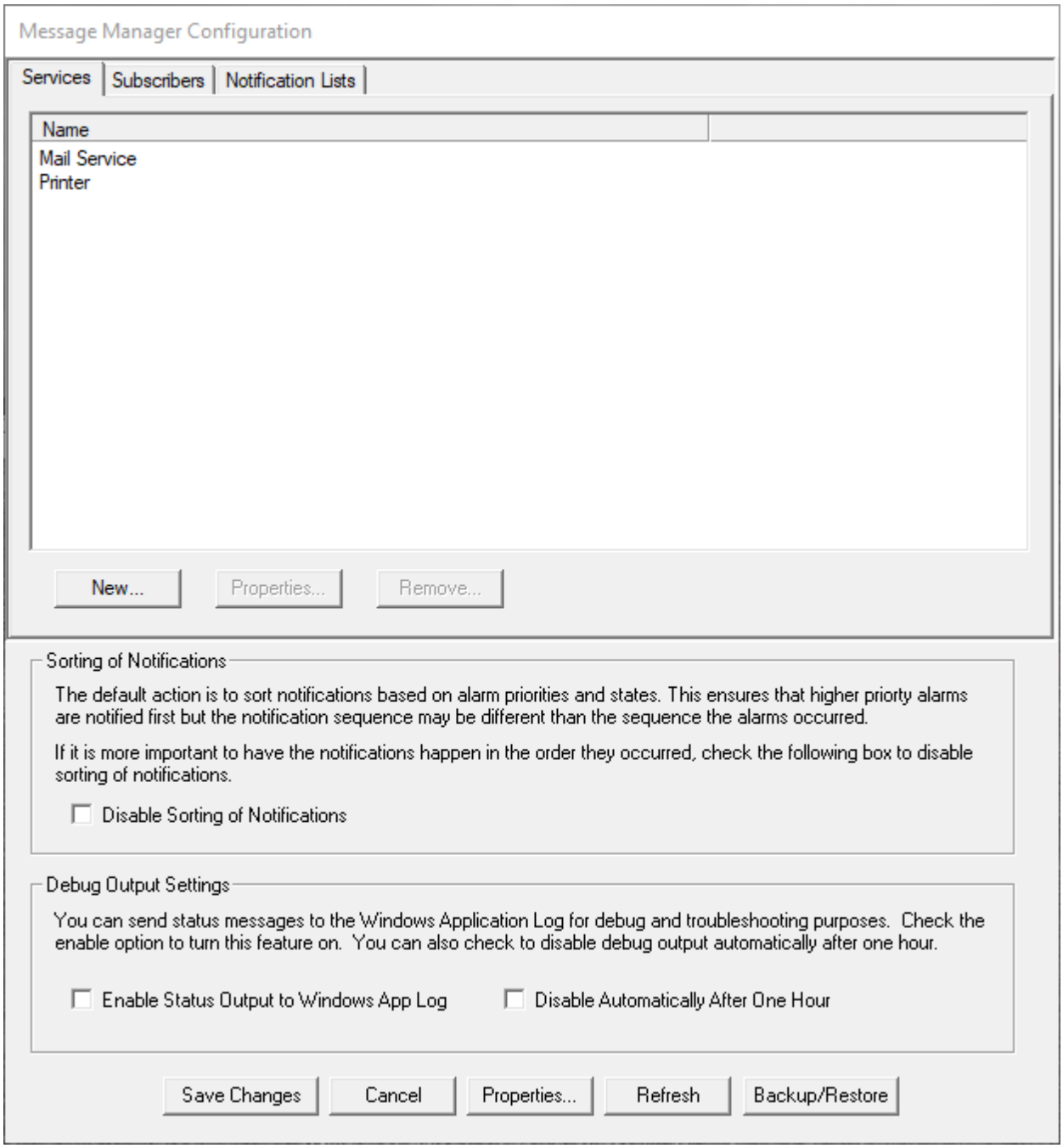
In rare situations, it may become necessary to temporarily stop the Message Manager service. Click to select the Eaton Message Manager Service listing. From the left pane, click the Stop link.



Configuring Message Manager

The Message Manager Configuration utility specifies the services and conditions under which personnel are notified when an alarm condition is reported.

To launch Message Manager Configuration, access *Windows Start>Foreseer>Message Manager Configuration*. Alternatively, you can navigate to the Message Manager installation folder and run *MsgManDialogs.exe* using the *Run as administrator* option.

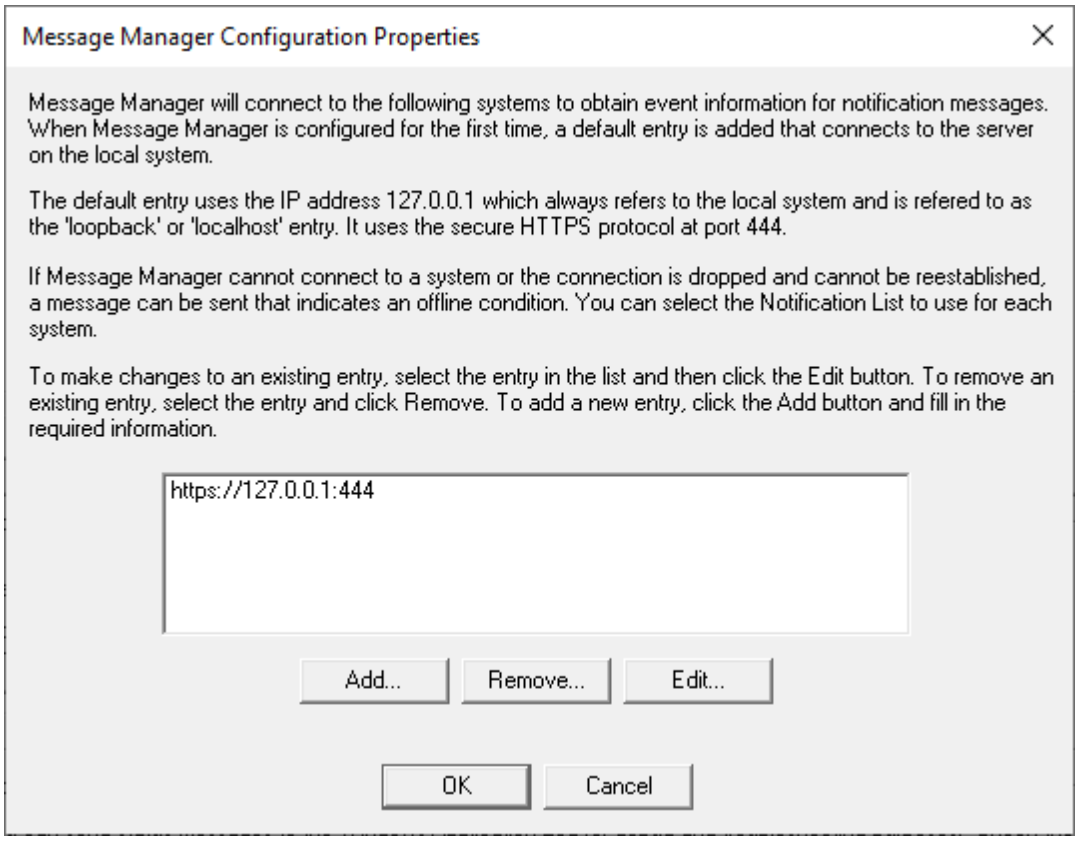


The bottom toolbar provides simple buttons that are used to perform basic rudimentary changes to Message Manager. They include:

- *Save Changes* – Saves all settings to Message Manager's configuration file. When Save Changes is clicked, the Message Manager service will automatically restart.
- *Cancel* – Exits without saving settings to Message Manager's configuration file.
- *Properties* – Used to configure Message Manager connection settings to Foreseer.
- *Refresh* – Used to refresh any changes to Services, Subscribers, or Notifications Lists that may have been applied.
- *Backup/Restore* – Used to perform a backup or restoration of Message Manager's Configuration.

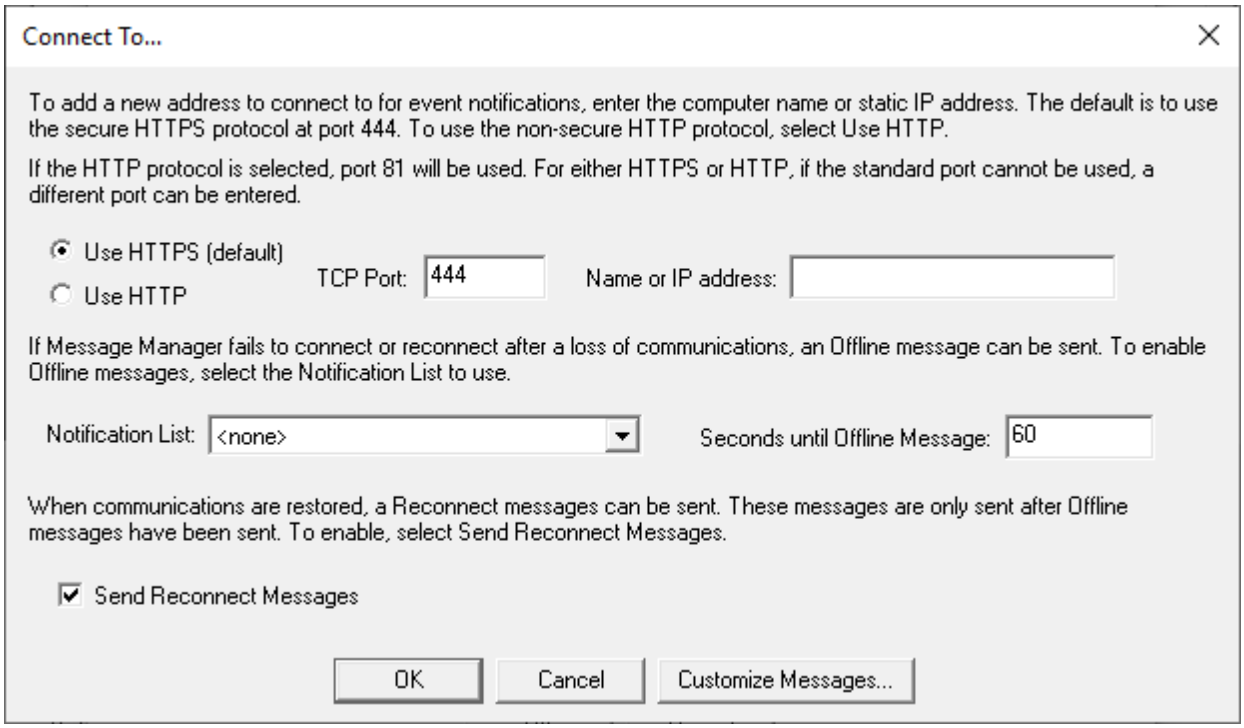
Connecting Message Manager to Foreseer

Message Manager connects to Foreseer using an encrypted connection. Before you begin configuring Message Manager, you should ensure that Message Manager is connected to Foreseer. The connection setup is accomplished through the Properties button displayed at the bottom of the Message Manager Configuration window.



The Message Manager Configuration Properties specifies the address of the Foreseer server in which Message Manager will connect to. Message Manager can connect via HTTP or HTTPS where HTTPS is preferred given its ability to encrypt content.

By default, Foreseer v7.3 uses HTTPS over Port 444 for a Message Manager connection. Older Foreseer versions used HTTPS over Port 443. This port can be changed to accommodate the security strategy of a given site. For information on changing these ports, consult the *Foreseer Server Guide - MN152088EN*.



To configure Message Manager connection settings, click Add to add a new entry, or click Edit to modify the existing entry. For situations where Message Manager is installed on the same application server as Foreseer, the loopback address of https://127.0.0.1:444 is acceptable.

If you installed Message Manager onto a remote application server separate from Foreseer, you can use the fixed IP address or fully qualified domain name of the Foreseer application server.

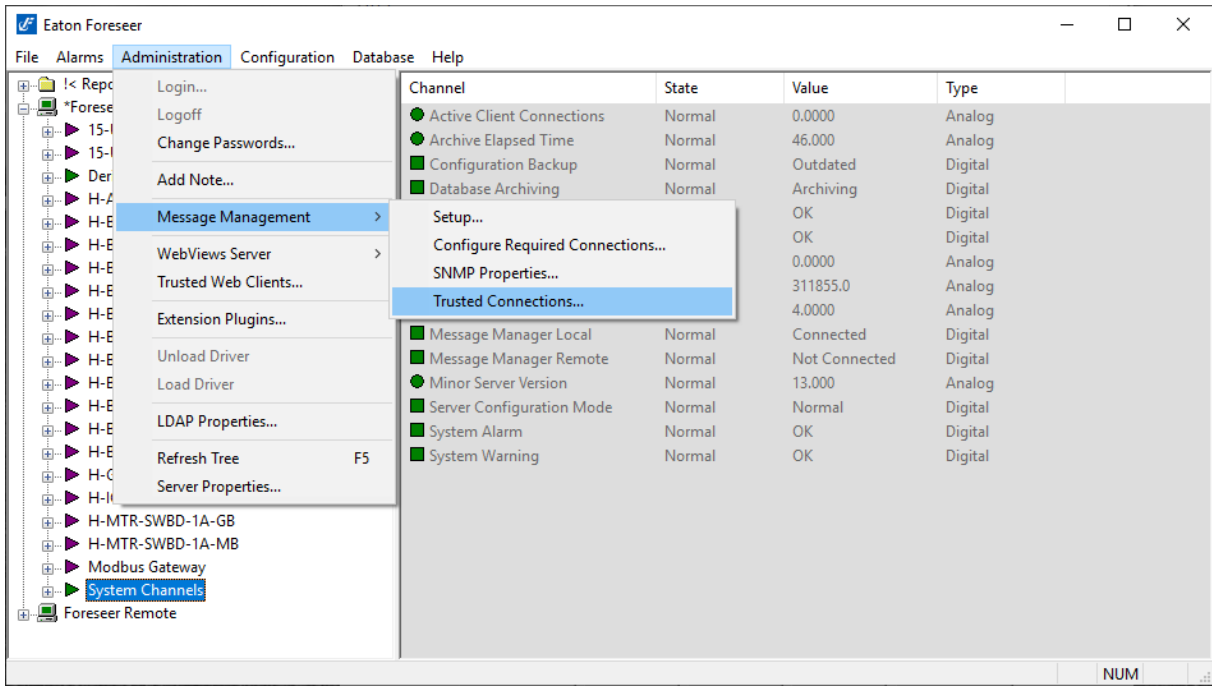
Click ***OK*** to apply the changes. Then, click ***Save Changes*** on the Message Manager Configuration window to save and make changes effective.

Setting Trusted Message Manager Connections in Foreseer

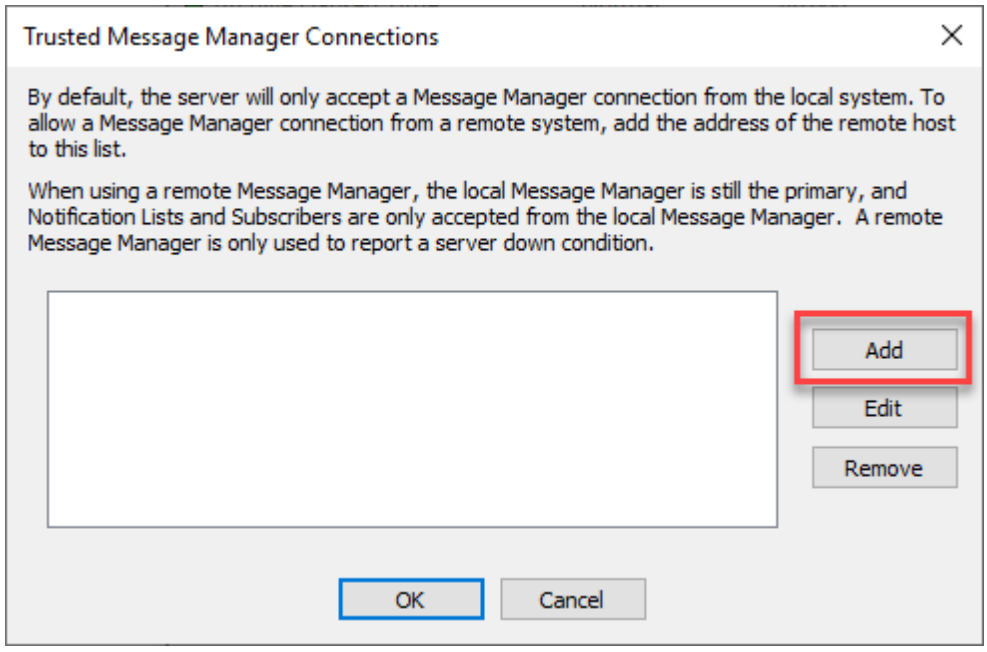
By default, a Foreseer server installation will only accept Message Manager connections from its local machine. In order to allow Foreseer to accept a remote Message Manager connection, the address of the remote Message Manager machine must be added into Foreseer's Trusted Message Manager Connections whitelist.

To access and configure the whitelist, perform the following steps:

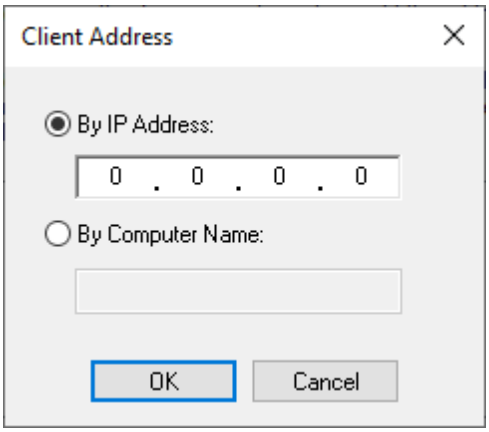
1. At the Foreseer application server, access Device Configuration. From Device Configuration, select *Administration>Message Management>Trusted Connections.*



2. The Trusted Message Manager Connections dialog will appear. By default, there should be no entries. Click ***Add*** to create an entry.



3. Enter the IP address or resolvable name of the remote machine where Message Manager resides. Click ***OK***.

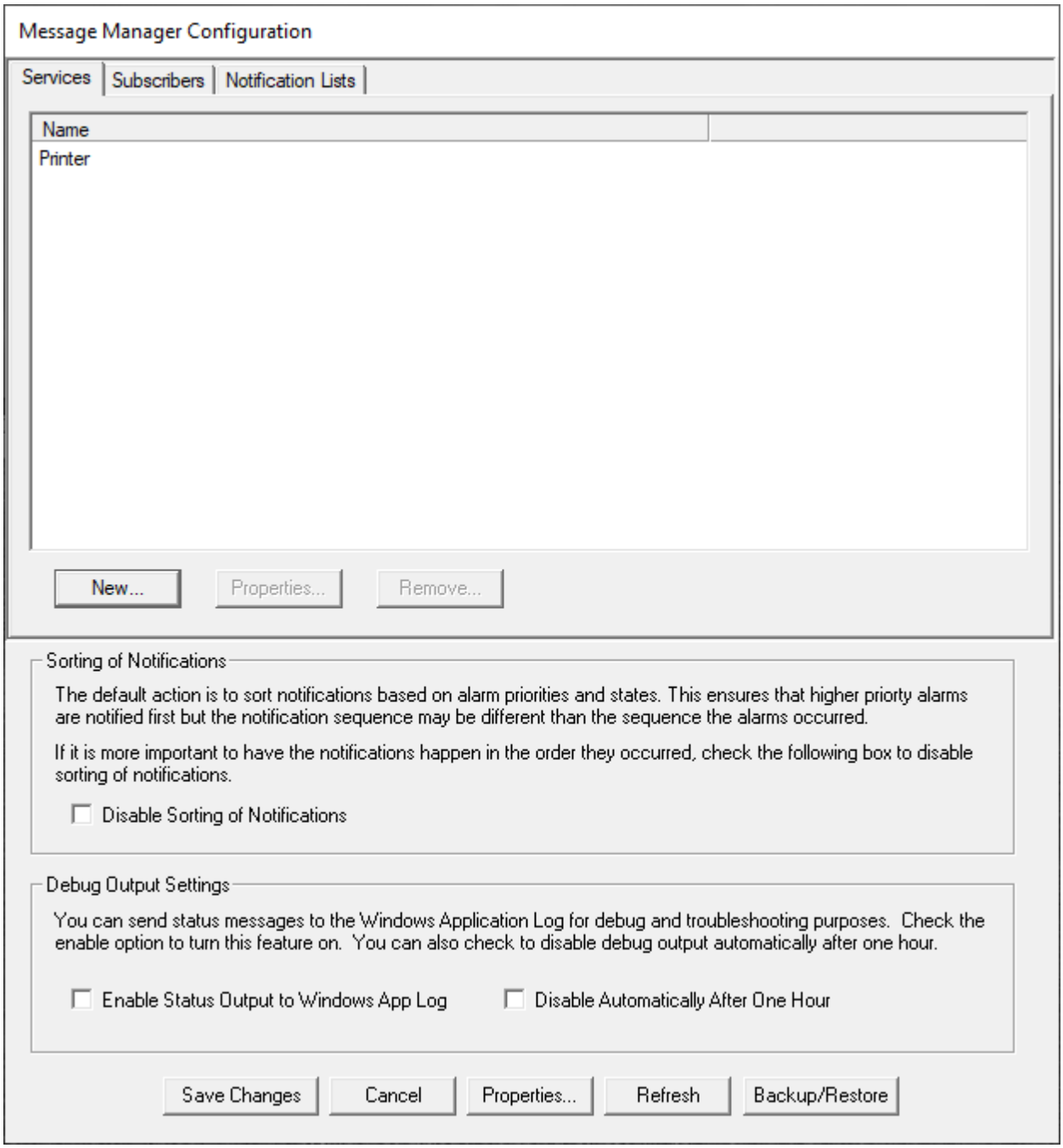


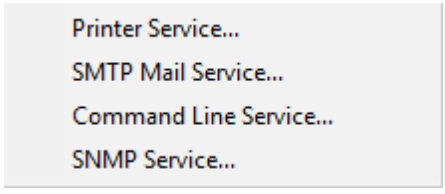
Configuring Message Manager Services

Notification messages are sent through one or more configured Services that are defined in the Message Manager Configuration. Message Manager can use several services to send notifications. The built-in services that are common to the client and the server are:

- Printer Service
- SMTP Mail Service
- Command Line Service
- SNMP Service

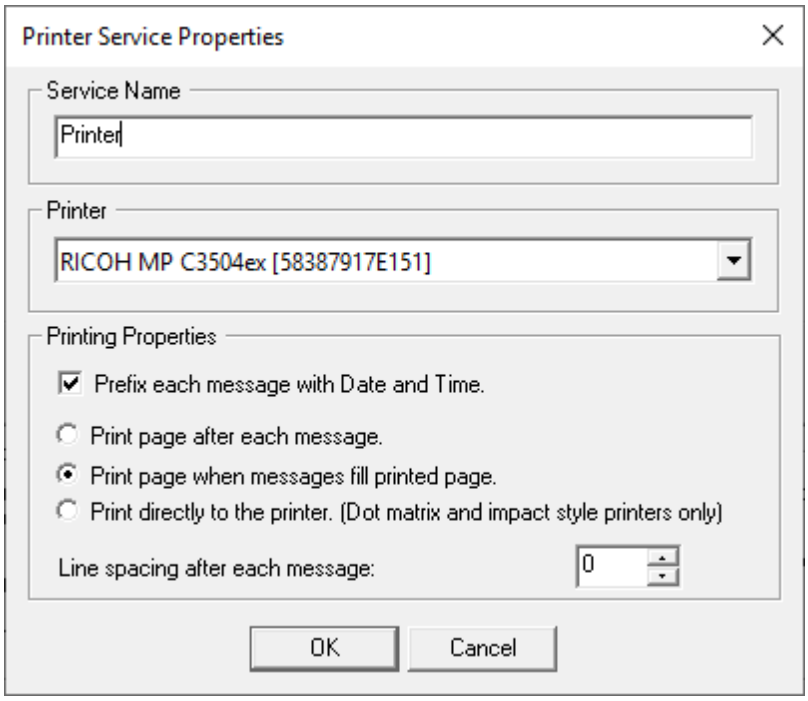
To add any of the mentioned Services to Message Manager, click ***New*** and selected the desired service from the context-menu.





Printer Service Setup

The Printer Service can be used to print alarm messages to a direct-connected to networked printer known to the Windows operating system where Message Manager is installed.

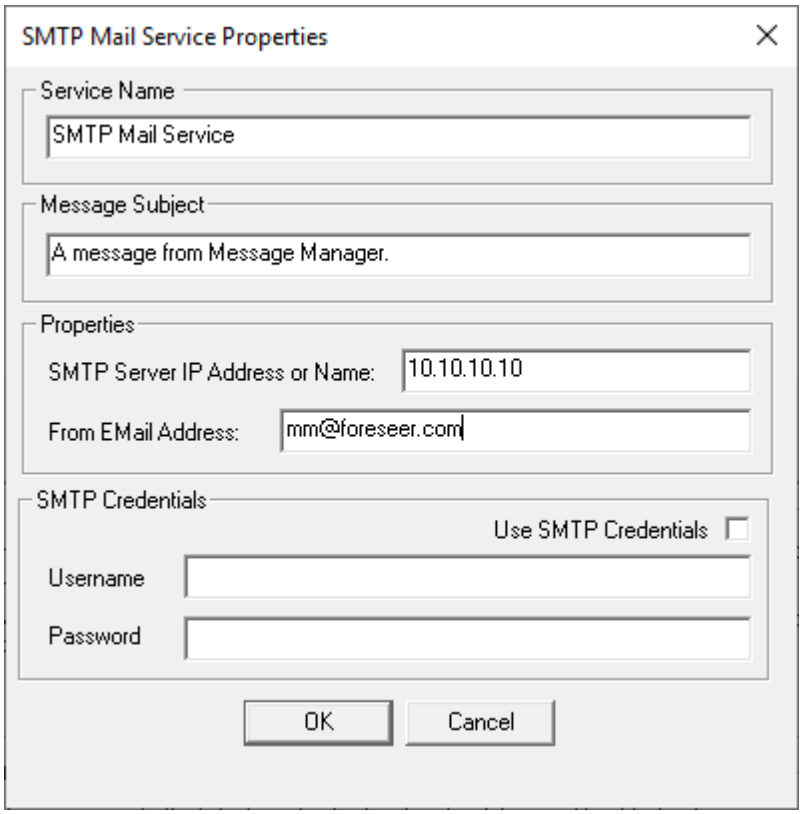


Message Manager is optimized for use with network printers, as well as classic dot-matrix and impact style printers (tractor-feed). Using Printing Properties, you can control the behavior of how alarms are printed. For example,*print page after each message* is useful for modern printers, whereas *Print directly to the printer* is useful for legacy line printers.

Printing alarms can present unique challenges based on the design of the manufacturer's printer driver. Some printers that attempt to display dialogs prior to completion (e.g. virtual software printing utilities that spool PDFs) will not work.

SMTP Mail Service Setup

The SMTP Mail Service can be used to send email notifications for alarms generated by Foreseer. The SMTP Mail Service ***exclusively supports Microsoft Exchange Servers over Port 25.***



Through the SMTP Mail Service Properties, you can configure a dedicated email subject to help recipients know that the message is in regard to system alarms.

Using the supplied fields:

1. Enter the resolvable SMTP Server name or IP address
2. Most, if not all, mail servers requires a valid email address to be supplied. Enter the email address for an account associated to Message Manager.
3. Some Microsoft Exchange servers may require you to authenticate with the server using SMTP credentials. Enter the credentials supplied to you by your organization's IT group. Click ***OK*** to apply the changes, then, click ***Save Changes*** in the Message Manager Configuration window.

> In secured environments, application servers that use Message Manager may need to be configured by your organization's IT group to permit SMTP Relay. Verify that the server hosting Message Manager is properly configured to do so.

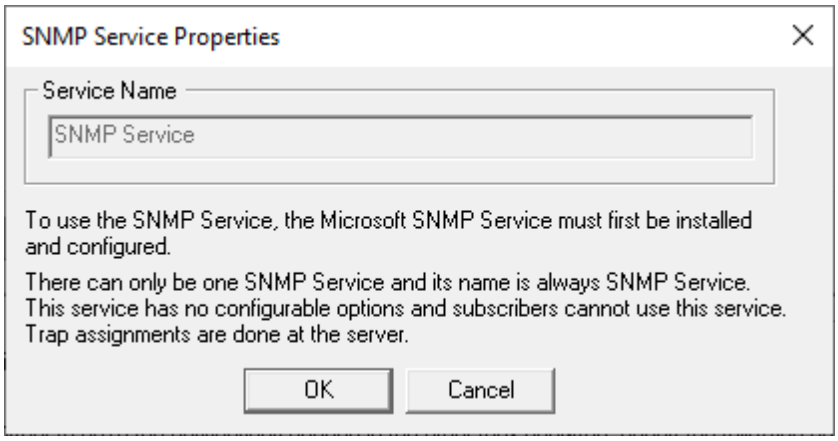
Command Line Service Setup

The Command Line Service may for alarm notification methods outside of the pre-canned options (Printer Service, SMTP Service, and SNMP Service) provided by Message Manager. The Command Line interface will invoke an executable program, supplied by the customer, that accepts command line arguments which provide detailed information about the specific alarm.

The command line program may then invoke any type of notification service to which it has access. The command line arguments that may be passed to the program are configurable through the message management system.

SNMP Service Setup

Simple Network Management Protocol (SNMP) provides a framework for communication between various network devices using the UDP protocol. SNMP employs a Manager/Agent model. The Network Management System (NMS) monitors and controls one or more Agents. The Agent, in this case Foreseer, has the ability to asynchronously send alerts, or traps, to specified SNMP Managers to report predefined events.



Message Manager's SNMP Service allows such messages to be sent from the Message Manager to an NMS to furnish enterprise-wide notification of critical events from the EPMS. By adding the SNMP option, a remote NMS can monitor critical events occurring within all of the foundation equipment supported by Foreseer.

There are 25 predefined Cautionary and 25 predefined Critical traps available through Message Manager's SNMP Service. They may be used to identify unique channels, or they may group channels by category. It is possible to use a single Trap Number multiple times.

Microsoft SNMP Service Setup

The Microsoft SNMP service must be installed on the machine that also hosts the Message Manager. Trap destinations and community strings are configured using the SNMP service properties. To install the Windows SNMP service, perform the following steps:

1. For Windows Server 2012 through 2016, access *Control Panel>Programs and Features>Turn Windows Features On or Off*. For Windows Server 2019 with build 1809 and later, go to *Settings>Apps>Apps & Features>Manage Optional Features*.
2. Check to Enable the Microsoft SNMP Service.
3. Follow the prompts displayed to you by Windows.

Eaton strongly recommends that you restart your server or virtual machine after adding the Windows SNMP Service to ensure it is properly registered and available for configuration.

After installing the Windows SNMP service, you must next add the SNMP devices to it that will receive traps from Message Manager using the Microsoft Management Console application. All SNMP managers must be added through the Windows SNMP service.

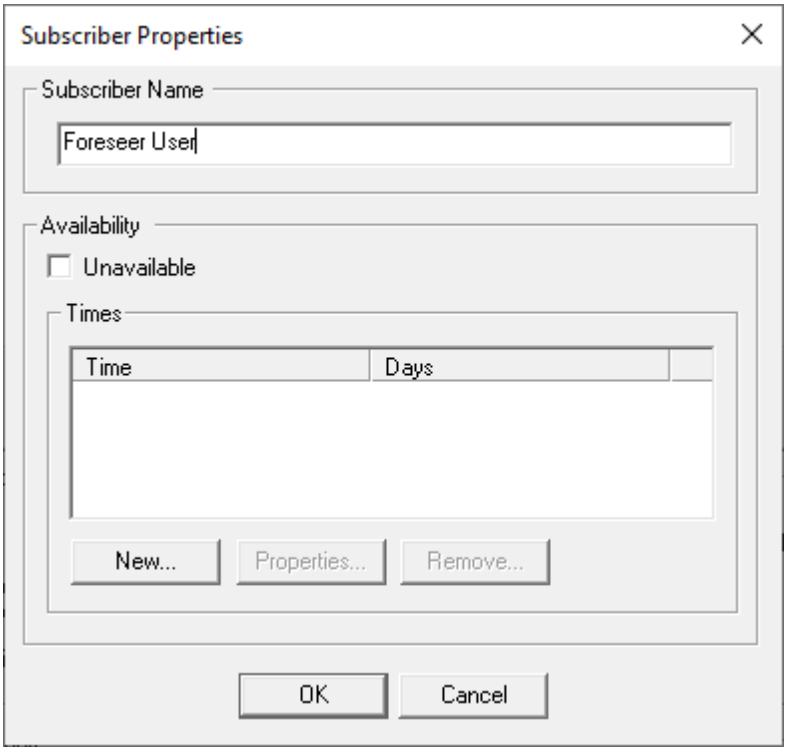
After configuring the Windows SNMP service, you can then enable SNMP Service in Message Manager through the Add button. Once added, be sure to click ***Save Changes***.

Configuring Subscribers

Subscribers are explicitly defined individuals or entities that will receive notifications from Message Manager. Subscribers are linked to a Service in Message Manager. Creating and adding Subscribers is performed through the Subscribers tab in Message Manager Configuration.

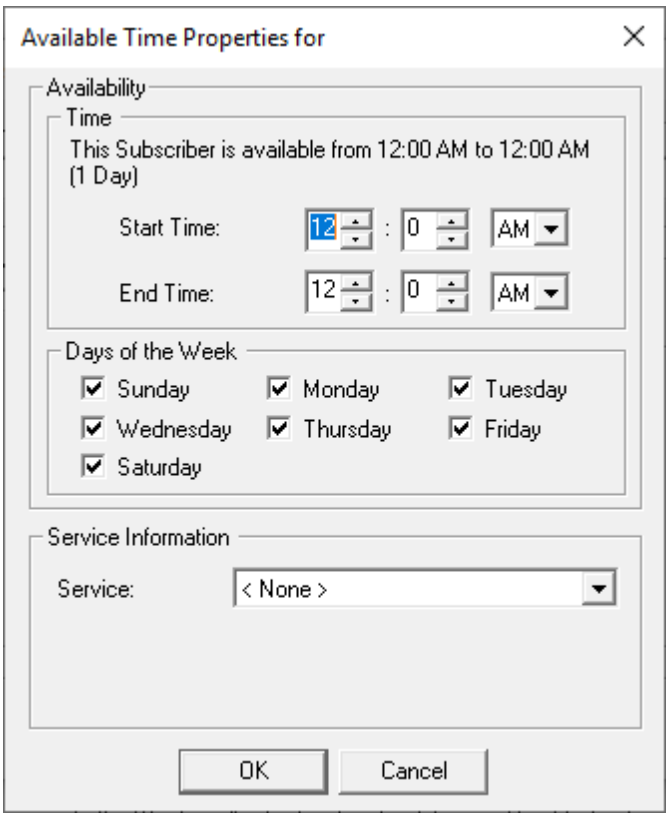
To add a Subscriber into Message Manager, perform the following steps.

1. From the Subscribers tab, click ***New***. This will display a Subscriber Properties window.
2. Specify a Name for the subscriber (you'll use this name when adding subscribers to a subscription list).



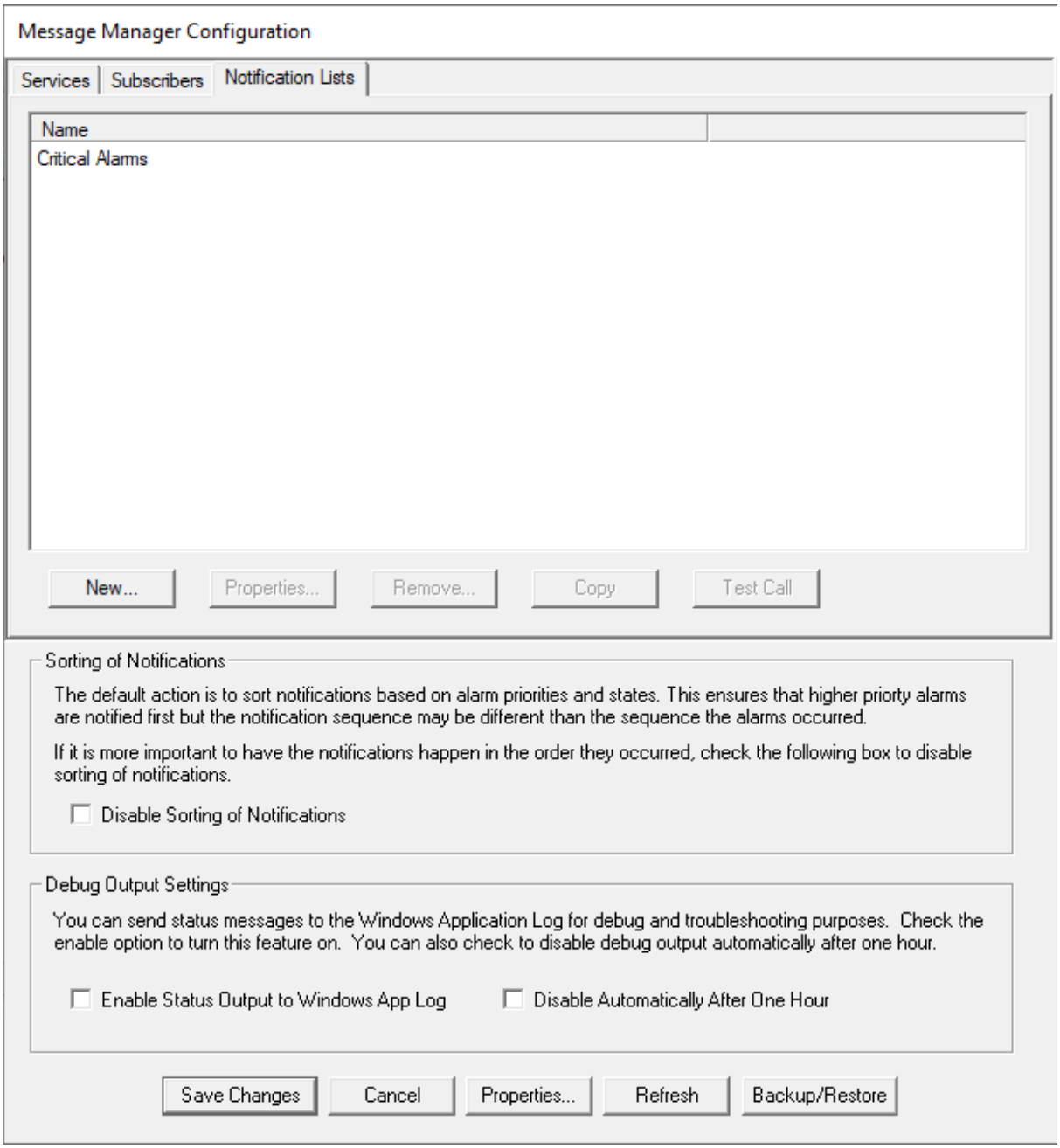
3. Configure the Subscriber's Availability.

1. You can mark a Subscriber as *Unavailable* for exceptional situations without adjusting the current daily schedule. Any notification occurring when *Unavailable* is checked will not be sent to the Subscriber.
2. To create a schedule, click ***New*** under the Times list box. Available Time Properties window will open. Provide the subscribers availability information. Subscribers will only be notified during the specific days and times specified.
3. Select a configured service from the Service drop-down menu.
4. If you have selected a configured SMTP service, type in the subscriber's email address.
5. Click ***OK***.



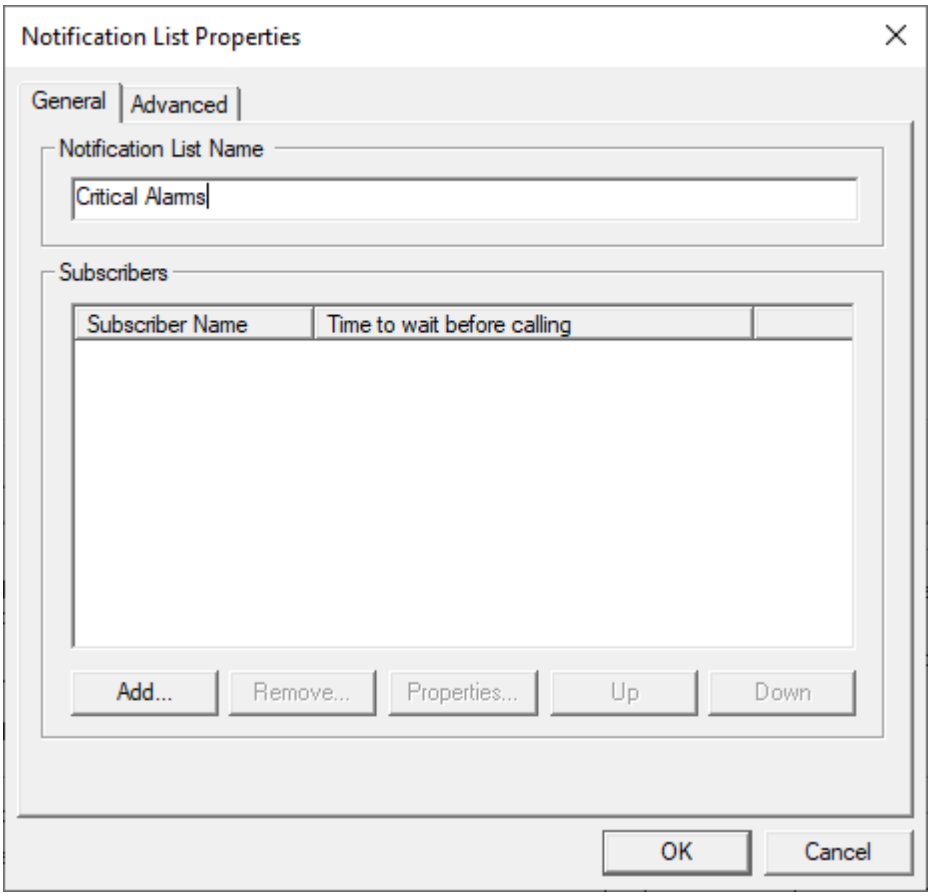
Configuring Notification Lists

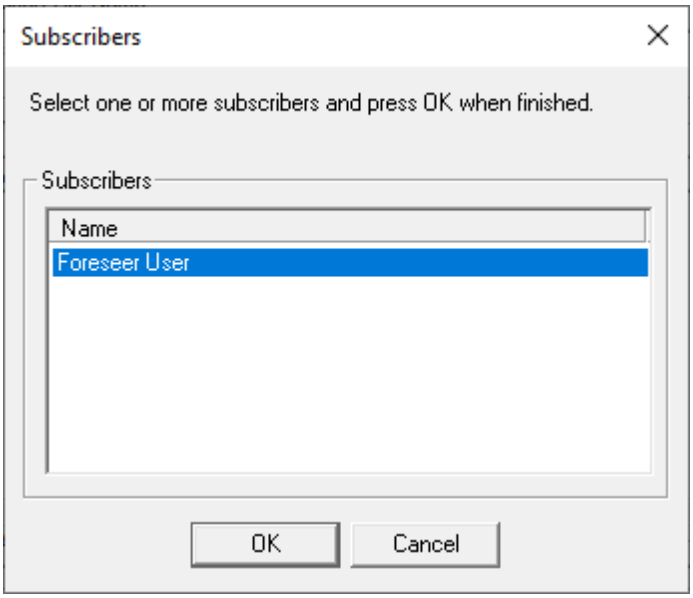
Notification Lists are used to group multiple subscribers into one or more distributions for easier transmission of notifications. Notification Lists may contain one or several subscribers. Subscribers can be members of multiple Notification Lists if desired. All Notification Lists are configured under the Notification Lists tab of Message Manager Configuration.



To configure a Notification List, perform the following steps:

1. From the Notification Lists tab, then select *New*.
2. Provide a name for the *Notification List* and select *Add*.
3. Select all Subscribers who are to be included in the List and, with the desired personnel highlighted, click ***OK*** to return to the Notification List Properties dialog box.
    1. A person's place in the contact queue can be changed by highlighting their Subscriber Name and then moving them *Up* or *Down* one position at a time.
    2. You can delete individual entries simply by highlighting them and clicking ***Remove***.



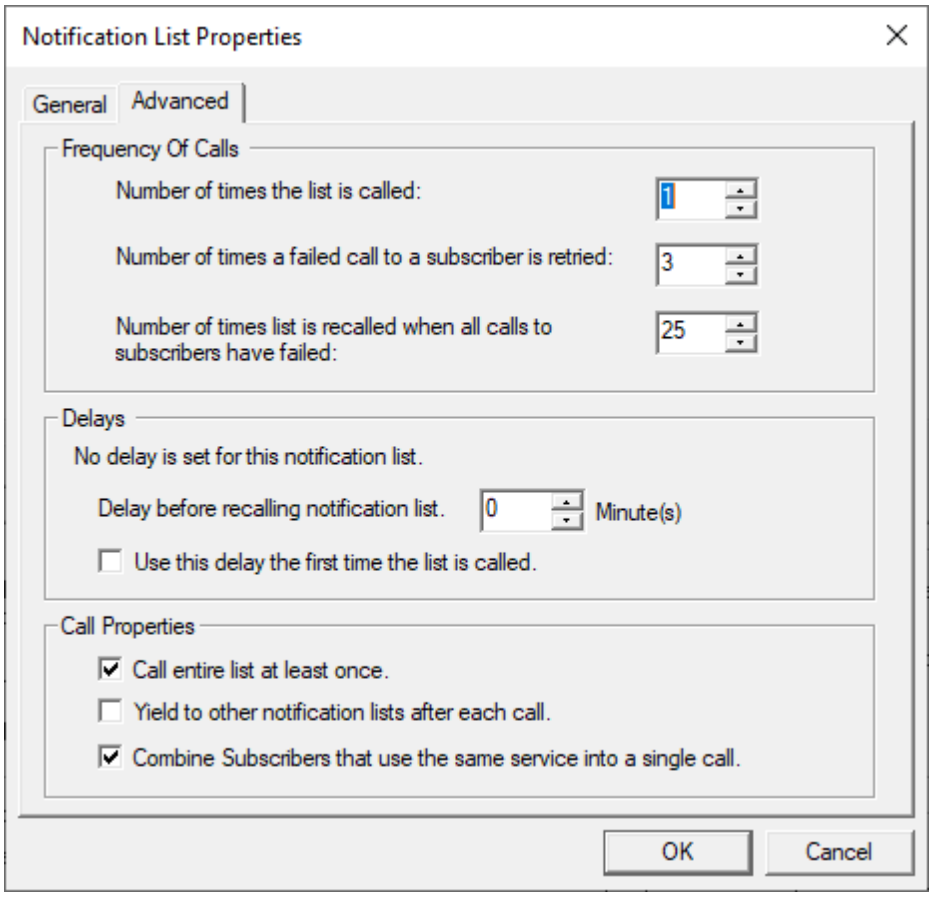


Notification List Properties - Advanced Settings

The Notification List Properties Advanced Settings provide additional parameters for controlling the Frequency of Calls, Delays, and Call Properties. Many of the properties contained within this section were used in legacy revisions of Message Manager that supported modems, pagers, and legacy forms of notifications.

While many of these parameters may not apply realistically to modern Message Manager

services, the values are reviewed for the purpose of clarity.



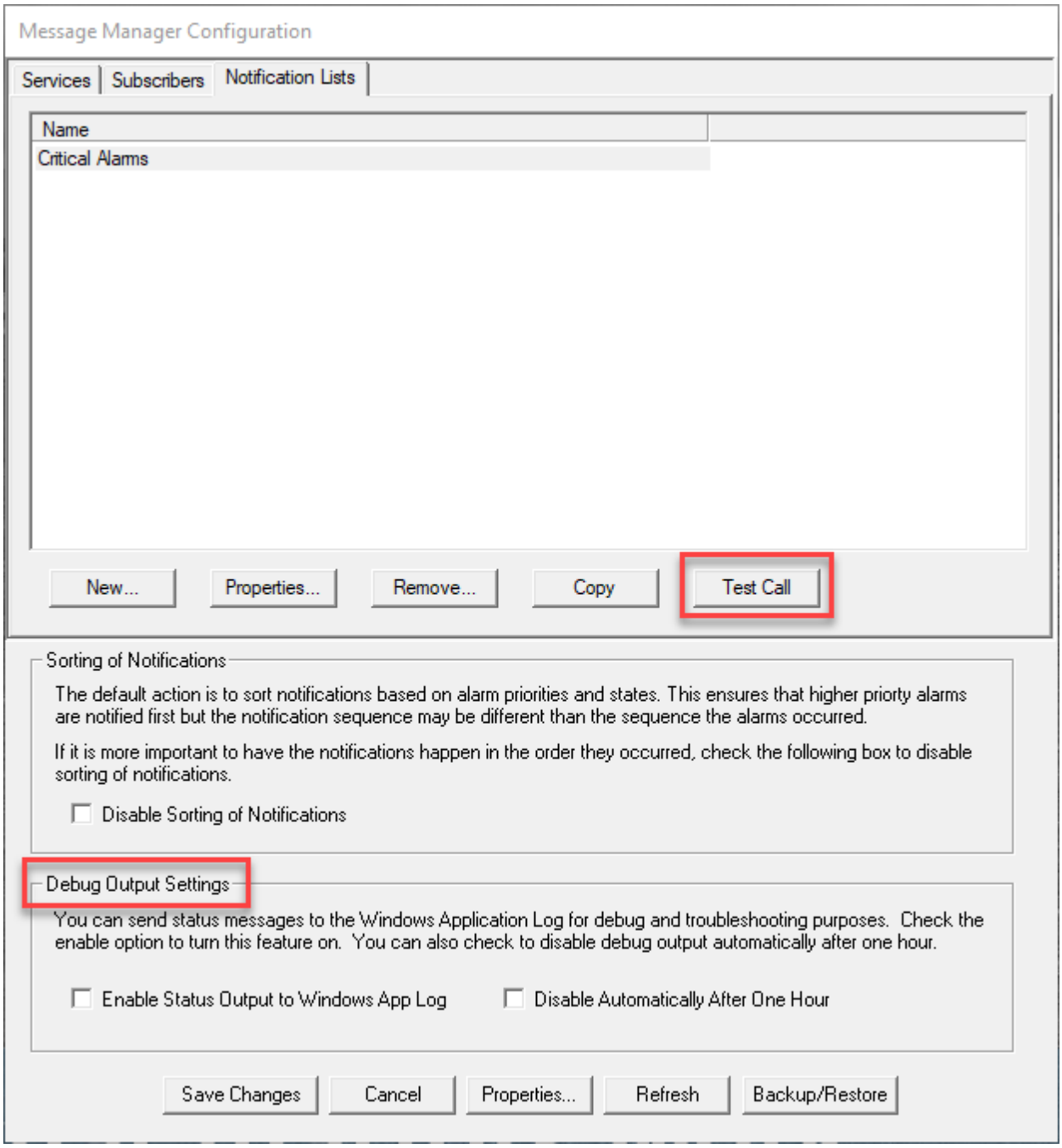
1. Enter the desired *Frequency of Calls* to specify the number of times the Notification List will be called as well as how many times each individual on the List will be notified.
2. Specify *Delays* to determine how long after an alarm is reported before messaging is initiated on the Notification List. Also designate whether this Delay is observed the first time the List is called.
3. Enable the desired *Call Properties* to indicate whether to call the entire Notification List regardless of whether a response is received, allow higher priority Lists to take call precedence, and if listed personnel using the same Service should be notified with the same notification call.

> The *Yield to other notification lists after each call* parameter was used for modem and legacy pagers (numeric and alphanumeric). This parameter may offer no useful capabilities in the context of modern Message Manager services. It is recommended that you not enable this property.

4. Click ***OK*** to save the changes to the Notification List.

Testing Notifications

Before configuring system alarms to use Message Manager, you can test the setup and configuration locally within Message Manager Configuration. The Notifications tab includes a Test Call button. By selecting any available Notification List configured within the system, you can click ***Test Call*** to perform a test notification.



In the bottom pane of the Message Manager Configuration window, a section named Debug Output Settings allow you to control logging of test and other notifications to the Windows Application Log. These controls are helpful for verifying notification settings prior to Message Manager connecting to a Foreseer server instance.

- The ***Enable Status Output to Windows App Log*** checkbox can be used to enable/disable logging of all status messages, including test calls, to the Windows Application Log. You can use the Windows Error Viewer to view entries to this log.
- The ***Disable Automatically After One Hour*** checkbox can be used to automatically disable logging to the Windows Application Log after one-hour. This checkbox helps prevent against nuisance logging. It is strongly recommended that you keep this box checked anytime you wish to enable status output. If you believe you have a situation that warrants

To perform a test call:

1. Click to select the Notification List you wish to test.
2. Click ***Test Call.***
3. Enter an appropriate message into one of the supplied fields. The supplied field will vary based on the Service utilized by the Notification List.

4. Click ***OK*** to initiate the Test Call. If you enabled status output options, you can view information regarding the status of test calls, as well as other alarms and events that have been handled by Message Manager.

Configuring Foreseer Alarm Message Management

The following section reviews Foreseer Alarms, and how-to setup existing devices and their channels for integration into Message Manager. For an in-depth review on how to configure channels for Alarming, please consult the *Foreseer Server Guide (MN#152029EN).*

Foreseer Alarms Overview

A Foreseer system has four types of channels: analog, digital, date/time, and text. Every channel has both a value and a state associated with it. A channel's value depends on the channel type:

- Analog - a floating point number
- Digital - true or false
- Date/time - a calendar date and time
- Text - a text string

A channel may be in one of eight states:

- No Data
- Disabled
- Disarmed
- Delayed
- Critical
- Cautionary
- Acknowledged
- Normal

Alarm State Notifications

Of the five alarm states, four of them can trigger notifications:

- Critical
- Cautionary
- Acknowledged
- Normal

If notifications are enabled for a channel, a message will be sent when it enters into a notifiable alarm state. The type of notification message sent depends entirely on how you configure the channel’s message settings.

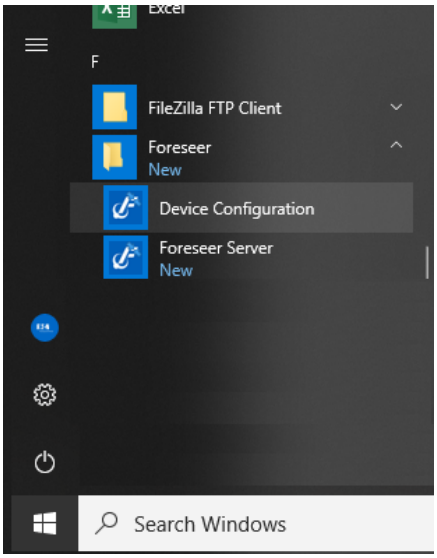
A Normal state means that the channel is reporting data and, if alarms are enabled, that the channel is not in an alarm state. A channel that does not have alarms enabled will

always be in the Normal state as long as it has a value to report.

Accessing Channel Message Settings

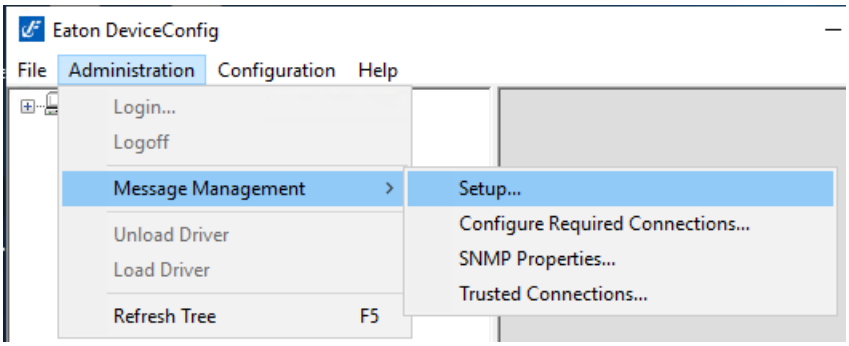
Channel Message Settings is where a Notification List is assigned to a channel. Any channel may have one and only one Notification List associated with it. If this channel enters a notifiable state, the associated notification list will be processed.

Channel Message Settings can be accessed using Foreseer's Device Configuration Utility, found in the Foreseer folder in the Windows Start menu.



> The Eaton Foreseer Server Service must be actively running in order to use the Device Configuration utility. If you still actively commissioning Foreseer, you may also access Channel Message settings from the Foreseer application.

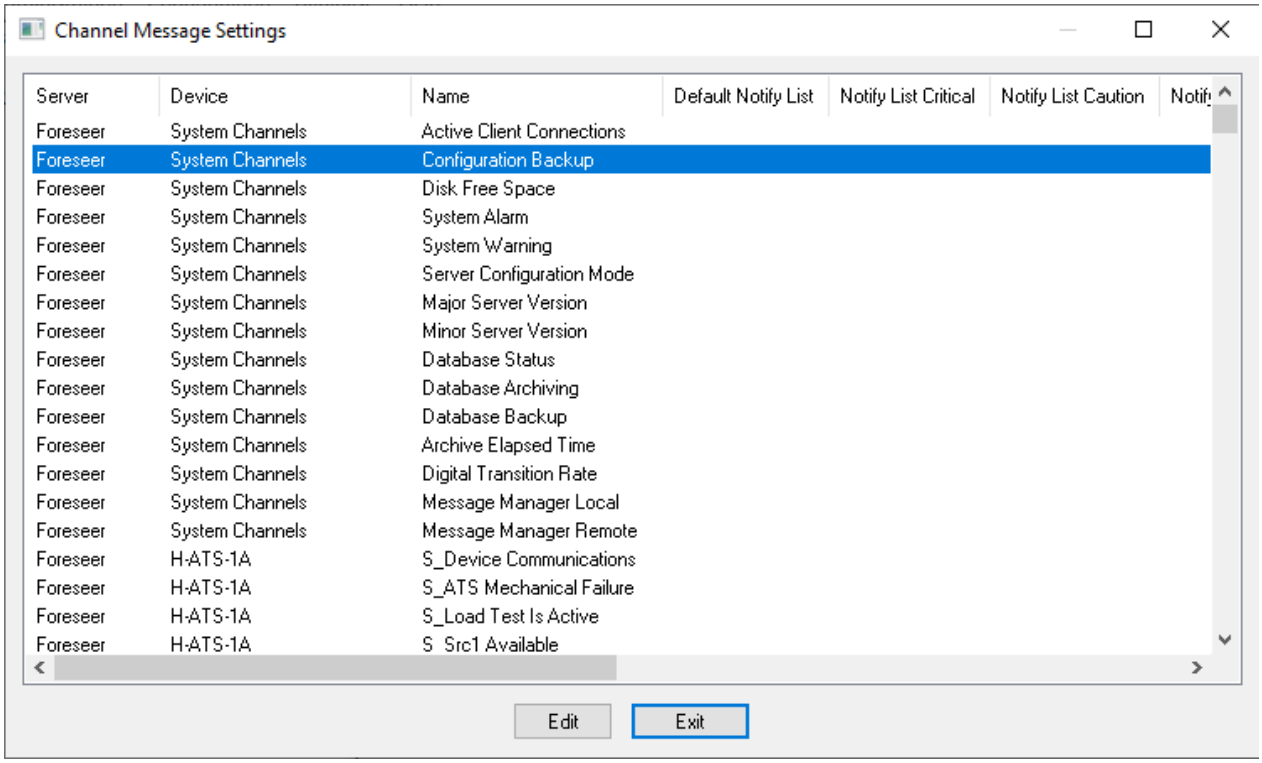
To access Channel Message Settings from Device Configuration, select *Administration>Message Management>Setup...*



Working with Channel Message Settings

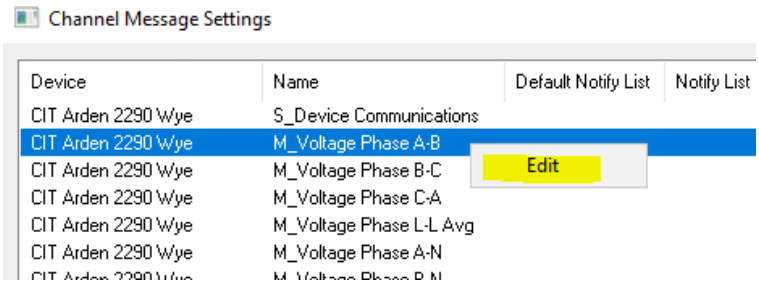
The Channel Message Settings window provides a complete list of all devices and channels contained within the Foreseer EPMS system.

Each column in the dialog is sortable, meaning that you can left-click any heading to sort data in an ascending or descending manner. If your system contains multiple remote servers, an additional column will appear containing the server name location for each device and channel.

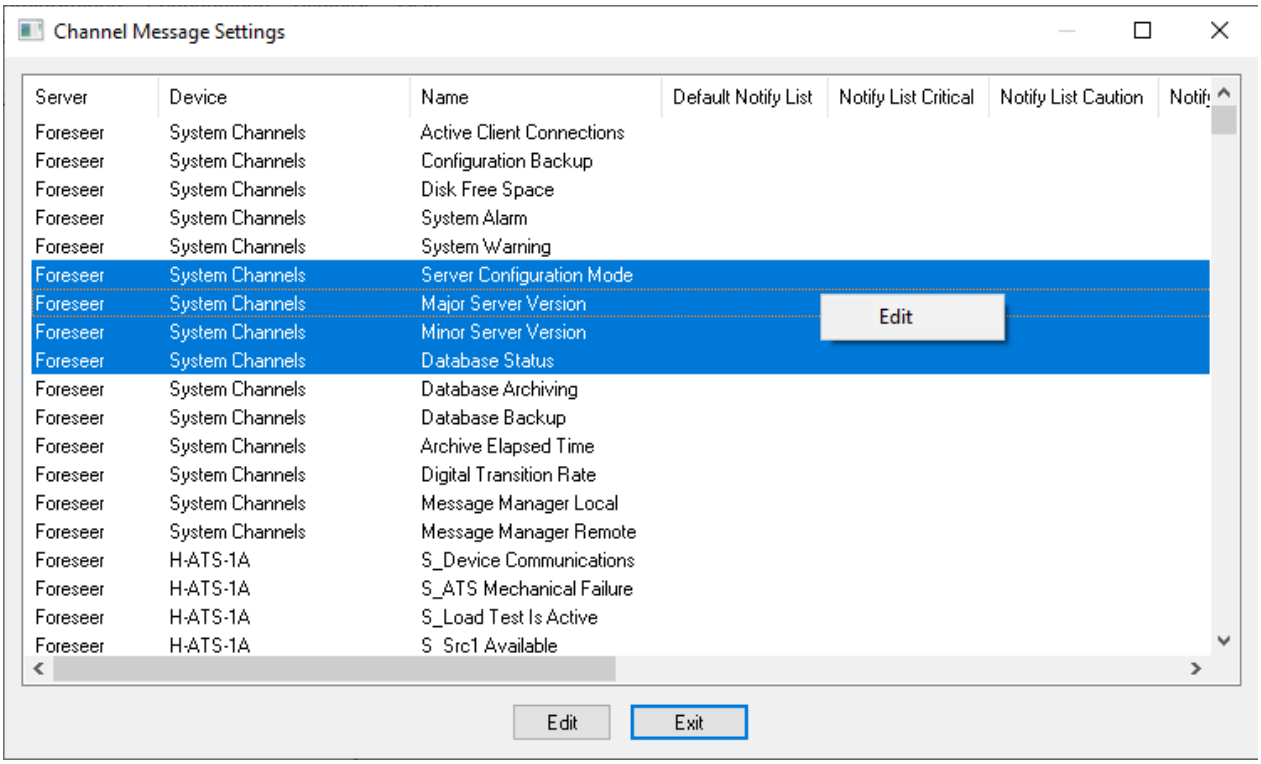


Editing Channel Message Settings

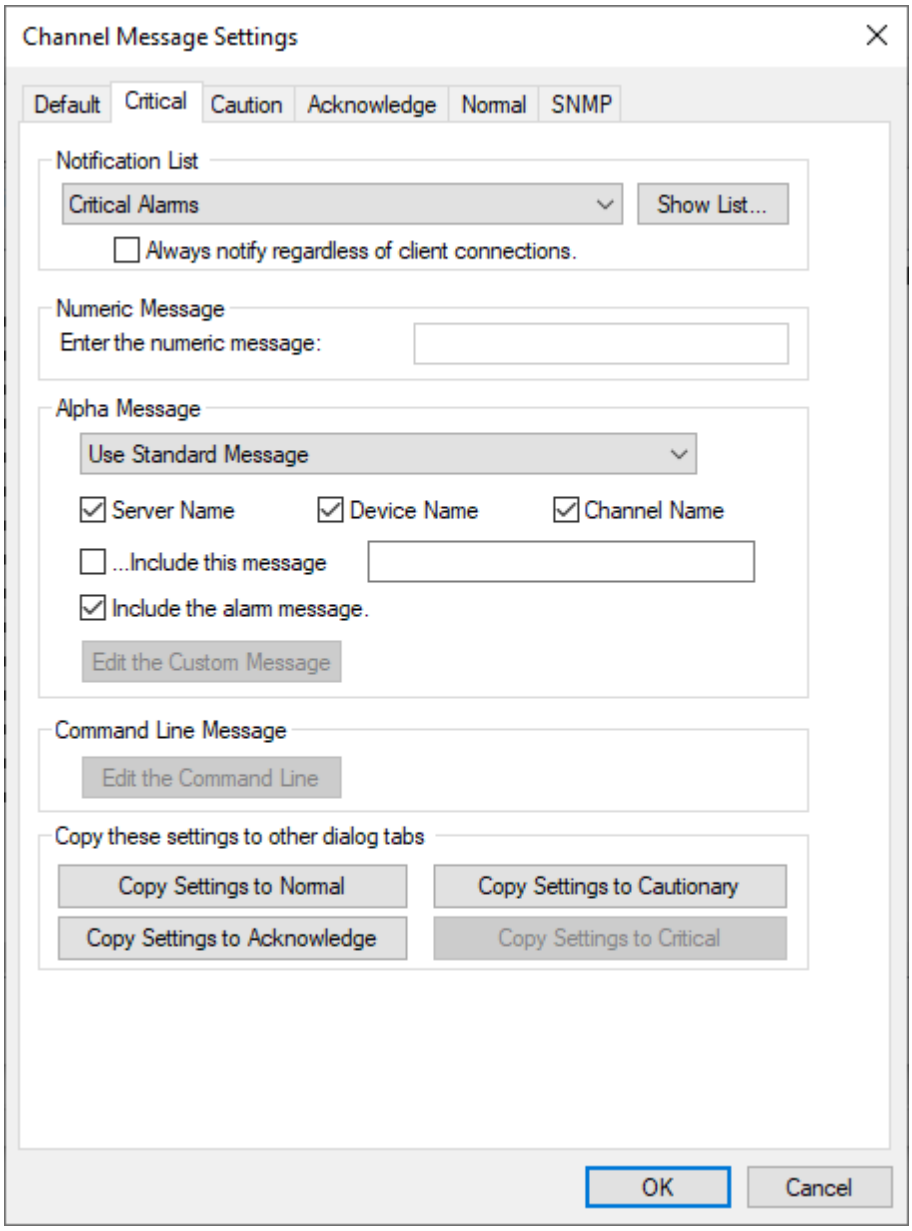
To edit a channel, click to highlight the channel. Then, right-click and select *Edit* from the context menu.



You can also edit multiple channels by multi-selecting by holding *Shift* of *Ctrl* on your keyboard to initially select channels, then right-click and select *Edit* from the context menu.



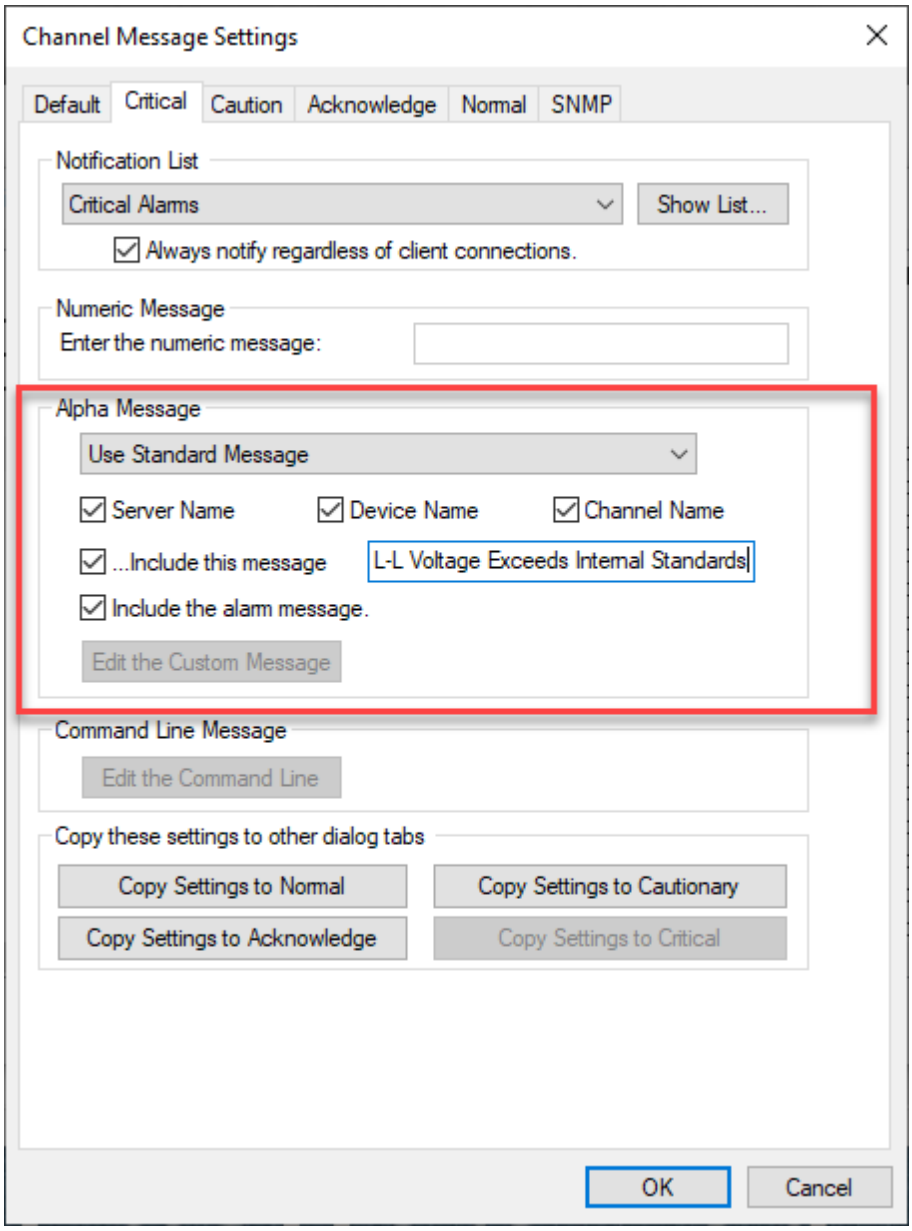
When you edit a channel, you have the option of assigning a notification list to any (or all of) the four notifiable states: *Critical*, *Caution*, *Acknowledged*, and *Normal*. In addition to these alarm states, an *SNMP* tab is provided if you intend to send a Trap to an SNMP device such as a Network Management System that supports Traps.



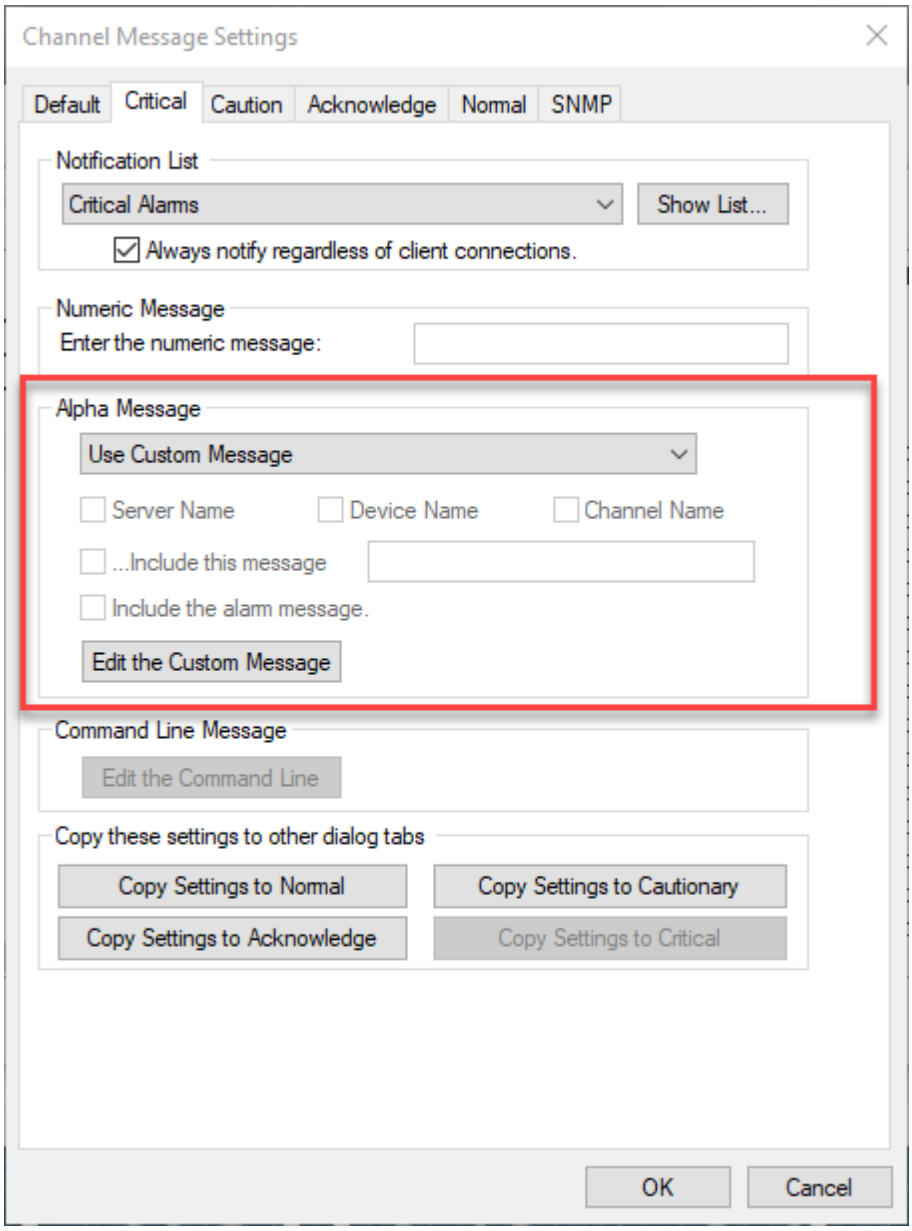
Although a channel may enter any of the states above, you have the option of which ones to use to notify on. For each of the states, you may select any Notification List previously configured in Message Manager Configuration.

If you have added Notification Lists to Message Manager Configuration after launching Device Configuration, those newly added lists may not appear. Simply close the Device Configuration utility and re-launch to obtain any newly added lists.

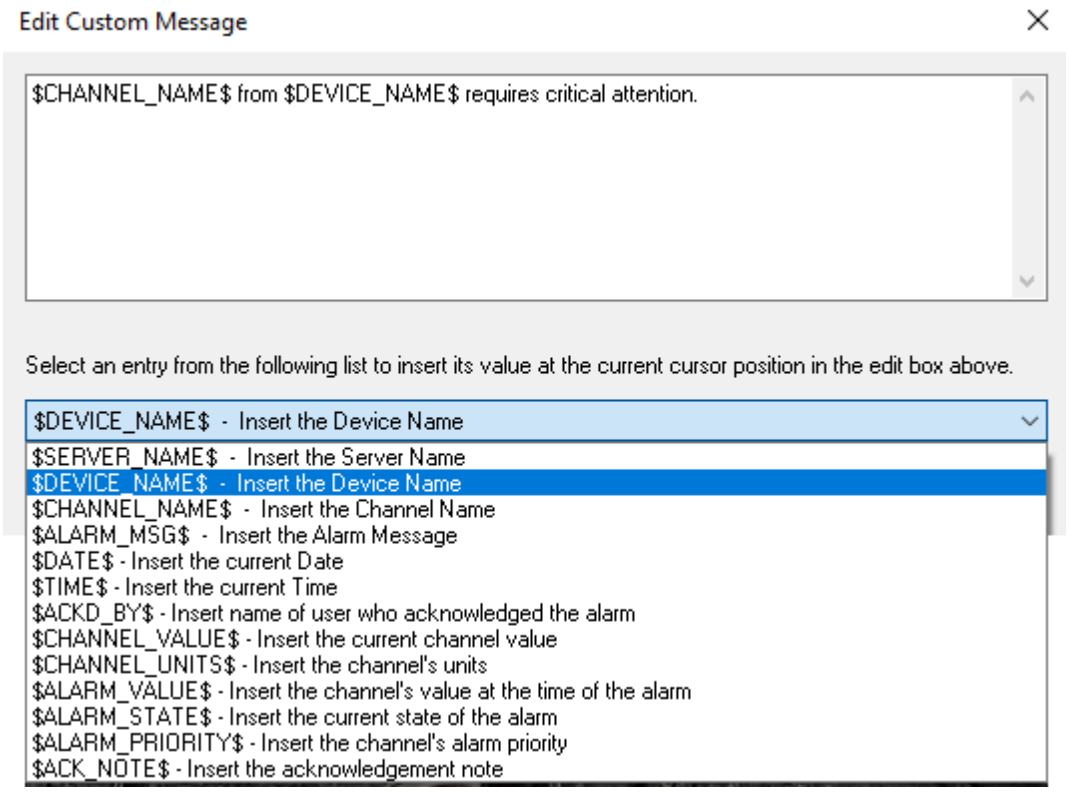
Once a notification list has been selected for a state, you also have the option of configuring the details of the notification message that is sent. If you use the Use Standard Message option, you may include or omit the server name, the device name, the channel name, a configurable message, and even the alarm message.



If you use email to send information as a text message to mobile phone recipients, you may opt to leverage the *Use Custom Message* option to enter your own customized message. Once selected, click the ***Edit Custom Message*** button to open the message editor.



The top editor provides a place to enter custom text. On the bottom of the Edit Custom Message editor is a drop-down that contains several variables that can be placed inside of your custom message.



Default Notification

When a channel that has Default Notification enabled enters a notifiable state, the containing device is checked. If it has been setup for Default Notification, then its notification lists will be used. If not, then the containing server is checked. If the server has been setup for Default Notification, then its lists will be used. Last, the All Servers list will be checked and used if enabled. Each channel still has the option of not using notification, of using notification that is unique for that channel or using Default Notification.

If all channels that enter a notifiable state will use the same notification list, assign it at the All Servers level. If a different list will be used for different servers (i.e., the server in Denver will notify the people in Denver), assign it at the server level. If all UPSs will notify the same group of people, assign the lists at the device level to all of the UPS devices. If you want a combination such as:

- the Denver server will notify people in Denver
- the Atlanta server will notify people in Atlanta
- the NOC people will be notified in either case

...then create separate lists for Denver and Atlanta that both include the NOC people and assign them at the server level - the Denver list to the Denver server and the Atlanta list to the Atlanta server.

A Default Notification object is considered to be set up if any state has a notification list assigned or an SNMP Trap enabled. If Default Notification is enabled, the Default Notification list being used will be in the column named Default Notify List. A Default

Notification Object (DNO) is identified by either <*All Servers>, <ServerName>, or <ServerName><DeviceName>.

When a new device is installed, select the channels that will notify (must have alarms enabled), and either assign the Notification Lists (and their messages) to be used for each channel or select Use Default Notify List from the Default tab. When Default Notification is enabled, the DNO that will be used shows in the Default Notify List column.

The Default Notify List column updates automatically as the lists are changed. If the DNO that will be used is the new device, and it hasn't been set up yet, then either <*All Servers> or <ServerName> will show in the column. If the device DNO is then set up, when you exit the DNO setup, the column for each of its channels will update automatically to now show <ServerName><New DeviceName>. The Notify lists and SNMP Traps that were set up in the DNO will show in the channel's columns, as if it had been set up. Any change in the DNO will always update the channels using it, as soon as OK has been selected for the DNO edit. When Use Default Lists is checked, the remaining state level tabs and the SNMP tab will disappear.

If a channel that had been using Default Notify is edited and Use Default Lists has been unchecked, the state level tabs will be made visible and will be set to the lists and/or traps that the DNO had been using.

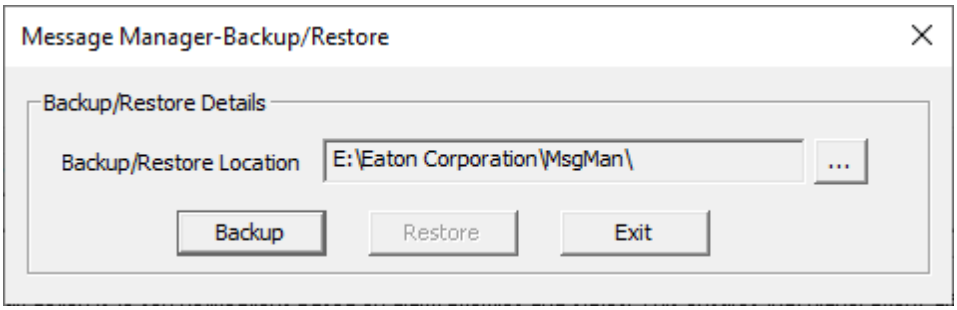
To navigate the list of all channels, any column header can be checked to sort the list by that column.

Message Manager Backup

Backing Up and Restoring Message Manager Settings

After you've successfully configured the Message Manager, it’s a good practice to back up the settings.
To save the settings:

1. From the Message Manager Configuration, click ***Backup/Restore***.
2. Either accept the default location for the backup file or click the browse button to select a folder. The default location will be the path where you installed Message Manager.



3. Click ***Backup***. A message box will confirm that the settings file was successfully written.

An additional way to copy the current Message Manager setup is to copy the *Data* folder located within your Message Manager installation – typically *C:\Eaton Corporation\MsgMan*.

This folder contains a copy of the *MessageManager.mxm* file. The contents of this file include configuration data such as configured services, subscribers, and notification lists.

If you are setting up a redundant Message Manager, you can copy the .mxm file to the remote system to quickly setup and configure Message Manager.

> The contents of the *MessageManager.mxm* file should not be modified independently of Message Manager.

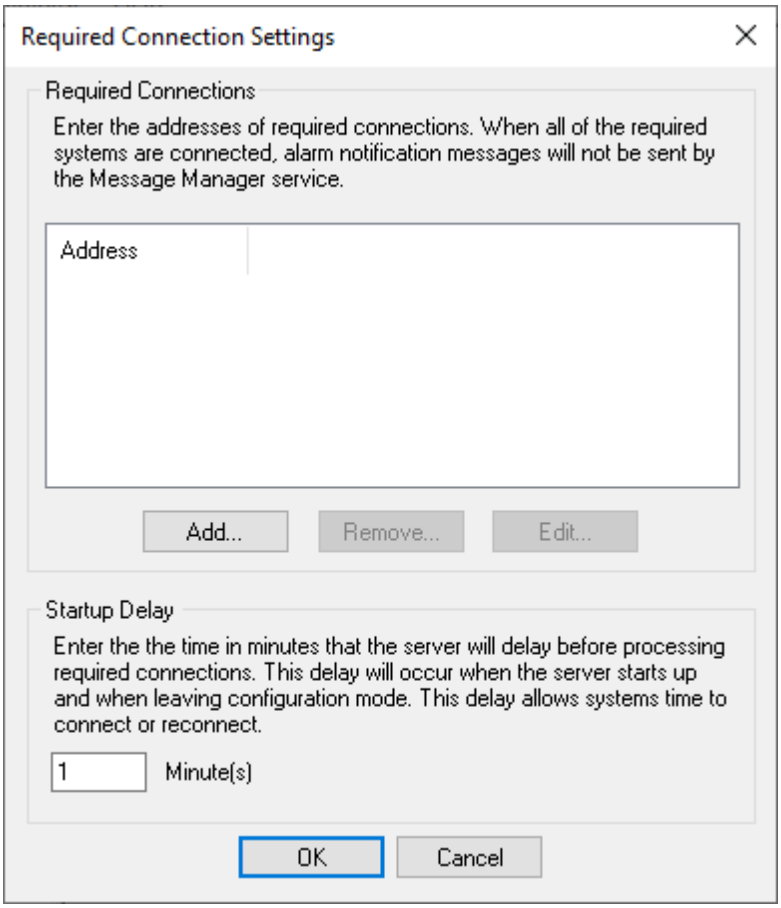
Configure Required Connections

Required Connection Settings is an optional configuration used to associate remote servers (such as Secondary Redundant systems) with a Primary when a Redundant architecture is implemented. This feature is designed to eliminate the possibility of two separate Message Manager installations from sending duplicate alarms in parallel.

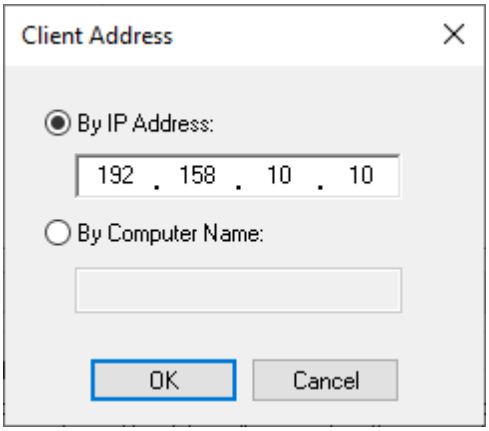
If any one of the listed servers becomes disconnected from the main server, the Message Management option begins its messaging routine to alert personnel of alarms.

To configure required connections:

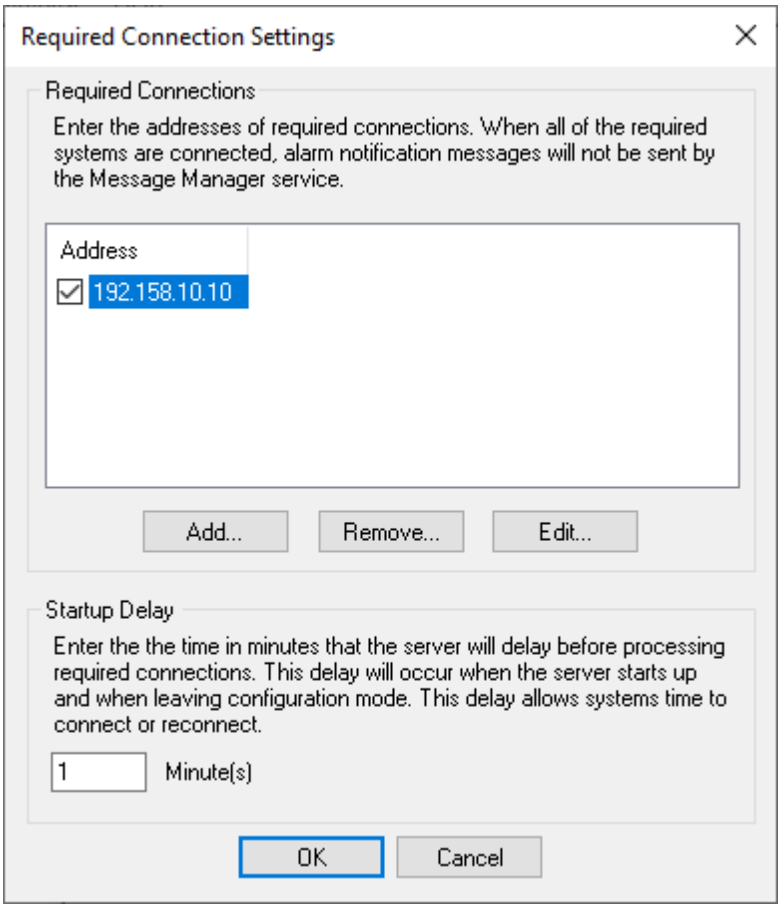
1. From Device Configuration, select *Administration>Message Management> Configure Required Connections*.



2. Click on the ***Add...*** button to access the Enter Client IP Address dialog box.
3. Furnish the IP Address or Computer Name. By IP Address is used for network connections to a fixed Server. The default of 127.0.0.1 is reserved for Foreseer Servers installed on the same machine. Realistically, you would enter the IP address of a remote Foreseer server.



4.
5. Check the box preceding the Address to enable Server access by that connection.



6. Specify the Startup Delay in which the Server will ignore any Remote Servers or Clients that become disconnected before initiating messaging. This Delay is in effect whenever the Server is initialized or when modifications are made.
7. Repeat Items 1 through 5 to add additional remote servers to the list.
8. Click ***OK*** to accept the displayed Required Connection Settings and return to normal operation.

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