SWOPG-18.0

M-Switch Operator's Guide

Isode

Table of Contents

Chapter 1	Overview 1
	This chapter covers the features of the Isode M-Switch required by Operators of M-Switch. It gives detailed descriptions of the monitoring and control features and components, especially the Graphical Management tools. It also provides links to the complementary volumes, <u>M-Switch Administration Guide</u> and the <u>M-Switch Advanced Administration Guide</u> .
Chapter 2	Message Switch Console 2
	Message Switch Console (MConsole) is a graphical management tool that can be used on UNIX or Windows to monitor, control and configure Isode messaging services, including M-Switch. This chapter introduces MConsole and explains how to start it up.
Chapter 3	Message Switch Console Operator Views 4
	This chapter lists the MConsole Operator Views and provides a brief summary.
Chapter 4	Starting and Stopping
	Starting and stopping the Messaging Services on both UNIX and Windows systems are described in this chapter.
Chapter 5	Switch Operations
	This chapter describes how the Switch Operations View is used to manage MTAs, Channels, Messages and Recipients.
Chapter 6	Events 14
	This chapter describes M-Switch Events and the how the Event Viewer View is used.
Chapter 7	Alerts 18
	This chapter describes M-Switch Alerts and how the Alert Viewer View is used.
Chapter 8	Message Tracking 22
	This chapter describes the AuditDB views used for message tracing and searching.
Chapter 9	Summary View
	This chapter describes how the Summary View can be used to determine problems with an MTA.
Chapter 10	Channel Monitor View 30
	This chapter describes how Channel Monitor View can be used to check on the status of various channels.
Chapter 11	ACP142 View 33
	This chapter describes how ACP142 features of M-Switch are monitored and operated. This is performed using the M-Console ACP142 View.
Chapter 12	ACP127
	This chapter describes how ACP127 features of M-Switch are monitored and operated. This is performed using the MConsole ACP127 View.
Chapter 13	Vetting View 55
	The Vetting View allows Operators to check that selected messages are suitable for queueing and sending

The Vetting View allows Operators to check that selected messages are suitable for queueing and sending and then manually release them for processing.

Chapter 14	Diversions
	This chapter describes how the M-Switch Diversions View is used.
Chapter 15	Correction View 57
	This chapter describes the Corrections View which allows operators to correct messages which would otherwise be non-delivered.
Chapter 16	Message Switch Console Views
	This chapter lists the MConsole Operator Views, providing a summary and links to further information.

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1

3

Software version

This guide is published in support of Isode M-Switch R18.0. It may also be pertinent to later releases. Please consult the release notes for further details.

2 Readership

This guide is intended for operators who plan to monitor and operate the Isode M-Switch message switch. For configuration features generally used by Administrators to set up M-Switch, and for more detailed information on M-Switch, use the complementary volumes, M-Switch Administration Guide and the M-Switch Advanced Administration Guide.

How to use this guide

This guide can be read through as a whole but can also be accessed from within MConsole using context sensitive links.

Chapter 1 Overview

This chapter covers the features of the Isode M-Switch required by Operators of M-Switch. It gives detailed descriptions of the monitoring and control features and components, especially the Graphical Management tools. It also provides links to the complementary volumes, <u>M-Switch Administration Guide</u> and the <u>M-Switch Advanced Administration Guide</u>.

1.1 What is the Isode M-Switch?

M-Switch is a high-performance, versatile Message Transfer Agent (MTA), which can be installed on either Windows or UNIX platforms. It is the main component in a messaging system and supports:

- · Internet messaging
- X.400 messaging
- ACP127 messaging
- A mixture of the three variants, converting messages from one form to the other.

The MTA consists of:

- The Queue Manager (qmgr)
- Channels which deliver messages into mailboxes or relay to other MTAs or gateway to other Message Transfer Systems
- Protocol listeners for messages entering the MTA (iaed, smtpsrvr or the isode.pp.p3 daemon)
- · Channels which perform conversions on messages

Other components of a complete Isode messaging system include:

- An M-Vault DSA, used to hold configuration
- The Message Audit Database which records information about messaging events and provides applications with the ability to access this information
- Management tools (GUIs and command line)

Chapter 2 Message Switch Console

Message Switch Console (MConsole) is a graphical management tool that can be used on UNIX or Windows to monitor, control and configure Isode messaging services, including M-Switch. This chapter introduces MConsole and explains how to start it up.

2.1 Starting MConsole

2.1.1 Introduction

As MConsole uses a client/server architecture you can install MConsole on any supported platform to connect to and manage the Isode M-Switches, either locally or remotely.

On Unix systems to start MConsole, ensure (*BINDIR*) is included in your path, and type: mconsole

On Windows right click on Start \rightarrow Isode \rightarrow MConsole and choose Run As Administrator.

2.1.1.1 Starting MConsole First Time

You are recommended to encrypt your Bind Profile, so when MConsole starts up you are prompted for your password. This is set up by the Messaging Administrator. Once entered you now can now login to the M-Switch server with suitable privileges.

2.1.1.2 Bind Profiles

Figure 2.1. MConsole Entering Bind Profile Passphrase

	Bind Profile Passphrase Required				
The file C:\Users\Administrator\AppData\Roaming\Isode\isode-bindprofile-r15.xml is protected by your Profile passphrase.					
Either enter	your passphrase, or press CANCEL to exit MConsole.				
Passphrase:					
	OK Cancel				

2.1.1.3 Welcome Screen

The initial Welcome screen now opens. This lists a number of Views which you can now open, see Chapter 3, *Message Switch Console Operator Views* for more details.

Figure 2.2. MConsole Welcome

	MConsole (Welcome to Message Console)	_ 🗆 X
File Window View Help		
😨 Welcome to Message Console 🛛		
Welcome to Message Console		
If you see this screen, then you may be running MConsole for the first time o	n this computer.	
The Messaging Configuration is held in a Directory Server (DSA).		
If you wish to set up a DSA and a complete new Messaging Configuration on	this computer, choose the "Create a new DSA and Messaging Configuration" option.	
If you wish to create a Messaging Configuration using a DSA which is already	running on another computer choose the "Create a new Messaging Configuration" option.	
The other options are for management of existing Messaging Configurations	, and can also be accessed from the View menu	
Create a new DSA and Messaging Configuration	Create a new Messaging Configuration	
Connect to an existing Messaging Configuration	Open your default Messaging Configuration (if any)	
Monitor existing Message Switches	Monitor existing X.400 Message Stores	
Run a simple user agent	Monitor event logs	
Backup a Messaging Configuration	Alerts	
		😟 Help

Chapter 3 Message Switch Console Operator Views

This chapter lists the MConsole Operator Views and provides a brief summary.

3.1 Introduction

The MConsole framework for displaying information is to provide views in a tabbed series of windows similar to that used in web browsers.

Views are created using the pull down menus, which create a new tab in the existing MConsole window. Some Views will only allow one Tab to be created and will simply open the the existing View if the Operator attemptss to open a second tab. The Alert View is one example of such a Tab.

Tabs can be moved into a new MConsole window by right clicking on the Tab, or by dragging the tab to the Desktop.

Detailed descriptions of all the MConsole Views used by Operators and Administrators of M-Switch are described in Chapter 16, *Message Switch Console Views*.

3.2 Live Operations

These are Views used by operators in order to manage Isode messaging systems in real time. These are documented in this manual, but further information (in particular how to configure these views) is in the

- Switch Operations. See Chapter 5, *Switch Operations* for a description of how Operators can use this View.
- Event Viewer. See Chapter 6, *Events* for a description of how Operators can use this View.
- Alerts. See Chapter 7, *Alerts* for a description of how Operators can use this View.
- User Agent. This View is used to forward messages from the messaging system into an X.400 Message Store. See Section 8.2, "Forwarding Messages from MConsole (User Agent)" for a description of how Operators can use this View.
- Vetting. See Chapter 13, *Vetting View* for a description of how Operators can use this View.
- ACP127. See Chapter 12, ACP127 for a description of how Operators can use this. View.
- ACP142 Message Transfer. See Chapter 11, ACP142 View for a description of how Operators can use this View.
- Message Store View. See the description of how Operators can use this View.

Welcome View. Most Views can be started by clicking on the icons. This View is described in Section 2.1.1.3, "Welcome Screen" [2].

Chapter 4 Starting and Stopping

Starting and stopping the Messaging Services on both UNIX and Windows systems are described in this chapter.

4.1 Introduction

The Isode M-Switch Server comprises a number of "Services" depending on the Features required. These Services are usually started and stopped by an Administrator but some Operators may also be granted permission to do this.

4.1.1 Starting and Stopping Services on Windows

Starting and Stopping Services on Windows is done using the "Isode Service Configuration" GUI Tool, this must be run as an Administrator and started from the Start Menu \rightarrow Programs \rightarrow Isode M.m \rightarrow Isode Service Configuration, where "M" is the Major Release Number and "m" is the Minor Release Number e.g. Isode 16.7.

The Administrator will have configured all the services to start automatically when the system starts up.

So a normal running system would present all the configured services and the dependencies. The following diagram shows the appearance of M-Switch Services when running as an Internet MTA:

	Service Co	onfiguration		
ice Configuration Operations View Help				
le Services				
Add 👔 Refresh All 👔 Refresh 🕨 Start 🕨 Start				
	ree 😺 stop 🔀 Kemove			
Isode DSA cn=dsa,o=messaging / John Smith	General Recovery Advanced			
Isode M-Switch Queue Manager Isode M-Switch SMTP Server	· · · ·			
Isode M-Switch CFTP Server				
lsode Event server	Executable Path C:\Program Files\Isod	e\bin\isode.pp.qmgr.exe		
Isode M-Box IMAP server	Registry Arguments			
Isode M-Box LMTP server Isode M-Box POP3 server	Service Executable Arguments			
Isode M-Box Management server	Account Type			
Isode AuditDB Embedded HSQLDB Back-end Servi	Local Account	Other Account		
Isode AuditDB Log Parsing Service				
	Required Services			
	The service depends on the following services:			
	Service Name		Service ID	Add
	 Isode DSA cn=dsa,o=messaging / John Smith 		isode.dsa.0	
				Remove
	<	ш		>
				Apply Can
III >				
t				
			Programs 🎽 🛋	և Օրդ նաև 10:5
🔚 🖉 🗒 🚺			Programs 🔺 🛄	27/03/

Figure 4.1. MTA Services and their Dependencies

Services will usually have been set up so other services depend on it. These form a "tree" of dependencies. So a normal running system would present all the configured services and the dependencies. The above diagram Figure 4.1, "MTA Services and their

Dependencies" shows the appearance of M-Switch Services including these dependences, e.g. the isode.pp.smtp depends on the isode.pp.qmgr

Running Services are indicated by a "Green" circle, Stopped Services by an "Orange" circle and disabled services by a "Blue" circle. You can "Start All" and "Stop All" the services from the Operations menu.

You can start individual services by clicking on the **Start** button which will start the selected service. If that service has dependencies you will be asked if you wish to start these services. In addition you can click on the **Start Tree** button in order to start all the dependent services. If you select to stop a service, you will be asked if you wish to stop any dependent services, as shown below.

Figure 4.2. Stopping Services

0,	Service Configuration	_ 🗆 X
Service Configuration Operations View Help		
Isode Services		
Add Refresh All Refresh Start Start Tree Isode AuditDB Embedded HSQLDB Back-end Service	Stop × Remove	
 Isode AuditOB Embedded HSQLDB Back-end Service Isode AuditOB Log Parsing Service Isode DSA cn=dsa,o=messaging / John Smith 	General Recovery Advanced Service ID isode.op.amar	
Sode Did chi usa, o-messaging / John Smith Sode M-Switch Queue Manager Sode M-Switch SMTP Server	Service ID isode.pp.qmgr Executable Path C:\Program Files\Isode\bin\isode.pp.qmgr.exe	
Isode Web Harrier Server	Registry Arguments	
 Isode M-Box IMAP server Isode M-Box LMTP server 	Dependent Services	
	There is 1 service that depend on "Isode M Switch Queue Manager". Do you want to stop them (and their dependents if any) as well ? Yes No	=
		Add
		emove
	A	pply Cancel
Abort		

4.1.1 Use of systemctId

Unix-like systems nowadays use systemctld to start and stop long lived services. This replaces SVR4 startup and shutdown procedures in older Unix-like systems, such as Red Hat 6/Centos 6. This section describes starting and stopping the services using systemctl commands.

An MTA comprises a number of processes. Starting an MTA therefore involves starting the various processes associated with that MTA.

R uses the SVR4 legacy features of systemctld in which most of the complexity is hidden behind standard SVR4 startup scripts, which for M-Switch is in files such as /*etc/init.d/pp*. On RedHat Linux, this is installed as a link to the actual script in (*SBINDIR*)/*pp*. On other unix platforms this may vary slightly.

4.1.2 Overview

This section summarizes what you must start, and what you may need to start depending on your configuration. Once you have a general understanding of this section, turn to ???, and follow the startup steps for your particular configuration:

- If the Directory is to be used for the messaging configuration and/or routing, ensure the Directory Server is running before starting your messaging system.
- Start the MTA processes. These can be started interactively from the command line, and left to run in the background, but normally they are started automatically as part of the system startup. Suitable scripts for doing this are copied into the appropriate places as part of the Isode MTA installation (e.g. the script /*etc/init.d/pp* on RedHat Linux).

• Only the qmgr process is essential and should be started before other processes. These run under the MTA userID (normally pp). The userID used is the owner of the file (*EXECDIR*)/sendmail.

4.1.3 Starting Services

In most simple cases, services are started/stopped/restarted by using an invocation such as the following in order to, for example, start an M-Switch service:

systemctl command service

If you are using Directory-based configuration you first start M-Vault using:

systemctl start dsa

The main M-Switch services include a small number of mandatory subservices, and a larger number of optional services depending on the type of M-Switch Configuration. See <u>M-Switch Administrator Guide</u> for a list of these sub services. See <u>M-Switch Administrator Guide</u> for a description of how to configure each of them.

You can then start M-Switch using:

systemctl start pp

If you are using M-Store, you can start it using:

```
systemctl start pumice
```

If you are using the Audit DB services, you may need the following services:

If you are using Postgres, start this as follows:

systemctl start postgresql

Alternatively, if you are using the Isode supplied test/demo DBMS, start this as follows:

systemctl start isode-hsqldb

Other Audit DB processes are started as follows:

systemctl start adb-lp
systemctl start adb-hk

These Audit DB services are less likely to be in use, but are included to complete the list of available services.

systemctl start adb-qn systemctl start adb-qn systemctl start adb-qosn systemctl start adb-qr

4.1.4 Stopping Services

Stopping services is carried out by stopping services in the reverse order to starting them, for example, if you are using Directory-based configuration you first start M-Vault using:

systemctl stop dsa

Chapter 5 Switch Operations

This chapter describes how the **Switch Operations** View is used to manage MTAs, Channels, Messages and Recipients.

5.1 Switch Operations Overview

The **Switch Operations** view displays information about Switches (MTAs) using an Explorer Window.

The Switch Operations view connects to the Queue Manager of each configured Switch.

The connection parameters for each Switch need to be set up by an Administrator. These parameters include a username (SASL ID) and password. These are set up by the M-Switch Administrator.

The **Switch Operations** view appears as follows providing a Explorer Window which shows the different **Switch** instances whose connections have been configured. Each **Switch** actually represents the Queue Manager for that **Switch**. Beneath each Switch/Queue Manager are the configured Channels for that **Switch**. Beneath a Channel there may either be queued **Messages** when the Channel processes messages within the MTA or **Peer MTAs** which represent external destinations to which **Messages** will be transferred by the Channel. Under each **Message** are the recipients for that **Message** which will be processed for the parent **Peer MTA**.

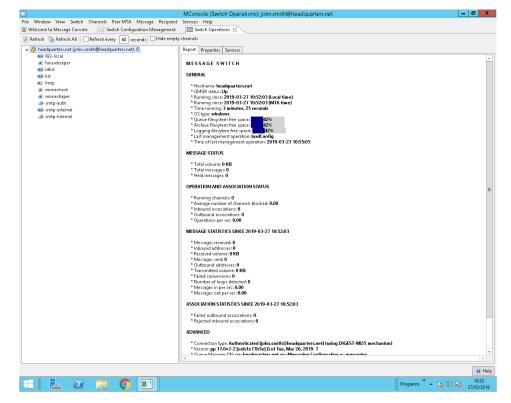


Figure 5.1. Simple Switch Operations View

Once you have connected to a **Switch**, you will be able to see the different messaging entities, as in the above diagram: Figure 5.1, "Simple Switch Operations View".

- the configured channels,
- · messages queued on those channels,
- · recipients of the queued messages,
- active connections to remote MTAs,

By selecting a **Switch**, **Channel** or **Peer MTA** item you can use an option from the popup menu (launched using the right mouse button) to access the configuration of that item in the Directory.

If you have authenticated as a suitably privileged user you can not only view the above entities, but also manage the entities. For a description of SASL IDs and authentication see <u>M-Switch Administration Guide</u>).

5.2 Management and Monitoring

5.2.1 Message Switch

A Message Switch object shown on the right-hand side of the Switch Operations View represents the Switch as a whole. It presents information about the overall peformance and status of the Switch, and allows the following operations to be performed:

- Edit switch configuration. This opens (or switches to) the Switch Configuration Management view, and selects the configuration entry for the Message Switch.
- Increase the maximum operation rate. This allows the MTA to perform more operations per second, increasing the amount of system resources that the MTA uses.
- Decrease the maximum operation rate, reducing the amount of system resources that the MTA uses.
- Enable submission: allow messages to be submitted normally again, after submission has been disabled.
- Disable submission: this prevents messages being submitted into the MTA. Use of this control might be useful if the MTA was being flooded with message submission.
- Enable all channels in a single operation.
- Disable all channels in a single operation.
- · Check routing. This allows the user to determine how the MTA would route an address.
- Reload message queue. This causes the Queue Manager to re-read all messages which are currently held on disk in the message queue.
- Reprocess queue. This causes the Queue Manager to perform a routing calculation for each recipient of every message currently queued. If routing or other configuration changes have been made since messages were queued, this may cause messages to be requeued on different channels or for transfer to different Peer MTAs.
- Reload configuration. This causes the Queue Manager to check its configuration entry in the Directory for configuration changes, and reload it if necessary.
- Shutdown. This causes the Queue Manager to terminate.

5.2.2 Channel

The following operations can be performed on individual channels:

• Alter channel configuration. This opens (or switches to) the Switch Configuration Management view, and selects the configuration entry for the channel.

- Enable the channel.
- Disable the channel. This prevents the channel from processing any messages which are queued on it.
- Enable inbound connections, allowing the channel to accept new inbound connections. This may be a no-op for some channels.
- Disable inbound connections, preventing the channel from accepting new inbound connections. Existing inbound connections are unaffected. This may be a no-op for some channels.
- Enable outbound connections. This may be a no-op for some channels.
- Disable outbound connections, preventing the channel from making new outbound connections. Existing outbound connections are unaffected. This may be a no-op for some channels.
- Disconnect all incoming connections. This may be a no-op for some channels.
- Clear delay. This clears any delay which may have been applied to the channel itself.
- Set 1 minute delay. Applies a one minute delay to the channel.
- Set 10 minute delay. Applies a ten minute delay to the channel.
- Set 1 hour delay. Applies a one hour delay to the channel.
- Downwards force attempt. This clears any delay on the channel, enables the channel, and then performs a "downwards force attempt" on any subordinate Peer MTA or messages.
- Connect to Peer MTA. This allows an arbitrary Peer MTA name to be entered and passed to the channel as the argument of a "connect" instruction. The name entered should be in the appropriate format for the channel protocol: e.g. a mail domain name for an SMTP channel or the Distinguished Name of a Peer MTA's x400p1 channel for a x400p1 channel. This is a no-op for non-protocol channels.
- Limit by priority. This allows you to configure the channel to only process Urgent or Urgent and Normal priority messages, with an optional time range, Lower-priority messages will be ignored, even if there are no messages of the selected higher priority to process. The priority limitation can be cleared by chosing the "All messages" option.
- Timeout all messages. This allows all messages queued on the channel to be timed out. The messages will be queued onto the Housekeeper channel for processing, and non-delivery reports will be generated for any message recipients for which they were requested.
- Delete all messages. This allows all messages queued on the channel to be deleted. No non-delivery reports will be generated.
- Reprocess queue. This causes the Queue Manager to perform a routing calculation for each recipient of every message currently queued on this channel. If routing or other configuration changes have been made since messages were queued, this may cause messages to be requeued on different channels or for transfer to different Peer MTAs.

5.2.3 Peer MTA

The following operations can be performed on individual Peer MTAs:

- Alter Peer-MTA Agreement. This opens (or switches to) the Switch Configuration Management view, and selects the configuration entry for the Peer-MTA agreement for this Peer MTA, if one exists.
- Enable the Peer MTA.
- Disable the Peer MTA. This prevents the channel from processing any messages which are queued on this Peer MTA.
- Enable inbound connections, allowing the channel to accept new inbound connections from this Peer MTA. This may be a no-op for some channels.

- Disable inbound connections, preventing the channel from accepting new inbound connections from this Peer MTA. Existing inbound connections are unaffected. This may be a no-op for some channels.
- Enable outbound connections. This may be a no-op for some channels.
- Disable outbound connections, preventing the channel from making new outbound connections to this Peer MTA. Existing outbound connections are unaffected. This may be a no-op for some channels.
- Clear delay. This clears any delay which may have been applied to the Peer MTA.
- Set 1 minute delay. Applies a one minute delay to the Peer MTA.
- Set 10 minute delay. Applies a ten minute delay to the Peer MTA.
- Set one 1 delay. Applies a one hour delay to the Peer MTA.
- Downwards force attempt. This clears any delay on the Peer MTA, enables it, and then performs a "downwards force attempt" on any subordinate messages.
- Reprocess queue. This causes the Queue Manager to perform a routing calculation for each recipient of every message currently queued on this Peer MTA. If routing or other configuration changes have been made since messages were queued, this may cause messages to be requeued on different channels or for transfer to different Peer MTAs.
- Connect MTA. Causes the channel to open a connection to this Peer MTA.
- Disconnect MTA. Causes the channel to close all open connections to this Peer MTA.
- Delete MTA. This allows an existing Peer MTA agreement to be temporarily deleted, so that no knowledge of the Peer MTA will be maintained once all queued messages have been processed and any open associations to or from the Peer MTA have been closed. If the MTA is "permanent", then the knowledge of it will be reloaded from the Directory the next time that the Queue Manager does a configuration reload.
- Timeout all messages. This allows all messages queued on the Peer MTA to be timed out. The messages will be queued onto the Housekeeper channel for processing, and non-delivery reports will be generated for any message recipients for which they were requested.
- Delete all messages. This allows all messages queued on the Peer MTA to be deleted. No non-delivery reports will be generated.

5.2.4 Message

The following operations can be performed on individual messages:

- Start the message; enable it to be processed.
- Stop the message; prevent it from being processes
- Clear delay. This clears any delay which may have been applied to the message
- Set 1 minute delay. Applies a one minute delay to the message.
- Set 10 minute delay. Applies a ten minute delay to the message.
- Set 1 hour delay. Applies a one hour delay to the message.
- Downwards force attempt. This clears any delay on the message, starts it, and then clears any delay on its recipients.
- Reprocess. This causes the Queue Manager to perform the routing calculation for each recipient of this message. If routing or other configuration changes have been made since messages were queued, this may cause one or more of the recipients of this message to be requeued on different channels or for transfer to different Peer MTAs.
- · Delete. Deletes this message without any non-delivery report being generated.
- Timeout. Passes the message to the Housekeeper channel for processing. Non-delivery reports will be generated for any message recipients for which they were requested.
- · Reload. Causes the message to be reloaded from the queue directory.

- Abort. If the message is currently being transferred to a Peer MTA, this will abort the transfer. This is a no-op for some channels.
- Pause.If the message is currently being transferred to a Peer MTA, this will pause the transfer. This is a no-op for some channels.
- Resume. If the message is currently being transferred to a Peer MTA and is paused, this will resume the transfer. This is a no-op for some channels.
- Forward as attachment. This uses the built-in User Agent to forward the selected message as an attachment to a new message.
- Forward as inline. This uses the built-in User Agent to forward the selected message as inline text in a new message.
- Content view: view the message content.
- Tracking search: open the Message Tracking view and search for information about the selected message.

5.2.5 Recipient

The following operations can be performed on message recipients:

- · Clear delay. This clears any delay which may have been applied to the recipient
- Set 1 minute delay. Applies a one minute delay to the recipient.
- Set 10 minute delay. Applies a ten minute delay to the recipient.
- Set 1 hour delay. Applies a one hour delay to the recipient.
- Delete. Deletes this recipient without any non-delivery report being generated.
- Timeout. Passes the recipient to the Housekeeper channel for processing. A non-delivery report will be generated if one has been requested for this recipient.
- Redirect. Allows this recipient to be redirected to an arbitrary address.

Chapter 6 Events

This chapter describes M-Switch Events and the how the Event Viewer View is used.

Figure 6.1. Event viewer

Event Source	New Events	Event Action	ns Filte	rs		Search	
🗐 🔿 Local Files 🛛 Select	Show existing events only	• 8 8 0	💼 🥪 Sho	w all entries	~	2	
SOM Server Select	Scroll down on new events		Filte	r 🏦		0	41
Log file	Date/Time	Program	PID	User ID	Log message		
dsa.2992.trace.log		-			1554115325: s	stacktracer 17.0v7-2 [eeb1e77b5e] () of Tue, Mar 26, 2019 6:47:03 AM	
dua-event.2019-04-01-00-00.log					:>>> db-ope	nh	
jua-event.2019-04-01-00-00.log					:.h: Trying to		
lua-event.2019-04-01-00-00.log						d succesfully to h	
lua-event.2019-04-01-00-00.log					:>>> schema		
lua-event.2019-04-01-00-00.log					:.force = 'null		
lua-event.2019-04-01-00-00.log					:.force = false		
lua-event.2019-04-01-00-00.log						already empty	
dua-event.2019-04-01-00-00.log					:>>> schema		
lua-event.2019-04-01-00-00.log						schema created	
lua-event.2019-04-01-00-00.log					:>>> db-pop		
lua-event.2019-04-01-00-00.log						norate nessage set (Database: 1 sets, 17 cases, 55 msgs, 587 lines 533 stored) 3969 ms, 14	
arrier-stack.1668.trace.log						stacktracer 17.0v7-2 [eeb1e77b5e] () of Tue, Mar 26, 2019, 6:47:03 AM	
napd.768.trace.log						stacktracer 17.0v7-2 [eeb1e77b5e] () of Tue, Mar 26, 2019 6:47:03 AM	
sode.iaed.2640.trace.log						stacktracer 17.0v7-2 [eeb1e77b5e] () of Tue, Mar 26, 2019 6:47:03 AM	
sode.pp.pmul.2892.trace.log						stacktracer 17.0v7-2 [eeb1e77b5e] () of Tue, Mar 26, 2019 6:47:03 AM	
sode.pp.qmgr.2768.trace.log						stacktracer 17.0v7-2 [eeb1e77b5e] () of Tue, Mar 26, 2019 6:47:03 AM	
sode.pp.smtp.1460.trace.log						stacktracer 17.0v7-2 [eeb1e77b5e] () of Tue, Mar 26, 2019 6:47:03 AM	
ode.pumice.2608.trace.log						stacktracer 17.0v7-2 [eeb1e77b5e] () of Tue, Mar 26, 2019 6:47:03 AM	
mtpd.1776.trace.log					1554115446: s	stacktracer 17.0v7-2 [eeb1e77b5e] () of Tue, Mar 26, 2019 6:47:03 AM	
nsadmind.1736.trace.log					1554115454: s	stacktracer 17.0v7-2 [eeb1e77b5e] () of Tue, Mar 26, 2019 6:47:03 AM	
nseventd.2356.trace.log					1554115438; s	stacktracer 17.0v7-2 [eeb1e77b5e] () of Tue, Mar 26, 2019 6:47:03 AM	
itam.1216.trace.log					1554115424: s	stacktracer 17.0v7-2 [eeb1e77b5e] () of Tue, Mar 26, 2019 6:47:03 AM	
iop3d.520.trace.log					1554115450: s	stacktracer 17.0v7-2 [eeb1e77b5e] () of Tue, Mar 26, 2019 6:47:03 AM	
ua-event.2019-04-01-00-00.log	2019-04-01 11:26:34	mconsole	1652	#0	I-javadsapim:	sg-log_info Loaded isodejavalib 17.0v7-2 [eeb1e77b5e] () of Tue, Mar 26, 2019 &	
lua-event.2019-04-01-00-00.log	2019-04-01 11:26:36	mconsole	1652	#0	N-Base-licen:	se_export_ciphers Cipher suites limited to 56 Bits. If higher strength is needed, u	s
lua-event.2019-04-01-00-00.log	2019-04-01 11:26:36	mconsole	1652	#0	N-X509-init_c	dir_ignored Directory C:\Users\Administrator\AppData\Roaming\Isode/x509 not	r
- lua-event.2019-04-01-00-00.log	2019-04-01 11:26:38	mconsole	1652	#0	I-javadsapim:	sq-loq_info [com.isode.dsapi.profile.lsodeBindProfiles. <clinit>] : Attempting to</clinit>	c
ua-event.2019-04-01-00-00.log	2019-04-01 11:26:43	mconsole	1652	#0	I-javadsapim:	sg-log_info [com.isode.dsapigui.x509.X509Manager. <clinit>] : X509Manager is b</clinit>	
Isa-event.2019-04-01-00-00.log		x500dsa	1532	#0		se_auth_ok This M-Vault is licensed	
Isa-event.2019-04-01-00-00.log		×500dsa	1532	#0		se_expiry_date This license will expire on 07-APR-2019	
lsa-event.2019-04-01-00-00.log		×500dsa	1532	#0		se export ciphers Cipher suites limited to 56 Bits. If higher strength is needed, u	s
Isa-event.2019-04-01-00-00.log		dsa.0	2992	#0		se_auth_ok This M-Vault is licensed	
Isa-event.2019-04-01-00-00.log		dsa.0	2992	#0		se_expiry_date This license will expire on 07-APR-2019	
Isa-event.2019-04-01-00-00.log		dsa.0	2992	#0		se export ciphers Cipher suites limited to 56 Bits. If higher strength is needed, u	s
lua-event.2019-04-01-00-00.log		mconsole	1652	#0		iceinfo Connection made to Windows Service Control Manager (Local System)	
lua-event.2019-04-01-00-00.log		mconsole	1652	#0		iceinfo Created service (isode.dsa.Ø)	
lua-event.2019-04-01-00-00.log		mconsole	1652	#0		iceinfo Changed failure actions (isode.dsa.0)	
Connected to MMHS-EVAL			wing log files		,	Total lines: 1,000	-

6.1 Events Overview

In the Event Viewer view you can display events recorded in the log files by M-Switch and other Isode applications like M-Vault, M-Box, etc.

The Event Viewer is capable of showing either log files that can be locally accessed or showing log files that are accessed remotely by using the SOM protocol to communicate with a SOM Server such as a **Queue Manager**.

Events are colour coded, varying depending on the type of event (e.g. error or notice) and the source of the event (e.g. M-Switch, M-Vault, M-Store, etc).

Critical, Fatal and Error events can present further information about what has occurred including possible course of action that may be required.

6.2 Selecting the event source

Event Viewer can read logs from two different sources:

- Local Files: These are log files created by M-Switch, and other applications, that are accessible through the file system by the Event Viewer. If this source is an option, it should be preferred, as it is more efficient.
- SOM Server: By connecting to a SOM server (e.g. a **Queue Manager**) it is possible to see the log files written to the SOM server's file system.

You can select the Event Source by choosing the corresponding radio button in the **Event Source** section.

6.3 Selecting the log files to work with

Since the different Isode programs write their events in their respective log files, the Event Viewer provides a log file selector which allows only the relevant logs to be shown. To select which log files are shown, click on the **Select** button in the corresponding section, and the Log File Selector dialog is shown.

6.3.1 Selecting local log files

When selecting Local Files, the **Log Directory** is shown at the top of the dialog. This is the directory where the program expects to find the log files, and it is set to (LOGDIR) by default. If you want to change it, click on the **Select** button. If the content of the directory has changed since the dialog was opened, you can click on the **Refresh** button to refresh the content of the log table.

The log files that are available in the Log Directory are shown in the log table. Only files that end in *.log* are shown.

6.3.2 Selecting log files from a SOM Server

When selecting log files from a SOM Server, the known SOM Servers are shown at the top of the dialog in a pull down list. These are the same SOM Servers that MConsole knows about for other views.

If you do not have a SOM Server defined, select the Switch Operations view (View \rightarrow Live Operations \rightarrow Switch Operations), and add a new switch by selecting Switch \rightarrow Add.

You can connect to a SOM Server by clicking on the **Connect** button. If you want to close a connection, click on the **Disconnect** button. If you want to change the SOM Server, simply choose it from the pull down list and then click **Connect**. If the connection succeeds, the available log files (ending in ".log") will automatically be shown on the log file selection table.

If the content of the SOM Server has changed since the dialog was opened, you can click on the **Refresh files** button to refresh the content of the log file selection table.

6.3.3 Automatic or Manual file selection

The Log File Selector dialog gives you two ways of selecting the log files: an Automatic and a Manual selection. If you choose the Automatic selection, then you simply have to decide which product, type and date you want to select, and the files will be selected automatically.

You can choose between **Automatic** and **Manual** by selecting the radio button at the top of the dialog.

For example, if you want to review the M-Vault Event files from yesterday, check the **M-Vault** product, the **Event** Type and the **Yesterday** Date options, and uncheck all other options. As you check and uncheck the options you will see the files in the log file selection table showing which files will be selected automatically.

When you select log files manually, you can use the check boxes next to each file in the log file selection table to select them. You can also use the **Select All**, **Clear Selection** and **Invert Selection** buttons to help you deal with the large number of files that you will probably be given.

The Include regex section only applies to SOM connections.

6.3.4 The log file selection table

The log files that are available to work with are shown in the log file selection table. The table has columns for the **Name**, **Size** and **Estimated Date**. The date is estimated as it is based on the log file name (which is what the SOM Server provides). It is possible to sort the log files in the table by clicking on any of the table column names.

Some files may have a colour-coded circle that warns the user that the size of the file is large. This is because the Event Viewer is not suitable for handling very large files, so there's no point in retrieving them from the server.

6.4 Selecting the Operation Mode

The Event Viewer can operate in one of two modes:

- · in Monitor Mode, which shows events as are they written to the log files
- in Review Mode, in which the events recorded earlier in the log files can be reviewed

The Monitor Mode and Review Mode are selected in the **New Events** section. If you want to work in Review Mode, then select the option **Show existing events only** from the pull down menu.

If you want to work in Monitor Mode, then select the option **Monitor for new events** from the pull down menu. Once you have selected this, a new pull down menu is activated. This gives you two options: **Scroll down on new events** and **Don't scroll down on new events**.

If you are monitoring a system and decide that you want to stop the scrolling, change the second pull down menu to **Don't scroll down on new events**. This option means that new events will be added to the bottom of the table, but the table will remain static, giving you the chance to review the events in more detail.

If the option **Scroll down on new events** is chosen, any new events are added at the bottom of the table and the table is scrolled automatically to display the new entries.

6.5 Event Actions

Once you have selected an event source and source files, the events will be shown on the events table. The **Event Actions** buttons allow you to manage the log table. All the buttons have a tooltip that explain their function.

The first button is used to refresh the content of the log table. This is only activated in Review mode. The second button is used to clear the content of the log table. This is used when the log table fills up or when you want to remove old events. The third button is used to copy the selected events to the clipboard. The fourth button is used to open a log viewer inspector that shows more information about the selected event. This is only activated when a single event is selected.

Any action performed on the Event Viewer will not affect the log files. That is, cleaning the table will only remove them from the table, but will leave the log files unchanged.

6.6 Filters

Since programs generate a large number of log events, there are a number of toolbar buttons that can be used to reduce the number of events shown.

By default the filter is set to **Show all entries**, but you can change it to **Show only errors**, **Show only Critical and Fatal** or **Show only Errors and Warnings**.

These refer to the Level of the log message, which is found by looking at the first letters of the log message: "C-" for critical, "F-" for failures, "E-" for errors, "W-" for warnings.

Additionally, it is possible to set a text filter by using the **Filter** section. If text is inserted here, only the log events that include the given string in the log line will be shown in the log table. The string comparison is case-insensitive. You can clear the filter by using the brush icon at the end of the text box.

6.7 Search

Another way to find events is by using the search facility. Simply type the string to search and the log table will be searched. If an event's log message matches the string provided the event will be highlighted and the table will be automatically scrolled to show the event that was found. The search is case insensitive.

You can then use the left and right arrows to find more events that match the given criteria. You can clear the search box by using the brush icon at the end of the text box.

6.8 Status Line

At the bottom of the Event Viewer you can find a status line that shows information about the current status of the Event Viewer. If you hover the mouse over the middle section where **Reviewing log files** or **Monitoring log files** is shown, a tooltip with the list of files will appear.

Chapter 7 Alerts

This chapter describes M-Switch Alerts and how the Alert Viewer View is used.

7.1 Alerts Overview

M-Switch Alerts are generated from Isode Events and represent information items which have been configured as requiring the attention of an Operator. See <u>M-Switch Administration</u> <u>Guide</u> for a description of Isode Events. The complete set of Isode Events is provided here: https://www.isode.com/Documentation/isode-events/index.html

The Alerts View is opened from the **View** \rightarrow **Alerts** menu option or by clicking on the **Alerts** icon in the Welcome View.

There can only be one Alerts View in MConsole; if one instance is open and you try to create a new one, the existing one will be shown.

The alerts shown in Alerts View are almost entirely driven by external events, that is, MConsole is not trying to determine if a certain condition is met or not before notifying the user: it expects some external entities to generate standard Isode events that it can then monitor. Alerts can come from multiple local or remote M-Switch servers.

There are three sources of events that are shown in the Alerts View:

- · events taken from local Isode log files
- · events taken from one or more Isode SOM Servers
- internal MConsole events

The Alerts View allows the administrator to configure the type of alert notification based on the Isode Events which are listed in the Isode Events Catalogue. This is done with the build-in Alert Configuration Editor.

To understand the Alerts View, it is important to be familiar with the Isode Event Catalogue and the configuration of logging in general. Refer to the section <u>M-Switch Administration</u> <u>Guide</u> for more information.

There are seven Alerts Groups defined. Each Alert Group has a number of Alert Actions associated with it, for example playing a sound, showing an error window or raising the MConsole window. By selecting the right Alert Group for an Isode Event, the administrator is able to select what type of alert is required for each Isode Event.

A new Alert Daemon, documented in <u>M-Switch Administration Guide</u> can monitor multiple M-Switch installations (via the SOM protocol) to generate alerts, which are then displayed by the Alerts View. The Alert Daemon is capable of generating alerts based on message age, number of messages queued and many other parameters. Flexible rule configuration based on priority, channel and sender is available, as well as control of the frequency with which events are generated for a given status.

7.2 GUI Elements

The Alerts View is composed of the following GUI elements:

- a toolbar, with a few buttons that allow you to configure and manage the events that you will be alerted on.
- an alerts table, which takes most of the space in the view. Here is where the alerts are displayed.
- an alert viewer at the bottom of the window, which displays information about the selected alert. It is made up of two sections: the Alert Details pane, where information from the Isode Events Catalogue is shown, and the Alert Status pane, where information about the selected alert is shown.
- a status bar at the bottom of the view.

Like all other MConsole views, the Alerts View has an icon. The icon starts as a green light. When new events are added, as they are unacknowledged, the icon changes into a red light. Once all alert events have been acknowledged, it changes back to a green light.

New Alerts are added to the Alerts Table are initially unacknowledged. Unacknowledged alerts are shown in a bold font. Acknowledged alerts are shown in normal font. Only when the administrator acknowledges the alert does the font change from bold to normal.

7.2.1 The toolbar

The toolbar has buttons to perform the following actions:

- C Acknowledge button: changes the status of the selected alert(s) to acknowledged. Also available as a right-click menu option from the Alerts Table.
- Acknowledge all similar alerts button: changes the status of the alerts that have the same event entry in the catalogue as the selected alerts to acknowledged. Also available as a right-click menu option from the Alerts Table.
 - Clean button: cleans the Alerts Table. Care should be taken when using this button, as once the table is clear, the alerts can no longer be examined.
 - Copy button: copies the selected Alerts as text to the Clipboard. Also available as a right-click menu option from the Alerts Table.
- Catalogue Information button: This button is enabled if there is an alert selected in the Alerts Table. When selected, it searches the Isode Event Catalogue and shows the information available for this error in a pop-up window.
- Alert Configuration: calls the Alert Configuration Editor. Also available as a right-click menu option from the Alerts Table. See <u>M-Switch Administration Guide</u>.
- Alert Groups: calls the Alert Group Editor. See M-Switch Administration Guide.
- SOM Reconnection: Attempts to reconnect to any SOM server that is currently disconnected.
- Alert View Options: calls the Alerts View Options page. <u>M-Switch Administration</u> <u>Guide</u>.

Scroll control: allows you to control the way that new alerts are added to the display. If "*Updating*" when new alerts are added, the table scrolls down and shows the new alert. If "*Paused*" alerts are added as normal, but the selected alert is not changed and the table is not scrolled. This allows you to examine the selected alert without being interrupted by new alerts.

• Alerts history size: allows you to control the number of entries to display in the Alerts Table. As with any GUI, if there are lots of entries in the table, it can be very slow, so setting this to a sensible value means that the table doesn't get too full. Once the maximum number is reached old alerts will be removed as new alerts are added.

7.2.2 The Alerts Table

The alerts table is the place where new alerts are added. It consists of 8 columns.

- Time/Date: In YYYY-MM-DD HH:MM:SS.ms format
- Source: The source of the event. Local files or a SOM server.
- Severity: The severity of the event (C, F, E, W)
- Level: The level of the alert event (derived from the Alert Group)
- Facility: The event facility
- MessageId: The message identifier of the event
- Program: The program or channel name that generated the event
- Description: The full text that describes the event or alert.

7.2.2.1 Right-click menu options in the Alerts Table

It is possible to invoke the some of the actions that appear in the toolbar by selecting an entry in the Alerts Table, and using the equivalent action in right-click menu.

- Acknowledge
- Acknowledge all similar alerts
- Configure alert
- Don't alert. Used to add a "Don't Alert" configuration for the selected event.
- Copy text to clipboard.

7.2.3 The Alerts Details and Alert Status boxes

When an alert is selected in the Alerts Table, the two views at the bottom of the window are updated with information about the selected alert.

The **Alert Details** box shows the information taken from the Isode Events Catalogue, like Facility Name, Error Description, Action and the full text of the alert message.

When the text of an alert message is very long, it may not fit in the "*Message*" column of the Alerts table, but it is available in "*Alert Details*" box.

The **Alert Status** box shows the status of the alert: if it has been acknowledged or not, the Process ID that created the event, the User ID and the corresponding log file name.

7.2.4 The Alert View Status bar

At the bottom of the Alerts View, there's a status bar, that displays the following information:

- The Alert Source: an icon that shows the source of the Alert Events. It can be the SOM Server, Local Files or both.
- The number of alerts displayed in the Alerts Table

7.3 Alert Sources

The Event Sources are configured in the Alerts View Options page.

If configured to use a SOM Server, MConsole connects to the SOM Server and starts to monitor all the event log files for event lines of level Critical, Warning, Fatal and Error.

If configured to use local log files, it will periodically inspect all the files under (LOGDIR) (that is, /var/isode/log, C:\Isode\log or whatever is configured), as this would be the place were local events are written.

Once an event is detected, the alert action to perform is determined according to what is in the configuration. If the new event is found to match one of the events configured in the Alert Editor, the corresponding set of Alert Actions will be performed.

Isode events are made of a Level, a Facility and a Description, for example E-MTA-TLSRequired is level "*E*" (an Error), the facility is "*MTA*" and the description (or name) is "*TLSRequired*".

The Internal MConsole events are Alerts resulting from local MConsole errors (e.g., failure to connect).

7.3.1 Local Log Files

These are the log files created by the Isode products in (LOGDIR), for example *mta-event.2016-10-02-00-00.log*.

7.3.2 SOM Server

If the connection to SOM is lost, a reconnection attempt will be tried periodically. It can also be triggered by clicking on the **SOM Reconnection** toolbar button.

The status of the SOM Server connection is shown in the status line, using connected/disconnected icons.

Chapter 8 Message Tracking

This chapter describes the AuditDB views used for message tracing and searching.

8.1 MConsole Message Tracking

8.1.1 Message Tracking View

The Message Tracking View allows you to query the database for information about messages using various search options. Some boxes such as **Sender** and **Recipient** have a checkbox which allow you to specify whether an exact match is required or simply that the value in the database contains that string. Exact matches work more quickly. You can also specify how many results you want to be returned – there may be a very large number.

Once you have set up your query, press the **Search** button and wait for the result to be displayed as in Figure 8.1, "Messaging Tracking View display".

	🗋 MConsole (Message Tracking): messaging.admin@mmhs-eval.net 📃 🗖 🗙									□ X			
File Wine	dow View Message	Help											
Welcon	ne to Message Console	📠 Messa	ge Tracking D	3									
[
Queue	ed From 🗸 🔰	7-Apr-2018 14	:46:00			Change	To No limit					C	hange
Seno	der Sender 🗸	,			[Recipient	Recipient v						
Subj	ject					_ ·	Words (space separated)						
Sender	r MTA/Peer	~		~	Host ID				v	Unique ID			
Ma	tch Substring Queue IE		[Search ty	pe	Subject messages only		Ý	Priority		All	~
						·		_					
SIC Coo	des (comma separated)				MMHST	Type None	 MMHS Type Identif 	ier		ACP127 T	SN		
ACP127	7 Channel Designator				Station Se	erial Number				Operating	Signal Code		
State			Any	~	Security (Classification	<any></any>		~	Search (r	umber) 100	\mathcal{P}	Search
												_	
ه ا	📷 📄 🙈 🗆 Refre	sh every 60	seconds						1 🚳 . F	6	Correlating	recipien	its ∨
#	Queued time	DTG	Se	nder			Subject	^	Recipie	nt	MTA Stat	e	MTA
1	2018-04-18 14:49:25	181249Z Apr		mmand.hq@mmhs-eval.net			another message from sho	e to sl	radi	o.operat	Transfer	red /	ACP 12
2	2018-04-18 14:49:05	181248Z Apr		mmand.hq@mmhs-eval.net			shore to ship						
3	2018-04-18 14:48:38	181248Z Apr		mmand.hq@mmhs-eval.net			To radio op 1						
4	2018-04-18 14:48:25	181248Z Apr	2018 co	mmand.hq@mmhs-eval.net			Msg to ship						
5	2018-04-18 14:46:42		0										
6	2018-04-18 14:17:38	181217Z Apr	2018 co	mmand.hq@mmhs-eval.net			Message for garbling						
7	2018-04-18 14:03:39		\diamond					~					
<								>	<	ш		_	>
24	ь.c.								2				
2 3	2 🛎								_				
			DEM	O-NATO UNCLASSIFI	ED			~		127 Messa			
									OR	aw Format	Standard	I Display	1
Fre	om: command.hq@r	nmhs-eval.r	net										
	: radio.operator1@v									e ZNR	Z Apr 201		^
	te: Wed Apr 18 14:4	8:38 BST 2	018								Routine	.8	_
	bject: To radio op 1							\sim			ND HQ SHO	RF	~
Me	essage Id: <323dd91	2-6d61-480	0-be7f-177:	5cdf98f32@172.20.1.24	5>								×
													Help
													S vieb

Figure 8.1. Messaging Tracking View display

Once your query returns the result, you can select each message to see information about recipients in the right hand page. You can also right click on each message to:

- display details of the message (Figure 8.2, "Message details view")
- display the content of the message (Figure 8.3, "Message content view")
- · report information about the message
- · forward the message using the built-in User Agent

You can also configure which columns are displayed.

Figure 8.2. Message details view

TA Message STID: mmhs-											
	eval UNID: XITAi802	AN-IOA LOGTIN	ME: 2019-07-30 11:59:1	5.000000+1:00 C	ONTENT TYPE: 822	MSGID: <d97b556< th=""><th>ic-ed37-425e-80e</th><th>-d-h516dde0dh11@m</th><th>mhs-eval.net> PR</th><th>IORITY: 4 OID: msg</th><th>.03576-0</th></d97b556<>	ic-ed37-425e-80e	-d-h516dde0dh11@m	mhs-eval.net> PR	IORITY: 4 OID: msg	.03576-0
EUED_TIME: 1	2019-07-30 11:58:59.0 MAND HQ SHORE	100000+1:00 SEM	NDER: command.hq@	mmhs-eval.net	SIZE: 1562 SUBJEC	CT: First Message SU	JBMIT_TIME: 20	19-07-30 11:58:58.000	000+1:00 TYPE: U	DTG: 2019-07-30 11	58:09.000000+1:00
TA Recipient			LOGTIME: 2019-07-3							. 10	
ATE_TIME: 201	9-07-30 11:59:15.000	000+1:00 UREQ	: fwu XNO: 1				ED_11ME: 2019-0	07-30 11:58:59:000000	+ I:UU RECIP: radio	.operator I@vessel1.n	et SIZE: 1562 STAT
			A Recipient Report N								
IOSTID	UNID	RNO	LOGTIME	LOGOFFSET	RECTYPE	ACTION_TIME	CHANNEL	MTA	RECIP	TID	
nmhs-eval nmhs-eval	XUAi8gAN-loA XUAi8gAN-loA	1	2019-07-30 11: 2019-07-30 11:		ok trans	2019-07-30 11:	acp127 acp127	cn=acp12/,cn	radio.operator radio.operator	1	
initi-eval	Addingent for		2010-07-00 11	10000	Gans	2019-07-50 11	acpier		raulo.operator		

You can display the content of the message by double clicking the message. If this is correctly configured, a Message Content View appears as follows:

Figure 8.3. Message conte	ent view
---------------------------	----------

MConsole (Message): messaging.admin@mmhs-eva	al.net 🗕 🗖 📑
Window View Message Help	
Velcome to Message Console 🛛 🔓 ACP127 View 🛛 🚺 Alerts 🖉 📠 Message Tracking 🖉 📄 <u>Message</u> 🛿 🔪	
sage Content - mmhs-eval :: C:/Isode/Archive/2019-07-30/1564484355.2620.0.iar	
£ 6	
ICP127 Message Format	
) Raw Format 💿 Standard Display	
VDE ZNR	
76 301058Z Jul 2019	
recedence Routine	
rom COMMAND HQ SHORE	
ction RADIO OPERATOR 1 VESSEL 1	
ecurity Label UNCLAS	
ubject First Nessage	
he quick brown fox jumps over the lazy dog	
he quick brown fox jumps over the lazy dog	
e quick brown fox jumps over the lazy dog	
he quick brown fox jumps over the lazy dog	
he quick brown fox jumps over the lazy dog	
he quick brown fox jumps over the lazy dog	
he quick brown fox jumps over the lazy dog	
he quick brown fox jumps over the lazy dog he quick brown fox jumps over the lazy dog	
he quick brown fox jumps over the lazy dog	
he quick brown fox jumps over the lazy dog	
he quick brown fox jumps over the lazy dog	
he quick brown fox jumps over the lazy dog	
he quick brown fox jumps over the lazy dog	
	Programs * 🔺 🎲 😳 🕞 12:33
	Programs 🔺 🅼 🙄 😼 30/07/2

Note that the message content appears in the format of the sender side on the left hand side pane displaying message list and on the Content view that opens on right clicking the LHS table and selecting **Content**. If outbound archive has been enabled in the authorization rules, the outbound recipient format is used to display message content on the right hand

side pane and on the Content View that opens on right clicking the RHS recipient table and selecting **Content**. If the outbound archive has not been enabled, the inbound format will be used to display content on both LHS and RHS tables.

If this does not appear, you need to configure the Message Archiving rule as described in the <u>MTA Configuration</u> and <u>Securing Your System</u> sections of the M-Switch Administration Guide.

8.1.2 Message History View

This view can be used to display a quick summary of messages that are sent and received by the the MTA for the day. There is an option to modify the time limits to widen or narrow down the search.

Figure 8.4. Message History View

	MCor	nsole (Message History): me	essaging.admin@mmhs-eval.net	_ 0 ×
File Window View Help				
💿 Welcome to Message Console	🕞 ACP127 View 🔋 🔋 Alerts 🕅 Messi	ige History 🕄		
All messages sent and received by	the MTA "mmhs-eval" from "Tue Jul 30 00:00:00	BST 2019" to "Wed Jul 31 00:0	0:00 BST 2019"	
Sender	Subject	Time	Content	
command.hq@mmhs-eval.net	First Message	2019-07-30 11:58:59	Inbound Outbound	
gateway@mmhs-eval.net	ANOTHER MESSAGE TO COMMAND HQ	2019-07-30 12:03:20		
gateway@mmhs-eval.net	MESSAGE FOR GARBLING	2019-07-30 12:02:59		
gateway@mmhs-eval.net	MESSAGE FOR GARBLING	2019-07-30 12:03:16		
command.hq@mmhs-eval.net	2nd msg	2019-07-30 11:59:13	DEMO-NATO UNCLASSIFIED	
command.hq@mmhs-eval.net	Third Message	2019-07-30 11:59:35		
\Leftrightarrow		2019-07-30 12:02:20	From: COMMAND HQ SHORE <command.hq@mmhs-eval.net></command.hq@mmhs-eval.net>	
\diamond		2019-07-30 12:02:31	To: RADIO OPERATOR 1 VESSEL 1 <radio.operator1@vessel1.net> Date: Tue Jul 30 11:58:58 BST 2019</radio.operator1@vessel1.net>	
gateway@mmhs-eval.net	MESSAGE TO HQ	2019-07-30 12:02:31	Subject: First Message	
gateway@mmhs-eval.net	THIRD MESSAGE FROM RADIO OP 1	2019-07-30 12:04:08	Message Id: <d97b556c-ed37-425e-80ed-b516dde0db11@mmhs-eval.net></d97b556c-ed37-425e-80ed-b516dde0db11@mmhs-eval.net>	
		Query Messa	age Archives	
	MTA Name mmhs	-eval	×	
			log	
	Between the times			
	between the diffes	30 July 2019 00:00 Edit C	lear and 31 July 2019 00:00 Edit Clear log	
			log	
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8.1.3 Message Transfers History View

This view displays the transfer history for messages displaying the local MTA, remote MTA, sender, recipients and other message attributes.

	e to Message Console	e 🕞 ACP127 View		Alerts 🔟 Me	ssage Tracking	Message Tran	sfers History 🖾 🔪							
Transfe	r						_					Search		
MTA (H	ostiD)		~	Logged Since No	limit		Change Chann	iel 📃				Search (number)	100	🔎 Searc
) [_ 6	Refresh every	50 seconds												
ŧ	Time	Local MTA	<	Remote MTA	From	To	Channel	Msg	Priority	Tx siz	Tx ti			
	2019-07-30 12:02	mmhs-eval		cn=acp127,cn			SO/@mmhs-eval.ne	t 368	Immediate	111				
	2019-07-30 12:02	mmhs-eval		cn=acp127,cn			acp127		Normal	99	0.510			
3	2019-07-30 11:59	mmhs-eval	>	cn=acp127,cn	command.hq	radio.operator	acp127	2,057	Routine	1,381	20.372			
1	2019-07-30 11:59	mmhs-eval		cn=acp127,cn		radio.operator			Routine	207	6.000			
	2019-07-30 11:59	mmhs-eval	>	cn=acp127,cn	command.hq	radio.operator	acp127	1,562	Routine	875	12.273			
														0

Figure 8.5. Message Transfers View

8.1.4 Statistics View

This view displays a range of statistics of messaging events in different formats. The statistics are displayed on different tabs and each tab provides further filtering depending on the type of statistic.

Figure 8.6. Statistics View

	MConsole (Statistics): mess	aging.admin@mmhs-eval.net	_ 0
Window View Help			
Velcome to Message Console 🛛 🔓 ACP127 View	/ 😫 Alerts 🖾 Statistics 😒		
Summary Summary (comparison) Details (comp		iginators MTAs Transfer MTAs Recipients Quarantir	ne Messages ACP127 Messages
ummary of message delivery, rejection, qu	eued message status		
ate From No limit	Change To	No limit	Change
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lost ID	✓ Recip/S	L	
	Summa		
	4.8%1.0		
		1	
		94.3%	
	_		
	Delivered locally - 99 messages Transferred - 5 messages		
	Guarantined spam - 1 messages		
	Rejected (due to virus malforme	, dietc.) - 0 messages	
	Summa	ary list	
	State	Number of messages	
	Incoming Messages	65	
	Outgoing Messages	113	
	Processed Messages	89	
	Delivered locally	99	
	Transferred	5	
	Quarantined (spam etc.)	1	
	Rejected (due to virus etc.)	0	
	Being processed	0	
	Current state	summary list	
	(Current state of the	: messages - Total)	
	State	Number of messages	
	Incoming Messages	65	
	Quarantined	1	
🛃 🛛 🚞 👩			Programs 🔌 🖕 😨 😽 12
	01011		30/0

8.2 Forwarding Messages from MConsole (User Agent)

Operators can forward a message by right clicking on the message in the **Message Tracking View**. This will display a **User Agent View**.

Figure 8.7. User Agent View: Forwarding a Message

MConsole (User Agent): messaging.admin@mmhs-eval.net File Window View Message Help	
👿 Welcome to Message Console 🛛 🙀 ALerts 👔 Message Tracking 👔 User Agent 🖄	
G .	
Send Send	
From command.hq@mmhs-eval.net	Setup
Mail Parsword (Optional) :	
To To	
Subject Fwd: First Message	
Forward this message as attachment	^
	>
Attachment mmhs-eval :: C//Isode/Archive/2019-07-30/1564484339.3576.0.iar	Show
	🔮 Help
🖶 🛃 🎒 💽 🚳 🎬	12:37
	30/07/2019

8.3 Resubmit Messages from MConsole

Operators can resubmit a message by clicking the resubmit tool item on the **Message Content View** toolbar. This will display a dialog that allows you to resubmit the message to its original recipients or new recipients.

The Water May Const Wetkome Manual Const Wetkome Manual Const Wetkome Manual Const Address Terming American Const Market Const State FIG AddRess State FIG AddRess State FIG AddRess MESAGE FIG AddR	-		MConsole (Message History):	messaging admin@r	mmhs-eval net		_ 0 X
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anne da defensione can lant prevenydemon-scalant prevenydemon-scalant prevenydemon-scalant command defensione-calant defen	All messages sent and received by th	he MTA "mmhs-eval" from "Tue J	ul 30 00:00:00 BST 2019" to "Wed Jul 31 0	:00:00 BST 2019"			
pterwy@mmb-vealant gatewy@mmb-vealant commadh.g@mmb-vealant commadh.g@mmb-vealant commadh.g@mmb-vealant commadh.g@mmb-vealant commadh.g@mmb-vealant commadh.g@mmb-vealant commadh.g@mmb-vealant message to new reginets MESSAGE TO HO THED MESSAGE FROM Bushmit is no new reginets MESSAGE TO HO THED MESSAGE FROM MESSAGE TO HO THE MESSAGE TO HO THE ME					ad .		
Image: Section 10 Message Image: Section 10 Message Image: Section 10 Message Image: Section 10 Message gateway@mmbreval.net MESSAGE FON Resubmit Message to original recipients Image: Section 10 Message to original recipients Image: Section 10 Message to original recipients gateway@mmbreval.net THRO MESSAGE FON Resubmit Message to original recipients Image: Section 10 Message to original recipients Image: Section 10 Message to original recipients gateway@mmbreval.net THRO MESSAGE FON Image: Section 10 Message to original recipients Image: Section 10 Message to original recipients gateway@mmbreval.net Section 10 Message to original recipients Image: Section 10 Message to original recipients gateway@mmbreval.net Section 10 Message to original recipients Image: Section 10 Message to original recipients gateway@mmbreval.net Section 10 Message to original recipients Image: Section 10 Message to original recipients gateway@mmbreval.net Section 10 Message to original recipients Image: Section 10 Message to original recipients gateway@mmbreval.net Section 10 Message to original recipients Image: Section 10 Message to original recipients gateway@mmbreval.net Message to original recipients Image: Section 10 Message to original recipients gateway@mmbreval.net S	gateway@mmhs-eval.net gateway@mmhs-eval.net gateway@mmhs-eval.net command.hq@mmhs-eval.net	ANOTHER MESSAGE TO CO MESSAGE FOR GARBLING MESSAGE FOR GARBLING 2nd msg	MMAND HQ 2019-07-30 12:03:20 2019-07-30 12:02:59 2019-07-30 12:03:16 2019-07-30 11:59:13			JATO UNCLASSIFIED	
getwey@mmbreexlatet getwey@mmbreexlatet getwey@mmbreexlatet metrospectrations getwey@mmbreexlatet getwey getwey@mbreexlatet getwey	0			nit Message	_ 🗆 🗙		
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Figure 8.8. Resubmit Message

Chapter 9 Summary View

This chapter describes how the Summary View can be used to determine problems with an MTA.

The Summary Message Transfer View is used to check the health of a M-Switch. It does this by querying configured M-Switchs, collecting a list of messages, and displaying channels which have messages over a certain time limit.

This allows an operator to quickly see if a channel can't process a message, or a backlog is being created.

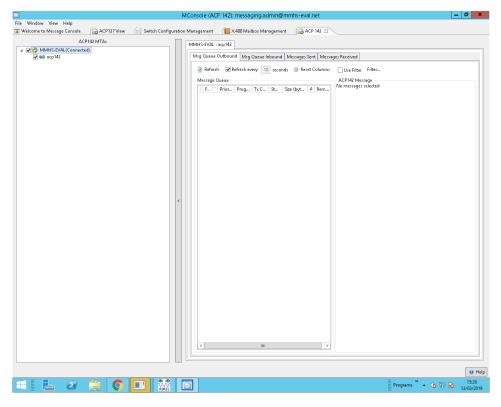


Figure 9.1. Summary View showing a working MTA

The top of the Summary View contains contains a toolbar with several controls:

- If a user selects the **Refresh** messages are reread from the MTAs.
- The **Refresh Every** checkbox can be checked to enable periodic refresh at a configurable interval.
- The **Minimum Age** value. If a channel has a message older than this age, then the channel is shown in a suitbale table, and the message can be used in the channel / MTA stats.
- The Include Peers If selected then peer / circuit information is shown. This means that it's possible to see which ACP127 circuit or X.400 P1 Bilateral Agreement has stuck messages.

The Summary View will open a tab for each pre-configured M-Switch profile. (To configure an M-Switch profile consult <u>M-Switch Administration Guide</u>)

Each M-Switch tab consists of a summary section and optional tables. The summary section includes:

- Total number of stuck messages for the whole MTA.
- Total volumne of stuck messages for the whole MTA.

- The highest priority of a stuck message.
- The age of the oldest stuck message.

Up to 3 optional tables are then shown.

- Transfer channels. SMTP / X.400 P1 / ACP 127 / ACP 142 / etc
- Delivery channels. LMTP / P3
- Misc channels. All others.

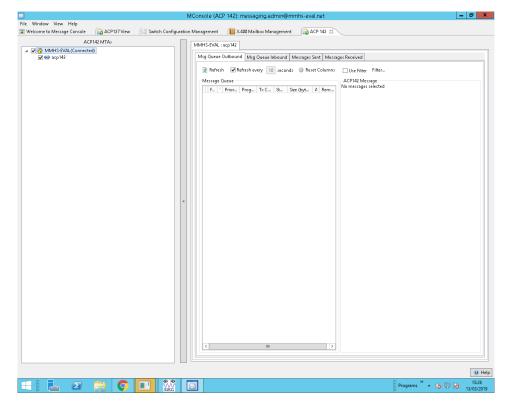
These tables are only shown if a channel has a message older than the max age time.

Chapter 10 Channel Monitor View

This chapter describes how Channel Monitor View can be used to check on the status of various channels.

The Channel Monitor View is used to monitor outgoing messages on channels which don't have a dedicated view. (IE CFTP / X.400p1 / SMTP / ETC).

Figure 10.1. ChannelMonitor Circuit MTA and Channel Selection



The Channel Monitor View left hand side allows MTAs and channels to be selected and displayed. Each channel is presented as a selectable Tab on the right hand side.

The MTAs available to the Channel Monitor View are as configured in the Switch Operations View.

See the <u>M-Switch Administration Guide</u> for details on how to configure the **Switch Operations** View.

You will also need to configure a suitable SASL Identity to connect to the Queue Manager of a configured **Switch**. SASL Identities are configured using the **Authenticated Entities Management** view or **Internet Mailbox Management** view (see <u>M-Switch Administration</u> <u>Guide</u>).

Once you have selected these, they will reconnect automatically and you can hide the left hand side of this view using the "<" button.

10.1 Channel Monitor main window

The main window of the channel monitor view allows some controls over the frequency of updates, and the age of messages which are to be included in the view.

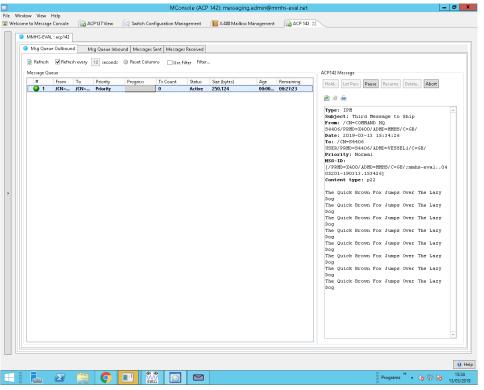
The top of the right hand side has the following controls:

- If a user selects the **Refresh** the messages are reread from the Channel Monitor channel.
- The **Refresh Every** checkbox can be checked to enable periodic refresh at a configurable interval.
- The **Minimum Age to Include** lets an operator specify how old a message has to be before it's shown in the channel view tab.

Beneath the refresh controls is a list of tab monitoring selected channels.

10.2 Channel Monitor Tab

Each tab shows a list of currently queued messages waiting to be transferred for the given channel or peer.



The Msg Queue Tab has the following buttons:

• If a user selects the **Reset Columns** the layout of the columns is recalculated in order to present more clearly.

- The **Use Filter** checkbox can be checked to filter messages according to a predefined filter.
- Selecting the **Filter.** button allows the configuration of a filter which restricts the set of messages displayed.

Selecting a message within the queue will display the message. It also allows a user to see the message content and perform actions on the message.

Depending on the nature of the channel and the status of the message different buttons appear and are selectable or greyed out as appropriate.

- The **Hold...** option allows an operator to put a delay on a message if it is currently waiting to be transmitted. Once the delay is cleared the message will start.
- If a message is delayed the Let pass button allows an operator to manually clear a delay.
- The **Delete...** option allows an operator to remove a message from the queue. This can only be done if the message is not being transferred. Any message currently being transferred will first have to be aborted.
- The Abort button allows the operator to cancel an ongoing transmission.

Chapter 11 ACP142 View

This chapter describes how ACP142 features of M-Switch are monitored and operated. This is performed using the M-Console ACP142 View.

The ACP142 Message Transfer View is used to monitor incoming and outgoing ACP142 messages.

Figure 11.1. ACP142 Circuit MTA and Channel Selection

ACP142 MTAs		MHS-EVAL : acp142	
MMHS-EVAL(Connected)			
🗹 🐋 acp142		Msg Queue Outbound Msg Queue Inbound Messages Sent Messa	ges Received
		👔 Refresh 🕑 Refresh every 🔟 seconds 🔘 Reset Columns	Use Filter Filter
		Message Queue	ACP142 Message
		F., ' Prior Prog Tx C St Size (byt A Rem	No messages selected
	<		
		< III >	

The ACP142 View left hand side allows MTAs and channels to be selected and displayed. Each channel is presented as a selectable Tab on the right hand side.

The MTAs available to the ACP142 View are as configured in the Switch Operations View.

See the <u>M-Switch Administration Guide</u> for details on how to configure the **Switch Operations** View.

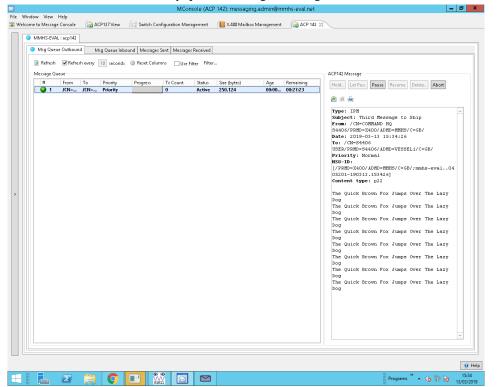
You will also need to configure a suitable SASL Identity to connect to the Queue Manager of a configured **Switch**. SASL Identities are configured using the **Authenticated Entities Management** view or **Internet Mailbox Management** view (see <u>M-Switch Administration</u> <u>Guide</u>).

Some parts of the ACP142 View also use the Audit DB features to return information about previously transferred messages.

The selection of connected MTAs and Circuits appears as follows:

Once you have selected these, they will reconnect automatically and you can hide the left hand side of this view using the "<" button.

11.1 Message Queue Outbound



This tab shows a list of currently queued messages waiting to be transferred.

The Msg Queue Tab has the following buttons:

- If a user selects the **Refresh** the messages are reread from the ACP142 channel.
- The **Refresh Every** checkbox can be checked to enable periodic refresh at a configurable interval.
- If a user selects the **Reset Columns** the layout of the columns is recalculated in order to present more clearly.
- The **Use Filter** checkbox can be checked to filter messages according to a predefined filter.
- Selecting the **Filter.** button allows the configuration of a filter which restricts the set of messages displayed.

Selecting a message within the queue will display the message. It also allows a user to see the message content and perform actions on the message.

Depending on the nature of the channel and the status of the message different buttons appear and are selectable or greyed out as appropriate.

• The **Hold...** option allows an operator to put a delay on a message if it is currently waiting to be transmitted. Once the delay is cleared the message will start.

If a message is delayed the Let pass button allows an operator to manually clear a delay.

The **Pause** option allows a message that is being transferred to be paused. This stops data being written out to the transport layer. Any existing data (for instance in an S'5066 server's queue) will still be transferred.

The **Resume** option allows a paused message to continue to be transferred.

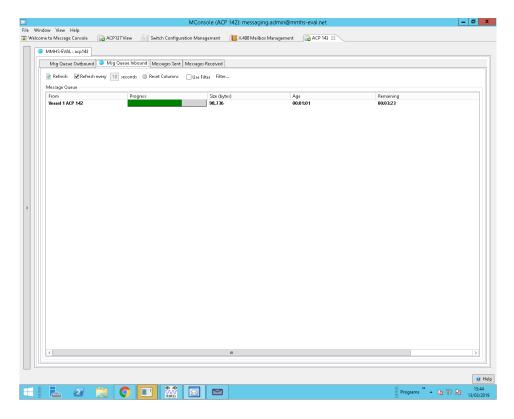
The **Delete...** option allows an operator to remove a message from the queue. This can only be done if the message is not being transferred. Any message currently being transferred will first have to be aborted.

The **Abort** button allows the operator to cancel an ongoing transmission. Note that any bytes which have already been written out to an S'5066 server will still be broadcast.

The **Process Next** button changes the processing priority of the message. This will make the selected message the next to be processed.

The **Move...** button allows a user to move a specific message up or down the message queue.

11.2 Message Queue Inbound



The inbound tab allows an operator to see some information for inbound ACP142 messages.

Note: The only information that can be displayed is from the ACP142 protocol, not the message itself. As such things like **From** represent the senders destination ID rather than an actual address

11.3 ACP142 Messages Sent View

Each tab for the ACP142 channel for an MTA will have **Messages Sent** tab. This tab connects to the Audit Database. The Audit Database is configured in the **Options** view.

The start and finish time selectors allow the range of messages which are displayed to be limited. A size limit on the search operation can also be configured.

Selecting a message in the view causes the Message Content to be displayed.

Figure 11.2. ACP142 Messages Sent View

				MConsole (ACP 142): messag	ng.admin@mmhs-eval.net	. 🖬 X
File Window Vi							
😨 Welcome to Me	ssage Console 🛛 🙀 🖓	CP127 View 🛛 🕍 S	witch Configurat	ion Managemer	it 🛛 📗 X.400 Mailt	ox Management 🛛 🙀 ACP 142 😥	
MMHS	-EVAL : acp142						
Msg	Queue Outbound N	1sg Queue Inbound	Messages Sent 🖡	Aessages Receiv	ed		
Refre	esh 🗹 Refresh every 🗌	60 seconds					
Betweer	n the times 13 March 20	019 00:00			Edit	lear and 14 March 2019 00:00 Edit	Clear
Search Li	imit(number) 500						
Subjec	:t	Submit Time	Priority	Size Peer	Transfer out Time	Content	
	42 Message to Vessel1 U				2019-03-13 15:33:21	🙈 🏨 🚋	
	er Message to Vessel 1 Message to Ship	2019-03-13 15:33:42 2019-03-13 15:34:26			2019-03-13 15:33:42 2019-03-13 15:38:04	Type: IPM	
>						Subject: Third Message to Ship Frem: (//-COMINDN NG SHAG6/FRHD-V400/ADMD-HIMB/C-GB/ Date: 2019-03-13 15:34:26 To: /(J*94640 USEN/FRH2-4106/ADMD-VESSELI/C-GB/ Frierity: Normal NSG-Di (//FHM-X400/ADMD-HIMB/C-G6/rmmhs-eval0405201-190313.153426) Content type: p22 The Quick Horow Fox Jumps Over The Lary Dog The Quick Horow Fox Jumps Over The Lary Dog	V
							🥑 Help
	2 📄		@ 30 \\\\\ 01011		3	Programs 🎽 🔺 🧤 😳 🍺	15:38 13/03/2019

11.4 ACP142 Messages Received View

Each tab for the ACP142 channel for an MTA has a **Messages Received** tab. This tab connects to the Audit Database configured in the **Options** view.

The start and finish time selectors allow the range of messages which are displayed to be limited.

Selecting a message in the view causes the Message Content to be displayed.

come to Message Console	ACP127 View 🖂 S	witch Configur	ation Management	(E X.400 Mail	box Managem	ent 🕞 ACP 142 😒		
· · · ·			Massages Passional					
Msg Queue Outbound	Msg Queue Inbound	Messages Sent	Messages Received					
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					_			
Between the times 13 Mar	ch 2019 00:00			Edit	Clear and	14 March 2019 00:00	Edit	Clear
Search Limit(number) 500								
Subject	Submit Time	Priority	Size		Content			
Message to Command HQ	2019-03-13 15:41:50	Priority	637		2 2 3	<u>.</u>		
Another message to HQ	2019-03-13 15:42:12	Priority	637			-		
Third Message to Comman	d 2019-03-13 15:42:49	Priority	110		Type :			^
						et: Third Message to Command		
						/CN=S4406 USER/PRMD=S4406/A	DMD=VESSEL1/C=GB/	
						2019-03-13 15:42:49		
						CN=COMMAND HQ S4406/PRMD=X40	D/ADMD=NNHS/C=GB/	
						ity: Normal		
					MSG-II			
							ssel1.ne.0214001-190313.154249]	
					Conter	nt type: p22		
						JICK BROWN FOX JUMPS OVER TH		
						JICK BROWN FOX JUMPS OVER TH		
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Figure 11.3. ACP142 Messages Received View

Chapter 12 ACP127

This chapter describes how ACP127 features of M-Switch are monitored and operated. This is performed using the MConsole ACP127 View.

12.1 ACP127 View

There are various ACP127 sub-views which are consolidated into a single View: the **ACP127 View**. Some of these sub-views can be "popped out" into a new window.

The ACP127 View left hand side allows MTAs and circuits to be selected and displayed. Each circuit is presented as a selectable Tab on the right hand side.

The MTAs available to the ACP127 View are the set that are configured in the Switch Operations View.

See the <u>M-Switch Administration Guide</u> for details on how to configure the **Switch Operations** View.

You will also need to configure a suitable SASL Identity to connect to the Queue Manager of a configured **Switch**. SASL Identities are configured using the **Authenticated Entities Management** view or **Internet Mailbox Management** view (see <u>M-Switch Administration</u> <u>Guide</u>).

Some parts of the ACP127 View also use the Audit DB features to return information about messages, such as displaying content. You will need to have configured your Audit Database in order for this functionality to work (see <u>M-Switch Administration Guide</u>).

The selection of connected MTAs and Circuits appears as follows:

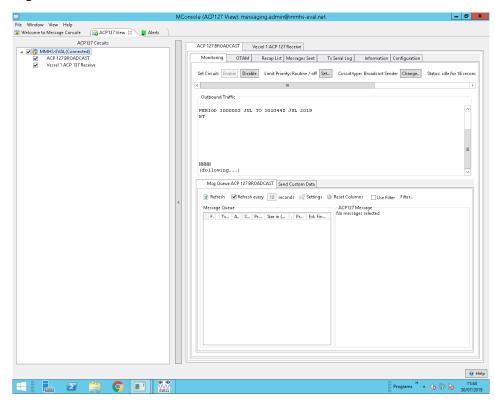


Figure 12.1. ACP127 Circuit MTA and Circuit Selection

Once you have selected these, they will reconnect automatically and you can hide the left hand side of this view using the "<" button.

12.1.1 ACP127 Circuit Monitor View

Circuits have a **Monitoring** Tab which allows the ACP127 process to monitor incoming traffic, outgoing traffic or both depending on whether the Circuit Tab is **Receive Only**, **Transmit Only** or **Two Way**.

There are buttons which allow the operator to make dynamic changes to the Circuit's behaviour.

- Set Circuit This button allows the circuit to be enabled/disabled
- **Circuit Type** This button allows the circuit to be switched between automatic and manual.

Outbound traffic is shown when data is queued up to be transmitted, while the inbound traffic is shown as soon as it is received.

In addition to the Traffic Panes, there are other sub tabs which provide different functions depending on the type of circuit. Available functions are as follows:

12.1.1.1 Message Queue

The Message Queue sub tab displays messages queued outbound on this circuit.

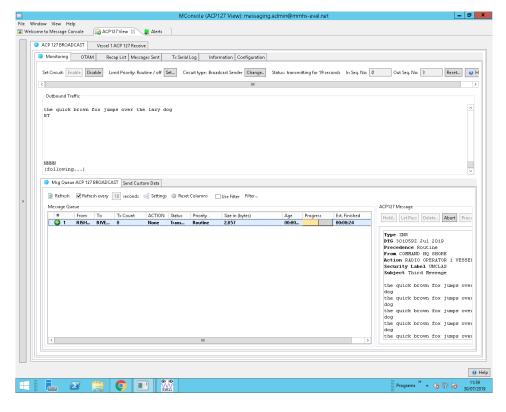


Figure 12.2. ACP127 Circuit Monitor View (Message Queue) Tab

The Msg Queue Tab has the following buttons:

- If a user selects the **Refresh** button the messages are reread from the ACP127 channel.
- The **Refresh Every** checkbox can be checked to generate periodic refreshes at regular intervals.
- If a user selects the **Reset Columns** the layout of the columns is recalculated in order to present them more clearly.
- The **Use Filter** checkbox can be checked to filter messages according to a predefined filter.
- Selecting the **Filter...** button allows a user to configure a filter which restricts the set of messages displayed.

Selecting a message within the queue will display the message. It also allows a user to see the message content and perform actions on the message.

Depending on the nature of the channel and the status of the message different buttons appear and are selectable or greyed out as appropriate.

For a circuit that is in the manual mode the following options are available:

- If a user selects the **Delete** button, then the currently selected message will be deleted if it hasn't yet started to be transmitted. If it has started, then the MTA will be told to abort (cancel) transferring the message before deleting the message.
- If a user selects the Send button, the message will be transmitted.
- If a user selects the **Abort** button, the transfer of the message will be aborted (cancelled in ACP127 terms).
- If a user selects the **Transferred** button, the message will be regarded as having been sent successfully and will be deleted from the MTA's queues.
- If a message is large enough, and Message Segmentation is enabled in the configuration of the circuit, it will be segmented when the initial attempt to transmit a message takes place, i.e. when the **Send** button is pressed when the message is selected.

Should this happen, the first segment will immediately begin to transmit. All the segments of the message will now appear as subsidiary items in the queue. The operator must use the **Send** button for each other segment in order to send it. The status will change from Transmitting to Sent as the segment is successfully sent and acknowledged, and the segment count in the message updated to reflect the number of segments successfully sent so far.

If a user selects the **Transferred** button for a segment, the **Send** button lights up and can be used to send another segment. Once all the segments have been sent, the message itself can be set to sent by selecting the **Transferred** button.

For automatic circuits the following options are available:

- If a user selects the Hold button, a delay will be imposed on the message.
- If a user selects the Let Pass button, any delay on the message is removed.
- If a user selects the **Delete** button, then the currently selected message will be deleted if it is idle. If transmission of the message has started, the MTA will be told to abort (cancel) transfer of the message before deleting it.
- If a user selects the **Abort** button, the message transfer will be aborted (cancelled in ACP127 terms) and be delayed or deleted depending on the option chosen.
- If a user selects the **Process Next** button, any delay will be cleared and the message will be set to be processed next.
- If a user selects the **Move** button, the message's place in the queue can be changed to alter the order in which messages are set to be processed.

Note: MConsole will resume the other messages only after it knows the current message has been transferred, and its knowledge of the queued messages is refreshed.

12.1.1.1 Understanding message queue settings

There are a variety of different settings to help monitor the message queue. These fall into two categories, automatic and manual settings.

12.1.1.1.1 Manual settings

When a circuit is in manual mode, the **settings** options just allow extra information to be displayed. It's up to the operator to decide if a message should be processed or not.

• Display ZPW in message queue.

Displays the ZPW as a new table column. This will force the table to be resized if needed. The ZPW will only be shown if present.

• Display DTG in message queue.

Displays the DTG (Date Time Group) value in a new column. This will force the table to be resized if needed.

• Display CSN in message queue.

Displays the circuit serial number. This will force the table to be resized if needed.

Note: The CSN is generated by the **ACP127 channel**. As such it's only shown when a message has started to be transferred.

12.1.1.1.2 Automatic settings

Automatic settings allow an operator to set specific instructions to **MConsole**, which can manipulate messages under certain circumstances.

• Display and check ZPW in message queue.

Displays the ZPW as a new table column. This will force the table to be resized if needed. The ZPW will only be shown if present. This option also allows further actions to be taken on the ZPW.

• Hold when ZPW is missing.

When the ZPW is missing, MConsole will issue a delay or **Hold** command on the message. The length of delay is specified by the **Delay timer**. The delay will not be issued if the message has already started being transmitted.

• ZPW Expiry Actions.

No Action, means that no action will be taken when the ZPW has expired. **Discard Immediately**, means that as soon as a ZPW is expired, the message will be discarded. **Delay then discard**, means that the message will be delayed by the **Delay timer** value, and then discarded. This gives an operator the ability to choose to transfer a message, or not, while automatically keeping the channel clear.

• Delay timer.

The delay in minutes to be applied to a message if the ZPW is missing or expired.

• Display DTG in the message queue.

Shows the Date Time Group in the message queue.

• Display CSN in the message queue.

Shows the **Circuit Serial Number** in the message queue.

• Non-Delivery.

If set, this option will generate a non delivery report when a message is discarded. The delivery report will include the reason specified in the text box.

Note: Messages can only be discarded or delayed if a message isn't already being transmitted. If a message is submitted, and begins to be processed by the **ACP127 channel** then delay and discard operations will not have any effect.

12.1.1.2 Compose Service Message

The **Compose Service Message** sub tab allows ad hoc Service Messages to be sent using the circuit.

MP 1 AZ 111	MConsole (ACP127 View): messaging.admin@mmhs-eval.net 📃 🗖
Window View Help Welcome to Message Console	ACP127 View 🖄 🕌 Alerts
ACP 127 BROADCAST	Vessel 1 ACP 127 Receive
Monitoring Messages Se	nt Messages Received Tx Serial Log Rx Serial Log Information Configuration
Set Circuit: Enable	Disable Limit Priority: Routine / off Set Circuit type: Normal (P4P) Change Status: idle for 6 seconds In Seq. Nor. 48 Out Seq. Nor. 2 Reset 💘 Help
Outbound Traffic	Inbound Traffic
VZCZCSHSOO1 PP RIVESSO DE RISHORE 0004 ZNR UUUUU ZID SHROOO	UU ^ HELLO AGAIN HQ A
Msg Queue Vessel 1 Ar	P 127 Receive Compose Service Mesings Send Custom Data
OPSIG context:	INT ZDK - Request Repetition
OPSIG:	INTZDK
ACP 131(e) Definition:	Will you reget mossage (or portion) (or will you erun number)? / Following repetition (of) is made in accordance with your request.
Parameter syntax help:	Parameter is single Channel Number to identify Transmission, which is 2 or three letters to identify the channel followed by the TSN 3 digits. For example '000123''
Abbreviated Format Service Message Priorit	y Routine v
Send	
Send	Image: Second

Figure 12.3. ACP127 Circuit Monitor View (Compose Service Message)

The pull down menu attached to **Default** allows you to choose a Service Message type from a list of commonly used types.

Custom SIG allows a service message type that is not in the commonly used list to be sent by specifying it directly.

The Abbrev option makes the ACP127 process send out an abbreviated service message.

The **Params** option allows an operator to enter free form information, if suitable for a given service message type. This needs to be appropriate for the service message chosen.

The Send button submits the service message to the queue.

12.1.1.3 Send Data

The **Send Data** Tab allows an operator to send data over the circuit. The tab looks within the *(ETCDIR)/ACP127TestTapeTemplates* directory, and lists all readable files in a pull down list. This means it is possible to store preconfigured test tapes / common messages within this directory, and easily transmit them over the circuit.

me to Message Console 🙀 <u>ACP127 View</u> 🖄 🚺 Alerts		
ACP 127 BROADCAST Vessel 1 ACP 127 Receive		
Monitoring Messages Sent Messages Received Tx Serial Log Rx Serial Li	og Information Configuration	
Set Circuit: Enable Disable Limit Priority: Routine / off Set C	Circuit type: Normal (PtP) Change Status: idle for 8 seconds In Seq. No: 48	Out Seq. No: 2 Reset 😢 Help
Outbound Traffic	Inbound Traffic	
VE2CSESSO01 UU PP RIVESSO PE RISEORE 0004 2111102 ZIN UUUU ZID SHR000	A HELLO AGAIN HQ BT B	ž
	NNNN (following)	~
Msg Queue Vessel 1 ACP 127 Receive Compose Service Message Send	Custom Data	
Templates: ACP_127_Standard_Test_Message v Load Delete	Edit Create	
\$07352070 BR RUEPW\$0750 D & \$1010 CAU \$0/NEYTSENUD \$FILINGTIME}\$22CR) ZMR ULUUUE2CP TEST THE OUICC BROWN FOX JUMPS OVER THE\$22CR) LAZY DO 635(2CR) T235757805076/REVENTIVER/REVENTIVE/REVENTIVE THE ZEX ISSO NIT ZEX ISSO NIT ZEX ISSO \$TRAILER\$\$(121RS)		^
Send Submit Internally Clear		v
		Γ
🛓 🛛 📋 💽 🔛		Programs 🔭 🔺 🌆 😨 😼 🍴

Figure 12.4. ACP127 Circuit Monitor View (Send Data)

Note: The default directory which contains the test templates can be changed by altering the **Template Directory** within the **ACP127 Monitoring** tab of the **Edit Message Switch** dialog. This dialog can be found by right clicking on your Switch and selecting **Modify**, in either the **Switch Operations** view or the **ACP 127 View**.

12.1.2 ACP127 Repair Queue

The repair queue provides a list of messages that have garbled content. This tab will only appear if the circuit has been configured to send garbled messages to the repair queue as explained in <u>M-Switch Administration Guide</u>.

The **Garbled** tab provides the functionality to process these messages. The messages in this queue can be discarded using the **Discard...** button and corrected using the **Repair...** button.

The **Repair** dialog presents the garbled content in an editable area. Message can be corrected here and then submitted to the server.

ACP 122 BROADCAST @ Vestel 1 ACP 127 Receive Montoring @ Repair @ Refreih @ Refreih every @ seconds Time 13-03-2019 15:07:06	Vou can edit the message here before submitting it to the channel Message for Area phrancas pu phrancas pu phrancas phrance phrancee phrancee phrancee phrancee phrancee phrancee phrancee phrancee	
	10 CURJECT MESSAGE BOZ RĂPAIR	
I SHR025 UU 1 SHR025 UU 2 RR RISHORE DE RIVEGGO 0109 0721506 2 ZRR UUVUU S RISSOGZ TAR 2019 6 FM RANKOVOPERATOR I VDÓSZL 1 Th COMMAND HS SHORA 8 BT GUNCLAS 10 CERPACT HESSAGE DOZ SÁPAIS I 11 THE QUICK BROWN YOX UMPSCOVER TH 15 BS OVER VOSEN YOX 15 BS OVER LE LAY DOG 15 BE QUICK BROWN YOX JUMPSCOVER TH 16 SUCCE BROWN YOX 16 DOG 15 BS OVER LHE LAY DOG 15 BE QUICK BROWN YOX JUMPSCOVER TH	THE QUICE BROWN FOX JU 19 FS OVER THE LAZY DOG 14 THE QUICK BROWN FOX JURPS OVER THE LAZY DOG 15 H 17 TAA QUICK BROWN FOX JURPS OVER THE LAZY DOG 17 TAA QUICK BROWN FOX JURPS OVER THE LAZY DOG 18 DHE QUICK BROWN FOX JURPS OVER THE LAZY DOG 19 DHE QUICK BROWN FOX JURPS OVER THE LAZY DOG 10 THE QUICK BROWN FOX JURPS OVER THE LAZY DOG	strully to
THE QUICK BROWN FOX JUMPS OVUME T THE QUICK BROWN FOX JUMPS OVUME T THE QUICK BROWN FOX JUMPS WURF T THE QUICK BROWN FOX JUMPS WURF T THE QUICK BROWN FOX JUMPS OVUME T THE QUICK BROWN F	I I IE LAXY DOG	Cancel

Figure 12.5. ACP127 Repair Queue

12.1.3 ACP127 Messages Sent View

Broadcast and Point to Point senders have a View which shows the messages sent, as shown below.

Figure 12.6. ACP127 Messages Sent View

	AM Recap List Messages h every 60 seconds	Sent T _X	Serial Log In	formation Configura	ion
Between the times 3	0 July 2019 00:00			Edit	Clear and 31 July 2019 00:00 Edit Clear
Search Limit(number)	500				Content
Subject First Message 2nd msg Third Message	DTG/Submit Time T 301058Z Jul 2019 1 301059Z Jul 2019 2 301059Z Jul 2019 3	Priority S. Routine 1. Routine 9. Routine 2.		Transfer out Time 2019-07-30 11:59:11 2019-07-30 11:59:19 2019-07-30 11:59:55	
					To: RADIO OPERATOR 1 VESSEL 1 ≤radio operator1@vessel1.ne> Date: Tue Jul 30 11:58:58 BST 2019 Subject: First Message Message 14: e397b556-ce317-425e-80ed-b516dde0db11@mmhs-eval.net> DTG: 3010582 Jnl 2019 Primary Precedence: Routine Copy Precedence: Routine
					the quick brown fox jumps over the lazy dog the quick brown fox jumps over the lazy dog
					the quick brown fox jumps over the lazy dog the quick brown fox jumps over the lazy dog
5				>	

The Messages Sent view connects to the Audit Database. The Audit Database is configured in the **Options** view.

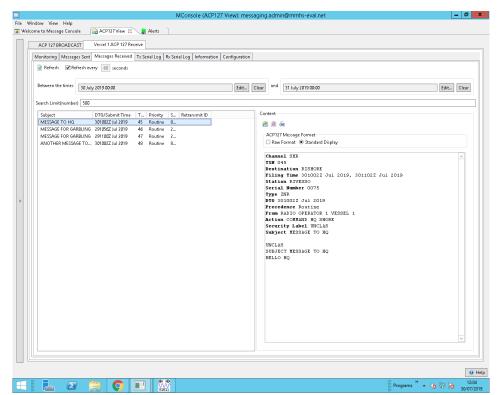
The time and date range fields allow selection of messages sent between two specified times and dates. The number of messages requested in the search results can also be limited.

Selecting a message in the view causes the Message Content to be displayed.

12.1.4 ACP127 Messages Received View

Broadcast and Point to Point receivers have a View which shows the messages received, as shown below.

Figure 12.7. ACP127 Messages Received View



The Messages Received view connects to the Audit Database. The Audit Database is configured in the **Options** view.

Setting the **Between the times** and the **and** text causes messages from between those times to be displayed.

Selecting a message in the view causes the Message Content to be displayed.

12.1.5 ACP127 Tx Serial Log

Figure 12.8. ACP127 Tx Serial Log View

ACP 127 BROADCAST Vessel 1 ACP 127 Receive		
Monitoring OTAM Recap List Messages	ent Tx Serial Log Information Configuration	
Serial Log file: acp127.Send++VOBS.2019-07-30-00-00.tr		
Traffic		
DE RISHORE 0001 2111059 ZNR UUUUU		^
R 301058Z JUL 2019		
FM COMMAND HQ SHORE TO RADIO OPERATOR 1 VESSEL 1		
BT		
UNCLAS SUBJECT First Message		
the quick brown fox jumps over the lazy dog the quick brown fox jumps over the lazy dog		
the quick brown fox jumps over the lazy dog		
the quick brown fox jumps over the lazy dog the quick brown fox jumps over the lazy dog		
the quick brown fox jumps over the lazy dog		
the quick brown fox jumps over the lazy dog the quick brown fox jumps over the lazy dog		=
the quick brown fox jumps over the lazy dog		
the quick brown fox jumps over the lazy dog the quick brown fox jumps over the lazy dog		
the quick brown fox jumps over the lazy dog		
the quick brown fox jumps over the lazy dog the quick brown fox jumps over the lazy dog		
PAGE 2 RISHORE 0001 UNCLAS		
BT		
NNNN		
NAWS		
VOBS002 RR RIVESSO		
DE RISHORE 0002 2111059		
ZNR UUUUU R 301059Z JUL 2019		
FM COMMAND HQ SHORE TO RADIO OPERATOR 1 VESSEL 1		
BT		
UNCLAS		~
SUBJECT 2nd msg		Ľ

Logging of data sent can be captured in log files and viewed in the Tx Serial Log Viewer tab.

12.1.6 ACP127 Rx Serial Log

Figure 12.9. ACP127 Rx Serial Log View

ACP 127 BROADCAST	sel 1 ACP 127 Receive	
Monitoring Repair Duplicate	Intercept Codress Messages Sent Messages Received Tx Serial Log Rx Serial Log Information Co	nfiguration
Serial Log file: acp127.Recv-RJ	SSO+SHR.2019-07-30-00-00.trans 🗸 🔯	
Traffic		
		^
NNNN VZCZCSHR049 UU		
RR RISHORE DE RIVESSO 0077 2111103		
ZNR UUUUU R 301002Z JUL 2019		
FM RADIO OPERATOR 1 VESS TO COMMAND HQ SHORE	1	
BT UNCLAS		
SUBJECT THIRD MESSAGE FRI THE QUICK BROWN FOX JUM		
THE QUICK BROWN FOX JUM	S OVER THE LAZY DOG	-
THE QUICK BROWN FOX JUM THE QUICK BROWN FOX JUM	S OVER THE LAZY DOG	
THE QUICK BROWN FOX JUM THE QUICK BROWN FOX JUM	S OVER THE LAZY DOG	
THE QUICK BROWN FOX JUM THE QUICK BROWN FOX JUM	S OVER THE LAZY DOG	
THE QUICK BROWN FOX JUM THE QUICK BROWN FOX JUM	S OVER THE LAZY DOG	
THE QUICK BROWN FOX JUM THE QUICK BROWN FOX JUM	S OVER THE LAZY DOG	
THE QUICK BROWN FOX JUM THE QUICK BROWN FOX JUM	3 OVER THE LAZY DOG 3 OVER THE LAZY DOG	
PAGE 2 RIVESSO 0077 UNCLA		
THE QUICK BROWN FOX JUM THE QUICK BROWN FOX JUM	S OVER THE LAZY DOG	
THE QUICK BROWN FOX JUM THE QUICK BROWN FOX JUM		
THE QUICK BROWN FOX JUM THE QUICK BROWN FOX JUM		
THE QUICK BROWN FOX JUM THE QUICK BROWN FOX JUM		
THE QUICK BROWN FOX JUM THE QUICK BROWN FOX JUM	S OVER THE LAZY DOG	
THE QUICK BROWN FOX JUM THE QUICK BROWN FOX JUM	S OVER THE LAZY DOG	v

Logging of data received can be captured in log files and viewed in the Rx Serial LOg Viewer tab.

12.1.7 ACP127 OTAM View

Figure 12.10. ACP127 OTAM View

	MConsole (ACP127 View): messaging.admin@mmhs-eval.net	L <u>-</u>	. 0 ×
	Window View Help		
Wel	Icome to Message Console 🛛 🙀 ACP127 View 🔯 🧶 Alerts		
	ACP 127 BROADCAST Vessel 1 ACP 127 Receive		
	Monitoring OTAM Recap List Messages Sent Tx Serial Log Information Configuration		
	Traffic Advanced		
	- Error Summary		
	Average error rate (1 / 5 / 15 min) : 0.00 0.00 0.00		
	OTAM Traffic		
	(following)		^
			=
			-
>			
			×
			🥑 Help
H		Programs 🦥 🔺 🆙 💭 🙀	12:00

The OTAM process connects to the ACP127 process, and monitors outbound traffic. It also connects to a receiver, allowing traffic that is being transmitted to be received. By comparing the two streams of read and write data, it is possible to spot errors when transmitting and allow the operator to assess the quality of the signal.

The OTAM view connects to the OTAM process in a similar fashion to the other ACP127 views by selecting an MTA/Circuit.

Once a circuit is being monitored Summary Error information and traffic is displayed within the **Traffic** sub tab.

The current error rate is displayed as a rolling average for the last minute, five minutes and fifteen minutes.

The Traffic window shows the comparison between the inbound and outbound streams. Green traffic means that the streams match.

Red means that a **Data Read Miss** has occurred. This happens when there is data in the read stream (from the receiver), but not present in the write stream.

Blue means that **Data Write Miss** has occurred. Data is present in the write stream, but not in the read stream.

dow View Help		
me to Message Console 🛛 🙀 ACP127 View	v 🖾 🟮 Alerts	
ACP 127 BROADCAST Vessel 1 ACP 12	27 Receive	
Monitoring OTAM Recap List	Messages Sent Tx Serial Log Information Configuration	
Traffic Advanced		
Update Information		
Refresh 🞅 🗹 Refresh every 10 se	conds	
Information		
	and an and a second second	
Read Connection: Write Connection:	not-connected not-connected	
1 Minute Rolling Error	0	
5 Minute Rolling Error	0	
15 Minute Rolling Error	0	
Commands		
Reset server statistics Reset		
Set error threshold: (%) 10 🔹	Set	
		Programs ³⁰ A 👍 💱 🕞

Figure 12.11. ACP127 OTAM View Advanced

The Advanced tab allows a user to:

- Refresh the error information and connection status
- Check the read connection.
- Check the write connection
- Check the 1 / 5 / 15 minute rolling average error information.
- Reset the error statistics.
- Set an error threshold. If the error rate reaches this level then an alert is issued.

Error information is updated when MConsole asks for the information to be refreshed from the OTAM process. A user can do this manually by selecting the **Refresh** button, or by setting the **Refresh every** option.

Selecting the Reset button will cause the OTAM process to reset its internal error count.

MConsole will notify a user if the OTAM internal error count exceeds the specified error threshold.

The **Read** and **Write** connection information is useful to check that the OTAM process has both read and write streams. It requires both streams to function correctly. If one or both of the streams are not connected, then the OTAM process cannot provide any useful information to the user.

12.1.8 ACP127 Queue Tabs

ACP127 server has types of queues associated with it that can be enabled by configuring the server to send messages to them in certain scenarios.

12.1.8.1 Duplicate Queue

The duplicate queue presents the list of messages that the server regards as duplicates. This tab will only appear if the circuit has been configured to send duplicate messages to the duplicate queue as explained in <u>M-Switch Administration Guide</u>

The UI provides operations for discarding and submitting messages back to the server. The **Show Matches** button displays the possible matches for the message in a dialog as shown in the figure below.

MC MC	onsole (ACP127 View): messaging.admin@mmhs-eval.net	-	σx
File Window View Help	······		
The Welcome to Message Console 🔗 ACP127 View 🛛 👔 Alerts		Π	
ACP 127 BROADCAST Vessel 1 ACP 127 Receive	Display Matching Messages 📃 🗕 🗖 🗙	I	
Monitoring Ouplicate Intercept Cod Match1 Matc	h2 Match3 Match4	iguration	
Refresh Refresh every 60 seconds			
Time T2N Subject		Size	
30-07-2019 12:16:01 054 SHR TSN SHRC		170	
30-07-2019 12:16:07 055 SHR Matching Co 30-07-2019 12:16:13 056 SHR 1 SHR05		170	
2 SUID-2019 12:10:15 030 3HK 2		110	
3 4 RR RU	CPW		
5			
	/ESSO 0033 2261503		
8 ZNR U 9	1000		
< 10 11 TET 1	THE QUICK BROWN FOX JUMPS OVER THE		>
1 SHRU54 12	THE QUICK BROWN FOR SUMPS OVER THE		^
3 RR RUEPU 13	DOG		
4 5 DE RIVESSO 0033 2261503			
> 6 2NR 00000 17 12345	57890RYRYRYRYRYRYRYRYRYRYRYRYRYRY		
e TEST THE QUICK BROWN FOX JUMPS OVE			
10 LAZY DOG 20 INT Z	3Z K		
11 22			
13 14 INT 282 K	<u>v</u>		
15	ОК		
16	UK		
		-	
<			>
Discard Submit Show Matches			
Distance: Submitter Site Middlifes			
			🔮 Help
🗧 📘 🖉 🚞 🕥 🔛 🗉		Programs 🦜 🖕 🐑 😽	12:16 30/07/2019

Figure 12.12. ACP127 Duplicate Queue

12.1.8.2 Codress Queue

The codress queue contains the list of messages received by the server that have a grouper (has the GR field present). This tab will only appear if the circuit has been configured to send encrypted messages to the encrypted queue as explained in <u>M-Switch Administration</u> <u>Guide</u>

The UI provides operations for discarding messages, exporting messages to file and importing messages from the filesystem to submit to the server.

dow View Help			e (ACP127 View): messagii	ig.aumin@mmns-eval.	net		
		E Alerts					
ACP 127 BROADCAST 🤍 V	essel 1 ACP 127 Receiv	e					
Monitoring Duplicate	🔵 Intercept 🧵 🤇	odress Messages Sent Me	ssages Received Tx Serial L	og 🛛 Rx Serial Log	Information Configuration		
🖹 Refresh 🛛 🗹 Refresh every	60 seconds						
Time	TSN	Station	From	Subject	Prioriry	Size	
30-07-2019 12:16:20	057	SHR	<unknown></unknown>	<unknown></unknown>	P	160	
30-07-2019 12:16:26 30-07-2019 12:16:32	058 059	SHR SHR	<unknown> <unknown></unknown></unknown>	<unknown> <unknown></unknown></unknown>	P	160 160	
1 SHR057UU 2 3 PP RBFUXG 4							
5 DE RIVESSO 0081 2 6 7 P 3011162 JUL 203 8 9 GR 37							
11 BT 12 13 24680 XRAY UNIFO	RM DELTA MIKE AN	LFA					
14 15 PBOSI NTYEB HJEL 16	GRZQS						
17 BT 18 19							
<							>
Discard Export							Impor
							ſ
	• • •					Programs » 🔺 🗊	

Figure 12.13. ACP127 Codress Queue

12.1.8.3 Intercept Queue

The intercept queue lists the messages received that are not explicitly meant for this station. This tab will only appear if the circuit has been configured to send intercepted messages to the intercept queue as explained in <u>M-Switch Administration Guide</u>.

The UI provides operations for discarding and forwarding the messages to an alternate ACP127 address.

ACP 127 BROADCAST Vessel 1 Monitoring Intercept Mes	1 ACP 127 Receive				
Monitoring • meneope mes		Tx Serial Log Rx Serial Log	Information Configur		
Refresh 🗹 Refresh every 60		TX Senar Log RX Senar Log	mormation comigur	auon	
		-			
Time TSN 30-07-2019 12:14:37 050	Station	From <unknown></unknown>	Subject <unknown></unknown>	Priority	Size 170
30-07-2019 12:14:43 051	SHR	<unknown></unknown>	<unknown></unknown>	R	170
30-07-2019 12:14:49 052	SHR	<unknown></unknown>	<unknown></unknown>	R	170
<			e Forward		
1 SHR050 2		his message to a PLA (Plain Language	Muuress)		
3 RR WEIRD		to PLA COMMAND HQ SHORE			
4 DE RIVESSO 0078 2111: 5	114 🗹 Delete	this message after forwarding			
6 2NR UUUUU 7					
8 TEST THE QUICK BROWN	FOX JUMPS OVE		OK	Cancel	
9 10 LAZY DOG					
10 5821 006					
12 1234567890RYRYRYRYRY 13	RYRYRYRYRYRYRYRYRY				
14 INT ZBZ K					
<					3
Discard Forward					

Figure 12.14. ACP127 Intercepted Queue

12.1.9 Information

The Information tab contains extra information about a given circuit.

Figure 12.15. ACP127 Circuit Monitor View (Information) Tab

Montonia OTAMI Recip Litt Mersage: Same TxSena Lag Information Circuit Mode April 2178 RADUADST Annet April 2178 RADUADST Annet April 2178 RADUADST Ap			I	
Name ACP 127 BROADCACT Potocol Selance Orbanoul Link SpedDayn Solance Orbanoul Link SpedDayn OPO Crical Statu OPD Crical Topic OPD Director Topic Topic OPD Director Topic T	Information Configuration	Tx Serial Log	Recap List Messages Sent	Monitoring OTAM
Pettoci Serial Charset Mile Charset Mile Outsound Link Speed Opp.) 30 Circuit Status OFEN FAB change Direction Hommann Normanni Normanni OtAlame Solo OfAmentoring Hommanni Laupdate Time 209370110002Z Manual Autoratic Enceptod O Encepted O Solabed O Encepted O				
Chance full Bab Ordenoul Link Specifies OPEN FAB change Circuit Dyout OPEN FAB change Circuit Type Image: Change chang				
Outbound Unk Speed (bp.) 300 Circus Datus OPEN : FAB change Circus To Status Internet in the status Direction Internet in the status Name XOS OtAthame VOBS Circus To Status Internet in the status Direction 2019/70110002Z Manual Automatic Encepted O Encepted O Stabel O Encepted O				
Carcust Study OPEN: FAB change Carcust D Carcust C Carcust D Feed C Carcust County Feed C Direction sed Direction Sed C Dare C Sed C Carcust County Sed C Carcust County Sed C Dare C Sed C Carcust County Sed County				
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Circuit Country Image: Circuit Country Direction Beil Direction Beil In Name O In Name V05 OrtName Wontoring Monotring Monotring Transmission Status Idle Last update Time 201907010032 Manual Automatic Encrypted Q Encrypted G Sorbed Q Encrypted G				
Direction send Ri				
Pi Col In Name XXXX Oxt Name VBS OTAM Monitoring Montoring Transmission Status Ide Latt update Timme 2019/2011/00022 Manual Automatic Encrypted Q				
In Name XXXX In Name XXXX Out Name XXXXX Out Name XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX			send	
Out Name VOBS OTAM Montoring Montoring Transmission Satus Idle Laturgater Time 20197010002Z Manual Automatic Encrypted Q Intercepted Q Grabed Q Intercepted Q			2007	
OTAM Monitoring Monitoring Transmission Satus idle Listupdate Timme 201907301100002 Manual Automatic Encrypted Q				
Transmission Status idle Lat update Timme 20190730100002Z Manual Automatic Encopted O Intercepted O Garbled O Intercepted O				
Last update Time 20190701100932 Manual Automatic Encrypted Q Software Sorbed Q Software				
Manual Automatic Encoyted Q Intercepted Q Sorbled Q Intercepted Q				
Encrypted O Intercepted O Gorbed Q				
Intercepted Q. Garbled Q.			Hatomate	
Garbled Q				

12.2 Windows COM device support

M-Switch provides support to connect to Windows COM devices. This allows data to be sent directly over serial based modems, or via 3rd party systems.

12.2.1 Preparation to use a COM device

It is advisable to have configured a working ACP127 based M-Switch configuration before going any further, using a TCP-based circuit connection. This allows verification of routing, and authentication before configuring the COM device.

The ACP127 channel process will relay information through a **serial proxy**. It may be useful to enable logging for the serial proxy during configuration. To do this, set the environment variable SERIALPROXY_DEBUG to a debug output file of your choice.

12.2.2 Configuring a COM device

Once the COM device drivers have been installed, the device settings should be set. For example

- Set baud rate to 300bps
- Set data bits to 7
- Set Parity to Odd
- Set Stop bits to 1
- Set Flow Control to Hardware

Note: In this example a data rate of 300bps is being set for the COM device. M-Switch will be told to transfer data at a higher rate to prevent buffer underflows.

12.2.3 Configuring the ACP127 circuit to use the COM device

Figure 12.16. ACP127 OTAM View Using the COM device

			- 0 ×
	MConsole (Switch Configuration Management): messaging.admin@mmhs-eval.net		
File Window View Messaging Operations H			
Welcome to Message Console 🛛 🔄 Switch Co	iguration Management 🛛		
	Tyronian Management 22 Main Routing Format Circuit Link Broadcest Recap Fill Tage Retenomission OTAM ■ ForoRate Threshold (general) Set Custom Value 10 0 - Srink Connection Proxy Command C:/Program File/Sludekthare/Lierin/prox/monsky.exe Encoding: LAS Full Character Set - 7 bit v - Srink Parameters Baud rate 600 Parity ForoR CTSRTS Tansmit BTS high throughout transmission v Hidden buffer drain time Configuration String baud=600 parity=N data=7 stop=1 rticts=transmit	com≡4 ✓ Stop bits @ One ○ Two ✓ Data size [7	. bit
Internet Message Stores MMHS-EVAL			
a 📴 SS066 Servers			
S MMHS-EVAL			Apply Cancel
ACP127 S5066 Access Points	▼		
			0.111
			🤨 Help
		Programs 🦥 🔺 🎲 🐑	11:43 30/07/2019

Select the circuit you wish to configure within the **Switch Configuration Management** view of MConsole.

Select the Circuit tab.

- Select **Serial** as the connection type.
- Select Serial proxy as the driver.
- Set **device** to the COM device. E.G **dev=com4**.
- Set the **baud rate** to be higher than the configured rate of the device. So in this example set it to **600**
- Set Stop bits to 1.
- Set Parity to Odd.
- Set Data Size to 7 bits.
- Set CTS/RTS to transmit.

Once configured you should restart the ACP127 process.

Chapter 13 Vetting View

The Vetting View allows Operators to check that selected messages are suitable for queueing and sending and then manually release them for processing.

Authorization Rules can be used to select messages to be "held" on arrival (submission or transfer-in) at a Message Switch. Messages which are "held" remain queued on their first scheduled channel until they are either manually released (via a SOM protocol operation) using the **Vetting View** or reach their expiry time, when they will be non-delivered.

Message holding allows messages to be inspected and cleared (or manually non-delivered) by an operator. Use of Authorization Rules to select those messages which will be held allows holding to be restricted to a subset of messages, e.g. those routed to external MTAs.

	Console 🛛 🙀	3 ACP12	7 View 🖄	📒 Alerts										
ACP 127 BROA	ADCAST .		CD 107D .	_										
			CP 127 Recei		_									_
 Monitoring 	OTAM	Reca	p List Messa	ages Sent	Tx Serial	I Log Ini	formation Configuration							_
Set Circuit: E	Enable Disabl	le Lim	iit Priority: Ro	utine / off	iet Cir	rcuit type: Bri	oadcast Sender Change	Status: transm	itting for 19	seconds In Seq	No: 0	Out Seq. No:	3 Res	et
<														
- Outbound T	Traffic													
the aut-	brown			- 1079 -										
BT	k brown fo:	x jump:	s over th	е таду об	g									
NNNN (followir	ng)													
			T											
Misg Que	eue ACP 127 BR	GADCAS	Send Cust	tom Data										
🖹 Refresh	n 🕑 Refresh e	every 1	0 seconds	🛒 Settings	Rese	t Columns	Use Filter Filter							
Message Q	Jueue											ACP127 Message		
#	From T		Tx Count	ACTION	Status	Priority	Size in (bytes)	Age	Progress	Est. Finishe	d		Delete Abor	t Pn
	From T		Tx Count 0	ACTION None	Status Trans	Priority Routine	Size in (bytes) 2.057	Age 00:00	Progress	Est. Finishe 00:00:24	d		Delete Abor	t Pn
#	From T								Progress		d	Hold Let Pass		t Pr
#	From T								Progress		d	Hold Let Pass	Jul 2019	t Pr
#	From T								Progress		d	Hold Let Pass Type 2NR DTG 3010592 3 Precedence Ro From CONNAND	Jul 2019 Dutine HQ SHORE	
#	From T								Progress		d	Hold., LetPass Type 2NR DTG 3010592 C Precedence Ro From CONMAND Action RADIO	Jul 2019 Dutine HQ SHORE OPERATOR 1	
#	From T								Progress		d	Hold Let Pass Type 2NR DTG 3010592 3 Precedence Ro From CONNAND	Jul 2019 Dutine HQ SHORE OPERATOR 1 el UNCLAS	
#	From T								Progress		d	Hold Let Pass Type 2NR DTG 3010592 3 Precedence Rc From COMMAND Action RADIO Security Labe Subject Third	Jul 2019 Dutine HQ SHORE OPERATOR 1 el UNCLAS d Message	VESS
#	From T								Progress		d	Hold., Let Pass Type ZNR DTG 3010552 C Precedence Rc From CORIAND Action RADIO Scupiet Thire the quick bro dog	Jul 2019 Dutine HQ SHORE OPERATOR 1 el UNCLAS d Hessage Dwn fox jump	VESS ps ov
#	From T								Progress		d	Hold. Let Pass Type ZNR DTG 3010592 C Precedence Re From CONNAND Action RADIO Security Labe Subject Third the quick bro dog the quick bro	Jul 2019 Dutine HQ SHORE OPERATOR 1 el UNCLAS d Hessage Dwn fox jump	VESS ps ov
#	From T								Progress		d	Hold., LetPass Type 2NR DTG 3010522 J Precedence Rc From CONNAND Action RADIO Security Labs Subject Third the quick bro dog the quick bro dog the quick bro	Jul 2019 Dutine HQ SHORE OPERATOR 1 el UNCLAS d Message Dun fox jump	VESS ps ov ps ov
#	From T								Progress		d	Hold. Let Pass Type 2NR D16 3010592 c Proceedence RR From CONNAUD Action RADIO Security Labs Subject Thire the quick bro dog the quick bro dog	Jul 2019 Dutine HQ SHORE OPERATOR 1 BI UNCLAS d Message Down fox jump Down fox jump	VESS ps ov ps ov
#	From T								Progress		d	Hold. Let Pars Type ZNR DT0 S010592 C Procedence RC Security Labs Subject Thire the quick bre dog the quick bre the the the the the the the the the the	Jul 2019 Dutine HQ SHORE OPERATOR 1 el UNCLAS d Message Dun fox jump Dun fox jump Dun fox jump	VESS ps ov ps ov ps ov ps ov
#	From T								Progress		d	Hold., LetPass Type ZNR DTG 5010592 C Proceedence Rc From CONTAND Action RADIO Security Labs Subject Third the quick bre dog the quick bre dog the quick bre dog the quick bre	Jul 2019 Dutine HQ SHORE OPERATOR 1 el UNCLAS d Message Dun fox jump Dun fox jump Dun fox jump	VES: ps or ps or ps or
#	From T					Routine			Progress			Hold. Let Pars Type ZNR DT0 S010592 C Procedence RC Security Labs Subject Thire the quick bre dog the quick bre the the the the the the the the the the	Jul 2019 Dutine HQ SHORE OPERATOR 1 el UNCLAS d Message Dun fox jump Dun fox jump Dun fox jump	VES: ps or ps or ps or
#	From T					Routine			Progress			Hold. Let Pars Type ZNR DT0 S010592 C Procedence RC Security Labs Subject Thire the quick bre dog the quick bre the the the the the the the the the the	Jul 2019 Dutine HQ SHORE OPERATOR 1 el UNCLAS d Message Dun fox jump Dun fox jump Dun fox jump	VES: ps or ps or ps or
#	From T					Routine			Progress			Hold. Let Pars Type ZNR DT0 S010592 C Procedence RC Security Labs Subject Thire the quick bre dog the quick bre the the the the the the the the the the	Jul 2019 Dutine HQ SHORE OPERATOR 1 el UNCLAS d Message Dun fox jump Dun fox jump Dun fox jump	VESS ps ov ps ov ps ov ps ov
	From T	NIVE	0		Trans	Routine			Progress			Hold, Let Parso Type ZM The Solicity of the	Jul 2019 Dutime HQ SHOPE OFEATOR 1 11 UNCLAS 11 Message pown fox jump pown fox jump pown fox jump pown fox jump	VESS ps ov ps ov ps ov ps ov

Authorization Rules are described in the

The **Vetting View** consists of a table, which lists all held messages, and a window allowing an operator to check the held messge, before accepting or rejecting it.

This chapter describes how the M-Switch Diversions View is used.

14.1 Diversions and Nexus Overview

The Diversions View enables an Operator to **Enable** or **Disable** certain routes, so that they are ignored for Routing purposes. This allows the Operator to respond to lack of availability of certain MTAs or networks. This is done using Routing Nexus.

A Routing Nexus specifies one or more MTAs which are to be the target for Routing. Each MTA can be labelled **Enabled** or **Disabled**. The checkboxes mean that the Operator is able to select which one of the MTAs is enabled. Enabling one MTA disables all the others.

The following screenshot shows how the Nexus can be edited to **Enable** or **Disable** the MTA Information.

The Nexus and MTA Information cannot be edited in the Diversion View which is intended for Operators. The Nexus and MTA Information can be edited in the Switch Configuration View. See <u>M-Switch Administration Guide</u> for further explanation.

Figure 14.1. Diversion View

		MConsole (Diversions): john.smith@x400.headquarters.net	_ 0
ndow View Help ome to Message Console	🖗 Switch Configuration Management	JUrversions 23	
Diversions: Operator's View			
	olay all Nexuses for the Selected MTA		
Nexus	MTA Information	Enable	
Naval Headquarters	X400 Headquarters (SATCOM) X400 Headquarters (HF)		
Refresh Table			
			Apply
占 🛛 🚦	3 📀 🏧 🖭	Program	ns 🎽 🔺 🌜 😰 😼 🕺 10

Chapter 15 Correction View

This chapter describes the Corrections View which allows operators to correct messages which would otherwise be non-delivered.

15.1 Correction View

Once the corrector channel has been set up correctly, and at least one user has been configured to manage the messages in the corrector channel, the Message Correction GUI can be used to process the messages that are pending in the corrector channel.

The Message Correction GUI offers a way to "fix" messages that are syntactically correct, but have been faulted for other reasons.

Connecting to the Message Correction GUI The Message Correction GUI can be accessed via a standard web browser. The default URL is http://localhost:18200 but this can change depending on your configuration.

If you are accessing the Message Correction GUI from another machine, make sure that it is possible to establish a connection to the port and IP address that the server is listening on.

After an HTTP connection is established with the Message Correction Channel, the web browser will display a web page like the one in the image below.

Message Correction X		Leonardo — 🗆 🗙
$\langle \leftrightarrow \rangle \subset \Delta$ () localhost:18200		아☆ 🍇 🖏 🐮 :
	🖾 Message Correction	
	john.smith@isode.com	
	Login	
	Remember username?	

Figure 15.1. Correction View Login

Enter your user name in the first text box and then the password in the second box. If you want the web browser to remember the user name, click on the "Remember username?" checkbox. Click on the "Login" button to log in.

Provided that you have entered the correct user name and password, you will now see the main interface of the Message Correction GUI.

15.1.1 Message Correction Interface

Figure 15.2. Message Correction Interface

Bessage Correction	×	Leonardo [_]
\leftrightarrow \Rightarrow C \triangle \bigcirc loca	host:18200	প কু 🖉 🐮
🖾 Messag	e Correction	leo@spec.isode.net 🔁
Pending messages	0	Next message
Priorities:		
OVERRIDE	0	
FLASH	0	
IMMEDIATE	0	
PRIORITY	0	
	0	
DEFERRED	0	
Session stats:		
Processed:	0	
Resubmitted:	0	
Discarded:	0	

The interface keeps track of the number of messages that are pending in the corrections channel and also keeps statistics for the session. Once you log off and log on again, the "Session stats" are reset.

The total number of pending messages are displayed in the "Pending messages" attribute. There is also a breakdown of pending messages arranged by military priority, to give the administrator an indication of what messages should be processed first.

When a message is queued in the corrector channel it will be picked up by the Message Correction GUI automatically. There may be a delay before the message is shown, and this is controlled by the M-Switch Administrator, by default the messages are refreshed every 10 seconds.

To log out of a session, click on the "arrow inside a box" icon on the top right hand side of the page. This will bring you back to the log in screen.

15.1.2 Selecting messages for correction

The following figure shows 3 messages in the corrector channel. The messages are arranged by priority first and then by age, that is: the highest priority messages are shown first and if two messages have the same priority the oldest message is shown before the newer message.

🖾 Messag	e Corr	ection				
Pending messages	3	Deferred correction of mes	sage 'Test B'			Next message
Priorities:		FLASH	msg.12946-0	/CN=SBFLORIA/OU=SBFL/O=SBCT/PRMD=SB/ADMD=ICAO/C=XX/	221205Z May 2018	3250 byte
OVERRIDE FLASH	0 1	PRIORITY	msg.11096-2	/OU=EGLLAMHS/O=AFTN/PRMD=EG/ADMD=ICAO/C=XX/	221201Z May 2018	10004 byte
IMMEDIATE PRIORITY	0 1	DEFERRED	msg.11096-3	/OU=EGLLAMHS/O=AFTN/PRMD=EG/ADMD=ICAO/C=XX/	221205Z May 2018	3204 byte
ROUTINE DEFERRED	0 1					
Session stats:						
	o					
Resubmitted:	0					

Figure 15.3. Message Selection

To select a message for correction, simply click on it, and the message details will be shown.

15.1.3 Operating on messages

The following figure shows the message correction editor. The operator is presented first with the error message that caused the message to be sent to the corrector channel. In the case of this example, it was "X.400 Message too large: policy violation".

The size and type of the offending bodypart is shown, together with a summary of the message header and content.

The operator has four options to deal with the message: Defer, Discard, Reject and Submit.

Message Correction	×					Lconere	10		×
← → C ☆ 🛈 local	host:182	00				on 🕁 🌌	Ø.	ë :	
🖾 Messag	e Coi	rrection							
Pending messages	3	Advanced:		Undo all changes	Defer Discard	Reject	Sub	omit	
Priorities:									-
OVERRIDE	0	Error X.400 Message to	o large: policy violation						
FLASH	1								
IMMEDIATE	0	Invalid attachments:							
PRIORITY	1	[content] ia5-text				3016 bytes	5 🗇		
ROUTINE	0								
DEFERRED	1								
		() Original message]	
Session stats:		From:							
Processed:	0		/CN=SBFLORIA/OU=SBFL/O=SBCT/PRMD=S	SB/ADMD=ICAO/C=XX/					
Resubmitted:	0	Subject:	Test B						ł
Discarded:	0	Submission date-time:	221205Z May 2018						
		Action:	/CN=SBFLORIA/OU=SBFL/O=SBCT/PRMD=S	SB/ADMD=ICAO/C=XX/					
		JUMPED OVER THE LÂZY DI LIKE THAT THE QUICK BRO OVER THE LAZY DOG OR SI THAT THE QUICK BROWN I THE LAZY DOG OR SOMETI THE OUICK BROWN FOX IU	QUICK BROWN FOX JUMPED OVER THE LAZY DG OR SOMETHING LIKE THAT THE QUICK B WN FOX JUMPED OVER THE LAZY DOG OR S MORTHING LIKE THAT THE QUICK BROWN FOX OWER THAT LE LAZY DOG OR SOME THING LIKE THAT THE QUICK BROWN FOX JUM MPED OVER THE LAZY DOG OR SOMETHING LIKE THAT THE QUICK BROWN FOX JUMPED	ROWN FOX JUMPED OMETHING LIKE THA OX JUMPED OVER TH THING LIKE THAT TH MPED OVER THE LAZ S LIKE THAT THE OUI	OVER THE LAZY DO AT THE QUICK BRO HE LAZY DOG OR SO HE QUICK BROWN F Y DOG OR SOMETH CK BROWN FOX IU	OG OR SOMI WN FOX JUN OMETHING L OX JUMPED HING LIKE TH MPED OVER	ETHING MPED LIKE OVER HAT	G	

Figure 15.4. Operating On Messages

• Defer.

This simply requeues the message in the corrector channel, to be processed later.

• Discard.

The message will be dropped and the originator of the message will not receive a non-delivery report or DSN. The first time you discard a message, the GUI will ask you to confirm. The confirmation dialog can be optionally disabled for the remainder of the session.

• Reject.

This option allows the operator to reject the mesasge (i.e. it will not be sent to the recipients), but it will create an X.400 Non-Deliery Report or Internet DSN (if requested) and it will include an optional text string with additional information. To reject the message without any additional information, simply click on "Submit".

• Submit.

This option can be used to submit the modified message back to the MTA, for further processing. Unless the message is modified or the configuration of the MTA changed, submitting the message without changes will result in the message being put back in the corrector channel.

15.1.4 Performing Message Correction

As there are several reasons why the message have been sent to the correction channel, the operator has a choice of message correction actions to perform on a message.

The actions include:

• Removing a message bodypart.

To remove a message bodypart, click on the trashcan icon.

• Adding a SIC.

To add a SIC or a Security Label, first click on the "Advance" slidebar to that the Security label and SICs interface is shown.

If the problem with the message is a lack of SIC codes, enter the SIC code in the box provided.

• Adding a Security Label.

You can select a Security label by clicking on the "[no marking]" text, and a list of known Security labels will be shown.

· Recipient address correction or removal.

To correct an invalid recipient address, click on the the pencil icon or the text. To remove the recipient address, click on the trash can icon.

After the message has been edited, click on "Submit" to submit it back to the MTA for further processing.

Chapter 16 Message Switch Console Views

This chapter lists the MConsole Operator Views, providing a summary and links to further information.

16.1 MConsole Views

The MConsole framework for displaying information is to provide views in a tabbed series of windows similar to that used in web browsers.

These Views can be broken down into the following groups:

• Live Operations

These are Views used by operators in order to manage Isode messaging systems in real time. These are documented in this manual, but further information (in particular how to configure these views) is in the

- Switch Operations. See Chapter 5, *Switch Operations* for a description of how Operators can use this View. See <u>M-Switch Administration Guide</u> for a description of configuring this View.
- Event Viewer. See Chapter 6, *Events* for a description of how Operators can use this View. See <u>M-Switch Administration Guide</u> for a description of configuring this View.
- Alerts. See Chapter 7, *Alerts* for a description of how Operators can use this View. See <u>M-Switch Administration Guide</u> for a description of configuring this View.
- User Agent. This View is used to forward messages from the messaging system into an X.400 Message Store. See Section 8.2, "Forwarding Messages from MConsole (User Agent)" for a description of how Operators can use this View. See <u>M-Switch</u> <u>Administration Guide</u> for a description of configuring this View.
- Vetting. See Chapter 13, Vetting View for a description of how Operators can use this View. See <u>M-Switch Administration Guide</u> for a description of configuring this View.
- ACP127. See Chapter 12, ACP127 for a description of how Operators can use this View. See <u>M-Switch Administration Guide</u> for a description of configuring this View.
- ACP142 Message Transfer. See Chapter 11, ACP142 View for a description of how Operators can use this View. See <u>M-Switch Administration Guide</u> for a description of configuring this View.
- Message Store View. See the description of how Operators can use this View.

• Configuration

These are Views used by Administrators in order to configure and manage Isode messaging systems. These are documented in .

- Switch Configuration Management. This View is the main way in which configuration changes are applied to M-Switch and other messaging applications. See <u>M-Switch Administration Guide</u>.
- X.400 Mailbox Management. This allows configuration of X.400 (P7 and P3) mailbox users and X.400 Distribution Lists. See <u>M-Switch Administration Guide</u>.
- Internet Mailbox Management. This allows configuration of Internet mailbox users and Internet Distribution Lists. See <u>M-Switch Administration Guide</u>.
- Gateway Users. This allows the configuration of ACP127 address mappings. See <u>M-Switch Administration Guide</u>.

- Authenticated Entities Management. This allows the configuration of the identity and authentication of users who operate and administer Isode messaging services. See <u>M-Switch Administration Guide</u>.
- ACP127 Addresses. This allows the configuration of ACP127 addresses. See M-Switch Administration Guide.
- Message Tracking

These are Views used by operators in order to manage Isode messaging systems in near real time by displaying information about messaging events in one or more Isode MTAs. The use by Operators of these features is documented in Chapter 8, *Message Tracking*. The Message Audit Database and its configuration are documented in detail in

- Message Tracking. See Section 8.1.1, "Message Tracking View"
- Message History. See Section 8.1.2, "Message History View"
- Message Transfers History. See Section 8.1.3, "Message Transfers History View"
- Quarantine Tracking. If your messaging system is performing content checking of messages (e.g. anti-virus, or spam), messages which fail content checking can be quarantined. See <u>M-Switch Administration Guide</u> for a description of content checking. See <u>M-Switch Advanced Administration Guide</u> for a description of how Quarantine works.
- Acknowledgement Tracking. Messages handled by M-Switch can result in Acknowledgements in the form of Delivery Reports or Read Receipts. The Message Tracking System can be configured to report on the presence or absence of Acknowledgements. See M-Switch Advanced Administration Guide
- Statistics. See Section 8.1.4, "Statistics View"

• Miscellaneous

These are Views which provide ways to configure and navigate in MConsole itself.

- Welcome View. Most Views can be started by clicking on the icons. This View is described in Section 2.1.1.3, "Welcome Screen" [2].
- Options. The Options View is described in the M-Switch Administration Guide

To display a view, click **View** and select the view you wish to display. Some views are greyed out until you have configured them. You do this by bringing up the **Options** which allows views to be configured.

A view can be detached into a new window which opens up a new invocation of MConsole by right clicking the **View**'s tab or by dragging the view outside the MConsole window.