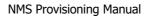
F^ober Smart NETW ORKS





NMS Provisioning Manual

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ABOUT THIS DOCUMENT

This Guide provides step by step instructions for normal system operations of the Wave2Wave Network Management System. It provides background and instructions for these functions.

The purpose of the Guide is to enable users of the Wave2Wave NMS to operate the system properly.

AUDIENCE

This document is intended for NMS Provisioning Operators and Technicians.

NMS Server Software Version

NMS Server Software version 5.6.2 (this version number is as of this writing – your installed version may differ).



ROME PRODUCT FAMILY INTRODUCTION

The Wave2Wave Automated Fiber Management (ROME) family of connectivity solutions enables facility operators to deliver new fiber based services, design and operate networks efficiently and flexibly, and improve customer service and network performance. Wave2Wave's ROME product line is the first of its kind to deliver the attributes and reliability of a manual optical patch panel while offering the benefits of remote control and automation.

Wave2Wave's ROME product family consists of best-in-class physical layer switch hardware, carrier-grade software and management modules, and supports an open interface for integration with third party applications and management systems.

Efficiently manage the fiber network in a true lights-out fashion. ROME operators can benefit from remotely managing their fiber infrastructure with ROME's remote capabilities, so that all fiber connectivity is centrally managed without the need to urgently send technicians to remote locations.

ROME is well suited to offer benefits in several key application areas, including but not limited to automation of fiber management for Telecom Operators, Hosted Data Centers (DC Operators), Co-Location Management within a Data Center (DC Tenants), Enterprise Data Centers, and Lab automation. In addition to fiber management, ROME offers the ability to test faulty fibers with an externally connected OTDR, and for automating fault recovery to supplement existing protection schemes.



NMS SERVER SOFTWARE

The Wave2Wave Network Management System (NMS) is a powerful Java based, SNMP management system for managing Wave2Wave ROME networks. The Wave2Wave NMS client is an Application that runs on Java-enabled Web browsers connected to a Wave2Wave NMS Server.

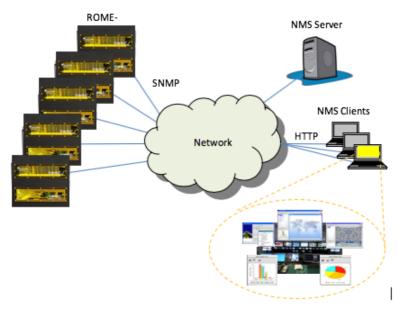


Figure 1. ROME, NMS Server & NMS Client Network Architecture

The NMS Server Software allows for secure remote management of the ROME system through the web enabled GUI client. It provides a complete network element (NE) view of overall ROME topology, and automated fiber connectivity. The user may access the system through either a map view or a tree view. An integrated database maintains accurate connectivity records at all times. The database is automatically updated as connectivity changes are successfully completed, and maintains information relating to system configuration, alarms, users and history logs.



Wave2Wave's NMS Server allows authorized users to remotely manage connectivity of both simplex and duplex Tx/Rx ports on a daily basis. Simplex ports are provisioned by issuing a single



connectivity command via simple point and click entries. Similarly duplex Tx/Rx ports are managed as a single entity, and also only require a single connectivity command while provisioning. The graphical interface makes the task of provisioning ports a simple and intuitive process.

NMS also supports typical administrative functions such as management of users, unit configuration, alarms, logs and connectivity reports. Operators may be assigned one of 6 default user level profiles, where access by the user is accordingly limited by their assigned profile. The 6 default user profiles include, Super User (granted full access without limits), System Administrator (responsible for adding/deleting, configuring and managing ROMEs), Security Administrator (responsible for adding/deleting, configuring and managing users), Technician (installs and services ROMEs, and may also manage connectivity), Provisioning Operator (manages connectivity) and Guest (view privileges only of select screens). In addition the Security Administrator may create new user profiles and tailor them as needed.

The system provides a graphical map and tree view of distributed ROMEs for selection and management of individual units, along with a network wide active alarm summary view. Operators can view a color coded active alarm summary either graphically or in tabular form, as well as alarm history within the alarm log. Historical logs are also available for provisioning operations, system administrative related functions, user security and management related functions, and events. Furthermore, logs may be filtered to quickly isolate specific information required. Reports may be generated from filtered logs and/or connectivity tables, and saved or printed for later viewing and analysis. These reports may be saved in CSV format, so that they can be conveniently organized and analyzed in spreadsheet form, such as within Excel and similar programs.

Software based Value Added Modules (VAMs) provide optional functionality to enhance the standard NMS offering. VAMs are sold separately and are field upgradable at any time. Currently supported VAMs include:

- Partitioning (supported via the NMS): to split an ROME into smaller logical sub-switches, allowing a single ROME to be shared over multiple service providers and co-location tenants.
- Temporary Disconnect (supported via the CLI): to simulate temporary connection interruptions of both simplex and duplex Tx/Rx ports, primarily for Lab Automation applications to determine how specific equipment under test (EUT) react to such events.

To fully automate provisioning management, the Wave2Wave NMS may be integrated with a third party OSS, Workflow Platform, or higher level Network Management System (NMS). In such cases, connectivity work-orders from a higher level system are electronically transmitted to the Wave2Wave NMS and automatically executed. Service activation (connectivity) is confirmed back to the higher level platform to close the work-order. This is accomplished via a Wave2Wave NMS Northbound Application Program Interface (API). Note that integration development is required between the Wave2Wave NMS and any northbound higher level management system to fully automate provisioning operations. Similarly alarms may be passed on to a northbound third party application via SNMP to be displayed in a Central Alarm Management System, and this functionality is supported today.



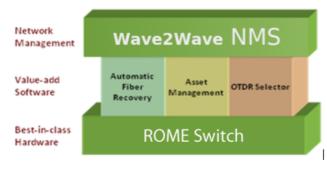


Figure 2. NMS Server Structure

NMS HIGHLIGHTS

- Client/Server architecture
- Web enabled client (no client software installation)
- Full SNMP support for remote management
- Secure communication and storage
- Synchronized authoritative database
- Configuration and connectivity management
- Alarm notification and management
- Server logs and report generation
- Value Added Module support
- Application Program Interface support

CLI SOFTWARE

The ROME supports a text based Command Line Interface (CLI) that is mainly used for installation and service purposes, by qualified and trained technicians while on site, and for running connectivity scripts which is particularly well suited for Lab Automation applications.

CLI capabilities include:

- Control of local switching operations
- Local pre-provisioning testing of fiber
- Local network element configuration and maintenance
- Run connectivity scripts to automate the rearrangement of lab connectivity setups

The CLI supports a local craft terminal interface (via RS232), and a remote Telnet interface (via Ethernet).



ROME HARDWARE

Wave2Wave offers a unique Automated Fiber Management (ROME) product family. The ROME system is a remotely managed all-optical physical layer fiber switch, providing transparent switching independent of protocol and bit rate, and supporting single mode or multimode fiber. The ROME product line utilizes Wave2Wave's passive Latched Optical Coupling (LOCTM) technology that was developed specifically to address fiber management applications. The principle of passive LOCTM is to physically couple two optical fibers together without mirrors, lenses, or collimators. Once a physical connection is made, no power is required to maintain a connection, and LOCTM technology delivers superb optical performance similar to a manual patch panel in a carrier-class platform.

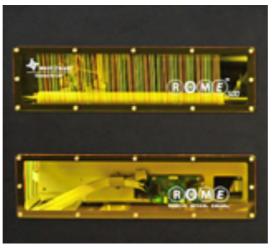


Figure 3. Wave2Wave ROME

ROME transforms the manual fiber infrastructure into a fully automated and managed layer, enabling network operators to remotely provision optical connections while automatically maintaining accurate inventory records, and to recover from fiber and equipment port faults. An externally connected OTDR may be switched through the ROME to any suspect fiber or equipment port in order to quickly test and locate faults.

ROME consists of 5 base models:

- The ROME 500 supports 256 east fibers by 256 west fibers.
- The ROME Mini supports up to 204 fibers in a single matrix.
- The ROME MAX supports up to 2,000 fibers on a full rack.
- The ROME 128 Q supports up to 128 MPO ports.
- The ROME 64 Q supports up to 64 MPO ports.
- Note that expansion for the scalable models is accomplished via combination of software and hardware.

ROME supports passive Latch Optical Coupling (LOCTM) that takes the best attributes of a manual optical patch panel including connection performance, reliability and integrity, and adds remote

management capabilities offering incredible ease of use and flexibility to manage fibers, all the while maintaining accurate up-to-date connectivity database records and introducing new revenue generating opportunities. With LOCTM, the ROME actually physically couples a matrix of male and female internal optical connectors, where the connection is established with standard LC type ferrules and sleeves. Wave2Wave utilizes Robotic Control Units (RCUs), which are robotic arms, to connect and disconnect the male and female optical connectors. ROME consists of a passive chassis and five Field Replaceable Units (FRUs) modules housing the ROME active components, including the Logical Control Unit CPU Module, DC Power Supply Module, Fan Module, Robotic Control Unit (RCU) Modules (upper and lower RCUs), and Connectors.

Connections are physically and passively latched in place and remain so even if all sources of power are lost, including battery backup, if any. In fact one can physically remove the Logical Control Unit CPU Module, DC Power Supply Module, Fan Module, and Robotic Control Unit (RCU) Modules (upper and lower RCUs) and connections remain physically and passively latched in place. This allows for servicing or replacement of these active modules in the field without any impact on existing connectivity. In the event of an internal fault, ROME generates an appropriate alarm for the given fault to alert the operator that servicing is required. Alarms range from critical, major, minor and warnings, depending on the severity, and are reported by Wave2Wave's NMS and CLI. These alarms may also be sent to a third party alarm management system.

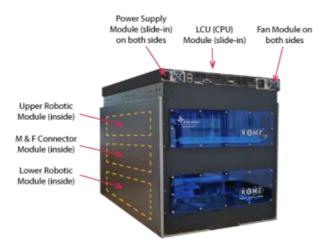


Figure 4. Arrangement of the ROME Field Replaceable Units (FRUs)

LOCTM also offers excellent optical performance due to the physical coupling of the internal optical connectors, with a typical insertion loss of 0.3 dB and return loss of -50 dB. Yet ROME solves the major drawbacks of manual patch panels, including the ability to:

- Remotely manage connectivity
- Automate the bypassing of faulty fibers and equipment ports with standby links and ports, which significantly reduces the recovery time
- Remotely switch an externally connected OTDR to any ROME port in order to quickly test fibers and locate faults
- Avoid hands in the plant, eliminate human errors, reduce ferrule pitting (wear), and dirty optical connector problems



- Maintain an authoritative connectivity database that remains synchronized with the physical connections at all times
- Logically partition an ROME, with the Partitioning VAM, into configurable port ranges, forming smaller logical sub-switches whereby different telecom operators, data center tenants, or lab operators can be given password controlled limited access over only their respective assigned port ranges. This allows the ROME operator to lease portions of an ROME to their respective customers, for additional sources of revenue generation.

NMS HARDWARE REQUIREMENTS

Performance of the Wave2Wave Web NMS depends upon the CPU and memory of the client and server systems. The following tables list the minimum configuration of the **client** and the recommended configuration of the server.

Minimum Client PC Requirements		
Operating System	Windows XP (SP3), Windows Vista or Windows 7	
CPU	P-IV or above	
RAM	2MB RAM, or above	
Hard Disk	520 MB free	
Optics	CD-ROM or DVD drive	
Network	Ethernet Card	
Monitor	Color SVGA (1024x786, 256 colors)	

Recommended NMS Server Workstation Configuration			
Operating System	Windows Server 2003 (R2) and Windows Server 2008 (R2)		
Machine Type	IBM x3550, Quad-Core Intel® Xeon® Processor E5420 (2.50 GHz, 80 Watts, 1333 FSB) 12MB (2x6MB) Level 2 cache		
CPU	Quad-Core Intel® Xeon® Processor E5420 (2.50 GHz, 80 Watts, 1333 FSB) 12MB (2x6MB) Level 2 cache		
MAX CPU	1 w/option for 2		
CPU BUS	1333 MHz		
RAM	4 GB PC2-5300 DDR2 SDRAM (Chipkill) option for 32GB 8 DIMM (6 DIMM)		
PCI Slots	1(1) PCI Express x8		



Recommended NMS Server Workstation Configuration			
Storage Controller	Integrated SAS Controller Raid 0,1,0 +1 support		
Power Supply	670 Watt power supply		
Disks Cage	2x1" Hot Swap disks Ultra 320		
Optics	Integrated DVD		
Network Gigabit Ethernet - Integrated Wake on LAN			
Graphics	ATI RN50 16MB Video: DDR2 RAM type		

NEW FEATURES IN VERSION 5.6.2

- Radius User Authentication & Accounting server support
- Improved Alarm Logs and Information
- ROME log collection via NMS





NMS

The NMS is the primary interface for day-to-day management, configuration and provisioning of the ROME. It supports all ROME features and functionality including connectivity, alarms, server logs, reports, queries and tables.

SERVER FEATURES

The NMS Server provides full network view supporting connectivity, operation and maintenance. Partitioning is also supported as a Value Added Module (VAM). Future software modules will allow for OSS or third-party NMS integration, enable clustering of multiple ROME units, logical dual asymmetric systems, logical fiber port grouping, test access functionality, automated fiber recovery from fiber and equipment port faults.

Note:

- Your Wave2Wave NMS server must be running in order to use the NMS Client.
- The NMS starts automatically, when the Server is started.
- Make note of the NMS Server's IP address.

Feature	Explanation		
SNMPv2c	Communication with ROME units is based on SNMPv2c.		
SNMP Support	t The NMS supports SNMP, including Get/Get-Next and Set commands. All communication between NMS and ROME is vis SNMP.		
Multiple Sessions Server supports multiple client sessions (5 concurrent licer			
Audit Trail	All user operations are logged, including security exceptions (failed login, unauthorized client command attempts).		

NMS CLIENT

The NMS Client is an install-free application that is fully compatible with Java capable browsers.

NOTE: The browser must support JRE (Java Runtime Environment) V 1.8 or higher. If the JRE is not already installed, you can obtain it at http://www.java.com/en/download/manual.jsp). The clients' Applet is embedded into an HTML document that checks for the JRE existence (if it does not exist, the browser automatically downloads the JRE from Sun).

The user must enter a user name and password to start a session.

Starting the NMS Client and Log-in

1. Verify that your Wave2Wave NMS Server is running and that you know its IP address.



- 2. Verify that you have been given a password by your NMS Security Administrator (you must change this password at your first log-on).
- Open your browser, enter the IP of your Wave2Wave NMS Server and the port number (*e.g., http://292.193.99.131:9090*). The default port number is 9090 (unless it has been changed. The Wave2Wave Client Login page will open.

Note: The default port number is 9090

👆 NMS Clien	× +	-		×
← → ⊂ ŵ	Q 292.193.99.131:9090/LoginPage.do	lii\	•	≡
	WAVE 2 WAVE Convect for Life- Warning! This is a private computer system and network. Unauthorized access or use may lead to prosecution I Agree Cancel			

Figure 5. Wave2Wave NMS Client Login Page

4. Click the "I Agree" button if you agree to the terms and conditions of use. The Wave2Wave NMS Authentication dialog will open.

Note: By default, Wave2Wave NMS Server runs on port 9090.

5. If Java is not present or is not enabled on your PC the following notice will appear:

Java Web Start is not installed in this machine. Please download Web Start. When linking to the SUN web site, you should download the latest version of the JRE	Get Java** Web Start NOWI
Java Web Start	
Java(TM) Web Start, 'A new chent application-deployment technology' that gives you the power to launch full-featured applications with a single now download and launch applications, without going through complicated installation procedures.	click from your Web browser. You can
Now 'Web NMS Application Client' is 'Web Start Enabled. You can launch it by just clicking on a Web page link. If the Application Client is not in automatically downloads all the necessary files. It then caches the files on your computer so that the client is always ready to be launched whenever desitop or from the browser link. No matter how and when you launch, Web Start ensures that you always work in the latest version of the Application	you want either from an icon on your

Figure 6. Java Web Start

If Java is present, the process will continue to verify you have the latest NMS client software and to automatically update it if needed. After that a login page will be opened (see Figure 7 below).

- Get Java^{*}" Web Start NOW!
- 6. Click the "Get Java" button at the top right (______). You will be directed to a Java download site:



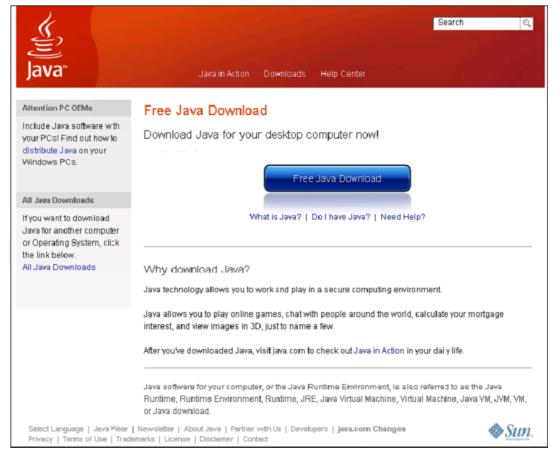


Figure 7. Java Download

7. Download and install Java, then restart the NMS Client.

👆 Wave2Wave NMS	Authentication —	×
		E.
	WAVE 2 WAVE	11
	Connect for Life™	11
Username	My_Username	-
Password	•••••	
THE REAL PROPERTY AND ADDRESS OF THE PARTY ADDRES		The real Party name
		in the second
The same and the same and the		a.
		100
And in case of the local division of the loc		100
And in case of the local division in the loc		00
	🔺 📤 Connect 🛛 🍂 Cancel	0.00
		0. 0.

Figure 8. Wave2Wave Authentication

8. Enter the User ID and Password in their respective fields.



- Click Connect. The NMS client will open (refer to the section: NMS Client Main Window). If you do not have login permission, contact your Security Administrator. The browser returns to the site from which you contacted the NMS server.
 - **Note:** The browser can be closed. It is no longer required for operating the Wave2Wave NMS client.
- 10. To **quit** the client, click **File > Exit**.

LOGON TROUBLESHOOTING

Logging on to the Wave2Wave NMS is generally trouble free. However, if you experience a problem, please refer to the System Administrator Manual.



NMS CLIENT MAIN WINDOW

The Wave2Wave Manager Main window provides access to all viewing and configuration options. It is comprised of the following:

- Menu Bar Tool Bar
- Tree View
- Alarm Summary
 - ♦ Tabular
 - Bar Graph
 - Pie Graph
- Display Panel
 - Map Views
 - ♦ Alarms
 - Logs

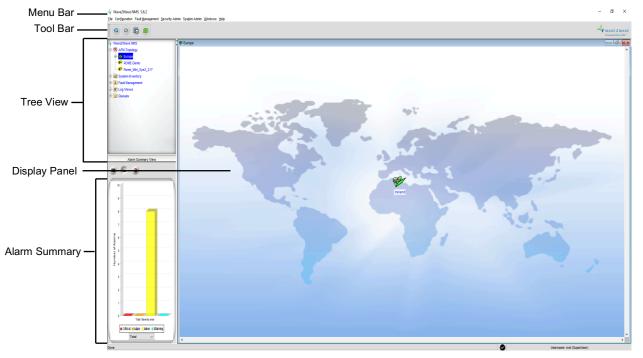


Figure 9. Wave2Wave NMS Client (with 4 ROMEs and 1 Map Added)



NMS Client Menu Bar

The Menu Bar accesses system-wide Views and functionality. For example, the "Add Map" function adds a map *to the system*. The Server Log (accessed via the Menu Bar) displays data for the system server, etc., Similar information and functionality for individual ROME units is accessed from the Tree View (see *Tree View*, *page 18*).

The Client Menu Bar is organized (in terms of functionality) as shown in the table below. Explanations are given in relevant sections of this Guide.

Note: The <u>*Tree View*</u> accesses Views and functionality for individual ROMEs. The <u>*Menu Bar*</u> accesses *system-wide* Views and functionality.

File	Configuration	Fault Management	Security Admin	Sys Admin
• Exit	• Preferences	Active AlarmsAlarm Log	 Change Own Password User Administration Logged Users Security Log Security Settings SMTP Settings 	 Add ROME Delete ROME Add Map Delete Map Server Log System Admin Log Provisioning Log Scheduling Log
Window	/s]	Telp		
• Casca	de	NMS User Guide		

- Tile Horizontal
- System Administra
- Tile Vertical
- System Administration Guide
- Security Administration Guide
- About Wave2Wave NMS



NMS Client Tool Bar

The Toolbar icons and their respective functions are listed below.

Note: Icons are context sensitive. Icons are visible only in Views that support the specific functionality.

lcon	Description
	Previous - Go backward, one map
	Forward - Go forward, one map
	Save Map (saves the current location of an ROME or of a submap on the selected Map).
2	Refresh Views

Viewing Panes

This section lists the NMS Client viewing panes and gives a brief explanation of their use.

Pane	Explanation	
Tree View (see <u>Tree View Network Topology</u>)	Top left pane. Displays the entire I status of the elements (e.g., OK, A	
The following Views can be accessed Help or the Manual for more information		nding sections of the
Fault Management ViewsActive AlarmsAlarm Log	 Log Views Server Log System Administrator Provisioning Log Security Log (Security Administrator only) Scheduled Log 	 Provisioning Views Matrix View Ports Connections
Alarm Summary Views	Alarm Summaries are located dire Tree. They provide immediate acc Management operations and Alarn	ess to basic Fault
Display Panel (Views)	This display panel is used to displa (including the Map View).	ay most Views

Notes:

- Additional functionality is available from the Tree pane and from the Tool & Menu Bars.
- The Username and the User Group(s) are displayed on the bottom right corner of the NMS screen.



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NMS Provisioning Manual

Username: root (SuperUser)



Tree View (Network Topology)

The topology Tree View lists all **ROMEs and Maps** starting from the **root** "ROME-Topology". The map displayed in the view always **corresponds** to the item selected in the **Tree** (and shows all defined **ROME elements** and the **status** of each).

For example, if you have selected the **"Hong_Kong" map** in the **Tree View**, the Hong Kong map will be **displayed** in the **Map View** of the display panel, together with all ROME **network elements** defined in the same map.

Element	Explanation
Organization of ROME items	ROME systems are user organized under the root directory or under map names (e.g., Hong Kong, New York, Toronto, etc.).
Wave2Wave NMS Wave2Wave2Wave NMS	Each item in the tree is represented by an icon and color by severity (see System States, <i>page 27</i>).1. Click an ROME unit to display the Port Matrix and the applicable provisioning menus.
	Each object shown in the Tree view (ROMEs, Maps) is color coded according to the Alarm status of the ROME.
	For example, a map containing an ROME with a Critical Active Alarm will be shown as RED.
	Note : A map icon is always colored with the color of the <i>highest</i> Alarm state in the Map.



Element	Explanation
Right Click on an:	Right-click on any item in the Tree View or on the Map A context sensitive configuration menu will open , as shown below.
ROME	The following information can be accessed from the Tree:
	FaultsActive Alarms- Displays the ROME's currently Active AlarmsAlarm Log- Displays the ROME's Alarm LogConfigurationSystem Settings- Opens the ROME's Configuration DialogTime Settings-SNMP Settings-
	Inventory- Lists the ROME's SNMP internal, hardware, firmware, software, etc., modulesProvisioning Matrix View- Displays the ROME's Matrix View
	ROME Operations
Мар	Reset- Resets the ROME databaseFetch ROME Logs- Collects all the ROME logsRefresh- Refreshes the mapMove- Moves the ROME to another mapDelete- Deletes the ROMEAdd ROME- Opens the Add ROME dialogAdd Map- Opens the Add Map dialogDelete ROME- Deletes the selected ROMEEdit Map- Opens the Edit Map dialogDelete Map- Deletes the selected empty MapNote:Only NMS System Administrators and Super Users can edit ROMEs and Maps.

NOTE: When an item in the Tree View is selected, the corresponding information is displayed in the Display pane.



Map View

The map view is used to display the **physical location** of your ROME units. In addition a map can be used to contain other maps. For example, the map of Europe could contain a sub-map of sub regions such as Ireland, and so on.

Double click on any sub-map **icon** on the map to display the actual underlying **sub-map**.



Figure 11. Main Map with a Sub-Map

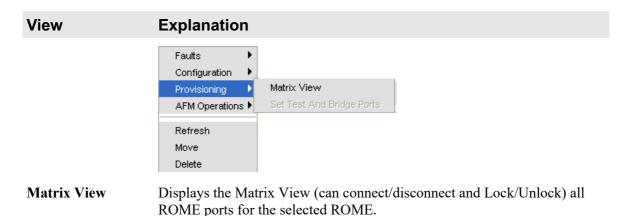


PROVISIONING

Provisioning refers to the adding and deleting of connections. All authorized users (i.e., Super Users, System Administrators, Technicians and Provisioning operators) are able to provision an ROME.

Maintenance and Configuration of ROME devices can generally be done by Super Users, System Administrators and Technicians.

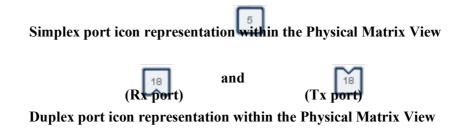
PROVISIONING VIEWS



Physical and Logical Matrix Views

To further help the user better manage simplex and duplex fiber ports, the NMS offers both a Physical Matrix View and Logical Matrix View of the ROME ports and connectorized panels. These views are selectable from within the Matrix View as a tab selection, allowing the user to alternate between views quickly and easily.

The Physical Matrix View displays all ports at the individual fiber level, making it easy to manage individual fibers. Therefore, the Physical Matrix View shows a duplex paired port as two individual ports, one port for the Tx fiber and the other for the Rx fiber. Different port icons are used to represent simplex ports and duplex ports, so even if duplex ports are shown as individual ports, the user can still distinguish simplex ports from duplex ports:





The screen view below shows an example of the Physical Matrix View.

		T	Logica		Physic	al			6	N	ø (Ð																					-1	:
Rx	Port	s															Tx P	ort	s															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	^		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	^
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32			17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48			33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64			49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	
65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80			65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	
81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96			81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	
97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	•		97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	
113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128			113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	
129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144			129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	
145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160			145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	
161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176			161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	
177	178	179	180													~		177	178	179	180													~
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Figure 12. Physical Matrix View

The Logical Matrix View is designed to simplify day-to-day connectivity management of both simplex and duplex paired ports. This view matches the actual connectorized panel layout, showing a simplex fiber termination as an individual fiber port and a duplex paired fiber termination as a duplex Tx/Rx paired port, with both the Tx and Rx fibers managed as a combined single entity (in the duplex case). The screen view below shows an example of the Logical Matrix View.

												В										
1	2	3	4	5	6	7	8	9	10	11	^	1	2	3	4	5 💧	6	7	8	9	10	11
12	13	14	15	16	17	a 18 💉	19 📕	20	21	22		12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30	31	32	33		23	24	25	26	27	28	29	30	31	32	33
34	35	36	37	38 💧	39	40	41	42 💧	43	44		34	35	36	37	38	39	40	41	42	43	44
45	46 💧	47 💧	48 💧	49 💧	50	51	52	53	54	55		45	46	47	48 💧	49 💧	50	51	52	53	54	55
56	57 💧	58	59 💧	60	61	62	63	64	65	66 6	H	56	57 💧	58	59	60	61	62	63	64	65	66
67	68	69	70	71	72	73	74	75	76	77	1	67	68	69	70	71	72	73	74	75	76	77
78	79	80	81	82	83	84 💧	85 6	86	87	88		78	79	80	81	82	83	84	85 💧	86	87	88
89	90	91	92 🔒	93 è	94	95	96	97	98	99		89	90	91	92	93	94	95	96	97	98 💧	99
00	101	102	103	104	105	106	107	108	109	110		100	101	102	103	104	105	106	107	108	109	110
11	112 🔒	113	114	115	116	117	118	119	120	121		111	112	113	114	115	116	117	118	119	120	121
22	123	124	125	126	127	128 💧						122	123	124	125	126	127 💧	128				

Figure 13. Logical Matrix View



Basic Connectivity Management within the Matrix View

Connectivity is managed with simple mouse clicks on the Matrix View graphical interface.

To connect one simplex port to another, simply click on both simplex ports to be connected and press the connect button. To disconnect a simplex port from another, simply click on one of the connected simplex ports (the other mated simplex port will be automatically selected) and press disconnect.

To connect one duplex port to another, simply click on both duplex ports to be connected and press the connect button. Both the Tx and Rx fibers of one port will be connected to the Rx and Tx fibers respectively of the other port (note that the Tx of one port connects to the Rx of the other port, and vice versa). To disconnect a duplex port from another, simply click on one of the connected duplex ports (the other mated duplex port will be automatically selected) and press disconnect. The Tx and Rx fibers of one duplex port will be disconnected from the Rx and Tx fibers respectively of the other duplex port. The Provisioning section of the NMS Provisioning User Manual provides further details on managing connectivity, locking and unlocking ports and scheduled provisioning operations.

Matrix View

The Matrix View is the default and main view; it is used to view, connect, disconnect, Lock and Unlock ROME ports (*see corresponding sections*).

The number of ports viewed is dependent on the following:

- The ROME model purchased.
- The number of ports configured for your license. (see examples below -- Figure 14 and Figure 15)
- Your user permissions (refer to the Security Administration manual).

To access the *Matrix* View:

- 1. Select an ROME in the Tree View, or double-click the ROME on the Map.
- 2. Click the Matrix View icon (iii).
- 3. Select the **Physical** tab to open the Physical Matrix View.

—or—

4. Select the Logical tab to open the Logical Matrix View.



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'est P	orts														East Po	rts												
AWI 8	AW2	AW3	AW4	AW5	AW6	AWT	AW8	AW9	AW10	AW11	AW12	AW13	AW14	Â	AE1	AE2	AE3	AE4	AE5	AE6	AE7	AE8	AE9	AE10	AE11	AE12	AE13	AE14
W15	AW16	AW17	AW18	AW19	AW20	AW21	AW22	AW23	AW24	AW25	AW26	AW27	AW28		AE15	AE16	AE17	AE18	AE19	AE20	AE21	AE22	AE23	AE24	AE25	AE26	AE27	AE28
W29	AW30	AW31	AW32	AW33	AW34	AW35	AW36	AW37	AW38	AW39	AW40	AW41	AW42		AE29	AE30	AE31	AE32	AE33	AE34	AE35	AE36	AE37	AE38	AE39	AE40	AE41	AE42
W43	AW44	AW45	AW46	AW47	AW48	AW49	AW50	AW51	AW52	AW53	AW54	AW55	AW56		AE43	AE44	AE45	AE46	AE47	AE48	AE49	AE50	AE51	AE52	AE53	AE54	AE55	AE56
W57	AW58	AW59	AW60	AW61	AW62	AW63	AW64	AW65	AW66	AW67	AW68	AW69	AW70		AE57	AE58	AE59	AE60	AE61	AE62	AE63	AE64	AE65	AE66	AE67	AE68	AE69	AE70
W71	AWT2	AW73	AW74	AW75	AW76	AWTT	AW78	AW79	AW80	AW81	AW82	AW83	AW84	I	AE71	AE72	AE73	AE74	AE75	AE76	AE77	AE78	AE79	AE80	AE81	AE82	AE83	AE84
W85	AW86	AW87	AW88	AW89	AW90	AW91	AW92	AW93	AW94	AW95	AW96	AW97	AW98	Ē	AE85	AE86	AE87	AE88	AE89	AE90	AE91	AE92	AE93	AE94	AE95	AE96	AE97	AE98
W99	AW100	AW101	AW102	AW103	AW104	AW105	AW106	AW107	AW108	AW109	AW110	AW111	AW112		AE99	AE100	AE101	AE102	AE103	AE104	AE105	AE106	AE107	AE108	AE109	AE110	AE111	AE113
V113	AW114	AW115	AW116	AW117	AW118	AW119	AW120	AW121	AW122	AW123	AW124	AW125	AW126	ь.	AE113	AE114	AE115	AE116	AE117	AE118	AE119	AE120	AE121	AE122	AE123	AE124	AE125	AE126
N127	AW128	AW129	AW130	AW131	AW132	BW1	BW2	BM3	BW4	BW5	BW6	BW7	BM8		AE127	AE128	AE129	AE130	BE1	BE2	BE3	BE4	BE5	BE6	BE7	BE8	BE9	BE10
9W9	BW10	BW11	BW12	BW13	BW14	BW15	BW16	BW17	BW18	BW19	BW20	BW21	BW22		BE11	BE12	BE13	BE14	BE15	BE16	BE17	BE18	BE19	BE20	BE21	BE22	BE23	BE24
W23	BW24	BW25	BW26	BW27	BW28	BW29	BW30	BW31	BW32	BW33	BW34	BW35	BW36		BE25	BE26	BE27	BE28	BE29	BE30	BE31	BE32	BE33	BE34	BE35	BE36	BE37	BE38
W37	BW38	BW39	BW40	BW41	BW42	BW43	BW44	BW45	BW46	BW47	BW48	BW49	BW50	~	BE39	BE-10	BE41	BE42	BE43	BE44	BE45	BE46	BE47	BE48	BE49	BE50	BE51	BE52



est	Ports													East	Ports	2											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	1	2	3	4	5	6	7	8	9	10	11	12	13	14
5	16	17	18	19	20	21	22	23	24	25	26	27	28	15	16	17	18	19	20	21	22	23	24	25	26	27	28
9	30	31	32	33	34	35	36	37	38	39	40	41	42	29	30	31	32	33	34	35	36	37	38	39	40	41	42
3	44	45	46	47	48	49	50	51	52	53	54	55	56	43	44	45	46	47	48	49	50	51	52	53	54	55	56
7.5	58	59	60	61	62	63	64	65	66	67	68	69	70	57	58	59	60	61	62	63	64	65	66	67	68	69	70
1	72	73	74	75	76	77	78	79	80	81	82	83	84	71	72	73	74	75	76	77	78	79	80	81	82	83	84
5	86	87	88	89	90	91	92	93	94	95	96			85	86	87	88	89	90	91	92	93	94	95	96		

Figure 15. Physical Matrix View (96x96 Ports)

	 Logical 	Physical				D 🖸 (3				_	_									1	
1	2	3	4	5	6	7	8	9	10	11		B	2	3	4	5	6	7	8	9	10	11
12	13	14	15	16	17	• 18 4	19	20	21	22		12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30	31	32	33		23	24	25	26	27	28	29	30	31	32	33
34	35	36	37	38 💧	39	40	41	42 💧	43	44		34	35	36	37	38	39	40	41	42	43	44
45	46 8	47 8	48	49 8	50	51	52	53	54	55		45	46	47	48 .	49 👩	50	51	52	53	54	55
56	57 8	58	59 👩	60	61	62	63	64	65	66 8		56	57 🔒	58	59	60	61	62	63	64	65	66
57	68	69	70	71	72	73	74	75	76	π		67	68	69	70	71	72	73	74	75	76	17
78	79	80	81	82	83	84 💧	85 🛔	86	87	88		78	79	80	81	82	83	84 💧	85 💧	86	87	88
89	90	91	92 8	93 8	94	95	96	97	98	99		89	90	91	92	93	94	95	96	97	98 💧	99
00	101	102	103	104	105	106	107	108	109	110		100	101	102	103	104	105	106	107	108	109	110
11	112 💧	113	114	115	116	117	118	119	120	121		111	112	113	114	115	116	117	118	119	120	121
122	123	124	125	126	127 🍵	128 🍙						122	123	124	125	126	127 🍵	128 🔒				
Conn 5/5	ected		Disconr 259/255			In Proces	15		Pending 0/0		- Lo	ocked	â	System L	ocked	C	Schedule	ed	M	Conflict 2/2		

Figure 16. Logical Matrix



Port Types

lcon	Name	Explanation
114	Physical Port	This is a Single Physical port. It can be connected to only one other Single Physical port.
31 or 31	Logical Port (physical	This is a representation of a Logical port in a Physical matrix. When selected, its paired port is also selected.
	representation)	Logical Ports stand for Transmit/Receive (Tx/Rx) ports and are therefore composed of a pair of Physical ports.
		It is impossible to perform provisioning operations over either Tx or Rx alone! Whenever one of them is selected, its pair will be selected as well.
		A Logical port can be connected only to another Logical port.
1	Logical Port (Logical	This is a representation of a Logical port in a Logical matrix
		A Logical port can be connected only to another Logical port of the same size.

Matrix Flagging Legend

lcon	Name	Explanation
1/2	Counters	Each icon is accompanied by two counters, indicating the total ports in the specific status (Left/Right)
8	Locked	This port is Locked by an authorized user (e.g., in order to protect the port from accidental connect or disconnect) and cannot be connected or disconnected unless Unlocked.
8	System Locked	This port is Locked and cannot be used. The system automatically Locks this port in order to prevent damage to the physical components. This status can be cleared only by a technician, after resolving the issue.
	In Process	The connect/disconnect action is being processed / is completing.
	Pending	The connect/disconnect action is in the queue and will be processed as soon as possible, generally, as soon as another action is completed – if it is in line, within the pending list
	Connected	This port is connected to another. Click on the port - the partner port on the other side will be highlighted.
٥	Scheduled	An operation has been scheduled for this port.



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	Disconnected	This port is not connected to any other nor awaiting a connection.
M	Conflict	This status is applicable for Duplex ports only. Conflict indicates a status where the Tx side is connected and Rx side is disconnected, or vice-versa.
		Note that this flag appears momentarily during the connect/disconnect process of Logical ports. This is OK . Only when the status remains permanent, does this indicate a problem.

Matrix View Toolbar

The following functions are available from the toolbar above the Matrix. Functions that are not applicable are disabled.

lcon	Name	Explanation
	Matrix	View the ports in matrix format. Two matrix views are available:
		Logical and Physical (see page 27).
	Ports Table	View the ports in table format. Two port views are available:
		Logical and Physical (see page 27).
M	Connect	Connect the selected ports (see page 37).
1 AM	Disconnect	Disconnect the selected (connected) ports (see page 38).
	Lock	Lock the selected (Unlocked) port/s (see page 35).
	Unlock	Unlock the selected (Locked) port/s (see page 35).
Ō	Schedule	Schedule a provisional operation on the selected ports (<i>see page 40</i>).
3	Load Port Data from File	Load a <i>.csv</i> file containing Names and Additional Information of ports of the selected ROME. The <i>.csv</i> file may contain data for all or some of the ports (<i>see page 47</i>).

Matrix View – Additional Accessories

ΤοοΙ	Name	Explanation
	Zoom	Zoom Matrix in/out.



NMS Provisioning Manual



Each one of the various parts of the Wave2Wave NMS interface can be expanded or contracted.

• By dragging anywhere along the divider up, down or sideways – the curser becomes vertical (or horizontal) and two-arrowed. Double-clicking brings the divider to the default (middle) position.

or

• By clicking the UP or DOWN arrow, to maximize one of the views and minimize the other, or vice-versa.

Matrix/Table View Modes

Following are the available viewing modes:

Mode	lcon	Explanation
Physical	Physical	This matrix/table displays all the available physical ports. A Logical port is displayed as the number of physical ports it represents.
Logical	▼ Logical	This matrix/table displays only the Logical ports. Each Logical port represents the number of physical ports according to the configuration.
Vertical Horizontal	Logical Physical Row/Column appearance	The Logical Matrix/Table can be displayed across the selected Panels,
	⊙ Vertical O Horizontal	laid out, vertically or horizontally.
	Select Panel name ✓ A ✓ B	Additionally, you can choose to view only selected panels
	Apply Undo Clear all Select all	

System States

In addition, the following system states are displayed in the tree View and on the map, beside the faulty site.



State	Tree	Мар	Details
Operational	Wave2Wave NMS → ☆ AFM-Topology → ☆ Europe 514	Germany S14	The ROME is operational
Call Tech	Wave2Wave NMS AFM-Topology New-York Manhattan AFM 22	Manhattan AFM 2	Service Engineer Required The detected fault requires the attention of a Service Engineer
Technician	Wave2Wave NMS AFM-Topology AFM-360 afm-242 \$57	S57	Servicing in Progress There is no communication with the system; it is being serviced by a Service Engineer.
No Communicatio	m 223	223	No network communication between the NMS server and the ROME.
Offline	r Wave2Wave NMS AFM-Topology New-York Manhattan_223 192.168.10.122	192.168.10.122	The ROME has been identified in the network, but there is no SNMP communication with it.
Pause	Wave2Wave NMS AFM-Topology New-York Manhattan AFM 223	Manhattan AFM 2	The ROME has detected extreme environmental conditions (e.g., temperature or earthquake) and therefore, in order to protect itself, has suspended all mechanical activity. The ROME will automatically resume normal operation when conditions return to normal.
Safe Reset	© \$40	•	The ROME is in the process of a procedural Restart. Upon the completion of the Restart process the ROME will automatically return to normal operation.
	-@ S40	S40	During Restart, the ROME may transit through the Offline state and the No Communication state.



State	Tree	Мар	Details	
		0		
		S40		

Ports Table View

This View displays a sequential list of all ports in the selected ROME as well as the status of various port parameters, e.g., Locked/Unlocked, Partner Port, etc.

Two Table views are available (as in the Matrix view):

- Physical Ports View
- Logical Ports View.

For additional information, see Matrix View, page 23.

To access the Ports Table View:

- 1. Select an ROME in the Tree View.
- 2. Click the **Port Table View** icon () to open the View.
- 3. Select the **Physical** view.

—or—

4. Select the Logical view.



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Figure 17. Physical Ports Table

In addition to the functions available via the toolbar (see *Matrix View*, *page 26*), the following function is available:

1. (see page 31).

Add/Edit the **Name** and **Additional Information** of the selected port.

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					AFM ROME-Demo Matrix	
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An series of the						
Name Name Perfulse Oxform rane Adm Solar Oper Sular Not Sular Name Perfulse Perfulse </th <th></th> <th></th> <th></th> <th></th> <th></th> <th>5,217</th>						5,217
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Edit Ports Name and Additional Information

You can add / edit the **Name** of any port (e.g., "My_Customer", "Brooklyn", "East_End", etc) from the Ports Table View. This may be used to enter a unique port ID or facility ID number. In addition, you can add a short note as "**Additional Information**". This information is displayed as part of the Ports View.

- 1. Open the Ports Table View.
- 2. Enter/edit the Name and/or the Additional Info and click OK. The information will now be displayed in the applicable column of that port.
- **Note**: The field "Additional Info" can be used as a filter parameter if desired.

Edit Port	X
Name	
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Figure 19. Edit Port



Examples of Ports Display Across Various Matrix Views

Following is an example of how port selection (a duplex pair of ports -59 and 60) is represented in the various views:

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 | 25 | 26
 | 27 | 28 | 29 | 30 | 31 | 32 |
| 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43

 | 44 | 45 | 46

 | 47

 | 48 | | 33
 | 34 | 35 | 36 | 37 | 38 | 39
 | 40
 | 41 | 42
 | 43 | 44 | 45 | 46 | 47 | 48 |
| 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59

 | 60 | 61 | 62

 | 63

 | 64 | | 49
 | 50 | 51 | 52 | 53 | 54 | 55
 | 56
 | 57 | 58
 | 59 | 60 | 61 | 62 | 63 | 64 |
| 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75

 | 76 | 77 | 78

 | 79

 | 80 | | 65
 | 66 | 67 | 68 | 69 | 70 | 71
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 | 73 | 74
 | 75 | 76 | 77 | 78 | 79 | 80 |
| 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91

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 | 96 | : | 81
 | 82 | 83 | 84 | 85 | 86 | 87
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| 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107

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84 85 66 67 68 69 70 71 72 73 83 84 86 67 88 99 91 92 93 94 95 96 99 000 101 102 103 104 105 106 107 108 109 101 102 103 104 105 115 116 117 118 119 120 121 122 122 124 125 126 127 128 115 116 117 118 119 120 121 122 122 122 122 124 125<!--</td--><td>19 20 21 22 23 24 25 26 27 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 69 60 61 62 63 64 45 56 67 68 69 60 61 62 63 64 65 66 67 68 69 60 61 62 63 64 65 66 67 68 69 60 61 62 64 65 66 67 68 69 60 71 72 73 74 83 84 86 67 88 99 91 92 93 49 66 67 88 89 90 71 72 73 74 83 84 86 67 88 99 90 101 102 103 104 105 106</td><td>13 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 56 66 67 58 69 60 61 62 64 57 68 68 70 71 72 73 74 75 77 78 60 61 62 63 64 65 67 68 65 70 71 72 73 74 75 77 78 60 64 65 67 68 65 70 71 72 73 74 75 77 78 80 65 66 67 68 67 68 69 99 99 91 92 93 94 95 66 67 68 67 68 67 68 67 68 69 78 89 90 91 92 93 94 95 96</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 45 46 44 45 52 35 54 55 65 67 68 59 60 61 62 63 64 57 68 69 70 71 72 73 74 75 76 89 84 65 66 77 68 59 99 90 91 92 93 45 56 89 80 102 104 105 106 107 108 109 111 112 73 74 75 76 89 90 91 92 93 45 56 57 68 69 70 71 72 73 74 75 76 91 102 104 105 105 104 111</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 61 62 56 67 58 59 60 61 62 63 64 65 65 67 58 59 60 61 62 63 64 65 65 67 68 69 70 71 72 73 74 75 76 77 78 79 80 65 65 67 68 69 70 71 72 73 74 75 77 78 79 80 65 65 67 68 69 70 71 72 73 74 75 76 77 78 80 65 65 67 68 69 70 71 72 73 74 75 76 77 78 98 93 100 101 102</td><td>13 20 21 22 23 24 25 26 27 29 30 31 32 35 36 37 38 34 04 44 24 44 45 46 61 62 53 64 55 65 67 68 59 60 61 62 63 64 49 05 51 52 56 67 68 59 60 61 62 63 64 49 05 51 52 56 67 68 59 60 61 62 63 64 65 66 67 68 69 71 72 73 74 75 77 78 83 84 86 66 67 68 90 91 92 93 94 93 100 101 102 103 104 105 106 107 108 106 107 108 106 106 107 108 106 101 111 112</td><td>13 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 44 7 48 51 62 53 64 65 66 67 96 99 60 61 62 63 44 45 45 46 47 65 65 67 96 99 60 61 62 63 64 65 66 67 98 53 60 61 62 63 67 86 86 77 74 75 77 78 79 80 89 84 86 67 88 99 91 92 93 44 96 60 101 102 103 104 105 106 107 186 109 101 111 112 103 104 105 106 107 108 108 101 111 112 103</td></td></td></t<></td></td<></td></td<></td> | 19 20 21 22 23 24 26 27 35 36 37 38 39 40 41 42 43 51 52 53 64 55 66 57 68 69 67 68 69 70 71 72 73 74 75 83 84 85 66 87 88 90 91 89 000 101 102 103 104 105 106 107 115 116 117 118 119 120 121 122 123 131 132 133 134 135 136 137 138 139 147 148 149 150 151 152 153 164 155 153 164 165 166 167 168 169 170 171 179 160 | 19 20 21 22 23 24 25 26 27 28 35 36 37 38 39 40 44 42 43 44 51 62 56 64 65 66 77 68 59 60 67 68 69 70 71 72 73 74 75 76 83 84 85 86 87 88 89 90 91 92 90 101 102 103 104 405 106 107 108 115 116 117 118 119 120 124 122 123 124 113 133 134 135 136 137 138 130 140 147 148 149 150 151 124 155 156 153 164 165 166 167 | 19 20 21 22 23 24 25 26 27 28 29 35 36 37 38 39 40 41 42 43 44 45 51 62 53 64 65 66 67 68 69 60 61 57 68 69 70 71 72 73 74 75 76 77 83 84 68 67 88 89 90 51 92 93 99 100 101 102 103 104 105 107 108 109 115 116 117 118 119 120 121 122 123 124 125 131 103 133 134 135 137 138 139 140 141 147 148 150 151 152 153 154 155 156 157 153 164 156 167 168 <td< td=""><td>19 20 21 22 23 24 25 26 27 28 29 30 35 36 37 38 39 40 41 42 43 44 45 46 51 52 53 54
 55 56 57 58 59 60 61 62 57 68 69 70 71 72 73 74 75 76 17 78 83 84 65 66 87 88 9 90 91 52 93 94 99 000 101 102 103 104 105 106 107 108 108 100 115 116 117 118 119 120 121 122 123 124 125 128 131 133 134 135 135 137 138 133 140 <td< td=""><td>19 20 21 22 23 24 25 26 27 28 29 30 31 35 36 37 38 39 40 41 42 43 44 45 45 47 51 52 53 64 65 66 57 68 69 60 61 62 63 67 68 68 70 71 72 73 74 75 76 77 78 79 83 84 85 86 87 88 89 90 91 92 93 84 95 93 000 101 102 103 104 105 106 107 108 103 111 115 116 117 118 119 120 121 122 123 124 125 125 127 131 133 134 135 136 137 138 139 140 141 142 143</td><th>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 45 46 47 48 51 62 53 64 55 66 67 69 60 61 62 63 64 57 68 68 70 71 72 73 74 75 76 77 78 79 60 83 84 68 67 68 89 90 91 92 93 94 95 96 99 100 101 102 103 104 105 106 107 108 109 110 111 112 115 116 117 118 113 123 124 125 123 124 125 126 127 128 113 123 123 124 125 123 124</th><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 42 44 45 46 47 48 51 62 53 64 55 66 77 68 69 60 61 62 63 64 57 68 69 70 71 72 73 74 75 76 77 79 79 80 83 84 86 67 68 89 90 91 92 93 54 55 99 000 101 102 103 104 105 106 107 108 109 101 111 112 115 116 117 118 120 121 122 123 124 125 126 127 128 113 123 123 124 125 156 157 158 159 160</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 0 41 42 43 44 45 45 47 48 51 62 53 64 65 66 67 96 99 60 61 62 63 64 49 57 68 68 70 77 72 73 74 75 77 78 79 80 83 84 68 67 68 89 99 91 92 93 94 95 96 89 100 101 102 103 104 105 106 107 108 109 101 111 112 113 113 123 124 125 123 124 125 127 128 131 113 123 124 135 131 133 140 141 142</td><td>19 20 21 22 24 25 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 45 45 47 48 51 52 53 64 65 65 76 67 78 79 80 67 68 69 70 71 72 73 74 75 77 78 79 80 63 84 85 86 87 88 90 91 92 93 94 95 96 83 84 85 86 87 88 90 91 92 93 94 95 96 81 102 103 104 105 105 101 111 112 115 116 117 118 129 103 113 114 122 130 113 114 112 113 114 114 113 14</td><td>19 20 21 22 23 24 25 27 28 29 30 31 32 35 36 37 38 39 40 41 42 44 46 46 48 51 52 55 64 55 66 57 68 59 60 61 62 63 64 57 68 59 70 71 72 73 74 75 76 77 78 79 80 83 84 85 66 97 68 90 91 92 39 94 95 96 61 62 63 64 65 65 67 83 84 85 67 88 90 91 92 39 43 59 93</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 59 60 61 62 63 64 49 60 61 62 63 64 96 61 62 63 64 96 61 62 63 64 96 61 62 63 64 96 61 62 63 64 96 61 62 63 64 96 61 62 63 64 65 66 67 68 89 90 91 92 93 95 96 81 82 84 86 67 88 89 90 91 92 93 94 95 96 91 92 93 94 95 96 91 92 93 94 95 <</td><td>19 20 21 22 23 24 25 26 27 28 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 57 66 59 60 61 62 63 64 49 0 61 62 53 67 68 69 60 61 62 63 64 49 0 61 62 53 67 68 69 99 91 59 34 95 96 65 65 67 68 89 93 000 101 102 033 104 105 106 101 111 112 83 84 88 86 87 89 90 101 111 112 113 114 115 116 117 118 133 104 105 106 101 111 112 133 134 135<</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 04 41 42 43 44 45 46 47 48 61 62 53 64 65 66 67 58 69 60 61 62 63 64 67 68 68 70 77 78 79 80 65 66 67 68 68 70 83 84 68 67 68 99 91 92 93 84 95 66 67 68 68 70 89 100 101 102 103 104 105 106 107 108 109 101 111 112 113 114 115 116 117 118 119 101 102 103 114 112 103 114 112 113 114 115 116 <t< td=""><td>19 20 21 22 23 24 25 27 28 29 30 31 32 35 36 37 38 39 44 42 44 46 46 47 48 51 52 55 64 55 66 57 68 59 60 61 62 63 64 65 65 67
 68 69 71 72 73 74 75 76 77 78 78 60 61 62 63 64 65 65 67 68 69 70 71 83 84 85 66 77 78 78 59 60 101 102 103 104 105 106 107 108 109 101 111 112 103 114 115 116 117 118 119 120 121 122 123 124 125 125 121 123 103 114 1162 103 104 <t< td=""><td>19 20 21 22 23 24 25 26 27 28 30 31 32 35 36 37 38 39 40 44 45 46 47 48 51 62 55 64 55 66 75 68 59 60 61 62 63 64 65 66 67 68 69 70 71 72 74 75 77 78 78 80 63 64 65 66 67 68 69 70 71 72 74 75 77 78 78 80 83 84 86 67 88 90 91 92 93 94 95 96 91 002 101 102 103 104 105 106 107 108 101 111 112 113 114 115 116 117 118 119 120 121 122 123 124</td></t<><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 69 70 71 72 73 83 84 85 66 67 68 69 70 71 72 73 83 84 86 67 88 99 91 92 93 94 95 96 99 000 101 102 103 104 105 106 107 108 109 101 102 103 104 105 115 116 117 118 119 120 121 122 122 124 125 126 127 128 115 116 117 118 119 120 121 122 122 122 122 124 125<!--</td--><td>19 20 21 22 23 24 25 26 27 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 69 60 61 62 63 64 45 56 67 68 69 60 61 62 63 64 65 66 67 68 69 60 61 62 63 64 65 66 67 68 69 60 61 62 64 65 66 67 68 69 60 71 72 73 74 83 84 86 67 88 99 91 92 93 49 66 67 88 89 90 71 72 73 74 83 84 86 67 88 99 90 101 102 103 104 105 106</td><td>13 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 56 66 67 58 69 60 61 62 64 57 68 68 70 71 72 73 74 75 77 78 60 61 62 63 64 65 67 68 65 70 71 72 73 74 75 77 78 60 64 65 67 68 65 70 71 72 73 74 75 77 78 80 65 66 67 68 67 68 69 99 99 91 92 93 94 95 66 67 68 67 68 67 68 67 68 69 78 89 90 91 92 93 94 95 96</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 45 46 44 45 52 35 54 55 65 67 68 59 60 61 62 63 64 57 68 69 70 71 72 73 74 75 76 89 84 65 66 77 68 59 99 90 91 92 93 45 56 89 80 102 104 105 106 107 108 109 111 112 73 74 75 76 89 90 91 92 93 45 56 57 68 69 70 71 72 73 74 75 76 91 102 104 105 105 104 111</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 61 62 56 67 58 59 60 61 62 63 64 65 65 67 58 59 60 61 62 63 64 65 65 67 68 69 70 71 72 73 74 75 76 77 78 79 80 65 65 67 68 69 70 71 72 73 74 75 77 78 79 80 65 65 67 68 69 70 71 72 73 74 75 76 77 78 80 65 65 67 68 69 70 71 72 73 74 75 76 77 78 98 93 100 101 102</td><td>13 20 21 22 23 24 25 26 27 29 30 31 32 35 36 37 38 34 04 44 24 44 45 46 61 62 53 64 55 65 67 68 59 60 61 62 63 64 49 05 51 52 56 67 68 59 60 61 62 63 64 49 05 51 52 56 67 68 59 60 61 62 63 64 65 66 67 68 69 71 72 73 74 75 77 78 83 84 86 66 67 68 90 91 92 93 94 93 100 101 102 103 104 105 106 107 108 106 107 108 106 106 107 108 106 101 111 112</td><td>13 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 44 7 48 51 62 53 64 65 66 67 96 99 60 61 62 63 44 45 45 46 47 65 65 67 96 99 60 61 62 63 64 65 66 67 98 53 60 61 62 63 67 86 86 77 74 75 77 78 79 80 89 84 86 67 88 99 91 92 93 44 96 60 101 102 103 104 105 106 107 186 109 101 111 112 103 104 105 106 107 108 108 101 111 112 103</td></td></td></t<></td></td<></td></td<> | 19 20 21 22 23 24 25 26 27 28 29 30 35 36 37 38 39 40 41 42 43 44 45 46 51 52 53 54 55 56 57 58 59 60 61 62 57 68 69 70 71 72 73 74 75 76 17 78 83 84 65 66 87 88 9 90 91 52 93 94 99 000 101 102 103 104 105 106 107 108 108 100 115 116 117 118 119 120 121 122 123 124 125 128 131 133 134 135 135 137 138 133 140 <td< td=""><td>19 20 21 22 23 24 25 26 27 28 29 30 31 35 36 37 38 39 40 41 42 43 44 45 45 47 51 52 53 64 65 66 57 68 69 60 61
62 63 67 68 68 70 71 72 73 74 75 76 77 78 79 83 84 85 86 87 88 89 90 91 92 93 84 95 93 000 101 102 103 104 105 106 107 108 103 111 115 116 117 118 119 120 121 122 123 124 125 125 127 131 133 134 135 136 137 138 139 140 141 142 143</td><th>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 45 46 47 48 51 62 53 64 55 66 67 69 60 61 62 63 64 57 68 68 70 71 72 73 74 75 76 77 78 79 60 83 84 68 67 68 89 90 91 92 93 94 95 96 99 100 101 102 103 104 105 106 107 108 109 110 111 112 115 116 117 118 113 123 124 125 123 124 125 126 127 128 113 123 123 124 125 123 124</th><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 42 44 45 46 47 48 51 62 53 64 55 66 77 68 69 60 61 62 63 64 57 68 69 70 71 72 73 74 75 76 77 79 79 80 83 84 86 67 68 89 90 91 92 93 54 55 99 000 101 102 103 104 105 106 107 108 109 101 111 112 115 116 117 118 120 121 122 123 124 125 126 127 128 113 123 123 124 125 156 157 158 159 160</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 0 41 42 43 44 45 45 47 48 51 62 53 64 65 66 67 96 99 60 61 62 63 64 49 57 68 68 70 77 72 73 74 75 77 78 79 80 83 84 68 67 68 89 99 91 92 93 94 95 96 89 100 101 102 103 104 105 106 107 108 109 101 111 112 113 113 123 124 125 123 124 125 127 128 131 113 123 124 135 131 133 140 141 142</td><td>19 20 21 22 24 25 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 45 45 47 48 51 52 53 64 65 65 76 67 78 79 80 67 68 69 70 71 72 73 74 75 77 78 79 80 63 84 85 86 87 88 90 91 92 93 94 95 96 83 84 85 86 87 88 90 91 92 93 94 95 96 81 102 103 104 105 105 101 111 112 115 116 117 118 129 103 113 114 122 130 113 114 112 113 114 114 113 14</td><td>19 20 21 22 23 24 25 27 28 29 30 31 32 35 36 37 38 39 40 41 42 44 46 46 48 51 52 55 64 55 66 57 68 59 60 61 62 63 64 57 68 59 70 71 72 73 74 75 76 77 78 79 80 83 84 85 66 97 68 90 91 92 39 94 95 96 61 62 63 64 65 65 67 83 84 85 67 88 90 91 92 39 43 59 93</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 59 60 61 62 63 64 49 60 61 62 63 64 96 61 62 63 64 96 61 62 63 64 96 61 62 63 64 96 61 62 63 64 96 61 62 63 64 96 61 62 63 64 65 66 67 68 89 90 91 92 93 95 96 81 82 84 86 67 88 89 90 91 92 93 94 95 96 91 92 93 94 95 96 91 92 93 94 95 <</td><td>19 20 21 22 23 24 25 26 27 28 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 57 66 59 60 61 62 63 64 49 0 61 62 53 67 68 69 60 61 62 63 64 49 0 61 62 53 67 68 69 99 91 59 34 95 96 65 65 67 68 89 93 000 101 102 033 104 105 106 101 111 112 83 84 88 86 87 89 90 101 111 112 113 114 115 116 117 118 133 104 105 106 101 111 112 133 134 135<</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 04 41 42 43 44 45 46 47 48 61 62 53 64 65 66 67 58 69 60 61 62 63 64 67 68 68 70 77 78 79 80 65 66 67 68 68 70 83 84 68 67 68 99 91 92 93 84 95 66 67 68 68 70 89 100 101 102 103 104 105 106 107 108 109 101 111 112 113 114 115 116 117 118 119 101 102 103 114 112 103 114 112 113 114 115 116 <t< td=""><td>19 20 21 22 23 24 25 27 28 29 30 31 32 35 36 37 38 39 44 42 44 46 46 47 48 51 52 55 64 55 66 57 68 59 60 61 62 63 64 65 65 67 68 69 71 72 73 74 75 76 77 78 78 60 61 62 63 64 65 65 67 68 69 70 71 83 84 85 66 77 78 78 59 60 101 102 103 104 105 106 107 108 109 101 111 112 103 114 115 116 117 118 119 120 121 122 123 124 125 125 121 123 103 114 1162 103 104 <t< td=""><td>19 20 21 22 23 24 25 26 27 28 30 31 32 35 36 37 38 39 40 44 45 46 47 48 51 62 55 64 55 66 75 68 59 60 61 62 63 64 65 66 67 68 69 70 71 72 74 75 77 78 78 80
 63 64 65 66 67 68 69 70 71 72 74 75 77 78 78 80 83 84 86 67 88 90 91 92 93 94 95 96 91 002 101 102 103 104 105 106 107 108 101 111 112 113 114 115 116 117 118 119 120 121 122 123 124</td></t<><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 69 70 71 72 73 83 84 85 66 67 68 69 70 71 72 73 83 84 86 67 88 99 91 92 93 94 95 96 99 000 101 102 103 104 105 106 107 108 109 101 102 103 104 105 115 116 117 118 119 120 121 122 122 124 125 126 127 128 115 116 117 118 119 120 121 122 122 122 122 124 125<!--</td--><td>19 20 21 22 23 24 25 26 27 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 69 60 61 62 63 64 45 56 67 68 69 60 61 62 63 64 65 66 67 68 69 60 61 62 63 64 65 66 67 68 69 60 61 62 64 65 66 67 68 69 60 71 72 73 74 83 84 86 67 88 99 91 92 93 49 66 67 88 89 90 71 72 73 74 83 84 86 67 88 99 90 101 102 103 104 105 106</td><td>13 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 56 66 67 58 69 60 61 62 64 57 68 68 70 71 72 73 74 75 77 78 60 61 62 63 64 65 67 68 65 70 71 72 73 74 75 77 78 60 64 65 67 68 65 70 71 72 73 74 75 77 78 80 65 66 67 68 67 68 69 99 99 91 92 93 94 95 66 67 68 67 68 67 68 67 68 69 78 89 90 91 92 93 94 95 96</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 45 46 44 45 52 35 54 55 65 67 68 59 60 61 62 63 64 57 68 69 70 71 72 73 74 75 76 89 84 65 66 77 68 59 99 90 91 92 93 45 56 89 80 102 104 105 106 107 108 109 111 112 73 74 75 76 89 90 91 92 93 45 56 57 68 69 70 71 72 73 74 75 76 91 102 104 105 105 104 111</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 61 62 56 67 58 59 60 61 62 63 64 65 65 67 58 59 60 61 62 63 64 65 65 67 68 69 70 71 72 73 74 75 76 77 78 79 80 65 65 67 68 69 70 71 72 73 74 75 77 78 79 80 65 65 67 68 69 70 71 72 73 74 75 76 77 78 80 65 65 67 68 69 70 71 72 73 74 75 76 77 78 98 93 100 101 102</td><td>13 20 21 22 23 24 25 26 27 29 30 31 32 35 36 37 38 34 04 44 24 44 45 46 61 62 53 64 55 65 67 68 59 60 61 62 63 64 49 05 51 52 56 67 68 59 60 61 62 63 64 49 05 51 52 56 67 68 59 60 61 62 63 64 65 66 67 68 69 71 72 73 74 75 77 78 83 84 86 66 67 68 90 91 92 93 94 93 100 101 102 103 104 105 106 107 108 106 107 108 106 106 107 108 106 101 111 112</td><td>13 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 44 7 48 51 62 53 64 65 66 67 96 99 60 61 62 63 44 45 45 46 47 65 65 67 96 99 60 61 62 63 64 65 66 67 98 53 60 61 62 63 67 86 86 77 74 75 77 78 79 80 89 84 86 67 88 99 91 92 93 44 96 60 101 102 103 104 105 106 107 186 109 101 111 112 103 104 105 106 107 108 108 101 111 112 103</td></td></td></t<></td></td<> | 19 20 21 22 23 24 25 26 27 28 29 30 31 35 36 37 38 39 40 41 42 43 44 45 45 47 51 52 53 64 65 66 57 68 69 60 61 62 63 67 68 68 70 71 72 73 74 75 76 77 78 79 83 84 85 86 87 88 89 90 91 92 93 84 95 93 000 101 102 103 104 105 106 107 108 103 111 115 116 117 118 119 120 121 122 123 124 125 125 127 131 133 134 135 136 137 138 139 140 141 142 143 | 19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 45 46 47 48 51 62 53 64 55 66 67 69 60 61 62 63 64 57 68 68 70 71 72 73 74 75 76 77 78 79 60 83 84 68 67 68 89 90 91 92 93 94 95 96 99 100 101 102 103 104 105 106 107 108 109 110 111 112 115 116 117 118 113 123 124 125 123 124 125 126 127 128 113 123 123 124 125 123 124 | 19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 42 44 45 46 47 48 51 62 53 64 55 66 77 68 69 60 61 62 63 64 57 68 69 70 71 72 73 74 75 76 77 79 79 80 83 84 86 67 68 89 90 91 92 93 54 55
 99 000 101 102 103 104 105 106 107 108 109 101 111 112 115 116 117 118 120 121 122 123 124 125 126 127 128 113 123 123 124 125 156 157 158 159 160 | 19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 0 41 42 43 44 45 45 47 48 51 62 53 64 65 66 67 96 99 60 61 62 63 64 49 57 68 68 70 77 72 73 74 75 77 78 79 80 83 84 68 67 68 89 99 91 92 93 94 95 96 89 100 101 102 103 104 105 106 107 108 109 101 111 112 113 113 123 124 125 123 124 125 127 128 131 113 123 124 135 131 133 140 141 142 | 19 20 21 22 24 25 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 45 45 47 48 51 52 53 64 65 65 76 67 78 79 80 67 68 69 70 71 72 73 74 75 77 78 79 80 63 84 85 86 87 88 90 91 92 93 94 95 96 83 84 85 86 87 88 90 91 92 93 94 95 96 81 102 103 104 105 105 101 111 112 115 116 117 118 129 103 113 114 122 130 113 114 112 113 114 114 113 14 | 19 20 21 22 23 24 25 27 28 29 30 31 32 35 36 37 38 39 40 41 42 44 46 46 48 51 52 55 64 55 66 57 68 59 60 61 62 63 64 57 68 59 70 71 72 73 74 75 76 77 78 79 80 83 84 85 66 97 68 90 91 92 39 94 95 96 61 62 63 64 65 65 67 83 84 85 67 88 90 91 92 39 43 59 93 | 19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 59 60 61 62 63 64 49 60 61 62 63 64 96 61 62 63 64 96 61 62 63 64 96 61 62 63 64 96 61 62 63 64 96 61 62 63 64 96 61 62 63 64 65 66 67 68 89 90 91 92 93 95 96 81 82 84 86 67 88 89 90 91 92 93 94 95 96 91 92 93 94 95 96 91 92 93 94 95 < | 19 20 21 22 23 24 25 26 27 28 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 57 66 59 60 61 62 63 64 49 0 61 62 53 67 68 69 60 61 62 63 64 49 0 61 62 53 67 68 69 99 91 59 34 95 96 65 65 67 68 89 93 000 101 102 033 104 105 106 101 111 112 83 84 88 86 87 89 90 101 111 112 113 114 115 116 117 118 133 104 105 106 101 111 112 133 134 135< | 19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 04 41 42 43 44 45 46 47 48 61 62 53 64 65 66 67 58 69 60 61 62 63 64 67 68 68 70 77 78 79 80 65 66 67 68 68 70 83 84 68 67 68 99 91 92 93 84 95 66 67 68 68 70 89 100 101 102 103 104 105 106 107 108 109 101 111 112 113 114 115 116 117 118 119 101 102 103 114 112 103 114 112 113 114 115 116 <t< td=""><td>19 20 21 22 23 24 25 27 28 29 30 31 32 35 36 37 38 39 44 42 44 46 46 47 48 51 52 55 64 55 66 57 68 59 60 61 62 63 64 65 65 67 68 69 71 72 73 74 75 76 77 78 78 60 61 62 63 64 65 65 67 68 69 70 71 83 84 85 66 77 78 78 59 60 101 102 103 104 105 106 107 108 109 101 111 112 103 114 115 116 117 118 119 120 121 122 123 124 125 125 121 123 103 114 1162 103 104 <t< td=""><td>19 20 21 22 23 24 25 26 27 28 30 31 32 35 36 37 38 39 40 44 45 46 47 48 51 62 55 64 55 66 75 68 59 60 61 62 63 64 65 66 67 68 69 70 71 72 74 75 77 78 78 80 63 64 65 66 67 68 69 70 71 72 74 75 77 78 78 80 83 84 86 67 88 90 91 92 93 94 95 96 91 002 101 102 103 104 105 106 107 108 101 111 112 113 114 115 116 117 118 119 120 121 122 123 124</td></t<><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 69 70 71 72 73 83 84 85 66 67 68 69 70 71 72 73 83 84 86 67 88 99 91 92 93 94 95 96 99 000 101 102 103 104 105 106 107 108 109 101 102 103 104 105 115 116 117 118 119 120 121 122 122 124 125 126 127 128 115 116 117 118 119 120 121 122 122 122 122 124 125<!--</td--><td>19 20 21 22 23 24 25 26 27 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 69 60 61 62 63 64 45 56 67 68 69 60 61 62 63 64 65 66 67 68 69 60 61 62 63 64 65 66 67 68 69 60 61 62 64 65 66 67 68 69 60 71 72 73 74 83 84 86 67 88 99 91
 92 93 49 66 67 88 89 90 71 72 73 74 83 84 86 67 88 99 90 101 102 103 104 105 106</td><td>13 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 56 66 67 58 69 60 61 62 64 57 68 68 70 71 72 73 74 75 77 78 60 61 62 63 64 65 67 68 65 70 71 72 73 74 75 77 78 60 64 65 67 68 65 70 71 72 73 74 75 77 78 80 65 66 67 68 67 68 69 99 99 91 92 93 94 95 66 67 68 67 68 67 68 67 68 69 78 89 90 91 92 93 94 95 96</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 45 46 44 45 52 35 54 55 65 67 68 59 60 61 62 63 64 57 68 69 70 71 72 73 74 75 76 89 84 65 66 77 68 59 99 90 91 92 93 45 56 89 80 102 104 105 106 107 108 109 111 112 73 74 75 76 89 90 91 92 93 45 56 57 68 69 70 71 72 73 74 75 76 91 102 104 105 105 104 111</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 61 62 56 67 58 59 60 61 62 63 64 65 65 67 58 59 60 61 62 63 64 65 65 67 68 69 70 71 72 73 74 75 76 77 78 79 80 65 65 67 68 69 70 71 72 73 74 75 77 78 79 80 65 65 67 68 69 70 71 72 73 74 75 76 77 78 80 65 65 67 68 69 70 71 72 73 74 75 76 77 78 98 93 100 101 102</td><td>13 20 21 22 23 24 25 26 27 29 30 31 32 35 36 37 38 34 04 44 24 44 45 46 61 62 53 64 55 65 67 68 59 60 61 62 63 64 49 05 51 52 56 67 68 59 60 61 62 63 64 49 05 51 52 56 67 68 59 60 61 62 63 64 65 66 67 68 69 71 72 73 74 75 77 78 83 84 86 66 67 68 90 91 92 93 94 93 100 101 102 103 104 105 106 107 108 106 107 108 106 106 107 108 106 101 111 112</td><td>13 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 44 7 48 51 62 53 64 65 66 67 96 99 60 61 62 63 44 45 45 46 47 65 65 67 96 99 60 61 62 63 64 65 66 67 98 53 60 61 62 63 67 86 86 77 74 75 77 78 79 80 89 84 86 67 88 99 91 92 93 44 96 60 101 102 103 104 105 106 107 186 109 101 111 112 103 104 105 106 107 108 108 101 111 112 103</td></td></td></t<> | 19 20 21 22 23 24 25 27 28 29 30 31 32 35 36 37 38 39 44 42 44 46 46 47 48 51 52 55 64 55 66 57 68 59 60 61 62 63 64 65 65 67 68 69 71 72 73 74 75 76 77 78 78 60 61 62 63 64 65 65 67 68 69 70 71 83 84 85 66 77 78 78 59 60 101 102 103 104 105 106 107 108 109 101 111 112 103 114 115 116 117 118 119 120 121 122 123 124 125 125 121 123 103 114 1162 103 104 <t< td=""><td>19 20 21 22 23 24 25 26 27 28 30 31 32 35 36 37 38 39 40 44 45 46 47 48 51 62 55 64 55 66 75 68 59 60 61 62 63 64 65 66 67 68 69 70 71 72 74 75 77 78 78 80 63 64 65 66 67 68 69 70 71 72 74 75 77 78 78 80 83 84 86 67 88 90 91 92 93 94 95 96 91 002 101 102 103 104 105 106 107 108 101 111 112 113 114 115 116 117 118 119 120 121 122 123 124</td></t<> <td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 69 70 71 72 73 83 84 85 66 67 68 69 70 71 72 73 83 84 86 67 88 99 91 92 93 94 95 96 99 000 101 102 103 104 105 106 107 108 109 101 102 103 104 105 115 116 117 118 119 120 121 122 122 124 125 126 127 128 115 116 117 118 119 120 121 122 122 122 122 124 125<!--</td--><td>19 20 21 22 23 24 25 26 27 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 69 60 61 62 63 64 45 56 67 68 69 60 61 62 63 64 65 66 67 68 69 60 61 62 63 64 65 66 67 68 69 60 61 62 64 65 66 67 68 69 60 71 72 73 74 83 84 86 67 88 99 91 92 93 49 66 67 88 89 90 71 72 73 74 83 84 86 67 88 99 90 101 102 103 104 105 106</td><td>13 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 56 66 67 58 69 60 61 62 64 57 68 68 70 71 72 73 74 75 77 78 60 61 62 63 64 65 67 68 65 70 71 72 73 74 75 77 78 60 64 65 67 68 65 70 71 72 73 74 75 77 78 80 65 66 67 68 67 68 69 99 99 91 92 93 94 95 66
 67 68 67 68 67 68 67 68 69 78 89 90 91 92 93 94 95 96</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 45 46 44 45 52 35 54 55 65 67 68 59 60 61 62 63 64 57 68 69 70 71 72 73 74 75 76 89 84 65 66 77 68 59 99 90 91 92 93 45 56 89 80 102 104 105 106 107 108 109 111 112 73 74 75 76 89 90 91 92 93 45 56 57 68 69 70 71 72 73 74 75 76 91 102 104 105 105 104 111</td><td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 61 62 56 67 58 59 60 61 62 63 64 65 65 67 58 59 60 61 62 63 64 65 65 67 68 69 70 71 72 73 74 75 76 77 78 79 80 65 65 67 68 69 70 71 72 73 74 75 77 78 79 80 65 65 67 68 69 70 71 72 73 74 75 76 77 78 80 65 65 67 68 69 70 71 72 73 74 75 76 77 78 98 93 100 101 102</td><td>13 20 21 22 23 24 25 26 27 29 30 31 32 35 36 37 38 34 04 44 24 44 45 46 61 62 53 64 55 65 67 68 59 60 61 62 63 64 49 05 51 52 56 67 68 59 60 61 62 63 64 49 05 51 52 56 67 68 59 60 61 62 63 64 65 66 67 68 69 71 72 73 74 75 77 78 83 84 86 66 67 68 90 91 92 93 94 93 100 101 102 103 104 105 106 107 108 106 107 108 106 106 107 108 106 101 111 112</td><td>13 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 44 7 48 51 62 53 64 65 66 67 96 99 60 61 62 63 44 45 45 46 47 65 65 67 96 99 60 61 62 63 64 65 66 67 98 53 60 61 62 63 67 86 86 77 74 75 77 78 79 80 89 84 86 67 88 99 91 92 93 44 96 60 101 102 103 104 105 106 107 186 109 101 111 112 103 104 105 106 107 108 108 101 111 112 103</td></td> | 19 20 21 22 23 24 25 26 27 28 30 31 32 35 36 37 38 39 40 44 45 46 47 48 51 62 55 64 55 66 75 68 59 60 61 62 63 64 65 66 67 68 69 70 71 72 74 75 77 78 78 80 63 64 65 66 67 68 69 70 71 72 74 75 77 78 78 80 83 84 86 67 88 90 91 92 93 94 95 96 91 002 101 102 103 104 105 106 107 108 101 111 112 113 114 115 116 117 118 119 120 121 122 123 124 | 19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 69 70 71 72 73 83 84 85 66 67 68 69 70 71 72 73 83 84 86 67 88 99 91 92 93 94 95 96 99 000 101 102 103 104 105 106 107 108 109 101 102 103 104 105 115 116 117 118 119 120 121 122 122 124 125 126 127 128 115 116 117 118 119 120 121 122 122 122 122 124 125 </td <td>19 20 21 22 23 24 25 26 27 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 69 60 61 62 63 64 45 56 67 68 69 60 61 62 63 64 65 66 67 68 69 60 61 62 63 64 65 66 67 68 69 60 61 62 64 65 66 67 68 69 60 71 72 73 74 83 84 86 67 88 99 91 92 93 49 66 67 88 89 90 71 72 73 74 83 84 86 67 88 99 90 101 102 103 104 105 106</td> <td>13 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 56 66 67 58 69 60 61 62 64 57 68 68 70 71 72 73 74 75 77 78 60 61 62 63 64 65 67 68 65 70 71 72 73 74 75 77 78 60 64 65 67 68 65 70 71 72 73 74 75 77 78 80 65 66 67 68 67 68 69 99 99 91 92 93 94 95 66 67 68 67 68 67 68 67 68 69 78 89 90 91 92 93 94 95 96</td> <td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 45 46 44 45 52 35 54 55 65 67 68 59 60 61 62 63 64 57 68 69 70 71 72 73 74 75 76 89 84 65 66 77 68 59 99 90 91 92 93 45 56 89 80 102 104 105 106 107 108 109 111 112 73 74 75 76 89 90 91 92 93 45 56 57 68 69 70 71 72 73 74 75 76 91 102 104 105 105 104 111</td> <td>19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 61 62 56 67 58 59 60 61 62 63 64 65 65 67 58 59 60 61 62 63 64 65 65 67 68 69 70 71 72 73 74 75 76 77 78 79 80 65 65 67 68 69 70 71 72 73 74 75 77 78 79 80 65 65 67 68 69 70 71 72 73 74 75 76 77 78 80 65 65 67 68 69 70 71 72 73 74 75 76 77 78 98 93
 100 101 102</td> <td>13 20 21 22 23 24 25 26 27 29 30 31 32 35 36 37 38 34 04 44 24 44 45 46 61 62 53 64 55 65 67 68 59 60 61 62 63 64 49 05 51 52 56 67 68 59 60 61 62 63 64 49 05 51 52 56 67 68 59 60 61 62 63 64 65 66 67 68 69 71 72 73 74 75 77 78 83 84 86 66 67 68 90 91 92 93 94 93 100 101 102 103 104 105 106 107 108 106 107 108 106 106 107 108 106 101 111 112</td> <td>13 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 44 7 48 51 62 53 64 65 66 67 96 99 60 61 62 63 44 45 45 46 47 65 65 67 96 99 60 61 62 63 64 65 66 67 98 53 60 61 62 63 67 86 86 77 74 75 77 78 79 80 89 84 86 67 88 99 91 92 93 44 96 60 101 102 103 104 105 106 107 186 109 101 111 112 103 104 105 106 107 108 108 101 111 112 103</td> | 19 20 21 22 23 24 25 26 27 29 30 31 32 35 36 37 38 34 44 45 46 47 48 51 62 53 64 55 66 67 68 69 60 61 62 63 64 45 56 67 68 69 60 61 62 63 64 65 66 67 68 69 60 61 62 63 64 65 66 67 68 69 60 61 62 64 65 66 67 68 69 60 71 72 73 74 83 84 86 67 88 99 91 92 93 49 66 67 88 89 90 71 72 73 74 83 84 86 67 88 99 90 101 102 103 104 105 106 | 13 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 56 66 67 58 69 60 61 62 64 57 68 68 70 71 72 73 74 75 77 78 60 61 62 63 64 65 67 68 65 70 71 72 73 74 75 77 78 60 64 65 67 68 65 70 71 72 73 74 75 77 78 80 65 66 67 68 67 68 69 99 99 91 92 93 94 95 66 67 68 67 68 67 68 67 68 69 78 89 90 91 92 93 94 95 96 | 19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 39 40 41 42 43 44 45 46 44 45 52 35 54 55 65 67 68 59 60 61 62 63 64 57 68 69 70 71 72 73 74 75 76 89 84 65 66 77 68 59 99 90 91 92 93 45 56 89 80 102 104 105 106 107 108 109 111 112 73 74 75 76 89 90 91 92 93 45 56 57 68 69 70 71 72 73 74 75 76 91 102 104 105 105 104 111 | 19 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 46 47 48 61 62 56 67 58 59 60 61 62 63 64 65 65 67 58 59 60 61 62 63 64 65 65 67 68 69 70 71 72 73 74 75 76 77 78 79 80 65 65 67 68 69 70 71 72 73 74 75 77 78 79 80 65 65 67 68 69 70 71 72 73 74 75 76 77 78 80 65 65 67 68 69 70 71 72 73 74 75 76 77 78 98 93 100 101 102 | 13 20 21 22 23 24 25 26 27 29 30 31 32 35 36 37 38 34 04 44 24 44 45 46 61 62 53 64 55 65 67 68 59 60 61 62 63 64 49 05 51 52 56 67 68 59 60 61 62 63 64 49 05 51 52 56 67 68 59 60 61 62 63 64 65 66 67 68 69 71 72 73 74 75 77 78 83 84 86 66 67 68 90 91 92 93 94 93 100 101 102 103 104 105 106 107 108 106 107 108 106 106 107 108 106 101 111 112 | 13 20 21 22 23 24 25 26 27 28 29 30 31 32 35 36 37 38 34 44 45 44 7 48 51 62 53 64 65 66 67 96 99 60 61 62 63 44 45 45 46 47 65 65 67 96 99 60 61 62 63 64 65 66 67 98 53 60 61 62 63 67 86 86 77 74 75 77 78 79 80 89 84 86 67 88 99 91 92 93 44 96 60 101 102 103 104 105 106 107 186 109 101 111 112 103 104 105 106 107 108 108 101 111 112 103 |





NMS Provisioning Manual

ical Pa	atch Pan	el A							Optical Pa	atch Pan	el B					
001	002	003	004	005	006	007	008	^	091	092	093	094	095	096	097	098
009	010	011	012	013	014	015	016		099	0100	0101	0102	0103	0104	0105	0106
017	018	019	020	021	022	023	024		0107	0108	0109	0110	0111	0112	0113	0114
025	026	027	028	029	030	031	032		0115	0116	0117	0118	0119	0120	0121	0122
033	034	035	036	037	038	039	040		0123	0124	0125	0126	0127	0128	0129	0130
041	042	043	044	045	046	047	048	÷	0131	0132	0133	0134	0135	0136	0137	0138
049	050	051	052	053	054	055	056	= 1	0139	0140	0141	0142	0143	0144	0145	0146
057	058	059	060	061	062	063	064		0147	0148	0149	0150	0151	0152	0153	0154
065	066	067	068	069	070	071	072		0155	0156	0157	0158	0159	0160	0161	0162
073	074	075	076	077	078	079	080		0163	0164	0165	0166	0167	0168	0169	0170
081	082	083	084	085	086	087	088		0171	0172	0173	0174	0175	0176	0177	0178
089	090							~	0179	0180						

Figure 21. Logical Matrix Presentation

x										
Direction	Port #	 Port Name 	Admin Status	Oper Status	HW Status	Partner Port #	Partner Port Name	Additional Info	Port Role	
<filter direction=""></filter>	<filter #="" port=""></filter>	<filter name="" port=""></filter>	<filter admin="" status=""></filter>	<filter oper="" status=""></filter>	<filter hw="" status=""></filter>	<filter #2<="" partner="" port="" td=""><td><filter na<="" partner="" port="" td=""><td><filter additional="" info=""></filter></td><td><filter port="" r-<="" td=""><td>ole></td></filter></td></filter></td></filter>	<filter na<="" partner="" port="" td=""><td><filter additional="" info=""></filter></td><td><filter port="" r-<="" td=""><td>ole></td></filter></td></filter>	<filter additional="" info=""></filter>	<filter port="" r-<="" td=""><td>ole></td></filter>	ole>
rtx.	50		oniockea	Disconnected	chapied				connection	<u> </u>
Rx	57		Unlocked	Disconnected	Enabled				Connection	<u> </u>
R×	58		Unlocked	Disconnected	Enabled				Connection	
Rx	59		Unlocked	Connected	Enabled	60			Connection	
Rx	60		Unlocked	Connected	Enabled	59			Connection	
Rx	61		Unlocked	Disconnected	Enabled				Connection	
Rx	62		Unlocked	Disconnected	Enabled				Connection	
Rx	63		Unlocked	Disconnected	Enabled				Connection	_
Rx			Unlocked Unlocked	Disconnected Disconnected	Enabled Enabled				Connection Connection	
Rx x	63 64	Port Name	Unlocked	Disconnected	Enabled		Partner Port Name	Additional Info	Connection	
Rx x Direction	63 64 Port #	Port Name Efter Port Name	Unlocked Admin Status	Disconnected Oper Status	Enabled HW Status	Partner Port #	Partner Port Name		Connection Port Role	
Rx Direction <filter direction=""></filter>	63 64 Port # <filter #="" port=""></filter>	Port Name <pre></pre> <filter name="" port=""></filter>	Admin Status Control Contro	Disconnected Oper Status <filter oper="" status=""></filter>	Enabled HW Status <fiker hw="" status=""></fiker>	Partner Port #	Partner Port Name <filter na<="" partner="" port="" td=""><td></td><td>Connection Port Role Filter Port R</td><td>/ /</td></filter>		Connection Port Role Filter Port R	/ /
Rx X Direction <filter direction=""> Tx</filter>	63 54 Port # <filter #="" port=""> 56</filter>		Unlocked Admin Status <i>Admin Status Admin Status</i>	Disconnected Oper Status Cilter Oper Status> Disconnected	Enabled HW Status <fiker hw="" status=""> Enabled</fiker>	Partner Port #			Connection Port Role <filter port="" r.<="" td=""><td>/ / /ke></td></filter>	/ / /ke>
Rx x Direction <filter direction=""> Tx Tx Tx</filter>	63 64 Port # <filter #="" port=""> 58 57</filter>		Unlocked Admin Status Almin Status Vilcer Admin Status> Unlocked	Disconnected Oper Status Cliner Oper Status> Disconnected Disconnected	Enabled HW Status <fiker hw="" status=""> Enabled Enabled</fiker>	Partner Port # CFilter Partner Port #:			Connection Port Role Connection Connection	xe>
Rx Direction Chiler Direction> Tx Tx Tx	63 64 Port # <filter #="" port=""> 56 57 58</filter>		Unlocked Admin Status CFilter Admin Status> Unlocked Unlocked Unlocked	Disconnected Oper Status CFilter Oper Status> Disconnected Disconnected	Enabled HW Status <fiker hw="" status=""> Enabled Enabled Enabled</fiker>	Partner Port #			Connection Port Role Filter Port R. Connection Connection Connection	
Rx Direction <filter direction=""> Tx Tx Tx Tx Tx</filter>	63 64 Port # Port # <filter #="" part=""> 56 57 58 53</filter>		Unlocked Admin Status c-filter Admin Status> Unlocked Unlocked Unlocked Unlocked Unlocked	Disconnected Oper Status CPUE Status Cifiler Oper Status> Disconnected Disconnected Disconnected Connected Connected	Enabled HW Status CRIter HW Status Enabled Enabled Enabled Enabled	Partner Port # CFilter Partner Port #> 240			Connection Port Role Filter Port R. Connection Connection Connection Connection	С же>
Rx Direction Tx Tx Tx Tx Tx Tx Tx	63 64 Port # <7/kter Port #> 56 57 58 59 60		Uniocked Admin Status Context of the status of the	Disconnected Oper Status CFilter Oper Status> Disconnected Disconnected Connected Connected Connected	Enabled HW Status Enabled Enabled Enabled Enabled Enabled Enabled	Partner Port #			Connection Port Role Connection Connection Connection Connection Connection Connection	С 2000 же>
Rx Direction <filter direction=""> Tx Tx Tx Tx Tx Tx Tx Tx</filter>	63 64 Port # Critter Port #> 56 57 58 59 60 61		Uniocked Admin Status (Filter Admin Status) Uniocked Uniocked Uniocked Uniocked Uniocked Uniocked Uniocked Uniocked	Disconnected Oper Status Connected Disconnected Disconnected Connected Connected Disconnected Disconn	Enabled HW Status Files HW Status Files HW Status> Enabled Enabled Enabled Enabled Enabled Enabled	Partner Port # 240 239			Connection Port Role Filter Part R Connection Connection Connection Connection Connection Connection Connection	С Украничение инстраничение и инстраничение и и и и и и и и и и и и и и и и и и
Rx Virection Selfer Direction> Tx Tx Tx Tx Tx Tx	63 64 Port # <7/kter Port #> 56 57 58 59 60		Uniocked Admin Status Context of the status of the	Disconnected Oper Status CFilter Oper Status> Disconnected Disconnected Connected Connected Connected	Enabled HW Status Enabled Enabled Enabled Enabled Enabled Enabled	Partner Port #			Connection Port Role Connection Connection Connection Connection Connection Connection	ле>

Figure 22. Physical Ports Table Presentation

	Physical							Ŀ
otical Patch Panel A								
Panel name	Port Label	Customer name	Admin Status	Oper Status	HW Status	Partner Panel	Partner Label	Port Role
<filter name="" panel=""></filter>	<filter label="" port=""></filter>	<filter customer="" name=""></filter>	<filter admin="" status=""></filter>	<filter oper="" status=""></filter>	<filter hw="" status=""></filter>	<filter panel="" partner=""></filter>	<filter label="" partner=""></filter>	<filter port="" role=""></filter>
Optical Patch Panel A	56	fiberzone56	Unlocked	Disconnected	Enabled			Connection
Optical Patch Panel A	57	fiberzone57	Unlocked	Disconnected	Enabled			Connection
Optical Patch Panel A	58	fiberzone58	Unlocked	Disconnected	Enabled			Connection
Optical Patch Panel A	59	fiberzone59	Unlocked	Connected	Enabled	Optical Patch Panel A	060	Connection
Optical Patch Panel A	60	fiberzone60	Unlocked	Connected	Enabled	Optical Patch Panel A	059	Connection
Optical Patch Panel A	61	fiberzone61	Unlocked	Disconnected	Enabled			Connection
Optical Patch Panel A	62	fiberzone62	Unlocked	Disconnected	Enabled			Connection
Optical Patch Panel A	63	fiberzone63	Unlocked	Disconnected	Enabled			Connection
Optical Patch Panel A	64	fiberzone64	Unlocked	Disconnected	Enabled			Connection
	Port Label	Customer name	Admin Status	Oner Status	HW Status	Dartner Danel	Dartner I abel	Port Role
ntical Patch Panel B Panel name	Port Label	Customer name Cliber Customer name	Admin Status	Oper Status	HW Status	Partner Panel	Partner Label	Port Role
Panel name <filter name="" panel=""></filter>	<filter label="" port=""></filter>	<filter customer="" name=""></filter>	<filter admin="" status=""></filter>	<filter oper="" status=""></filter>	<filter hw="" status=""></filter>	Partner Panel <filter panel="" partner=""></filter>	Partner Label	<filter port="" role=""></filter>
Panel name <filter name="" panel=""> Optical Patch Panel B</filter>	<filter label="" port=""> 91</filter>	<filter customer="" name=""> fiberzone91</filter>	<filter admin="" status=""> Unlocked</filter>	<filter oper="" status=""> Disconnected</filter>	<filter hw="" status=""> Enabled</filter>			<filter part="" role=""></filter>
Panel name <filter name="" panel=""> Optical Patch Panel B Optical Patch Panel B</filter>	<filter label="" port=""></filter>	<filter customer="" name=""> fiberzone91 fiberzone92</filter>	<filter admin="" status=""></filter>	<filter oper="" status=""></filter>	<filter hw="" status=""></filter>			<filter port="" role=""> Connection Connection</filter>
Panel name <i>Filker Panel name></i> Optical Patch Panel B Optical Patch Panel B Optical Patch Panel B	<filter label="" port=""> 91 92</filter>	<filter customer="" name=""> fiberzone91</filter>	<filter admin="" status=""> Unlocked Unlocked</filter>	<filter oper="" status=""> Disconnected Disconnected</filter>	<filter hw="" status=""> Enabled Enabled</filter>			<filter part="" role=""></filter>
Panel name <i>Filter Panel name</i> > Optical Patch Panel B Optical Patch Panel B Optical Patch Panel B Optical Patch Panel B	<filter label="" port=""> 91 92 93</filter>	<filter customer="" name=""> fiberzone91 fiberzone92 fiberzone93</filter>	<filter admin="" status=""> Unlocked Unlocked Unlocked</filter>	<filter oper="" status=""> Disconnected Disconnected Disconnected Disconnected</filter>	<filter hw="" status=""> Enabled Enabled Enabled</filter>			<filter port="" role=""> Connection Connection Connection Connection</filter>
Panel name <i>CFIIter Panel name</i> > Optical Patch Panel B Optical Patch Panel B Optical Patch Panel B Optical Patch Panel B	<filter label="" port=""> 91 92 93 94</filter>	<filter customer="" name=""> fiberzone91 fiberzone92 fiberzone93 fiberzone94</filter>	<filter admin="" status=""> Unlocked Unlocked Unlocked Unlocked</filter>	<filter oper="" status=""> Disconnected Disconnected Disconnected Disconnected Disconnected</filter>	<pilter hw="" status=""> Enabled Enabled Enabled Enabled Enabled</pilter>			<pre><filter part="" role=""> Connection Connection Connection</filter></pre>
Panel name Cfilter Panel name> Optical Patch Panel B Optical Patch Panel B Optical Patch Panel B Optical Patch Panel B Optical Patch Panel B	<filter label="" port=""> 91 92 93 94 95</filter>	<filter customer="" name=""> fiberzone91 fiberzone92 fiberzone93 fiberzone93 fiberzone94 fiberzone95</filter>	<filter admin="" status=""> Unlocked Unlocked Unlocked Unlocked Unlocked Unlocked</filter>	<filter oper="" status=""> Disconnected Disconnected Disconnected Disconnected Disconnected Disconnected</filter>	<filter hw="" status=""> Enabled Enabled Enabled Enabled Enabled</filter>			<pre><filter part="" role=""> Connection Connection Connection Connection Connection Connection </filter></pre>
Panel name	<pre><filter label="" port=""> 91 92 93 94 95 96</filter></pre>	<pre></pre> // Customer name> fiberzone91 fiberzone92 fiberzone93 fiberzone94 fiberzone95 fiberzone95 fiberzone96	<filter admin="" status=""> Unlocked Unlocked Unlocked Unlocked Unlocked Unlocked</filter>	CFilter Oper Status> Disconnected Disconnected Disconnected Disconnected Disconnected Disconnected Disconnected	<pre><filter hw="" status=""> Enabled Enabled Enabled Enabled Enabled Enabled</filter></pre>			<pre> <filter part="" role=""> Connection Connection</filter></pre>



Figure 23. Logical Ports Table Presentation

Connections Views

The following ROME connections views are available:

- All current connections (Connections Tab)
- Actions tab Commander: Commands that are waiting for execution from the NMS server *See page 35.*
- Actions tab Embedded: Up to 256 commands (executed and pending) that are stored in the ROME See page 34.



Viewing The Connections Tab

To view the active connections of the selected ROME, perform the following:

- 1. Select an ROME in the Tree View, or double-click an ROME on the map.
- 2. Select the Connections tab to display a list of the connected ports in the selected ROME, and the time they were connected. The ports presentation in the list changes according to the Matrix type (Logical / Physical).

Actions	Connections	Alarms			
Type port direction and numbe	er 🖉				
West Port #	West Port Name	East Port #	East Port Name	Completion Time	-
<filter #="" port="" west=""></filter>	<filter name="" port="" west=""></filter>	<filter #="" east="" port=""></filter>	<filter east="" name="" port=""></filter>	<filter completion="" time=""></filter>	
9	WPort 9	99	EPort 99	2012/Dec/16 12:15 PM	~
35	WPort 35	167	EPort 167	2012/Dec/16_11:45 AM	
15	WPort 15	160	EPort 160	2012/Dec/16_11:45 AM	
6	WPort 6	150	EPort 150	2012/Dec/16_11:45 AM	=
45	WPort 45	132	EPort 132	2012/Dec/16_11:45 AM	
102	WPort 102	128	EPort 128	2012/Dec/16_11:45 AM	
445	D. 1. 17	100	50.1400	00100 80 44 45 684	

Figure 24. Connections Tab – Physical View

Actions		Connections	Alarms			
Type port panel and nur	nber 🖉					
Port A Panel	Port A Label	Port A Name	Port B Panel	Port B Label	Port B Name	Completion Time
<filter a="" panel="" port=""></filter>	<filter a="" label="" port=""></filter>	<filter a="" name="" port=""></filter>	<filter 8="" panel="" port=""></filter>	<filter 8="" label="" port=""></filter>	<filter 8="" name="" port=""></filter>	<filter completion="" time=""></filter>
A	189	C25 - Port A189	A	99	C25 - Port A99	2012/Dec/16_12:15 PM
A	6	C25 - Port A6	A	150	C16 - Port A150	2012/Dec/16_11:45 AM
A	45	C24 - Port A45	A	132	C17 - Port A132	2012/Dec/16 11:45 AM
A	102	C20 - Port A102	A	128	C17 - Port A128	2012/Dec/16_11:45 AM
A	115	C18 - Port A115	A	120	C18 - Port A120	2012/Dec/16_11:45 AM

Figure 25. Connections Tab – Logical View

- 3. The list can be filtered and sorted, as detailed on Filtering Matrix Logs, page 60 and Sorting Logs, page 65.
- 4. It is also possible to disconnect ports from this view. See page 39.



Viewing The Connection Queue

To view the connections queue of the selected ROME, perform the following:

- 1. Select the **Actions** Tab.
- 2. Click the **Embedded** button.

Acti	ions	Conne	ections	A	larms				
Commander	Embedded								
Seq ID	West Port #	West Port 🔻	East Port #	East Port Name	Owner	Request Type	Status	Details	Completion Ti
<filter id="" seq=""></filter>	<filter #<="" port="" td="" west=""><td><filter i<="" port="" td="" west=""><td><filter #<="" east="" port="" td=""><td><filter east="" n<="" port="" td=""><td><filter owner=""></filter></td><td><filter request="" td="" ty<=""><td><filter status=""></filter></td><td><filter details=""></filter></td><td><filter completion<="" td=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter i<="" port="" td="" west=""><td><filter #<="" east="" port="" td=""><td><filter east="" n<="" port="" td=""><td><filter owner=""></filter></td><td><filter request="" td="" ty<=""><td><filter status=""></filter></td><td><filter details=""></filter></td><td><filter completion<="" td=""></filter></td></filter></td></filter></td></filter></td></filter>	<filter #<="" east="" port="" td=""><td><filter east="" n<="" port="" td=""><td><filter owner=""></filter></td><td><filter request="" td="" ty<=""><td><filter status=""></filter></td><td><filter details=""></filter></td><td><filter completion<="" td=""></filter></td></filter></td></filter></td></filter>	<filter east="" n<="" port="" td=""><td><filter owner=""></filter></td><td><filter request="" td="" ty<=""><td><filter status=""></filter></td><td><filter details=""></filter></td><td><filter completion<="" td=""></filter></td></filter></td></filter>	<filter owner=""></filter>	<filter request="" td="" ty<=""><td><filter status=""></filter></td><td><filter details=""></filter></td><td><filter completion<="" td=""></filter></td></filter>	<filter status=""></filter>	<filter details=""></filter>	<filter completion<="" td=""></filter>
20495	9	WPort 9	99	EPort 99	CLI user	Connect	Succeeded		2012/Dec/16 12: 🔨
20492	9	WPort 9	99	EPort 99	CLI user	Connect	Succeeded		2012/Dec/16 12:
20491	9	WPort 9	99	EPort 99	CLI user	Disconnect	Succeeded		2012/Dec/16 12:
20482	9	WPort 9	99	EPort 99	CLI user	Disconnect	Succeeded		2012/Dec/16 11:
20481	9	WPort 9	99	EPort 99	CLI user	Connect	Failed	One or more port	2012/Dec/16 11:
20480	9	WPort 9	99	EPort 99	CLI user	Connect	Succeeded		2012/Dec/16 11:
20344	9	WPort 9	99	EPort 99	CLI user	TMD	Failed	One or more port	2012/Dec/16 11:

Figure 26. Actions Tab – Embedded

The Embedded view shows the table that is stored in the ROME. It can keep up to 256 commands – some have been executed (succeeded or failed), and some are pending execution. The pending list represents commands that had already been sent to the ROME.

The Commander (see page 39) view shows all the command s that were initiated by the NMS and are waiting for execution

Most of the time only the executing command appears in BOTH lists

The list can be filtered and sorted, as detailed on Filtering Matrix Logs, page 60 and Sorting Logs, page 65.

Additionally, you can delete an entry with a status that is not being processed (that is:

Pending; Succeeded or Failed), by selecting it, and clicking

Note: A pending provision that was deleted from this queue will not be performed.

Lock / Unlock Ports

Ports can be Locked and Unlocked by System Administrators, Technicians and Provisioning Operators. This is done in order to prevent a critical port from being used or disconnected by mistake – until it is Unlocked. You can Lock/Unlock ports via the Matrix View and via the Ports View.

- **Note:** When selecting an Unlocked port, only the Lock function is enabled, and vice-versa
- **Note:** If the port selected is connected to another port the Unlock function operation will Unlock both of the connected ports.
- **Note:** Lock/Unlock can be done over a single physical port, provided it is unconnected, otherwise the port it is connected to will be locked/unlocked too.



- **Note:** Lock/Unlock can be done over a single Logical port, provided it is unconnected => 1 Logical port (that is, 2 or more physical ports) is Locked.
- 1. Open the Matrix View or the Ports Table View.
- 2. Select the **Port** to Lock or Unlock.
- 3. Click the or button. The NMS Locks or Unlocks the ports.

M Manhattan A	FM 223 Matrix								
Phy	rsical								+
bx									ę
Direction	Port #	Port Name	Admin Status	Oper Status	HW Status	Partner Port #	Partner Port	Additional Info	Port Role
<filter direction=""></filter>	<filter #="" port=""></filter>	<filter name<="" port="" td=""><td><filter admin="" stat<="" td=""><td><filter oper="" statu<="" td=""><td><filter hw="" status<="" td=""><td><filter partner="" po<="" td=""><td><filter partner="" po<="" td=""><td><filter .<="" additional="" td=""><td><filter port="" role=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter admin="" stat<="" td=""><td><filter oper="" statu<="" td=""><td><filter hw="" status<="" td=""><td><filter partner="" po<="" td=""><td><filter partner="" po<="" td=""><td><filter .<="" additional="" td=""><td><filter port="" role=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter oper="" statu<="" td=""><td><filter hw="" status<="" td=""><td><filter partner="" po<="" td=""><td><filter partner="" po<="" td=""><td><filter .<="" additional="" td=""><td><filter port="" role=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter hw="" status<="" td=""><td><filter partner="" po<="" td=""><td><filter partner="" po<="" td=""><td><filter .<="" additional="" td=""><td><filter port="" role=""></filter></td></filter></td></filter></td></filter></td></filter>	<filter partner="" po<="" td=""><td><filter partner="" po<="" td=""><td><filter .<="" additional="" td=""><td><filter port="" role=""></filter></td></filter></td></filter></td></filter>	<filter partner="" po<="" td=""><td><filter .<="" additional="" td=""><td><filter port="" role=""></filter></td></filter></td></filter>	<filter .<="" additional="" td=""><td><filter port="" role=""></filter></td></filter>	<filter port="" role=""></filter>
Rx	23	Rx IBM from Cus	Unlocked	Disconnected	Enabled			Addinfo 23	Connect
Rx	24	Rx IBM from Cus	Unlocked	Connected	Enabled	25	Tx IBM to Custo	Addinfo 24	Connect
Rx	25	Rx IBM from Cus	Unlocked	Connected	Enabled	24	Tx IBM to Custo	Addinfo 25	Connect
Rx	26	Rx IBM from Cus	Unlocked	Disconnected	Fnabled			Addinfo 26	Connect 📃 🞽
x									
Direction	Port #	Port Name	Admin Status	Oper Status	HW Status	Partner Port #	Partner Port	Additional Info	Port Role
<filter direction=""></filter>	<filter #="" port=""></filter>	<filter name<="" port="" td=""><td><filter admin="" stat<="" td=""><td><filter oper="" statu<="" td=""><td><filter hw="" status<="" td=""><td><filter partner="" po<="" td=""><td><filter partner="" po<="" td=""><td><filter .<="" additional="" td=""><td><filter port="" role=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter admin="" stat<="" td=""><td><filter oper="" statu<="" td=""><td><filter hw="" status<="" td=""><td><filter partner="" po<="" td=""><td><filter partner="" po<="" td=""><td><filter .<="" additional="" td=""><td><filter port="" role=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter oper="" statu<="" td=""><td><filter hw="" status<="" td=""><td><filter partner="" po<="" td=""><td><filter partner="" po<="" td=""><td><filter .<="" additional="" td=""><td><filter port="" role=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter hw="" status<="" td=""><td><filter partner="" po<="" td=""><td><filter partner="" po<="" td=""><td><filter .<="" additional="" td=""><td><filter port="" role=""></filter></td></filter></td></filter></td></filter></td></filter>	<filter partner="" po<="" td=""><td><filter partner="" po<="" td=""><td><filter .<="" additional="" td=""><td><filter port="" role=""></filter></td></filter></td></filter></td></filter>	<filter partner="" po<="" td=""><td><filter .<="" additional="" td=""><td><filter port="" role=""></filter></td></filter></td></filter>	<filter .<="" additional="" td=""><td><filter port="" role=""></filter></td></filter>	<filter port="" role=""></filter>
-	25	Tx IBM to Custo	Unlocked	Connected	Enabled	204	Rx IBM from Cus	Addinfo 205	Connect
Tx					-			8 delia 4a 2000	Constant Constant
Tx Tx	26	Tx IBM to Custo	Unlocked	Disconnected	Enabled			Addinfo 206	Connect
	26 27	T× IBM to Custo T× IBM to Custo	Unlocked Unlocked	Disconnected Disconnected	Enabled			Addinfo 206 Addinfo 207	Connect

			Physic	al					X	đ											3				+111-				_
хP	orts														C	x Po	ts												
1	2	3	4	5	6	7	8 8	9	10	11	12	13	14	^		1	2	3	4	5	6	7	8 8	9	10	11	12	13	14
15	16	17	18	19	20	21	22	23	24	25	26	27	28			15	16	17	18	19	20	21	22	23	24	25	26	27	28
9	30	31	32	33	34	35	36	37	38	39	40	41	42		,	29	30	31	32	33	34	35	36	37	38	39	40	41	42
13	44	45	46	47	48	49	50	51	52	53	54	55	56		ŧ.	43	44	45	46	47	48	49	50	51	52	53	54	55	56
7	58	59	60	61	62	63	64	65	66	67	68	69	70		1	57	58	59	60	61	62	63	64	65	66	67	68	69	70
1	72	73	74	75	76	77	78	79	80	81	82	83	84			71	72	73	74	75	76	77	78	79	80	81	82	83	84
15	86	87	88	89	90	91	92	93	94	95	96	97	98.			85	86	87	88	89	90	91	92	93	94	95	96	97	98
19	100	101	102	103	104	105	106	107	108	109	110	111	112	~		99	100	101	102	103	104	105	106	107	108	109	110	111	112

Figure 27. Lock / Unlock Connected Ports

Connect / Disconnect Ports

ROME ports can be connected / disconnected from the each of the following views.

This was designed in order to allow each user to perform provisioning operations in a fashion that suits that user's preferences.

- Physical Matrix View
- Logical Matrix View (if you are configured to work in Logical mode)
- Physical Ports Table
- Logical Ports Table (if you are configured to work in Logical mode)
- Physical Connection Tab



- Logical Connection Tab (if you are configured to work in Logical mode)
- Physical Actions Tab > Commander
- Logical Actions Tab > Commander (if you are configured to work in Logical mode)

Before connecting the required ports, select the required ROME from the tree view; then, proceed to the view of your preference.

Connect Ports via the Physical Matrix View

This View is *color coded*. Ports are colored according to their *connection status*.



For further information on this toolbar, refer to Matrix Flagging Legend, page 25.

			Dhumin						2	A		2													Lun					
			Physic	a					2	C															+111-					:
Rx P	orts										_				ſ	X Po	ts													l en
1	2	3	4	5	6	7	8	9	10	11	12	13	14	^		1	2	3	4	5	6	7	8 8	9	10	11	12	13	14	
15	16	17	18	19	20	21	22	23	24	25	26	27	28			15	16	17	18	19	20	21	22	23	24	25	26	27	28	
29	30	31	32	33	34	35	36	37	38	39	40	41	42		t	29	30	31	32	33	34	35	36	37	38	39	40	41	42	
43	44	45	46	47	48	49	50	51	52	53	54	55	56		:	43	44	45	46	47	48	49	50	51	52	53	54	55	56	
57	58	59	60	61	62	63	64	65	66	67	68	69	70		I	57	58	59	60	61	62	63	64	65	66	67	68	69	70	
71	72	73	74	75	76	77	78	79	80	81	82	83	84			71	72	73	74	75	76	77	78	79	80	81	82	83	84	
85	86	87	88	89	90	91	92	93	94	95	96	97	98			85	86	87	88	89	90	91	92	93	94	95	96	97	98	
99	100	101	102	103	104	105	106	107	108	109	110	111	112	~		99	100	101	102	103	104	105	106	107	108	109	110	111	112	
		onnecte	be		Disc	onnecte	ed		In Pr	ocess	(Pending		8		cked	ſ	s	ystem	ocked		Ō	Sched	uled	1		nflict		

Figure 28. Matrix View

- 1. Click the Left port. The port will be highlighted.
- 2. Connect the **Right** port. The port will be highlighted.
- 3. Click A Confirmation dialog will open.
- 4. Click Yes to connect the two ports.

Viewing a Connected Port's "Partner Port"

1. Select a *Connected port*. It will be highlighted; its *Partner port* will also be highlighted, as follows.



olts	TX Poils
2 3 4 5 6 7 8 9 10 11 12 13 14	
16 17 18 19 20 21 22 23 24 25 26 27 28	15 16 17 18 19 20 21 22 23 24 25 26 27 28
30 31 32 33 34 35 36 37 38 39 40 41 42	E 29 30 31 32 33 34 35 36 37 38 39 40 41 42

Figure 29. Matrix View: Connected Port (left) and Partner Port (right)

Disconnect Ports via the Matrix View

- 1. Select a connected port, as above.
- 2. Click *Methods*. A **Confirmation** dialog will open. Click **Yes** to disconnect the ports.

Connect/Disconnect Ports via the <u>Actions</u> Tab

This Tab enables you to connect or disconnect ports by using their names.

1. Select the **Actions** tab.

Ac	tions		Connection	ns	Ala	arms					
Commander	Embedded	Connect 💌	West 💌 🛛	West Port name	with E	ast 💌 East Pe	ort name				
Connection Ic	Command Id	Action	Description	Priority	Waiting 🔺	Creation Date	Lifetime	State	Link Id	User Name	Scheduled
<filter connect<="" td=""><td><filter commar<="" td=""><td><filter action=""></filter></td><td><filter descript<="" td=""><td><filter priority=""></filter></td><td><filter td="" waiting<=""><td><filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter commar<="" td=""><td><filter action=""></filter></td><td><filter descript<="" td=""><td><filter priority=""></filter></td><td><filter td="" waiting<=""><td><filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter action=""></filter>	<filter descript<="" td=""><td><filter priority=""></filter></td><td><filter td="" waiting<=""><td><filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter priority=""></filter>	<filter td="" waiting<=""><td><filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter></td></filter>	<filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter>	<filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter>	<filter state=""></filter>	<filter id="" link=""></filter>	<filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter>	<filter scheduk<="" td=""></filter>
901	1	Manual connect	Connect port	20	Executing	2012/Dec/16	2 days, 23 ho	Ready		root	No
904	4	Manual connect	Connect port	20	Waiting for ex	2012/Dec/16	2 days, 23 ho	Reserved		root	No
905	5	Manual connect	Connect port	20	Waiting for ex	2012/Dec/16	2 days, 23 ho	Reserved		root	No

Figure 30. Actions Tab – Commander (Physical)

Act	tions		Connection	ns	Ala	arms					
Commander	Embedded	Connect 🗸	A 🖌 A Po	rt name	with A	✓ A Port name		•			
	Command Id		Description	Peterster	184-31	Groation Date	L Madima	Club	Link Id	User Name	Scheduled
<filter connect<="" td=""><td><filter commar<="" td=""><td><filter action=""></filter></td><td><filter descript<="" td=""><td><filter priority=""></filter></td><td><filter td="" waiting<=""><td><filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter commar<="" td=""><td><filter action=""></filter></td><td><filter descript<="" td=""><td><filter priority=""></filter></td><td><filter td="" waiting<=""><td><filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter action=""></filter>	<filter descript<="" td=""><td><filter priority=""></filter></td><td><filter td="" waiting<=""><td><filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter priority=""></filter>	<filter td="" waiting<=""><td><filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter></td></filter>	<filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter>	<filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter>	<filter state=""></filter>	<filter id="" link=""></filter>	<filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter>	<filter scheduk<="" td=""></filter>
901	1	Manual connect	Connect port	20	Executing	2012/Dec/16	2 days, 23 ho	Ready		root	No
904	4	Manual connect	Connect port	20	Waiting for ex	2012/Dec/16	2 days, 23 ho	Reserved		root	No

Figure 31. Actions Tab – Commander (Logical)

The list can be filtered and sorted, as detailed on Filtering Matrix Logs, page 60 and Sorting Logs, page 65.

Note: The displayed parameters are slightly different between the Physical and Logical

- 2. Ensure that the **Commander** button is selected.
- 3. Select the **Connect** or **Disconnect** function.
- 4. Type the port names or numbers you want to connect or disconnect. The Commit Operation button is becomes enabled. In any case that an illegal pair of ports is selected, this icon remains disabled, and you can see the tooltip for further information (by hovering over the icon with the cursor).
- 5. Click to perform the operation.



Disconnect Ports via the Connections View

West/2 <-> East/2	×	
West Port #	West Port Name	East Port #
<filter #="" port="" west=""></filter>	<filter name="" port="" west=""></filter>	<filter #="" east="" port=""></filter>
8		8
2		2
1	P1W	1
47		47

- 1. Open the **Connections** tab.
- 2. Click the **Embedded** button.
- 3. Click the row containing the **Port/Partner Port pair** to disconnect.

or

Type the port direction and number.

The definitions of the connected ports are displayed in the field

- 4. Click **4**. A **Confirmation** dialog will open.
- 5. Click **Yes** to disconnect the ports.

Pending Provisioning Requests

Pending Provisioning requests are those requests that were issued, but remained queued, usually due to hardware constraints. For example, the most usual case is due to a number of Connect/Disconnect commands being sent in sequence; because each action takes about 35 seconds, they will most likely be queued.

Authorized users can view all pending connections as well as operations that are in the process of being executed. They appear in Tree View, under **Pending Commands** view for all ROMEs, or in the **Actions Tab** > **Commander** for a specific (the selected) ROME

Cancelling a Pending Provisioning Request – Any user with Provisioning permissions can cancel any pending connect / disconnect operations.

Via the Actions Tab

- 1. Open the **Connections** tab.
- 2. Click the **Embedded** button.

Ac	tions		Connection	ns T	Ala	arms					
Commander	Embedded	Connect	West 🔽 🚺	Vest Port name	with E	ast 🔽 East Pe	ort name				
Connection Ic	Command Id	Action	Description	Priority	Waiting 🔺	Creation Date	Lifetime	State	Link Id	User Name	Scheduled
<filter connect<="" td=""><td><filter commar<="" td=""><td><filter action=""></filter></td><td><filter descript<="" td=""><td><filter priority=""></filter></td><td><filter td="" waiting<=""><td><filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter commar<="" td=""><td><filter action=""></filter></td><td><filter descript<="" td=""><td><filter priority=""></filter></td><td><filter td="" waiting<=""><td><filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter action=""></filter>	<filter descript<="" td=""><td><filter priority=""></filter></td><td><filter td="" waiting<=""><td><filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter></td></filter></td></filter>	<filter priority=""></filter>	<filter td="" waiting<=""><td><filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter></td></filter>	<filter creation<="" td=""><td><filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter></td></filter>	<filter lifetime.<="" td=""><td><filter state=""></filter></td><td><filter id="" link=""></filter></td><td><filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter></td></filter>	<filter state=""></filter>	<filter id="" link=""></filter>	<filter nai<="" td="" user=""><td><filter scheduk<="" td=""></filter></td></filter>	<filter scheduk<="" td=""></filter>
901	1	Manual connect	Connect port	20	Executing	2012/Dec/16	2 days, 23 ho	Ready		root	No
904	4	Manual connect	Connect port	20	Waiting for ex	2012/Dec/16	2 days, 23 ho	Reserved		root	No
905	5	Manual connect	Connect port	20	Waiting for ex	2012/Dec/16	2 days, 23 ho	Reserved		root	No





The Commander view displays a queue of pending provisioning requests for the selected ROME. This list reflects the commands that were sent to the embedded, and were either executed or are still pending.

The list can be filtered and sorted, as detailed on Filtering Matrix Logs, page 60 and Sorting Logs, page 65.

Note that the displayed parameters are slightly different between the Physical and Logical

Via the Tree View

1. In the Tree View, select Pending Requests.

NMS Pending Commands Queue Pending Commands Queue Confe. Comma. Action Description 2141 Manual connect Connect port Optical Patch Panel.	Pending Reques	sts in Queue. 3 Waiting Reason	Creation Date	Filter. ente	r text to filter			
Comme Comma Action Description 3019 2841 Manual connect Connect port Optical Patch Panel.		Waiting Reason	Creation Date	Lifetime				
	ALA				State	Linkid	User N	Sche
	w19 (m 20	AFM connections disabled	AM 11.46 10/39/2012	2 days, 23 hours, 55	Waiting		root	No
3020 2842 Manual connect Connect port Optical Patch Panel.	022 (fi 20	AFM connections disabled	AM 11.46 10/39/2012	2 days, 23 hours, 55	Waiting		root	No
3021 2843 Manual connect Connect port Optical Patch Panel	023 (fi 20	AFM connections disabled	AM 11:46 10/39/2012	2 days, 23 hours, 55	Waiting		root	No

Figure 33. Pending Provisioning Requests Via the Tree View

- 2. The list displays a queue of pending provisioning requests for the selected ROME.
- 3. The list can be sorted, as detailed on Sorting Logs, *page 65*, and filtered, by entering the filtering text in the **Filter** field.

SCHEDULING A PROVISIONING OPERATION

The NMS enables you to schedule provisioning operations on the ports of the ROME, such as connecting, disconnecting, Locking and Unlocking ROME ports.

Each operation can be scheduled in the NMS GUI using the **Schedule** button, as described below, or by loading a CSV batch file of operations, as described in the *Loading a Batch File of Scheduled Operations* section on page 47.

Manual Scheduling

It is possible to Schedule either by Logical or by Physical ports (depending on the ROME configuration).

Scheduling is available from each one of the following views:

• Physical matrix view



- Physical Ports table view
- Logical matrix view
- Logical Ports table view

Additionally:

- When you click if from one of the Logical views, then the Scheduling dialog will be opened in the Logical Display Mode.
- When you click if from one of the Physical views, then the Scheduling dialog will be opened in the Physical Display Mode.
- Ports selected in the Matrix or Port List prior to clicking (L), will be automatically populated into the Ports section in the Scheduling dialog.

To manually schedule a provisioning operation, perform the following:

- 1. Select an ROME in the Tree View.
- 2. Click the Matrix View icon () to open the View, as shown below –

												в										
1 💧	2 💧	3	4	5	6	7	8	9	10	11	^	1 💧	2 💧	3	4	5 💧	6	7	8	9	10	11
12	13	14	15	16	17	a 18 ,≰	19 📕	20	21	22		12	13	14	15	16	17	18	19	20	21	22
23	24	25	26	27	28	29	30	31	32	33		23	24	25	26	27	28	29	30	31	32	33
34	35	36	37	38 💧	39	40	41	42 💧	43	44		34	35	36	37	38	39	40	41	42	43	44
15	46 💧	47 🔒	48 💧	49 💧	50	51	52	53	54	55		45	46	47	48 💧	49 🍵	50	51	52	53	54	55
56	57 💧	58	59 🍵	60	61	62	63	64	65	66 🍵	H	56	57 💧	58	59	60	61	62	63	64	65	66
67	68	69	70	71	72	73	74	75	76	\square	1	67	68	69	70	71	72	73	74	75	76	77
18	79	80	81	82	83	84 💧	85 💧	86	87	88		78	79	80	81	82	83	84 💧	85 💧	86	87	88
19	90	91	92 .	93 👩	94	95	96	97	98	99		89	90	91	92	93	94	95	96	97	98 💧	99
00	101	102	103	104	105	106	107	108	109	110		100	101	102	103	104	105	106	107	108	109	110
11	112 💧	113	114	115	116	117	118	119	120	121		111	112	113	114	115	116	117	118	119	120	121
22	123	124	125	126	127 🔒	128 💧						122	123	124	125	126	127 💧	128 💧				

Figure 34. Matrix View

3. You can now click the **Schedule** button () to display the following window or select the port(s) for which to schedule an operation, and then click the **Schedule** button to display the following window.



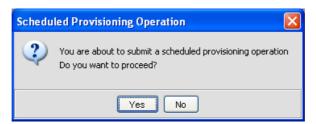
Scheduled Provisioning Operation	×
AFM Name Rome_Mini_Sys3_217 V	
Operation	
Provision Operation Priority	
Connect 🗸 🗸 20 🗸	·
Reserve ports until execution	
Display mode	
O Physical Ports	
October 10 Logical Ports	
Ports	
Select panel V Select	t panel 🗸 🗸
· · · · · · · · · · · · · · · · · · ·	~
_ Schedule	
Date (yyyy/mm/dd) Time	
2020 \(\not\) 03 \(\not\) 24 \(\not\) 03	~:54 ~ PM ~
Submit Car	ncel

Figure 35. Scheduled Provisioning Operation Window

- 4. The Scheduled Provisioning Operation window enables you to define the scheduling operation to be performed and the schedule for which to perform it. Fill out the field of this window as follows:
 - **ROME Name:** Specifies the name of the ROME that was selected in the Tree View. This is the ROME on which the operations are to be performed. This is a read-only field.
 - **Provision Operation:** Specifies the operation to be performed on the port: **Connect**, **Disconnect**, **Lock** or **Unlock**.
 - Priority: Specifies the priority (order) in which Connect and Disconnect operations are performed when multiple commands are scheduled to be executed at the same time. Operations with the lowest Priority number have the highest priority. The default priority is 20. This field does not apply to Lock and Unlock operations, because multiple Lock/Unlock operations can be performed simultaneously.
 - **Reserve ports until execution:** Checking this option defines the default value of the **Reserve ports until execution** field in the **Scheduling** tab of the Preferences window. This option specifies whether each port, for which a scheduling operation has been added, is Locked until execution. The port is Locked as soon as the scheduling operation has been created. This prevents other scheduling operations from being executed on the same port.
 - **Display Mode**: Specifies which display mode you will be using to define the ports. **Physical Ports** displays the naming conventions used in the Physical Matrix, and **Logical Ports** displays the naming conventions used in the Logical Matrix.



- Left Port #/ Right Port #: Specifies the port on which to perform the operation defined in this window. Both port fields must be specified for a Connect and Disconnect operation. Only one port needs be specified for a Lock and Unlock operation. If you selected a port(s) in the panels shown in the Matrix View before clicking the Schedule button, then these port numbers automatically appear in these fields. The name of the direction of these ports is determined by the label defined in the Provisioning tab in the Preferences window, as described on page 21.
- Schedule: Specifies the time scheduled for the operation to be executed. This field must specify a date in the future according to the time on the NMS client's computer. The maximum number of days ahead that can be scheduled is displayed on the bottom of this window; this maximum is defined in the Max Scheduling time field in the Scheduling tab of the Preferences window.
- **Note:** The system does not limit the user from using historical date and time. Using a historical date or time causes the command to be executed immediately.
- 5. Click **Submit**. A confirmation window may be displayed asking you to confirm the scheduled operation, as shown below:





6. Click **Yes** to confirm.

The port for which this operation is scheduled then appears in the Matrix View as follows:



Figure 37. Scheduled Operation Icon



Viewing the Scheduling Queue

You can display the operations waiting in the scheduling queue to be executed by selecting the **Queues** > **Scheduled Operations** branch in the Tree View. A list of all the operations scheduled for future execution are then displayed, as shown below:

	Operations Queue												
🗄 💖 testi 🥝 🥒 1					Scheduler	d Requests in Queue				Filter, ente	r text to filter		
BrapStas Schedule Id	AFM Name	PAddress	AFM Host Name	WestPorta	WestPortName	East Ports	East Port Name	Provisioning Ope	Enter Time	Remain Time	Username	Priority	Reserve Ports
- B 223 10687	249	192 168 10.249	192 168 10 349	157	Westlesting 157	157	Eastlesting 157	Connect	PM 02-05 16/20/2011	2 minutes	ranroot	20	Yes
E 249 10688	249	192 168 10 249	192 168 10 249	158	Westlesting 158	158	Eastlesting 150	Connect	PM 02-05 16/mv/2011	2 minutes	rannoot	20	Yes
B 240 10689	249	192 168 10.249	192 168 10 249	159	Westlesting 159	159	Eastlesting 159	Connect	PM 02-06 16/09/2011	3 minutes	ranroot	20	Yes
B 228 10690	249	192.168.10.249	192 168 10 249	160	Westlesting 140	160	Easttesting 160	Connect	PM 02-06 16/09/2011	3 minutes	ranroot	20	Yes
219 10691	249	192 168 10 249	192 168 10 249	\$45	Westlesting 145	145	Eastlesting 145	Disconnect	PM 02.06 16/70/2011	3 minutes	ranroot	20	Yes
System/inventory 10692	249	192 168 10 249	192 188 10 249	346	Westlesting 146	146	Eastlesting 146	Disconnect	PM 02-06 16/09/2011	3 minutes	ranroot	20	Yes
	249	192 168 10 249	192 168 10 249	\$47	Westlesting 147			Lock	PM 02.07 16/09/2011	4 minutes	ranroot	20	Yes
aut Vanagement 10694	249	192 168 10 249	192 168 10 249	110	Westlesting 110			Unlock	PM 02.07 16/77/2011	4 minutes	ranroot	20	Yes
Active Alarms													
B) AlamiLog													
Log Views													
Provisioning Log													
ServerLop													
B Security Log													
B) System Admin Log													
2) Scheduled Log													
Queues													
© Pending Commands													
Scheduled Operations													
Active Alarma Summary View													
(E)													



Each row represents a single scheduled operation that was scheduled manually (one at a time), as described above, or was loaded from a batch file (which typically loads many operations). You can filter the display of rows using the **Filter** field.

As each operation is executed at the scheduled time, it is logged along with the name of the user who defined the operation and then removed from the queue. You can view this log by selecting an ROME in the **Tree View** and then selecting **Log Views > Scheduling Log**.

The following describes the columns of the rows in this window:

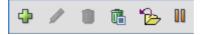
- Schedule id: Specifies a unique ID for each scheduled operation currently in the queue. The order in which the operations appear in the queue is the order in which they will be processed.
- **ROME:** Specifies the name of the ROME on which the operation is to be performed.
- **IP Address/Host Name:** Shows the IP of the ROME on which the operation is to be performed. If the host has a DNS, then the host name is also displayed.
- Left (West) Port #/ Right (East) Port #: Specifies the port on which to perform the operation defined in this window. Both port fields must be specified for a Connect and Disconnect operation. Only one port need be specified for a Lock and Unlock operation.
- **Port Name:** Specifies the name(s) of the port(s) on which to perform the operation.
- **Provisioning Operation:** Specifies the operation to be performed: Connect, Disconnect, Lock or Unlock.



- Enter Time: Specifies the time when the operation was defined by clicking the Submit button or the time when it was imported from a batch file.
- **Remaining Time:** Specifies the time remaining until this operation is performed. This is a countdown that is refreshed each time the queue display is automatically refreshed.
- User name: Specifies the name of the user who defined this operation.
- **Priority:** Specifies the priority (order) in which **Connect** and **Disconnect** operations are performed when multiple commands are scheduled to be executed at the same time. Operations with the lowest Priority number have the highest priority, meaning that Priority 1 operations are executed first. The default priority is **20**. This field does not apply to **Lock** and **Unlock** operations, because multiple such operations can be performed simultaneously.
- **Reserve Ports:** Specifies that this port is Locked until after the scheduled operation has been executed.

Scheduled Provisioning Queue Toolbar

The following describes the tools provided in the Scheduled Provisioning Queue's toolbar:



🗣 Add

Enables you to add a new scheduled operation.

Edit Enables you to edit a selected operation row in the queue. Only one row can be edited at a time. You can also double-click on a row to edit its operation.

Delete Deletes the selected operation row from the queue.

Delete All Deletes all the operation rows from the queue.

Load Batch File Imports a batch file of operations, as described in the *Loading a Batch File* of Scheduled Operations section on page Error! Bookmark not defined..

Stop/**Play** Stops (pauses) or starts the processing of the queue. When the Play button is clicked after the queue was stopped (paused) for a while, all scheduled operations for which time has passed are executed immediately.



To add an operation:

1. Click the Add ¹ button to display the following window in which you can define a new operation:

Scheduled Provisioning Operation	×
AFM Name Rome_Mini_Sys3_217 ~]
Operation	
Provision Operation	Priority
Connect ~	20 🗸
Reserve ports until execution	
Display mode	
O Physical Ports	
Logical Ports	
Cogical Ports	
Ports	
Select panel ~	Select panel 🗸
· · · · · · · · · · · · · · · · · · ·	¥
Schedule	
Date (yyyy/mm/dd)	Time
2020 \(03 \(24 \)	03 v : 54 v PM v
Submit	Cancel

Figure 39. Scheduled Operations

- 2. In the **ROME Name** field, select the ROME on which to schedule the operations.
- 3. Fill in the rest of this window and click the **Submit** button, as described on the previous page (see *Manual Scheduling*, *page 40*).



Loading a Batch File of Scheduled Operations

This option enables you to create multiple scheduling operations by executing a CSV batch file, rather than manually entering this data one field at a time:

To load a CSV batch file of operations:

1. Click the **Help** button to display a sample CSV batch file, which you can also use as a template. Two file formats are available: for Logical Ports and for Physical Ports

4 Scheduled operation .csv example	\times
Select example file: scheduling example.csv v	
The first columns (Scheduled Date & Time, AFM Name, West Port #, East Port #, Provisionin # except lock/unlock commands that may be performed on one port # The columns that are not filled will get the default values: # Username=The user that is loading the file; Priority=20; Reserve Ports as defined in th # Reserve Ports column can have YES (the ports will be locked until the time for connect/c # Note that the Reserve Ports & Priority columns have no effect for lock/unlock commands # The Scheduled Date format is defined as MM/dd/yyyy (preferred) or MM-dd-yyyy # Time format is hh:mm # If the Scheduled Date & Time is in the past - the command will be executed immediately # Priority range is 18-23 with 20 as default and 18 as highest	e li
#Scheduled Date, Time,AFM Name,Port A,Port B,Provisioning Operation,Username,Priority, 04/13/2018, 17:30,ROME,1AE9,1AW10,connect,root,21,YES 04/13/2018, 17:30,ROME,1AE1,1BW10,disconnect,root,21,YES 04/13/2018, 17:30,ROME,1AE40,1AE80,lock,,, 04/13/2018, 17:30,ROME,A40,,unlock,,,	F
< >	~
OK Save	

Figure 40. Scheduled Operation Templates

- 2. Save the desired example.
- 3. Edit the file as required, and save under a different name.
- 4. Click the Load Batch File button in the Scheduled Provisioning Queue's toolbar. The following window is displayed:



👆 Load S	cheduled Operations From File	×
File name		2
Operations		
	OK Cancel	



👆 Load S	Scheduled Operations From File	×
File name	scedule.csv	?
Operations	#Scheduled Date, Time,AFM Name,Port A,Port B,Provisioning Operation,Username,Priority,Reserve Ports 04/13/2020, 17:30,ROME-Demo,1AE9,1AW10,connect,root,21,YES 04/13/2020, 17:30,ROME-Demo,1AE1,1BW10,disconnect,root,21,YES 04/13/2020, 17:30,ROME-Demo,1AE40,1AE80,lock,,, 04/13/2020, 17:30,ROME-Demo,A40,unlock,,,	
Empty colum	ut load the above scheduled operations ns will be set to default values t to proceed?	
	OK Cancel	

Figure 42. Load Batch File of Scheduled Operations

The following are a few example rows:

04/13/2020, 17:30, ROME-Demo, 1AE9, 1AW10, connect, root, 21, YES

04/13/2020, 17:30, ROME-Demo, A1, A3, connect, root, 21, YES

04/13/2020, 17:30, ROME-Demo, 1BE1, 1BW10, disconnect, root, 21, YES

04/13/2020, 17:30, ROME-Demo, 1AE40, 1AE80, lock, ,,

04/13/2020, 17:30, ROME-Demo, A40,, unlock,,,



The following shows the syntax of the rows in the file:

#Scheduled Date, Time,ROME Name,Port A,Port B,Provisioning Operation,Username,Priority,Reserve Ports

The data is as follows – from left to right with comma separators:

- Scheduled Date
- Time
- ROME Name
- Port A #: Applies to the ports on the left panel in the Matrix View. Make sure to change the *Label_Name* to be the same as defined in the **Provisioning** tab of the Preferences window. If you want to Lock or Unlock a single port, it is enough to fill in the label of that port only. For example,:

04-12-2011, 17:30, ROME-ABC, 11, , Unlock, , ,

- Port B #: Same as for *West Label_Name Port* #, but applies to the ports on the right panel in the Matrix View.
- Provisioning Operation
- Username
- Priority
- Reserve Ports: Set to **True** to Lock the port until after the scheduled operation has been executed.

The format of the Logical file is slightly different, instead of Port A #: and East Label_Name Port #: there are Port A and Port B. Following is the detailed format:

- Scheduled Date
- Time
- ROME Name
- Port A
- Port B
- Provisioning Operation
- Username
- Priority
- Reserve Ports

The following describes the syntax rules for this file:



- Make sure to specify the precise ROME, direction and port names as they appear in the NMS's GUI, which is described on the previous pages.
- Make sure to specify all the column names in the header line (note that the ports title should be the same as defined in the system preferences).
- Empty rows are skipped.
- The name of the side (direction), which is defined in the Provisioning tab in the Preferences window must be specified according to its current definition.
- Ports that are not stated in the file remain unchanged
- An empty column deletes the current value on this column on the NMS. For example, **1,,addinfo-22** deletes the port name and **1,Rxtesting-1** deletes the information field.
- Lines that start with the "#" symbol are ignored.
- Mandatory fields are: Scheduled Date, Time, ROME Name, Left Port #, East Port # and Provisioning Operation
- Lock/Unlock commands that may be performed over a single port
- If the system preferences definition was changed for the matrix port titles the column names hereafter should be the same as in the system preferences. For example: If the preferences changes the matrix labels to Rx and Tx instead of West and East the title should be: Rx Port and Tx Port #
- Empty columns will get the following default values:
 - Username=The user who is loading the file
 - Priority=20
 - Reserve Ports as defined at the NMS system preferences
- Reserve Ports column can have YES (the ports will be Locked until the time for connect/disconnect execution) or NO (no Lock)
- Reserve Ports column has no effect on the Lock/Unlock commands (redundant); therefore any value will be ignored
- Priority column has no effect on the Lock/Unlock commands (redundant); therefore any value will be ignored
- The Scheduled Date format is defined as MM/dd/yyyy (preferred) or MM-dd-yyyy
- Time format is hh:mm (24-hour format)
- If the Scheduled Date & Time is in the past the command will be executed immediately
- Priority range is 18-23 with 20 as default and 18 as highest



The following describes the rules for the Logical file:

- The header should have all the column names as follows: Scheduled Date, Time, ROME Name, PortA, PortB, Provisioning Operation, Username, Priority, Reserve Ports
- Mandatory fields are: Scheduled Date, Time, ROME Name, PortA, PortB, Provisioning Operation
- Lock/Unlock commands that may be performed over a single port
- PortA and PortB column should include the panel name and the port label separated by a hyphen ('-')
- Empty columns will get the following default values:
 - Username=The user that is loading the file
 - Priority=20
 - Reserve Ports as defined in the system preferences
- Reserve Ports column can have YES (the ports will be Locked until the time for connect/disconnect execution) or NO (no Lock)
- Reserve Ports column has no effect for Lock/Unlock commands (redundant) therefore any value will be ignored
- Priority column has no effect for Lock/Unlock commands (redundant) therefore any value will be ignored
- The Scheduled Date format is defined as MM/dd/yyyy (preferred) or MM-dd-yyyy
- Time format is hh:mm (24-hour format)
- If the Scheduled Date & Time is in the past the command will be executed immediately
- Priority range is 18-23 with 20 as default and 18 as highest
- 5. Click the **Save** button to save this file and edit it in Excel or any standard text editor, such as: Notepad.
- 6. Click the **Browse** button to display a file selection window from which you can select the CSV file to load. The file is then displayed in the window, as follows:



👆 Load S	Scheduled Operations From File	×
File name	scedule.csv	?
Operations	#Scheduled Date, Time,AFM Name,Port A,Port B,Provisioning Operation,Username,Priority,Reserve Ports 04/13/2020, 17:30,ROME-Demo,1AE9,1AW10,connect,Unknown,21,YES 04/13/2020, 17:30,ROME-Demo,1AE1,1BW10,disconnect,Unknown,21,YES 04/13/2020, 17:30,ROME-Demo,1AE1,1BW10,disconnect,Unknown,21,YES 04/13/2020, 17:30,ROME-Demo,1AE40,1AE80,lock,,, 04/13/2020, 17:30,ROME-Demo,A40,,unlock,,,	
Empty colum	ut load the above scheduled operations ns will be set to default values to proceed?	
	OK Cancel	

Figure 43. Load Batch File Scheduled Operations – Confirmation

7. Click **OK** to start processing. Syntax errors may be displayed in the window during processing, such as shown below:

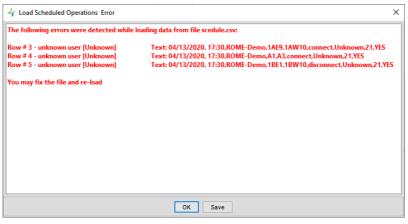


Figure 44. Load Batch File Scheduled Operations – Error Messages

If errors are displayed, then simply click **OK**, edit the file, and reload the file by repeating the procedure described in this section from the beginning.





The Scheduling Log lists all scheduled events. These include scheduled commands that were added, deleted, sent to pending queue, etc.

To view the Scheduling Log

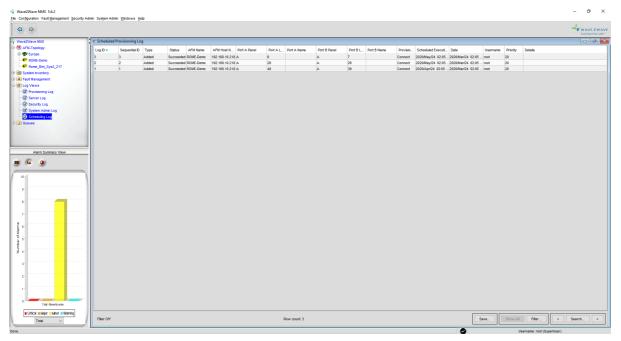
- 1. Go to the Menu bar.
- 2. Click System Admin > Scheduling Log.



—or—

3. Go to the Tree View and select **Scheduling Log**.

The Scheduling Log is displayed:







FILTERING THE SCHEDULING LOG

To filter the Scheduling Log, perform the following:

To open the Scheduling Log Filter, open the Scheduling Log and click the Filter icon (
 Filter.........) on the Scheduling Log Toolbar (at the bottom of the View). The Scheduling Log

Filter dialog appears.

Scheduled Log Filter		×
		^
✓ Status	Failed 💌	
AFM Name		
AFM Host Name (DNS)		
Username		
🗌 Details		
Schedule Execution Time		1
Erom Dec 💌 19 💌	2012 10 🗸 : 29 🗸 AM 🗸	
🗹 To 🛛 Dec 💌 20 💌	2012 10 🗸 : 29 🗸 AM 🗸	
Vvhole day		=
Date		1
Erom Dec 🔽 19 🔽	2012 10 🗸 : 29 🗸 AM 🗸	
🗹 To 🛛 Dec 💌 20 💌	2012 10 🗸 : 29 🗸 AM 🗸	
Vvhole day		-
ок	Apply Cancel More>>	

Figure 46. Scheduling Log Filter

- 2. If required, select any port definition.
- 3. Select the required Scheduling Properties.
- 4. For Server Properties with a drop down list select the required field(s).
- 5. Select the Date/Time properties.
- 6. Click Apply or OK. The View will display all information that meets all the filter criteria.
 - **Note:** To cancel the filter, click the button labeled Show All Show All. The unfiltered View will be displayed.



🕼 Sched	uled Provi	isioning Lo	og											
Log ID 🔻	Sequen	Туре	Sta	AFM Na	AFM Ho	Port A Panel	Por	Port A Name	Port B Panel	Por	Port B Name	Pro	Scheduled Ex	Date
10	5	Sent to p	Succ	223	192.168.1	с	45	singleW45	A	37	singleE37	Conn	2012/Dec/16 0	2012/Dec/16 0
9	4	Sent to p	Succ	223	192.168.1	с	5	singleVV5	A	45	singleE45	Conn	2012/Dec/16 0	2012/Dec/16 0
8	3	Sent to p	Succ	223	192.168.1	с	39	singleW/39	A	39	singleE39	Conn	2012/Dec/16 0	2012/Dec/16 0
7	1	Sent to p	Succ	223	192.168.1	с	34	singleW34	A	34	singleE34	Conn	2012/Dec/16 0	2012/Dec/16 0
6	2	Sent to p	Succ	223	192.168.1	с	30	singleW30	A	30	singleE30	Conn	2012/Dec/16 0	2012/Dec/16 0
<														>
Filter On				Ro	ow count: 5				Save	Show	v All Fitte	r	< Searc	:h >

Figure 47. Filtered Scheduling Log

Additionally, it is possible sort the list, by clicking the heading of the desired column (see Sorting Logs, page 65).



LOADING PORT DATA

It is possible to load initial Port data from a .*csv* file (created by the customer).

To load a .csv port data file, perform the following:

- 1. Select the required ROME in the tree.
- 2. Click the Load Port Data From File icon in the toolbar (

Load Por	t Data from File	×
File name		?
Port Data		
	OK Cancel	

Figure 48. Load Data From File Dialog

- 3. Click , and browse to the required *.csv* file; then, click **OK**. The file updates all the applicable ports.
- 4. To view an annotated (explained) .*csv* file, click **2**. This file can also be used as a template.



PROVISIONING LOG

The Provisioning Log contains history information related to making connections, disconnections, Locking and Unlocking ports.

To access the Provisioning Log:

For a specific ROME:

- 1. Select the ROME.
- 2. Go to Tree View > Log Views > Provisioning Log.

For all ROMEs:

3. Click System Admin > Provisioning Log

—or—

4. Go to the Tree Pane and click **Provisioning Log**.

																	WAVE 21
Wave NMS	() Provisio	ning Log															- 0
M-Topology	Log ID 🗸	Sequential ID	Туре	Initiated by	Status	Port A Panel	Port A Label	Port A Name	Port B Panel	Port B Label	Port B Name	AFM Name	AFM P	AFM Host Name (DNS)	Username	Source	Date
Europe ROME-Demo	57		Port unlock	AFM operation	Succeeded	West	7	1AW7				ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	cu	2020/Mar
	56		Port unlock	AFM operation	Succeeded				East	7	1AE7	ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	cu	2020/Ma
Rome_Mini_Sys3_217	55		Port unlock	AFM operation	Succeeded	West	6	1AW6				ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/Ma
tem inventory	54		Port unlock	AFM operation	Succeeded				East	6	1AE6	ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/M
Management	53		Port unlock	Scheduled comma.	Succeeded	A	7					ROME-Demo	192,168,10,218	192,168,10,218	root	Reserve Ports Op.	2020/M
Views	52		Port unlock	Scheduled comma.	Succeeded	A	6					ROME-Demo	192,168,10,218	192,168,10,218	root	Reserve Ports Op.	2020/0
Provisioning Log	51		Port unlock	AFM operation	Succeeded	West	29	1AW29				ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/0
Server Log	50		Port unlock	AFM operation	Succeeded				East	29	1AE29	ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/M
Security Log	49		Port unlock	AFM operation	Succeeded	West	28	1AW28				ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/M
System Admin Log	48		Port unlock	AFM operation	Succeeded				East	28	1AE28	ROME-Demo	192,168,10,218	192.168.10.218	CLIuser	CLI	2020/4
icheduling Log	47		Port unlock	Scheduled comma.	Succeeded	A	29					ROME-Demo	192.168.10.218	192.168.10.218	root	Reserve Ports Op.	2020/4
es	46		Port unlock	Scheduled comma.		A	28					ROME-Demo	192,168,10,218	192 168 10 218	reat	Reserve Ports Op.	
lending Commands	45		Port unlock	AFM operation	Succeeded	West	39	1AW39				ROME-Demo	192.168.10.218	192.168.10.218	CLIuser	CLI	2020/0
cheduled Operations	44		Port unlock	AFM operation	Succeeded				East	39	1AE39	ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/0
	43		Port unlock	AFM operation	Succeeded	West	40	1AW40				ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/0
	42		Port unlock	AFM operation	Succeeded				East	40	1AE40	ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/0
Alarm Summary View	41		Port unlock	Scheduled comma	Succeeded	A	39					ROME-Demo	192,168,10,218	192,168,10,218	reat	Reserve Ports Op.	2020/0
	40		Port unlock	Scheduled comma.	Succeeded	A	40					ROME-Demo	192.168.10.218	192.168.10.218	root	Reserve Ports Op.	2020/0
۲	39		Port lock	AFM operation	Succeeded	West	7	1AW7				ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/0
	38		Port lock	AFM operation	Succeeded				East	7	1AE7	ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/0
)	37		Port lock	AFM operation	Succeeded	West	6	1AW6				ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/0
	36		Port lock	AFM operation	Succeeded		-		East	6	1AE6	ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/0
	35		Port lock	Scheduled comma.	Succeeded	4	7					ROME-Demo	192,168,10,218	192 168 10 218	root	Reserve Ports Op.	2020/04
	34		Port lock	Scheduled comma		4	6					ROME-Demo	192,168,10,218	192,168,10,218	reet	Reserve Ports Op.	
	33		Port lock		Succeeded	West	29	1AW29				ROME-Demo	192,168,10,218	192 168 10 218	CLIuser	CLI	2020/M
	32		Port lock	AFM operation	Succeeded				East	29	1AE29	ROME-Demo	192,168,10,218	192 168 10 218	CLIuser	CLI	2020/M
	31		Port lock	AFM operation	Succeeded	West	28	1AW28				ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/M
	30		Port lock	AFM operation	Succeeded				East	28	1AE28	ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CU	2020/0
	29		Port lock	Scheduled comma.	Succeeded	4	29			C		ROME-Demo	192,168,10,218	192,168,10,218	root	Reserve Ports Op.	
	28		Port lock	Scheduled comma.		4	28					ROME-Demo	192,168,10,218	192 168 10 218	root	Reserve Ports Op.	
	27		Port lock		Succeeded	West	39	1AW39				ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/M
	26		Port lock	AFM operation	Succeeded				East	39	1AE39	ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/M
	25		Port lock	AFM operation	Succeeded	West	40	1AW40				ROME-Demo	192,168,10,218	192,168,10,218	CLIUSER	CLI	2020/M
	24		Port lock	AFM operation	Succeeded				East	40	1AE40	ROME-Demo	192,168,10,218	192,168,10,218	CLIuser	CLI	2020/M
	23	C	Port lock	Scheduled comma			39		Con.		DOL TO	ROME-Demo	192 168 10 218	192 168 10 218	root	Reserve Ports Op.	
	22	-	Port lock	Scheduled comma.		Â	40		-			ROME-Demo	192.168.10.218	192.168.10.218	root	Reserve Ports Op.	
	21	-		liser command	Succeeded	Â	2	Bank of america c	-			ROME-Demo	192.168.10.218	192.168.10.218	root	NMS	2020/M
	20		Disconnect	User command	Succeeded	Â	37	built of uncred c	A.	36		Rome_Mini_Sys3_217	192.168.10.217	demo_st	mini_prov	NMS	2020/M
_		23524	Disconnect	AFM operation	Succeeded	Â	37	A37	4	36	A36	Rome Mini Sys3 217	192.168.10.217	demo st	NMS system	NMS	2020/M
		23524	Disconnect	AFM operation	Pending	A .	36	436	4	30	A30 A37	Rome_Mini_Sys3_217	192 168 10 217	demo_st	NMS system	NMS	2020/01
	17	20024	Disconnect	User command	Pending	A .	37	~~~	4	36	~	Rome_Mini_Sys3_217	192.168.10.217	demo_st	mini prov	NMS	2020/04
	16		Disconnect		Succeeded	A A	27		A A	26		Rome_Mini_Sys3_217 Rome_Mini_Sys3_217	192.168.10.217	demo_st demo_st	min_prov	NMS	2020/0
Total -Severity wise	<	-	Disconnect	oser contrand	aucoeeded	A	21		~	20		rune_nn_Sys3_217	192.100.10.217	idento_se	han Drov	mea	202000
tical 📕 Major 💶 Minor 📕 Warning																ır	

Figure 49. Provisioning Log



SEARCHING PORTS IN LOGS

The View's **Search** function is used to **GoTo** (i.e., to **highlight**) the specific port/s within a **log**. When the Search locates a port, connection, etc., that row of the View is highlighted (see bottom of next page).

Provisioning Log Search		×
Port A		^
Port A Panel		
Port A Label		
Port A Name		
Port B		1
Port B Panel		
Port B Label		
Port B Name		
Provisioning properties		1
🗌 Туре	Connect 🗸	
Initiated by	AFM operation \sim	
Status	Deleted \lor	
AFM Name		
AFM Host Name (DNS)		
Username		-
Log ID		
From	То	
Sequential ID		
From	То	
< Prev	Next > Close < <less< th=""><th>-</th></less<>	-

Figure 50. Connection List Search

- 1. Open the desired log (**Unfiltered** or **Filtered**).
- 2. Click the button labeled **Search** (<u>Search</u>.). The **Search** dialog for that View will open.
- 3. Select the parameter and enter the values.
- 4. Click Next to go to the next port that meets the search criteria (also highlights the port).
- 5. Click **Prev** to go to the previous port that meets the search criteria also **highlights** the port).



ptical Patch Panel A								
Panel name	Port Label	Customer name	Admin Status	Oper Status	HW Status	Partner Panel	Partner Label	Port Role
<filter name="" panel=""></filter>	<elter label="" port=""></elter>	<filter customer="" name<="" td=""><td><elter admin="" status=""></elter></td><td><filter oper="" status=""></filter></td><td><elter hw="" status=""></elter></td><td><eliter panel="" partner=""></eliter></td><td><filter label="" partner=""></filter></td><td>< Eliter Port Role ></td></filter>	<elter admin="" status=""></elter>	<filter oper="" status=""></filter>	<elter hw="" status=""></elter>	<eliter panel="" partner=""></eliter>	<filter label="" partner=""></filter>	< Eliter Port Role >
Optical Patch Panel A	1	fiberzone1	Unlocked	Connected	Enabled	Optical Patch Panel B	091	Connection
Optical Patch Panel A	2	fiberzone?	Locked	Connected	Enabled	Optical Patch Panel B	097	Connection
Optical Patch Panel A	3	fiberzone3	Unlocked	Connected	Enabled	Optical Patch Panel B	093	Connection
Optical Patch Panel A	4	fiberzone4	Unlocked	Disconnected	Enabled			Connection
Optical Patch Panel A	5	fiberzone5	Unlocked	Disconnected	Enabled			Connection
Optical Patch Panel A	6	fiberzoneś	Unlocked	Disconnected	Enabled			Connection
<u></u>				o:	e			
Panel name	Port Label	Customer name Filter Customer name	Admin Status	Oper Status	HW Status	Partner Panel	Partner Label	Port Role
<filter name="" panel=""></filter>	<filter label="" port=""></filter>	<filter customer="" name<="" td=""><td><pre><filter admin="" status=""></filter></pre></td><td><filter oper="" status=""></filter></td><td><filter hw="" status=""></filter></td><td><filter panel="" partner=""></filter></td><td><filter label="" partner=""></filter></td><td><filter port="" role=""></filter></td></filter>	<pre><filter admin="" status=""></filter></pre>	<filter oper="" status=""></filter>	<filter hw="" status=""></filter>	<filter panel="" partner=""></filter>	<filter label="" partner=""></filter>	<filter port="" role=""></filter>
Optical Patch Panel B	91	fiberzone91	Unlocked	Connected	Enabled	Optical Patch Panel A	001	Connection
Optical Patch Panel B	92	fiberzone92	Locked 🔒	Connected	Enabled	Optical Patch Panel A	002	Connection
Optical Patch Panel B	93	fiberzone93	Unlocked	Connected	Enabled	Optical Patch Panel A	003	Connection
Optical Patch Panel B	94	fiberzone94	Unlocked	Disconnected	Enabled			Connection
Optical Patch Panel B	95	fiberzone95	Unlocked	Disconnected	Enabled			Connection
Optical Patch Panel B	96	fiberzone%	Unlocked	Disconnected	Enabled			Connection
Actions		Connections	Ale	erts				
ort A Panel	Port A Label	Port A I	lame I	Port B Panel	Port B Label	Port B	Vame	Completion Time
ilter Port A Panel>	<filter a="" la<="" port="" td=""><td>bel> <filter pi<="" td=""><td>ort A Name></td><td><filter b="" panel="" port=""></filter></td><td><filter b="" la<="" port="" td=""><td>ibel> <filter p<="" td=""><td>ort B Name></td><td><filter completion="" td="" time:<=""></filter></td></filter></td></filter></td></filter></td></filter>	bel> <filter pi<="" td=""><td>ort A Name></td><td><filter b="" panel="" port=""></filter></td><td><filter b="" la<="" port="" td=""><td>ibel> <filter p<="" td=""><td>ort B Name></td><td><filter completion="" td="" time:<=""></filter></td></filter></td></filter></td></filter>	ort A Name>	<filter b="" panel="" port=""></filter>	<filter b="" la<="" port="" td=""><td>ibel> <filter p<="" td=""><td>ort B Name></td><td><filter completion="" td="" time:<=""></filter></td></filter></td></filter>	ibel> <filter p<="" td=""><td>ort B Name></td><td><filter completion="" td="" time:<=""></filter></td></filter>	ort B Name>	<filter completion="" td="" time:<=""></filter>
tical Patch Panel A	009	fiberzon		Optical Patch Panel B	099	fiberzon		PM 04-25 16/78p/2012
tical Patch Panel A	003	fiberzon		Optical Patch Panel B	093	fiberzon		PM 04.25 16/mm/2012
	002	fiberzon	e2	Optical Patch Panel B	092	fiberzon		PM 04:25 16/78p/2012 PM 04:24 16/78p/2012
tical Patch Panel A	001	fiberzon		Optical Patch Panel B				

Figure 51. Search by Filtering (Tab View)

In the various Tab views, search is done by filtering. See page 60.



FILTERING LOGS

FILTERING MATRIX LOGS

All the lists displayed under the matrix (i.e., Actions, Connections, Alarms) can be filtered.

To filter a list, start typing the string in the field at the top of the required column. As you type, the list shortens to include only the rows containing that string.

Following is an example, where the filtering string is "3". All the filtered rows contain "3" in that column:

Seq ID 💦 🦄	West Port #	West Port Na	East Port #	East Port Name	Owner	Request Type	Status	Details	Completion Ti.
<filter id="" seq=""></filter>	<filter port<="" th="" west=""><th><filter port<="" th="" west=""><th>3</th><th><filter east="" i<="" port="" th=""><th><filter owner=""></filter></th><th><filter request="" t;<="" th=""><th><filter status=""></filter></th><th><filter details=""></filter></th><th><filter completio<="" th=""></filter></th></filter></th></filter></th></filter></th></filter>	<filter port<="" th="" west=""><th>3</th><th><filter east="" i<="" port="" th=""><th><filter owner=""></filter></th><th><filter request="" t;<="" th=""><th><filter status=""></filter></th><th><filter details=""></filter></th><th><filter completio<="" th=""></filter></th></filter></th></filter></th></filter>	3	<filter east="" i<="" port="" th=""><th><filter owner=""></filter></th><th><filter request="" t;<="" th=""><th><filter status=""></filter></th><th><filter details=""></filter></th><th><filter completio<="" th=""></filter></th></filter></th></filter>	<filter owner=""></filter>	<filter request="" t;<="" th=""><th><filter status=""></filter></th><th><filter details=""></filter></th><th><filter completio<="" th=""></filter></th></filter>	<filter status=""></filter>	<filter details=""></filter>	<filter completio<="" th=""></filter>
1538	45	-	37		root	Connect	Succeeded		2012/Dec/17_10
1536	39		39		root	Connect	Succeeded		2012/Dec/17_10
1535	34		34		root	Connect	Succeeded		2012/Dec/17_10
1534	30		30		root	Connect	Succeeded		2012/Dec/17_10
1524	102		103		root	Connect	Succeeded		2012/Dec/16_03
1508	164		113		CLI user	Disconnect	Succeeded		2012/Dec/16_03

Figure 52. Filtering Lists

Additionally, it is possible sort the list, by clicking the heading of the desired column (see Sorting Logs, page 65).

FILTERING PROVISIONING LOG AND SCHEDULE LOG

The Wave2Wave NMS enables you to display **subsets** of the data contained in a Log or a View. This is done by **Filtering**. In essence this creates a customized View containing only the information specified.

The following Log Views can be filtered. The Filters are context sensitive, and can be customized.

- Provisioning Log
- Schedule Log

Note: The Value Criteria are context dependent and change according to the Filter Criteria.



Prov	isioning Log Filter		×	Sch	eduled Log Filter		×
	Port B Name		^		Port B Label		^
Prov	visioning properties				Port B Name		
	Туре	Connect	~				
	Initiated by	AFM operation	\sim	Sc	heduled properties ———		
	Status	Deleted	~		Туре	Added	~
	AFM Name				Provision Operation	Connect	\sim
	AFM IP				Priority		
	AFM Host Name (DNS)				Status	Failed	~
	Username						
	Source	AFM initiated operation	~		AFM Name		
	Details				AFM Host Name (DNS)		
Date	e/Time				Username		
	From Mar \checkmark 23 \checkmark	2020 3 V : 49 V PI	M ~		Details		
	To Mar \sim 24 \sim	2020 3 V : 49 V P	м 🗸	Se	- hedule Execution Time —		
	Whole day		~		From Mar 🗸 23 🗸	2020 3 . : 50	~ PM ~
نومنا							
	From	То			To Mar V 24 V	2020 3 🗸 : 50	\sim PM \sim
	uential D				Whole day		
	From	То		-			•
	ОК	Apply Cancel	<less< th=""><th></th><th>ОК</th><th>Apply Cancel</th><th>More>></th></less<>		ОК	Apply Cancel	More>>

Figure 53. Provisioning Log Filter

Figure 54. Scheduled Log Filter

Filter Addition – "More"

Click the button labeled "**More**" on any Filter to display the following parameter. To retract, click the button labeled "**Less**".

Note: When activated, the LogID parameter functions when it is displayed and when it is hidden.

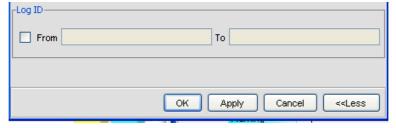


Figure 55. Log Filter



Filtering the Provisioning Log

To filter the Provisioning Log, perform the following:

To open the Provisioning Filter, open the Provisioning Log and click the Filter icon (
 Filter...) on the Provisioning Log Toolbar (at the bottom of the View). The Provisioning

Log Filter dialog appears.

Provisioning Log Filter		×
Port B Name		^
Provisioning properties		_
🗹 Туре	Connect ~	
Initiated by	AFM operation 🗸 🗸	
☑ Status	Deleted ~	
AFM Name		
AFM IP		
AFM Host Name (DNS)		
Username		
Source	AFM initiated operation \sim	
Details		
Date/Time		-
From Mar 🗸 23 🗸	2020 3 < : 49 < PM <	
\Box To Mar \sim 24 \sim	2020 3 v : 49 v PM v	
Whole day		
ок	Apply Cancel More>	

Figure 56. Alarm Log Filter

- 2. Select the required **Provisioning Properties**.
- 3. For Provisioning Properties with a drop down list select the required field(s).
- 4. Select the Date/Time properties.
- 5. Click Apply or OK. The View will display all information that meets all the filter criteria.
 - **Note:** To cancel the filter, click the button labeled Show All Show All. The unfiltered View will be displayed.



NMS Provisioning Manual

Log ID 🔻	Sequential ID	Туре	Initiated by	Status	Port A Panel	Port A Label	Port A Name	Port B Panel	Port B Label	Port B Name
132		Replaced logical t	AFM operation	Succeeded						
131	20655	TMDP	AFM operation	Failed	West	160	Rxtesting 160	East	160	EPort 160
130	20655	TMDP	AFM operation	Pending	West	160	Rxtesting 160	East	160	EPort 160
129	20654	TMDP	AFM operation	Succeeded	West	160	Rxtesting 160	East	160	EPort 160
128	20654	TMDP	AFM operation	Pending	West	160	Rxtesting 160	East	160	EPort 160
127	4300	Disconnect	AFM operation	Succeeded	West	35		East	44	
2126	4300	Disconnect	AFM operation	Pending	West	35		East	44	
2125	4299	Disconnect	AFM operation	Succeeded	West	41		East	68	
2124	4299	Disconnect	AFM operation	Pending	West	41		East	68	
2123	4298	Disconnect	AFM operation	Succeeded	West	38		East	36	
2122	4297	Disconnect	AFM operation	Succeeded	West	26		East	33	
2121	4296	Disconnect	AFM operation	Succeeded	West	13		East	17	
2120	4298	Disconnect	AFM operation	Pending	West	38		East	36	
2119	4297	Disconnect	AFM operation	Pending	West	26		East	33	
2118	4296	Disconnect	AFM operation	Pending	West	13		East	17	
2117	20653	Connect	AFM operation	Succeeded	West	15	WPort 15	East	160	EPort 160
2116	4295	Connect	AFM operation	Succeeded	West	38		East	36	
2115	4295	Connect	AFM operation	Pending	West	38		East	36	
2114	4294	Connect	AFM operation	Succeeded	West	35		East	44	
2113	4294	Connect	AFM operation	Pending	West	35		East	44	
2112	4293	Connect	AFM operation	Succeeded	West	26		East	33	
2111	4293	Connect	AFM operation	Pending	West	26		East	33	
2110	4292	Connect	AFM operation	Succeeded	West	13		East	17	
2109	4292	Connect	AFM operation	Pending	West	13		East	17	
2108	20652	Connect	AFM operation	Succeeded	West	160	Rxtesting 160	East	15	Txtesting 15
2107	20653	Connect	AFM operation	Pending	West	15	WPort 15	East	160	EPort 160
2106	20652	Connect	AFM operation	Pending	West	160	Rxtesting 160	East	15	Txtesting 15
2105	4291	Disconnect	AFM operation	Succeeded	West	36		East	36	
104	4290	Disconnect	AFM operation	Succeeded	West	13		East	33	
<										

Figure 57. Unfiltered Log

Log ID 🔻	Sequential ID	Туре	Initiated by	Status	Port A Panel	Port A Label	Port A Name	Port B Panel	Port B Label	Port B Name
2127	4300	Disconnect	AFM operation	Succeeded	West	35		East	44	
2126	4300	Disconnect	AFM operation	Pending	West	35		East	44	
2125	4299	Disconnect	AFM operation	Succeeded	West	41		East	68	
2124	4299	Disconnect	AFM operation	Pending	West	41		East	68	
2123	4298	Disconnect	AFM operation	Succeeded	West	38		East	36	
2122	4297	Disconnect	AFM operation	Succeeded	West	26		East	33	
2121	4296	Disconnect	AFM operation	Succeeded	West	13		East	17	
2120	4298	Disconnect	AFM operation	Pending	West	38		East	36	
2119	4297	Disconnect	AFM operation	Pending	West	26		East	33	
2118	4296	Disconnect	AFM operation	Pending	West	13		East	17	
2105	4291	Disconnect	AFM operation	Succeeded	West	36		East	36	
2104	4290	Disconnect	AFM operation	Succeeded	West	13		East	33	
2103	4289	Disconnect	AFM operation	Succeeded	West	33		East	5	
2102	4291	Disconnect	AFM operation	Pending	West	36		East	36	
2101	4290	Disconnect	AFM operation	Pending	West	13		East	33	
2100	4289	Disconnect	AFM operation	Pending	West	33		East	5	
2091	4284	Disconnect	AFM operation	Succeeded	West	10		East	10	
2090	4284	Disconnect	AFM operation	Pending	West	10		East	10	
2089	4283	Disconnect	AFM operation	Succeeded	West	11		East	11	

Figure 58. Filtered Log



FILTERING SERVER LOG

To filter the Scheduled Log, perform the following:

1. To open the **Scheduled Log Filter**, open the Server Log and click the **Filter icon** (Filter...)) on the Scheduled Toolbar (at the bottom of the View). The **Scheduled Log Filter** dialog appears.

Scheduled Log Filter		×
Provision Operation	Connect	~ ^
Priority		
Status	Failed	\sim
AFM Name		
AFM Host Name (DNS)		
Username		
Details		
Schedule Execution Time		_
From Mar 🗸 23 🗸	2020 3 ~ : 50 ~ PM	~
\Box To Mar \sim 24 \sim	2020 3 🗸 : 50 🗸 PM	~
Whole day		
Date		
From Mar 🗸 23 🗸	2020 3 ~ : 50 ~ PM	~
\Box To Mar \sim 24 \sim	2020 3 🗸 : 50 🗸 PM	\sim
Whole day		
ОК	Apply Cancel Mor	'e>>

Figure 59. Scheduled Log Filter

- 2. Select the required **Scheduled Properties**.
- 3. For Scheduled Properties with a drop down list select the required field(s).
- 4. Select the Date/Time properties.
- 5. Click Apply or OK. The View will display all information that meets all the filter criteria.

Note: To cancel the filter, click the button labeled Show All Show All. The unfiltered View will be displayed.

C Scheduled Provisioning Log														
Log ID 🔻	Sequen	Type 🛆	Sta	AFM Na	AFM Ho	Port A Panel	Por	Port A Name	Port B Panel	Por	Port B Name	Pro	Scheduled Ex	Date
10	5	Sent to pendin	Succ	223	192.168.1	с	45	singleVV45	A	37	singleE37	Conn	2012/Dec/16 0	2012/Dec 📥
9	4	Sent to pendin	Succ	223	192.168.1	с	5	singleVV5	A	45	singleE45	Conn	2012/Dec/16 0	2012/Dec 📒
8	3	Sent to pendin	Succ	223	192.168.1	с	39	singleVV39	A	39	singleE39	Conn	2012/Dec/16 0	2012/Dec
<			-	000	100 100 I	-	<u>.</u>	11004	*	•••)	1 504			
Filter On				Row co	ount: 5			Sa	ive	ihow All	Filter		Search	





SORTING LOGS

All the logs in the Wave2Wave NMS can be sorted the same way any Windows list is sorted:

Click the heading of the desired column to toggle descending /ascending order.

An arrow pointing downwards indicates that the list is sorted in the descending order.

The following figures show a list sample, sorted according to the Log ID column in descending and ascending order.

🕸 Alarm Log								
Log ID 🔻	Severity	Name	Alarm Source	Alarm Subsystem	Туре	Date		
52	Major	Server Communication Failure	229	AFM	Communication	2012/Dec/12 09:41:41 PM		
51	Major	Server Communication Failure	223	AFM	Communication	2012/Dec/12 09:41:41 PM		
50	Major	Server Communication Failure	249	AFM	Communication	2012/Dec/12 09:41:36 PM		
49	Info	Power Feed Failure	223	249 ⁵ U_Terminal A	Environmental	2012/Dec/11 08:18:59 PM		
48	Info	Trap Destination Failure	223	AFM	Communication	2012/Dec/11 08:12:27 PM		
47	Warning	Trap Destination Failure	223	AFM	Communication	2012/Dec/11 08:11:07 PM		
46	Minor	Power Feed Failure	223	PSU_Terminal A	Environmental	2012/Dec/11 08:11:07 PM		

Figure 61. Alarm Log Sorted in Descending Order

🕸 Alarm Log								
Log ID	Severity	Name	Alarm Source	Alarm Subsystem	Туре	Date		
1	Major	Server Communication Failure	192.168.10.223	AFM	Communication	2012/Dec/10 11:39:26 PM		
2	Major	Internal Voltage Failure	223	PSU_3.3V	Equipment	2012/Dec/11 09:50:39 AN		
3	Minor	Power Feed Failure	223	PSU_Terminal A	Environmental	2012/Dec/11 09:50:39 AN		
4	Warning	New Error Log file is Created In AFM	223	AFM	Processing	2012/Dec/11 09:50:39 AN		
5	Minor	Power Feed Failure	223	PSU_Terminal B	Environmental	2012/Dec/11 09:50:39 AN		
6	Warning	New Error Log file is Created In AFM	223	AFM	Processing	2012/Dec/11 09:50:47 AM		
7	Major	Internal Voltage Failure	223	PSU_3.3V	Equipment	2012/Dec/11 09:50:47 AM		

Figure 62. Alarm Log Sorted in Ascending Order



APPENDIX A – UNDERSTANDING SIMPLEX AND DUPLEX LAYOUT

SIMPLEX CONNECTORIZED PANEL LAYOUT DETAILS

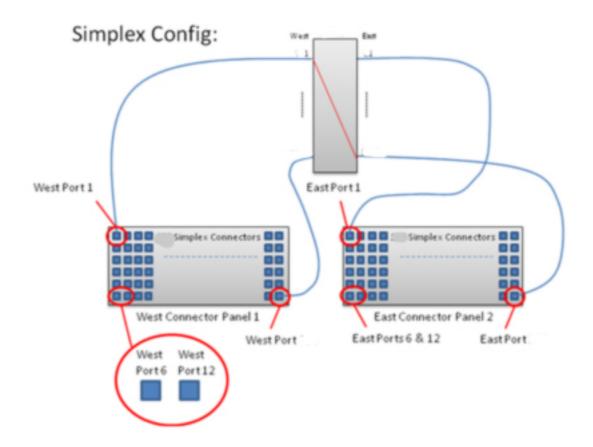
Simplex Config Option

The diagram below shows an example of a simplex port connectorized panel layout for the Simplex Config Option, and how it is pre-terminated to the ROME at the factory.

This arrangement consists of a west connectorized panel terminating the 180 fibers within the ROME west fiber bundle, and an east connectorized panel terminating the 180 fibers in the ROME east fiber bundle. The west connectorized panel terminates west simplex ports 1 to 180, while the east connectorized panel terminates east simplex ports 1 to 180. Connectorized panels may be ordered with various connector options, such as LC, SC, ST, etc., depending on customer requirements. This Simplex Config Option provides the user with an ROME supporting [180 west port] by [180 east port] connectivity, where any west port may be internally connected by the ROME to any east port.

Note that the above describes the case for the ROME, ROME-192S, and ROME-96S (unlimited) models (as in the diagram below). In the ROME-96S (limited) model case only one connectorized panel is required, but the 192 port panel version should be used which supports up to [96 fiber port] by [96 fiber port] connectivity.





DUPLEX TX/RX PAIR CONNECTORIZED PANEL LAYOUT DETAILS

There are two main options offered for duplex Tx/Rx paired port connectorized panels, one is referred to as Duplex Config 1 Option and the other as Duplex Config 2 Option. The Duplex Config 1 Option is the more popular of the two options, but both options are available depending on customer specific requirements.

Duplex Config 1 Option

The diagram below shows an example of a duplex Tx/Rx paired port connectorized panel layout for the Duplex Config 1 Option arrangement, and also shows how it is pre-terminated to the ROME at the factory.

This arrangement consists of two connectorized panels. The first connectorized panel is terminated to the first set of 256 Tx/Rx fiber pairs in the first ROME fiber bundle, and the second connectorized panel terminates the second set of 256 Tx/Rx fiber pairs in the second ROME fiber bundle. The first connectorized panel terminates duplex Tx/Rx ports 1 to 128, while the second panel terminates duplex Tx/Rx ports 129 to 256. Connectorized panels may be order with various duplex port connectors, such as LC, SC, ST, etc., depending on customer requirements. This Duplex

Config 1 Option provides the user with an ROME supporting [256 duplex Tx/Rx paired ports], where any duplex port of either of the two panels can be internally connected by the ROME to any other duplex port on either of the two panels. For example duplex port #1 on the first panel may be connected to duplex port #2 also on the first panel, or duplex port #1 on the first panel may be connected to duplex port #100 on the second panel.

Note that the above describes the case for the ROME 500.





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