

# Myricom nVoy Series Packet Broker

# **User Manual**

Version 1.0



March 13, 2017

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#### **Publishing Information**

Document version:	nPBg v1.0
Date:	March 13, 2017

#### Address

CSP Inc. 175 Cabot Street, Suite 210 Lowell, MA 01854 Tel: (800) 325-3110 <u>support@cspi.com</u>

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# 1 Introduction - Myricom nVoy Series Packet Broker

This chapter provides an introduction to the Myricom nVoy Series Packet Broker and its major user interfaces in the following sections:

- nVoy Series Packet Broker Overview
- nVoy Packet Broker Features and Benefits
- nVoy Packet Broker User Interface
- nVoy Packet Broker APIs
- Chapter Summaries



Figure 1: Myricom nVoy Series Packet Broker

# 1.1 nVoy Packet Broker - Overview

The nVoy Series Packet Broker is purposefully designed to help network administrators to build next-generation fabric visibility networks. The nVoy Packet Broker makes it easy to tap, aggregate, replicate, tag, strip, filter, and load balance traffic from the traffic feed to customers' visibility networks. It also empowers network administrators to deploy monitoring devices on the fly without the need for SPAN ports.

The nVoy Packet Broker leverages state-of-the-art technology to provide:

- 48, SFP+/SFP28 ports that operate at 1G, 10G and 25G.
- 6, 40Gbps/100Gbps QSFP+/QSFP28 ports that operate at 40G and/or 100G.
- Line-rate up to 3.6Tbps forwarding capabilities over all interfaces, even for the smallest packet size.
- An integrated Web-based user interface (Web UI).

The nVoy Packet Broker processes data in terms of domains. A domain is a collection of user-selected ingress and egress ports, interconnected with packet-processing building blocks. A packet- processing element can be a filter, load balancer, packet replicator, packet aggregator, or L2 switch.

# **1.2 nVoy Packet Broker Features and Benefits**

Features	Benefits
Up to 3.6Tbps line-rate packet operation. 48, 1G/10G/25G SFP+/SFP28 ports. 6, 40G/100G QSFP+/QSFP28 ports.	Provides superior line-rate packet filtering capabilities over a wide range of fields.
Flow Domains provide best flow manipulation with functional isolation for inline and/or offline tap, traffic aggregation, traffic replication, filter, tag, and load-balance applications.	Improves operating efficiency and team collaboration by providing Virtual Wire connectivity to isolated, point- to-point, lossless connectivity between two arbitrary ports.
Integrated lossless connection matrix for mix-and- match over 1G, 10G, 25G, and 100G interfaces. nVoy Packet Broker offers a Virtual Wire constructor backed by drag-and-drop user interface. Virtual Wire can be used to connect one port to another with complete isolation and lossless forwarding.	Virtual Wire is ideal when implementing and managing remote connections without physical re-wiring. Virtual Wire's flexibility also enables a traffic source to easily connect to tools within an inline or offline application.
nVoy Packet Broker has native state-of-the-art HTML 5 Web-based user interface (Web UI) that can be accessed from any standard-based web browser.	The Web UI is compatible with: Chrome version 56 or later (recommended) Firefox version 51 or later Internet Explorer version 11 or later Safari version 10 or later
Leveraging the latest generation processor and switch technologies, nVoy Packet Broker is power efficient and equipped with two redundant power supplies and four hot serviceable fans.	Reduce customers' CAPEX and OPEX. High Availability by Design. Built for robust and reliable 24x7 operation.

Table 1: nVoy packet broker features and benefits.

# 1.3 nVoy Packet Broker Hardware

#### **Front Panel and interfaces**



Figure 2. nVoy Packet Broker front panel and main interfaces.



### Back panel with power modules and fans



Figure 3. nVoy Packet Broker back panel with redundant power modules and replaceable fans.

# 1.4 nVoy Packet Broker User Interface

The nVoy Packet Broker is shipped with a default IP address and logon information to connect to the nVoy Packet Broker Web UI.

## **1.4.1** Default logon information

Default IP address	192.168.0.240
Default administrative username	admin
Default administrative account password	no default password
Default console port setting	Baud rate of 115200, 8 data bit, no parity, and a 1 stop bit.

Table 2: Default login information.

A successful logon displays, as shown below.

nVoy Packet H	Broker
exit config exec show help tree history	<ul> <li>exit shell</li> <li>configuration</li> <li>execute operation</li> <li>display system information</li> <li>display help information</li> <li>display command line tree</li> <li>display command history</li> </ul>
nVoy Packet H	Broker running
Hardware Plat InfiniOS Vers	form : nVoy Packet Broker ion :
Control Plane Control Plane CP Memory Max CP Core Temp	CPU : Intel(R) Core(TM) i3- CPU @ 2.00GHz Version: 1.0.4 /Free : 4139147264/3389046784 : 40.0 (C)

Figure 4: Successful logon display.

Once connectivity is established, you can manage the nVoy Packet Broker through the Web UI user interface.



## 1.4.2 nVoy Packet Broker command line interface and Web UI

The nVoy Packet Broker offers an easy-to-use command line interface (CLI) as well as a Web UI interface.

#### **Command line interface (CLI)**

The command line interface enables the user to set up various connectivity protocols and related diagnostic information such as name, location, descriptions, and so on.

For more information, go to *Chapter 2: Command Line Interface* 

#### Web UI

The Web UI enables users to gain full control over the design, management, and monitoring of the nVoy Packet Broker data path. The multi-user Web UI platform also enables users to run multiple sessions concurrently.



Figure 5: Command line interface and Web UI functionality with nVoy Packet Broker.

# 1.5 nVoy Packet Broker APIs

nVoy Packet Broker users can leverage the scripting API to automate tasks such as user, port, and domain management. The scripting APIs are created in Ruby open source programming language and installed as a Gem file. The APIs are crossplatform and OS neutral.

The nVoy Packet Broker APIs are compatible with the following operating systems:

- Windows
- Linux
- FreeBSD
- Mac OS
- NetBSD.



Figure 6: nVoy Packet Broker - operating system compatibility.



# **1.6 Chapter Summaries**

The nVoy Packet Broker user manual contains the following chapter summaries:

Chapter	Description
Chapter 1	Introduction to the nVoy Packet Broker
Chapter 2	<i>Command Line Interface</i> Describes the features of the FlowDirect-640 command line user interface along with commonly used interface and domain commands.
Chapter 3	Web User Interface (Web UI) Describes the functional details of the Web UI. The Web UI is the recommended method to interact with the nVoy Packet Broker appliance.
Chapter 4	Dashboard Tab Describes the features of the Web UI Dashboard tab. The Dashboard tab is the nVoy Packet Broker appliance's central information hub. With a simple point and click, users can oversee almost all device management tasks without switching to different tabs.
Chapter 5	<i>Interfaces Tab</i> This chapter describes the Interfaces tab important features and operations associated with interface ports.
Chapter 6	<i>Flow Operations Tab</i> The Flow Operations or "Flow OPS" tab offers a comprehensive view of the nVoy Packet Broker flow domains attributes and associated user tasks.
Chapter 7	<i>Resource Tab</i> The Resource tab displays all available filter and flow domain information on the Web UI.
Chapter 8	<i>Syslog Tab</i> The System Log tab or "Syslog" tab provides a centralized view of all nVoy Packet Broker events and logs, including search and filter capabilities.
Chapter 9	Help Tab The Help tab enables the user to access all pertinent nVoy Packet Broker online help documents in the form of user guides and user manuals
Chapter 10	Managing Flow Domains Provides samples of nVoy packet broker flow domain modes, describing use cases, traffic flow, and settings.

# 2 Command Line Interface

This chapter further describes the features of the nVoy Packet Broker command line user interface along with commonly used interface and domain commands.

The chapter includes the following sections:

- The Command Line User Interface (CLI)
- List of Interface Commands
- List of Domain Commands

# 2.1 The Command Line User Interface (CLI)

The command line user interface serves as the first contact between user and the newly installed system. The nVoy Packet Broker supports Cisco-style CLI access through the serial port and SSH access through the management port.

#### Access through the serial port

The console port default setting has a baud rate of 115200, 8 data bit, no parity, and a 1 stop bit.

#### Access through the SSH or Telnet connection

Once you have set the IP address through the console port and the device is accessible through Ethernet connection, you can access CLI using SSH or through the Telnet connection.

#### **Default administrator account**

The nVoy Packet Broker is shipped with a default IP address to establish TCP/IP connectivity.

For more information on the admin account, go to the *Default logon information* section of the *Introduction to the nVoy Packet Broker* chapter.

# 2.2 List of Configuration Commands

Once you have logged into your account, refer to the **config** command to configure the nVoy Packet Broker appliance. Table 3. highlights the most commonly used configuration commands.

Command root	Command (example)	Description
config interface mgmt ip	config interface mgmt ip 192.168.0.240 255.255.255.0	Sets the device IP address.
config interface mgmt gateway	config interface mgmt gateway 192.168.0.1	Sets the device gateway.
config system hostname	config system hostname qa_tester_01	Sets the host name as qa_tester_01.
config system description	config system description QA Regression Tester 01	Sets the tester description so that everyone knows its intended usage.
config system location	config system location EngLab01-Rack13-Slot3	Sets the appliance location.
config system contact	config system contact support@cspi.com	Sets the administrator contact information.
show running	show running	Displays system runtime information.
exit	exit	Exits CLI

Table 3: Commonly used nVoy packet broker configuration commands and their description.

For more information on configuration commands, go to *Appendix 3: Supplemental Interface Commands* 

# 2.3 List of Domain Commands

The domain command offers an alternative method to configure simple domains such as a virtual wire, as shown in Table 4.

Command root	Command (example)	Description
config domain create virtualwire [domain_name] port [port X] [port Y]	#config domain create virtualwire testdomain port XG1 XG2	Creates a virtual wire between port XG1 and XG2. The port name can be changed using the interface name command
config domain create virtualwire [domain_name] sysport [portname1] [portname2]	#config domain create virtualwire testdomain sysport myport1 myport2	Creates a virtual wire between myport1 and myport2 using a system port name. The system port name cannot be changed.
Config domain delete [domain_name]	#config domain delete testdomain	The command removes the domain identified by domain name.

Table 4. Examples of domain commands and their description.

For more complex domain commands, go to *Web User Interface (Web UI)* 

## CS7i

# 3 Web User Interface (Web UI)

Once you have configured the nVoy Packet Broker IP address and linked to your network, you can now access the device through the Web User Interface (Web UI). The Web UI is the recommended method to interact with the nVoy Packet Broker (Figure 7).

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Figure 7: nVoy Packet Broker Web UI homepage

# 3.1 Web UI features

The Web UI allows the user to easily perform the following tasks on the device:

- Port management tasks such as port allocation, reservation, and state management.
- Domain management tasks such as domain creation, deletion, enabling, and disabling.
- User management tasks such as user creation, deletion and edition.
- Device diagnostic information, including serial number, firmware version, location, and administrator contact information.
- Device operations, including the ability to update device firmware, saving configurations, rebooting the appliance, and so on.

# 3.2 Web GUI Homepage

Familiarize yourself with the layout of the nVoy Packet Broker Web UI homepage. Figure 8 displays a typical Web UI layout and its six essential tabs.



Figure 8: Web UI homepage with highlighted tabs.

# 3.2.1 Web UI tabs

The nVoy Packet Broker Web UI has six tabs:

#### Dashboard tab

The Dashboard tab offers a bird's eye view to the device. It groups the most frequently used device management operations. We recommend users familiarize themselves with the contents of the Dashboard tab.

For more detailed information, go to *Dashboard Tab* 

#### Interfaces tab

The Interface tab provides detailed settings and statistics of each interface, including port name, port ID, link attributes, traffic statistics, interface module information, and available operations.

For more detailed information, go to Interface Tab

#### Flow OPS tab

The Flow OPS tab offers a comprehensive view of all flow domain operations information such as name, type, admin status, ingress port, egress port, data path, date, description, statistics, and operations.

For more detailed information, go to *Flow OPS Tab* 

#### Resource tab

The Resource tab displays all saved resources such as filters and flow domain templates. Users can also create and manage IP black lists, pattern lists, and filters.

For more detailed information, go to *Resource Tab* 



#### Syslog tab

The Syslog tab enables the user to view, search, and filter log events.

For more detailed information, go to SyslogTab

#### Help tab

The Help tab displays all technical documentation pertaining to the nVoy Packet Broker appliance.

For more detailed information, go to Help Tab

# 4 Dashboard Tab

The Web UI Dashboard tab is the nVoy Packet Broker appliance's central information hub. With a simple point and click, users can oversee almost all device management tasks without switching to different tabs.

The Dashboard is by far the most complex of the six tabs (Figure 9). Users should take the time to thoroughly familiarize themselves with its functions before operating the appliance.



Figure 9: Web UI Dashboard tab panels

# 4.1 Dashboard tab panels

Six panels highlight the dashboard's important features.

1. Device View

The Device View panel displays the status of all device ports, domains, and topologies. Such device information includes CPU usage, memory consumption, temperature, service levels, power modules, and fan status.

For more detailed information on the Device View panel, go to the *Device View* section in this chapter.



2. Device Information

The Device Information panel displays device identification and tracking information such as software version, serial number, and IP address.

For more detailed information on the Device Information panel, go to the *Device Information* section in this chapter.

3. Device Operation

The Device Operation panel displays the various operational, management, and configurational settings required for routine device operation. Such operations include download configuration, reboot device, user management, service management, and so on.

> For more detailed information on the Device Operation panel, go to the *Device Operation* section in this chapter.

4. Service Status

The Service Status panel displays critical log information by port, domain, task, user, appliance, and so on.

For more detailed information on the Service Status panel, go to the *Service Status* section in this chapter.

5. Flow Domains

The Flow Domains panel lists domains created through flow operations. The user can edit, activate/deactivate, monitor, and delete domains in this panel.

For more detailed information on the Flow Domains panel, go to the *Flow Domains* section in this chapter.

6. Real Time Domain Display

The Real Time Domain Display panel displays real-time plots and traffic statistics of active running domains.

For more detailed information on the Real Time Domain Display panel, go to the *Real Time Domain Display* section in this chapter.

# 4.2 Device View

Device View is the center of the nVoy Packet Broker's day-to-day operations. It offers you direct access to the device in the following ways:

- Change port name
- Change port attributes
- Set cable identifier
- Open port monitor window
- Enable or disable ports
- Change port link attributes
- Create loopback
- Create flow domain operations

#### Up close and personal

The Device View displays an array of 54 traffic ports with status and operations tightly integrated, as shown in Figure 10.



Figure 10: Device View



#### At a glance

To display port settings and traffic statistics at a glance, hover your pointer over any of the port icons in Device View. A Tool Tip automatically appears, displaying that port's information in real-time, as shown in Figure 11.

	XG40   Traffic P	Port				Increase Pro-								Inc	in Fast				Maket					a college		
	Name: Cable ID:	XG40				1240-1.324	191					1		1240-19	1.1941-1				00			121	2			1
	Admin:	Enabled		1	1		Т	ool	Ti	р				NSE	UNGES .				0		e	8		dir.	tori tirra	e Constan.
anna mar	Link Status: Speed:	off N/A			-				_	-		,												-		U.Ø.
	RxPkts: TxPkts: RxBits: TxBits: RxBytes: TxBytes:	Rate 0 0 0 0 0	Total 0 0 0 0 0				Loopted CCC CCC CCC CCC Cocycle			Nord NGA	Land NZ 28 m 225 m NUT	LAZZS VE DE E E E E E E E E E E E E E E E E E		6-34(22 1000 1000 1000 1000 1000 1000 1000 1		240-X625		Lingtha Eliji Eliji Eliji Kozmi	a 240.9 Si Si Si Si Si		64 10 18 (3) 18 (3) 19	ettak 16 646 041	ND48 III US III III III III III III III I	KLSSS BSI was BSI was BSI was KLSHT	82 82 82 82	253 95 97 97 97 90 1201
DEVICE INFORMATION Social Number: Photo Op Time: Proto Social Time: 2013	Congestion: Time to Refresh Interface Module	0 0 h:	0	8	() hered	Service U in a	**	104	100	1.4	» [*	* 313	44 20 0	(* ) 4	(1144v) 1 •	teori inci " " "	Permany Services Description Description	Nanagement Iganetice Coefiguestic formere		) (Hereps) F (Herefs) F (Herefs) F (Herefs)	0	NAMES OF	Devita Mar Figuratum Marantan		<ul> <li>✓ Depti</li> </ul>	

Figure 11: Device View tool tip.

### **Device View Toolbar**

🏽 🊱 Create Domain \, 🍘 Edit Domain 🛛 📌 Delete Domain 🛛 🧟 Activate Domain 🖓 Deactivate Domain 👘 Port Groups

The Device View Toolbar tabs are described as follows:

- Create Domain
- Edit Domain
- Delete Domain
- Activate Domain
- Deactivate Domain
- Port Groups
- Port Groups Speed



## 4.2.1 Create Domain tab

The Create Domain tab allows you to create a domain by assembling individual components or by employing templates.

There are two ways to create a Virtual Wire domain:

- Creating a Virtual Wire with "Drag and Drop" (Recommended)
- Creating a Virtual Wire from the Toolbar

#### Creating a Virtual Wire with "Drag and Drop"

To create a virtual wire domain using the "drag and drop" method, follow these steps:

#### Example

In this example, port 50 is **XLG50** and port 49 is **XLG49**, as shown in Figure 12a.

- 1. Click the Dashboard tab and scroll to the Device View panel.
- **2.** Drag and drop port XLG50 to the destination port XLG49, as shown in Figure 12a.

A virtual wire is created between both ports, as shown in Figure 12b.



Figure 12a: Dragging and dropping a port.

							۲
XG38	XG40	240-XG5	240-XG4	XG46	XG48	XLG50	XLG52
38 10G	40 10G	42 10G	44 10G	46 10G	48 106	50 40G	52 40G
						↓ ^ _ ↓ ^	
37 10G	39 10G	41 10G	43 10G	45 10G	47 10G	49 40G	51 40G
XG37	XG39	XG41	XG43	XG45	XG47	XLG49	XLG51

Figure12b. Creating a virtual wire between two ports.





### Creating a Virtual Wire from the Toolbar

The Create Domain tab allows you to create a domain by assembling individual components or by employing templates.

**NOTE:** In this example, we will select a template to create a bi-directional virtual wire domain. The bi-directional virtual wire cross-connects two ports.

1. Click Create Domain from the Device View toolbar.

The Input Domain name window appears, as shown in Figure 12c.

2. Enter the domain name in the text box and click OK.

The Configuration Editor window appears with the domain name in the Data Path Components panel, as shown in Figure 12c.



Figure 12c: Configuration Editor window



**3.** Click and drag the bi-directional domain template from the Data Path Templates panel to the grid.



Figure 12d: Assigning port XG34 to the bi-directional virtual wire template.

 Double-click the blocks PortX\_Rx and PortX\_Tx to assign the same port (Figure 12d). In this example PortX\_Rx and PortX\_Tx are assigned to port XG34.

The Device View window appears, displaying the available ports (Figure 12d inset).

5. Select port XG34 and click OK.

The Device View window closes.



Figure 12e: Assigning port **XG33** to the bi-directional virtual wire template.

6. Likewise, double-click the blocks **PortY\_Rx** and **PortY\_Tx** to assign the same port as in Figure 12e. In this example **PortY\_Rx** and **PortY\_Tx** are assigned to port **XG33**.

The Device View window appears, displaying the available ports (Figure 12e inset).

7. Select port XG33 and click OK.

The Device View window closes.

8. Click OK in the Configuration Editor Window.

The Start Domain in Progress Window appears. The window closes once the domain has been configured.

**9.** To activate the domain, click **Activate Domain** from the Device View toolbar, as shown in Figure 12f.



NTERFACES 👩 FLOW OPS 🔛 RESOURCE 📳 SYSLOG 🔞 HELP 👂 Edit Domain 🛛 of Delete Domain 🤎 Activate Domain 🖉 Descrivate D Dort Cro DomainExample01 ~ dellr T4.P1 T4.P3 T1.P1 T1.P3 LoopBack. LoopBack. LoopBack. LoopBack 2(1 XG8 XG10 prec(1) Filter\_Mutliple\_Executions\_Test 10G 8 10G 10 10G 12 10G 14 0 106 32 10 34 10G 36 10G 38 25G 40 25G 42 25G 44 25G TLB+FL\_High\_Filter\_Test\_Case\_Full\_SmallFlows\_G 00 0.0 00 TLB+FL\_High\_Filter\_Test\_Case\_Full\_Skeleton\_No\_Labels TERT LB+FL\_High\_Filter\_Test\_Case\_Full\_SmallFlows Domain drop-10G 7 10G 9 10G 11 10G 13 9 10G 31 10G 33 10G 35 10G 37 25G 39 25G 41 25G 43 25G down combo box 1 E 00 0.0 10 00 2 (0 XG7 T4.P0 XG9 T4.P2 LoopBack, LoopBack, LoopBack, LoopBack prec(0) dell T1.P0 T1.P2 MEMORY: 15% TEM ER 1: 💉 🛛 POWER 2: 💉 DEVICE OPERATIONS Today] [Export Log] 03-7475 Mar 06 Mar 05 Mar 04 (s) 21 hour(s) 58 min(s) 3 sec(s) 0 0 0 -03-10 11:06:58 -0800 0 0 0

The Domain drop-down combo box appears, as shown in Figure 12f.

Figure 12f: Selecting the domain to activate.

10. Click the Domain entry (DomainExample01) from the drop-down combo box.

The Start Domain in Progress window appears. The window closes once the domain has been activated (Figure 12g).



Figure 12g. Start Domain in Progress window.



The activated bi-directional domain appears in the Device View window with the virtual wire cross-connecting ports **33** and **34**, as shown in Figure 12h.



Figure 12h. A bi-directional virtual wire between ports 33 and 34.

For more information on bi-directional domains, go to Chapter 10: *Managing Flow Domains* 



#### **Domain Compiler Warning**

The current version of the nVoy Packet Broker contains a domain compiler that is particularly sensitive to filter behaviors. Therefore, if your domain contains filter components, you may encounter a domain compiler warning like the one shown in Figure 12i.

The options available to you are as follows:

- CONTINUE exit the editor and start running the domain.
- OK exit the domain editor and leave domain disabled.
- CANCEL return to editing the domain to verify your flow's logic.

If you believe that your domain's filters conform to best practices, then you may select **CONTINUE** to activate the domain.

	The domain configuration has the following error(s):
U	(1) Component Drop SRC IP 155.155.* cannot be connected to
	Component 5-tuple Load Balance
	(2) Component Drop SRC IP 99.111.* cannot be connected to
	Component 5-tuple Load Balance
	Press OK to close the domain editor with domain in disabled state;
	Press Cancel to edit the domain;
	Press Continue to activeate with possible failures.

Figure 12i: Domain compiler warning window.

For more information on filter behavior, go to Appendix 5: *nVoy Packet Broker – Filter User Guide*


# 4.2.2 Edit Domain tab

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2 106 2 6 6 106 8	FAN4	G	18 10	5 20 10G	22 100	24	2	26 10	g [28	10G	30 106	32 1	og 34 1	0G 36 10G
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tem Time: 2015-08-25 09:22:35 -070	@ \/M_3240-1_3240-TP1	Lo Lo	Change]	- Mada	enter .					0		õ	0	
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	@ VM_XG17_XG19			DiskDi	rive	0		9	0	C	,	0	0	0
	GUVM_XG18_XG20			FlowDirec	tor-640	<b>S</b>		2	2	C		0	0	C

Figure 13: Edit Domain with combo box.



### Editing a domain

1. Click Edit Domain.

A combo box displays all domains as shown in Figure 13.

2. Select the desired domain from the combo box.



Figure 14: Edit Domain - Configuration Editor window.

- 3. The Configuration Editor window appears, as shown in Figure 14.
- 4. Make the necessary changes to the domain.

# **CS**Pi

- **5.** There are two ways to save the new domain.
  - a. Click **OK** to save the edited domain, OR
  - b. Click **Save as Template** to save as a template.



4.2.3 Delete Domain tab	4.2.3	<b>Delete Domai</b>	n tab
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3240-1 3240-2 3240-3 3240-4 XG10	The fault Virtual Wire(Ports:XG3,3240-1)	20 Loop	pback	XG24	ILoad-XG1	ILoad-XG2	iLd226-XG1	iLd226-XG2	XG33 240-
2 106 4 106 6 106 8 106 10 10G	FAN4 20	106 22	106 24	106	26 10G	28 10G	30 10G	32 106	34 106 36
	Gi Fiter								
1 106 3 106 5 106 7 106 9 106	NewDomain 1	106 21	106 23	106	25 106	27 106	29 10G	31 106	33 106 35
<b>— — — —</b>	🕢 NewDomain3								
XG1 XG3 400-XG5 XG9	RewDomain4 XG	19 Loo	xp81 L	oopB2	XG25	XG27	XG29	XG31	XG33 XG
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System mile: 2013-08-25 09: 1:55 -0700	@VM_3240-1_3240-TP1 M	lodLocator	0	0		2	0	0	0 0
Management ID: 102 158 0 222	@ VM_3240-1_iLd226-XG1	System	0	0		2	0	0	
Firmulare Version: 1617	@ VM_3240-2_3240-TP1 @ VM_3240-2_Ld226-XG2	HealthMon	0	0			0	0	
Location: Please specify the location information	@ \M_3240-3_3240-4	Console				2	0	0	
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\ \	WM_ILoad-XG1_ILoad-XG2	Port	0	0		2	0	0	0
	VM_XG10_XG12	Task	0	0		2	0	0	0
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	@VM_XG17_XG19 I @VM_XG18_XG20 Flow	Director-640	0	0	6	2	0	0	0 0

Figure 15: Delete Domain display.



### Deleting a domain

1. Click Delete Domain.

A combo box displays all domains as shown in Figure 15.

2. Select the desired domain.

DEVICE VIEW							
Create Domain 🕐 Edit Domain 🔹 Delete D	omain 🧟 Activate Domain 🚱 Deactivate Domain 📑 Port Groups 📔						
XG2 XG4 XG6 XG8 XG10 XG12	Confirm	×	KG32	XG34	XG36	XG38	XG40
2 10G 4 10G 6 10G 8 10G 10 10G 12 10G			2] <b>10</b> G	34 10G 3	6 10G	38 10G	40 100
	Please confirm to delete the flow domain.						
	$\mathbf{v}$						
1 10G 3 10G 5 10G 7 10G 9 10G 11 10G			1 10G	33 10G 3	5 10G	37 10G	39 100
T7.P0 T7.P1 T8.P0 T8.P1 XG9 XG11	🖌 ОК 💋 Са	incel	(G31	XG33 )	XG35	XG37	XG39
K35 RX-TX							

Figure 16: Confirm Delete Domain.

A Confirm window appears, as shown in Figure 16.

3. Click OK to delete the domain.



Create Dom	ain 🚯 Highlight Domain 🛞 Edit Domain	of Delete	Pashta Donasia	-				
2406-20 2406-	22 XG6 XG8 XG10 XG12	3240-TP1 XG16	Contraction of the second seco	XG28	XG30	XG32	XG33	XG3
2 106 4 1	06 6 106 8 106 10 106 12 106	14 106 16 106	C Detaut Virtual Wire(Ports:XG3,3240-1)	28 10G	30 100	32 10G	34 106	36
			Filter				1000	
* 1	*		NewDomain 1					
1			RewDomain2					
			RevDomain3					
			RevDomain4					
1 106 3 1	og 5 106 7 106 9 106 11 106	13 106 15 106	RevDomain5	27 10G	29 106	31 105	33 106	35
			TwwDomain6					
40G-19 240G-	21 3 400-XG5 XG9 XG11	XG13 XG15	G NewDomain7	XG27	XG29	XG31	XG33	XG3
			NewDomain8					
PU:	7. MEMORY: US 20% TO CE	RATURE: COMPANY	NewDomain9	NFS:	POW	ER 1: 💉	POWER 2	*
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rice INFORMAT erial Number: p Time: ystem Time: ost Name: anagement IP: miware Version: xxation: ontact:	FM-001-7063 9 day(s) 17 hour(s) 4 min(s) 44 sec(s) 2015-08-26 16:05:54 -0700 nVoy Packet Broker 192.168.0.232 1.6.1.7 Please specify the location information Please specify the contact information	2 (Char) (Char (Char) (Char (Char) (Cha	(a) VM, 240-X65, 240-X64           (b) VM, 2406-19, X69           (c) VM, 2406-19, 220-X68           (c) VM, 3240-1, 3240-2           (c) VM, 3240-1, 3240-2           (c) VM, 3240-2, 3240-17P1           (c) VM, 3240-2, 3240-7P1           (c) VM, 3240-2, 3240-7P1           (c) VM, 3240-2, 3240-7P1           (c) VM, 3240-2, 3240-4           (c) VM, 3240-4, 3240-7P1	2015-08-2 Aug 23 © <sub>2</sub> ) © <sub>2</sub> ) © <sub>2</sub> ) © <sub>2</sub> © <sub>2</sub> )	40g 22	[Today]     Aug 21     O     O     O     O     O     O     O     O     O     O     O     O     O     O     O	(Export L Aug 20 0 0 0	(0) (0)
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VICE INFORMAT erial Number: p Time: ystem Time: ost Name: lanagement IP: immware Version: ocation: ontact:	FM-001-7063 9 day(s) 17 hour(s) 4 min(s) 44 sec(s) 2015-08-26 16:05:54 -0700 nVoy Packet Broker 192.168.0.232 1.6.1.7 Please specify the location information Please specify the contact information	2 2 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	(a) VM 240-XG5 240-XG4 (b) VM 2406-19 XG9 ✓ VM 2406-19 XG9 (c) VM 2406-20 XG8 (c) VM 3240-1 3240-2 (c) VM 3240-1 3240-7P1 (c) VM 3240-2 3240-7P1 (c) VM 3240-2 3240-7P1 (c) VM 3240-2 3240-7P1 (c) VM 3240-3 3240-4 (c) VM 3240-7P1 3240-1 (c) VM 3240-7P1 3240-4 (c) VM 3240-7P1 400-7P1 (c) VM 3240-7P1 (c) VM 3240-7	2015-08-2 Aug 23 ©;) ©;) ©;) ©; ] ©; ] ©; ] ©; ] ©; ] ©;	Aug 22           O <td>[Today]     Aug 21     O</td> <td>[Export L Aug 20 0 0 0 0 0 0 0 0 0 0 0</td> <td>.00]</td>	[Today]     Aug 21     O	[Export L Aug 20 0 0 0 0 0 0 0 0 0 0 0	.00]
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# 4.2.4 Activate Domain tab

Figure 17: Activate Domain operation.

# **CS**Pi



### Activating a domain

1. Click Activate Domain.

A combo box displays all domains as shown in Figure 17 and 18.

Г

2. Select the domain to be activated.

The domain(s) are	highlighted.	Activate Domain	
DEVICE VIEW			
🏻 🏀 Create Domain  🊱 Edit Do	main of Delete Domain	Activata Domain Ma Doactivate	Domain
K35 RX-TX	XG10 XG12 XG14	Firewall_example_1	XG24
2 10G 4 10G 6 10G 8 10G	10 10G 12 10G 14 10	G NewConfig1 G First_Case	24 <b>10G</b>
		Firewall_example_1     NewConfig1	
		JFM_Simple_TAP	
1 10G 3 10G 5 10G 7 10G	9 10G 11 10G 13 10	JFM_Port0_to_XG1     G     G     Https_filtering     G     IFM_VI_AN_Eiltering_1	23 <b>10G</b>
<b>T7.P0 T7.P1 T8.P0 T8.P1</b>	XG9 XG11 XG13	JFM_Tag_Only_2	XG23
K35 RA-1A	- <u>1, 20-80 - 2006</u>	JFM_Tag_Only_1	
CPU: 8% MEMORY	: 12% TEM		P: 🥘



**3.** A Start Domain In Progress window appears, as shown in Figure 19. The window disappears once the domain has been successfully enabled.

The domain in activated.

Update received:	8/26/2015, 4:11:34 PM	
Progress:	Start to setup domain VM_2406-19_XG9 Domain VM_2406-19_XG9 compiled successfully	
	Ød	ose

Figure 19: Start Domain in Progress window.



# 4.2.5 Deactivate Domain tab

	Deactivate Domain
DEVICE VIEW	
Create Domain 🛞 Edit Domain of Delete Domain 🤤 Activate Domain	omain Port Groups
XG2       XG4       XG6       XG8       XG10       XG12       XG14       XG16       XG18       XG2         [2]       10G       4       10G       6       10G       10       10       12       10G       14       10G       18       10G       201       First_Ca:         [] <th>example_1         Port 2         XG30         XG32         XG34         XG36         XG36</th>	example_1         Port 2         XG30         XG32         XG34         XG36         XG36
JFM_Por JFM_Por	Activated Domain (with checkmark)
1 10G 3 10G 5 10G 7 10G 7 10G 1 10G	Port 1         XG29         XG31         XG33         XG33         XG35         <
CPU: CPU: CPU: CPU: CPU: CPU: CPU: CPU:	g_Only_1 Test_Case SSH: ● POWER 1: ★ POWER 2: ★

Figure 20: Deactivate Domain operation.



### Deactivating a domain

#### 1. Click Deactivate Domain.

A combo box displays all domains as shown in Figure 20.

2. Select any domain with a checkmark ✓ (activated).

The domain(s) are highlighted and a Confirm window appears, as shown in Figure 21.

3. Click OK to deactivate the domain operation.

	Domain d	B Hoblight Dom	sin 🙆 Edit	Domain of 1	Delete Domain	Confirm				o	۲		
3240-1	3240-2	3240-3 6 100 100	3240-4 (5) 100 (1) (1) (1) (1) (1) (1) (1) (1)	XG10	XG12	()	Please	contrim to dea	covate the	now operation	<b>.</b>	ILoad-XG1	1Load-NG2
1 100	3 100	5 105	7 106	9 100	11 105		-	m		ок	Cancel	[25] 106	27 105
XG1	XG3	XG5	400-XG5	XG9	XG11	XG13	XG15	XG17	XG19	Loop81	Loop82	XG25	XG27
CPU:	5%	MEMORY:	15%	TEMPERATI	JRE: UIT	8 44*C H	пр: 🕘 н	TIPS: 🌖 SS	H: 😑 🛛 SNI	49: <mark>@</mark> NF5:	e Power	1: 💰 - POW	er 2: 🔬 🛛 Fi
EVICE INFO	MATION							⊙ SER	VICE STATU	s			

Figure 21: Deactivated domain confirmation.



# 4.2.6 Port Groups

Users can place several ports into a group by clicking the ports in question and assigning an arbitrary group name for identification purposes, as shown in Figure 22. Similarly, the port groups can be broken down, updated, or cleared altogether in the same way



Figure 22: Port groups.

## **CS**Pi

### **Port Groups Speed**

The nVoy Packet Broker organizes its ports into quads, with each quad including four ports. For all ports in a quad to share one PLL (phase-locked loop), they need to stay in the same speed categories of 1G, 10G or 25G.

#### Example: 1G/10G

**1.** User sets port quad XG13, XG14, XG15, and XG16 in 10G mode, as shown in Figure 22a.

Figure 22a: Port group XG14 – XG16.

**2.** User modifies XG16 port speed from 10G to 25G. This action displays the following prompt, as shown in Figure 22b.

Figure 22b: Confirming port speed change from 10G to 25G.

To change XG16 to 25G, the other ports need to be changed to 25G as well.

**3.** User confirms and all ports switch to 25G.



#### Port description

Each port contains the following information:

- Port Name
- Port ID
- Link Speed
- Port Status



Figure 22: Port description.

#### **Port Name**



Figure 22a: Port name.

In this example, "3240-3" is the port name. Port names can be changed at any time.

#### Port ID



Figure 22b: Port ID.

In this example, the port ID is "6". You cannot change the port ID.



### Link Speed

324	0-3
6	10G

Figure 22c: Link speed.

The "10G" is the port's link speed indicator.

### Link speed settings



Figure 23: Link speed settings.

### **Port Status**

The icon at the bottom of each port indicates the port's module and link status. The port status icon has three modes:



: Link is on



: Link is down and interface module is unplugged



: Link is down and interface module is plugged

Figure 24: Port status.



### Domain and TAP/Mirror topology area

3240-3	3240-4	XG10	XG12	3240-TP1	XG16	XG18	XG20	Loopback	XG24	ILoad-XG1	ILoad-XG2	iLd22
6 10G	<b>8</b> 106	10 105	12 106	14 105	16 106	18 106	20 106	22 106	24 10G	26 105	28 106	30
114	114	-		4		<u> </u>	<u> </u>					-
								Ϋ́Ϋ́		v.	<u> </u>	
5 100	7 105	9 106	11 106	V	15 105	17 106	19 106	Ý Ť	23 106	V [25] 106	V	29
5] 106	7 100	[9] 100 []	11 105		[15] 10G	17 106	19 106		23 105	V [25] 106	27] 106	[29]

Figure 25: Domain topology (highlighted in red).

The highlighted area displays the topology of each domain, as shown in Figure 25. The topology is updated in real time after domains are configured and activated.

#### **Device Status Bar**

The Device Status Bar captures the device status in real-time, as shown in Figure 26.





# **CSPi**

# 4.3 Device Information

The Device Information panel posts a snapshot of the device's ID and current status, as shown in Figure 27.

DEVICE INFORMATI	ON	۲
Serial Number:	FD-002-5738	
Up Time:	8 day(s) 12 hour(s) 49 min(s) 34 sec(s)	
System Time:	2015-08-25 11:50:44 -0700	[Change]
Host Name:	CSPi nVoy Packet Broker	[change]
Management IP:	192.168.0.240	📝 [Change]
Firmware Version:	1.8.2.6	🎇 [Manage]
Location:	Please specify the location information	[Change]
Contact:	Please specify the contact information	浸 [Change]

Figure 27: Device information panel.

#### **Serial Number**

Displays the nVoy Packet Broker ID. It is a read-only field.

#### **Up Time**

Displays how long the device has been running since its last reboot.

#### **System Time**

Displays the system time. You can change the system time as described in Figure 28.



### Changing the system time

Change S	system Time Settings	(
Date:	2015-08-25	<b>v</b>
Time:	11:52:44	▼ Update
Time Zor	ne: (GMT-07:00) America/Los_Angeles	Update
Synchro	nize with a Network Time Server	Settings

Figure 28: Change System Time Settings window.

1. Click [Change] beside the System Time entry, as shown in Figure 27.

A Change System Time Settings window appears, as shown in Figure 28.

2. Update the Date, Time, Time Zone, and/or Synchronize with a Network Time Server entries as required.



#### **Host Name**

Displays the host name of the nVoy Packet Broker. You can change the host name as follows.



#### Changing the host name

Change System Name	۲
Please specify the name of device:	
CSPi - Envoy Packet Broker	
V OK V Can	cei

Figure 29: Change System Name window.

1. Click [Change] beside the Host Name entry, as shown in Figure 27.

A Change System Name window appears, as shown in Figure 29.

2. Change the device name, as required.

#### **Management IP**

Displays the management IP address assigned to the nVoy Packet Broker. You can modify the management IP address as shown in Figure 30.

<ul> <li>mgmt0</li> </ul>	Management Interfa	ace: mgmt0	(
	Name: MAC: Role: IP Address: Netmask: Gateway: Defalut Gateway: Primary DNS: Secondary DNS:	mgmt0 2c:60:0c:04:46:71 Master ▼ 192.168.0.240 255.255.255.0 192.168.0.1	
ange the settings m	ay interrupt running config	uration and views. After click OK, the web GUI will try to connect to the new address.	

Figure 30: System IP Settings window.

# **CSPi**



### Changing the management IP Address

1. Click [Change] beside the Management IP entry, as shown in Figure 27.

A System IP Settings window appears, as shown in Figure 30.

- 2. Update the IP address, Netmask, Gateway, Primary and Secondary DNS entries as required.
- 3. Click OK.

**NOTE:** Changing the IP settings may interrupt the configuration and views. **Restart the Web user interface to redirect to the new address**.

#### **Firmware Version**

Displays the current firmware version running the nVoy Packet Broker as shown in Figure 31. We recommend upgrading to the latest nVoy Packet Broker firmware version whenever possible. To upgrade your firmware to the latest version or roll it back to an earlier version, follow the procedure below.

Version	Activation Status	Size (Byte)	Md5Sum	Operati	ions
1.6.1.7		140883960	[Calculate]		
1.5.9.0	0	185198712	[Calculate]	[Activate]	(Delete)
1.6.1.6	0	140885944	[Calculate]	[Activate]	(Delete]
1.6.1.4	0	140875144	[Calculate]	[Activate]	(Delete]
1.6.1.3	0	136130040	[Calculate]	[Activate]	(Delete]
1.6.1.2	0	136130952	[Calculate]	[Activate]	(Delete]
1.6.1	٢	136121320	[Calculate]	[Activate]	(Delete]
1.6.0.5	0	136120984	[Calculate]	[Activate]	(Delete)
1.6.0.4	٢	130329528	[Calculate]	[Activate]	(Delete]
.6.0.3.4	0	134752088	[Calculate]	[Activate]	m [Delete]

Figure 31: Device Firmware Management window.



### Managing your firmware

1. Click [Manage] beside the Firmware Version entry, as shown in Figure 27.

A Device Firmware Management window appears, displaying a table of available firmware versions with activation status, file size, and operations, as shown in Figure 31.

2. Select the firmware to be installed and click [Activate] in the Operations column.



A Confirm window appears, as shown in Figure 32.

Confirm	8
(1)	Please confirm to activate this image version 1.8.2.6 After the firmware is activated, the device will reboot to start update process.Please DO NOT power off the device in the middle of update. Use console (baud rate 9600,8N1) to monitor the progress of update. It usually will take 5 to 10 mintues to finish.
	OK 🖉 OK

Figure 32: Confirm firmware change/update.

3. Click **OK** to confirm that you are activating your required firmware version.

The system automatically reboots to activate the new firmware version.

#### Location

Displays the location of the device.

Change Location	۲
Please specify the location	of device:
R&D Lab	
	OK OK Cancel

Figure 33: Change Location window.

### Changing the device location

- 1. Click [Change] beside the Location entry, as shown in Figure 27.
  - A Change Location window appears, as shown in Figure 33.
- 2. Enter the desired location and click OK to confirm.



#### Contact

Displays the device contact information.



Figure 34: Change Contact window.



### Changing the contact information

1. Click [Change] beside the Contact entry, as shown in Figure 27.

A Change Contact window appears, as shown in Figure 34.

2. Enter the desired contact information and click **OK** to confirm.

# **CS**Pi

# 4.4 Device Operation

The Device Operation panel displays the various device operation and management settings available to the user, as shown in Figure 35.





Device

#### Figure 35: Device Operations panel.

# 4.4.1 Device and User Management

The nVoy Packet Broker multiple-user functionality enables network administrators, operators, and users to setup and manage the following tasks:

- LDAP Servers
- TACACS+ Servers (not supported in this release)
- RADIUS Servers (not supported in this release)
- Groups
- Users
- Debug Account
- Port Classes

Port Classes	LDAP Servers					0
All	Name	Host	Port Domain	Search Base	Operations	
LDAP Servers					New LDAP Serve	er
TACACS+ Servers						
RADIUS Servers	TACACS+ Servers					
L Users	Name	Host	Port	Key	Operations	
🧚 Debug Account					New TACACS+ Serve	er
	RADIUS Servers					0
	Name	Host	Port	Кеу	Operations	
					New RADIUS Serve	e <b>r</b>



#### Figure 36: Device and User Management window.

#### Accessing Device and User Management settings

1. Click **User and Device** in the Device Operation panel of the NVoy Packet Broker Web UI Dashboard tab.

The Device and User Management window appears, as shown in Figure 36.

#### **LDAP Servers**

LDAP (Lightweight Directory Access Protocol) is an Internet protocol that email and other programs use to look up information from a server. LDAP servers look up entries in a variety of ways. LDAP servers index all the data in their entries, with "filters" that select and return information on the user or group you want.

An example of a filter is one in which all users are sorted by a last name that begins with the letter "C", their email address, title, and description. LAPD filters all user accounts and returns only those accounts fitting the search criteria.

LDAP is not limited to contact information, or even information about people. LDAP is used to look up encryption certificates, pointers to printers, and other services on a network, and provides "single sign-on" permissions where one user password is shared between many services.

LDAP is appropriate for any kind of directory-like information, where fast lookups and less-frequent updates are the norm.





### Adding an LDAP Server

**1.** Click **LDAP Servers** in the left column of the Device and User Management window, as described in Figure 36.

The LDAP Servers window appears.

2. Click New LDAP Server...

The Add/Edit LDAP Server window appears, as shown in Figure 37.

Add/Edit LDA	P Server (x)
Server Name: Server IP: Port: Bind DN: Search Base:	OpenLDAP           192.168.0.198           389           dc=home,dc=network
	Scancel

Figure 37: Add/Edit LDAP Server window.

3. Enter the Server Name, Server IP, and Port.

The LDAP Server IP and Port are the most important parameters in the LDAP server profile. The user may choose to leave the **Bind DN** and **Search Base** dialog boxes.

4. Click OK.

The Login DN dialog box appears, as shown in Figure 38.



Figure 38: Login DN dialog box.

- 5. Enter the Login DN, Password, and Domain.
- 6. Click Login.



#### **TACACS+ Servers**

NOTE: Ve

TACACS+ servers are not supported in the nVoy Packet Broker version 1.0 release.

### Groups

Add/Edit User Group	User Group	Group Tab
RADIUS Servers	Name Administrator Guest	Operations  Construction  Construction  Construction  Construction  New Group
Add/Edit User Group	Groups	•
System Management:	UI	
Port Name           2406-19           2406-20           2406-21           2406-22           X05           X06	Port Location Slot1.Port1 Slot1.Port2 Slot1.Port3 Slot1.Port4 Slot1.Port5 Slot1.Port5	DEVICE OPERA     Firmware Mana     Save Configure     Download Con     Event Notificat     User Managem

Figure 39: Add/Edit User Group window.



#### Adding a new user group

**1.** Click **Groups** in the left column of the Device and User Management window, as described in Figure 39.

The Groups window appears.

2. Click New Group...

The Add/Edit User Group window appears, as shown in Figure 39.

- 3. Enter the group attributes, as follows:
  - Group Name Input the user group name in this field.
  - **System Management** User groups can be set up with one or more management roles and with assigned port access authority. There are three management roles available to the nVoy Packet Broker appliance:
    - User Management: Controls the accounts setup and assigns user access and privileges.
    - Device Management: Assigns access privileges to the device ports, storage devices, and other resources.

# CS7i

- Flow Management: Performs flow operation settings and operations.
- Packet Data Visibility Sets the data access authorization level:
  - Unlimited: User group has unlimited visibility to the packet data, for the purpose of data analysis, manipulation, and so on.
  - Network Layer (lower three layers): User group has limited visibility to the lower three layers of the packet data, where they can perform further operations.
  - Transport Layer (lower four layers): User group has limited visibility to lower four layers of the packet data, where they can perform further operations.
  - Number of Data Bytes: User group has limited visibility to the predefined number of packet data, where they can perform further operations.
  - Disabled: This setting does not apply to the nVoy Packet Broker appliance.
- **Port Access** Lists only those ports that a user group can access and manage. A user group can be assigned one, more than one, or all ports.



#### Users

	Device And User Management						(*)
	Port Classes	Users					۲
	E 🔄 All	Name	Domain	1	Group	Ope	rations
	LDAP Servers	admin	local		Administrator		[Edit]
	TACACS+ Servers	guest	local		Guest	[Edit]	(Delete)
Lisors	RADIUS Servers	Inerez dd/Edit User	local		Administrator	[Edit]	(Delete)
Users	Debug Account	dd/Edit User	User Name: Domain: Group: Password: First Name: Last Name: Email: Extension: Session Timeout:	Local Administrator		✓ ✓ ✓ ✓ Set Password ✓ ✓ ✓	(Delete)     (Detete)     (New User)     (New User)     (Solution)     (Solution)     (Solution)     (Solution)





### Adding a new user

- Click Users in the left column of the Device and User Management window. The Add/Edit User window appears, as shown in Figure 40.
- 2. Enter the following user attributes:

User Name	
Domain	Default set to <b>Local</b> .
Group	Select Administrator or Guest
Set Password	To create a new user password, click <b>Set</b> <b>Password</b> and enter the new password twice. Click <b>OK</b> .
Password	Encrypted password appears as dots.
First/Last Name	Self-explanatory
Email	Self-explanatory
Extension	Self-explanatory
Session Timeout	Select from 5 min, 10, 15, 30, or 1 hour.



#### **User Personality Colors**

You can assign different colors to user profiles for role management purposes (Figure 41).

Set User Person	ality	Edit/Edit Color Filter	Add New Color Bule
Add/Edit User			×
Summar	Name	String	Operation
Personality Colors			[Add New Color Rule]
Die Project	Add/Edit Col Filter Name: String: Display Co Foregre	or Filter	
		$\checkmark$	OK 🖉 Cancel
			V OK Ø Cancel

Figure 41: Assigning different colors to user profiles.

#### **User PCAP Viewer**

You can assign a variety of pcap viewer timestamps to the user profile (Figure 42).

The default time stamp format is hh:mm:ss.mmm (millisec).

User PCAP Vie	ewer		Time Stamp
Settings			Format
Add/Edit User			×
Summary Personality Colors PCAP Viewer	Time Stamp Secon Secon MicroS NanoS hh:mn hh:mn YY-MM	o Format d.MicroSecond d.NanoSecond second second n:ss.mmm (millisec) n:ss.uuuuuu (microsec) I-DD hh:mm:ss.mmm (millisec) I-DD hh:mm:ss.uuuuuu(microsec)	
			V OK 🖉 Cancel

Figure 42: Assigning pcap viewer timestamps.



#### **User Project Description**

You can assign a project descriptor such as project name, system under test, description, test ID format, and a report icon, as shown in Figure 43.

Project Set	ting	Set Project Information
Add/Edit User	Project Name: System Under Test Project Description Format of Test ID: Report Icon:	Information    Information    Information    Information    Information   Information  Informati

Figure 43: Assigning a project descriptor.

3. Click OK to add the new user.

## CS7i

### **Debug Account**

The Debug Account setting enables users to login through an account password to perform routine or diagnostic operations. Account access depends on the network connectivity. There is no additional tunnel or port opened in the network.

Dobug Account So	tting	Enable/Disable	
Debug Account Se	tting	debug account	
User Management		/	
User Management	ag Account UUG Account Status: UUG Account Status: UUG Account of the account of the origin this of the account of the origin this of the account of the origin the origin account of the disat same UI.  Please input password  Password: Repeat:	Operators, field engineers or InfiniCORE     to the support and password you     work connectivity. There is not any addit     bled by rebooting the nVoy Packet Record	support engineers, under your permission, is set to perform diagnosis operation. The access to ional tunnel or port is opened in your network. ter Or by turning off the 'Debug Account' through
		🧹 ОК 🖉 Са	(O Close

Figure 44: Debug Account window with a password request.

#### Enabling the debug account status

**1.** Click **Debug Account** in the left-hand column of the User Management window, as described in Figure 44.

The Debug Account window appears.

2. Set the Debug Account Status slider from COFF to CONCEPT.

The "please input password" prompt appears.

3. Enter your password twice.

The debug account status is enabled.





#### **Port Classes**

Port classes allow you to set individual ports to SPAN, Tool, or Bidirectional port classes, as shown in Figure 45. By default, all ports are bidirectional and traffic direction is determined by the domain connection.

All	Ports	SPAN Ports/Mirror Ports	Tool Ports	Bidirectional Ports	
IDAP Servers	Inf-load (0)	O Ingress	○ Egress	<ul> <li>Bidirectional</li> </ul>	
ACACS+ Servers	Inf-Load (1)	O Ingress	CEgress	<ul> <li>Bidirectional</li> </ul>	
RADIUS Servers	XG3	Ingress	◯ Egress	Bidirectional	
Groups	XG4	O Ingress	◯ Egress	Bidirectional	
L Users	XG5	O Ingress	◯ Egress	<ul> <li>Bidirectional</li> </ul>	
Pebug Account	XG6	◯ Ingress	◯ Egress	<ul> <li>Bidirectional</li> </ul>	
	XG7	Ingress	⊖ Egress	Bidirectional	
	XG8	Ingress	CEgress	Bidirectional	
	Vinca (0)	Ingress	C Egress	Bidirectional	
	Vinca (1)	◯ Ingress	C Egress	Bidirectional	
	XG11	Ingress	◯ Egress	<ul> <li>Bidirectional</li> </ul>	
	XG12	Ingress	◯ Egress	<ul> <li>Bidirectional</li> </ul>	
	XG13	◯ Ingress	C Egress	<ul> <li>Bidirectional</li> </ul>	

Figure 45: Port classes.



#### **RADIUS Servers**

	RADIUS servers are not supported in the nVoy Packet Broker
NOTE:	version 1.0 release.



### 4.4.2 Service Management

The Service Management utility sets up the HTTP/HTTPS web user interfaces, secure shell, SNMP access and auto refresh settings.



Figure 46: Service Management window.



#### Enabling Service Management settings

**1.** Click **Settings** in the Device Operation panel of the Web UI, as described in Figure 27.

The Service Management window appears, as shown in Figure 46.

2. Set any or all of the following Service Management sliders from

OFF to ON

- a. HTTP Web User Interface
- b. HTTPS Web User Interface
- c. Secure Shell
- d. SNMP Agent (Click Edit to modify agent, if required)
- 3. Click the Auto Refresh drop-down combo box and select the desired auto



Auto Refresh:



Figure 47: Auto Refresh

- 4. Click [Refresh] to refresh the Web UI internal data.
- 5. Click Close to exit.



### 4.4.3 Event Notifications

The Event Notifications setting enables the user to send special event notifications.

The nVoy Packet Broker supports the following messaging formats:

• **General** Every generated event moves to local storage first to prevent loss, after which a notification mechanism pushes the event out of the corresponding pipeline, as follows:

#### **Option 1:**

Keep events for: Displays how long the event should be stored.

#### Option 2:

**Clear events**: Describes an immediate action, which triggers an immediate removal of the events from the storage system. For example, when you select "Keep the past day" from the drop-down combo box, all the events older than the past day are removed.

- **SNMP Trap** The most widely used messaging format; designed to alert and monitor device activities across a network. Messages are sent to the manager by an agent when an issue needs to be reported (Figure 48).
- Email Event information is sent via email (Figure 48).
- **SysLog** Displays device system information and logs stored on a server. Users can filter events by Informative, Warning, and Error category (Figure 49).





### Setting up an event notification

#### 1. Click Event Notifications.

The Event Notification windows appear, as shown in Figures 48 and 49.

All	SNMP Trap		
Email SysLog	Enable:         Image: Community image: Co	Port: 162	
	Email		i.
	Enable: From: Username@ema User: Password:	I domain.com domain.com Use a comma to separate email addresses. hain.com Port: 445 om	

Figure 48: Event Notification window - SNMP Trap and Email.

	SysLog		•
🚓 SNMP Trap	Enable: Remote Server: Event Filter:	<ul> <li>✓</li> <li>10.0.0.1 Port: 514</li> <li>Informative   Warning   Error</li> </ul>	

Figure 49: Event Notification window - SysLog

- 2. Select the appropriate messaging format in the left column.
- **3.** Click the **Enable** check box in the right column and enter the required information in the dialog boxes.
- 4. Click **OK** to send the event notification.



Firmware Update

# 4.4.4 Device Firmware Management

The Firmware Management setting enables the user to view the device activation status, file size and operations.

To manage device firmware, go to the *Device Information* section of this chapter.

### Viewing device firmware status

#### 1. Click Firmware Update.

The Device Firmware Management window appears, displaying firmware Version, Activation Status, Size, Md5Sum, and Operations, as shown in Figure 50.

Version	Activation Status	Size (Byte)	Md5Sum	Operations	
nvoy-1.8.2.14	0	152187704	[Calculate]		
1.8.2.9	0	152223720	[Calculate]	[Activate] <a>[Del</a>	ete]
1.8.2.8	0	152060088	[Calculate]	V [Activate] 🔐 [Del	ete]
1.8.2.7	0	152010584	[Calculate]	✓[Activate]	ete]
1.8.2.6	0	151994024	[Calculate]	[Activate] <a>[Del</a>	ete]
1.8.2.11	0	152228456	[Calculate]	[Activate] <a>[Del</a>	ete]
1.8.2.10	0	152236584	[Calculate]	V [Activate] 🔐 [Del	ete]
nvoy-1.8.2.13	0	152183880	[Calculate]	[Activate] <a>[Del</a>	ete]
nvoy-1.8.2.12	0	152182248	[Calculate]	V [Activate] 🕋 [Del	ete]

Figure 50: Device Firmware Management window.

2. Click [Calculate] to calculate Md5Sum.

The window refreshes to display the Md5Sum, as shown in Figure 51.

	ware Management			
Version	Activation Status	Size (Byte)	Md5Sum	Operations
1.8.2.1		149708920	2653027f2038ce57e24e96105f09cc60	





3. Click Upload New firmware... to upload new firmware to the Web UI (optional)

The Update Firmware window appears, as described in Figure 52.

Update Firmware	×
Note: Uploading new firmware will overwrite any existing firmware image. Use the Choose File button to find the firmware file you want to upload. Firmware files extension of .ipkg eg., [product model]-1.0.1.ipkg. After the firmware is uploaded, the device will reboot to start update process. Please E off the device in the middle of update. Use console (baud rate 9600,8N1) to monitor the update. It usually will take 5 to 10 minutes to finish. Please select firmware to upload Choose File File Name: File Size:	have a file O NOT power e progress of
	d 🖉 Cancel

Figure 52: Update Firmware window.

	Once the firmware uploads, the device will reboot to start the update process.
NOTE:	DO NOT power off the device in the middle of an update.
	Use console (baud rate 9600,8N1) to monitor the update progress.

- 4. Click Choose File... and select the firmware file with an .ipkg file extension
- 5. Click Upload to upload the firmware.

The new firmware posts to the Device Firmware Management window. Uploading new firmware will overwrite any existing firmware image.

6. Click OK to exit.



# 4.4.5 Save Configuration

The Save Configuration setting allows you to preserve changes that have been made to the device configuration.



### Confirming a device configuration

1. Configure the device, as described further in the *Device Operation* section.

Once a device has been configured, the **Save Configuration** script changes from blue to red, indicating that the changes have been made.

2. Click [Apply] to save the configuration.

The Confirm window appears confirming that the configuration has been saved, as shown in Figure 53.

Confirm		۲
(i)	Configuration has been saved successfully.	
	13	
	V OK	

Figure 53: Configuration Save confirmation.

3. Click OK

Once the configuration is saved, the **Save Configuration** script changes from red to blue.



# 4.4.6 Download Configuration

The Download Configuration setting prompts the user to download and export system configurations.



### Downloading a system configuration (from Firefox web browser)

1. Click [Download] in the Devices Operation panel.

A text file prompt appears in the lower right corner of Web UI, saving the file as Opening <Packet\_Broker\_Name>-Config-File.txt as shown in Figure 54.

Opening nVoy Packet Bro	ker-Config-File.txt		
You have chosen to	open:		
nVoy Packet Bi	oker-Config-File.txt		
which is: Text from: http://1 What should Firefo	Document 0.6.0.141 x do with this file?		
• Open with	Notepad (default)		~
○ <u>S</u> ave File			
Do this <u>a</u> uto	matically for files like this	from now on.	
1154		OK	Cancel

Figure 54: Text file prompt

2. Click Save File to save the text file to your hard drive.

#### OR

- 3. Click **Open with** to open the text file in an editor.
- 4. Click File > Save to save the text file.

The configuration file is saved to the hard drive.



# 4.4.7 Upload Configuration

The Upload Configuration setting prompts the user to upload a configuration file to the server.

Update Configure	۲
Note: Upload configuration file will cause device to restart. Please select configuration file to upload: Choose File	
	Vpload 🖉 Cancel

Figure 55: Update Configure window.



### Uploading a configuration file

1. Click [Upload] in the Devices Operation panel.

The Update Configure window appears, as shown in Figure 55.

- 2. Click Choose File... and select the configuration file.
- 3. Click Upload to upload the configuration file.

**NOTE:** The device restarts after the configuration file has uploaded.



# 4.4.8 Reset Configuration

The Reset Configuration setting enables you to reset the device configuration to factory default.

Reset Configuration to Factory Default	8
Reset Port Configuration	
<ul> <li>Reset Domain Configuration</li> </ul>	
Reset User Configuration	
Reset Network Management Configuration	
[Reset All]	V OK 🖉 Cancel

Figure 55a: Resetting the device configuration to factory default.



### Resetting the configuration

1. Click Reset in the Devices Operation panel.

The Reset Configuration to Factory Default window appears, as shown in Figure 55a.

2. Check all four check boxes.

The window refreshes to display the default IP, netmask, and gateway addresses, as shown in Figure 55b.

Reset Configuration to Fact	ory Default	(*)
Reset Port Configura	tion	
Reset Domain Config	uration	
Reset User Configura	tion	
Reset Network Mana	gement Configuration	
Use factory del	fault network settings 🔘 Use current netwo	rk settings
IP Address:	192.168.0.240	
Netmask:	255.255.255.0	
Gateway:	192.168.0.1	
[Reset All]	<b>V</b>	OK 🐼 Cancel

Figure 55b: Displaying default IP, netmask, and gateway addresses.

3. Click OK.

The device configuration is reset to factory default.



## 4.4.9 Reboot Device

The Reboot Device setting prompts the user to reboot the device.

Confirm	(	×
<b>(</b> )	The current configuration will be lost when they are not saved.	
-	Please click "Save" to save the current configuration	
	<b>RISK OF CONFIGURATION LOSS</b>	
	Save 🖉 Continu	e

Figure 56: Reboot confirmation window.



### Rebooting the device

**CAUTION:** Save your current configuration before you reboot the device. You run the risk of losing all your information without first saving it.

**1.** Click **[Reboot]** in the Devices Operation panel.

The Confirm window appears, as shown in Figure 56.

- 2. Click Save to save your current configuration.
- 3. Click Continue to reboot the device.
### 4.4.10 Shutdown Device

The Shutdown Device setting enables the user to shut down the device operation.

Confirm Shutd	own System	۲
(i)	By clicking OK, device will be shutdown. Please confirm to shutdown the device.	
	OK Canc	el

Figure 57: Confirm Shutdown System window.



### Shutting down the device

- 1. Click [Shutdown] in the Devices Operation panel.
  - A Confirm Shutdown System window appears, as shown in Figure 57.
- 2. Click OK to confirm shutting down the device operation.

## 4.4.11 Health log

The Health logfile records the following real-time device statistics in one-minute intervals:

- Number of runtime crash files in the system
- Logfile creation date and time
- Logfile category (INFO)
- CPU temperature (degrees Celsius)
- CPU usage (percentage)
- Available memory (MB)
- System Health File Size in bytes.

Health Log				0
Recent log output:				
Found 0 runtime crash	files in system	n	10,00000000	^
# Logfile created on	2017-01-13 09:00	18 -0800 by logg	er.rb/31641	
I, [01-13 09:00#813]	INFO : Temp	(C): CPU 40 Usage	29% Memory Free 7505M	5
T. [01-13 09:02#813]	INFO : Temp	(C): CPU 40 Usage	5% Memory Free 7413MB	
I. [01-13 09:03#813]	INFO : Temp	(C): CPU 40 Usage	6% Memory Free 7412MB	
I, [01-13 09:04#813]	INFO : Temp	(C): CPU 40 Usage	6% Memory Free 7410MB	
I, [01-13 09:05#813]	INFO : Temp	(C): CPU 40 Usage	6% Memory Free 7408MB	
I, [01-13 09:06#813]	INFO : Temp	(C): CPU 40 Usage	4% Memory Free 7415MB	
I, [01-13 09:07#813]	INFO : Temp	(C): CPU 40 Usage	4% Memory Free 7414MB	
I, [01-13 09:08#813]	INFO : Temp	(C): CPU 40 Usage	5% Memory Free 7415MB	
T [01-13 09:09#813]	INFO : Temp	(C): CPU 40 Usage	78 Memory Free 7413MB	
I. [01-13 09:11#813]	INFO : Temp	(C): CPU 40 Usage	5% Memory Free 7410MB	
T. [01-13 09:12#8131	TNFO : Temp	(C): CPU 40 Usage	5% Memory Free 7410MB	~
				[Clear All
Log files:				
	Log File Name		File Size	Operations
	System Health		1068	(Download]
	Fil	e size in bytes		
	L			
				(X) Close





1. Click [Health Log] in the Devices Operation panel.

A Health Log window appears, as shown in Figure 58.

2. Click [Download] to save the health log (optional).



Figure 59: Health logfile prompt

A logfile prompt appears in the lower right corner of Web UI, saving the file as system\_health.<Logfile\_Number>.log as shown in Figure 59.

3. Click Save File to save the log file to a text file editor.

#### OR

- 4. Click Open with to open the logfile in a text file editor.
- 5. Click **File > Save** to save the logfile to a text file editor.

The health logfile is saved to the editor.

## 4.5 Service Status

The Service Status panel displays the real-time device status by user, system, domain, port, task, and so on, as shown in Figure 60.

SERVICE STATU	JS							
		•	2017-03	-22	- Þ [1	Foday] [E	xport Log]	
Services	Mar 22	Mar 21	Mar 20	Mar 19	Mar 18	Mar 17	Mar 16	
User	<b>C</b>		<b>e</b>	0	0	<b>C</b>		
ModLocator				0	0			
System			<b>C</b>	0	0			
HealthMon	0	0	0	0	0	0	0	
Console	0	0	0	0	0	0	0	
HTTP			<b>C</b>	0	0			Active event log with
HTTPS	0	0	0	0	0	0	0	no errors or warnings
SNMP	0	0	0	0	0	0	0	
Domain				0	0		0+	Active event log with
Port			<b>C</b>	0	0			errors or warnings.
Task	0	0	0	0	0	0	0	
DiskDrive	0	0	0	0	0	0	0+	Active service but with
nVoy				0	0			no event log.

Figure 60: Service Status panel.



### 4.5.1 Services Category

The Service Status lists log events into 13 categories. Clicking any tagged active vent log opens an Event Log Detail window, where event details can be reviewed.

#### User

The User Event Log Detail window displays events related to user ID, time, warning severity, and description, as shown in Figure 61.

All		×	····	,		
System	ID	Source	Time	Severity	Description	
FlowDirector-640P	99	User	2017-02-15 07:37:45	<ol> <li>Informative</li> </ol>	User admin login successfully	^
НТТР	107	User	2017-02-15 09:04:52	1 Informative	User admin login successfully	
ModLocator	108	User	2017-02-15 09:05:05	1 Informative	User admin password has been changed	
Domain	109	User	2017-02-15 09:05:05	<ol> <li>Informative</li> </ol>	User with username admin and domain local has been updated	
Port	1872	User	2017-02-21 13:20:03	<ol> <li>Informative</li> </ol>	User admin login successfully	
nVoy	2476	User	2017-02-22 13:00:37	1 Informative	User admin login successfully	
	2757	User	2017-02-23 08:06:54	<ol> <li>Informative</li> </ol>	User admin login successfully	
	3693	User	2017-02-26 11:51:19	1 Informative	User admin login successfully	
	4124	User	2017-02-27 13:30:20	<ol> <li>Informative</li> </ol>	User admin login successfully	
	5048	User	2017-02-28 12:50:02	<ol> <li>Informative</li> </ol>	User admin login successfully	
	6864	User	2017-03-02	<ol> <li>Informative</li> </ol>	UserVar login failed	~

Figure 61: User Event Log Detail window.

#### **ModLocator**

The ModLocator Event Log Detail window displays events related to traffic modules device ID assignment, time, warning severity and description, as shown in Figure 62.

All	Display F	Filter: 🗸 Informativ	ve 🗸 Warning	Error			
System	ID	Source	Time	Severity	Description		
FlowDirector-640P	5	ModLocator	2017-02-14 12:56:24	1 Informative	Start device registration	^	
🗎 НТТР	153	ModLocator	2017-02-15 09:35:17	1 Informative	Start device registration		
ModLocator	677	ModLocator	2017-02-16 12:31:27	<ol> <li>Informative</li> </ol>	Start device registration		
Domain	1164	ModLocator	2017-02-21 07:06:02	1 Informative	Start device registration		
Port	1265	ModLocator	2017-02-21 08:33:58	<ol> <li>Informative</li> </ol>	Start device registration		
📄 nVoy	1372	ModLocator	2017-02-21 08:45:57	1 Informative	Start device registration		
	1534	ModLocator	2017-02-21 09:42:56	<ol> <li>Informative</li> </ol>	Start device registration		
	1618	ModLocator	2017-02-21 09:51:25	1 Informative	Start device registration		
	2160	ModLocator	2017-02-22 09:45:13	1 Informative	Start device registration		
	2244	ModLocator	2017-02-22 09:52:00	1 Informative	Start device registration		
	2398	ModLocator	2017-02-22	1 Informative	Start device registration	~	

Figure 62: ModLocator Event Log Detail window.

#### System

The System Event Log Detail window displays events related to system booting, running status, shutdown, and reboot, as shown in Figure 63.

All	Display F	ilter: 🗸 Informa	itive 🗸 Warnin	g 🗸 Error		
System	ID	Source	Time	Severity	Description	
FlowDirector-640P	0	System	2017-02-14 12:56:16	<ol> <li>Informative</li> </ol>	System is starting	^
📄 НТТР	75	System	2017-02-14 12:56:33	1 Informative	NFS sharing has been stopped.	
ModLocator	76	System	2017-02-14 12:56:33	<ol> <li>Informative</li> </ol>	SNMP service has been stopped.	
Domain	146	System	2017-02-15 09:34:03	1 Informative	Firmware upgrade to version fd640p-1.8.2.9 completed.	
Port	148	System	2017-02-15 09:35:08	<ol> <li>Informative</li> </ol>	System is starting	
nVoy	222	System	2017-02-15 09:35:25	1 Informative	NFS sharing has been stopped.	
	223	System	2017-02-15 09:35:25	1 Informative	SNMP service has been stopped.	
	224	System	2017-02-15 09:35:25	1 Informative	Start domain with name "VW_XG24_XG26" since it is enabled	
	671	System	2017-02-16 12:30:24	<ol> <li>Informative</li> </ol>	Firmware upgrade to version fd640p-1.8.2.10 completed.	
	672	System	2017-02-16 12:31:18	1 Informative	System is starting	
	747	System	2017-02-16	<ol> <li>Informative</li> </ol>	NFS sharing has been stopped.	~

Figure 63: System Event Log Detail window.

#### HealthMon

The HealthMon category displays the device running status. There is no Event Log Detail window associated with the HealthMon category.

For more information on health logs, go to Section 4.4.11 *Health Log*.

#### Console

The Console category displays the system console interface status. There is no Event Log Detail window associated with the Console category.

For more information on consoles, go to Appendix 3: *Hardware Specifications.* 



#### HTTP

The HTTP Event Log Detail window displays events related to HTTP traffic and service, as shown in figure 64.

All	Display I i		tive Varinit			
System	ID	Source	Time	Severity	Description	
FlowDirector-640P	2	НТТР	2017-02-14 12:56:18	<ol> <li>Informative</li> </ol>	Web Service is restarted. HTTP: true	^
НТТР	3	нттр	2017-02-14 12:56:18	<ol> <li>Informative</li> </ol>	Web Service is restarted. HTTPS: true	
ModLocator	150	HTTP	2017-02-15 09:35:10	<ol> <li>Informative</li> </ol>	Web Service is restarted. HTTP: true	
Domain	151	HTTP	2017-02-15 09:35:10	<ol> <li>Informative</li> </ol>	Web Service is restarted. HTTPS: true	
Port	674	HTTP	2017-02-16 12:31:20	<ol> <li>Informative</li> </ol>	Web Service is restarted. HTTP: true	
hVoy	675	HTTP	2017-02-16 12:31:20	<ol> <li>Informative</li> </ol>	Web Service is restarted. HTTPS: true	
	1161	HTTP	2017-02-21 07:05:56	<ol> <li>Informative</li> </ol>	Web Service is restarted. HTTP: true	
	1162	НТТР	2017-02-21 07:05:56	<ol> <li>Informative</li> </ol>	Web Service is restarted. HTTPS: true	
	1262	НТТР	2017-02-21 08:33:51	1 Informative	Web Service is restarted. HTTP: true	
	1263	НТТР	2017-02-21 08:33:51	<ol> <li>Informative</li> </ol>	Web Service is restarted. HTTPS: true	
	1369	НТТР	2017-02-21	<ol> <li>Informative</li> </ol>	Web Service is restarted. HTTP: true	~

Figure 64: HTTP Event Log Detail window.

#### **HTTPS**

The HTTPS category displays events related to HTTPS traffic and service. There is no Event Log Detail window associated with the HTTPS category.

For more information on HTTPS, go to Section 4.4.2 *Service Management*.

#### **SNMP**

The SNMP category displays the network management status. There is no Event Log Detail window associated with this category.

For more information on SNMP, go to Section 4.4.3 *Event Notifications.* 



#### Domain

The Domain Event Log Detail window displays events related to creating, initializing, running, and executing a capture domain, as shown in Figure 66.

All	Display I	Filter:	native 🗸 Wa	rning V Err	ror		1
System	ID	Source	Time	Severity	Description		
FlowDirector-640P HTTP ModLocator User Domain Port Aver	102	Domain	2017-02-15 08:59:26	1 Informative	Domain runner enters execution state	^	
	103	Domain	2017-02-15 08:59:29	1 Informative	Domain NewConfig1 is created and alive		
	104	Domain	2017-02-15 08:59:29	1 Informative	Domain NewConfig1 is initializing		
	105	Domain	2017-02-15 08:59:30	() Informative	Domain NewConfig1 is running		
	110	Domain	2017-02-15 09:06:40	() Informative	Domain NewConfig1 stops running with reason Stop Request From Operator		
I NOY	111	Domain	2017-02-15 09:06:40	() Informative	Domain runner enters execution state		
	112	Domain	2017-02-15 09:06:43	() Informative	Domain Ingress_Port_Groups_Testing is created and alive		
	113	Domain	2017-02-15 09:06:43	() Informative	Domain Ingress_Port_Groups_Testing is initializing		
	114	Domain	2017-02-15 09:06:43	() Informative	Domain Ingress_Port_Groups_Testing is running		
	115	Domain	2017-02-15 09:11:31	() Informative	Domain Ingress_Port_Groups_Testing stops running with reason Stop Request From Operator	U	

Figure 66: Domain Event Log Detail window

#### Port

The Port Event Log Detail window displays events related to traffic port assignment, reservation, name changes, and running status, as shown in Figure 67.

IIA 📇 I	Display Fil	ter: 🗹 Informative	✓ Warning	Error		
Th System	ID	Source	Time	Severity	Description	
FlowDirector-640	590	Port	2015-08-17 16:51:40	<ol> <li>Informative</li> </ol>	Change port name from XG30 to iLd226-XG1	
📑 нттр	591	Port	2015-08-17 16:51:49	<ol> <li>Informative</li> </ol>	Change port name from XG32 to iLd226-XG2	
ModLocator	1999	Port	2015-08-25 03:21:59	<ol> <li>Informative</li> </ol>	Port 3240-3 switches to TAP and Mirror mode	
🕒 User	2000	Port	2015-08-25 03:22:24	<ol> <li>Informative</li> </ol>	Port 3240-4 switches to TAP and Mirror mode	
Domain	2001	Port	2015-08-25 03:22:55	Informative	Port 3240-3 switches to TAP and Mirror mode	
Port	2166	Port	2015-08-25 23:06:17	<ul> <li>Informative</li> </ul>	Change port name from XG1 to 240G-20	
nVoy	2167	Port	2015-08-25 23:06:33	Informative	Change port name from 3240-1 to 240G-20	
	2168	Port	2015-08-25 23:06:43	<ul> <li>Informative</li> </ul>	Change port name from 240G-20 to 240G-19	
	2169	Port	2015-08-25 23:06:56	Informative	Change port name from XG3 to 240G-21	
	2170	Port	2015-08-25 23:07:19	<ol> <li>Informative</li> </ol>	Change port name from 3240-2 to 240G-22	
	2171	Port	2015-08-25 23:07:48	<ol> <li>Informative</li> </ol>	Change port name from XG19 to 240G-23	
	2172	Port	2015-08-25 23:07:56	<ol> <li>Informative</li> </ol>	Change port name from XG20 to 240G-24	

Figure 67: Port Event Log Detail window.

#### Task

The Task category displays events related to task status and management. There is no Event Log Detail window associated with the Task category.

There are many task categories to choose from. Go to Section 3.2.1 *Web UI tabs* and select the appropriate tab for more detailed task information.

#### **DiskDrive**

The DiskDrive category displays events related to hard disk drive storage. There is no Event Log Detail window associated with the DiskDrive category.

For more information on disk drive storage, go to Section 4.3 *Device Information*, or Chapter 8: *Syslog Tab.* 

#### nVoy

The nVoy Packet Broker Event Log Detail window displays events related to device configuration, activation, initializing, loading, power supply status, fan status, and so on, as shown in Figure 70.

All	Display Fil	ter: 🔽 Informative	Warning	Frror				
The System	ID	Source	Time	Severity	Description			
FlowDirector-640P	1368	nVoy	2017-02-21 08:45:49	1 Informative	Automatically sync time with internet time server time.nist.gov disabled			
🚹 НТТР	1371	nVoy	2017-02-21 08:45:57	1 Informative	Automatically sync time with internet time server time.nist.gov disabled			
ModLocator User Domain	1373	nVoy	2017-02-21 08:45:57	1 Informative	Port XG1 SFP module is unplugged			
	1374	nVoy	2017-02-21 08:45:57	1 Informative	Port XG2 SFP module is plugged. New module type: SFP/SFP+/SFP28 vendor: AVAGO			
Port	1375	nVoy	2017-02-21 08:45:57	Informative	Port XG3 SFP module is plugged. New module type: SFP/SFP+/SFP28 vendor: FINISAR CORP.			
nVoy	1376	nVoy	2017-02-21 08:45:57	1 Informative	Port XG4 SFP module is plugged. New module type: SFP/SFP+/SFP28 vendor: AVAGO			
	1377	nVoy	2017-02-21 08:45:57	1 Informative	Port XG5 SFP module is plugged. New module type: SFP/SFP+/SFP28 vendor: FINISAR CORP.			
	1378	nVoy	2017-02-21 08:45:57	1 Informative	Port XG6 SFP module is plugged. New module type: SFP/SFP+/SFP28 vendor: FINISAR CORP.			
	1379	nVoy	2017-02-21 08:45:57	1 Informative	Port XG7 SFP module is plugged. New module type: SFP/SFP+/SFP28 vendor: FINISAR CORP.			
	1380	nVoy	2017-02-21 08:45:57	1 Informative	Port XG8 SFP module is plugged. New module type: SFP/SFP+/SFP28 vendor: FINISAR CORP.			
	1381	nVoy	2017-02-21 08:45:57	() Informative	Port XG9 SFP module is unplugged	~		

Figure 70: nVoy Packet Broker Event Log Detail window.



### 4.5.2 Export Log

Event logs can be exported to an external file through the [Export Log] link.

ERVICE STAT	าปร						
Services User	Event Log Export Window		Event Log Export          2015-08-29           Today        Window          Aug 26         Aug 25         Aug 24           Aug 26         Aug 25         Aug 24				
ModLocato	or 🚱	<b>R</b>		0		Expor	t Log
System		ml, 🔨		0			
HealthMor	Event Log Exp	port					
Console	Select Date: Services:	From 2015-08-27	To .	2015-08-28	T		
HTTP		[Uncheck All]					
HTTPS							
SNMP							
Domain							
Port							
Task							
DiskDrive							
FlowDirector-						-	

Figure 71: Event Log Export window.



#### Exporting an event log

**1.** Click **[Export Log]** in the upper-right hand corner of the Service Status panel, as shown in Figure 60.

An Event Log Export window appears, as shown in Figure 71.

2. Enter the event log export date range.

Check Others for services, otherwise leave unchecked.

3. Click Export.

The event log is exported.



### 4.5.3 Event Severity

The service status log events in every Event Log Detail window are categorized into three severity levels according to the nature of the events, shown in Table 4.

Severity	Description
Informative Message	An informative message is just that - information about execution. It is never used to indicate problems. Only general information, such as system is starting, storage configuration loaded, disk mount successfully, is found in informative messages.
Warning Message	Warning messages are generated when a task or operation experiences a situation that may cause a problem during its execution or when the result may not be what you expect. You can take action when a warning is returned, such as canceling the task or by creating another configuration setting.
Error Message	Error messages indicate a critical event, which may prevent a task or operation from executing. Errors are generated when one or more parameters have invalid values or when a critical execution process or routine has failed.

Table 4: Event log severity categories.

## 4.6 Flow Domains

The Flow Domains panel lists all domains created through flow operations by domain name, ingress ports, egress ports, status, and available operations, as shown in Figure 72. Other domain operations include edit, activate/deactivate, monitor, display, and delete.



Figure 72: Flow Domains panel.

#### **Domain Name**

Displays the name applied to the new domain.

#### **Ingress Ports**

Shows ingress ports associated with the domain, which can be edited through the Edit Domain operation.

#### **Egress Ports**

Shows egress ports associated with the domain, which can be edited through the Edit Domain operation.

#### **Domain Status**

There are two icons that indicates the domain current activate status.

😁 🕗 : Show domain running status. 😚 : is activated; 🙆 : is inactivated.



#### **Domain Operations**

Lists all available domain operations such as edit domain, monitor statistics, real-time traffic plot, activate/deactivate, delete domain (Figure 73). The available domain operations are described in detail in this section.

	Edit Domain
Q	Deactivate
	Show Brief Statistics
-	Monitor
	Duplicate
0	Download
~	Hide Realtime Plot
1	Delete

Figure 73: Available domain operations.

### 4.6.1 Edit Domain

The Edit Domain operation edits domain ingress ports, domain egress ports, and domain operation and topology, as shown in Figure 74. It can also edit interface and domain properties.



Figure 74: Edit Domain operation.

### 4.6.2 Activate/Deactivate Domain

The domain exists in two states, represented by two distinct command buttons:

💁 : the domain is INACTIVE, click to ACTIVATE the domain.

🖼 : the domain is ACTIVE, click to DEACTIVATE the domain.



### 4.6.3 Show Brief Statistics

The Show Brief Statistics operation displays the real-time Rx/Tx packets, bytes per second, bytes, and Rx errors for a given domain, as shown in Figure 75.

Domain JEM S	imple TAP Statistic													0
Pause Upd	ate 🜉 Select Ports	🔝 Monitor	Update Status:	<b>1</b> 2s										
Dente	Receive P	ackets	Receive	Bps	Receive E	Bytes	Receive I	Errors	Transmit P	Packets	Transmit	Bps	Transmi	it Bytes
Ports	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total
Port 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T7.P0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T7.P1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 75: Domain Show Brief Statistics operation.

#### **Update Status**

Displays a statistics progress bar at a given refresh rate. To pause, check the **Pause Update** check box.

#### **Select Ports**

Allows you to select a subset of ports that you want to monitor.

#### **Monitor Real-time Interface Statistics**

For more information on monitoring statistics, proceed to the following section, *Monitoring realtime interface statistics* 

### 4.6.4 Monitor Real-time interface statistics

The Monitor Real-time Interface Statistics operation displays and updates (per the set refresh rate) the domain interface module and status, real-time packet statistics, and configuration status, as shown in Figure 76.

forderse Bill Sine -	a lonar b	Apartus Wejsie 🔹			Toolbar	e turne	Interface Mo	dule and Sta	itus
- C BLARCIN	2.548.0.232~	canitor Ment Mon	anid-VM_240	5-20,968		_		1	
:521									
A Pesence 5 in Sec. (	Tare lota	Citele Guines and	Note Int. 🕐	the Deterface House	Hele Interface Status (1996) Interface Database	Mite Domain Config 14 Aus	el Counters To Zero 🖉 Add Kall Purt		
Full Rates	24	60 28 60 2			Interface Medule				
Calife 3D		AAA			Interface Module				
Column Highlighter	/	-	/	-		Present	true		true
face Mable	_		_			Type	SEP+	SEP	1000Base-CX
Present		tue itra	199 20	March 1		Vendor	Amohenol		Amoheool
Vender	87	(hand)	875	Partol .		Contal	40511200022012	1001	2480012058
-	171	540002	801	4040		Serial	MFT11200022F72	APT	2400013000
day then						PN	571540002	6	10540001
Admin		THE .							
Code Second	-	(M		10	Interface Status				
too Midday						Admin	Pri se		true
Put Rane	24	10.28				Link	0		0.0
Castor	Rate	total.	R.du	Total .		LINK	On		Un
References	812.024	817 414 440	412.045	817.016.244		Speed	10Gb		10Gb
RailualPhilden(P				and a state of the					
Relationship	\$11.10x	817,028,849	411.143	807,018,216	-				
Balastino dha									
Rebuiltin					RyllestPlets	032 034	607 000 640	032.063	607 000 26
Radial Personal P					TOAD COLO NO	2221024	00710027012	552,005	0077002720
East of Parality					RxUcstPktsNonIP	0	0	0	0
Rafford Party					in the second second	~		*	~
Rafford Frankraut					RxUcstPktsIPv4	932.034	607,009,649	932,063	607,009.26
Ruman and					the second se				
Reflection Park									
Rehardshelding				-					
And a state of the	erise(1)s	11,000,100,000	PCHL418	10.000,000,000					
Tabuthhaddan (7							1		
Reduction and Party									
Ruburbanative									
<b>ExPlosition-Audit</b>							1		
References						Sec. Street		and the second second	
Reflection and Pro-						Real-ti	me nacket statis	tics by type	S
Referenties						incur u	ine puonet statis	and all the	-
Refreentides						1			

Figure 76: Monitor Real-time Interface Statistics operation window.

### **Toolbar Settings**

Refresh Frequency: 5 Sets the refresh frequency in 1, 5, 15, 30 or 60-second intervals, as show below.



Pause Update : Click the **Pause Update** check box to temporarily stop interface statistics from updating; uncheck the check box to resume updating interface statistics.

Hide Counters With Value Zero : Click the **Hide Counters with Zero Value** check box to hide interface statistics with a zero value; uncheck the check box to display all interface statistics types.

Hide Interface Module : Click the Hide Interface Module check box to hide interface module information such as presence, type, vendor, serial number and part number; uncheck the check box to display interface module information, as shown below.

Interface Module		
Present	true	true
Туре	SFP+	SFP 1000Base-CX
Vendor	Amphenol	Amphenol
Serial	APF11200022PJ2	APF124800130GB
PN	571540002	610540001

Hide Interface Status : Click the Hide Interface Status check box to hide interface status information such as admin status, link status, and speed; uncheck the check box to display interface status information, as shown below.

Interface Status		
Admin	true	true
Link	On	On
Speed	10Gb	10Gb

Hide Interface Statistics : Click the Hide Interface Statistics check box to hide interface statistics; uncheck the check box to display interface statistics.

### :S7

Hide Domain Config : Click the Hide Domain Config check box to hide the domain configuration; uncheck the check box to display the Domain Configuration window, as shown in Figure 77.

Domain Config				
Port Name	240G-20		XG8	
	Type Egress	Туре	Ingress	
Dort	Speed SFP+: 10Gbps Full Duplex	Speed	SFP+: 10Gbps Full Duplex	
POIL		Slice	Disable	
		Tag	Disable	
	PPS PPS	:607,009,649 :55,086,326,804	XG8	5:607.009.242 5:55,086,331,143
	The second secon	:607,009,266 :55,086,333,470	240G-21	0 5:607,008,107 5:55,086,227,282
Data Path				

Figure 77: Domain Configuration window.

Reset Counters To Zero : The Reset Counters to Zero command button resets all interface statistics counters to zero.

Add/Edit Port : The Add/Edit/Delete command button adds, edits, and deletes ports.



#### Adding a port

1. Click the Add/Edit/Delete command button.

The **Select Port** window appears, displaying a map of all ports.

**2.** Click the port to be added.

The port is highlighted, as shown in Figure 78.

100	105	100 100	105		16406	16 106	105	100	100	100	100	-	105	10	100	-	G 🔲 10G	10	100	405	
2406-19	240G-21 XG5	400-XG5	XG9	Highlighted	port	-23 LoopB1	LoopB2	XG25	XG27	XG29	XG31	XG33	XG35	XG37	XG39	XG41	XG43	XG45	XG47	XLG49	XLG51
105	100	100 100 100	100	100 100 10	100 IIII 100	16 10 196	100	100	100	100	-	-	100		-	-	s 📰 100	100	E 100		-

Figure 78: Select Port window.

3. Click OK.

The port is added and displayed, as shown in Figure 79.



FlowDirector-640	× 🛛 🕅 Domain Me	onitor: VM_240 ×	)						
→ C & https://1	92.168.0.232/m	ionitor.html?dom	ainid=VM_240	G-20_XG8	1				
CO: NVOY P	ACKET BROKER	_							
JOPTMAN									
sh Frequency: 5 💌 Sec	Pause Update	Hide Counters Wi	th Value Zero 🔽	Hide Interface Module	Hide Interface Status	Hide Interface Statistics	Hide Domain Config	X Reset Counters To Zero	Add/Edit
Port Name	240	G-20	)	(68					
System Name	X	G2	,	(G8					
Column Highlighter			0						
rface Statistics		2.22		236					
Port Name	Rate Rate	G-20 Total	Pata	(G8					
Version	0	10	0	10					
RxUcstPkts	932,034	607,009,649	932,063	607,009,266					
RxUcstPktsIPv4	932,034	607,009,649	932,063	607,009,266					
RxUcstOctetsIPv4	84,580,129	55,086,326,804	84,583,418	55,086,333,470					
Rx64Pkts	699,035	455,255,341	699,052	455,254,676					
Rx128to255Pkts	232,996	151,754,300	233,004	151,754,584					
RxGoodOctets	84,580,129	55,086,326,804	84,583,418	55,086,333,470					
RxOctetsIPv4	84,580,129	55,086,326,804	84,583,418	55,086,333,470					
RxPriorityPkts.0	932,029	607,009,634	932,055	607,009,257					
RxPriorityOctets.0	84,580,556	55,086,326,826	84,581,687	55,086,331,675					
TxPriorityOctets.0	84,579,936	55,086,227,282	84,582,201	55,086,331,143					
TxUcstPkts	932,025	607,008,107	932,046	607,009,242					
TxUcstPktsIP	932,025	607,008,107	932,046	607,009,242					
TxUcstOctetsIP	84,580,343	55,086,227,090	84,581,431	55,086,329,732					
Tx64Pkts	699,031	455,253,807	699,045	455,254,657					
Tx128to255Pkts	232,992	151,754,294	232,998	151,754,579					
TxOctets	84,579,936	55,086,227,282	84,582,201	55,086,331,143					
FloodForwardedPkts	932,025	607,008,111	932,047	607,009,247					
ParseErrDropPkts	1	1,519	0	0					
timestamp	1,007,657	25,241,403,592	1,007,660	25,241,403,228					

Figure 79: Port interface statistics.

Split

: The **Split** command button enables the user to run several real-time simulation tests on different interfaces the same time, as shown in Figure 80.

lefresh Freq	uency: 5 💌 Sec	Pause Update	Hide Counters Wit	h Value Zero Hid	e Interface Module	Refresh Freq	uency: 5 🔻 Sec 🗌	Pause Update	Hide Counters W	Ith Value Zero Hid	e Interface Modul
	Port Name	Po	n 1	T8	PO		Port Name	Po	et 1	T8.	.P0
	System Name	ж	327	×	G5		System Name	XI	527	X	G5
	Cable ID						Cable ID				
	Column Highlighter						Column Highlighter				
nterface Me	dule					Interface Me	odule				
	Present	fa	lse	tr	ue		Present	fa	lse	tr	ue
	Type	N	/A	10G8	ase-SR		Туре	1	l/A	10GB	ase-SR
	Vendor	N	/A	FINISA	R CORP.		Vendor	•	I/A	FINISAJ	R CORP.
	Serial	N	/A	MWC	31PFX		Serial	5	I/A	MWG	J1PFX
	PN	N	//A	FTLX85	71D3BCL		PN	•	I/A	FTLX857	/1D38CL
nterface Sta	itus					Interface Sta	itus				
	Admin	tr	we	tr	ue .		Admin	t	rue.	tr	ue .
	Link	c	Diff	C	NI.		Link	(	ThC	0	HE
	Speed	N	/A	N	I/A		Speed	N	I/A	N	/A
nterface Sta	tistics					Interface Sta	tistics				
	Port Name	Por	rt 1	TB	JP0		Port Name	Po	et 1	18.	PO
	Counter	Rate	Total	Rate	Total	-	Counter	Rate	Total	Rate	Total
	Rubytes	0	0	0	0		RxBytes	0	0	0	0
	RuPkts	o	0	0	0		RuPkts	0	0	0	0
	TxBytes	0	0	1,600,000,000	3,200,000,000		TxBytes	0	0	1,600,000,000	3,200,000,00
	TxPkts	0	0	25,000,000	50,000,000		TxPkts	0	0	25,000,000	50,000,000
	RxUnicastPlkts	0	0	0	0		RxUnicastPkts	0	0	0	0
	RoMulticastPkts	0	0	0	0		RxMulticastPkts	0	0	0	0
	the second state of the second s						Contraction of the contraction of the				

Figure 80: Split-screen representation of two interfaces in real-time.



#### Multiple operations example:

The toolbar can also group operations together. In the is example we have selected **Pause Update**, **Hide Counters with Value Zero**, **Hide Interface Module**, **Hide Interface Status**, and **Hide Domain Config** to demonstrate NVoy Packet Broker Web UI flexibility (Figure 81).

-> C (8 berps://1	92.168.0.232/m	nonitor.html?dom	ainid=VM_24	0G-20_XG8					0
CSPi 🕬	PACKET BROK	ER							
h Frequency: 8 + Sec	Pause Update	Hde Counters Wi	th Value Zero 🔅	Hide Interface Module	Hide Interface Status	Hide Interface Statistics	Hide Domain Config	a Reset Counters To Zero	Add/Edit Port
Port Name System Name Cable ID	240	G-20 G2		XG8 XG8					
Column Highlighter	1		0						
face Datistics									
Port Name	240	G-20		XGB					
Counter	Rate	Total	Rate	Total					
Version	0	10	0	10					
RaticstPicts	932,034	607,009,649	932,063	607,009,266					
RatUcstPictsIPv4	932,034	607,009,649	932,063	607,009,266					
RxUcstOctetsIPv4	84,580,129	55,086,326,804	84,583,418	55,086,333,470					
Ra64Pkts	699,035	455,255,341	699,052	455,254,676					
Rx128to255Pkts	232,996	151,754,300	233,004	151,754,584					
RxGoodOctets	84,580,129	\$5,086,326,804	84,583,418	\$5,086,333,470					
ReOctetsIPv4	84,580,129	55,086,326,804	84,583,418	55,086,333,470					
RxPriorityPits.0	932,029	607,009,634	932,055	607,009,257					
RxPriorityOctets.0	84,580,556	55,086,326,826	84,581,687	\$5,086,331,675					
TxPriorityOctets.0	84,579,936	55,085,227,282	84,582,201	55,066,331,143					
TatlestPicts	932,025	607,008,107	932,046	607,009,242					
TatlestPictsIP	932,025	607,008,107	932,046	607,009,242					
TxUcstOctetsIP	84,580,343	55,085,227,090	84,581,431	55,086,329,732					
Tx64Pkts	699,031	455,253,807	699,045	455,254,657					
Tx128to255Pkts	232.992	151,754,294	232,998	151,754,579					
TaOctets	84,579,936	55,086,227,282	84,582,201	55,086,331,143					
FloodForwardedPkts	932,025	607,008,111	932,047	607,009,247					
ParseErrDropPkts	1	1.519	0	0					
timestamp	1,007,657	25,242,403,592	1,007,660	25,241,403,228					

Figure 81: Interface group operations example.

## 4.6.5 Display Real-time Plot

The **Real-Time Plot** command button displays the real-time traffic plot and port statistics, as shown in Figure 82.

Figure 82: Real-time traffic plot and port statistics.



### 4.6.6 Delete Domain

The Delete Domain operation deletes the flow domain.



#### Deleting a domain

1. Click the **Operations** pull-down menu in the Flow Domain panel and select **Delete Domain**.

A Confirm window appears, as shown in Figure 83.

2. Click OK to delete the flow domain.



Figure 83: Confirming domain deletion.

# 4.7 Real-Time Domain

The Real-time Domain panel displays real-time plots and traffic statistics of active running domains, as shown in Figure 84.

operations		7	
A 20 AV A 20 Epons 	10.00 Holds	× Att Carlos	MOU 20         Muto         Fourier           control         01/21/21         0.01/21           control         01/21         0.01/21           control         01/21         0.01/21           control         01/21/21         01/21           control         01/21/21         01/21           control         01/21/21         01/21           control         01/21/21         01/21
	240G-20	Rate	Total
Real-time domain traffic plot	RxPkt	973.44K	9.13G
	RxBytes	706.72M	6630.62G
Real-time domain traffic plot	RxPkt	973.44K	9.13G
	RxBytes	706.72M	6630.62G
	TxPkt	973.44K	9.13G
Real-time domain traffic plot	RxPkt	973.44K	9.13G
	RxBytes	706.72M	6630.62G
	TxPkt	973.44K	9.13G
	TxBytes	88.34M	828.83G
Real-time domain traffic plot	RxPkt	973.44K	9.13G
	RxBytes	706.72M	6630.62G
	TxPkt	973.44K	9.13G
	TxBytes	88.34M	828.83G
	CongDrop	0	0
Real-time domain traffic plot	RxPkt	973.44K	9.13G
	RxBytes	706.72M	6630.62G
	TxPkt	973.44K	9.13G
	TxBytes	88.34M	828.83G
	CongDrop	0	0
	XG8	Rate	Total
Real-time domain traffic plot	RxPkt	973.44K	9.13G
	RxBytes	706.72M	6630.62G
	TxPkt	973.44K	9.13G
	TxBytes	88.34M	828.83G
	CongDrop	0	0
	XG8	<b>Rate</b>	Total
	RxPkt	973.45K	9.13G
Real-time domain traffic plot Real-time packet statistics by port	RxPkt RxBytes TxPkt TxBytes CongDrop XG8 RxPkt RxBytes	973.44K 706.72M 973.44K 88.34M 0 <b>Rate</b> 973.45K 706.73M	9.13G 6630.62G 9.13G 828.83G 0 Total 9.13G 6630.60G
Real-time domain traffic plot Real-time packet statistics by port	RxPkt RxBytes TxPkt TxBytes CongDrop XG8 RxPkt RxBytes TxPkt	973.44K 706.72M 973.44K 88.34M 0 <b>Rate</b> 973.45K 706.73M 973.45K	9.13G 9.13G 9.13G 828.83G 0 Total 9.13G 6630.60G 9.13G

Figure 84: Real-time Domain panel.

## 4.7.1 Real-time Plot Area

The real-time domain traffic plot displays Ingress and Egress plots in bit-per-second format (Bps) with congestion packets in packet per second format (CongDropPkts), as shown in Figure 85.



Figure 85: Real-time domain traffic plot displays.

### 4.7.2 Real-time Port Statistics

The real-time statistics of ports are displayed below. In this example, the table lists the following real-time port statistics from port **240G-20**, as shown in Figure 86.

#### **RxPkt**

The port receive packet rate in packet per second and total packets.

#### **RxBytes**

The port receive bytes rate in bytes per second and total bytes.

#### TxPkt

The port transmit packet rate in packet per second and total packets.

#### TxBytes

The port transmit packet rate in bytes per second and total bytes.

#### CongDrop

The port congestion packet rate in packet per second and total packets.

240G-20	Rate	Total	-
RxPkt	973.44K	9.13G	
RxBytes	706.72M	6630.62G	
TxPkt	973.44K	9.13G	
TxBytes	706.72M	6630.62G	
CongDrop	0	0	
XG8	Rate	Total	
RxPkt	973.45K	9.13G	
RxBytes	706.73M	6630.60G	
TxPkt	973.45K	9.13G	
Typyton	00 2/M	010 020	

Figure 86: Real-time port statistics display (example).



### 4.7.3 Domain Operations

The Real Time Domain Display panel, enables the user to monitor, edit domain configurations, check domain topology maps, deactivate, and delete operations, all from the Operations toolbar, as shown below.

#### **Operations Toolbar**

🔤 Monitor 🔀 Edit Config	🔭 Topology Map	Q	窗
-------------------------	----------------	---	---

Monitor...:: The **Monitor...** command button launches the Domain Monitor window, displaying the domain's interface modules, status, interface statistics, and domain configuration in real-time at a set refresh rate.

Edit Config... : The Edit Config... command button launches the Domain Data Path Designer window, displaying domain ingress ports, egress ports, and domain topologies, all of which can be edited.

Topology Map....:: The **Topology Map...** command button displays the selected domain data path topology, as shown in Figure 87.



Figure 87: Selected domain data path topology.



sthe domain is ACTIVE, click to DEACTIVATE the domain.

Eletes the flow domain.

# 5 Interfaces Tab

The Interfaces tab presents detailed information about interfaces ports, as shown in Figure 88.

Interfaces	s List		Tool	bar		In	ter	face	es Tal	ole		Interface	es Operations	
FlowDirector-640 "JUnsa. ×			./						1					0
C	0.232		/										Q (1	0
CSPi/_												CRU: 44444444	20% Logged in as admin 1 () 1	🖲 Lagos
DASHBOARD	FLOW OPS	E D SYSLOG	LP .					1						
C Edt Q Diable D Erable	Filter: (240G	7 Apply Oca						1						
INTERFACES LIST	Module	Name	Port	Cable	Admin	Setting	Link	Speed		Statistics		Interface Module	Operationa	
PowDirector-640     Vabic-640     2406-19     2406-20     2406-21     2406-22	vFabric 640-1	2405-19	XG1	868	Enabled	SFR+: 10Gbps Full Duples	•	N/A	RxPits TxPits RxBits TxBits RxBytes TxBytes RxEmors Congetion	Rate 0 0 0 0 0 0 0 0 0 0 0	Total	<ul> <li>Plugped</li> <li>Type:SP+ 10GBase-SR</li> <li>Vendor:DMNICOMM</li> <li>Senal:1110010002</li> <li>Part Number-ONCS-M85-L9A0</li> <li>RopurtN/A</li> <li>TigourtN/A</li> <li>TigourtN/A</li> </ul>	Clossile) Clev Statutus) (Nontor) (Clev Statutus) (Nontor) (Clev Statutus) (Nontor) (Clev Statutus) (Nontor) (Clev Statutus)	
<ul> <li>x05</li> <li>x06</li> <li>400-x055</li> <li>x08</li> <li>x09</li> <li>x09</li> </ul>	vFabric-640-1	2405-20	X62	84A	Enabled	SFP+: 10Gbps Full Duplex	•	10Gb	RxPicts TxPicts RxBits TxBits RxBytes TxBytes RxBytes RxBytes RxBytes	Rate 934,280 934,283 678,300,968 678,296,512 678,300,968 84,787,064 0 0	Total 69,530,681, 69,530,489, 678,300, 678,296, 50,479,463,994, 6,309,920,675,	161 Plugged 968 TyperSP4 968 TyperSP4 968 TyperSP4 968 Part NumberS71540002 908 RepertN/A 0 TypertN/A	Cosolie) Clear Standics (Kontor) (Clear Standics) (Kontor) (Clearing) (Probe Link Attribute)	
<ul> <li>x611</li> <li>x612</li> <li>x613</li> <li>2240-TP1</li> <li>x615</li> <li>x615</li> </ul>	vFabric (640-1	2405-21	X63	ccc	Enabled	SFP+: 10Gbps Full Duplex	•	10Gb	RuPits TuPits RuBits TuBits RuBites RuBites RuEntors	Rate: 0 0 0 0 0 0 0	Total	0 Plupped Type:SP+ VendorArghenol 9 senti-APF11270025639 0 Part Numer:571540002 0 RepentN/A 0 TowntN/A	[Dable] M [Cer Statsbis]     [Inosisten]     [Inosisten]     [Probe Link Attribute]	
x017 x058 2405-23 2405-24 toopB1 LoopB1	vFabric-640-1	2405-22	X(54	DDD	Enabled	SFP+: 10Gbps Full Duplex		1066	RxPita Tx8kts Rx8its Tx8its Rx8ites Tx8ytes RxErrors	Rate 0 0 0 0 0 0 0	Total	0 0 0 0 0 0 0 0 0 0 0 0 0 0	Chable Cor Statetraj (Nonto) (Cor Statetraj (Notetra) (Probe Link Attribute)	
<ul> <li>LoopE2</li> <li>XG24</li> <li>XG25</li> <li>XG25</li> <li>XG26</li> <li>XG26</li> <li>XG26</li> <li>XG29</li> <li>XG29</li> <li>XG29</li> <li>XG29</li> </ul>	v#abrc=640-1	2405-23	NG19		Enabled	SFP: SERDES without AutoNeg	7	1Gb	Congestion RxPits TxPits RxBits TxBits RxBytes RxErrors Congestion	0 Rate 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Total Total	0 0 1 1 1 1 1 1 1 1 1 1 1 1 1	Costie) Cost (Cor Statistic) (Nontal (Corstans) (Probe Link Attribute)	

Figure 88: Interfaces tab displaying detailed port information.

# 5.1 Interface tab panels

Four panels highlight the interface tab's important features.

#### 1. Interfaces List

The Interfaces List panel displays a record of all the nVoy Packet Broker devices ports.

For more detailed information on the Interfaces List panel, go to the *Interfaces List* section in this chapter.

2. Interfaces Information Table

The Interface Information table displays device information and attributes such as, name, port, cable, admin status, statistics, and so on.

For more detailed information on the Interfaces Information panel, go to the *Interfaces Information Table* section in this chapter.

#### 3. Operations

The Operations panel displays the various device operation and management settings available to the user.

The operator can invoke operations such as:

- Renaming ports
- Enabling or disabling ports
- Filtering ports
- Viewing interface module information and port status
- Viewing port statistic counters
- Probing port link attributes
- Clearing port statistic counters

For more detailed information on the Operations panel, go to the *Operations* section in this chapter

#### 4. Interfaces Toolbar

The Interfaces Toolbar enables the user to quickly detect, edit, disable, or enable a specific port.

For more detailed information on the Interfaces Toolbar, go to the *Interfaces Toolbar* section in this chapter

## 5.2 Interfaces List

The Interfaces List panel lists all nVoy Packet Broker devices ports by device and port ID sequence, as shown in Figure 89.



Figure 89: Interfaces List panel.

#### Up close and personal

To view the details of a specific interface port or to perform further operations, click on the port name, as show in Figure 90.

DASHBOARD - 🚠 INTER	le   Filter:	DURCE 📳 SYSLO	IG 🕜 HELP			
INTERFACES LIST	Module	vFabric-640-1			1	
FlowDirector-640	A Name	2405-20				
vFabric-640-1		210020			+	
240G-19	Port	XG2				
240G-20	Cable	ААА				
240G-21	Admin	Enabled				
¥ XG5	Setting	SFP+: 10Gbps	Full Duplex			
🜉 XG6	Link				-	Detailed Port
400-XG5	Link					Information
🜉 XG8	Speed	10Gb				mormation
XG9			Rate	Total	T !	
WC10		RxPkts	1,075,174	76,236,349,793		
AGI0		IxPkts	1,075,159	76,236,141,502		
XG11	Statistics	Typite	780,561,224	780 561 224		
XG12	stausucs	RyBytes	780 583 592	55 347 798 182 976		
WC12		TxBytes	97,570,153	6,918,461,393,007		
× XG13		RxErrors	0	0		
3240-TP1		Congestion	0	0		
🜉 XG15		Plugged				
🜉 XG16	and a strategy and	Vendor:Amphe	lone			
🜉 XG17	Interface Module	Serial:APF112 Part Number:5	00022PJ2 71540002			
🜉 XG18		Rxpwr:N/A Txpwr:N/A				
240G-23	100 1700 C	[Disable]	[Clear Statistics]			
🜉 240G-24	Operations	[Monitor]	[] [Registers]			
I LoopB1	1	CHODE LIU	K Addibute 111			

Figure 90: Specific interface port details.

# 5.3 Interfaces Information Table

The Interfaces Information table displays pertinent interface information and operations, as shown in Figure 91.

Module	Name	Port	Cable	Admin	Setting	Link	Speed		Statistics		Interface Module	Operations			
								1	Rate	Total	1				
	_	_				_	_	RAPRIS	0	0	And should be	_			
								TxPits	0	0	Plugged				
								RaBits	0	0	Type:SPF+ 1008/36-5K	(Disable) [Clear Statistics]			
Fabric-6-40-1	2405-19	861	RRR	Enabled	SFP+: 10Gbps Full		N/A	TUBICS	0	0	Serial:1110010002	er [Monitor] [m] [Registers]			
					Duplex	-	1000	RxBytes	0	0	Part Number: OMCS-M85-L94H5	disfembe Link Attribute 1			
								TxRutes	0	0	Rxpwr:N/A	and a second second second second			
								References	0	0	Txpwr:N/A				
								Connection	0	0					
									Date	Total					
								RyPlets	951 211	76 705 539 944					
								Tubler	051 204	76 705 230 443	Plugged				
								R-Rite	600 575 130	600 \$75 130	Type:SFP+	ColDisable1 Million Statistics1			
	A 10.0 A 40	10000		100000	SFP+: 10Gbos Full	-	1000	Tilling	400 575 800	600 575 800	Vendor:Amphenol	[Monitor] [][Registers]			
aonc-640-1	2400-20	302	AAA	Enabled	Duplex		1000	11853	690,575,800	090,373,800	Senarcap+11200022PJ2 Part Number:571540002				
								RXBytes	090,575,120	33,088,431,303,300	Rynam N/A				
								TXBytes	86,321,975	0,951,040,453,450	Txpwr:N/A				
								KXENOIS	0	0					
								Congestion	0	0					
									Rate	Total					
								RxPkts	0	0	Plucoed				
								TxPkts	0	0	Type:SFP+	Comments when comments			
					SED at 10/2host full			RABItS	0	0	Vendor:Amphenol	G (Disaple) I [Cies, scipapita]			
abric-640-1	2405-21	XG3	CCC	Enabled	Duplex		10Gb	TxBits	0	0	Serial: NPF11270025639	II [Monitor] [] [Registers]			
					and the			RxBytes	0	0	BrownN/A	[Probe Link Attribute]			
								TxBytes	0	0	TeneriN/A				
								RxEmors	0	0	0 Intraine a	0	3	0	
								Congestion	0	0					
								1.000	Rate	Total	4				
								RxPkts	0	0	Pluseed				
								TxPkts	0	0	Type:SED +				
					600 - 1000 - 100			RxBits	0	0	Vendor:USource	(Disable) (Cear Statistics)			
abric-640-1	240G-22	XG4	000	Enabled	Drinley		10Gb	TABCS	0	0	Serial:RT1412151010	[[[Monitor] ]] [Registers]			
					Popula			RxBytes	0	.0	Part Number: USFPP-DAC-03	<pre>[Probe Link Attribute]</pre>			
								TxBytes	0	0	Rxpwr:N/A	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
								RxEntors	0	0	LADIE DA M				
								Congestion	0	0					
									Rate	Total					
								RxPkts	0	0					
								TxPits	0	0					
					12220200000000000000			RaBits	0	0		(Disable) [Clear Statistics]			
abric-640-1	XG5	XG5		Enabled	SFP+: 10Gbps Full		N/A	THEIS	0	0	Unplugged	Et (Monitor) (Registers)			
					Duplex	100	100	RxBytes	0	0		S[Probe Link Attribute]			
								TxBytes	0	0		all a constant and the second second			
								RxEmors	0	0					
								Conception	0	0					
								and a state of the			1				

Figure 91: Interfaces Information table.

Ten fields highlight the Interfaces Information table's important features.

#### Module

The nVoy Packet Broker device ID, as defined by the user.

#### Name

The port name.

#### Port

The system port ID of a specific nVoy Packet Broker device. It is a read only field and cannot be changed.

#### Cable

The connecting cable identifier.

#### Admin

Port administrative status.

#### Setting

Port link attribute.

#### Link

Port link status.

#### Speed

Port link speed.



#### **Statistics**

Displays port counters statistics:

- Receive/transmit packet rate and total
- Receive/transmit byte rate and total
- Receive error rate and total
- Congestion packet rate and total

#### Interface Module

Displays interface module status and ID:

- Type
- Vendor
- Serial number
- Part number
- Receive and transmit power

# 5.4 Interfaces Operations

The Interfaces Operations panel displays the most commonly used port operations, as shown in Figure 92.

	Statistics		Interface Module	Operations				
	Rate	Total						
RxPkts	0	0	Diama d					
TxPkts	0	0	Plugged Type:SED+ 10GRace.SP					
RxBits	Bits 0 0	Vendor:OMNICOMM	🚱 [Disable] 🎽 [Clear Statistics]					
TxBits	0	0	Serial:1110010002	[Monitor] [] [Registers]				
RxBytes	0	0	Part Number:OMCS-M85-L9AHS	Probe Link Attribute]				
TxBytes	0	0	0 Rxpwr:N/A Txpwr:N/A					
RxErrors	0	0	TXDWI:IN/A					
Congestion	0	0						
	Rate	Total						
RxPkts	1,240,234	72,213,818,080	Diversed					
TxPkts	1,240,230	72,213,619,648	Type:SED+					
RxBits	900,415,784	900,415,784	Vendor:Amphenol	[Disable] [Clear Statistics]				
TxBits	900,408,608	900,408,608	Serial:APF11200022PJ2	[Monitor] 🙀 [Registers]				
RxBytes	900,415,784	52,427,428,993,200	Part Number:571540002	Probe Link Attribute]				
TxBytes	112,551,076	6,553,415,876,952	Rxpwr:N/A					
RxErrors	0	0	TXPWI IWA					
Congestion	gestion 0 0							
	Rate	Total						

Figure 92: Interfaces Operations panel.

#### Description

@[Enable] /@[Disable]	Enables or disables the port.
@[Enable]	The port is enabled; click to disable the port.
@[Disable]	The port is disabled; click to enable the port.
[Clear Statistics]	Clears the port statistics counters and resets them to zero.
[Monitor]	Displays statistic counters for a selected port, as shown in Figure 93. This operation is identical to the Flow Domains panel <b>[Monitor]</b> operation.



	2.168.0.232/m	onitor html?porti						
		oniconnannipora	d={"device	eid":0,"moduleid":1,"pc	ortid":1}			
	CKET BROKER							
Refresh Frequency: 5 💌 Sec 🛛	Pause Update	Hide Counters With	Value Zero	Hide Interface Module	Hide Interface Status	Hide Interface Statistics	📓 Reset Counters To Zero	Add/Edit Port
Port Name	240	G-20						have been a set of a
System Name	x	G2						
Cable ID								
Column Highlighter								
Interface Module								
Present	tr	rue						
Type	SF	-P+						
Serial	APF1120	00022PJ2						
PN	5715	40002						
Interface Status								
Admin	tr	rue						
Link	(	Dn						
Speed	10	)Gb						
Interface Statistics								
Port Name	240	G-20						
Counter	Rate	Total						
Version	0	10						
RxUcstPkts	1,302,054	138,071,291						
RxUcstPktsIPv4	1,302,054	138,071,291						
RxUcstOctetsIPv4	118,162,546	12,530,019,418			N			
Rx64Pkts	976,529	103,553,008			5			
Rx128to255Pkts	325,527	34,518,287						
RxGoodOctets	118,162,546	12,530,019,418						
RxOctetsIPv4	118,162,546	12,530,019,418						
RxPriorityPkts.0	1,302,063	138,071,306						
RxPriorityOctets.0	118,164,702	12,530,021,788						
TxPriorityOctets.0	118,193,677	12,530,030,668						
TxUcstPkts	1,302,406	138,071,315						
TxUcstPktsIP	1,302,406	138,071,315						
TxUcstOctetsIP	118,194,938	12,530,031,502						
Tx64Pkts	976,789	103,552,944						
Tx128to255Pkts	325,614	34,518,371						
TxOctets	118,193,677	12,530,030,668						
FloodForwardedPkts	1.302.078	138.070.987						
ParseErrDronPkts	2	331						
timestamn	1 405 686	110 624 057 335						

Figure 93: Displaying statistic counters for a selected port.

#### [Registers]

Displays port registers values in the Port Registers window to be copied and pasted to a clipboard, as shown in Figure 94.



Figure 94: Port Registers window.



[Probe Link Attribute ...]

Tests and confirms port link attributes, in the Probe Port Link Attributes window, as shown in Figure 95.

Probe Port Link Attributes		6
Probing Link Attributes:	100%	
Messages		
Use SFP: SERDES with AutoNe Use SFP: SERDES with AutoNe Use SFP: SERDES without Aut Use SFP: SERDES without Aut Use SFP: SGMII with AutoNeg Use SFP: SGMII with AutoNeg Use SFP: SGMII without Auto Use SFP: SGMII without Auto Probe Completed: 1 usable 1	g jLink Off :oNeg ioNegLink Off : :Link Off :Neg NegLink Off ink attributes are detected.	•
SFP+: 10Gbps Full Duplex		*
Available Speed Mode: SFP+: 1	OGbos Full Duplex 💌 🕪 Apply	
Available Speed Mode. SFP+, 1		
		(X) Close

Figure 95: Probe Port Link Attributes window.

## 5.5 Interfaces Toolbar

The Interfaces Toolbar enables the user to quickly detect, edit, disable, or enable a specific port, as shown in Figure 96.

CSPi	NVOY PACKET	BROKER				
👰 DASHBOARD 🔻	A INTERFACES	🗿 FLOW OPS		SYSLOG	(2) HELP	
📝 Edit 🛛 🚱 Disab	le 🚱 Enable   Fi	lter: 240G		7 Apply	🧭 Clear	
INTERFACES LIST		A	ladula	Nama		Bort

Figure 96: Interfaces Toolbar.



#### Editing a port

- 1. Select the port on the Interfaces List, as shown in Figure 97.
- 2. Click [Edit] on the toolbar.

The Edit port window appears.

- 3. Make the necessary changes to port name, admin status, speed, or mode.
- 4. Click OK.

E DASHBOARD V MARTINGA	Filter:	DURCE SYSLOG	Clear				
INTERFACES LIST	Module	vFabric-640-1			r		
RovDirector-640	Name	240G-19			Edit Port		۲
2406-19	Port	VG1			Port Name:	240G-19	
2405-20	Port	×01			Admin:	OFF	
2406-21	Cable	888			Speed:	SFP+: 10Gbps Full Duplex	*
J40G-22	Admin	Disabled		6	Mode:	Capture Port Or Traffic Port	Ŧ
1 XG5	Setting	SFP+: 10Gbps Full D	uplex				
🜉 XG6	1 June						
## 400-XG5	LINK						
🜉 XG8	Speed	N/A					
XG9			Rate	Total			
xG10		RxPkts	0	0			
		RxBits	0	0			
Mol1	Statistics	TxBits	0	0		- OK	(a creat
M XG12		RxBytes	0	0		V UK	Cancer
XG13		TxBytes	0	0		1	
3240.TD1		RxErrors	0	0		1	
- 3240-TF1		Congestion	0	0			
💆 XG15		Plugged Type:SFP+ 10GBase	SR			Edit Port	
🜉 XG16		Vendor:OMNICOMM			l		
🜉 XG17	Interface Module	Part Number:OMCS-M	185-L9AHS				
🜉 XG18		Rxpwr:N/A Txpwr:N/A					
Add 240G-23		(Enable) [Cle	ar Statistics]				
🕎 240G-24	Operations	[Monitor]	egisters]				
I LoopB1		Probe Link Attro	ute]				

Figure 97: Edit port operation with Edit port window.





### Enabling a port

- 1. Select the port on the Interfaces List, as shown in Figure 98.
- 1. Click [Enable] on the toolbar.

The port is enabled.



#### Disabling a port

- 1. Select the port on the Interfaces List, as shown in Figure 98.
- 2. Click [Disable] on the toolbar.

The port is disabled.

DASHBOARD V A INTERFACES	FLOW OPS	OURCE SYSLOG	(2) HELP	
🛛 📝 🚱 Disable 🛛 🖓 Enable	Filter:	🍸 Apply	🖉 Clear 🛛	
INTERFACES LIST	Module	vFabric-640-1		
<ul> <li>FlowDirector-640</li> <li>vFabric-640-1</li> </ul>	Name	240G-21		
🜉 240G-19	Port	XG3		
240G-20	Cable	ccc		
240G-22	Admin	Enabled		
🜉 XG5	Setting	SFP+: 10Gbps F	ull Duplex	
¥ XG6	Link			
¥ XG8	Speed	10Gb		
💓 XG9			Rate	Total
W XG10		RxPkts	0	0
- X310		RyRite	0	0
XG11	Statistics	TyBits	0	0
XG12	Statistics	RxBytes	0	0
W YG13		TxBytes	0	0
- NOIS		RxErrors	0	0
3240-TP1		Congestion	0	0
<ul> <li>聚 XG15</li> <li>聚 XG16</li> <li>聚 XG17</li> <li>聚 XG18</li> </ul>	Interface Module	Plugged Type:SFP+ Vendor:Amphen Serial:APF11270 Part Number:57: Rxpwr:N/A Typwr:N/A	ol 025639 1540002	
240G-23 240G-24	Operations	[Disable]     [	[Clear Statistics]	

Figure 98: Enabling and disabling a port.



#### Port filtering

The filter offers a string-based match capability, enabling the user to drill down to specific port quickly and easily.

#### Example 1: Port "XG35"

- 1. Enter XG35 in the Filter: dialog box.
- 2. Click Apply.

All ports containing the string Port XG35 are displayed, as shown in Figure 99.



Figure 99: Port filtering example 1.

#### Example 2: Port "240G-2"

- 1. Enter 240G-2 in the Filter: dialog box.
- 2. Click Apply.

All ports containing the string Port 240G-2 are displayed, as shown in Figure 100.

dule	1 me L	Port	Cable	Admin	Setting	Link	Speed	Statistics			Interface Module	Operationa	
									Rate	Total			
								RxPkts	1.117,982	3,072,012,928			
	2 · · · · · · · · · · · · · · · · · · ·							TxPkts	1.117.999	3,072,005,062	Plugged		
								RxBits	811.660.495	811.660.496	Type:sev-	(Disable) M [Clear Statistics]	
vEabric_640.1	2400 20	¥52	000	Enchlad	SER4: 10Ghos Bill Dunkey		105h	Tuffits	811.683.728	811.683.728	Sarial-APEL1200022P12	[Monitor] [Registers]	
The second second second	2400-20	0.000		C. Harrison	and the second of the second	-	1000	RyBytes	811.660.495	2 230 290 634 456	Part Number:571540002		
	-134,000 0000 0 4 42 40 X							TyButoc	101 460 465	278 785 824 576	Rxpwn/N/A	Settione care sectored and	
								ByEmpre	0		TxpiwrcN/A		
								Concettion		0			
								Congescors	Date	Total			
								Publits	0	10.0			
								Tublete	0	0	Plugged	(Clear Statistics)	
								Public	0	0	Type:SFP+		
Sec. 640.2	240G-21	400		Fashing	CER LOCKer Bull During	-	1005	Tutte		0	vendor:Amphenol		
AL9721-040-1	2400-21	AG3	uu	EUSCIED	pre-+1 100005 Huil Duplex	1.1	1000	Puther	0		Part Number 571540002		
								Typeter	0	0	Rxpwr:N/A	Probe Link Admoute]	
								1 xbytes	0		Txpiwr:N/A		
								ROLEHTONS	0	0			
								Congestion	9	0			
0									Rate	Total		(Q [Disable] ) [Clear Statistics] (Monitor] (2 [Registers] (93) (Probe Link Attribute]	
653								NOPICS	0	0	0 Plugged Type:SEP+		
-								TxPkts	0	0			
	2400 22	53325				100		RXBIS	0	0	Vendor:USource		
vFabric-640-1	2400-22	XG4	DDD	Enabled	SFP+: 10Gbps Full Duplex		10Gb	TXBITS	0	0	Serial:RT1412151010		
								RxBytes	0	0	Part Number 05HPP-DAC-03		
								TXBytes	0	0	0 Txpwr:N/A		
								RXEITOIS	0	0			
		-						Congestion	0	0			
									Rate	Total			
								RxPkts	0	0	Disposed		
								TxPkts	0	0	Type:SFP 1000Base-T		
		100005			CED- CEDFOCC without			RxBts	0	0	Vendor:FINISAR CORP.	Catosabiel antonar statistics]	
vFabric-640-1	240G-23	XG19		Enabled	AutoNec		1Gb	TxBits	0	0	Serial:PPK522G	[Monitor] [[ [Registers]	
								RxBytes	0	0	Part Number: FCLF-8521-3	[Probe Link Attribute]	
								TxBytes	0	0	Tense N/A		
								RxErrors	0	0	- Anna Anna		
								Congestion	- 0	0			
									Rate	Total			
								RxPkts	0	0	The second		
								TxPkts	0	0	0 Plugged Type:SFP 1000Base-SX 0 Vendor:PICOLIGHT 0 Secial:428H40F2 0 Part Number:PL-XPL-VC-S13-11		
	2400.04	100000			and shares the state			RXBRS	0	0		[Disable] M [Clear Statistics]	
vFabric-640-1	240G-24	XG20		Enabled	tuotitwi TiMeze 1442		1Gb	TxBits	0	0		[Monitor] [ [Registers]	
	200000 VV (0.75.97.75.02)	1.00000000			Automag			RxBytes	0	0		[Probe Link Attribute]	
								TxBytes	0	0	Rxpwr:N/A		
								RxErrors	0	0	Exploring A		
								Consider	ni.	0			



# 6 Flow Operations Tab

Domain List			Тос	Toolbar			Flow Domains Table			Domain Operations		
/			/				/					
ionConstor 640 "Junan x		3 20233	1						Like second			KALLE, HERE
C B PP5//192164021	14		-/				/				-	4.17
:S7i _/_			/							HDI. 15	Lopped in 24	daia 1 🛈 1 😔
SHOARD . A BOTHINGS	Anna and American	or Disestor	HER									1
in Die Comen 1 1 Conten	Contrate @ Die	I Plant H				_	1					1
	Nate	Domain Type	Admin Status	Ingress Ports	Egress Port	Outepath	Date Modified	Description		Statistics		Operation
Al Flow Domains	D NewDoman12	FoxOrector Domain	0	3010,8011	x511,x510,x529	Danal	2015-09-03 11:59:17					
Owfault Vitual WindPorts Boad	D NewDomain2	FoxDirector Domain	0	x526,x528,3240-	400.X65,2406-22,X66	Detail	2015-08-04 18:30:44					8 6 1
Default Victual Wive(Ports x63.2	I NewDonian3	FoeDrector Donain	0	X525	2405-20,2405-22	Detail	2015-08-06 07:32:08					A 6 5
F4214	NewDoman4	<b>FlowDirector Domain</b>	٥	3240-791	2406-20,2406-22	Dytail	2015-08-12 20:28:19					0 0 1
F2a	NewDomain5	FlowDirector Domain	0	3240-791	X58,X56	Ovtal	2015-08-13 23:45:51					961
hardinant.	Li NexDoman6	FeaDrector Doman	0	3240-791	2406-22	Detail	2015-08-14 06:09:13					A G F
Englisher and	D Institution	FlowDrivetor Domain	8	1024 Loore 102, 1028, 10000000	¥525,8531,8529	Detail	2015-06-18 18:54-31					2 0 1
New Constant	I NexConan9	FoeDirector Domain	ě			Detail	2015-08-18 20:32:56					AGE
New Consents	II VM_240-XG15_XG38	RoeDirector Domain	ø	xG36,xG30	¥538,¥536	Detail	2015-08-18 20:25:00					8 8 5
NewConan12	VM_240-865_240-864	4 FlowDirector Domain	0	XG42,XG44	3044,3042	Dytal	2015-06-18 20:19-29					3 G =
NewConung	U VM_240G-19_X59	FlowDirector Domain	0	2405-19,359	x09,2405-19	Denal	2015-08-26 15:59:26					0 G E
NewDomain3	1 . O. O. BRAN								140G-30 Interface Statistics			
NewDoman4									Kase	Rate	Total	
Nex-Domard									Pits Pits	101.694	3,895	1.00
NewDoman6	W 2405-20 X58	Enablinator Domain		2405-20 3/58	858,2405-20	Detail	2015-29-02 14:07:08		CongDrop	0	0	0.00
NewDomain?	- 1								XG8 Driteface Statutics			
NexConana									Name	Rate	Total	
NewDoman9									Pros Bries	101.69M	3,895	-
VM_240-XG15_XG18									CongDrop			
VM_240-X05_240-X54	M_2400- 24. Loopback	FlowDirector Domain	0	2405-24,600pback	Loopback,240G-24	Detail	2115-08-27 14:33:36					Res
VM_2405-19_X09	U 1M_3240-1_3240-2	FoxDirector Domain	0	2405-20,2405-22	2406-22,2406-20	Dytal	2015-08-09 23:52:27					3 6 5
VM_2406-20_X68	U WI_3240-1_3240-TP1	Feedbrectir Donain	0	2405-20,3240-791	3240-791,2406-20	<b>D</b> -Cal	2015-06-19 09:00:28					8 G 1
VM_2405-24_Loupback	W_0240-1_64226- XG1	FlowDirector Domain	0	2405-20,X030	X530,2405-20	Dytal	2015-08-25 03:21:33					3 6 5
VM. 3240-1. 3240-2	U VM_3240-2_3240-TP1	E FlowDrector Domain	8	2405-22.3240-791	3240-191,2406-22	Dytail	2115-08-18 20:49-32					BOR
VM 1240-1 1240-TP1	WC3249-3_6226- XG2	FlowDirector Domain	0	2405-22,8032	XG32,240G-22	Detail	2015-08-25 03:21:45					3 6 5
VM 1245-1 #J0256.851	II VM_3240-3_3240-4	FlowDirector Domain	٥	856,858	858,856	Dutal	2115-08-18 20:20:16					8 @ #
VM 3240.2 3240.701	UM_3240-4_3240-TP1	FoxDirector Domain	0	XG8,3240-TP1	3240-7P1,XG8	Detail	2015-08-14 01:51:01					8 Q 1
M 33453 #4336363	1 VM_3240-191_3240-1	FoxDirector Donain	8	3240-091,X028,X026,X030,X032 X345,784,X08	2400-20	Denal	2013-08-23 08:14:18					
144 3349 3 3349 4	VM_3240-TP1_400-	Excercise Conser		Alan The and will	400 MER 33.40 The	Depl	2012/00/14 00:40:20					200
1-11-0-12-12-0-4	NG5	Finder Contain		2240-191,470-803		Cricki Cricki	211200-17 227622					
Au <sup>225624<sup>23569-251</sup></sup>	VM 400 805 ILaad	Postorectly Domain	0	3240-191,8524	AUX4,3240-TP1	CHAR	2012-00-14 00:59:42					0.0.0
10,3140-191,3240-1	NG2	Previous Contain	0	*/0-#33,852B	x028,400-855	DACH	2015-00-14 11:21:10					10 6 21
VM_3240-TP1_3240-4	10 100 NG2	Feedinctor Donain	0	XG26,XG28	X528,X526,240G-20	Dytal	2015-08-13 13:18:34					28 Q 23
VM_3240-TP1_400-X05	VM Loocback 240G-		^	1.1.1.1.000.00		10.10	****					

Figure 101: Flow Operations or "Flow OPS" tab.

#### Attributes

The Flow Operations or "Flow OPS" tab offers a comprehensive view of The nVoy Packet Broker flow domains with the following attributes (Figure 101).

- The domain name
- The type of domain
- Domain admin status
- Domain ports and their roles
- Domain data path
- Domain date, descriptions, and statistics
- Domain operations

#### Tasks

The Flow Operations tab enables users to perform the following tasks quickly and easily, as shown in Figure 102.

- Creating a new domain
- Uploading a domain
- Editing a domain
- Enabling or disabling a domain
- Deleting a domain
- Downloading a domain
- Selecting all or unselecting all domains for a specific task

## 6.1 Flow Operations tab panels

Four panels highlight the Flow Operations tab's important features.

#### 1. Flow Domains List

The Flow Domains List panel displays a record of all flow domains in alphabetical order.

For more detailed information on the Flow Domains panel, go to the *Flow Domains list* section in this chapter.

#### 2. Flow Domains Information Table

The Flow Domains Information table displays flow domain information and attributes such as, name, domain type, admin status, ingress ports, egress ports, statistics, and so on.

For more detailed information on the Flow Operations Information table panel, go to the *Flow Domains Information Table* section in this chapter.

#### 3. Operations

The Operations panel displays the various flow domains operation and management settings available to the user.

For more detailed information on the Operations panel, go to the *Operations* section in this chapter

#### 4. Flow Operations Toolbar

The Flow Operations Toolbar enables the user to quickly detect, edit, disable, or enable a specific flow domain.

For more detailed information on the Flow Operations Toolbar, go to the *Flow Operations Toolbar* section in this chapter
# 6.2 Flow Domains List

The Flow Domains List panel lists all The nVoy Packet Broker domains by time or alphabetical order, as shown in Figure 102.



Figure 102: Flow Domains List panel.





To view the details of a specific flow domain, follow these steps:

**1.** Select the domain from the Flow Domains List, as shown in Figure 103.

The Configuration Editor window appears with detailed flow domain information.

DASHBOARD . A INTERFACES	Children and mas	OUNCE D SYSLOG O HELP			Detaile	ed Flow Do	mair	n Info	orma	tion
New Kow Domain	un Geschutz 21	peler [ [] Select All					2			
Al Fore Domans	Rate	NewConan11								
Contact Vision WindPorts Stand	Domain Type	RevOractor Donan								
S Default Vitual WincPorts/k03,3	Admin Status	0								
S \$404	Ingress Ports	Name	THE WAR & Date	Spend		Deat	Pandia	Tag	444	Cable Mentifier
O Filter		Rate	Pare Suppleren Infree		Speed	(ruce	Distre		200	Cable Identifier
NexConun1	Egress Port	400-805	SPP+: 2002grc Pull Duples		0.50050					
Gi Indonesi Gi Indonesi G	Outopath Date Multified	100g	III fine1	, ] <del>.</del>		100 KOS				
@ VM_3240-4_3240-091	Provide State									
WE_3240-791_32240-1     WE_3240-791_32240-4     WE_3240-791_32240-4     WE_3240-791_32240-4		240G-20 Interface Statistics Name Pits Bytes		Rate 926.17% 672.45%			100 727 528	43M 150		

Figure 103: Configuration Editor window with detailed flow domain information.

# 6.3 Flow Domains Information Table

Important flow domains information and operations are organized and displayed in table format as shown in Figure 104.

	Name	Domain Type	Admin Status	Ingress Ports	Egress Port	Datapath	Date Modified	Description	Statistics			Operati	ene
0	NewDomain12	FlowDirector Domain	8	XG10,XG11	XG11,XG10,XG29	Detail	2015-09-03 11:59:17					0 :	10
0	NewDomain2	RowDirector Domain	0	XG26,XG28,3240- TP1 1GtoWah 400,XG5	400-XG5,240G-22,XG6	Detail	2015-08-04 18:30:44				2	Q :	1 1
0	NewDomain3	FlowDirector Domain	0	XG26	240G-20,240G-22	Detail	2015-08-06 07:32:08				2	0 1	1 1
0	NewDomain4	FlowDirector Domain	ā	3240-TP1	240G-20,240G-22	Detail	2015-08-12 20:28:19				B	ê r	1 1
0	NewDomain5	FlowDirector Domain	ä	3240-TP1	XG8,XG6	Detail	2015-08-13 23:45:51				3	e :	: 1
0	NewDomain6	<b>FlowDirector Domain</b>	ē	3240-TP1	240G-22	Detail	2015-08-14 06:09:13					e :	10
0	NevDomain7	FlowDirector Domain	8	3240-TP1,XG26,XG28,Loopback	400-XG5,Loopback	Detail	2015-08-17 22:17:02				2	0 1	1 8
Θ	NewDomain8	FlowDirector Domain	8	XG24,LoopB2,XG37,XG39,XG25	XG25,XG31,XG29	Detail	2015-08-18 18:54:31					Q :	1 1
8	NewDomain9	RowDirector Domain	8			Detail	2015-08-18 20:32:56					0 :	1 1
Θ	VM_240-XG15_XG38	RowDirector Domain	8	XG36,XG38	XG38,XG36	Dical	2015-08-18 20:25:00					Q (	10
0	VM_240-XG5_240-XG4	RowDirector Domain	8	XG42,XG44	XG44,XG42	Detail	2015-08-18 20:19:29					Q :	: 🗑
Ξ	VM_240G-19_XG9	FlowDirector Domain	8	240G-19,XG9	XG9,240G-19	Detail	2015-08-26 15:59:26				12	Q 1	: 🗃
									2405-30 Interface Statistics				
									Name Rate	Total			
									Pkts 959.47K	51.26M			
									Bytes 696.59M	37.21G	-	-	-
	VM_240G-20_XG8	FlowDirector Domain	62	240G-20,XG8	XG8,240G-20	Detail	2015-09-02 14:07:08		XG8 Interface Statistics		12	6 2	1.0
									Name Rate	Total			
									Pkts 1.09M	49.36M			
									Bytes 99.22M	4,486			
63	VM_240G-	Re-Distance Description	•	Neid Mitzachark	Lough and Aller Ar	David.			Conjunty 0		10.	0.1	
-	24_Loopback	HowDirector Domain		240G-24,L00pDack	L00p0ack,240/3-24	Decai	2015-08-27 14:33:36				10	42 2	1 10
5	VM_3240-1_3240-2	FlowDirector Domain	8	240G-20,240G-22	240G-22,240G-20	Detail	2015-08-09 23:52:27				10	63 1	
ш	VM_3240-1_3240-TP1	RowDirector Domain	6	240G-20,3240-TP1	3240-TP1,240G-20	Detail	2015-08-19 09:00:28				10	61 2	1 1
	XG1	FlowDirector Domain	8	240G-20,XG30	XG30,240G-20	Detail	2015-08-25 03:21:33				1	e :	
Ð	VM_3240-2_3240-TP1	FlowDirector Domain	8	240G-22,3240-TP1	3240-TP1,240G-22	Detail	2015-08-18 20:49:32					Q 1	1 🗐
	VM_3240-2_ILd226- XG2	RowDirector Domain	8	240G-22,XG32	XG32,240G-22	Detail	2015-08-25 03:21:45				12	Q :	10
0	VM_3240-3_3240-4	FlowDirector Domain	8	XG6,XG8	XG8,XG6	Detail	2015-08-18 20:20:16					0 :	1 1
Θ	VM_3240-4_3240-TP1	FlowDirector Domain	8	XG8,3240-TP1	3240-TP1,XG8	Detail	2015-08-14 01:51:01					0 :	18
	VM_3240-TP1_3240-1	FlowDirector Domain	6	3240-TP1,XG28,XG26,XG30,XG32	240G-20	Detail	2015-08-25 08:14:18					Q :	1 1
	VM_3240-TP1_3240-4	FlowDirector Domain	8	3240-TP1,XG8	XG8,3240-TP1	Detail	2015-08-14 00:46:28					Q :	1 1
0	VM_3240-TP1_400- XG5	FlowDirector Domain	0	3240-TP1,400-XG5	400-XG5,3240-TP1	Detail	2015-08-17 22:45:22				2	0 :	1 1
0	VM_3240-TP1_XG24	FlowDirector Domain	8	3240-TP1,XG24	XG24,3240-TP1	Detail	2015-08-14 00:59:42				R	Q :	10
0	VM_400-XG5_ILoad-	RowDirector Domain	0	400-XG5,XG28	XG28,400-XG5	Detail	2015-08-14 11:21:10					e :	10
0	VM_ILoad-XG1_ILoad- XG2	RowDirector Domain	0	XG26,XG28	XG28,XG26,240G-20	Detail	2015-08-13 13:18:34					Q :	: 1
8	VM_Loopback_240G-	FlowDirector Domain	0	Loophack 240G-24	240G-24 Loophark	Detail	2015-08-27 14:33:40				2	0 1	. 0

Figure 104: Flow Domains Information table.

Flow Domain information table features:

#### Name

The Flow domain name.

### **Domain Type**

The flow domain attribute and type.

### **Admin Status**

The flow domain administrative status.

The flow domain is INACTIVE. Click et to ACTIVATE the domain.

The flow domain is ACTIVE. Click 🥯 to DEACTIVATE the domain.

### **Ingress Ports**

C.

The flow domain ingress ports.

### **Egress Ports**

The flow domain egress ports.



### **Data Path**

Displays the flow domain's data path configuration, as described below.

Click **Details** in the Data Path column to launch the Data Path Configuration window, as shown in Figure 105.



Figure 105: Data Path Configuration window.

### **Date Modified**

The last date and time the flow domain was modified.

#### **Description**

The flow domain description.

### **Statistics**

Displays the activating flow domain port statistics counters:

- Receive/transmit packet rate and total
- Receive/transmit byte rate and total
- Receive error rate and total
- Congestion packet rate and total

An example of activating flow domain port statistics counters is shown in Figure 106.

Name	Rate	Total
Pkts	959.47K	51.26M
Bytes	696.59M	37.21G
XG8 Interface Statistics		
XG8 Interface Statistics	Rate	Total
KG8 Interface Statistics Name	Rate	Total
KG8 Interface Statistics Name Pkts	Rate 1.09M	<b>Total</b> 49.36M
XG8 Interface Statistics Name Pkts Bytes	Rate 1.09M 99.22M	<b>Total</b> 49.36M 4.48G

Figure 106: Example of flow domain port statistics counters.

# 6.4 Flow OPS Operations

The Flow OPS Operations panel displays the most commonly used flow domain operations, as shown in Figure 107.

	Statistics			Flow OPS operations
240G-20 Interface Statistics				
Name	Rate	Total	42	
Pkts	959.47K	51.26M	0	
Bytes	696.59M	37.21G	~	
XG8 Interface Statistics				
Name	Rate	Total		
Pkts	1.09M	49.36M		
Bytes	99.22M	4.48G		
CongDron	0	0		

Figure 107: Flow OPS Operations panel.

## Description

📄 [Edit]	Edits the flow domain settings.
@[Enable] / @[Disable]	Enables or disables the flow domain.
@[Enable]	The flow domain is enabled; click to disable the flow domain.
@[Disable]	The flow domain is disabled; click to enable the flow domain.
[Show Statistics]	Displays statistic counters for a selected flow domain. This operation is identical to the Flow Domains panel <b>[Monitor]</b> operation.
Monitor	Displays the flow domain's interface modules, status, interface statistics, and domain configuration in real-time at a set refresh rate.
Duplicate	Duplicates a flow domain entry.
Ownload	Downloads a flow domain file to the Web UI.
Delete]	Deletes the flow domain from Web UI.



## Editing a flow domain

- **1.** Select the flow domain from the Flow Domains Information table.
- 2. Click [Edit] in the Operations panel.

The Domain Data Path Designer window appears, as shown in Figure 108.

- 3. Modify the flow domain settings as required.
- 4. Click OK.

The flow domain settings have been edited.



Figure 108: Domain Data Path Designer.



### Enabling a flow domain

- **1.** Select a flow domain from the Flow Domains Information table.
- 2. Click [Enable] in the Operations panel.

The flow operation is enabled.



## Disabling a flow domain

- 1. Select a flow domain from the Flow Domains Information table.
- 2. Click [Disable] in the Operations panel.

A Confirm window appears to confirm disabling the flow operation (Figure 109).

Confirm	۲
í	Please confirm to deactivate the flow operation.
1000	
	OK Q Cancel

Figure 109: Confirm window for disabling a flow operation.

**3.** Click **OK** to confirm.

The flow operation is disabled.



## Displaying flow domain statistic counters

- **1.** Select a flow domain from the Flow Domains Information table.
- 2. Click [Show Statistics] in the Operations panel.

The flow domain's Statistics window appears, as shown in Figure 110.

Domain JFM_V	LAN_Filtering_1 St	atistics												0
Pause Upd	ate 🜉 Select Ports	Monitor	Update Status:	35										
Deate	Receive P	ackets	Receive	Bps	Receive B	lytes	Receive E	rrors	Transmit P	ackets	Transmit	Bps	Transmit	Bytes
Ports	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total	Rate	Total
Port 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Port 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T7.P0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T0 D1	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 110: Flow domain's Statistics window.



## Deleting a flow domain

- 1. Select a flow domain from the Flow Domains Information table.
- 2. Click [Delete] in the Operations panel.

A Confirm window appears, as shown in Figure 111.



Figure 111: Flow domain delete confirmation.

3. Click OK to confirm.

The flow domain has been deleted from the Web UI.

# 6.5 Flow Operations Toolbar

The Flow OPS Toolbar enables the user to create, edit, disable and enable, or delete flow domains quickly and easily.

NOTE:To ensure that all active toolbar operations at your disposal for a specific flow<br/>domain, click the Select check box of the corresponding domain (Figure 113).<br/>Unchecked flow domain entries are limited to the Create Domain and<br/>Upload Domain operations, as shown in Figure 112.

### **Unchecked flow domain entry**

CSPI NYOY PACKET BROKER						
💆 DASHBOARD 🗸 🏯 INTERFACES 🕂 FLOW		CE 📳 SYS	SLOG 🔞 HE	LP		
Create Domain 👚 Upload Domain	浸 Edit Domain 🛛 🚱	Deactivate	🗑 Delete 🌔	Download	Sel	ect All
Order By: I Time 🕈 Alpha 🕜	Name	Admin Statu	Ingress Ports	Egress Port	Datapatł	Date Modified
All Flow Domains     IFM Port1 to XG7	FM_Port1_to_XG7	8	Port 1	(8.P1	Detail	2017-01-05 17:39:23
active operations	uncheo	cked		inactive	e opera	tions

Figure 112: Unchecked flow domain entry.

### **Checked flow domain entry**

CSPI NYOY PACKET BROKER						
💆 DASHBOARD 🗸 🛔 INTERFACES 🔏 FLO		CE 📳 SYS	ilog 🔞 H	ELP		
🛛 👩 Create Domain 👔 Upload Domain 📔	📝 Edit Domain 🛛 🚱	Activate	Delete	Download	Sel	ect All
Order By: 🖡 Time 🛊 Alpha	Name	Admin Statu	Ingress Ports	Egress Port	Datapatł	Date Modified
All Flow Domains     IFM. Port1 to XG7	FM_Port1_to_XG7	٨	Port 1	TX P1	Detail	2017-01-05 17:39:23
	checke	d			active	operations

Figure 113: Checked flow domain entry.



### Creating a new flow domain

- 1. Click [Create Domain...] from the Flow OPS toolbar.
- 2. The Configuration Editor window appears, as shown in Figure 114.



Figure 114: Configuration Editor window.

- **3.** Enter the domain name and description in the Component Properties panel. You may choose to change the remaining default settings.
- **4.** Click, drag, and place the required component and device icons from the lefthand panel to the grid.
- 5. Click OK.

The Start Domain <NewDomainName> In Progress window appears.

6. Click Close.

The new domain entry appears in the Flow Domains Information table panel.

**NOTE:** Once the domain name is created, it cannot be changed.



### Uploading a specific domain

1. Click Upload Domain... from the Flow OPS toolbar.

The Upload File window appears, as shown in Figure 115.

rder By: 🖡 Time 🛊 Alpha	Name	Admin Statu	Ingress Ports	Egress Port	Datapath	Date Modified	Description	
All Flow Domains	JFM_Simple_TAP	0	Port 1	T7.P0,T7.P1	Detail	2017-01-08 10:58:01		
JFM_Port1_to_XG7	JFM_Port1_to_XG7	٢	Port 1	T8.P1	Detail	2017-01-05 17:39:23		
JFM_Port0_to_XG1	JFM_Port0_to_XC	Upload File					۲	
JFM_VLAN_Filtering_1	https_filtering	Please select File Name:	domain zip file	to upload:	Choose File			
JFM_Tag_Only_2		File Size:						Port 0 Interface 9
JFM_Tag_Only_1								Name
								Pkts
								Bytes
								Port 1 Interface :
								h la ma n

Figure 115: Upload File window.

2. Click Choose File...

The File Upload window appears.

- 3. Select a domain zip file to upload.
- 4. Click Upload.

The domain zip file uploads to the server.



### Editing a specific domain

- Click the specific domain check box from the Flow Domains Information table. The Edit Domain button becomes active.
- 2. Click Edit Domain.





The Configuration Editor window appears, as shown in Figure 116.

Figure 116: Configuration Editor window.

- 3. Edit the component and device icons, as required.
- 4. Click OK.

The flow domain has been edited.



### Deactivating an active domain

- Click the active domain check box from the Flow Domains Information Table. The Deactivate button becomes active in the Flow OPS toolbar.
- 2. Click Deactivate.

A Confirm window appears, as shown in Figure 117.



Figure 117: Confirming domain deactivation.

3. Click OK to confirm domain deactivation.

The domain is deactivated.



### Activating an inactive domain

- Click an inactive domain check box from the Flow Domains Information Table. The Activate button becomes active in the Flow OPS toolbar.
- 2. Click Activate.

A Confirm window appears.

3. Click OK to confirm domain activation.

The domain is activated.





### Deleting a specific domain

**1.** Click the specific domain check box from the Flow Domains Information table, as shown in Figure 118.



Figure 118: Confirming specific domain deletion.

The Delete Domain button becomes active.

2. Click Delete.

A Confirm window appears.

3. Click OK to confirm domain deletion.

The domain is deleted.



#### Downloading a domain

- 1. Click the specific domain check box from the Flow Domains Information table.
- 2. Click Download from the Flow OPS toolbar.
- 3. The Zipping files window appears. The domain zip files are created.
- 4. Click OK.



### Selecting or unselecting all domains

The Select All and Unselect All check boxes an effective way to batch select or unselect all domains for a specific task.

#### Example 1:

To select all domains for deletion, follow these steps:

1. Click the Select All check box.



All domains are checked, as shown in Figure 119.



Figure 119: Checking all domains operation.

2. Click Delete.

A Delete Domain in Batch window appears.

3. Click OK to confirm domain deletion.

All domains are deleted.

#### Example 2:

1. To deselect all selected domains, click the **Unselect All** check box from the Flow OPS toolbar

All selected domains are deselected.



# 7 Resource Tab

The Resource tab displays all available filter and flow domain information (Figure 120). Users can also create and manage filters and filter folders.

**NOTE:** We suggest that you follow the directions in the *Envoy Packet Broker Filter User Guide* in Appendix 5. to acquaint yourself with the basics of creating a filter domain first before moving on to the more detailed procedures in the nVoy Packet Broker User Guide.

Resource L	ist	Toolbar	Resour Inform	ce ation Table	Operations	
FlowDirector 642 * Toman Ma	nian NesiCo 🗴 🔽		-			
CSPi	/	/		/	Chui	
E DASHBOARD + A INTERPRETS @ FLO	wors and system	G HILP	/			
Other Byt. + Tener (* Alpha)	D Rhela	anne SCRA-Pass Divid-Van-Pass Civide a filter to pass Civide a filter to pass	Deed traffic that matches MAC#A is source Divisiveth field stan	Temptate Detail View Detail View Detail	Operation (Arr) (Cor) (Corier) (Cori (Corier)	New Filter.
Image: Source and Source an						

Figure 120: Resource tab.

Users can run the following operations from the Resource tab:

- Creating and deleting filters
- Editing filters
- Creating filter folders
- Deleting flow domain templates

## 7.1 Resource tab panels

Four panels highlight the Resource tab's important features.

#### 1. Resource List

The Resource List panel displays all available filter and flow domain resources by time and alphabetical order.

For more detailed information on the Resource panel, go to the *Resource List* section in this chapter.

#### 2. Resource Information Table

The Resource Information table displays flow domain resource information and attributes such as, name, name, description, filter template detail,



operation, and so on.

For more detailed information on the Resource Information table panel, go to the *Resource Information Table* section in this chapter.

### 3. Operations

The Operations panel displays flow domain filter operation and management settings available to the user.

For more detailed information on the Operations panel, go to the *Operations* section in this chapter

### 4. Resource Toolbar

The Resource Toolbar enables the user to quickly detect, edit, disable, or enable filters.

For more detailed information on the Resource Toolbar, go to the *Resource Toolbar* section in this chapter

# 7.2 Resource List

The Resource List panel lists all The nVoy Packet Broker resources, such as filters and flow domains, by time or alphabetical order, as shown in Figure 121.



Figure 121: Resource List panel.

To view the details of a specific resource category or to perform further operations, click on the resource category, as show in Figure 122.

Boins		<b>U</b> nur							
er (t Alpha)	Kata	Type	Deni	Template Graph	Operations				
Unt Int	Vibalitive	ROWORECTOR	Onable virtual wire template	2-0	(Deles)				
n he Waldow	Fiber	ROWODRECTOR	Create Filter Operation template	200	@(Deles)				
ter SourceDrid-Man Pass	Appropriator Filter Replicator	ROWORKCTOR	Owate data path with first appropriate, then filter, and finally suplicator template	880	8[D+42]				

Figure 122: Details of a specific resource category.

# 7.3 **Resource Information Table**

The Resource Information table displays important resource information and operations, organized and displayed by category. For example, the Filters information tables is displayed, as shown in Figure 123.

	checkbox columr	ı	template det	ail operations	;
	Name	Desc	Template Detail	Operations	
0	Filter-MAC#A-Pass	Create a filter to pass traffic that matches MAC#A	View Detail	(Edit) (Delete)	
8	Filter-SourceIPv6-Vian-Pass	Create a filter to pass source IPv6 with feld Vlan	View Detail	Edit] (Edit)	
				New Fil	ter



Five fields highlight the Resource (Filter) Information table's important features.

Checkbox column	Click the checkbox at to check or uncheck the filter template for further operations.
Name	The name of the filter.
Description	The description of the filter template.
Template Detail	Click View Detail to view filter template details, as shown in Figure 124.
Operations	The <b>[Edit]</b> and <b>[Delete]</b> operations of the filter template.

Name	Field	Value	Mask
	Match Action		Pass
default filter	VIAN	1	65535
Jerduit meet	VD-SV	0x0001	0xFFFF
	Source IPv6#A	1:2:3:4:5:6:7:8	FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF
natched Packets: Dro	p		
natched Packets: Dro	p		

Figure 124: Filter Template Detail window.

# 7.4 Resource Operations

**Operations** 

The Resource Information table displays the most commonly used filter and flow domain configuration operations, as shown in Figure 125.

Name 🛦	Desc	Template Detail	Operations
Bob's Filter		View Detail	[Edit] 🕋 [Delete]
Source MAC and Destination IP address filter	custom filter	View Detail	🛃 [Edit] 🛛 🍿 [Delete]

View Detail	Displays the filter template detail.
7 [New Filter]	Creates a new filter.
📝 [Edit]	Edits a filter setting.
(Delete)	Deletes a filter entry.
[Export to CSV]	Exports a filter to the server in CSV format.
[Import from CSV]	Imports a filter to the Web UI in CSV format
<b>[Load from Templates]</b>	Loads a filter from a template.
[ 🌇 ]	Duplicates a filter entry.

### Myricom nVoy Series Packet Broker User Guide v 1.0

### Creating a new filter

**NOTE:** We suggest that you follow the directions in the *Envoy Packet Broker Filter User Guide* in Appendix 5. to acquaint yourself with the basics of creating a filter domain first before moving on to the more detailed procedures in the nVoy Packet Broker User Guide.



- 1. Click [New Filter...] in the lower left-hand corner of the Resource Operations panel.
- 2. The Add Filter window appears, as shown in Figure 126.

	Name	Desc	Template Detail	0	perations
	Source MAC and Destination IP address filter	custom filter	View Detail	🕞 (Edit)	(Delete)
	Bob's Filter	just playing around	View Detail	[edit]	(Delete)
Add Filter					(x)
Namor					Â
Folder:	/Custom				7.•N
Description:					
Name	e Field 4	Value	N	lask Ope	rations
Nam	e Field 4	Value	SV] •[Import from CSV]	task Ope T[Load from Templates] T	erations lew Filter]
Nam	Field 4	Value	SV] •[Import from CSV]	task Ope T [Load from Templates] T [N	erations lew Filter]
Nam	e Field 4	Value [Export to C	SV] [Import from CSV]	task Ope	erations lew Filter]
Nam	e Field 4	Value PExport to C	SV] •[Import from CSV]	task Ope ▼[Load from Templates] ▼(N	erations lew Filter]
Nam	e Field 4	Value FExport to C	SV] •[Import from CSV]	task Ope ▼[Load from Templates] ▼,[N	erations lew Filter]
Nam	e Field 4	Value PExport to C	SV] •[Import from CSV]	task Ope ▼[Load from Templates] ▼,[N	erations lew Filter]
Nam	e Field 4	Value PExport to C	SV] •[Import from CSV]	task Ope ▼[Load from Templates] ▼{N	rations lew Filter]
Nam	e Field 4	Value PExport to C	SV] •[Import from CSV]	task Ope ▼[Load from Templates] ▼_{ N	rations lew Filter]
Nam	e Field 4	Value PExport to C	SV] •[Import from CSV]	task Ope ▼[Load from Templates] ▼ ↓[N	rations ew Filter]
Nam	e Field 4	Value PExport to C	SV] •[Import from CSV]	task Ope ▼[Load from Templates] ▼[N	rations ew Filter]

Figure 126: Add Filter window.

- 3. Enter a filter name and description
- **4.** Create the filter in one of the following ways, as shown below:

[Export to CSV]	Exports a filter to the server in CSV format.
[Import from CSV]	Imports a filter to the Web UI in CSV format.
<b>T</b> [Load from Templates]	Loads a filter from a template.
<b>7</b> [New Filter]	Adds filter detail at the link, network, and transport layer field level.

5. Click OK to create the new filter.



### Editing a filter

- **1.** Select a filter entry from the Resource Information table and click **[Edit]** in the corresponding Operations column.
- 2. The Edit Filter window appears, as shown in Figure 127.

	Name A	Desc	Template Detail	Operations		
	Bob's Filter just playing around View D		View Detail	Delete]		
		stom filter	View Detail	[Edit] (Delete)		
Edit Filter: A. con/Source MAC and Destination IP address filter						
Name: Source MAC and Destination IP address filter Folder: /Custom						
Description:	custom filter					
Name	Field	Value	Mask	Totals E rs 💽 🍸 7		
Filter-1	Match Action Source MAC#A	00:60:DD:43:48:B6	Pass FF:FF:FF:FF:FF:FF:FF			
Unmatched Packets (i) Use other filters, drop if none () Pass						
	0.000	Export to CSV	] [Import from CSV] ] [Load i	from Templates] 7 [New Filter]		
	Edit Filter A	Name ▲       Bobs Filter     just pr       Source 16 <sup>10</sup> Control 10 <sup>10</sup> Control 10 <sup>10</sup> Address filter       Edit Filter, n. con/Source MAC and Destination IP ad       Name:     Source MAC and Destination IP ad       Folder:     /Custom       Description:     Custom filter       Name     Field       Filter-1     Source MAC Address filter       Unmatched Packets     Use other filters, drop If not state in the st	Name ▲     Desc       Bob's Filter     just playing around       Source Hard     Cattom Hiter       Edit Filter, Hu om/Source MAC and Destination IP address filter     Edit Filter, Hu om/Source MAC and Destination IP address filter       Name:     Source MAC and Destination IP address filter       Folder:     /Custom       Description:     Custom filter       Name:     Filter-1       Source MAC filter     Source MAC filter       Name:     Custom filter       Description:     Custom filter       Intervention     Destination IP#A       10.60.0140     Unmatched Packets       Use other filters, drop if none     Pass	Name A       Desc       Template Detail         Bob's Filter       just playing around       View Detail         Score IV-Source MAC and Destination IP address filter       View Detail       View Detail         Edit Filter, ex own/Source MAC and Destination IP address filter       View Detail       View Detail         Edit Filter, ex own/Source MAC and Destination IP address filter       View Detail       View Detail         Edit Filter, ex own/Source MAC and Destination IP address filter       Folder       View Detail         Poster       /Custom       Custom       Custom         Description:       custom filter       View Detail       View Detail         Name       Filder       Source MACand Destination IP address filter       View Detail         Name       Custom       Custom       Custom       View Detail         Description:       Custom filter       View Detail       View Detail       View Detail         Name       Field       Value       Mask       View Detail       View Detail         Name       Field       Value       Mask       View Detail       View Detail       View Detail         Unmatched Packets © Use other filters, drop if none       Pass       Filterport to CSV       View Detail       View Detail		

Figure 127: Edit Filter window.

3. Modify the filter in one of the following ways, as shown in Figure 128.

📝 [Edit]	Edits a filter setting.
[册]	Deletes a filter entry.
[ 🌇 ]	Duplicates a filter entry.
[@]	Deactivates a filter entry.
[@]	Activates a filter entry.
[1]	Moves filter entry up (when there is more than one filter entry).
[♣]	Moves filter entry down (when there is more than one filter entry).



ame: older:	Filter-MAC#A-Pass /Custom	Edit Filter	Delete Filter	Duplicate	Filter
escription:	Create a filter to pass	traffic that matches MAG	S#A		
Name	Field	Value	Ma	Total:2 F	ilters 🗣 👎 🍸 Operations
<b>FI 1 1 1 1 1 1 1 1 1 1</b>	Match Action		Pass [] [] [] [] [] [] [] [] [] [] [] [] []		
Hiter-MAC#	A Source MAC#A	00:00:00:00:00:01	FF:FF:FF:FF:FF		
Tilkes 1	Match Action		Pass [2010]		
Filter-1	Source IP#A	1.1.0.1	255.255.255.255		🛓 ] [ 🏫 ]
Unmatched Pa	ckets 🔵 Pass 💿 Drop				
		[Export to CSV]	[Import from CSV]	[Load from Templates]	7[New Filter]
		Dea	activate Filter	Move up Fi	lter





## Importing a filter from a CSV file

- 1. Open an Edit Filter window.
- 2. Click [Import from CSV] from the Edit Filter window.

The Import From CSV File window appears, as shown in Figure 129.

Edit Filter: /cu	stom/Filter-MAC#A	-Pass					(
Name: Folder:	Filter-MAC#A-Pass /Custom	1					
Jescription:	(Create a fil	lter to pass traf	fic that matche	5 MAC#A			
Name	[	Click to brow	se and			Tota	I:2 Filters 💽 💽 🏹
Filter-MAC#	¢A	select CSV file	e to	Pass	FF:FF:F	F:FF:FF:FF	t 📄 1 ( 🍘 1 t 🐚 1 t 🚱 1 t 📮 1
Filter-1	sekate () Dave ()	Source IP#A	1.1.0.1	Pass	255.25	5.255.255	.( 🖉 )( 👘 )( 👘 ) ( 😋 )( 👚 )
	Import From CSV	/ FIle	Export to C	SV] [Import	from CSV]	T[Load from Templat	tes] 🏹 [New Filter]
	File Name: File Size:						V OK Ocance
				6	🦉 Upload	Cancel	

Figure 129: Import from CSV File window.



- Click Choose File... to select a CSV file to import.
   The File Upload window appears.
- Select the CSV file and click Open.
   The Import From CSV File window displays the file.
- 5. Click Upload to import the filter from a CSV file.

## Exporting a filter to a CSV file

- **1.** Open an Edit Filter window.
- 2. Click [Import from CSV] from the Edit Filter window.
- 3. Save the file as a template\_export.csv text file OR
- 4. Open the file in an application of your choice.
- 5. Click OK to export the filter to a CSV file.

### Loading a filter from a template

- 1. Open an Edit Filter window.
- 2. Click [Load from Templates] from the Edit Filter window.
- 3. The Load Filter Template window appears, as shown in Figure 130.

Ter:	: Filter-MAC#A-Pass r: /Custom									
scription:	/Custom [Create a fil	ter to pass	traffic that match	es MAC#A						
						Total:2 Filters 💽 🎅 🍸				
Name	Fie	ld	Value		Mask	Operations				
Filter-MAC#		Match Action		Pass		( 🔊 ) ( 🍘 ) ( 🐚 )				
FILCE PROPERTY	- So	urce MAC#A	00:00:00:00:00:01		FF:FF:FF:FF:FF	[@][#]				
Filter-1		Match Action		Pass	AFF AFF AFF AFF					
		Source IP#A	1.1.0.1		255.255.255.255	[G][				
interest into		urep.	elExport to	CSVI @[Import	from CSV1 TI oad from T	emplates] ONew Filter]				
		default filter Unmatched Packets: Drop	Match Action VLAN Source IPv6#A	1 0x0001 1:2:3:4:5:6:7:8	Pass 65533 00/000 00/000 00/000 00/000 00/000 00/000 00/000 00/000 00/000					
			/							
		Select th	e filter							
		template	2							

Figure 130: Load Filter Template window.







4. Select a template and click OK.

The template creates a filter in the Web UI.



### Duplicating filter detail

1. Open an Edit Filter window, as shown in Figure 131.

Edit Filter: /custon	n/Source MAC and Destination IP addr	ess filter		(*)	
Name:	Source MAC and Destination IP addr	ess filter			
Folder:	Custom				
Description:	custom filter				
	<b>5</b> .4	Male		Total:1 Filters 💽 💽 🍸 🗸 du	uplica
Name	Match Action	value	Pace	Operations	
	Match Action	00-60-00-42-49-06	EE-EE-EE-EE-EE	[ [] [] [] [] [] [] [] [] [] [] [] [] []	
Filter-1	Source MAC#A	UU.0U.DD.43.40.DO			
Filter-1	Source MAC#A Destination IP#A	10.6.0.140	255.255.255.255	[@]	
Filter-1 Unmatched Pack	Source MAC#A Destination IP#A ets () Use other filters, drop if non	10.6.0.140 e O Pass	255.255.255.255		

Figure 131: Edit Filter window for filter duplication.

- 2. Click Duplicate in the Operations Column.
- 3. A duplicate filter entry appears below the original, as shown in Figure 132.

ame:	Source MAC and Destination IP address filter									
older:	/Custom									
escription:	custom filter									
				Total:2	Filters 🍺 🍠 🍸					
Name	Field	Value	M	ask	Operations					
	Match Action		Pass	ri	≥11@11@1					
Filter-1	Source MAC#A	00:60:DD:43:48:B6	FF:FF:FF:FF:FF							
	Destination IP#A	10.6.0.140	255.255	5.255.255	🐻 11 🔶 1					
	Match Action		Pass	1	<u>ا () ا ()</u>					
Filter-2	Source MAC#A	00:60:DD:43:48:B6	FF:FF:FF:FF:FF:FF 255.255.255.255		נ <u>ווו</u> ות ונ <u>ות</u> סע ▲ 1					
	Destination IP#A	10.6.0.140								
Unmatched Pa	ackets 🔍 Use other filters, drop if non	e 🔾 Pass								
		Export to CSV	[Import from CSV]	T [Load from Template	s] 7. [New Filter]					

Figure 132: Duplicate filter entry.

4. Click OK.





1. Select Filters category in the Resource list.

The Resource Information table appears.

- 2. Click a filter View Detail link in the Template Detail column.
- 3. The Filter Details Template window appears, as shown in Figure 133.

Order By:    Time    Aloha	۲		Name	Desc	Template Detail	Op	erations
Filters				custom filter	2 View Detail	[Edit]	(Delete)
			Bob's Filter	just playing around	View Detail	[Edit]	(Delete)
Y Source MAC and	Filter Template D	etail				۲	
E I Build In	Name		Field	Value	Mask		
Y Bob's Filter			Match Action		Pass		
Configuration	Filter-1		Source MAC#A	00:60:DD:43:48:B6	FF:FF:FF:FF:FF:FF	F:FF	
JFM Strip VLAN and	-		Destination IP#A	10.6.0.140	255.255.255.	255	
New Template	Unmatched Pac	kets: Drop					
Intew_remplate							
i Temp							
						(X) Close	

Figure 133: Filter Details Template window.



### Viewing configuration detail

1. Select Configuration category in the Resource list.

The Resource Information table appears.

- 2. Click a Configuration View Detail link from the Data Path Topology column.
- **3.** The Template <ConfigurationName> Data Path Configuration window appears, as shown in Figure 134.



Figure 134: Template <ConfigurationName> Data Path Configuration window.





## Deleting a filter entry

1. Select Filters category in the Resource list.

The Resource Information table appears.

2. Click [Delete] from the Operations column.

A Confirm window appears, as shown in Figure 135.



Figure 134: Confirming a filter entry deletion.

3. Click OK.

The filter is deleted from the Web UI.



### Deleting a configuration entry

1. Select Configuration category in the Resource list.

The Resource Information table appears.

2. Click [Delete] from the Operations column.

A Confirm window appears, as shown in Figure 136.

Order By: 1 Time 1 Alpha	Name	Туре	Desc	Datapath Topology	Operations			
E Filters				Detail	(Delete)			
Custom	New_Template	FLOWDIRECTOR	Description of the template	Detail	(Delete)			
Source MAC and Destination IP	Temp	FLOWDIRECTOR	Description of the template	Detail	(Delete)			
🖃 📗 Build In		Confirm		8				
Bob's Filter     Configuration     JFM Strip VLAN and tag pkt     New Template		Are your sure you want to delete template 'JFM Strip VLAN and tag pkt'?						
Temp			✓ ОК	Cancel				

Figure 136: Confirming a configuration entry deletion.

3. Click OK.

The configuration is deleted from the Web UI.

# 7.5 Resource Toolbar

The Resource Toolbar enables the user to perform commonly-used tasks on filters quickly and easily.

### **Filters Category**

The Filters category enables the user to select, create, and delete filter and folder operations, as shown in Figure 137.

🔽 Calast All 🗇 Dalata 🗌 🔽 Carata Ellar 🚺 Carata Ealdar 🖨 Dalata Ealdar	👮 DASHBOARD 🔻 📇 IN	TERFACES	FLOW OPS		SYSLOG	() HELP	
Select All I Delete I Create Filter I Create Folder I Delete Folder	Select All 💮 Delete	7. Create	Filter 👖 Create	Folder 🗑 Delete I	Folder		

Figure 137: Filters category menu.



You can easily batch delete all filter operations as follows:

- 1. Click Select All from the filters toolbar, as shown in Figure 138.
- 2. All available filter templates are selected.
- 3. Click Delete.

All filter templates are deleted.

🖳 DASHBOARD 🔻	INTERFACES	FLOW OPS	🔄 🖺 SYSLOG 🔞 HELP	
Select All	elete 🏹 Create	Filter 🕕 Create Folder		
0 -	+			
	Name	Desi	Template Detail	Operations
2	Fibe-SourceDv6-Van-Page	Create a more to pass source IPv6 with field Vae Create a filter to pass source IPv6 with field Vae	View Detail	(Edit) (Edit) (Editation)

Figure 138: Deleting all filter templates.



### Creating a new filter

1. Click Create Filter from the filter toolbar.

Add Filter					
older: Description:	/Custom				
Name	Field	Value		Mask	Operations
Hanne	1 1010	[Figure 1 (Export to CSV]	[Import from CSV]	T[Load from Templates]	T [New Filter]
				1	OK 🖉 Can

Figure 139: Add Filter window.

The Add Filter window appears, as shown in Figure 139.

- 2. Enter a filter name and description
- **3.** Create the filter in one of the following ways, as shown below:

[Export to CSV]	Exports a filter to the server in CSV format.
[Import from CSV]	Imports a filter to the Web UI in CSV format.
<b>T</b> [Load from Templates]	Loads a filter from a template.
7 [New Filter]	Adds filter detail at the link, network, and transport layer field level.

4. Click OK to create the new filter.



## Creating a filter folder

To create a folder for a specific filter type, follow these steps:

1. Click Create Folder from the toolbar.

An Add Folder window appears, as shown in Figure 140.

Add Folder	۲
Please input folder name:	
	V OK 🖉 Cancel

Figure 140: Add Filter Folder window.

Enter a folder name and click OK.
 A filter folder has been created.

### Deleting a filter folder

To delete a filter folder, follow these steps:

- **1.** Select a filter folder and delete all filter templates from the folder.
- 2. Click Delete Folder from the toolbar.

A Confirm window appears.

3. Click OK to delete the filter folder.



# 8 Syslog Tab

The System Log or "Syslog" tab consolidates all nVoy Packet Broker events by log list category, with search and filter capabilities, as shown in Figure 141.

ASHBOARD + 📇 INTERFACES	GT FLOW OPS	SOURCE PERSONAL OF	3 HELP				
earch:	Apply OClear Fir	nd:	Previous 🖒 Next	Total events: 1122	2 🙀 First Page 🕴 Previous Page 🌓 Next Page 🛃 Last Pag	e 👔 Copy to Clipboard 🥐 System Info 🖉 Discard Al	Events
GLIST	O ID	Source	Time 🔻	Severity		Description	
LOGS	11221	nVoy	2017-03-22 10:07:49	Informative	Port XG18 link status has changed to On		
El User	11220	nVoy	2017-03-22 10:07:49	<ol> <li>Informative</li> </ol>	Port XG17 link status has changed to On		
	11219	nVoy	2017-03-22 10:07:12	Informative	Port XG18 link status has changed to Off		Syclog Toolbar
nVoy	11218	nVoy	2017-03-22 10:07:12	Informative	Port XG17 link status has changed to Off		Sysiog Toolbal
FlowDirector-640P	11217	nVoy	2017-03-22 10:06:09	Informative	Port XG18 link status has changed to On		
Modi ocator	11216	nVoy	2017-03-22 10:06:09	<ol> <li>Informative</li> </ol>	Port XG17 link status has changed to On		
Modeocator	11215	nVoy	2017-03-22 10:03:53	<ol> <li>Informative</li> </ol>	Port XG18 link status has changed to Off		
HTTP	11214	nVoy	2017-03-22 10:03:53	Informative	Port XG17 link status has changed to Off		
System	11213	nVoy	2017-03-22 09:46:10	Informative	Port XG18 link status has changed to On		
E consta	11212	nVoy	2017-03-22 09:46:10	Informative	Port XG17 link status has changed to On		
Domain	11211	nVoy	2017-03-22 09:45:09	Informative	Port XG18 link status has changed to Off		
Port Port	11210	nVoy	2017-03-22 09:45:09	Informative	Port XG17 link status has changed to Off		
	11209	nVoy	2017-03-22 09:41:00	<ol> <li>Informative</li> </ol>	Port XG18 link status has changed to On		
	11208	nVoy	2017-03-22 09:41:00	Informative	Port XG17 link status has changed to On	Overlass Table	
	11207	nVoy	2017-03-22 09:39:26	Informative	Port XG18 link status has changed to Off	Syslog Table	
	11206	nVoy	2017-03-22 09:39:26	1 Informative	Port XG17 link status has changed to Off	, ,	
l og l ist	11191	riVoy	2017-03-21 21:33:03	Informative	Port XG12 link status has changed to On		
LOG LIST	11190	nVoy	2017-03-21 21:32:57	Informative	Port XG12 link status has changed to Off		
	11189	nVoy	2017-03-21 21:32:28	<ol> <li>Informative</li> </ol>	Port XG12 link status has changed to On		
	11188	nVoy	2017-03-21 21:32-22	1 Informative	Port XG12 link status has changed to Off		
	11187	nVoy	2017-03-21 21-32-16	Informative	Port XG12 link status has changed to On		
	11186	nVoy	2017-03-21 21:32:06	Informative	Port XG12 link status has changed to Off		
	11185	nVoy	2017-03-21 21:31:51	<ol> <li>Informative</li> </ol>	Port XG12 link status has changed to On		
	11184	nVoy	2017-03-21 21:31:49	Informative	Port XG12 link status has changed to Off		
	11183	nVoy	2017-03-21 21:31:40	Informative	Port XG12 link status has changed to On		
	11182	nVoy	2017-03-21 21:31:38	Informative	Port XG12 link status has changed to Off		
	11181	nVoy	2017-03-21 21:31:26	Informative	Port XG12 link status has changed to On		
	11180	nVoy	2017-03-21 21:31:20	<ol> <li>Informative</li> </ol>	Port XG12 link status has changed to Off		
	11179	nVoy	2017-03-21 21:31:17	<ol> <li>Informative</li> </ol>	Port XG12 link status has changed to On		
	11178	nVoy	2017-03-21 21:31:14	<ol> <li>Informative</li> </ol>	Port XG12 link status has changed to Off		
	11177	nVoy	2017-03-21 21:31:03	Informative	Port XG12 link status has changed to On		
	11176	nVoy	2017-03-21 21:30:55	<ol> <li>Informative</li> </ol>	Port XG12 link status has changed to Off		
	11175	nVoy	2017-03-21 21:30:50	Informative	Port XG12 link status has changed to On		
	11174	nVoy	2017-03-21 21:30:50	Informative	Port XG11 link status has changed to On		

Figure 141: System Log or "Syslog" tab.

Three panels highlight the Syslog tab's important features.

#### 1. Log List

The Log List displays all available log categories.

#### 2. Syslog Table

The Syslog table lists all available event logs by ID, event source, time, severity, and detailed description.

#### 3. Syslog Toolbar



The Syslog toolbar provides quick access to event log search and filter capabilities.



# 8.1 Log List

The Log List displays all Syslogs by category, as shown in Figure 142.



Figure 142: Log List displaying all Syslog categories.



### Viewing specific event log category details

To view the details of a specific event log category, such as nVoy Packet Broker, click nVoy Packet Broker from the Log list. The log table displays all event logs related to the nVoy Packet Broker appliance, as shown in Figure 143.

ni	7 Acoly Ochar	Find:	4 Previous - P	Next Copy to	Outcard 😥 Oder 📌 System 1rfs	
ust		Source	Torse	Sevenity		Description
1065	1	A CONTRACT OF A				
System	23	FloeDirector-649	2015-09-04 14:28:25	O Informative	Load all streams	
D Doubleway (4)	22	FiseDirector-640	2015-09-04 14:28:23	O Informative	Initialize FlowMapic Components	
C Prompting and and	19	FieldDirector 640	2015-09-04 14:28:22	O Informative	FANL IS IN SILVICE	
ALLH D	17	FlowDivctor-640	2015-09-04 14:28:22	O Informative	FAN1 is detected	
Madiocator	16	FiosDirector-649	2015-09-04 14:28:22	O Informative	FAN2 is in service	
D	15	FioeDirector-648	2015-09-04 14:28:22	O Informative	FAN2 is detected	
g brintoad	14	Fice/Director 645	2015-09-04 14:28:22	O Informative	FAND is in service	
FowMagic	13	FlowDirector-645	2015-09-04 14:28:22	O Informative	FANJ is detected	
D Counting	12	FlowDirector-640	2015-09-04 14:20:22	O informative	74N4 is in service	
D portan	11	FioxDirector-640	2015-09-04 14:28:22	O Informative	FAN4 is detected	
E lise:	10	FoxDirector 645	2015-09-04 14:26:22	O Informative	PS/I2 is detected	
	9	FlowDirector-640	2015-09-04 14:28:22	O Informative	PS/12 power output is good	
		FoxDivctor-640	2015-09-04 14:28:22	O Informative	PSUS is detected	
	7	FeeDirector-648	2015-09-04 14:20:11	O Informative	Initialar InfroLoad Components	
		FoeDirector 640	2015-09-04 14:28:11	O Informative	Activate configuration	
	2	FiceDrector 640	2015-09-04 14:28:08	O Informative	Automatically and time with internet time server time.nist.gov disabled	
	1	Enellingth: 641	2015-01-04 14:28:07	O Informative	Automatically note time with internet time server time with role closhied	

Figure 143: Log table showing Syslogs by selected category.



# 8.2 Syslog Table

The Syslog table displays event log information in detail, as shown in Figure 144.

	Source	Time	Severity	Description		
ID D						
23	pomeri	2012-02-04 10:22:11	City City	Douver Leaveoureut to positive and a second of		
52	Domain	2015-09-04 16:25:11	C Error	Domain execution interrupted. Resource not available. Type: Egress Port. Number of Domain: 2		
51	Domain	2015-09-04 16:25:10	<ul> <li>Informative</li> </ul>	Domain NewDomain1 is initializing		
50	Domain	2015-09-04 16:25:07	Informative	Domain NewDomain1 is created and alive		
49	Domain	2015-09-04 16:25:03	Informative	Dontain runner enters execution state		
48	Domain	2015-09-04 15:27:13	C Error	Domain with "Default Virtual Wire(Ports:XG3,3240-1)" is not active		
47	Domain	2015-09-04 15:26:57	C Error	Domain with "Default Virtual Wire(Ports:XG3,3240-1)" is not active		
46	Domain	2015-09-04 15:25:51	C Error	Domain Default Virtual Wire(Ports:XG3,3240-1) is terminated with exception		
45	Domain	2015-09-04 15:25:51	C Error	Domain execution interrupted. Resource not available. Type: Ingress Port. Number of Domain: 2		
44	Domain	2015-09-04 15:25:51	Informative	Domain Default Virtual Wire(Ports:XG3,3240-1) is initializing		
43	Domain	2015-09-04 15:25:51	Informative	Domain Default Virtual Wire(Ports:0G3,3240-1) is created and alive		
42	Domain	2015-09-04 15:25:48	Informative	Domain runner enters execution state		
41	Domain	2015-09-04 15:18:41	C Error	Domain VM 240G-20 XG8 is terminated with exception		
40	Domain	2015-09-04 15:18:41	C Error	Domain execution interrupted. Resource not available. Type: Ingress Port, Number of Domain: 2		
39	Domain	2015-09-04 15:18:41	Informative	Domain VM_240G-20_XG8 is initializing		
38	Domain	2015-09-04 15:18:41	Informative	Domain VM_240G-20_XG8 is created and alive		
37	Domain	2015-09-04 15:18:38	Informative	Domain runner enters execution state		
36	Domain	2015-09-04 15:18:03	C Error	Domain with "VM XG8_240G-20" exists already		
35	Domain	2015-09-04 15:17:15	C Error	Domain VM_XG8_240G-20 is terminated with exception		
34	Domain	2015-09-04 15:17:15	C Error	Domain execution interrupted. Resource not available. Type: Ingress Port, Number of Domain: 2		
33	Domain	2015-09-04 15:17:15	Informative	Domain VM_XG8_240G-20 is initializing		
32	Domain	2015-09-04 15:17:15	1 Informative	Domain VM_XG8_240G-20 is created and alive		
31	Domain	2015-09-04 15:17:12	Informative	Domain runner enters execution state		
30	User	2015-09-04 14:53:17	1 Informative	User admin login successfully		
29	Domain	2015-09-04 14:28:29	Informative	Domain NewDomain11 is running		
28	Domain	2015-09-04 14:28:28	Informative	Domain NewDomain11 is initializing		
27	Domain	2015-09-04 14:28:28	Informative	Domain NewDomain11 is created and alive		
26	Domain	2015-09-04 14:28:25	1 Informative	Domain runner enters execution state		
35	Plan Handa	2015 02 01 11 20 25	A Information	Paral description with source "Min-Parameters" sizes in to constrained		

Figure 144: Syslogs table.

# 8.2.1 Description

Five fields highlight the Syslog table's important features:

#### **ID Column**

Displays the event log ID, assigned to each event automatically and continuously.

### Source

Displays the event source.

	The source categories are dynamic. They are populated as events
NOTE:	occur by the component that captures them. Suggestions are included
	below.

- User
- ModLocator
- System
- HealthMon
- Console
- HTTP
- HTTPS
- SNMP
- Domain
- Port



• Task

### Time

The date and time of the event log.

### **Severity**

Indicates the severity of the event log. There are three severity levels:

Severity	Description			
Informative Message	An informative message is just that—information about execution. It is never used to indicate problems. Only general information, such as system is starting, storage configuration loaded, disk mount successfully, is found in informative messages.			
Warning Messages	Warning messages are generated when a task or operation experiences a situation that may cause a problem during its execution or when the result may not be what you expect. You can take action when a warning is returned, such as canceling the task or making another configuration setting. <b>Examples</b> System starting Load all stream Storage configuration loaded			
Error Messages	Error messages indicate a critical event that prevented a task or operation from executing. Errors are generated when one or more parameters have invalid values or when a critical execution process or routine has failed. <b>Examples</b> Domain xxx terminated with exception Domain with xxx exists already Domain execution interrupted			

### Description

Displays detailed event description. Examples include:

- System start
- Load all stream
- Storage configuration loaded
- Disk drive xxx probed
- Disk xxx mounted successfully
- Task xxx created and live
- Task xxx running
- Xxx is live



## 8.2.2 Sorting Operations

Syslog is assigned a continuous ID from the time the event occurred and re-initialized every day. By default, event logs are listed by log ID number in descending order, and by chronological order, as shown in Figure 145.

The Syslog tab window displays only today's syslog. Old syslogs are saved to a log file on a daily basis.

For more information on accessing old syslog files, go to Section 4.5 *Service Status*.

Sorting by ID in From Sorting by Time in From Latest to Oldest Order High to Low Order Source Time Severity Description ٠ 10 Informative 2015-09-04 21:27:10 User admin login successfully Ujet 55 User 2015-09-04 20:53:23 2015-09-04 20:53:15 Informative User admin login successfully User ad.om login failed Use Error Error Informative Informative 53 Domain 2015-09-04 16:25:11 Domain NewDomain1 is terminated with exception 2015-09-04 16:25:11 Domain execution interrupted. Resource not available. Type: Egress Port, Number of Domain: 2 Domain 51 Domain 2015-09-04 16:25:10 Domain NewDomain1 is initializing ... 2015-09-04 16:25:07 2015-09-04 16:25:03 Domain NewDomain1 is created and alive Domain 49 Domain Domain runner enters execution state . Informative
 Enor
 Enor
 Enor
 Enor
 Enor
 Informative
 Informative
 Enor
 Enor Domain 2015-09-04 15:27:13 Domain with "Default Virtual Wire(Ports:)(63,3240-1)" is not activ 2015-09-04 15:26:57 Domain with "Default Virtual Wire(Ports:XG3,3240-1)" is not active 47 Domain Domain 2015-09-04 15:25:51 Domain Default Virtual Wire(Ports:X63,3240-1) is terr nated with exce 45 45 Domain 2015-09-04 15:25:51 Domain execution interrupted. Resource not available. Type: Ingress Port. Number of Domain: 2 Domain Default Virtual Wire(Ports:XG3,3240-1) is initializing... 44 Domain 2015-09-04 15:25:51 2015-09-04 15:25:51 Domain Default Virtual Wire(Ports:XG3,3240-1) is created and alive 43 Domain 2015-09-04 15:25:48 42 Domain Domain n nders execution state. 41 Domain 2015-09-04 15:18:41 2015-09-04 15:18:41 Domain VM\_240G-20\_XG8 is beminated with exception Domain execution interrupted. Resource not available. Type: Ingress Port, Number of Domain: 2 Domain Domain VM\_240G-20\_XG8 is initializing. 39 Domain 2015-09-04 15:18:41 Domain VM\_240G-20\_XG8 is created and alive 2015-09-04 15:18:41 Domain 37 Domain 2015-02-04 15:18:38 Domain runner enters execution state ... Domain with "VM\_XG8\_240G-20" exists already 2015-09-04 15:18:03 Domain 35 2015-09-04 15:17:15 Domain VM\_XG8\_240G-20 is terminated with exception Domain 2015-09-04 15:17:15 Domain execution interrupted. Resource not available. Type: Ingress Port. Number of Domain: 2 Domain 33 Domain 2015-09-04 15:17:15 Domain VM\_XG8\_240G-20 is Initializing ... 2015-09-04 15:17:15 2015-09-04 15:17:12 Domain Domain Domain VM\_XG8\_2405-20 is created and alive 31 Domain runner enters execution state User 2015-09-04 14:53:17 User admin login successfully Domain NewDomain11 is running 2015-09-04 14:28:29 29 Domain Domain 2015-09-04 14:28:28 Domain NewDomain11 is initializing 28 27 Domain 2015-09-04 14:28:28 Domain NewDomain11 is created and alive Domain 2015-09-04 14:28:25 Domain runner enters execution state 25 FlowMapic 2015-09-04 14:28:25 Start domain with name "NewDomain11" since it is enabled 2015-09-04 14:28:25 24 System NPS sharing has been stopped 23 FlowDirector-640 FlowDirector-640 2015-09-04 14:28:25 2015-09-04 14:28:23 Load all streams... Initialize FlowMagic Components 22 2015-09-04 14:28:23 2015-09-04 14:28:23 Discovered 0 testcases for user QA\_1@local Discovered 0 testcases for user guest@local 21 InfiniLoad InfiniLoad 19 InfiniLoad 2015-09-04 14:28:23 Discovered 0 testcases for user admini@local 2015-09-04 14:28:22 FlowDirector-640 FANI is in service 18 FlowDirector-640 2015-09-04 14:28:22 FAN1 is detected FlowDirector-640 2015-09-04 14:28:22 FAN2 is in service 15 FlowDirector-640 2015-09-04 14:28:22 FAN2 is detected 2015-09-04 14:28:22 FlowDirector-640 FANG is in service

Figure 145: Sorting events logs.





### Sorting events logs by source

By default, the Source table header lists all event logs by descending ID order.

Click the Source table header and an "Up" arrow appears, with all event logs listed in ascending alphabetical order, as shown in Figure 146.

Click the arrow a second time and a "Down" arrow appears, with all event logs listed in descending alphabetical order.

		Sorting by Source in From A to Z					
		Alphab	etical Ord	ler			
		- /					
ID		Time	Severity	Description			
	Source						
53	Domain	2015-09-04 16:25:11	C Error	Domain NewDomain1 is terminated with exception			
52	Domain	2015-09-04 16:25:11	C Enter	Domain execution interrupted. Resource not available. Type: Egress Port. Number of Domain: 2			
51	Domain	2015-09-04 16:25:10	Informative	Domain NewDomain1 is initializing			
50	Domain	2015-09-04 16:25:07	Informative	Domain NewDomain1 is created and alive			
49	Domain	2015-09-04 16:25:03	Informative	Domain runner enters execution state			
48	Domain	2015-09-04 15:27:13	C Enter	Domain with "Default Virtual Wire(Ports:XG3,3240-1)" is not active			
47	Domain	2015-09-04 15:26:57	C Error	Domain with "Default Virtual Wire(Ports:XG3,3240-1)" is not active			
46	Domain	2015-09-04 15:25:51	C Error	Domain Default Virtual Wire(Ports:XG3,3240-1) is terminated with exception			
45	Domain	2015-09-04 15:25:51	C Error	Domain execution interrupted. Resource not available. Type: Ingress Port. Number of Domain: 2			
-44	Domain	2015-09-04 15:25:51	Informative	Domain Default Virtual Wire(Ports:XG3,3240-1) is initializing			
43	Domain	2015-09-04 15:25:51	Informative	Domain Default Virtual Wire(Ports:XG3,3240-1) is created and alive			
42	Domain	2015-09-04 15:25:48	Informative	Domain runner enters execution state			
41	Domain	2015-09-04 15:18:41	Error	Domain VM_240G-20_XG8 is terminated with exception			
40	Domain	2015-09-04 15:18:41	C Entor	Domain execution interrupted. Resource not available. Type: Ingress Port. Number of Domain: 2			
39	Domain	2015-09-04 15:18:41	Informative	Domain VM_240G-20_XG8 is initializing			
38	Domain	2015-09-04 15:18:41	Informative	Domain VM_240G-20_XG8 is created and alive			
37	Domain	2015-09-04 15:18:38	Informative	Domain runner enters execution state			
36	Domain	2015-09-04 15:18:03	C Error	Domain with "VM_XG8_240G-20" exists already			
35	Domain	2015-09-04 15:17:15	C Error	Domain VM_XG8_240G-20 is terminated with exception			
34	Dontain	2015-09-04 15:17:15	C Entor	Domain execution interrupted. Resource not available. Type: Ingress Port. Number of Domain: 2			
33	Domain	2015-09-04 15:17:15	<ol> <li>Informative</li> </ol>	Domain VM_XG8_240G-20 is initializing			
32	Domain	2015-09-04 15:17:15	<ol> <li>Informative</li> </ol>	Domain VM_XG8_240G-20 is created and alive			
31	Domain	2015-09-04 15:17:12	Informative	Domain nunner enters execution state			
29	Domain	2015-09-04 14:28:29	1nformative	Domain NewDomain11 is running			
28	Domain	2015-09-04 14:28:28	Informative	Domain NewDomain11 is initializing			
22	Domain	2015-09-04 14:28:28	Informative	Domain NexDomain11 is created and alive			
26	Domain	2015-09-04 14:28:25	Informative	Domain runner enters execution state			
23	FlowDirector-640	2015-09-04 14:28:25	<ul> <li>Informative</li> </ul>	Load all streams			
22	FlowDirector-640	2015-09-04 14:28:23	Informative	Initialize FlowMagic Components			
18	FlowDirector-640	2015-09-04 14:28:22	1nformative	FAN1 is in service			
17	FlowDirector-640	2015-09-04 14:28:22	Informative	FAN1 is detected			
16	FlowDirector-640	2015-09-04 14:28:22	Informative	FAN2 is in service			
15	FlowDirector-640	2015-09-04 14:28:22	1nformative	FAN2 is detected			
14	FlowDirector-640	2015-09-04 14:28:22	Informative	FAN3 is in service			
13	FlowDirector-640	2015-09-04 14:28:22	Informative	FAN3 is detected			
12	FlowDirector-640	2015-09-04 14:28:22	Informative	FAN4 is in service			
11	FlowDirector-640	2015-09-04 14:28:22	Informative	FAN4 is detected			
10	FlowDirector-640	2015-09-04 14:28:22	Informative	PSU2 is detected			
9	FlowDirector-640	2015-09-04 14:28:22	1nformative	PSU1 power output is good			
8	FlowDirector-640	2015-09-04 14:28:22	1 Informative	PSII1 is detected			
7	FlowDirector-640	2015-09-04 14:28:11	Informative	Initialize InfiniLoad Components			
6	FlowDirector-640	2015-09-04 14:28:11	U Informative	Activate configuration			
2	FlowDirector-640	2015-09-04 14:28:08	Informative	Automatically sync time with internet time server time nist gov disabled			

Figure 146: Sorting event logs by source.
## CS7i



#### Sorting event logs by severity

By default, the Severity table header lists all event logs by descending ID order.

Click the Severity table header and an "Up" arrow appears, with all event logs listed from most to least severe, as shown in Figure 147.

Click the arrow a second time and a "Down" arrow appears, with all event logs listed from least to most severe.

				Sorting by Severity in From high		
				to low Order		
			<u>_</u>			
ID	Source	Time	* Severity	Description		
53	Domain	2015-09-04 16:25:11	C Error	Domain NewDomain1 is terminated with exception		
52	Domain	2015-09-04 16:25:11	C Error	Domain execution interrupted, Resource not available, Type: Egress Port, Number of Domain: 2		
48	Domain	2015-09-04 15:27:13	C Error	Domain with "Default Virtual Wire(Ports:XG3,3240-1)" is not active		
47	Domain	2015-09-04 15:26:57	C Error	Domain with "Default Virtual Wire(Ports:XG3,3240-1)" is not active		
46	Domain	2015-09-04 15:25:51	C Error	Domain Default Virtual Wire(Ports:XG3,3240-1) is terminated with exception		
45	Domain	2015-09-04 15:25:51	C Error	Domain execution interrupted. Resource not available. Type: Ingress Port. Number of Domain: 2		
41	Domain	2015-09-04 15:18:41	C Error	Domain VM_240G-20_XG8 is terminated with exception		
40	Domain	2015-09-04 15:18:41	C Error	Domain execution interrupted. Resource not available. Type: Ingress Port. Number of Domain: 2		
36	Domain	2015-09-04 15:18:03	C Error	Domain with "VM_XG8_240G-20" exists already		
35	Domain	2015-09-04 15:17:15	C Error	Domain VM_XG8_240G-20 is terminated with exception		
34	Domain	2015-09-04 15:17:15	C Error	Domain execution interrupted. Resource not available. Type: Ingress Port. Number of Domain: 2		
51	Domain	2015-09-04 16:25:10	<ul> <li>Informative</li> </ul>	Domain NewDomain1 is initializing		
44	Domain	2015-09-04 15:25:51	Informative	Domain Default Virtual Wire(Ports:XG3,3240-1) is initializing		
43	Domain	2015-09-04 15:25:51	1 Informative	Domain Default Virtual Wire(Ports:XG3,3240-1) is created and alive		
42	Domain	2015-09-04 15:25:48	Informative	Domain runner enters execution state		
50	Domain	2015-09-04 16:25:07	1 Informative	Domain NewDomain1 is created and alive		
49	Domain	2015-09-04 16:25:03	1 Informative	Domain runner enters execution state		
39	Domain	2015-09-04 15:18:41	1 Informative	Domain VM_240G-20_XG8 is initializing		
38	Domain	2015-09-04 15:18:41	Informative	Domain VM 240G-20 XG8 is created and alive		
37	Domain	2015-09-04 15:18:38	Informative	Domain runner enters execution state		
54	User	2015-09-04 20:53:15	Informative	User ad.om login failed		
56	User	2015-09-04 21:27:10	Informative	User admin login successfully		
55	User	2015-09-04 20:53:23	Informative	User admin login successfully		
33	Domain	2015-09-04 15:17:15	Informative	Domain VM XG8 240G-20 is initializing		
32	Domain	2015-09-04 15:17:15	Informative	Domain VM XG8 240G-20 is created and alive		
31	Domain	2015-09-04 15:17:12	Informative	Domain runner enters execution state		
30	User	2015-09-04 14:53:17	Informative	User admin login successfully		
29	Domain	2015-09-04 14:28:29	Informative	Domain NewDomain11 is running		
28	Domain	2015-09-04 14:28:28	Informative	Domain NewDomain11 is initializing		
27	Domain	2015-09-04 14:28:28	Informative	Domain NewDomain11 is created and alive		
26	Domain	2015-09-04 14:28:25	Informative	Domain numer enters execution state		
25	FlowMapic	2015-09-04 14:28:25	Informative	Start domain with name "NewDomain11" since it is enabled		
24	Sustem	2015-09-04 14-28-25	Informative	NFS sharing has been stonged		
23	FlowDirector-640	2015-09-04 14:28:25	Informative	Load all streams		
22	FlowDirector-640	2015-09-04 14:28:23	Informative	Initialize BowMagic Components		
21	Infinit.oad	2015-09-04 14:28-23	o Informative	Discovered 0 testcases for user QA 1 thlocal		
20	InfiniLoad	2015-09-04 14:28:23	1nformative	Discovered () testrases for user questilional		
19	Infinit oad	2015-09-04 14:28:23	Informative	Discovered () testcases for user adminibliocal		
18	FlowDirector 640	2015-00-04 14-20-23	o Informative	FAN1 is in service		
17	FowDirector-640	2015-09-04 14:28:22	o Informative	EAN1 is detected		
16	FlowDirector-640	2015-09-04 14-29-22	Informative	EAN2 is in service		
15	FlowDirector-640	2015-00-04 14:28:22	Informative	EAN2 is dutanted		
	FlowDirector 640	2015-09-04 14:20:22	Informative	EAV2 is in service		

Figure 147: Sorting event logs by severity.

## 8.3 Syslog Toolbar

The Syslog toolbar, enables the user to perform tasks such as event log filtering, searching, copying logs to clipboard, and so on, and shown in Figure 148.

	T BROKER						
💆 DASHBOARD 🔻 🏯 INTERFA	CES FLOW OPS		SYSLOG	(?) HELP			
Filter:	🍸 Apply 🔣 Clear	Find:		Previo	us 🕨 Next	Copy to Clipboard	R
Figure 148: Sys	log toolbar.						



## Creating a syslog filter

A Syslog filter allows you to manage the flow of event messages. To create a Syslog filter, follow these steps:

- 1. Select any event log entry from the Log List panel.
- 2. Click Apply.
- 3. The log filter results appear in the Source column, as shown in Figure 149.

7 Apply Gear	Find:	4 Previous	Next Copy to	Clipboard 🖉 Clear 🥐 System Info
	Source	C Time		Description
			Severity	
53	Domain	2015-09-04 16:25:11	Error	Domain NewDomain1 is terminated with exception
52	Domain	2015-09-04 16:25:11	Entor	Domain execution interrupted. Resource not available. Type: Egress Port. Number of Domain: 2
48	Domain	2015-09-04 15:27:13	Enor	Domain with "Default Virtual Wire(Ports:XG3,3240-1)" is not active
47	Domain	2015-09-04 15:26:57	Enor	Domain with "Default Virtual Wire(Ports:XU3,3240-1)" is not active
40	Domain	2015-09-04 15:25:51	Curbe	Domain Default Virtual Wire(Ports:XIs3,3240-1) is terminated with exception
45	Domain	2015-09-04 15:25:51	Enter	Domain execution interrupted. Resource not available. Type: Ingress Port. Number of Domain: 2
41	Domain	2015-09-04 15:18:41	Enter	Domain VM_240G-20_XG8 is terminated with exception
40	Domain	2015-09-04 15:18:41	Entor	Domain execution interrupted. Resource not available. Type: Ingress Port, Number of Domain: 2
30	Domain	2015-09-04 15:18:03	Enter	Domain with VM_XG8_240G-201 exists arready
35	Domain	2015-09-04 15:17:15	Error	Domain VM_XUB_240G-20 is terminated with exception
34	Doman	2015-09-04 15:17:15	C Enter	Domain execution interrupted. Resource not available. Type: Ingress Port. Number of Domain: 2
51	Domain	2015-09-04 16:25:10	o informative	bomain Newbomana is initializing
44	Domain	2015-09-04 15:25:51	aneormacive	bomain berault wirtual wire(Ports/x03, 3240-1) is initializing
43	Domain	2015/09/04 15:25:51	1 Information	Domain beaut, virtual wire(Polis,Kos, 22494) is created and any
12	Domain	2015-09-04 15:25:45	Toformation	Domain furnish in ters execution success
30	Domain	2015-02-04 16:25:07	o Information	Domain removing the created and anne
30	Domain	2015-09-04 10:25:05	Toformativa	Domain Million enters execution subor
39	Domain	2015-09-04 15:18-41	o Information	Domain VP_2400-20_X00 is incomprise Domain VP_2400-20_X00 is modeling
39	Domain	2015-09-04 15-18-28	a Informativa	Domain Vin_2+00-20_100 is created and any
12	Domain	2015-09-04 15:10:30	a Informative	Pombin VM VG8, 3406-30 is initializion
12	Domain	2015-09-04 15:17:15	1nformative	Domain VM_X08_240/520 is incompright
32	Domain	2015-09-04 15:17:13	a Informative	Domini tri_X00_2490420 is Created and arre
20	Domain	2015-09-04 14-28-20	1 Informative	Domin NacDomin11 is period
20	Domain	2015-09-04 14-28-28	o Informative	Pombio NacDomaint 1 is initializion
27	Domain	2015-09-04 14-28-28	1 Informative	Domin NacDomin11 is control tod shine
26	Domain	2015-09-04 14-28-25	o Informative	Domin minor antar availant the
25	EneMania	2015-09-04 14-20-25	o Information	Chat domain with name "NacCommini11" since it is untilled
	7 April 20-ar 1 53 52 48 47 46 45 41 40 36 35 31 51 44 43 51 44 43 51 44 43 51 51 52 63 52 53 52 64 64 53 52 52 53 52 52 53 52 53 52 52 53 52 53 52 53 52 53 52 53 52 53 52 53 52 53 52 53 55 55 55 55 55 55 55 55 55	Y April         Find:           53         Consin           52         Domain           40         Domain           47         Domain           48         Domain           49         Domain           40         Domain           41         Domain           42         Domain           43         Domain           34         Domain           35         Domain           44         Domain           51         Domain           43         Domain           44         Domain           45         Domain           47         Domain           48         Domain           39         Domain           30         Domain           31         Domain           32         Domain           33         Domain           34         Domain           35         Domain           36         Domain           37         Domain           38         Domain           39         Domain           20         Domain           21<	Y April         End:         4 Previous           Source         3         Tree           53         Domain         2015-09-04 16:25:11           52         Domain         2015-09-04 16:25:11           48         Domain         2015-09-04 16:25:11           47         Domain         2015-09-04 15:22:13           47         Domain         2015-09-04 15:23:51           46         Domain         2015-09-04 15:23:51           47         Domain         2015-09-04 15:23:51           48         Domain         2015-09-04 15:23:51           49         Domain         2015-09-04 15:23:51           40         Domain         2015-09-04 15:23:51           51         Domain         2015-09-04 15:23:51           52         Domain         2015-09-04 15:25:51           53         Domain         2015-09-04 15:25:51           54         Domain         2015-09-04 15:25:51           53         Domain         2015-09-04 15:25:51           54         Domain         2015-09-04 15:25:51           59         Domain         2015-09-04 15:25:54           50         Domain         2015-09-04 15:25:54           51         Domain         2	Y April         Produ         Providus         Produ         Providus         Produ         Copy to           50         Source         3         Time         6         Security           53         Domain         2015-09-04 16:25:11         Ellero           52         Domain         2015-09-04 15:25:51         Ellero           48         Domain         2015-09-04 15:25:51         Ellero           47         Domain         2015-09-04 15:25:51         Ellero           48         Domain         2015-09-04 15:25:51         Ellero           49         Domain         2015-09-04 15:25:51         Ellero           40         Domain         2015-09-04 15:25:51         Ellero           41         Domain         2015-09-04 15:25:51         Ellero           42         Domain         2015-09-04 15:25:51         Ellero           43         Domain         2015-09-04 15:25:51         Ellero           44         Domain         2015-09-04 15:25:51         Ellero           51         Domain         2015-09-04 15:25:51         Informative           42         Domain         2015-09-04 15:25:51         Informative           59         Domain         2015-09-04 15:25:5

Figure 149: Creating a filter operation.



### Clearing a syslog filter

To cancel or clear an applied filter, follow these steps:

- 1. Click Clear.
- **2.** The action clears the syslog filter from the Source column. The event logs reappear, sorted by descending event ID, as shown in Figure 150.

Filter:	7 1 Ø Clear	Find:	Previous	Next   💽 Copy 1	to Clipboard 🛛 🖉 Clear , 🥙 System Info
LOG LIST	• ID	Source	Time		Descriptio
LOGS				Severity	
System	53	Domain	2015-09-04 16:25:11	C Error	Domain NewDomain1 is terminated with exception
	52	Domain	2015-09-04 16:25:11	Error	Domain execution interrupted. Resource not available. Type: Egress Port. Number of Domain: 2
FlowDirector-640	48	Domain	2015-09-04 15:27:13	Error	Domain with "Default Virtual Wire(Ports:XG3,3240-1)" is not active
HTTP	47	Domain	2015-09-04 15:26:57	Error	Domain with "Default Virtual Wire(Ports:XG3,3240-1)" is not active
Modi orator	46	Domain	2015-09-04 15:25:51	Error	Domain Default Virtual Wire(Ports:XG3,3240-1) is terminated with exception
- Houseboutor	45	Domain	2015-09-04 15:25:51	Error	Domain execution interrupted. Resource not available. Type: Ingress Port. Number of Domain: 2
InfiniLoad	41	Domain	2015-09-04 15:18:41	C Error	Domain VM_240G-20_XG8 is terminated with exception
FlowMagic	40	Domain	2015-09-04 15:18:41	Error	Domain execution interrupted. Resource not available. Type: Ingress Port. Number of Domain: 2
E Domaio	36	Domain	2015-09-04 15:18:03	C Error	Domain with "VM_XG8_240G-20" exists already
Domain	35	Domain	2015-09-04 15:17:15	C Error	Domain VM_XG8_240G-20 is terminated with exception
User User	34	Domain	2015-09-04 15:17:15	C Error	Domain execution interrupted. Resource not available. Type: Ingress Port. Number of Domain: 2
	51	Domain	2015-09-04 16:25:10	Informative	Domain NewDomain1 is initializing
	44	Domain	2015-09-04 15:25:51	Informative	Domain Default Virtual Wire(Ports:XG3,3240-1) is initializing
	43	Domain	2015-09-04 15:25:51	Informative	Domain Default Virtual Wire(Ports:XG3,3240-1) is created and alive
	42	Domain	2015-09-04 15:25:48	Informative	Domain runner enters execution state
	50	Domain	2015-09-04 16:25:07	Informative	Domain NewDomain1 is created and alive
	49	Domain	2015-09-04 16:25:03	Informative	Domain runner enters execution state
	39	Domain	2015-09-04 15:18:41	<ol> <li>Informative</li> </ol>	Domain VM_240G-20_XG8 is initializing
	38	Domain	2015-09-04 15:18:41	Informative	Domain VM_240G-20_XG8 is created and alive
	37	Domain	2015-09-04 15:18:38	Informative	Domain runner enters execution state
	54	User	2015-09-04 20:53:15	Informative	User ad,om login failed
	56	User	2015-09-04 21:27:10	Informative	User admin login successfully
	55	User	2015-09-04 20:53:23	Informative	User admin login successfully
	33	Domain	2015-09-04 15:17:15	Informative	Domain VM_XG8_240G-20 is initializing
	32	Domain	2015-09-04 15:17:15	Informative	Domain VM_XG8_240G-20 is created and alive
	31	Domain	2015-09-04 15:17:12	<ol> <li>Informative</li> </ol>	Domain runner enters execution state
	30	User	2015-09-04 14:53:17	Informative	User admin login successfully
	29	Domain	2015-09-04 14:28:29	Informative	Domain NewDomain11 is running
	28	Domain	2015-09-04 14:28:28	Informative	Domain NewDomain11 is initializing
	27	Domain	2015-09-04 14:28:28	<ul> <li>Informative</li> </ul>	Domain NewDomain11 is created and alive
	26	Domain	2015-09-04 14:28:25	Informative	Domain runner enters execution state
	25	FlowMagic	2015-09-04 14:28:25	Informative	Start domain with name "NewDomain11" since it is enabled
	24	System	2015-09-04 14:28:25	Informative	NPS sharing has been stopped.
	23	FlowDirector-640	2015-09-04 14:28:25	Informative	Load all streams
	22	FlowDirector-640	2015-09-04 14:28:23	Informative	Initialize FlowMagic Components
	21	InfiniLoad	2015-09-04 14:28:23	Informative	Discovered 0 testcases for user QA_1@local
	20	InfiniLoad	2015-09-04 14:28:23	Informative	Discovered 0 testcases for user guest@local
	19	InfiniLoad	2015-09-04 14:28:23	Informative	Discovered 0 testcases for user admin@local
	18	FlowDirector-640	2015-09-04 14:28:22	Informative	FAN1 is in service
	17	FlowDirector-640	2015-09-04 14:28:22	Informative	FAN1 is detected
	16	FlowDirector-648	2015-09-04 14:28:22	Informative	FAN2 is in service
	15	FlowDirector-640	2015-09-04 14:28:22	Informative	FAN2 is detected
	14	FlowDirector-640	2015-09-04 14:28:22	Informative	FAN3 is in service

Figure 150: Clearing a syslog filter operation.



#### Searching for an event log

The search operation allows users to locate event logs quickly and effectively. To search for an event log that matches the search parameter(s), follow these steps:

- 1. Enter the search word in the Find: search box.
- 2. Click Next or Previous.
- **3.** Any word in an event log that fits the search parameter is highlighted, as shown in Figure 151.
- **4.** To search the next event log that matches the search parameter, click **Next**; to search a previous event log, click **Previous**.

	Search input textbox		put	Search Search next previous one one			
🗄 DASHBOARD 🔹 🏯 IN	TERFACES	FLOW OPS		( HELP			
Filter:	7	Apply 🥝 Clear	Find: NewDomain	Previous	Next Opy t	to Clipboard 📿 Clear 🧚 System Info	
LOG LIST			Source	Time	Severity		Description
LOGS		ID					
System		0	System	2015-09-04 14:28:01	1 Informative	System is starting	
B De Diverse Can		1	FlowDirector-640	2015-09-04 14:28:07	Informative	Automatically sync time with internet time server tim	e.nist.gov disabled
E HowDirector-040		2	FlowDirector-640	2015-09-04 14:28:08	<ul> <li>I formative</li> </ul>	Automatically sync time with internet time server time	e.nist.gov disabled
HTTP		3	HTTP	2015-09-04 14:28:08	11 ormative	Web Service is restarted. HTTP: true	
ModLocator		4	HTTP	2015-09-04 14:28:08	Int mative	Web Service is restarted. HTTPS: true	
ID Tofollord		5	ModLocator	2015-09-04 14:28:09	Infc mative	Start device registration	
Tutinicoso		6	FlowDirector-640	2015-09-04 14:28:11	<ol> <li>Informative</li> </ol>	Activate configuration	
FlowMagic		7	FlowDirector-640	2015-09-04 14:28:11	Informative	Initialize InfiniLoad Components	
Domain		8	FlowDirector-640	2015-09-04 14:28:22	<ol> <li>Inform tive</li> </ol>	PSU1 is detected	
E un		9	FlowDirector-640	2015-09-04 14:28:22	<ol> <li>Informa ve</li> </ol>	PSU1 power output is good	
User User		10	FlowDirector-640	2015-09-04 14:28:22	<ul> <li>Informati e</li> </ul>	PSU2 is detected	
		11	FlowDirector-640	2015-09-04 14:28:22	<ol> <li>Informative</li> </ol>	FAN4 is detected	
		12	FlowDirector-640	2015-09-04 14:28:22	<ul> <li>Informative</li> </ul>	FAN4 is in service	
		13	FlowDirector-640	2015-09-04 14:28:22	<ul> <li>Informative</li> </ul>	FAN3 is detected	
		14	FlowDirector-640	2015-09-04 14:28:22	<ol> <li>Informative</li> </ol>	FAN3 is in service	
		15	FlowDirector-640	2015-09-04 14:28:22	<ul> <li>Informative</li> </ul>	FAN2 is detected	
		16	FlowDirector-640	2015-09-04 14:28:22	<ol> <li>Informative</li> </ol>	FAN2 is in service	
		17	FlowDirector-640	2015-09-04 14:28:22	<ol> <li>Informative</li> </ol>	FAN1 is detected	
		18	FlowDirector-640	2015-09-04 14:28:22	<ol> <li>Informative</li> </ol>	FAN1 is in service	
		19	InfiniLoad	2015-09-04 14:28:23	<ul> <li>Informative</li> </ul>	Discovered 0 testcases for user admin@local	
		20	InfiniLoad	2015-09-04 14:28:23	Informative	escovered 0 testcases for user guest@local	
		21	InfiniLoad	2015-09-04 14:28:23	<ul> <li>Informative</li> </ul>	E scovered 0 testcases for user QA_1@local	
		22	FlowDirector-640	2015-09-04 14:28:23	<ul> <li>Informative</li> </ul>	Instalize FlowMagic Components	
		23	FlowDirector-640	2015-09-04 14:28:25	<ul> <li>Informative</li> </ul>	Lo. 1 all streams	
		24	System	2015-09-04 14:28:25	Informative	NFC haring has been stopped.	
		25	FlowMagic	2015-09-04 14:28:25	1nformative	Start don by th name "NewDomain11" since it is e	nabled
		26	Domain	2015-09-04 14:28:25	1nformative	Domain runner enters execution state	
		27	Domain	2015-09-04 14:28:28	1nformative	Domain Membership 1 is created and alive	
		28	Domain	2015-09-04 14:28:28	untormative	Domain NewDomain11 is initializing	
		29	Domain	2015-09-04 14:28:29	Informative	Domain NewDomain11 (s running	Filter results
		30	User	2015-09-04 14:53:17	Informative	User admin login successfully	Therresults
		31	Domain	2015-09-04 15:17:12	Informative	Domain runner enters execution state	
		32	Domain	2015-09-04 15:17:15	Informative	Domain VM_XG8_240G-20 is created and alive	
		33	Domain	2015-09-04 15:17:15	Informative	Domain VM_XG8_240G-20 is initializing	The law path had a firm a
		34	Domain	2015-09-04 15:17:15	Enor	Domain execution interrupted. Kesource not availabl	e. Type: Ingress Port. Number of Domain: 2
		35	Domain	2015-09-04 15:17:15	Enor	Domain VM_X08_240G-20 is terminated with except	1011
		36	Domain	2015-09-04 15:18:03	Information	Domain with VM_XG8_240G-20 exists already	
		37	Domain	2015-09-04 15:18:38	Informative	Domain runner enters execution state	
		38	Domain	2015-09-04 15:18:41	Informative	Domain VM_240G-20_XG8 is created and alive	
		39	Domain	2015-09-04 15:18:41	Informative	Doman VM_240G-20_XG8 IS Initializing	
		40	Domain	2015-09-04 15:18:41	Entor	Domain execution interrupted. Resource not available	e. Type: Ingress Port. Number of Domain: 2
		41	Domain	2015-09-04 15:18:41	Ellor	Domain vM_240G-20_XG8 is terminated with except	ion

Figure 151: Searching for an event log operation.



### Copying an event log to the clipboard

The **Copy to Clipboard** operation allows users to copy all event logs to the Windows Clipboard.

1. Click Copy to Clipboard on the toolbar.

A System Information window appears, as shown in Figure 152.

2. Enter Ctrl+A and Ctrl+C to copy events log text to the clipboard.

The event log is copied to the clipboard.

3. Click Close.

		Copy log	table to					
		cliphoard	4					
DASHBOARD . A INTERF	ACES G FLOW OPS	RESOURCE	1 HELP	- (				
iter: [	7 Apply Otear	Find: NewDomain	4 Previous	Next Copy t	e Clipboard	🖉 Clear 🛛 🥐 System Info		
a LIST	•	Source	Time	Severity				Description
LOGS	10							
D System	0	System	2015-09-04 14:28:01	O Informative	System is	starting		
D Factor and the	1	FlowDirector-640	2015-09-04 14:28:07	O Informative	Automatic	ally sync time with internet time server t	me.nist.gov disable	d
HowDirector-0+0	2	FlowDirector-640	2015-09-04 14:28:08	Informative	Automatic	ally sync time with internet time server t	ime.nist.gov disable	d
HTTP	3	HTTP	2015-09-04 14:28:08	Informative	Web Servi	ce is restarted. HTTP: true		
ModLocator	4	HTTP	2015-09-04 14:28:08	Informative	Web Servi	ce is restarted. HTTPS: taxe		
tefoload	5	ModLocator	2015-09-04 14:28:09	1nformative	Start devie	ce registration		
Developed	- C	FoxDirector-640	2015-09-04 14:28:11	Dubumative	Activate o	enhouration		
E Formage	i Sys	tem Information						×
E Contain	5							
Date:	<sup>2</sup> Dlo	hos Aththe and	Ctrl+C to conv to	t to cliphoar	4			
	1 Pie	ase use cuitta allu	culter to copy tes	tt to clipboart				_
	1 10	Source	Time	Se	verity	Desc		
	1 56	User	2015-09-04 2	1:27:10 in	fo	User admin login	1	
	1	constully						
	1 1	lless		a	(m)	and the second s		22 C
	1 55	User	2015-09-04 2	0:53:23 10	10	User admin login		
	1 50	ccessfully						
	1 54	User	2015-09-04 2	0:53:15 in	fo	User ad,om login fa	niled	
	53	Domain	2015-09-04 1	6:25:11 er	TOP	Domain NewDomain1	s	
	2 te	eminated with ex	cention					
	5 52	Bomain	2015-00-04 1	6-25-11 or	Dan	Domain execution		
		Dunierii	2015-05-04 1	bla Turner		Post Nuclear of Deer		
	2	terrupted. Resol	irce not availa	Die. Type:	egress	PORC. NUMber of Doma	an: 2	
	2 51	Domain	2015-09-04 1	6:25:10 in	<b>†0</b>	Domain NewDomaini	IS .	
	2 10	itializing						
	2 50	Domain	2015-09-04 1	6:25:07 in	fo	Domain NewDomain1	s	
	2 60	eated and alive						
	3 49	Domain	2015-09-04 1	6:25:03 in	fo	Domain runner enter	-	-
	3 0023	C C C C C C C C C C C C C C C C C C C				contract rearrant circles		-
	3							
	1						Qdee	ber of Domain: 2
	1						Close	
	30	pongin	2013-09-04 13-18-03	CHOI	DOTION V	UT 17 A00_2+00-20 EX AS ALEMAN	5 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
	37	Domain	2015-09-04 15:18:38	U Informative	Domain ru	inner enters execution state		
	38	Domain	2015-09-04 15:18:41	Informative	Domain V	M_240G-20_XG8 is created and alive		
	39	Domain	2015-09-04 15:18:41	Informative	Domain V	M_240G-20_XG8 is initializing		
	40	Domain	2015-09-04 15:18:41	C Error	Domain er	ecution interrupted. Resource not avail	System	log table
	41	Domain	2015-09-04 15:18:41	Cmor	Domain V	M_240G-20_XG8 is terminated with exc	officin	nog cabie
	42	Domain	2015-09-04 15:25:48	Informative	Domain n	inner enters execution state		

Figure 152: Copying a log table to the clipboard.



#### Copying a specific log to the clipboard

To copy a specific log or logs from the same category, follow these steps:

- **1.** Select a log category from the Log List panel.
- 2. Click Copy to Clipboard on the toolbar.

A System Information window appears, as shown in Figure 153.

3. Enter Ctrl+A and Ctrl+C to copy events log text to the clipboard.

The event log is copied to the clipboard.



4. Click Close.

PLOKE	7 Apply Ø Clear	Find:	Previous	Next Copy to	Cloboard	System Info	
DG LIST	•	Source	Time	Severity			Descript
LOGS	ID .						
System	3	HTTP	2015-09-04 14:28:08	O Informative	Web Service is restarte	d. HTTP: true	
FighDirector-640		HITP	2015-09-04 14:28:08	O Information	Web Service is restarte	G. HI IPS: DUE	
I HITP	1	System Information					
ET HOOFOCHOL		Biasta una Orda A and	Order to care but to cloband				
InfiniLoad	1	Frease use contra and	corrector copy text to exposite.	elty Dec			
FlowMagic	\	4 HITTP	2015-09-04 14:28:08 info	Web Service	is restarted.		
IR Docuis		3 HITP	2015-09-04 14:28:08 info	Web Service	is restarted.		
Coloct log	anto go mu	HTTP: true					
Selectiog	category						
						Con	v select les
						Сор	y select log
						Cop	y select log
					(Correct)	Cop	y select log gory results to

Figure 153: Copying a specific log to the clipboard.



### Clearing event log displays

The **Clear** operation allows users to clear the entire event log display from the Systems Log table.



#### Displaying syslog system information

The **System Info** operation displays nVoy Packet Broker system information such as model, version, data plane version, PCI bridge, and so on. To display syslog system information, follow these steps:

1. Click System Info on the toolbar.

A System Information window appears, as shown in Figure 154.

2. Enter Ctrl+A and Ctrl+C to copy the events log information to the clipboard.

The syslog system information is stored as a JSON (JavaScript Object Notation) file to the clipboard.

3. Click Close.



Figure 154: Displaying syslog system information operation.

## 9 Help Tab

The Help tab enables the user to access all pertinent nVoy Packet Broker online help documents in the form of user guides, user manual, and video tutorials, as shown in Figure 155.

**NOTE:** The Help tab has been revised since the release of this document. Refer to the Myricom nVoy Series Packet Broker Release Notes to access the newly revised Help tab.

	HELP
JSER GUIDES	USER MANUALS
UG100-InfiniCORE FlowDirector-640 Getting Started Guide-V1.02 In this Hardware Owner's Manual and Getting Started Guide, you will find comprehensive information about how to verify received package, how to setup and operate FlowMagic-3200 appliance. A fully functional FlowMagic-3200 appliance will be ready to use after the instructions in this guide are completed.	<ul> <li>UM100-InfiniCORE FlowDirector-640 User Manual         This user manual provides a definitive guide on how to operate InfiniCORE             FlowDirector appliance through its innovation Web User Interface.         </li> <li>UM104-InfiniCORE FlowDirector-640 SFP+ to QSFP+ Conversion User Manual         This user manual provides a guide on how to use 4 SFP+ interfaces as one native             QSFP+ interface through proper cabling.     </li> <li>InfiniCORE Networks SIMP Structure of Management Information         This file contains InfiniCORE Networks SIMP MIB for FlowDirector-640         This file contains InfiniCORE Networks SIMP MIB definition for FlowDirector-640     </li> </ul>



#### **User Guides**

User guides offer an overall view of the tasks associated with the nVoy Packet Broker and on how to initiate a specific task.

#### **User Manuals**

User manuals offer detailed guidance and instructions on the management and operational aspects of the nVoy Packet Broker appliance. Companion documentation includes API reference manuals, evaluation guides, case studies, white papers, and so on.

## **10 Managing Flow Domains**

The nVoy Packet Broker organizes its data path around the concept of a flow domain. Each Flow Domain has a set of ports and a rule to define how to process the flows among the ports. Flow Domains are distinct entities and do not interfere with one another.

The nVoy Packet Broker supports a range of domain modes such as:

- Virtual Wire
- Bidirectional Traffic
- Traffic Replication
- Traffic Aggregation
- Traffic Aggregation and Replication
- Load Balancing

## **10.1 Virtual Wire**

#### **Use Case**

The purpose of Virtual Wire is to provide an efficient way for the user to conduct automated cable management. Virtual Wire Mode can be viewed as a mode where two switch ports are internally connected through a lossless wire. This setting provides the best flexibility when the user wants to create a dedicated connection across a set of ports.

The two ports connected by virtual wire will be bi-directionally lossless that is capable of 10Gbps traffic @ 64 bytes with minimum latency.

#### **Traffic Flow**

In virtual wire mode, all the traffic coming from the TrafficPort0 is sent to TrafficPort1, while all the traffic coming from the TrafficPort1 is sent to TrafficPort0.



Figure 156: Example of a virtual wire domain.

All the virtual wire domains in the switch are isolated and will not interfere with on another.



#### **Settings**

Figure 157 demonstrates how a simple virtual wire is created in the Configuration Editor, displaying the domain name, ingress ports and egress ports.



Figure 157: Setting up a virtual wire in the Configuration Editor.

## **10.2 Bidirectional Traffic**

#### **Use Case**

Bidirectional traffic allows the user to receive and transmit data within the same interface port. For the most part, ports are explicitly assigned to an egress or an ingress role; however, there are instances where hardware limitations require that one port take on both roles. For example, bidirectional traffic occurs in machines with only one PCI slot that rely on one port in an ingress and egress capacity to receive, analyze, and transmit traffic.

#### **Traffic Flow**

The capabilities to handle bidirectional traffic are inherently built into many devices. This is called running in Full-Duplex mode. Full-Duplex mode allows for both Rx and Tx traffic on paired-off interfaces, compared to Half-Duplex mode, which only allows unidirectional traffic streaming. The traffic through the wire is unaffected.

#### Settings

Bidirectional traffic on an interface requires two ingress and two egress ports, as shown in Figure 158.



Figure 158: Setting up a bidirectional traffic scenario.

## **10.3 Traffic Replication**

**NOTE:** We suggest that you follow the directions in the *Envoy Packet Broker Filter User Guide* in Appendix 5. to acquaint yourself with the basics of creating a filter domain first before moving on to the more detailed procedures in the nVoy Packet Broker User Guide.

#### **Use Case**

Traffic Replication allows the user to apply different processing technologies to the same traffic path.

#### **Traffic Flow**

The Traffic Replication domain replicates the traffic coming into the Traffic port and sends it out to the FanoutPorts. Each FanoutPort transmits the same traffic (Figure 159).



Figure 159: Traffic replication between TrafficPort and FanoutPorts.

Each FanoutPorts do not receive traffic. The dataflow is unidirectional from TrafficPort to FanoutPorts.

#### Settings

The traffic replication requires one Ingress Traffic port and more than one Fanout Egress port to operate. The Fanout ports are completely isolated and don't interfere



Domain Data Path Designer	<b>a</b> 0
Components	Data Path Components
	🗉 🕼 TrafficReplication
	(Ingress1)
	Filter1
Increas Port III (Ingress1) III Replicator1 III Filter1 III (Egress1)	Filter2
Filters 0 0	Filber3
	Replicator1
	(Egress1)
	Egress2)
Filter	(Egress3)
II Filter2 II (Egress2)	
Filters 0	Component Properties
Replicator	Label Ingress1
Approprio	Port Select Port
	Cable ID:
	Speed
Filter3 (Egress3)	Tag Use 2 [2-255]
Religion Filters 0	Slice Size Disable 🔹
Case Marce Form Port Text Text Text Dences	8
Saw To Template	V OF OCH
	V UK V Carce

with traffic, as shown in Figure 160.

Figure 160: Setting up a traffic replication scenario.

## **10.4 Traffic Aggregation**

**NOTE:** We suggest that you follow the directions in the *Envoy Packet Broker Filter User Guide* in Appendix 5. to acquaint yourself with the basics of creating a filter domain first before moving on to the more detailed procedures in the nVoy Packet Broker User Guide.

#### **Use Case**

Traffic Aggregation can be used to construct N to 1 traffic concentration with filtering capabilities. Traffic coming from Traffic ports is sent through filter banks, aggregated together, and then forced out the Aggregation Port.

#### **Traffic Flow**

The following diagram shows the traffic flow for this domain.



Figure 161: Representation of a traffic aggregation domain.

#### Settings

The Traffic Aggregation Domain can manage two or more traffic ports and one port as the aggregation port.



Figure 162: Setting up a traffic aggregation scenario.





The user can also configure the filters to define which traffic is permitted to egress.

Figure 163: Configuring filters for the traffic aggregation domain.

## **10.5 Traffic Aggregation and Replication**

**NOTE:** We suggest that you follow the directions in the *Envoy Packet Broker Filter User Guide* in Appendix 5. to acquaint yourself with the basics of creating a filter domain first before moving on to the more detailed procedures in the nVoy Packet Broker User Guide.

#### **Use Case**

Traffic Aggregation and Replication Domain merges Traffic Aggregation and Replication together with slice engine and filtering capabilities in a single domain.

#### **Traffic Flow**

There are several important elements in this domain (Figure 164.)



Figure 164: Representation of a traffic aggregation and replication domain.

#### **Filters**

The filters are applied to traffic at the ingress port and egress port. The user assigns the default action of a port to be either pass or drop. Filters are set to screen a subset of the traffic and direct remaining traffic through the pipeline.

#### **Slice Engine**

The slice engine can be configured to truncate the packet to a specific size.

#### **Replication Ports**

The replication engine replicates the aggregated packets into multiple copies with its own filters.



#### **Settings**

An example of a Traffic Aggregation and Replication domain is shown in Figure 165 below.



Figure 165: Setting up a traffic aggregation and replication domain scenario.

## **10.6 Load Balancing**

#### **Use Case**

In a network, it is common to create a bridge between high speed traffic (such as 10Gbps) and processing nodes with less capability. Examples of such nodes are IDS, IPS, and data recorders. The nVoy Packet Broker Load Balance domain offers a solution to this problem.

#### **Traffic Flow**

The nVoy Packet Broker Load Balance domain manages the high-speed traffic by splitting the traffic across many low-speed interfaces while maintaining flow integrity and processing capability.



Figure 166: Representation of a load balancing domain.

#### Settings

An example of a Load Balance domain is shown in Figure 167.



Figure 167: Setting up a load balancing domain scenario.

In this example, the Load Balance domain has one traffic port and multiple Load Balance ports. There are many ways to load-balance traffic.

### 10.6.1 TAP/RSPAN Required for Replication prior to Load Balancing

A user wants to replicate incoming traffic by sending one flow to a Load Balance component and the other flow for separate examination. Selecting a Replicator component may be a wise choice, but due to the nature of pipelines with the nVoy Packet Broker Tomahawk chipset, a different component is required. To interrupt the pipeline the user must rely on the TAP/RSPAN component instead of the Replicator component.

To demonstrate, Figure 168 shows a Flow Domain connected to a Replicator. While this may seem the intuitive way to create the domain, the Replicator cannot prevent the Load Balancer from drawing all traffic to itself.



Figure 168: Flow domain connected to a replicator.

To successfully create two full flows, replace the Replicator component with a TAP/RSPAN component, as shown in Figure 169.



Figure 169: Flow domain with replicator replaced by a TAP/RSPAN component.

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# **Appendix 1: List of Error Messages**

nVoy Packet Broker error messages and their possible cause.

ID	Message shown on user interface	Possible cause
1	Fail to connect "5.0.0.XXXXX"	Internal Error; Reboot to clear.
2	Invalid port ID #{id}	Port number is invalid.
3	User #{username} exists already	User name exists already.
4	User #{username} does not exist	User name does not exist.
5	You can't delete administrator account #{username}	Administrator account is reserved and cannot be removed.
6	Domain #{domain} is not found in system. Invalid domain #{domain}.	Domain name is not found.
7	The old password is incorrect. Please retry with right password	Password is not correct.
8	Server \#{name}\ already exists in LDAP server list.	LDAP server exists already.
9	Server \#{name}\ already exists in TACACS+ server list.	TACACS server exists already.
10	LDAP Server #{name} does not exist.	LDAP server exists already.
11	Group #{name} exists already	Group name exists.
12	Group #{name} does not exist	Group name does not exist.
13	Current role is #{get_role_mode()} find a port that does not exist locally	Cluster link uses a non-existent port.
14	All cluster links are used, please retry later or reconfigure cluster with more cluster links	Cluster link has been used up.
15	When CSPi nVoy Packet Brokers are placed in cluster configuration, domain type \#{nd[:mode]}\ cannot be created with ports mixed from different CSPi nVoy Packet Broker appliances.	Ports can't be mixed within cluster setup.
	Packet Broker appliance	
16	CSPi nVoy Packet Broker Cluster does not support mode #{nd[:mode]}	Cluster model is not supported.
17	User #{owner} has domain named #{name} already	The domain name is duplicated.
18	This device is a slave device of a cluster. Please use cluster master to operate slave device	Operation needs to be started from Master.
19	Domain with id #{domain_id} does not exist in the system	Domain is not existed.

ID	Message shown on user interface	Possible cause
20	This device is a slave device and has active domain in use. Please use master device to remove domain before change the mode. Master device's URL is http://#{@role[:master_ip]}	The action needs to started from master device.
21	Fail to find port by port name #{port_name}	Port name does not exist.
22	Fail to find domain with port #{from_port} #{to_port}	Domain that contains specified port does not exist.
23	Free invalid filter VLAN id #{vlan_id}	VLAN id does not exists.
24	Port indexed by id #{portid} does not exist.	Invalid port index is used.
25	No Interface Module Detected!	Port does not have interface optical module.
26	Currently nVoy Packet Broker supports English and Chinese language, requested #{language}	Local language is not supported.
27	#{port_sysname} is taken by domain #{dom[:name]}, please disable or delete domain #{dom[:name]} to release #{port_sysname}	Port has been used already.
28	Lack of mirror resource #{@mirror_id_res.length}	There is no mirror left in device to use.
29	Lack of filter resource left #{@acl_id_res.length} require #{num}	There is no filter resource left in device to use.
30	Please specify an extra port for hardware processing resource. that required for the operation	Hardware processing port is needed.
31	Only one processing port can be used in this domain	Each domain can have one processing port.
32	Please specify one port to provide processing resource for domain operation.	The domain operation requires an additional processing port.

# **Appendix 2: Supplemental Interface Commands**

Command root	Command (example)	Description
<pre>#config interfaces trafficports port-name</pre>		Accesses the interface commands node.
speed [1G 10G]		Changes the port configuration to 1Gbps or 10Gbps. When setting the port to 1Gbps, the SFP module converts 10Mbps and 100Mbps speed grade to 1Gbps using SGMII protocol.
name [string]		Names the port name to string.
admin [enable disable]		Enables or disables the ports.
show		Displays the current port configuration and status.
sfpctrl [read write] i2caddress reg_addr [data]	<pre># sfpctrl read 0xA2 0x80 # sfpctrl write 0xA2 0x0 0x1140</pre>	Reads or writes to the SFP configuration space.
linksync [enable disable]		Enables or disables the link synchronization feature when the virtual wire is created.

# **Appendix 3: Hardware Specifications**

# Hardware Specifications

Function	Compliance	Туре	Quantity
Bi-mode 1Gb/10Gb/25Gb Traffic Ports	IEEE 802.3by Optical fiber, twinaxial, backplane 25 Gigabit Ethernet IEEE 802.3ae 10 Gigabit Ethernet IEEE 802.3aq 10GBASE-LRM	1G SFP+ Fiber Optics 1G SFP+ Passive DAC Cable 10G SFP+ Fiber Optics 10G SFP+ Passive DAC Cable 25G SFP28 Fiber Optics 25G SFP28 Passive DAC	48
40Gb/100Gb Traffic Ports	SFF-8436, SFF=8635 QSFP+ 40Gb port; QSFP28 100Gb Ports	QSFP+/QSFP28+ Fiber Optics or QSFP+/QSFP28 DAC Cable	6
40Gb/100Gb Traffic Ports Breakout Capabilities QSFP+ QSFP28+ 4 x SFP+/SFP28 1Gb/10Gb/25Gb	Each 40Gb/100G Traffic Port can be split into 4 ports to support 1Gb/10Gb/25Gb Operation. IEEE 802.3ae 10 Gigabit Ethernet IEEE 802.3aq 10GBASE-LRM SFP+ MSA, Revision 4.1 Direct-attach copper support up to 10 meters	40G QSFP+ to 4x SFP+ splitter cable 100G QSFP28 to 4x SFP28 splitter cable	6 x QSFP+/QSFP28 to 24 SFP+/SFP28
1Gb/10Gb/25Gb Traffic Ports Gang Capabilities 4 x SFP+/SFP28 QSFP+ QSFP28	Four (4) adjacent 1Gb/10Gb/25Gb Ports can be ganged into one (1) QSFP+/QSP28 Port with QSFP+/QSP28 to SFP+/SFP28 Cable	QSFP+/QSP28 Fiber Optics or QSFP+/QSP28 DAC Cable	48 x SFP+/SFP28 to 12 x SFP+/QSFP28
LED - System	Power Module 1 Status LED Power Module 2 Status LED FAN Status LED STAT Status LED	GREEN/AMBER GREEN/AMBER GREEN/AMBER GREEN/AMBER	1 1 1 1
LED - SFP+ Traffic Ports	Combo LED for Link and Activity	GREEN LED	1 per Port
LED - QSFP+ Traffic Ports	Combo LED for Link and Activity	BLUE LED	1 per Port
10/100/1000 Mbps Management Port	10/100/1000BASE-T Category 5, Category 5e, Category 6 UTP	Copper RJ-45	1
Visible LED RJ-45 Management Port	LED for Link LED for Activity	GREEN/ORANGE LED GREEN LED	2
Console Port	115200 Baud 8 Bit Data No Parity 1 Stop Bit	Mini USB Type B	1
USB Port	USB 2.0 High Speed 480Mpbs Port	USB Type A	1
Air Flow and Fans	PWM Controlled Long Endurance Fan	Front to Back Air Flow	4



Function	Compliance	Туре	Quantity
Redundant Power Supply	Dual 750W High Efficiency 90-230V AC 50-60Hz Class I	1+1 Redundant Power Supply	2
Rack Mount Kit	19-inch Rack Mountable	19 Inch Rack Mountable	1
Chassis Dimension	Height x Width x Depth (inches)	1.75 x 17.3 x 19	1

## **Standard Peripherals**

Part Name	Quantity
DB-9 to Mini-B USB Serial Console Cable	1
UTP Cat 6. Ethernet Cable	1
Rail Mounting Kit	1

## **Package and Environmental Specifications**

Item	Description	
Dimension (Unit: mm)	485 x 440 x 44 (Width x Depth	x Height)
Net Weight (Unit: Kilogram)	8.5	
Environment	Operating Temperature: Non-Operating Temperature: Humidity:	10 ~ 35 -40 ~ 70 20 ~ 90% (Non-condensing)

## **Protocols Support**

The nVoy Packet Broker supports the following protocols:

TRILL, MPLS, VPWS, Q-in-Q, MAC-in-MAC, IPv4, IPv6, GRE, ECMP, TCP, UDP, IGMPv1, IGMPv2, IGMPv3, VEPA

# **Appendix 4: Recommended Reading Materials**

Suggested reading materials on the nVoy Packet Broker appliance.

- **1.** Myricom nVoy Series Packet Broker Getting Started Guide.
- 2. Myricom nVoy Series Packet Broker Quick Reference Guide.

## **Appendix 5: nVoy Packet Broker - Filter User Guide**

The Filter User Guide provides the background information, conceptual model, and typical data path design patterns that allow users to manage packet filters effectively and efficiently.

## **Packet Filters**

Packet filters are often used to match protocol fields parsed from a packet against a set of pre-defined rules to a verdict. Depending, on the implementation technologies, there are hardware-based packet filters and software-based packet filters.

### Hardware-based filters

Hardware based filters are implemented using dedicated resources found in hardware chipsets. In the case of the nVoy Packet Broker, it is the TCAM based lookup engines that are strategically placed along the packet processing pipeline. The main strength for hardware based filters comes from its deterministic performance of the pipeline operating at line rate speeds. The nVoy Packet Broker hardware-based lookup engine is capable of processing packets at line rate regardless of packet sizes.

### **Software-based filters**

Software-based filters run on highly optimized network processors or general purpose processors optimized for data plane usage. They are flexible, feature-rich and can be quickly re-engineered to offer new features. Software-implemented filter performance is not nearly as high as hardware-based filters; however, they are good enough to process tens of millions of packets per second.

At its core, the operating system organizes the filter configuration around the following abstractions.

#### **Filter Component**

A filter component is a repository designated to hold filters and their relative location in the data path.

#### **Filter Definition**

A filter is defined by three groups of attributes.

#### 1. Filter Qualifiers

Filter qualifiers, also known as fields, specify the match conditions.

#### 2. Filter Actions

Filter actions define the action that needs to take place when a packet is found to match all the qualifiers.

#### 3. Filter Controls

Filter meta data specifies the name and enablement with an optional description.

The following nVoy Packet Broker Web UI screenshots provide an overall look and feel of the above abstractions.



Figure 1: Filter components and their place in the data path.

## **Description of Filter Building Blocks**

The relationship among the filter component, filters, and fields is illustrated in Figure 2.

Each filter component can have one or more filters. Each filter has a collection of fields. Each field serves as qualifier against the data carried in the packet.

After a packet arrives at the ingress port, the packet parser extracts all the fields from the packet. These values are sent to the TCAM-based lookup engine where high performance parallel lookup takes place against predefined filters. The lookup engine outputs a verdict for each packet. The lookup engine uses the following formula to evaluate a given value-to-filter definition.

#### (Field Value from Packet + Field Mask from Filter Definition) = Field Value

Only when all fields in a filter produce a match, the corresponding action in the same filter will be taken. Examples of actions can be either dropping the packet, redirecting, or mirroring the packet. When multiple filters match a given packet, the filter precedence is determined by its order in the filter array.



Figure 2: Relationship among the filter component, filters, and fields.



#### An example of a match process is shown in Figure 3 below.

Port:32K-XG Speed:SFP+	sport1 3-XE4 : 10Gb Full Duplex	HTTPS_SSH Source Or Dest IP#A:192.168.0.1/24 Source Or Dest PORT#A:443(HTTPS) Source Or Dest IP#A:192.168.0.0- Source Or Dest IP#A:192.168.0.0- Source Or Dest PORT#A:22(SSH)	Egressport1     Port:640-XG18     Speed:SFP: 1Gb Si     Loopback:No Loopl     Enable VLAN Attace	ERDES Full Duplex
efinition Edito	r			
			<b>T</b> .	
Name	Field	Value	Tot Mask	tal:2 Filters 💽 💽 🍞 🔒 Operations
Name	Field Match Action	Value	Tot Mask	al:2 Filters 💽 💽 🏹 📑 Operations
Name HTTPS	Field Match Action Source Or Dest IP#A	Value Pa: 192.168.0.1	Tot Mask 55 255.255.255.0	al:2 Filters 💽 💽 🏹 🔚 🖓 Operations
Name HTTPS	Field Match Action Source Or Dest IP#A Source Or Dest PORT#A	Value Pa: 192.168.0.1 443: HTTPS	Tot Mask 255.255.255.0 65535	al:2 Filters 💽 💽 🍞 🕞 🕈 Operations
Name HTTPS	Field Match Action Source Or Dest IP#A Source Or Dest PORT#A Match Action	Value Pa: 192.168.0.1 443: HTTPS Pa:	Tot Mask 255.255.255.0 65535 ss	al:2 Filters 💽 💽 🍞 🕞 Operations
Name HTTPS SSH	Field Match Action Source Or Dest IP#A Source Or Dest PORT#A Match Action Source Or Dest IP#A	Value Pa: 192.168.0.1 443: HTTPS Pa: 192.168.0.0	Tot Mask 255.255.255.0 65535 55 255.255.255.24	Coperations       []

Figure 3: Illustration of a match process on the nVoy Packet Broker Web UI.

#### Example

In the above example, there is one filter component sitting in between the ingress and egress ports. In this filter component, two filters are configured to allow only HTTPS or SSH traffic to pass. The traffic is specified by its source or destination port number. An additional field is also specified to ensure the matched traffic only comes from a specific IP range.

Source or Destination port number for HTTPS	443
Source or Destination port number for SSH	22
IP Range	192.168.0.0/24.

Table 1: Specifying the source and destination ports for HTTPS and SSH.

**NOTE:** Since the configuration assigns **Source Or Dest** to each port and IP, bi-directional traffic can be matched and passed

The following traffic patterns should pass this filter component:

- Source IP = 192.168.0.100 AND Destination Port = 443
- Destination IP = 192.168.0.100 Source Port is 443
- Source IP = 192.168.0.100 AND Destination Port = 22
- Destination IP = 192.168.0.100 Source Port is 22

The following traffic patterns should *not* pass this filter component:

- Source IP = 192.168.1.100 AND Destination Port = 443
- Destination IP = 192.168.0.100 Source Port is 80



## **Types of Filters**

The nVoy Packet Broker provides two types of filters known as Ingress and Egress filters to facilitate its network visibility data path. The relative location of each component in the packet processing pipeline is represented in Figure 4.

The nVoy Packet Broker Web UI Configuration Editor uses Ingress Filter Component and Egress Filter Component to represent the ingress filter and the egress filter respectively.



NOTE:Each filter type can only be evaluated one time at the hardware level.Concatenation of filters in the Web UI is possible, however it may lead to over-<br/>committed hardware resources due to the flattening process.



### **Ingress Filters**

Ingress filters are mainly used as pass filters to split ingress traffic into orthogonal traffic classes and then passing each traffic class to the next processing element. By default, all non-matched traffic is dropped. Ingress filters can associate matched packets with additional actions such as tunneling or VLAN attachment.

#### Example 1:

A typical example of Ingress Filters is shown in Figure 5. The ingress traffic is split by Filters **A** and **B**. The catch-all port **C** continues to receive all the traffic.



Figure 5: Ingress filtering when traffic is split into orthogonal classes.

#### Example 2:

When it is difficult to split traffic into orthogonal traffic classes, such as the filter setup in Figure 6, the overlapped traffic "**C**" will appear at the output of the first filter.



Figure 6: Ingress filtering behavior when traffic is <u>not</u> split into orthogonal classes.

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#### Example 2: Suggested workaround

A suggested workaround is to introduce a new filter to filter out "C", followed by aggregation to combine the traffic together to produce **AC** and **BC**.



Figure 7: Ingress filtering with added filter and aggregation components.

One more solution to overcome the above non-orthogonal case is suggested in the next section with the help of the Egress Filter.



### **Egress Filters**

An Egress Filter can be connected to one and only one egress port. In other words, the egress filter is a localized filter, and only impacts the traffic to that egress port. In this release, the action of the egress filter is limited to "drop" only.

#### Example 1:

One typical usage of egress filtering is to drop a known traffic pattern without affecting the other ports, as shown in Figure 8. The "**Drop AB**" on Port **A** will not impact Port **B** from transmitting **B**.



Figure 8: An example of egress filtering.

#### Example 2:

In the case where it is difficult to split traffic into orthogonal traffic classes, the ingress filter is used to filter out the traffic of **ABC**, followed by an egress filter to drop traffic **B** and **C** on its corresponding egress interface.



Figure 9: Egress filtering with an added ingress filter component.

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## **Filter Configuration Work Flow**

The section describes how to create a domain filter from the nVoy Packet Broker Web UI.

**NOTE:** We suggest that you follow the directions in this section to acquaint yourself with the basics of creating a filter domain first before moving on to the more detailed procedures in the nVoy Packet Broker User Guide.

#### Creating a filter

**1.** Click **New Flow Domain** from the Flow Domains panel or **Create Domain** from the Device View panel of the Web UI Dashboard, as shown in Figure 10.

Status	Operations						
•	0	-					
8	0						
8	0	-					
8	0	0			()		
 	-		B DASHBOARD . A INTE	RFACES CELECTION	KESOURCE SY	SLOG GHELP	

Figure 10: Select Create Domain or New Flow Domain.

2. Enter the domain name in the text box of the Input Domain name window and click **OK**.

The Configuration Editor window appears.

- **3.** Drag and drop the following components from the Components panel into the workspace:
  - 1, Ingress port
  - 1, Ingress filter
  - 1, Egress port
  - 1, Egress filter







**4.** Double-clicking a filter component or clicking **New Filter Definition...** in the Components Properties panel (Figure 12), launches the Filter Definition Editor window, as shown in Figure 13.



Figure 12: Selecting a filter component to define.

The Filter Definition Editor enables the user to add, edit, delete, duplicate, and enable and disable filters. The editor also enable users to load and save filter templates to the Web UI.

Name	Field	Value		Mask	Op	orations
Pass [Pass	Unmatched] 🥎 [Drop Unmat	ched] [ Export to CSV]	[Import from CSV]	T[Load from Templates]	Save As Template	7.[New]
					/	
					New Fift	or
						Ci

Figure 13: Filter Definition Editor.

5. Click [New] to create/configure a new filter.

The Filter Configuration Editor window appears, as shown in Figure 14.



All	Overview								0
Changing (	Filter Name	Filter-1							
	Actions	Pass      Drop							
Link Layer Field		Mirror/Xmit through GRE Tu	nnel 🔻 🗉 Use New Ou	ter Vlan 2	8				
Network Layer	Eashla	True O False							
Transport Layer	Chable								
	Link Lawer Eigh	de							0
	End Points	Attributes	Value	Mask		IEX Valu	Je	HEX Mask	J
	MAC#A	Source T	00:00:00:00:00:01	FF:FF:FF:	FF:FF:FF 0	x00000	0000001	OxFFFFFFFFFFFF	
	MAC#B	Destination •	00:00:00:00:00:02	FF:FF:FF:	FF:FF:FF 0	x00000	0000002	OxFFFFFFFFFFFF	
	VLAN		1	65535	0.	x0001		OxFFFF	
	🗆 cos		0	255	0.	x00		OxFF	
	EtherType		0x0800:IPv4	▼ 65535	0	x0800		OxFFFF	
			h						
	Network Layer	Fields							۲
	End Points	Attributes	Value		Mask		HEX Value	HEX Mask	
	IP#A	Source OR Destination V	1.1.0.1		255.255.255.255	NM	0x01010001	OxFFFFFFFF	
	IP#B	Source OR Destination	2.2.0.2		255.255.255.255	NM	0x02020002	OxFFFFFFFF	
	Precedence	e	0		255		0x00	0xFF	
	DSCP		0: Best Effort	•	255		0x00	0xFF	
	TOS		0		255		0x00	0xFF	
	Π		64		255		0x40	0xFF	
	Protocol		6: TCP	•	255		0x06	0×FF	
	Transmort I ave	r Fields							0

Figure 14: Filter Configuration Editor.

6. Set your Overview, Link Layer Fields, Network Layer Fields, and Transport Layer Fields values.

To add an outer VLAN ID, go the Adding an Outer VLAN ID in this section.

7. Click OK.

The Filter Definition Editor re-appears displaying the newly configured filter. Figure 15. shows the Filter Definition Editor with three configured filters.

CONTRACTOR OF	Field	Value		Mask	Operations
Hume	Match Action	Paroc.	Pass	1 mars	
Filter-1	Source Or Dest IP#A	1.1.0.1	1055	255,255,255,255	
	Match Action	17575577	Pass		
Filter-2	Source Or Dest IP#A	2.1.0.1		255.255.255.255	
	Match Action		Pass		
Filter-3	Source Or Dest PORT#A	80: HTTP		65535	
			Import from CSV/		Shim as communities without
	ass onmatched] Score onmatche	ed [ etc. cov]	[Import from CSV]	T (Load from templates)	Save As Templatej
	ass onmatched) 🦓 (Drop Onmatch	al Ceresol Contro Cont	[Import from CSV]	T (Load from templates)	Save As templatej Kitvewj
	ass onmatched] 🦓[Orop onmatche	of stexport to CSVI	[Import from CSV]	Y (Load from remplates) [7]	Save As template) 🏌 (New)
	ass onmatcheoj 🦓 (Orop onmatche	of Stexport to CSVI	Import from CSV	Y (Load from remplates)	Save As remplate) T <sub>e</sub> rnew)
	ass onmatched, Millorop onmatche	of Perception Covi	e[Import from CSV]	T (road nom rempiates) <b>en</b> t	Save As remplate) T <sub>e</sub> rvew
	ass onmatched) MyDrop Onmatche	al MExport to CSA	e[Import from CSV]	T (road nom rempares) and	Save As remplate) T <sub>e</sub> rvewj
	ass onmatched) Millorop onmatch	al Action of the control of the cont	elimport from CSV]	T (road nom rempares) <b>Par</b>	Save As template: To [New]
	ass onmatched, Millorop onmatche	al Action Cov	elimport from CSV]	T (road nom rempares) <b>Par</b>	Save As template: X [New]

Figure 15: Filter Definition Editor with three configured filters.


**8.** After the filters are created, follow the general connectivity rules to connect the filters to upstream and downstream components.

NOTE:	The Egress Filter can only be connected to one egress port.				
	For more information on connecting comport to other upstream and downstream compont go to section 4.2.1 <i>Create Domain tab</i> .	nents nents,			



## **Domain Compiler Warning**

The current version of the nVoy Packet Broker contains a domain compiler that is particularly sensitive to filter behaviors. Therefore, if your domain contains filter components, you may encounter a domain compiler warning like the one shown in Figure 16.

The options available to you are as follows:

- CONTINUE exit the editor and start running the domain.
- OK exit the domain editor and leave domain disabled.
- CANCEL return to editing the domain to verify your flow's logic.

If you believe that your domain's filters conform to best practices, then you may select **CONTINUE** to activate the domain.

$\mathbf{G}$	The domain configuration has the following error(s):
U	(1) Component Drop SRC IP 155.155.* cannot be connected to
	Component 5-tuple Load Balance
	(2) Component Drop SRC IP 99.111.* cannot be connected to
	Component 5-tuple Load Balance
	Press OK to close the domain editor with domain in disabled state; Press Cancel to edit the domain; Press Continue to activeate with possible failures.

Figure 16: Domain compiler warning window.



## Adding an Outer VLAN ID

To add an outer VLAN ID to outgoing filter packets, follow these steps:

1. Check the Use New Outer VLAN checkbox in the Overview panel of the Filter Configuration Editor window and specify the VLAN ID value, as shown in Figure 17. In this example the VLAN ID value is **411**.

All	Overview								ç
Overview	Filter Name (Pass Unmatched								
Link Layer Field	Actions Pass Drop Mirror/Xmit through GRE Tunnel V Use New Outer Vlan 411 r Enable © True False								
	Link Layer Fields								
	End Points	Attributes	Value	Mask		HEX Valu	Je	HEX Mask	
	MAC#A	Source OR Destination	▼ 00:00:00:00:00	00:00:00:	00:00:00	0x00000	0000000	0x00000000000	
	MAC#B	Source OR Destination	▼ 00:00:00:00:00:02	FF:FF:FF:	FF:FF:FF	0x00000	0000002	OxFFFFFFFFFFFF	
	U VLAN		1	65535		0x0001		OxFFFF	
	COS		0	255		0x00		OxFF	
	EtherType		0x0800:IPv4	▼ 65535		0x0800		OxFFFF	
	Network Layer Fields								
	End Points	Attributes	Value		Mask	han a	HEX Value	HEX Mask	
	U IP#A	Source OR Destination	▼ 1.1.0.1		255.255.255.255	NM	0x01010001	OXFFFFFFFF	
	IP#B	Source OR Destination	▼ 2.2.0.2		255.255.255.255	NM	0x02020002	OXFFFFFFFF	
	Precedence	e	0		255		0x00	0xFF	
	DSCP		0: Best Effort	•	255		0x00	OxFF	
	TOS		0		255		0x00	0xFF	
	TTL		64		255		0x40	OxFF	
	Protocol		6: TCP	۲	255		0x06	0xFF	
	Transport I ave	r Fielde							- 1

Figure 17: Selecting an outer VLAN ID value from the Filter Configuration Editor.

2. Select the Egress Port in the Configuration Editor and check the **Enable VLAN Attachment:** checkbox to enable VLAN attachments, as shown in Figure 18.

Component Properties						
Name:	Vinca PO					
Port:	VINCA.P0 ()					
Cable ID:						
Speed:	SFP+: 10Gb Full Dup 🔻					
Loopback:	No Loopback 🔹					
Enable VLAN Attachment:						

Figure 18: Enabling the VLAN attachment.

You are not obliged to add a VLAN ID value to attach to your packets. If that's the case, you can skip the Filter Configuration Editor entirely and simply enable the VLAN attachment in the Egress Port, as shown in Figure 18. The nVoy Packet Broker selects a value for you. Subsequently, all Egress Ports within the domain will choose unique VLAN ID's to attach to.