HP Network Node Manager i Software 10.00



Step-by-Step Guide to Pairwise and Batch Incident Configuration

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Introduction

This whitepaper uses examples to document pairwise functionality and batch incident configuration tools available in NNMi 10.00.

Pairwise

This section includes two examples that document pairwise functionality. The first example involves trap pairing using the same trap yet having different varbinds to differentiate the meaning of the trap. The second example describes a trap pairing with two other traps. (Prior to NNMi 9.20, a trap could only be involved in a single pairing.) This example includes the use of the "time duration" feature and the "delete when canceled" feature.

Pairwise Example 1 (Same Trap with Different Varbinds)

Initial Preparation

Set up the NNMi management server to receive the traps of interest. This example uses traps from Ascend Communications. This was selected because it is a MIB not shipped with NNMi, which allows this example to illustrate many preparation steps. The sequence of traps and varbinds shown may not represent an actual sequence. All traps are sent using NNMi command line scripts rather than an actual network device.

Load the MIBs and the Traps

- 1. Load the dependent MIBs using the nnmloadmib.ovpl command. The dependent MIBs include the following:
 - IF-MIB.mib
 - RFC1213-MIB.mib
 - ASCEND-MIB.mib
 - ASCEND-CHASSIS-MIB.mib
 - ASCEND-RADIUS-MIB.mib
 - ASCEND-MCAST-MIB.mib
 - ASCEND-LANMODEM-MIB.mib
 - ASCEND-SESSION-MIB.mib
 - ASCEND-POWER-SUPPLY-MIB.mib
 - ASCEND-MULTI-SHELF-MIB.mib
 - ASCEND-ATMP-MIB.mib
 - ASCEND-RESOURCES-MIB.mib
 - ASCEND-WATCHDOG-MIB.mib
 - ASCEND-CALL-LOGGING-MIB.mib
 - ASCEND-VOIP-MIB.mib
 - ASCEND-CALL-LOGGING-MIB.mib
 - ASCEND-ADVANCED-AGENT-MIB.mib
 - RFC-1215.mib
 - ASCEND-MGSTAT-MIB.mib
 - ASCEND-SPARING-MIB.mib
- 2. After loading the dependent MIBs, load the desired MIB (ASCEND-TRAP.mib) as shown.

nnmloadmib.ovpl -load ASCEND-TRAP.mib Successfully completed operation LoadMib.

- 45 Traps were loaded.
- 3. The output indicates that 45 traps were loaded; however, they are not completely ready for use. You must first obtain the name of the MIB module using the NNMi console. Navigate to the **Configuration** workspace and select **Loaded MIBs**. Then locate the module name associated with the MIB file just loaded. You can see in the following figure that the module name is ASCEND-TRAP.

```
Loaded MIBs
() Network Node Manager
  Ele View Jools Agtions Help
 Deshboards y Loaded MBs
 🔥 Incident Management 🛛 😵 📴 🖉 🖉 🤊 🌾 🔛
  A. Topology Maps ¥ Name • MIB File

    Monitoring
    ASCEND-LANMODEM-MB
    Ne.//Tapan/Tapan/MBa/ASCEND-LANMODEM-MB
    ASCEND-MCAST-MB
    Newtony
    ASCEND-MCAST-MB
    Newtony
    ASCEND-MCAST-MB
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    ASCEND-MCAST-MB
    Newtony
    ASCEND-MCAST-MB
    Newtony
    ASCEND-MCBIAT-MB
    Newtony
    ASCEND-MB
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 Management Mode & ASCEND-MIB
                                                                                                                                                file ///Tapan/Tapan/MBs/ASCEND/ASCEND-MB mb
                                                                                         ASCEND-MULTI-SHELF-MIB
                                                                                                                                                 file //Tapan/Tapan/MBs/ASCEND/ASCEND-MULTI-SHELF-MB mb
  A Incident Browning ¥
                                                                                        ASCEND-POWER-SUPPLY-MB file://Tapan/Tapan/MBs/ASCEND/ASCEND-POWER-SUPPLY-MB.mb
 St Performance Analysis $
                                                                                         ASCEND-RADUS-MB
                                                                                                                                                  file ///Tapan/Tapan/MBs/ASCEND/ASCEND-RADIUS-MB mb

    Quality Assurance
    ASCEND-RESOURCES-MB file //Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tispan/Tisp
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ATM-FORUM-MB file.//lopt/OV/mac/innm/anmp-mbs/Vendor/Clacc/ATM-FORUM-M
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    💿 🚞 Security
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     🕒 🍅 MBs
                7 Loaded MBs
                                                                                     Analysis
                III MB Variables
                                                                                        MB Summary : ASCEND-TRAP 3
                 MB Notifications
                                                                                                                                  A SCEND-TRAP
                                                                                          Name
                 Textual Conventions
                                                                                                                                      file:///Tapan/Tapan/MIBs/ASCEND/ASCEND-TRAP.mib
                                                                                          MB File
                 MB Expressions
```

4. Load the traps using the nnmincidentcfg.ovpl command along with the module name as shown in the following:

nnmincidentcfg.ovpl -loadTraps ASCEND-TRAP

SNMP trap(s) from mib module loaded: ASCEND-TRAP. Number of traps: 45.

The following traps were added to incident configuration:

```
wanLineStateChange - .1.3.6.1.4.1.529.0.40
portConnected - .1.3.6.1.4.1.529.0.7
```

callLogDroppedPkt - .1.3.6.1.4.1.529.0.41 multicastHeartBeatMonitor - .1.3.6.1.4.1.529.0.19

maxTelnetAttempts - .1.3.6.1.4.1.529.0.15
powerSupplyStateChange - .1.3.6.1.4.1.529.0.23

atmpAgentErrorRecvTrap - .1.3.6.1.4.1.529.0.29 portWaiting - .1.3.6.1.4.1.529.0.6

radiusServerChange - .1.3.6.1.4.1.529.0.18
powerSupplyOperationalStateChange - .1.3.6.1.4.1.529.0.24

consoleStateChange - .1.3.6.1.4.1.529.0.12 dirdoListFailure - .1.3.6.1.4.1.529.0.21

portAcrPending - .1.3.6.1.4.1.529.0.10
lanModemMovedToSuspectList - .1.3.6.1.4.1.529.0.20

atmpMaxTunnelExceeded - .1.3.6.1.4.1.529.0.27 sysSlotStateChange - .1.3.6.1.4.1.529.0.22

suspectAccessResource - .1.3.6.1.4.1.529.0.34
portWaitSerial - .1.3.6.1.4.1.529.0.2

portCollectDigits - .1.3.6.1.4.1.529.0.5
sdtnPrimaryListEmptyTrap - .1.3.6.1.4.1.529.0.31

megacoLinkStatusTrap - .1.3.6.1.4.1.529.0.42
portCarrier - .1.3.6.1.4.1.529.0.8

portUseExceeded - .1.3.6.1.4.1.529.0.13

```
sparingIfStatusChange - .1.3.6.1.4.1.529.0.44
portRinging - .1.3.6.1.4.1.529.0.4
portLoopback - .1.3.6.1.4.1.529.0.9
controllerSwitchoverTrap - .1.3.6.1.4.1.529.0.37
voipGkChange - .1.3.6.1.4.1.529.0.39
portDteNotReady - .1.3.6.1.4.1.529.0.11
watchdogWarningTrap - .1.3.6.1.4.1.529.0.35
callLogServChange - .1.3.6.1.4.1.529.0.38
eventTableOverwrite - .1.3.6.1.4.1.529.0.16
portDualDelay - .1.3.6.1.4.1.529.0.1
systemUseExceeded - .1.3.6.1.4.1.529.0.14
sysConfigChangeTrap - .1.3.6.1.4.1.529.0.30
portInactive - .1.3.6.1.4.1.529.0.0
cntrReduAvailTrap - .1.3.6.1.4.1.529.0.45
atmpAgentErrorSentTrap - .1.3.6.1.4.1.529.0.28
sysLastRestartReasonTrap - .1.3.6.1.4.1.529.0.26
sparingSlotStatusChange - .1.3.6.1.4.1.529.0.43
slotCardResetTrap - .1.3.6.1.4.1.529.0.36
systemClockDrifted - .1.3.6.1.4.1.529.0.33
sdtnSecondaryListEmptyTrap - .1.3.6.1.4.1.529.0.32
multiShelfStateChange - .1.3.6.1.4.1.529.0.25
portHaveSerial - .1.3.6.1.4.1.529.0.3
The traps are now completely loaded into NNMi.
```

Configure Trap Format

In this section, you can see that the different varbind values differentiate the pairwise behavior.

 Configure the format of the sysSlotStateChange trap (the example trap) to better see the varbind values. In the Configuration workspace, expand the Incidents folder, select SNMP Trap Configurations, and double-click sysSlotStateChange.

Network Node Manager									
File View Tools Actions Help									
f Incident Management	SNUP Trap Configurations	10 X 16							
1. Topology Maps	· @ * B Ø თ	♦ × ⊑							
Monitoring	¥ Name ·	SMMP Object ID	Enabled	Root	Deduplicatic Enabled	Rate Enabled	Seve	Cate Fami Author	Message Form
Troubleshooting	* STPNewRoot	1361211701		Cause	€nabled ✓	chabieo	Av	# F IT's HP Network Nod	STP New Root
Inventory	STPTopologyChange	1361211702			*			* F Tay HP Network Nod	
Management Mode Incident Browsing						*			
Antegration Module Configuration	SuspectAccessResource	.1.3.6.1.4.1.529.0.34	*	*		*		75 胞 N Customer	suspectAccess
Integration Module Configuration Configuration	sysConfgChangeTrap	136141529030	~		6	-		P ≤ 12 N Customer	sysConfigChang
Communication Configuration	sysLastRestartRessonTrap	13.6.1.4.1.529.0.26	*		1.0		ON	75 BIS Customer	sysLastRestart
	SyslopMessage	1361419941201	+			+	Ar	St F Kay HP Network Nod	\$1.53 54 (syslo)
Decevery Decevery Monitoring	BysSictStateChange	.1.3.6.1.4.1.529.0.22	*	2			ON	7 5 El N Customer	sysSictStateCha
- lo incidente	systemClockDrifted	136141529033	*			(*)	On	Customer	systemClockOnt
incident Configuration	systemUseExceeded	136141529014	~				ON	7 5 B N Customer	systemUseExce
SNIP Trap Configurations	voieGkChanoe	136141529039	~		12		ON	7 s R N Customer	voieGkChange
Syslog Message Configurati	Updated, 10/17/11 12:53:14 P	M MDT				Total: 112		Selected: 1	
Management Event Configur	Analysis								
Remote NNM 6.x/7.x Event C	SMMP Trap Configuration Su	nmary : sys5lot5tateChange ()	i i		Details (3				
Pairwise Configurations	ShallP Object ID	341415290.22			Enabled			true	
📑 Trap Forwarding Configurat		ys Slot State Change			Severty			Normal	6. C.
Custom Correlation Configur					Category Family			Status	
Status Configuration					Root Cause			faine	
Global Network Management					Author			Customer	
E D User Interface					Description				ent to all the mu

4

2. Change the format to include the slot number and the current state as shown in the following figure. Notice in the Message Format area the following text: "Slot: \$1 Status: \$ text (\$2)". The first part, "\$1", represents the first varbind. The second part, "\$ text (\$2)", tells NNMi to print the textual representation of the second varbind rather than the number. This makes the traps more readable in the NNMi console. Click Save and Close.

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	D save and close M w relies prove up	o conspirator	1 100									
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for information about the	utimetroling incidents, click bere			•								
Name	xys/StatStateChange											I's participation in an interfacer ing three configured on the
	D) attribute accepts are wildcard character (*) the 86 permits wildcards only in ODs beginning with.			Node Settings tab								
Click here for more info				• 8 0	0 ×						10 0	2+5+10 O CI 22
SMMP Object ID	138141529022			Interface Gros	p. Ordering	Enabled						
Enabled	10		-									
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	(nessage appears in the tradent view. To include											
	(name). Select these variables from a set of valid, one information, click here	parameters or 0	undore:									
Message Format												
sysSetStateCharge Sk	r St Dates Start 12											
5												
Description												
created due to slot inse sper-state-durse, or op- slotTable slotStatus des Variables 5 slotIndex 5 slotIndex Desorption A unique ut simthumber 2 slotStatus	e managers n'he kild group when a sict carfs 5 too, or he current salar brandson be oper-taine taine-sone states. Refer to the saliffable abtrick orgitions. Rue for each sict card. Its value ranges between 1	-down, oper-s x and					Test	# 0 S	elected 0	Filter Of		Auto refresh: OFF
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nalysis												
SAMP Trap Configuratio	n Summary : sysSictStateChange O		Detais 🖸									
SNNP Object ID	.136141529.022		Enabled			true						
Nessage Format	wys Slot State Change		Severby Category			C El Norma	100					
			Family			Node						
			Root Cause			false						
			Author			slot insertion	, or the curre	et-state tran	sitions into ope	r-state-dow	m, oper-state	TATE profile is created du up, oper-state-dump, or
			Description			alotindex Syn	taxINTEGER D nber. 2: slot14	lescription:A atus Syntaxd	unique value fi NTEGER Descrip	or each slot o	card. Its value	descriptions. Variables: ranges between 1 and th f the TRT slot card For nor

 To see the values of slot status, you can look up slotStatus in the MIB variables. Go to Configuration -> MIBs -> MIB Variables and search for slotStatus. In the Analysis pane shown in figure below, you can see that the enumerated values include the following:

```
operStateDown = 1,
operStateUp = 2,
operStateDiag = 3,
operStateCoreDump = 4,
operStateLoading = 5,
operStatePost = 6,
operStateNone = 7,
operStateOccupied = 8
```

MIB Variables											
Metwork Node Manager									User Name: system	NNMi Role: Administrator	Sign Out
<u>File View Tools Actions Help</u>											
Dashboards ¥	MIB Variables										
👌 Incident Management 🛛 💝	2 🖻 🖉 🤊	🌮 🖴								K 🔍 1	-1 of 1 👂 🖾 🖃
🚓 Topology Maps 🛛 🕹	OID (Numeric)	▲ Name	Syntax	MIB	1	OID (Text)					
Monitoring *	.1.3.6.1.4.1.529.2.2.1.8	slotStatus	Integer	ASCEND-C	HASSIS-MIB	iso.org.dod.internet.priv	/ate.enterprises.a	scend.slots.slotTable.slotEntry.slotStatus			
Troubleshooting *											
Inventory ¥											
🧐 Management Mode 🛛 🕹 😵											
🍖 Incident Browsing 🛛 🕹											
Performance Analysis *											
😰 Quality Assurance 🛛 😜											
Traffic Analysis *											
$<\!$											
& Configuration											
E Communication Configuration											
💿 🧰 Discovery											
📧 🧰 Monitoring											
Incidents											
Status Configuration											
Global Network Management											
User Interface	Updated: 8/12/14 11:34:55					Total: 1	Selecter	d:1 Fite			Auto refresh: OFF
Gecurity Gecurity MIBs		AM				lotar 1	Selecter	a: 1 Pite	: UN		
Loaded MIBs	Analysis	-									A
MB Variables	MIB Variable Summary :	slotStatus 😳			Details 😂						
MB Notifications	OID (Numeric)	.1.3.6.1.4.1.529.2.2.1.8			OID (Text)			.iso.org.dod.internet.private.enterp operStateDown = 1, operStateUp = 2			tel cading = 5
_	Syntax	Integer			Enumerated \	/alues (8)		operStatePost = 6, operStateNone =	7, operStateOccupied =	8[Fewer]	
Textual Conventions	мв	ASCEND-CHASSIS-MIB			Description			The current status of the TNT slot of	ard For non-TNT system	ns operStateNone is always r	eported.
MIB Expressions											
MB OD Types											
m iffypes											

Now NNMi is configured to be able to receive the traps and easily read them in the NNMi console.

Manually Sending the Traps

For this example, there is not a device sending the traps, so you must manually create and send them.

Tip: It is always best to use traps sent directly from a device in the network but manually sending them is a good way to develop and test your solution.

For this example, use the nnmsnmpnotify.ovpl command to format the trap that is sent. See the following format of the command used to send the operStateUp for slot 1 (note that this command must all be on one line rather than the three lines shown in the following sample).

Tip: See the *nnmsnmpnotify.ovpl* reference page or the UNIX manpage for more information.

Make sure your source node (in this case, ciscope6524) is already discovered in NNMi to receive the trap.

```
nnmsnmpnotify.ovpl -v 1 -a ciscope6524 localhost .1.3.6.1.4.1.529.0.22
.1.3.6.1.4.1.529.2.2.1.1 integer 1
.1.3.6.1.4.1.529.2.2.1.8 integer 2
```

You can send status messages to ensure traps are coming in successfully by changing the second varbind value to one represents a different state. For example, you can change the value to 8, which represents operStateOccupied.

```
nnmsnmpnotify.ovpl -v 1 -a ciscope6524 localhost .1.3.6.1.4.1.529.0.22
.1.3.6.1.4.1.529.2.2.1.1 integer 1
.1.3.6.1.4.1.529.2.2.1.8 integer 8
```

As indicated in the figure below, traps containing all of the supported values 1-8 have been sent. To see these traps, go to **Incident Browsing -> SNMP Traps**. When looking for these traps in the SNMP Traps table, make sure that you have selected an appropriate time filter to include the traps you want to see.

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7 Deatlocente		UNP Traps											
Accident Danagement	. 3	(HE)	DOOX	1.							Last Hour +	-Empty Group filter>	- 80
L. Topology Maps	1 3	ever Lifes	- Last Occurrence-fi	Source Node	Source Object	Cala	c fam	Corr	Mennage	Notes -			
1 Monitoring	- 0	5 0	812/14 11:10/02 AM	ciacope0524	none	17	\$2	-	systimutateChange Sixt 1 Status: operStateNone				
Trouble shooting Inventory		3 0	8/12/14 11:50:00 AM	ciscope6524	none	17	20	34	systletStateCharge Sist. 1 Status, specitatePost				
Management Mode		3 6	61214 11 49 58 AM	ciectpe6524	none	17	韵	-	sysSidStateCharge Sid: 1 Status, operStateLoading				
Incident Browning		3 0	8/12/14 11 49:54 AM	ciscope6524	none	12	\$2	3	sysSktStateCharge Sol. 1 Status: operStateCoveDurp				
Corr Key Incidente	10	3 0	81014 11 49 52 AM	ciscopet524	none	17	\$2	3-	systectionCharge Set 1 Status operitateDay				
Cased Key Incidents	0	3 0	\$12/14 11 49/21 AM	ciscopel524	1014	12	\$2	3-	systemisteleCharge Set. 1 Status operitateOccupied				
IT Open Roat Cause Incidents	0	3 0	8/12/14 11 48:20 AM	ciecopet624	none	17	20	3-	BysSkitStateChange Sot 1 Status operStateUp				
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	4	ideled Bri	214 11 50 A2 AM						Total 7 Selected 8		Filler ON		
	A	alysis .											
		Junnery I											

If you open (double-click) one of these traps, you can see the varbinds associated with the trap. See the following figure. **Custom Attributes**

ALL LEL ME - UN								
0 0 0 0	Save and Close 🛛 🖉 💥 Delete Incident 🛛 🔛							
- Besics			General Correl	lated Parenta	Correlated Childre	Custon Athrew	en Disposition Regist	ration
Message			-					
sysSictStateChange S	ot: 1 Status: operStateUp		INNI Inte the Custor Reators Default Set					ay. If you bort or filter the Custo
* Severty	Normal +		0 8 0	0				10 0 1-
* Priority	Note v		Name		ype v	lature .		
* Lifecycle State			(1381415292)		an_integer 1	2		
- Linecycle state	Repatered -		1381415392		ian_integer 2			
Source Node	ciacope0124	10 -	1361411121			Scopet 24 Ind ho	com.	
	(and the second	(article)	cis.snmpoid		and the second	36141 29022		
Source Object	mente		Cis.address	5	ioing v	acopel624 withe	com	
			cia originaladdress	5	laring 1	218.52.128		
Assigned To		- 10 -	cis agentAddress	5	laring 1	5.218.52.128		
* Notes							Slot No	
Notes						Slot Status		
			Updated 6/12/14 1	1.52-19 AM		Total: 7	Selected: 0	Filter: OFF
Analysia								
Incident Summary sys	StofStateChange Ø	Details D	Custom Attributes D	ciacope85243	10 Values C	Verformance D	Source Node ciscope1524 \$	3 Sinlar (6) G
Performance Data Message Severtly Lifecycle State RCA Active Source Object Created/Opened	Tue Aug 12 11:52:13 IST 2014 sys Siol StateChange Siot: 1 Status: operStateUp International Registered false none (Configuration Rem) 8:12:14 11:48 AM (Open for 3.7 minutes)	Category Family Correlation Nu Origin Last Occurre Source Node	0.1.11.225		Status Node Symptom SMMP Trap August 12, 2014 cacope6524	11.4820 AM IST		

Same Trap, Different Varbinds Pairwise Configuration

Suppose that when a status of operStateUp arrives, you want to cancel any of the other state traps for this node. The correlation searches back in time for up to 24 hours for any incidents to cancel. For example, an operStateUp value cancels any traps that have any of the other statuses for the same source node and slot number for the past 24 hours (this is an example scenario only). You can also require that the Source Node and the Slot Number be the same on both traps.

1. Go to **Incidents -> Pairwise Configurations** and click the 🌞 icon.

Network Node Manager Je View Tools Aglions Help						
2 Dashboards	¥	Parwise Configurations				
Incident Management	*	0 (* C O O P	× 🖻			
1. Topology Maps	¥	Name	Enabled	First Incident	Second Incident	
Monitoring	8	CiscoLinkDownUpPair	~	CiscoLinkDown	CiscoLinkUp	
* Troubleshooting	*					
Inventory	¥	CiscoModuleDownUpPair	~	CiscoModuleDown	CiscoModuleUp	
Management Mode	*	DEVI4/FAN_FAILED_RECOVERED-Pa	~	DEVI4/FAN_FAILED	DEVI4FAN_RECOVERED	
Incident Browsing	*	DEVI4/POWER_FAILED_RECOVERED	~	DEVI4/POWER_FAILED	DEVI4/POWER_RECOVERED	
Performance Analysis	¥	Lineproto-5-UpDownPair	~	LINEPROTO-5-UPDOWN	LINEPROTO-5-UPDOWN	
Quality Assurance	¥	Link-3-UpDownPair	~	LINK-3-UPDOWN	LINK-3-UPDOWN	
Traffic Analysia	*					
Lintegration Module Configuration	¥	OPTMOD/4/MODULE_OUT_N-Pair	~	OPTMOD/4/MODULE_OUT	OPTMODI4MODULE_N	
Configuration	2	OPTMOD/5/MOD_ALM_ON_OFF-Pair	*	OPTNOD/5/MOD_ALM_ON	OPTMOD/SMOD_ALM_OFF	
Communication Configuration		ProCurve-RMON_LACP_DYNAMIC_1	*	ProCurve-RMON_LACP_D	ProCurve-RMON_LACP_DYNAMIC_TRUNK_ON_LINE	
E Discovery		ProCurve-RMON_SSH_DISABLED_E	~	ProCurve-RMON_SSH_DE	ProCurve-RMON_SSH_ENABLED	
Com Monitoring Com Incidents		QaSpiSite	~	SiteDown	SiteUp	
incident Configuration		QaSpiSiteReachable	*	SteNotReachable	SteReachable	
SNMP Trap Configurations		QaSpiSiteServiceUp	~	ServiceTaSiteDown	ServiceToSiteUp	
📰 Syslog Message Configuration	18	Rated Intercettence		Patent interes	Ball and initia	
Management Event Configurat	50	Updated: 8/12/14 11:55:34 AM			Total 23	Selected: 0
Pairwise Configurations		Analysis			216	

- 2. Set the First Incident and Second Incident to be sysSlotStateChange. In this case, these are the same trap. Only the varbind value differentiates them.
- 3. Set the duration time to 24 hours.
- 4. Because this is not just a simple pair of traps, it might be best to start with defining the Second Incident Payload Filter. The second incident is the trap that closes the other traps on the back end.
- 5. Build an AND condition using ciaName and ciaValue. (Custom Incident Attributes (CIAs) are varbinds in NNMi). Create the condition where the varbind Object ID (OID) equals

.1.3.6.1.4.1.529.2.2.1.8 and the varbind value equals 2. Remember that the value of 2 represents operStateUp.

Pairwise Configuration: Filter Editor

Basics	First Incident Payload Filter Second Incident Payload Filter Matching Criteria	
Name SlotChangeUpDown Enabled First Incident Configuration Second Incident Configuration Description Varbing 1 must match and Varbind 2 equaling 2 (Up) should cancel all outstanding states (1, 3, 4, 5, 6, 7, 8)	A Payload Fiter enables you to further define the fitters to be used for selecting the Incidents that should participate in an operation; for example, be suppressed, enrich dampened, run actions, or participate in pairwise. A Payload Fitter selects incoming Incidents based on Custom Incident Attribute names (ciaName) and values (ciaValumore information, click here. Fitter Editor Attribute Operator Value CiaName In Operator Value	hed, ie). Fi
Author Customer	Append	ace
	AND CiaValue = 2	ર
	L. ciaName = .1.3.6.1.4.1.529.2.2.1.8	
	Filter String (ciaValue = 2 AND ciaName = .1.3.6.1.4.1.529.2.2.1.8)	te

6. Next, define the First Incident Payload Filter. This represents any traps that are to be closed as part of this pairing. Be careful entering values with the "in" operator (do not use commas; instead, put each value on a separate line). The AND condition shown in figure below, represents any of the traps with a varbind value of operStateDown, operStateDiag, operStateCoreDump, operStateLoading, operStatePost, operStateNone, or operStateOccupied (1, 3, 4, 5, 6, 7 or 8).

Pairwise Configuration: First Incident Payload Filter

10	an in the second second			
Ć	§ Ģ ⊓ ซ ซ	Save and Close 🖉 🗙 Delete Pairwise Configuration 🔛		
ľ	- Basics		First incident Payload Filter Second Incident Payload Filter Matching Criteria	
	Name	SlotChangeUpDown		
	Enabled First Incident Configuration Second Incident Configuration Description Wickled 1 must match and	VysSiedStateChange	A Payload Filter enables you to further define the filters to be used for selecting the incidents that should participate in an operation, for examp suppressed, encoded, dampend, nun ections, or participate in parawise. A Payload Filter selects incoming incidents based on Custom incident (catalame) and values (catalame). For more information, cick here. Filter Editor Adhibute Quertain In	
	Author Duration Delete When Canceled	Costoner - US -	Filler String (contains in (1, 3, 4, 5, 6, 7, 8)) Filler String (contains in (1, 3, 4, 5, 6, 7, 8) AND contains = 1.3, 6.1, 4.1, 529, 2.2, 1.8)	Append AND OR NOT EXSTS NOT EXSTS Delete

7. Finally, enter the Matching Criteria. NNMi automatically performs a source node match for all pairwise operations, so we do not need to specify the source node as part of the matching criteria. We enter the OID for the slot number since that must be the same for the match to be valid. Click Save and Close to finish this pairwise configuration.

Pairwise Configuration: Matching Criteria

Parwise Configurations	Parwae Configuration *				
8 6 8 3	Seve and Close	rise Configuration			
* Basics			First Incident Payload Filler Second Incident Payload Fill	or Matching Criteria	
Name	SkitChangeUpDown				
Enabled	22		Specify the Matching Orderia only if you want to use Mat	tohing Criteria in addition to the following orderia that fature	use's automatically.
, First Incident Configuration	sysSotStateChange	- 💷 -	SBMP Trap locidential cis address of the source		
, Second Incident Configuration	sysSelStateChange	- 0 -	Management Events Incidents: Name of the En Remote WIM 6.47.4 Event Incidents: cis remote and cis.address of the source address. for the trap	mpr (P Address or Hostname) of the WAU management at	lation sending the incident
Description			Ryslog Mexsage Incidents: new		
Varbind 1 must match a	nd Verbind 2 equaling 2 (Up) should cancel al	outstanding states (1.3.4.5.6.7.6)	See the 'Walching Orberts Configuration Form Utbenity In -	colard Parks" help topic for more information.	
* Author	Customer	- 0 -	* B 0 0 X		0 0 1-101 0 0 m
* Duration	24.00 Hours -		First Incident Criteria	Second Incident Criteria	
Delete When Cancele	e 🛄		(1361415292211	1361415292211	

Testing

1. Test the pairwise configuration by manually sending the traps. All of the traps are sent except the one with a value of 2 (operStateUp).

```
# nnmsnmpnotify.ovpl -v 1 -a ciscope6524.ind.hp.com localhost
.1.3.6.1.4.1.529.0.22 .1.3.6.1.4.1.529.2.2.1.1 integer 1
.1.3.6.1.4.1.529.2.2.1.8 integer 1
# nnmsnmpnotify.ovpl -v 1 -a ciscope6524.ind.hp.com localhost
.1.3.6.1.4.1.529.0.22 .1.3.6.1.4.1.529.2.2.1.1 integer 1
.1.3.6.1.4.1.529.2.2.1.8 integer 3
# nnmsnmpnotify.ovpl -v 1 -a ciscope6524.ind.hp.com localhost
.1.3.6.1.4.1.529.0.22 .1.3.6.1.4.1.529.2.2.1.1 integer 1
.1.3.6.1.4.1.529.2.2.1.8 integer 4
# nnmsnmpnotify.ovpl -v 1 -a ciscope6524.ind.hp.com localhost
.1.3.6.1.4.1.529.0.22 .1.3.6.1.4.1.529.2.2.1.1 integer 1
.1.3.6.1.4.1.529.2.2.1.8 integer 5
# nnmsnmpnotify.ovpl -v 1 -a ciscope6524.ind.hp.com localhost
.1.3.6.1.4.1.529.0.22 .1.3.6.1.4.1.529.2.2.1.1 integer 1
.1.3.6.1.4.1.529.2.2.1.8 integer 6
# nnmsnmpnotify.ovpl -v 1 -a ciscope6524.ind.hp.com localhost
.1.3.6.1.4.1.529.0.22 .1.3.6.1.4.1.529.2.2.1.1 integer 1
.1.3.6.1.4.1.529.2.2.1.8 integer 7
# nnmsnmpnotify.ovpl -v 1 -a ciscope6524.ind.hp.com localhost
.1.3.6.1.4.1.529.0.22 .1.3.6.1.4.1.529.2.2.1.1 integer 1
.1.3.6.1.4.1.529.2.2.1.8 integer 8
```

2. Look in the trap table to see the traps.

2		C 9 9 X	1							
Seve	Lifed	Last Occurrence-Ti	Source Node	Source Object	Cate	ç Famil	Corre	Message		Note
0	3	8/12/14 12:32:59 PM	ciscope6524	none	'n	睑	30	sysSlotStateChange Slot	1 Status: operStateOccupied	N
0	5	8/12/14 12:32:58 PM	ciscope6524	none	17	睑	3.	sysSlotStateChange Slot.	Status: operStateNone	
0	5	8/12/14 12:32:56 PM	ciscope6524	none	17	题	30	sysSlotStateChange Slot	Status: operStatePost	
0	5	8/12/14 12:32:54 PM	ciscope6524	none	n	赲	30	sysSlotStateChange Slot.	1 Status: operStateLoading	
0	8	8/12/14 12:32:52 PM	ciscope6524	none	17	診	3.	sysSlotStateChange Slot.	1 Status: operStateCoreDump	
0	3	8/12/14 12:32:49 PM	ciscope6524	none	17	30	3.	sysSlotStateChange Slot.	1 Status: operStateDiag	
0	3	8/12/14 12:32:47 PM	ciscope6524	none	17	睑	3-	sysSlotStateChange Slot	Status: operStateDown	

3. Send the "up" trap and it should close all the other traps that happened within the last 24 hours. Note that you may not see this happen immediately in the NNMi console. The pairwise thread runs every 30 seconds (or when a certain count is reached, if that happens sooner than 30 seconds). So you may not see the correlations for 30 seconds after sending

the trap. Note that if you are using northbound integration with NNMi, this pairwise feature will not keep the correlated traps from "going north". You can prevent them from going north by using the dampening feature (see the *NNMi Deployment Reference* for more information on dampening).

SNMP	Traps
------	-------

포		0 n n X	1						
Sever	Lifer	Last Occurrence-Ti	Source Node	Source Object	Categ	Famil	Corre	Message	Notes
0	ନ	8/12/14 12:34:11 PM	ciscope6524	none	17	10	30	sysSlotStateChange Slot: 1 Status operStateUp	
0	R	8/12/14 12:32:59 PM	ciscope6524	none	h	診	30	sysSlotStateChange Slot: 1 Status: operStateOccupied	
0	ନ୍ନ	8/12/14 12:32:58 PM	ciscope6524	none	17	鉋	300	sysSlotStateChange Slot: 1 Status: operStateNone	
0	ନ	8/12/14 12:32:56 PM	ciscope6524	none	17	验	30	sysSlotStateChange Slot: 1 Status: operStatePost	
0	ନ	8/12/14 12:32:54 PM	ciscope6524	none	17		30	sysSlotStateChange Slot: 1 Status: operStateLoading	
0	Q	8/12/14 12:32:52 PM	ciscope6524	none	17	胞	30	sysSlotStateChange Slot: 1 Status: operStateCoreDump	
0	ନ୍	8/12/14 12:32:49 PM	ciscope6524	none	17	10	300	sysSlotStateChange Slot: 1 Status: operStateDiag	
0	Q	8/12/14 12:32:47 PM	ciscope6524	none	17	10	300	sysSlotStateChange Slot: 1 Status: operStateDown	

4. If you double-click the "up" trap and look at the **Correlated Children** tab, you can see all of the traps that were closed due to the pairwise correlation.

SNMP Traps: Incident: Correlated Children

Basics			Gener	al Correlated Parents Correlated Ch	Idren) Custom Attributes Diagnostics	Registration	
Message			•				
sysSlotStateChange Slo	ot: 1 Status: operStateUp			🗟 Ø Ø		61	
Severity	Normal		Seve	Last Occurrense Type	Message	Source Node	Source Object
Priority	None		0	8/12/14 12:32:59 Pl Pairwise Correlation	n sysSlotStateChange Slot: 1 St	ati ciscope6524	none
Lifecycle State	Closed		٢	8/12/14 12:32:58 Pl Pairwise Correlation	n sysSlotStateChange Slot: 1 St	ati ciscope6524	none
			٢	8/12/14 12:32:56 Pl Pairwise Correlation	n sysSlotStateChange Slot: 1 St	ati ciscope6524	none
Source Node	ciscope6524		٢	8/12/14 12:32:54 PM Pairwise Correlation	n sysSlotStateChange Slot: 1 St	ati ciscope6524	none
Source Object	none		٢	8/12/14 12:32:52 Pk Pairwise Correlation	n sysSlotStateChange Slot: 1 St	ati ciscope6524	none
			٢	8/12/14 12:32:49 PM Pairwise Correlation	n sysSlotStateChange Slot: 1 St	ati ciscope6524	none
Assigned To		- 🗊 -	0	8/12/14 12:32:47 Ph Pairwise Correlation	n sysSlotStateChange Slot: 1 St	ati ciscope6524	none
Notes							
Notes							
			I to day	ed: 8/12/14 12:35:16 PM	Total: 7 Selected: 0	Filter: OFF	Auto refresh: OF

Tip: You can configure NNMi to delete traps when they are canceled (closed). See the following figure.

Pairwise Configuration: Delete Pairwise Configurations	When Canceled Pairwise Configuration *	
9 🗣 🗗 🎦 🤅) Save and Close 😂 X Delete Pairw	ise Configuration 🔛
- Basics		
Name Enabled	SlotChangeUpDown	3
 First Incident Configuration 	sysSlotStateChange	- 🖉 -
 Second Incident Configuration 	sysSlotStateChange	- B
Description		
Varbind 1 must match an	d Varbind 2 equaling 2 (Up) should cancel all o	outstanding states (1,3,4,5,6,7,8)
* Author	Customer	- 0
* Duration	24.00 Hours -	
Delete When Canceled		

The deleting of events from the pairwise operation is done by another thread that runs every 2 minutes, so you might first see the traps in the browser.

SNMP Traps: Traps Present

Seve	Lifec	Last Occurrence-Ti	Source Node	Source Object	Cates	Famil	Corre	Message	Notes
0	3	8/12/14 12:38:53 PM	ciscope6524	none	17	20	3.	sysSlotStateChange Slot: 1 Status, operStateUp	
0	3	8/12/14 12:38:35 PM	ciscope6524	none	17	10	3.	sysSlotStateChange Slot: 1 Status: operStateOccupied	
0	3	8/12/14 12:38:34 PM	ciscope6524	none	17	睑	3-	sysSlotStateChange Slot: 1 Status: operStateNone	
0	3	8/12/14 12:38:32 PM	ciscope6524	none	17	診	3-	sysSlotStateChange Slot: 1 Status: operStatePost	
0	3	8/12/14 12:38:28 PM	ciscope6524	none	17	赲	3.	sysSlotStateChange Slot: 1 Status: operStateLoading	
0	3	8/12/14 12:38:26 PM	ciscope6524	none	17	胞	3.	sysSlotStateChange Slot: 1 Status: operStateCoreDump	
0	3	8/12/14 12:38:25 PM	ciscope6524	none	17	10	3-	sysSlotStateChange Slot: 1 Status: operStateDiag	
0	3	8/12/14 12:38:22 PM	ciscope6524	none	17	跑	34	sysSlotStateChange Slot: 1 Status: operStateDown	

Then you might see them close.

NMP	Traps								
2		G 9 4 X	1						
Seve	Lifec	Last Occurrence-Ti	Source Node	Source Object	Cates	Famil	Corre	Message	Notes
0	Q	8/12/14 12:38:53 PM	ciscope6524	none	17	10	3m	sysSlotStateChange Slot: 1 Status: operStateUp	
0	R	8/12/14 12:38:35 PM	ciscope6524	none	i>	胞	ges :	sysSlotStateChange Slot: 1 Status: operStateOccupied	
0	Q	8/12/14 12:38:34 PM	ciscope6524	none	17	10	30	sysSlotStateChange Slot: 1 Status: operStateNone	
0	ନ	8/12/14 12:38:32 PM	ciscope6524	none	17	Ð	300	sysSlotStateChange Slot: 1 Status: operStatePost	
0	R	8/12/14 12:38:28 PM	ciscope6524	none	17	10	300	sysSlotStateChange Slot: 1 Status: operStateLoading	
9	R	8/12/14 12:38:26 PM	ciscope6524	none	17	胞	3.	sysSlotStateChange Slot: 1 Status: operStateCoreDump	
0	Q	8/12/14 12:38:25 PM	ciscope6524	none	17	10	30	sysSlotStateChange Slot: 1 Status: operStateDiag	
0	R	8/12/14 12:38:22 PM	ciscope6524	none	17	30	300	sysSlotStateChange Slot: 1 Status: operStateDown	

Then you will see them get deleted.

SNMP Traps: Traps Deleted	
SNMP Traps	
図 😫 Ø の 💠 🗙 🖺	
Sever Lifec: Last Occurrence-Ti Source Node Source Object Catec Famil Corre Message	Notes

Pairwise Example 2 (Three Traps)

You can construct sophisticated pairwise filters involving multiple traps. For example, you might have three different traps (X, Y, and Z). You could have Z close both X and Y. To do this with different traps, you would need to create separate pairwise configurations for each relationship: Z closing X, and Z closing Y. Suppose that when you receive a portCarrier trap, you want to cancel both the portConnected and portWaiting traps.

* 🖻 🛛 🖓 🖓 🗶 📓										
Name 🔺	SNMP Object ID▽	Enabled	Root Cause	Deduplicati on Enabled		Sev erit y	Cat eg ory	Fa mil y	Author	Message Format
maxTeinetAttempts	.1.3.6.1.4.1.529.0.15	~		-		🛇 N	ï۲s	۱. N	Customer	maxTeinetAttempts
megacoLinkStatusTrap	.1.3.6.1.4.1.529.0.42	~	-	-	-	🛇 N	iک	10 N	Customer	megacoLinkStatusTrap
multiShelfStateChange	.1.3.6.1.4.1.529.0.25	~	-	-	-	🛇 N	۶	10 N	Customer	multiShelfStateChange
multicastHeartBeatMonitor	.1.3.6.1.4.1.529.0.19	~	-	-	+	🛇 N	۳s	💷 N	Customer	multicastHeartBeatMonitor
portAcrPending	.1.3.6.1.4.1.529.0.10	~	-	-	-	🛛 N	Ì٦s	10 N	Customer	portAcrPending
portCarrier	.1.3.6.1.4.1.529.0.8	~	-	-	+	🛛 N	s	💷 N	Customer	portCarrier
portCollectDigits	.1.3.6.1.4.1.529.0.5	~	-	-	+	🛛 N	Ì٦s	💷 N	Customer	portCollectDigits
portConnected	.1.3.6.1.4.1.529.0.7	~	-	-	-	🛇 N	İ۶	10 N	Customer	portConnected
portDteNotReady	.1.3.6.1.4.1.529.0.11	*	-	-	+	🛇 N	۶	💷 N	Customer	portDteNotReady
portDualDelay	.1.3.6.1.4.1.529.0.1	~	-	-	÷	🛛 N	۶	10 N	Customer	portDualDelay
portHaveSerial	.1.3.6.1.4.1.529.0.3	~	-	-	+	🛇 N	İ۲s	10 N	Customer	portHaveSerial
portInactive	.1.3.6.1.4.1.529.0.0	~	-	-	+	🛛 N	s	💷 N	Customer	portInactive
portLoopback	.1.3.6.1.4.1.529.0.9	~	-	-	÷	🗢 N	İ۶	10 N	Customer	portLoopback
portRinging	.1.3.6.1.4.1.529.0.4	~	-	-	-	🛇 N	İ۶	10 N	Customer	portRinging
portUseExceeded	.1.3.6.1.4.1.529.0.13	~	-	-	+	🛛 N	İ٦s	10 N	Customer	portUseExceeded
portWaitSerial	.1.3.6.1.4.1.529.0.2	~	-	-	÷	🛇 N	۶	10 N	Customer	portWaitSerial
portWaiting	.1.3.6.1.4.1.529.0.6	~	-	-	-	Ø N	Ì٦s	10 N	Customer	portWaiting
powerSupplyOperationalState0	CF .1.3.6.1.4.1.529.0.24	~	-	-	-	Ø N	۶	10 N	Customer	powerSupplyOperationalStateChange
powerSupplyStateChange	.1.3.6.1.4.1.529.0.23	~	-	-	+	ØN	Ì٦s	۱. N	Customer	powerSupplyStateChange
radiusServerChange	.1.3.6.1.4.1.529.0.18	~	-	-	-	🛇 N	Ì٦s	10 N	Customer	radiusServerChange

SNMP Trap Configurations

1. Edit the trap configuration to include the source node and the port in the format for easier reading. Do this for all 3 trap mentioned above – an example snapshot is shown in following figure.

SNMP Trap Configuration: Message Format

SNMP Trap Configurations	SNMP Trap Configuration *	
2 🗊 🗎 🎽 🛛	Save and Close 2 🖉 🔀 Delete SNMP Trap Configuration 🛛 🔛	
		Interface Settings
For information about troul	pleshooting Incidents, click here.	-
	portConnected attribute accepts one wildcard character (*) that must appear at the end of ermits wildcards only in OIDs beginning with .1.3.6.1.4 (private MIBs). Click	NNMi enables you Group. Interface S Node Settings tab.
SNMP Object ID	.1.3.6.1.4.1.529.0.7	Interface Grou
Enabled Root Cause		
* Category	Status	
* Family	Node 👻 🐨	
* Severity	Normal 👻	
	nessage appears in the Incident view. To include Incident information in the name). Select these variables from a set of valid parameters or Custom Incident ation, click here .	1
* Message Format		
portConnected SourceNo	de=\$sm Port=\$.1.3.6.1.2.1.2.2.1.1	
Description		
flow has not yet been en Variables: 1: ifindex Syntax:TEXTUAL_CONVE Description:A unique valu assigned contiguously sta		
* Author	Customer 👻	

Here is what the three trap look like when they are sent:

```
# nnmsnmpnotify.ovpl -v 1 -a ciscope6524.ind.hp.com localhost
.1.3.6.1.4.1.529.0.6 .1.3.6.1.2.1.2.2.1.1 integer 1
# nnmsnmpnotify.ovpl -v 1 -a ciscope6524.ind.hp.com localhost
.1.3.6.1.4.1.529.0.7 .1.3.6.1.2.1.2.2.1.1 integer 1
# nnmsnmpnotify.ovpl -v 1 -a ciscope6524.ind.hp.com localhost
.1.3.6.1.4.1.529.0.8 .1.3.6.1.2.1.2.2.1.1 integer 1
```

SNMP Traps

SMMP Traps ③ 😂 🤣 ヴ - ダ 🗙 🖴									
Seve	Lifec	Last Occurrence-Ti	Source Node	Source Object	Cateç	Famil	Corre	Message	Notes
0	3	8/13/14 8:20:41 AM	ciscope6524	none	17	色	30	portCarrier SourceNode=ciscope6524 Port=1	
0	3	8/13/14 8:20:36 AM	ciscope6524	none	17	脸	3-	portConnected SourceNode=ciscope6524 Port=1	
0	3	8/13/14 8:20:31 AM	ciscope6524	none	17		300	portWaiting SourceNode=ciscope6524 Port=1	

- 2. Build two pairwise correlations.
 - a. Select the Second Incident Configuration as portConnected and the First Incident Configuration as portCarrier. You do not need to define any payload filters but you must define matching criteria. Remember that there is a built-in criterion for Source Node. In addition, you must match against the port as defined by the varbind
 .1.3.6.1.2.1.2.2.1.1. You could also use \$1 but it is usually better to use explicit OIDs rather than position numbers. Note that the duration has been set to zero. This means that NNMi searches back through the entire incident database to find the match, but after it finds a match, it stops correlating. This results in a single pairing. This may not be desired but is shown as an example here.

Pairwise Configuration: ascendPortCarrierConnectedPair

Pairwise Configurations Pairwise Configuration *	
💯 🛛 📅 🍟 Save and Close 🛛 💋 X Delete Pairwise Configuration 🛛 🖴	
▼ Basics	First Incident Payload Filter Second Incident Payload Filter Matching Criteria
Name ascendPortCarrierConnectedPair	•
Enabled First holdent Configuration Second Incident Configuration Description	Specify the Matching Criteria only if you want to use Matching Criteria in addition to the following criteria that NNMI uses automatically: SNMP Trap Incidents: cla address of the source address for the trap Management Events Incidents: Name of the Source Digit and Source Node Remote INIM 6x/7x Event Incidents: cla remotempr (IP Address or Hostname) of the NNM management station sending the incident and cla address of the source address for the trap Syslog Message Incidents: none See the "Matching Criteria Configuration Form (identify Incident Paris)" help topic for more information.
Author Customer Duration 0.00 Seconds Delete When Canceled	- * ≧ Ĵ ♡ X © ○ 1-1011 ○ ○ ⊡ First Incident Criteria (1.36.12.12.2.1.1

Pairwise Configuration: ascendPortCarrierWaitingPair

Pairwise Configurations Pairwise Configuration *	
💯 📴 🎽 🐮 Save and Close 🧭 💥 Delete Pairwise Configuration 🔛	
▼ Basics	First Incident Payload Filter Second Incident Payload Filter Matching Criteria
* Name ascendPortCarrierWaitingPair	•
Enabled • Frait Indent Configuration • Second Incident Configuration Description	Specify the Matching Criteria only if you want to use Matching Criteria in addition to the following criteria that NNMI uses automatically: SNMP Trap Incidents: cia address of the source address for the trap Management Events Incidents: a time of the Source Object and Source Node Remote NNM Su/X, Event Incidents: or another of PAddress or Hostname) of the NNM management station sending the incident and cia address of the source address for the trap Syslog Message Incidents: none See the "Matching Criteria Configuration Form (Identify Incident Pars)" help topic for more information.
* Author 🗸 🖾 🗸	* 🗟 🗳 🗶 🔯
Duration 0.00 Seconds	First Incident Criteria Second Incident Criteria
Delete When Canceled	1361212211

b. Receive the first two traps. Nothing is correlated.

SNMP Traps: Traps Received

	Traps	ີ 6 ຫ ຫ X	1			-	-		
	and the second se	Last Occurrence-Ti	A THE R.	Source Object	Cates	Famil	Corre	Message	Notes
0	3	8/13/14 8:41:44 AM	ciscope6524	none	17	動	30	portConnected SourceNode=ciscope6524 Port=1	
0	3	8/13/14 8:41:39 AM	ciscope6524	none	in.	10	٥.	portWaiting SourceNode=ciscope6524 Port=1	

c. When you receive the portCarrier trap, it closes the other two traps.

SNMP Traps: portCarrierTrap Received

							_		
Seve	Lifec	Last Occurrence-Ti	Source Node	Source Object	Categ	Famil	Corre	Message	Notes
0		8/13/14 8:43:38 AM	ciscope6524	none	Þ		<mark>ĝ</mark> ≁≏	portCarrier SourceNode=ciscope6524 Port=1	
0	ß	8/13/14 8:41:44 AM	ciscope6524	none	Þ		<mark>ĝ}∽</mark> ≏	portConnected SourceNode=ciscope6524 Port=1	
0	n l	8/13/14 8:41:39 AM	ciscope6524	none	Þ		ۇ⊷	portWaiting SourceNode=ciscope6524 Port=1	

d. Because the duration is set to zero, only the first pairings are closed. If there were other traps in the database that had potential matches, as shown below, those traps are not closed

SNMP Traps: Other Traps with Potential Matches

2	6	😂 🄊 🖓 🗙							
Seve	Life	Last Occurrence . Ti	Source Node	Source Object	Catec	Famil	Corre	Message	Notes
0	ß	8/13/14 8:43:38 AM	ciscope6524	none	Þ		<mark>ĝ}≁</mark> ≏	portCarrier SourceNode=ciscope6524 Port=1	
0	ß	8/13/14 8:41:44 AM	ciscope6524	none	i٦		} ≁≏	portConnected SourceNode=ciscope6524 Port=1	
0	ß	8/13/14 8:41:39 AM	ciscope6524	none	Þ		200	portWaiting SourceNode=ciscope6524 Port=1	
0	5	8/13/14 8:20:36 AM	ciscope6524	none	i٦		} ≁≏	portConnected SourceNode=ciscope6524 Port=1	
0	5	8/13/14 8:20:31 AM	ciscope6524	none	Þ		<mark>ĝ⊳</mark> ≏	portWaiting SourceNode=ciscope6524 Port=1	

Batch Incident Configuration

NNMi 10.00 allows you to make modifications to collections of incident configurations using a file. This facilitates the process of making many similar changes without having to use the NNMi console for each incident configuration. For example, suppose you want to add the same action to a set of incidents. With batch incident configuration, you can export the current configuration, modify the file, and then import the modified configuration in just a few simple steps.

There are two new tools introduced in NNMi 9.20 which are available in NNMi 10.00 as well: nnmincidentcfgdump.ovpl and nnmincidentcfgload.ovpl. You use nnmincidentcfgdump.ovpl to export the current configuration and you use nnmincidentcfgload.ovpl to import the new configuration. These tools use a tag formatted file (not XML or free-form text).

This document does not give the complete syntax for these tools. There are a number of very good examples in the following directory:

- UNIX: /opt/OV/examples/nnm/incidentcfg
- Windows: <drive>\Program Files (x86) \HP\HP BTO Software\examples\nnm\incidentcfg

One of the easiest ways to use the nnmincidentcfgload.ovpl tool is to generate an example and compare the differences. Then you can carry these differences over to other incidents. Consider the following example.

Suppose you want to load the F5-BIGIP-COMMON-MIB file to get some new traps defined in NNMi for F5 BIG-IP.

1. Load the MIB with the nnmloadmib.ovpl command:

```
# nnmloadmib.ovpl -load F5-BIGIP-COMMON-MIB.mib
Successfully completed operation LoadMib.
16 MIB Variables were loaded.
134 Traps were loaded.
```

2. Load the traps into the trap configuration using the nnmincidentcfg.ovpl command.

```
# nnmincidentcfg.ovpl -loadTraps F5-BIGIP-COMMON-MIB
SNMP trap(s) from mib module loaded: F5-BIGIP-COMMON-MIB. Number of traps:
134.
The following traps were added to incident configuration: bigipNodeUp -
.1.3.6.1.4.1.3375.2.4.0.13
bigipAgentStart - .1.3.6.1.4.1.3375.2.4.0.1
bigipStandby - .1.3.6.1.4.1.3375.2.4.0.14
... (many traps not shown here)
bigipDiskPartitionGrowth - .1.3.6.1.4.1.3375.2.4.0.26
bigipAsmRequestBlocked - .1.3.6.1.4.1.3375.2.4.0.38
bigipGtmAppAvail - .1.3.6.1.4.1.3375.2.4.0.71
```

Suppose you want to apply an action to all of these traps. Because there are 134 traps, it would take much effort to open each trap configuration individually and add the action. So you will take advantage of the batch configuration.

3. Before going any further, it is a good idea to export the incident configuration before making changes. This allows you to revert to this same place using the nnmconfigimport.ovpl command, if necessary. (Alternatively, you could perform a backup of NNMi.)

```
# nnmconfigexport.ovpl -c incident -f /var/tmp Successfully exported
/var/tmp/incident.xml.
```

4. Dump one trap to provide an example. Use the trap bigipAgentStart and specify the dump command to only dump this trap configuration based on the OID .1.3.6.1.4.1.3375.2.4.0.1.

```
# nnmincidentcfgdump.ovpl -dump bigipAgentStart_before.tag -oid
.1.3.6.1.4.1.3375.2.4.0.1
Starting a user transaction with a timeout of: 3,600 seconds.
```

Here is the file it created:

cat bigipAgentStart_before.tag

```
*ConfigurationType=SnmpTrapConfig
```

```
*Name bigipAgentStart
*Oid .1.3.6.1.4.1.3375.2.4.0.1
-Author
      -Key com.customer.author
-Category
      -Key com.hp.nms.incident.category.Status
-Enable true
-ActionConfiguration
      -Enable false
-DampenConfiguration
      -Enable false
      -HourInterval 0
      -MinuteInterval 0
      -SecondInterval 0
-DedupConfiguration
      -ComparisonCriteria NAME
      -DedupCount 2
      -Enable false
      -HourInterval 0
      -MinuteInterval 0
      -SecondInterval 0
-Description An indication that the agent has started running.
-Family
      -Key com.hp.nms.incident.family.Node
-GeoCentralForwardConfiguration
      -Enable false
-MessageFormat bigipAgentStart
-Severity NORMAL
-EnrichConfiguration
      -Enable false
-SuppressConfiguration
      -Enable false
-RateConfiguration
      -ComparisonCriteria NAME
      -Enable false
      -HourInterval 0
      -MinuteInterval 0
      -RateCount 0
      -SecondInterval 0
-UserRootCause false
```

5. Go into the NNMi console and add the action to this trap configuration. Save the trap configuration after making the change.

SNMP	Trap	Configuration: Actions
------	------	-------------------------------

SNMP Trap Configurations	SNMP Trap Configuration *									
🗵 🗟 🗎 🎦 🛒	Save and Close) 😂 💢 Delete SNMP Trap Configuration 🏻 🔛									
- Basics		Ir	Interface Settings	Node Settings	Suppression	Enrichment	Dampening	Deduplication	Rate	Actions
For information about trouble	shooting Incidents, click here.		•							
Name	bigipAgentStart							r example, when a Mi supports runnin		
	tribute accepts one wildcard character (*) that must appear at the end of nits wildcards only in OIDs beginning with .1.3.6.1.4 (private MIBs). Click		Note: Your config Enabled						g a oʻjanon nii	
SNMP Object ID	.1.3.6.1.4.1.3375.2.4.0.1		- Lifecycle Trans	ition Actions	-					
Enabled Root Cause			* 🖬 Ø	ø 🗙						
* Category	Status 👻 🗊 🔻		Lifec, Comm		mmand					
* Family	Node		C ScriptO	Executable /vai	r/opt/OV/shared	/nnm/actions/bi	gIPAction.ksh \$r	name \$snn		
* Severity	Normal 👻									
	ssage appears in the Incident view. To include Incident information in the ne). Select these variables from a set of valid parameters or Custom Incident on, click here.									
* Message Format										
bigipAgentStart										
Description										
Description An indication that the agent	has started running.									
* Author	Customer									

6. Dump the configuration again with the action added.

```
# nnmincidentcfgdump.ovpl -dump bigipAgentStart_after.tag -oid
.1.3.6.1.4.1.3375.2.4.0.1
Starting a user transaction with a timeout of: 3,600 seconds.
```

Here is the file it created with the newly added lines highlighted. Notice the relatively simple format that was added. # cat bigipAgentStart after.tag

```
*ConfigurationType=SnmpTrapConfig
      *Name bigipAgentStart
      *Oid .1.3.6.1.4.1.3375.2.4.0.1
      -Author
             -Key com.customer.author
      -Category
             -Key com.hp.nms.incident.category.Status
      -Enable true
      -ActionConfiguration
             -Enable true
             -Actions
                    -Action
                           -Command
                           /var/opt/OV/shared/nnm/actions/bigIPAction.ksh
                           $name $snn
                           -CommandType SCRIPT OR EXECUTABLE
                           -LifecycleState Registered
             -DampenConfiguration
                    -Enable false
                    -HourInterval 0
                    -MinuteInterval 0
                    -SecondInterval 0
             -DedupConfiguration
                    -ComparisonCriteria NAME
                    -DedupCount 2
                    -Enable false
                    -HourInterval 0
                    -MinuteInterval 0
                    -SecondInterval 0
      -Description An indication that the agent has started running.
      -Family
             -Key com.hp.nms.incident.family.Node
```

```
-GeoCentralForwardConfiguration
      -Enable false
-MessageFormat bigipAgentStart
-Severity NORMAL
-EnrichConfiguration
      -Enable false
-SuppressConfiguration
      -Enable false
-RateConfiguration
      -ComparisonCriteria NAME
      -Enable false
      -HourInterval 0
      -MinuteInterval 0
      -RateCount 0
      -SecondInterval 0
-UserRootCause false
```

7. Now that you have learned the format of the lines you must add, dump all 134 traps. You can dump the whole family of traps using an OID wildcard .1.3.6.1.4.1.3375.*.

nnmincidentcfgdump.ovpl -dump bigip_before.tag -oid .1.3.6.1.4.1.3375.*
Starting a user transaction with a timeout of: 3,600 seconds.

8. Edit this file and add the highlighted lines to all the traps. Save the file as bigip_after.tag, and then load this file into NNMi using nnmincidentcfgload.ovpl as shown.

nnmincidentcfgload.ovpl -load bigip_after.tag Translated: 134 configurations, now attempting import.

Starting a user transaction with a timeout of: 3,600 seconds.

9. Go to any of the BIG-IP traps in the NNMi console and notice that the action has been added.

SNMP Trap Configurations	SNMP Trap Configuration								
2 😼 🖺 🎦 🛛	🖞 Save and Close 🛛 🥩 🗙 Delete SNMP Trap Configuration 🛛 🔛								
- Basics		Interface Set	ttings Node Settings	Suppression	Enrichment	Dampening	Deduplication	Rate	Actions
For information about trou	ubleshooting Incidents, click here.	-							
the OID specified. NNMi here for more information		automatically	ure actions to automatic ly open a trouble ticket, configured actions are (send email, or p	age your netwo	ork operator. NN	IMi supports runnin		
SNMP Object ID	.1.3.6.1.4.1.3375.2.4.0.90	▼ Lifecycle	Transition Actions						
Enabled Root Cause		* 🖻	I 🞜 🔊 🗙						
Category	Status 💌 関			mmand					
Family	Node		criptOrExecutable /va	r/opt/UV/shared	/nnm/actions/bi	gIPAction.ksh \$	name \$snn		
Severity	Normal 👻								
	message appears in the incident view. To include incident information in _name). Select these variables from a set of valid parameters or Custom mation, click here .								
bigipBladeOffline									
Description									
A blade has failed - offlir Variables: 1: bigipNotifyObjMsg Syntax:TEXTUAL_CONV Description:The additiona									
* Author	Customer								

SNMP Trap Configuration: Action Added

You have now added an action to all 134 traps at one time.

If you wanted to revert back to the earlier configuration, there are two ways you could do this. First, you could import the configuration snapshot that you took earlier as shown here:

nnmconfigimport.ovpl -f incident.xml We have sorted the list like: incident, Successfully imported incident.xml. Or you could load the configuration of the earlier file, which represents the traps before you made your modifications:

nnmincidentcfgload.ovpl -load bigip_before.tag Translated: 134
configurations, now attempting import.
Starting a user transaction with a timeout of: 3,600 seconds.

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