

EXTREME NETWORKS

Onboard Mgmt EXOS XIQ-SE workflow

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Onboard Mgmt EXOS XIQ-SE workflow



- Workflow to onboard an EXOS/Switch Engine switch onto a dedicated switch mgmt VLAN/L2VSN
- Mgmt VLAN / I-SID and IP data extracted from CSV file previously placed on XIQ-SE
- VLAN is created on the switch and I-SID assigned to it, so that FA can signal it onto the uplinks
- Then the desired IP address and gateway are configured
- Existing VLAN / IP address / Gateway are deleted
- Ability to change the switch sysname at the same time
- Ability to set the FA Message authentication during the IP mgmt change
- Ability to re-add the device into a different XIQ-SE site after the mgmt VLAN IP change
- Ability to send a custom set of CLI commands at the same time, with logical operators
- Ability to launch a follow up workflow once this workflow has finished
- Requires minimum 22.4 (for FA support)

Workflow manual execution



- Workflow can be manually run against 1 or many switches simultaneously

The screenshot displays the 'Devices' tab in the Extreme Networks management console. A table lists various network devices with columns for Status, Name, Site, Admin Profile, and IP Address. The device '5520-48T' is highlighted in yellow. A context menu is open over this device, showing options like 'Device View', 'Terminal', 'WebView', 'FlexView', 'More Views', 'Configure...', 'Compass Search...', 'Rediscover', 'Clear Alarms...', 'Upgrade Firmware...', 'Add to Device Group...', 'More Actions', 'Archives', 'Tasks', 'Maps', and 'Network'. The 'More Actions' submenu is expanded, showing categories like 'Access Control', 'Config', 'Example', 'Macro', 'Provisioning', 'Security', 'System', 'VLAN', and 'VPLS'. The 'Onboard Mgmt EXOS' option under the 'Security' category is highlighted with a red rectangle.

Status	Name	Site	Admin Profile	IP Address
▶	7520E-1	/World/CTC-Reading/Campus/Universal-H...	PoC Profile	10.180.20.76
▶	7520E-2	World/CTC-Reading/Campus/...		10.180.20.77
●	5420M	World/CTC-Reading/Campus/...		10.180.48.11
●	5320-16P	World/CTC-Reading/Campus/...		10.180.48.14
●	5420M-2	World/CTC-Reading/Campus/...		10.180.209.10
●	5520-24X	World/CTC-Reading/Campus/...		10.180.209.11
●	5320-24T	World/CTC-Reading/Campus/...		10.180.209.14
●	4220-48P	World/CTC-Reading/Campus/...		10.180.209.41
●	5520-48T			10.180.209.54
●	5520-Stat			20.0.209.52

Workflow automatic execution during onboarding



- Workflow can be automatically run after ZTP+ onboarding, under XIQ-SE Site Actions
- In this case script will always run against 1 switch only, the onboarding switch

The screenshot displays the 'Universal-HW-Access' configuration page in the XIQ-SE interface. The 'Actions' tab is selected, showing various workflow options. Below these, the 'Custom Configuration' section contains a table with columns for Enabled, Vendor, Family, Topology, and Task. The first row is highlighted, showing 'Extreme' as the vendor, 'Universal Platform S' as the family, 'Any' as the topology, and 'Provisioning/Onboard Mgmt EXOS' as the task. An 'Update' button is visible next to this row.

Devices **Universal-HW-Access** Site Summary Endpoint Locations FlexReports

Discover **Actions** VRF/VLAN Fabric Connect Services Port Templates ZTP+ Device Defaults Endpoint Locations Analytics Custom Variables XIQ Locations

☒ Automatically Add Devices Collection Mode: Historical

☒ Add Trap Receiver Collection Interval (minutes): 10

☒ Add Syslog Receiver Map Name: /World/CTC-Reading/Campus/Universal-HW-Access/Universal-HW-Access map

☒ Add to Archive

☒ Add to Map

Custom Configuration

+ Add Edit - Delete

Enabled	Vendor	Family	Topology	Task
<input checked="" type="checkbox"/>	Extreme	Universal Platform S	Any	Provisioning/Onboard Mgmt EXOS
<input type="checkbox"/>	Extreme	Universal Platform Fabr...	Any	Provisioning/Onboard Mgmt EXOS
<input type="checkbox"/>	Extreme	Universal Platform Swit...	Any	Provisioning/Onboard Mgmt EXOS

Update Cancel

Onboard Mgmt VLAN XIQ-SE workflow inputs



- If your XIQ-SE was installed without “root” access, place the CSV file here instead:
/usr/local/Extreme_Networks/NetSight/appdata/logs/scripting/NetSight_Server

- A CSV file is uploaded to XIQ-SE beforehand
- CSV file has device data which can be device specific
- CSV data is looked up either by device initial (dhcp) IP or Serial Number or MAC Address
- CSV data can be referenced as \$<name> or \$(name) in workflow inputs
- Site variables can still also be referenced but as \${name}
- The CSV variable names are case sensitive

Workflow Editor: /Workflows/Ludovico/Onboard Mgmt EXOS

Activities: Start → Move to VLAN mgmt IP → End

Details: Inputs

CSV data file: /root/mgmtdata.csv

Index into CSV file: Serial Number

Mgmt VLAN and re-add Site Notes:

Provide new mgmt I-SID, IP, Mask and Default Gateway. The VLAN id is optional and can be omitted. Is not used on DVR Leaf and can be auto-allocated otherwise. The UNI static port is only to be specified for switches which are not fabric connected but are connected to some external firewall/router; tagging on the port will be determined based on whether the newly provided mgmt IP is in the same subnet as the existing IP or not: if more than 1 port provided as comma separated, these will need to be double

Mgmt VLAN ID: \$<mgmt vlanid>

Mgmt VLAN I-SID: \$<mgmt isid>

Mgmt VLAN IP: \$<mgmt ip>

Mgmt VLAN Mask: \$<mgmt mask>

Mgmt VLAN Default Gateway: \$<mgmt gateway>

Mgmt VLAN optional UNI static port:

serial number	mgmt vlanid	mgmt isid	mgmt ip	mgmt mask	mgmt gateway	sysname	site name
JA092041G-01023	209	2800209	20.0.209.54	255.255.255.0	20.0.209.1	5420-bld1	/World/building1
TB062139K-H0210	209	2800209	20.0.209.53	255.255.255.0	20.0.209.1	5320-bld1	/World/building1
TB022131K-H0059	209	2800209	20.0.209.52	255.255.255.0	20.0.209.1	5320-bld2	/World/building2
JA102040G-00003	209	2800209	20.0.209.55	255.255.255.0	20.0.209.1	5420-bld2	/World/building2

CSV data file input



CSV data file:

```
%rootDir%/sitePath%/siteName%.csv
```

- Available path variables: **%rootDir%**, **%sitePath%**, **%siteName%**
 - %rootDir% by default is /root/; can be changed via workflow variable const_ROOT_PATH_VAR
 - %sitePath% and %siteName% are set based on site path of device; e.g. if device is in "/World/CTC-Reading/VSP Sandbox" then %sitePath% = "World/CTC-Reading" and %siteName% = "VSP Sandbox"
- Can use these to have different CSV per site

Workflow execution



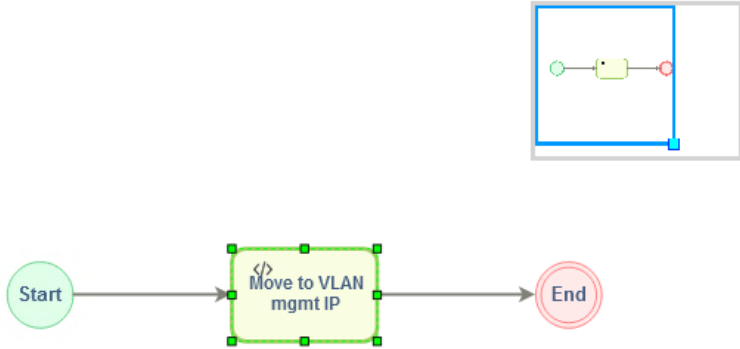
Workflow Dashboard Scheduled Tasks Saved Tasks Scripts Workflows Onboard Mgmt EXOS (762) Onboard Mgmt EXOS (759) ✕

Summary

Status	Start Date/Time	Name	Version	Source	# Devices	Started By	End Date/Time	Message	Path
✓	12/2/2024 3:54:58 ...	Onboard Mgmt EXOS	14	Site Discover Action...	1	NetSight Server	12/2/2024 3:56:23 ...	2024G-00139: Re-added device using mgmt l...	/Workflows/Ludovico/Onboard Mgmt EXOS

Graph View Table View

Stop Workflow Show Output Show Variables



Devices Grid

Show Output Show Variables

Status	Device IP	Output Path	Start Date/Time	End Date/Time	Message
SUCCESS	10.180.48....		12/2/2024 3:5...	12/2/2024 3:5...	2024G-00139: Re-added device using mgmt IP 10.180.209.54 on VLAN 1209 to XIQ-SE Site '/World/CTC-Reading/Campus/Univers

The following configuration was successfully performed on switch:

```
-> configure snmp sysName 5520-48T
-> configure vlan 1209 add isid 2801209
-> configure vlan 1209 ipaddress 10.180.209.54 255.255.255.0
-> configure iproute add default 10.180.209.1
-> configure vlan 4048 name VLAN_4048
-> disable dhcp vlan VLAN_4048
-> configure fabric attach management-vlan forward off
Deleted IP '10.180.48.232' from XIQ-SE's database
Added new device IP '10.180.209.54' to XIQ-SE Site '/World/CTC-Reading/Campus/Universal-HW-Access' with admin profile 'PoC Profile'
Initiated XIQ-SE rediscovery of newly added device 10.180.209.54
Initiated XIQ-SE config reload of newly added device 10.180.209.54
Exit code SUCCESS
```

Close

Workflow tuning



- If the workflow is found to fail, because after all the changes it is unable to perform “save config” on the switch, this is because during onboarding XIQ-SE is also busy making changes and saving the config itself
 - Not being able to save is not usually an EXOS problem (but workflow code inherited for VOSS)
- To avoid the workflow failures on failed save this variable can be set:
- `const_NO_ERROR_ON_FAIL_SAVE`
 - If set, the workflow will still try and save the config at the end, but if unable to, the workflow will complete without any errors

General Variables Inputs Outputs Menus Network OS					
+ Add Edit - Delete Global Variables...					
Name ↑	Default Value	Variable Reference	Scope	Type	Referenced
const_CSV_DELIMITER	,		Workflow	String	false
const_DELAY_RECONNECT	10		Workflow	String	false
const_DELAY_SITE_READD	20		Workflow	String	false
const_DEVICE_READD_TIMEOUT	100		Workflow	String	false
const_GRACEFUL_EXIT_IF_NO_IP	false		Workflow	Boolean	false
const_GRACEFUL_EXIT_IF_NO_SN	false		Workflow	Boolean	false
const_NO_ERROR_ON_FAIL_SAVE	false		Workflow	Boolean	false
const_PING_NEW_IP_TIMEOUT	45		Workflow	String	false
const_XOS_MIN_SW_VERSION	22.4		Workflow	String	false

Workflow tuning 2



- Workflow variables:
- const_GRACEFUL_EXIT_IF_NO_SN
 - If set, the workflow will gracefully exit if the device lookup key was not found in the provided CSV file
- const_GRACEFUL_EXIT_IF_NO_IP
 - If set, the workflow will gracefully exit if no Mgmt VLAN IP value was obtained from Site or CSV inputs

General Variables Inputs Outputs Menus Network OS					
Add Edit Delete Global Variables...					
Name ↑	Default Value	Variable Reference	Scope	Type	Referenced
const_CSV_DELIMITER	,		Workflow	String	false
const_DELAY_RECONNECT	10		Workflow	String	false
const_DELAY_SITE_READD	20		Workflow	String	false
const_DEVICE_READD_TIMEOUT	100		Workflow	String	false
const_GRACEFUL_EXIT_IF_NO_IP	false		Workflow	Boolean	false
const_GRACEFUL_EXIT_IF_NO_SN	false		Workflow	Boolean	false
const_NO_ERROR_ON_FAIL_SAVE	false		Workflow	Boolean	false
const_PING_NEW_IP_TIMEOUT	45		Workflow	String	false
const_XOS_MIN_SW_VERSION	22.4		Workflow	String	false

Additional CLI commands input / sample ↓



Additional CLI commands:

```
#No need to start with enable, config term; commented lines are ignored
#configure fabric attach management-vlan forward off
#configure timezone name BST 1 autodst
#configure snmp sysLocation $<location>
```

```
#No need to start with enable, config term; commented lines are ignored
configure fabric attach management-vlan forward off
configure timezone name BST 1 autodst
configure snmp sysLocation $<location>
configure snmp sysContact "Master of Disaster!"
configure ssl certificate privkeylen 4096 country GB organization Extreme common-name EXOS
enable web https
#if      ("5520-24" in ${deviceType} or "5420-24" in ${deviceType})
            configure slpp guard ports 1-24 recovery-timeout none
#elseif("5520-48" in ${deviceType} or "5520-48" in ${deviceType})
            configure slpp guard ports 1-48 recovery-timeout none
#end
```

- The additional CLI commands input can make use of the following variables:
 - Site variables **\${var}**: Useful to apply same values to all devices in same XIQ-SE Site. Or to apply same values to all devices in same sub-Sites
 - **Emc_vars** \${deviceIP}: Useful to feed some of these values into the same space as Site variables
 - CSV variables **\$<var>**: Useful to provide device specific values
 - Eval variables **\$_[var]**: Useful to compute new values within the template file and be able to store and re-use these values via a variable
- The additional CLI commands input can make use of the following pragmas
 - **#if/#elseif/#else/#end, #error fail|stop|continue, #eval / #eval <varname>=(), #sleep, #last**
 - but not: #block start|execute
- Please refer to documentation of the Apply Config Template workflow here:
 - https://github.com/extremenetworks/ExtremeScripting/blob/master/XMC_XIQ-SE/oneview_workflows/xwf/Apply_Config_Template_Workflow.pdf

