EXTREME NETWORKS

Onboard Mgmt EXOS XIQ-SE workflow

Ludovico Stevens

Solutuions Engineering

November 2024

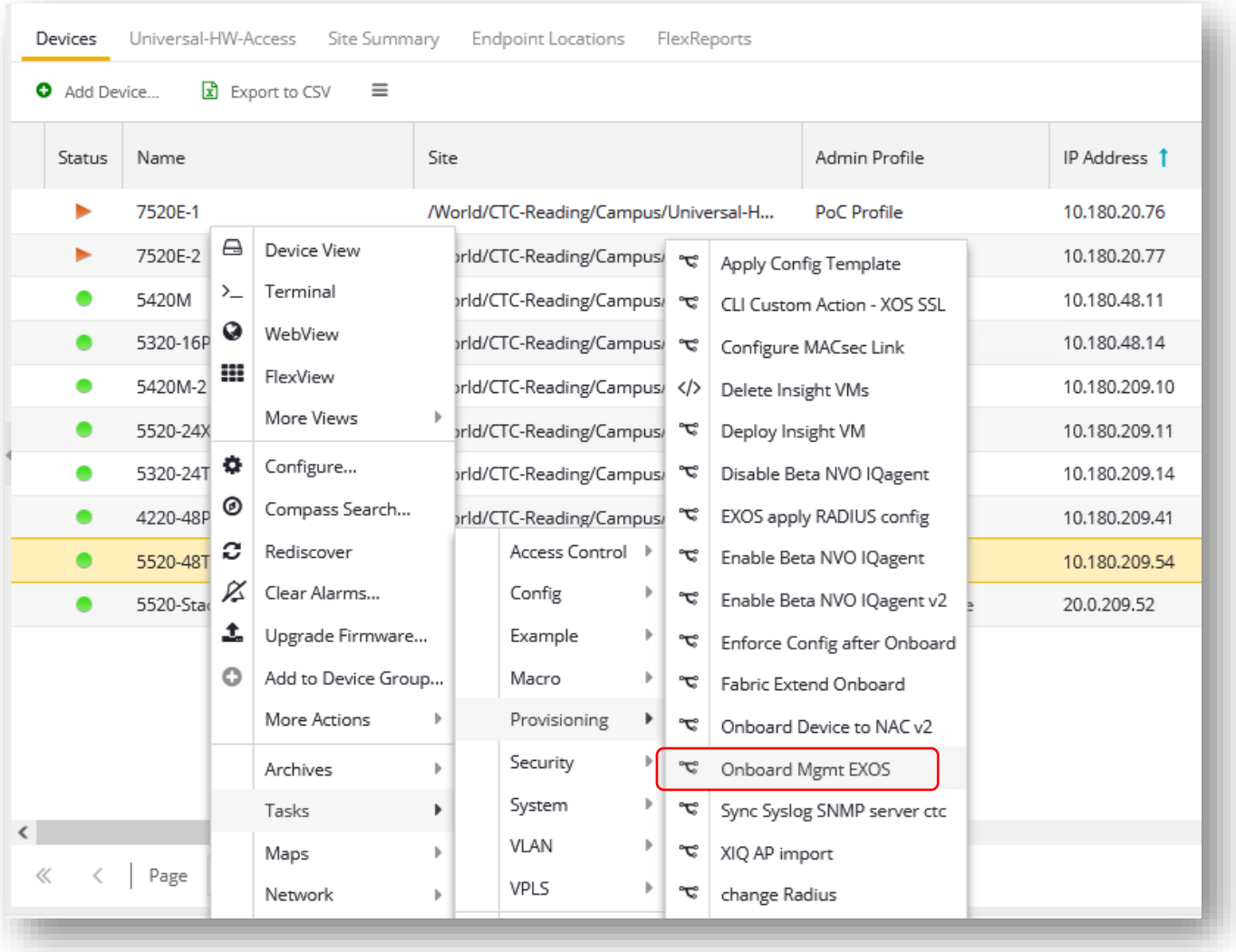
ADVANCE WITH US

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)

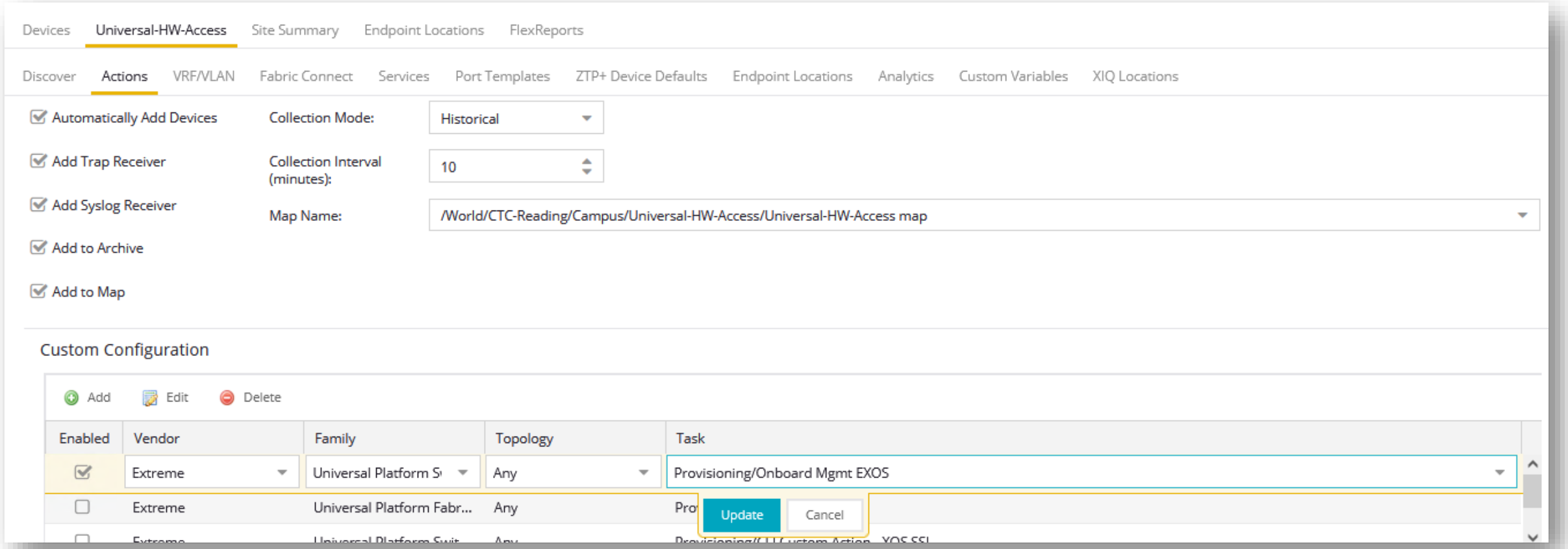
Workflow manual execution

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



Workflow automatic execution during onboarding

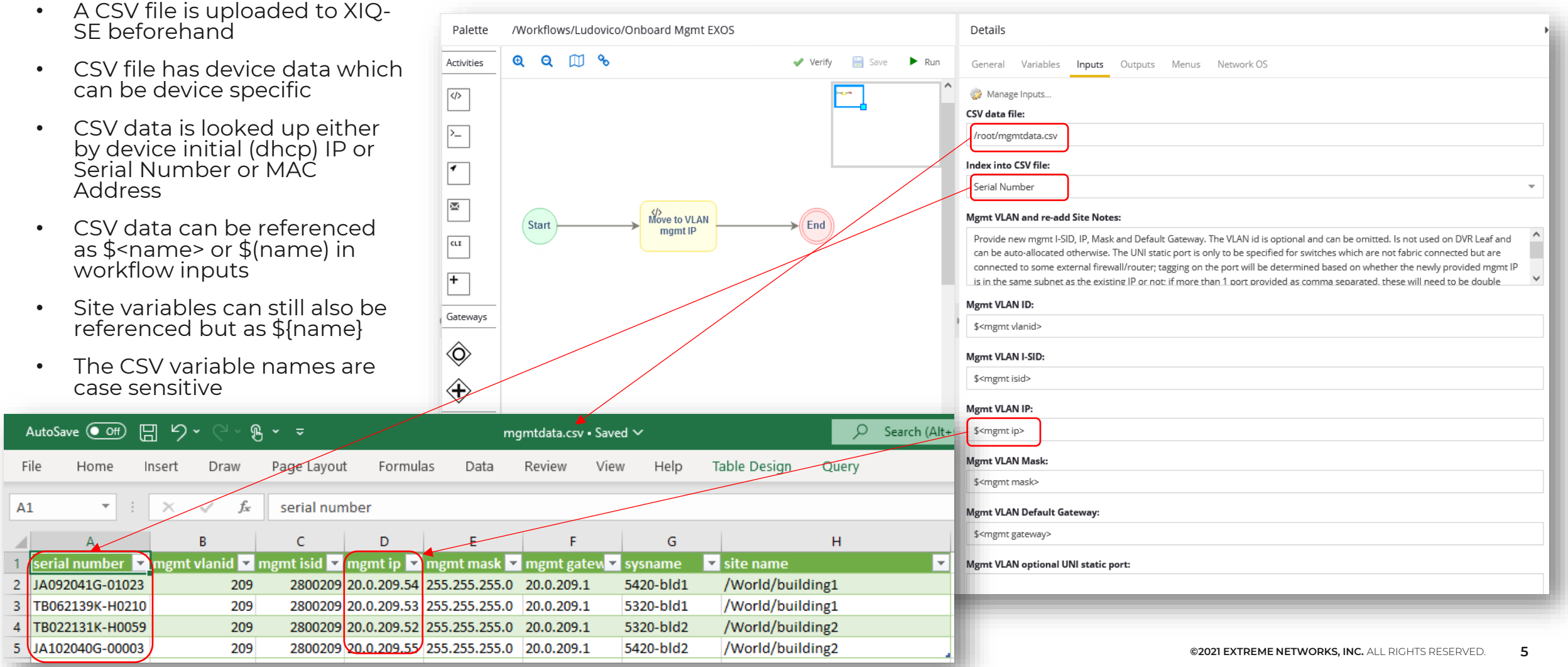
- Workflow can be automatically run after ZTP+ onboarding, under XIQ-SE Site Actions
- In this case script will always run against 1 switch only, the onboarding switch



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



CSV data file input

CSV data file:

```
%rootDir%/%sitePath%/%siteName%.cvs
```

- 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

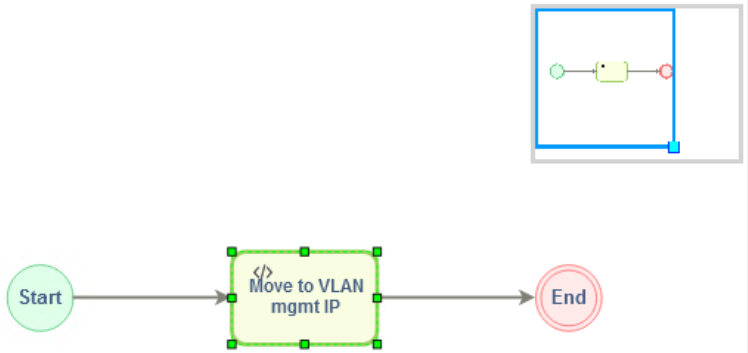
Workflow Dashboard | Scheduled Tasks | Saved Tasks | Scripts | Workflows | Onboard Mgmt EXOS (762) | Onboard Mgmt EXOS (759)

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 I...	/Workflows/Ludovico/Onboard Mgmt EXOS

Graph View | Table View

Stop Workflow | Show Output | Show Variables



Devices Grid

Show Output | Show Variables

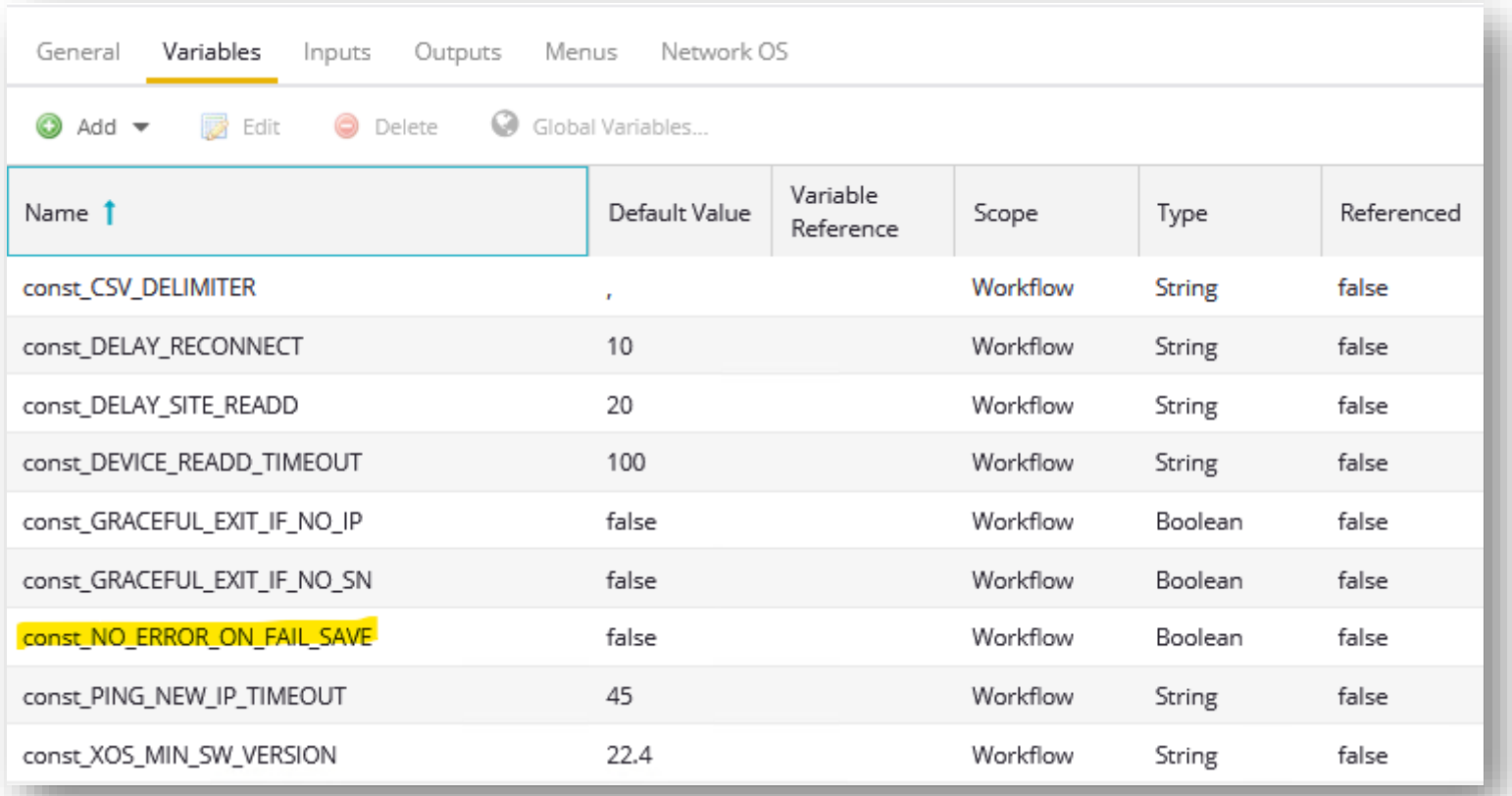
Status	Device IP	Output Path	Start Date/Time	End Date/Time	Message
SUCCESS	10.180.48....		12/2/2024 3:5...	12/2/2024 3:5...	2024G-00139: Re-added device using mgmt IP 10.180.209.54 on VLAN 1209 to XIQ-SE Site '/World/CTC-Reading/Campus/Univers

```
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

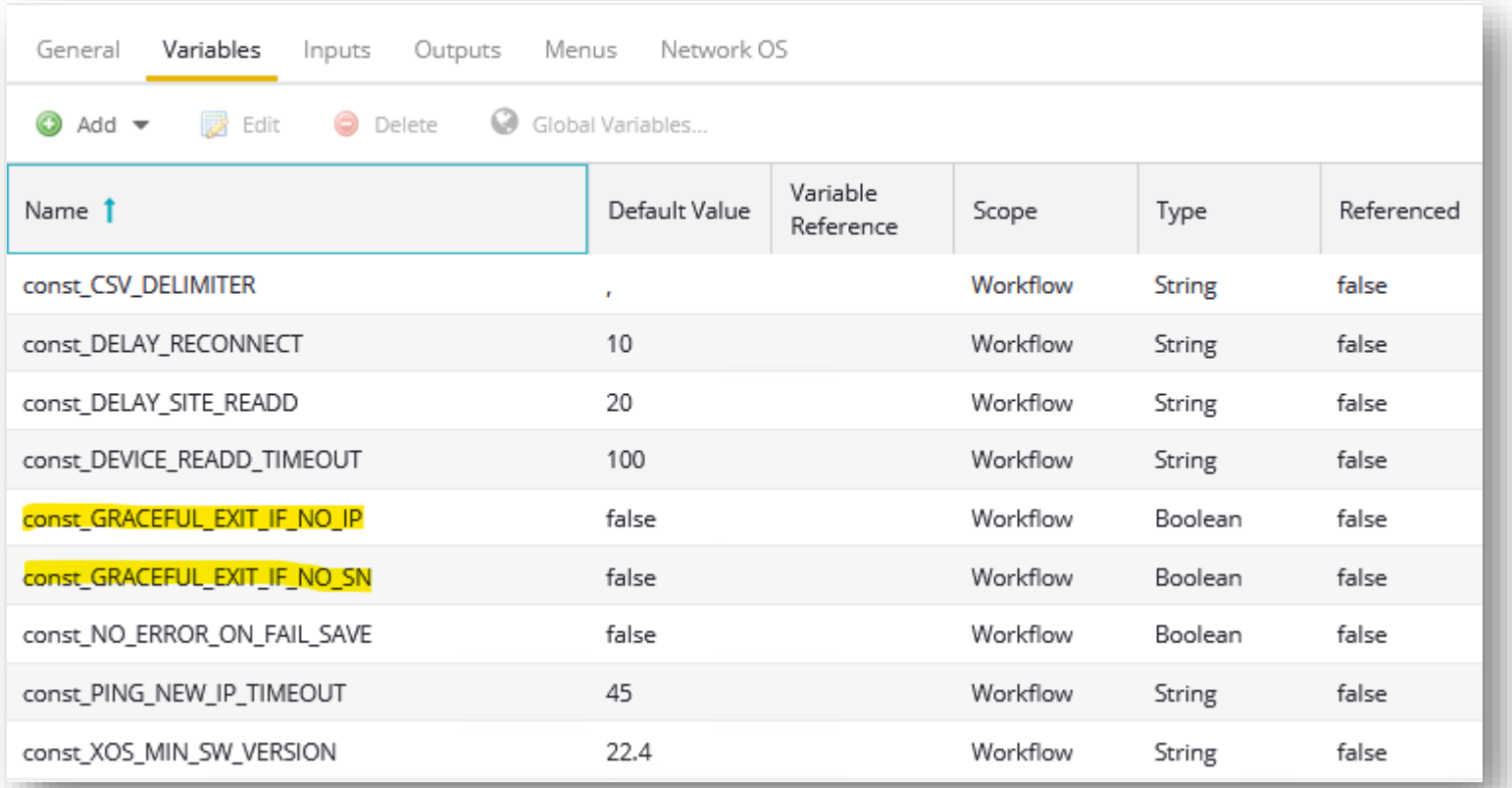
Workflow tuning

- 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



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



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