Rockwell Automation

FactoryTalk® Network Manager™ Migration Guide

expanding **human possibility**®

PUBLIC

FactoryTalk® Network Manager™ – Lifecycle Status

- Current Lifecycle Status: Discontinued as of January 2023
- New product license not available for sale
  - Software will remain available for downloading through January 2024 to support license operation
- No direct replacement, but similar features are available in other products
  - Device Level Ring (DLR) Faceplate - DLR topology, diagnostics and alarms
  - Stratix® Faceplate - switch level alarming / monitoring
  - FactoryTalk® AssetCentre - backup and compare Stratix® configurations
  - FactoryTalk® Linx, FactoryTalk® AssetCentre, ControlFLASH Plus™, third-party tools (for example, Claroty, Cisco® DNA Center) - asset discovery and inventory
  - Link Layer Discovery Protocol (LLDP) neighbor tables in FactoryTalk® Linx Network Browser – mapping of connected devices
  - Stratix® Automatic Diagnostics in ControlLogix® and CompactLogix™ controllers - Switch level alarming using FactoryTalk® Alarms and Events
  - Third-party Network Management Software (NMS) with support for Cisco IOS-based products - various capabilities

Document Purpose

This document offers an overview of the network management features available in both Rockwell Automation products and third-party solutions. Its purpose is to assist customers who are seeking a migration path from FactoryTalk® Network Manager™ or who wish to implement a higher level of network management in their environments.

- Tables in slides 3-8 show support for each feature:

Yes	Fully supported
Yes(1)	Partially supported / limitations apply – see a note
No	Not supported

- Use hyperlinks within the table to navigate to slides with more details

Network Management Solutions

Feature	FactoryTalk® AssetCentre	Network Device Library Faceplates	FactoryTalk® Linx Browser	Device Webpage	Studio 5000 Logix Designer® AOP	Cisco® DNA Center	Cisco CyberVision	Claroty	Enterprise NMS
Switch Discovery and Inventory – IT protocols (SNMP, CDP, LLDP, SSH)	Yes(1)	N/A	Yes(2)	N/A	N/A	Yes	Yes	Yes	Yes
Inventory Export - SNMP devices	Yes	N/A	No	N/A	N/A	Yes	Yes	Yes	Yes
Device Discovery and Inventory – CIP	Yes	N/A	Yes	N/A	N/A	No	Yes	Yes	No
Device Discovery – CIP Backplane Bridging	Yes	N/A	Yes	N/A	N/A	No	No(3)	Yes	No
Inventory Export – CIP devices	Yes	N/A	Yes(4)	N/A	N/A	No	Yes	Yes	No
Switch Configuration	No	No	Yes(5)	Yes	Yes(6)	Yes(7)	No	No	Yes(8)

(1) SNMP v2 only
(2) Supports LLDP discovery in v6.31
(3) Can discover modules in the chassis
(4) Inventory export using ControlFLASH Plus™ v5.0 or later
(5) IP address and port state only
(6) Selected settings
(7) Selected settings using templates
(8) Capabilities vary by vendor

Network Management Solutions

Feature	FactoryTalk® AssetCentre	Network Device Library Faceplates	FactoryTalk® Linx Browser	Device Webpage	Studio 5000 Logix Designer® AOP	Cisco® DNA Center	Cisco CyberVision	Claroty	Enterprise NMS
Topology – List of directly connected devices	No	No	Yes(1)	Yes(2)	No	Yes(3)	No	No	Yes
Topology – Star, Ring (non-DLR) or Linear for switches	No	No	No	N/A	N/A	Yes	No	No	Yes
Topology – DLR	No	Yes(4)	No	Yes(5)	Yes(5)	No	No	No	No
Topology – REP	No	No	No	Yes(6)	No	Yes	No	No	No
Topology – PRP	No	No	No	N/A	N/A	No	No	No	No
Topology - VLANs	No	No	No	N/A	N/A	Yes	No	No	Yes
Topology export	No	No	Yes(7)	N/A	N/A	Yes	No	No	Yes

(1) Requires LLDP support by connected devices
(2) LLDP or CDP neighbor information for Stratix® switches
(3) Connected switches only
(4) Up to three rings with the same supervisor
(5) DLR participant list on a Stratix® switch (DLR supervisor)
(6) List of ring switches per REP segment
(7) LLDP neighbor table can be exported per device

Network Management Solutions

Feature	FactoryTalk® AssetCentre	Network Device Library Faceplates	FactoryTalk® Linx Browser	Device Webpage	Studio 5000 Logix Designer® AOP	Cisco® DNA Center	Cisco CyberVision	Claroty	Enterprise NMS
Diagnostics / Alarms – switches (HTTPS, SNMP, SSH)	No	No	No	Yes(1)	No	Yes	No	No	Yes
Diagnostics / Alarms – CIP	No	Yes(1)	Yes(2)	Yes(1)	Yes	No	No	No	No
Diagnostics / Alarms – DLR topology	No	Yes(3)	Yes(4)	Yes	Yes	No	No	No	No
Diagnostics / Alarms – REP topology	No	No	No	Yes	No	Yes	No	No	No
Diagnostics / Alarms – PTP	No	Yes(1)	No	Yes(1)	Yes(1)	No	No	No	No
Diagnostics / Alarms – PRP topology	No	No(5)	No	Yes(1)	Yes(1)	No	No	No	No
Email Notifications	No	No	No	No	No	Yes	No	Yes	Yes
Syslog Server	No	No	No	N/A	No	Yes	No	No	Yes
NetFlow Collector	No	No	No	N/A	No	Yes	No	Yes	Yes

(1) Single device view
(2) Port state and statistics: speed/duplex, counters and errors
(3) Up to three rings with the same supervisor
(4) DLR status only on EtherNet/IP™ modules
(5) Roadmap

Network Management Solutions

Feature	FactoryTalk® AssetCentre	Network Device Library Faceplates	FactoryTalk® Linx Browser	Device Webpage	Studio 5000 Logix Designer® AOP	Cisco® DNA Center	Cisco CyberVision	Claroty	Enterprise NMS
Switch Configuration Backup	Yes	No	No	Yes(2)	Yes	Yes	No	No	Yes
Switch Configuration Restore	No(1)	No	No	Yes(2)	Yes	Yes	No	No	Yes
Switch Configuration Compare Versions	Yes	No	No	No(3)	No	Yes	No	No	Yes
Switch firmware update / downgrade	No	No	No	Yes(2)	No	Yes	No	No	Yes
Zero day switch provisioning with Plug-n-Play (PnP)	No	No	No	N/A	N/A	Yes	No	No	No

(1) An archived configuration can be retrieved from the FactoryTalk® AssetCentre archive and restored using the Stratix® switch WebUI or Device Manager
(2) Single switch
(3) Stratix® 5800 and Stratix® 5200 allow comparing changes in the running configuration with the startup configuration before saving

Network Management Solutions

Feature	FactoryTalk® AssetCentre	Network Device Library Faceplates	FactoryTalk® Linx Browser	Device Webpage	Studio 5000 Logix Designer® AOP	Cisco® DNA Center	Cisco CyberVision	Claroty	Enterprise NMS
User role-based access	Yes(1)	Yes(1)	Yes(1)	Yes(3)	Yes(1)	Yes	Yes	Yes	Yes
User audit	Yes(1)	Yes(1)	Yes(1)	Yes(4)	Yes(1)	Yes	Yes	Yes	Yes
External Authentication for users	Yes(2)	Yes(2)	Yes(2)	Yes(4)	Yes(2)	Yes	Yes	Yes	Yes
Device groups and group-based access	Yes(1)	Yes(1)	No	N/A	Yes(1)	Yes	No	Yes	Yes
Integration with IT security tools	No	No	No	No	No	Yes	Yes	Yes	Yes
REST API for programmability	No	N/A	No	N/A	No	Yes	Yes	Yes	Yes

(1) FactoryTalk® Security policies
(2) FactoryTalk® Security accounts linked to Active Directory
(3) Local user roles or AAA on Stratix® switches
(4) Requires AAA on Stratix® switches

FactoryTalk® AssetCentre

Overview and Resources

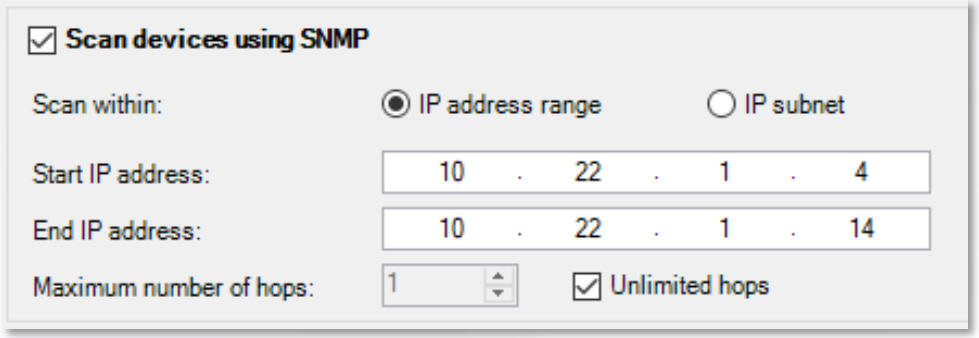
FactoryTalk® AssetCentre is a comprehensive solution designed to streamline the management of automation-related assets throughout your entire facility. With minimal intervention from management or employees, this centralized platform automates the processes of securing, managing, versioning, tracking, and generating reports on asset information. Using FactoryTalk® AssetCentre, you can improve uptime, productivity, quality, employee safety and regulatory compliance in your organization.

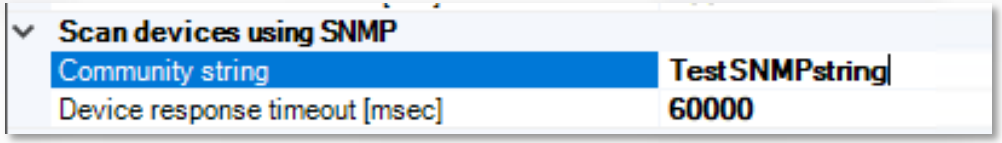
- Rockwell Automation website - FactoryTalk® AssetCentre
- FactoryTalk® AssetCentre Getting Results Guide
- FactoryTalk® AssetCentre Installation Guide
- FactoryTalk® AssetCentre Utilities User Manual
- Stratix® Disaster Recovery with FactoryTalk® AssetCentre (QA56314)
- FactoryTalk® AssetCentre Disaster Recovery Device Support (QA29309)
- FactoryTalk® AssetCentre Asset Inventory FAQs (QA31975)
- Rockwell Automation YouTube – FactoryTalk® AssetCentre playlist

FactoryTalk® AssetCentre

Discovery and Inventory using SNMP

- Use an Asset Inventory item to enable Simple Network Management Protocol (SNMP) scanning
  - The Asset Inventory tool will browse the IP address range and request all available SNMP information from responding devices.
  - Configure separate inventory item for each IP range
  - Only SNMP v2 is currently supported. The SNMP community string can only be set globally, not on a per-device level.
  - SNMP inventory scan can be combined with the CIP scan

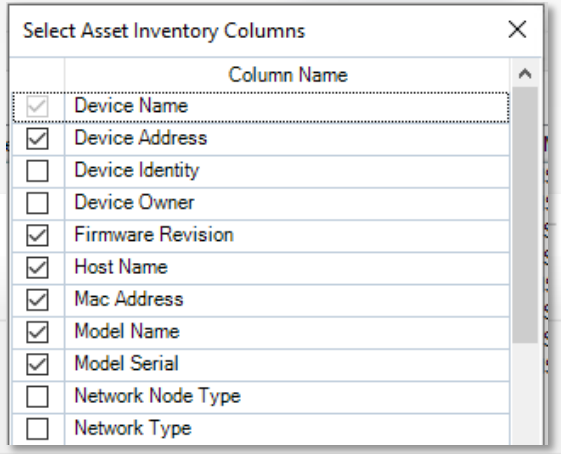




FactoryTalk® AssetCentre

Discovery and Inventory using SNMP

- View inventory after running a scheduled or on-demand scan
  - Enable columns with relevant SNMP data



Asset Inventory

Search | Columns | Undo | Check In | Export | Add | Update | Help

Start Time: 1/9/2023 12:54:57 PM
End Time: 1/9/2023 12:57:59 PM
Result: Succeed

Devices | Software

Add | Update | SYNC | Expand All | Collapse All

Device Name	Device Address	Firmware Revision	Host Name	Mac Address	Model Name	Model Serial	Snmp Device Description
SNMP_10.22.1.4	10.22.1.4	15.2(8)E	PRP-RB1	F45433051E80	1783-HMS8TG8EG4CGN	FDO1841U09U	Cisco IOS Software, S5400...
SNMP_10.22.1.5	10.22.1.5	15.2(8)E	PRP-RB2-DLR	F45433116500	1783-HMS16TG4CGR	FDO1906U071	Cisco IOS Software, S5400...
SNMP_10.22.1.7	10.22.1.7	15.2(8)E	PRP-IES-NAT-A	F45433CE2500	1783-BMS10CGN	FDO2017T0LN	Cisco IOS Software, S5700...
SNMP_10.22.1.8	10.22.1.8	15.2(8)E	PRP-IES-NAT-B	E49069F5A480	1783-BMS10CGN	FDO1807T028	Cisco IOS Software, S5700...
SNMP_10.22.1.11	10.22.1.11	15.2(8)E	PRP-IES-A01	F4543315E000	1783-HMS8TG8EG4CGR	FDO1913U09Y	Cisco IOS Software, S5400...
SNMP_10.22.1.12	10.22.1.12	15.2(8)E	PRP-IES-A02	E490698DD100	1783-BMS10CGN	FDO1727T0T2	Cisco IOS Software, S5700...
SNMP_10.22.1.13	10.22.1.13	15.2(8)E	PRP-IES-A03	E49069899C00	1783-BMS20CGP	FDO1723T0AF	Cisco IOS Software, S5700...
SNMP_10.22.1.14	10.22.1.14	15.2(8)E	PRP-IES-A04	F45433112400	1783-HMS16TG4CGR	FDO1905U0AS	Cisco IOS Software, S5400...

FactoryTalk® AssetCentre

Discovery and Inventory using SNMP

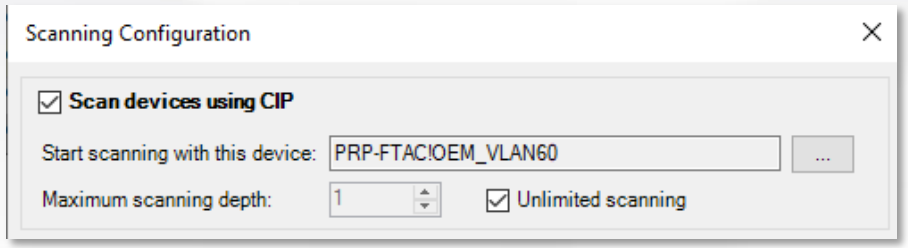
- Export inventory in the CSV or XML format

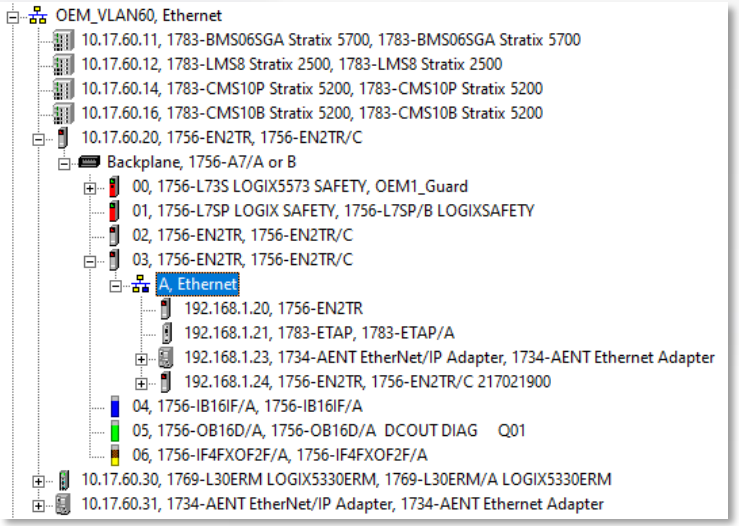
Device Name	Device Address	Firmware	Host Name	Mac Address	Model Name	Model Serial	Snmp Device Description
SNMP_10.22.1.4	10.22.1.4	15.2(8)E	PRP-RB1	F45433051E80	1783-HMS8TG8EG4CGN	FDO1841U09U	Cisco IOS Software, S5400
SNMP_10.22.1.5	10.22.1.5	15.2(8)E	PRP-RB2-DLR	F45433116500	1783-HMS16TG4CGR	FDO1906U071	Cisco IOS Software, S5400
SNMP_10.22.1.7	10.22.1.7	15.2(8)E	PRP-IES-NAT-A	F45433CE2500	1783-BMS10CGN	FDO2017T0LN	Cisco IOS Software, S5700
SNMP_10.22.1.8	10.22.1.8	15.2(8)E	PRP-IES-NAT-B	E49069F5A480	1783-BMS10CGN	FDO1807T028	Cisco IOS Software, S5700
SNMP_10.22.1.11	10.22.1.11	15.2(8)E	PRP-IES-A01	F4543315E000	1783-HMS8TG8EG4CGR	FDO1913U09Y	Cisco IOS Software, S5400
SNMP_10.22.1.12	10.22.1.12	15.2(8)E	PRP-IES-A02	E490698DD100	1783-BMS10CGN	FDO1727T0T2	Cisco IOS Software, S5700
SNMP_10.22.1.13	10.22.1.13	15.2(8)E	PRP-IES-A03	E49069899C00	1783-BMS20CGP	FDO1723T0AF	Cisco IOS Software, S5700
SNMP_10.22.1.14	10.22.1.14	15.2(8)E	PRP-IES-A04	F45433112400	1783-HMS16TG4CGR	FDO1905U0AS	Cisco IOS Software, S5400

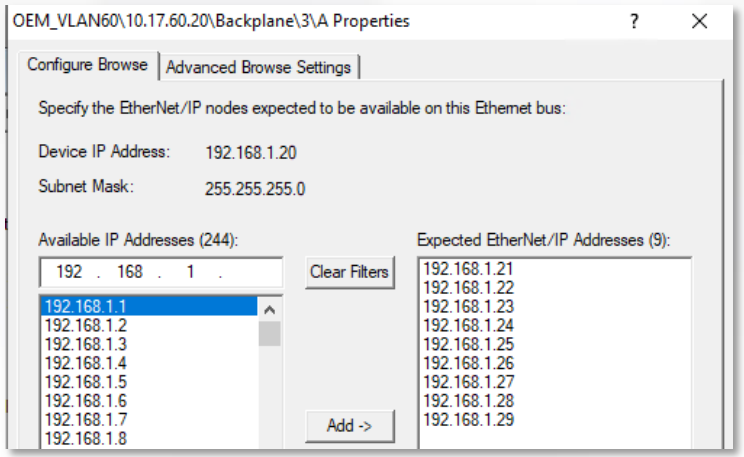
FactoryTalk® AssetCentre

Discovery and Inventory using CIP

- Use an Asset Inventory item to enable Common Industrial Protocol (CIP) scanning
  - RSLinx® Classic must be installed on the FactoryTalk® AssetCentre Agent PC
  - EtherNet/IP™ driver type can be used to browse the local or remote subnet
  - To discover devices through the ControlLogix® backplane, CIP routing should be configured for each module in RSLinx® Classic (specify expected IP ranges for the remote subnet)



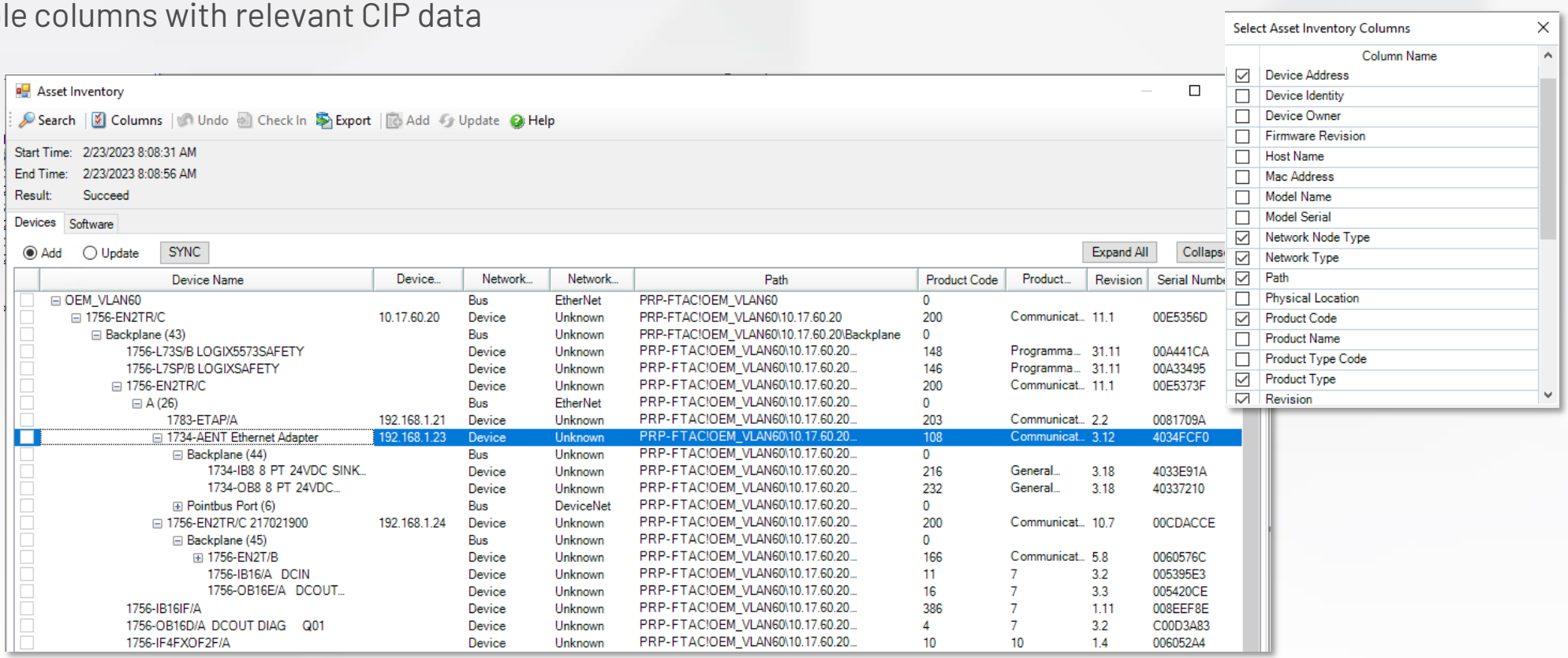




FactoryTalk® AssetCentre

Discovery and Inventory using CIP

- View inventory after running a scheduled or on-demand scan
  - Enable columns with relevant CIP data



FactoryTalk® AssetCentre

Discovery and Inventory using CIP

- Export inventory in the Comma-Separated Values (CSV) or Extensible Markup Language (XML) format

Device Name	Device Address	Network Node T	Network Type	Path	Product Code	Product Type	Revision	Serial Number
OEM_VLAN60		Bus	EtherNet	PRP-FTAC!OEM	0			
1756-EN2TR/C	10.17.60.20	Device	Unknown	PRP-FTAC!OEM	200	Communications	11.1	00E5356D
Backplane (43)		Bus	Unknown	PRP-FTAC!OEM	0			
1756-L73S/B LOGIX5573SAFETY		Device	Unknown	PRP-FTAC!OEM	148	Programmable Lc	31.11	00A441CA
1756-L7SP/B LOGIXSAFETY		Device	Unknown	PRP-FTAC!OEM	146	Programmable Lc	31.11	00A33495
1756-EN2TR/C		Device	Unknown	PRP-FTAC!OEM	200	Communications	11.1	00E5373F
A (26)		Bus	EtherNet	PRP-FTAC!OEM	0			
1783-ETAP/A	192.168.1.21	Device	Unknown	PRP-FTAC!OEM	203	Communications	2.2	0081709A
1734-AENT Ethernet Adapter	192.168.1.23	Device	Unknown	PRP-FTAC!OEM	108	Communications	3.12	4034FCF0
Backplane (44)		Bus	Unknown	PRP-FTAC!OEM	0			
1734-IB8 8 PT 24VDC SINK IN		Device	Unknown	PRP-FTAC!OEM	216	General Purpose	3.18	4033E91A
1734-OB8 8 PT 24VDC SOURCE OUT		Device	Unknown	PRP-FTAC!OEM	232	General Purpose	3.18	40337210
Pointbus Port (6)		Bus	DeviceNet	PRP-FTAC!OEM	0			
1734-IB8 8 PT 24VDC SINK IN		Device	Unknown	PRP-FTAC!OEM	216	General Purpose	3.18	4033E91A
1734-OB8 8 PT 24VDC SOURCE OUT		Device	Unknown	PRP-FTAC!OEM	232	General Purpose	3.18	40337210
1756-EN2TR/C 217021900	192.168.1.24	Device	Unknown	PRP-FTAC!OEM	200	Communications	10.7	00CDACCE


```
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 −<Bus>
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    <DeviceName>A (26)</DeviceName>
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    <Path>PRP-FTAC!OEM_VLAN60\10.17.60.20\Backplane\3\A</Path>
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    <ProductTypeCode>0</ProductTypeCode>
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     −<Device>
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        </OldPath>
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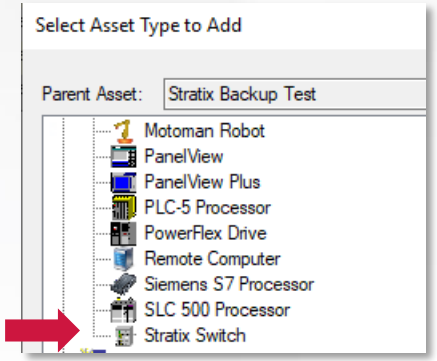
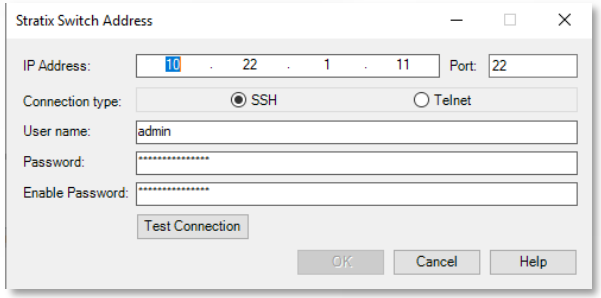
Rockwell Automation

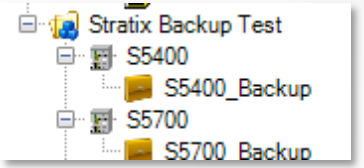
FactoryTalk® AssetCentre

Stratix® Switch Backup

- Add Stratix® switches as asset type to archive
  - Stratix® 8000/5400/5700 (FactoryTalk® AssetCentre v9.0 or later)
  - Stratix® 5800 (FactoryTalk® AssetCentre v10.0 or later)
  - Add manually or from the Asset Inventory
- Configure Secure Shell (SSH) connection details
- Create a Backup or Backup and Compare schedules



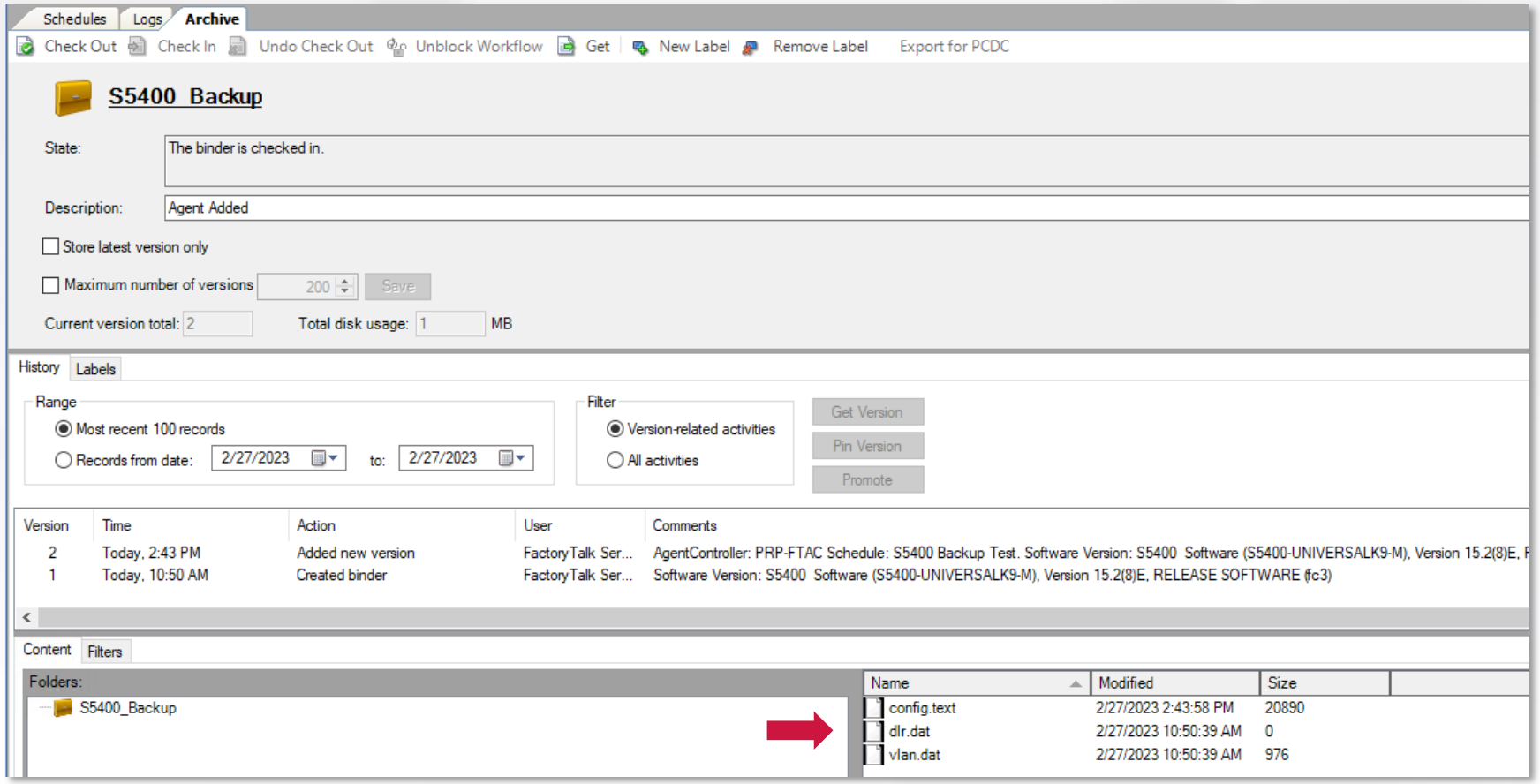




FactoryTalk® AssetCentre

Stratix® Switch Archive

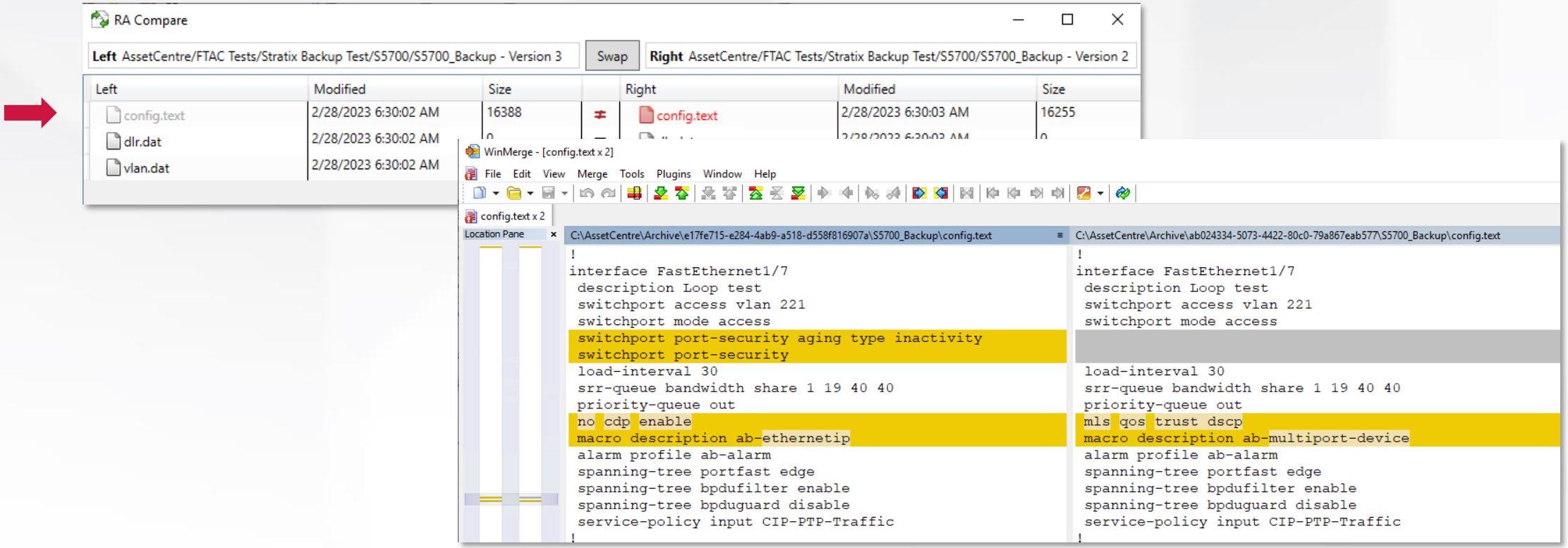
- Stratix® startup configuration and other files are saved in the archive
  - Specific files depend on the switch platform
- A master version can be designated



FactoryTalk® AssetCentre

Stratix® Switch backup comparison

- Versions can be compared side by side to see differences
  - Detailed compare available for text files only
  - A third-party compare tool must be configured for necessary file extensions in *Tools - Options*



FactoryTalk® AssetCentre

Additional features (not available in FactoryTalk® Network Manager™)

- Asset Lifecycle status
- Backup and Compare for controllers and other device types

FactoryTalk® View Faceplates

Network Device Library - Overview

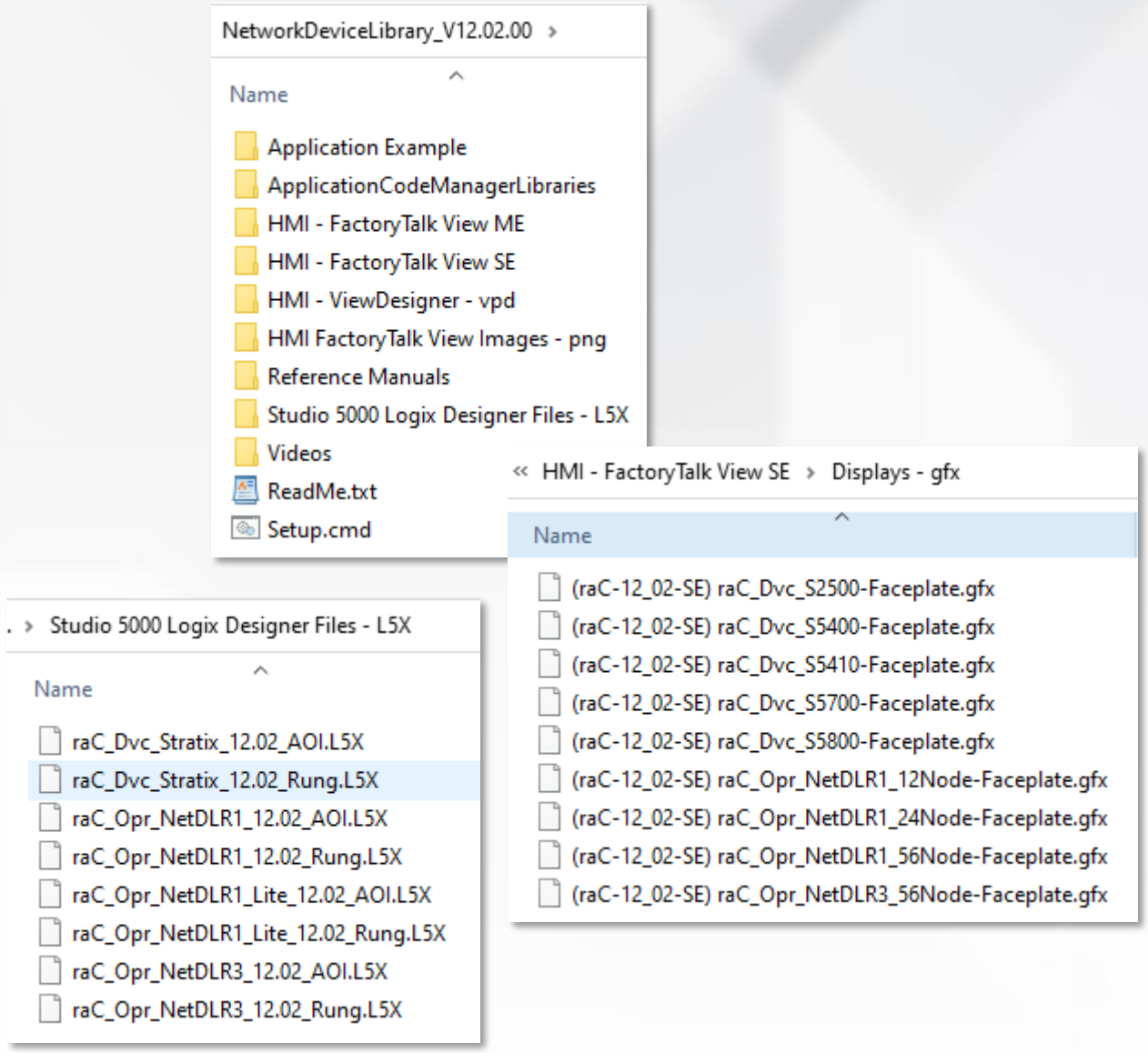
- Faceplates are simple graphic displays that can be added into a FactoryTalk® View Site Edition, FactoryTalk® Machine Edition or a PanelView™ 5000 application
- Faceplates provide real-time data from a network device or a topology on a single screen in an organized manner, with preconfigured status and diagnostic displays
- Network Device Library package can be downloaded for free from the Rockwell Automation Product Compatibility and Download Center (PCDC):

  https://compatibility.rockwellautomation.com/Pages/MultiProductDownload.aspx

FactoryTalk® View Faceplates

Network Device Library - Components

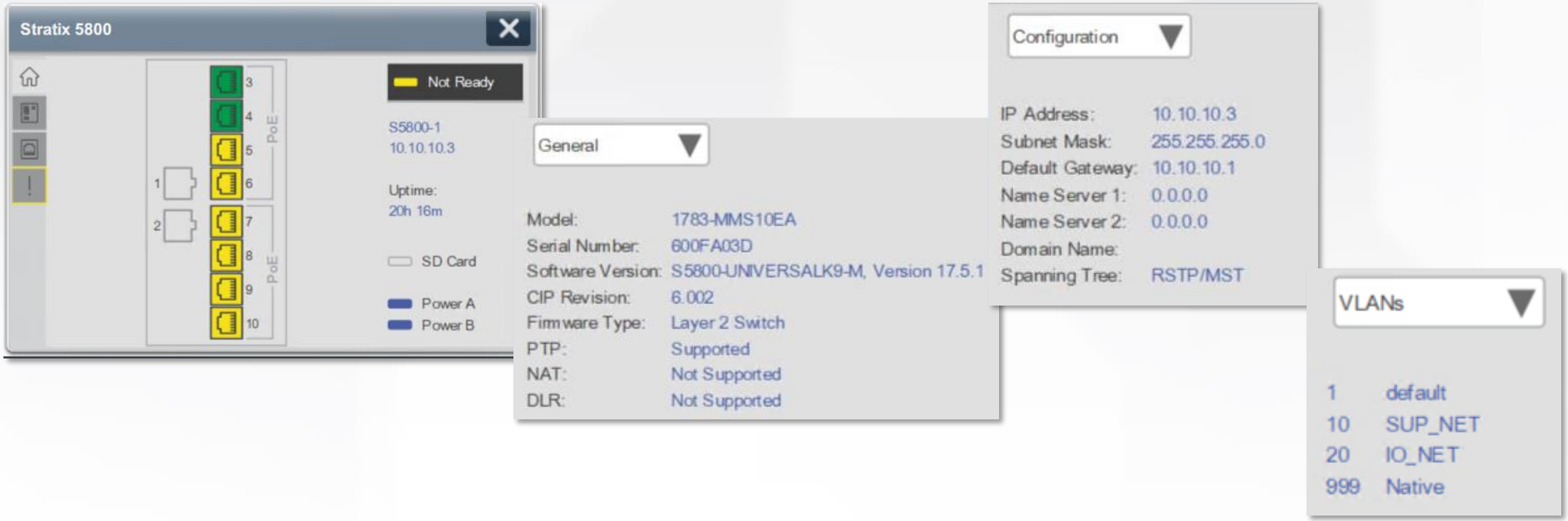
- The Network Device Library version 12.02 supports:
  - Stratix® 2500/5400/5410/5700/5800 switches
  - One or three ring DLR topologies with up to 56 nodes
- The library contains:
  - An Add-On Instruction (AOI) that brings device data into the Studio 5000 Logix Designer® program
  - Pre-configured screens, images and other objects for FactoryTalk® View or PanelView™ 5000
  - Release notes, instructional PDFs or short videos



FactoryTalk® View Faceplates

Switch Information

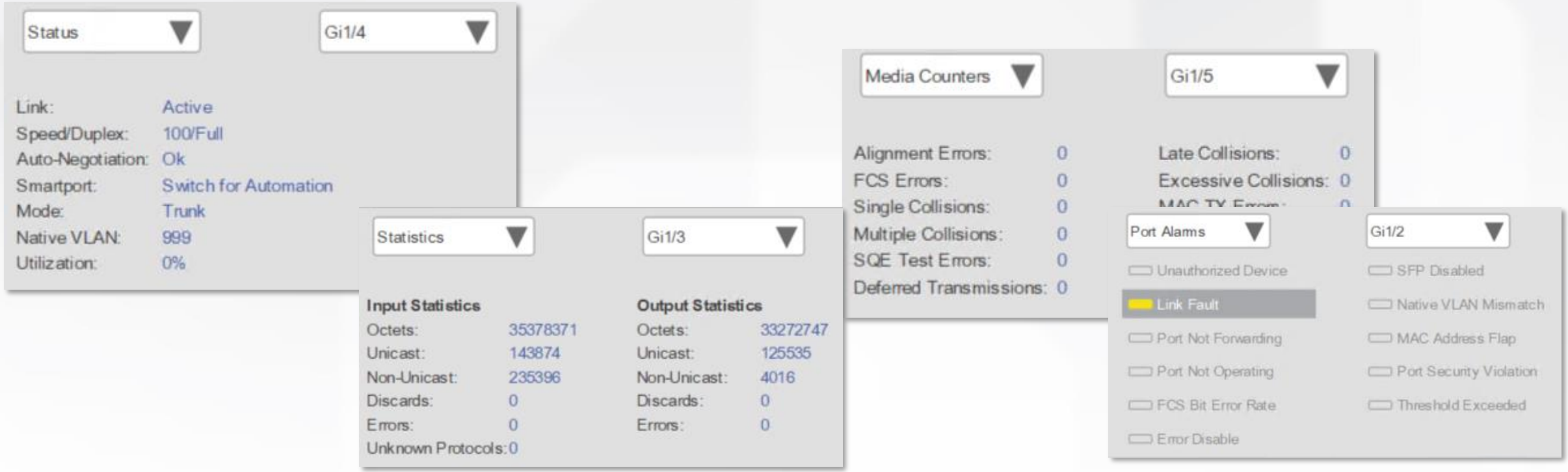
- The Stratix® switch faceplates provide inventory and diagnostic data using CIP
- View switch information such as port status, IP/MAC addresses, feature support, VLANs



FactoryTalk® View Faceplates

Port Diagnostics

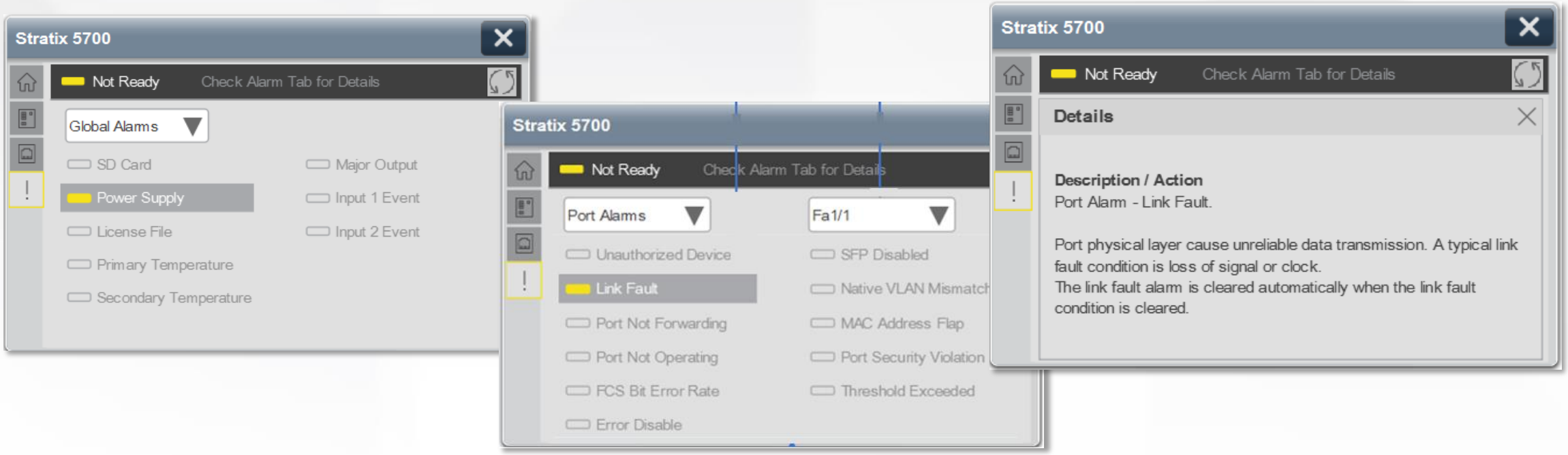
- Port status, mode, Smartport role, assigned VLANs
- Port utilization, media counters and errors



FactoryTalk® View Faceplates

Switch Alarms

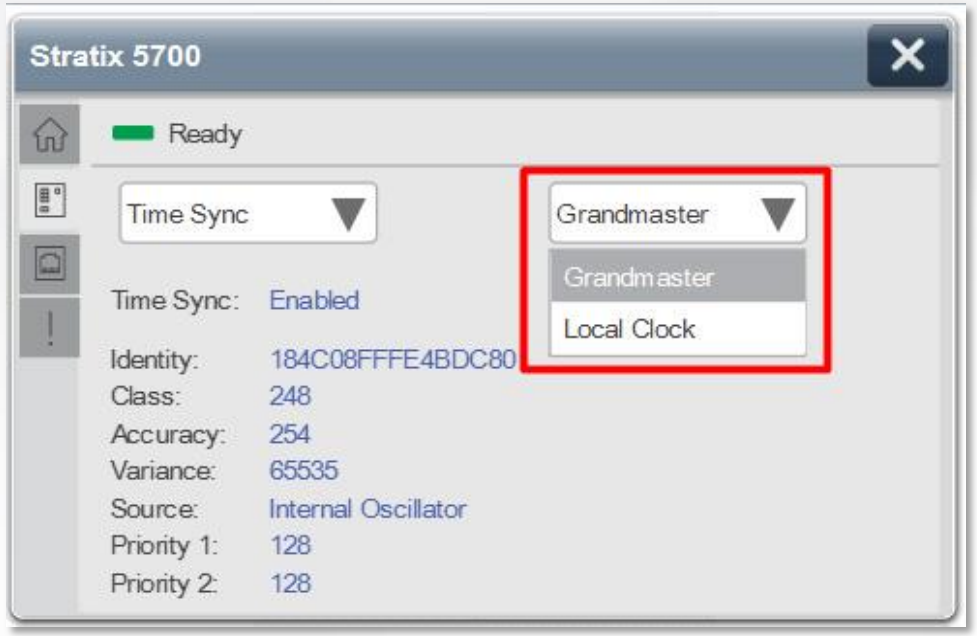
- Global switch alarms: SD card, power supply, temperature, relay status
- Port alarms: link fault, traffic thresholds, excessive errors, MAC flaps, security violations
- Alarm descriptions and suggested actions

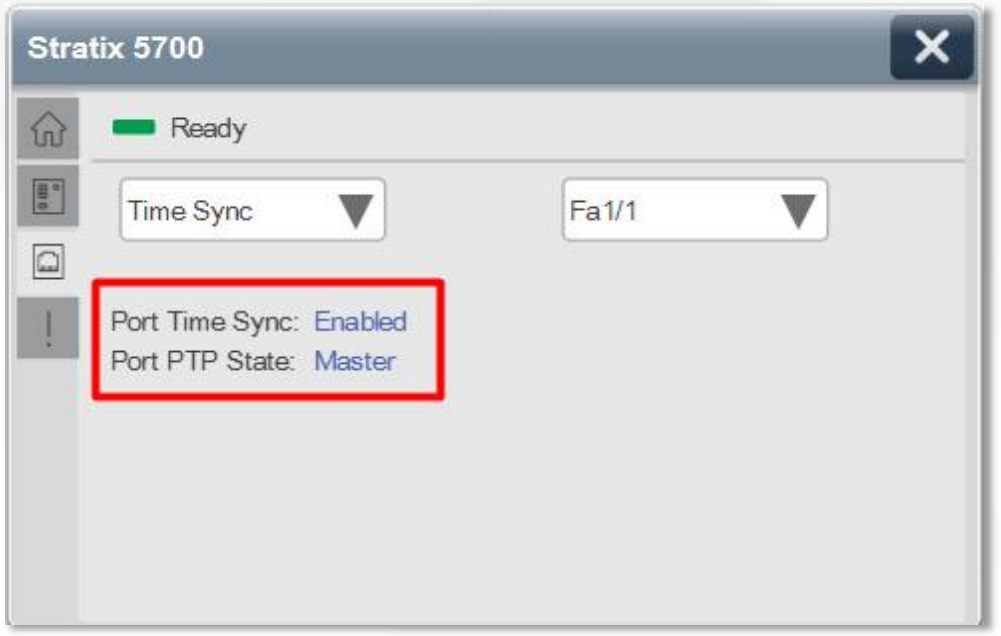


FactoryTalk® View Faceplates

PTP Information

- View Precision Time Protocol (PTP) information
  - Clock information for the local switch or the Grandmaster
  - Time sync status and state per port

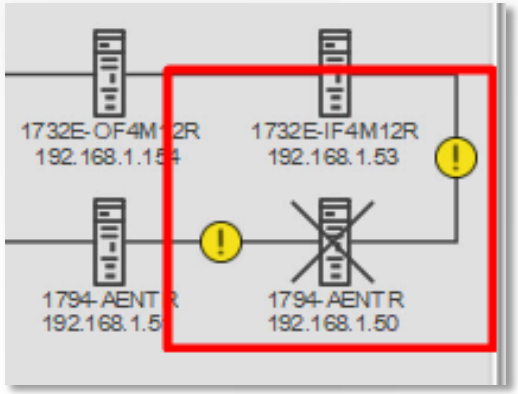


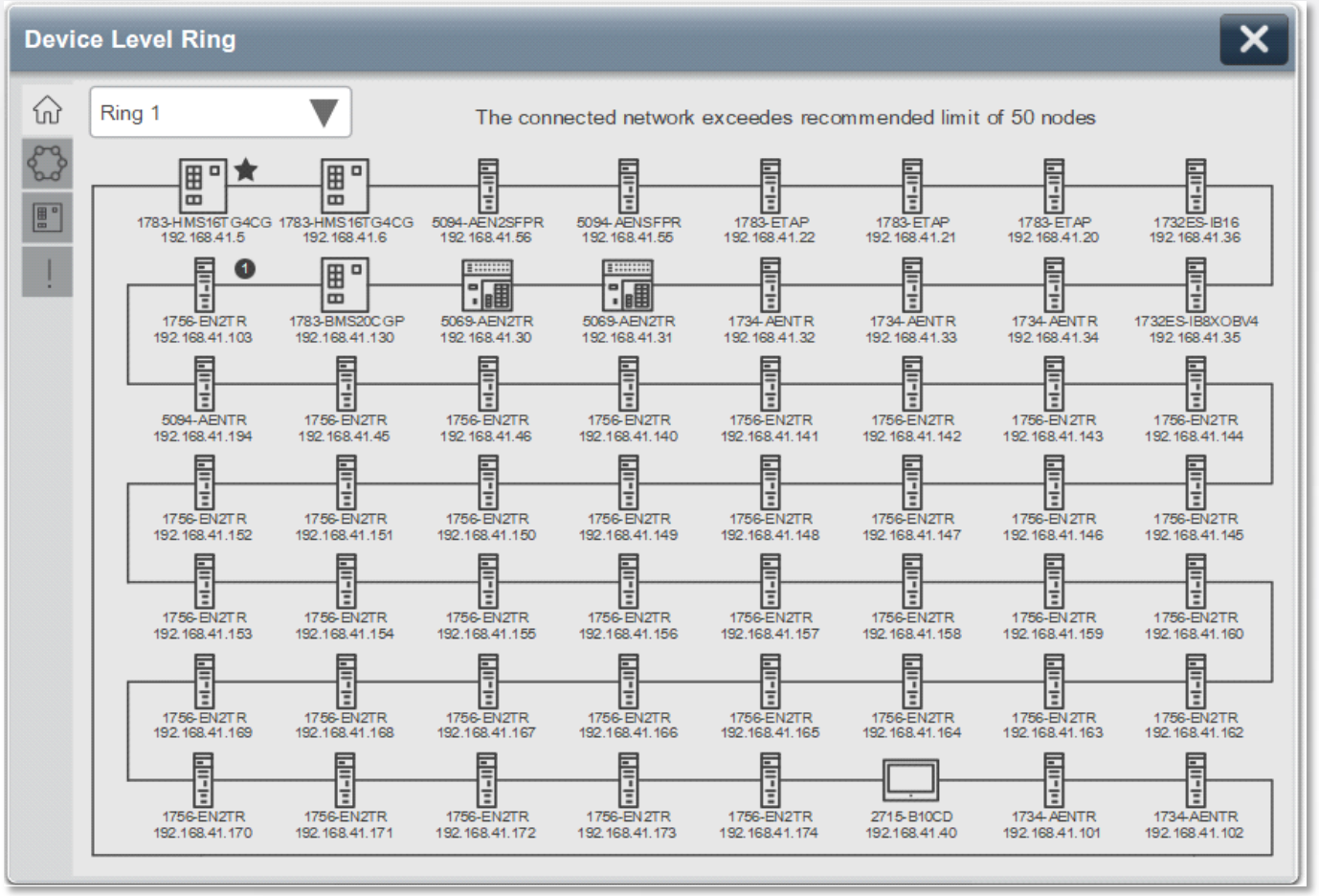


FactoryTalk® View Faceplates

DLR - Layout

- Ring layout, node catalog numbers and IP addresses
- Fault location
- Choice of faceplate objects to reduce resource consumption:
  - 1 or 3 rings
  - 12 or 56 nodes

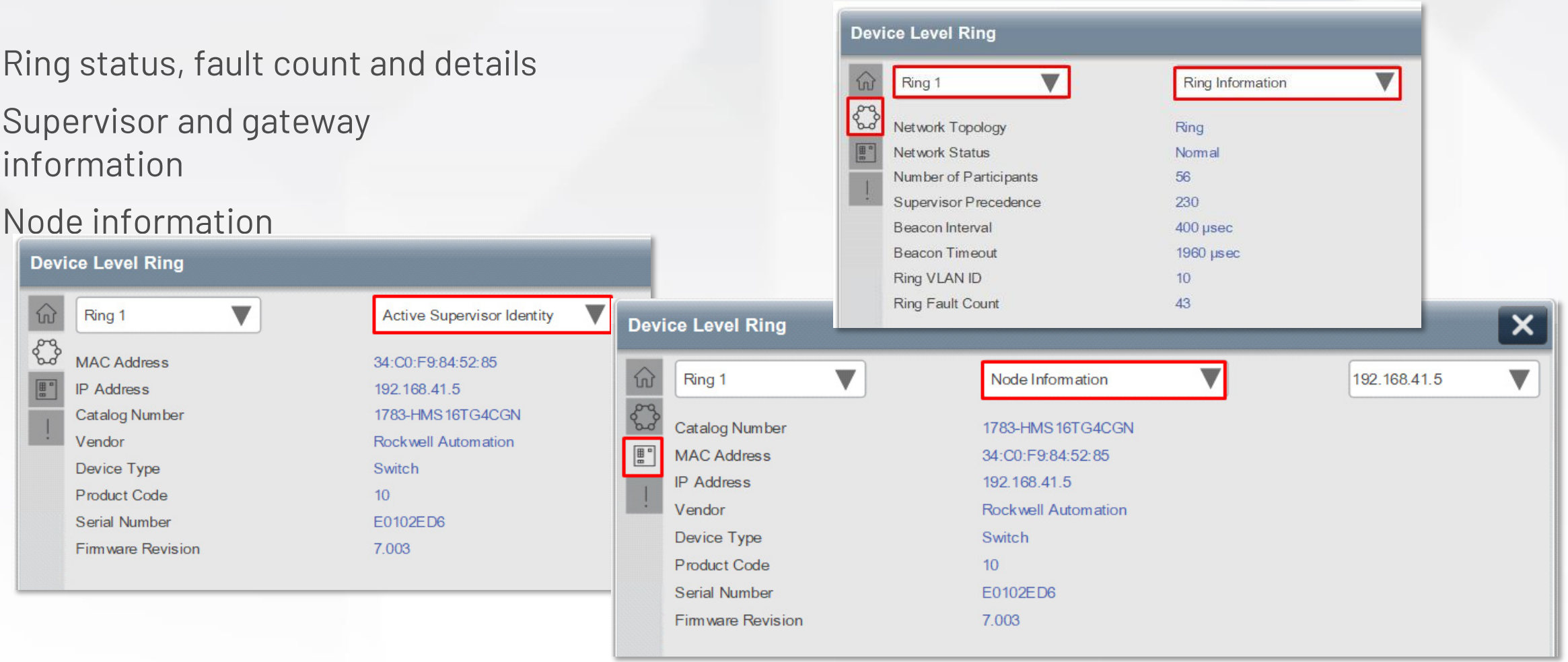




FactoryTalk® View Faceplates

DLR - Information

- Ring status, fault count and details
- Supervisor and gateway information
- Node information



FactoryTalk® View Faceplates

DLR – Fault Detection

- DLR alarms: ring fault, unexpected loop, partial fault, rapid fault/restore
- Fault location

FactoryTalk® Linx Network Browser

Overview and Resources

FactoryTalk® Linx is the premier communication platform software that provides one access point to your data, allowing both FactoryTalk® and third-party software shared access to control equipment.

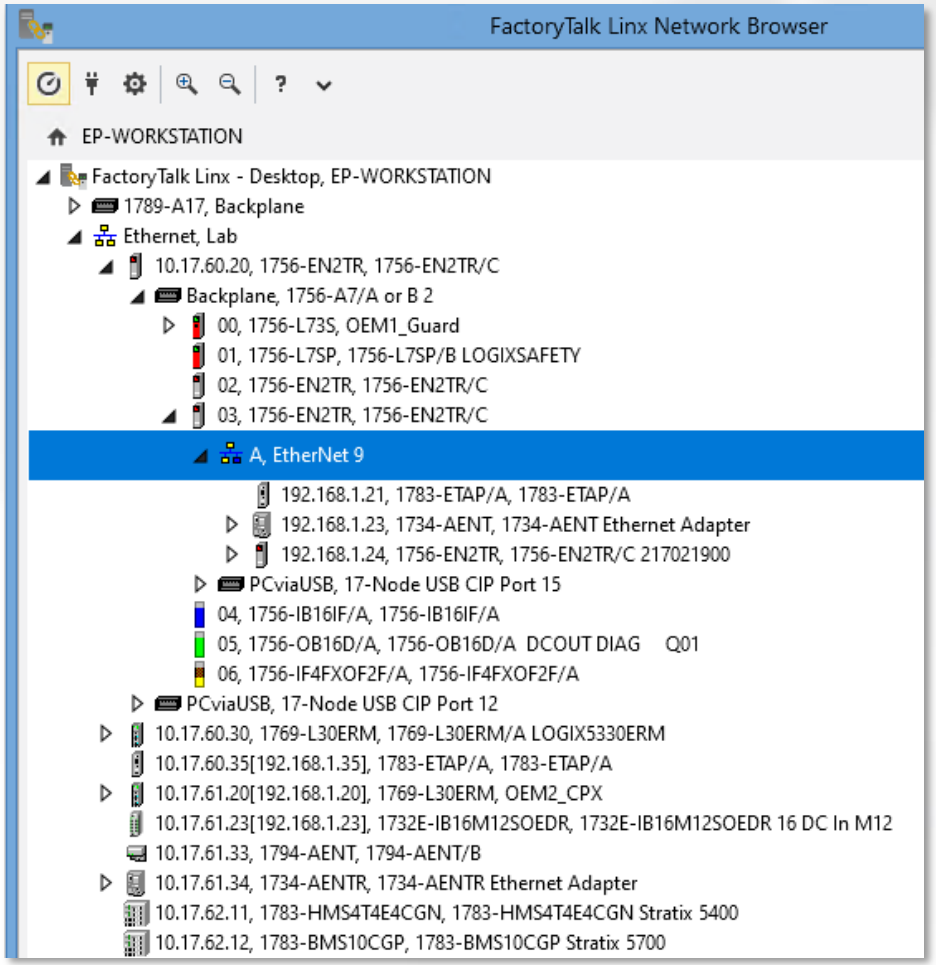
The FactoryTalk® Linx Network browser provides a simple user interface to view and navigate an automation system topology and access device properties.

- Rockwell Automation website - FactoryTalk Linx
- FactoryTalk® Linx Getting Results Guide
- Rockwell Automation YouTube – Industrial Communications
- FactoryTalk® Linx Gateway: Remote Proxy Service (QA65401)

FactoryTalk® Linx Network Browser

Device Discovery

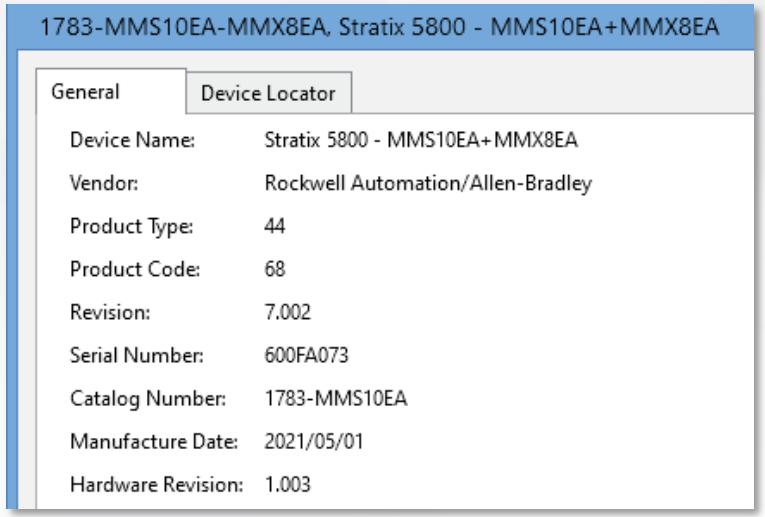
- Discover EtherNet/IP devices on the network
  - Browse local or remote IP subnet
  - Add IP addresses manually
  - Browse the backplane
- Use Remote Devices via Proxy Service to bridge through a FactoryTalk® Linx Gateway workstation
  - Allows communicating with devices on another network
  - FactoryTalk® Linx v6.31 or later

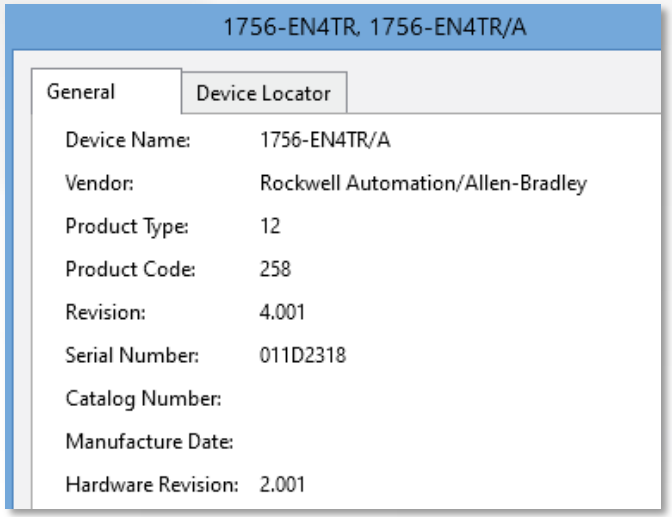


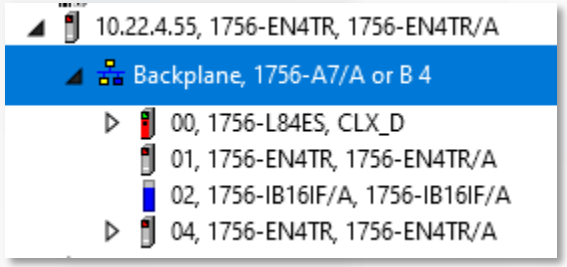
FactoryTalk® Linx Network Browser

Device Inventory

- View inventory data for EtherNet/IP devices and Stratix® switches
- Browse the backplane to see modules in the chassis



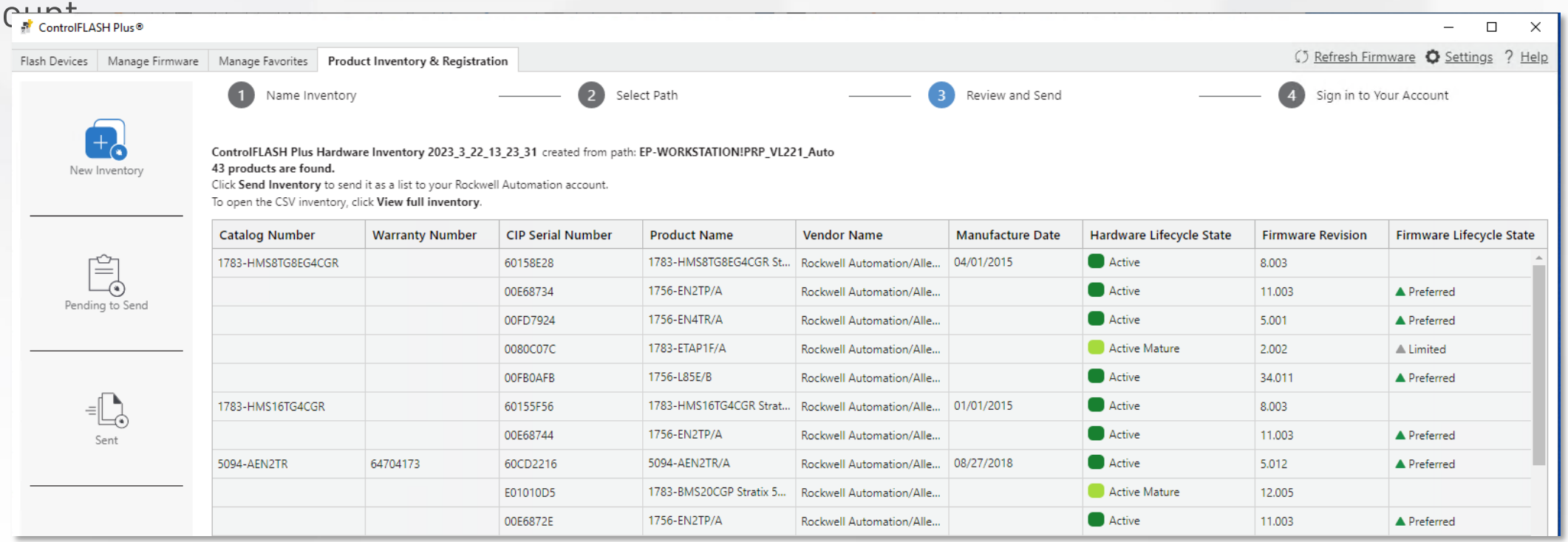




FactoryTalk® Linx and ControlFLASH Plus™

Lifecycle Status and Inventory Export

- View inventory data and lifecycle status for EtherNet/IP™ devices and Stratix® switches
  - ControlFLASH Plus™ v5.0 or later
- Create a product inventory report and export as CSV file or send to your Rockwell Automation account

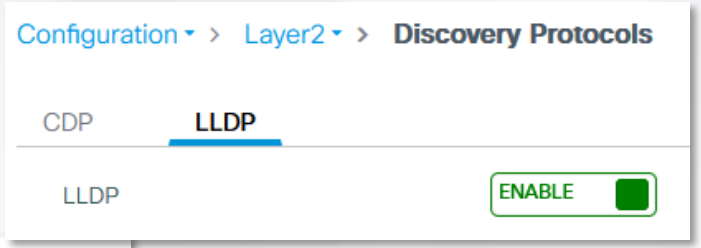


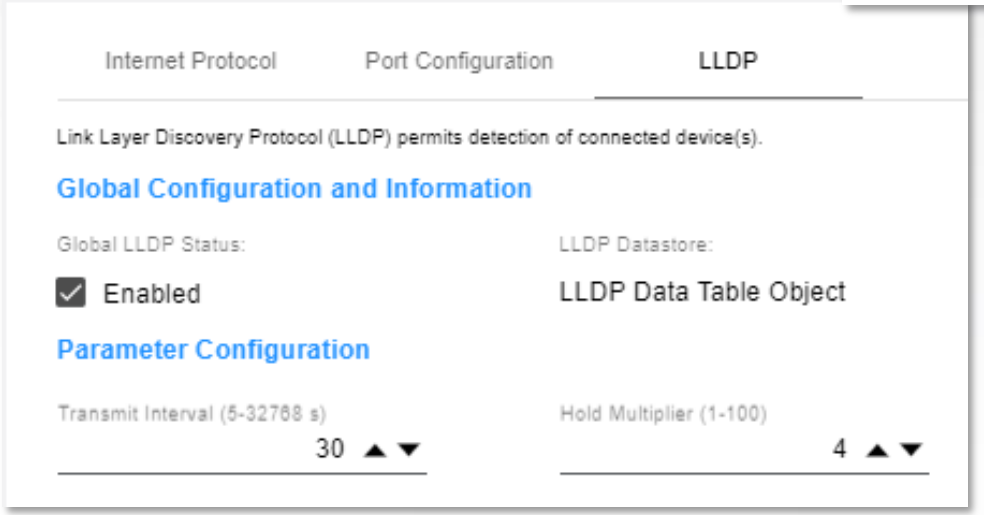
Catalog Number	Warranty Number	CIP Serial Number	Product Name	Vendor Name	Manufacture Date	Hardware Lifecycle State	Firmware Revision	Firmware Lifecycle State
1783-HMS8TG8EG4CGR		60158E28	1783-HMS8TG8EG4CGR St...	Rockwell Automation/Alle...	04/01/2015	Active	8.003	
		00E68734	1756-EN2TP/A	Rockwell Automation/Alle...		Active	11.003	Preferred
		00FD7924	1756-EN4TR/A	Rockwell Automation/Alle...		Active	5.001	Preferred
		0080C07C	1783-ETAP1F/A	Rockwell Automation/Alle...		Active Mature	2.002	Limited
		00FB0AFB	1756-L85E/B	Rockwell Automation/Alle...		Active	34.011	Preferred
1783-HMS16TG4CGR		60155F56	1783-HMS16TG4CGR Strat...	Rockwell Automation/Alle...	01/01/2015	Active	8.003	
		00E68744	1756-EN2TP/A	Rockwell Automation/Alle...		Active	11.003	Preferred
5094-AEN2TR	64704173	60CD2216	5094-AEN2TR/A	Rockwell Automation/Alle...	08/27/2018	Active	5.012	Preferred
		E01010D5	1783-BMS20CGP Stratix 5...	Rockwell Automation/Alle...		Active Mature	12.005	
		00E6872E	1756-EN2TP/A	Rockwell Automation/Alle...		Active	11.003	Preferred

FactoryTalk® Linx Network Browser

Connected Devices (LLDP)

- Use Link Layer Discovery Protocol (LLDP) to view the table of directly connected devices
- Requires CIP LLDP object support on Stratix® switches and EtherNet/IP™ modules
  - Enable LLDP on Stratix® switches after Express Setup
- Supported firmware revisions:
  - Stratix® 5400/5410/5700/8000 IOS 15.2(8)E1
  - Stratix® 5800/5200 IOS XE 17.9 or later
  - ControlLogix® 5580 version 34 (front port)
  - CompactLogix™ 5380 version 34
  - 1756-EN4TR v5.001
  - Other products: roadmap





FactoryTalk® Linx Network Browser

Connected Devices (LLDP)

- The LLDP table shows directly connected devices
  - View neighbors on Stratix® switches or EtherNet/IP™ modules
  - Allows mapping linear topologies by looking at each device in the chain
  - Module information: IP/MAC, catalog number, revision
- Export as a table

Port Configuration and Device Connected

Port	Outgoing Enabled	Neighbor Infomation					
		IP Address	Port	Device Name	Revision	Mac Address	Vendor
Gi1/6	☑						
Gi1/7	☑	10.22.1.51	1	1756-EN4TR	5.001	34-C0-F9-FE-8A-6A	Rockwell Automation...
Gi1/8	☑						
Gi1/9	☑						
Gi1/10	☑						
Gi1/11	☑						
Gi1/12	☑						
Gi1/13	☑	10.22.1.235	1	1756-EN4TR	5.001	5C-88-16-EE-38-A0	
Gi1/14	☑						

Port Configuration and Device Connected

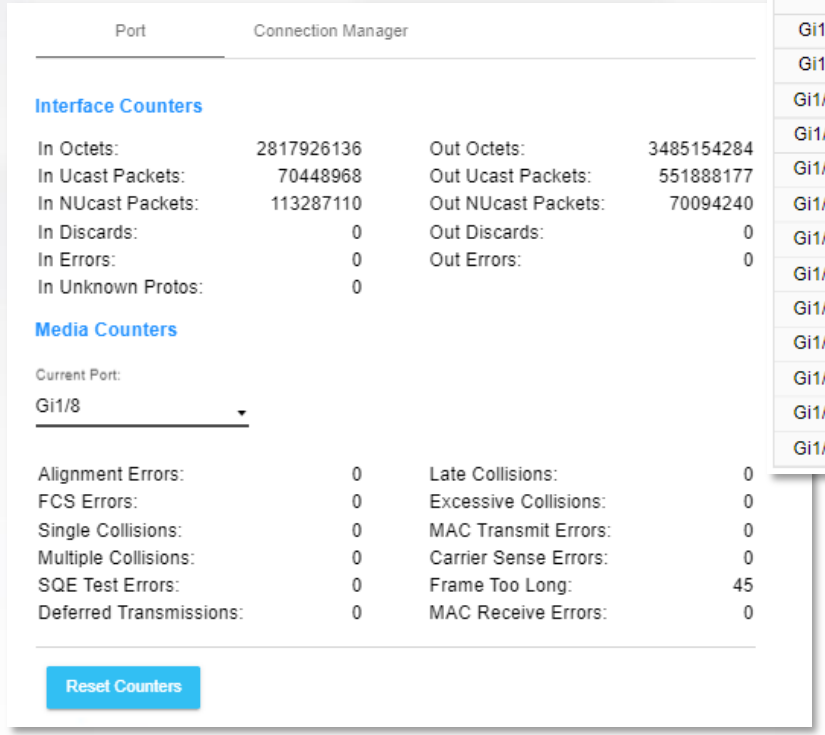
Port	Outgoing Enabled	Neighbor Infomation				
		IP Address	Port	Device Name	Revision	Mac Address
1	☑	10.22.1.235	2	1756-EN4TR	5.001	5C-88-16-EE-38-A0
2	☑	10.22.1.238	1	1756-L85E LO...	35.011	00-1D-9C-D9-69-8E

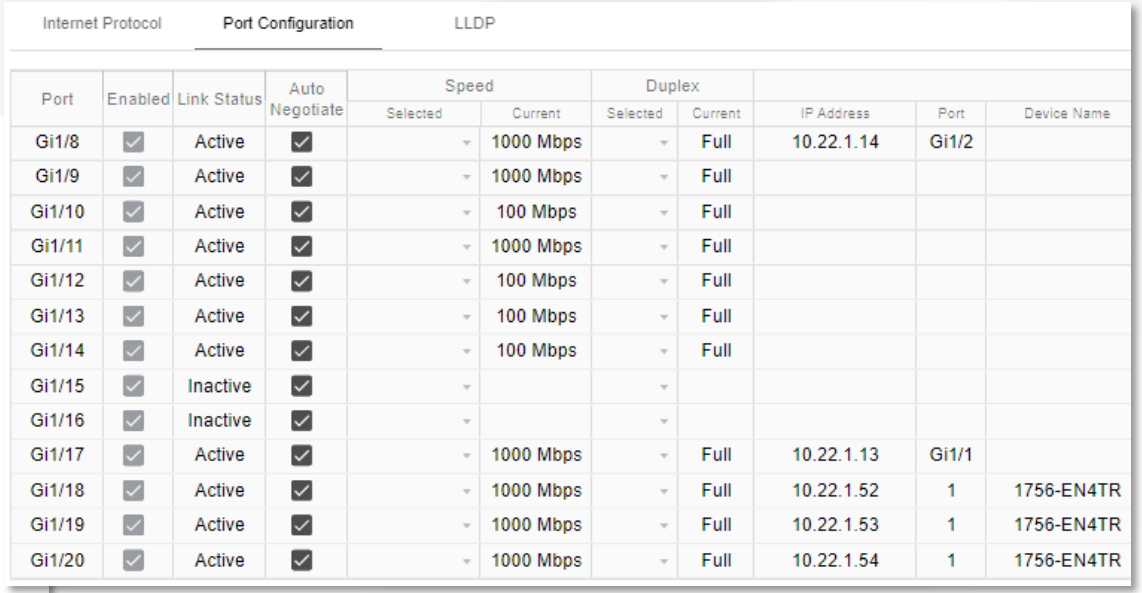
	A	B	C	D	E	F	G	H
1	Port	Outgoing	IP Address	Port	Device Name	Revision	Mac Address	Vendor
5	Gi1/4	TRUE						
6	Gi1/5	TRUE						
7	Gi1/6	TRUE						
8	Gi1/7	TRUE	10.22.1.51	1	1756-EN4TR	5.001	34-C0-F9-FE-8A-6A	Rockwell Automation/Allen-Bradley
9	Gi1/8	TRUE						
10	Gi1/9	TRUE						
11	Gi1/10	TRUE						
12	Gi1/11	TRUE						
13	Gi1/12	TRUE						
14	Gi1/13	TRUE	10.22.1.235	1	1756-EN4TR	5.001	5C-88-16-EE-38-A0	Rockwell Automation/Allen-Bradley
15	Gi1/14	TRUE						

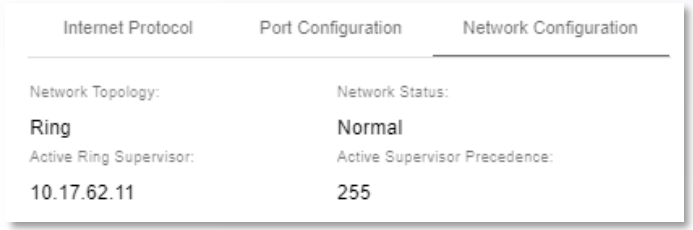
FactoryTalk® Linx Network Browser

Device Diagnostics

- View port information for Stratix® switches and EtherNet/IP™ modules
  - Port state, speed and duplex
  - Port statistics, media counters and errors
  - CIP connection data
- View DLR status







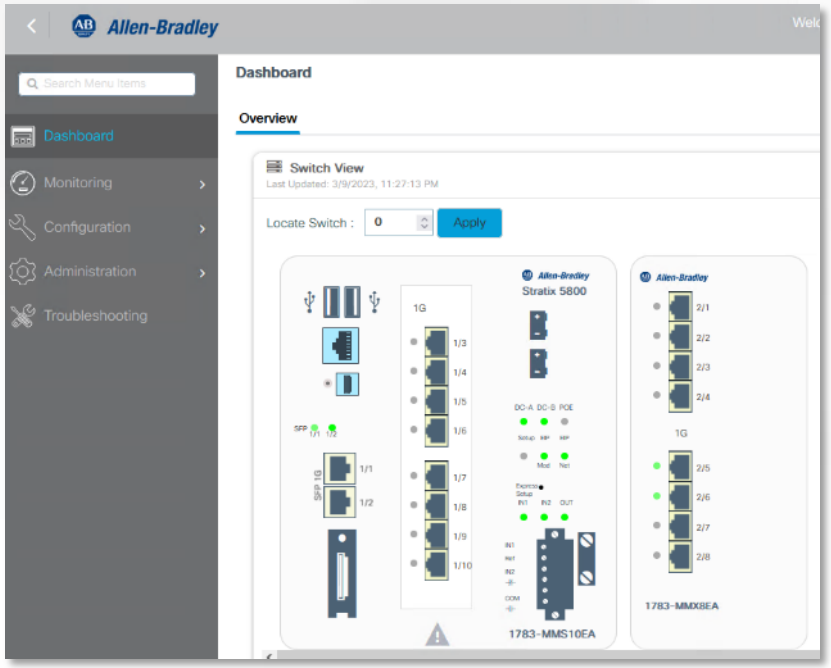
Stratix® WebUI and Device Manager

Overview and Resources

WebUI is the new web-based configuration tool for Stratix® 5800 and Stratix® 5200. It replaces Stratix® Device Manager as the switch management tool with extended configuration capability, improved navigation, higher performance, and faster firmware update process.

The WebUI provides new troubleshooting and monitoring tools for verifying connectivity, collecting diagnostic data and executing CLI commands.

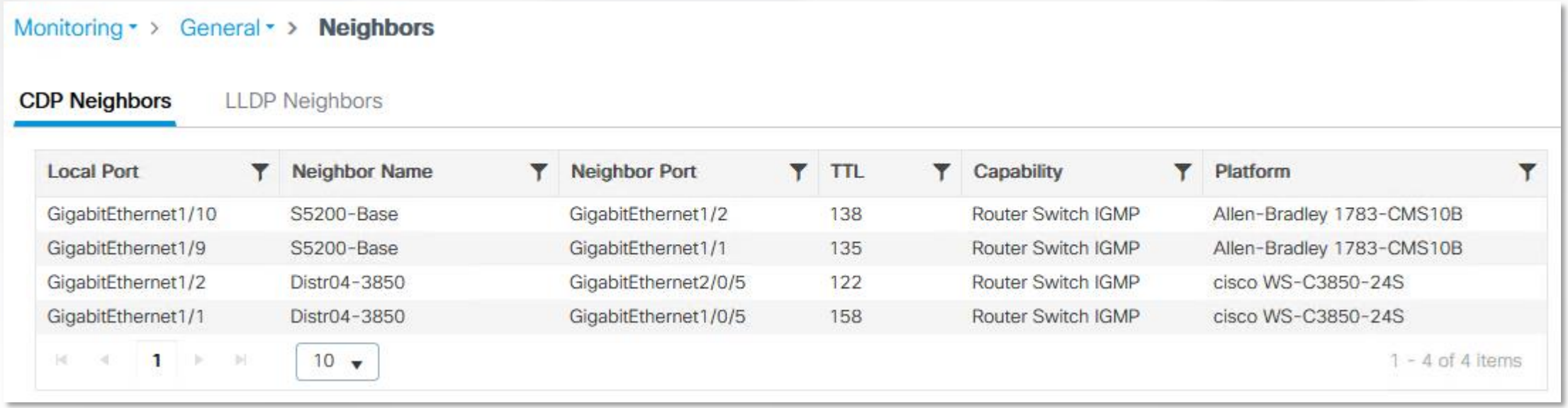
- Stratix® 5800 Managed Switches User Manual (1783-UM012)
- Stratix® Managed Switches User Manual (1783-UM007)



Stratix® WebUI and Device Manager

Connected Devices (CDP and LLDP)

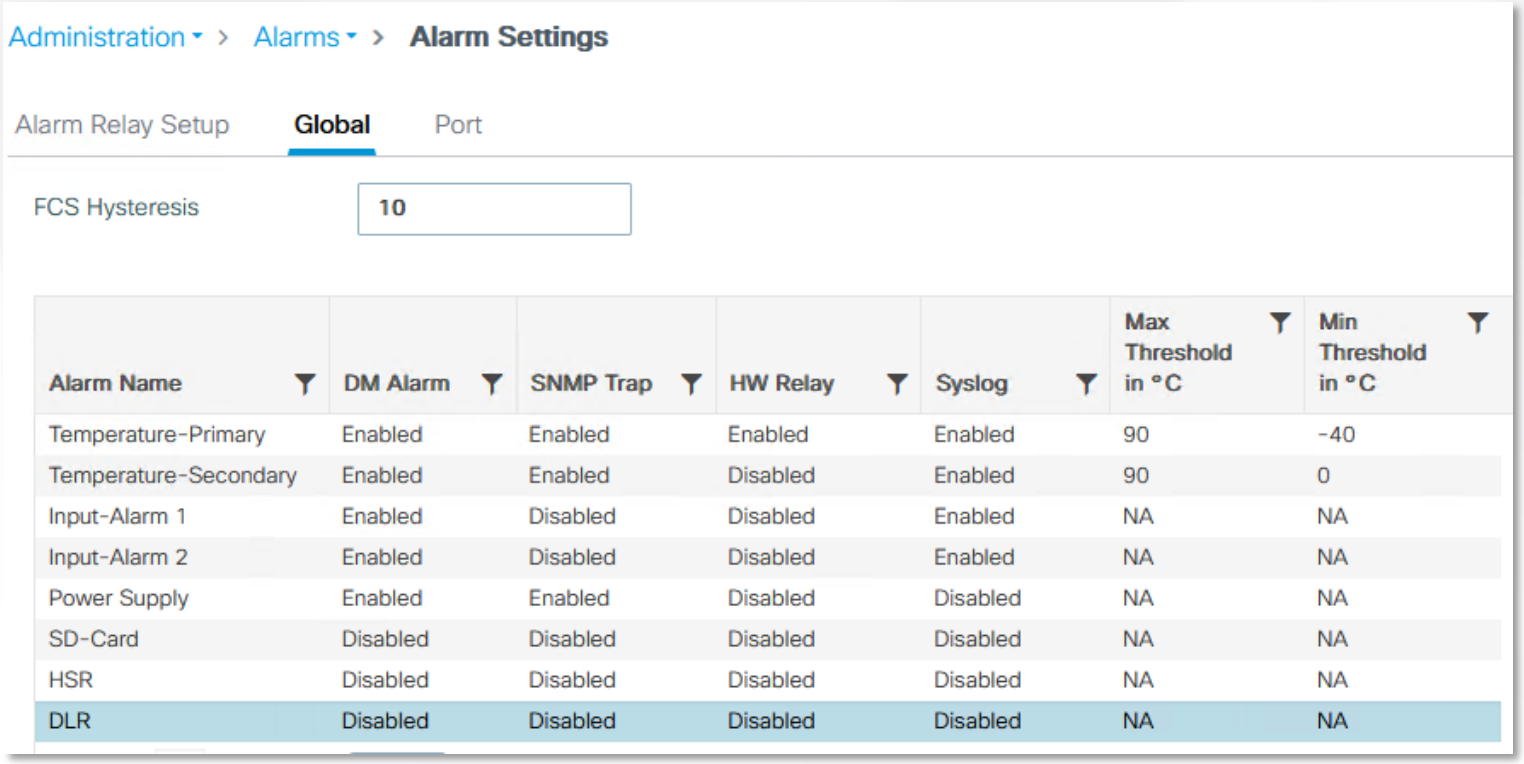
- Use Cisco® Discovery Protocol (CDP) or Link Layer Discovery Protocol (LLDP) to see directly connected devices
  - CDP is enabled by default on Stratix® switches
  - LLDP is supported by Stratix® switches and selected EtherNet/IP™ modules (see FactoryTalk® Linx slide)



Stratix® WebUI and Device Manager

Switch alarms

- Stratix® switches support various types of alarms
  - Web interface based
  - External: SNMP traps, syslog
  - Hardware relays
  - Global or port-based alarm conditions

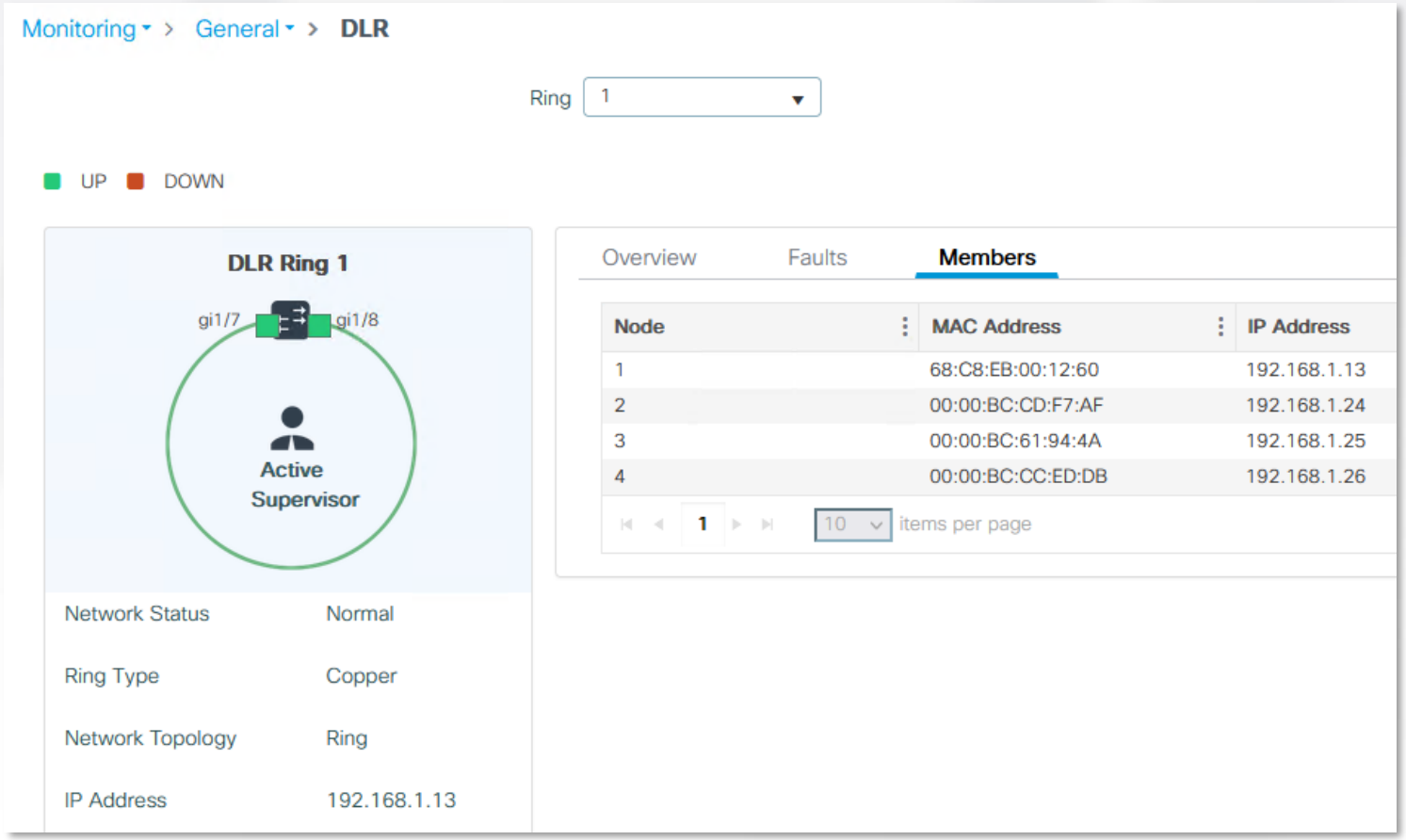


Alarm Name	DM Alarm	SNMP Trap	HW Relay	Syslog	Max Threshold in °C	Min Threshold in °C
Temperature-Primary	Enabled	Enabled	Enabled	Enabled	90	-40
Temperature-Secondary	Enabled	Enabled	Disabled	Enabled	90	0
Input-Alarm 1	Enabled	Disabled	Disabled	Enabled	NA	NA
Input-Alarm 2	Enabled	Disabled	Disabled	Enabled	NA	NA
Power Supply	Enabled	Enabled	Disabled	Disabled	NA	NA
SD-Card	Disabled	Disabled	Disabled	Disabled	NA	NA
HSR	Disabled	Disabled	Disabled	Disabled	NA	NA
DLR	Disabled	Disabled	Disabled	Disabled	NA	NA

Stratix® WebUI and Device Manager

DLR Diagnostics and Topology

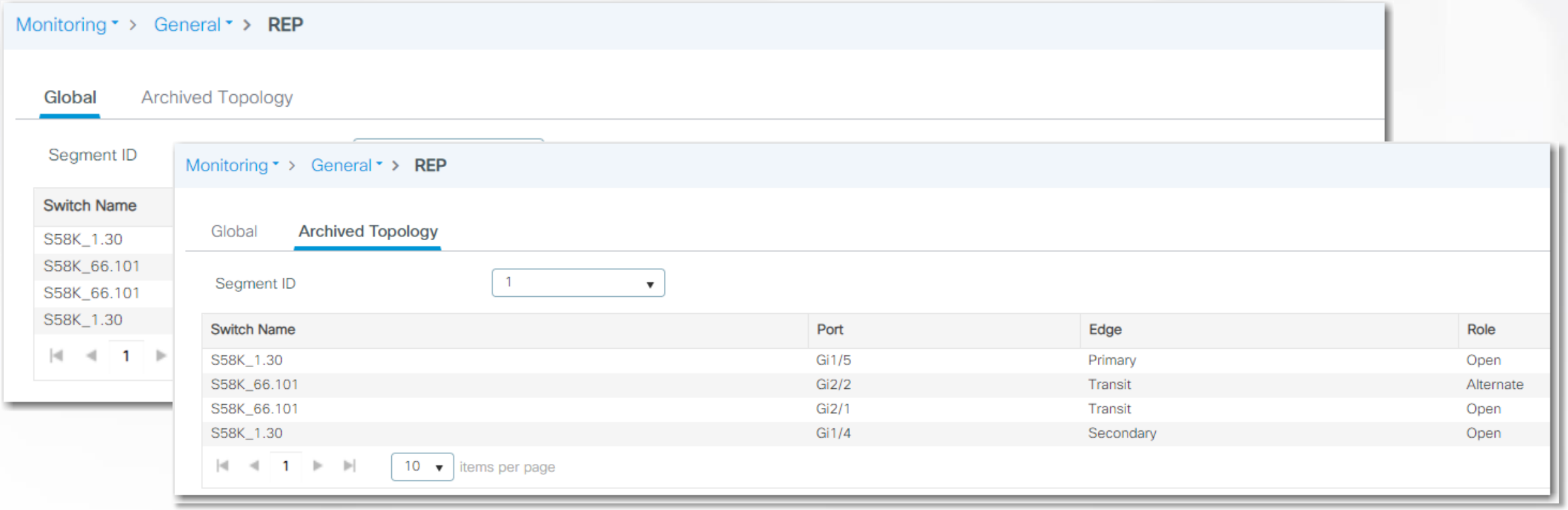
- View DLR status, fault information and statistics
- View the ring member list on the Stratix® switch acting as the DLR Supervisor
  - Node number represent the device order in the ring



Stratix® WebUI and Device Manager

REP Diagnostics and Topology

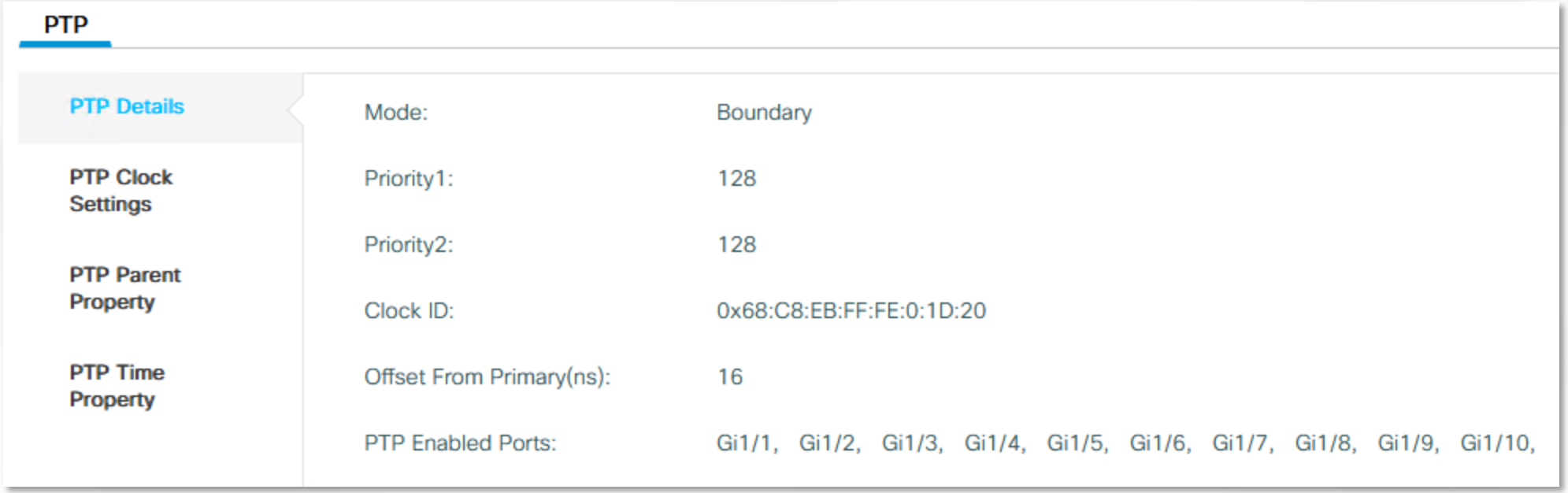
- View Resilient Ethernet Protocol (REP) status, ring members and REP roles
  - Current and previous (archived) topology is available



Stratix® WebUI and Device Manager

PTP Monitoring

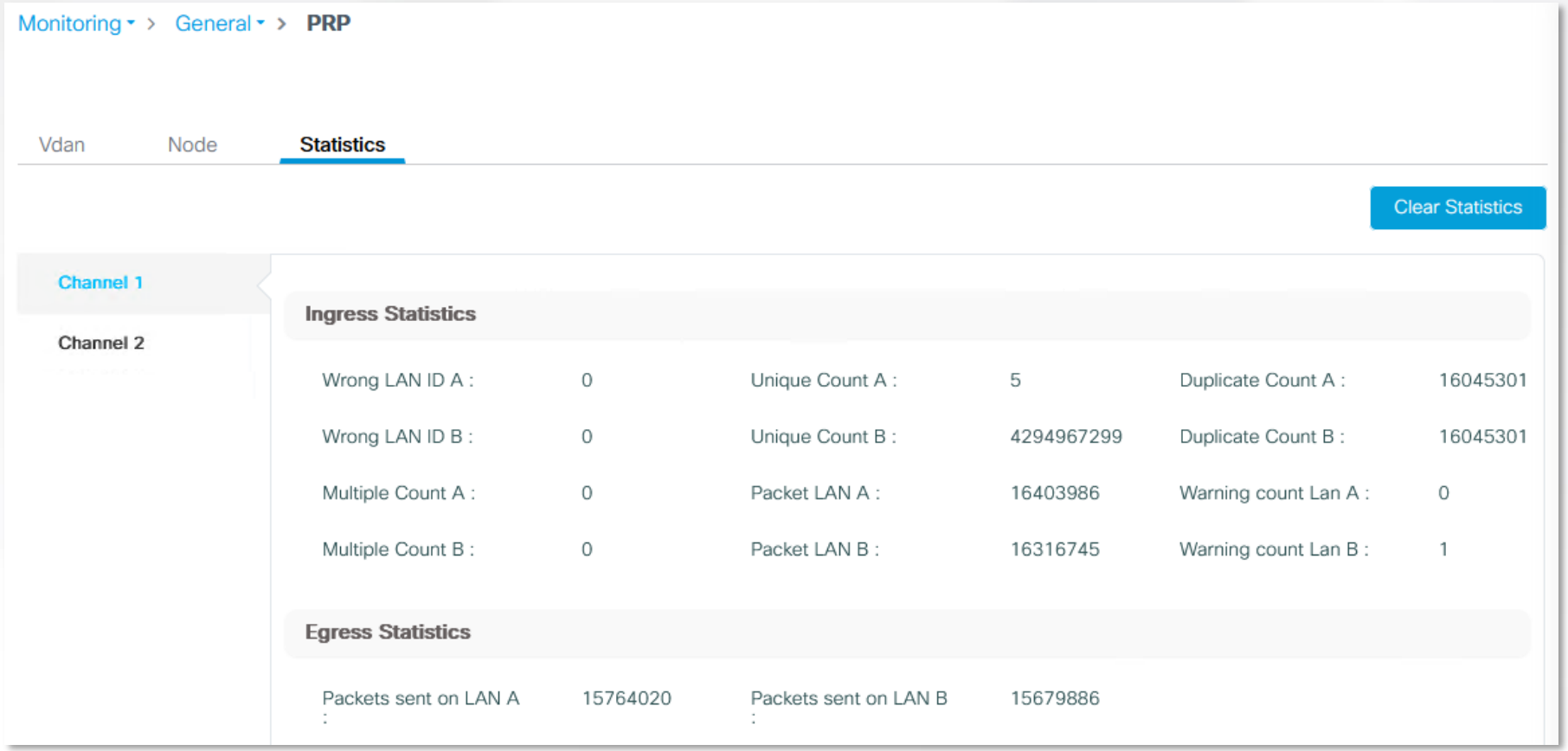
- View PTP mode, local and parent clock information, and offset



Stratix® WebUI and Device Manager

PRP Monitoring

- View Parallel Redundancy Protocol (PRP) statistics and diagnostic information on a Stratix® RedBox switch:
  - PRP network status
  - DAN and VDAN tables

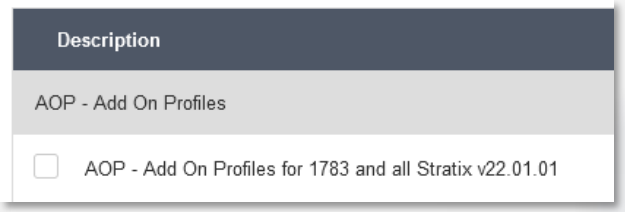


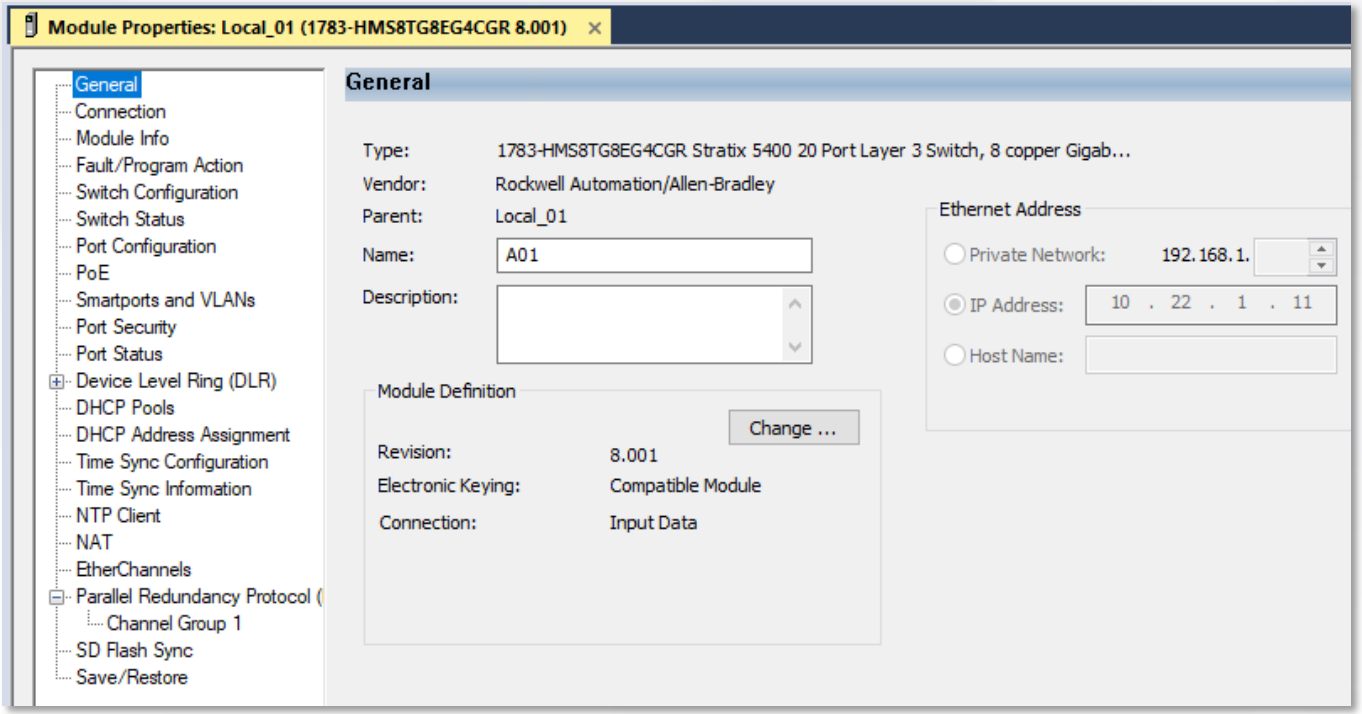
Studio 5000 Logix Designer® Add-On Profiles

Overview

As a part of Premier Integration, Rockwell Automation has implemented the Common Industrial Protocol (CIP) in a variety of its Stratix® switch product families. Add-On Profiles (AOP) in Studio 5000 Logix Designer® allow configuring and monitoring Stratix® switches.

New AOP versions can be downloaded as part of the Stratix® switch or the module firmware package using the Product Compatibility and Download Center (PCDC).

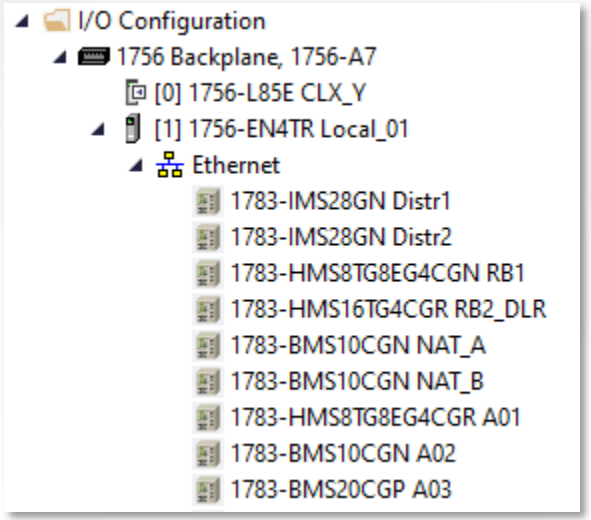


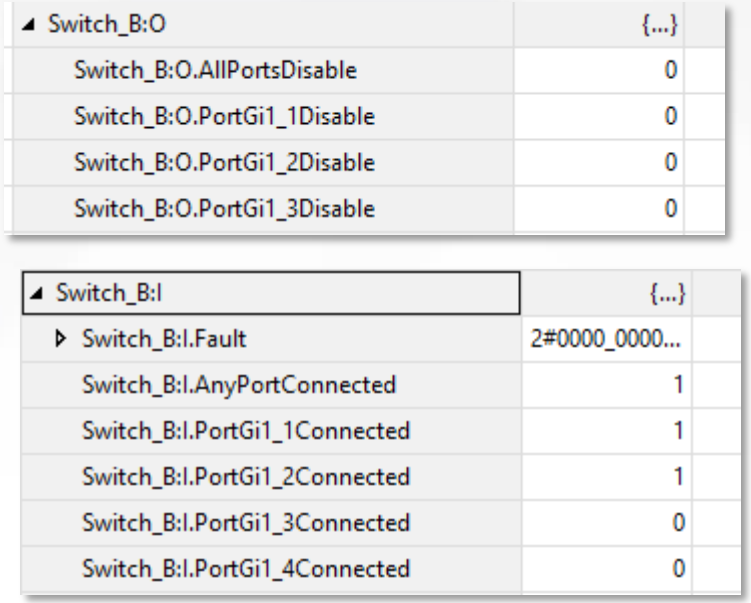


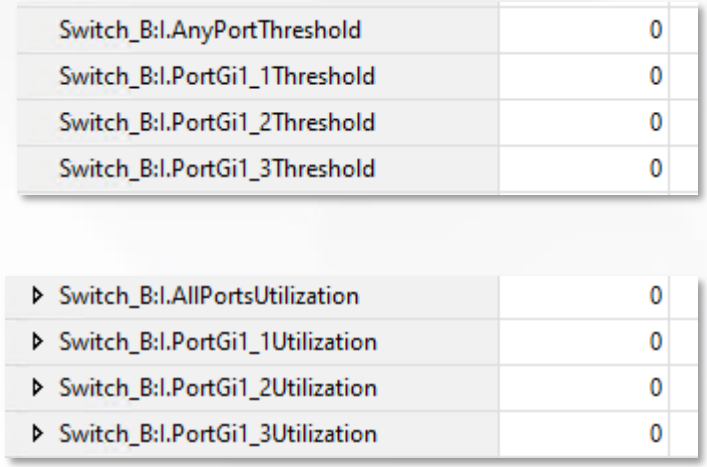
Studio 5000 Logix Designer® Add-On Profiles

Stratix® switch integration

- Switch and network diagnostic data can be retrieved directly from the switch using CIP
- Switch I/O tags are available to use in a program: switch fault status, port disable, port threshold and utilization
- Multiple Stratix® switches can be added to the I/O tree of the controller program.







Studio 5000 Logix Designer® Add-On Profiles

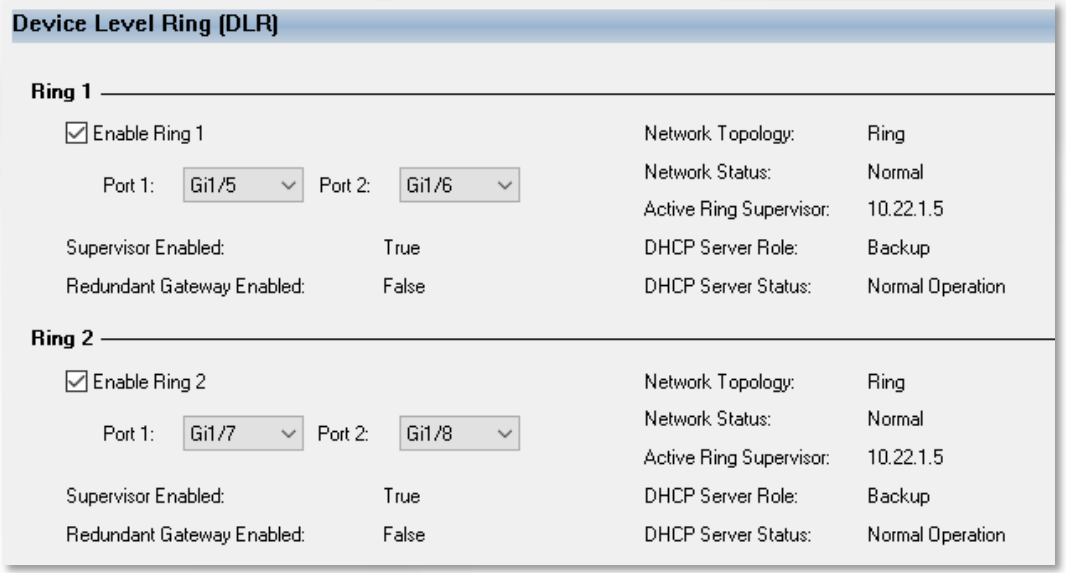
Automatic Diagnostics for Stratix® switches

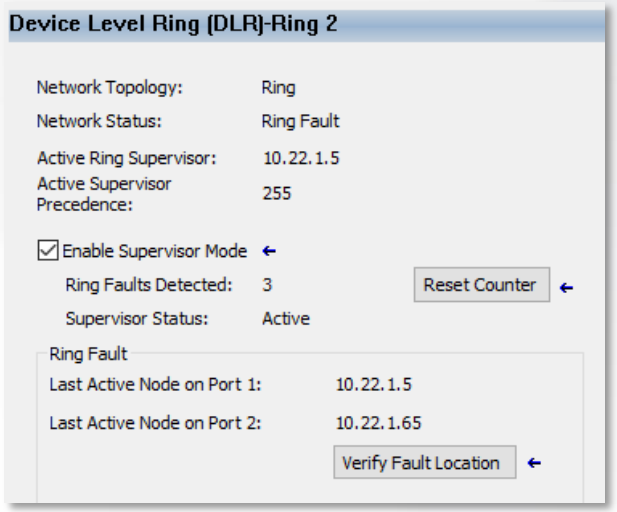
- Automatic Diagnostics is a system-level feature that provides device diagnostics to HMIs and other clients, with zero programming. The diagnostics include device description conditions and state events.
  - Compact GuardLogix® 5380, CompactLogix™ 5380, CompactLogix™ 5480, ControlLogix® 5580, and GuardLogix® 5580 controllers with the firmware revision 33 or later
  - Stratix® AOP version 21.01.01 or later
- FactoryTalk® Alarms and Events subscribes to and displays diagnostic events enabled by the Automatic Diagnostics.

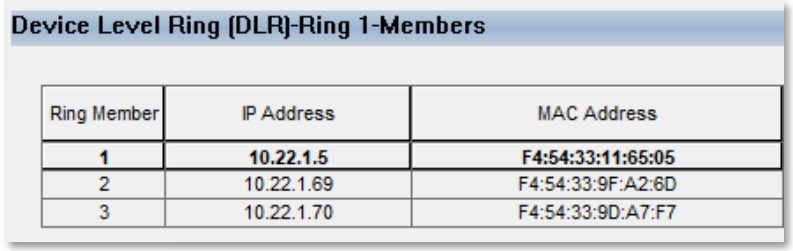
Studio 5000 Logix Designer® Add-On Profiles

DLR Diagnostics and Topology

- View DLR status, fault information and statistics
- View the ring member list on the Stratix® switch acting as the DLR Supervisor
  - Node number represent the device order in the ring





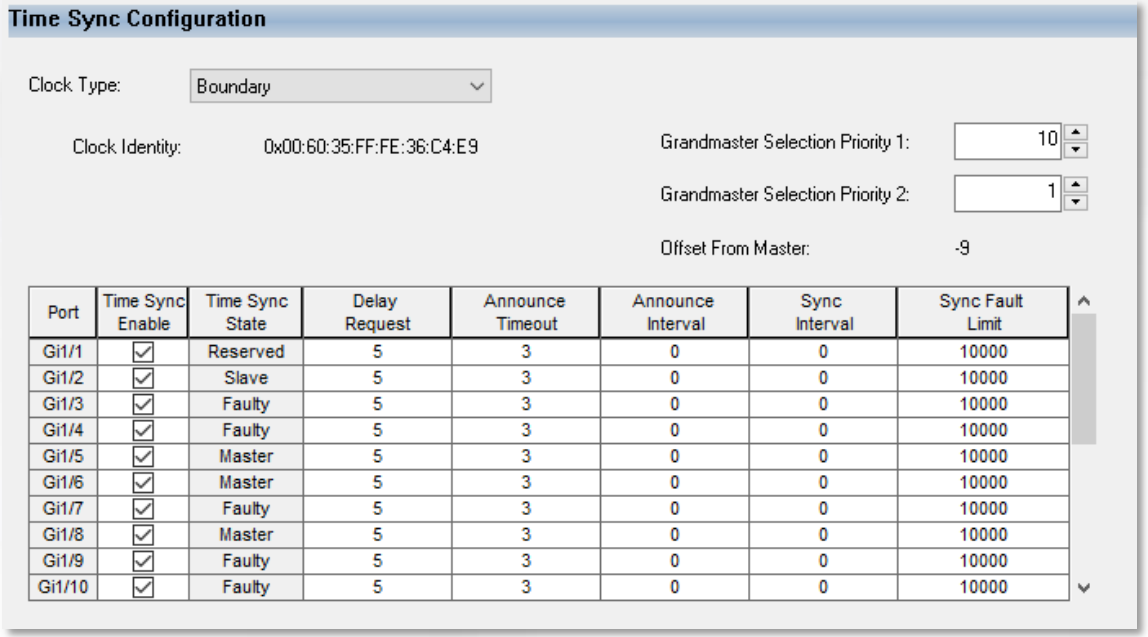


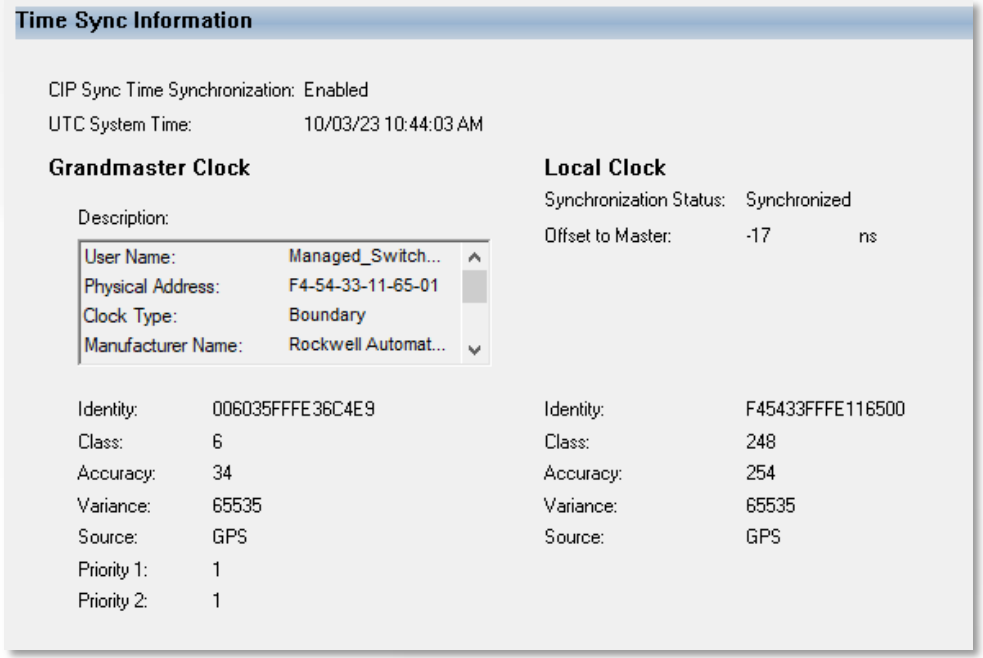
Ring Member	IP Address	MAC Address
1	**10.22.1.5**	**F4:54:33:11:65:05**
2	10.22.1.69	F4:54:33:9F:A2:6D
3	10.22.1.70	F4:54:33:9D:A7:F7

Studio 5000 Logix Designer® Add-On Profiles

PTP Monitoring

- View PTP mode, port state, local and parent clock information, and offset

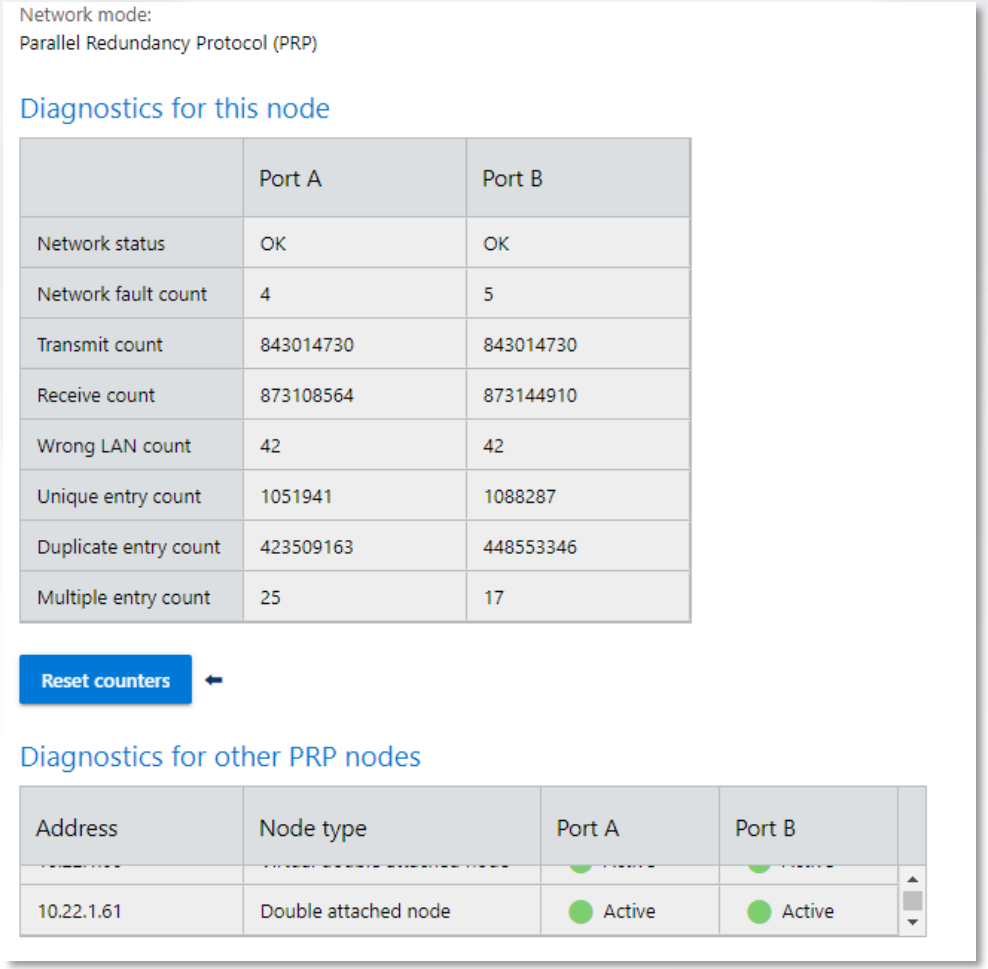




Studio 5000 Logix Designer® Add-On Profiles

PRP Monitoring

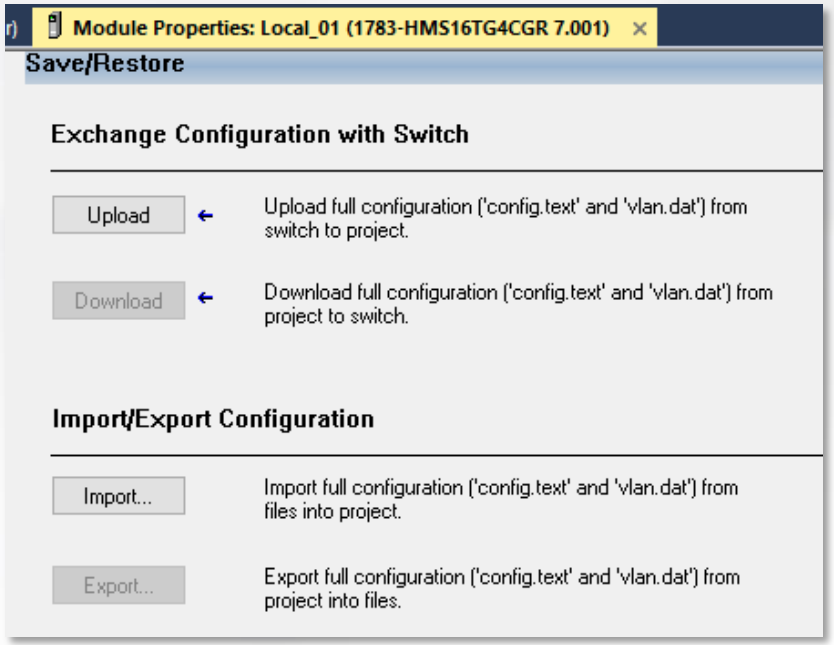
- View PRP statistics and diagnostic information:
  - Stratix® RedBox switches
  - PRP-capable EtherNet/IP™ modules



Studio 5000 Logix Designer® Add-On Profiles

Switch Backup and Restore

- Backup and restore configurations for Stratix® switches in the I/O tree
- Import/export configuration files and store them as part of the project



Cisco® DNA Center

Overview and Resources

Cisco DNA Center is a network management solution that enables provisioning and monitoring of the network from a single console. It supports IIoT environments by providing visibility, automation, security, and integration with external applications.

Some of the features of Cisco DNA Center are:

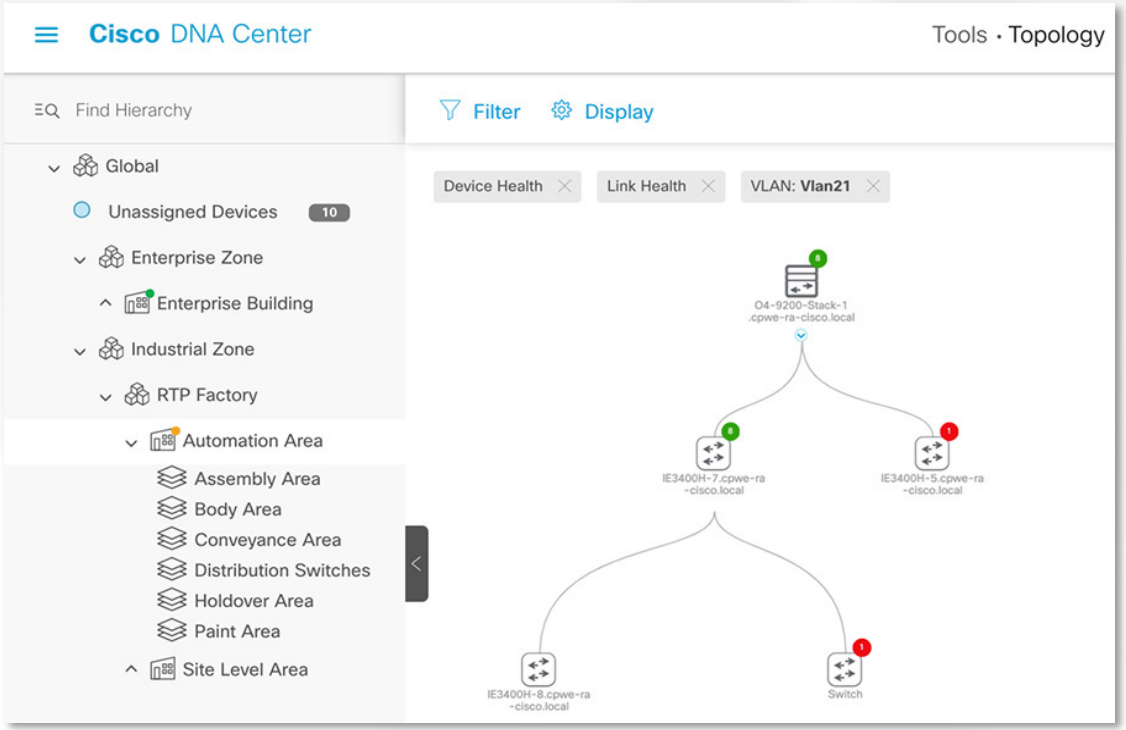
- Support for intent-based networking, which allows you to define your network goals and policies and let Cisco DNA Center implement them automatically
- Simple and fast network management, with auto discovery, zero-touch provisioning, configuration automation, and centralized dashboard
- Increased network uptime, with proactive monitoring, troubleshooting, assurance, and optimization
- Effective security, with identity services engine integration, segmentation, encryption, and threat detection
- Future network optimization, with location analytics, AI network analytics, machine learning insights, and recommendations

- DNA Center Platform Overview
- DNA Center Resources
- Cisco DNA Center for Industrial Automation Design Guide

Cisco® DNA Center

Industrial Network Support and Limitations

- Stratix® switches and Cisco IE switches
  - See DNA-C Compatibility Matrix for supported catalog numbers and minimum firmware revisions
- Star, linear and ring topologies (some limitations exist)
- Resilient Ethernet Protocol (REP)
- Currently does NOT support:
  - Device Level Ring (DLR)
  - Parallel Redundancy Protocol (PRP)
  - Precision Time Protocol (PTP)
  - Discovery, management and alarms using CIP
  - Network Address Translation (NAT)



Cisco® Cyber Vision

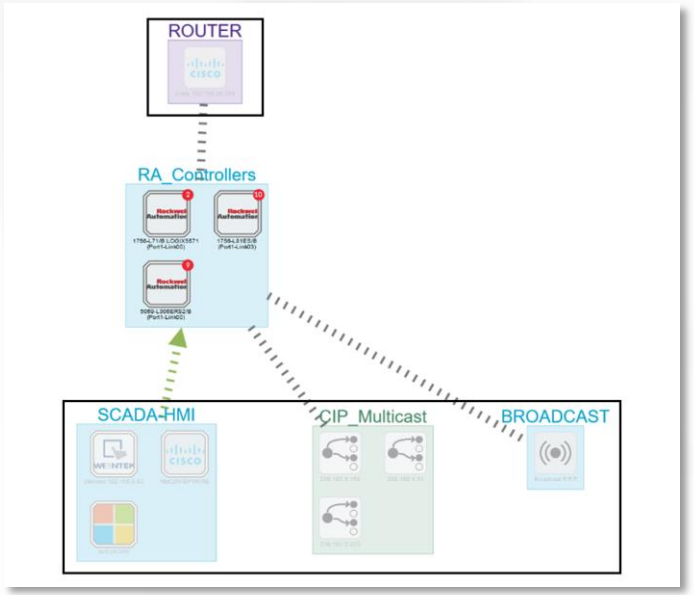
Overview and Resources

Cisco Cyber Vision provides continuous visibility into Industrial Control Systems (ICS) to understand their security posture, improve their industrial networks efficiency, and extend IT security to their industrial operations.

Cisco Cyber Vision combines a unique edge monitoring architecture and deep integration with Cisco's leading security portfolio. With edge sensor capabilities built into the industrial network equipment, it can be easily deployed at scale to monitor your industrial assets and their application flows in real time.

Cisco Cyber Vision integrates with Cisco Identity Services Engine (ISE), Stealthwatch and Cisco Firepower® products by providing contextual information about industrial assets and network flows.

- Cisco Cyber Vision Overview
- Cisco Cyber Vision resources
- Rockwell Automation and Cisco Cyber Vision

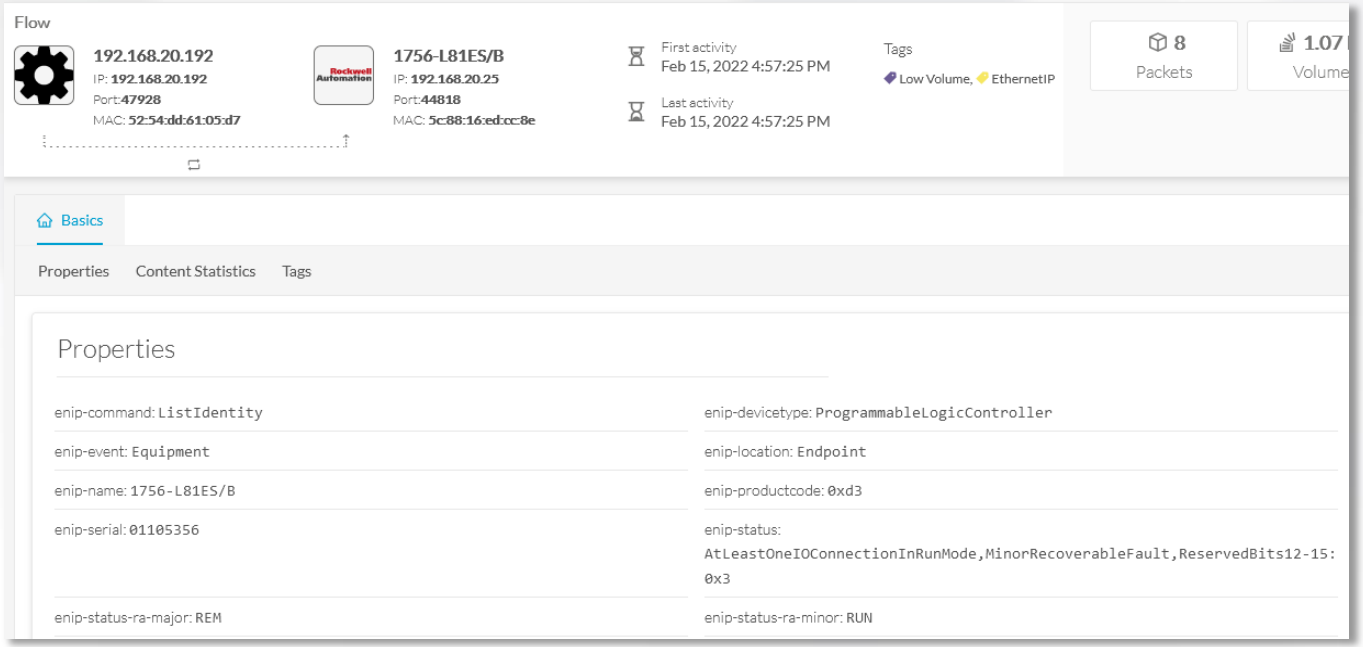


Cisco® Cyber Vision

Asset Discovery

While network management is not the primary function of Cisco Cyber Vision, its asset discovery and inventory features can increase visibility and complement traditional NMS that may not support industrial protocols or assets.

- Active Discovery allows the Cyber Vision sensor to discover previously unseen devices and gather additional properties for known devices.
  - Export the inventory as CSV
- See Cisco Cyber Vision Active Discovery Configuration Guide for details



Cisco® Cyber Vision

Stratix® 5800 as Cyber Vision Sensor

- Cisco Cyber Vision sensors are embedded in the networking equipment without the need to deploy dedicated appliances or build an out-of-band Switch Port Analyzer (SPAN) collection network.
- Cisco Cyber Vision sensors passively capture and decode industrial control protocol data. They only send lightweight metadata to the Cisco Cyber Vision Center with minimum load to the industrial network. Cisco Cyber Vision sensors also have the capability to do active discovery.
- Cisco Cyber Vision Sensors can be deployed on the advanced catalogs of the Stratix® 5800 switches:
  - 1783-MMS10EA, 1783-MMS10EAR, 1783-MMS10A, 1783-MMS10AR

Claroty Continuous Threat Detection (CTD)

Overview and Resources

Claroty CTD is a robust solution that delivers cybersecurity controls for industrial environments. It provides key benefits for OT networks such as asset discovery, network protection, vulnerability and risk management, and threat detection.

Rockwell Automation and Claroty have partnered to offer comprehensive OT security solutions. Claroty is a participating Encompass™ Product Partner in North America and EMEA in the Rockwell Automation PartnerNetwork™.

While network management is not the primary function of Claroty CTD, its asset discovery and inventory features can increase visibility and complement traditional NMS that may not support industrial protocols or assets:

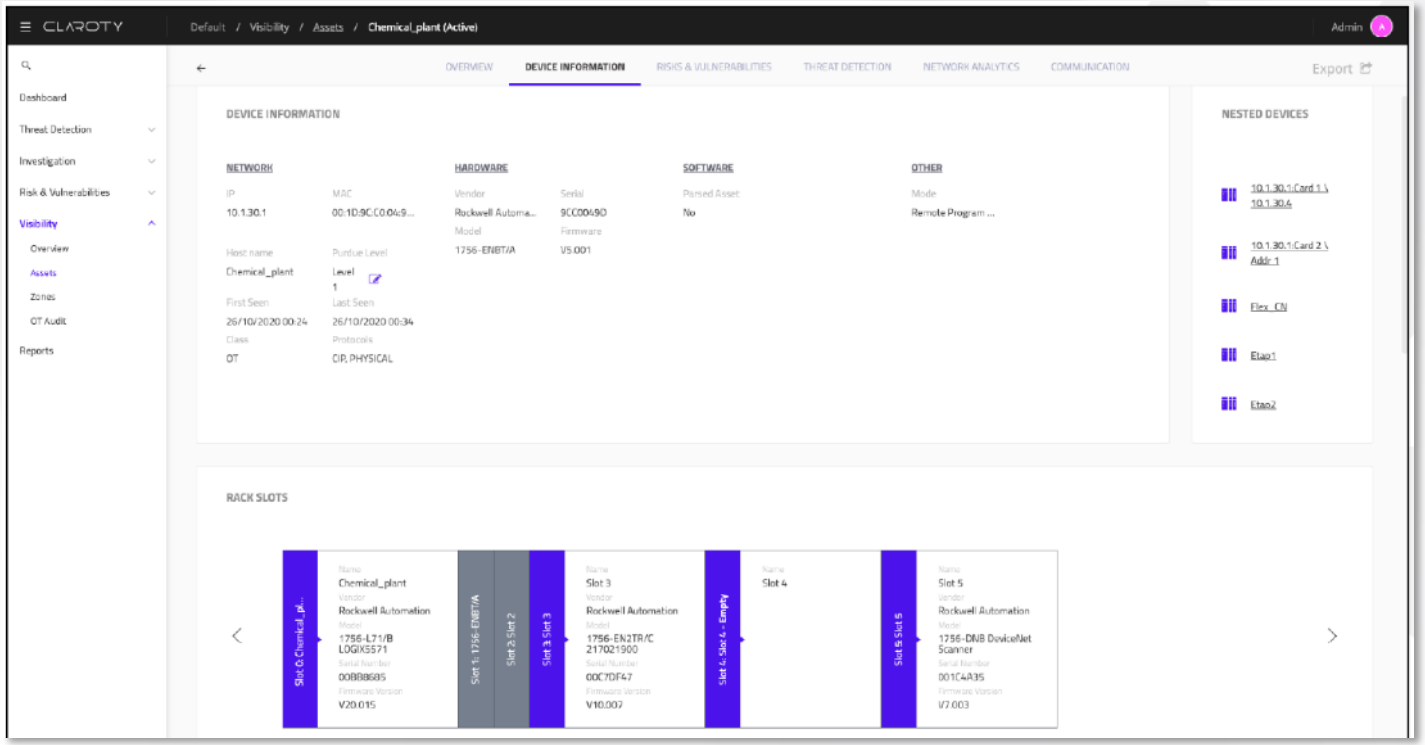
- Support for 450+ IT and OT protocols
- Passive and active discovery methods
- Integration with FactoryTalk® AssetCentre
- Integration with Cisco® Identity Services Engine (ISE) and Cisco Secure products

- Claroty CTD Overview
- Claroty Asset Discovery
- Rockwell Automation Industrial Cybersecurity Services

Claroty Continuous Threat Detection (CTD)

Integration with FactoryTalk® AssetCentre

- The CTD Connector for FactoryTalk® AssetCentre uses Claroty's asset discovery mechanism to ingest project files from FactoryTalk® AssetCentre, extract the OT asset information present on those files, and populate and organize it within CTD.
- The result is a fully automated, completely centralized, and always up-to-date OT asset inventory and a single source of truth for OT asset information.



Enterprise Network Management Software

Resources

Some of the enterprise network management platforms:

- SolarWinds
- Nagios XI
  - Industrial protocols: Modbus TCP, Modbus RTU
- Paessler PRTG
  - Industrial protocol support: Modbus TCP, OPC UA, MQTT