

DATACOM Device Topology Template Scheduler Audit DmView 11.7.0.0 Settings administrator

Manage Devices

Discover / Add | Polling | Add Link | Apply Template | View Template Applications | Management Protocols | Properties | Test Connectivity | Remove

Search all fields

Show only DMOS devices

AND	Name	IP/Hostname	Model	Serial Number	Firmware	Location	Status	Last Update	CPU	Memory
	172.22.202.59	172.22.202.59	DM4100	1752475	15.2.1		Critical	Feb 18, 2026 15:42:11	48%	69%
	172.22.206.8	172.22.206.8	DM4340 40T-30K	7084321	12.2.0		Critical	Feb 18, 2026 15:43:30	48%	70%
	172.22.206.98 (23 ONUs)	172.22.206.98	DM4616 40GS-PON+40S	6012384	12.2.0		Critical	Feb 18, 2026 15:43:19	14%	62%
	172.22.226.31	172.22.226.31	DM4770 32CX	5150567	12.2.0.005-gs46f2006	/ /root	Critical	Feb 18, 2026 15:42:33	4%	59%
	172.22.240.104	172.22.240.104	DmSwitch 32CF2	1549563	11.16.4	/US	Normal	Feb 18, 2026 15:42:11	33%	33%
	172.22.240.109	172.22.240.109	DM4100	0	15.2.18	/CA	Critical	Feb 18, 2026 15:42:11	37%	37%
	172.22.240.12 (958 ONUs)	172.22.240.12	DM4612 8GPON+20T+2XS	5493856	12.0.0.014-g0d8edc1c5	/MX	Critical	Feb 18, 2026 15:42:57	17%	69%
	172.22.240.15 (1904 ONUs)	172.22.240.15	DM4615 16GPON+40T+4XS	4788041	11.4.0.024-gf6423ee90	/MX	Critical	Feb 18, 2026 11:02:22	50%	61%
	172.22.240.18 (8912 ONUs)	172.22.240.18	DM4618 OLT	5569397	10.8.0.019-g268d90904	/AR	Critical	Feb 18, 2026 15:43:34	14%	58%
	172.25.144.11	172.25.144.11	DM4050 24GT+4XS	4468349	10.2.0.019-g84d0979c	/LY	Critical	Feb 18, 2026 15:45:14	29%	40%
	172.25.144.12	172.25.144.12	DM4170 24GX+12XS	4434366	10.4.0.020-g4f26a0259d	/CC	Critical	Feb 18, 2026 15:42:41	19%	48%
	172.25.144.13	172.25.144.13	DM4170 24GX+4XS+2QX	4461028	10.4.0.034-gb36d06132	/BR	Critical	Feb 18, 2026 15:43:13	21%	46%
	172.25.144.14	172.25.144.14	DM4250 24XS+2QX	4451378	10.2.0.019-g84d0979c	/ /root	Critical	Feb 18, 2026 15:43:12	25%	42%
	172.25.144.146	172.25.144.146	DM2302 4GT+4GX	3497544	3.8.2		Normal	Feb 18, 2026 15:42:40	94%	94%
	172.25.144.15 (14 ONUs)	172.25.144.15	DM4610 HW2 8GPON+80X+40T+2XS	3058768	11.0.0.121-g801f61c1c	/BR	Unknown	Feb 18, 2026 12:00:30	20%	67%
	172.25.144.16 (9 ONUs)	172.25.144.16	DM4615 16GPON+40T+4XS	4499630	10.6.0.250-gba030ae6d	/ /root	Critical	Feb 18, 2026 15:42:31	18%	49%
	172.25.144.17 (1022 ONUs)	172.25.144.17	DM4610 8GPON+80X+40T+2XS	2802600	5.0.0.001-gaa195c1363	/ /root	Unknown	Feb 01, 2026 22:20:07	27%	59%

Selected (0) Page 1 of 1 Results per page Showing 1 - 51 of 51

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Last update: 02/18 - 17:21

Refresh this page

DMVIEW

NETWORK MANAGEMENT

PRODUCT DESCRIPTION
11.7.0

DMVIEW

NETWORK MANAGEMENT

SERVICE, NETWORK AND ELEMENT MANAGEMENT

DmView is the integrated network and element management system developed by Datacom for monitoring, configuring, and automating devices, covering a wide range of network technologies in a hybrid fashion: **Carrier/Metro Ethernet (L2, L3, and MPLS), GPON, xDSL, SDH, and PDH**. The system is fully compatible with **DmOS**, Datacom's unified operating system.

With an intuitive graphical interface and topological visualization of devices on maps, DmView provides a complete management experience, making network monitoring, configuration, and diagnostics easier. The hierarchical view and simplified navigation on the topological map allow users to quickly locate network elements and links, facilitating access to **OAM functions, status, events, and configurations**.

DmView offers a robust set of features that support complete network operations:

- **CLI and TR-069 templates** for standardized and fast configuration;
- **End-to-end service provisioning** with path discovery;
- **Supervision, fault detection, and active alarms**;
- **Inventory, user, permission, and security management**;
- **Performance, traffic, and event monitoring**;
- **Network element discovery**;
- **Comprehensive network service management** with specific OAM and configuration functions per service;
- **Notifications for new firmware versions** for devices and CPEs, and **new software versions** for the DmView platform itself;
- **Backup of network element configurations**, allowing restoration of valid configurations in case of failures;
- **Scheduling of backup and template application tasks (CLI and TR-069)**;
- **Notification center** to track the most important network operations, even while the user is offline;
- **Complete DWDM network management**, allowing the user to create, configure, diagnose, and audit end-to-end optical circuits, including amplifiers, optical links, Mux/Demux, and optical channels, providing an integrated and automated view of the network's optical layer.

The CLI and TR-069 templates functionality is one of DmView's major differentiators—it's a robust and highly effective solution to streamline customers' network operations. This tool enables the creation of customized command templates, tailored to the specific needs of each environment, with the support of Datacom's technical teams. Once created, templates can be reused by operators, offering a wide range of advantages over manual command application directly on the devices.

Key benefits include:

- **Complete auditability:** every template creation and application is fully logged, including user details, date and time, commands executed, machine IP, and the operation result, ensuring traceability and operational security.
- **Operational security:** usage permissions can be configured per user, restricting template application to authorized operators only, preventing uncontrolled changes to the network. Another major advantage is that the operator does not need to know the device's password, as DmView securely stores and manages that information, ensuring practicality and added protection.
- **Operational efficiency:** a single template can be used to apply configurations simultaneously to multiple devices, saving time and standardizing processes.
- **Smart reuse:** templates created in DmView Web Maestro can be reused as often as needed and across different devices, promoting consistency and efficiency.
- **Ease of use:** once templates are ready and available in the DmView Maestro interface, even operators with limited command-line experience can safely perform configurations, with no need for advanced technical knowledge.

Additionally, DmView includes several default templates upon installation. These templates cover common tasks such as activating bridge/router ONUs, GPON device configurations, troubleshooting commands, service profiles, firmware updates for DmOS and switch devices, and CPE configurations via TR-069. These ready-to-use models also serve as learning resources and references for creating new custom templates.

With each new release, Datacom analyzes the most common customer use cases and continuously adds new default templates to the platform, making it increasingly complete and aligned with real market needs.

DmView also includes a powerful **TR-069 solution (ACS)**, capable of managing both Datacom and multivendor CPEs with mass firmware upgrades, reboots, and remote configurations. The **Zero Touch Provisioning (ZTP)** feature enables the automatic application of TR-069

templates in response to TR-069 informs, or CLI templates in response to SNMP traps—optimizing device provisioning and minimizing manual intervention.

All actions performed in the system are thoroughly logged through an audit mechanism that tracks CLI commands, TR-069 parameters, and NETCONF operations, including the responses received from managed devices. This traceability ensures security, compliance, and confidence in daily operations.

DmView supports **multiple simultaneous users** and is already deployed in large-scale environments, with over **200 concurrent operators**. The solution can be implemented in simple setups—such as laptops in the field—or in corporate infrastructures with multiple servers, high availability, automatic failover, and load balancing.

Compatible with **Microsoft Windows and Linux** operating systems, **Oracle (including Oracle RAC)** and **MongoDB** databases, and supporting standard protocols like **NETCONF, SSH, Telnet, and SNMP (v1, v2, v2c, and v3)**, DmView offers great integration flexibility. Its architecture supports **northbound integration with OSS/BSS platforms**, as well as **southbound extensions for non-Datacom devices**, with custom integration available on demand.

Built according to **internationally recognized standards**—including ITU-T's TMN, ISO's FCAPS model, IETF RFCs, MEF services, and W3C specifications—DmView is the ideal choice for service providers, carriers, and enterprises seeking a robust, flexible platform ready to meet the current and future challenges of network management.

MAIN CHARACTERISTICS

DWDM NETWORK MANAGEMENT

Starting from version 11.7, DmView expands its optical network management capabilities by incorporating full supervision and configuration features for DWDM (Dense Wavelength Division Multiplexing) environments.

Through DmView Web Maestro, it is possible to manage the DWDM topology, including equipment, optical links, Mux/Demux, and circuits, providing a clear and consistent view of the network's optical infrastructure.

Instead of focusing exclusively on the individual configuration of each device, operators can now work based on the end-to-end circuit concept. Provisioning is performed through a structured step-by-step wizard, where the circuit is built visually and progressively. As elements are selected, the diagram is dynamically generated, improving topology clarity and reducing the risk of inconsistencies.

This approach brings direct productivity and standardization gains while minimizing human errors during the activation process.

Among the available features are:

- **DWDM link management**
 - Creation, editing, and removal of DWDM links
 - Distance and attenuation configuration
 - Support for two links per port, considering transmission (Tx) and reception (Rx) directions
- **Mux/Demux management**
 - Creation, editing, and removal of Mux/Demux
 - Name and serial number registration
 - Model selection
 - Association with DWDM equipment (DM4920)
- **DWDM circuit management**
 - A-End and Z-End selection, with support for intermediate (inline) sites
 - Optical channel configuration with multiple multirate speeds such as 1×100G, 2×100G, 2×100G-QAM, 3×100G, and 4×100G
 - Transceiver transmission power adjustment
 - Selection and association of external optical links
 - Full EDFA amplifier configuration, including profile definition (Booster and Pre-Amp), operating modes (Gain and Power), operational limits, and parameters such as LOS Threshold and LOS Action
 - OSC management port configuration
 - Automatic circuit naming with optional custom description
- **DWDM circuit diagnostics**
 - Visualization of hundred, four-hundred, EDFA, mgmt-OSC port data and DWDM links through an interactive diagram or tables
- **Permissions and auditing**
 - Detailed auditing of all operations
 - Complete logging of executed commands
 - User, date, and time tracking
 - Granular permissions per user and group

The system includes validations that prevent incompatible combinations between devices, ports, channels, and links. Additionally, resources already used by a circuit are protected against unintended reuse, reducing conflicts between simultaneous operations.

DATAKOM Device - Topology - Template - Scheduler Audit DmVIEW 11.7.0-RC2 | Settings - administrator

Add DWDM Circuit

1 Ends 2 Transponders 3 Intermediates 4 Links 5 Amplifiers 6 OSC Management 7 General

Origin (A-END)

Device: Rio Grande-172.25.144.147

Slots: Slot 1/2 Ports: four-hundred-g-ethernet 1/2/1, four-hundred-g-ethernet 1/2/2

Mux/Demux 1 Rio Grande

Destination (Z-END)

Device: Eldorado do Sul-172.25.144.149

Slots: Slot 1/2 Ports: four-hundred-g-ethernet 1/2/1, four-hundred-g-ethernet 1/2/2

Mux/Demux 1 Eldorado do Sul

Circuit diagram

Next Cancel

FIGURE 1 – STEP 1.ENDS – DWDM CIRCUIT CONFIGURATION

DATAKOM Device - Topology - Template - Scheduler Audit DmVIEW 11.7.0-RC2 | Settings - administrator

Add DWDM Circuit

1 Ends 2 Transponders 3 Intermediates 4 Links 5 Amplifiers 6 OSC Management 7 General

Origin ports (A-END)

Device: Rio Grande-172.25.144.147

Port	Channel	Multirate	Tx Power
four-hundred-g-ethernet 1/2/1	33.0 (193.3 THz, 1550.92 nm)	4x100G	-8.0
four-hundred-g-ethernet 1/2/2	37.0 (193.7 THz, 1547.72 nm)	4x100G	-8.0

Destination ports (Z-END)

Device: Eldorado do Sul-172.25.144.149

Port	Channel	Multirate	Tx Power
four-hundred-g-ethernet 1/2/1	33.0 (193.3 THz, 1550.92 nm)	4x100G	-8.0
four-hundred-g-ethernet 1/2/2	37.0 (193.7 THz, 1547.72 nm)	4x100G	-8.0

Circuit diagram

Previous Next Cancel

FIGURE 2 – STEP 2.TRANSpondERS – DWDM CIRCUIT CONFIGURATION

DATAKOM Device - Topology - Template - Scheduler Audit DmVIEW 11.7.0-RC2 | Settings | administrator

Add DWDM Circuit

✓ Ends ✓ Transponders ✓ Intermediates ✓ Links 5 Amplifiers 6 OSC Management 7 General

Amplifiers

Identifier	Device	Port	Profile	Mode	Value	Limit	LOS Threshold	LOS Action	Actions
Amp A	Eldorado do Sul-172.25.144.149	edfa 1/5/1	Booster	Gain	26.0	0.0	-25.0	Enabled	
Amp B	Pelotas-172.25.144.148	edfa 1/4/1	Booster	Gain	26.0	0.0	-25.0	Enabled	
Amp C	Rio Grande-172.25.144.147	edfa 1/5/1	Pre-Amp	Gain	26.0	0.0	-36.0	Enabled	
Amp D	Pelotas-172.25.144.148	edfa 1/5/1	Booster	Gain	26.0	0.0	-25.0	Enabled	
Amp E	Eldorado do Sul-172.25.144.149	edfa 1/4/1	Pre-Amp	Gain	26.0	0.0	-36.0	Enabled	
Amp F	Amplifier not configured, -172.25.144.147	edfa 1/4/1	Booster						

Circuit diagram

Previous Next Cancel

FIGURE 3 – STEP 5.AMPLIFIERS – DWDM CIRCUIT CONFIGURATION

DATAKOM Device - Topology - Template - Scheduler Audit DmVIEW 11.7.0-RC2 | Settings | administrator

Add DWDM Circuit

✓ Ends ✓ Transponders ✓ Intermediates ✓ Links ✓ Amplifiers ✓ OSC Management 7 General

General

Name
 Rio Grande-172.25.144.147 - four-hundred-g-ethernet 1/2/1 - 1/2/2 <-> Eldorado do Sul-172.25.144.149 - four-hundred-g-ethernet 1/2/1 - 1/2/2

Generate name automatically

Description
 DWDM circuit between Rio Grande and Eldorado do Sul with optical signal regeneration in Pelotas.

Circuit diagram

Previous Finish Cancel

FIGURE 4 – STEP 7.GENERAL – DWDM CIRCUIT CONFIGURATION

DATAKOM Device - Topology - Template - Scheduler - Audit DmView 11.7.0-RC2 | Settings - | administrator

DWDM Circuits

Add | Edit | Remove | Remove from NMS

Sorting: Name x Filters: No active filters

Name	Origin (A-END)	Destination (Z-END)	Associated Mux/Demux	Status	Actions
Porto Alegre - 172.25.144.141 - four-hundred-g-ethernet 1/2/1 - 1/2/2 <-> Florianópolis - 172.25.144.142 - four-hundred-g-ethernet 1/2/1 - 1/2/2	Porto Alegre - 172.25.144.141	Florianópolis - 172.25.144.142	Mux/Demux Porto Alegre, Mux/Demux Florianópolis	Critical	[Info] [Edit] [Delete]
Rio Grande - 172.25.144.147 - four-hundred-g-ethernet 1/2/1 - 1/2/2 <-> Eldorado do Sul - 172.25.144.149 - four-hundred-g-ethernet 1/2/1 - 1/2/2	Rio Grande - 172.25.144.147	Eldorado do Sul - 172.25.144.149	Rio Grande, Eldorado do Sul	Critical	[Info] [Edit] [Delete]

Items selected (0) Items per page: 20 1 - 20 of 2 [Refresh]

Next refresh in 1 min and 36 sec Last update: 02/16 - 09:31

FIGURE 5 – VISUALIZATION OF CREATED DWDM CIRCUITS

DWDM circuit management does not end with provisioning. The ability to quickly diagnose the behavior of the optical layer is essential to maintain service quality.

DmView 11.7 provides diagnostics through an interactive diagram, where the operator can view detailed information by hovering over each circuit component. Available data, for example for EDFA ports, includes input and output power, amplifier gain, operational status, current, temperature, and associated alarms.

In addition to the diagram, the information is also organized into specific tables by component type, such as transceivers, amplifiers, OSC management, links, and alarms. The system also presents the consolidated circuit status, representing the overall health of the circuit, automatically calculated based on the status of the main elements involved.

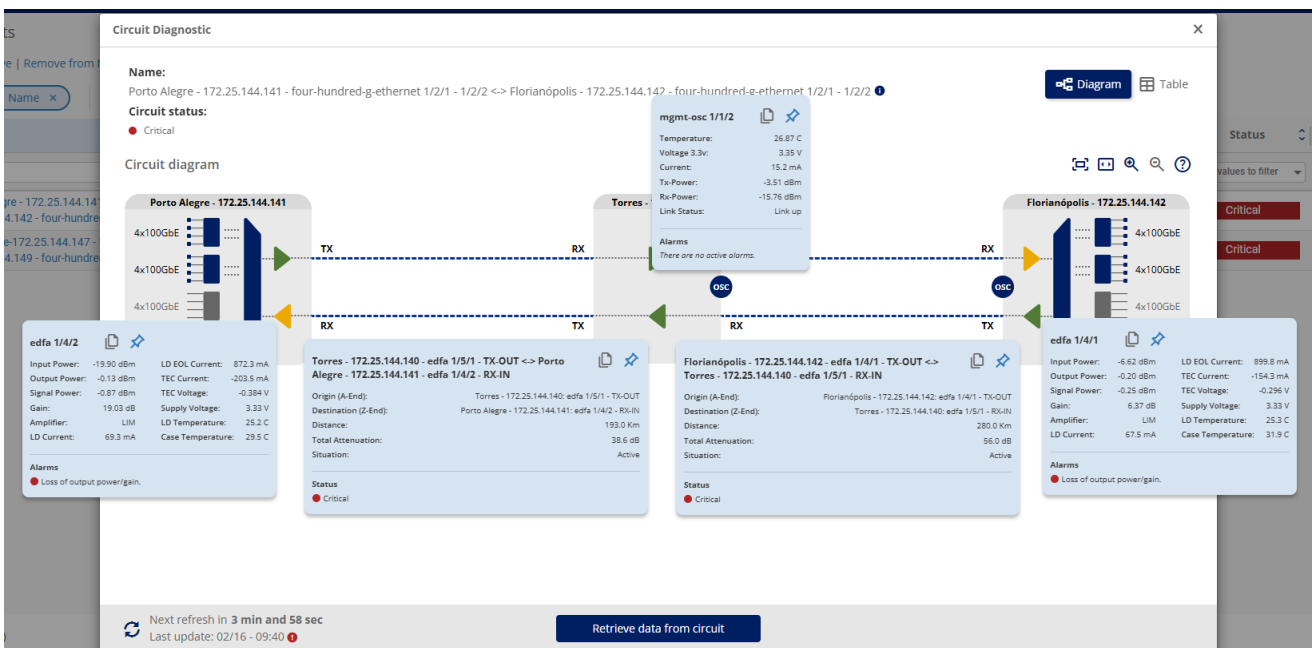


FIGURE 6 – DWDM CIRCUIT DIAGNOSTIC – DIAGRAM VIEW

Circuit Diagnostic

Name: Porto Alegre - 172.25.144.141 - four-hundred-g-ethernet 1/2/1 - 1/2/2 <-> Florianópolis - 172.25.144.142 - four-hundred-g-ethernet 1/2/1 - 1/2/2

Circuit status: Critical

Transceivers Amplifiers OSC Manager Links Alarms

Transceivers (four-hundred)

Device	Transceiver ID	Temperature	Voltage 3.3v	Current	Tx-Power	Rx-Power	OSNR	PREFEC BER	FERC
Florianópolis - 172.25.144.142	four-hundred-g-ethernet 1/2/1	50.46 C	3.29 V	56.05 mA	-7.99 dBm	-40 dBm	0.0 dB	1.00e+00	1.06e+09
Florianópolis - 172.25.144.142	four-hundred-g-ethernet 1/2/2	49.53 C	3.28 V	63.5 mA	-8.49 dBm	-40 dBm	0.0 dB	1.00e+00	1.06e+09
Porto Alegre - 172.25.144.141	four-hundred-g-ethernet 1/2/1	17.88 C	3.3 V	0 mA	-40 dBm	-40 dBm	35.0 dB	1.00e+00	4.29e+09
Porto Alegre - 172.25.144.141	four-hundred-g-ethernet 1/2/2	26.6 C	3.28 V	63.95 mA	-40 dBm	-40 dBm	26.2 dB	2.90e-06	0.00e+00

Transceivers (hundred)

Device	Transceiver ID	Temperature	Voltage 3.3v	Current	Tx-Power	Rx-Power	Link Status	Alarms
Florianópolis - 172.25.144.142	hundred-gigabit-ethernet 1/2/1	N/A	N/A	N/A	N/A	N/A	Link down	-
Florianópolis - 172.25.144.142	hundred-gigabit-ethernet 1/2/2	N/A	N/A	N/A	N/A	N/A	Link down	-
Florianópolis - 172.25.144.142	hundred-gigabit-ethernet 1/2/3	N/A	N/A	N/A	N/A	N/A	Link down	-
Florianópolis - 172.25.144.142	hundred-gigabit-ethernet 1/2/4	N/A	N/A	N/A	N/A	N/A	Link down	-
Florianópolis - 172.25.144.142	hundred-gigabit-ethernet 1/2/5	39.07 C	3.24 V	88.02 mA	1.96 dBm	0.22 dBm	Link down	-

Next refresh in 1 min and 23 sec
Last update: 02/16 - 09:40

Retrieve data from circuit

FIGURE 7 – DWDM CIRCUIT DIAGNOSTIC – TABLE VIEW

CLI/TR-069 TEMPLATES

The **CLI/TR-069 Templates** feature in **DmView**, fully accessible through the web graphical interface, allows you to create, edit, and apply custom templates with any set of commands to multiple devices or CPEs simultaneously. This solution promotes standardization, reuse, and automation of repetitive tasks, significantly reducing time and effort in daily operational activities.

Within the templates, operators can define fixed and variable commands, which are configured at the time of application. Users simply fill in the variable fields and view a preview of the final configuration, while also tracking command-by-command execution and device/CPE responses. Removal commands can also be associated with the template, allowing specific configurations to be undone on selected devices in a controlled and efficient manner.

The tool supports advanced logic such as loops for iterative commands and conditionals for dynamic decisions, adapting to different contexts and devices. In CLI templates, it is also possible to define dynamic variables based on data retrieved from the devices themselves, such as lists of ports, ONUs, or IPs, available at the time of application.

To support more sophisticated scenarios, **DmView supports two programming languages for template creation:**

- **Freemarker:** ideal for simple templates with basic logic and a gentle learning curve.
- **Python:** recommended for complex templates requiring greater flexibility, conditional reactions based on device responses, or sequential command execution with decision-making.

This flexibility allows:

- Precise adaptation to the logic of each network and the behavior of devices;
- Reactive responses to SNMP traps or CLI command outputs;
- Reactive responses to TR-069 informs;
- Intelligent configuration automation in heterogeneous environments.

Templates can be exported and imported between different DmView installations, enabling sharing between teams, integrators, and Datacom itself. Frequently used variables can be saved as favorites, streamlining the creation of new templates based on reused parameters.

All template-related activity is thoroughly audited, including actions such as creation, editing, application, sent commands, device responses, responsible user, source IP, and date/time of each operation — ensuring complete traceability, security, and control.

CLI/TR-069 templates can be restricted by device/CPE model, firmware version, user, or user group. The system automatically validates these permissions at the time of application, displaying only the templates that are compatible with the selected devices and available to the operator.

The same logic can be used to support different syntaxes across multivendor devices. Thus, with a single template, DmView enables the application of distinct commands depending on the selected device model, abstracting complexity for the operator and allowing simultaneous application across heterogeneous environments.

The solution also includes a ready-to-use set of default templates focused on common scenarios such as:

- **GPON:** activation of bridge/router ONUs, VLAN and profile configuration;
- **Firmware upgrades:** bulk updates for all switch, router, and GPON device families;
- **Network configuration:** L3 interfaces, link aggregation, LLDP, bandwidth limitation, SNMP, OSPF, and MPLS (for DmOS, DM4000, and DM4100 devices);
- **TR-069 CPEs:** PPPoE, DHCP, Wi-Fi settings, among others.

Users can also discover, add, edit, remove, and search for devices and CPEs directly through the web interface, with the option to use the currently logged-in user's credentials for SSH/Telnet authentication during command execution.

The CLI templates feature is available for all Datacom devices with CLI support, as listed in the supported devices section. TR-069 templates are compatible with Datacom CPEs and third-party CPEs that comply with the TR-069 protocol.

The solution is fully prepared for new firmware and Datacom models, with dynamic support that does not require platform updates, allowing **zero-day support** for new versions and devices in production environments.

Finally, CLI/TR-069 templates can be extended to **Multivendor** support through an additional license. To enable this feature, please contact Datacom.

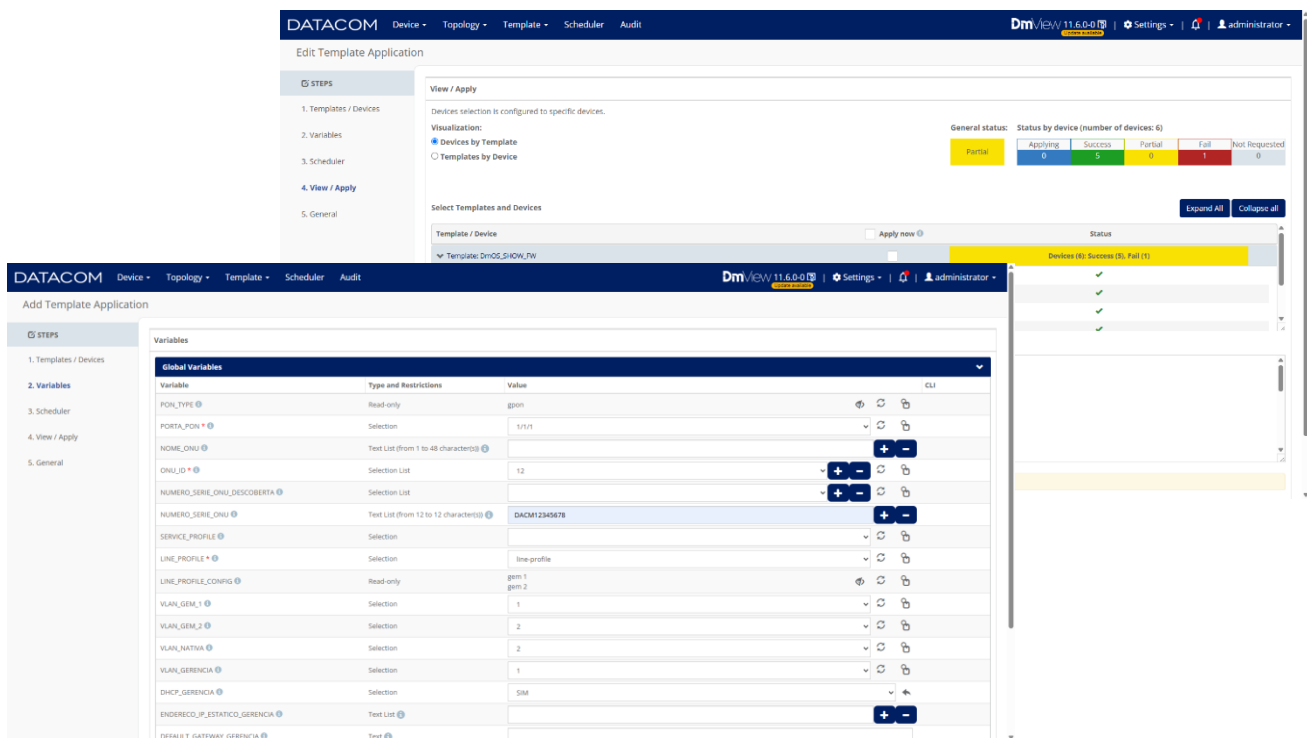


FIGURE 8 – TEMPLATE APPLICATION

ZERO TOUCH PROVISIONING

Zero Touch Provisioning (ZTP) is an advanced functionality of DmView that enables the automatic configuration of network devices as soon as they are connected to the infrastructure, eliminating the need for manual on-site intervention by technicians. This approach brings agility, standardization, and error reduction, and enables large-scale provisioning—especially useful in environments that require rapid devices expansion or replacement.

DmView's ZTP functionality has evolved over successive versions to cover the entire chain of access network devices, including:

- CPEs (Customer Premises Equipment)

- ONUs (Optical Network Units)
- OLTs (Optical Line Terminals)

**Switches and other devices running the DmOS operating system)

How does it work? DmView ZTP supports different triggering mechanisms to automatically initiate the application of CLI or TR-069 templates:

- **TR-069 Informs:** Used to automatically configure CPEs and ONUs as soon as they are connected. This functionality was introduced in version 11.3.
- **SNMP Traps:** Used to automate the configuration of DmOS-based switches and OLTs, which do not communicate via TR-069. As of version 11.5, the system can identify specific traps sent by these devices and automatically execute CLI templates based on the received information.

To support more sophisticated scenarios, **DmView supports the Python programming language** for CLI templates, in addition to the existing Freemarker support. This allows for:

- **Conditional logic** based on trap content or device response
- **Sequential command execution** with decision-making logic
- **Greater expressiveness and flexibility** to adapt templates to each device type and deployment scenario

A practical example of this capability is the standard template developed to automatically provision ONUs: upon receiving an SNMP trap from an OLT indicating a new ONU connection, the Python template captures the trap data and automatically applies the full ONU configuration to the OLT, with no human intervention.

ZTP Benefits

- Automated and standardized installation of new device
- Significant reduction in operational time and costs
- Minimization of human errors during provisioning
- Scalability for large-scale deployments
- Greater control, traceability, and integration with DmView's auditing system
- Flexible logic using either Freemarker or Python

All actions performed by ZTP are fully audited. This includes applied templates, configuration content, involved users (when applicable), the source of automation (TR-069 or SNMP), and the execution results.

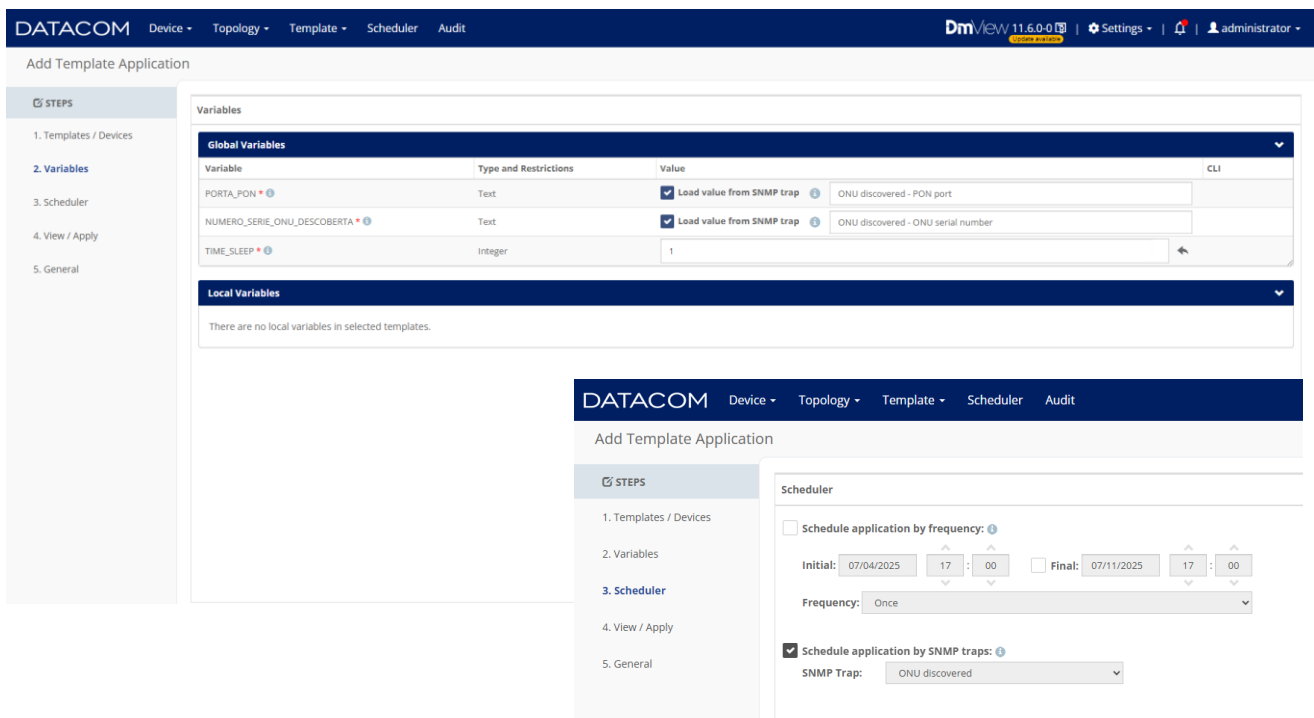


FIGURE 2 – TEMPLATE APPLICATION BY SNMP TRAP (ZTP)

VERSION UPDATE NOTIFICATIONS

With DmView, you no longer need to worry about manually checking for new firmware versions or system updates. The automatic version notification feature was designed to ensure that you're always ahead—keeping your devices, CPEs, and the DmView platform itself up to date with the latest improvements, fixes, and features.

As soon as a new firmware or software version is released by Datacom, the system displays clear visual alerts and informative icons directly on the screens you already use in your daily workflow. These notifications appear in the device and CPE management screens as well as in the main menu of the application, making it easy to access updates without the need to browse websites, access support platforms, or consult external documentation.

All notifications are also centralized in the **Notification Center**, allowing you to quickly view what's new—even if you're switching between screens or were offline when the notification was received. With just one click, you can download the new version, streamlining the entire update process.

DmView performs automatic and periodic checks against a version repository maintained by Datacom—no manual configuration required. If you have specific firmware versions for your network, it's also possible to configure these version checks to point to a local server with pre-approved firmware, according to your company's preferences.

With this feature, you ensure that your network stays secure, up to date, and running at peak performance—fully leveraging the potential of Datacom solutions. All of this with greater agility, reduced operational effort, and a modern, efficient user experience.

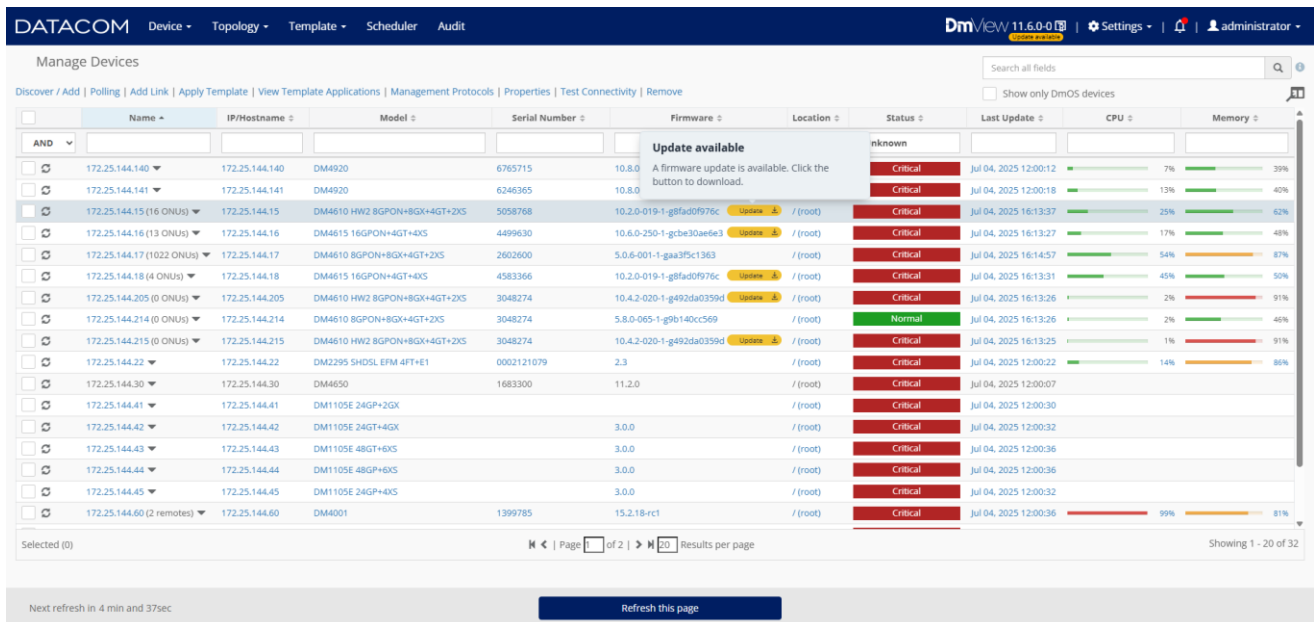


FIGURE 3 – VERSIONS UPDATES NOTIFICATIONS

DEVICE CONFIGURATION BACKUP

Device configuration backup is an essential feature in network management, ensuring security, operational continuity, and fast service recovery. With DmView, all backup-related operations can be performed directly through the web interface in a centralized, intuitive, and secure way.

The system allows users to create, edit, delete, execute, view, import, export, schedule, and restore configuration backups for network devices. It is possible to perform and restore full (complete) configuration backups. Backups can be executed manually (on demand) or scheduled to run based on a specific date or a configurable recurrence.

DmView provides a comprehensive interface for automatic backup scheduling, offering a variety of frequency options to suit the routine of any environment:

- One-time execution
- Hourly
- Daily
- Every business day (Monday through Friday)
- Weekly

- Monthly
- Yearly
- Custom cron expression

This flexibility ensures that backups occur regularly and automatically, reducing the need for manual action and increasing the reliability of the process.

Backups can be **exported to local files and later imported**, enabling future restoration—whether **on the same device or on another compatible one**. For devices running the DmOS operating system, it is possible to **restore a backup created on any other DmOS device**, regardless of model. The target device’s DmOS is responsible for validating whether the received configuration can be correctly applied, ensuring consistency and safety.

Restoration can thus be used both for **recovery in case of failure and to speed up the replacement or standardization** of new devices. In addition, the system includes an automatic purge mechanism that removes old backups in a controlled way, optimizing storage usage.

The screenshot shows the 'Backup Devices' page in the DATAKOM interface. The page has a navigation bar with 'Device', 'Topology', 'Template', 'Scheduler', and 'Audit' tabs. The main content area displays a table of backup jobs. The table has columns for 'Job Name', 'Date', 'Device', 'Model', 'Firmware', and 'Actions'. The 'Job Name' column contains 'SobDemanda_Todos_1' for all entries. The 'Date' column shows 'Jul 03, 2025, 06:30:36 PM'. The 'Device' and 'Model' columns vary, including IP addresses like '172.25.144.60-1.1' and models like 'DM4001', 'DM881 MPU622', 'DM4610 HW2 8GPON+8GX+4GT+2XS', 'DM4170 24GX+4XS+2QX', 'DM4170 24GX+12XS', 'DM4001', 'DM4615 16GPON+4GT+4XS', 'DM4616 4XGS-PON+4XS', 'DmSTM1', 'DM4610 8GPON+8GX+4GT+2XS', 'DM4170 24GX+4XS+2QX', 'DM4610 HW2 8GPON+8GX+4GT+2XS', 'DM4610 HW2 8GPON+8GX+4GT+2XS', 'DM4050 24GX+6XS', and 'DM880 MPU10G'. The 'Firmware' column shows various versions like '15.2.18-rc1', '18.1', '10.2.0-019-1-g8fad0f976c', '10.4.0-234-1-gb36c06132', '10.4.2-020-1-g492da0359d', '15.2.14', '10.6.0-250-1-gcbe30ae6e3', '9.4.0-153-1-g8229bac437', '28.0', '5.8.0-065-1-g9b140cc569', '10.4.2-020-1-g492da0359d', '10.4.2-020-1-g492da0359d', '10.4.2-020-1-g492da0359d', '10.4.2-020-1-g492da0359d', and '14.3'. The 'Actions' column contains icons for refresh, download, and delete. At the bottom of the table, it says 'Selected (0)', 'Page 1 of 1', 'Results per page', and 'Showing 1 - 30 of 30'. There is also a 'Refresh this page' button and a note 'Next refresh in 4 min and 31sec'.

FIGURE 4 – LIST OF REALIZED BACKUPS

The screenshot shows a dialog box titled 'View backup configuration for device 172.25.144.16'. The dialog has a search bar at the top and navigation arrows. The main content area displays the following configuration text:

```

aaa authentication-order [ local ]
aaa user admin
password $1$bGtInXoj$/H3s82RRZOWJg0EkNW/k01
group admin
!
aaa user teste
password $1$sPkyvclI$FDC2uF/eM4o9vtaNXkfSL1
group admin
!
user teste
!
snmp traps config-commit
snmp traps cpu-core

```

FIGURE 5 – VIEW BACKUP CONFIGURATION FOR A DEVICE

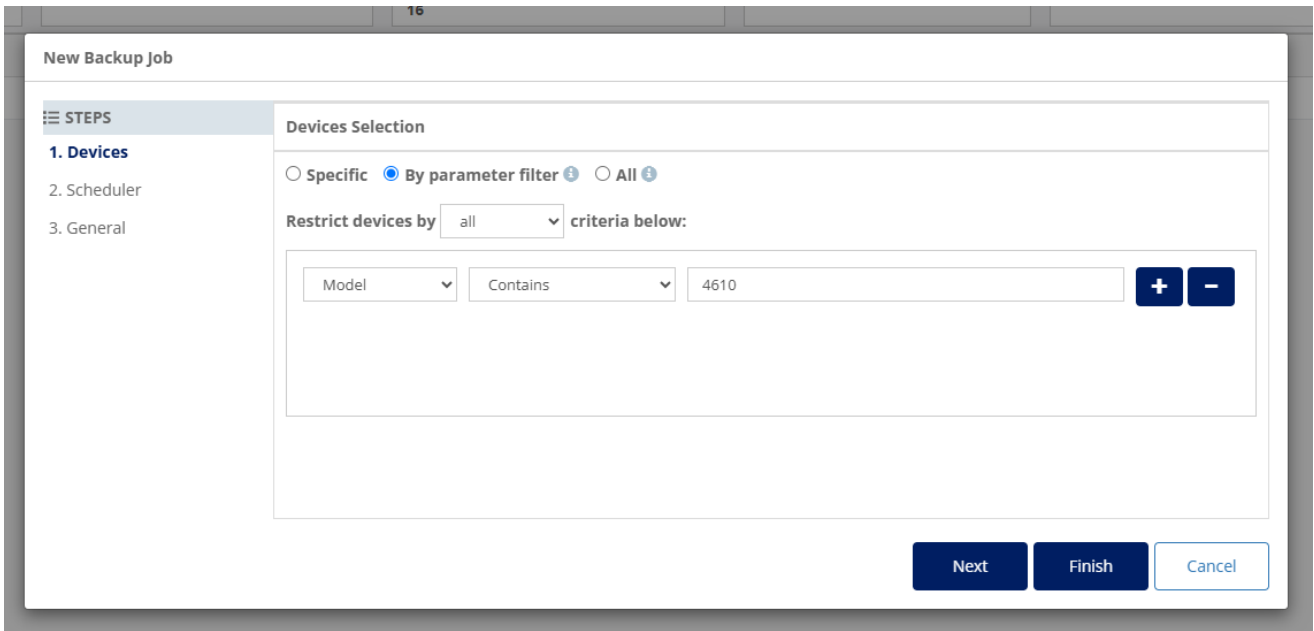


FIGURE 6 – CREATING A NEW BACKUP JOB WITH FILTERS DEVICE SELECTION

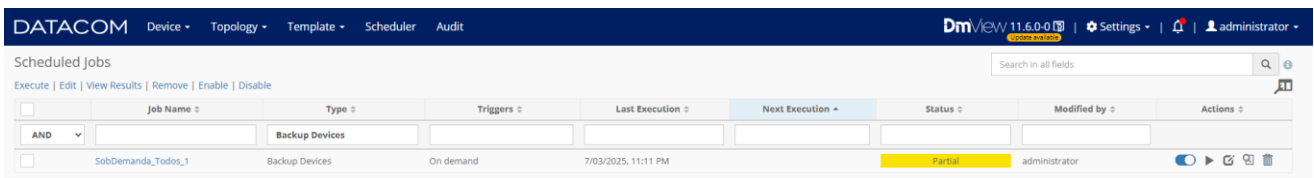


FIGURE 7 – SCHEDULED BACKUP JOB

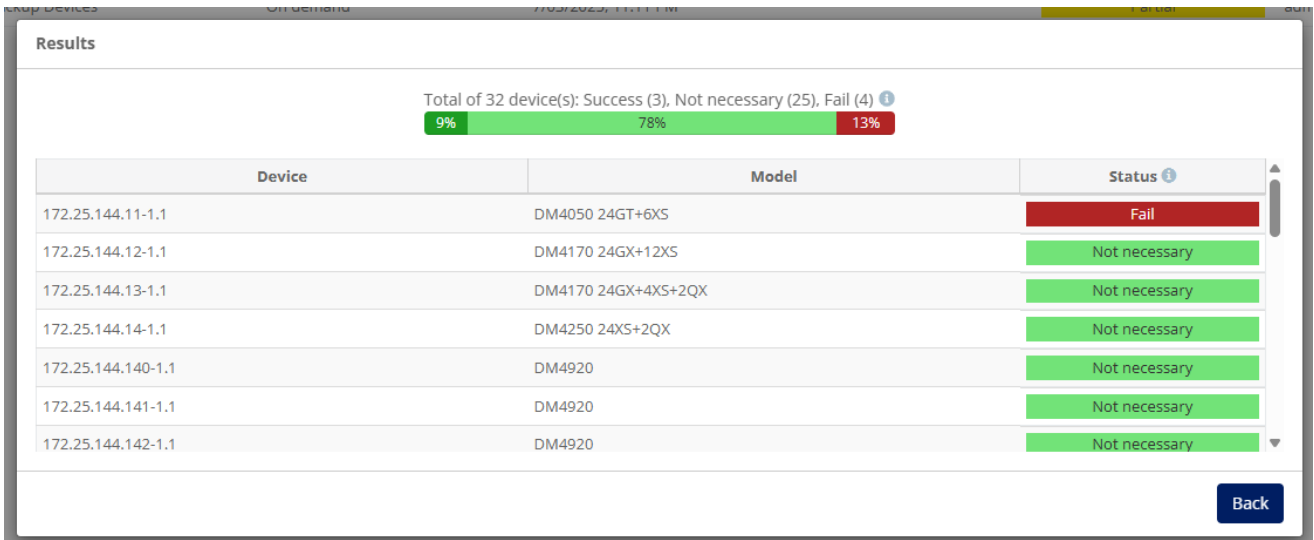


FIGURE 8 – BACKUP JOB RESULTS

DYNAMIC SUPPORT FOR DMOS DEVICES

DmView provides full support for devices running the DmOS operating system — Datacom’s unified platform — through an intuitive, and responsive web-based graphical interface. It offers summary, operational status, and configuration features, delivering a centralized and efficient management experience.

The solution uses a dynamic, YANG-based model, allowing any new DmOS device model or firmware version to be automatically supported by DmView, without requiring a system upgrade. This enables zero-day support for new devices and firmware directly in the field.

Status and configuration screens are dynamically generated from YANG models obtained directly from the DmOS system. This ensures that all CLI nomenclature, field types, valid values, hints, and consistency rules are structured and standardized within the web interface. Operators can choose to view only status data, configuration data, or both simultaneously.

Navigation is optimized through full-text search across the status/configuration structure, allowing direct access to the desired functionality or entity without needing to navigate the entire hierarchy.

Configuration is flexible and efficient, allowing batch editing of multiple items, either by individual selection or by range — making it easy to configure several ports, create multiple VLANs, and more in a single operation.

All actions are logged through DmView’s audit system, which records details of each operation, including the responsible user, source IP, date and time, executed commands, and modified parameters — ensuring full transparency and control over changes.

Users can discover, add, edit, remove, and search for DmOS devices directly through the web interface with ease. Additionally, the system can be configured to use the logged-in DmView user’s credentials for automatic NETCONF authentication on the device, simplifying configuration deployment.

DmView also includes an intelligent mechanism to detect hardware model changes. If a device is replaced by another model at the same IP address (e.g., replacing a DM4610 4GPON with a DM4610 8GPON), the system automatically detects the change during polling, updates the management accordingly, and logs the model switch in the audit history — all without impacting the operator.

Finally, DmOS devices can be fully managed without the need to enable SNMP. In this case, all configuration and monitoring operations are performed exclusively via NETCONF. SNMP remains optional and is only required for supplementary features such as traps and traffic collection.

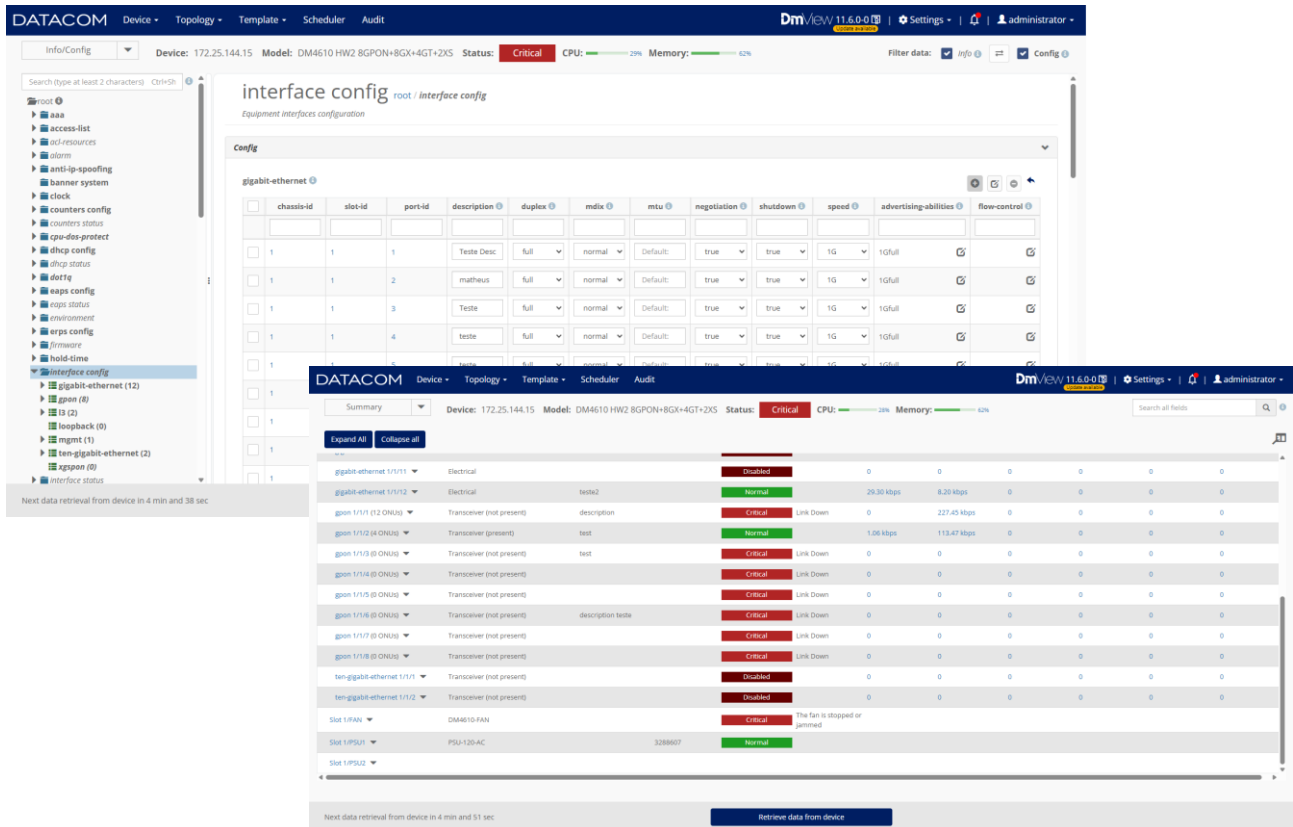


FIGURE 9 – DEVICE INFO/CONFIG AND SUMMARY

GPON ONUS MANAGEMENT

The management of ONUs in the GPON network can be performed through a single screen that displays all ONUs in the network, available via a web interface. This screen allows users to view all ONU data as columns, select which data to display and in what order, sort by any column, and perform text-based or comparative searches for numeric fields. These various search and display preferences are saved per user. This enables users to efficiently manage, monitor, and quickly locate the desired ONUs across the entire network.

When an ONU is connected to an OLT, a notification is displayed to the user in DmView. This alerts the user as soon as the ONU becomes available for configuration, streamlining the provisioning process.

The screenshot shows the DmView interface for GPON ONUS management. The top navigation bar includes 'DATACOM', 'Device', 'Topology', 'Template', 'Scheduler', 'Audit', 'DmView 11.6.0-0', 'Settings', and 'administrator'. The main content area is titled 'GPON ONUS' and features a table with columns for Device, Port, ID, Status, Rx Power(dBm), Tx Power(dBm), Alarms, Alarms Times, Serial Number, Name, IPv4 Addr., and TR-069 Mgmt IP. The table lists 14 ONUs with various statuses (Critical, Normal) and power levels. A notification box in the bottom right corner displays 'New ONU discovered' for DACM12345678, discovered in port 1/1/8 from OLT 172.25.144.16. The notification includes links to 'View ONU DACM12345678' and 'View All ONUs of this OLT', and a checkbox for 'Do not show notifications of this type anymore'.

Device	Port	ID	Status	Rx Power(dBm)	Tx Power(dBm)	Serial Number	Name	IPv4 Addr.	TR-069 Mgmt IP
172.22.206.98	xgspn 1/1/1	1	Critical	N/A	N/A	DACM91D89C38	CLIENT-32	0.0.0.0/0	
172.22.206.98	xgspn 1/1/1	2	Critical	N/A	N/A	DACM91D89D48	CLIENT-29	0.0.0.0/0	
172.22.206.98	xgspn 1/1/2	0	Normal	-11.05	5.92	DACM91D89C10	HAIRPIN_XGS	172.22.206.149/26	
172.22.206.98	xgspn 1/1/2	1	Normal	-10.67	5.65	DACM91D89D50	DM987-1010-PPPoE	172.22.206.150/26	
172.22.206.98	xgspn 1/1/2	2	Critical	N/A	N/A	HWTCA6F2DDAA8		0.0.0.0/0	
172.22.206.98	xgspn 1/1/2	3	Normal	-10.72	5.68	DACM91D89B08	IGMP_CLIENT_XGSPON	172.22.206.142/26	
172.22.206.98	xgspn 1/1/2	4	Normal	-10.51	6.53	DACMD7030228		172.22.206.158/26	
172.22.206.98	xgspn 1/1/3	0	Critical	N/A	N/A	HWTCA2123D6AA		0.0.0.0/0	
172.22.206.98	xgspn 1/1/3	1	Critical	N/A	N/A	HWTCA7E54EAA		0.0.0.0/0	
172.22.206.98	xgspn 1/1/3	2	Critical	N/A	N/A	HWTCA38A9567A	C-28	0.0.0.0/0	
172.22.206.98	xgspn 1/1/3	3	Normal	-14.05	2.25	DACM91122Z7F8			
172.22.206.98	xgspn 1/1/3	100	Normal	-16.18	2.40	ZNTS12345678	HAIRPIN_G IGMP_CLIENT		

FIGURE 10 – ONU DISCOVERED NOTIFICATION

The available data includes operational status, serial number, inventory, name, uptime, IP addressing, configured profiles, service VLANs, configured bandwidth, firmware, optical power, and input/output traffic, among others.

From a device or port in other system screens, users can navigate directly to the ONUs associated with the selected device or port. The ONU screen will open with the appropriate filters already applied.

On the ONU screen, quick action items are available to configure GPON application scenarios in a single step using the CLI templates provided in DmView. By clicking on an ONU and selecting an application scenario, a screen with all configuration fields will be displayed, pre-filled with data corresponding to the selected ONU. On this screen, the user only needs to complete the remaining fields, optionally review the resulting CLI commands that will be sent, and apply the configuration. After execution, the resulting data is retrieved from the devices and updated in the interface.

The available scenarios can be customized to suit the customer's operation, allowing the most frequent and specific actions in each customer's network to be executed in the shortest possible time.

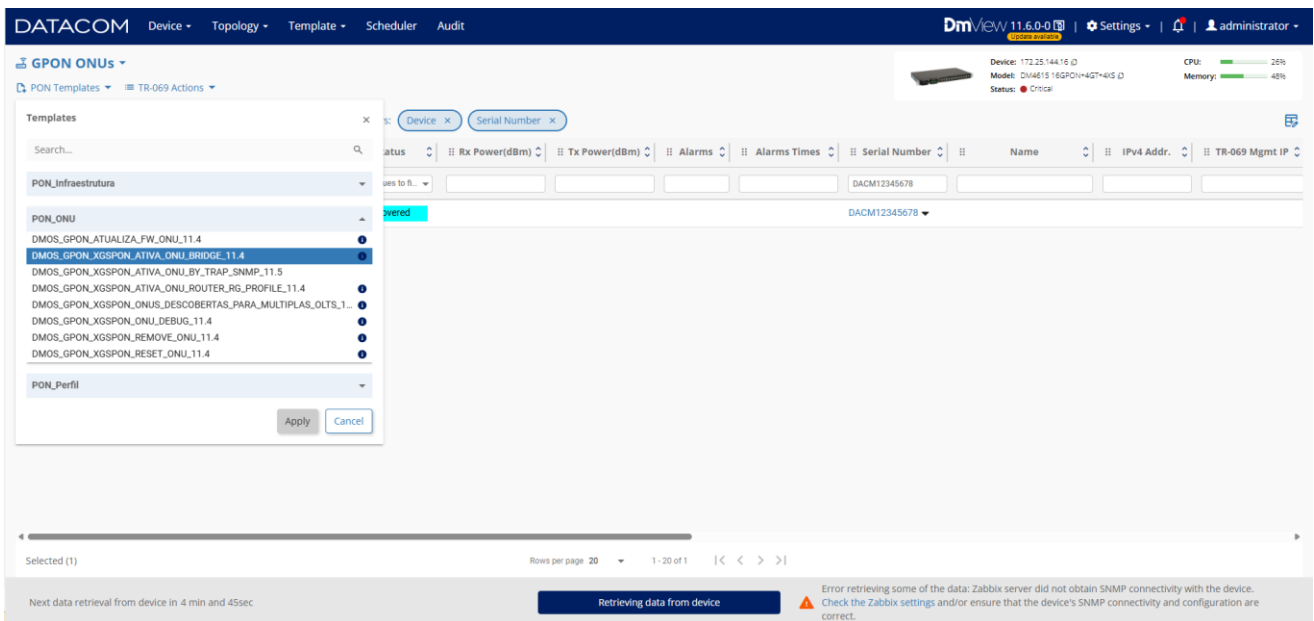


FIGURE 11 – TEMPLATE APPLICATION WITH OLT AND ONU CONTEXT

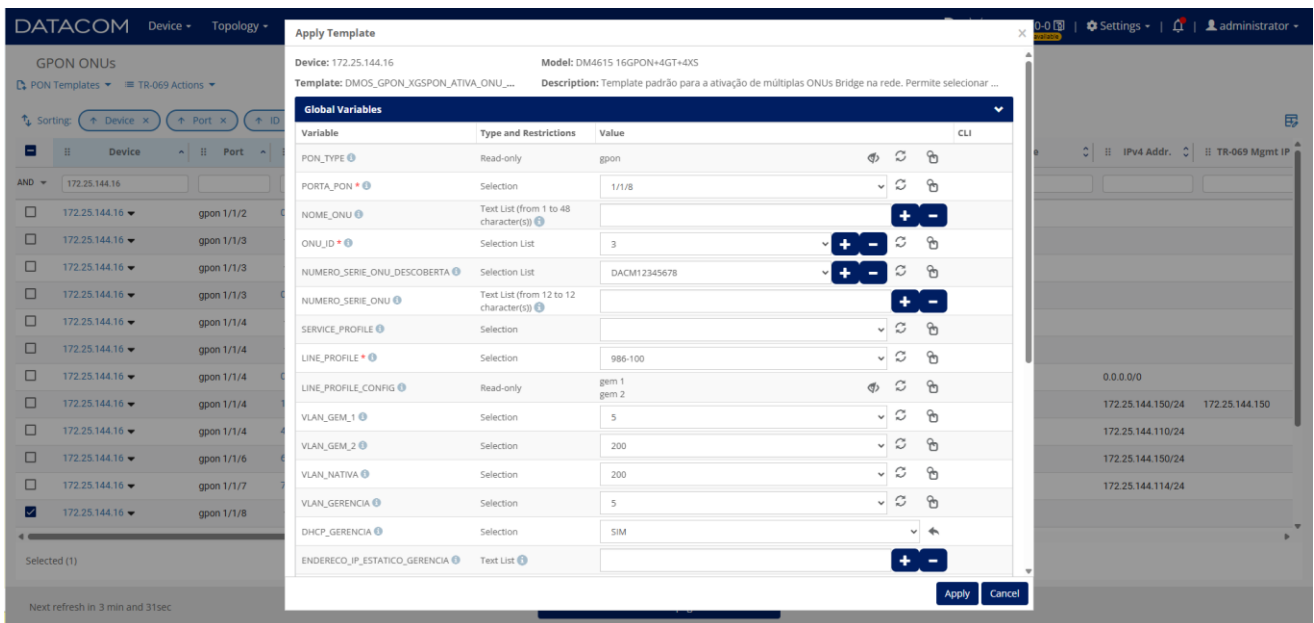


FIGURE 12 – TEMPLATE APPLICATION WITH OLT AND ONU CONTEXT

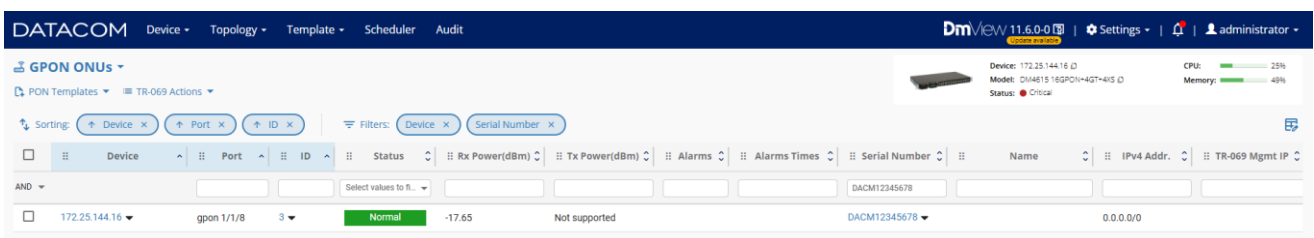


FIGURE 13 – ONU PROVISIONED BY CLI TEMPLATE

TR-069 MANAGEMENT (ACS)

DmView includes a TR-069 CPE management service (ACS). The TR-069 protocol enables full management of Customer Premises Equipment (CPE) features, ensuring interoperability between the management system (referred to as ACS – Auto Configuration Server) and the CPEs, regardless of vendor. DmView always comes with an integrated ACS component upon installation. The TR-069 management solution can be used with both Datacom and multivendor (non-Datacom) CPEs.

In addition to manual or automated application of TR-069 templates using scheduled tasks triggered by TR-069 informs (ZTP), the supported TR-069 features include:

- Reception, registration, and authentication of informs sent by CPEs
- Configuration of access usernames and passwords for CPEs
- Viewing and searching for CPEs on the network using various parameters
- Connectivity testing for troubleshooting (ping and TR-069)
- Viewing and searching all status and configuration parameters per CPE
- Configuration, addition, and removal of any configuration parameters per CPE
- Firmware and configuration file downloads to multiple CPEs simultaneously
- Rebooting multiple CPEs simultaneously
- Complete auditing of all operations performed on CPEs, including all parameter values sent by the management system and responses received from the devices

When a CPE is configured with the DmView ACS URL, a notification is displayed to the user indicating that a new CPE has been registered, streamlining the configuration process.

The screenshot shows the DmView interface for configuring parameters for a CPE. The top navigation bar includes 'DATAKOM', 'Device', 'Topology', 'Template', 'Scheduler', and 'Audit'. The user is logged in as 'administrator'. The main content area shows a search for 'InternetGatewayDevice' and a table of parameters. A notification box at the bottom right states: 'Parameter request successfully performed in CPE: DACM9117AAE0 (IP: 172.25.144.127)'. The table below shows the following parameters:

Name	Value / Actions
InternetGatewayDevice	
InternetGatewayDevice.DeviceInfo	
InternetGatewayDevice.DeviceInfo.AccessType	GPON
InternetGatewayDevice.DeviceInfo.AdditionalHardwareVersion	
InternetGatewayDevice.DeviceInfo.AdditionalSoftwareVersion	
InternetGatewayDevice.DeviceInfo.Description	HomeGateWay
InternetGatewayDevice.DeviceInfo.DeviceType	e8C 4+2 AP
InternetGatewayDevice.DeviceInfo.FirstUseDate	2022-01-21T11:30:10
InternetGatewayDevice.DeviceInfo.HardwareVersion	V1.0.0
InternetGatewayDevice.DeviceInfo.Manufacturer	Datacom
InternetGatewayDevice.DeviceInfo.ManufacturerOUI	70CD91
InternetGatewayDevice.DeviceInfo.ModelName	DM985-424 HW2
InternetGatewayDevice.DeviceInfo.ModemFirmwareVersion	
InternetGatewayDevice.DeviceInfo.ProductClass	DM985-424

FIGURE 14 – CPE PARAMETERS CONFIGURATION

The screenshot shows the DmView interface for managing TR-069 CPEs. The top navigation bar includes 'DATAKOM', 'Device', 'Topology', 'Template', 'Scheduler', and 'Audit'. The user is logged in as 'administrator'. The main content area shows a table of CPEs with the following columns: Serial Number, Manufacturer, Product Class, Mgmt IP, Last Inform, HW Version, SW Version, Provisioning Code, and Connection Request URL. A context menu is open over the first row, showing the following actions: Parameters, Apply Template, View Template Applications, Credentials, Test Connectivity, Download Firmware/File, Reboot, and Remove.

Serial Number	Manufacturer	Product Class	Mgmt IP	Last Inform	HW Version	SW Version	Provisioning Code	Connection Request URL
DACM0000C1ED	Datacom	DM984-422	172.25.144.105	Jul 04, 2025 09:43:36	800.5156.12	v4.1.12-0-g95d	DACM	http://172.25.144.105:30005/
DACM9117AAE0	Datacom	DM985-424	172.25.144.127	Jul 04, 2025 17:52:53	V1.0.0	V3.2.0	teste_matheus1234	http://172.25.144.127:58000
DACM917788E8	Datacom	DM985-424	172.25.144.150	Jul 04, 2025 17:52:58	V1.0.0	V3.0.0	TLCO.GRP2	http://172.25.144.150:58000

FIGURE 15 – AVAILABLE ACTIONS FOR TR-069 CPES

TRAFFIC AND PERFORMANCE MONITORING

It is possible to monitor **traffic and performance data** in DmView. The data can be viewed, benchmarked (for example, what devices are above 80% CPU or which ports are above 500 Mbps), and sort the network by these data, verifying which devices has more or less traffic, CPU, memory, etc.

The available data for ports are **in/out rate, packets with error, discarded, unknown, unicast, broadcast and multicast**. For devices, the monitored data are CPU and memory. For GPON ONUs, the data are optical power and in/out rate.

DmView **integrates with Zabbix** for traffic and performance monitoring. The configuration of the integration parameters (URL, user and password) is done through Web interface, and once configured, DmView starts to obtain the data from Zabbix and summarize it in the devices, ports and ONUs screens. From these present data, shortcuts can be clicked to open the Zabbix history graphs. It is possible to configure DmView to automatically create hosts in Zabbix, corresponding to the devices present and added in DmView, and automatically associate them with a Zabbix monitoring template (also configured by DmView) that collects all necessary data, including treating differences between SNMP objects in distinct device lines. Therefore, the user only needs to indicate to DmView where Zabbix is installed, and then all monitoring and hosts configuration in Zabbix is performed by DmView itself.

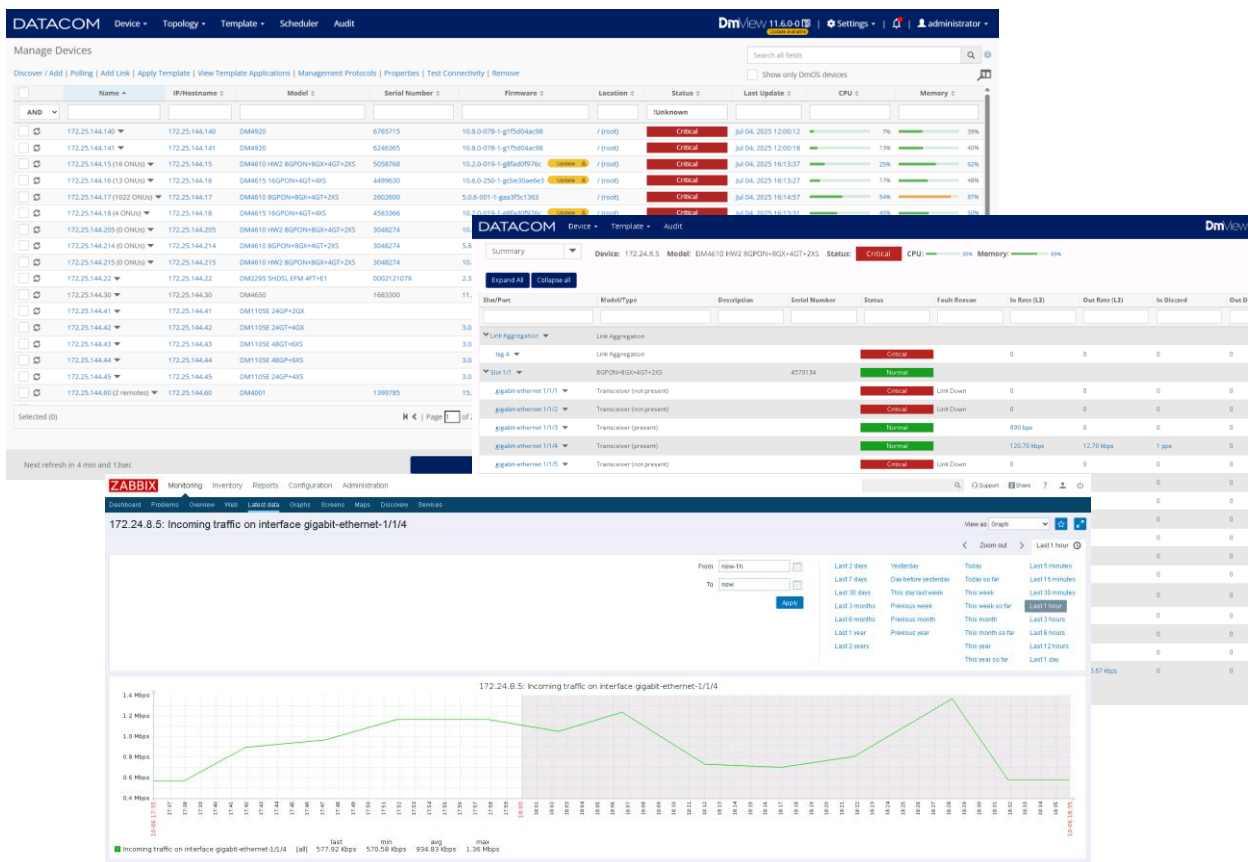


FIGURE 16 – TRAFFIC MONITORING WITH ZABBIX INTEGRATION

PROVISIONING AND CONFIGURATION

DmView offers a complete solution for **end-to-end service provisioning and configuration**, allowing centralized and automated service activation for customers with full visibility and control. The configuration is performed through an **intuitive, step-by-step interface** that streamlines workflows and minimizes operational errors.

Provisioning covers the **Switches, SDH, and DM705** product lines, enabling the configuration of different service types according to the technology of each line, including:

- Nx64K (E1/T1, G.SHDSL TM, V.35, G64, FXS, FXO, E&M)
- 2M (E1/T1)
- VC-12, VC-3, VC-4 (SDH)
- VLAN L2, MPLS L2VPN (Ethernet)
- G.SHDSL EFM

It is possible to configure **service hierarchies**, such as an Nx64K service over a VC-12, or represent complex services like **TDM over Ethernet and Ethernet over TDM**—all within a unified service model. End-to-end provisioning also supports hybrid networks with L2 and MPLS devices on the same path.

The service path can be **discovered automatically by DmView** (as in the Switches line) or defined **step-by-step by the operator** (in the SDH and DM705 lines). Protection paths can also be configured to ensure high service availability.

To facilitate standardization and reuse, **configuration profiles for QoS** can be used, especially in the Switches line. The system also allows **customer and service type registration**, which can be associated with provisioned configurations. All service properties are available for search and filtering through the service search functionality.

DmView also supports the **provisioning of network protection topologies** as manageable entities, simplifying configurations that span multiple elements. This includes support for **EAPS rings, STP, and MPLS ring LSPs** in the Switches line, and **MS-SPRING** in the SDH line.

Services previously configured outside DmView (via CLI or Web) can be **imported into the system** and managed as any internally provisioned entity. It is also possible to provision services on unmanaged devices, defined with a "Custom" model, allowing for multivendor network representation and full end-to-end circuit tracking.

The system **supports topological migrations**, enabling the insertion or removal of devices in links, port changes, and automatic updates to maps, service paths, and devices configurations. These migrations are supported in the Switches, SDH, and DM705 lines.

Element-level configuration is supported for all manageable devices. In the Switches line, this configuration focuses on critical or frequently modified functions (such as ports, SNMP, and QoS queues). It's also possible to view the running-config of switches in plain-text format, just like in the CLI, directly from the topological maps.

DmView allows the registration of **identification and location** information on devices ports, facilitating network search and organization. It also supports the configuration of logical interface boards in the SDH and DM705 lines, as well as the discovery, authentication, and logical configuration of ONUs for the DM4610 8GPON model.

The **configuration mismatch** feature allows identification of **changes made outside of DmView to protected configurations**. When this occurs, the system allows the user to choose between accepting the new configuration from the device or restoring the version managed by DmView. This functionality is available per service (in the SDH and DM705 lines) or per device (in the SDH, DM705-SUB, and Switches lines—except for DmOS, DM2300, DM1200, and DM2500 models).

Finally, **firmware upgrades are also supported**, allowing firmware files to be sent to one or multiple devices simultaneously, with full control and tracking of all operations.

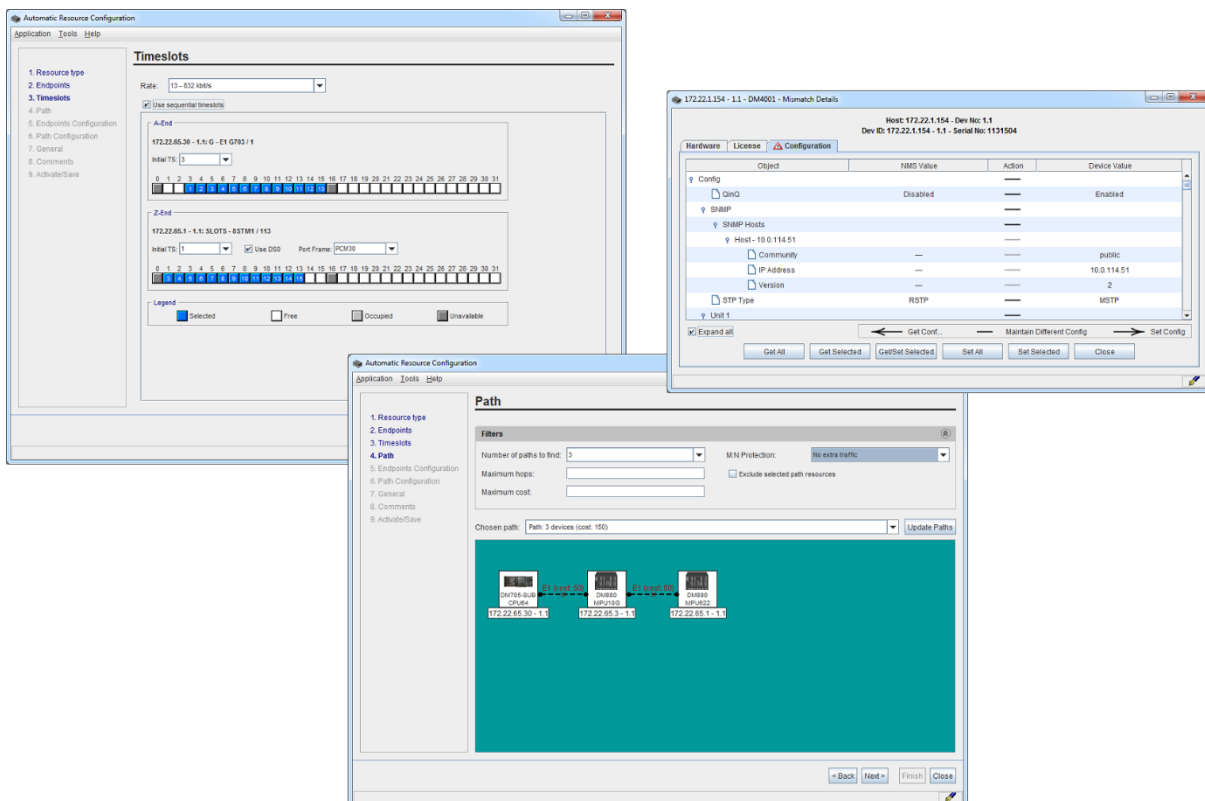


FIGURE 17 – CIRCUITS PROVISIONING AND MISMATCH

SUPERVISION, FAULT AND OAM

DmView offers advanced fault supervision and OAM (Operations, Administration, and Maintenance) features that enable real-time proactive network monitoring. The system detects failures as they occur, presenting the root cause, occurrence details, and affected resources — which facilitates quick diagnostics and resolution.

From the detected faults, the operator can run tests, execute commands, and configure automated actions such as sending emails, executing scripts, or triggering sound alerts, helping anticipate corrective measures. Events currently under resolution can be marked as Ack or masked to avoid duplicate work by multiple operators.

DmView receives SNMP traps sent by network devices and organizes them as correlated network events, grouping those of the same nature (e.g., multiple traps from the same port) and highlighting the root cause. Each event is assigned a default severity, which can be modified according to operational policies. Events can be finalized using the "Terminate" flag, indicating the issue has been resolved.

The platform supports SNMP PDUs of type InformRequest (from SNMPv2 onwards), ensuring higher reliability for receiving notifications. Additionally, events can be exported in CSV format for historical tracking or database cleanup. Detailed reports can also be generated with custom filters and multiple export formats — using the same capabilities available in the Inventory section.

For DmOS devices, SNMP trap support is fully dynamic and model-based, allowing new traps and firmware versions to be supported automatically, without requiring a DmView update. This guarantees zero-day support for new firmware directly in production environments.

The system also performs continuous monitoring of devices connectivity with the management system, using SNMP or NETCONF at configurable intervals (default is 5 minutes). When communication with a device is lost or restored, DmView generates automatic events and updates the overall status of the device and its interfaces.

Network health is clearly visualized through a centralized summary screen that displays the device model, status of all slots and ports, and allows direct navigation to detailed status, configuration, and alarm windows. This provides a fast and accurate view of the device's structure and ongoing issues.

The system also provides windows with detailed status information, diagnostic commands, and testing tools for each device. Full support is available, except for the Switches line, where only mandatory or commonly used information is shown (such as ports, transceivers, and CFM entities). For devices that support alarm lists, all identified problems can be viewed individually — as seen with SDH, DM705, GPON, and DM2300 devices.

In the SDH and DM705 lines, DmView allows operators to view the summarized status of a service, including a complete topological representation of the service path across the network, with detailed statuses of each port, device, and logical entity involved. In these lines, device log files are collected automatically by the system every 15 minutes and are available for viewing, searching, and export — giving the operator full visibility into logs generated across the network.

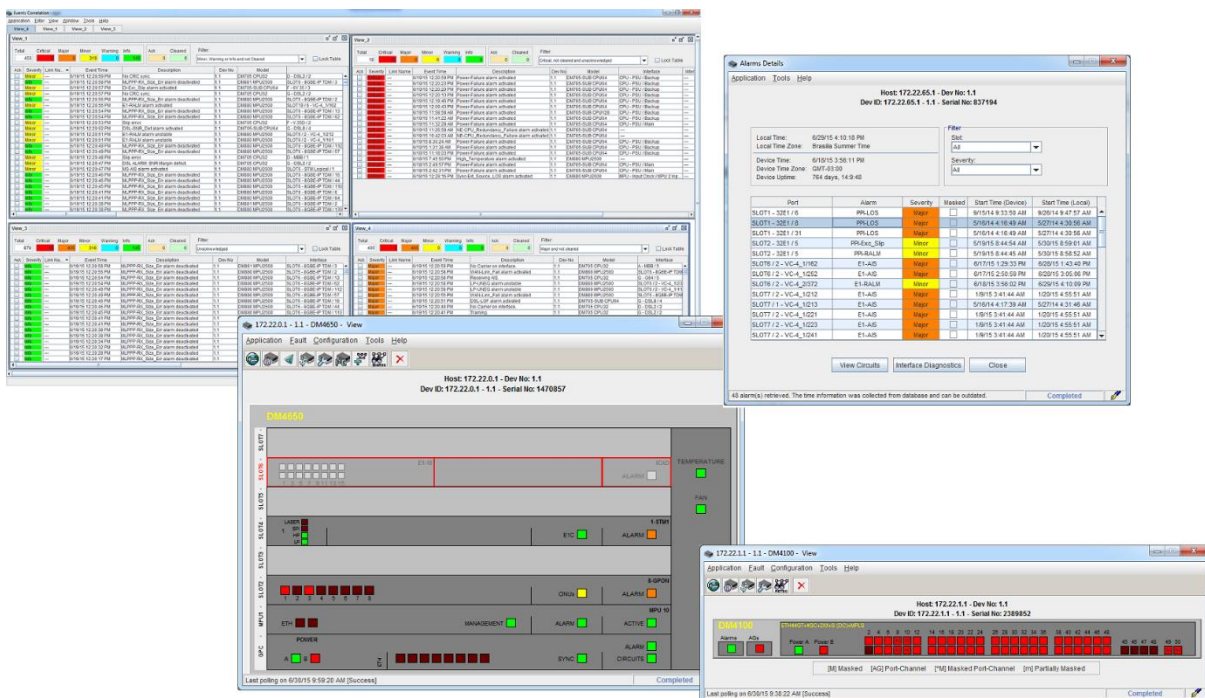


FIGURE 18 – EVENTS AND ALARMS

INVENTORY

The inventory solution is available in a Web interface, and allows **physical inventory** (devices, interfaces, ports, transceivers, links, GPON ONUs), **logical inventory** (circuits, protection topologies), **network occupation** (timeslots, KLMs, VLANs, ports and cards available for service provisioning) and register (customers, users). Several search criteria options and result export formats allow great flexibility for different scenarios and needs.

The generated reports can be exported to HTML, CSV, PDF, XLS and XLSX.

It is possible to create favorite reports (individual or visible to all users) and schedule reports to specific dates or frequencies, **sending them by e-mail or FTP/SFTP server**.

The Web reports also include events inventory and users operations audit. These features are described in their respective sections in this document, and their reports have the same standard functionalities that are available for all reports (export formats, favorites and scheduling).



FIGURE 19 – PHYSICAL AND LOGICAL INVENTORY

USER ADMINISTRATION, SECURITY AND ACCOUNTING

The DmView AAA Solution (Authentication, Authorization, and Accounting) provides a solid foundation for user administration, with a focus on **security, access control, and operational traceability**. The system offers extensive flexibility for defining permissions, customizable password security policies, and a robust auditing mechanism for user activities.

Authentication and Authorization functionalities can be managed locally or integrated with an external LDAP server, ensuring compatibility with corporate infrastructures. The Auditing functionality is always stored and managed locally, providing full control over user action logs.

It is possible to define user **groups, apply permissions individually or by group**, and configure access levels by location, device model, and specific system functionalities — such as service provisioning, web portal access, and topological map viewing.

For each location and device type, permissions can be granted at three distinct levels:

- **View:** view-only access;
- **Test:** view and perform test actions;
- **Manager:** full access to view, test, and configure.

The system supports **CAPTCHA** on the login screen as an additional layer of protection against unauthorized access. DmView can also be integrated with **Access Manager** platforms to enable unified authentication (single sign-on) across different web systems used by the customer.

Password security policies are fully customizable, allowing administrators to define:

- Password expiration time;
- Minimum and maximum password length;
- Maximum number of failed login attempts;
- Inactivity timeout, after which the session is automatically terminated (default is 120 minutes).

The **auditing** feature logs all **user actions in detail**, including who performed the operation, when, from which IP address, and what was **executed**. These logs can be queried using advanced filters and exported in multiple formats, using the same export features described in the "Inventory" section of this document.

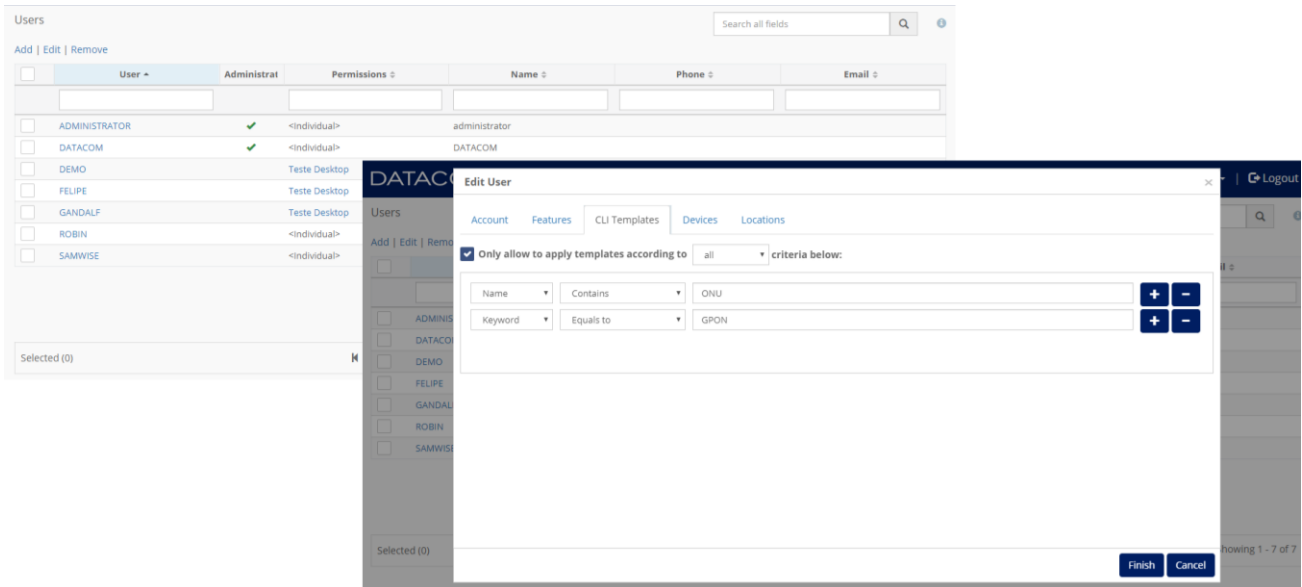


FIGURE 20 – USERS AND PERMISSIONS MANAGEMENT

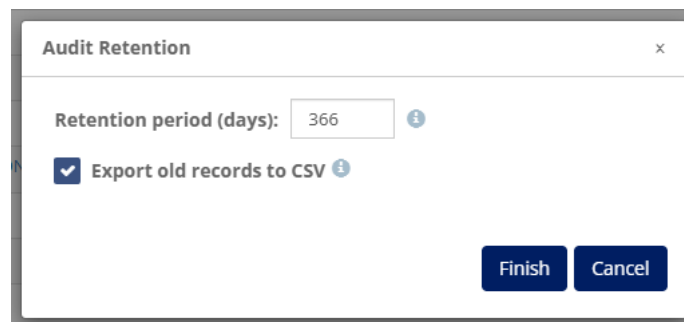


FIGURE 21 – AUDIT RETENTION

TOPOLOGICAL MAPS AND NETWORK DISCOVERY

DmView's **topological maps** provide a hierarchical and organized view of the network, enabling **navigation by location, identification of device interconnections, and status propagation** in a clear and intuitive way. This graphical interface allows operators to visually manage the entire infrastructure, supporting both managed and unmanaged devices.

Operators can **register detailed identification and location information**, as well as **automatically discover devices within a subnet or IP range**. The system identifies active devices and displays their models, allowing the user to easily select which devices to add to the managed environment.

The maps allow the **addition of locations, devices, and links** between them, forming a hierarchical tree structure. When devices located in different regions are connected, the system creates visual shortcuts, enabling direct navigation between interconnected areas. This improves the visibility of distributed links across different network zones.

Device and port statuses are propagated bottom-up—any failure detected within the hierarchy automatically affects the associated location or link—allowing operators to immediately identify the most critical point in the network based on aggregated status.

For SDH and DM705-SUB product lines, a **clock synchronization layer can be enabled** on the map. This displays reference links, synchronization status, and quality level between devices—an essential feature for environments requiring precise timing.

From the map, users have quick access to operational summaries, status and configuration windows, links, and circuits, with seamless navigation through network layers and levels. This optimizes response time and facilitates diagnosis and decision-making.

The network discovery feature is performed directly through the web interface. Simply enter a subnet or IP range and DmView will scan, detect active devices, and display them in an interactive list. From there, users can add multiple devices simultaneously, remove them, or import/export the list in CSV format—ideal for managing large-scale environments.

The system also allows **connectivity tests** with the devices using a variety of protocols, depending on the product line: ping, SSH, Telnet, NETCONF, SNMP, HTTP/HTTPS, and a proprietary protocol for SDH and DM705 devices.

While navigating the map, users can **activate an integrated event panel that displays real-time alarms and failures** related to the device in a specific location, optimizing monitoring and incident response with contextual information.

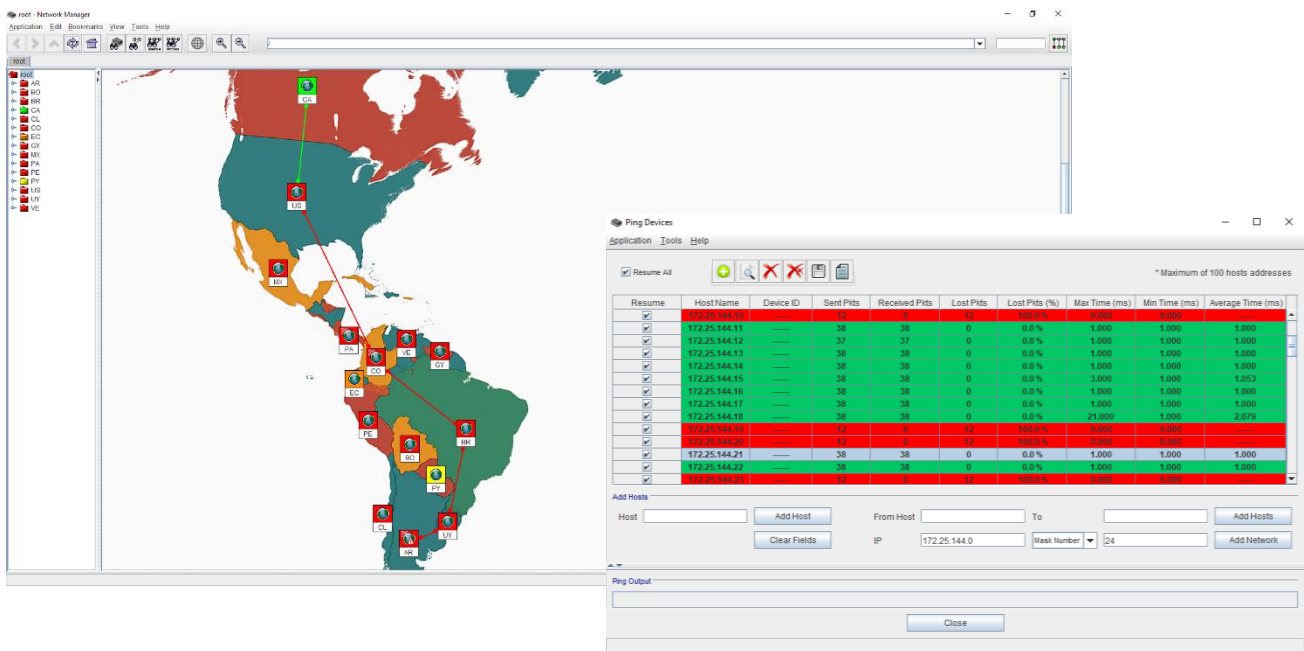


FIGURE 22 – TOPOLOGICAL MAPS

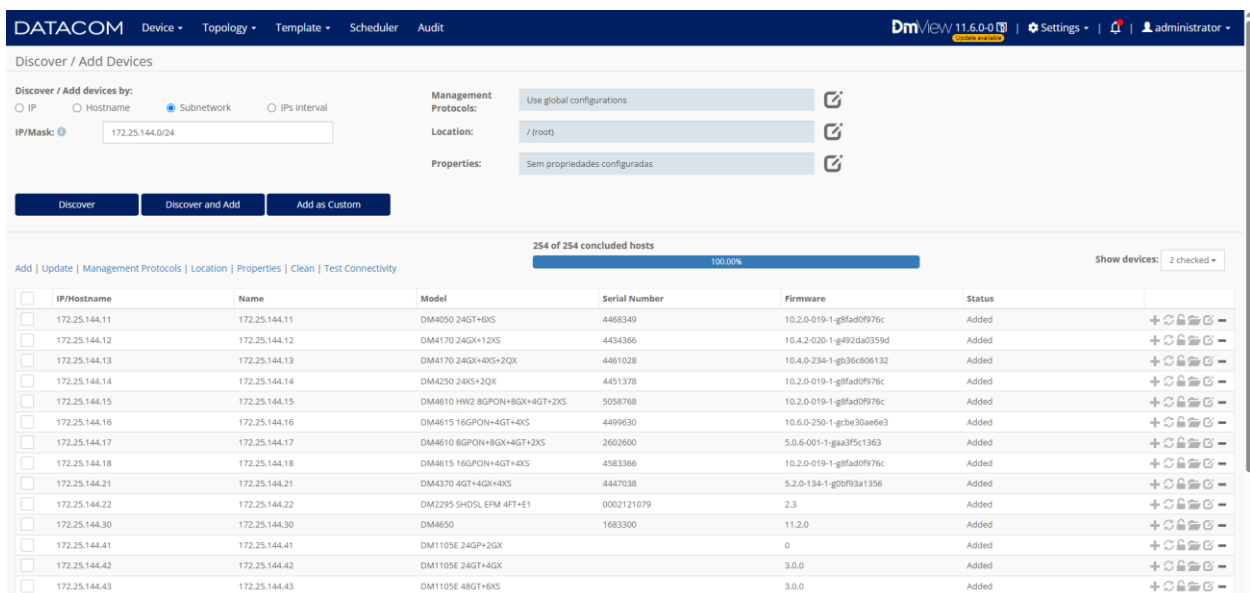


FIGURE 23 – NETWORK DEVICE DISCOVER

SELF-MANAGEMENT

The system has **self-management** monitoring, collecting server, database and software components parameters. Windows and reports allow verifying this data and proactively acting when a threshold is triggered, as well as performing maintenance tasks.

NORTH-BOUND AND SOUTH-BOUND INTEGRATIONS

DmView features an **extensible and modular architecture**, designed to facilitate integration with **external systems**—both **Northbound** (such as OSS, BSS, and monitoring systems) and **Southbound** (for managing third-party devices).

In **Northbound** integration, DmView acts as the central point for receiving network events, encapsulating and **forwarding SNMP traps** as management notifications to OSS systems. Additionally, integrations for exporting physical and logical inventory data are already in operation, with support for CSV format. Key system modules—such as service and link provisioning, CLI/TR-069 templates, network discovery, and devices addition/removal—are ready for **integration via REST APIs**, with complete documentation to support implementation by partner technical teams or the customer's own staff.

DmView's **Southbound** architecture enables the incorporation of third-party devices through specific commercial agreements, with feature and protocol implementation tailored to each project's needs. There are already operational cases supporting multivendor devices, reinforcing the platform's flexibility.

Currently, DmView supports various communication protocols, both for Datacom's own devices and for third-party devices, including:

- SNMP (v1, v2c, v3)
- NETCONF
- JSON-RPC
- XML over HTTP/HTTPS
- XML over TCP
- Datacom proprietary protocol

This integration capability enhances DmView's value as a **central management platform for heterogeneous networks**, allowing customers to securely and scalably connect their operational environment in alignment with the specific needs of each scenario.

DEVICES

The following Datacom device lines are supported in DmView:

- Switches line (with DmOS): DM4700, DM4300, DM4200, DM4170 and DM4050;
- Switches line: DM4000, DM4100, DM3000, DM2100-EDD, DM2300 and DM1200 families;
- Routers line: DM2500 family.
- GPON line (with DmOS):
 - OLTs: DM4610, DM4611, DM4612, DM4615 and DM4618 families;
 - ONUs (with TR-069): DM985-424, DM985-102, DM986-414, DM986-100, DM955 and DM955M models;
 - ONUs: DM984 family and DM985-100 model;
- SDH line: DM880, DM881, DM830, DM820, DM810 and DmSTM-1 models;
- Multiservice line: DM705 and DM706 families;
- PDH line: DM16E1 – DM4E1 family and DM4E1S model;
- Modems line: DM229x and DM991 models and DMG20 management card;
- Converters line: DM704 family;
- DWDM line: DM4920 model.

Devices with DmOS operating system are fully supported, including models that will be released in the future, which is achieved through the DmOS dynamic model-based support existent in DmView.

CPEs with TR-069 support are fully supported, including models that will be released in the future, which is achieved through the adherent TR-069 protocol support existent in DmView.

LICENSING

DmView is available in the following licensing options:

- DmView Enterprise Lite (free): up to 15 managed devices.
- DmView Enterprise 50: up to 50 managed devices.
- DmView Enterprise 150: up to 150 managed devices:
- DmView Enterprise Unlimited: no limit of managed devices (in this case, the practical limitation will be given by the available HW, which can receive upgrade to raise the limit. Contact Datacom for HW dimensioning).

The managed devices mentioned above do not include the TR-069 CPEs. DmView Enterprise Lite allows management of up to 2,000 Datacom CPEs and up to 100 Multivendor (non-Datacom) CPEs via TR-069. Managing additional CPEs is possible through additional licensing options.

The above options do not include the features which require a specific licensing option, which are these:

- CLI Template Multivendor: allows to apply CLI templates on third party devices.
- High Availability: allows the high availability of DmView through HW redundancy.

The following license option, already including the licensable features, is also available:

- DmView Enterprise Unlimited Plus: no limit of managed devices, including the CLI Template Multivendor and High Availability options.

The Enterprise Lite option is free, and is available for download in the self-service site of Datacom support (request an user access to the site, if you do not have access yet): <https://supportcenter.datacom.com.br>.

SOFTWARE AND HARDWARE

DmView can be installed with all its components in a centralized server, or in a notebook for field operations and training, or in an installation for medium and large network, with its services installed in multiple servers or Virtual Machines (VMs), with operation redundancy for each service, as application (main), database and remote access servers.

It is possible to use High Availability (HA), providing redundancy, fail-over and load balancing for the management services and network devices access, ensuring the continuous management operation with minimum loss in case of failures, and horizontal and agile scalability to growing networks. Oracle Data Guard is required for database HA. It is also possible to use database clustering through the Oracle RAC solution.

The minimum HW required for DmView installation and operation is the following:

- Processor:
 - Intel:
 - Intel Core I3 8th generation or higher;
 - Intel Core I5 7th generation or higher;
 - Intel Core i7 3rd generation or higher.
 - AMD
 - AMD Ryzen 3 1st generation or higher.
- Memory: 12 GB RAM.
- HD available space: 20 GB.

The following operating systems are homologated for DmView, always in 64 bits:

- Server in environment without HA: CentOS Linux 6.5/7.3, Red Hat Enterprise Linux 8, Oracle Linux 8.10, Rocky Linux 8.10, Windows Server 2016/2019/2022, Windows 8.1/10/11;
- Server in environment with HA: CentOS Linux 6.5/7.3, Red Hat Enterprise Linux 8, Oracle Linux 8.10, Rocky Linux 8.10;
- Database: CentOS Linux 6.5/7.3, Oracle Linux 7.2, Red Hat Enterprise Linux 8, Oracle Linux 8.10, Rocky Linux 8.10, Windows Server 2016/2019/2022, Windows 8.1/10/11.

The supported Oracle versions are (non-container or container modes):

- Oracle 21c (XE – Express, SE – Standard e EE – Enterprise);
- Oracle 19c (SE – Standard e EE – Enterprise);
- Oracle 18c (XE – Express, SE – Standard e EE – Enterprise);
- Oracle 12c (SE – Standard e EE – Enterprise);

The supported MongoDB versions are:

- MongoDB 4.2;
- MongoDB 4.4;
- MongoDB 5.0;
- MongoDB 6.0;
- MongoDB 7.0;
- MongoDB 8.0;

Java is a requirement for DmView execution. The minimum version is:

- Oracle JRE 17.0.12

Specifications and products may change without prior notice.

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