Enhancing ITA's Network Reliability with PRTG Network Monitoring

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ITA's Problem:

- Rapidly company growth
- Complaints:
  - laggy
  - unstable
  - hard to troubleshoot

- No centralized visibility
- Hard to determine what is online, down or configured

Why PRTG?

PRTG offers:

- Centralized monitoring
- Auto-discovery
- Topology maps
- Basic IP address management
- Alerts and notifications
- Easy to deploy and use

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PRTG Installation & Monitoring

PRTG Core Server:

- Installed in Head Office Data Centre
- Monitors WAN links and remote branches
- Uses sensors to pull data from routers, switches, servers and firewalls

PRTG monitors using:

- Sensors = individual checks (interface load, ping, CPU, VLAN traffic)
- Device groups
- Dashboards: real-time health status (green/yellow/red)

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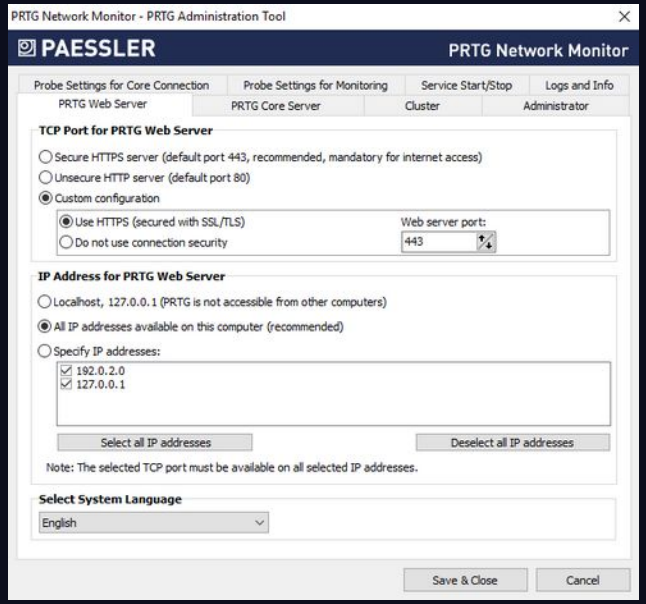
IP Address Management

PRTG helps ITA with:

- Auto-discovery of IP ranges
- Tracking used/unused IPs
- Detecting duplicate IPs
- Seeing devices online/offline
- Preventing IP conflicts



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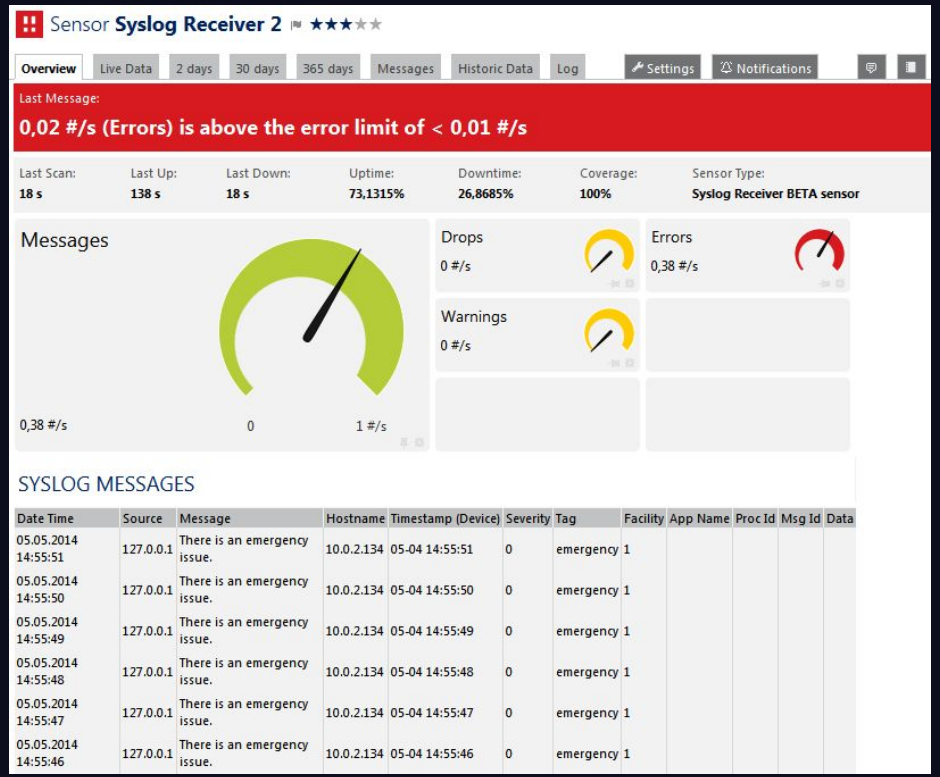
What is Syslog?

- Standard **system logging protocol**
- Used to **transfer log information** from network devices to a **central server**
- Uses a **specific message format** for consistency
- Helps track the **overall health** of network devices by simplifying log management



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How Syslog Works

- Devices **send event messages** using the syslog protocol
- Messages are sent to a **logging / syslog server**
- **Each message can include:**
  - → **Timestamp**
  - → **Device ID & IP address**
  - → **Severity level**
  - → **Event details**

Syslog servers

Syslog Listener

➔ Listens on the network to **receive syslog messages**

Database/Storage

➔ Stores large volumes of log data

➔ Needs **fast read/write** for searching and reporting

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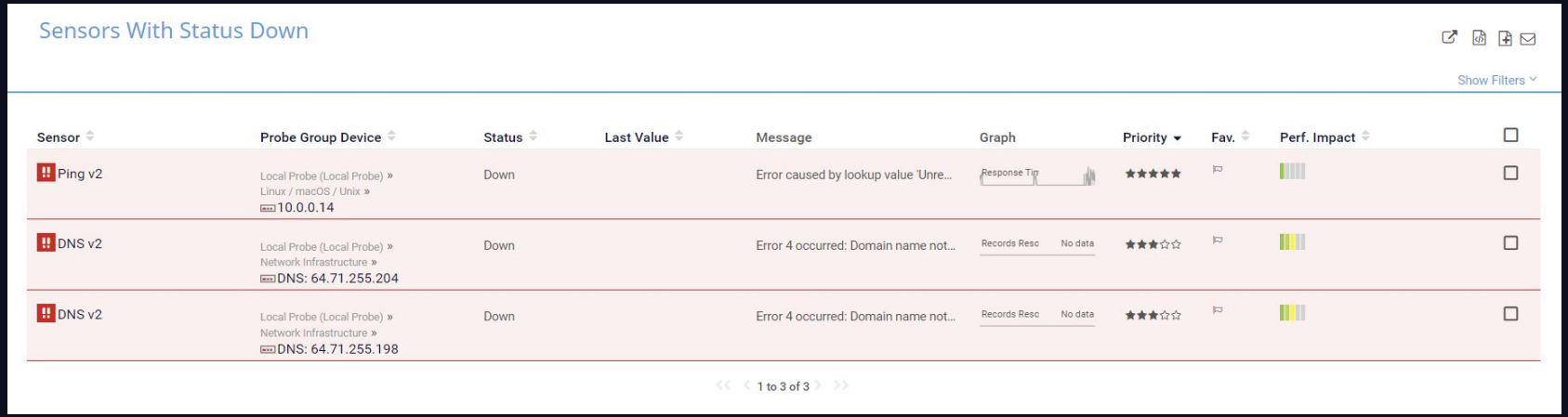
Monitoring & Alerts With Syslog

- Use **monitoring tools** to watch syslog messages

  Set up **alerts** for important events (e.g., email to admins)
- Can trigger **automated scripts** for certain events
- Helps **respond faster**, reduce damage, and **improve application availability** during peak hours



Play demo vid

Setting up and sending a syslog message

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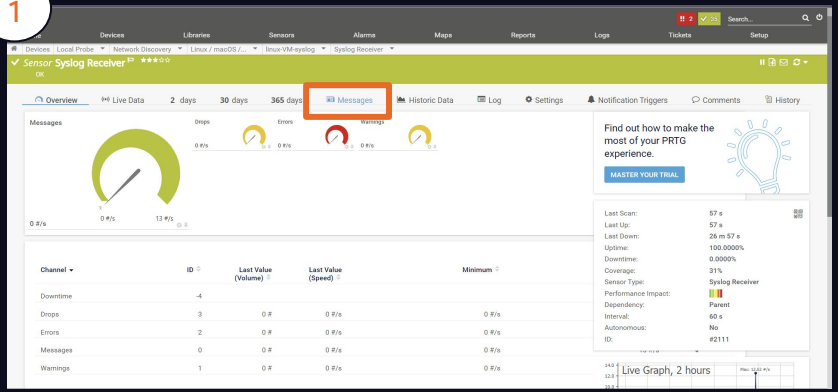
Filtering by severity, device, or keyword

1



2

Syslog Messages

Select Range | Filter By Date: 2025-08-06 01:31 – 2025-11-14 01:31

Filter | Source | Message | Hostname | Severity: Any | Tag | Facility: Any | Appname | Procid

	Source	Message	Hostname	Timestamp (Device)	Severity	Tag	Facility	App Name	Proc Id	Msg Id
2025-11-14 1:31:32 AM	172.20.225.136	PRTG TEST MESSAGE FROM Aysha-VM	Aysha	11-14 01:31:32	6	aysha	16			

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Centralized Logging

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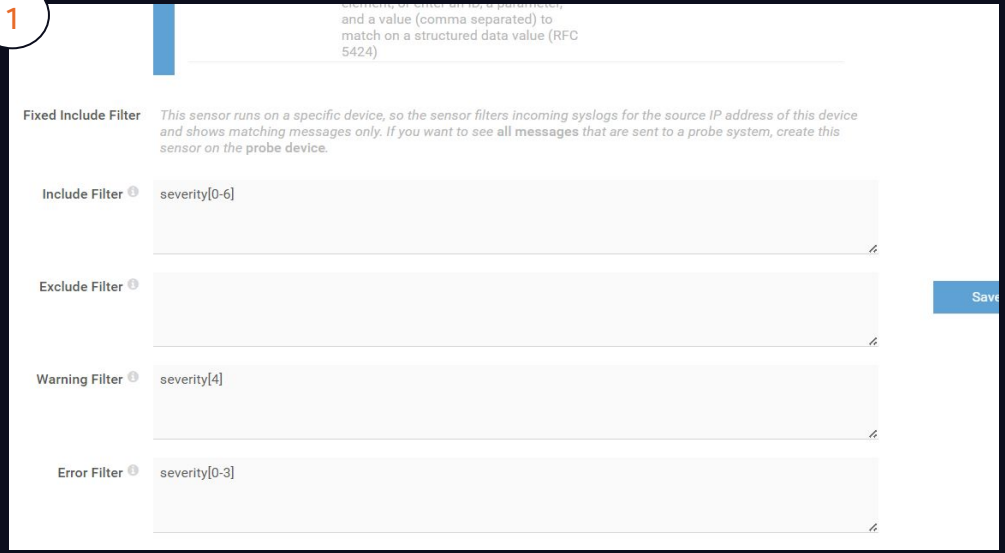

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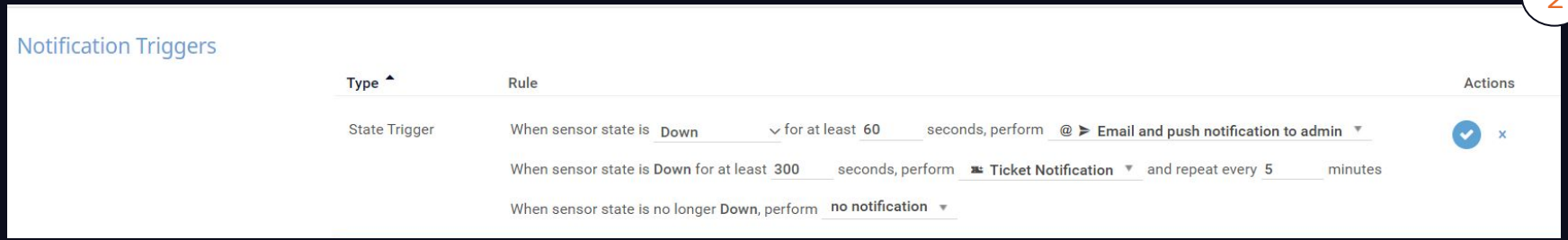

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Configuration Management in PRTG

Many branches → lots of repeated device types

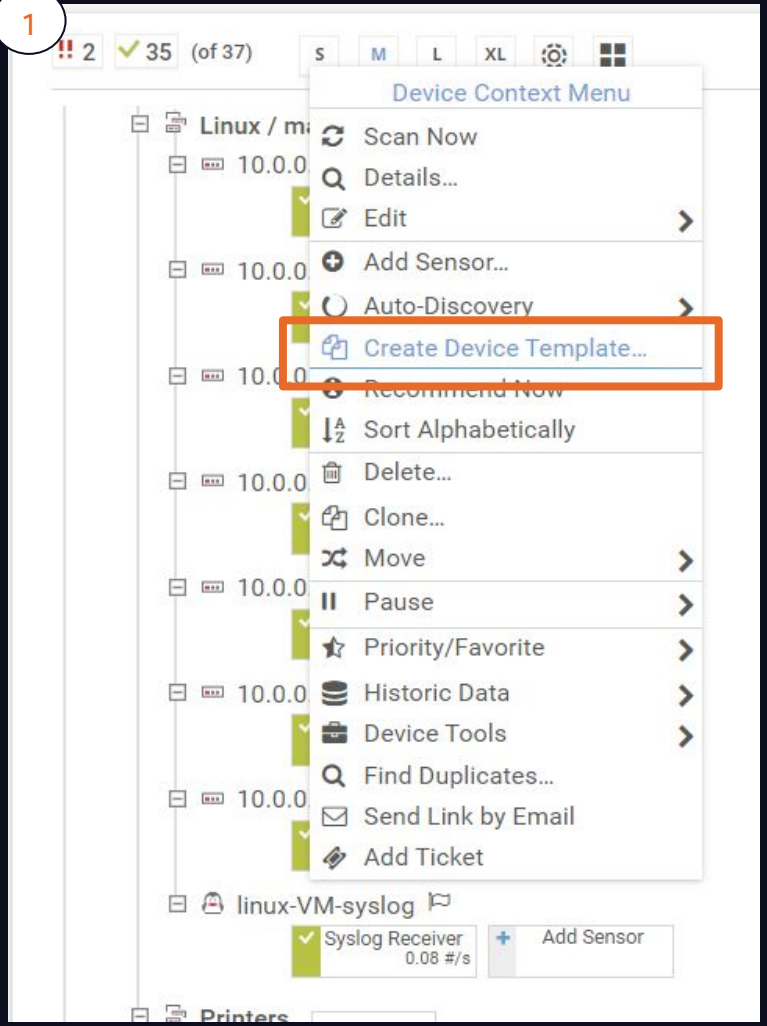
- Linux servers, firewalls, switches at each site

Goal: **same monitoring config everywhere, minimal manual work**

PRTG tools we can use:

- Device templates → standard monitoring pack we can re-use
- Groups & tags → organize devices, share common settings
- SSH / custom script sensors → optionally watch for config changes

1



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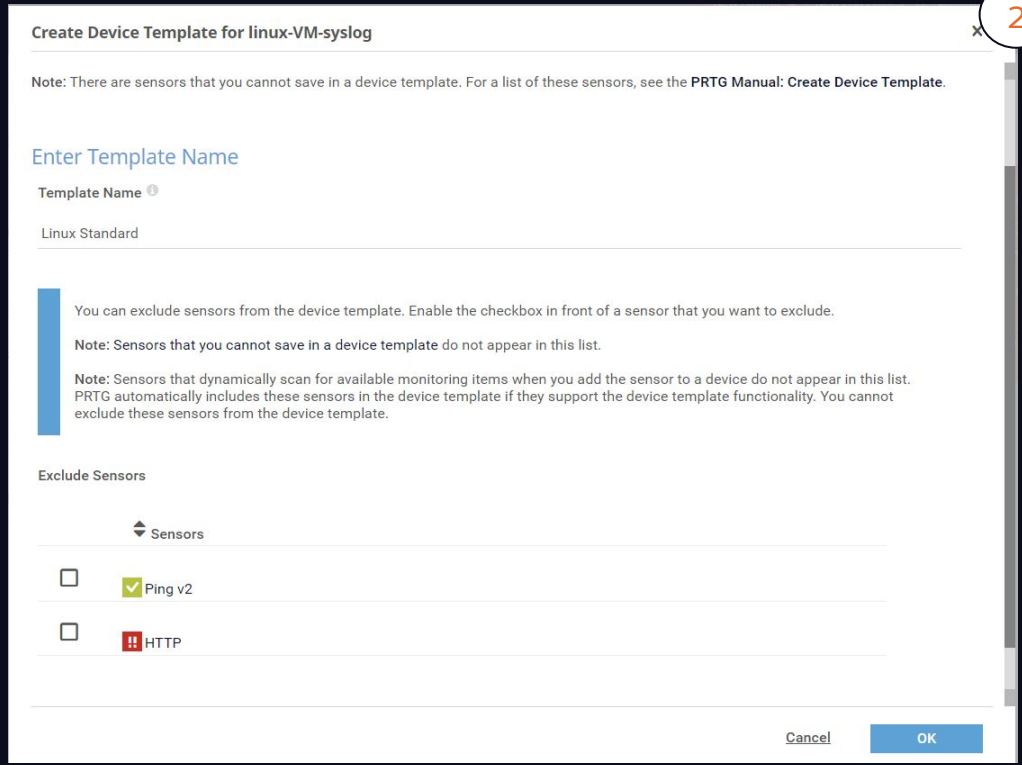

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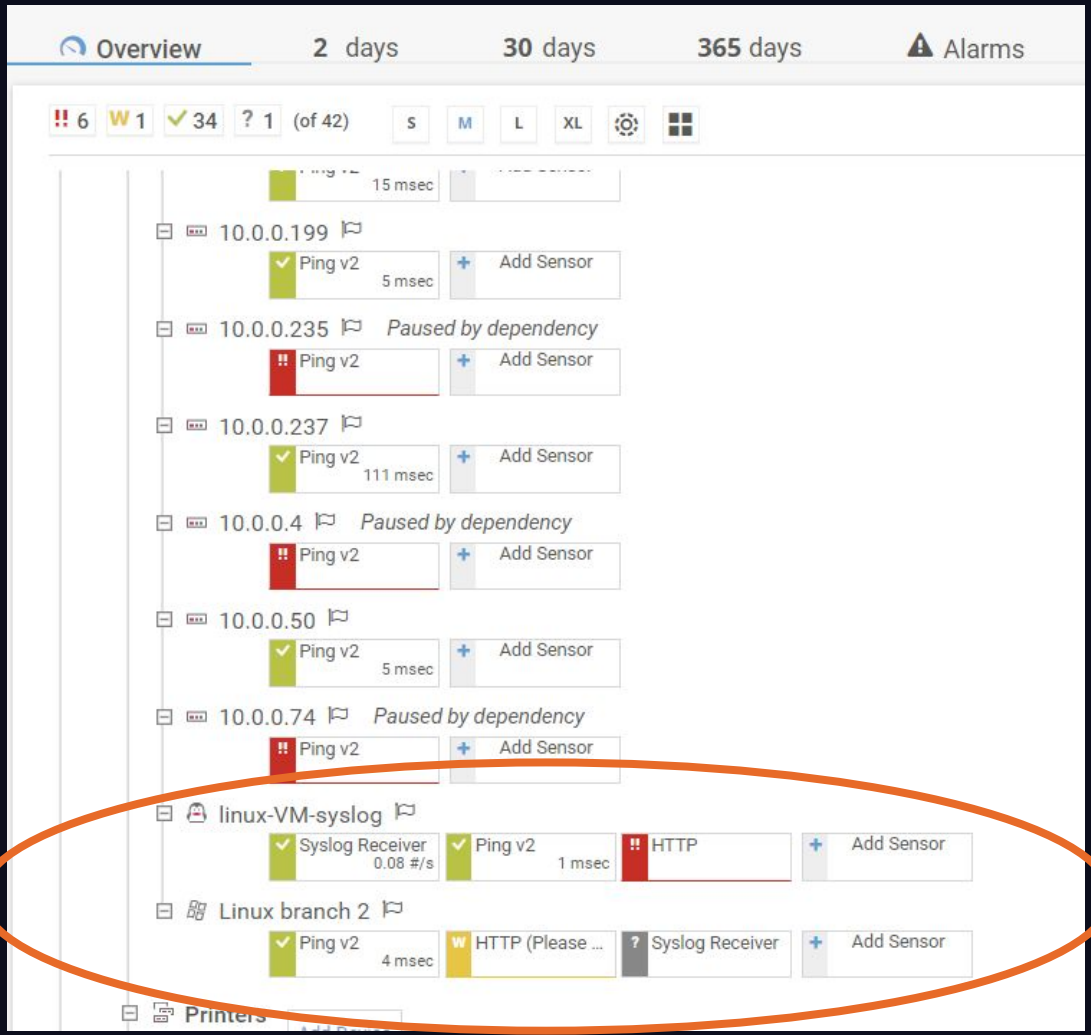
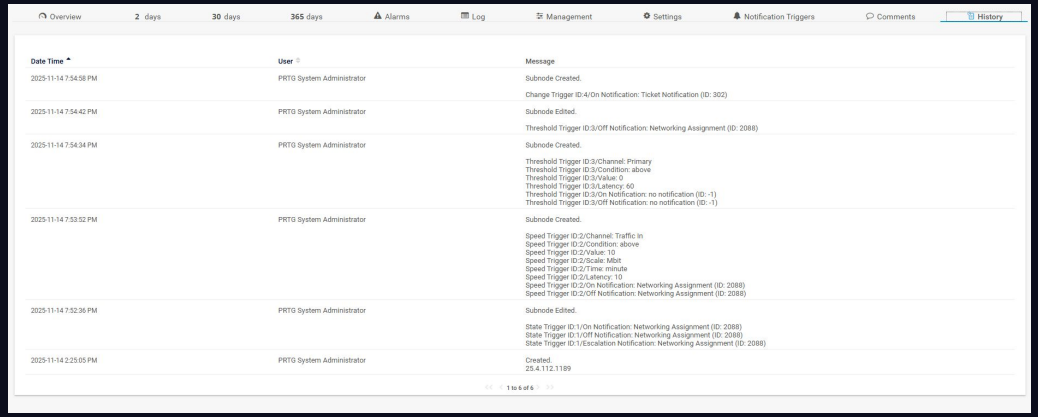
Play video


Overview
2 days
30 days
365 days
Alarms
6
1
34
1
(of 42)
S
M
L
XL
15 msec
10.0.0.199
Ping v2
5 msec
Add Sensor
10.0.0.235
Paused by dependency
Ping v2
Add Sensor
10.0.0.237
Ping v2
111 msec
Add Sensor
10.0.0.4
Paused by dependency
Ping v2
Add Sensor
10.0.0.50
Ping v2
5 msec
Add Sensor
10.0.0.74
Paused by dependency
Ping v2
Add Sensor
linux-VM-syslog
Syslog Receiver
0.08 #/s
Ping v2
1 msec
HTTP
Add Sensor
Linux branch 2
Ping v2
4 msec
HTTP (Please ...
Syslog Receiver
Add Sensor
Printers

Performance Monitoring in PRTG

Historical Reports and Trends



- Monitors CPU, RAM, Disk, and Bandwidth
- Real-time and historical tracking
- Detects overloaded or failing devices
- Key for diagnosing ITA's "laggy" performance issues

Historical Reports and Trends

- Stores long-term Graphs
- Useful for capacity planning
- Shows recurring problem times

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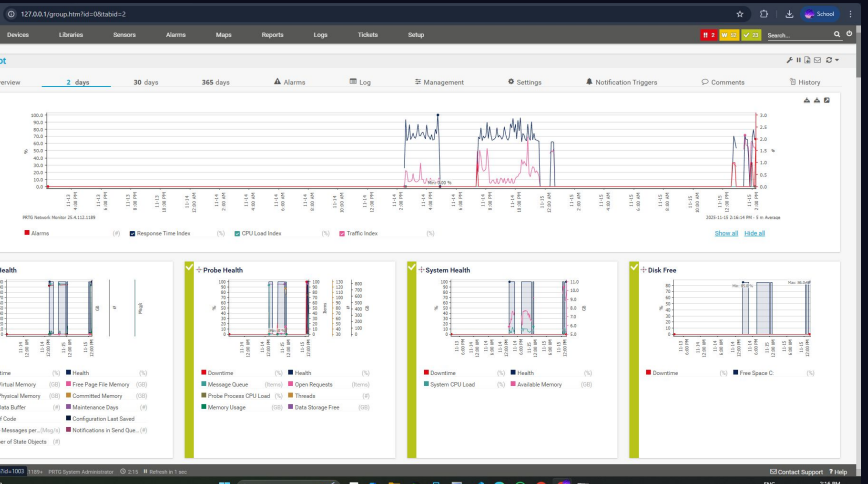
Monitoring CPU and Memory Health

CPU Monitoring

- Shows real-time processor usage
- Detects overloaded servers/routers
- CPU spikes = slow apps and lags

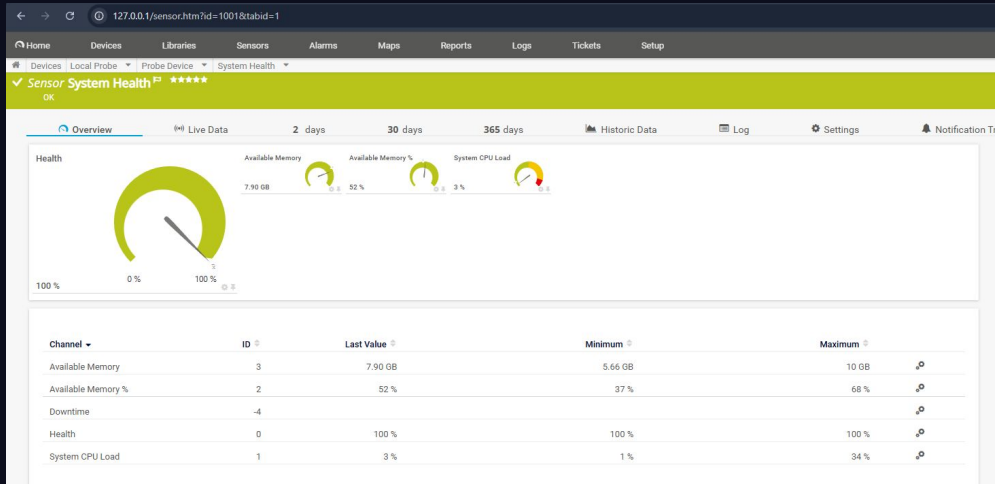
CPU Monitoring



Memory Monitoring

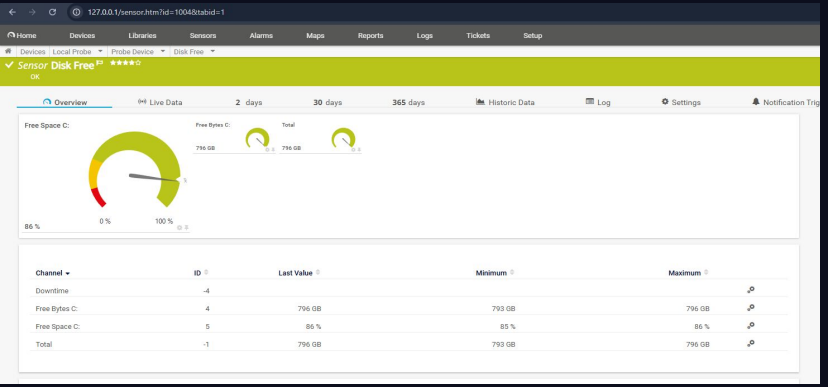
- Tracks RAM usage
- High memory means there's freezing and slowness
- Helps detect stressed equipment

Memory Monitoring

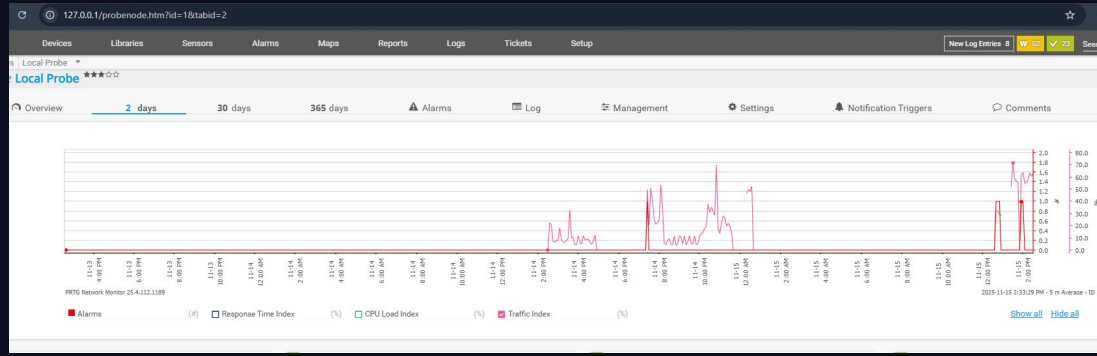


Storage and Network Traffic Monitoring

Disk Space



Traffic Index



Disk Monitoring

- Monitors free disk space
- If disks are full there are service failures
- Important for servers storing logs, apps, backups

Bandwidth Monitoring

- Measures WAN/LAN traffic
- Detects congestion on branch links
- Helps explain slow connections

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Alert and Threshold Triggers

Alerts and Thresholds →

- Thresholds for CPU, RAM, Disk, Traffic
- Sends email, SMS, push alerts
- Notifies IT before users complain

Live Alert Example →

- Alert triggers automatically
- Sensor turns yellow/red
- Incident is logged


Play video

Conclusion and Recommendation

- PRTG centralized monitoring and logging for all ITA devices
- Maps and dashboards allow IT to quickly identify network issues
- Alerts and notifications reduce downtime and speed up incident response
- Templates, device groups, and IPAM support standardized configurations and up-to-date inventories
- Helps ITA's "laggy, unstable" network providing visibility, proactive alerts, and trend analysis
- Recommendation: implement PRTG to improve network reliability, reduce outages, and support future growth.

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