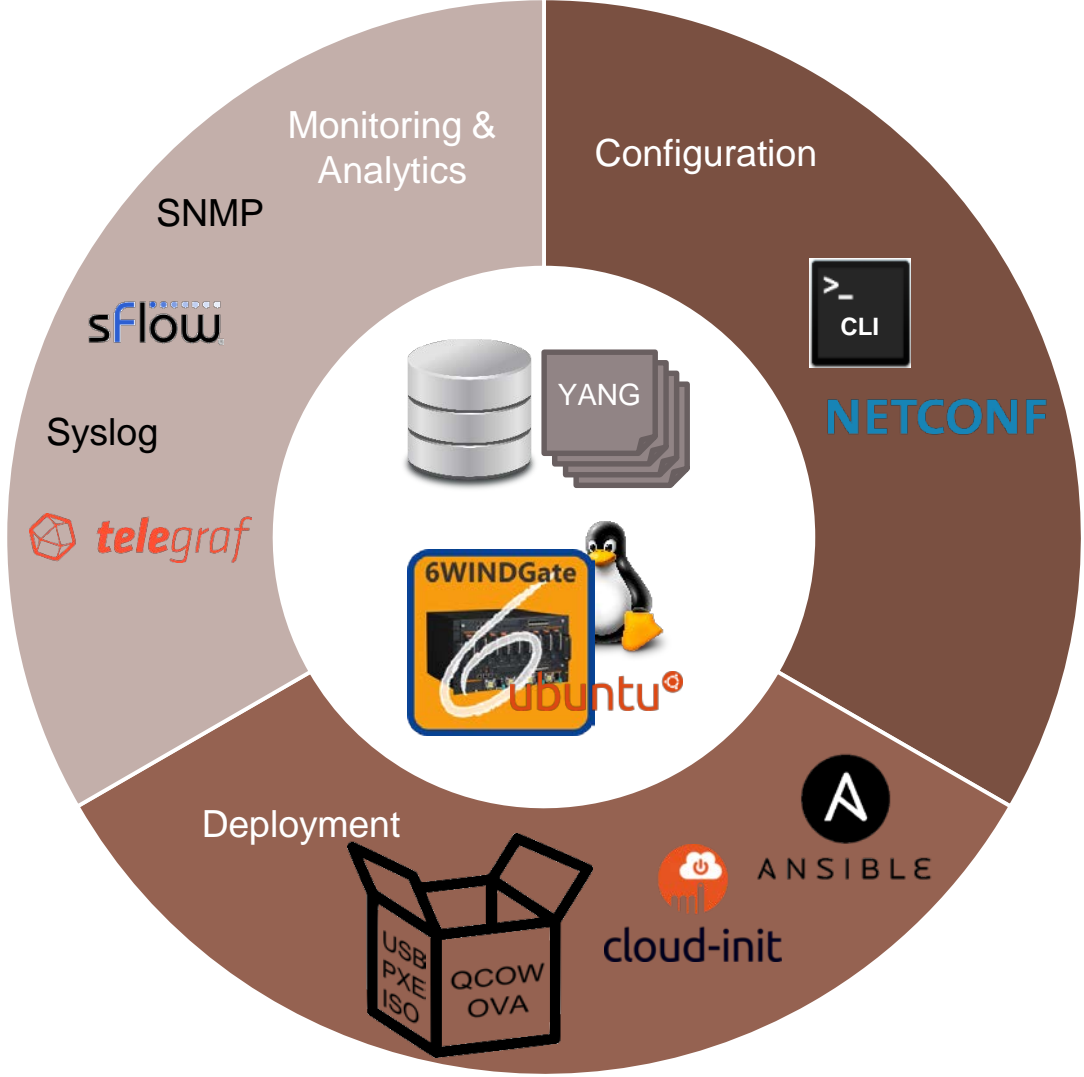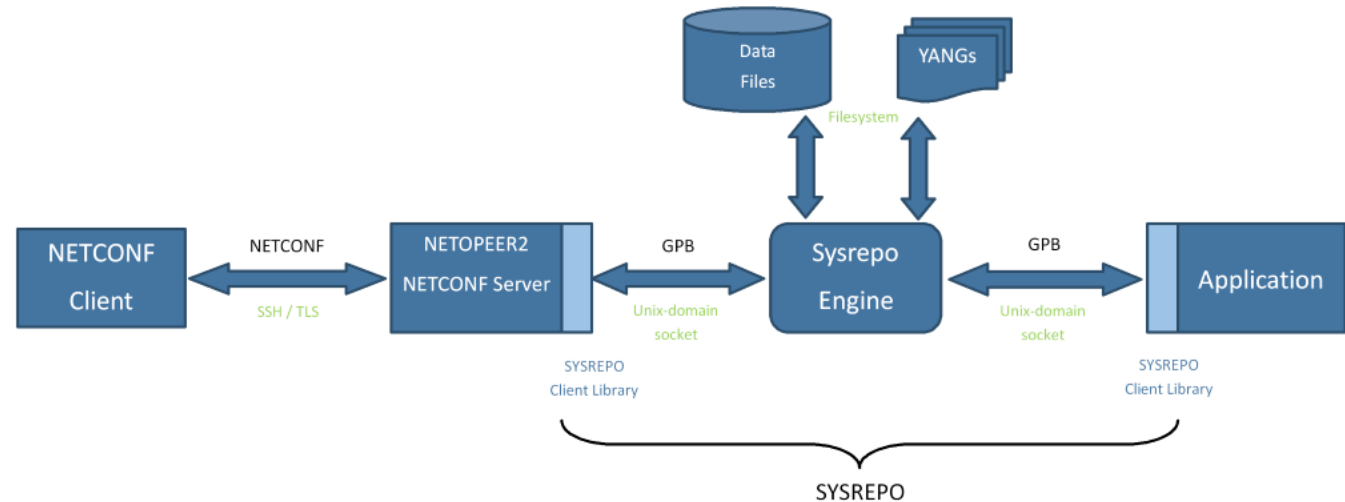# 6WINDGate Management

#SPEEDMATTERS For Serious Networks

6WINDGate Management

Open Standard-Based Architecture

- **New management relies on standards (Linux, YANG, NETCONF) so that the integration with existing management tools and frameworks will be easy**

- **6WINDGate YANG models are public**

- **Open source framework**

  - NETCONF server: netopeer2

  - Datastore: sysrepo

  - Telemetry: telegraf

Configuration of 6WINDGate Features

- **CLI**

  - Contextual help and completion

  - Configuration files management (save/restore)

  - NETCONF client with YANG-based command validation

- **YANG-based configuration engine and datastore with NETCONF support**

  - Startup, running and candidate datastore support

  - Data consistency and constraints enforcement according to YANG models

  - Full transaction and concurrency support

  - Programmatic interface

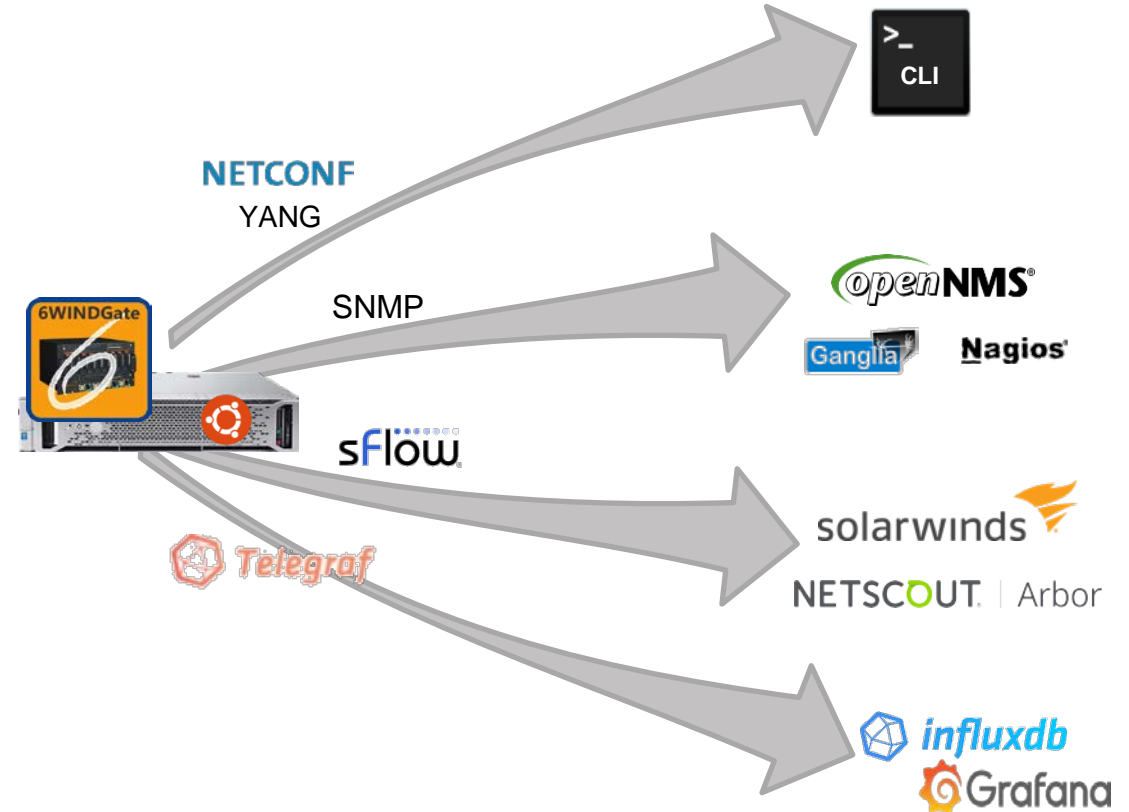- **Customers can integrate 6WINDGate with another NETCONF client**

6WINDGate YANG / Configuration Extensibility

- **Customers can extend 6WINDGate management**

  - Extend the YANG model for an existing 6WINDGate feature

  - Define a new YANG model for a customer feature to be integrated with 6WINDGate

- **Customer's development teams will benefit from a standard, well designed management to quickly develop and test new management features**

  - CLI automatically available with the YANG model

  - Automatically generated documentation (command reference)

  - Network service written in Python (Existing templates and examples available with 6WINDGate features)

  - Custom datastore client can be developed using the GPB API

- **Examples**

  - Add a new CLI command for routing configuration or routing information display

  - Develop a 6WINDGate management extension for a customer GTP module integrated with 6WINDGate

# Monitoring / Analytics for 6WINDGate Features

- **Granular statistics polling**
  - CLI or custom NETCONF client
  - Legacy SNMP

- **sFlow**
  - Data Plane packet sampling for integration with third-party collectors

- **KPIs**
  - KPIs are exported to TSDB (Telegraf / InfluxDB)
  - Analysis with graphical frontend (Grafana)
  - Customizable dashboards on github

NETCONF
YANG

SNMP

6WINDGate

sFlow

Telegraf

CLI

openNMS
Ganglia   Nagios

solarwinds
NETSCOUT | Arbor

influxdb
Grafana

6WINDGate Monitoring / Analytics Extensibility

- **Granular monitoring**

  - Same benefits as for configuration extension

- **Customers can customize 6WINDGate Analytics**

  - Add or extend KPI / Telegraf

  - Customize Grafana dashboards

- **Customers can integrate 6WINDGate with other tools**

  - Replace Telegraf

  - Integrate Telegraf with another TSDB or InfluxDB with another analytics frontend

Monitoring Using Grafana
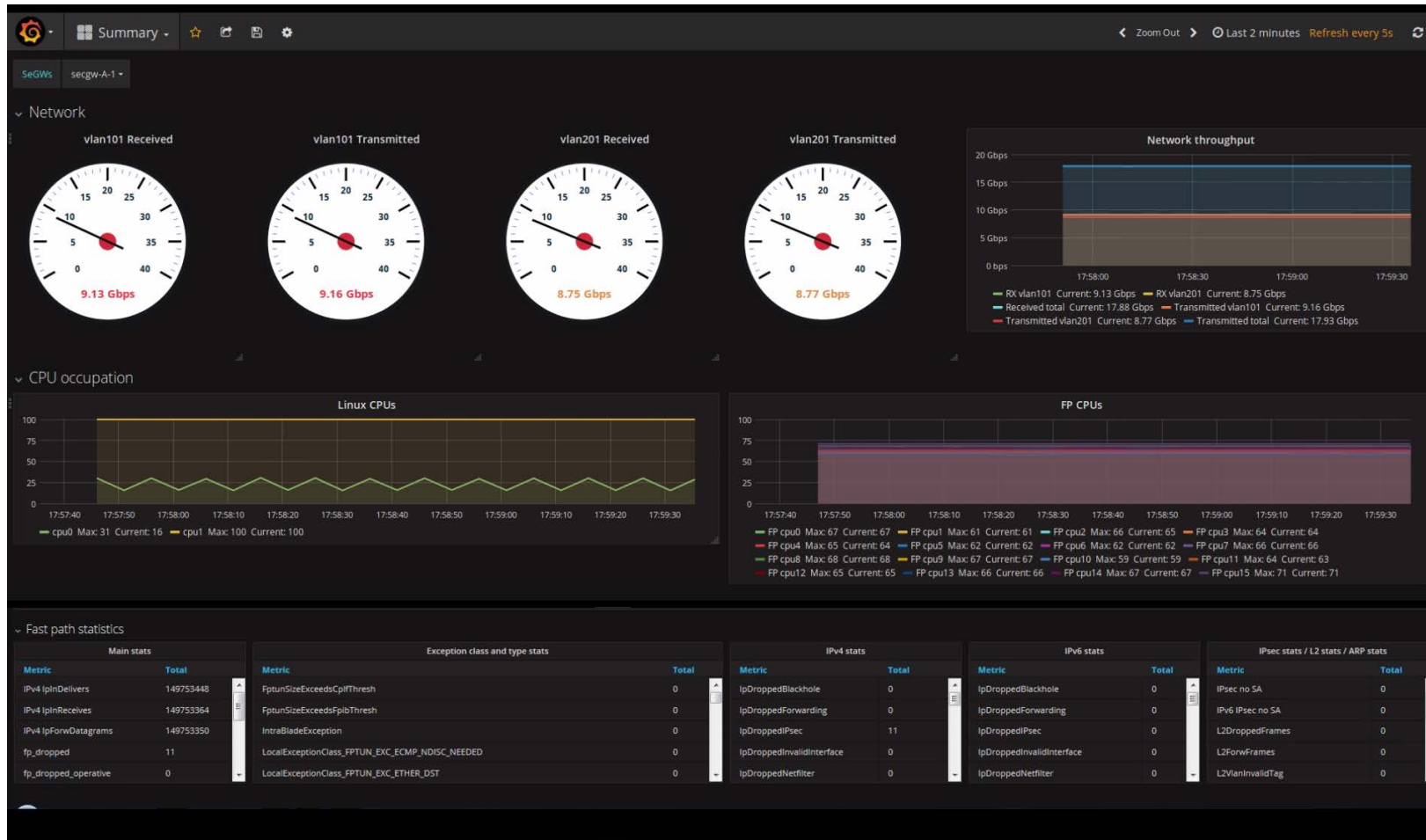
Network throughput

CPU utilization

Data Plane statistics

6WINDGate Management Modules

- **6WINDGate can be managed by Linux thanks to the Linux / Fast Path Synchronization module**

- **6WINDGate Management modules provide integrated management including CLI and programmatic APIs instead of Linux shell and inconsistent configuration files**

- **Management Baseline provides Fast Path management**
  - NETCONF, SNMP
  - YANG-based datastore (sysrepo)

- **Control Plane management through add-ons**
  - Routing, Security, VRRP

- **Additional user interface modules**
  - CLI
  - Analytics / KPIs
  - Analytics / sFlow

Thank You

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