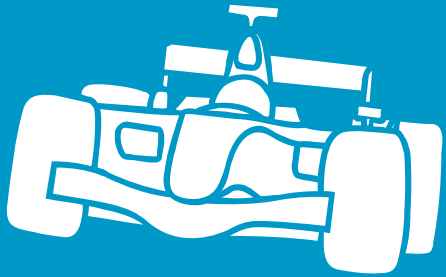


# Brocade FOS 9.0 Overview



# Brocade Fabric Operating System 9.0 Benefits for Gen7



# 2X

Performance

With Gen 7 Fibre Channel



New

## Traffic Optimizer

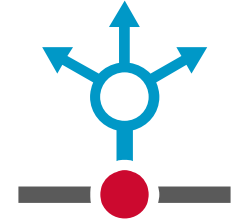
Optimize traffic performance across the network



New

## Fabric Notification

Hardware and software signaling to end devices



New

## Multipathing

Monitor and notify MPIO layer of link health



Better

## SAN Telemetry Data

190+ more IO, NVMe and flow metrics\*



Better

## Flow Learning

Automatically learn and monitor application traffic path\*



Better

## Security

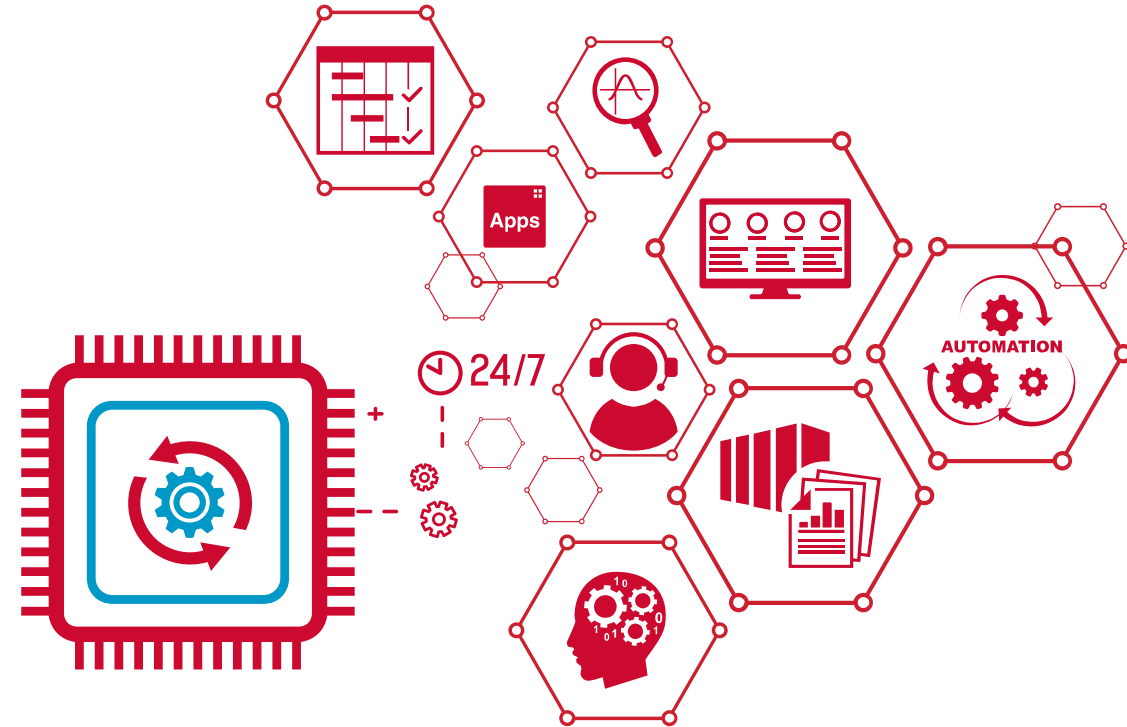
Tamper proof hardware

\*Some SAN Telemetry and Flow features plan to be available in future FOS v9.x releases

# Gen 6 SAN Telemetry Data Enhancements in FOS 9.0

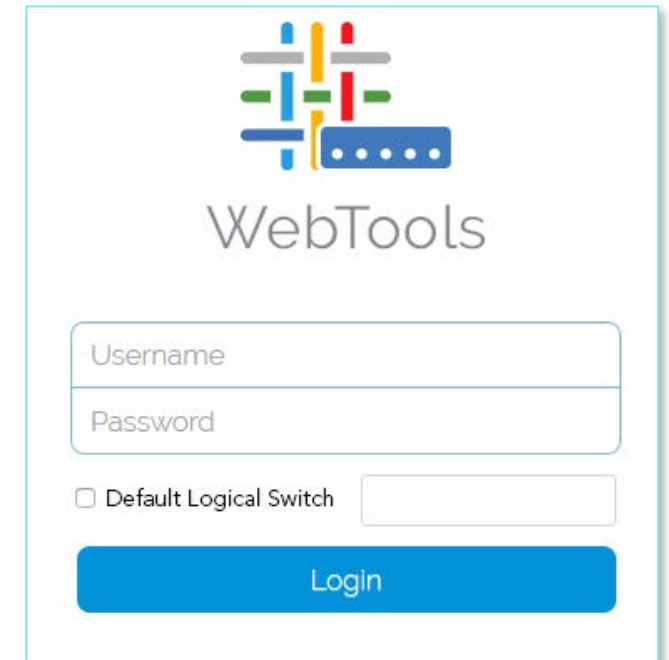
## Automatic Flow Learning and Integration with SANnav

- Physical and FC Layers Including:
  - SFPs
  - CRCs
  - Link Failures
  - Throughput
- IO performance and latency statistics including:
  - IOPS
  - First Response Time
  - Exchange Completion Time
  - Pending IO
- Integrated with MAPS support
  - Flow metric automatically imported into MAPS
  - MAPS monitor with pre-defined threshold
- Integrated with SANnav
  - Flow data directly steamed to SANnav
  - SANnav provides UI/UX for consuming flow data
  - SANnav define Flow Collection to be monitored



# FOS v9.0 New WebTools

- Modern HTML-based WebTools
  - No Java!! – avoids many compatibility and security vulnerability issue
  - Operating systems: Windows 10 Pro, Window 2019, RedHat 8.0 & 8.1
  - Browsers: Chrome, FireFox
- Modern UI technologies same as SANnav provide clean and consistent look and feel
  - Dashboard view provide health and performance summary
- Supports launching from SANnav UI
- FOS v9.0 supports most existing WebTools features:
  - Hardware and logical switch view
  - Switch overview and settings
  - Port settings and zone admin
  - Access Gateway settings
- Some legacy WebTools features are deprecated
  - SSH Client



# Summary of Features and Enhancements for FOS 9.0

## Autonomous

- Fabric Congestion Notification
- Gen 7 Traffic Optimizer

## Analytics

- Gen 6 IO Insight Flow Learning
- Gen 6 Flow data streaming to SANnav

## Automation

- REST authentication token
- User defined RBAC role
- New feature support

## Management & Infrastructure

- New Java-less WebTools
- Gen 7 Unified 10-bit addressing mode
- Fabric Zoning Lock
- 4MB zoning database size
- Kernel and open source software upgrade
- Firmware update mode
- Parallel SupportSave capture
- Generic USB drive support
- Command reset to factory default
- EULA acceptance
- Mandatory FICON Logical Switch

## Monitoring

- MAPS Global Quiet Time
- MAPS pause monitoring of entire switch
- MAPS System temperature monitoring
- FPI oversubscription port monitoring and alerting
- User configurable FPI thresholds
- FPI alert message indicating congested VC
- IF-Alias Object MIB support for port name
- Increase SNMP users to 12

## Security

- Gen 7 Secure Boot
- OpenSSL library upgrade with TLS 1.3
- Default maintenance account
- FC-SP compliant device port authentication
- Mandatory default password change
- Gen 7 Secure license certificate
- Counterfeit license protection enhancement
- Disable default SNMP users
- Login idle session timeout
- Windows 2016 Active Directory

**Brocade Gen 6 and Gen 7 Director, Switch, Extension, and Embedded Platforms**