Fibre Channel Coffee Talk Series

Simplified Management and Orchestration

Bhavin Yadav (Cisco) and Nishant Lodha (Marvell)

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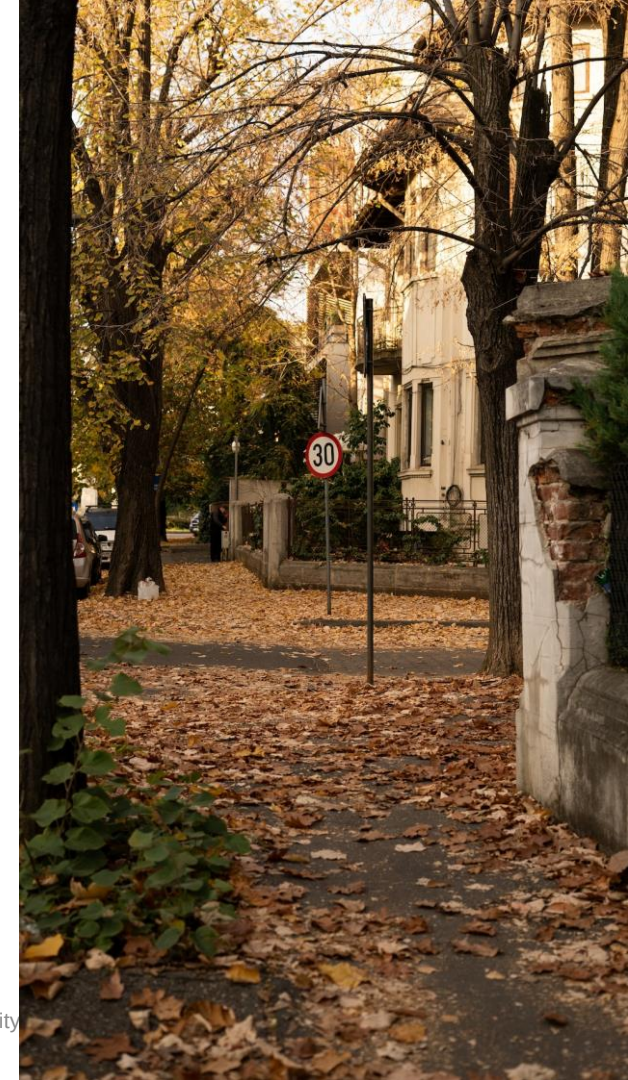
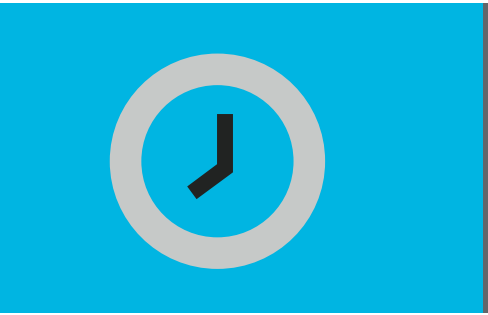
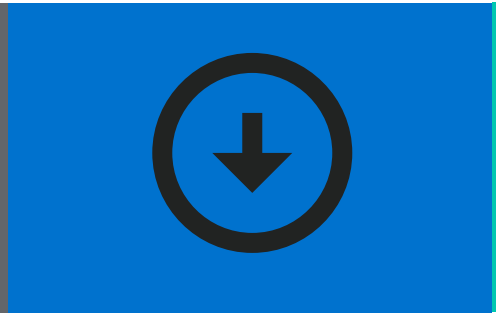
Agenda

- Infrastructure Management **Challenges**
- **FC HBA** Management
  - In Manufacturing and Test
  - At Pre-Production
  - In Production
- **FC Switch**
  - Congestion Mitigation and Automated Zoning
  - Powerful dashboards
- **Next Webinar**

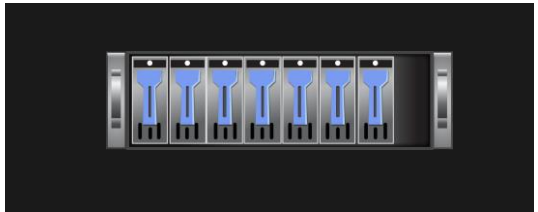


Infrastructure Management Challenges

Time to Deployment	Security Risks	Troubleshooting	Skillset
			
Manual Configuration and Deployment steps delay infrastructure deployment	Misconfiguration and inadequate configuration causes security loopholes	Lack of in-depth diagnostics and managing multiple software components	Specialized tool and training adds to cost and dependency of IT staff

Infrastructure Management is a top concern in the Datacenter including
Storage Fabrics

Storage Fabric Lifecycle Management - Comparison



Ethernet Storage Fabric		
Multiple Drivers – NIC + Storage Initial Config - IP, vLAN, DCB Firewall Ports Manual Storage Discovery	Initial Config: DCB, PFC, ETS Access Control: vLAN, ACLs Congestion Thresholds	Initial Config: IP, vLAN, DCB Setup Discovery Service Disk Config, LUN Masking
Fibre Channel Storage Fabric		
One Driver {No initial config} {Automatic login and discovery}	Access Control: Zoning	Disk Config LUN Masking

FC HBA Management and Orchestration

Test and Manufacturing

Lightweight scriptable utilities by operating system

Internal and External loopback tests

Pre-Production and Pre-OS

No Operating System / BMC Based Management via Integration into OEM Server Utilities

End to End Diagnostic Tests for complete health checks

Maintenance and Production

Firmware Update Utilities

Automatic Error Detection and Re-routing

Telemetry and Notifications

HBA Management – Manufacturing to Production

View HBA health and alerts in the dashboard and automate workflows with powerful cross platform scripting capabilities.

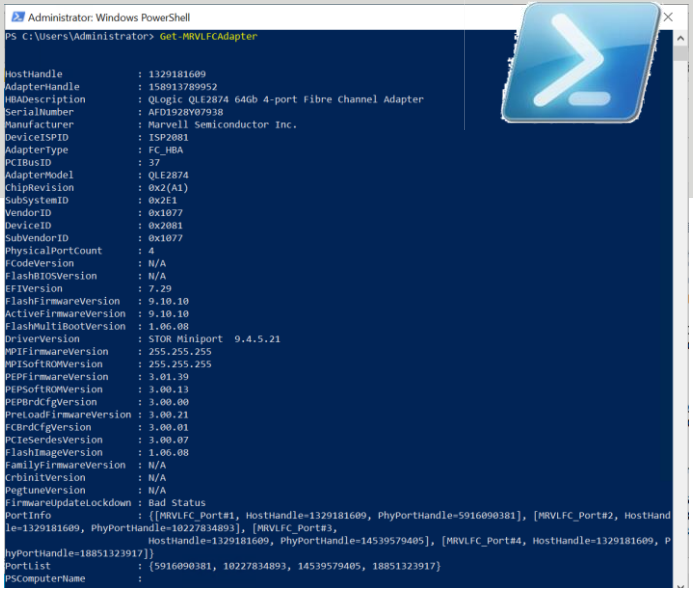


Image 1: PowerKit for QLogic Fibre Channel HBAs

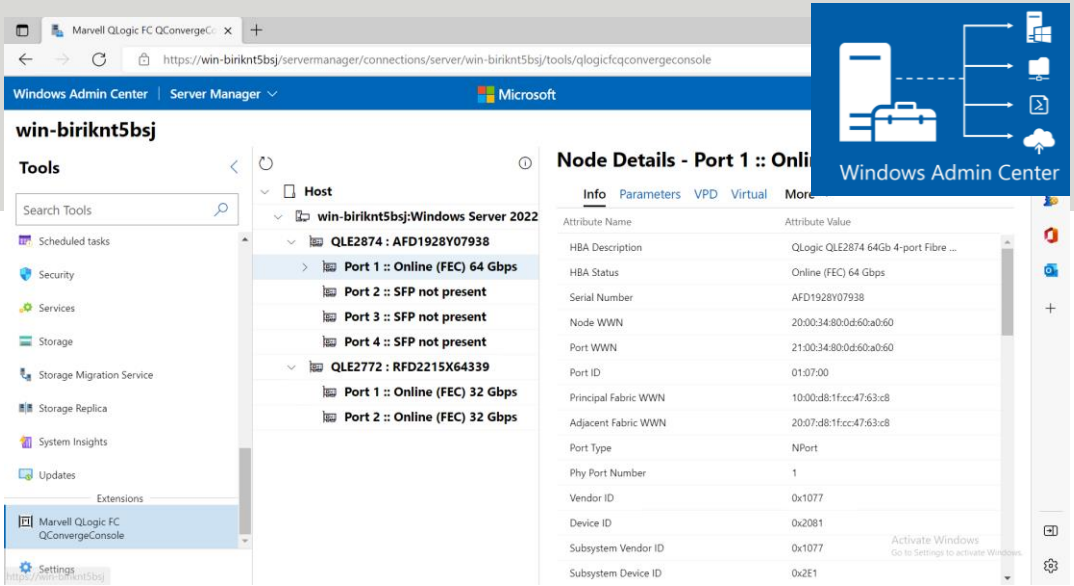


Image 2: Microsoft Windows Admin Center (WAC) Plug-in

Integration into Operating System and OEM Utils

Pre-OS and Pre-Boot Management

Boot from SAN Config

Adapter Configuration

Adapter Health and Temperature

In OS Management

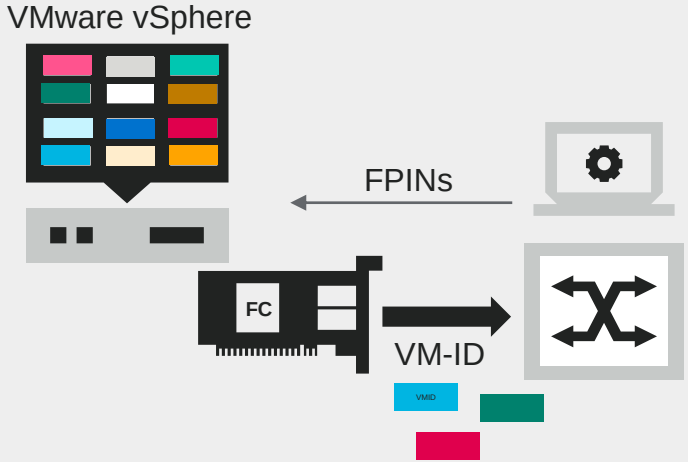
Routine Firmware Updates

Diagnostics

Logging

Telemetry (VM-ID) and Notifications (FPINs)

Standards based VM tagging and Fabric Notifications



- Traditional solutions obscure VM identify
- Marvell QLogic VM tags all traffic with VM-ID
- Ethernet NIC and Switches do not share health
- QLogic Rx Congestion and Link Notifications

Compatibility with Cisco Switches

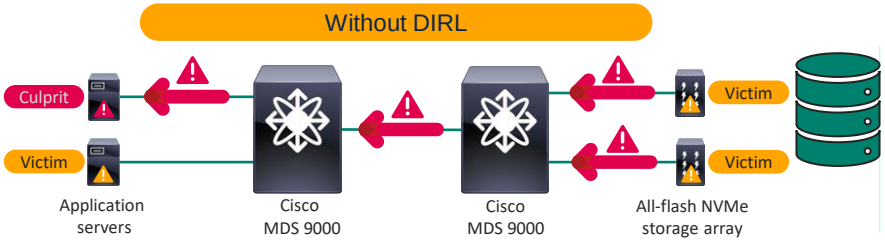
Automated congestion control using DIRL

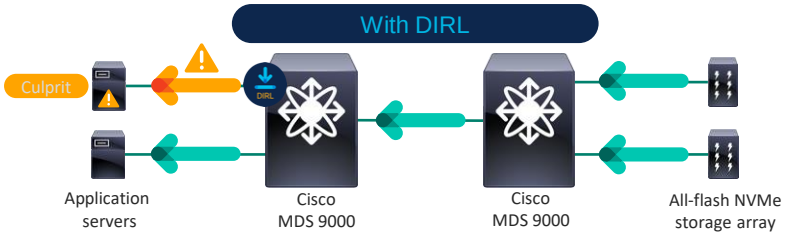
Limit the culprit devices using

Dynamic Ingress Rate Limiting (DIRL)

to accelerate the performance of all-flash NVMe storage arrays

Cisco Patented Unique





End-device independent
Upgrading of end-devices is not needed

Adaptive
DIRL dynamically adjusts as per the traffic profile of the host

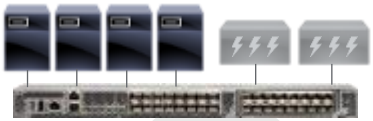
No side effects
Rate limits congested hosts only. Other non-congested hosts and storage ports are not impacted

Easy adoption
DIRL is available on MDS switches after a software-only upgrade.

Affordable
No additional license needed

Topology independent
DIRL works in edge-core, edge-core-edge, or collapsed core (single switch fabric) topologies

Cisco Autozone



I1
I2 T1
I3 T2
I4

Yesterday

Zoneset ZSET

Zone 11	I1 T2
I1 T1	Zone 22
Zone 21	I2 T2
I2 T1	Zone 32
Zone 31	I3 T2
I3 T1	Zone 42
Zone 41	I4 T2
I4 T1	
Zone 12	

Today

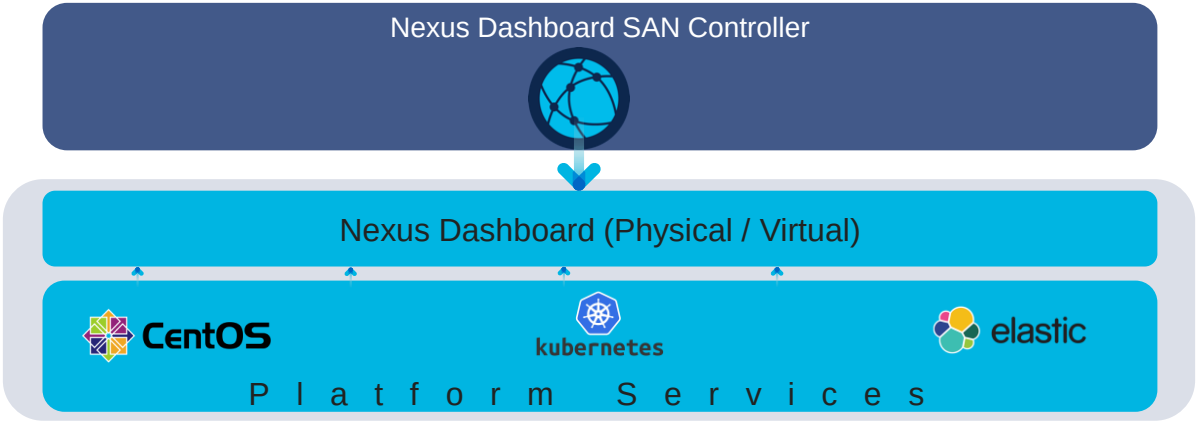
Step 1
Devices log-in

Step 2
Zones are created and activated.
Long manual task

Step 3
Initiators and targets
can communicate

autozone
Fully automated zoning

Cisco Nexus Dashboard

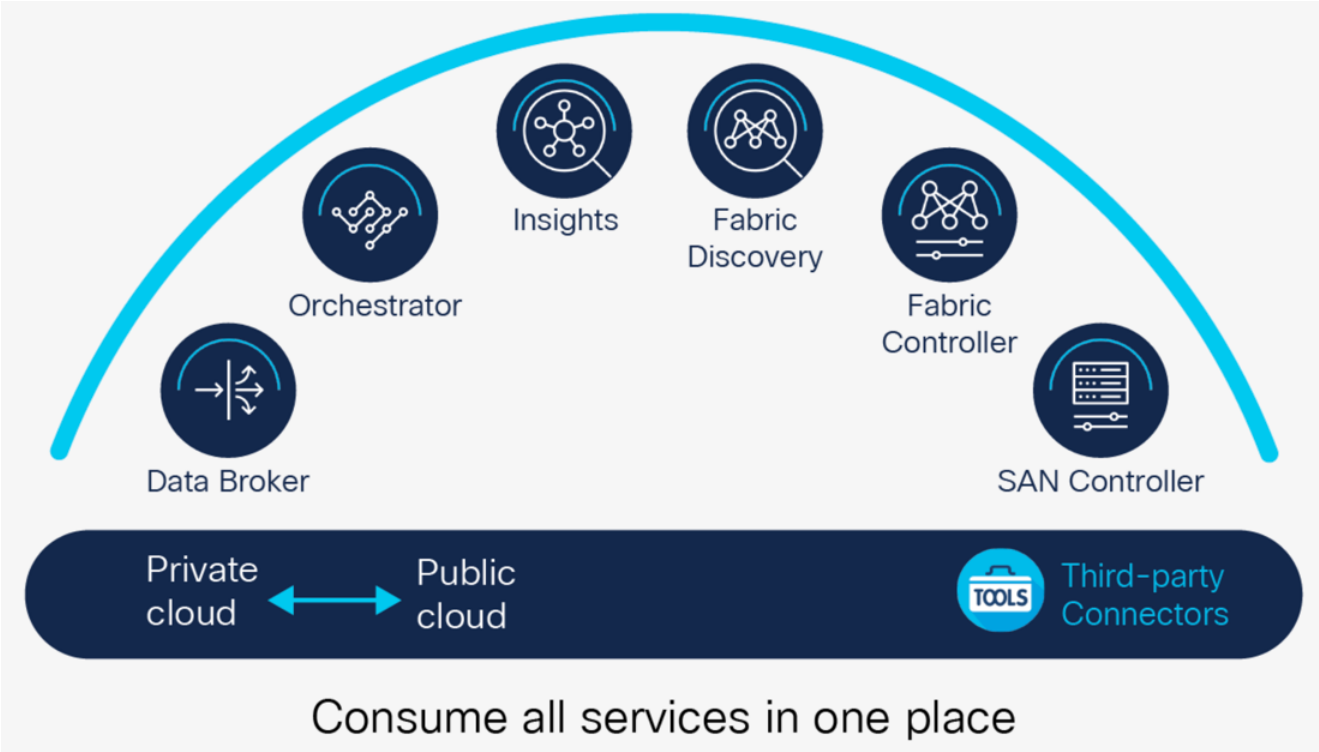


- Streamline data center automation
- Complete lifecycle management
- Constant monitoring of compliance
- Visualize multiple fabrics with intuitive topology
- Active redundancy using multi-node clustering

"Now, we can do maintenance and upgrade network software with minimal impact, and we can control all network updates programmatically rather than having to do them manually."

Gregory Shulov
Director of Global IT, Infinidat

Nexus Dashboard
Simple to automate, simple to consume



Key takeaways

1. Deploying and Managing FC SANs is significantly more hands-off vs. Ethernet

2. Marvell FC HBAs simplify lifecycle management via inbox drivers, integrated management and scriptable tools

3. Cisco MDS leads in innovation and automation for Storage networking

Cisco – Marvell Fibre Channel Coffee Talk Series

Series of 6 webinars focused on Fibre Channel technology/trends

Past: Overview of Fibre Channel → Today and Tomorrow (Watch)

Past: Meeting Customer Expectations with Predictable Performance (Watch)

Past: Delivering Secure & Reliable Storage Connectivity (Watch)

Today: Providing Simplified Management and Orchestration

Dec 7, 2022: Enabling SAN Visibility and Intelligence

Jan 18, 2023: Future Proof Fibre Channel

Join us for the next Fibre Channel Coffee Talk

- Enabling SAN Visibility and Intelligence
- Wednesday, Dec 7, 2022, 11AM ET / 8AM PT
- Register at: https://cvent.me/9ByyzA?EID=116185&ECID=19733&DTID=oemcvt001459

Resources

- Marvell StorFusion® - Smarter SAN Management
- Marvell QLogic® - Unified Adapter Management
- Cisco DIRL:
  - Solution overview on DIRL
  - Miercom validation report of DIRL
- Cisco Autozone
  - Automatic zoning on Cisco MDS9000 switches using Autozone:
- Nexus Dashboard Fabric Controller video series