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#CiscoLive



The bridge to possible

# Real-time NVMe and SCSI visibility using Cisco SAN Analytics

Kiran Ranabhor  
MDS Product Manager  
PSODCN-2355

# Cisco Webex App

## Questions?

Use Cisco Webex App to chat with the speaker after the session

## How

- 1 Find this session in the Cisco Live Mobile App
- 2 Click “Join the Discussion”
- 3 Install the Webex App or go directly to the Webex space
- 4 Enter messages/questions in the Webex space

Webex spaces will be moderated by the speaker until June 17, 2022.



<https://ciscolive.ciscoevents.com/ciscolivebot/#PSODCN-2355>



# Agenda

- Introduction
- Cisco MDS Innovation
- Accelerating SAN Performance
- Cisco Nexus Dashboard Fabric Controller for MDS
- Cisco SAN Innovation Summary
- Summary

# Customer Initiatives



Deliver App Experiences Users Love



Securely Expand to Multi cloud



Simplify Security & Compliance



Accelerate IT Operations



Deliver the Future of Work

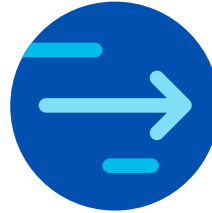
# Modernize the data center with Cisco



Leading storage  
networking provider



Reduce cost of ownership  
with investment protection



Data integrity and  
security with upgrade  
path to new technology



In-line SAN analytics  
and insights

# Investment Protection

64G FC Module and NVMe Enhanced  
SAN Analytics

## Multilayer Directors



MDS-9718



MDS-9710



MDS-9706

16 Gbps

32 Gbps

64 Gbps

## Multilayer / Multiservice Switches



MDS9132T



MDS9148T



MDS9396T



MDS9220i

32 Gbps

Integrate storage networking for applications ranging  
from small fabrics to large data centers.

Speeds and capabilities  
to cover all deployments

16/32/64G

The right switch  
for the right deployment

On-chip  
Line Rate  
SAN  
Analytics

Native real time visibility  
on 32/64G switches

SCSI/NVMe

Concurrent SCSI/FC  
and NVMe/FC workloads

# SAN Analytics

On-chip line rate analytics on all 48 ports/LC



Real-time with NPU acceleration



SCSI/FC and NVMe/FC traffic



Deep packet visibility



Detailed views for performance enhancement



Built for infrastructure enhancement with flexibility and scalability



# Accelerating SAN Performance

# Congestion Management

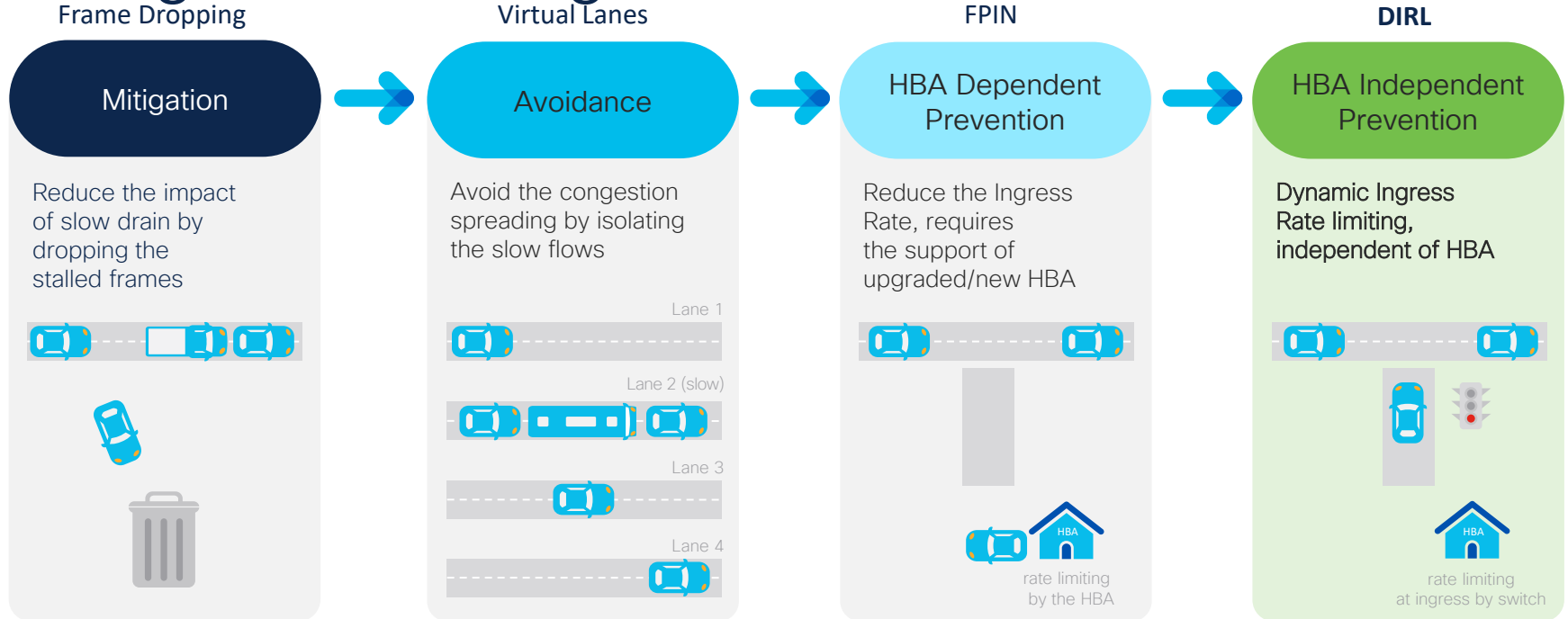
Congestion Isolation/Recovery  
using Virtual Lanes

Fabric Performance  
Impact Notification

Dynamic Ingress  
Rate Limiting

Industry's First HBA independent Slow-Drain Prevention with Dynamic Ingress Rate Limiting

# Congestion Management Innovation



Prevent SAN Congestion with MDS DIRL – Cisco exclusive capability/patent

Assuring application experiences

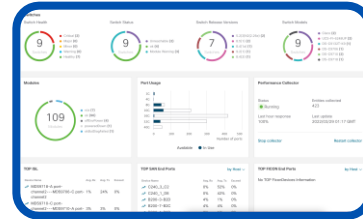
# Cisco Nexus Dashboard Fabric Controller for MDS

# Nexus Dashboard Fabric Controller - SAN

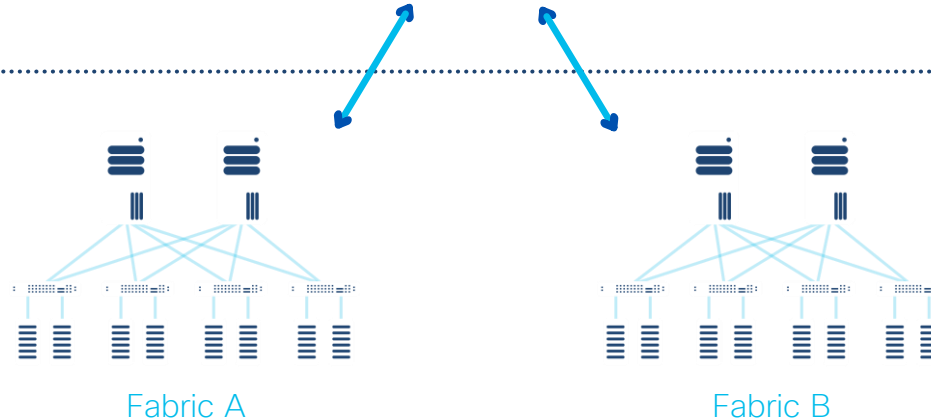
## Provisions and monitors



Manages and monitors  
Cisco MDS and Nexus  
switching and integrates  
with Cisco UCS



Single Pane of glass for  
day-to-day SAN management  
and SAN Analytics



# Nexus Dashboard Fabric Controller – SAN

## Innovation Summary



Dashboards to help summarize current state across all fabrics



SAN Insights—Visualizes fully integrated SAN Analytics data



SAN Performance trending with vCenter integration



SAN Insights shows end-to-end path from Source to LUN



Modular software platform with true High Availability architecture



SAN Insights supports both SCSI and NVMe FC flows



Zoning, Event Policy, Event Management, FCIP Configuration



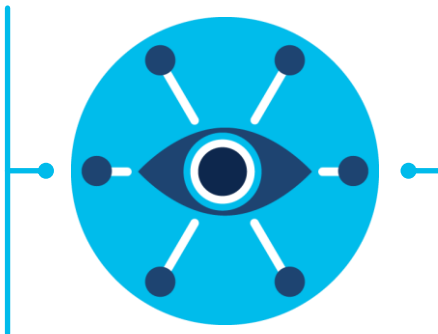
Backup and restore

# Nexus Dashboard Fabric Controller - SAN

## Visibility & analytics with SAN Insights

### Host and flow path visualization

- NDFC provides a view of the discovered hosts and end-to-end flows
- Path from source to destination shown in physical topology
- Provides information to show the congestion points in the path



### Auto learning

- NDFC aggregates hundreds of thousands of auto learned FC flows
- No need to program source and destination information or protocol type
- Integrates slow drain metrics from end-to-end

## Benefits

High level of network visibility for diagnostics

Monitoring and management of SAN networks

# Cisco SAN Innovation Summary



# Cisco Innovation Summary



Cisco Solves the decade old Congestion problem with MDS DRL and SAN Analytics



Sets a new benchmark for all FC SANs



Unprecedented Investment Protection and uptime



SAN Insights on Cisco Nexus Dashboard

# Cisco SAN Insights Discovery (SID)

# Cisco SAN Insights Discovery

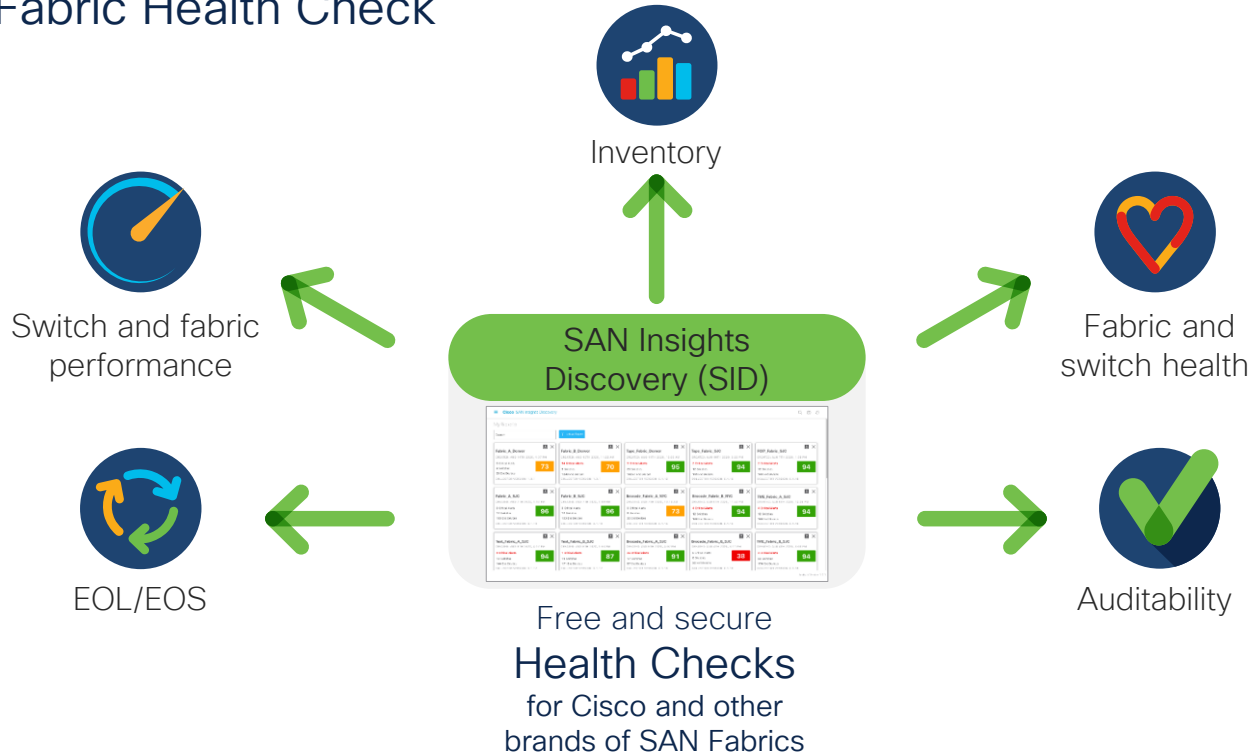
## Cloud-based SAN Health Check tool



Easy to Use SAN Health Check Tool

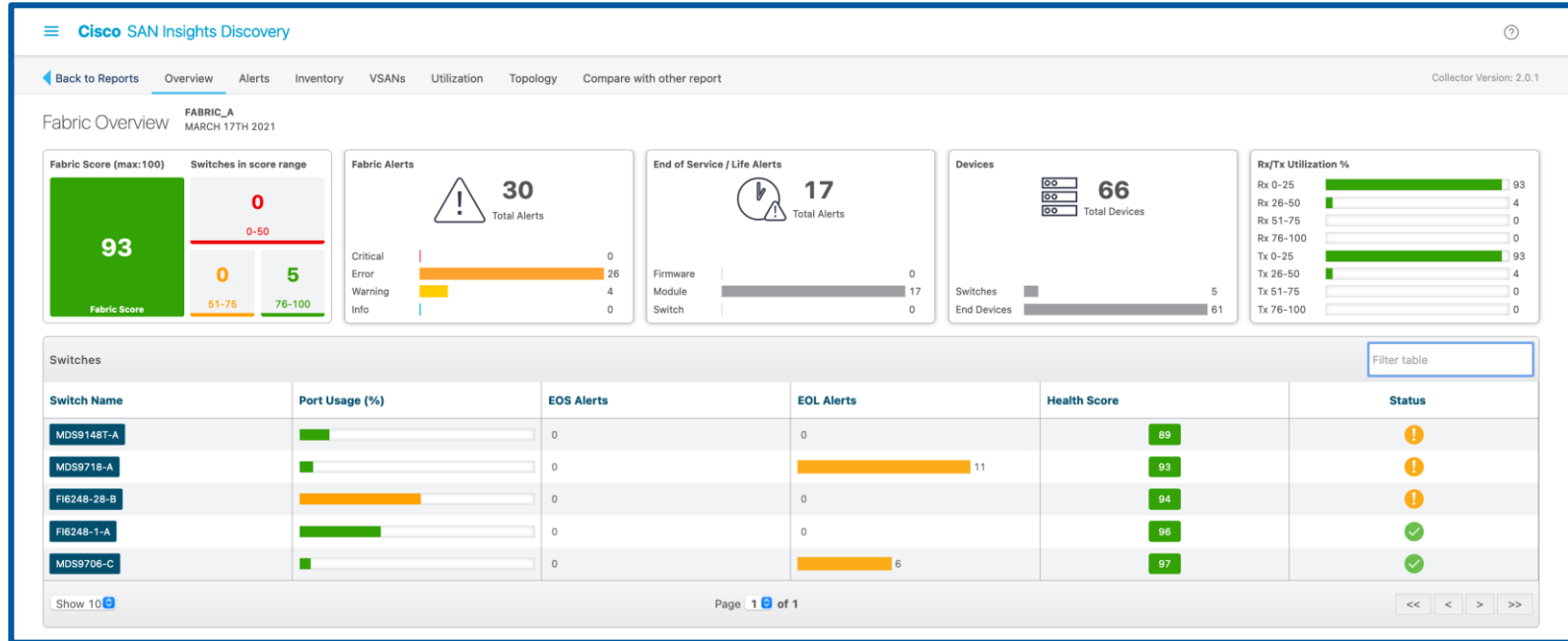
# Cisco SAN Insights Discovery

## Modern Fabric Health Check



Free Cloud-Based SAN Health Check Tool

# Cisco SID – Report Overview



For more information visit <https://www.cisco.com/go/san>

The screenshot shows the Cisco SAN landing page. At the top is the Cisco logo and navigation links: Products and Services, Solutions, Support, Learn, Partners, Explore Cisco, and a search bar. The main header features a background image of server racks with the title 'Storage Area Networking (SAN)' and the text 'Cisco storage networks deliver superior 64G Fibre Channel, NVMe enhanced analytics and investment protection.' Below this are two buttons: 'See what's new' and 'Watch video (3:35)'. A secondary navigation bar includes links for Benefits, SAN Innovation, Solutions, Products, Analysts, Assess Fabric Health, Services, Resources, and a 'Partner Help' dropdown. The main content area is titled 'Why Cisco Storage Area Networking?' and contains four columns, each with an icon and a description:

- Investment protection** (Dollar sign icon): Solutions offer 64G-capable speed and high performance for NVMe/FC and all-flash array storage environments.
- Deep visibility** (Target icon): Built-in hardware-based analytics FC-SCSI/NVMe/FC provide fast troubleshooting and improved operations.
- IT Automation** (Gears icon): Reduce OPEX with DevOps tools, including Ansible, for faster end-to-end provisioning.
- Security** (Fingerprint icon): Cisco MDS 9000 Series Switches come with industry leading security built in.

At the bottom center is a 'Read white paper' button.

Cisco storage networks deliver superior 64G Fibre Channel, NVMe enhanced analytics and investment protection.

# Technical Session Surveys

- Attendees who fill out a minimum of four session surveys and the overall event survey will get Cisco Live branded socks!
- Attendees will also earn 100 points in the Cisco Live Game for every survey completed.
- These points help you get on the leaderboard and increase your chances of winning daily and grand prizes.



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## Pay for Learning with Cisco Learning Credits

(CLCs) are prepaid training vouchers redeemed directly with Cisco.



## Learn

### Cisco U.

IT learning hub that guides teams and learners toward their goals

### Cisco Digital Learning

Subscription-based product, technology, and certification training

### Cisco Modeling Labs

Network simulation platform for design, testing, and troubleshooting

### Cisco Learning Network

Resource community portal for certifications and learning



## Train

### Cisco Training Bootcamps

Intensive team & individual automation and technology training programs

### Cisco Learning Partner Program

Authorized training partners supporting Cisco technology and career certifications

### Cisco Instructor-led and Virtual Instructor-led training

Accelerated curriculum of product, technology, and certification courses



## Certify

### Cisco Certifications and Specialist Certifications

Award-winning certification program empowers students and IT Professionals to advance their technical careers

### Cisco Guided Study Groups

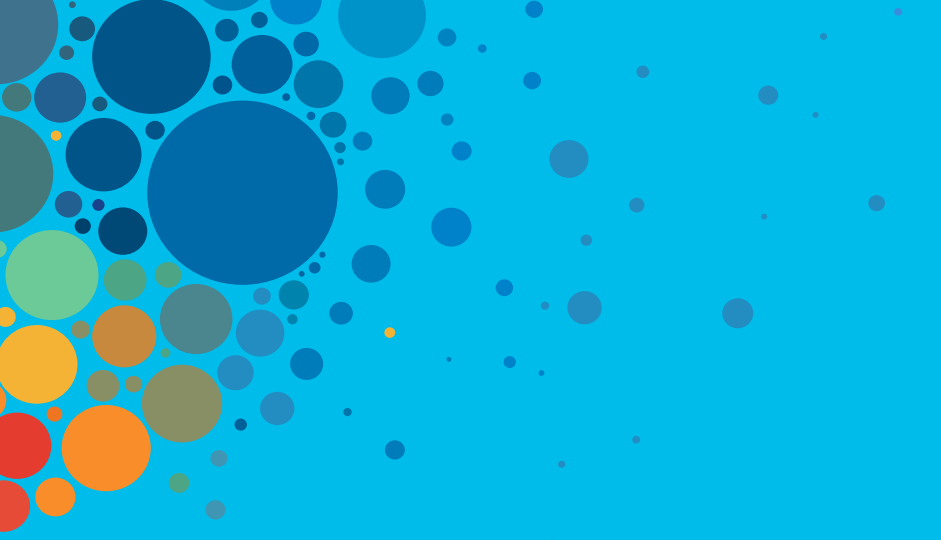
180-day certification prep program with learning and support

### Cisco Continuing Education Program

Recertification training options for Cisco certified individuals

Here at the event? Visit us at **The Learning and Certifications lounge at the World of Solutions**





# Continue your education

- Visit the Cisco Showcase for related demos
- Book your one-on-one Meet the Engineer meeting
- Attend the interactive education with DevNet, Capture the Flag, and Walk-in Labs
- Visit the On-Demand Library for more sessions at [www.CiscoLive.com/on-demand](https://www.CiscoLive.com/on-demand)



The bridge to possible

# Thank you

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