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The bridge to possible

# Day 2 Automated Dashboard for Multi-domain Monitoring and Observability

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# Become a Cross-Domain Dashboard Expert

# Objective

Introduce the outcome and get hands-on experience with the creation of the dashboard

Clone the GitHub repo, understand the code structure, architecture and API used

Create Mongodb credentials

Update credential.py

Execute the dbpush.py and see how the objects are created and populated in the mongodb instance

See how to create the front-end using mongodb charts

# Cisco Webex App

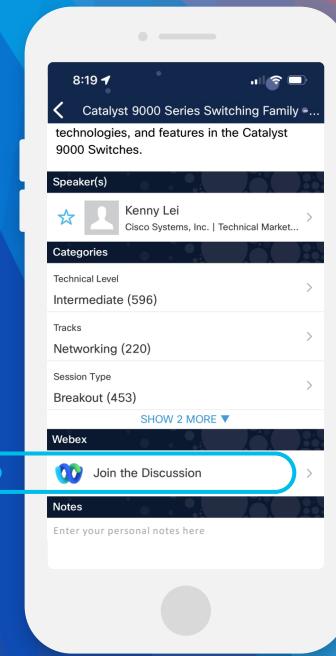
## Questions?

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 February 23, 2024.



<https://ciscoevents.com/ciscolivebot/DEVWKS-2991>



**Chuck Robbins**  
@ChuckRobbins

...

Great to be in Miami w/ [@CiscoPartners](#) for our annual partner summit...  
In my 25 years at Cisco I've never been more excited about the  
opportunity we have to drive collective innovation together.

# What's in the Box



## Outcomes

3 main outcomes:  
Alerting, Monitoring, and  
Troubleshooting



## Topology

Catalyst Centre, SD-WAN and  
ThousandEyes



## Code

Python, JSON, and Cisco APIs



## Dashboard

Mongodb Cloud and Charts

# Outcomes



**Alerting:** Custom Ticketing, Reporting, Notifications, and SLOs

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**Troubleshooting:** Auto generated Controller url to directly go into the issue for detailed analysis

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**Monitoring:** Modern Single-Pane-of-Glass Dashboard – Alarms, Network, and Application Health

# Alerting



## Custom Ticketing, Reporting and SLOs

Customizable issue reporting in ServiceNow based on specific triggers and Service Level Objectives, with cross domain context enrichment.

## Notifications

Be able to send Webex notifications for any change in the dashboard elements. This allows near real time response to any degradation in service or to ensure that tickets are closed in a timely manner.

# Troubleshooting



Auto generated Controller url to directly go into the issue for detailed analysis, reducing UI clicks.

Too many clicks  
to perform  
simple tasks

Customer Feedback  
in Cisco Live

severity	summary	name	url
critical	process-restart	vmanage	<a href="https://10.1.100.11/#/app/monitor/alarms/details/65e6a0cf-2d0c-4d7a-95cd-d">https://10.1.100.11/#/app/monitor/alarms/details/65e6a0cf-2d0c-4d7a-95cd-d</a>
critical	process-restart	vmanage	<a href="https://10.1.100.11/#/app/monitor/alarms/details/c282bb84-a1c6-4a80-84f9-2">https://10.1.100.11/#/app/monitor/alarms/details/c282bb84-a1c6-4a80-84f9-2</a>
critical	rulename	DC-8kv	<a href="https://10.1.100.11/#/app/monitor/alarms/details/23153895-539b-43cb-b558">https://10.1.100.11/#/app/monitor/alarms/details/23153895-539b-43cb-b558</a>

status ↴	deviceFamily	name	reachabilityHealth	uuid	url
moderate	vedge	RS1001-BR-WAN1	reachable	ISR4331/K9-FDO2116130M	<a href="https://10.1.100.11/?_open=ext#/app/monitor/devices/dashboard/health?system">https://10.1.100.11/?_open=ext#/app/monitor/devices/dashboard/health?system</a>
moderate	vedge	CPS-WANEgde1	reachable	CSR-337C2D1B-3F54-F921-BCD6-043219E2FC9B	<a href="https://10.1.100.11/?_open=ext#/app/monitor/devices/dashboard/health?system">https://10.1.100.11/?_open=ext#/app/monitor/devices/dashboard/health?system</a>
positive	switches_and_hubs	CPS-Edge2	reachable	4c9a1371-86f1-4d6b-b9ba-3f7ea7f669f9	<a href="https://10.1.100.4/dna/assurance/device/details?id=4c9a1371-86f1-4d6b-b9ba-3f7ea7f669f9">https://10.1.100.4/dna/assurance/device/details?id=4c9a1371-86f1-4d6b-b9ba-3f7ea7f669f9</a>

# Modern Single-Pane-of-Glass Dashboard



Alarms aggregated from  
Cisco Catalyst Centre and  
SD-WAN

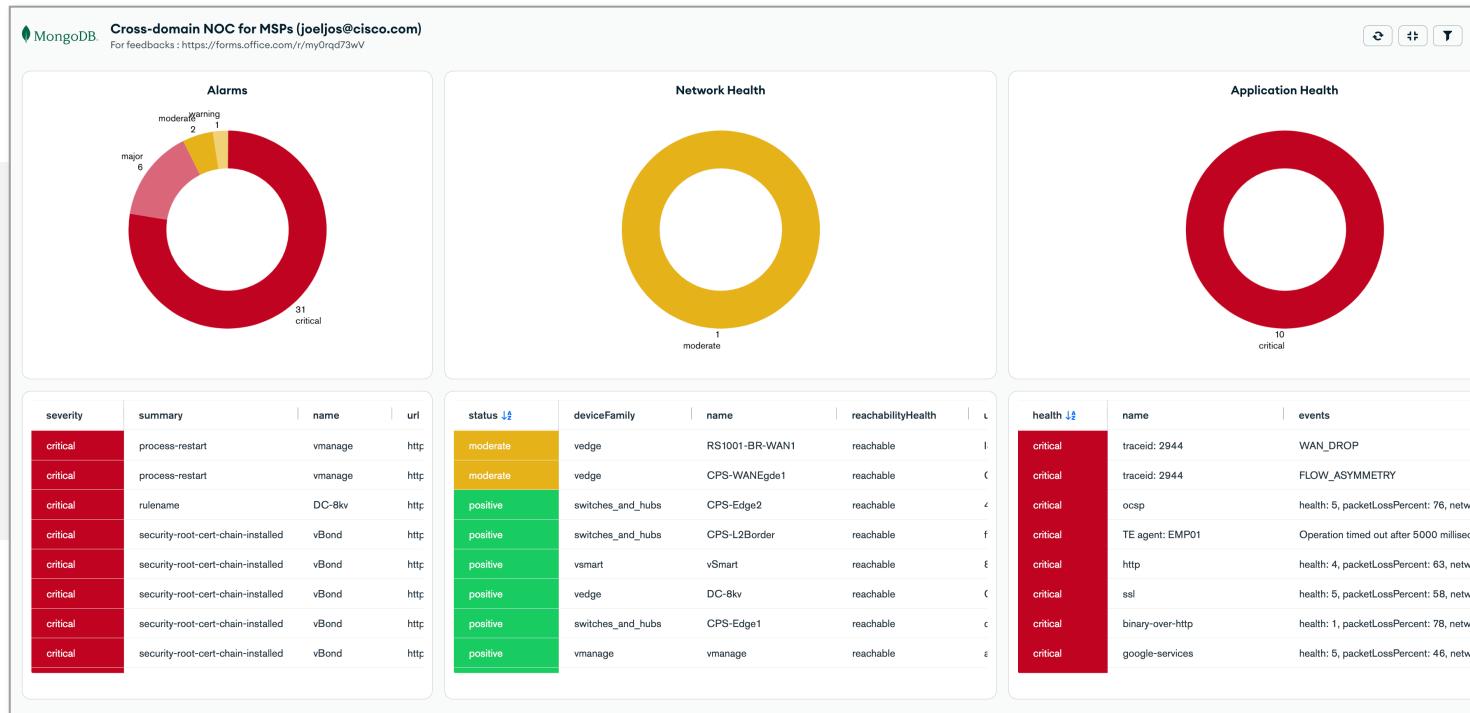


Network health is an  
aggregation from Cisco Catalyst  
Centre and  
SD-WAN devices

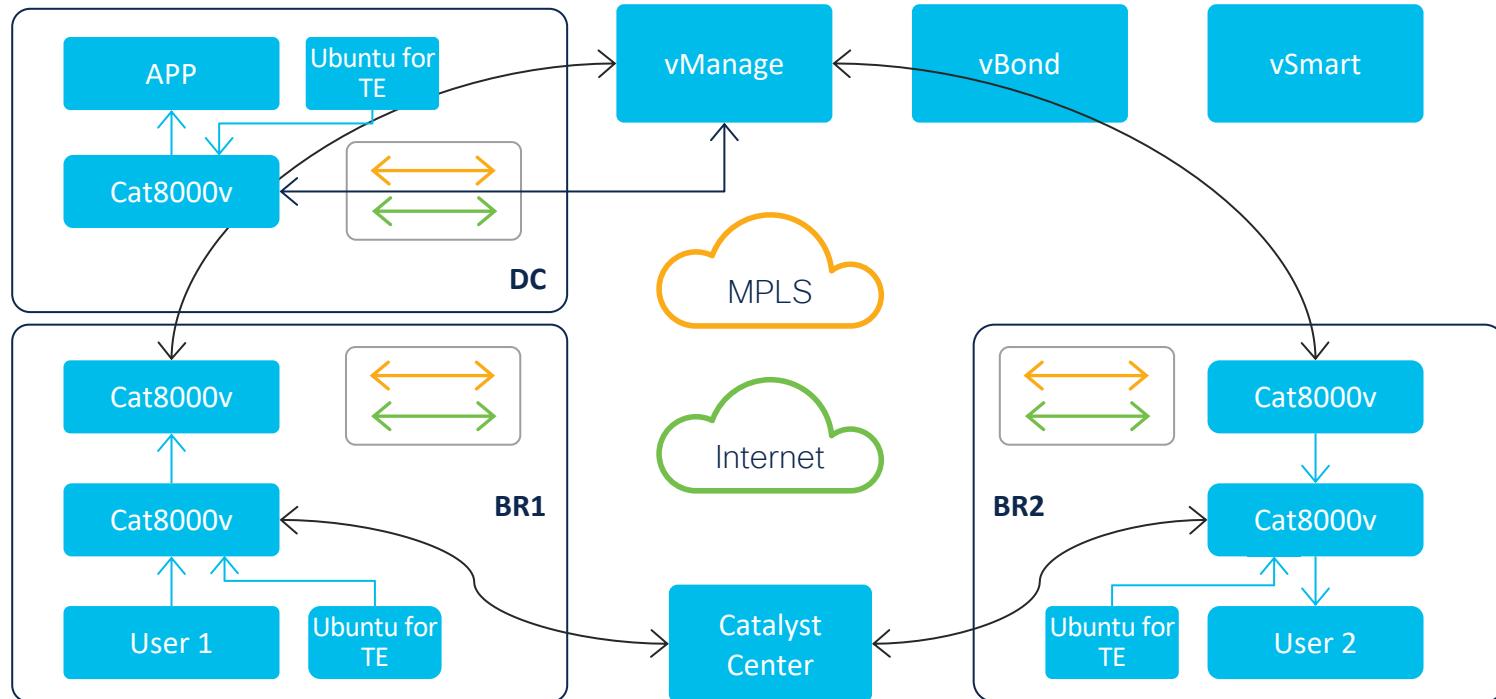


Application health shows all  
the application flows that  
have health issues as flagged  
by Cisco Catalyst Centre, SD-  
WAN,  
and ThousandEyes

# Modern Single-Pane-of-Glass Dashboard



# Topology

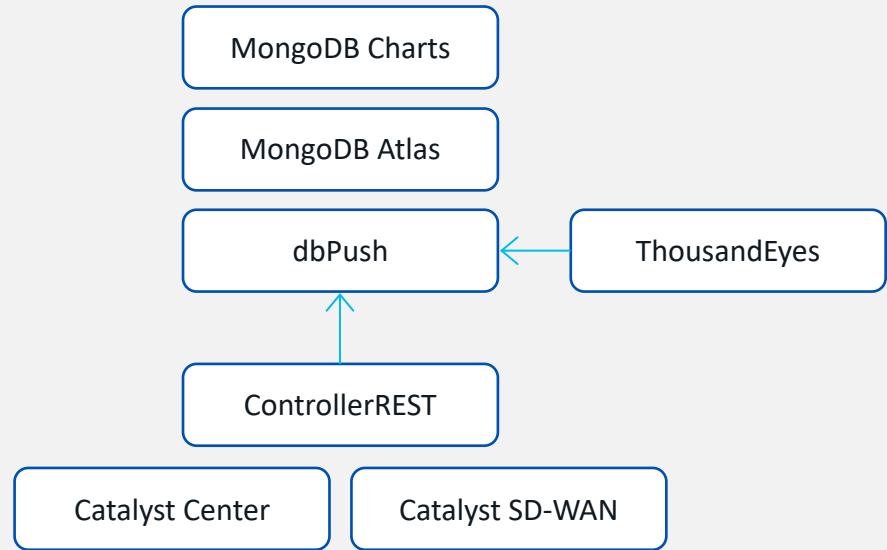


# Code

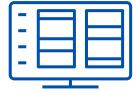


**Repo:** <https://github.com/CiscoSE/GPRS-MSP-Dashboard>

Programming Language used is Python and the data model is based on JSON



# Dashboard



**URL:** <https://charts.mongodb.com/charts-global-msp-noc-vktwd/public/dashboards/643d02a2-33ac-4db0-82cc-1e76be904285>

## MongoDB Atlas

- MongoDB Atlas is a fully managed cloud database service provided by MongoDB
- It allows for easy deployment, operation, and scaling of MongoDB databases in the cloud

## MongoDB Charts

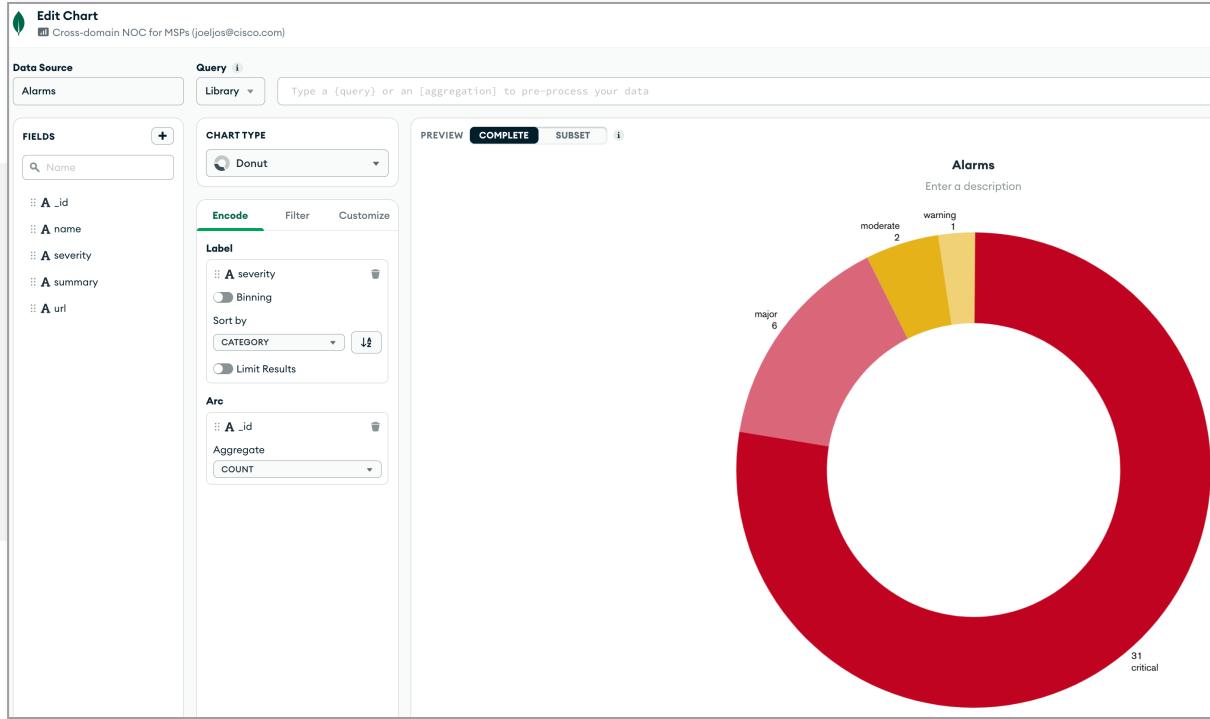
- MongoDB Charts is a data visualization tool offered within MongoDB Cloud
- Allows users to create, share, and embed visual representations of MongoDB data
- Supports a wide variety of chart types, including bar, column, line, area, scatter, heatmaps, and more
- No need to move data into other systems or leverage third-party visualization tools
- It offers a drag-and-drop interface for easy creation of charts

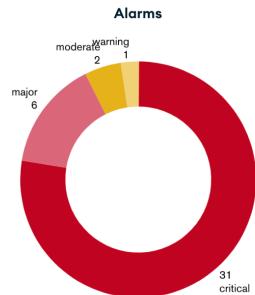
# MongoDB Atlas

The screenshot shows the MongoDB Atlas interface. The top navigation bar includes 'Atlas', 'Cisco System...', 'Access Manager', 'Billing', 'All Clusters', 'Get Help', and a user profile for 'Joel'. Below the navigation is a secondary header with 'Global MSP NOC' (selected), 'Data Services' (highlighted in green), 'App Services', and 'Charts'. The main left sidebar has sections for 'Overview', 'DEPLOYMENT' (selected), 'Database', 'SERVICES' (selected), 'Device Sync', 'Triggers', 'Data API', 'Data Federation', 'Search', 'Stream Processing', 'SECURITY' (selected), and 'Backup'. Under 'Database', there is a '+ Create Database' button and a search bar for 'Search Namespaces'. The 'testdb' database is selected in the 'SERVICES' section. The 'Collections' tab is active, showing the following data:

Collection Name	Documents	Logical Data Size	Avg Document Size	Storage Size	Indexes	Index Size	Avg Index Size
Alarms	40	7.73KB	198B	36KB	1	36KB	36KB
ApplicationHealth	9	2.12KB	242B	36KB	1	36KB	36KB
DNACalarms	0	0B	0B	24KB	1	24KB	24KB
DeviceHealth	12	4.08KB	348B	36KB	1	36KB	36KB
NWPevents	0	0B	0B	36KB	1	36KB	36KB
NPevents	0	0B	0B	24KB	1	24KB	24KB

# MongoDB Charts

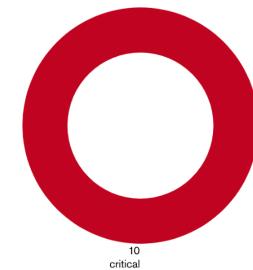




Network Health



## Application Health



severity	summary	name	url
critical	process-restart	vmanage	http://
critical	process-restart	vmanage	http://
critical	rulenam e	DC-8kv	http://
critical	security-root-cert-chain-installed	vBond	http://
critical	security-root-cert-chain-installed	vBond	http://
critical	security-root-cert-chain-installed	vBond	http://
critical	security-root-cert-chain-installed	vBond	http://
critical	security-root-cert-chain-installed	vBond	http://

status	deviceFamily	name	reachabilityHealth	lastPing
moderate	vedge	RS1001-BR-WAN1	reachable	10:00 AM
moderate	vedge	CPS-WANEgde1	reachable	09:55 AM
positive	switches_and_hubs	CPS-Edge2	reachable	10:00 AM
positive	switches_and_hubs	CPS-L2Border	reachable	09:55 AM
positive	vsmart	vSmart	reachable	10:00 AM
positive	vedge	DC-8kv	reachable	09:55 AM
positive	switches_and_hubs	CPS-Edge1	reachable	09:55 AM
positive	vmanage	vmanage	reachable	10:00 AM

health ↴	name	events
critical	traceid: 2944	WAN_DROP
critical	traceid: 2944	FLOW_ASYMMETRY
critical	ocsp	health: 5, packetLossPercent: 76, net
critical	TE agent: EMP01	Operation timed out after 5000 millise
critical	http	health: 4, packetLossPercent: 63, net
critical	ssl	health: 5, packetLossPercent: 58, net
critical	binary-over-http	health: 1, packetLossPercent: 78, net
critical	google-services	health: 5, packetLossPercent: 46, net

# User Story

Send your requests for future outcomes in this user story format to [joeljos@cisco.com](mailto:joeljos@cisco.com)

[A. CORE USER] If needs to impr [B. PRIMARY NEED] able them to support an increasing threat surface and reduce inventory patch times, because it take [C. SURPRISING USER-VALIDATED INSIGHT] right resource allocated to engage in the patching activity. The increasing number of devices and features that are getting enabled, is leading to more complexity in the patch detection and compliance.

Today, [D. HOW CURRENT SOLUTIONS FALL SHORT] When the advisory is received – via email or a visit to the OEM website, there is a substantial effort involved to get the right person assigned to the activity. There requires a huge amount of time to be spend in understanding the number of devices affected by the advisory and then conveying it to the right personal. Following up with the cross functional teams and converging on the appropriate maintenance window is the other problem that takes away huge amount of time from the productivity.

As a result of this, our solution absolutely must: provide a efficient way to collect the security advisory and understand the devices that are present in the Bank that is affected [1. PRIMARY PROBLEM TO SOLVE], when and within the different teams to reduce the lead time required in the patching activity.

While being able to scale-up easily to support increasing Infrastructure elements, plus, if [2. SECONDARY PROBLEM TO SOLVE], would help with arriving at the right maintainance wind [3. TERTIARY PROBLEM TO SOLVE].

# Fill out your session surveys!



Attendees who fill out a minimum of four session surveys and the overall event survey will get Cisco Live-branded t-shirt (while supplies last)!



All surveys can be taken in the Cisco Events Mobile App or by logging in to the Session Catalog and clicking the "Attendee Dashboard" at <https://www.ciscolive.com/emea/learn/sessions/session-catalog.html>

# Next steps

Visit our Partner Managed Services booth (A02) in the World of Solutions



**Ready to get started or have questions?**

Reach out to us at:

[PartnerManagedServices@cisco.com](mailto:PartnerManagedServices@cisco.com)

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## Attend our sessions at Cisco Live Amsterdam

Monday, February 5th	Speaker	CET
DEWWKS-2991 – Day 2 Automated dashboard for multi-domain monitoring and observability	Joel Jose	9:30 – 10:15
DEVNET-2011 – Cloud Native Application Observability API: An Introduction for Beginners	Anuj Modi	14:30 – 15:15
Tuesday, February 6th	Speaker	CET
DEWWKS-2768 – Demystifying Cisco FSO Stack APIs	Anuj Modi	12:30 – 13:15
PSOMS-1121 – Why should you consider Outcome-Based Security? – Managed Security Services	Vijayanand CD	Cisco Theater 12:50 – 13:20
PSOMS-1122 – Bringing Managed Services to Life – From Ideation to Outcomes	Silvia Reis	Cisco Theater 16:50 – 17:20
Wednesday, February 7th	Speaker	CET
PSOMS-1123 – From Platform to Profit: How MSPs can Leverage Cisco to Deliver Performance, Impact, and Experience	Ken Seitz	Cisco Theater 9:30 – 10:00
BRKSEC-1645 – Struggling Operating Security in Complex Distributed and Multi-Org Environments? Cisco Has Your Back!	Vijayanand CD Marival Cruz	12:30 – 13:30
Thursday, February 8th	Speaker	CET
PSOMS-1124 – Managed Services: How to Make the Most of the Meraki Platform	Alessio Valdez	Cisco Theater 12:10 – 12:40

**Missed our earlier sessions?  
Watch the recording after Cisco Live!**



The bridge to possible

# Thank you

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