The bridge to possible

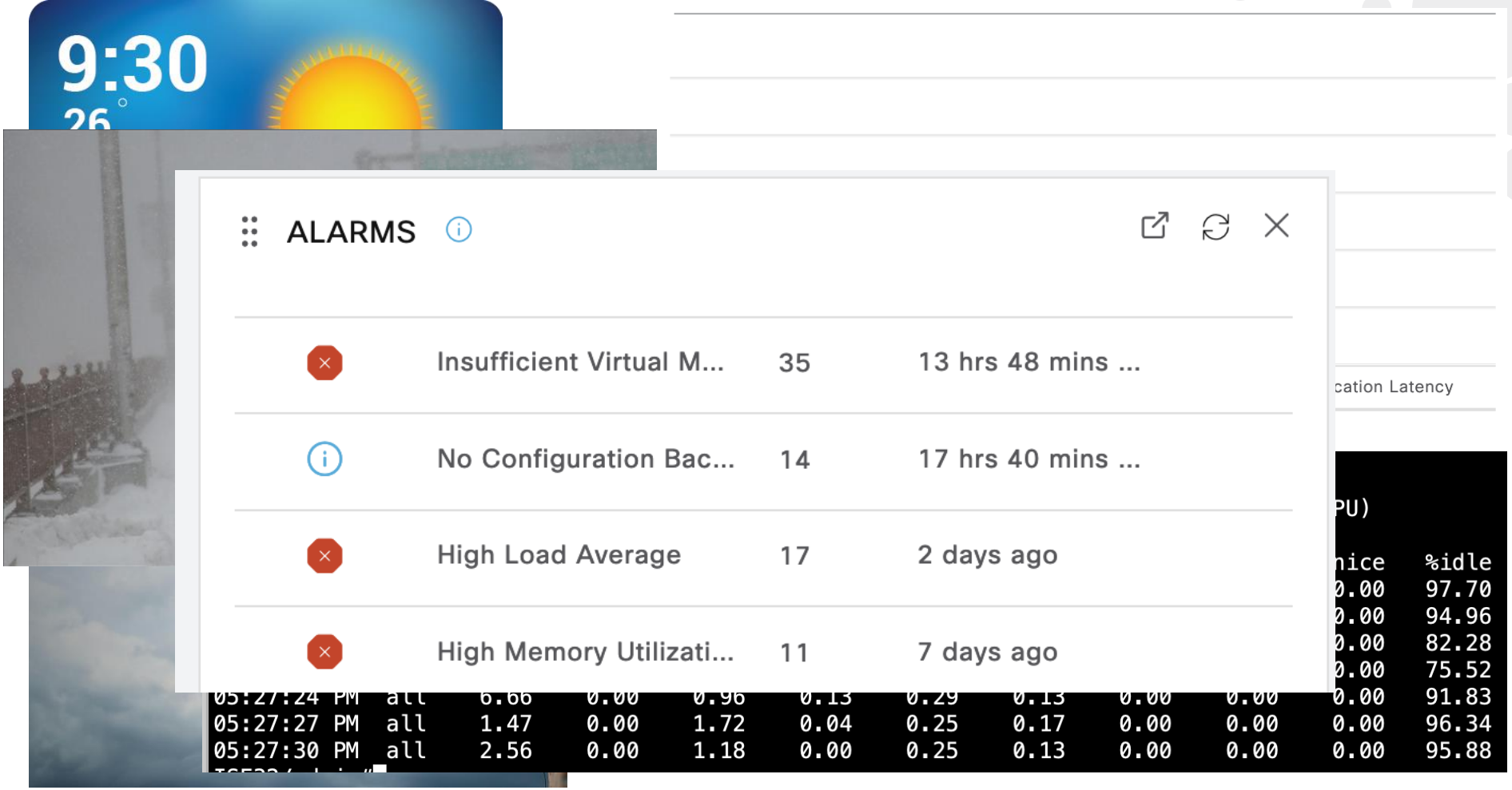
Next Generation ISE Telemetry

Monitoring and Custom Reporting

Emmanuel Cano, Security Consulting Engineer
@EmmanuelCano

cisco Live!

DEVNET-2035



Agenda

- Why do we need next-gen Monitoring and reporting tools?
- Infrastructure Monitoring + Demo
- Log Analytics + Demo
- Data Connect + Demo
- Wrap-Up and Next Steps

Cisco Webex App

Questions?

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with the speaker after the session

How

1. Find this session in the Cisco Live Mobile App
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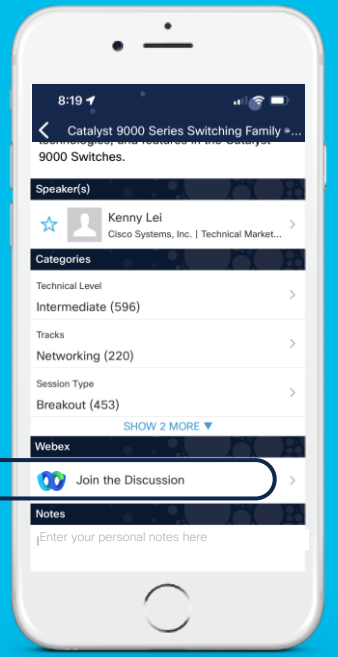
Webex spaces will be moderated until February 24, 2023.



https://ciscolive.ciscoevents.com/ciscolivebot/#DEVNET-2035

For your Reference!

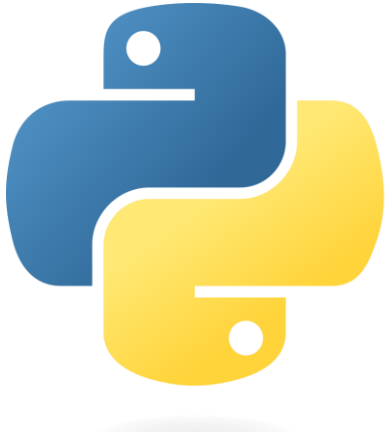
Slido: How do you monitor your ISE Hardware resources, performance and processes?

slido

- Join at
- Slido.com
- #3469 778

Do you recognize these logos?

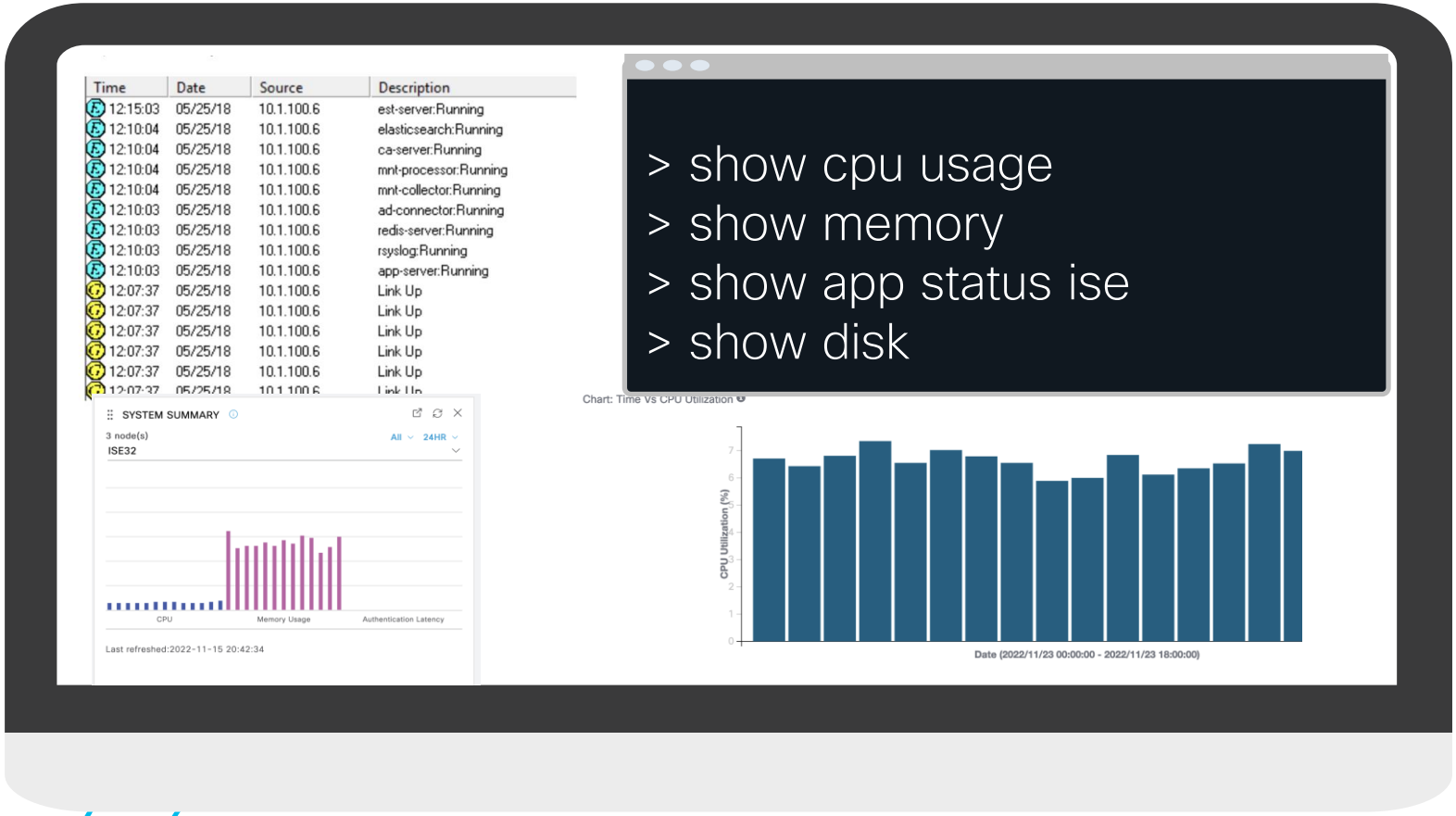


Why we need next-gen Monitoring and reporting tools?

Why Next-Generation Options

Hardware resources and processes Monitoring



Why Next-Generation Options

Static Reports.PDF

Authentications By Location

Location	Passed	Failed	Total
All Locations	101	0	101

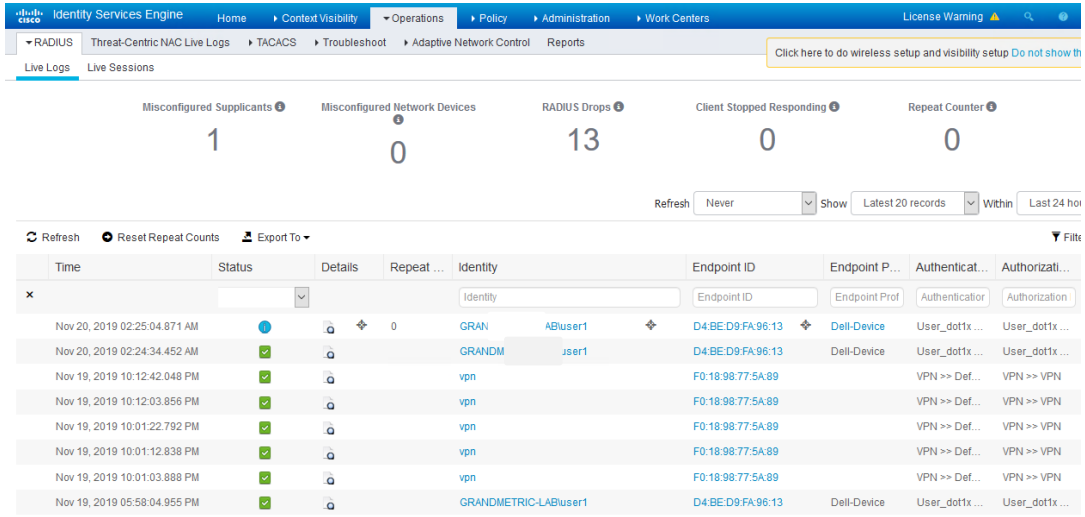
Authentications By Device Name

Network Device Name	Passed	Failed	Total
EAP-TEST	101	0	101

Authentications By Allowed Protocol

Allowed Protocol	Passed	Failed	Total
Default Network Access	101	0	101

Logs and Reporting



Why Next-Generation Options

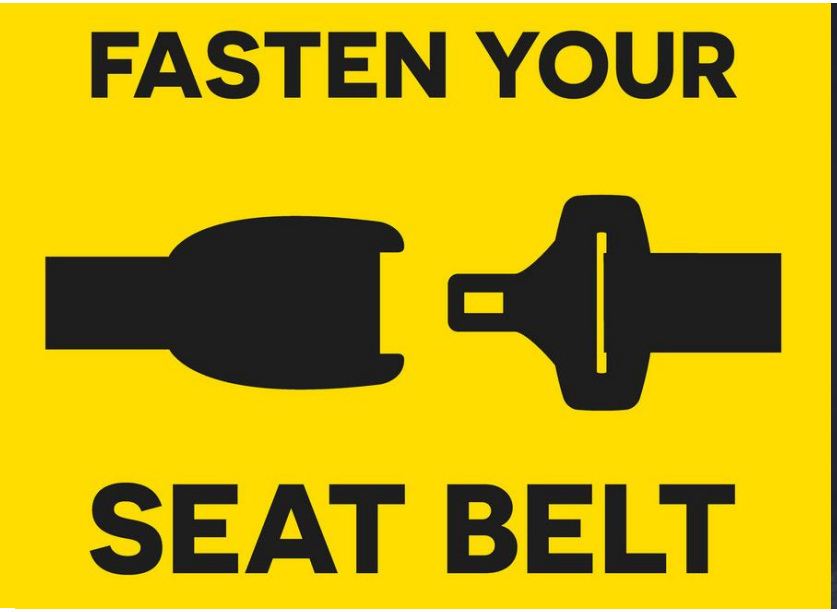
Is this Scalable/dynamic?

Customizable?

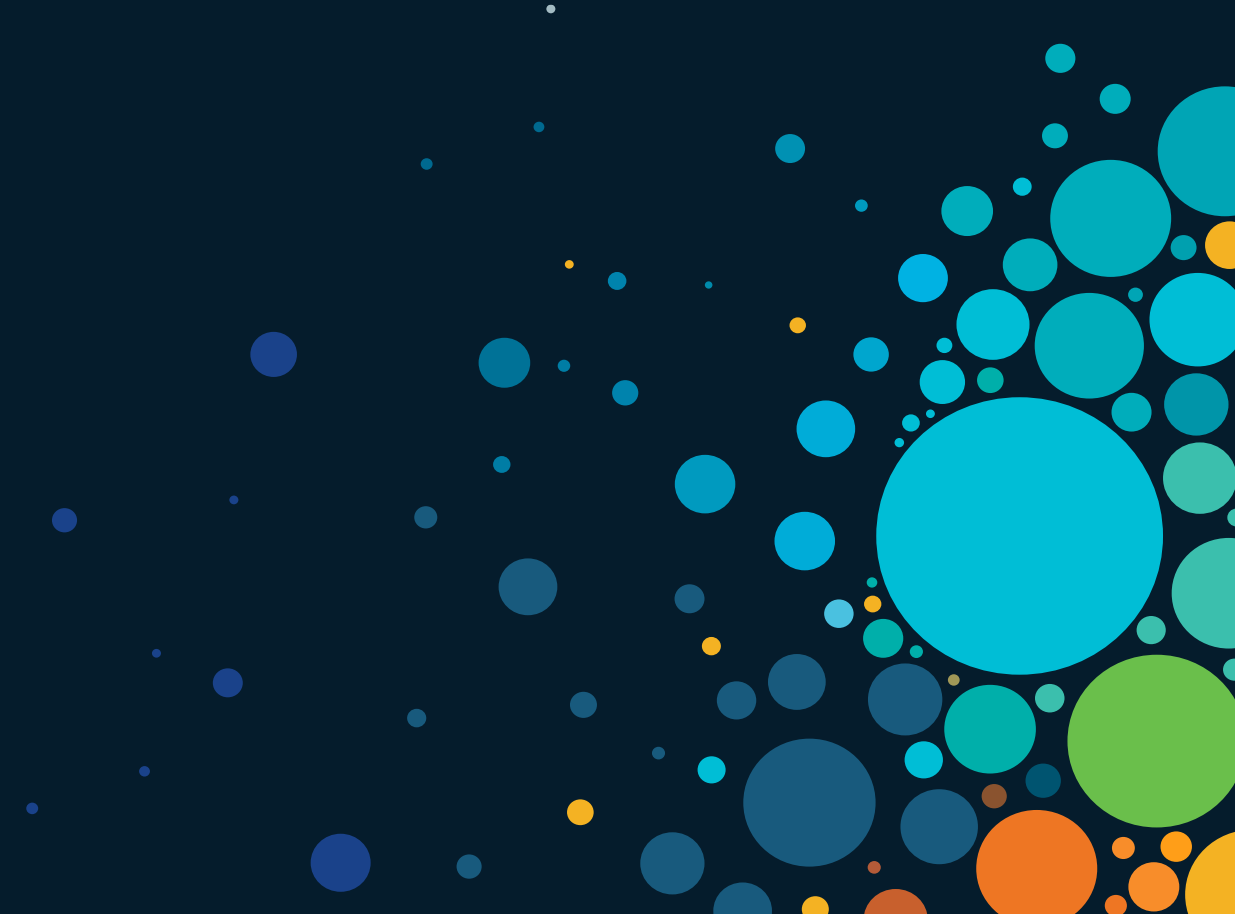
Do I need another software?

Is this easy to use/read?

Next Generation Monitoring and Custom Reporting



Infrastructure Monitoring

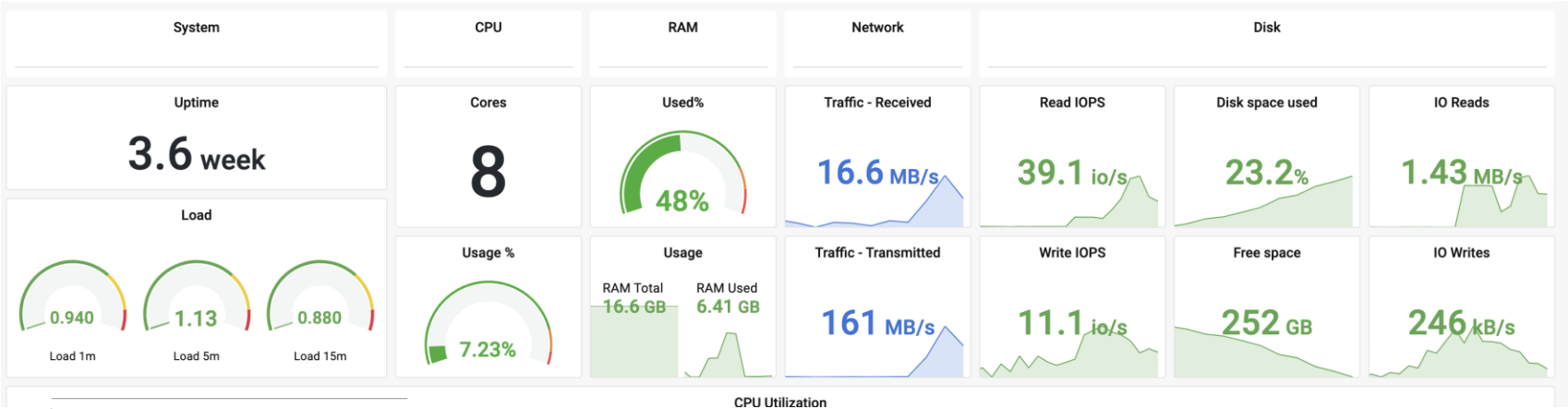


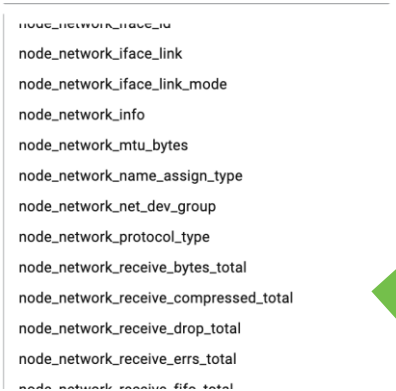
Infrastructure Monitoring – System 360

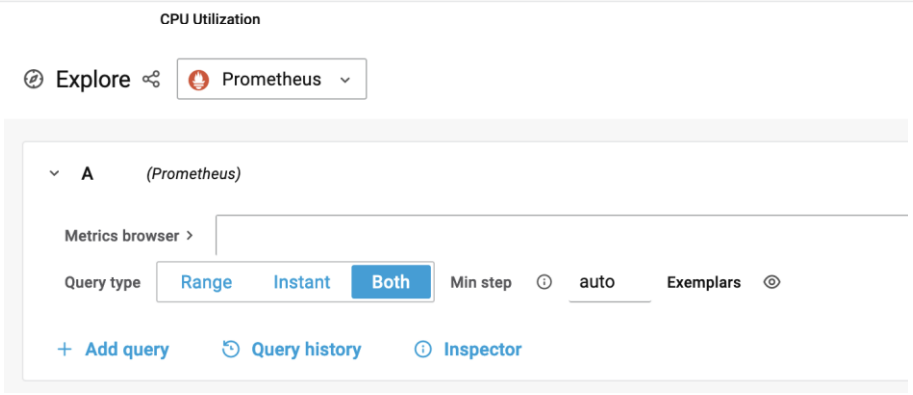
1. **CPU**: Overall CPU usage
2. **Diskstats**: HDD and SSD disk statistics
3. **Loadavg**: System load of the node for a defined period of time

1. **Meminfo**: RAM usage statistics
2. **Stat**: System kernel statistics
3. **Time**: System time

Infrastructure Monitoring





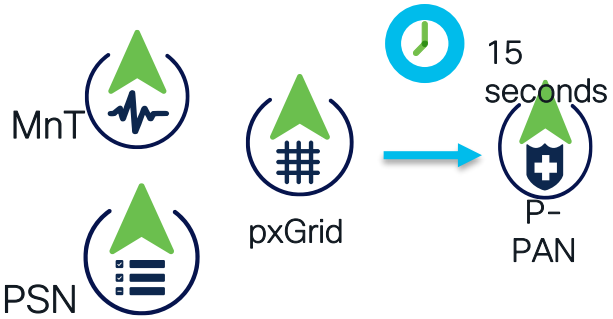


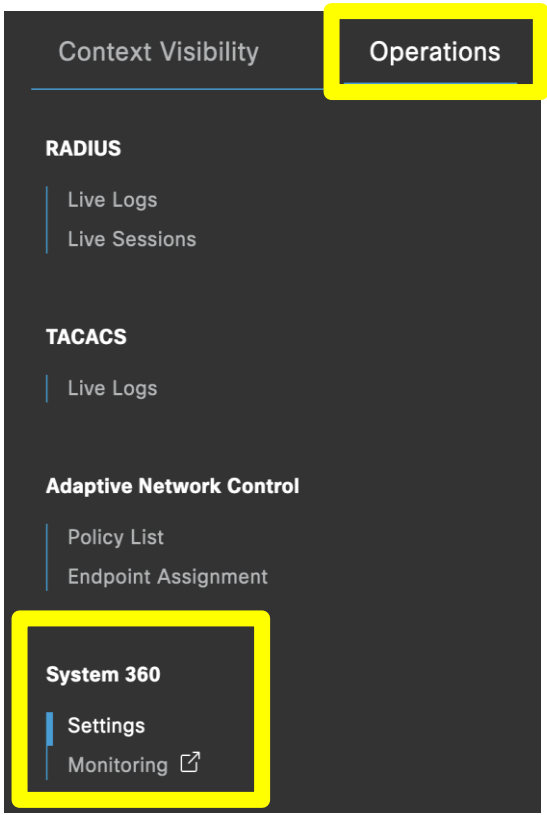
node_network_info{job="node_ISE32"}

Infrastructure Monitoring – Considerations

- The Monitoring service is enabled by default

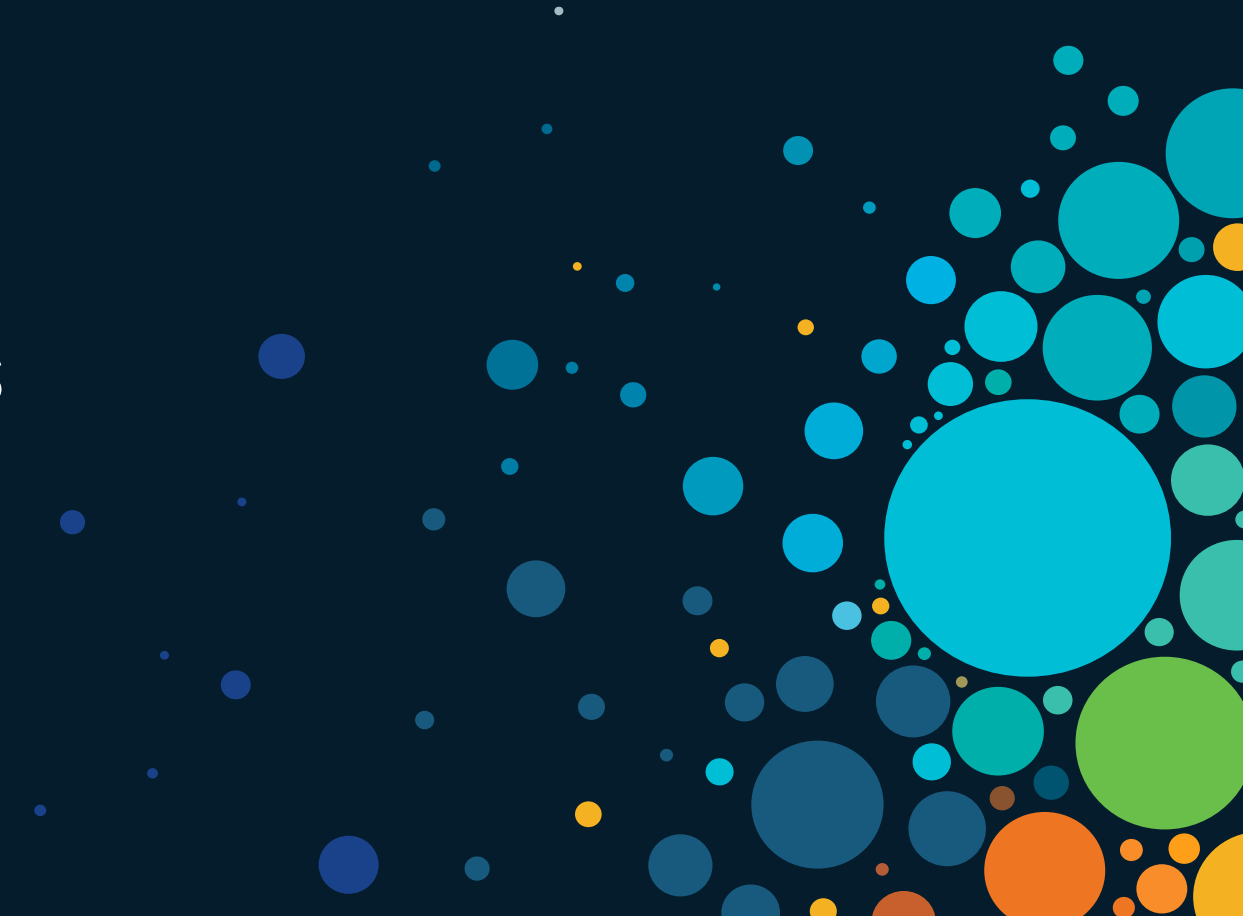
- This data is accessed by Grafana to populate the dashboards.



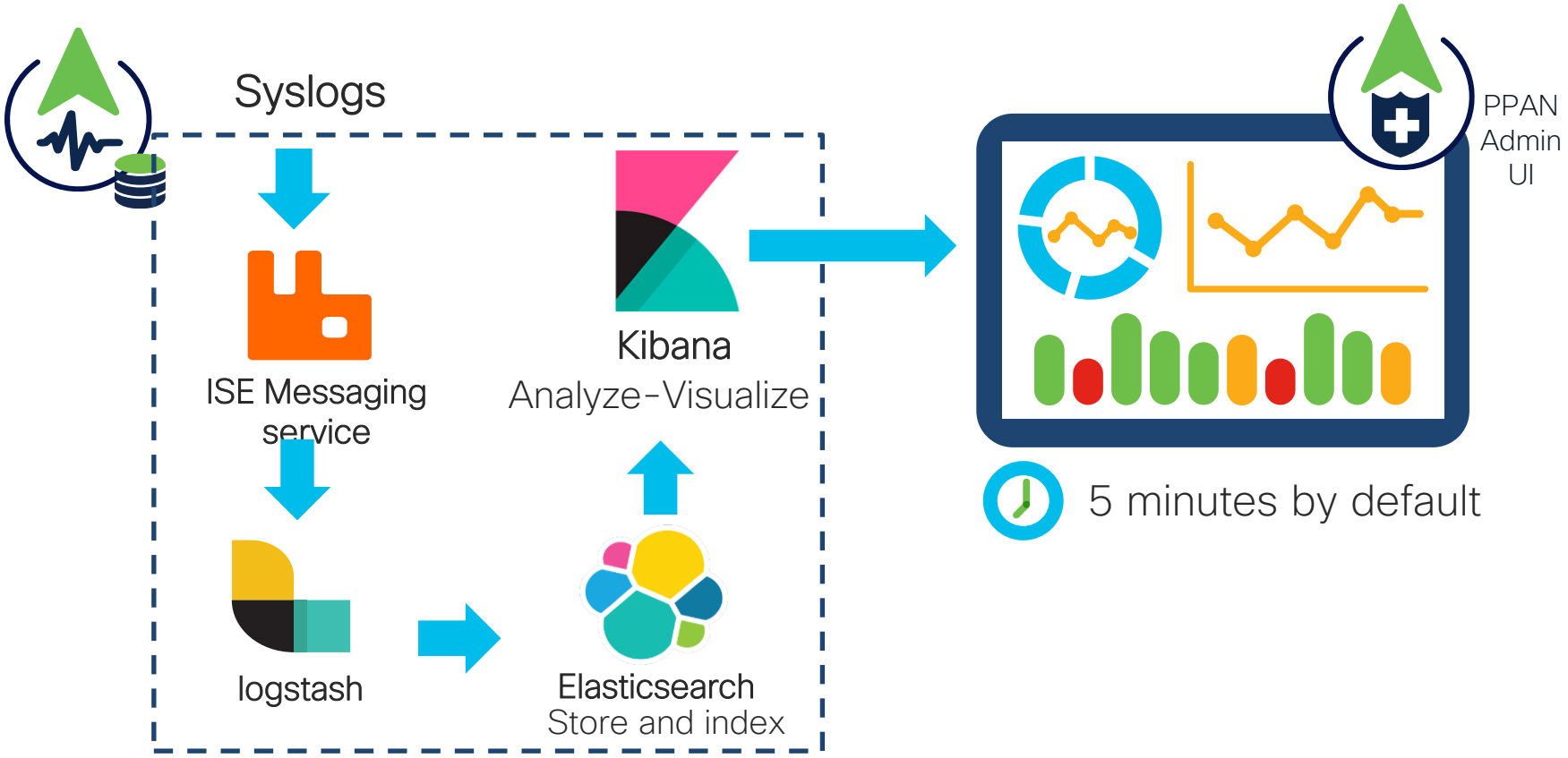


This data is retained in the Prometheus database for **7 days**.

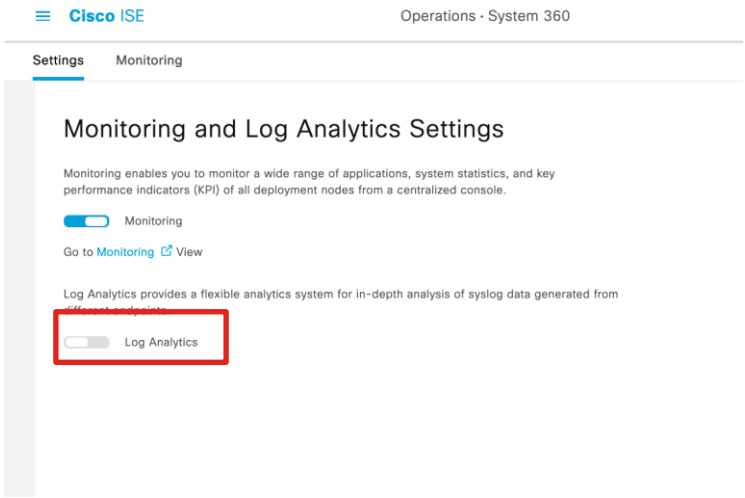
Log Analytics

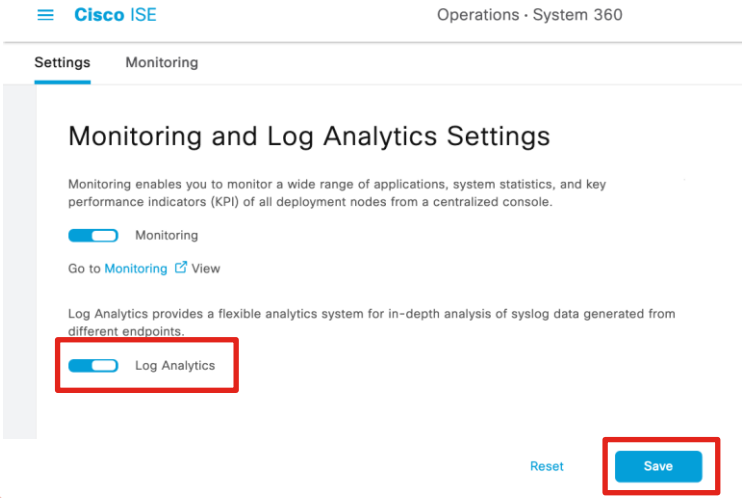


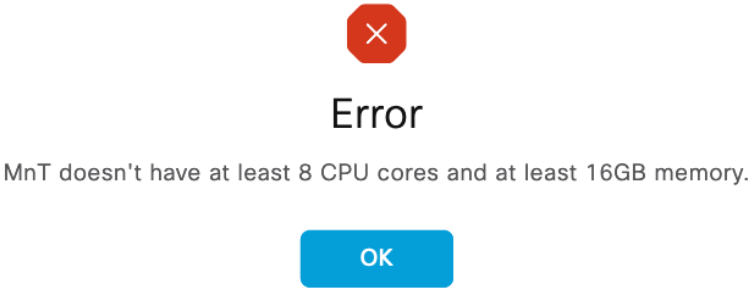
Log Analytics – System 360



Log Analytics – System 360







Log Analytics – Deployment Scenarios

Small Deployment

Medium Deployment

Large Deployment

Log Analytics and Infra Monitoring – Services Status

For your Reference!

```
ISE PROCESS NAME                       STATE            PROCESS ID
------------------------------------------------------------------
Database Listener                      running          513862
Database Server                        running          100 PROCESSES
Application Server                     running          531252
Profiler Database                      running          521678
ISE Indexing Engine                    running          533133
AD Connector                           running          534510
M&T Session Database                   running          527746
M&T Log Processor                      running          940202
Certificate Authority Service          running          534275
EST Service                            running          577833
SXP Engine Service                     disabled
TC-NAC Service                         disabled
PassiveID WMI Service                  disabled
PassiveID Syslog Service               disabled
PassiveID API Service                  disabled
PassiveID Agent Service                disabled
PassiveID Endpoint Service             disabled
PassiveID SPAN Service                 disabled
DHCP Server (dhcpd)                    disabled
DNS Server (named)                     disabled
ISE Messaging Service                  running          517076
ISE API Gateway Database Service       running          520369
ISE API Gateway Service                running          526266
ISE pxGrid Direct Service              running          553719
Segmentation Policy Service            disabled
REST Auth Service                      disabled
SSE Connector                          disabled
Hermes (pxGrid Cloud Agent)            disabled
ISE Node Exporter                      running          562260
ISE Prometheus Service                 running          565973
ISE Grafana Service                    running          561688
ISE MNT LogAnalytics Elasticsearch     running          663611
ISE Logstash Service                   running          666082
ISE Kibana Service                     running          667899
```

`show application status ise`

Infrastructure Monitoring

- ISE Node Exporter running 30774
- ISE Prometheus Service running 32862
- ISE Grafana Service running 36380

Log Analytics

- ISE MNT LogAnalytics Elasticsearch running 63388
- ISE Logstash Service running 68472
- ISE Kibana Service running

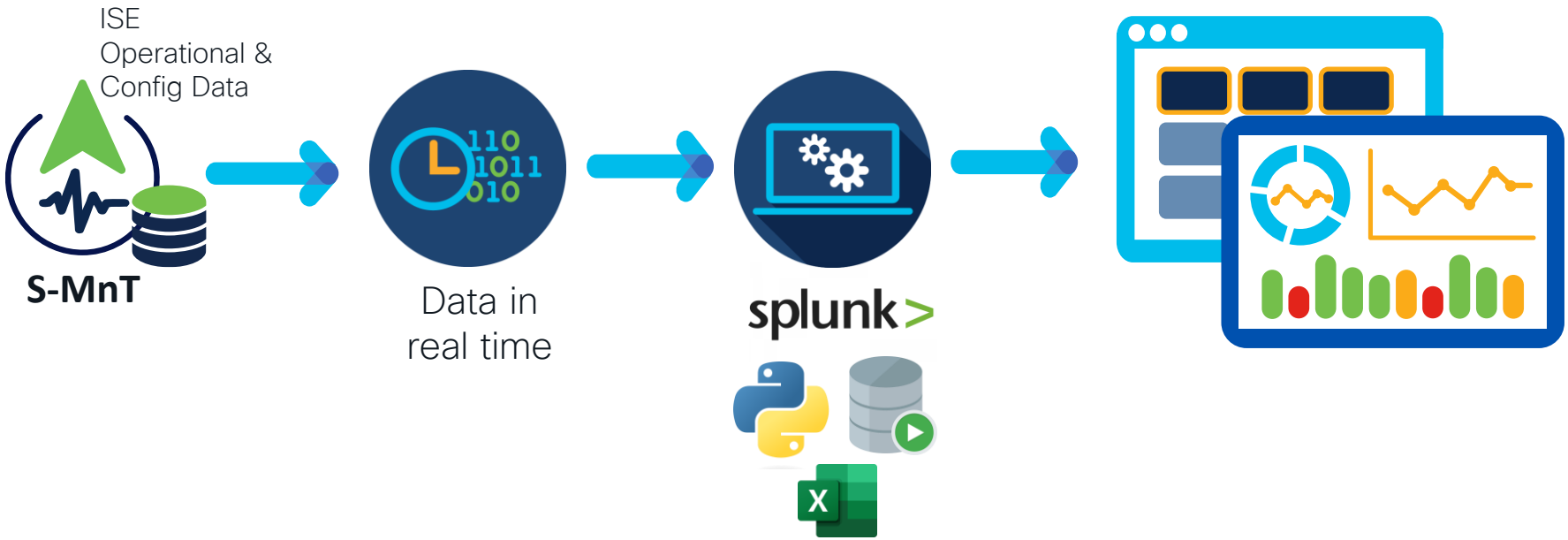
Demo: Infra Monitoring & Log Analytics

Well, this is great! But…still local…

Data Connect

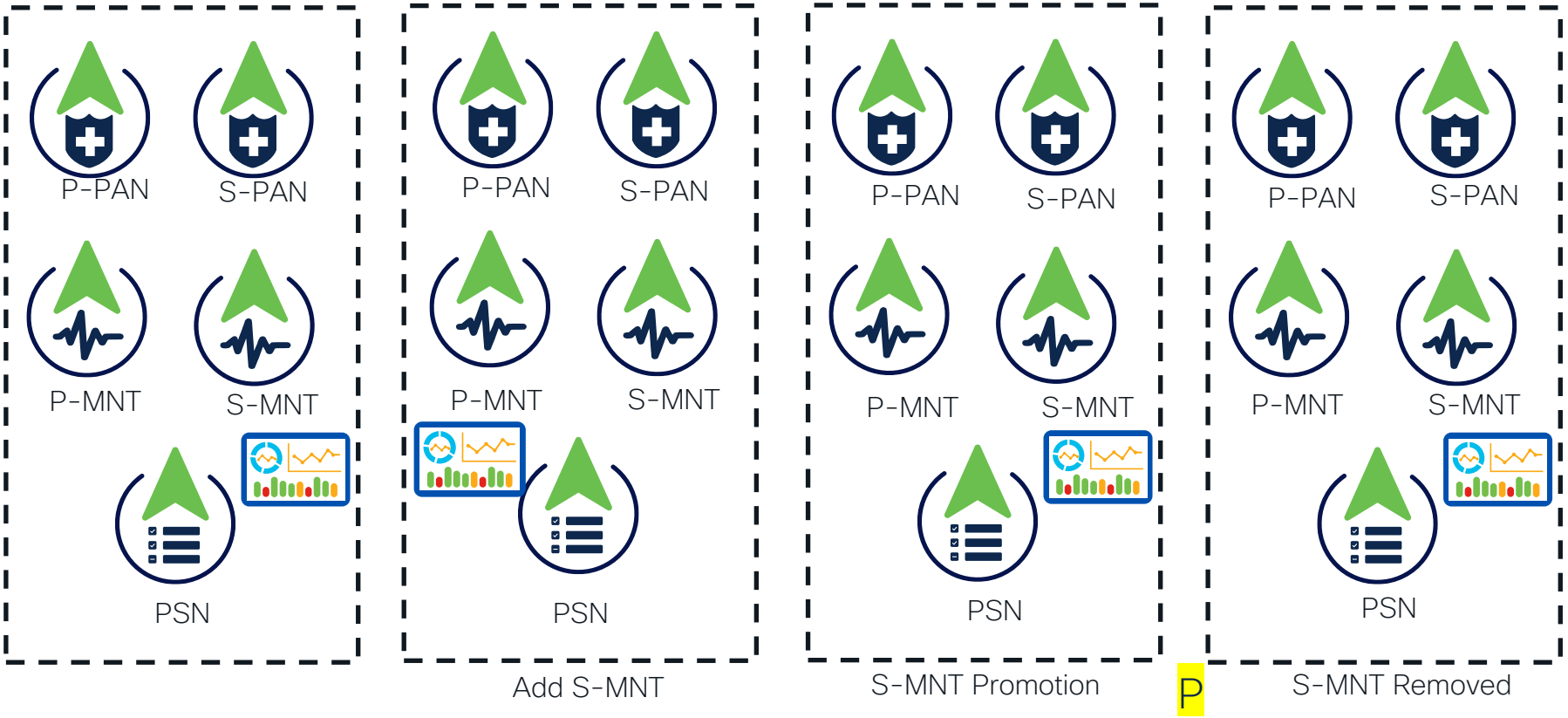
Data Connect – What you need WHEN you need it.

Extract any configuration or operational data

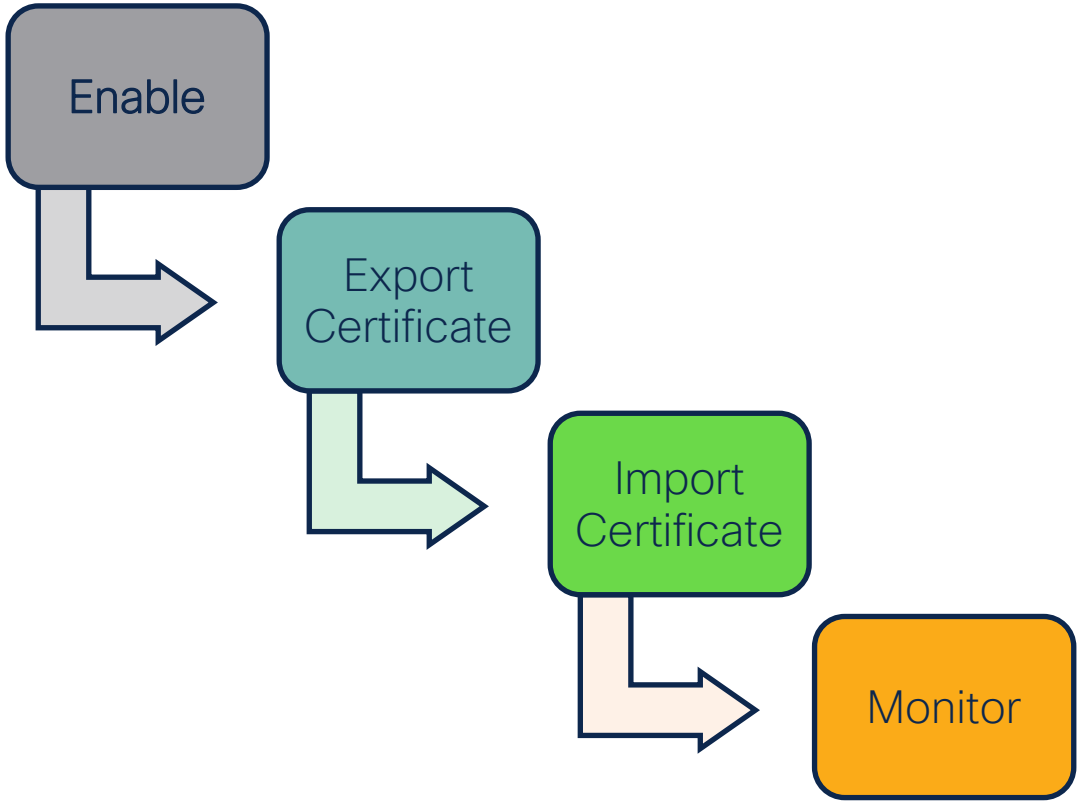


Data Connect – Deployment Scenarios

For your Reference!



Data Connect - Steps



Data Connect – Enable.

- Essentials License

Administration > System > Settings > **Data Connect**

Data Connect

User Name	dataconnect
Hostname/IP	ISEPANSEC.ciscoise.lab
Port	2484
Service Name	cpm10
Password Expires on	27 November 2023 at 21:43 UTC

Change Password

Password
•••••

View Password Criteria

Confirm Password
•••••

Password Expiry
365

Dataconnect Services

GET	`/api/v1/mnt/data-connect/details`	Retrieve the Dataconnect ODBC details.
GET	`/api/v1/mnt/data-connect/settings`	Retrieve the status of the Dataconnect feature
PUT	`/api/v1/mnt/data-connect/settings/password`	Update the Dataconnect user password.
PUT	`/api/v1/mnt/data-connect/settings/password/expiry`	Updates the number of days of Dataconnect password expiry.
PUT	`/api/v1/mnt/data-connect/settings/status`	Update the DataConnect feature status

https://github.com/EmmanuelCano/DataConnect

12 to 30 characters: (A-Z), (a-z), (0-9) -(#$%&*+,-.:;=?^_~)

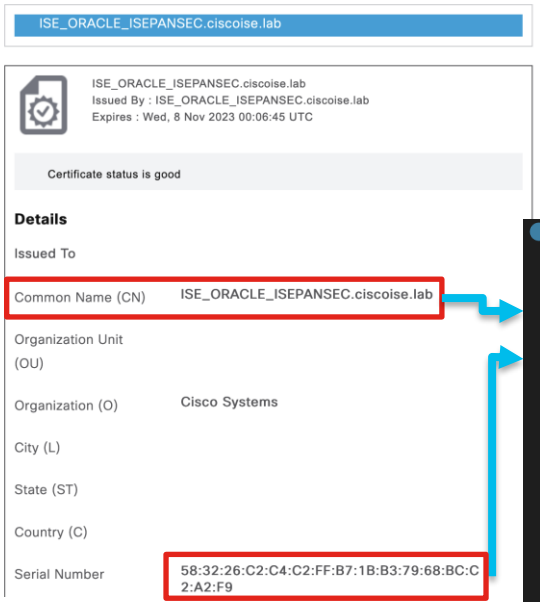
Data Connect – Export/Import Certificate

For your Reference!

Trusted Certificates – Self-Signed Certificate

Certificate Hierarchy

Export



Import

keytool -import -alias **CiscoLive** -file DataConnectCertificate.pem -storetype JKS -keystore JKS

```
ECANOGUT-M-DY10:CiscoLive ecanogut$ keytool -import -alias CiscoLive -file Da
Enter keystore password:
Owner: CN=ISE_ORACLE_ISEPANSEC.ciscoise.lab, O=Cisco Systems
Issuer: CN=ISE_ORACLE_ISEPANSEC.ciscoise.lab, O=Cisco Systems
Serial number: 583226c2c4c2ffb71bb37968bcc2a2f9
Valid from: Tue Nov 08 01:06:45 CET 2022 until: Wed Nov 08 01:06:45 CET 2023
Certificate fingerprints:
         SHA1: B8:4A:18:11:9E:69:AB:8E:73:85:7F:BF:DF:83:41:F7:72:53:73:6F
         SHA256: B9:3A:97:4B:89:29:63:D5:4A:4E:E7:DE:23:8C:A0:53:D2:7E:4D:AC:
Signature algorithm name: SHA256withRSA
Subject Public Key Algorithm: 2048-bit RSA key
Version: 1
Trust this certificate? [no]:  yes
Certificate was added to keystore
```

Data Connect – Monitor

For your Reference!

Data Connect alerts and alarms are generated in the following scenarios:

- **License Expiry:** If the Essentials license expires
- **Password Expiry:** If the Data Connect password expires
- **Certificate Expiry:** If the Data Connect certificate

Demo: Data Connect

Wrap-Up – Monitoring and Reporting New Approach

Optimal resources utilization

Improve Visibility

Better Performance
and Decision Making

Proactive Actions

Complete your Session Survey

- Please complete your session survey after each session. Your feedback is important.
- 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

Continue Your Education

Visit the Cisco Showcase for related demos.

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Meet the Speaker:
Area 1
02/08/23 – 12:20pm

Attend any of the related sessions at the DevNet, Capture the Flag, and Walk-in Labs zones.

Visit the On-Demand Library for more sessions at ciscolive.com/on-demand.

Security Technologies

Network Security

Learn about a broad range of solution and technologies which will help you better understand how to secure your network. You will find topics such as VPN, ISE, IPv6, DDoS, IoT....

START

Feb 5 | 19:00
LABSEC-2333
ISE integrations via pxGrid with FTD, WSA, StealthWatch

Feb 6 | 08:45
TECSEC-3781
Walking on solid ISE - Advanced Use Cases and Deployment Best Practices

Feb 7 | 08:45
BRKSEC-2445
The Art of ISE Posture, Configuration and Troubleshooting

Feb 7 | 11:30
BRKSEC-2037
Securing Starlink Internet Services

Feb 8 | 10:45
BRKSEC-2096
Securing Industrial Networks: Where do I start?

Feb 8 | 13:30
BRKSEC-2678
DDoS Mitigation: Introducing Radware Deployment on Firepower Appliances

Feb 9 | 08:30
BRKSEC-2660
ISE Deployment Staging and Planning

Feb 9 | 10:30
BRKSEC-2101
Malware Execution As A Service: a Deep Dive into CSMA Advanced File Analysis

Feb 9 | 15:45
BRKSEC-3058
Route based VPNs with Cisco Secure Firewall

Feb 9 | 15:45
BRKSEC-2044
Secure Operations for an IPv6 Network

Feb 10 | 09:00
BRKSEC-3019
Visibility, Detection and Response with Cisco Secure Network Analytics

If you are unable to attend a live session, you can watch it On Demand after the event

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Feb 10 | 09:00

LTRSEC-2381

Stronger Together: Uniting IT and OT Security with Cyber Vision

Feb 10 | 09:00

BRKIPV-3134

IPv6 Security in the Local Area with First Hop Security

Feb 10 | 11:00

FINISH

BRKSEC-2218

Cisco Secure Hybrid SWG – Your First Step to Your SASE Journey

If you are unable to attend a live session, you can watch it On Demand after the event

The bridge to possible

Thank you

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References

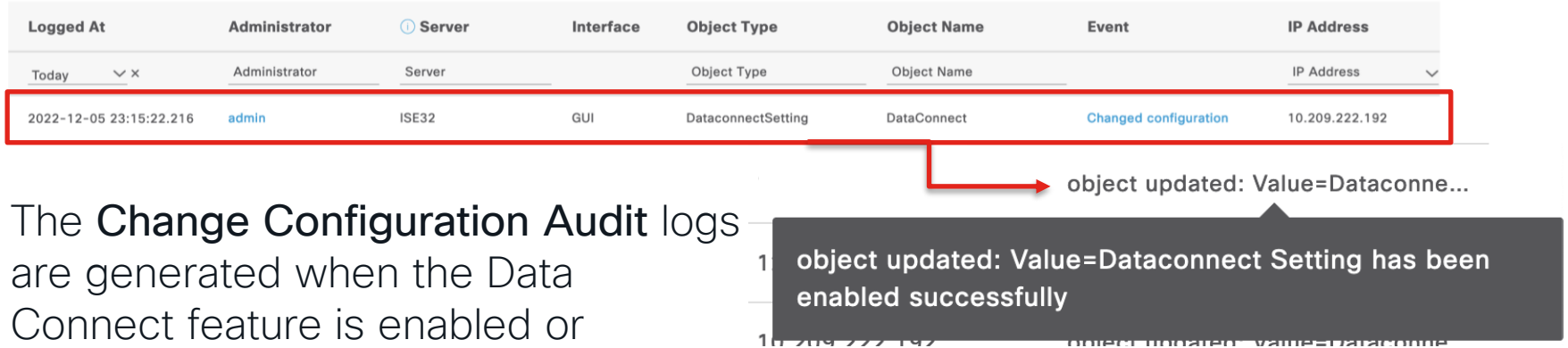
More Resources

- Data Connect: https://developer.cisco.com/docs/dataconnect/#!introduction
- Data Connect (Open API): https://developer.cisco.com/docs/identity-services-engine/latest/#!data-connect-openapi
- ISE Public Bar: https://eurl.io/#ryJFrhiBW
- ISE Webinars and Training Videos: https://learningnetwork.cisco.com/s/cisco-ise-training-videos
- ISE Devnet: https://developer.cisco.com/identity-services-engine/
- Configure ISE 3.2 Data Connect Integration with Splunk: https://www.cisco.com/c/en/us/support/docs/security/identity-services-engine/218190-configure-ise-3-2-data-connect-integrati.html
- GitHub Repository : https://github.com/EmmanuelCano

Appendix

Data Connect – Monitor

For your Reference!



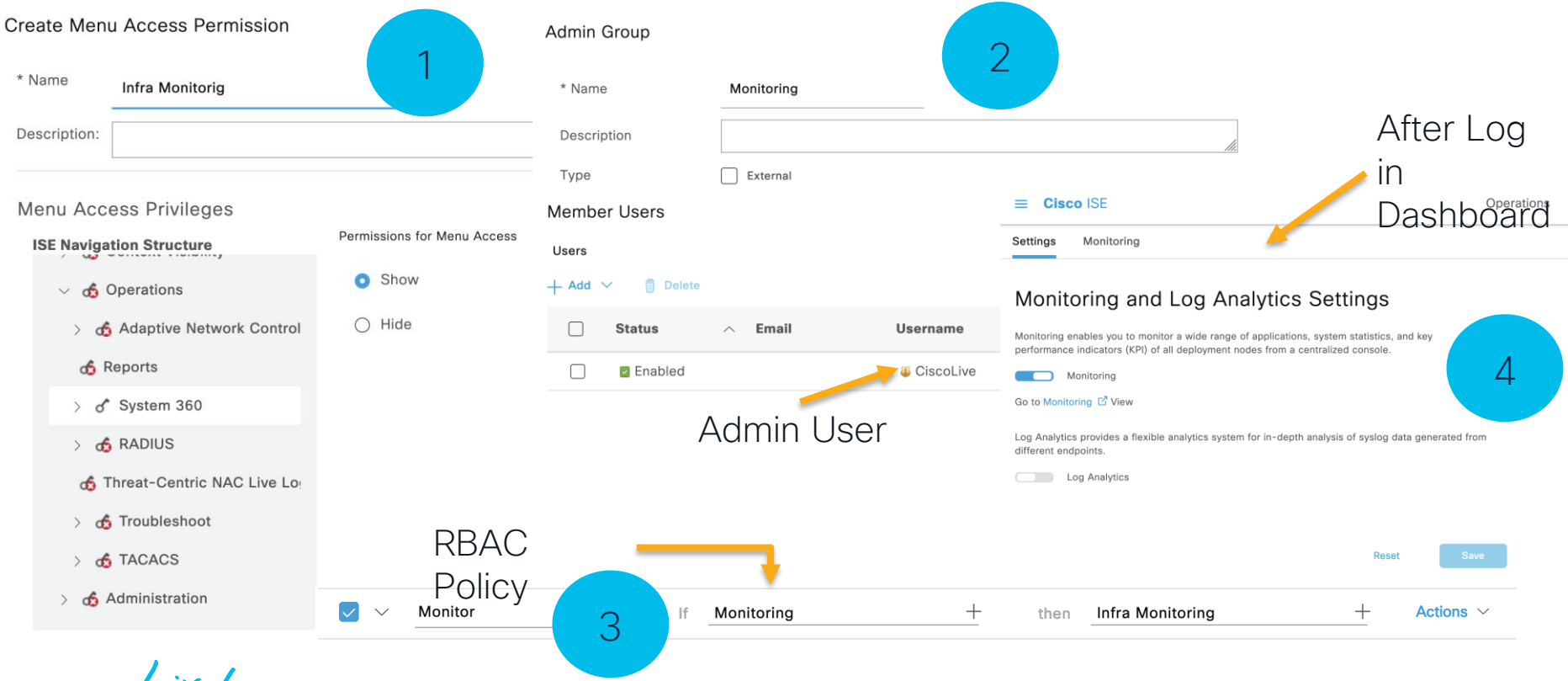
The **Change Configuration Audit** logs are generated when the Data Connect feature is enabled or disabled by the admin, or as a result of a persona change.

Data Connect Logging

Additional logs for UI and Open API changes related to Data Connect will be available at **ise-psc.log**

Infrastructure Monitoring – SOC VIEW!

For your Reference!

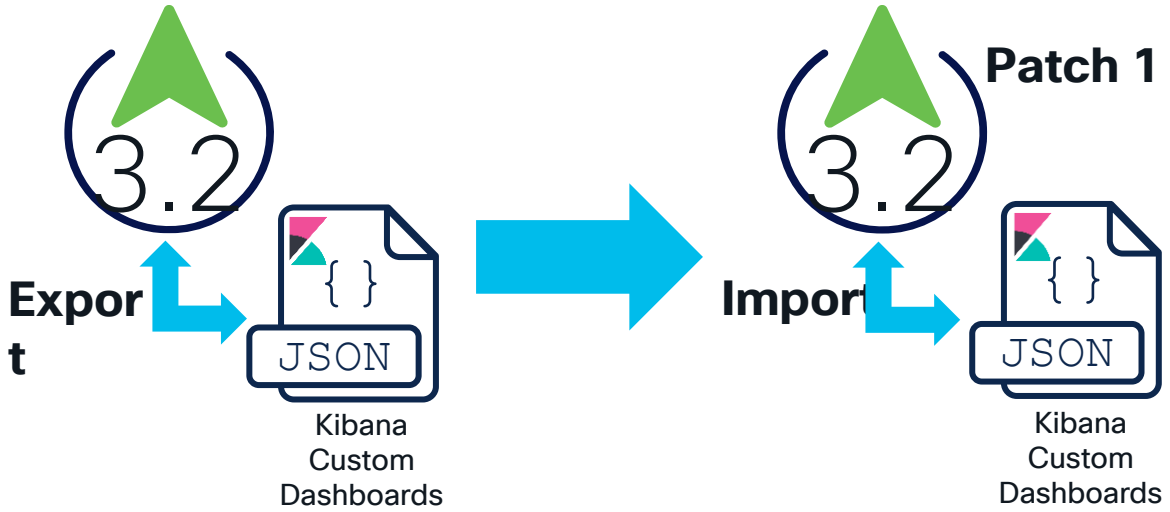


Log Analytics – Patch 1 Known Limitations

For your Reference!

Limitation:
Custom Log Analytics dashboards that are created in ISE 3.2 are not displayed after you install ISE 3.2 patch 1

Solution:
Export the dashboards from Kibana and import them after patch install.

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Thank you
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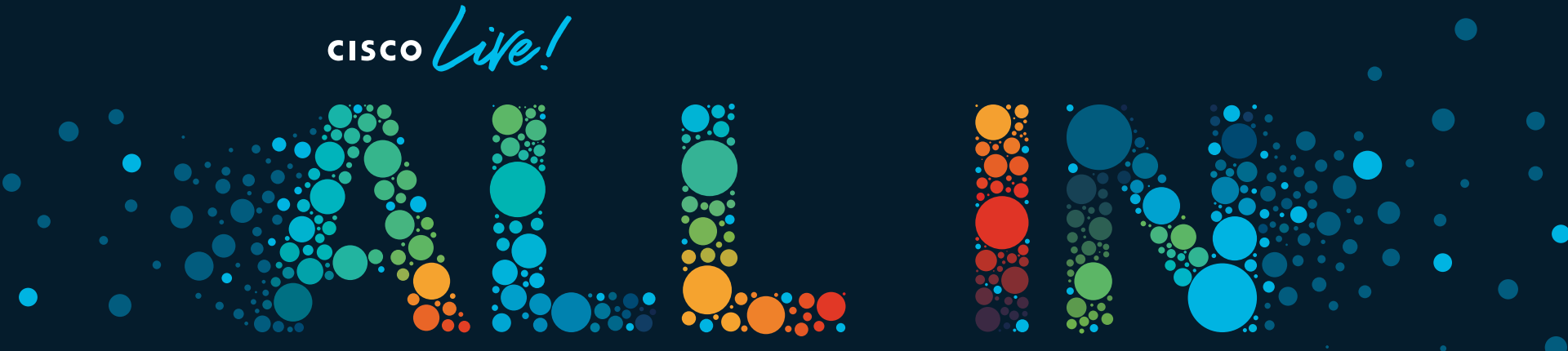
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ALL IN