Speakers

Saravanan VA
Product Manager

Stefano Gridelli
CEO/Co-Founder

Agenda

- App Hosting on Cisco Catalyst 9000 switches

- NetBeez integration with Cisco App Hosting

- Cisco DNA Demonstration

- Q&A

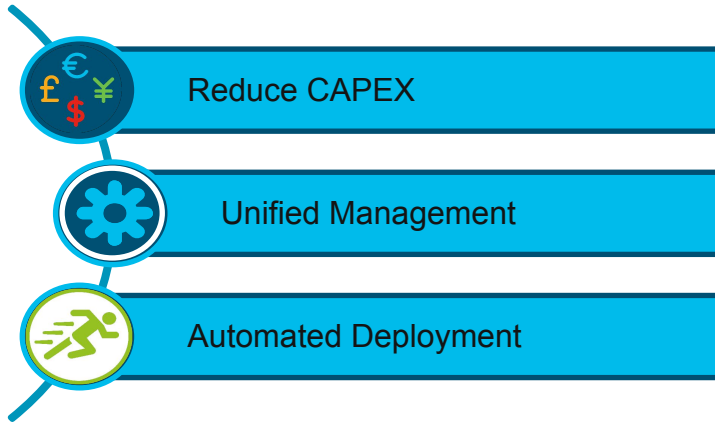# Application hosting on Cisco Catalyst 9000 switches
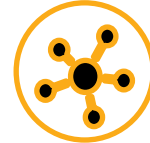
Enabling Intelligence at the edge

Saravanan.V.A
Product Manager - Enterprise Switching

Next Generation of Application Hosting
With Cisco Catalyst 9000 Switches and DNA Center

Reduce CAPEX

Unified Management

Automated Deployment

IT Operations & Monitoring Tools

Customer Specific Applications

Security Agents & Functions

Cloud Gateways with Serverless Edge Compute
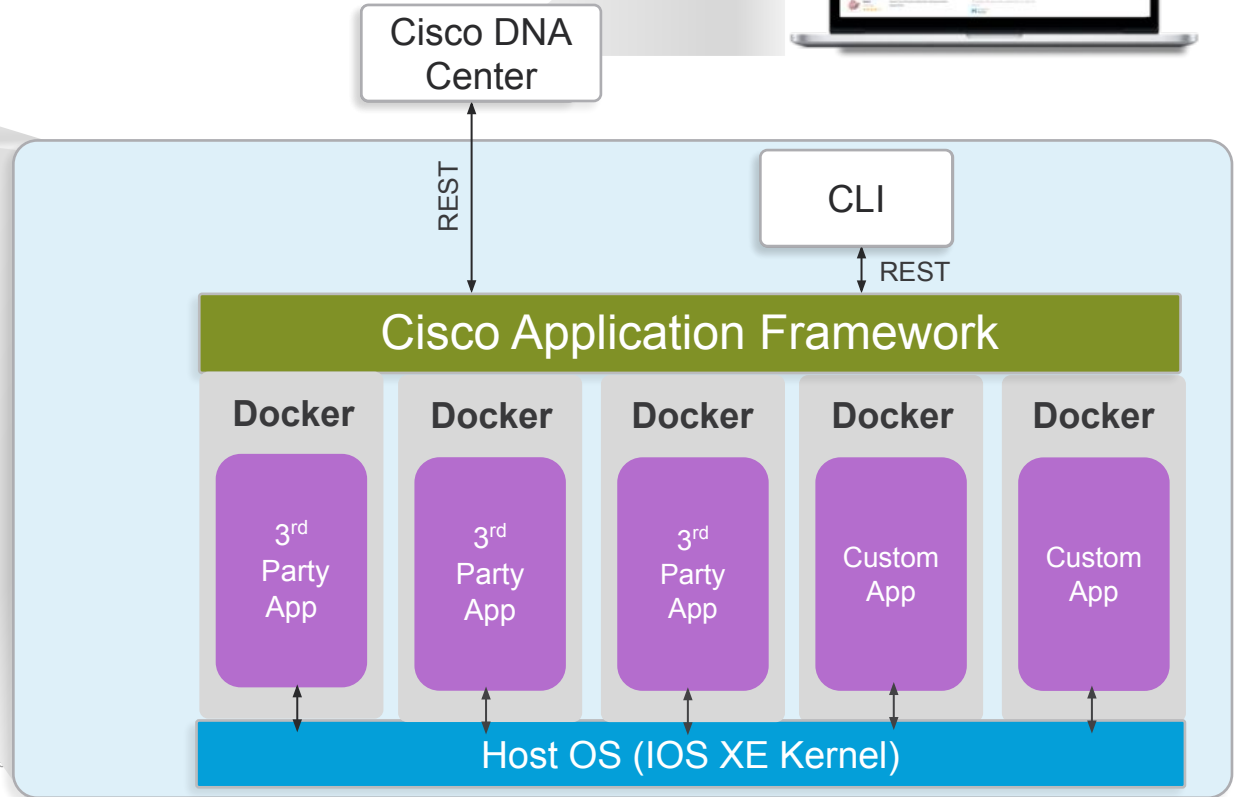
Automate App. Management

docker
Flexible Architecture

CISCO **DEVNET**
Rich Ecosystem

Application Management

Catalyst 9300

Cisco DNA Center

CLI

REST

REST

Cisco Application Framework

Docker	Docker	Docker	Docker	Docker
3rd Party App	3rd Party App	3rd Party App	Custom App	Custom App

Host OS (IOS XE Kernel)

Catalyst 9000 switch storage and compute

	Resource type	Catalyst 9300	Catalyst 9400*
Networking	Front panel ports (1G)	Yes	Yes*
Resources	Memory	2GB	up to 8GB
	CPU	1 core (25%)	1 core (25%)
	Storage	120GB (USB3.0/SSD)	240-960GB (SATA)

Catalyst 9300
USB 3.0
120GB

Back panel

Catalyst 9400
M2 SATA
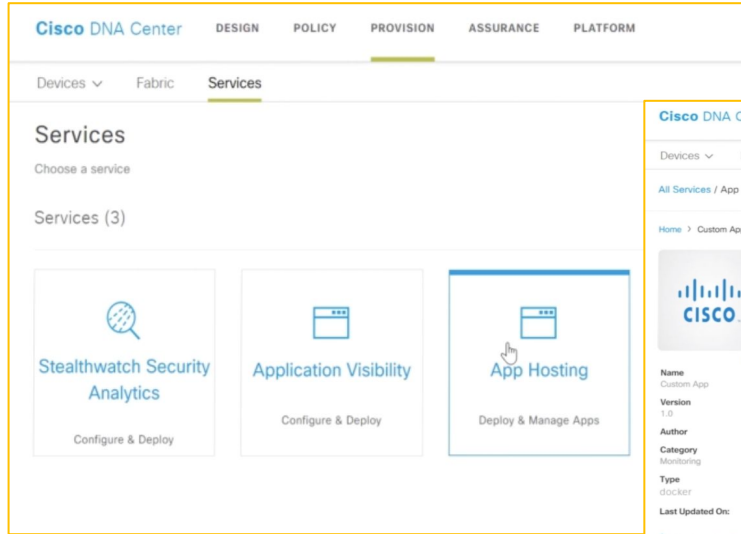240/480/960GB

Plug into removable SUP

For local storage and app hosting production

- 3rd party USB drives in front panel are not supported
- Applications can be hosted via CLI too

* December 2019
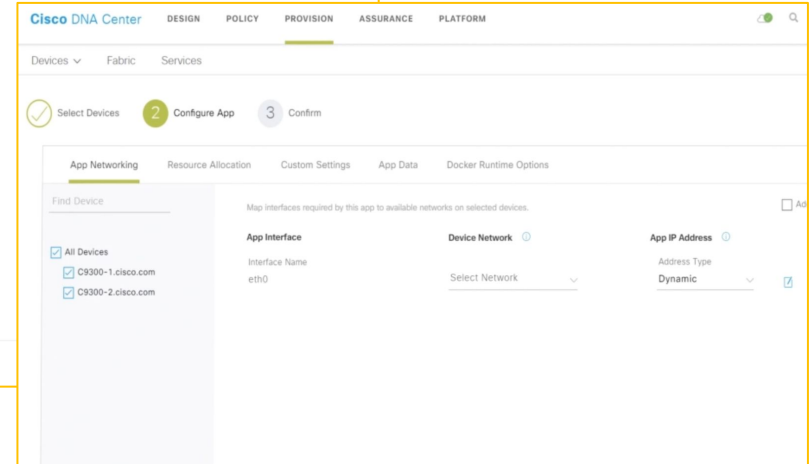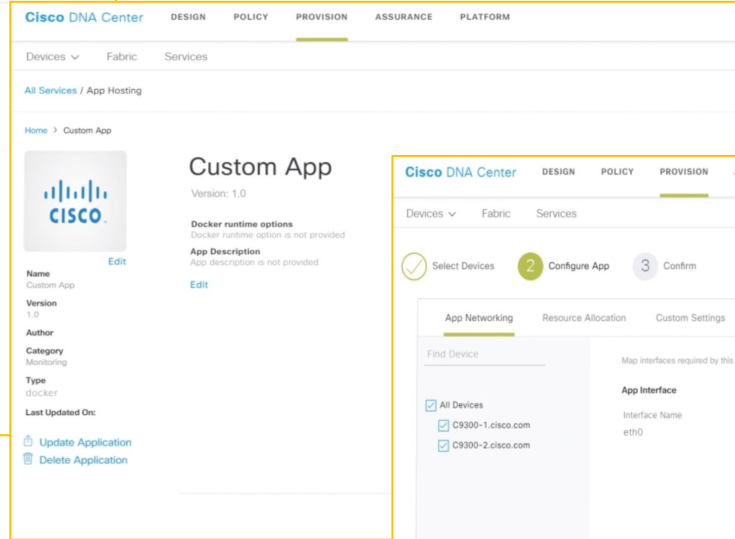
App Hosting from Cisco DNAC (v1.3.1)

Enterprise Single Pane of Glass

Consistent Cisco DNA Center workflows

App Lifecycle

Provisioning of multiple devices, Change management

DNAC Package Update required for App Hosting Workflow

Customer Testimonials

As any network engineer knows, performance issues are among the hardest things to troubleshoot.

The issue may be anywhere in the network or even outside of it and it's often very difficult to pinpoint it with conventional monitoring tools (SNMP).

Full visibility in the network is a key value to detect, isolate and fix the issue before the users report it.

With the app hosting capability, we will now be able of installing probes across the entire network allowing us to generate real data traffic and detect any loss of performances.

Moreover, the Docker oriented solution allows us to leverage our current and future investments (on Catalyst 9300) without adding extra costs in physical probes.

We also skip the painful management and configuration tasks of those probes through the very easy-to-use DNA Center interface.

The City of Luxembourg is currently testing the solution on a limited number of devices but has a plan to open the tests to a wider range of devices.

We have currently done some throughput and delay testing on our network.

— **Frank Weiler**, Network and Telco manager @ City of Luxembourg

VILLE DE LUXEMBOURG

"Application Hosting capability on Catalyst 9300 along with Cisco DNA Center makes it possible to deploy any application with its intuitive user interface and eliminates the need to install apps on Catalyst 9300 series using CLIs, making it simple yet powerful."

— **Mike Coffey**, Principal Network Architect @ ARM Processors

arm

Customer Testimonials

"Networking and computing at the edge is the future and it is here now. The network infrastructure is already a necessity and the ability to perform Application hosting at the edge opens the door for limitless possibilities. The Cat9ks are great because they provide the best of both worlds and are backed by the industry's leading specialists. Even though I am still a fan of the CLI, a very nice feature is the ability to upload, install, monitor and troubleshoot your hosted applications via GUI. To me this was huge as I am new to this area of the industry and it allows me to rapidly transitioning into the world of IoT."

— **Keith Hansel**, JEA

"We (Conscia) are excited how easy it is to quickly put Docker instances in the network edge layer using the App Hosting on Catalyst 9000. App hosting opens up new possibilities for distributed architectures with automation and IoT with the help of local data processing in the edge."

- **Stefan Ehrson** (CCIE 56593) - Senior Network
Engineer at Conscia

NetBeez + Cisco Integration Benefits

- Easy deployment and maintenance of NetBeez agents

- Rapidly scale reach to large Wide Area Networks

- Integrated Service Level (SLA) Monitoring within Catalyst 9000

Integrated SLA Monitoring on Catalyst 9000

Test	Primary Metric	Test interval*	Detection time
PING	Round-Trip-Time, Packet loss	5 seconds	25 seconds
DNS	DNS Lookup time	30 seconds	2.5 minutes
HTTP	HTTP Get time	60 seconds	5 minutes
Traceroute	Hop count, RTT, MTU	120 seconds	User-defined
iPerf	TCP/UDP/Multicast Throughput	User-defined	n/a
VoIP	Jitter, Packet Loss, MOS	User-defined	n/a
Network Speed	Download/Upload Throughput	User-defined	n/a

NetBeez App Hosting Architecture
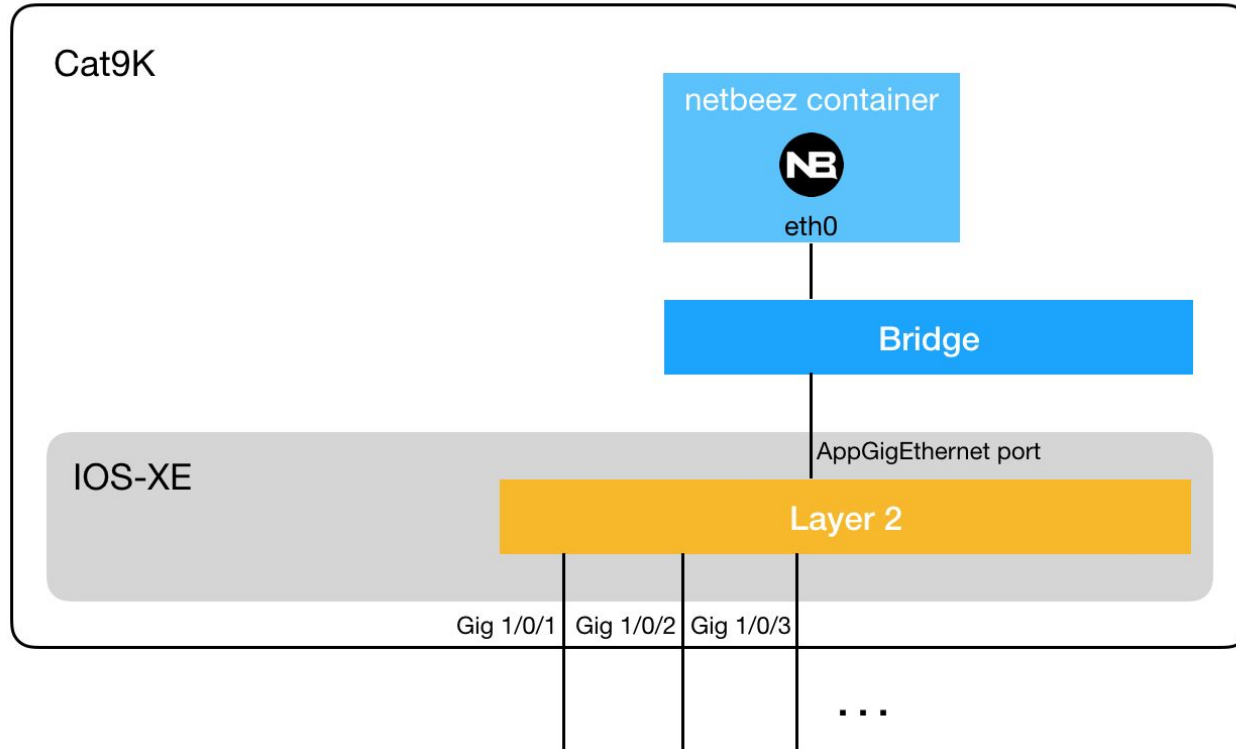
Quick Procedure

Download the NetBeez docker agent image on your local laptop:

```
docker pull netbeez/nb-agent
docker save netbeez/nb-agent > netbeez.tar
```

Copy the netbeez.tar from the USB thumb drive plugged in the front USB port of the Catalyst:

```
copy usbflash0:netbeez.tar flash:
```

Configure the NetBeez Docker agent to register to your BeezKeeper Dashboard:

```
conf t
  app-hosting appid netbeez
   app-resource docker
    run-opts "-e 'NB_SECRET_KEY=<SECRET_KEY>' -v netbeez:/etc/netbeez/persistence/:rw"
```

Configure the NetBeez docker agent resources:

```
conf t
 app-hosting appid netbeez
  app-resource profile custom
   cpu 7400
   memory 2000
   persist-disk 4000
```

Learn more …

https://netbeez.zendesk.com
https://developer.cisco.com/app-hosting/

Get hands on with Application Hosting

Learning Labs
Learn how to setup the Catalyst 9K switch to enable the application hosting framework and then deploy a Docker application.

Sandbox
Play with features in our Application Hosting Sandbox, a free 24/7 hosted development lab for integrating and working with code.

Developer Guides
Learn how to host docker applications on Cisco Catalyst 9000 series switches.

Open source
Explore the catalog of open source applications that have been validated on Catalyst 9000 series switches.

Ecosystem Exchange
Cisco DevNet Ecosystem Exchange enables discovery of new use cases to address business needs. Explore the catalog for solutions that work seamlessly on Catalyst 9000 series switches.

Apply to become a solution partner
Be front and center to the worldwide base of Cisco customers and be part of the seamless journey from development (integrations and tools) to promotion.
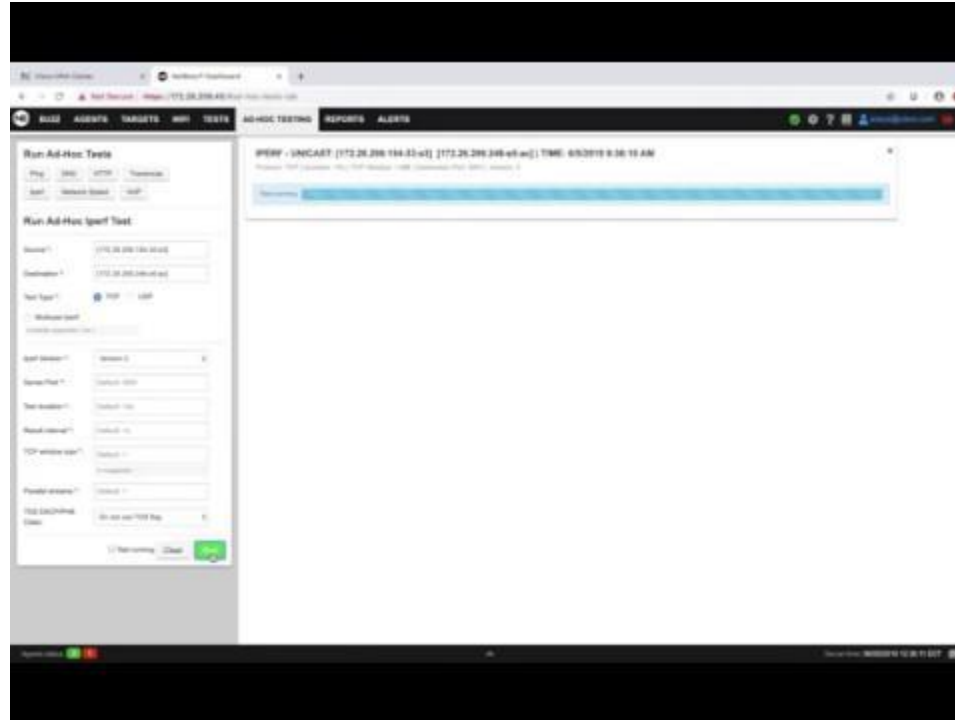
SPP

NetBeez, Inc.

NetBeez for Cisco Catalyst 9000 Series Switches

NetBeez has developed a real-time, distributed, performance monitoring solution that proactively detects network and application problems. The NetBeez platform actively

CISCO
Preferred Solution Partner

Cisco DNA Demo

More Information

Request Proof of Concept for Cisco App Hosting Integration:

- Fully featured dashboard

- License for up to 10 NetBeez Cat9K agents

Go to https://netbeez.net/demo

Get hands on and explore more about Application Hosting on DevNet
https://developer.cisco.com/app-hosting/

Q&A