# Automating Day 2 Ops

## Meet the Cisco DC Assurance and Insights Suite

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**BUSINESS**

Trading suspended at Global Stock Exchange due to failed software upgrade

Huge system failure a Major Airline in UK ove the holiday weekend.

Save 116

Two outages at International European Bank compromising

SHARE

4 hr down time

$10M for investigation

$$$ Cost on global trading

75000 cancelled flights

$68M in passenger reimbursements

2.8% drop in stock price

600K missing transactions

6M customers impacted

$72M in fines

# We all have been here…

# Common denominators

## Human Error

#1 most common cause of outages

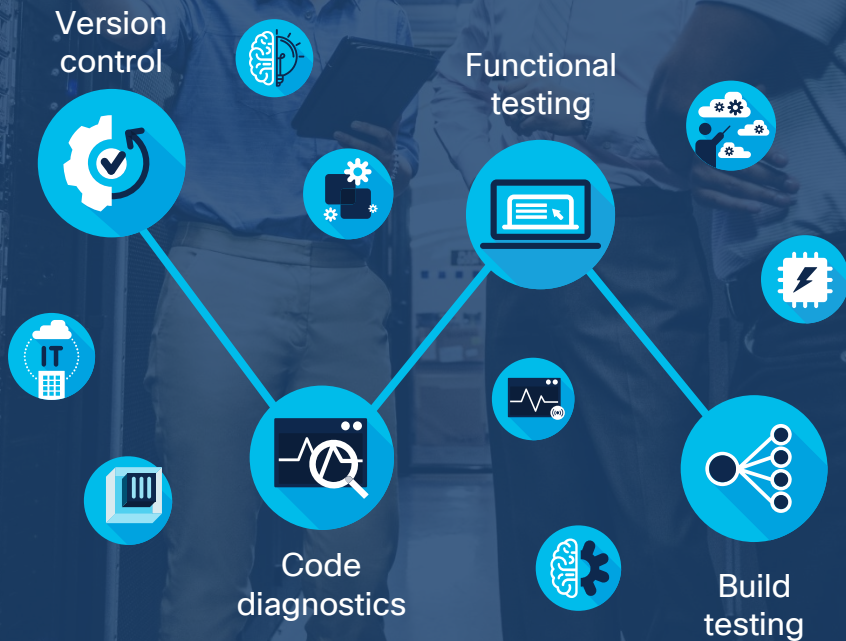Inadequate system automation

Quantity of data exceeds human reasoning

## Limited Insights

Poor system wide visibility
No actionable and useful insights
Rapid change cycles

## Reactive Posture

Vulnerabilities unknown until breach
Difficulty in correlating events
Lacking failure pattern learning and anticipation

# Operational Opportunities for IT Organizations

**0** **1** **2**

**Day 0**

Infrastructure planning, delivery and installation, automation

**Day 1**

Discover, configure and secure

**Day 2**

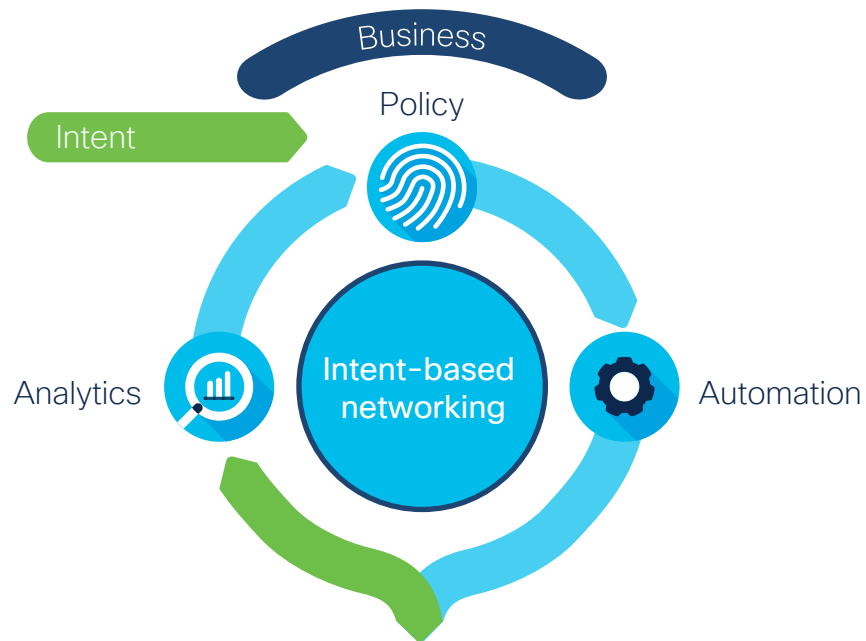Assure, monitor, NetOps, and automate

# Main challenges in Day 2 Ops

Lacking pervasive visibility and insights

No event and issue correlation

Inability to understand change impact

Limited performance and availability

# How is Cisco helping

# Intent-based networking



Business

Policy

Intent

Analytics

Intent-based networking

Automation

Data centers

Campus and branches

Enterprise+

Multicloud

# Cisco Data Center Network Assurance and Insights Suite

Transform day 2 networking operations from reactive to proactive

## Assure intent

"Verify impact of changes before deployment to ensure business intent"

## Guarantee reliability

NEW

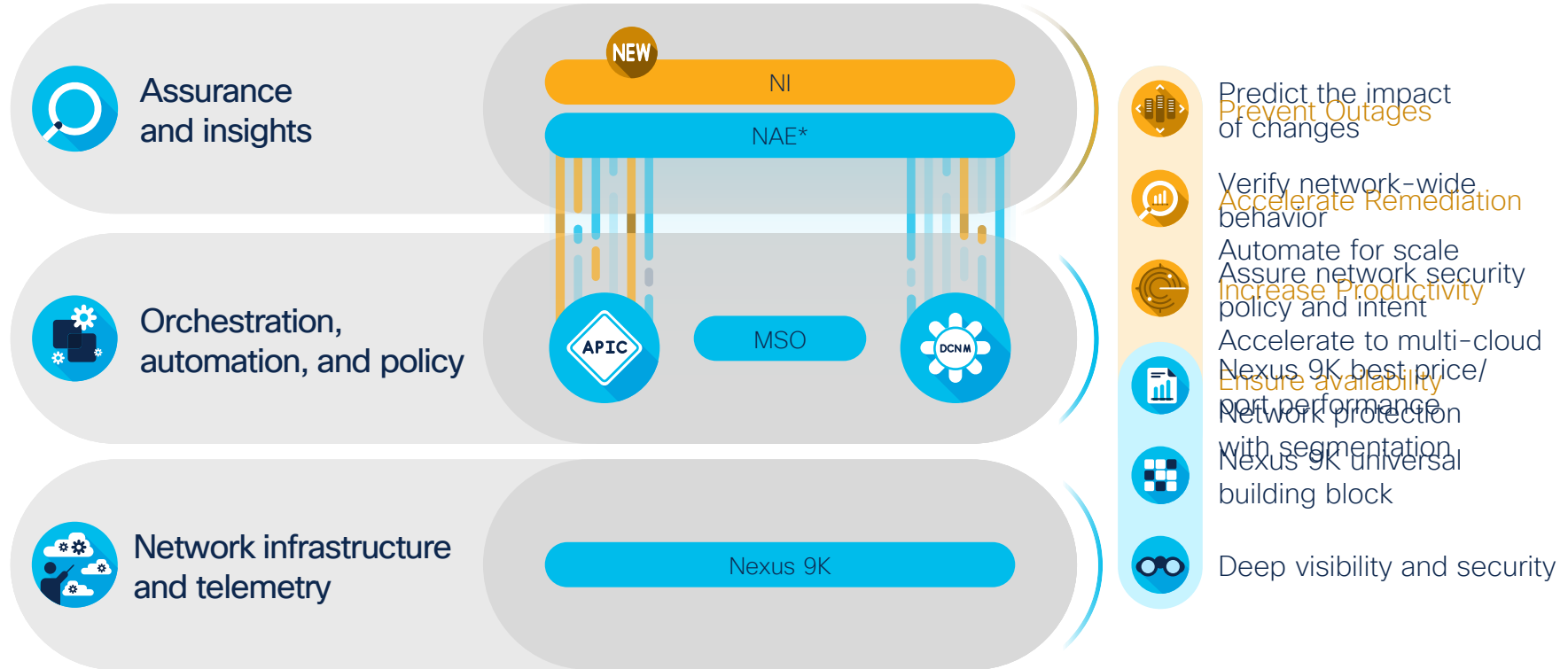"Identify and resolve problems before they impact business"

## Troubleshoot intelligently

NEW

"Leverage real time telemetry to accelerate remediation"

# Customer benefits

Improved customer experience

Increase in revenue

Business continuity and compliance

Decrease in cost

# Cisco Data Center Solution Architecture

**Assurance and insights**

NEW

NI

NAE*

Predict the impact of changes
Prevent Outages

Verify network-wide behavior
Accelerate Remediation

Automate for scale
Assure network security
Increase Productivity
policy and intent

**Orchestration, automation, and policy**

APIC

MSO

DCNM

Accelerate to multi-cloud
Nexus 9K best price/
Ensure availability
port performance
Network protection
with segmentation
Nexus 9K universal
building block

**Network infrastructure and telemetry**

Nexus 9K

Deep visibility and security

# Cisco data center solutions



**Assurance and insights**

NEW

NI

NAE*

+ MSO

**Orchestration, automation, and policy**

APIC

DCNM

**Network infrastructure and telemetry**

ACI

NX-OS

## Consumption models

## DCN Essentials
Single data center

CISCO Live!

# Cisco data center solutions



**Assurance and insights**

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**Orchestration, automation, and policy**

MSO

APIC

DCNM

**Network infrastructure and telemetry**

ACI

NX-OS

## Consumption models

### DCN Advantage
Multiple data center/clouds

**DCN Essentials**
Single data center

# Cisco data center solutions



**Assurance and insights**
- NEW — NI
- NAE*

**Orchestration, automation, and policy**
- MSO
- APIC
- DCNM

**Network infrastructure and telemetry**
- ACI
- NX-OS

## Consumption models
INSTALL BASE
NEW PURCHASE

### DCN Premier
Multiple data center/clouds with highest innovation

### DCN Advantage
Multiple data center/clouds

### DCN Essentials
Single data center

DCN Essentials
Single data center

Day 2 operations
Assurance and Insights
+
ACI / NX–OS

DCN Advantage
Multiple data center/clouds

Day 2 operations
Assurance and Insights
+
ACI / NX–OS

DCN Premier
Multiple data center/clouds
with highest innovation

Day 2 operations
Assurance and Insights
—
ACI / NX–OS

INSTALL BASE

NEW PURCHASE

# Solution architecture



**Assurance and insights**

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**Orchestration, automation, and policy**

APIC

MSO

DCNM

**Network infrastructure and telemetry**

Nexus 9K

* Roadmap for NXOS Fabrics

# Cisco Cloud Scale ASIC Telemetry

Extensive telemetry capabilities

## Flow Table (FT)

Captures full packet flow information and metadata

## Flow Table Events (FTE)

Triggers notifications when packet flows meet thresholds or criteria

## Streaming Statistics Export (SSX)

Streams ASIC statistics based on user configuration

Data-Plane Flow Data

ASIC State

# Cisco provides full visibility leveraging N9K hardware telemetry

**Competition**
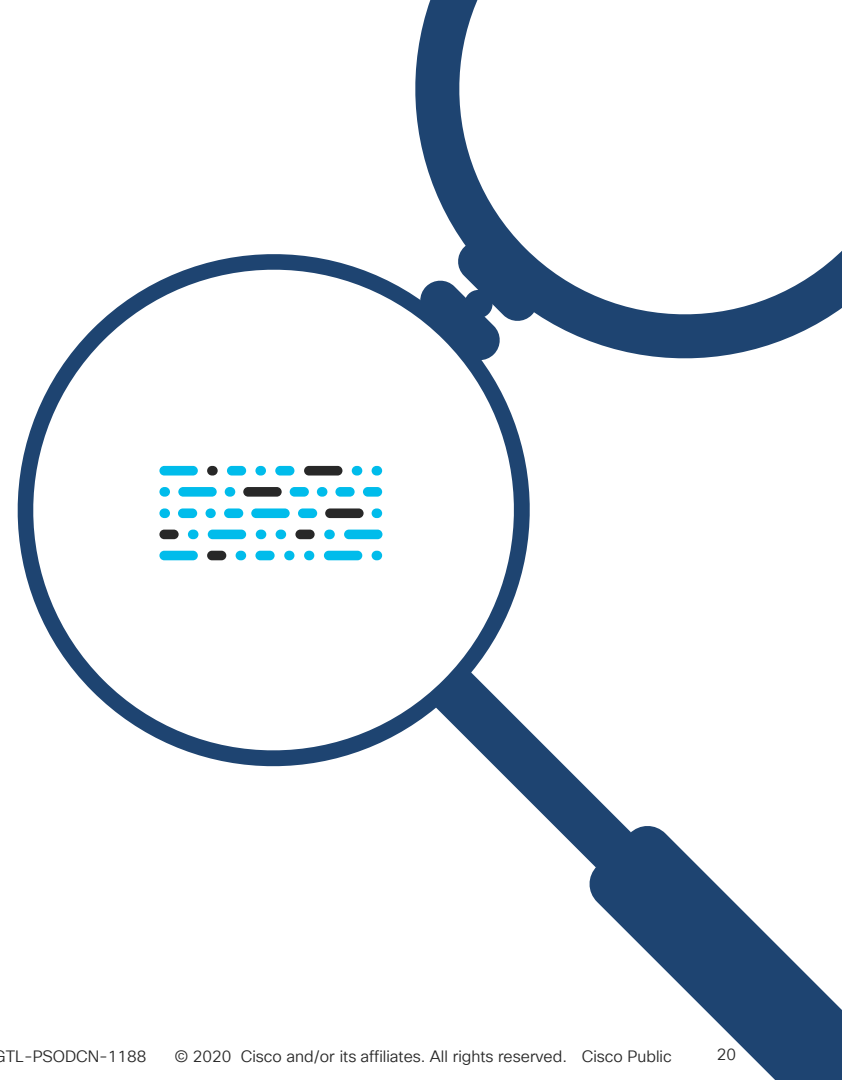
Basic telemetry

# Cisco provides full visibility leveraging N9K hardware telemetry

**Competition**

Basic telemetry

**Cisco**

Advanced telemetry

# Solution architecture
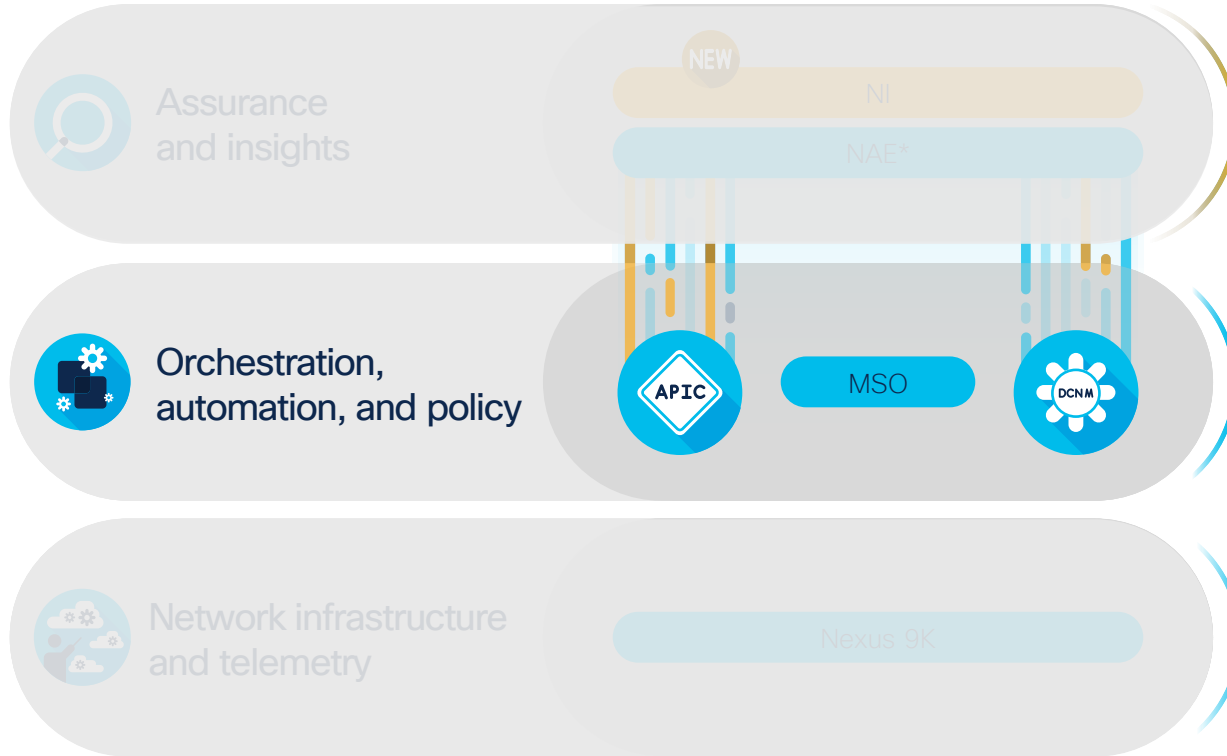
# Cisco ACI
## Aligned with Your Digital Transformation

### Optimize
### Your Network

Automation through
common policy for DC
operations

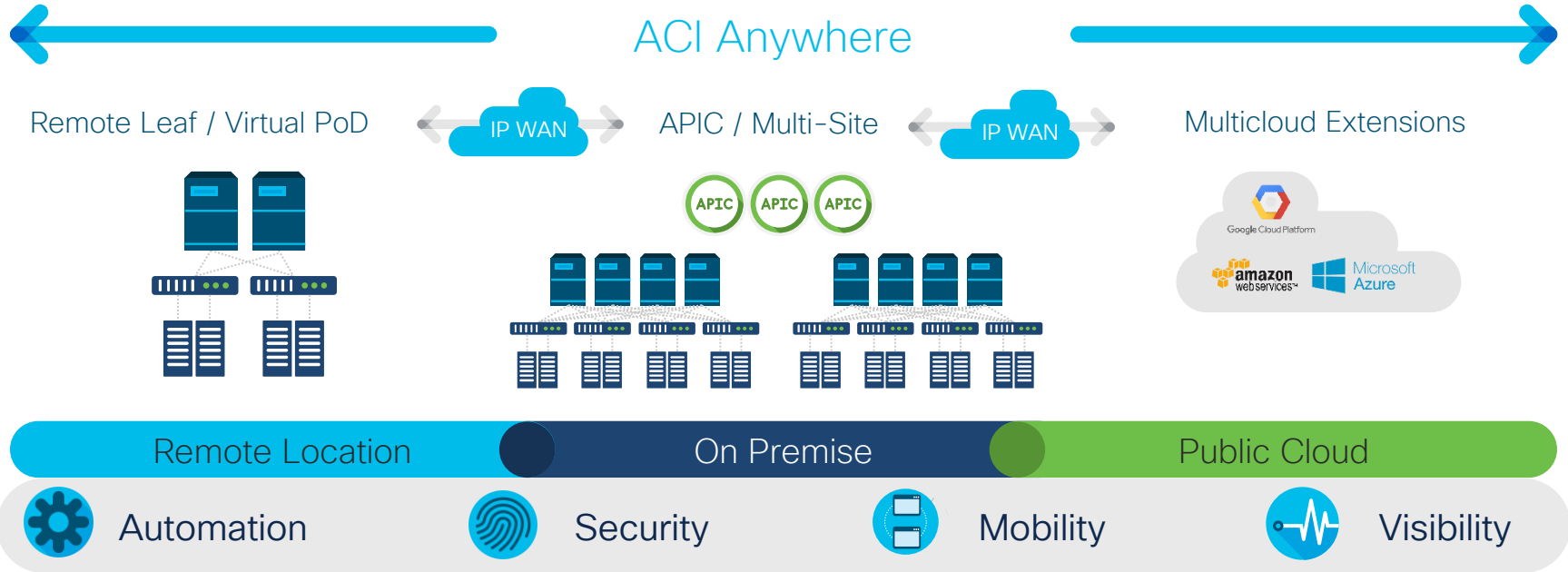### Protect
### Your Business

Business continuity and
disaster recovery with
pervasive security

### Accelerate
### Multicloud

Seamless connectivity to
any workload, anywhere–on
premises to cloud

# ACI Architecture

## Any Cloud, Any Application, Any Platform, Anywhere

ACI Anywhere

Remote Leaf / Virtual PoD

IP WAN

APIC / Multi-Site

APIC  APIC  APIC

IP WAN

Multicloud Extensions

Google Cloud Platform

amazon web services™

Microsoft Azure

| Remote Location | On Premise | Public Cloud |
|---|---|---|

| Automation | Security | Mobility | Visibility |
|---|---|---|---|

Integrations **ACI** Summary

**01** **02** **03**

## Application Monitoring
### Cisco AppDynamics

*"Correlate app performance and network data"*

## Application Delivery
### Cisco SD-WAN

*"Automate app service delivery by extending operations and policy"*

## Application Security
### Cisco SD-Access

*"Identity access management from user to applications"*

Performance monitoring, performance delivery and consistent security for your applications where ever your applications go

# Furthering the reach with ACI ecosystem

**Observability and Analysis**

splunk>  ScienceLogic  zenoss Own IT.

APPDYNAMICS  SevOne

**Public Cloud**

Azure Stack  Google Cloud Platform

Azure  amazon webservices

**Automation**

SALTSTACK  ANSIBLE  CHEF  puppet labs  Terraform

ACI Fabric

**ITSM**

bmc  Cherwell

servicenow

**ADC**

HAPROXY  A10

CITRIX  radware

f5

**Workload Management**

docker  openstack  kubernetes

Hyper-V  vmware

**Security**

FORTINET  CISCO  McAfee

Check Point SOFTWARE TECHNOLOGIES LTD.  paloalto NETWORKS

Symantec  radware  tufin

Infoblox  algosec

CISCO Live!

# Solution architecture



Assurance and insights
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Orchestration, automation, and policy
APIC
MSO
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Network infrastructure and telemetry
Nexus 9K

* Roadmap for NXOS Fabrics

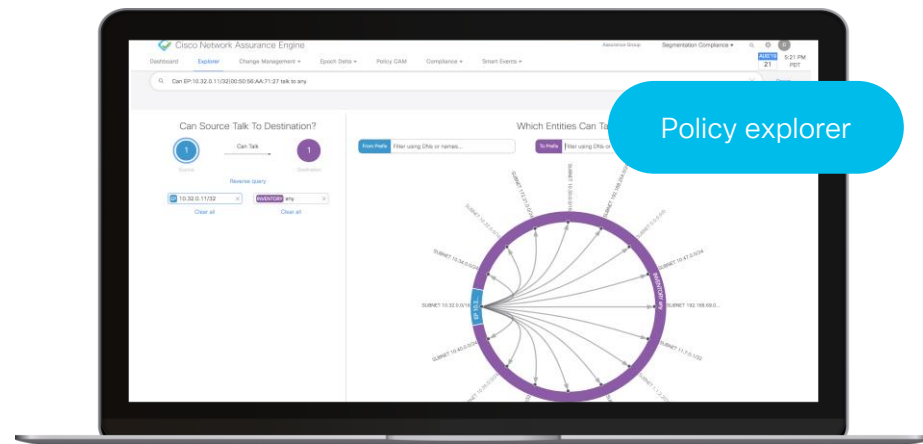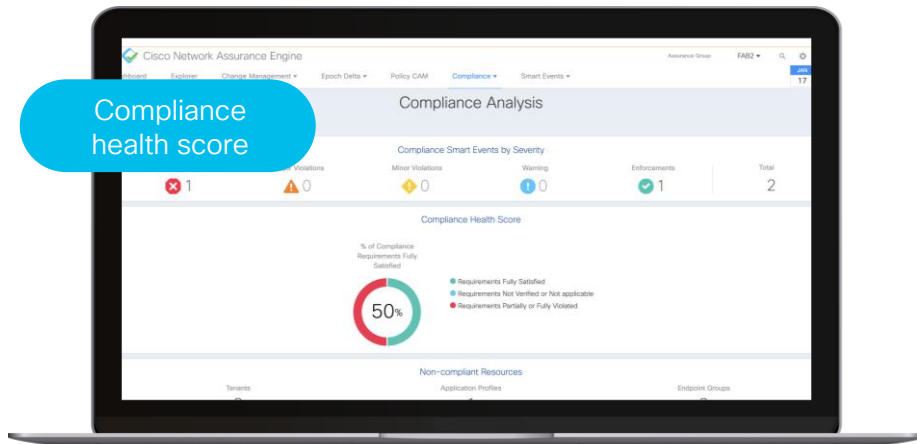# Change management
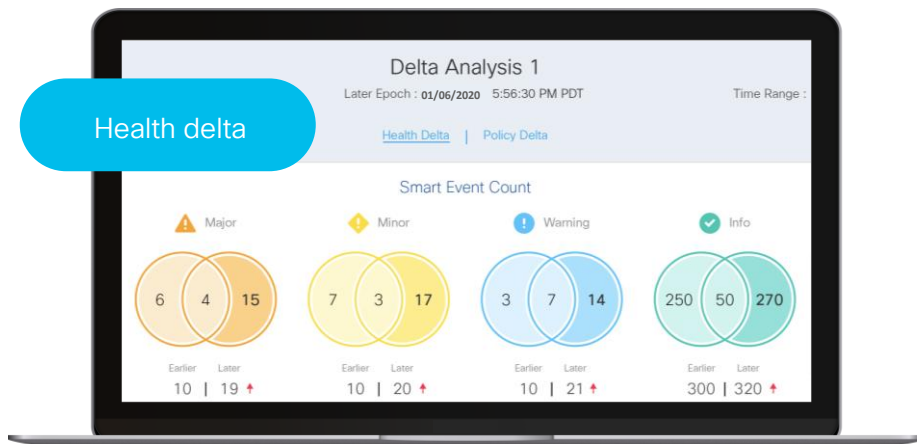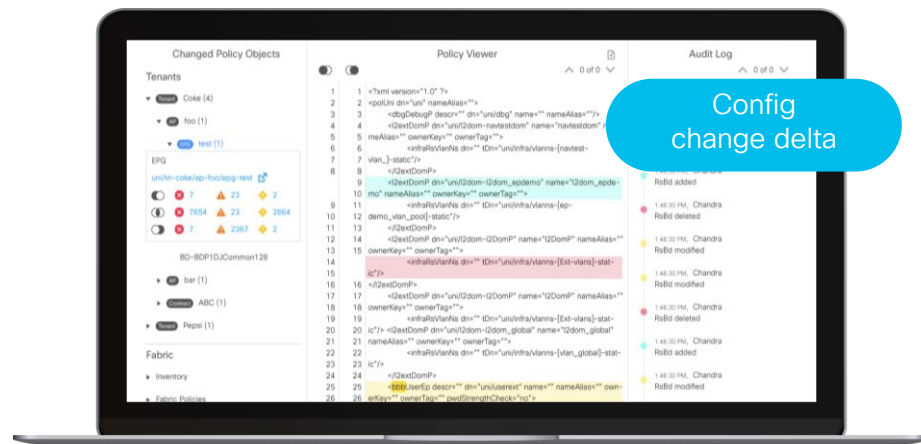


## Customer benefits

Detect network impact before and after changes

Reduce maintenance windows require for changes

Lifecycle management for network issues

Drive faster change approval and service deployment to meet business needs

# Compliance and connectivity



Compliance health score

Policy explorer

## Customer benefits

Ensure network policies are compliant against business rules

Pass audits faster and comply with regulatory clauses

Ability to query the fabric to gain deeper insights to connectivity and asset relationship
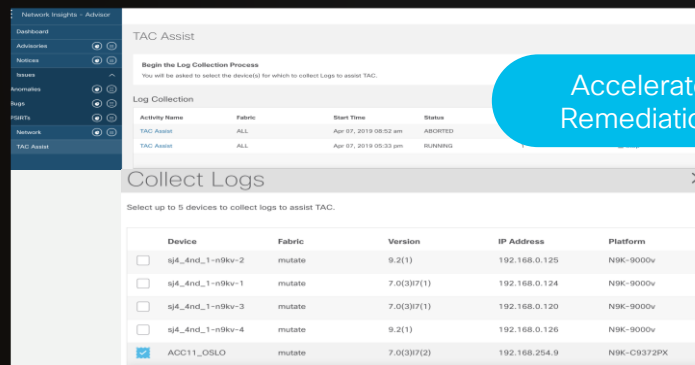
Continuous fabric analysis and visibility to reduce security issues

# Prevention and Remediation





**Prevent Outages**
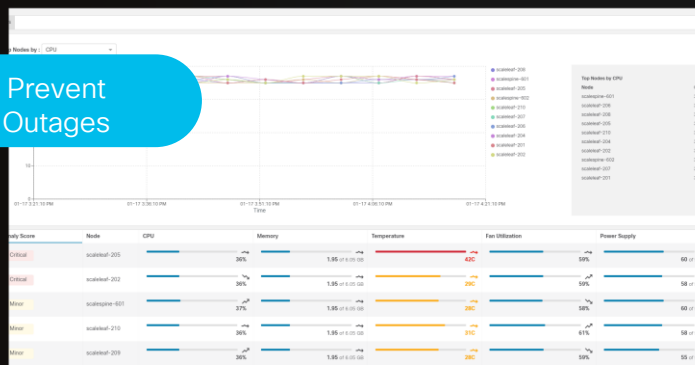
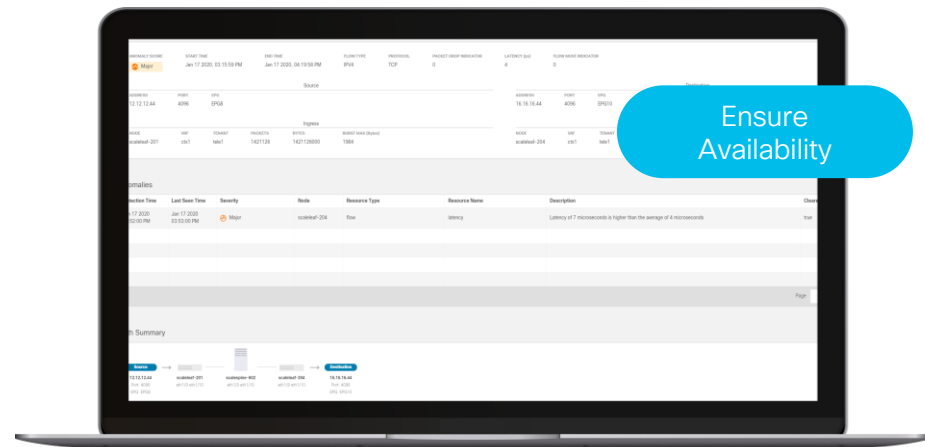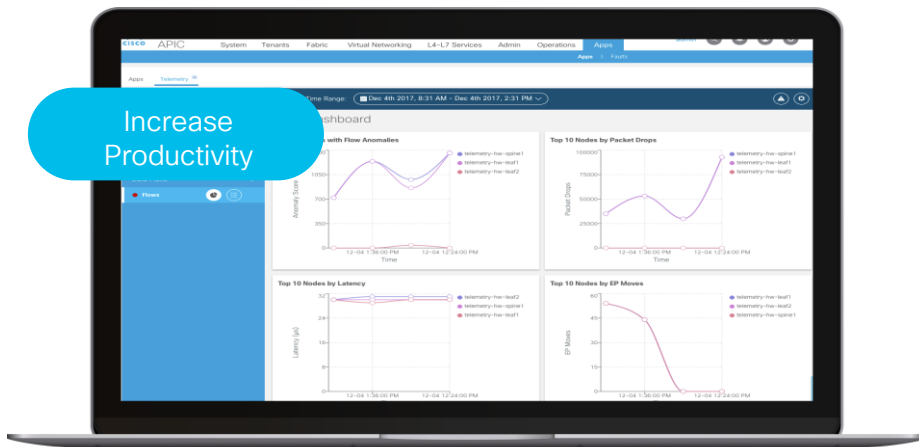**Accelerate Remediation**

## Customer benefits

Proactive advisory to preserve infrastructure health

Predictive alerts to fix Issues before impact

Automatically identify root cause of issues

Cloud assisted TAC and Remote Fix

# Productivity and Availability



Increase Productivity

Ensure Availability

## Customer benefits

Knowledge base digitization to reduce manual process

Machine Learning assisted Anomaly detection

Utilize telemetry data to provide real time visibility

Automated risk exposure analysis

Thank you

Possibilities

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