
AWS
re:Invent

ENT286-S

SPONSORED BY NETSCOUT

Safe and successful AWS migrations

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NETSCOUT

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Director, Product Marketing
NETSCOUT

AWS re:Invent

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Agenda

Acceleration of the migration to AWS

Getting to Day 2 cost-effectively with smart visibility

Hybrid cloud visibility with NETSCOUT Smart Data, from Day 0 to Day 2

Looking forward: Smart Data in 5G and the edge

NETSCOUT and AWS collaboration



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Hybrid cloud adoption

ACCELERATED BY COVID-19 AND WFH TRENDS

- Those who had cloud initiative in play fared better than those that did not
- The border between private and public cloud is becoming more seamless
- The shift in connectivity from offices or school campuses to the home was sudden, but well-handled by IT teams

“We are running hot – but stable.”

–Many NETSCOUT customers



51% of UK business leaders say their shift to a cloud computing-based business model has saved their company from collapse during the COVID-19 pandemic, according to research from Centrify, a leading provider of Identity-Centric Privileged Access Management (PAM) solutions. Given this success, 60% of respondents are planning to substantially increase their use of cloud-based IT throughout and following the pandemic.

Visibility challenges with cloud migrations



Private cloud

35%

Increase through 2020



Public cloud

10%

Increase (beyond the ~60% of total IT already budgeted)



71% of enterprises believe it is very important to have constant visibility, analytics, and control across clouds



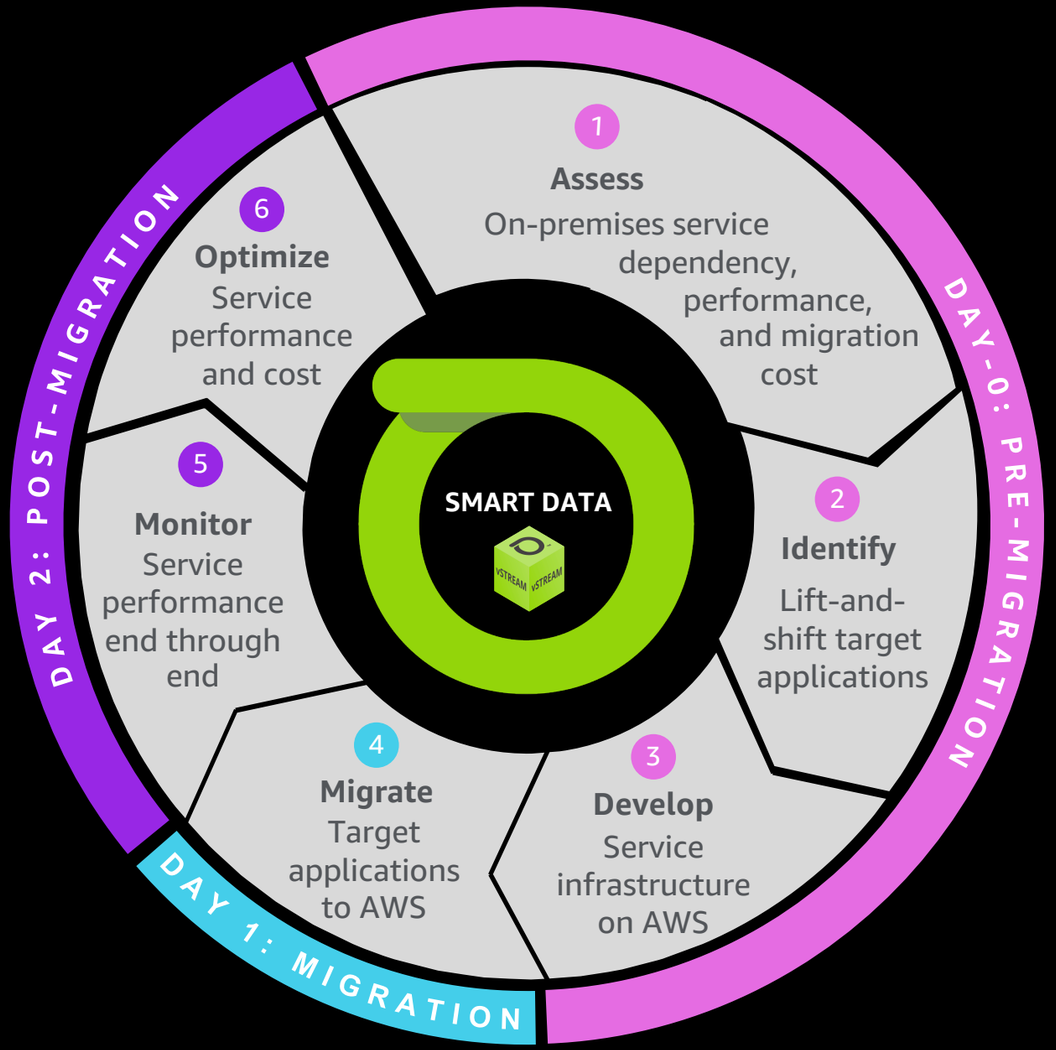
Many enterprises are dissatisfied with current hybrid / multicloud management strategies due to the lack of integration and inability to consistently address dynamic “Day 2” operational concerns

Source: IDC

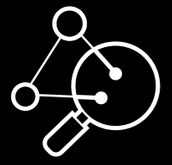
Streamlining AWS migration

Getting to Day 2 as efficiently and cost-effectively as possible

- Day 0 is more than dev – understand the application and cost in hybrid cloud
- Day 1: Audit the motion
- Day 2: Operations – monitor and optimize performance and cost



The visibility challenge: Balancing performance and cost



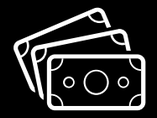


Performance

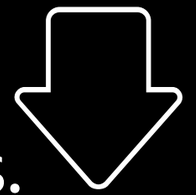
User experience

Application triage

Capacity planning



Cost

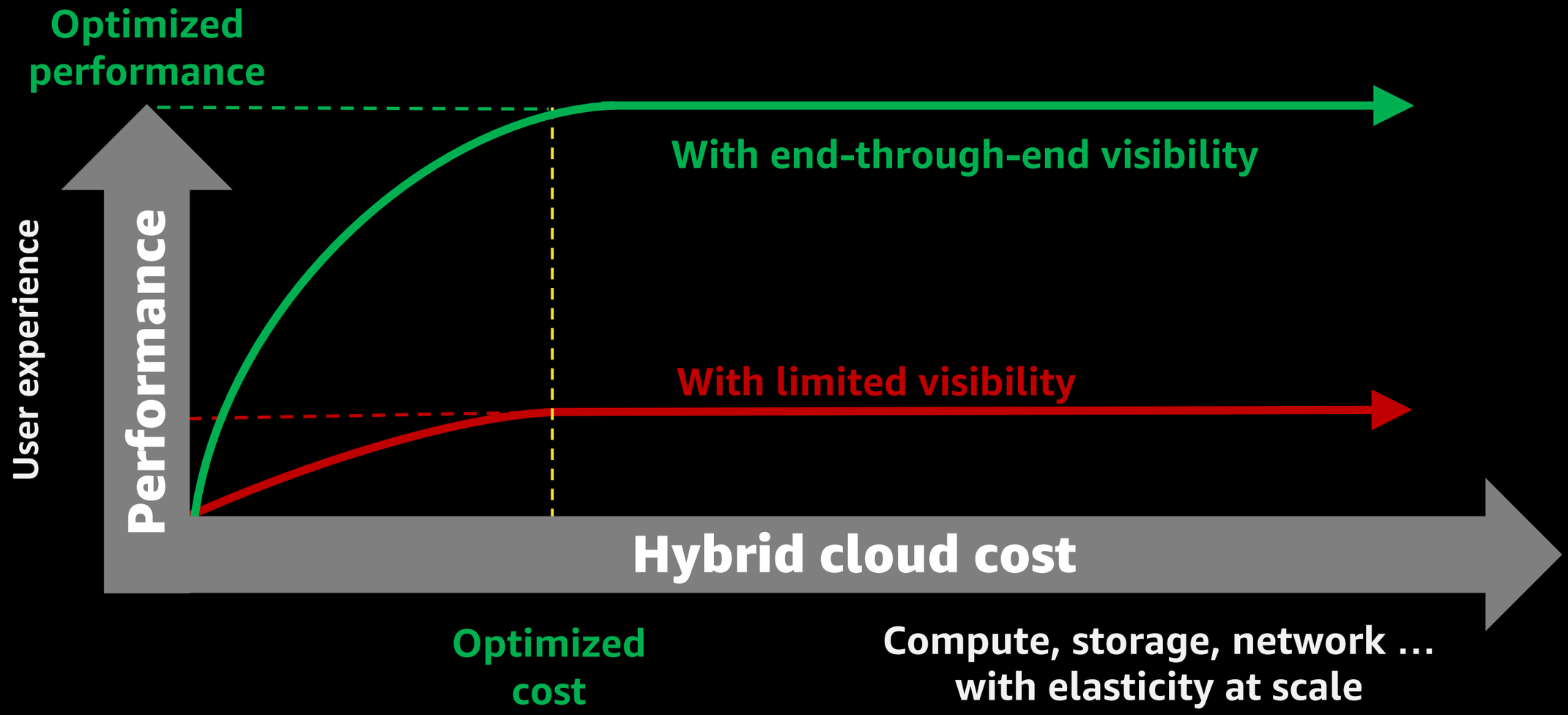


Balancing cost vs. user experience

Leveraging elasticity

Communication to the business

The visibility challenge: Improving the performance-cost ratio



Hybrid cloud visibility with NETSCOUT Smart Data, from Day 0 to Day 2

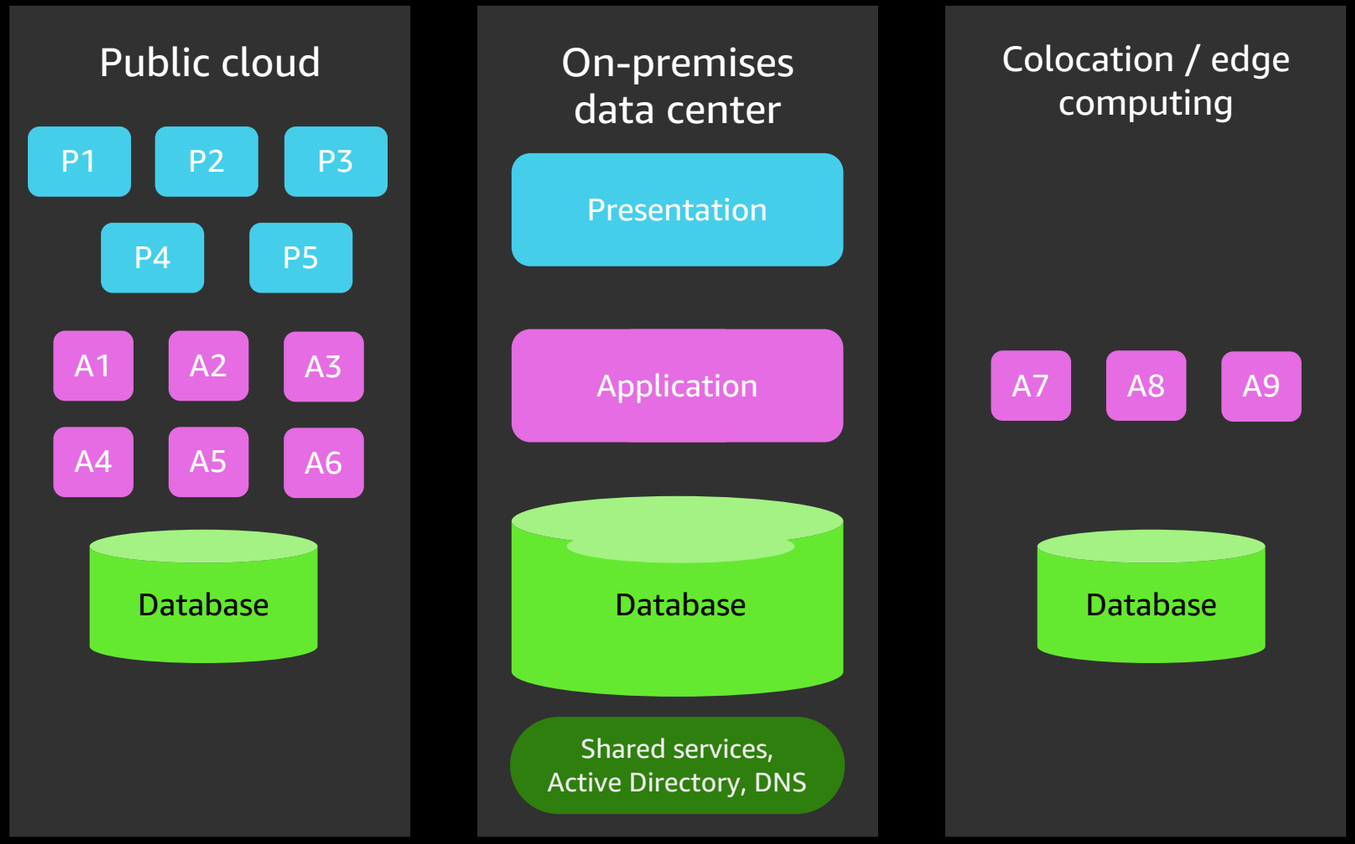


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Hybrid cloud migration visibility challenges

ASSURING USER EXPERIENCE IN THESE COMPLEX SERVICE ARCHITECTURES



Legacy and refactored applications

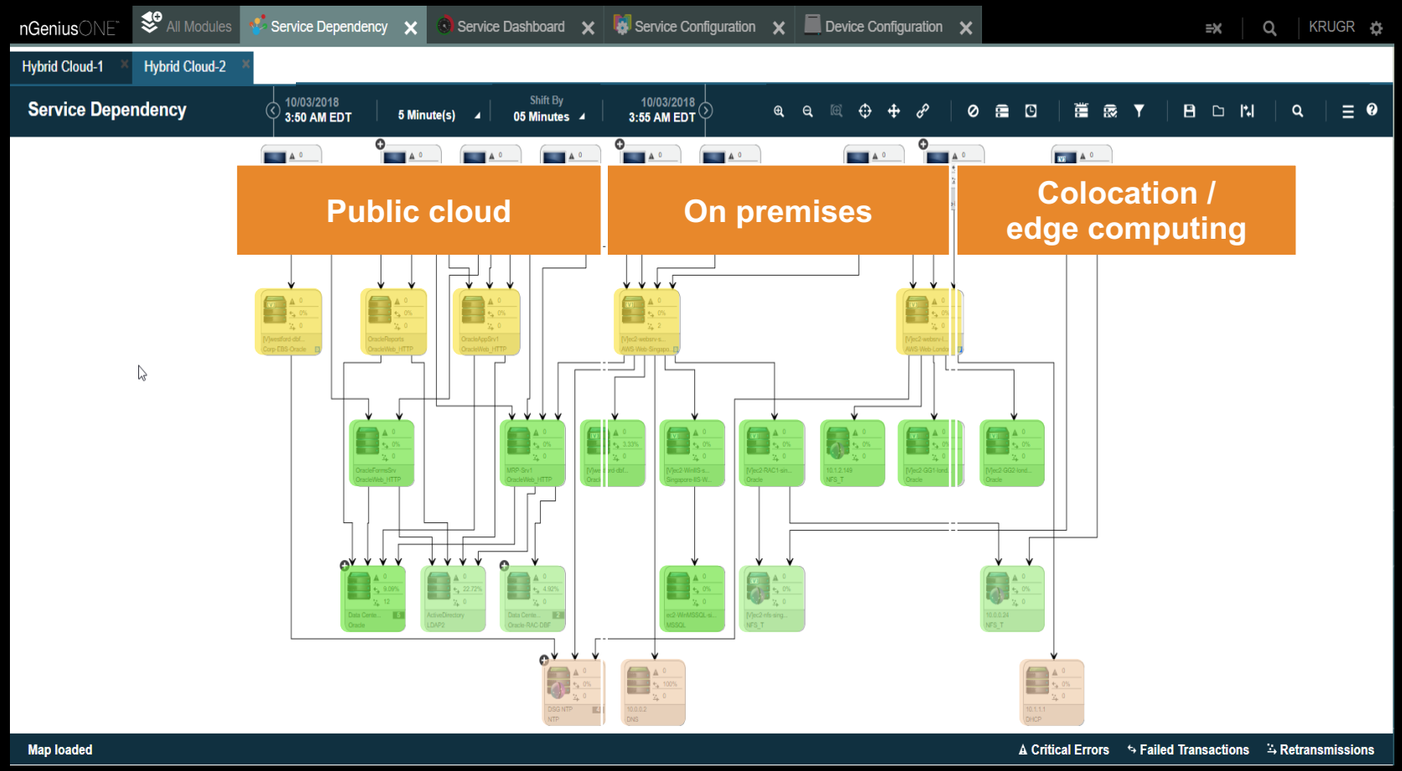
- Where's the problem?
- Who has ownership?
- How can you quickly resolve issues with this constant change?
- What's the improvement in performance?

Visibility is critical to empower IT to execute their migration strategy successfully

Visibility throughout the application lifecycle

HYBRID CLOUD VISIBILITY WITH NETSCOUT SMART DATA

- Day 0: Pre-migration
  - Choose workloads to migrate
  - Identify dependencies
  - Establish performance baselines
  - Develop migration strategy
- Day 1: During migration
  - Assure performance
- Day 2: Post-migration
  - Optimize performance as you elastically scale
  - Compare to baselines
  - Monitor service availability
  - Monitor vulnerabilities and security threats



Smart visibility with NETSCOUT Smart Data

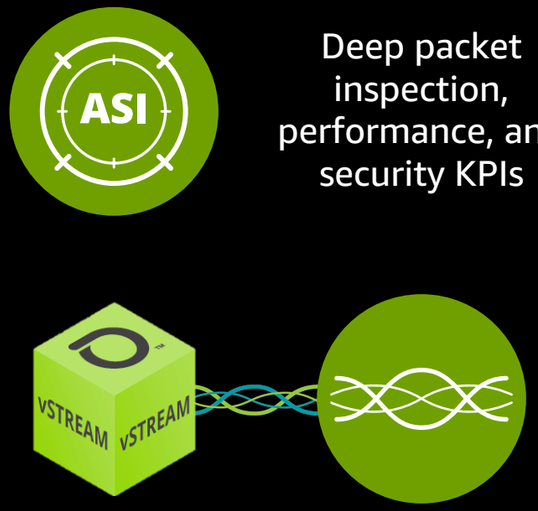
What is Smart Data?

PACKET DATA IS ULTRA-HD, UNIVERSALLY AVAILABLE, AND CONVERTED TO SMART DATA WITH ASI

Acquire packet data

- Data center and colocation
  - VMware ESX, NSX
  - NSX-T service insertion
  - Hyper-V, OpenShift, KVM, etc.
  - Port mirroring / span / taps
- AWS
  - Amazon VPC traffic mirroring
- Flexible deployments
  - Cloud-native
  - VMs, containers, and pods

Convert to smart data



Deep packet inspection, performance, and security KPIs

Smart data

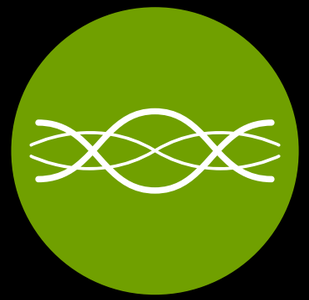
Export

To data warehouses and data lakes

- Using industry-standard Kafka and REST APIs
- To destinations like Amazon Redshift and Amazon S3

Smart data – ASI metrics

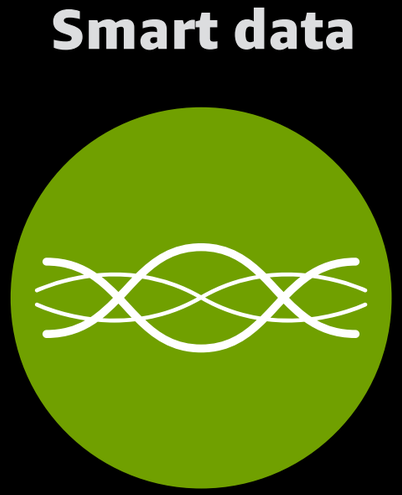
- Rich, multidimensional metadata
  - KPI, session, packet
- Advanced metrics
  - Application response time
  - Application success, failure
  - Application errors
  - Network response time
  - Per protocol, per message type (i.e., URL)
  - Voice and video QoE metrics
- Security metrics
  - Weak security practices (ciphers, protocols)
  - Threat analysis
  - Behavior analysis



Smart data

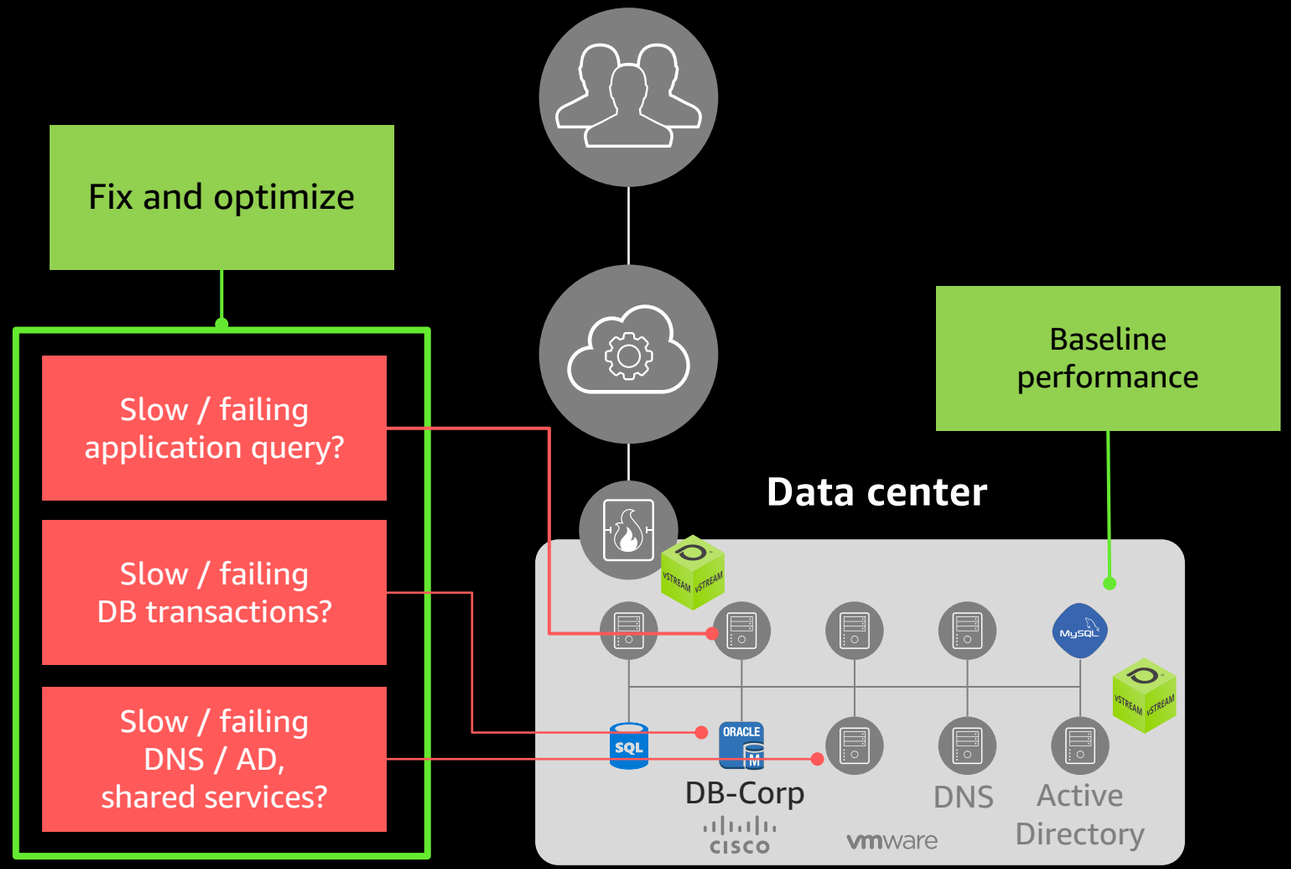
Smart application troubleshooting and monitoring

Smart data gives common situational awareness



Gain visibility – Day 0

VSTREAM VISIBILITY IN THE DATA CENTER

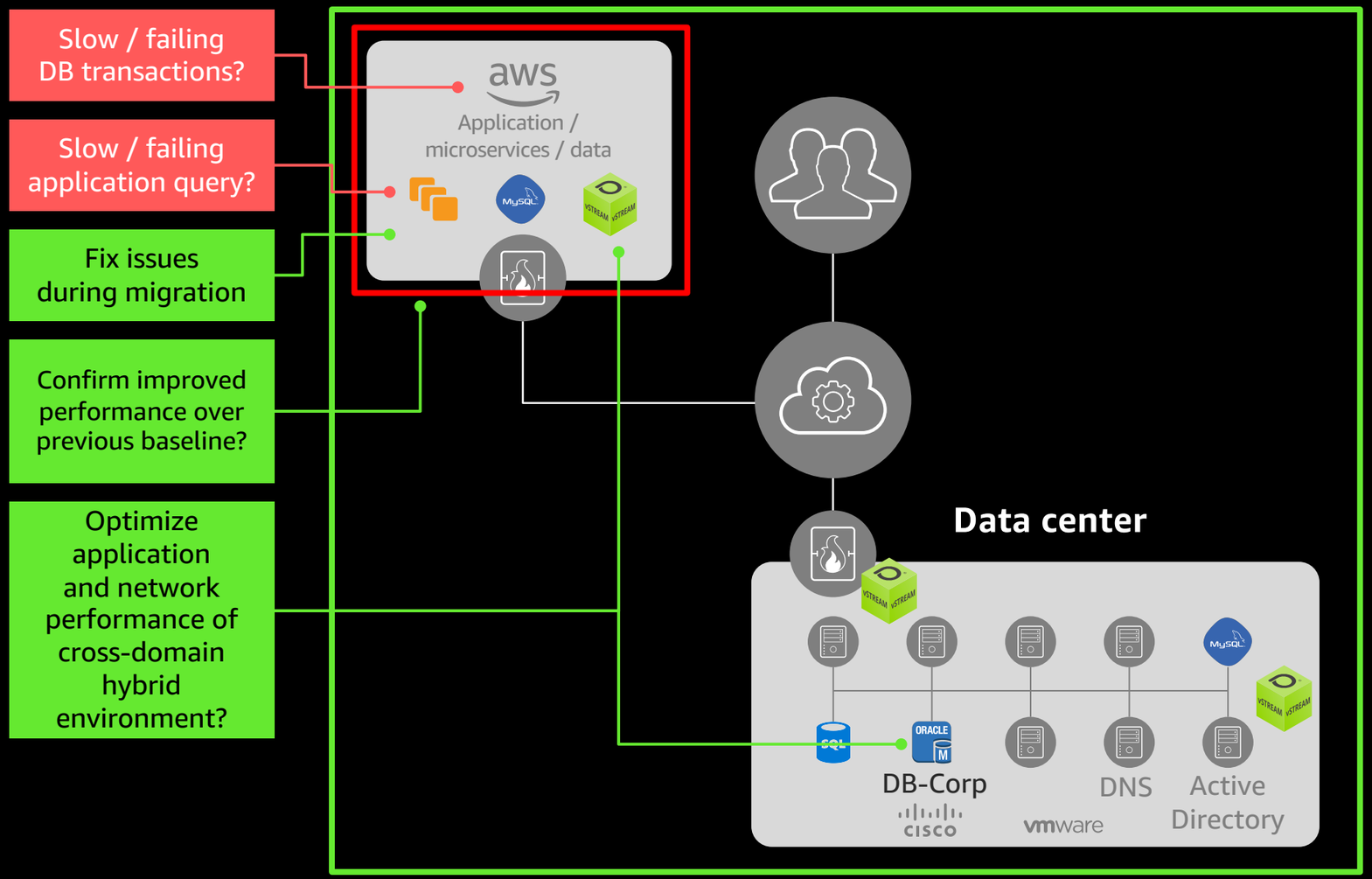


Pre-migration

- Service baselining
- Service-level assurance of user experience
  - Networks, applications, enablers, database, etc.
- Asset tracking
  - What needs to be migrated

Visibility into AWS migrated workloads – Day 1

VSTREAM EXTENDS THE VISIBILITY INTO AWS

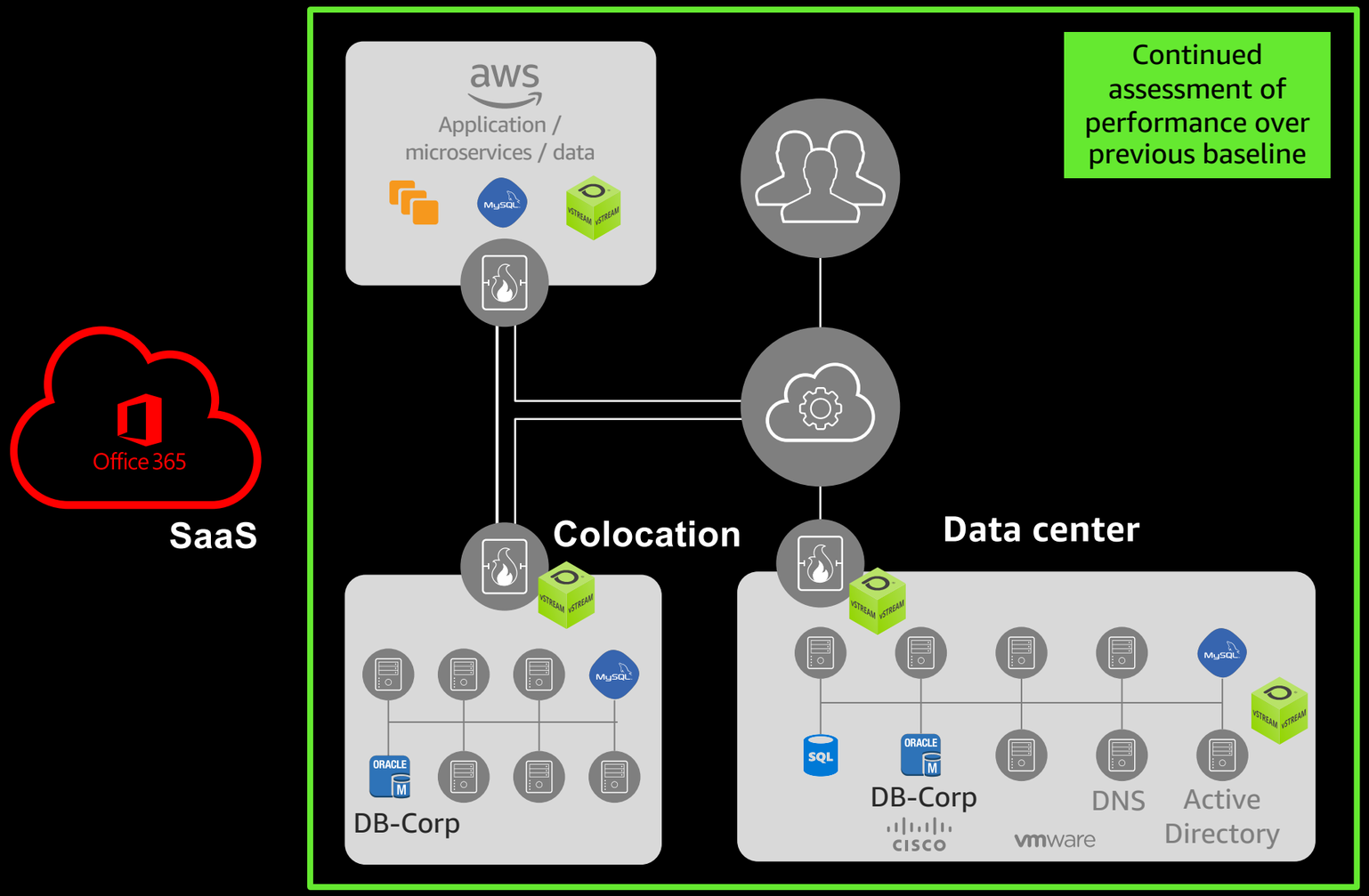


During and after migration

- Service-level assurance of user experience in hybrid environment
- Service / application optimization
- Cross-domain network and application performance (and costs)

NETSCOUT visibility without borders

VSTREAM ON PREMISES, COLOCATION, AWS IAAS, AND SAAS

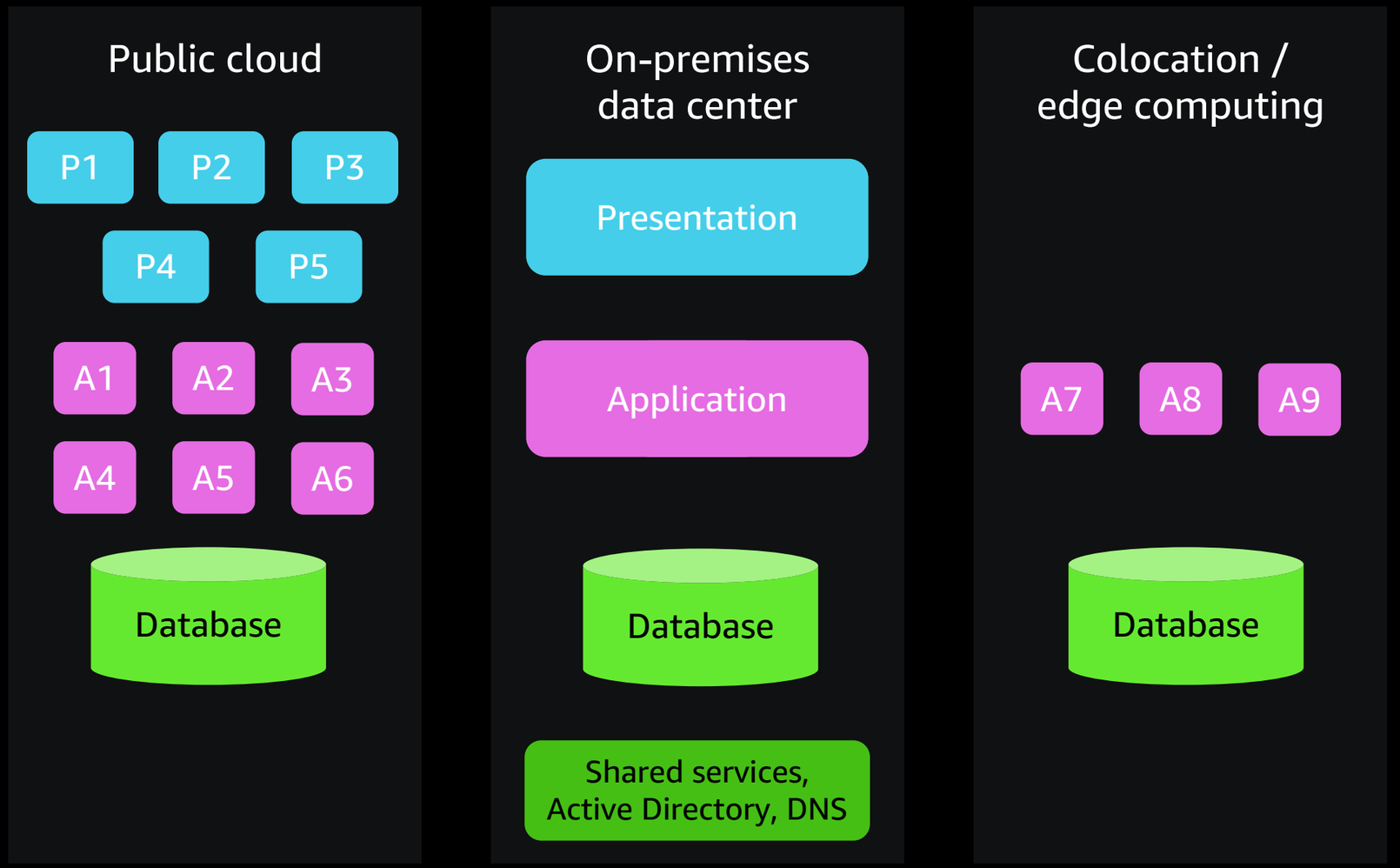


With colocation and SaaS

- Service-level assurance of user experience across all domains
- Service / application optimization
- Cross-domain network and application performance (and costs)

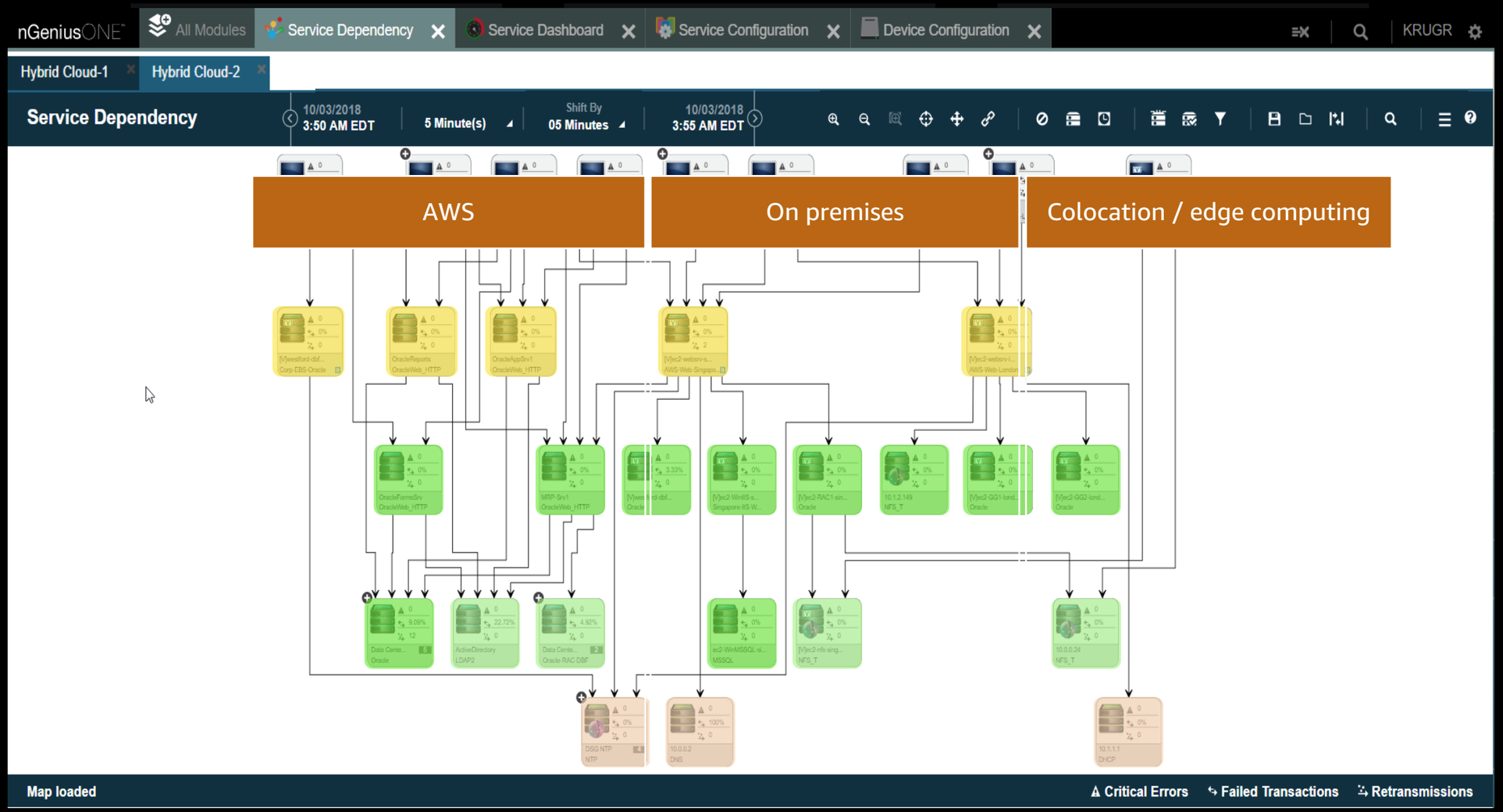
Visibility without borders

SEEING DEPENDENCIES ACROSS ALL THE BORDERS AND DOMAINS



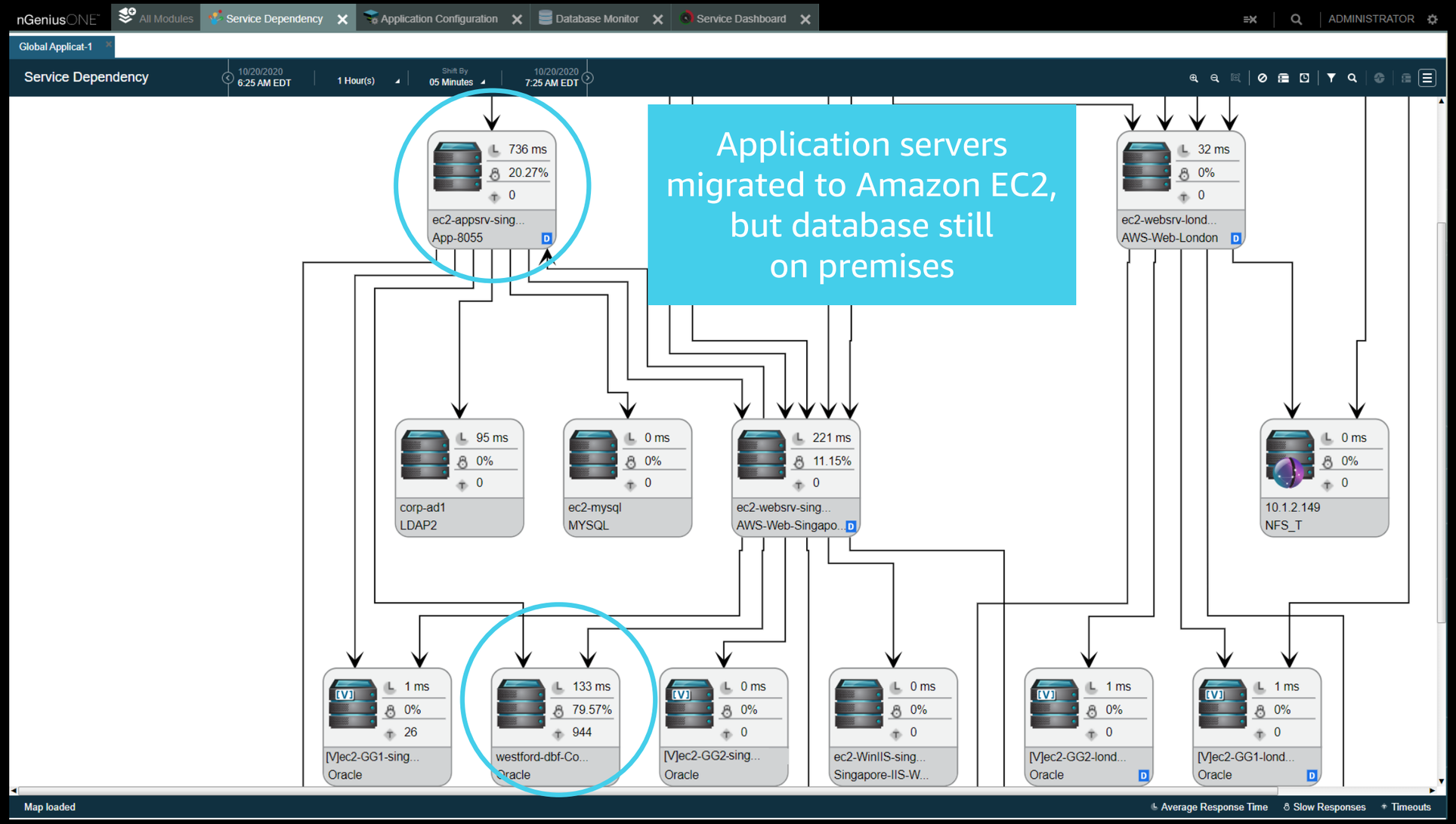
Visibility without borders

SEEING DEPENDENCIES ACROSS ALL THE BORDERS AND DOMAINS



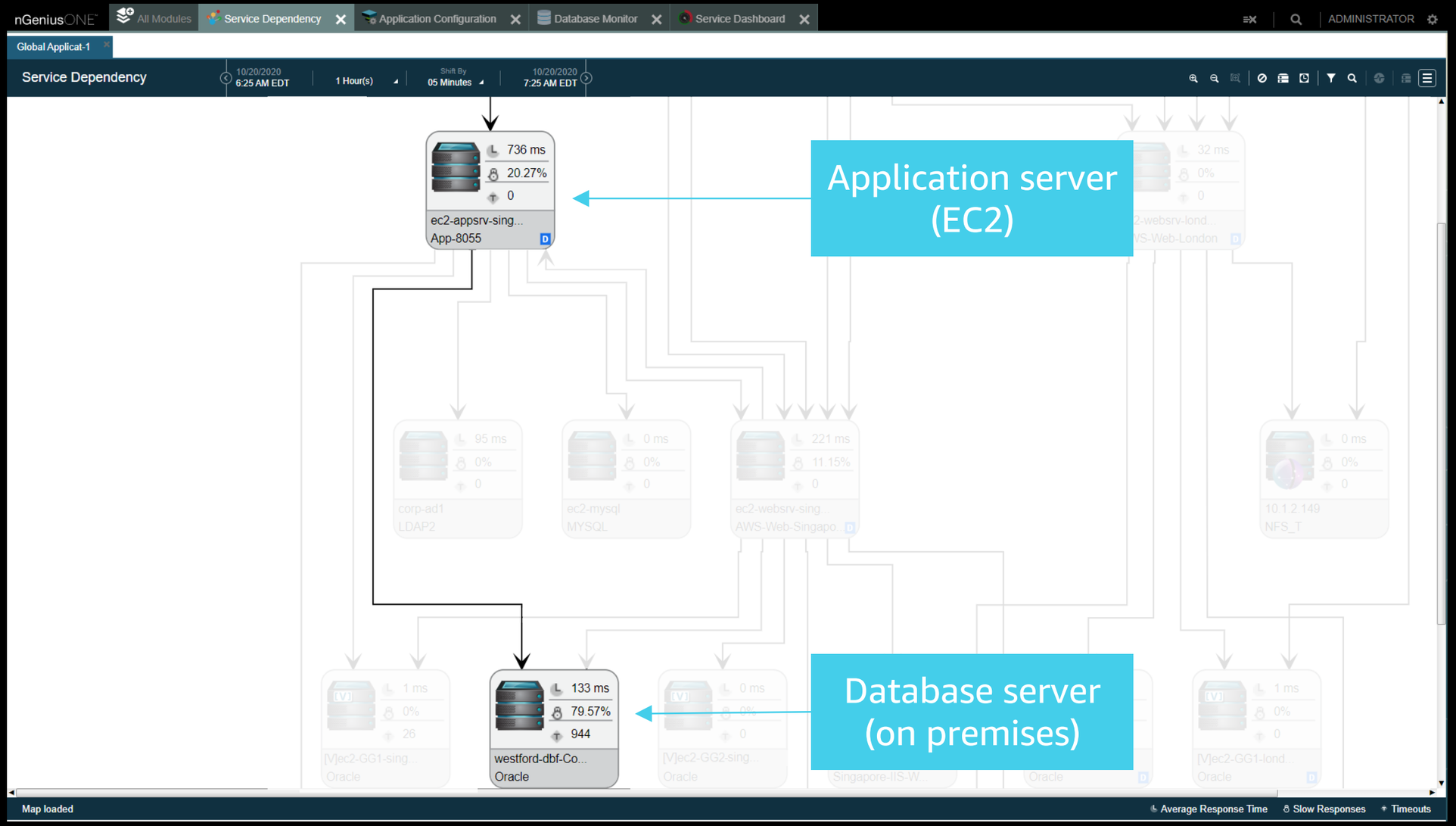
Application performance across hybrid cloud

VIEW DURING MIGRATION



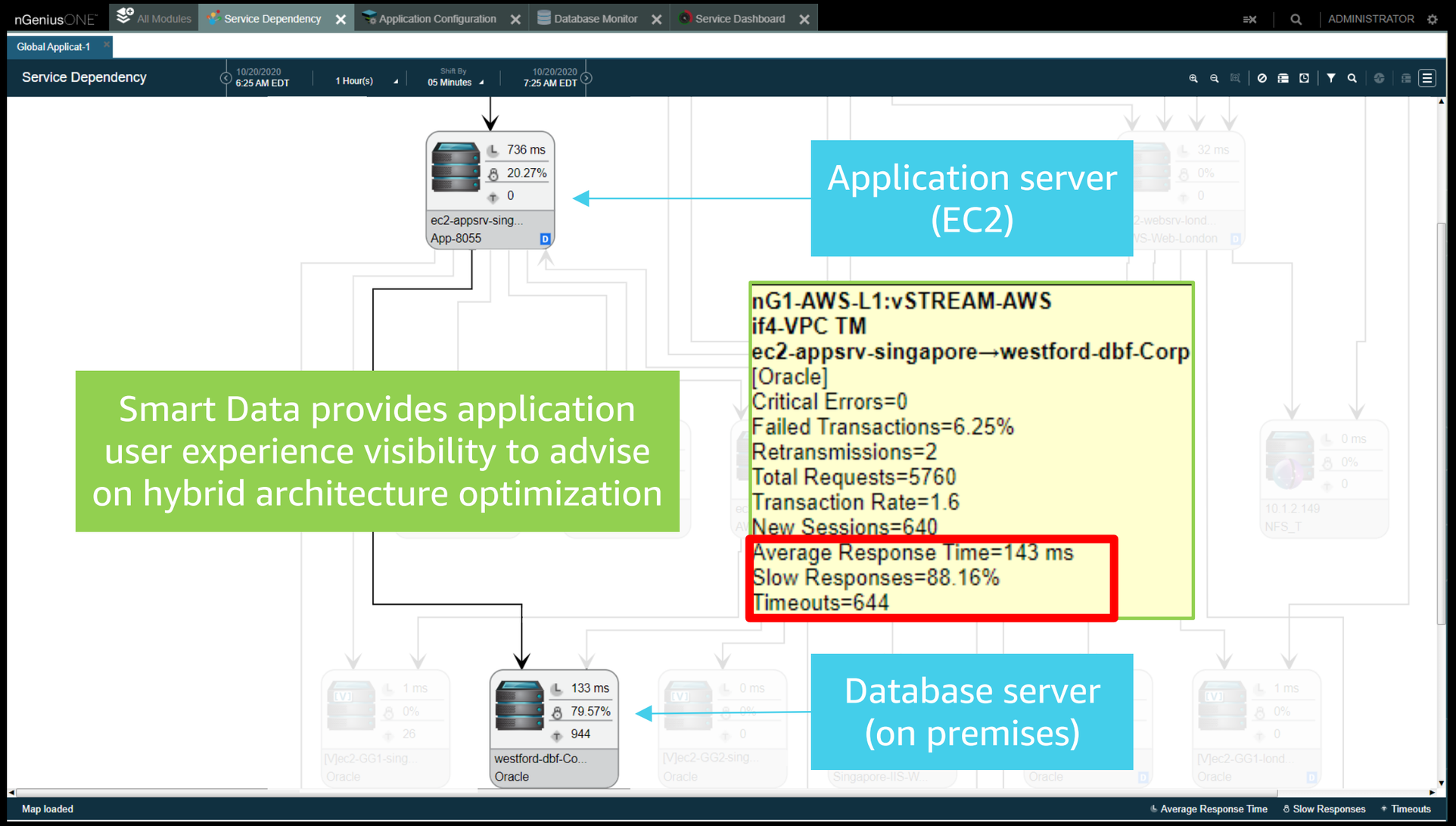
Application performance across hybrid cloud

VIEW DURING MIGRATION – APP SERVERS IN AMAZON EC2, DATABASE STILL ON PREMISES



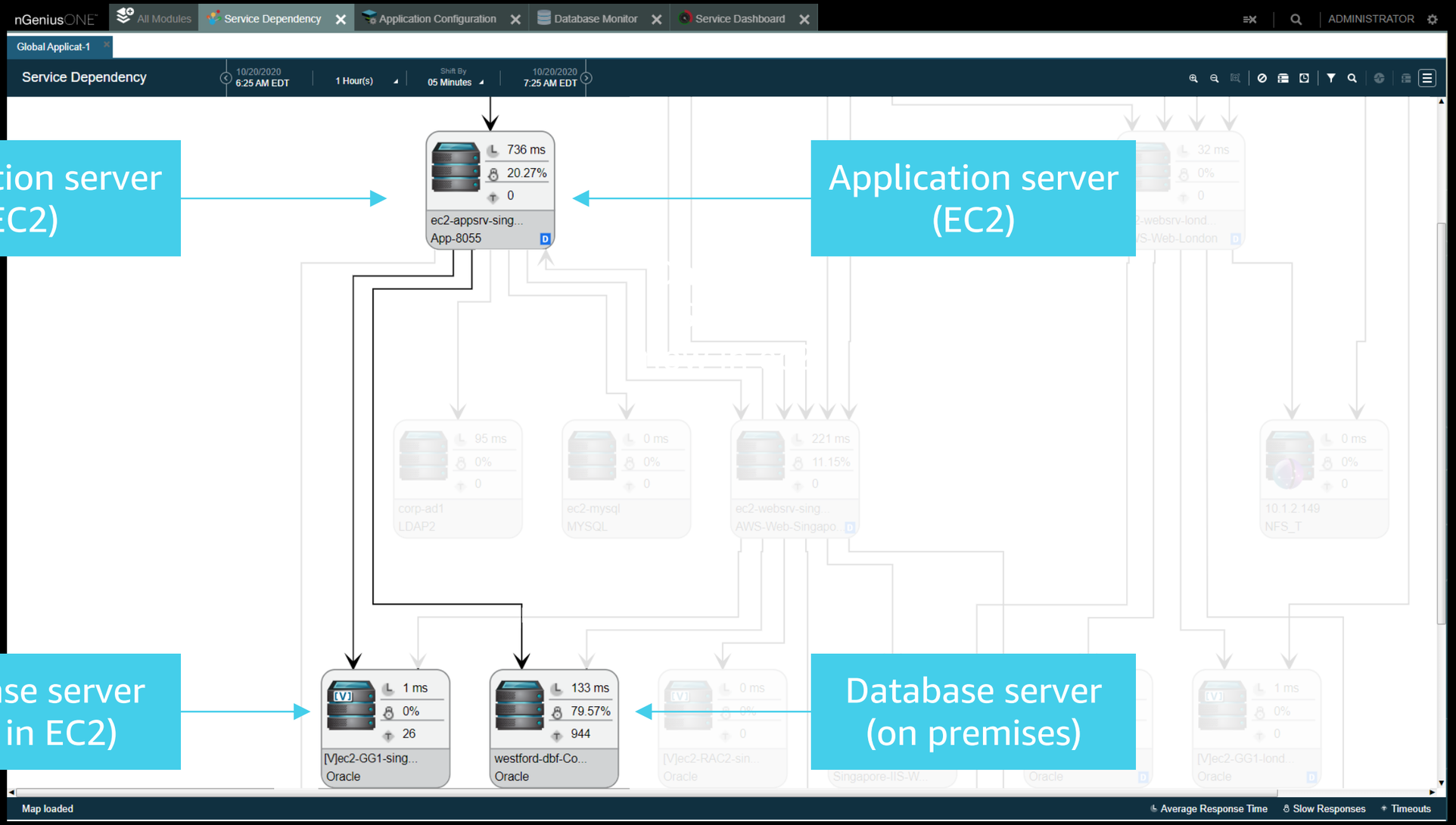
Application performance across hybrid cloud

VIEW DURING MIGRATION – APP SERVERS IN AMAZON EC2, DATABASE STILL ON PREMISES



Application performance across hybrid cloud

SERVICE OPTIMIZATION: DATABASE MOVED TO AMAZON EC2

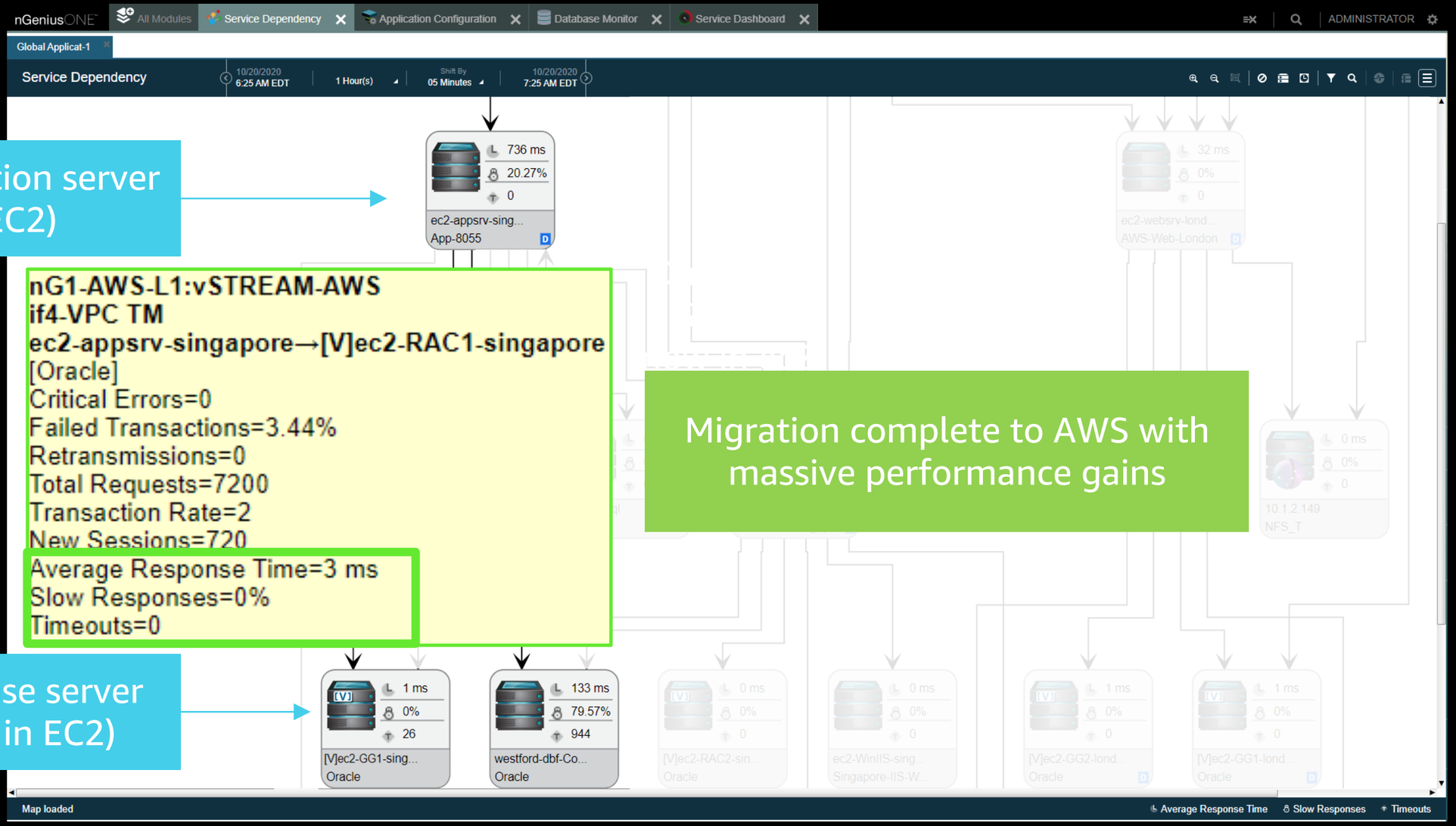


Application performance across hybrid cloud

SERVICE OPTIMIZATION: DATABASE MOVED TO AMAZON EC2

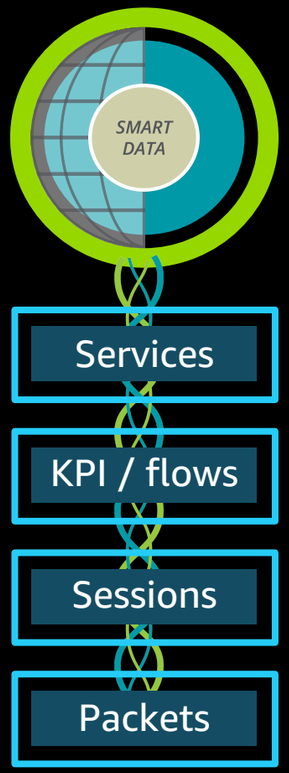
Application server (EC2)

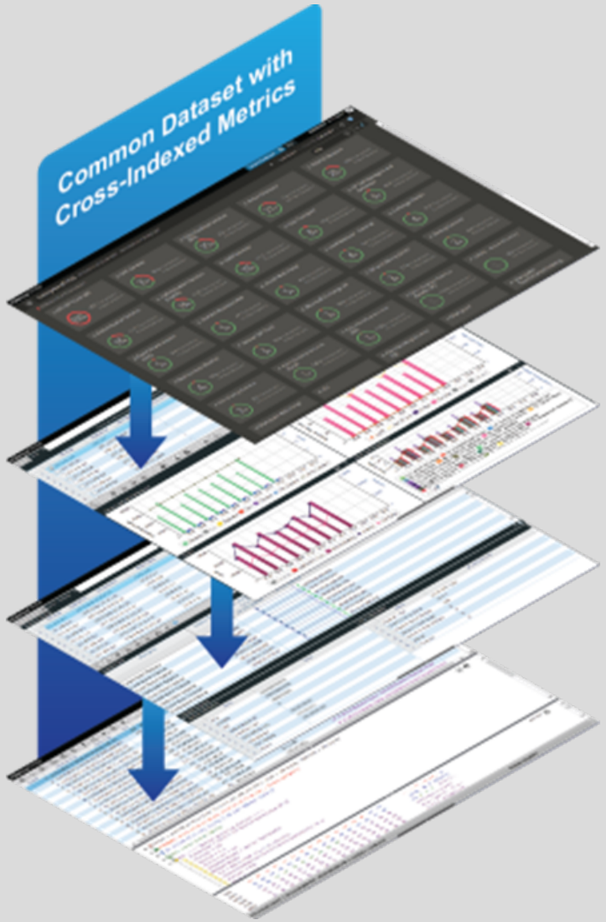
Database server (now in EC2)



Quick and effective service triage

USING PROACTIVE TOP-DOWN METHODOLOGY





nGeniusONE

nG1

Service Dashboard
Gain visibility into critical service issues

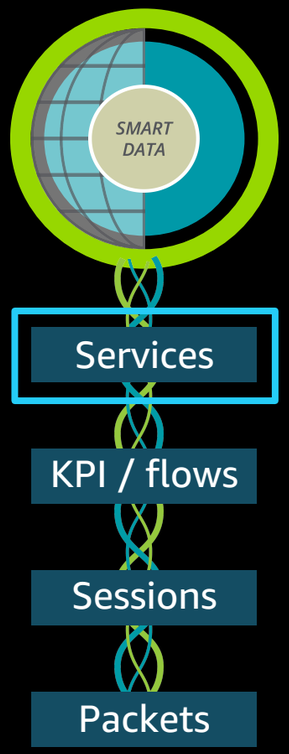
Performance Analysis
Launch service monitors to verify and correlate service impact

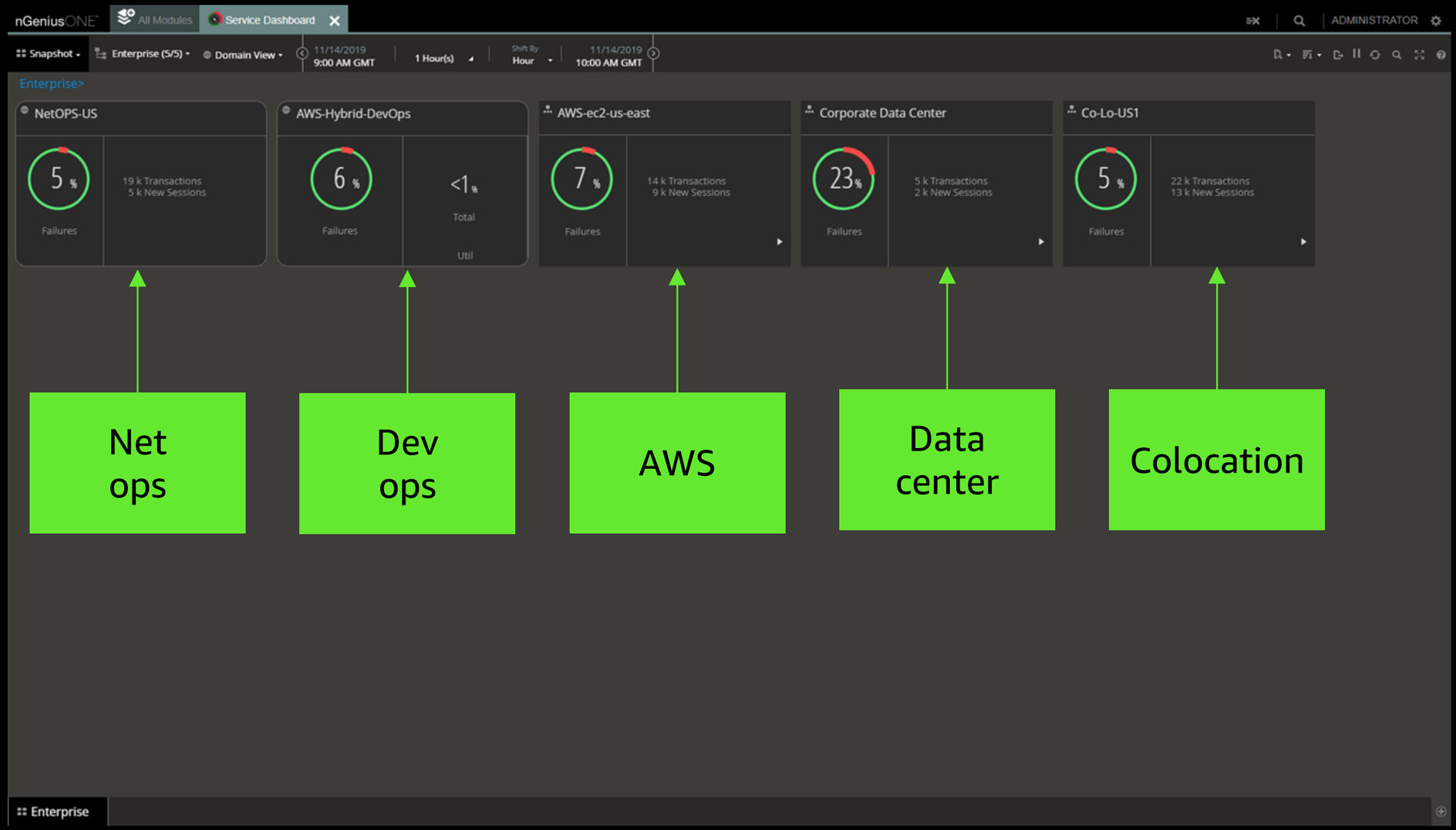
Session Analysis
Perform granular user session tracing and analysis

Deep-Dive Packet Analysis
Deep-dive investigation of service delivery issues

nGeniusONE hybrid cloud dashboard

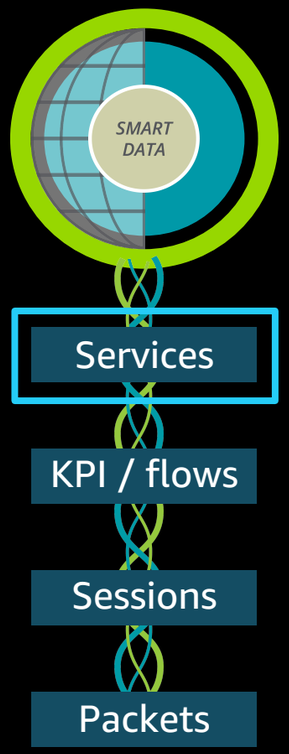
ESTABLISHING COMMON SITUATIONAL AWARENESS

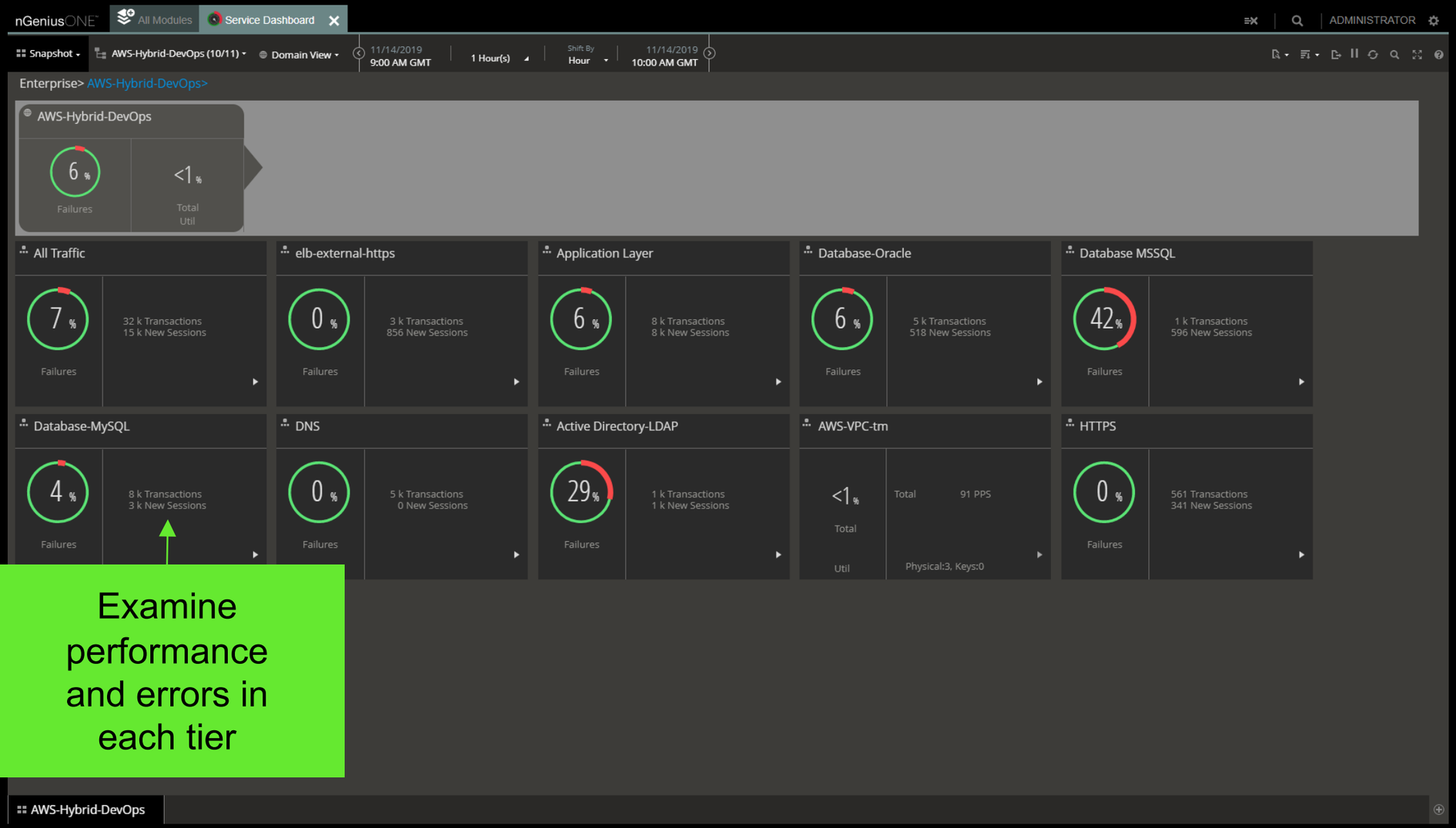




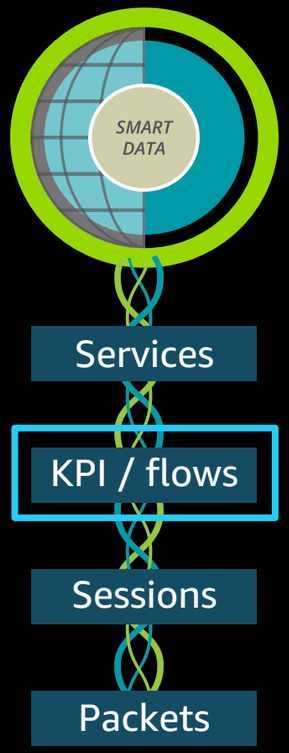
Performance monitoring – hybrid cloud

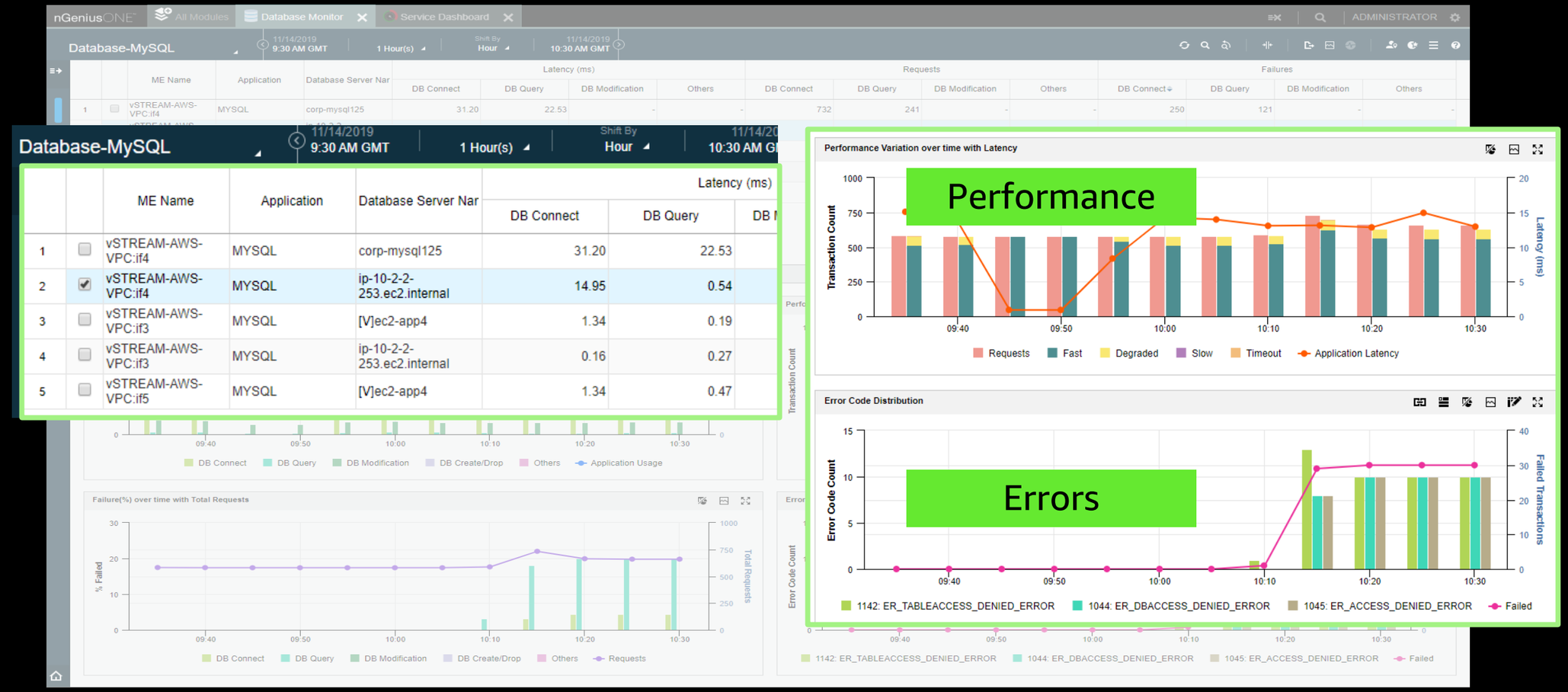
SERVICE TRIAGE – CLOUD TO APP TO LAYER



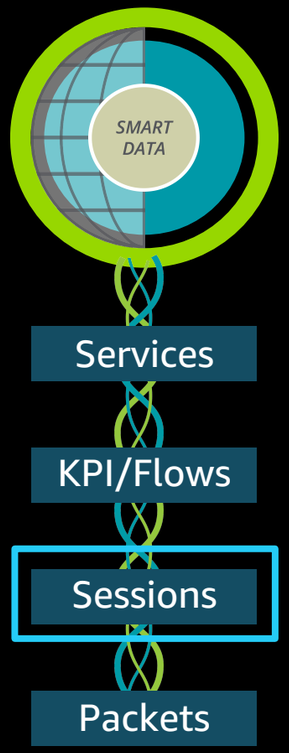


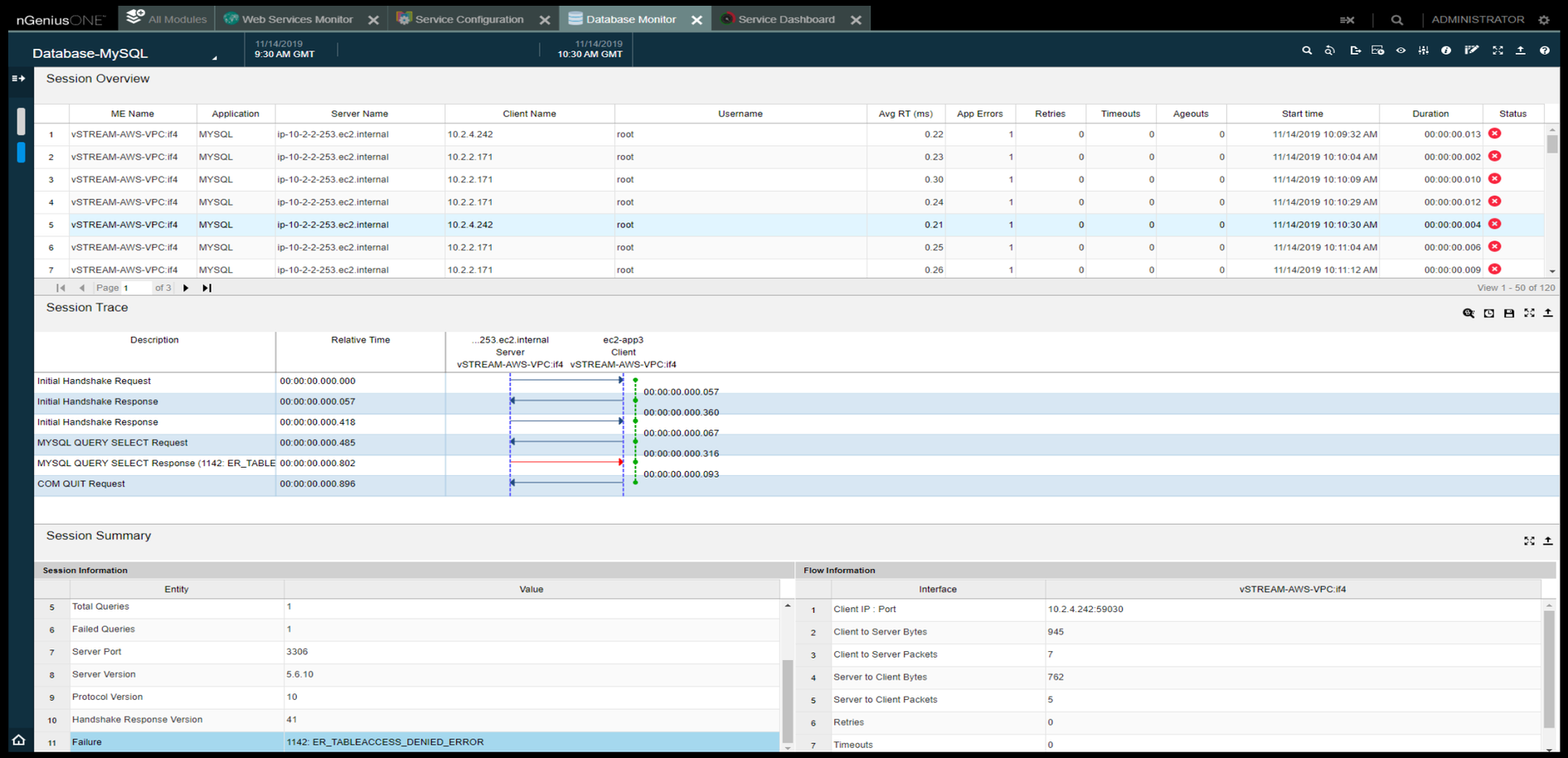
Service triage – Example MySQL performance issues



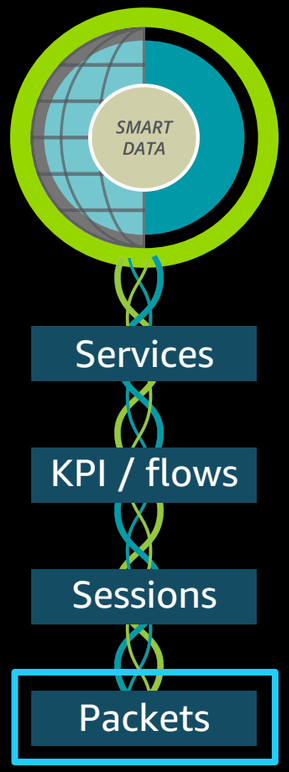


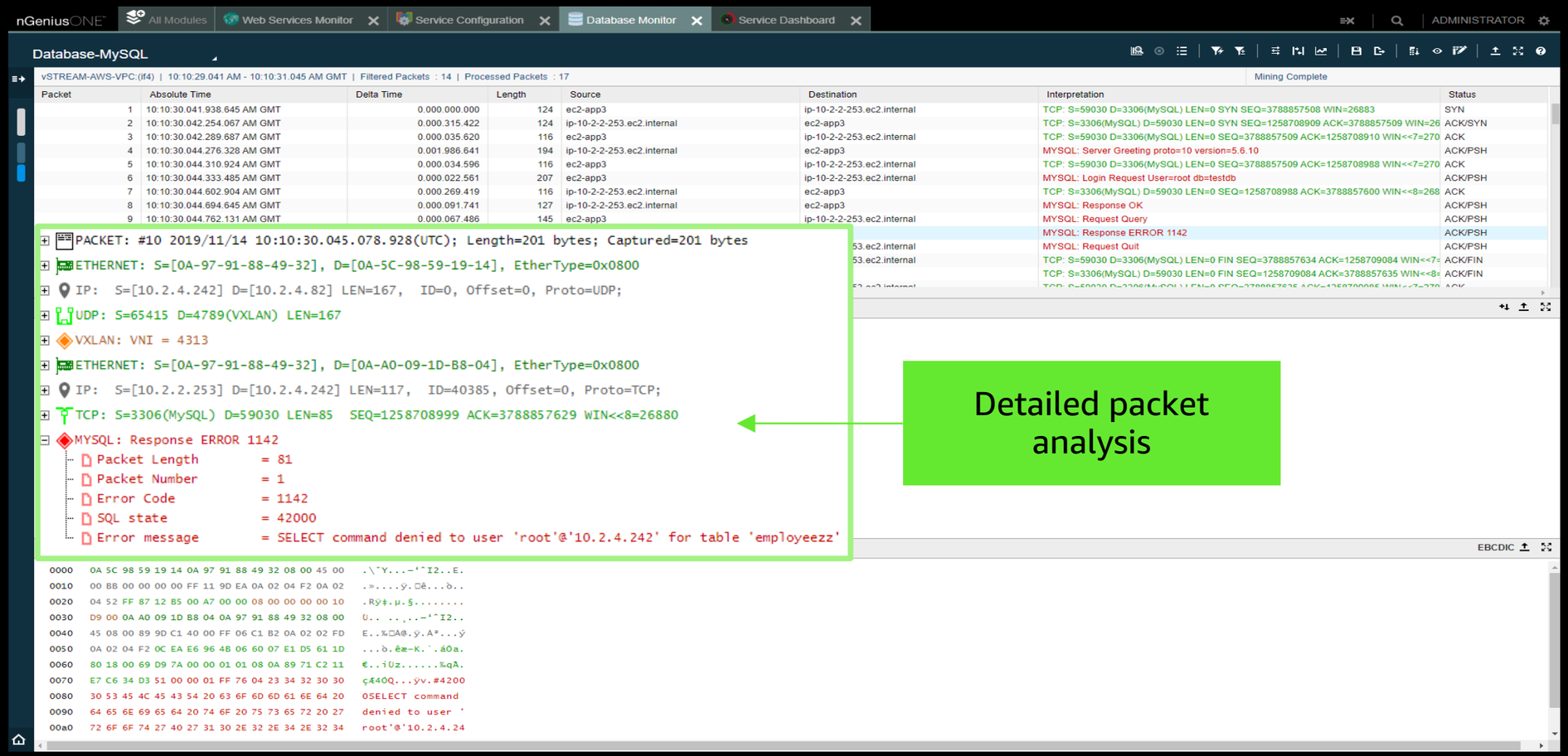
Service triage – Sessions performance





Service triage – Sessions performance

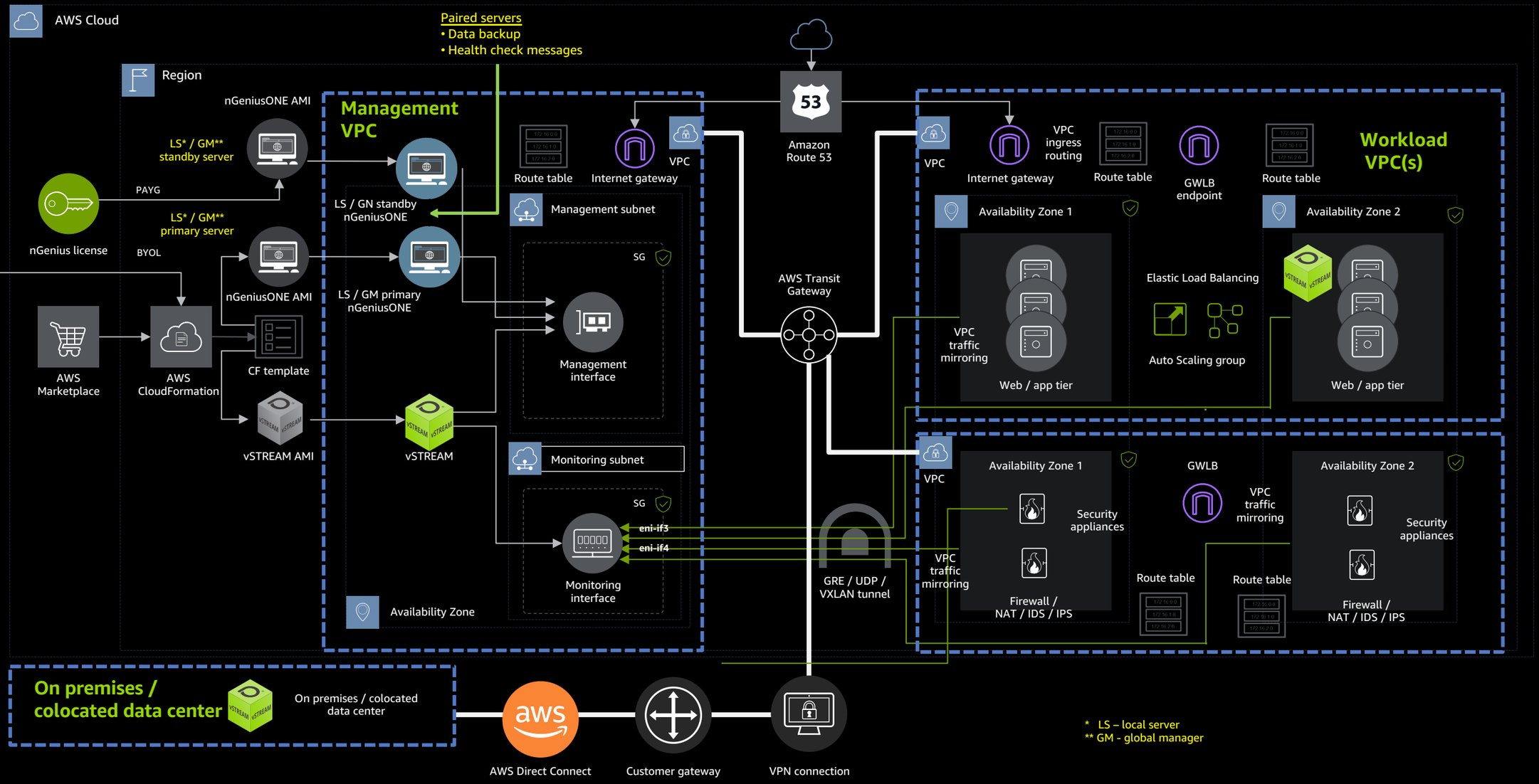




Detailed packet analysis

NETSCOUT hybrid deployment model

WITH AUTOMATED nGeniusONE FAILOVER, IN VPC TM, IR, AND GWLB

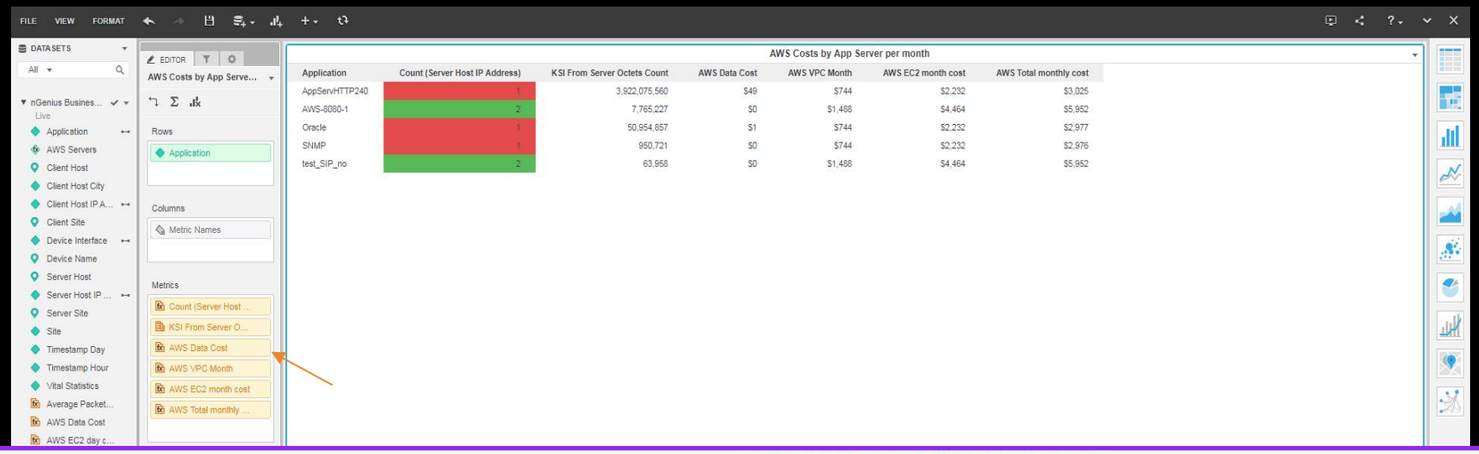


AWS cost assessment with Smart Data

APPLICATION UTILIZATION COSTS – BY APPLICATION, BY AMAZON EC2 INSTANCE, PER MONTH

Volumetric smart data from packets and ASI transformed to AWS costs

i.e., costs per application, per instance based on traffic usage



AWS Costs by App Server per month

Application	Count (Server Host IP Address)	KSI From Server Octets Count	AWS Data Cost	AWS VPC Month	AWS EC2 month cost	AWS Total monthly cost
AppServHTTP240	1	3,922,075,560	$49	$744	$2,232	$3,025
AWS-8080-1	2	7,765,227	$0	$1,488	$4,464	$5,952
Oracle	1	50,954,857	$1	$744	$2,232	$2,977
SNMP	1	950,721	$0	$744	$2,232	$2,976
test_SIP_no	2	63,958	$0	$1,488	$4,464	$5,952

Application

Amazon EC2 instances

Packets per server, per app

AWS data costs

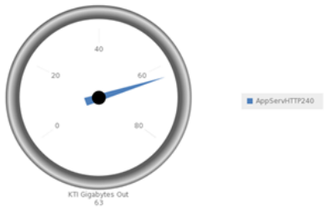
AWS VPC costs

Amazon EC2 costs

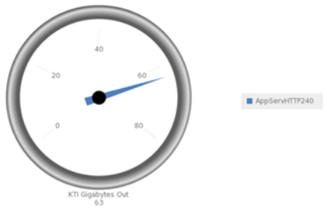
Combined Amazon CloudWatch and ASI data

AWS USAGE DATA COMBINED WITH SMART DATA SERVICE PERFORMANCE INFORMATION

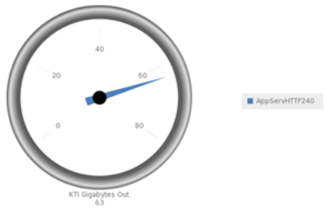
Amazon S3 usage



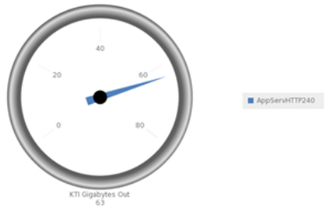
Server count

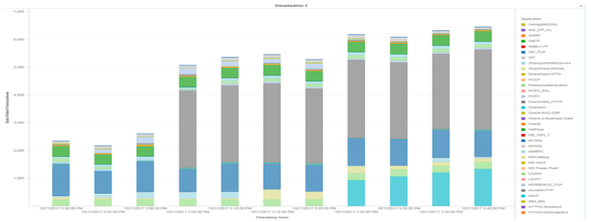


VPC usage

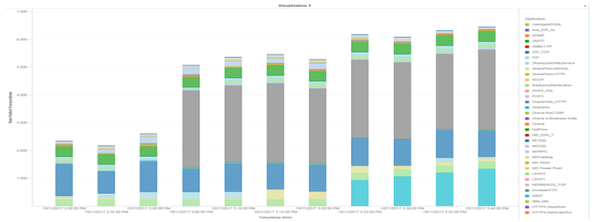


Bytes out

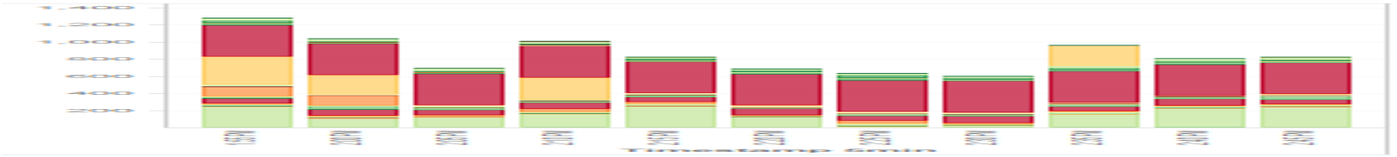




Failures per application



Failures by function (net, app, server)



Transaction response time, stacked for DNS + SSL + APP + network

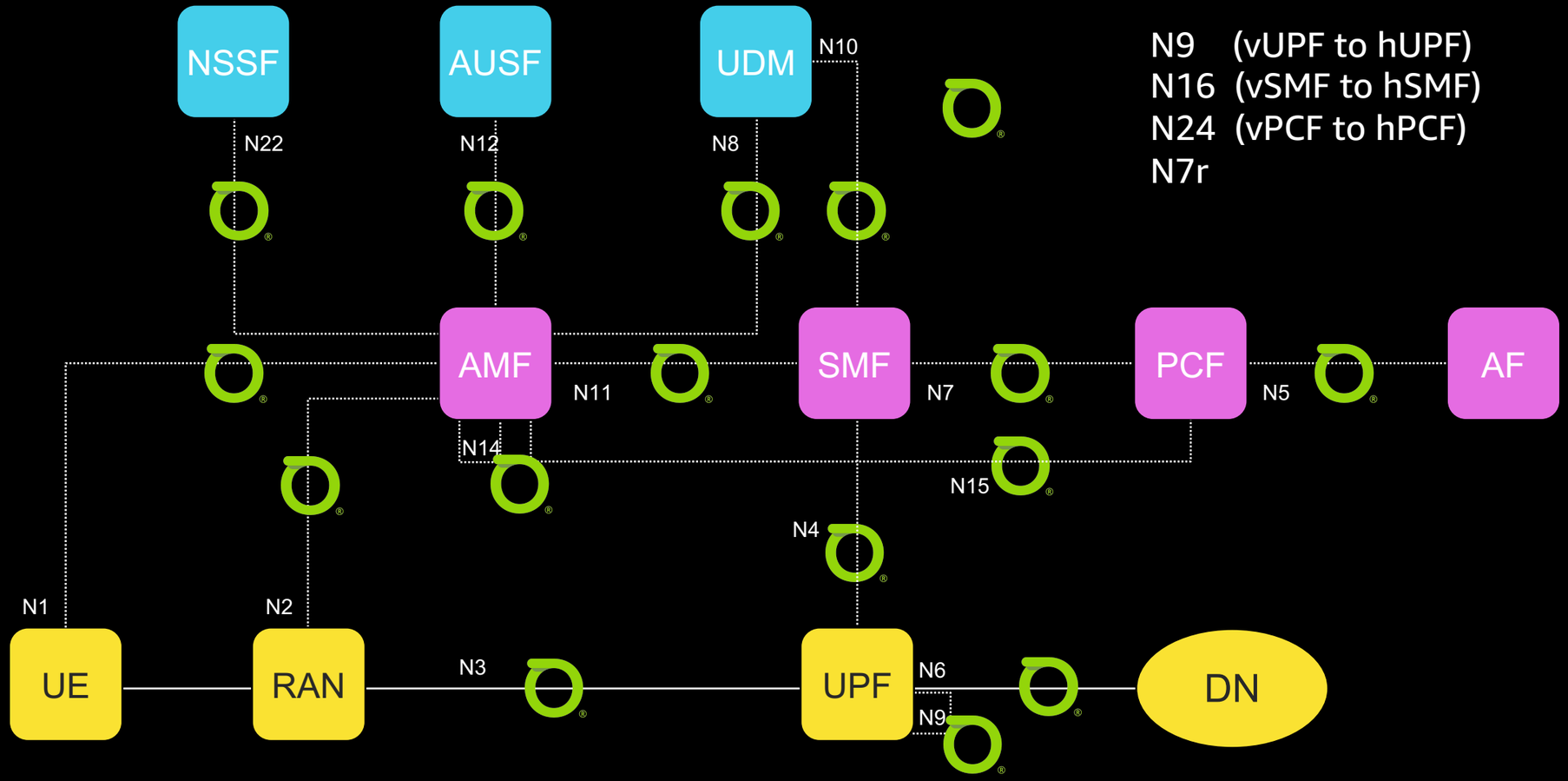
Looking forward: Smart Data in 5G and the edge



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5G system visibility with NETSCOUT

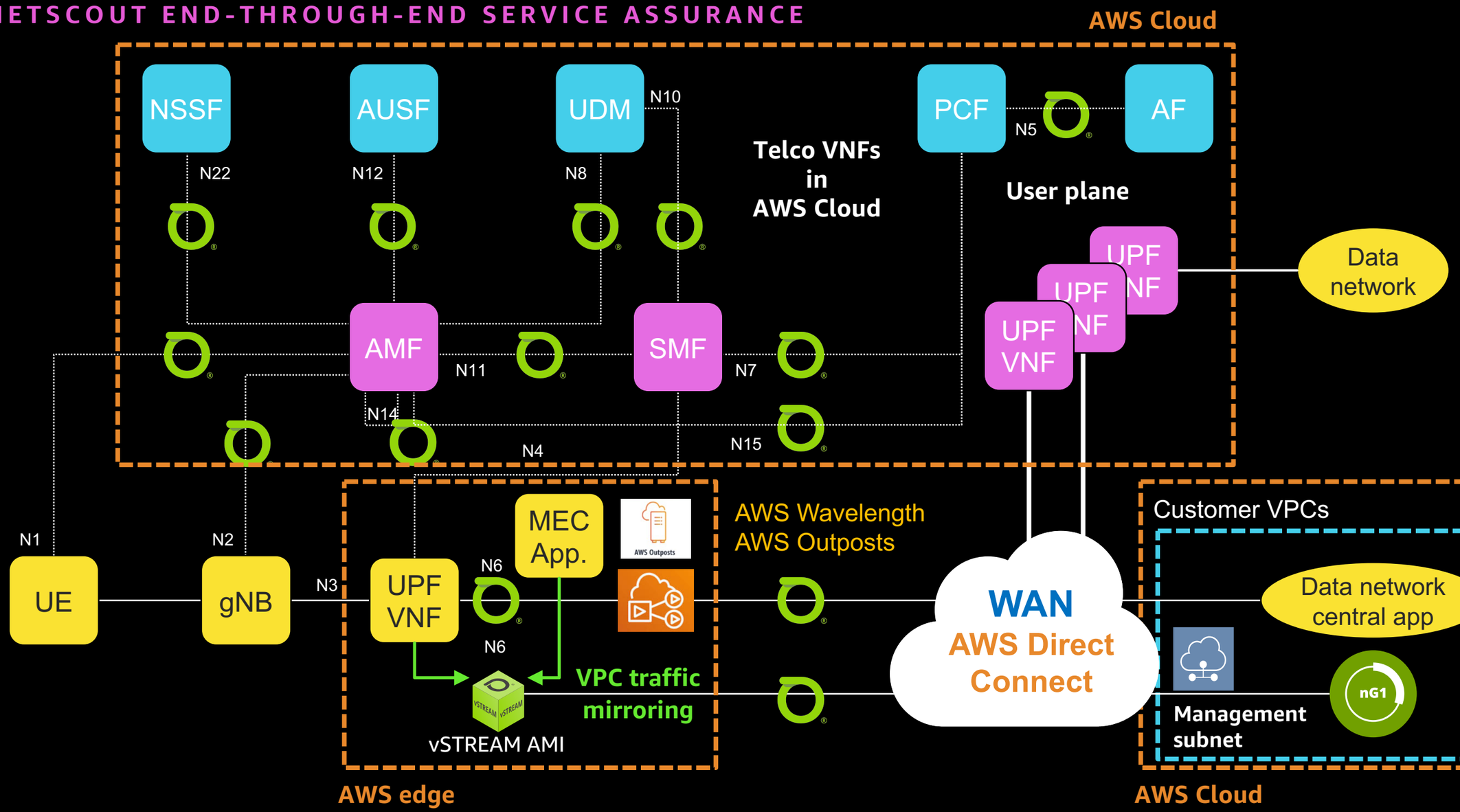


N9 (vUPF to hUPF)
N16 (vSMF to hSMF)
N24 (vPCF to hPCF)
N7r

Deployed in nonstandalone and standalone 5G networks

AWS Wavelength and AWS Outposts edge monitoring

WITH NETSCOUT END-THROUGH-END SERVICE ASSURANCE



NETSCOUT and AWS collaboration



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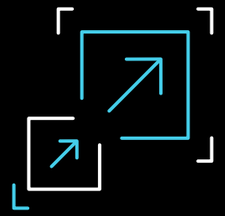
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AWS and NETSCOUT together

aws partner network

Advanced Technology Partner

Networking Competency



Technology alignment

- VPC traffic mirroring
- VPC ingress routing
- AWS gateway load balancer (GWLB)



AWS Marketplace offerings

- Commercial
- AWS GovCloud



Amazon customer engagement (ACE)

- eCo-Sell program



Competency programs

- Network competency
- Migration competency
- AWS Outposts ready*
- AWS Wavelength ready*

* Work in progress

AWS and NETSCOUT together



Technology integration

Amazon VPC ingress routing and traffic mirroring allow NETSCOUT to seamlessly extend its technology on AWS



Accelerated migration

NETSCOUT accelerates workload and data migration to AWS by providing effective monitoring and assurance in hybrid environments before, during, and after migration



Satisfied customers

NETSCOUT enables IT to use AWS Services with confidence by improving user experience of applications and services running on AWS or hybrid environments

Customer reviews: NETSCOUT solutions on AWS

John Deere & Co – Manufacturing
nGeniusONE gives us the answers we need in a timely fashion.

HCSC – Healthcare
Solution is fitting for voice and network infrastructure. Sales and engineering are top notch. Reporting down to end user is invaluable.

AON Corporation – Insurance
Delivering a superior customer experience is our number one priority. The visibility made possible by NETSCOUT's solutions has been the key to our ability to ensure a consistent and high-quality experience for our end users.

Summary

STRONG RELATIONSHIP HELPS CUSTOMERS, AWS, AND NETSCOUT WIN

- Customer win
  - Ensuring delightful customer experience throughout the migration process
  - End-through-end visibility helps optimize service performance and costs
  - Ability to detect and resolve issues quickly across the hybrid cloud
- AWS win
  - Accelerated migration to AWS
  - Satisfied customers
- NETSCOUT win
  - Supporting customers’ digital transformation (DX) and their AWS migration initiatives

Thank you!



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