



# Full Stack Infrastructure Observability and Key Cornerstone for AIOps by Broadcom

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AIOPS BY BROADCOM

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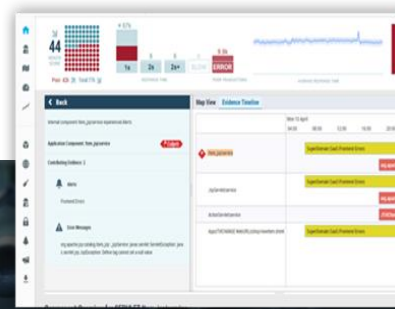
KEY TECHNOLOGY MONITORING CAPABILITIES

# AI Ops by Broadcom



# Use Cases for AIOps by Broadcom

Gain insights into end-to-end digital experience



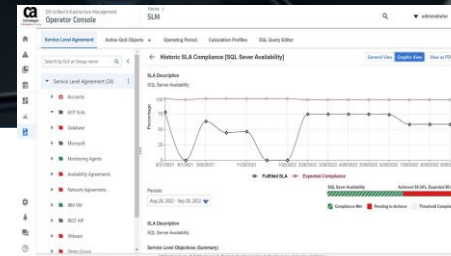
Address tool sprawl with hybrid cloud observability



Deliver operational efficiencies with actionable intelligence



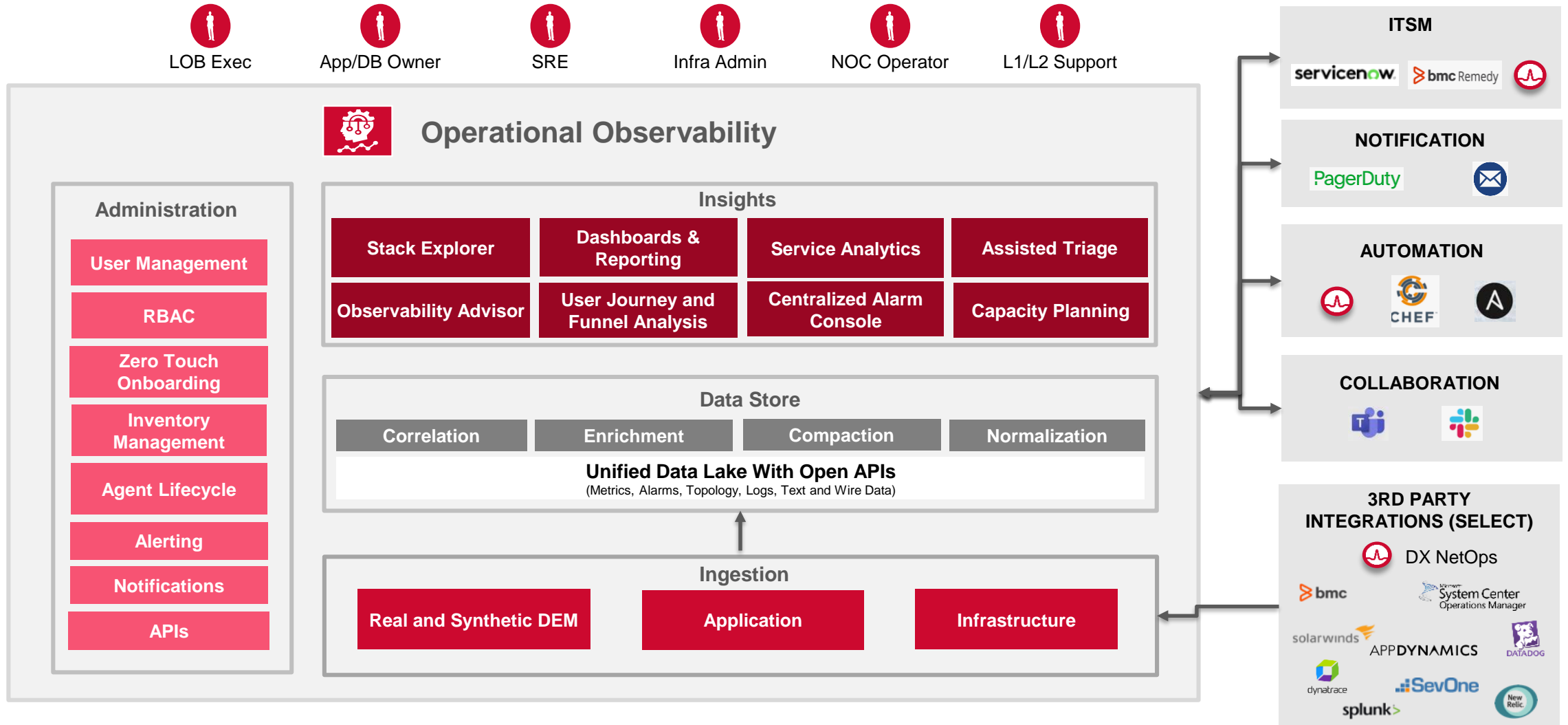
Diagnose issues across domains using comprehensive datasets



Organizational awareness for digital service agility and resilience



# AIOps by Broadcom for DEM-App-Infra-Network Observability



**Hybrid, Private and Public Cloud AIOps Solution**

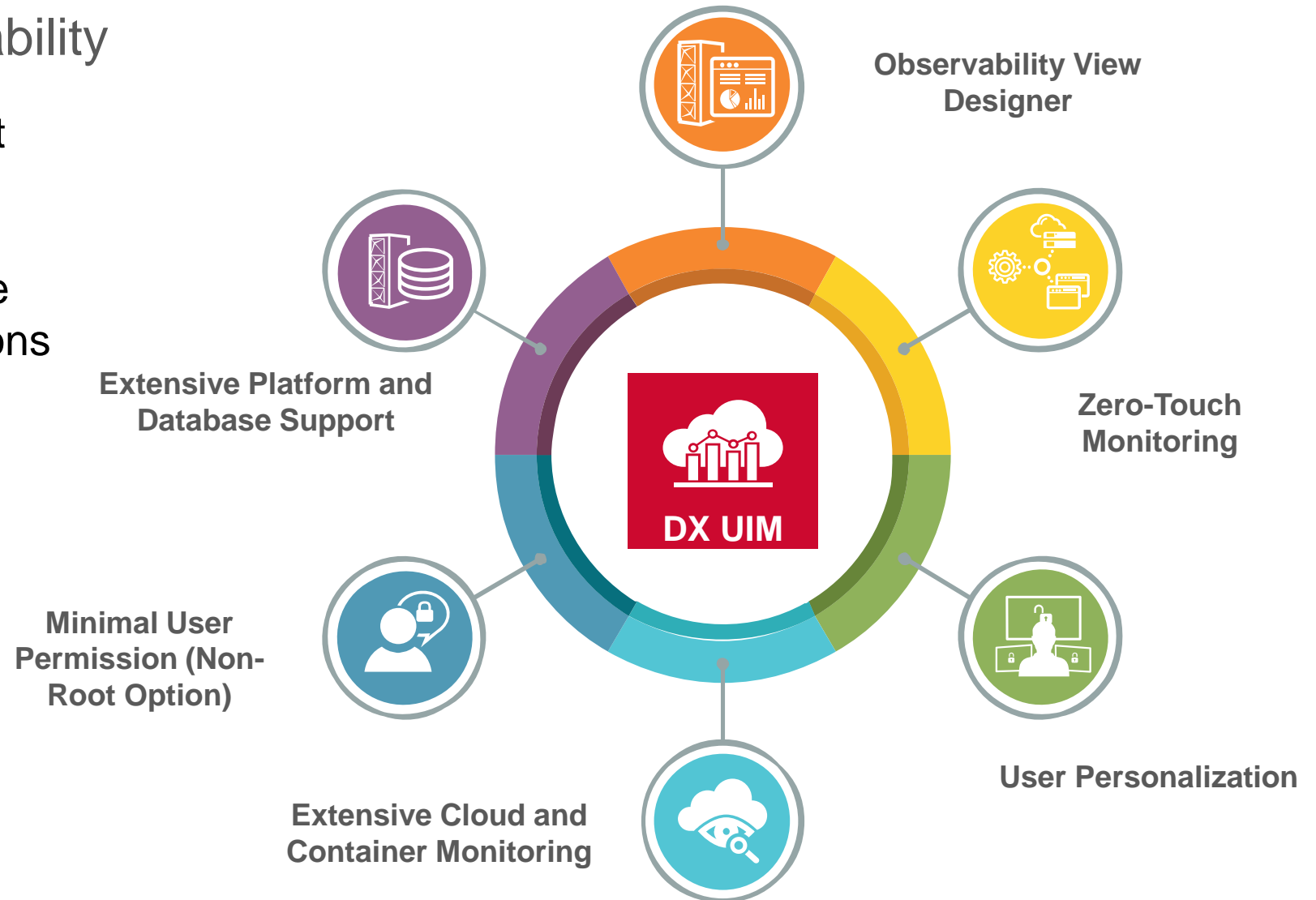


# DX UIM Overview

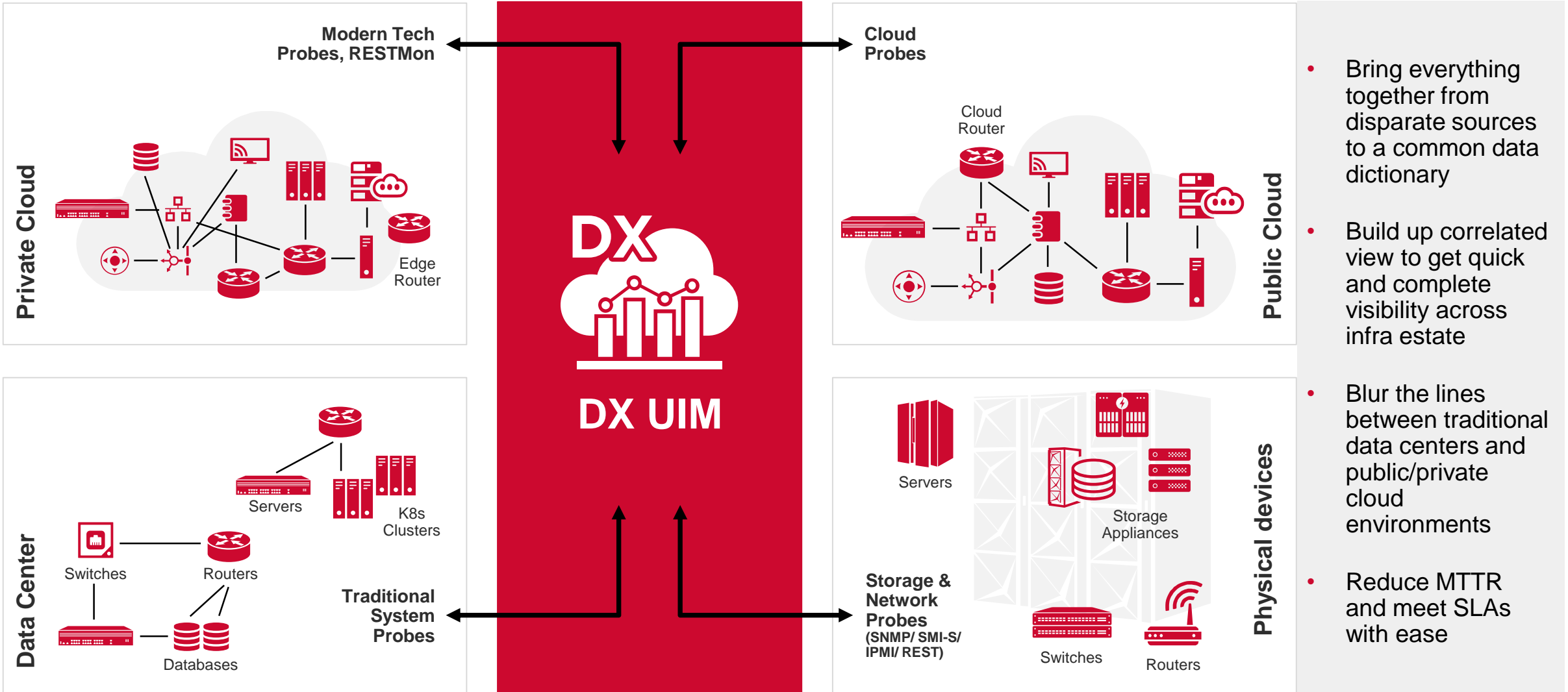
# DX Unified Infrastructure Management (DX UIM)

## Fueling AIOps for Observability

Enable enterprises, government agencies and managed service providers with scalability for IT complexity, unified infrastructure observability, intelligent operations and AIOps and observability



# True Hybrid Monitoring – Across the Infrastructure Estate





# Our Solution: DX Unified Infrastructure Management (DX UIM)



## Scalability for IT Complexity

Implement reliable, secure and scalable solution that's natively multi-tenant for the world's largest and most complex enterprises, government agencies and MSPs



## Unified Infrastructure Observability

Cover traditional, virtual and modern hybrid cloud technologies providing a single-pane-of-glass for full stack infrastructure observability



## Intelligent Operations

Automate inventory management, smart incident correlation and service-level insight for efficiency, faster MTTR and improved end-user experience



## AIOps & Observability

Ingest granular, full stack infrastructure data to enable highly accurate analytics with complementary AIOps solutions

**PARTNERING WITH IT OPS FOR DIGITAL TRANSFORMATION**

# Scalability for IT Complexity



## Scalability for IT Complexity

Implement reliable, secure and scalable solution that's natively multi-tenant for the world's largest and most complex enterprises, government agencies and MSPs

## Multi-Tenancy

*“Our company has multiple business units with differing needs, reporting requirements, and vastly different infrastructure models. We found that DX UIM could handle the complexity without deploying multiple instances.”*

— Head of IT operations, large international financial services firm

**IT Infrastructure Management to support scale and complexity**

# What Our Customers Say

## Scalability for IT Complexity

*“We monitor the health of thousands of devices for our SME and enterprise clients from our own cloud. We oversee the devices that make up our client’s virtual and storage environments – their VMware machines, SQL databases, NetApp storage and HPE SimpliVity hyperconverged infrastructure. At the same time, we provide detailed insights into the state of their cloud and hybrid network infrastructures, including Azure and related SaaS technologies like Office365.”*

*— Monitoring unit manager, European managed services provider*



# Unified Hybrid Infrastructure Observability



## Unified Infrastructure Observability

Cover traditional, virtual and modern hybrid cloud technologies providing a single-pane-of-glass for full stack infrastructure observability

## Reduce Tool Sprawl Across Diverse Infrastructure Types

*“Before DX UIM, we had six point solutions in place. With DX UIM, we were able to collapse everything into a single interface confidently. This not only made my team’s life easier, but for the first time we had one view of our entire infrastructure, which made optimizing the digital experience much more straightforward.”*

— VP of IT operations, large international financial services firm

**Unified view across the tech stack on a single platform**

# What Our Customers Say

## Unified Hybrid Cloud Observability

*“Supporting a modern enterprise means that an infrastructure monitoring platform will likely have to support federated organizations with multiple business units and complex hybrid environments. That is why we selected DX UIM – because we needed a platform that monitors highly dynamic cloud environments...what I tell my peers is that the more complex an infrastructure is, the better DX UIM will perform because it is built to manage complexity.”*

*— IT director, U.S. healthcare services provider*



# Intelligent Operations



## Intelligent Operations

Automate inventory management, smart incident correlation and service-level insight for efficiency, faster MTTR and improved end-user experience

## Automated Inventory & Alarm Management

*“We have 25,000 devices under management, so managing the monitoring configurations for this would be massively time-consuming. With DX UIM, you can leverage MCS to create configuration profiles that can be applied appropriately across device groups — literally hundreds at a time. You can also use MCS to set alarm configurations for those same groups at scale. Therefore, we can apply a specific set of alarm baselines and thresholds and custom alarm messages in bulk. It **saves us countless hours** when we want to change a setting or alarm configuration.”*

— Head of infrastructure management, Fortune 500 financial services organization

Efficient triage and service level optimization

# What Our Customers Say

## Intelligent Operations

*“DX UIM’s SLA wizard leverages the DX UIM grouping model to automatically include all the devices in a given group for an SLO. Before, we struggled to define SLOs for certain infrastructure items and ultimately would just turn them off. However, the new capability allows us to bulk assign and edit SLA configurations within minutes.”*

*— Head of infrastructure monitoring, large US energy provider*



# AIOps & Observability



## AIOps & Observability

Ingest granular, full stack infrastructure data to enable highly accurate analytics with complementary AIOps solutions

### Single Pane of Glass Across Diverse Domains

*“AWS and Azure probes monitor our cloud environments, and our database administrators can easily create new monitors as needed. That done, the alarms from DX UIM flow into DX SaaS for Operational Intelligence, our single pane of glass for IT monitoring and business service management.”*

— Observability and enterprise management architect, consumer goods provider

**Unified view across the tech stack on a single platform**



# What Our Customers Say

## AIOps & Observability

*“Our clients are able to gather and correlate alarms from multiple domains and use time, topology, text and technology to intelligently map and cluster multiple issues to a single probable root cause. In addition to central alarm management, DX Operational Intelligence offers our clients a single pane of glass for dashboarding and reporting and service observability.”*

*— Sr. Engagement Manager, sales, services and support provider for AIOps by Broadcom*



# Marquee Features



# Zero-Touch Monitoring

## Scale and Resilience for Monitoring Configuration Service (MCS)

- Consistent (template-based) monitoring
- Ease of configuration management at scale
- Quicker TTV with zero-touch inventory onboarding
- Enabling monitoring governance

### 3. Autonomous operations

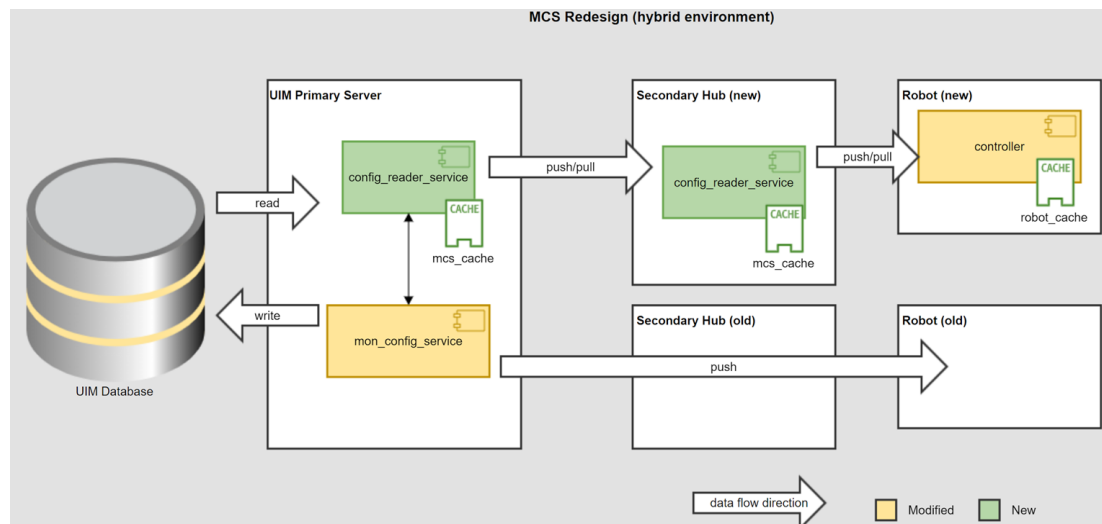
- Alarm notification and incident management
- Dashboards and reports
- Performance & health management

### 1. Dynamic discovery

- Device discovery
- App discovery
- Inventory grouping

### 2. Auto configuration

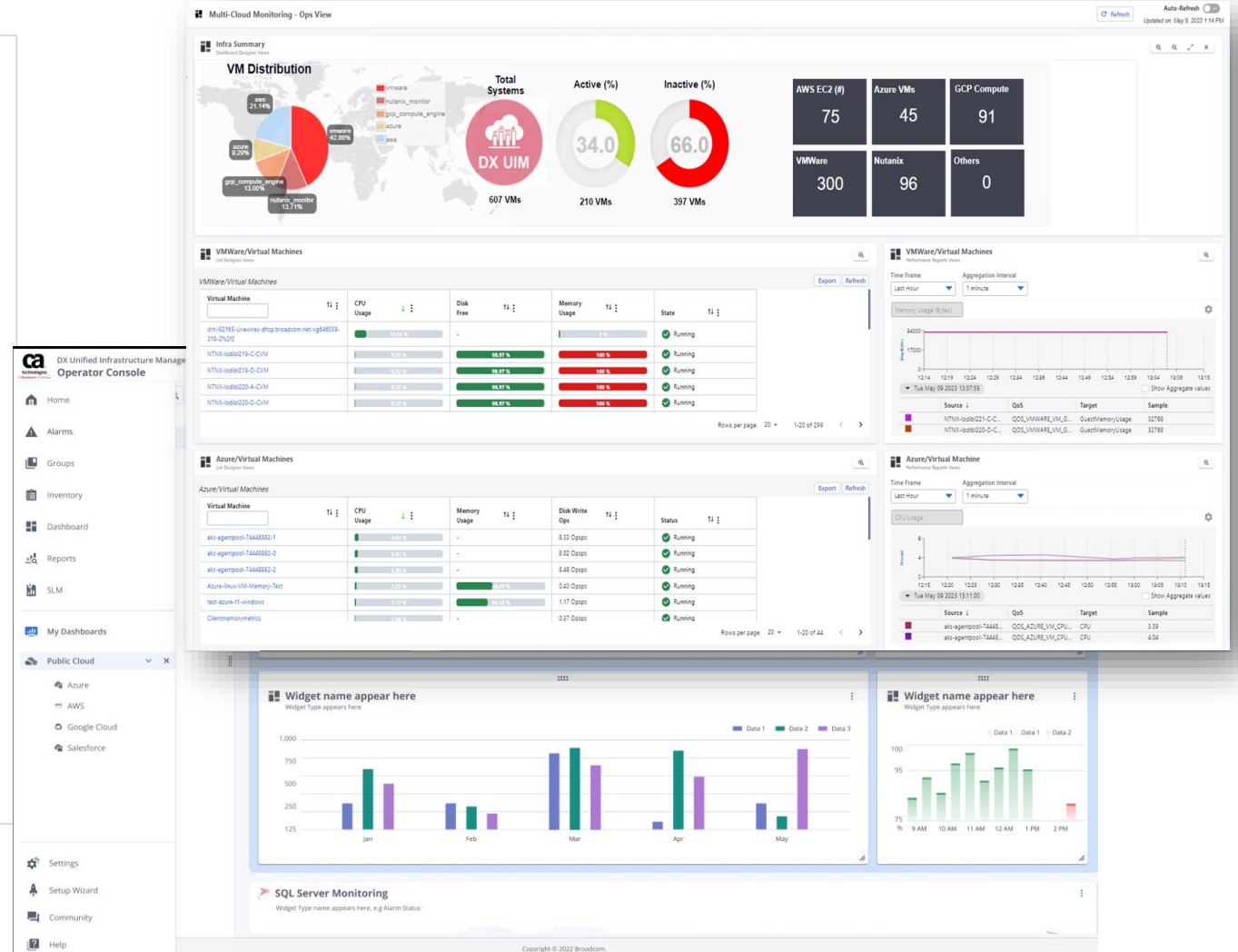
- Push Monitoring profile and alarm policies



# Observability View Designer

## Rich Home Screens as Per Role and Technology

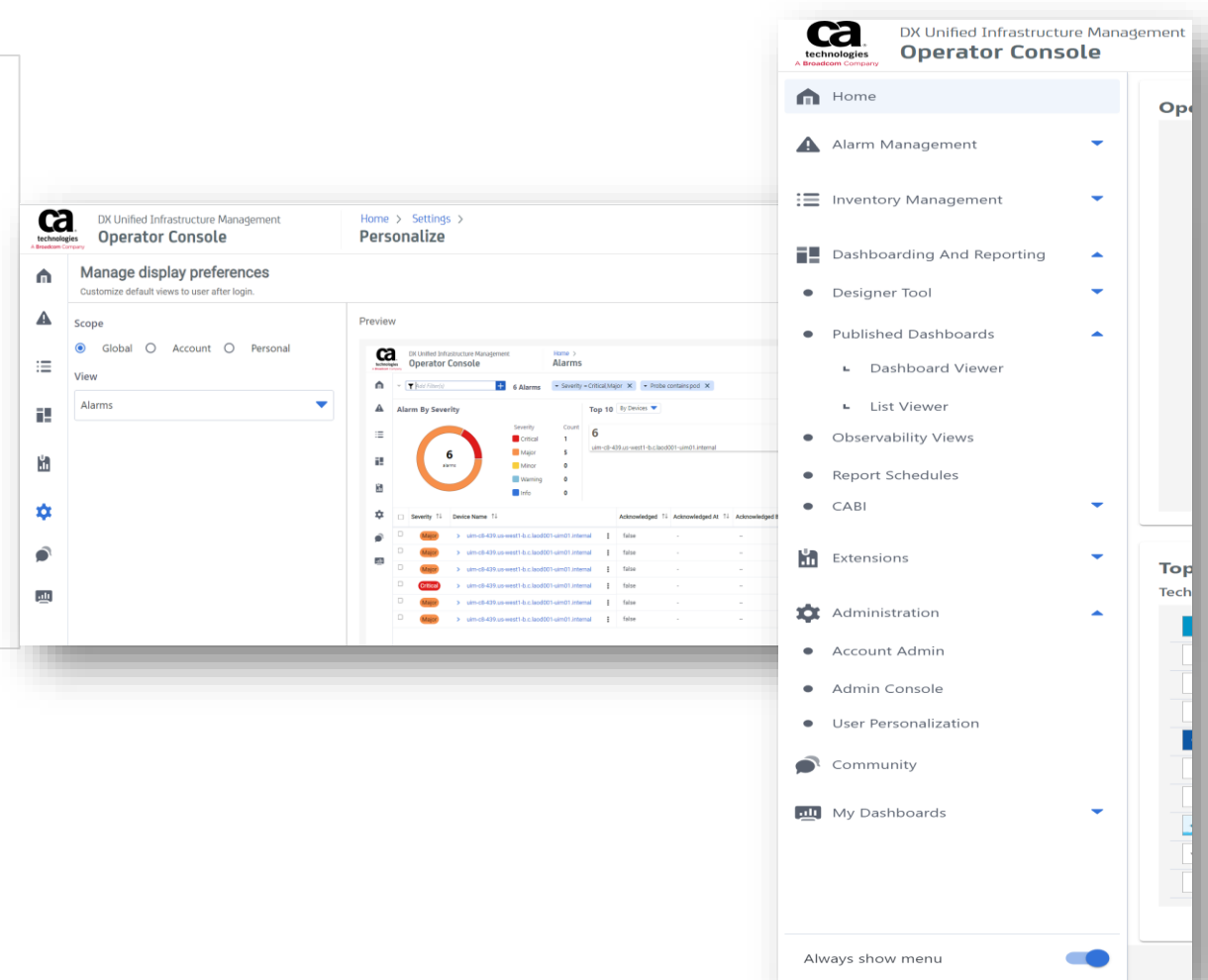
- Design integrated views to create unified views across infrastructure stack
- Easy correlation to understand performance insights across hybrid multi cloud data center
  - Inventory to fault correlation
  - Fault to performance correlation
- Persona-based content
- Enables self service



# Personalize Operator Console

## Ease of Use for Efficient Operations

- Personalize Operator Console as per role and responsibility
  - Customizable navigation menu bar
    - On Operator Console, remove used menu items
- Set default home screen
  - Choose default landing page
- White labelling enabled



# List Designer and List Viewer

## Faster Full-Stack Triage – Performance and Health Management

- List Viewer displays information in a table format; the information can be in the form of text, numbers, gauges, alarms or line graphs
- Create two kinds of lists: detail or group
  - In detail lists, each row displays information for a single host or target
  - In group lists, each row displays aggregated information for a group of systems
- Publish URLs for sharing and easy access
- Role-based, tenant-aware visualization

The screenshot displays the 'List Designer' interface for 'DX Unified Infrastructure Management DX UIM'. The main view shows a table titled 'List View-0#\*' with columns for Hosts, Alarm, CPU Usage, Memory Usage, and Disk Read/Write. The table contains multiple rows of data for 'Sample-SLA Name' with various alarm statuses (Warning, Clear, Major, Critical, Info) and performance metrics. A notification at the top indicates 'List View-0# saved successfully.' An 'Add Primary Column' dialog box is open, showing options for Column Header, Row Source, Group, and Data Filter.

Hosts	Alarm	CPU Usage	Memory Usage	Memory Usage	Disk Read	Disk Write	Info
Sample-SLA Name	Warning	15%	1.5 3.5 5.5 1 4 1	[Line Graph]	815,057.28 Bps	815,057.28 Bps	Sample-SLA
Sample-SLA Name	Clear	15%	1.5 3.5 5.5 1 4 1	[Line Graph]	815,057.28 Bps	815,057.28 Bps	Sample-SLA
Sample-SLA Name	Major	15%	1.5 3.5 5.5 1 4 1	[Line Graph]	815,057.28 Bps	815,057.28 Bps	Sample-SLA
Sample-SLA Name	Critical	15%	1.5 3.5 5.5 1 4 1	[Line Graph]	815,057.28 Bps	815,057.28 Bps	Sample-SLA
Sample-SLA Name	Info	15%	1.5 3.5 5.5 1 4 1	[Line Graph]	815,057.28 Bps	815,057.28 Bps	Sample-SLA
Sample-SLA Name	Major	15%	1.5 3.5 5.5 1 4 1	[Line Graph]	815,057.28 Bps	815,057.28 Bps	Sample-SLA
Sample-SLA Name	Minor	15%	1.5 3.5 5.5 1 4 1	[Line Graph]	815,057.28 Bps	815,057.28 Bps	Sample-SLA
Sample-SLA Name	Minor	15%	1.5 3.5 5.5 1 4 1	[Line Graph]	815,057.28 Bps	815,057.28 Bps	Sample-SLA
Sample-SLA Name	Info	15%	1.5 3.5 5.5 1 4 1	[Line Graph]	815,057.28 Bps	815,057.28 Bps	Sample-SLA

# Performance Insights

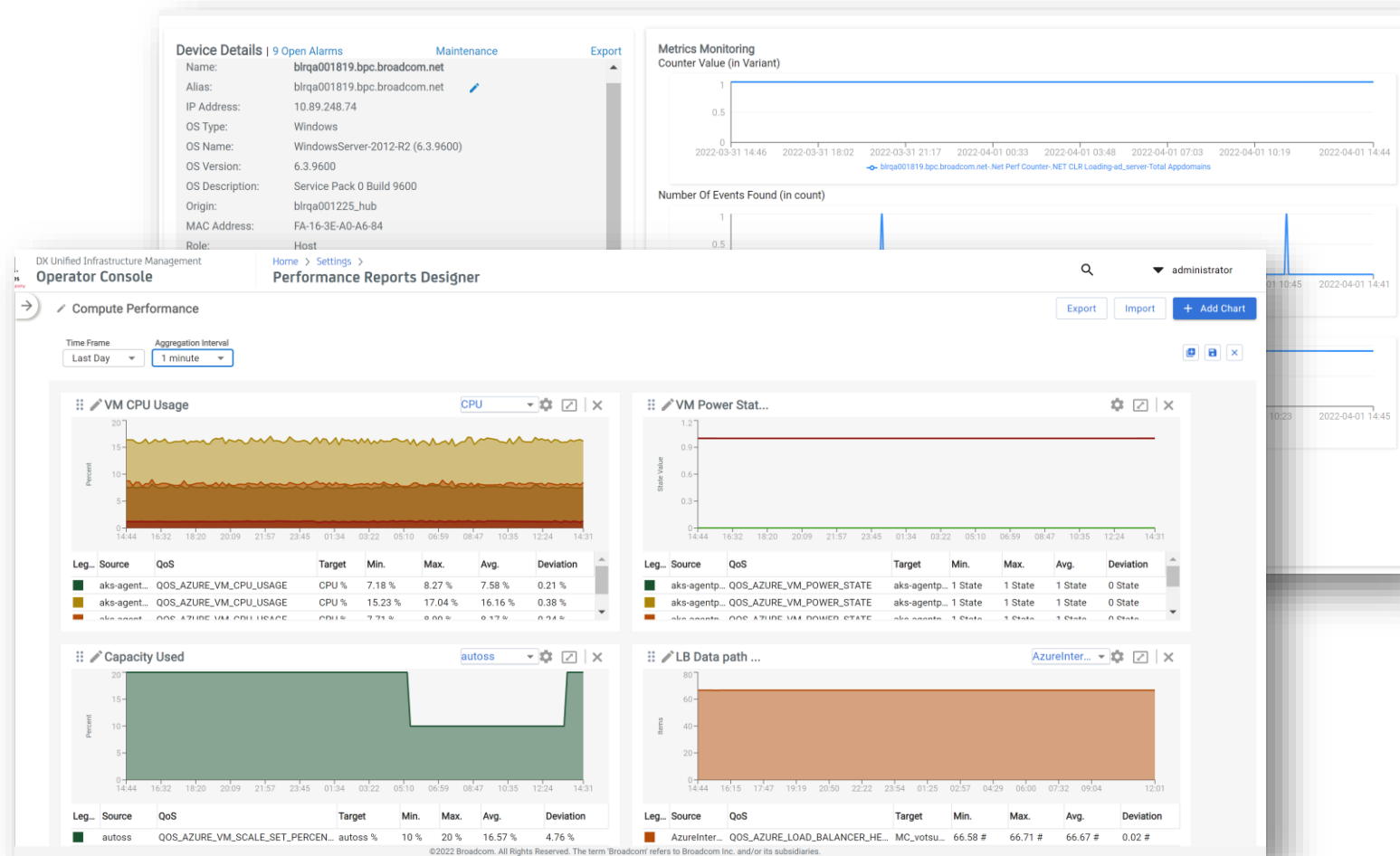
## Faster Full-Stack Triage – Performance and Device Health Management

- Performance Report Designer

- Compare QoS parameters across devices
- Schedule reports to share with all stakeholders
- Multiple chart options for accurate representation

- Metric Viewer

- View metrics across devices, groups and technologies
- View performance anomalies based on historical data
- Role-based metric views



# Centralized Alarm Management

Alarm Policies, Dynamic Baselining, Automated Alarm Routing & In-Context Filtering

The screenshot shows the 'Alarm Policies' configuration page in the Operator Console. It displays two conditions for the device 'blrqa001456.bpc.broadcom.net'. The first condition is for 'Process CPU usage' with a metric of 'CPU Usage' and a priority of 'Highest'. The second condition is for 'Process Availability' with a metric of 'State' and a priority of 'Highest'. Both conditions are set to generate an alarm when configured thresholds are violated.

The screenshot shows the 'Alarms' overview page in the Operator Console. It features a donut chart showing 13938 total alarms, broken down by severity: Critical (38), Major (1669), Minor (32), Warning (106), and Info (12093). A table lists the top 10 devices by alarm count, with 'lvndev012409.bpc.broadcom.net' having the highest count at 2443. On the right, a 'Top 5 SLA' section shows compliance levels for various services: GCP System Availability (0% achieved, 75% expected), SQL Server Availability (75% achieved, 98% expected), and DB Cache Hit Ratio (0% achieved, 100% expected). Below these is a table of active alarms with columns for Severity, Device Name, Probe, Acknowledged status, Acknowledged At, and Alarm Message.

## ALARM DEFINITION

Centralized alarm policies based on dynamic baselining across the technologies

Forward device alerts for single-pane-of-glass view

## ALARM NOISE REDUCTION

Algorithmic mechanisms like Time to Threshold & Time over Threshold

## SCALED UP ALARM SERVICE

Enabling alarm enrichment, correlation, and suppression using scripts

## INCIDENT MANAGEMENT

Bidirectional ITSM integration enabling quick triage

## ALARM VIEWER

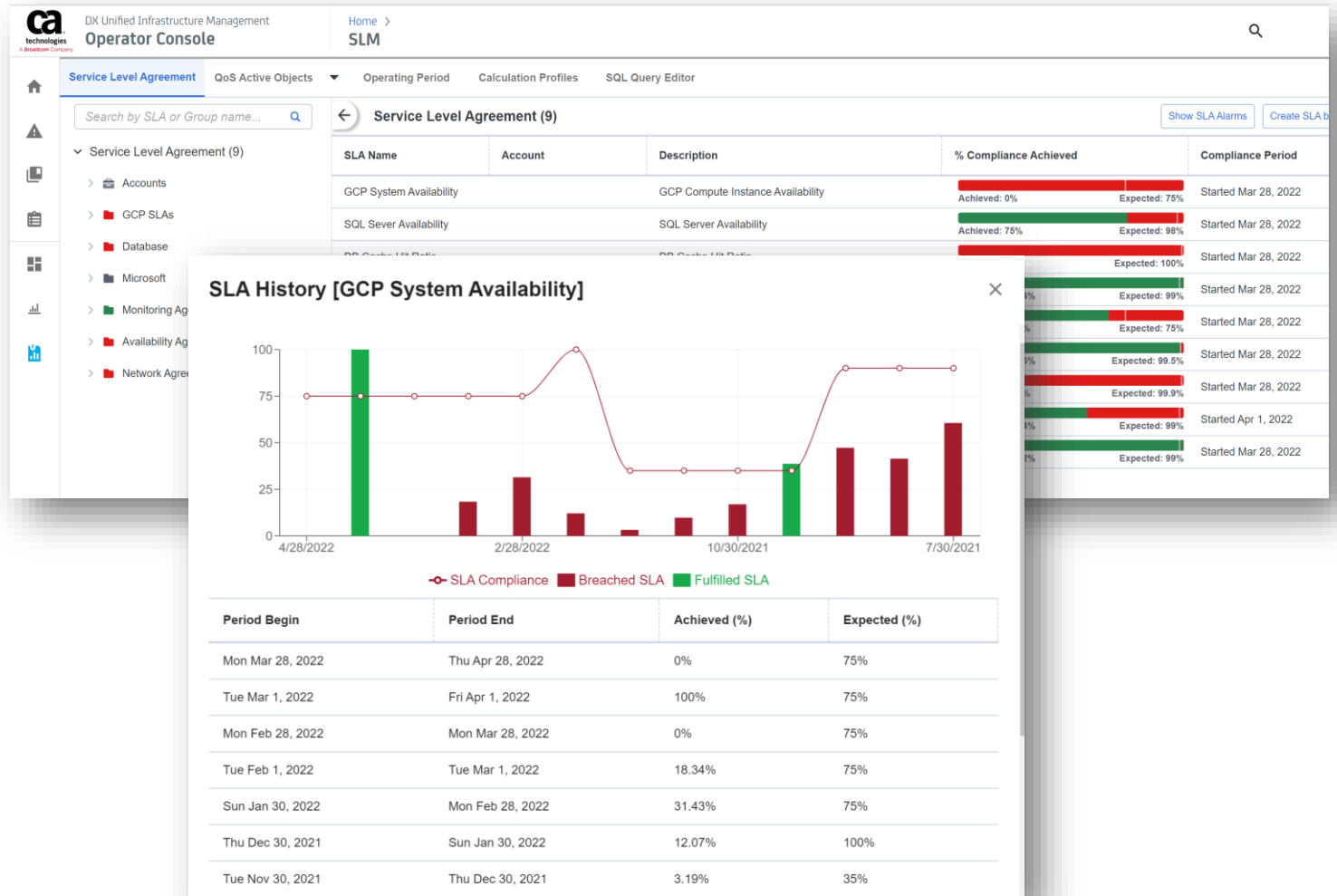
Tenant aware, advance filtering for quicker triage



# Service Level Management

## Faster Full-Stack Triage with Service Level Management

- Manage service availability across tech stack based on QoS parameters for defined service objectives
- Share service availability trend reports with stakeholders
- SLA alerts for proactive service degradation management
- Group-level SLO definition



# Extensive Container and Cloud Monitoring

Unified Hybrid Multi-Cloud Monitoring

## Public Cloud Service Providers



Services spanning multiple categories across accounts, geographies and workflows

## Containers and Orchestrators



Foundational infrastructure elements, distributed containers, deployment plane elements and control plane services

## Virtualization and Storage

Monitor virtualization, converged infrastructure, clusters and OpenStack cloud deployments and infrastructures



# Extensive Platform and Database Support

## Enabling Web-Scale Deployments

- Recent platforms support updates
  - Microsoft Windows Server 2022
  - RHEL 9.x
  - Jaspersoft 8.2 for CA Business Intelligence
- Recent database support updates
  - MySQL 8.X
  - Microsoft SQL Server 2022



# Monitoring with Minimal Access Permission (Option)

## Deployment and Monitoring with Non Root User

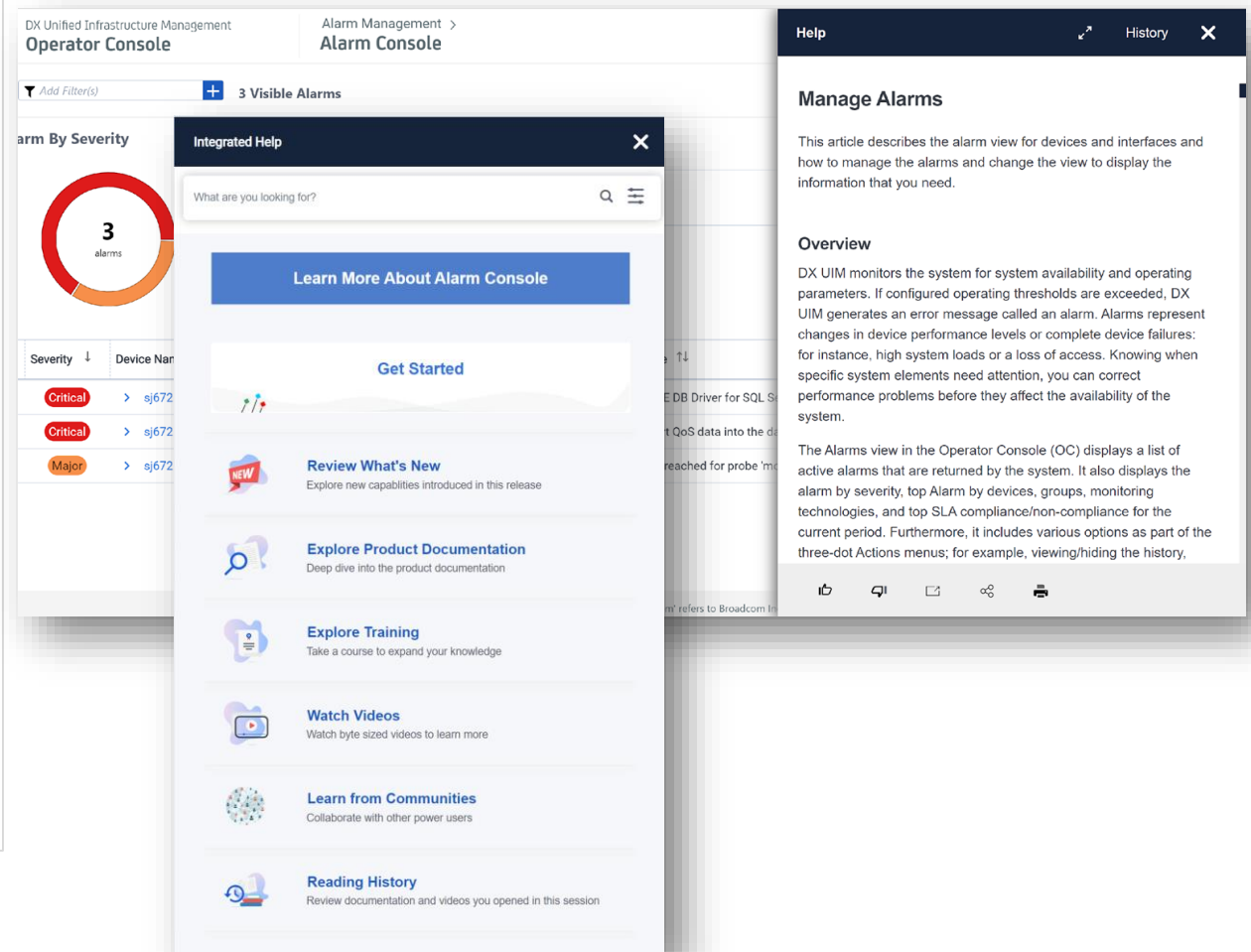
- Root level access for monitoring and deployment is now optional to align with organizational security recommendations
  - Less privilege user can deploy servers and robots
  - Monitoring probes certified to work with less privilege user permission



# DX UIM In-Product Content Enrichment

## Easy Access to Support and Enablement Resources

- Support and enablement articles can be viewed on the Operator Console
- View enablement content in the product context spread across
  - Technical documentation
  - Blogs
  - Product videos
  - KB articles
- Provide feedback, print or share the documentation at ease
- Opt-in feature (requires internet connection)
- Collects anonymous analytics to help us understand article usage details



# Key Technology Monitoring Capabilities



# VMware Monitoring

- One solution to monitor VMs, hosts, resource pools, datastores, clusters, virtual apps, etc.
- Data for the monitored components can be obtained through
  - vCenter
  - ESXi servers
- Support for the latest vSphere 8 and vCenter Server 8



# AWS Monitoring

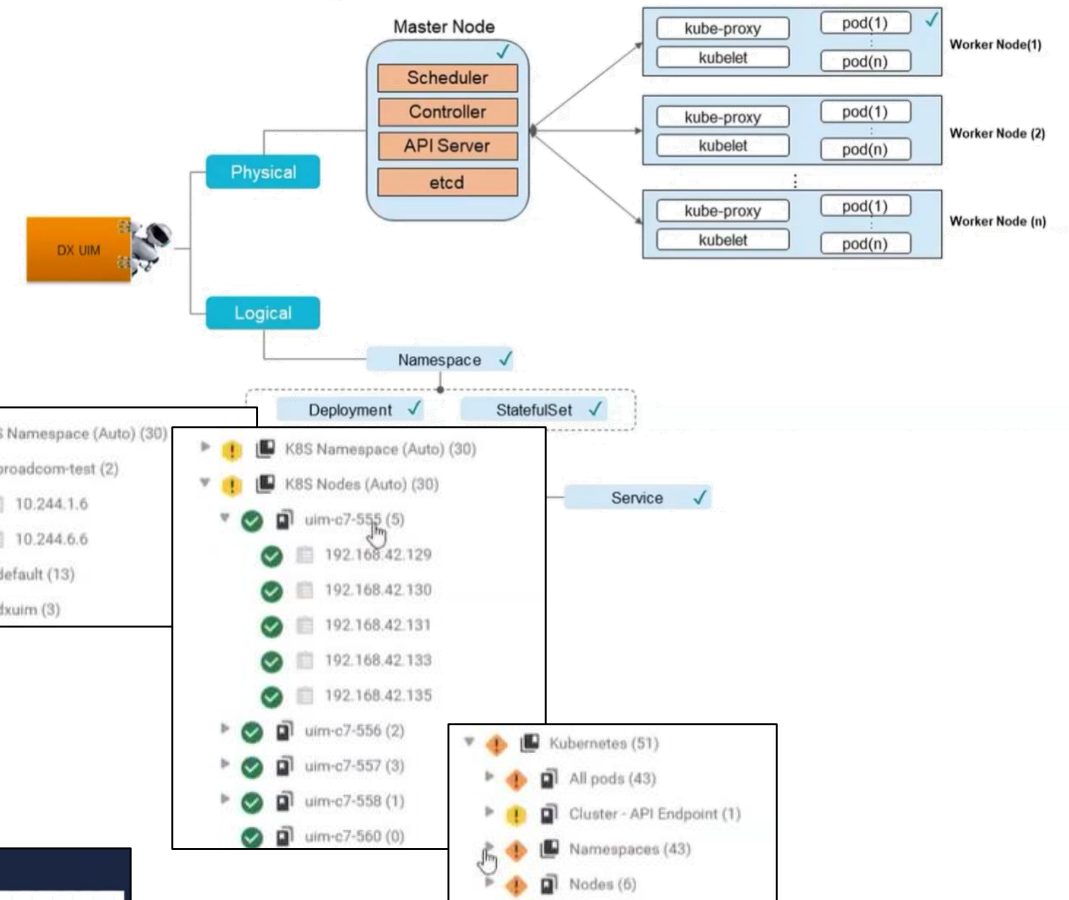
- Remotely monitors the health and performance of available services over an AWS cloud through AWS CloudWatch
- Collects data for more than 15 popular AWS services across compute, storage, application integration, analytics, networking and content delivery, database, containers, etc.
- Recently added support for monitoring Amazon Elastic Kubernetes Service (EKS)





# Kubernetes Monitoring

- Wide and deep coverage across physical and logical planes of the deployment
- Segregate and apply specific policies to group members per your preferences
- Monitor at-a-glance with confidence



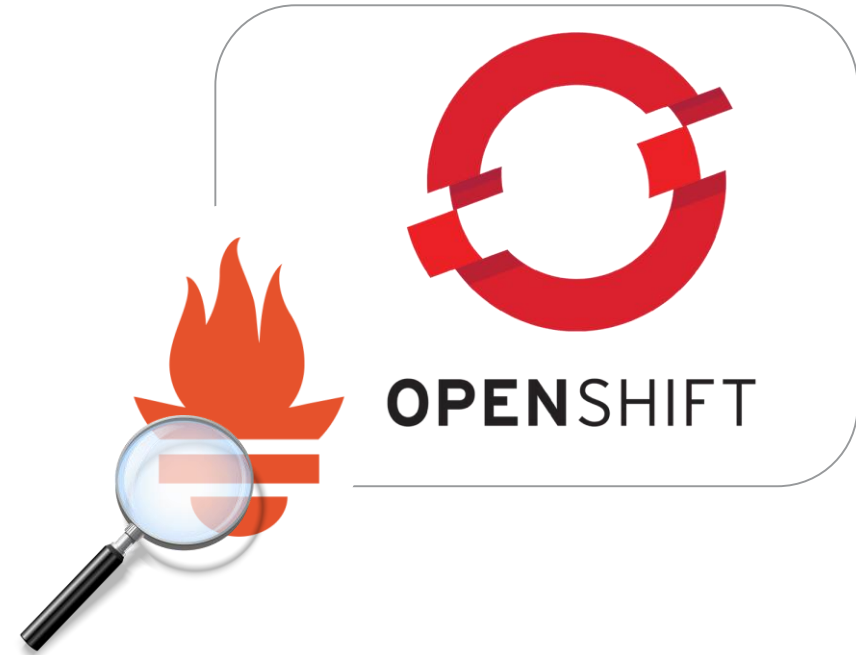
# PodMan Monitoring

- Monitors the health and performance of your PodMan environment
- You can generate Quality of Service (QoS) and alarm messages for the following components:
  - Host (single host system)
  - Containers
  - Images
  - Volumes
- Monitor Podman container engines embedded in platforms like OpenShift



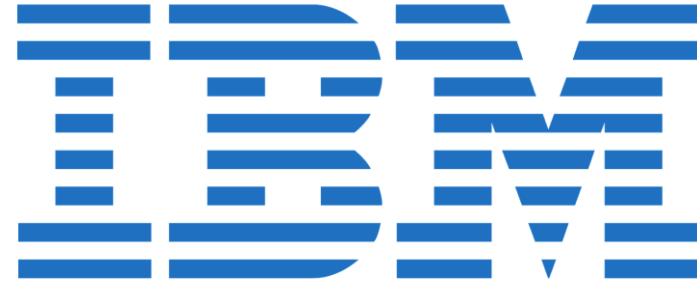
# OpenShift Monitoring

- Monitor your OpenShift clusters and retrieve all the service data (health, size and performance) at:
  - Cluster
  - Namespace
  - Node
  - Pod
  - Container
  - Replicaset
  - Deployment
  - StatefulSets
  - Control Planes
- Collect enhanced metrics for OpenShift from Prometheus



# IBM PowerVM Monitoring Using REST (ibmvm\_rest) Probe

- Monitors the managed IBM Power Systems connected to IBM Hardware Management Console (HMC) interfaces
- Communicates with the HMC using the HMC REST API
- Monitors key performance metrics for IBM virtualization enabled systems, including managed systems, VIOS and LPARs
- Support for new IBM HMC release (v9r2)



# Remote System Monitoring (RSP)

- Agentless retrieval of performance data of a system
- Remotely monitor the performance of the following system parameters:
  - CPU
  - Disk
  - Memory
  - Load
  - NTEvents
  - Processes
  - Services
  - WMI objects
- Periodically auto-discovers and resyncs entities to maintain coverage accuracy



# SQL Server Monitoring and SNMP Gateway

- Monitors the internal performance and space allocation of SQL Server databases
- Can run locally on the database server or it can be configured to run as a remote client
- Convert DX UIM alarms to SNMP trap messages
- Can be read by any SNMP-based event manager
- Support strong 256-bit encryption and hashing standards



# Monitoring for Widest Range of Infrastructure Observability

## SERVERS & APPS

- Apache HTTP Server
- Active Directory Events
- Active Directory Server
- Cisco UCM
- Citrix Insight Server
- Citrix Provisioning Service
- Citrix XenApp
- Citrix XenDesktop
- Email Response
- IBM Domino Server
- IBM Notes Server Response
- IBM WebSphere
- IBM WebSphere MQ
- JBoss
- Java Management Extensions
- Java Virtual Machine
- Microsoft Exchange
- Microsoft Exchange Server Response
- Microsoft Office365
- Microsoft IIS
- Microsoft SharePoint
- Microsoft Windows Event Log
- Microsoft Windows Performance
- Microsoft Windows Services
- Salesforce
- SAP Basis
- Sybase EAServer
- Tomcat
- WebLogic
- Web URL Service

## SYSTEMS & SERVICE RESPONSE

- Active Directory Response
- CPU Disk Memory
- Cisco
- Cisco IPSLA (SAA)
- Cisco UCM
- Cisco UCS
- Citrix Insight Response
- Clustered Environments
- Command Execution
- DHCP Response
- DNS Response
- ecoMeter
- Email
- E2E Application Response
- File & Directory
- File Systems Mount
- I/O Stats
- ICMP
- KVM
- LDAP Response
- LogMon
- Network Time Protocol Response
- NIC Performance
- Printers
- Processes
- Reboot
- Remote System
- URL Endpoint Response

## CLOUDS, CONTAINERS & VIRTUALIZATION

- Apache CloudStack
- AWS
- Citrix XenServer
- Docker
- Google Cloud Platform
- IBM PowerVM
- Kubernetes
- Microsoft Azure
- Microsoft Hyper-V
- Nutanix
- OpenStack
- PodMan
- Red Hat
- Solaris Zones
- VMware ESX
- VMware vCenter
- VMware vCloud Director

## IBM AS/400 iSERIES

- Data Service Pack
- Disks
- Fetch System Messages
- Jobs
- Jobs Queue
- Jobs Schedule
- Journal Message
- Output Queue
- OHST Data
- Message Service
- Network Monitoring

## NETWORKING INFRASTRUCTURE

- Cisco Meraki
- Cisco Tandberg C-Series
- Cisco Tandberg EX90
- Cisco Tandberg MXP Series
- Cisco UCM
- Cisco UCS
- ICMP
- Net Connect
- NQ Services
- SNMP Collector
- SNMP Get
- SNMP Trap Daemon

## EXTENSIBILITY & INTEGRATIONS

- Application Delivery Analysis Inventory
- CA APM Bridge
- CA App Experience Analytics Gateway
- CMDB Gateway
- DX Operational Intelligence Gateway
- Email Gateway
- Java Database Connectivity Gateway
- Message Gateway
- REST API Monitoring
- Short Message Service Gateway
- Service Desk Gateway
- SNMP Gateway
- Spectrum Gateway
- System Log Gateway
- Usage Reporting Web Gateway

## BIG DATA, DATABASES & STORAGE

- Apache Flume
- Apache Oozie
- Apache Solr
- Cassandra
- Cloudera Impala
- Ceph
- Cohesity
- Dell EMC Elastic Cloud Storage
- Dell EMC VMAX
- Dell EMC VPLEX
- Dell EMC VNXe
- Dell EMC XtremIO
- Hadoop
- Hitachi
- HP 3PAR
- IBM DB2
- IBM DS S8xxxx
- IBM DS S3xxxx, S4xxx, S5xxx
- IBM SAN Volume Controller
- IBM Total Storage 4000
- JDBC Response
- MongoDB
- MySQL
- NetApp
- NetApp ONTAP
- Oracle
- Pure Storage
- Redis
- SQL Response
- SQL Server

# PUT DX UIM TO WORK FOR YOU

Get started with DX UIM and see how this advanced solution gives you enterprise-grade scalability and intelligent observability for your complex, hybrid IT infrastructures.

Visit the [DX Unified Infrastructure Management page](#) on the Broadcom Software Academy to learn more



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