



Full stack monitoring across apps & infrastructure with Azure Monitor

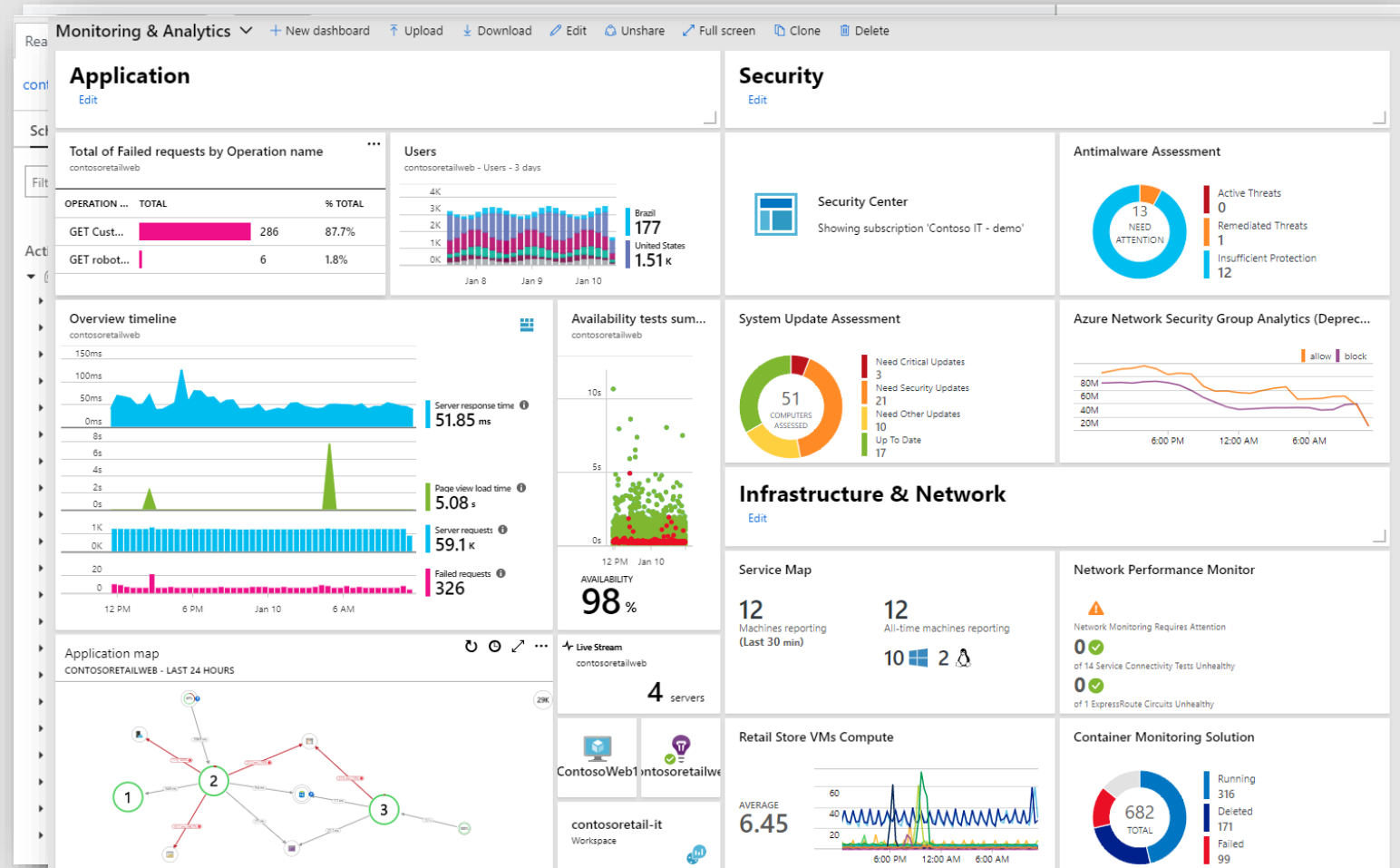
Maxim Sergeev

Sr. Premier Field Engineer

Monitor Cloud-Native/Hybrid Applications



- ➔ Detect & diagnose issues across apps and dependencies with App Insights
- ➔ Correlate issues at infra level with Azure Monitor for VMs & AKS
- ➔ Operationalize at scale with Smart Alerts & Automated Actions
- ➔ Drill down with Log Analytics for troubleshooting & deeper diagnostics
- ➔ Create visualizations with Azure Dashboards & Workbooks



Architecture



Azure Monitor

Applications

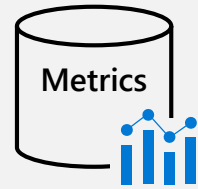
Operating Systems

Azure Resources

Azure Subscriptions

Azure Tenant

Custom Sources



Insights



Application



Container



VM



Monitoring Solutions

Visualize



Dashboards



Views



Power BI



Workbooks

Analyze



Metrics Explorer



Log Analytics

Respond



Alerts



Autoscale

Integrate



Event Hubs



Logic Apps

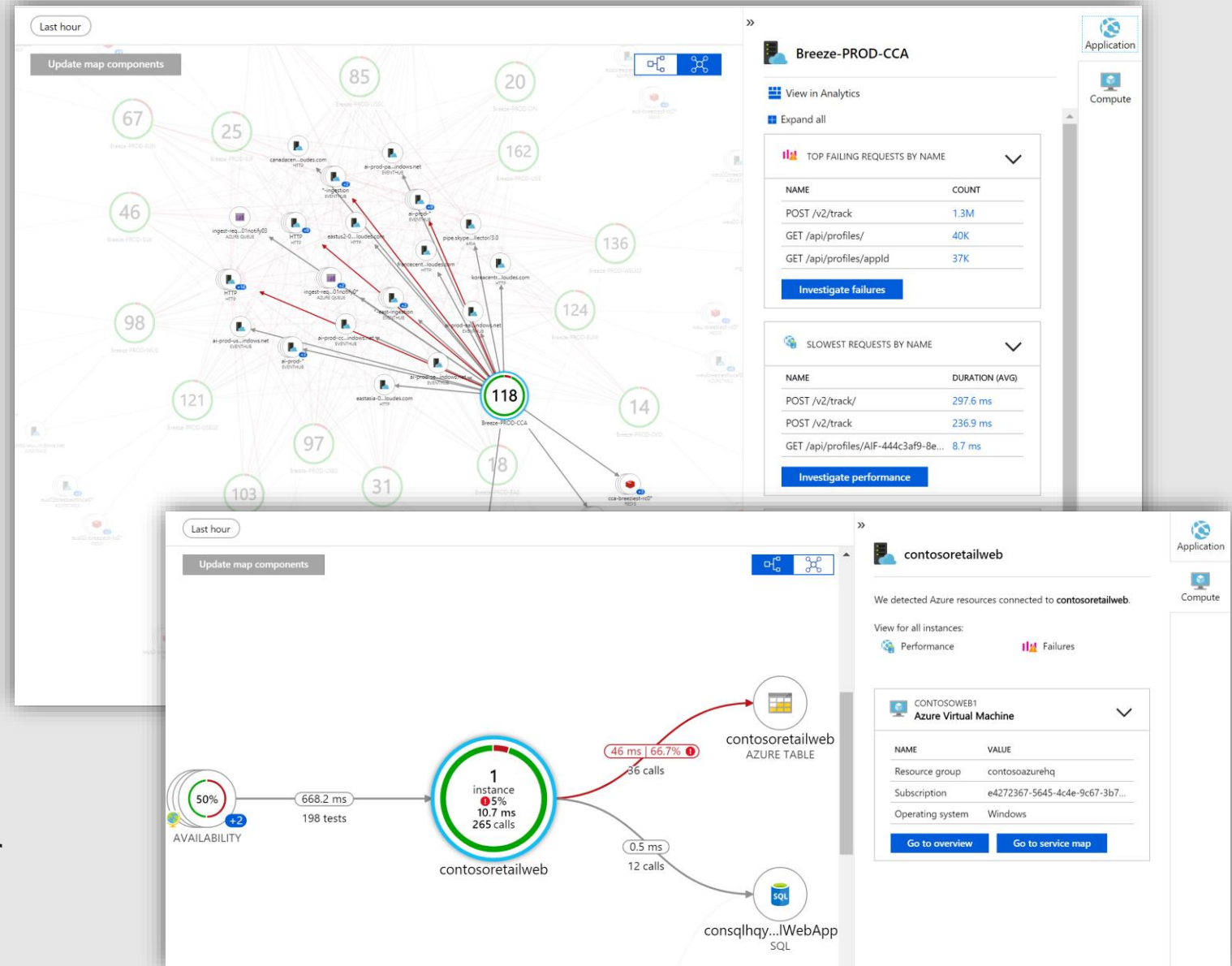


Ingest &
Export APIs

Application Monitoring



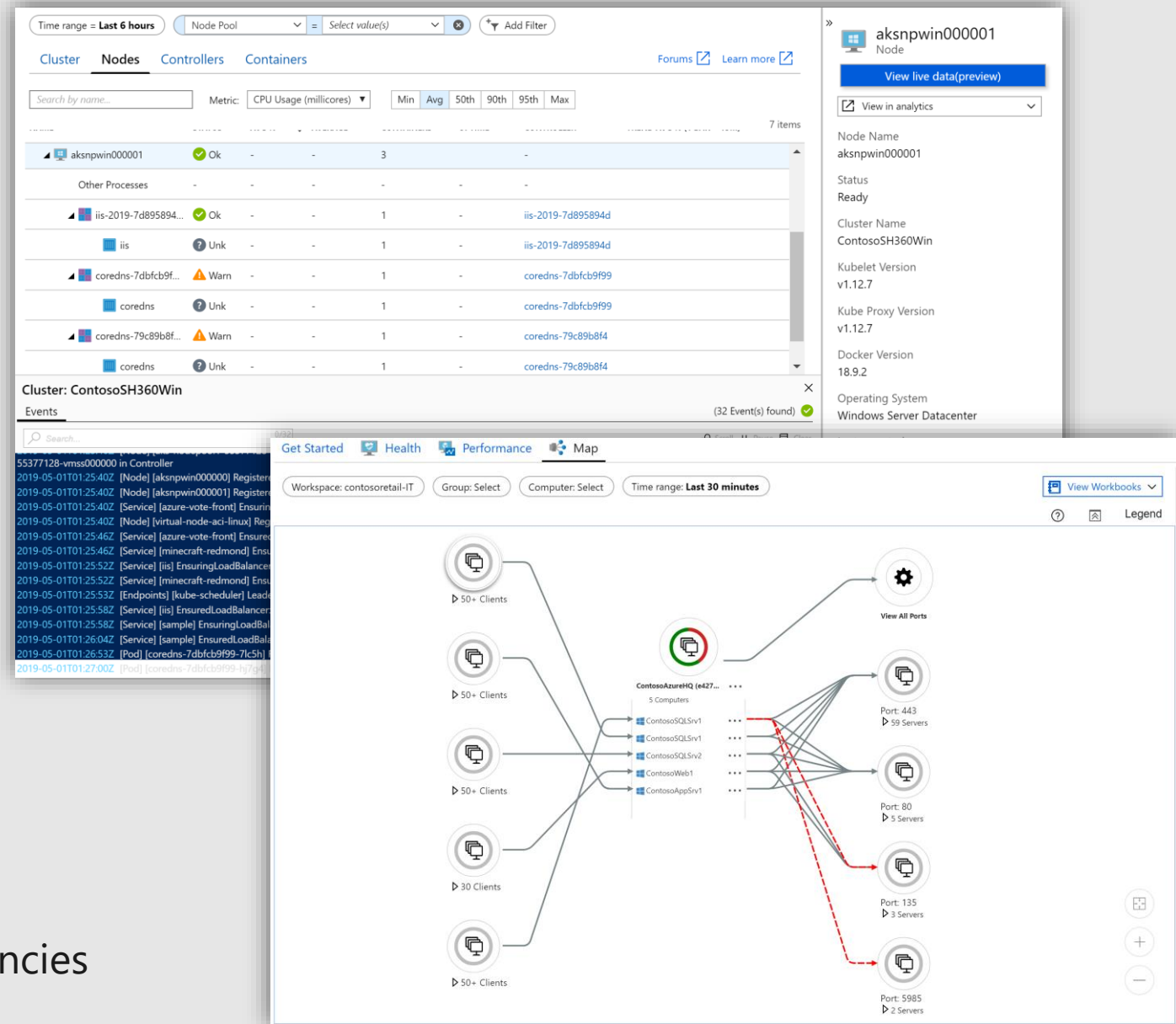
- ➔ Available **on-by-default** for Azure App Services & Functions (.NET)
- ➔ Visualize events & metrics in real time with **Live Metrics Stream**
- ➔ Visualize server/client connections & dependencies with **App Map**
- ➔ Transition with 1-click from App Map to **VM Map** for diagnostics
- ➔ Understand **end-user** cohorts, behavior & engagement for planning
- ➔ Monitor apps in .NET, JS, Java, Node.js or any other language with **OSS SDKs**



Infrastructure Monitoring



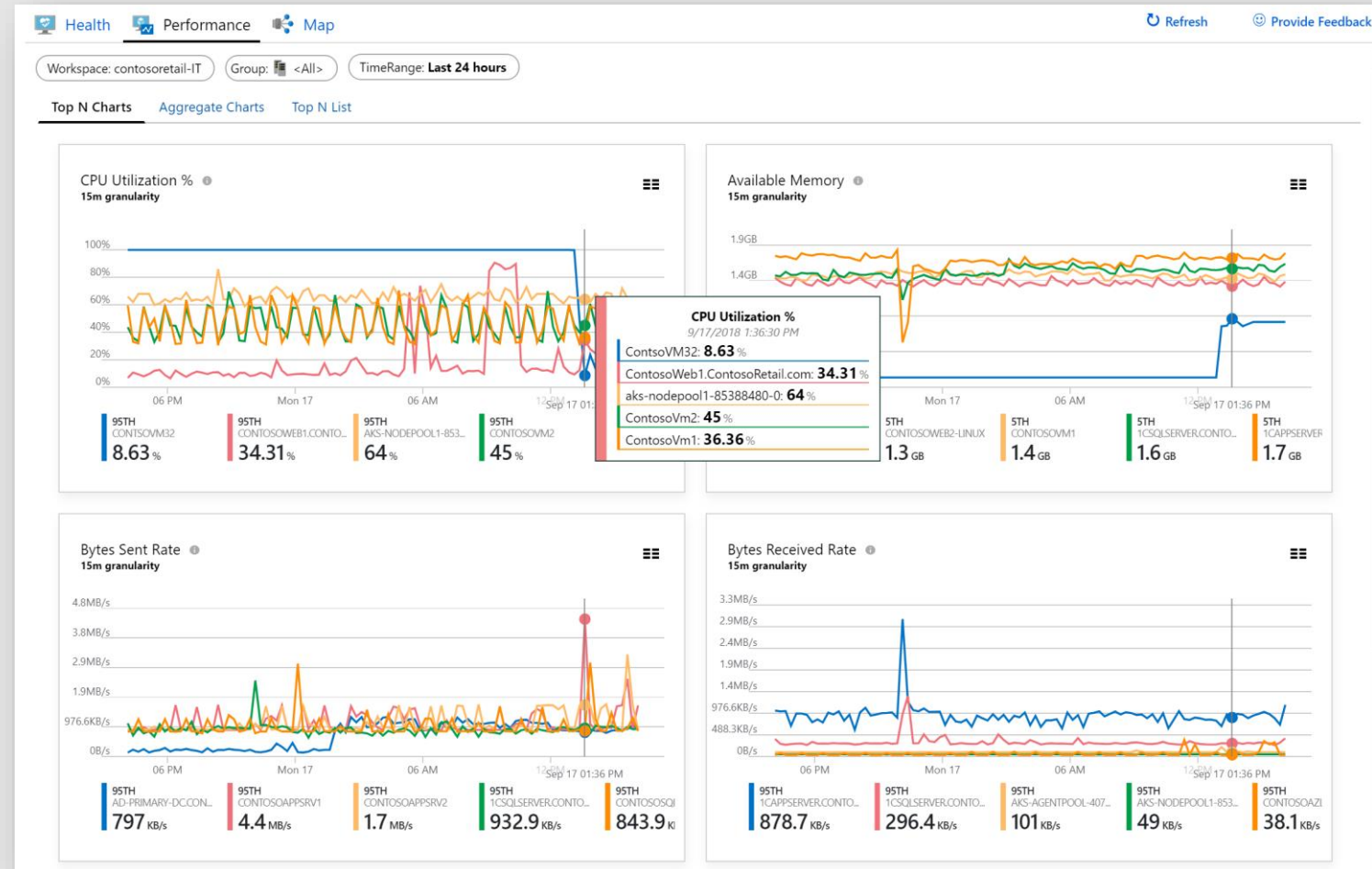
- **Support** for AKS (Windows/Linux), Virtual Node+ACI & AKS-engine
- **Live** Container logs, Live Kubernetes Event logs & **Prometheus** metrics for observability
- Monitor **multi-cluster** health, node status & perf across nodes, controllers and containers
- **VM logs & perf counters** to troubleshoot issues & identify health problems
- Visualize service dependencies & connection failures in **VM maps**
- Out-of-the-box **Workbooks** to diagnose VM/Storage Perf Health & Network Dependencies



Rich Insights for Virtual Machines



- ➔ Monitor single VMs or at scale
- ➔ Identify & isolate host-level or guest-level health problems
- ➔ Troubleshoot perf issues like CPU, memory, disk, and network
- ➔ Visualize service dependencies & connection failures in Maps
- ➔ Onboard at scale using PowerShell or Azure Policy

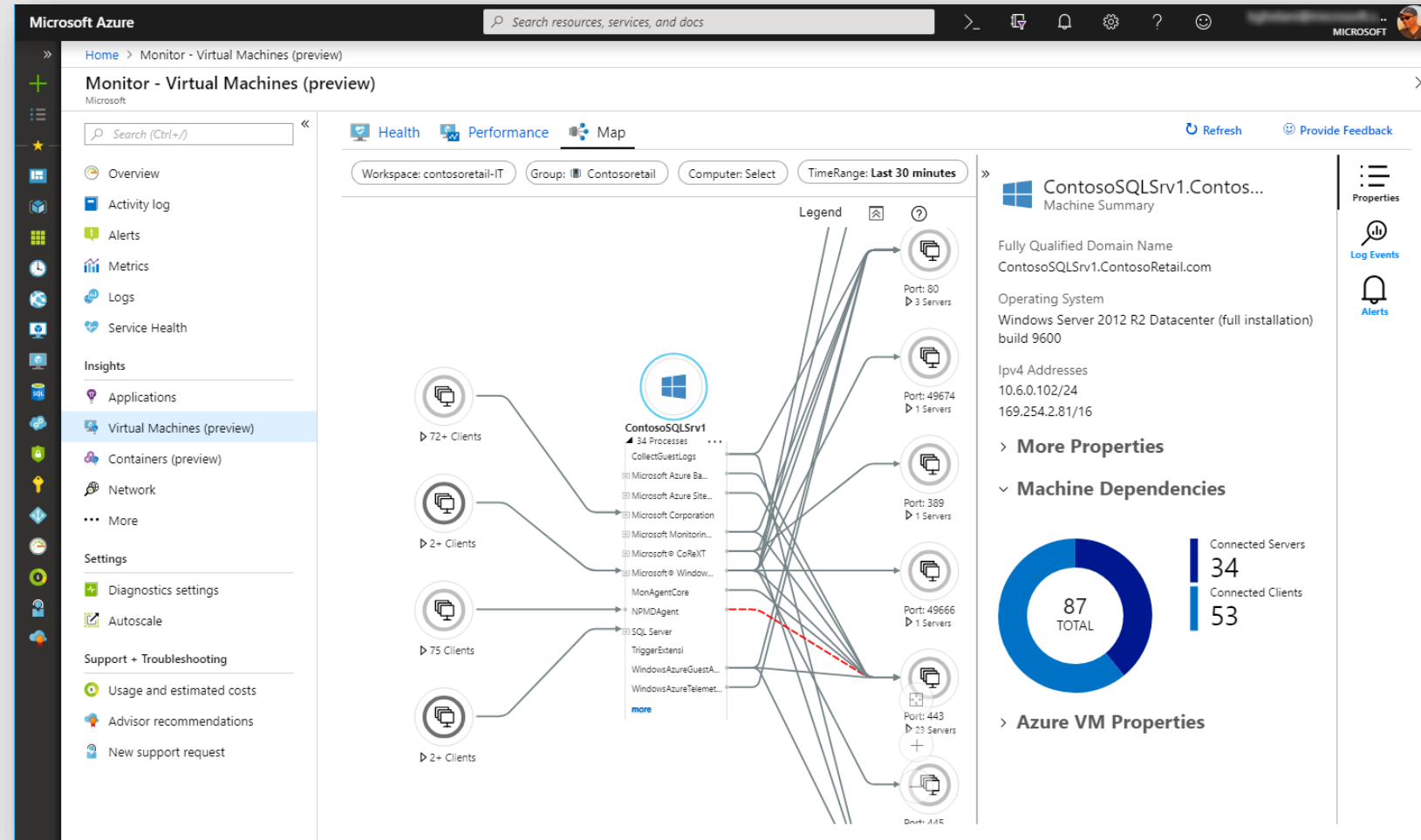


Azure Monitor for VMs

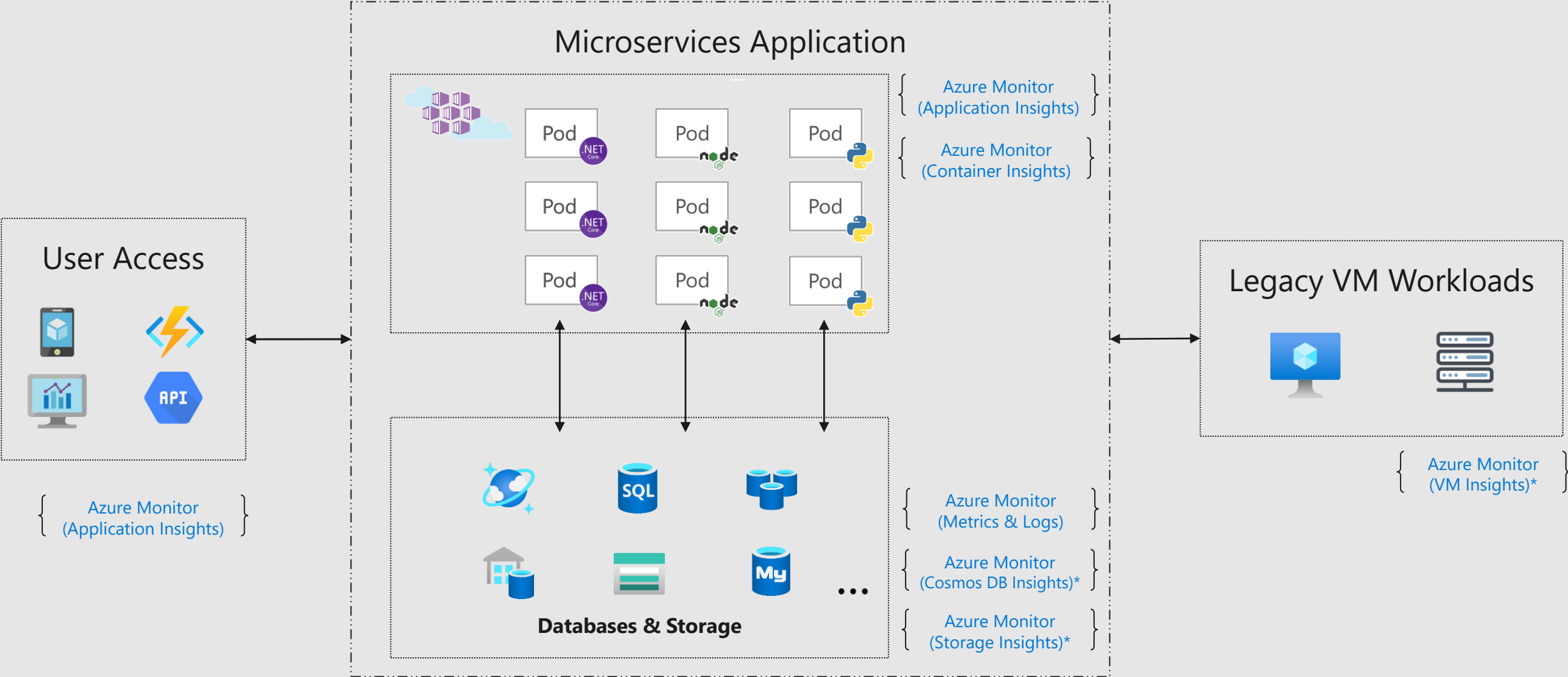


Maps

- Visualize VMs and process interaction for resource groups, VM scale sets and subscriptions
- Identify surprise dependencies and connection failures
- Live connection metrics between processes and VMs identifying spikes in network traffic
- Drill through dependent VMs to Alerts and Logs



Sample Modern App Architecture

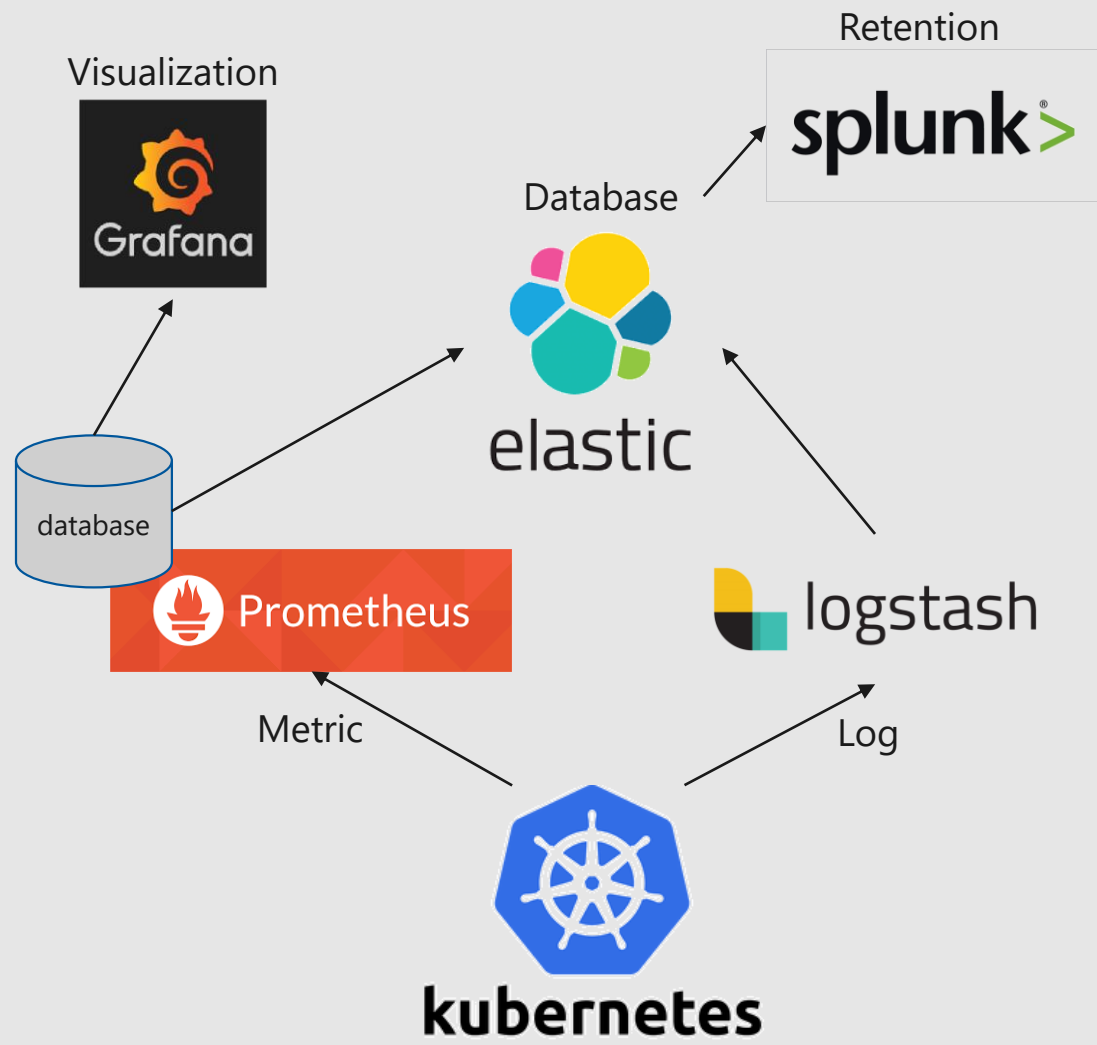


Azure Monitor can be used for E2E monitoring across the n-tier stack

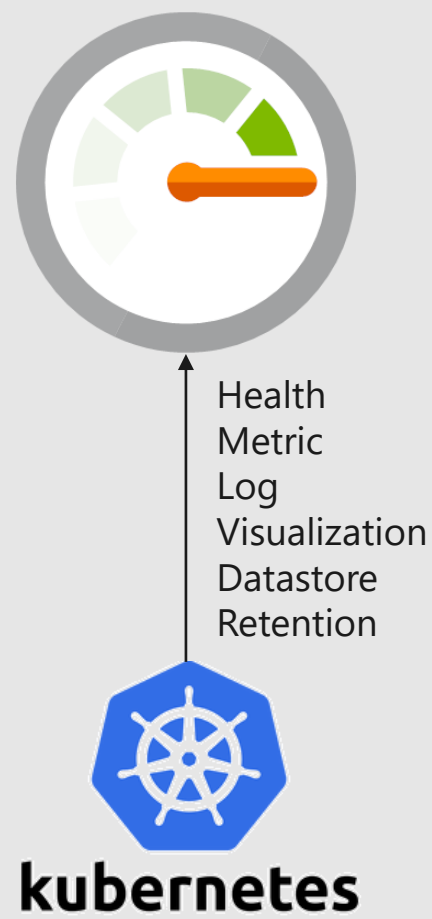
**Service in Preview*

Container Monitoring Preferences

Prometheus



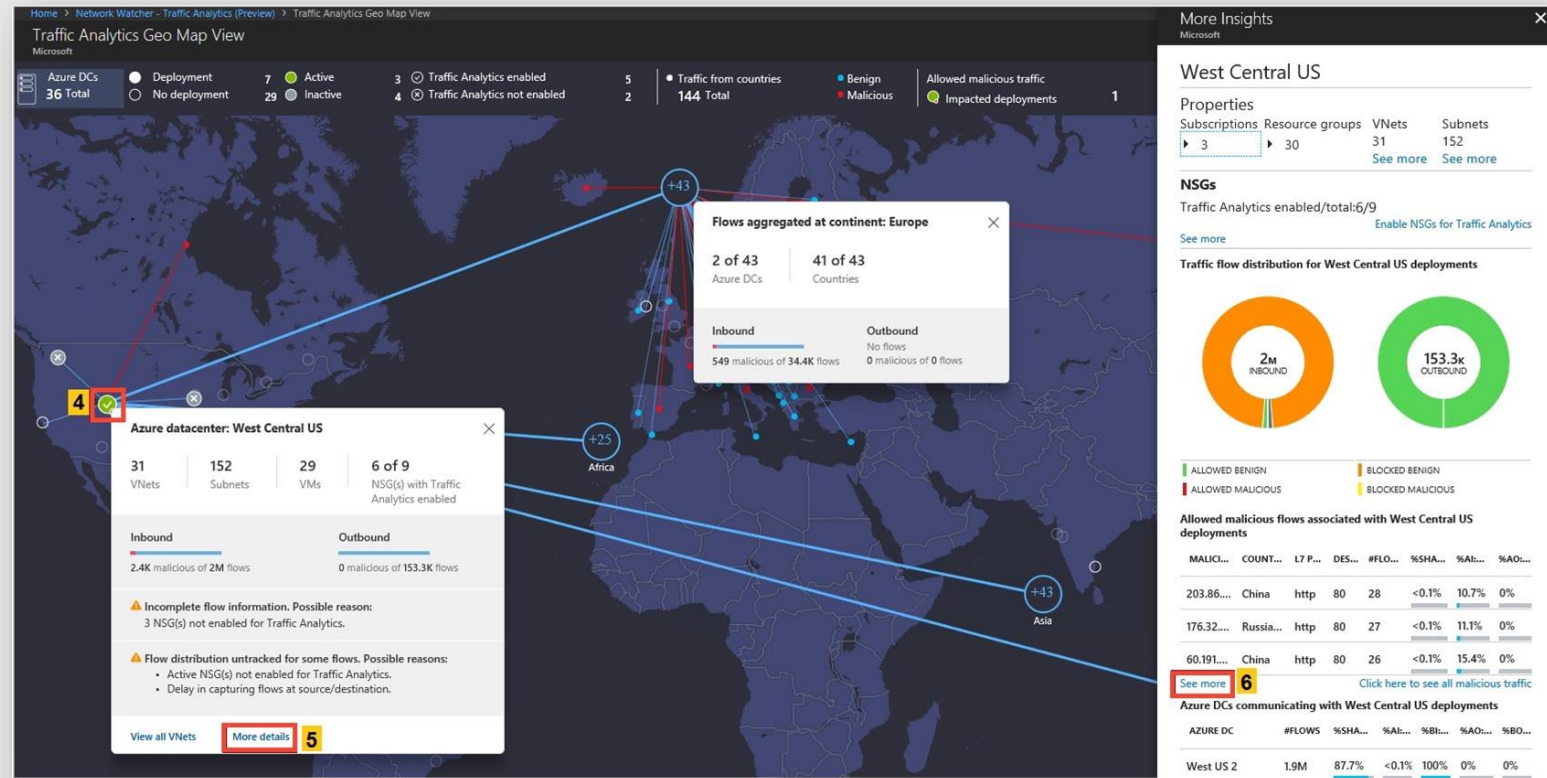
Azure Monitor for Containers



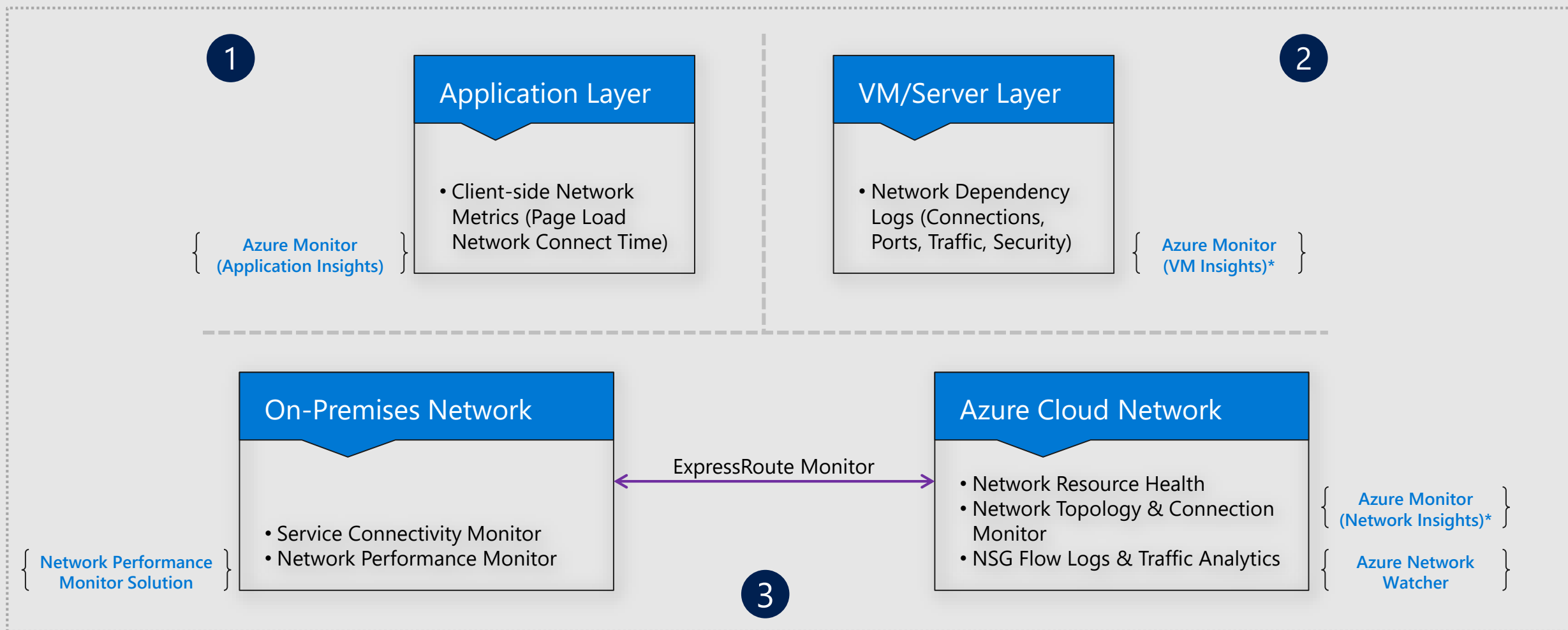
Monitor Network Health & Traffic



- ➔ Secure and audit your network with Network Watcher Traffic Analytics
- ➔ Discover and monitor ExpressRoute circuits, across subscriptions
- ➔ Monitor ExpressRoute connectivity to virtual networks and O365
- ➔ Monitor connectivity to LoB apps with Service Connectivity Monitor



Diagnosing network issues across the stack





Comprehensive alert management workflow

Simple Notifications

Email, SMS, Voice & Mobile App Push

Logic App Workflows

ChatOps (Teams/Slack)

Bug Filing (Azure Boards/GitHub/Jira)

Custom Emails/Reports

ITSM & On-Call Management

ITSM Connectors:
ServiceNow/Cherwell/Provance

Webhooks:
PagerDuty/VictorOps/etc.

Secure Export: ITSM integration with Azure AD Authentication

Auto-healing & Auto-remediation

Autoscale

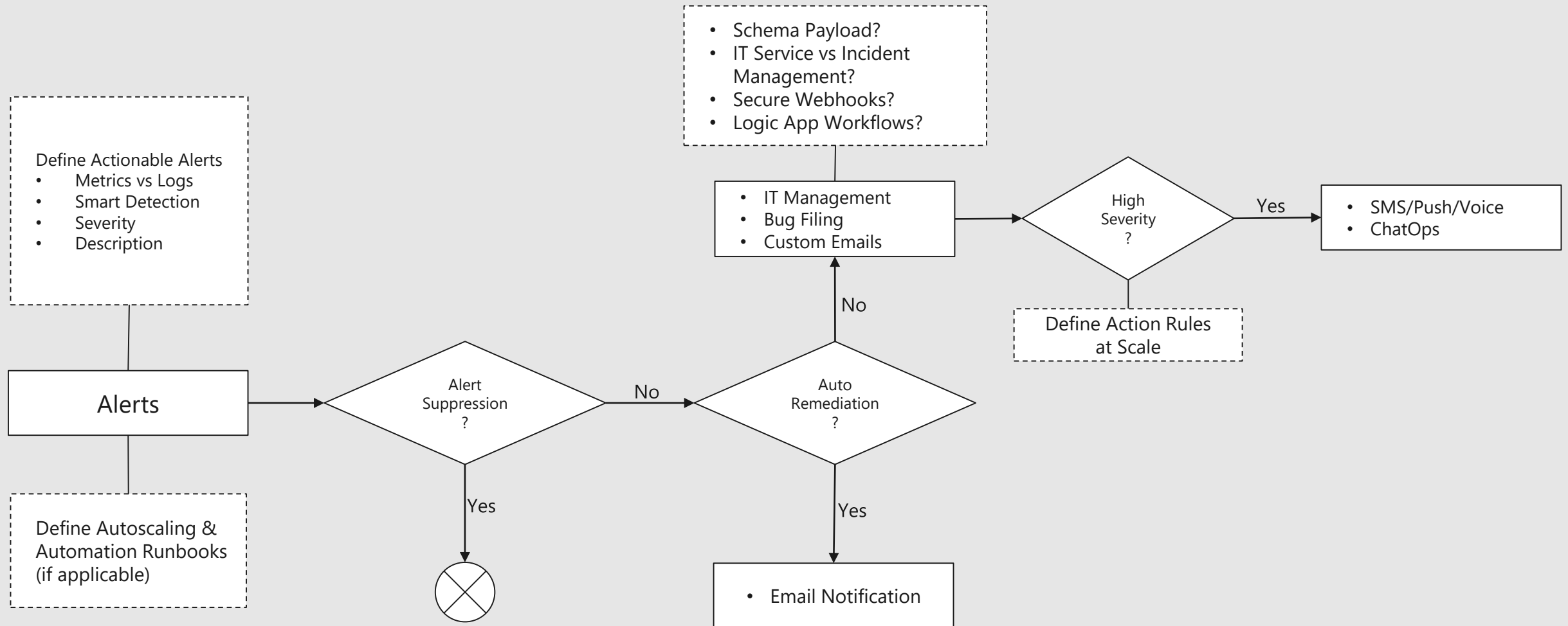
Automation Runbooks

Operationalization

Alert Suppression

Action Groups at Scale

Sample alert management workflow



Azure Monitor Demo

Full observability across Apps & Infrastructure



Seven best practices (L100)

- ✓ Enable monitoring for *all* apps & services via SDKs, Azure Pipelines, DevOps Projects, or Extensions
- ✓ Enable monitoring for *all* relevant components of your infrastructure (VMs, Containers, Network)
- ✓ Bucket Azure resources in Resource Groups for full visibility
- ✓ Ensure quality throughout your CI/CD pipelines
- ✓ Setup actionable alerts with notifications and/or remediations
- ✓ Prepare role-based dashboards & workbooks for reporting
- ✓ Continuously optimize with 'Build Measure Learn'

Learn More: <https://azure.microsoft.com/blog/7-best-practices-for-continuous-monitoring-with-azure-monitor/>



Summary

- 💡 **Integrated:** Native, near-real time, seamless experience for monitoring Azure/Hybrid resources
- 💡 **Intelligent:** Investigative experiences powered by ML capabilities to help identify & solve problems
- 💡 **Interoperable:** Works well with 3rd party products and a rich ecosystem of partner integrations

Resources

Tech Community - <https://techcommunity.microsoft.com/t5/Azure-Monitor/bd-p/AzureMonitor>

Documentation – <https://aka.ms/MonitoringDocs>

Resources, Tutorials, Videos & What's New – <https://aka.ms/AzMonOverview>

Courses – <https://aka.ms/KQLPluralsight> & <http://aka.ms/AMPluralsight>



