

# Full stack monitoring across apps, data, infrastructure with Azure Monitor

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Sr. Customer Engineer

# Azure Monitor – Big Themes

- ✓ **Native Support for Azure E2E**  
Consistency, Completeness, Easy Onboarding
- ✓ **Enterprise Readiness**  
Security & Compliance, Management at Scale
- ✓ **Full Stack Diagnostics**  
Deep Analytics, Rich Insights, Distributed Tracing
- ✓ **Open Ecosystem**  
Open Source, DevOps/IT Integrations, Partners



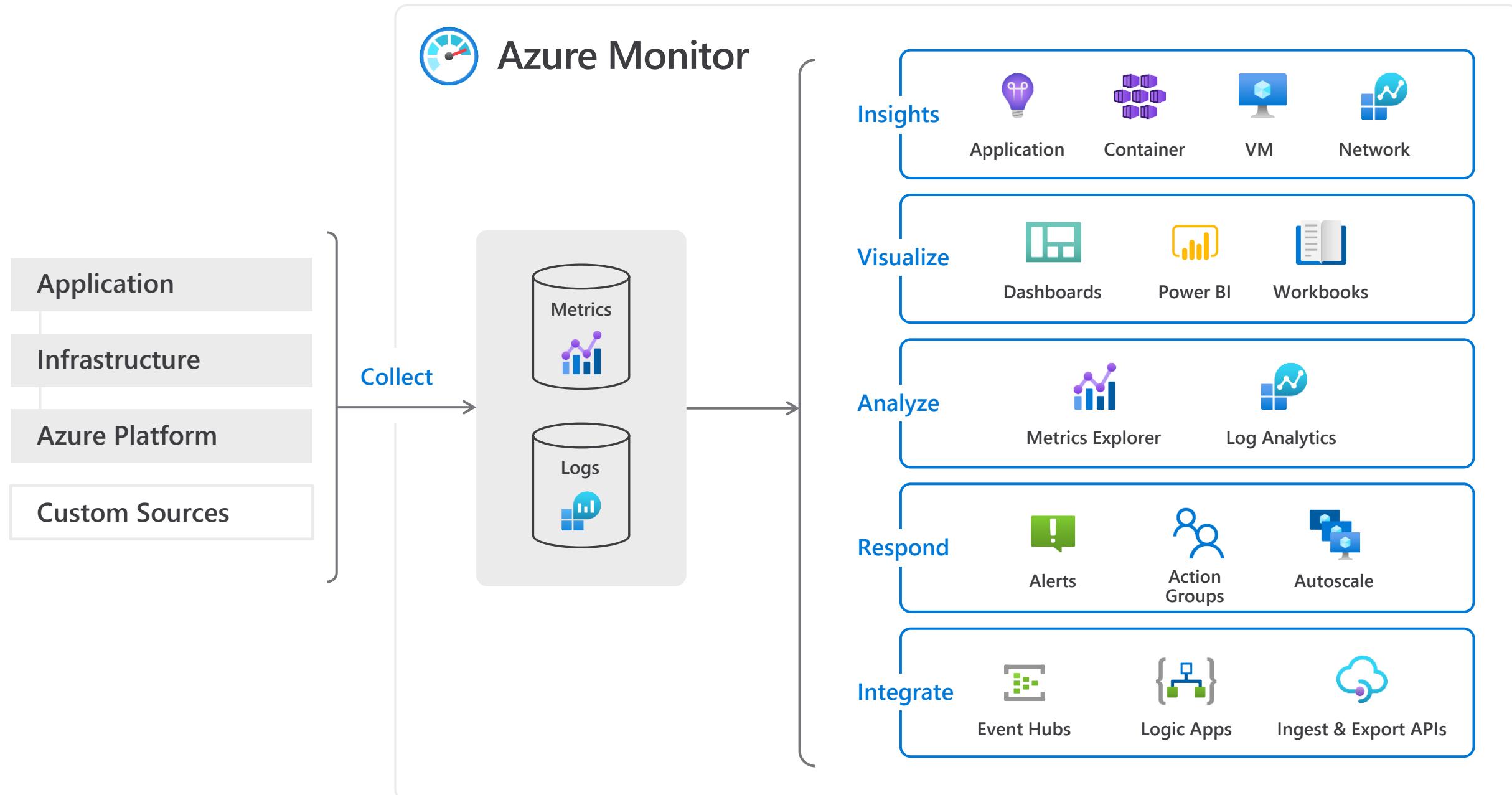
# Azure Monitor Overview (Azure / Hybrid)



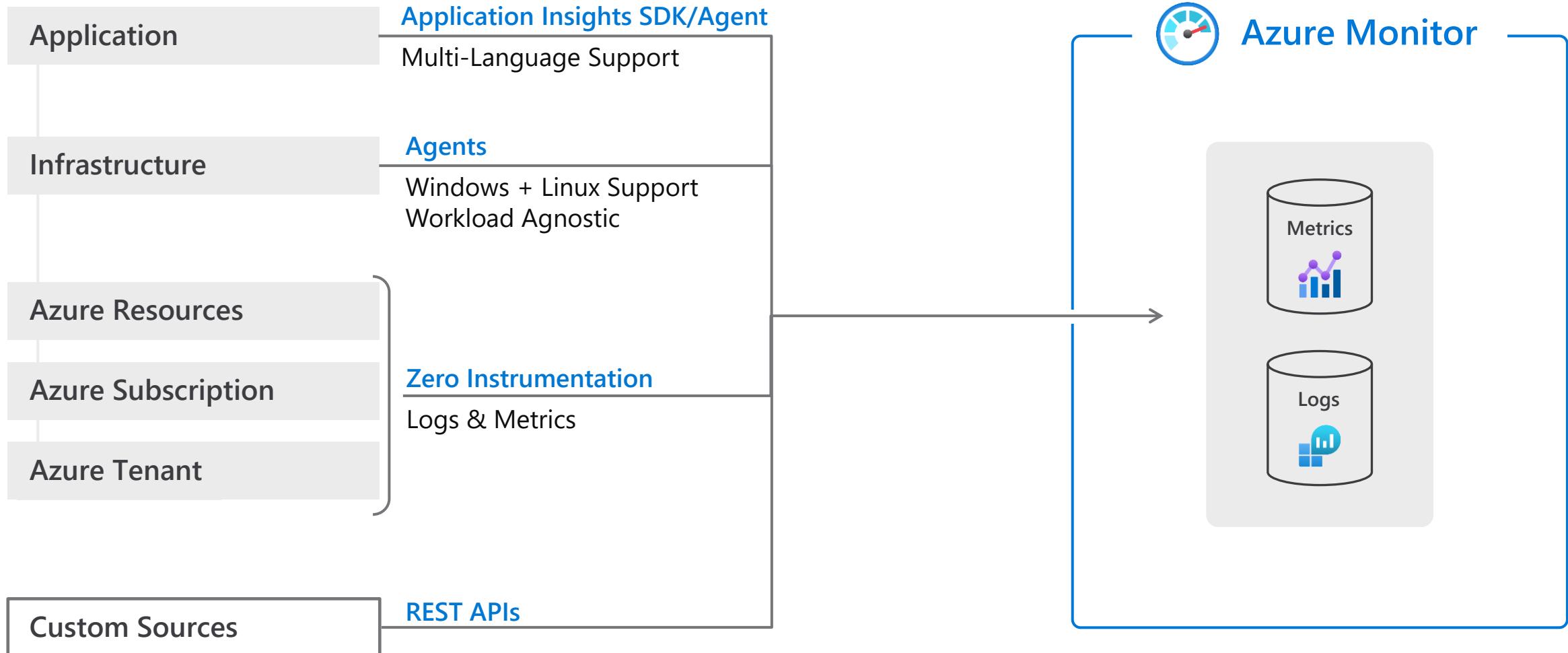
- Detect & diagnose issues across apps and dependencies with App Insights
- Correlate issues at infra level with Azure Monitor for VM, AKS, Storage, Network
- Operationalize at scale with Smart Alerts & Automated Actions
- Drill down with Log Analytics for troubleshooting & deeper diagnostics
- Create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



# Conceptual Architecture



# Data Collection & Onboarding



# Benefits of Monitoring in Azure



\* Presented as a representative third-party solution commonly encountered in the field

Cloud	Platform Logs & Metrics	App/Infra Diagnostics	Analytics
AWS	CloudWatch	X-Ray + New Relic*	CloudWatch/ElasticSearch/Splunk*
Google	StackDriver	StackDriver/New Relic*	BigQuery/Splunk*
Azure	<a href="#">Azure Monitor</a>	<a href="#">Azure Monitor</a>	<a href="#">Azure Monitor</a>

**Azure** provides full stack E2E Monitoring & Analytics with a single integrated solution

- Our unified pricing comes up as [most competitive](#) as customers no longer need multiple products
- Natively integrated with [Azure Services](#) and can be used to [monitor apps on-premises or on any cloud](#)
- [Natural choice for VS/.NET developers](#) with strong [Debugging/Profiling/DevOps](#) capabilities, while supporting most programming languages & dependencies, with our [OSS SDKs & Open Census Support](#)
- [Powerful integrated analytics platform](#) provides centralized logging across Monitoring/Management/Security
- [Integrated alerting/dashboarding](#) across Metrics & Log Queries with a common platform
- Customers wishing to continue using [New Relic/Splunk/etc.](#) can still integrate with [Azure Monitor](#) easily



# Ensuring monitoring at scale

## Configuration

Deploy [Log Analytics Agent](#) & enable [Diagnostic Settings](#) via ARM Templates, Azure CLI, PowerShell or Azure Automation DSC

Integrate monitoring as part of CI/CD workflows ([Azure Pipelines/Azure DevOps Projects/Terraform](#))

## Management

Enable out-of-the-box [Azure Policy Initiatives](#) for Azure Monitor (VM Insights & Diagnostic Settings)

Leverage [Management Groups](#) to prevent monitoring blind spots

Manage multiple tenants via [Azure Lighthouse](#)

## Visualization

Customize [Workbooks](#) for aggregated reports across resources

Build diagnostic or KPI [Dashboards](#) in Azure, Power BI or Grafana

## Operationalization

Setup [Multi-resource Alerts](#) that grow flexibly with your resources

Use [Dynamic Thresholds](#) to enable scalable ML powered alerts for metrics

Use [Action Rules](#) to manage Alert Suppression & Actions at scale

# Monitoring n-tier microservices on containers



Need: OSS Support, Easy Enablement, Distributed Tracing & Full Stack Observability

## Application Workload Monitoring

Enable [Azure Monitor \(Application Insights\)](#) for microservices (OSS SDKs/DevOps)

Get rich APM for each app, workload and/or dependency

Identify and diagnose issues across apps with App Map & Distributed Tracing

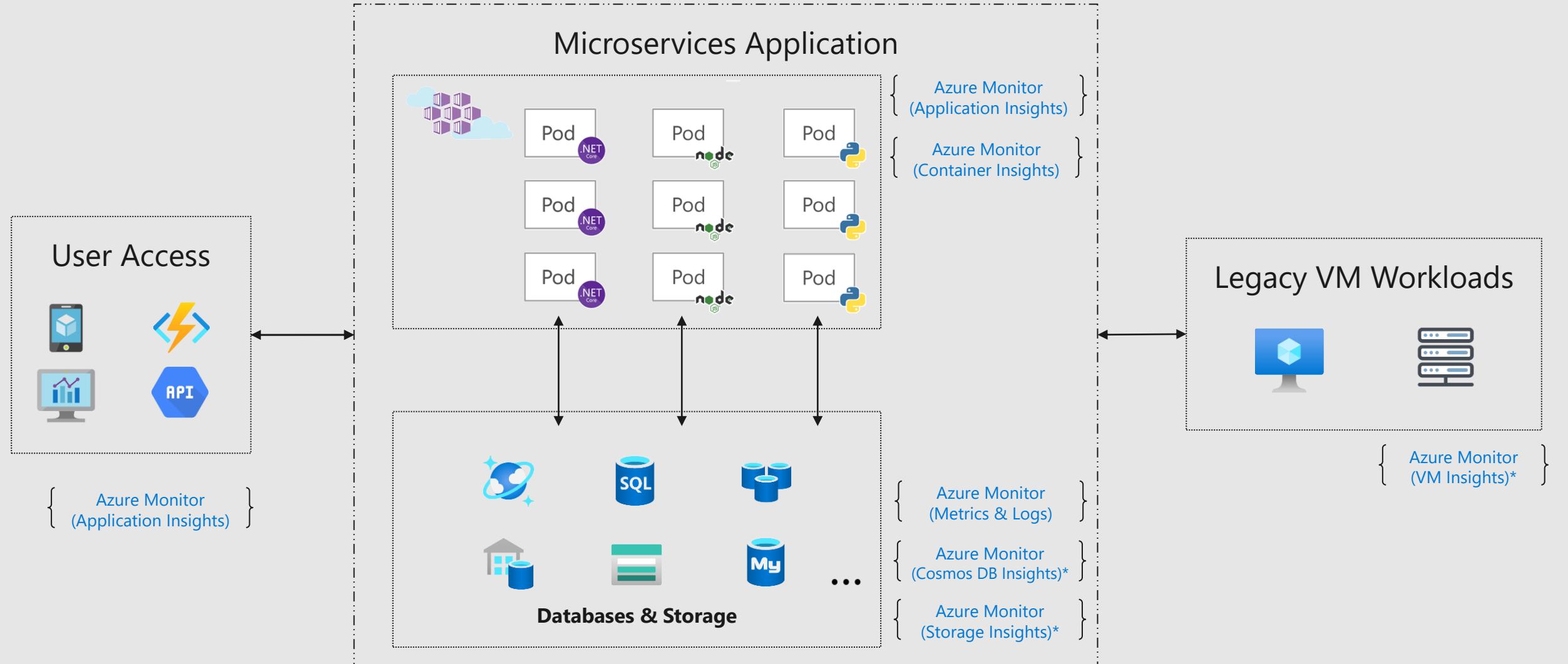
## Container Infrastructure Monitoring

Enable [Azure Monitor \(Container Insights\)](#) for AKS/AKS-engine/On-Prem K8 (Agent/DevOps)

Get rich telemetry on cluster health, node/pod status and container performance

Correlate metrics/logs across App & Infra layers for full stack diagnostics

# Sample Modern App Architecture



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

\*Service in Preview

# Codeless Attach vs SDKs for Application Insights

- **Codeless Attach via Application Insights Agent** : Easiest to enable 'runtime' monitoring with no advanced configuration. Auto-collects same telemetry out-of-the-box as SDKs.
  - If both agent-based and manual SDK-based instrumentation is detected only manual instrumentation settings will be honored to prevent data duplication.
- **Code-based Monitoring via Application Insights SDK** : Use this if there is no support for Codeless Attach (agent-based monitoring) or if you need to make custom API calls to track events/dependencies not captured by default.

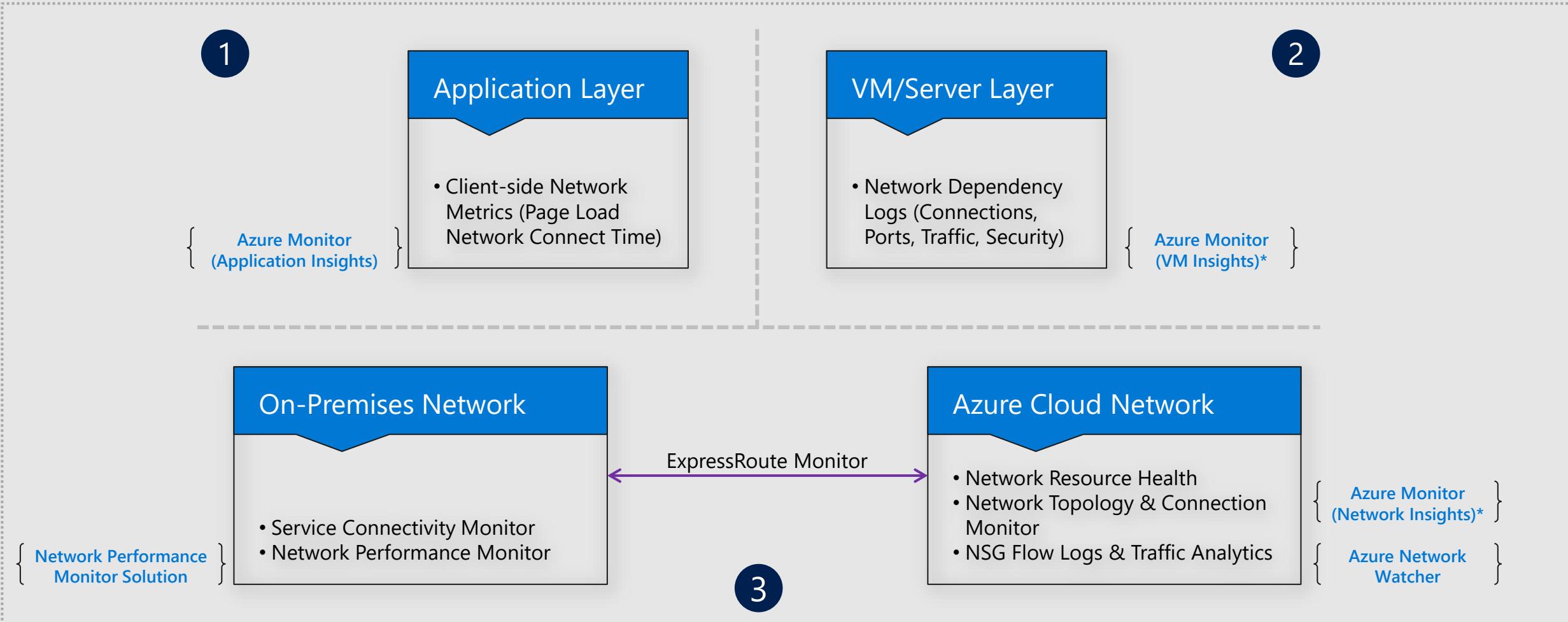
ONBD = On By Default; Coming Soon: Preview in Summer 2020

Codeless Attach Support	.NET	.NET Core	Java	Node.JS	Python
Azure App Services	Yes (ONBD)	Yes	Yes (Preview for Linux; Coming Soon for Windows)	Yes (Preview for Linux; Coming Soon for Windows)	
Azure Functions	Yes (ONBD)	Yes (ONBD)	Yes (ONBD; Coming Soon with Distributed Tracing)	Yes (ONBD)	Yes (ONBD)
Azure VMs	Yes (for IIS via PowerShell)				
On-Premises/ Other Cloud VMs	Yes (for IIS via PowerShell)				
Azure Kubernetes Services (AKS)		Yes (Preview using Istio; Coming Soon with Agent) <sup>^</sup>	Yes (Preview using Istio; Coming Soon with Agent) <sup>^</sup>	Yes (Preview using Istio; Coming Soon with Agent) <sup>^</sup>	Yes (Preview using Istio; Coming Soon with Agent) <sup>^</sup>

<sup>^</sup>Private Preview of Agent based Codeless Attach for apps on AKS available via <http://aka.ms/AKSCodelessAPM>



# Diagnosing network issues across the stack



Cross App/Infra Logs Correlation

{ Azure Monitor (Log Analytics) }

\*Service in Preview



# 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

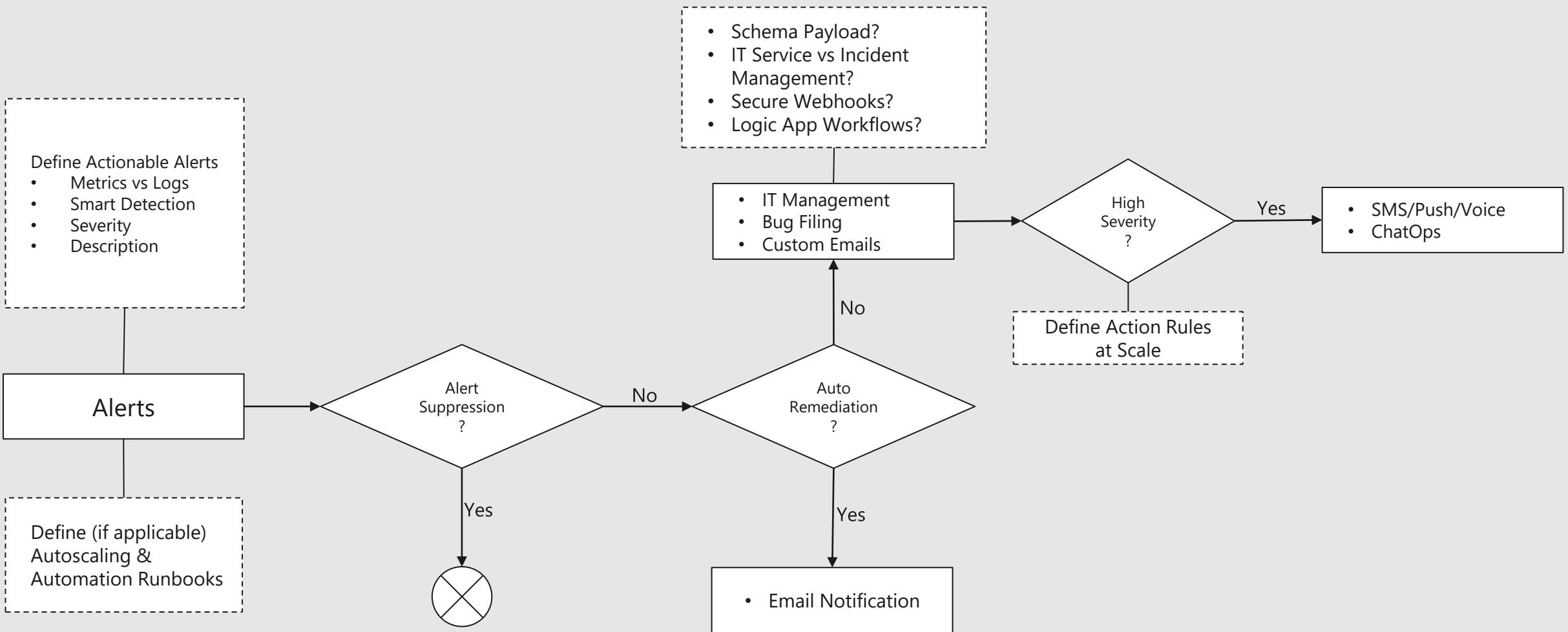
## Auto-healing & Auto-remediation

Autoscale  
Automation Runbooks

## Operationalization

Alert Suppression  
Action Groups at Scale

# Sample alert management workflow



# Azure supports all monitoring & analytics partners



APPDYNAMICS

pagerduty

splunk

LogicMonitor

Prometheus

influxdata<sup>®</sup>

solarwinds

derdack  
SIGNL4

turbonomic

elastic

MICRO  
FOCUS

Grafana

CloudBeacon

SignalFx

sumologic

Atlassian

logz.io

DATADOG

CH

OpsGenie

dynatrace

New Relic

IBM Security

\*and many more ... growing as we speak!

# New scenarios & capabilities

# Application monitoring

## Azure Monitor Application Insights on LA Workspaces

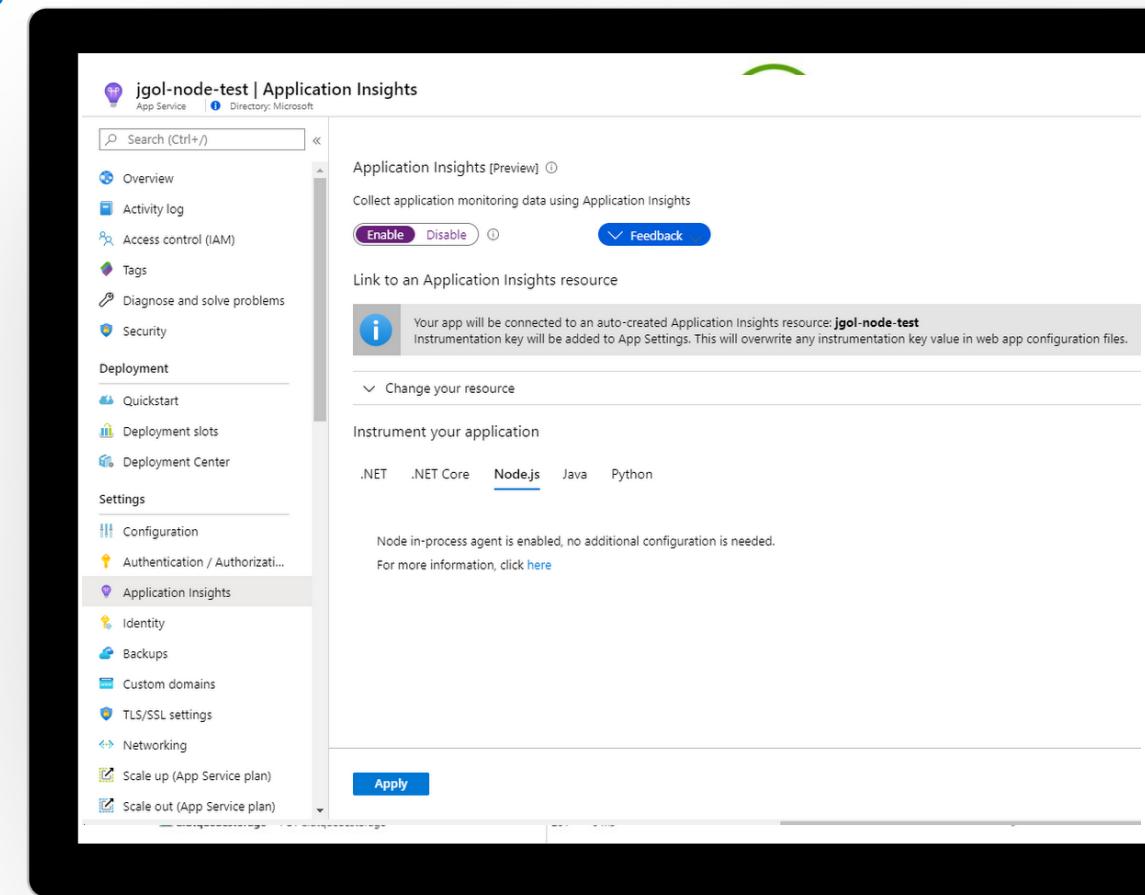
- Converge App Logs with Platform/Infra Logs in **One Workspace**
- Optimize cost through **Reserved Capacity Pricing**
- **Continuous Export** to Storage/Event Hub via Diagnostic Settings
- **Additional Advantages** from Log Analytics (CMK Encryption, Private Link support, BCDR/HA, Global Availability, etc.)

## Codeless Attach for easy onboarding

- **Node.JS Codeless Attach** for Azure App Services (Linux)
- **Java Codeless Attach** with platform agnostic In-Process Agent

## Distributed Tracing enhancements

- **Python OpenCensus SDK** supporting Distributed Tracing
- Out-of-the-box Distributed Tracing in Azure **Functions (Java)**
- Transaction correlation across **Service Bus & Event Hub**
- Correlation of TCP calls to **Azure Cosmos DB** with requests



# Infrastructure monitoring

## GA for Azure Monitor for VM & VMSS

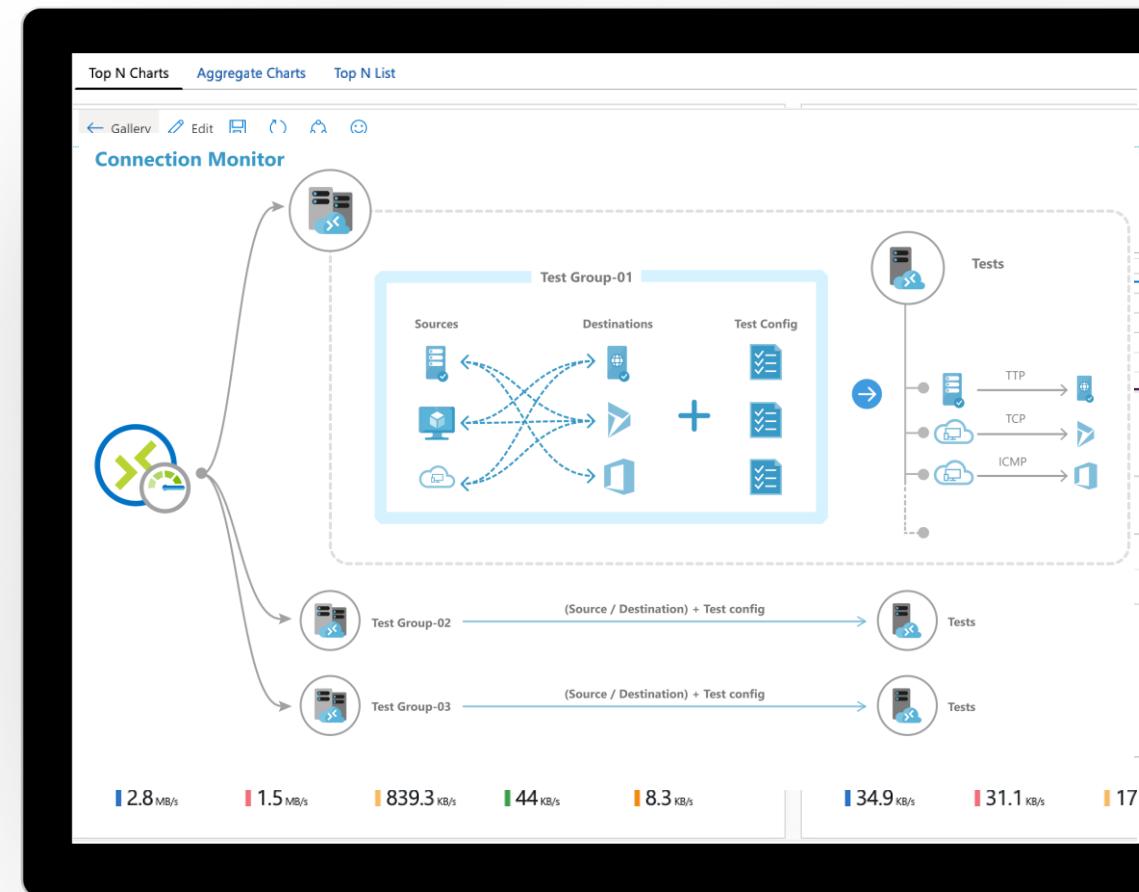
- Explore guest-level **perf issues** and resource utilization trends
- Troubleshoot **dependency connections** and VM client issues
- Discover **hotspots at scale** using out-of-the-box workbooks
- Support for **Azure Arc** enabled Servers

## Expanded support from Azure Monitor for Containers

- Support for **Azure RedHat OpenShift 4.3**
- **GPU Monitoring** for AKS Containers
- **Recommended Alerts** available out-of-the-box
- Support for **Azure Arc** enabled Kubernetes

## Unified Network Watcher Connection Monitor

- Single console for configuring/monitoring **connectivity and network quality** from Azure & on-premises VMs/hosts
- Ability to **monitor endpoints** within and across Azure regions, on-premises sites and global service locations



# Metrics, logs & insights

## New Out-of-the-box insights based on Workbooks

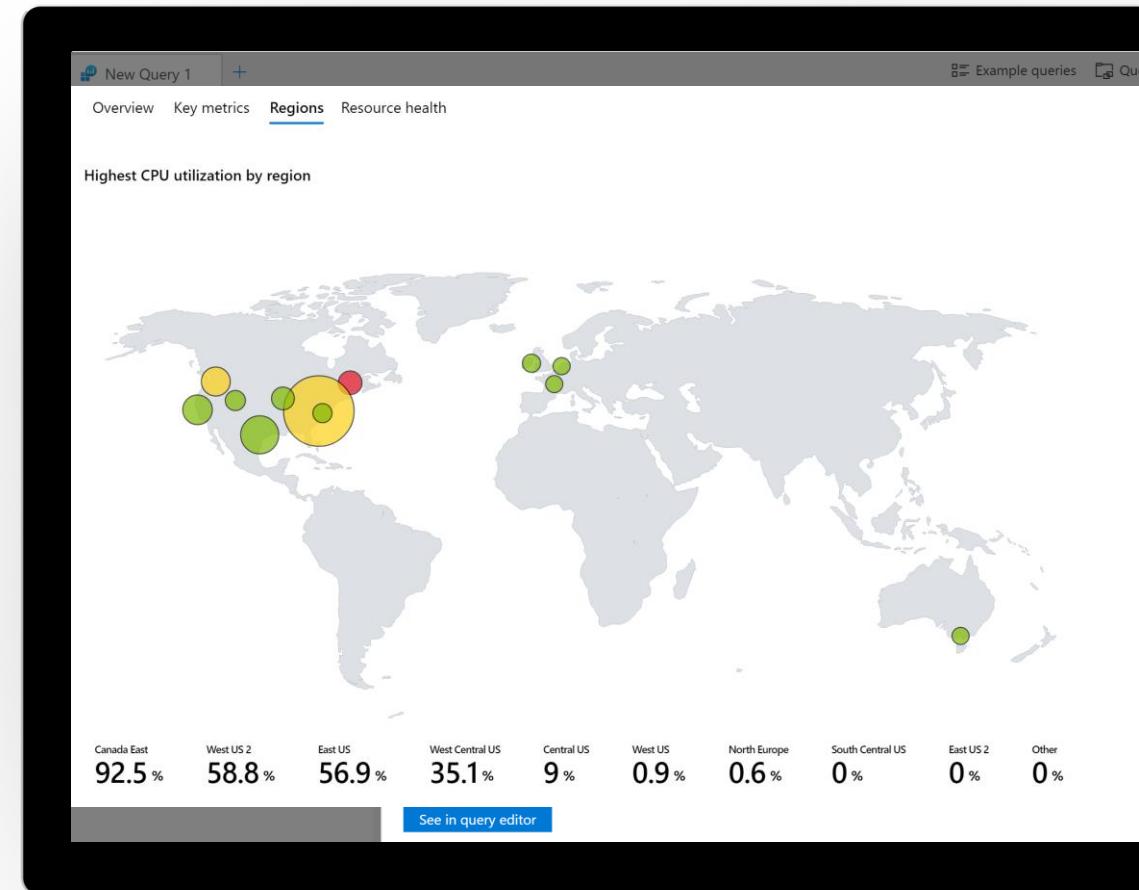
- GA for Azure Monitor for **Storage** & Azure **Cosmos DB**
- Preview of Azure Monitor for **Key Vault** & Azure **Cache for Redis**

## New Workbooks data sources & visualizations

- Support **additional data sources** like ADX, ARM Endpoints, Custom Endpoints, Resource-Centric KQL Queries, etc.
- **Visualization enhancements** like Geo-Maps, Hive Clusters, Tabs, Groups and advanced chart customizations

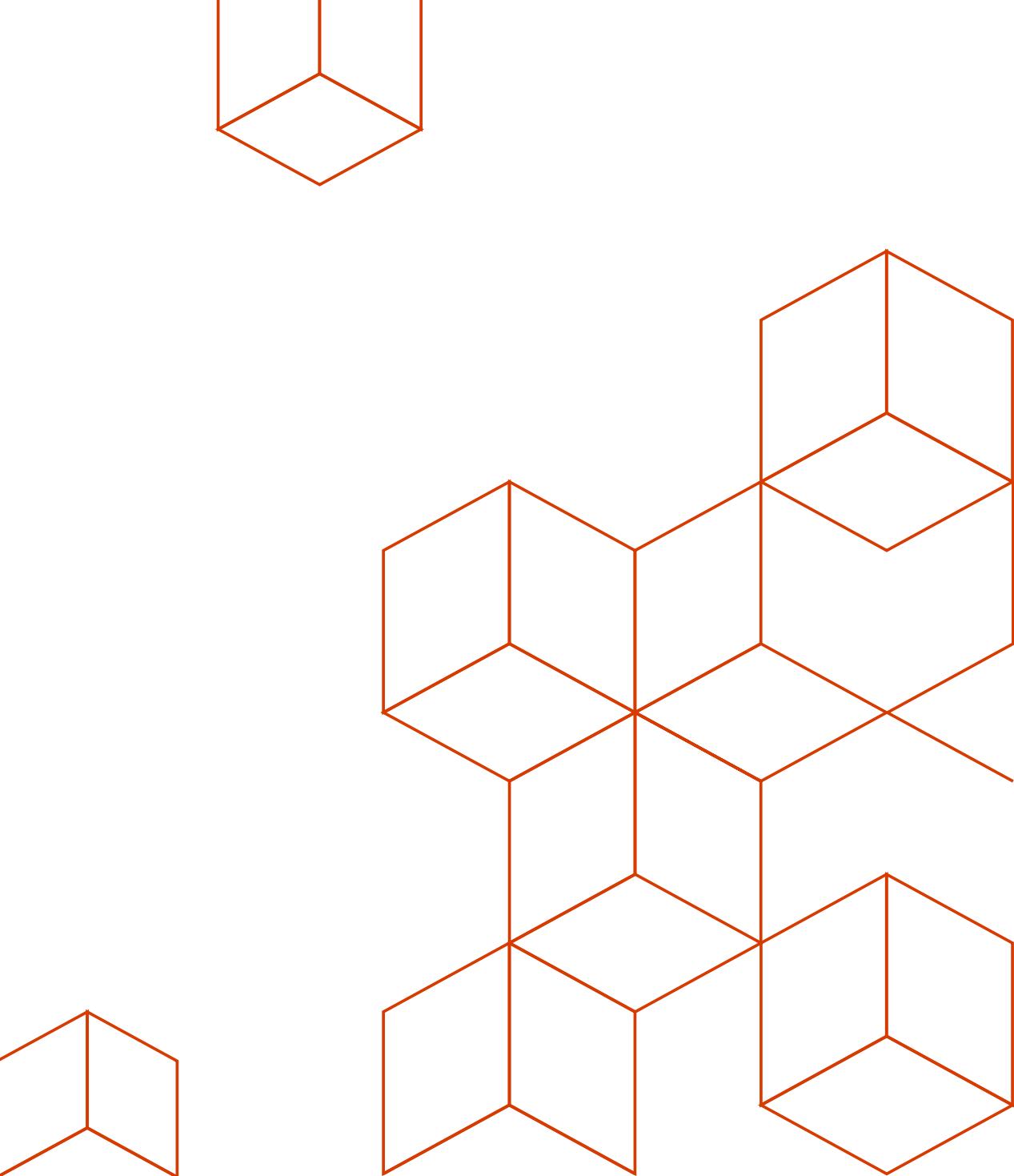
## Improved user experience & enterprise readiness

- New **Schema/Table Pane & Query Examples** in Log Analytics
- Updated **Log Analytics Gateway** with improved reliability
- **CMK Encryption** when using dedicated Log Analytics Clusters with capacity reservation of >1TB/day



# Azure Monitor Demo

Full observability across Apps & Infrastructure



# Azure Monitor Roadmap 2020

## Basics

- Faster ingestion, query & alerting [E2E latency](#)
- One [Azure Monitor Agent](#) with at-scale [Data Collection Rules](#)
- [Resource-centric](#) Application Insights for Azure Resources
- Application Insights [Codeless Attach](#) for Apps on Azure App Services, VMs & AKS
- Client SDK Support for [OSS](#) languages with [OpenTelemetry](#)
- [Rich Insights](#) for Workloads and additional Azure Resources
- Service specific monitoring for [Networking Resources](#) like Load Balancer, Express Route, Private Link, VPN, vWAN, etc.
- Business Continuity [Disaster Recovery](#) & [High Availability](#)
- [Recommended Alerts](#) available out-of-the-box

## Capabilities

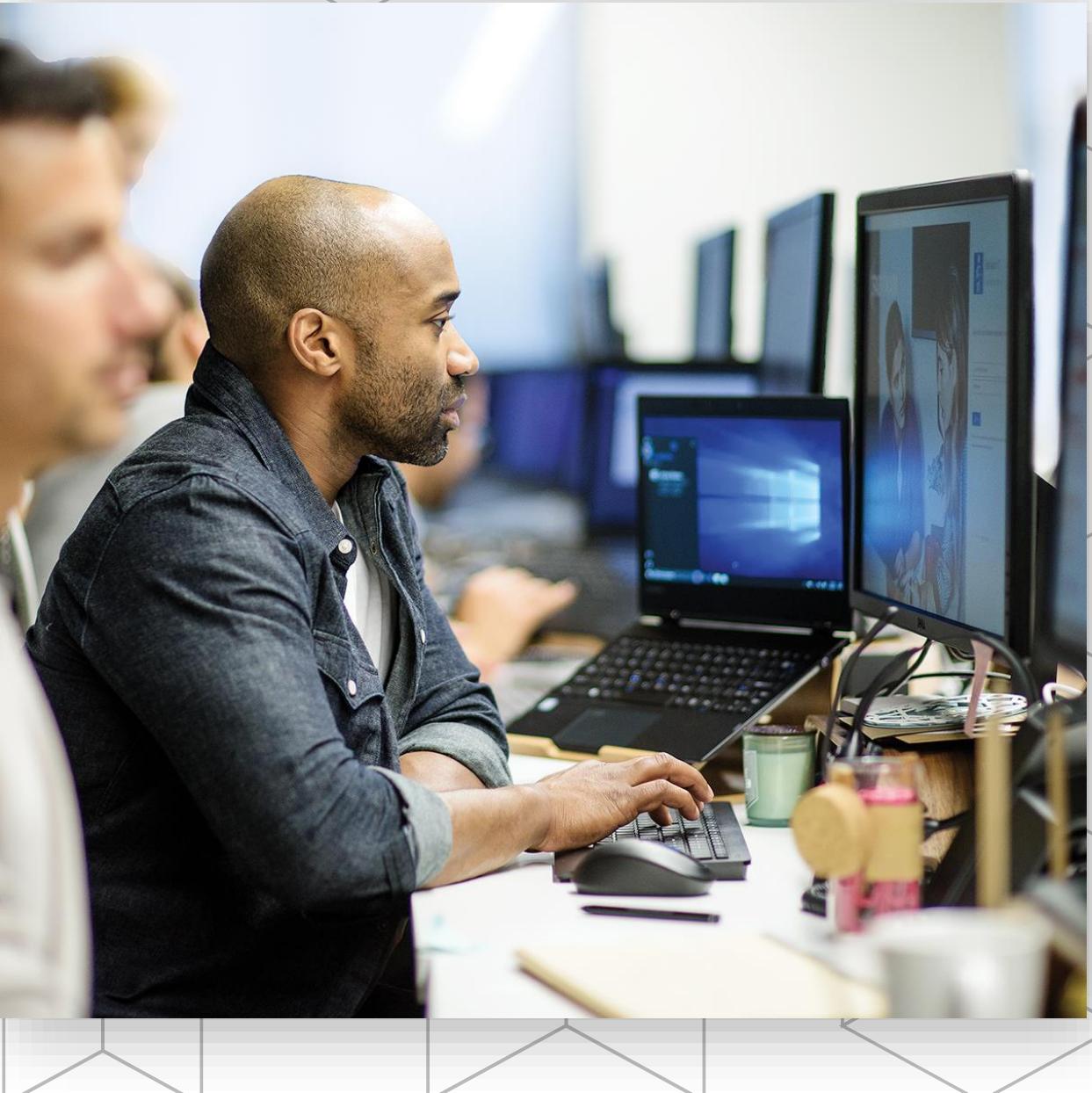
- [Distributed Tracing](#) coverage & enhancements for additional Azure Services (IoT Hub, Cosmos DB, Service Bus & Event Hub)
- [App Scoping](#) for monitoring logical group of resources
- [Health Monitoring](#) for VMs, Containers & Networking resources
- [Selenium](#) based multi-step synthetic availability testing
- Integrations with Azure DevOps for [ChatOps \(Teams, Slack\)](#) and accessing [Environment/Workload Health](#) in Pipelines
- [Continuous Export](#) from Logs to Storage/Event Hub
- Creation and Deployment of [Query Packs](#) using APIs

# Seven best practices (L100)

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- ✓ 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/>



# Ten best practices (L200)

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- ✓ Manually instrument apps with [custom metrics/events/page views](#) to gain valuable usage insights, specially for SPAs
- ✓ Use [different App Insights resources](#) for each independent app and per environment, to gain specific insights while still being able to visualize E2E in App Map/Distributed Tracing and correlate data in Logs
- ✓ Bucketize resources in [Azure Resource Groups](#) for monitoring health, failure, perf & maps of systems in aggregate
- ✓ Create [custom charts/queries/dashboards](#) to monitor KPIs for multiple apps/resources together
- ✓ Use '[Infrastructure as Code](#)' (ARM, Terraform, etc.) to configure/manage monitoring, alerting & dashboarding at scale
- ✓ Identify & configure [appropriate actions for each alert](#), from simple notifications to automated runbooks or autoscaling
- ✓ Setup Azure Monitor [Quality Gates](#) in [Azure Pipelines RM](#) to ensure health/reliability during CI/CD
- ✓ [Customize workbooks](#) as troubleshooting guides or dynamic reports with relevant charts/queries to share with colleagues
- ✓ Use KQL to be able to [drill down into raw telemetry/logs](#) for powerful troubleshooting, visualizations, data mining & alerting
- ✓ Collect only as much data as you might ever need to use and consider exporting for long term storage/retention

# Next Steps & Resources



Azure Updates:

- <https://aka.ms/AzMonUpdates>

Documentation:

- <https://aka.ms/MonitoringDocs>

Useful Skills & Courses:

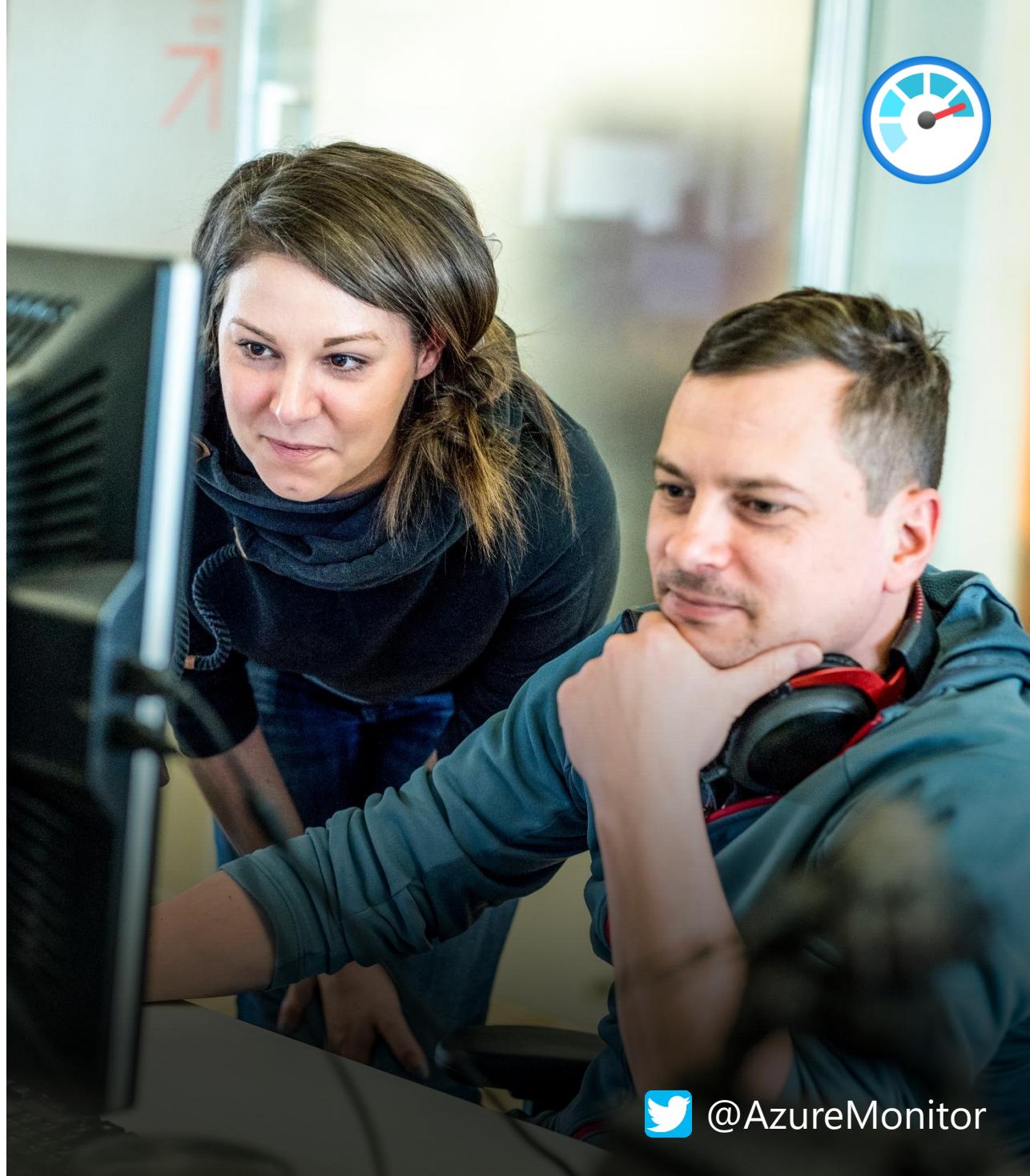
- <http://aka.ms/AzMonSkills>

Monthly AMA:

- <http://aka.ms/AzMonAMABlog>

Case Studies:

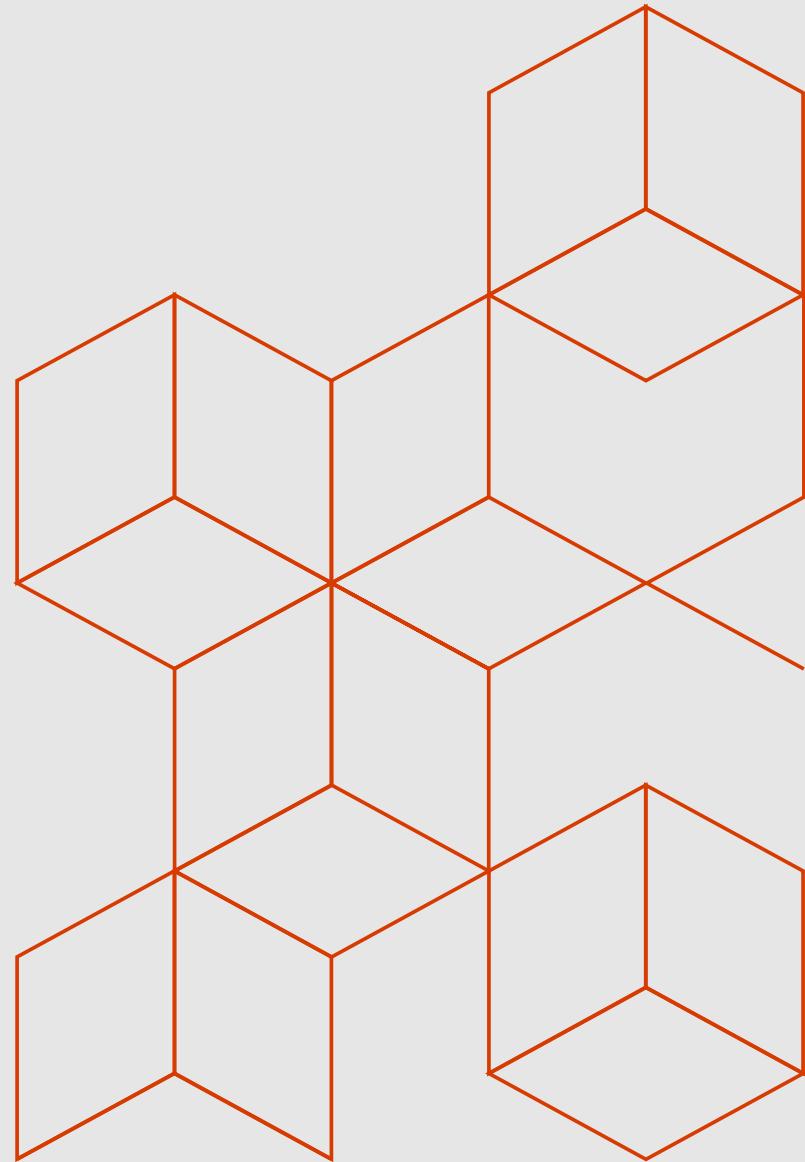
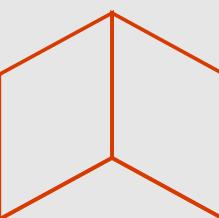
- <http://aka.ms/AzMonStories>



@AzureMonitor

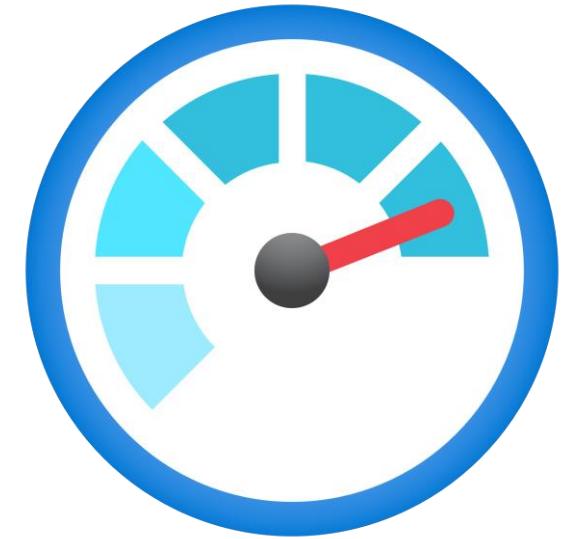


# Appendix

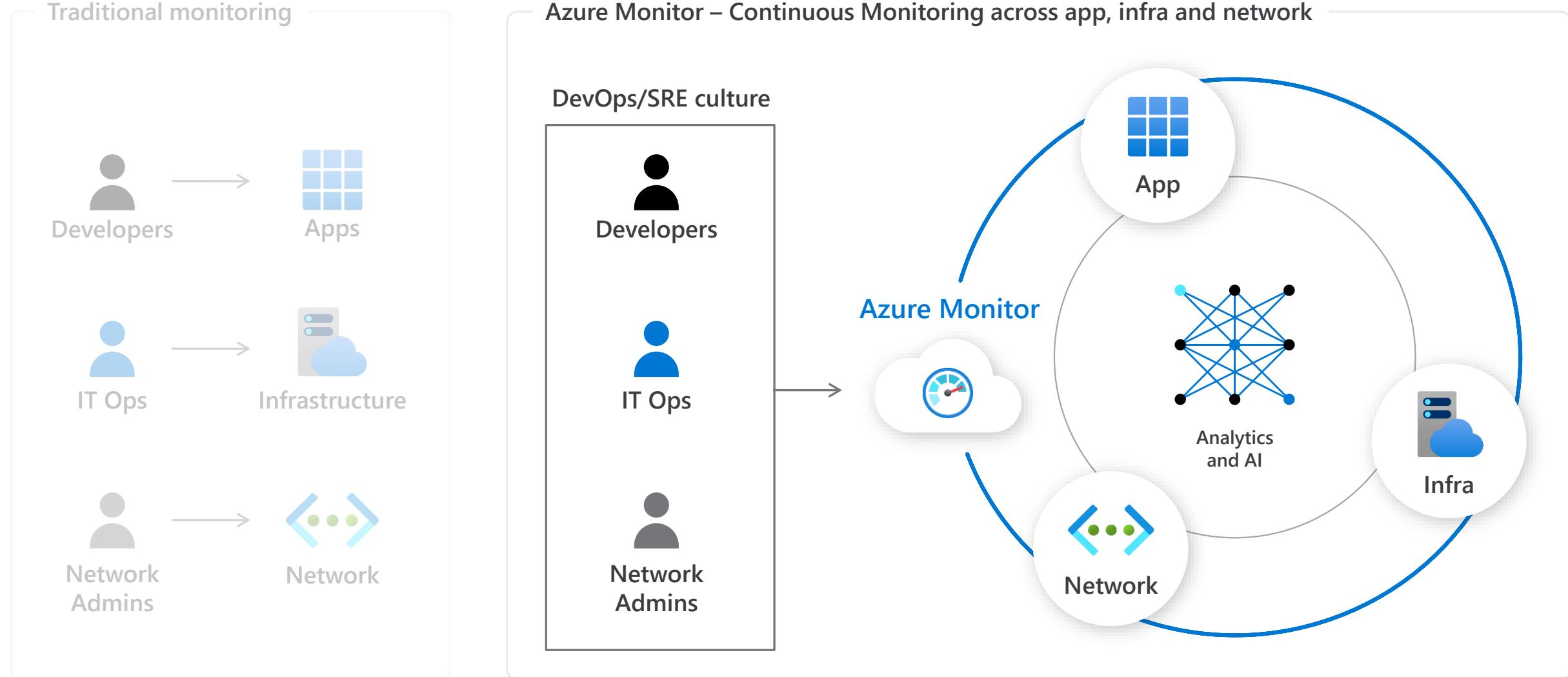


# Monitoring in Azure

- ✓ **Native to Azure** – Out of box without need for any 3<sup>rd</sup> party monitoring or analytics solutions
- ✓ **Mission Critical** – Support mission critical needs to continuously ensuring health, availability & reliability of apps & infra
- ✓ **Powerful Analytics** – State-of-the-art centralized logging platform with rich queries & ML capabilities for troubleshooting & analyses
- ✓ **Rich Ecosystem** – Integrations with 1<sup>st</sup> and 3<sup>rd</sup> party tools/workflows and ecosystem of partner solutions for specific scenarios



# Changes in monitoring



# Customer adoption

 **RapidDeploy**  
CLOUD AIDED DISPATCH™

**Firstgas®**

**Alaska**  
AIRLINES

 . .

**VATTENFALL** 

**Bentley®**



 **ALD**  
Automotive

 **rackspace**®

 TELEOPTI

**asos**

TEST WORKS 

 **DONNER & REUSCHEL**  
PRIVATBANK SEIT 1798



 **Allscripts**®

**Hafslund**   
Nett

 **DNV·GL**

 **KONICA MINOLTA**

# Customer quotes

“



"We needed access to good tools and not invest in custom tooling. Azure Monitor and its Application Insights capability offered us better tooling at a greatly reduced cost, and that in turn allowed us to reinvest in creating the next generation of our cloud services."

Saida Kontrime,  
*Director and Distinguished Architect  
of iTwin Service Development*

“



"Azure Monitor was the perfect choice for us. It's a first-class monitoring tool that allows us to be productive and innovative in the cloud."

Rickard Öh,  
*Cloud Solution Architect,  
If Insurance*

“



**ALD**  
Automotive

"Within a few minutes of using the Application Insights Agent capability in Azure Monitor, we quickly identified an application sucking up a lot of memory and causing additional issues with our service. Now, we deploy the agent on all our virtual machines."

Romain Thomann,  
*Head of IS Strategy & Chief Architect*

“



"It would take a monumental amount of time, money, and effort to re-create the comprehensive services provided by Azure Monitor. Taking advantage of these services gives us the time to focus on other unique, customer-centric support features and to drive significant value for our customers."

Dugan Sheehan,  
*Principal Engineer,  
Microsoft Cloud Team*

”

”

”

”

# Typical scenarios



## Operate at Scale

Turn on monitoring at scale through  
[Azure Policy](#)

Automate using  
[PowerShell/CLI/ARM Templates](#)

Manage multiple tenants via  
[Azure Lighthouse](#)

## Microservices

Get infrastructure health by enabling  
[Azure Monitor](#) for AKS/AKS-engine/On-Prem K8 (Agent/DevOps)

Use [Application Insights](#) and  
[distributed tracing](#) to understand performance and failures

## Alert Management

Setup [Multi-resource Alerts](#) that grow flexibly with your resources

Use [Dynamic Thresholds](#) to enable scalable ML powered alerts for metrics

Use [Action Rules](#) to manage Alert Suppression & Actions at scale

# Using Agents & Extensions for VMs & Servers

- **Log Analytics Agent** - Collect data from Guest OS & VM Workloads in LA workspaces. Same agent as used by SCOM (which can be multi-homed) and also referred to as MMA/OMS Agent. Required for writing Log Analytics Queries or using VM Insights, Azure Security Center or Azure Sentinel.
- **Dependency Agent** – Collect discovered data about running processes & external process dependencies on VMs. Required for VM Insights Maps feature and has dependency on Log Analytics Agent.
- **InfluxData Telegraf Agent** – Collect performance data from Linux VMs to Azure Monitor metrics. Required for Metrics Alerts & Autoscale (Linux).
- **Azure Diagnostics Extension** – Collect data from Guest OS & Compute Workloads in Azure in Storage/Event Hubs or Azure Monitor metrics. Required for Metrics Alerts & Autoscale (Windows) and for VM Boot Diagnostics.

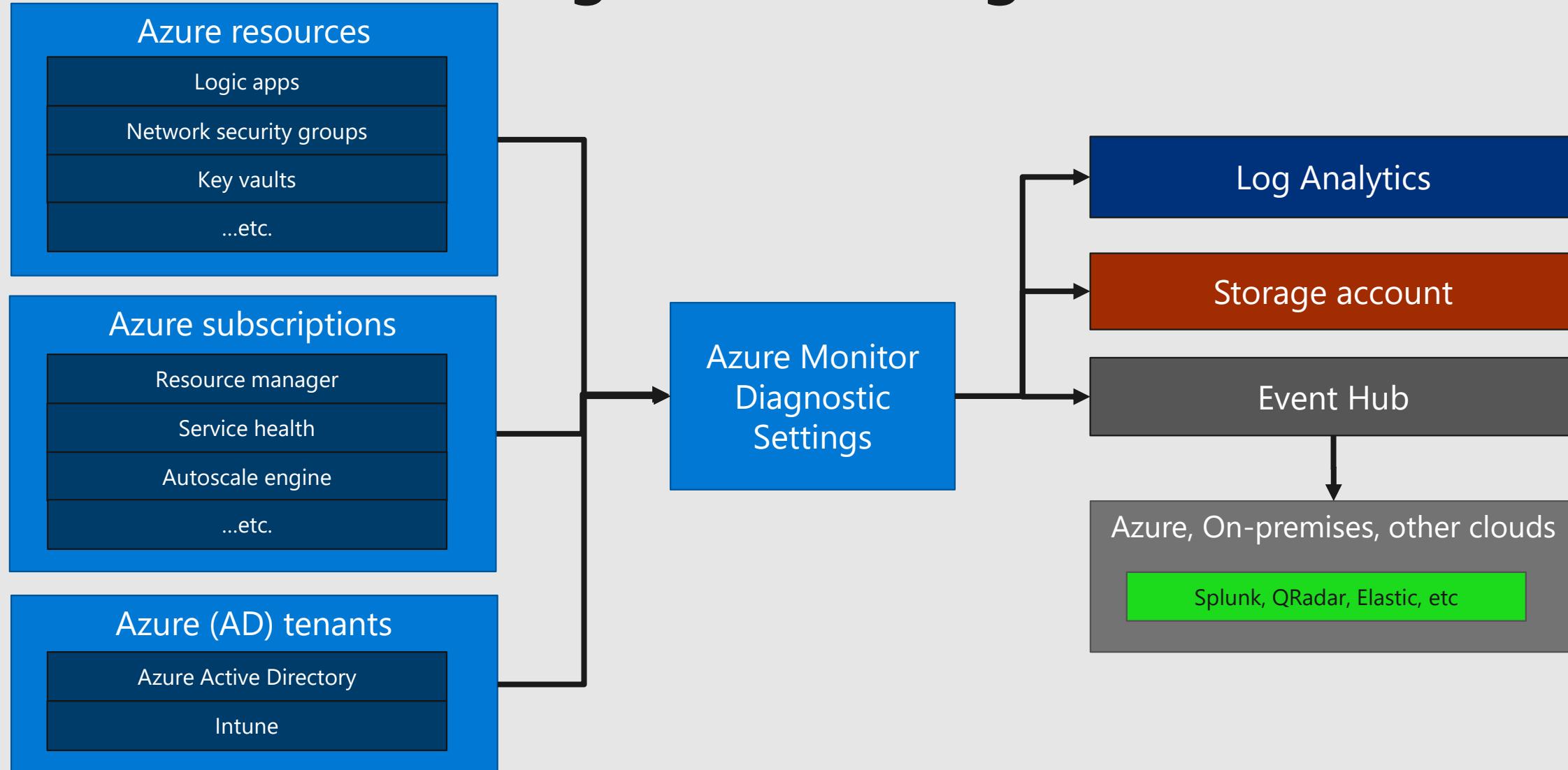
## Windows VM/Server

	Azure Diagnostics Extension (WAD)	Log Analytics Agent	Dependency Agent
Environments Supported	Azure	Azure Other cloud On-premises	Azure Other cloud On-premises
Agent Requirements	None	None	Requires Log Analytics agent
Data Collected	Event Logs ETW events Performance File based logs IIS logs .NET app logs Crash dumps Agent diagnostics logs	Event Logs Performance File based logs Insights and solutions Other services	Process details and dependencies Network connection metrics
Data Sent To	Azure Storage Azure Monitor Metrics Event Hub	Azure Monitor Logs	Azure Monitor Logs

## Linux VM/Server

	Diagnostics Extension (LAD)	Telegraf Agent	Log Analytics Agent	Dependency Agent
Environments Supported	Azure	Azure Other cloud On-premises	Azure Other cloud On-premises	Azure Other cloud On-premises
Agent Requirements	None	None	None	Requires Log Analytics agent
Data Collected	Syslog Performance	Performance	Syslog Performance Security Custom logs Container logs Insights and solutions Other services	Process details and dependencies Network connection metrics
Data Sent To	Azure Storage Event Hub	Azure Monitor Metrics	Azure Monitor Logs	Azure Monitor Logs

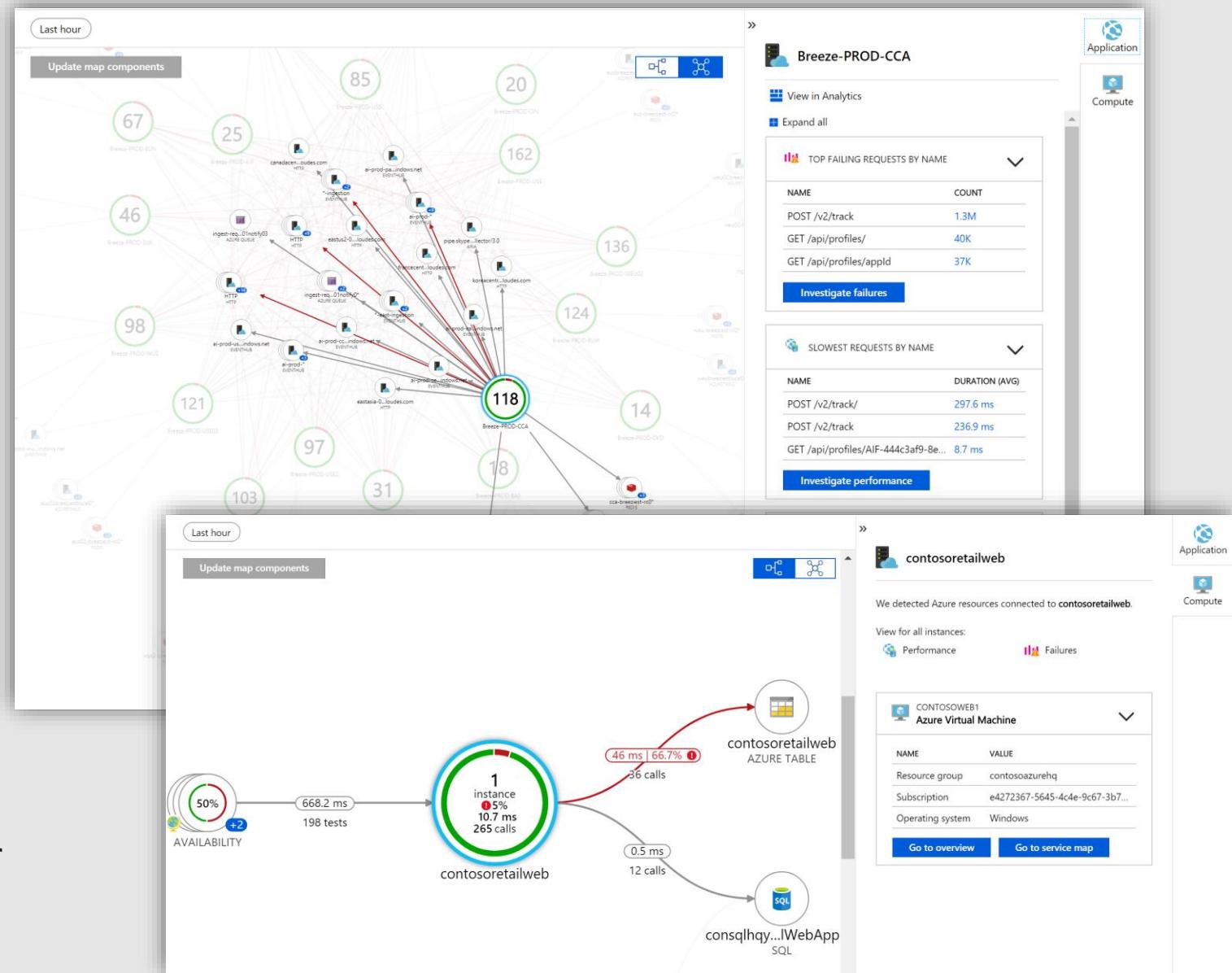
# Azure Monitor Diagnostic Settings





# 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

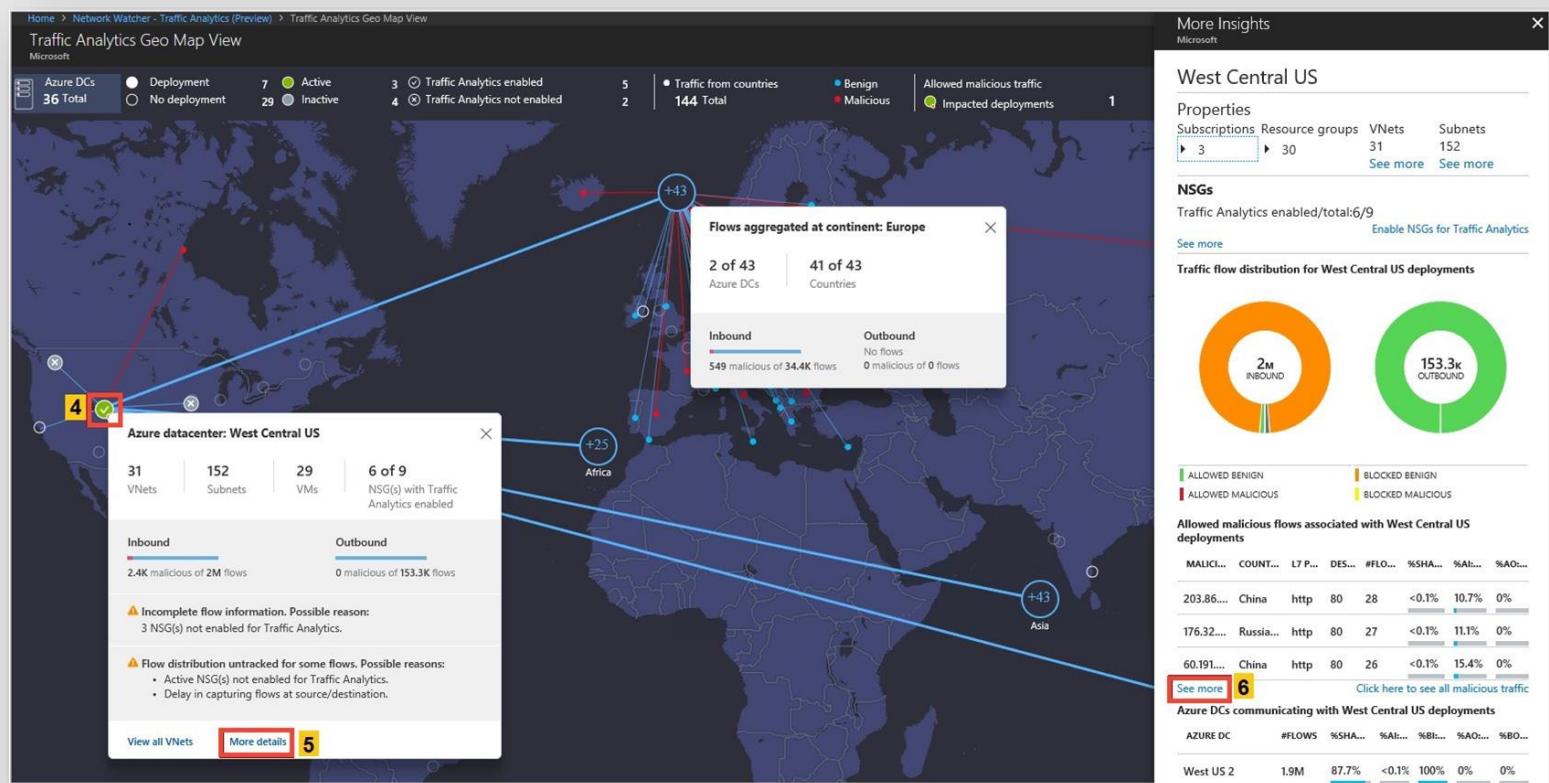
The screenshot displays several components of the monitoring platform:

- Nodes Dashboard:** Shows a table of nodes with metrics like CPU Usage (milliscores) over time. One node, 'aksnpwin000001', is highlighted with a 'View live data(preview)' button.
- Events Dashboard:** Shows a log of events from a specific node, such as '53377128-vmss000000 in Controller'.
- Map View:** A network diagram showing dependencies between services. It includes nodes like 'ContosoAzureHQ (e427...)', 'ContosoSQLSrv1', 'ContosoSQLSrv2', 'ContosoWeb1', 'ContosoAppSrv1', and various client nodes. It highlights connection paths and failure points.
- Workbooks:** A sidebar on the right lists available workbooks for tasks like 'View live data(preview)', 'View in analytics', and specific cluster details.

# 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



# Smart & Scalable Alerting



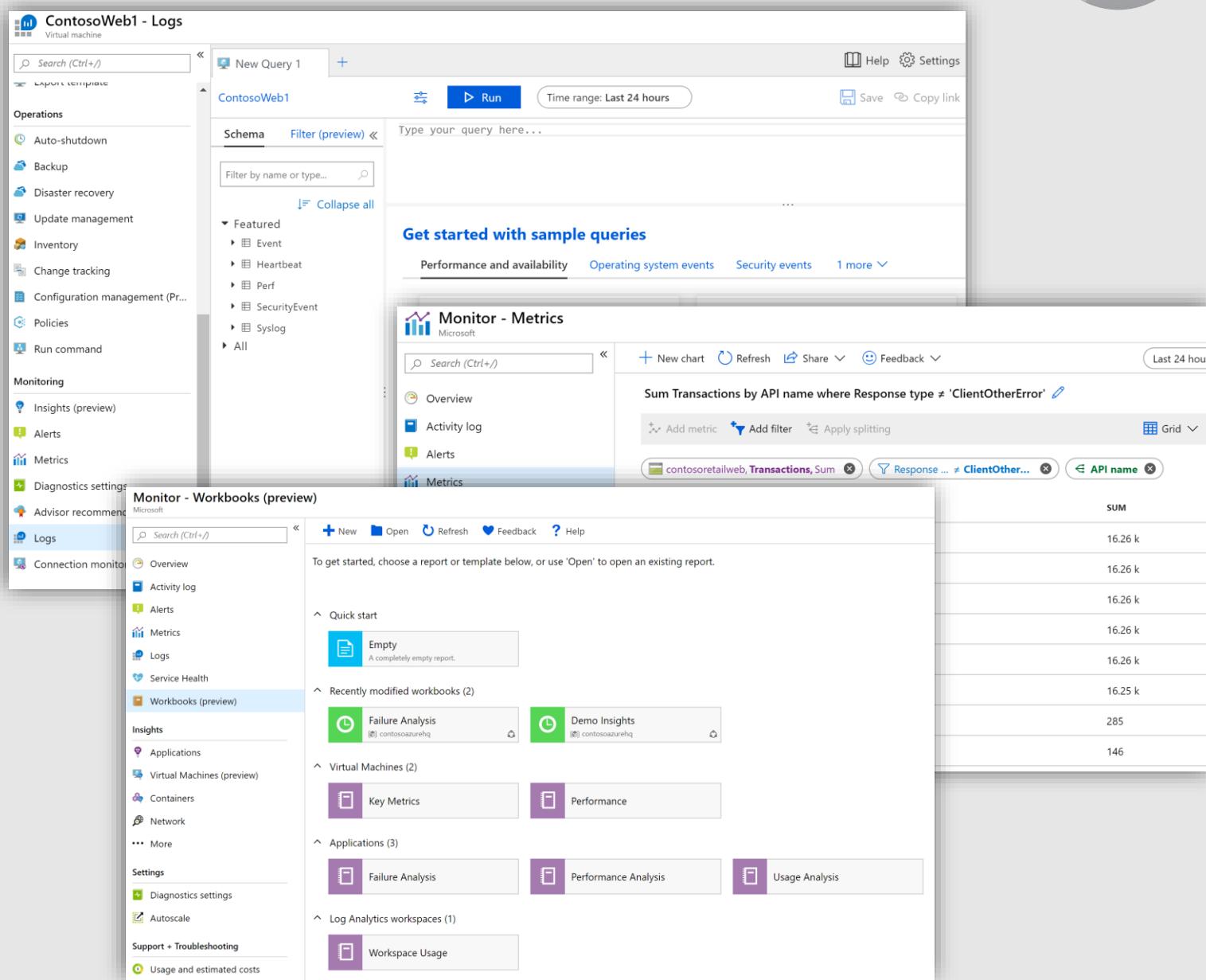
- Multi-resource Alerts with **Static & Dynamic Thresholds**
- **Automated actions**, autoscaling & workflows via logic apps & functions
- Alert Suppression & Scalable Actions with **Action Rules**
- AI based **Smart Detection** for discovering anomalies & correlating potential root causes
- **On-Call Management** with Webhooks integration to 3rd party solutions
- **Incident Management** with ITSM connectors to Service Now, Cherwell, etc.

The screenshot displays the Azure Monitor - Alerts interface. On the left, a modal window titled "New Action Rule" shows configuration steps for "SCOPE" (contosoazurehq), "FILTER CRITERIA" (Severity not equals 'Sev0'), "DEFINE ON THIS SCOPE" (Suppression selected), and "SUPPRESSION CONFIG" (Suppressed with recurrence - Weekly). To the right, the main "Configure Signal Logic" page is shown. It includes a chart titled "Server requests(Platform)" showing "Server requests (Count) contosoapp3" at 317.97k over the last week, with a note that thresholds were calculated based on historical data. Below the chart, sections for "Alert logic" (using "Dynamic" threshold type), "Operator" (Greater or Less than), "Aggregation type" (Count), and "Threshold Sensitivity" (Medium) are visible. The top right of the interface shows "Configure Suppression" options, including "With a recurrence" (selected), "Recurrence options" (Daily, Weekly, Monthly), and a "Range of recurrence" section with checkboxes for Sunday through Saturday.

# Metrics, Logs & Visualizations



- Central Analytics Platform across Monitoring, Management & Security
- Granular [resource centric logs](#) with role-based access control
- Powerful algorithms for [Anomaly Detection & Forecasting](#)
- Charts & visualizations with filters & segmentation in [Metrics Explorer](#)
- [Workbooks](#) with rich capabilities centrally available in Azure Monitor
- Azure Monitor metrics & logs in core [Grafana v6](#) for dashboarding

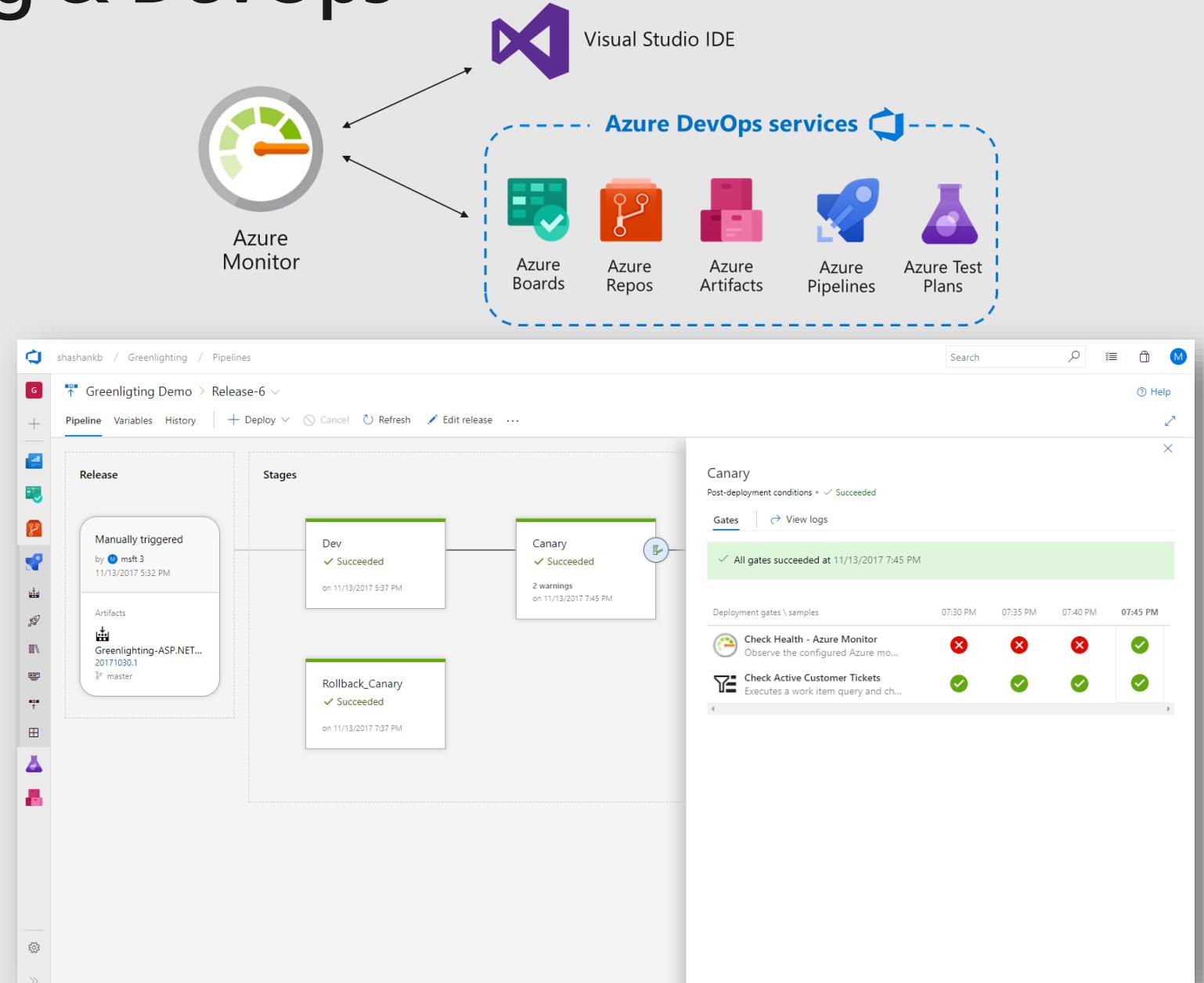


The screenshot displays the Azure Monitor interface with three main sections:

- Logs:** Shows a search bar, a 'New Query' button, and a 'Run' button. It includes a schema viewer with 'ContosoWeb1' data and a 'Get started with sample queries' section for Performance and availability, Operating system events, and Security events.
- Metrics:** Shows a search bar, a 'New chart' button, and a 'Refresh' button. It displays a chart titled "Sum Transactions by API name where Response type ≠ 'ClientOtherError'" with data for contosoretailweb, Transactions, Sum. The chart shows values like 16.26 k, 16.26 k, 16.26 k, 16.26 k, 16.25 k, 285, and 146.
- Workbooks (preview):** Shows a search bar and a 'New' button. It lists recently modified workbooks such as "Failure Analysis" and "Demo Insights", and categories like Virtual Machines, Applications, and Log Analytics workspaces.

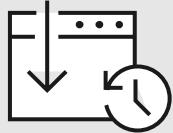
# Continuous Monitoring & DevOps

- Native IDE integrations in **VS** (.NET) and **VS Code** (Node.js)
- Configure Pre- or Post- Deployment **Quality Gates** with Metrics/Alerts
- Run Load Tests, Ping Tests or Multi-Step Web Tests for **Synthetic Perf Monitoring**
- File & track **bugs/work items** with Azure Boards/GitHub
- Run **code-level analyses** in production with Snapshot Debugging & Profiling



# DevOps – Delivering Continuous Value

DevOps brings together people, processes, and technology, automating software delivery to provide continuous value to your users.



## Continuous Integration (CI)

- Improve software development quality and speed.
- When you use Azure Pipelines or Jenkins to build apps in the cloud and deploy to Azure, each time you commit code, it's automatically built and tested, and bugs are detected faster.

101010  
010101  
101010

## Continuous Deployment (CD)

- By combining continuous integration and infrastructure as code, you'll achieve identical deployments and confidence to deploy to production at any time.
- With continuous deployment, you can automate the entire process from code commit to production if your CI/CD tests are successful.



## Continuous Monitoring (CM)

- With Azure Monitor you can identify how your apps & infra are performing and test if the recent deployment made things better or worse.
- Using CI/CD practices, paired with monitoring tools, you'll be able to safely deliver quality features to your customers as soon as they're ready.

# Azure Monitor vs Azure Data Explorer

Fully managed E2E Monitoring SaaS solution	Flexible PaaS to build custom analytical solutions
<p>Lead with <b>Azure Monitor</b> when the customer needs an E2E managed solution for monitoring Cloud Native Apps, IT Infrastructure &amp; Workloads, with:</p> <ul style="list-style-type: none"><li>a. App &amp; Infra monitoring health models and contextual insights out-of-box</li><li>b. Diagnostics &amp; Troubleshooting tools with real-time metrics &amp; logs</li><li>c. Powerful analytics capabilities of KQL over telemetry data</li><li>d. Smart analytics &amp; anomaly detection for AIOps</li><li>e. Solutions framework for specialized knowledge domains or custom workloads</li></ul>	<p>Recommend <b>Azure Data Explorer (Kusto)</b> when the customer is building their own analytics solution/platform and needs:</p> <ul style="list-style-type: none"><li>a. Full control of data sources, data schema and data management</li><li>b. Powerful analytics capabilities of KQL over any time series data</li><li>c. Reserved resources cost model</li></ul>

# Monitoring Vision for DevOps

- ❑ **IDE Integration:** Accessing both local debug & production telemetry within VS/VS Code with ability to drill down to exact line of code for debugging & diagnostics
- ❑ **GitHub & Azure DevOps:** Seamless integrations for Provisioning & Configuration, Release Management and Work Item Tracking, addressing customer needs across workflows
- ❑ **Monitoring at Scale:** Onboarding, configuring & managing monitoring resources at scale through DevOps Projects, ARM templates, PowerShell, CLI & Terraform
- ❑ **Governance:** Ensuring comprehensive monitoring & alerting policies which can be defined & audited for enterprise governance
- ❑ **Alerting & Incident Management:** Enabling smart alerts which can trigger automated actions & integrate natively with ticketing & incident management systems
- ❑ **SRE at Microsoft:** Leveraging learnings & best practices from Azure SRE to help customers drive health, availability & reliability for their apps & infrastructure