AWS re:Invent

WIN330-P

Operationalizing Microsoft workloads

Siavash Irani
Sr. Solutions Architect
Amazon Web Services

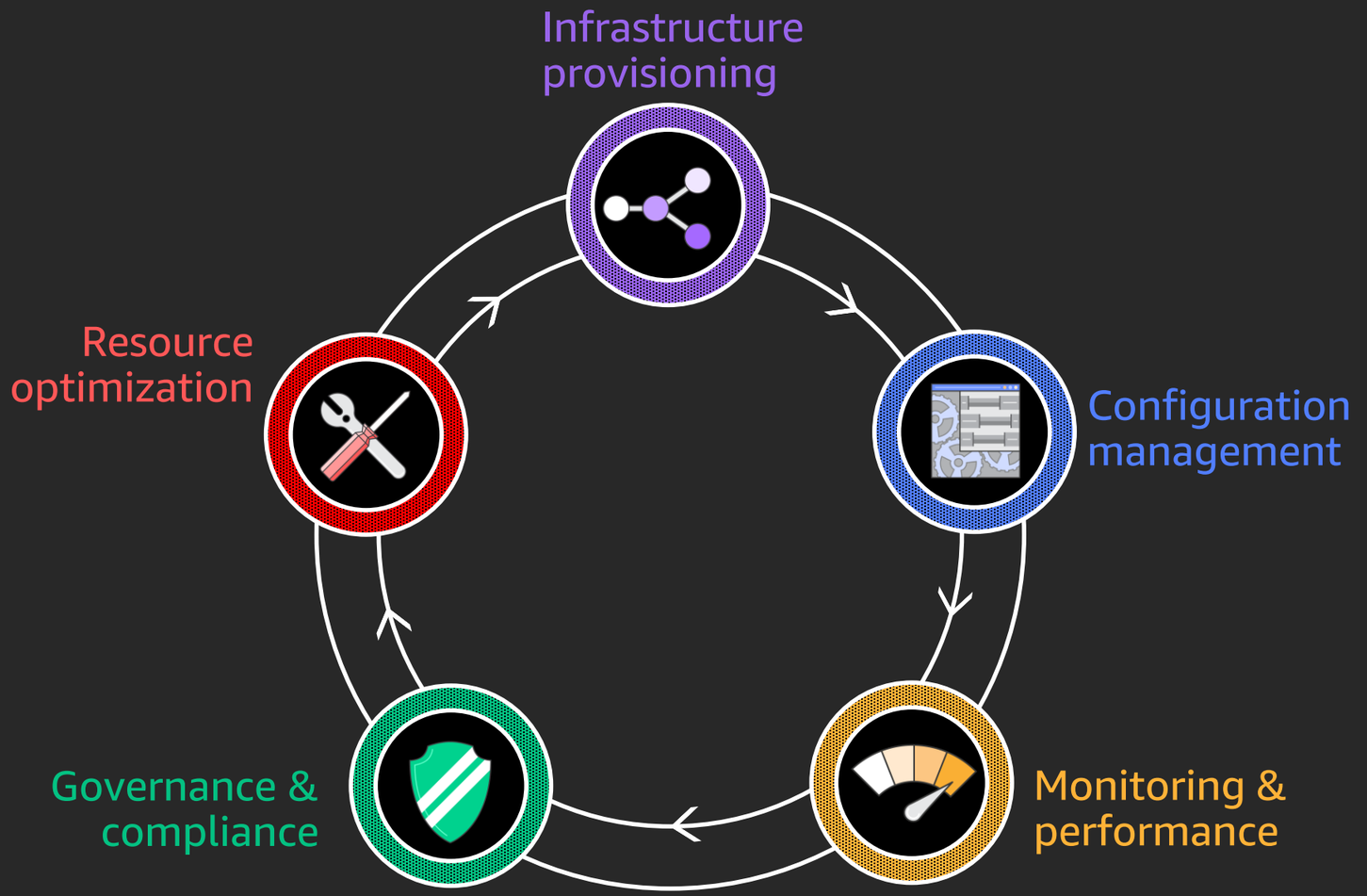
Pallavi Sharma
Sr. Product Manager
Amazon Web Services

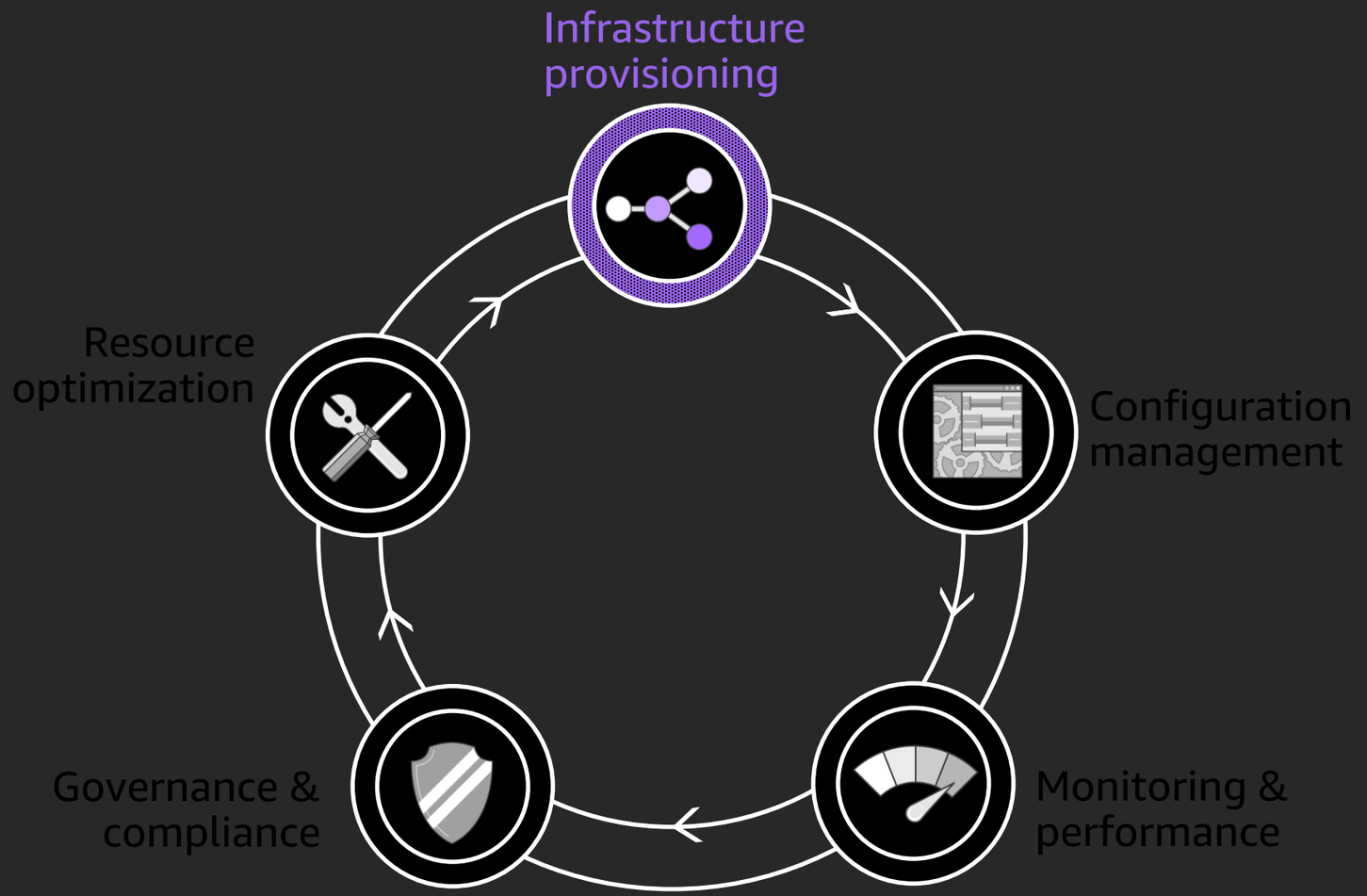
AWS re:Invent

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

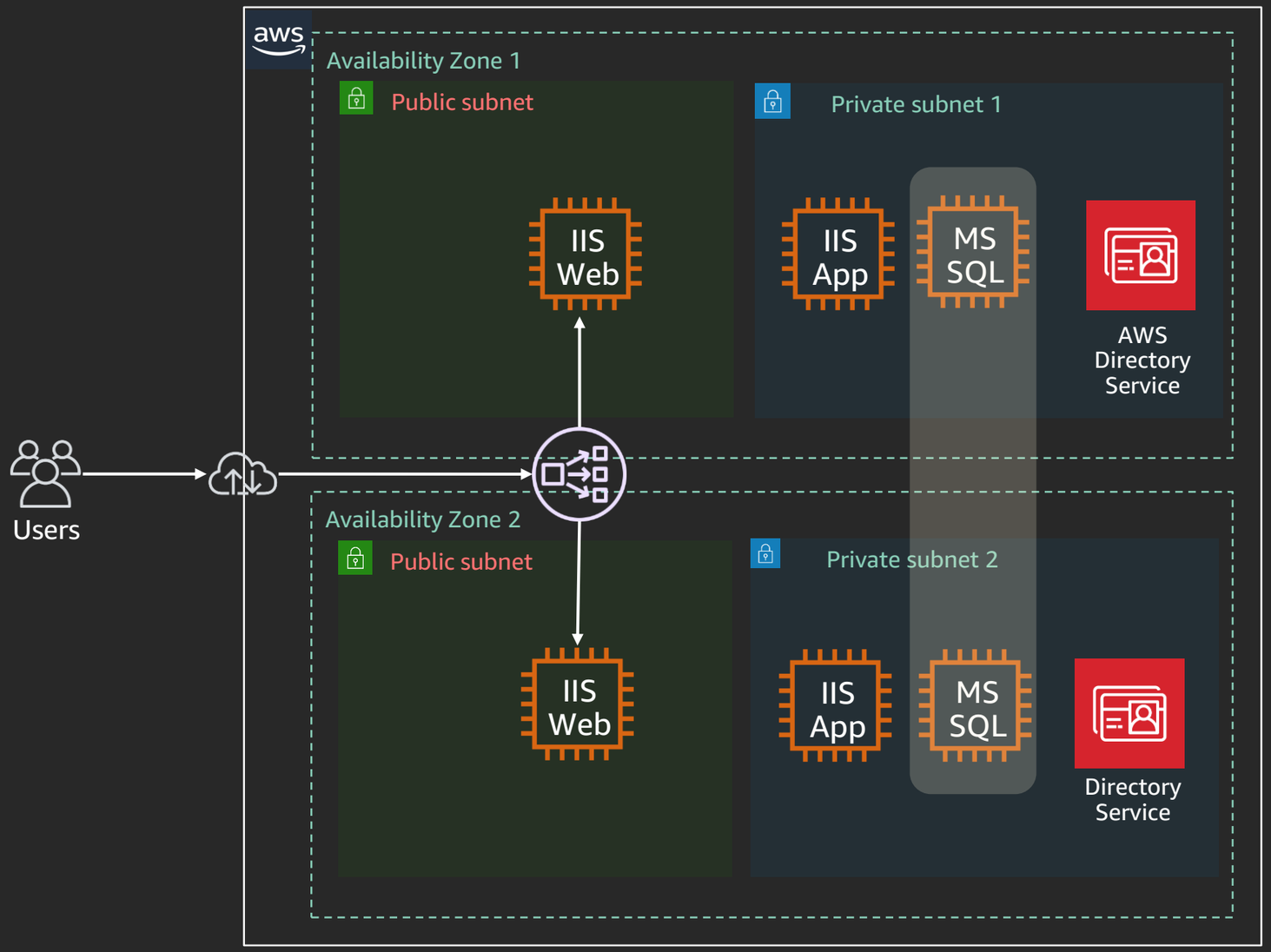
aws

Agenda


Infrastructure provisioning
Configuration management
Monitoring & performance
Governance & compliance
Resource optimization


Infrastructure provisioning
Configuration management
Monitoring & performance
Governance & compliance
Resource optimization

What are the steps to build an environment?



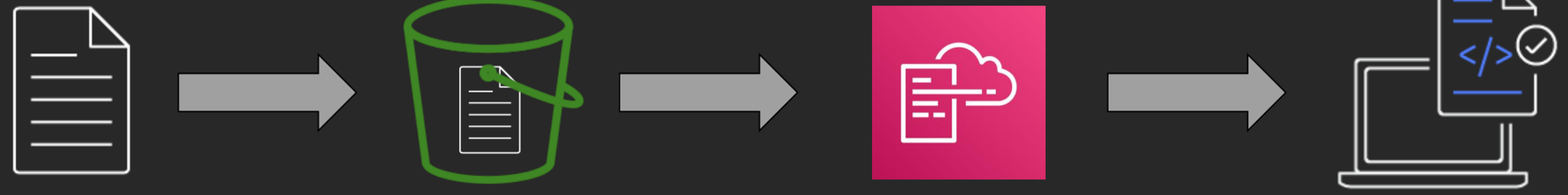
Non-repeatable

Human error

Time-consuming

AWS CloudFormation

AWS CloudFormation



Code Infrastructure

Code your infrastructure from scratch with AWS CloudFormation template language, in either YAML or JSON format, or start from many available sample templates.

Amazon Simple Storage Service (Amazon S3)

Check out your template code locally, or upload it into an S3 bucket.

AWS CloudFormation

Use AWS CloudFormation via the browser console, command line tools to APIs to create a stack based on your template code.

Output

AWS CloudFormation provisions and configures the stacks and resources you specified on your template



Automated and Repeatable

AWS Quick Starts

MICROSOFT TECHNOLOGIES

Active Directory DS
Windows directory service for managing network resources
Learn more | View guide

Exchange Server
Communications server that supports email, scheduling, messaging
Learn more | View guide

Lync Server
Communications platform with IM, conferencing, telephony
Learn more | View guide

Microsoft servers
Five servers in a single deployment: Lync, SQL, SharePoint, Exchange, WAP
Learn more | View guide

PowerShell DSC
Task automation and system configuration for Microsoft Windows
Learn more | View guide

RD Gateway
Secure, encrypted remote connections with RDP over HTTPS
Learn more | View guide

SharePoint Server
Web application platform for content and collaboration
Learn more | View guide

SQL Server
Database with AlwaysOn Availability and Windows Server Failover Clustering
Learn more | View guide

WAP & AD FS
Identity federation, SSO, pre-authentication, reverse proxy services
Learn more | View guide

Windows CI/CD
CI/CD with Jenkins, .NET, MSBuild, AWS CodeDeploy, AWS CodePipeline on AWS
Learn more | View guide

https://aws.amazon.com/quickstart/

Provisioning SQL Server Always On on Amazon Elastic Compute Cloud (Amazon EC2)

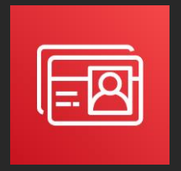
Tools


Amazon EC2


Amazon Virtual Private Cloud (Amazon VPC)


Amazon Elastic Block Store (Amazon EBS)


AWS CloudFormation


Directory Service


AWS Identity and Access Management (IAM)


AWS Cost Explorer




AWS WAF

Tasks

Size EC2 instances and EBS volumes

Get a cost estimate

Provision the infrastructure

Configure networking

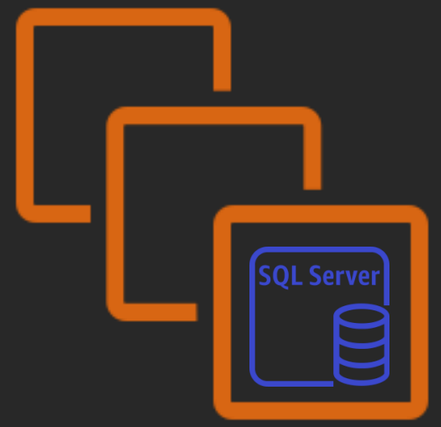
Configure Windows cluster

Join an Active Directory domain

Configure SQL server

Apply best practices

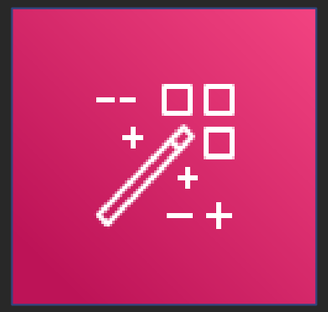
Target



SQL Always On on Amazon EC2

AWS Launch Wizard for SQL Server

Guided experience to size, configure, and deploy SQL Server Always on solutions on Amazon EC2.



AWS Launch Wizard

Simple

Easy GUI based interface for deployment

End-to-end

Size, deploy and configure your workload

Tailored

Workload is customized to your needs

Automated

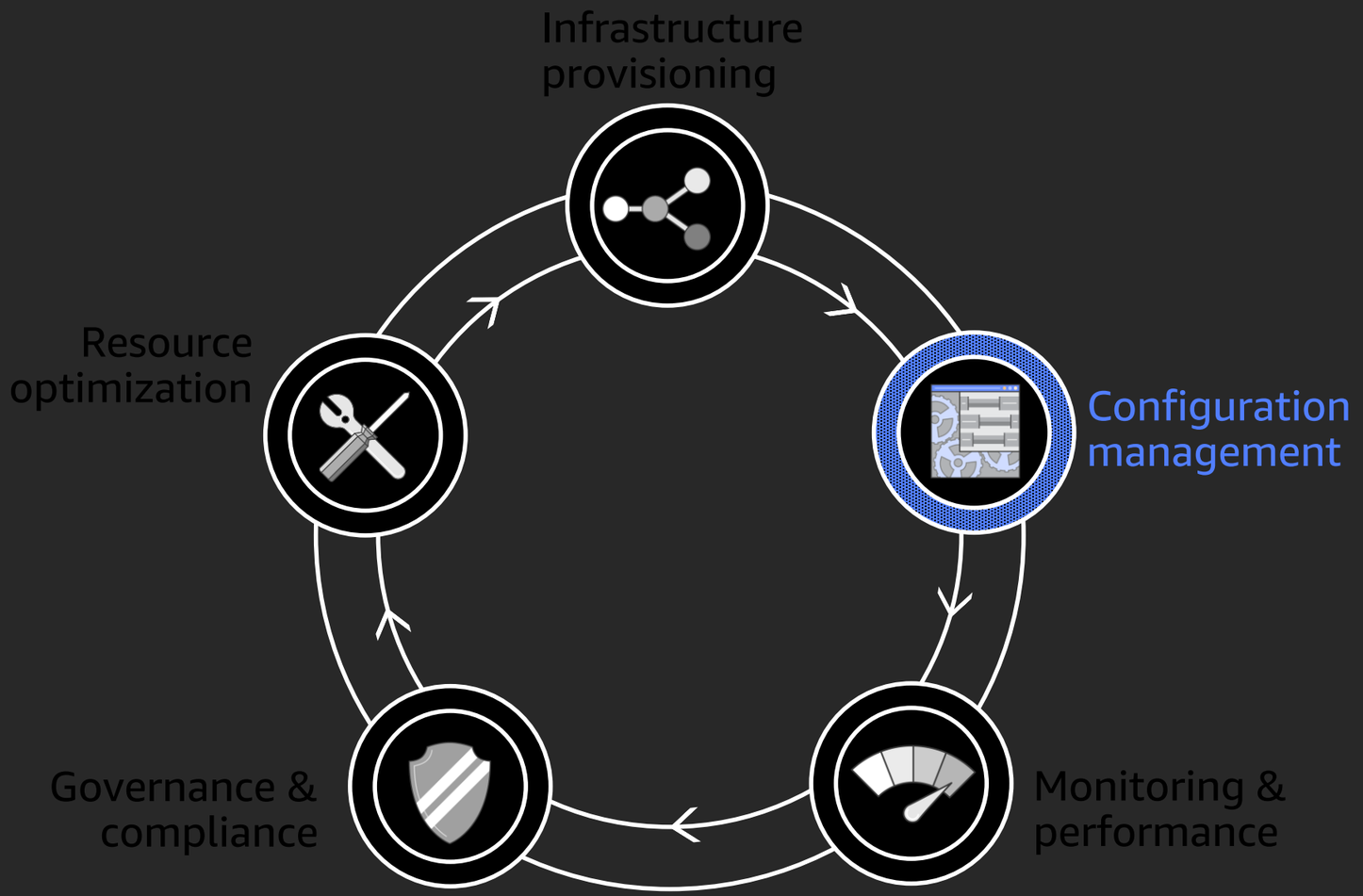
Deployment is automated through a few easy steps

Based on Best Practices

Follows Well-Architected framework

Demo

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.


Infrastructure provisioning
Configuration management
Monitoring & performance
Governance & compliance
Resource optimization

Managing your Windows instances

Tools



AWS Systems Manager Run Command



Systems Manager Session Manager

Tasks

Reset admin password

Restart services

GPUpdate

Configure Windows updates

VSS snapshots

And so on . . .

Target



Amazon EC2

Running commands



Systems Manager
Run Command



Non-interactive



Good for bulk administrative changes



Systems Manager
Session Manager



Interactive

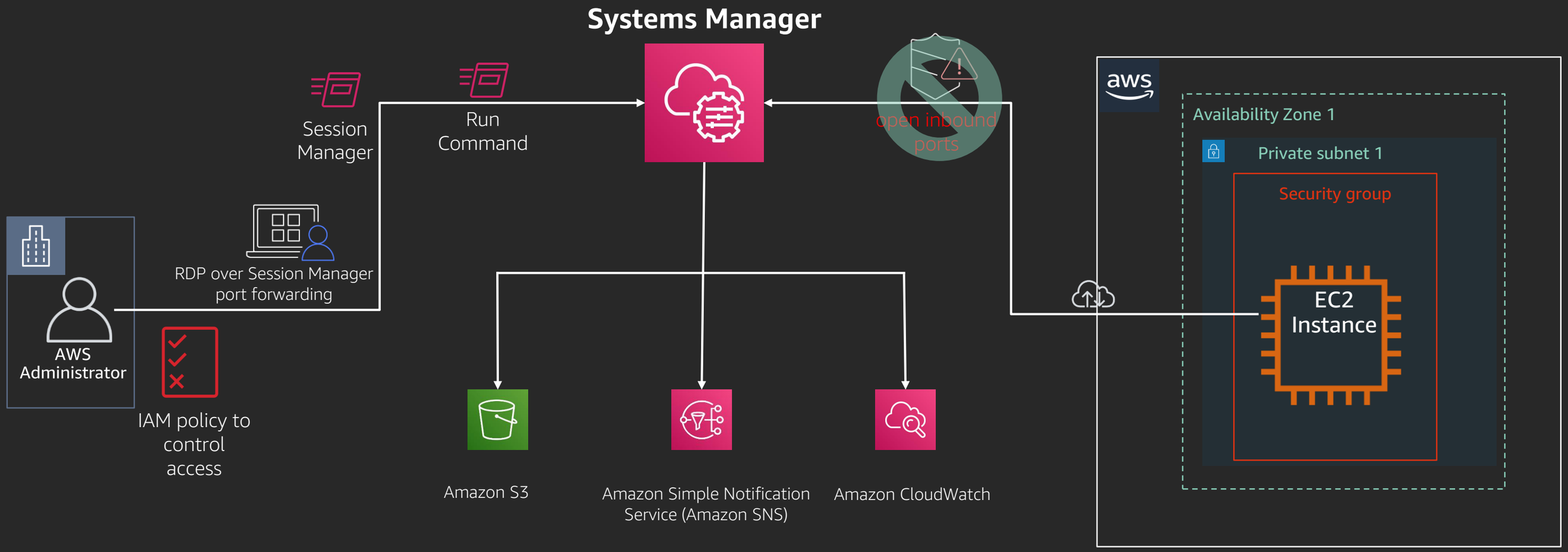


Good for full, interactive access



Port forwarding

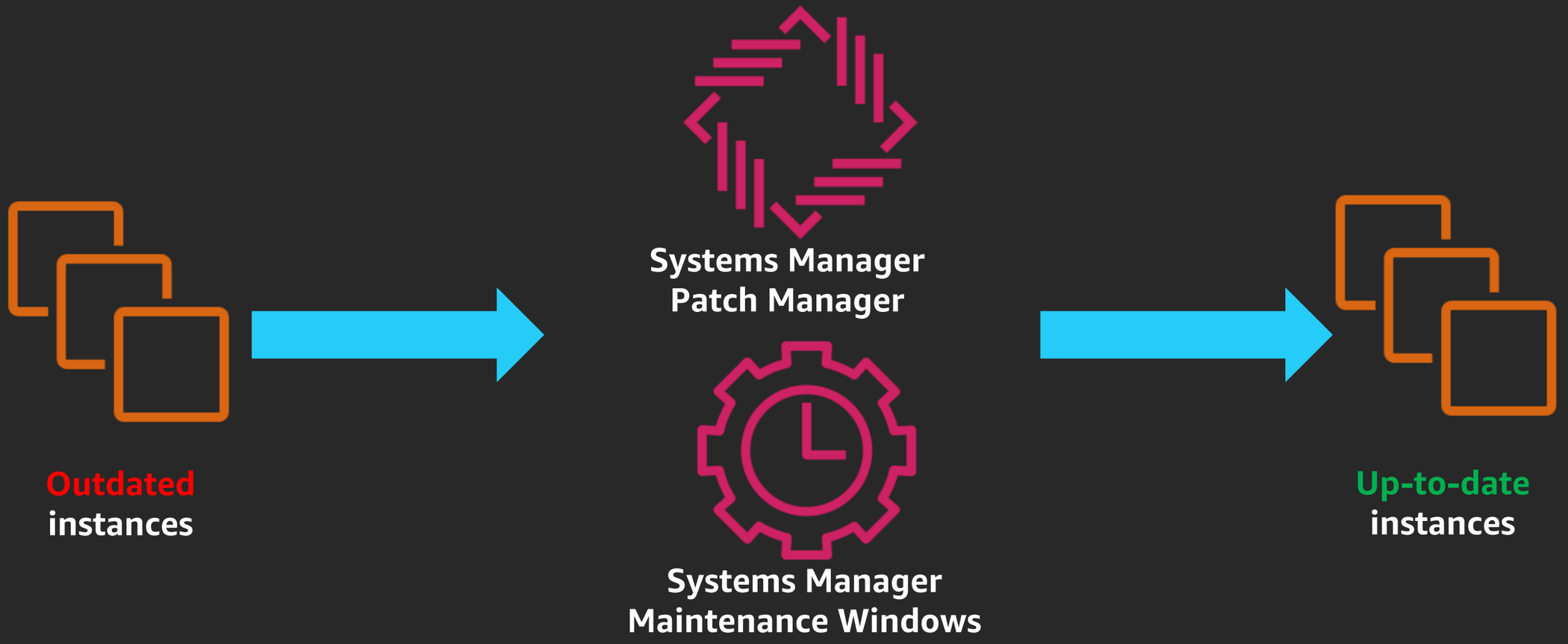
Secure remote configuration management



Demo

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Patching Microsoft Windows in the cloud



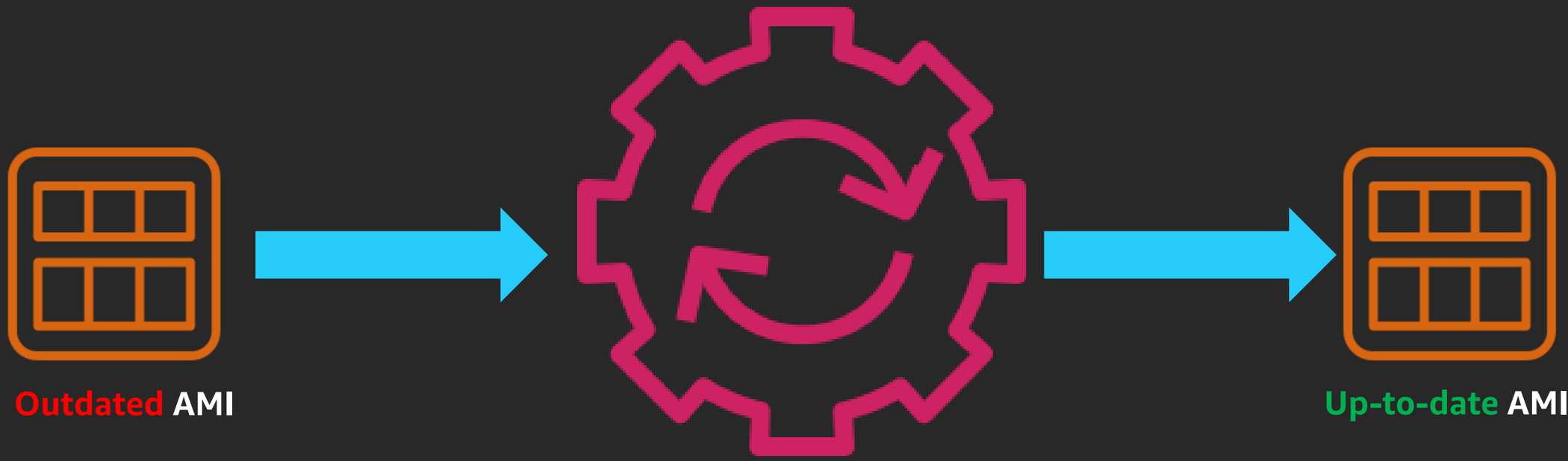
Systems Manager Patch Manager

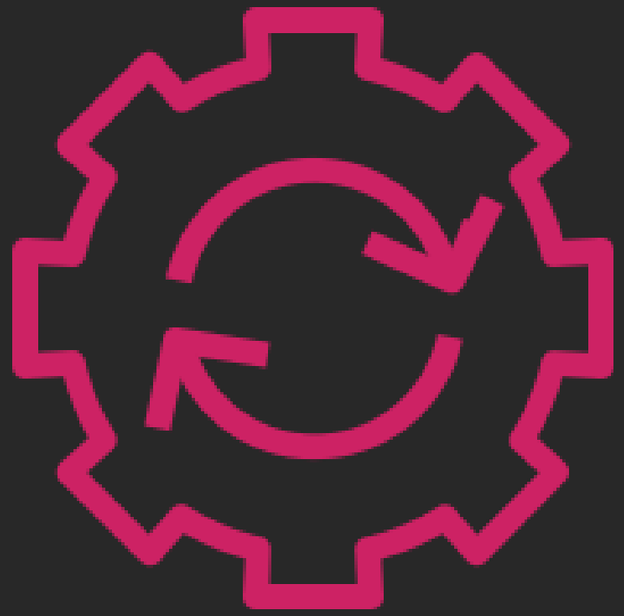
- Scan instances for missing patches
- Apply missing patches individually or to bulk instances using tags
- Create baselines that include rules for auto approving patches

Systems Manager Maintenance Windows

- Create recurring schedules to perform administrative tasks
- Integrates with Systems Manager Run Command, Automation, AWS Lambda, AWS Step Functions

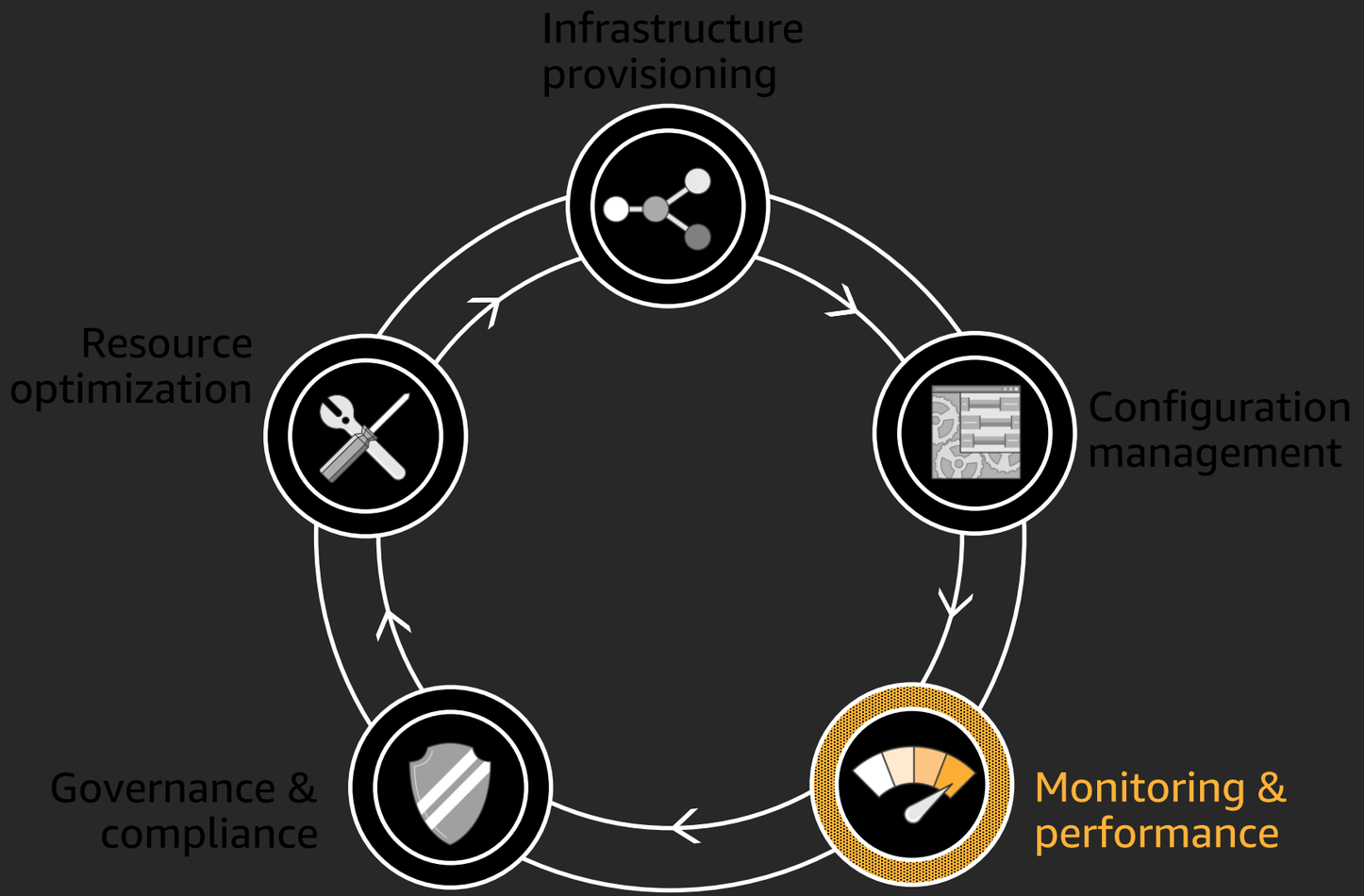
Automating IT tasks





Systems Manager Automation

- Simplify common IT tasks
- Express your workflow as automation steps in a JSON-based *document*
- Support for Run Command, Lambda functions, AWS APIs


Infrastructure provisioning
Configuration management
Monitoring & performance
Governance & compliance
Resource optimization

Monitoring your Microsoft workloads for availability and performance

Tools



Amazon Cloudwatch

Tasks

Monitoring:

- CPU, memory, disk, network utilization
- Service availability
- Server availability
- Application availability

Target



Amazon EC2



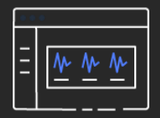
CloudWatch



No need to set up monitoring servers



In-guest metrics



Support for all performance monitor metrics

Monitoring and storing your logs

Tools



Amazon CloudWatch Logs

Logs

IIS logs

Windows event logs

SQL logs

Cluster logs

3rd party application logs . . .

Target



Amazon EC2



CloudWatch Logs



Monitor logs from Amazon EC2 instances in real time

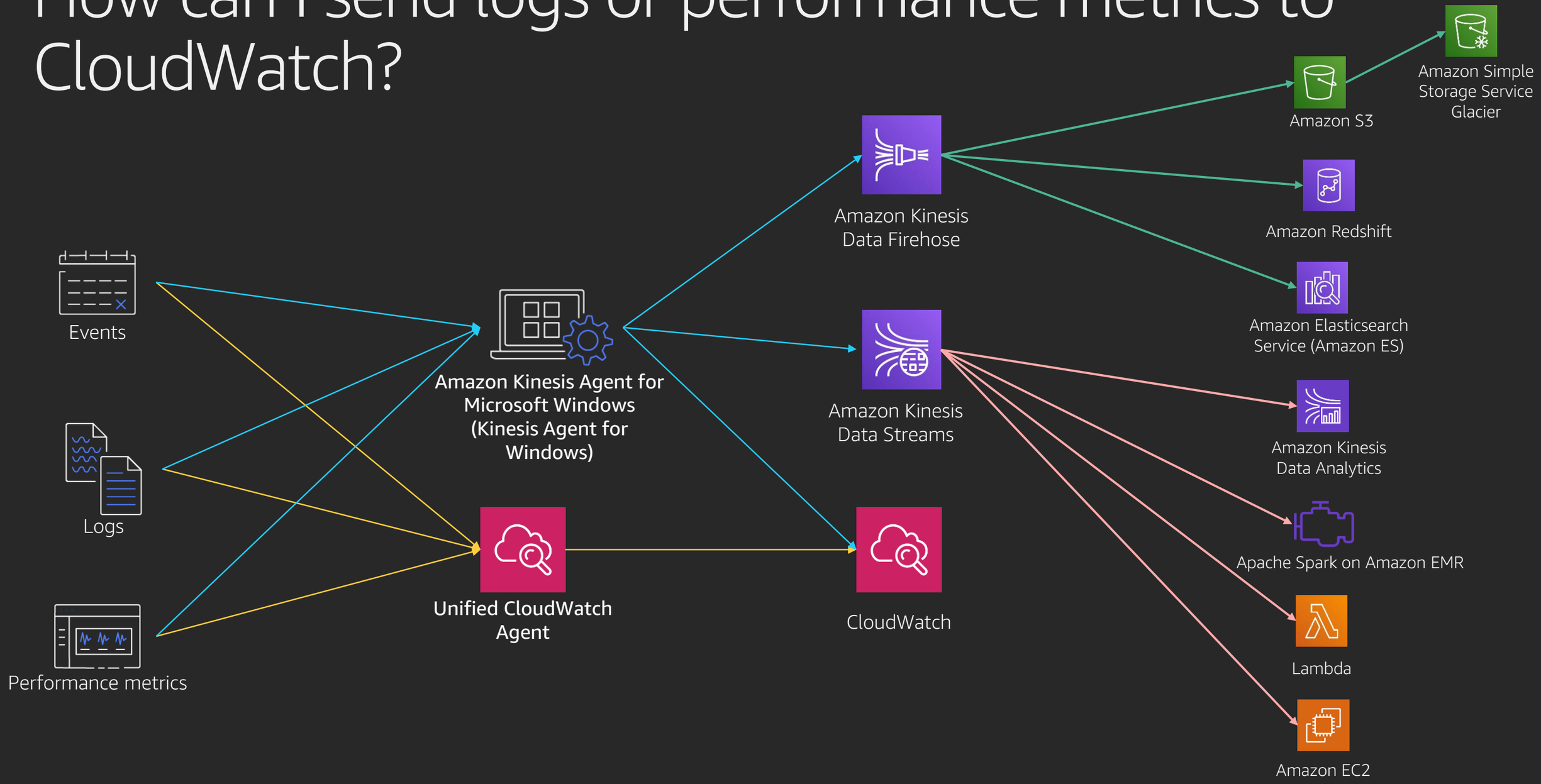


Log retention

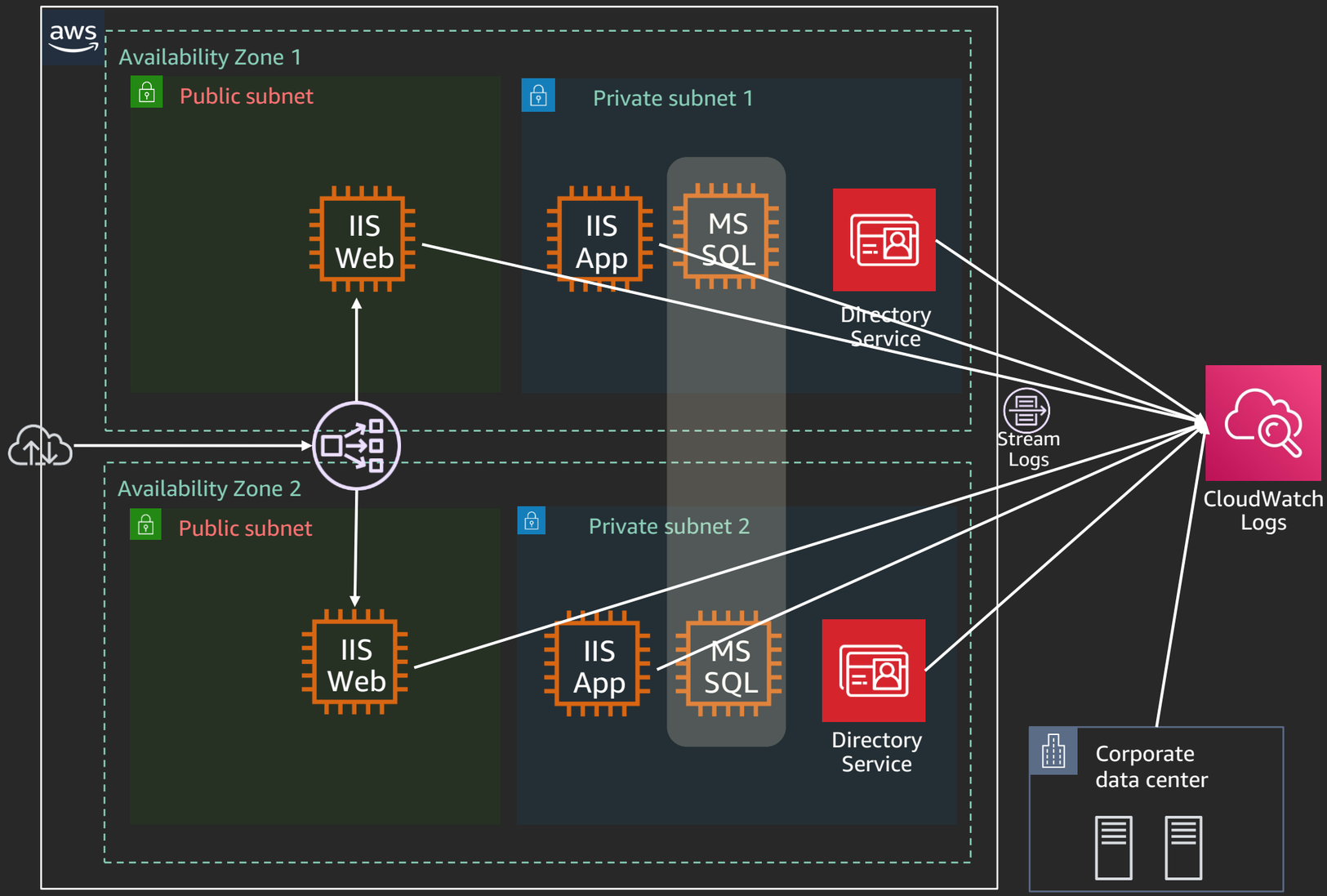


Archive log data

How can I send logs or performance metrics to CloudWatch?



How do I search and analyze logs in CloudWatch Logs?



CloudWatch Logs Insights

- Interactive search
- Custom query (Regex support)
- Real time
- Automatic field discovery

Demo

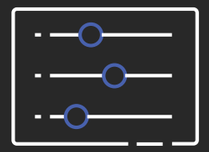
© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Amazon CloudWatch Application Insights for .NET & SQL Server

Easily and quickly detect and diagnose common problems with .NET and SQL Server applications



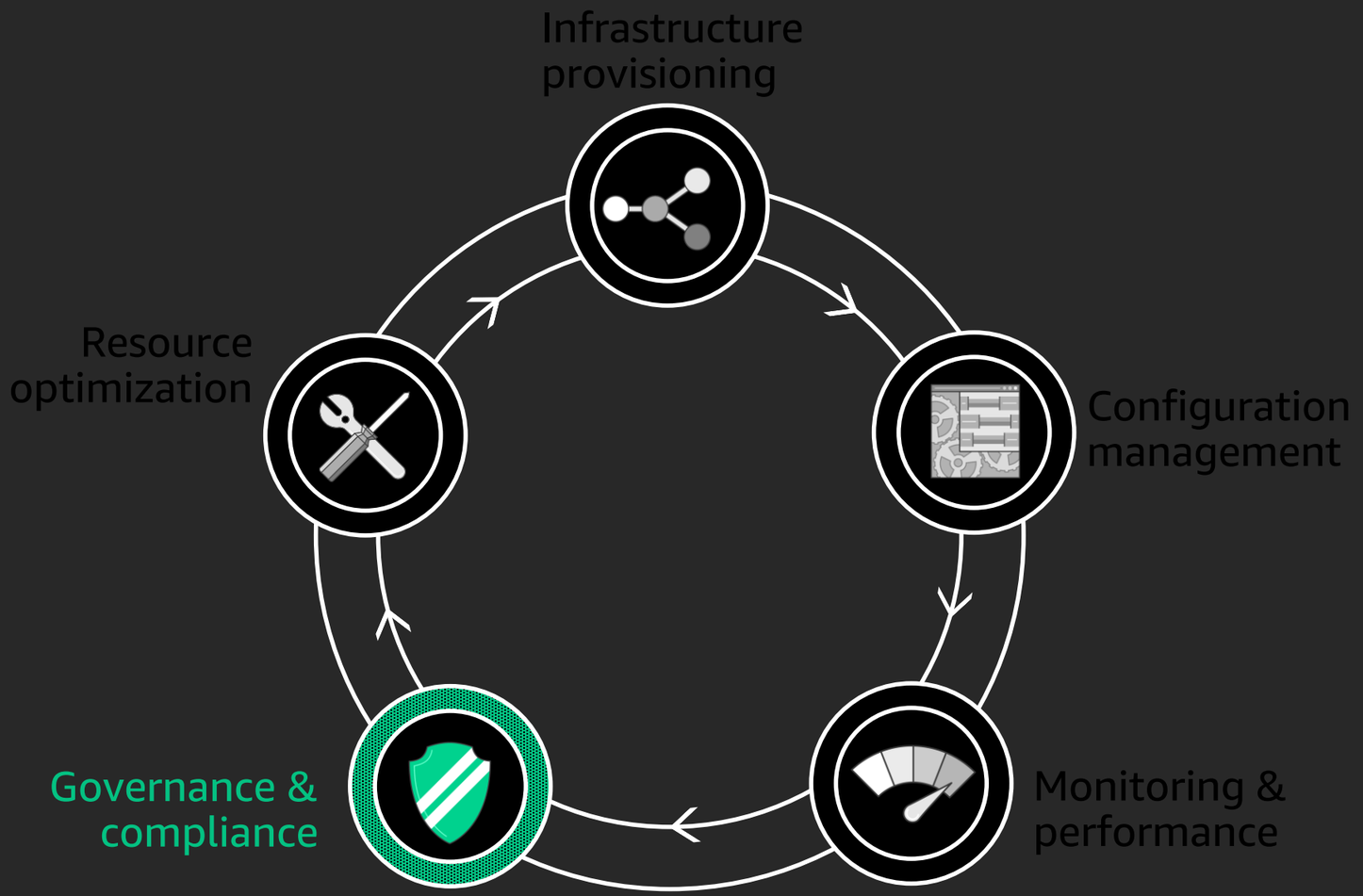
Machine learning–based anomaly detection for metrics and logs



Visualize root cause with Amazon CloudWatch Automatic Dashboards

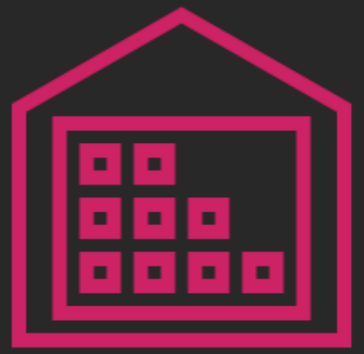


Improved customer experience


Infrastructure provisioning
Configuration management
Monitoring & performance
Governance & compliance
Resource optimization

Keeping inventory

Tools



Systems Manager Inventory

Items

OS versions & patch levels

Software installations

Application configurations

Licenses

Files

Network configurations

Windows registry

Other system properties

Target



Amazon EC2

Managing configuration drift

Tools



Systems Manager State Manager

Tasks

Configuring RDP access

Ensuring firewall rules are enabled

Enforcing application settings

Maintaining Windows activation settings

Join Windows instances to AD domain

Bootstrap instances with specific software at startup

And so on …

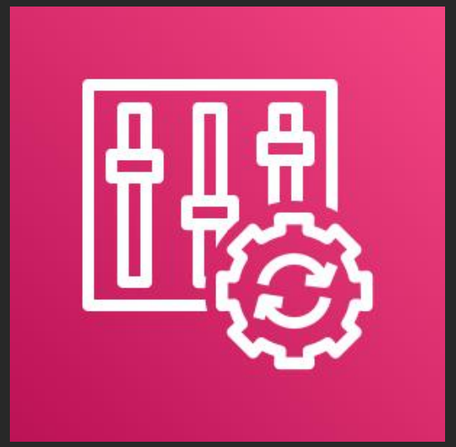
Target



Amazon EC2

Managing configuration changes for AWS resources

Tools



AWS Config

Tasks

Discover configuration changes

Change management

Continuous audit and compliance

Compliance as code

Security analysis

Troubleshooting and remediating non-compliance

Target



Amazon EC2



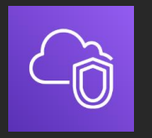
Amazon S3



Systems Manager Inventory



Amazon Relational Database Service (Amazon RDS)



Amazon VPC



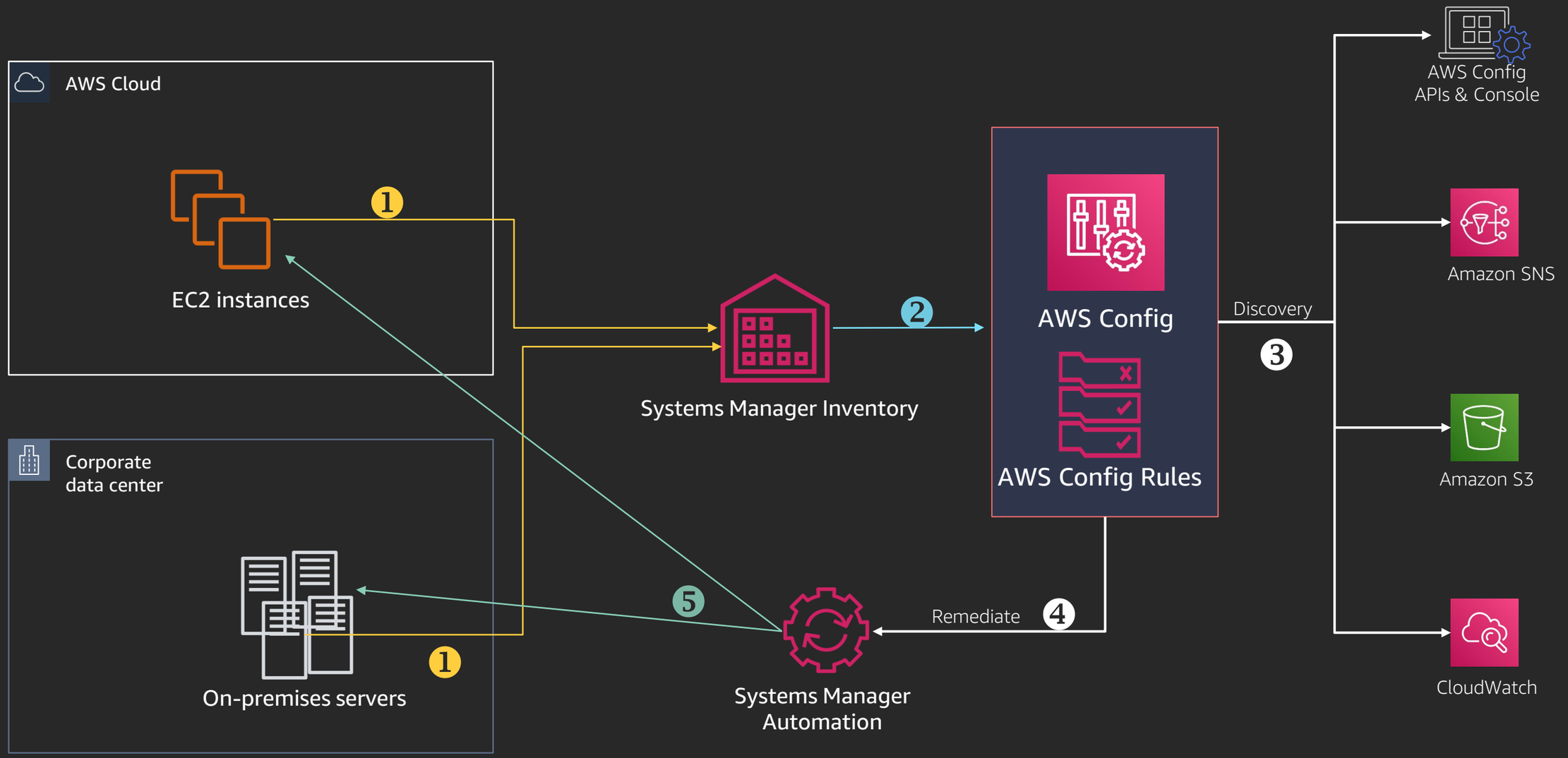
Amazon EBS



IAM

. . .

Managing compliance with Systems Manager and AWS Config

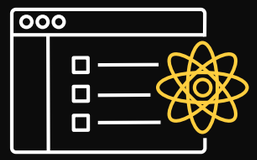


Demo

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

How to manage licenses?

AWS License Manager, a one-stop solution for managing licenses from a variety of software vendors



Manage licenses across hybrid environments



Proactively stay compliant per your organizational structure and processes



Built-in integration with AWS services

Manage usage of Windows and SQL licenses

Windows Server on AWS

At-a-glance summary of licenses and usage limits

SQL Server on AWS

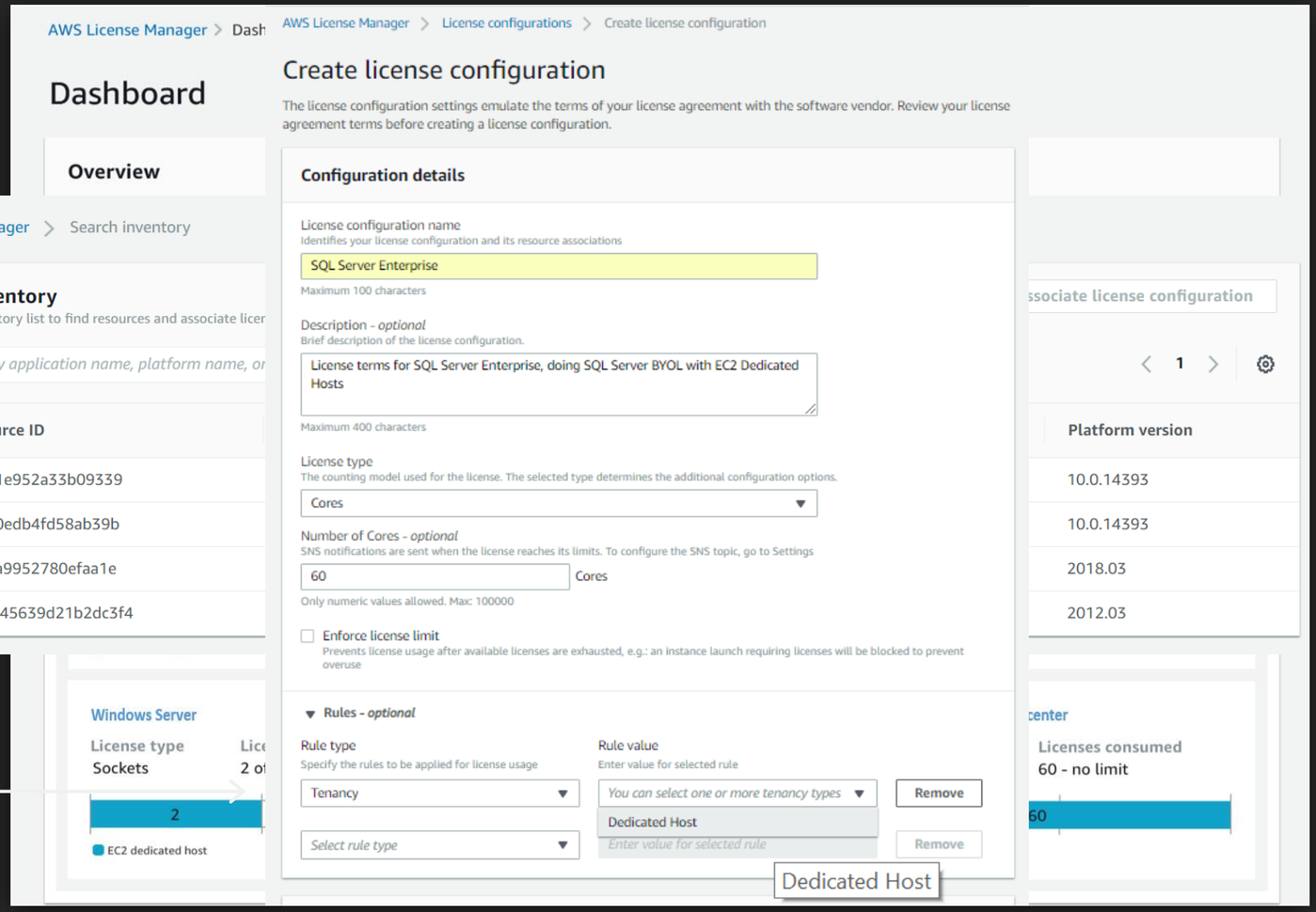
See whether or not limits are enforced

Oracle database on AWS

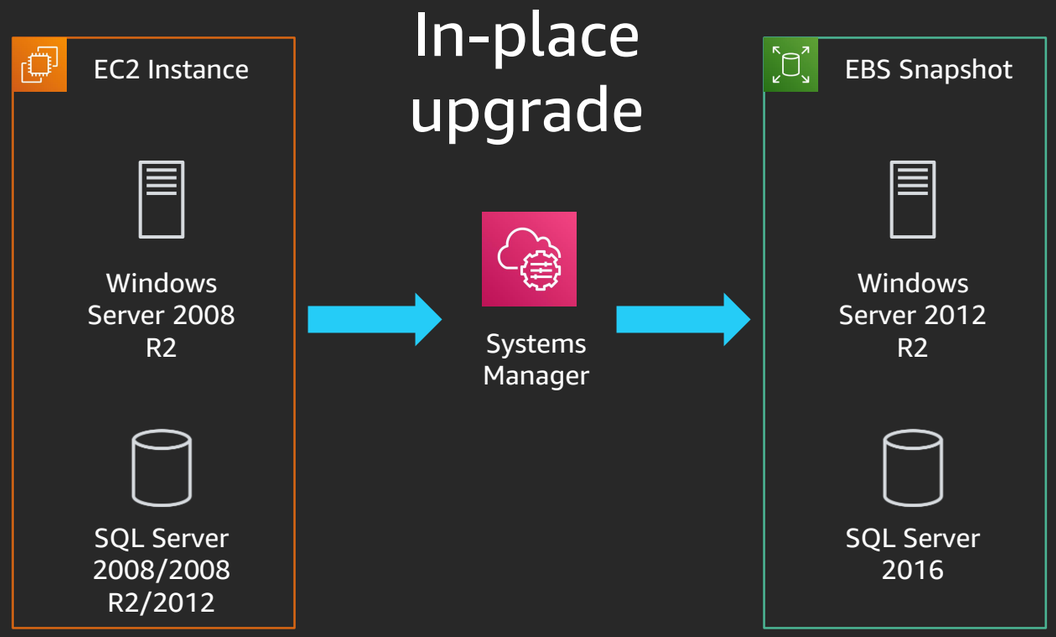
On-premises SQL Server

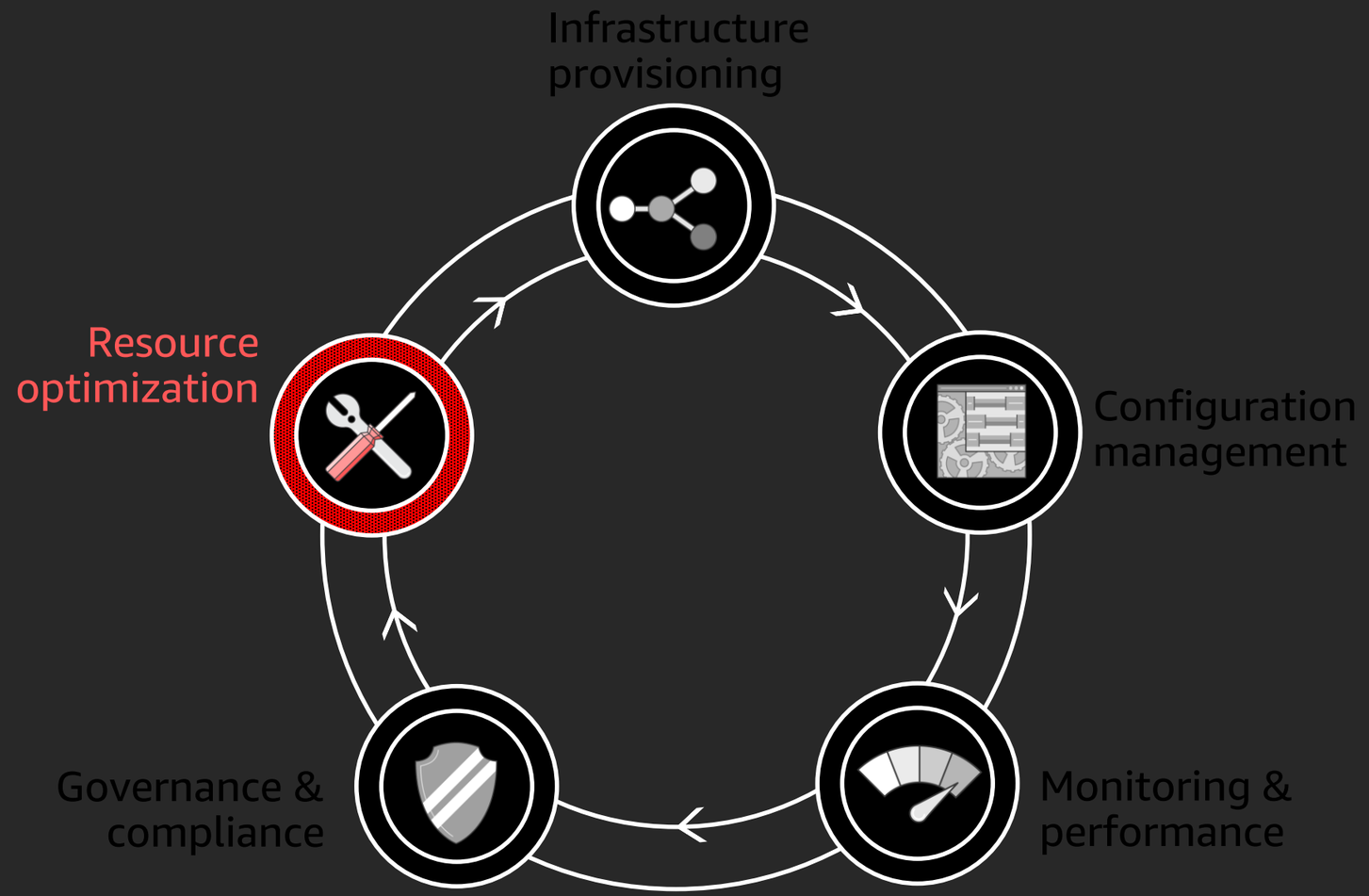
Here is how you manage your licensing terms

Specify tenancy as dedicated host



Compliance for EOS products like SQL Server 2008 or Windows Server 2008




Infrastructure provisioning
Configuration management
Monitoring & performance
Governance & compliance
Resource optimization

Fine-tuning your Microsoft workloads in the cloud

Tools



AWS Trusted Advisor

What to fine-tune?

Cost

Performance

Security

Fault tolerance

AWS service limits

Storage optimization

Target



Amazon EC2



Trusted Advisor

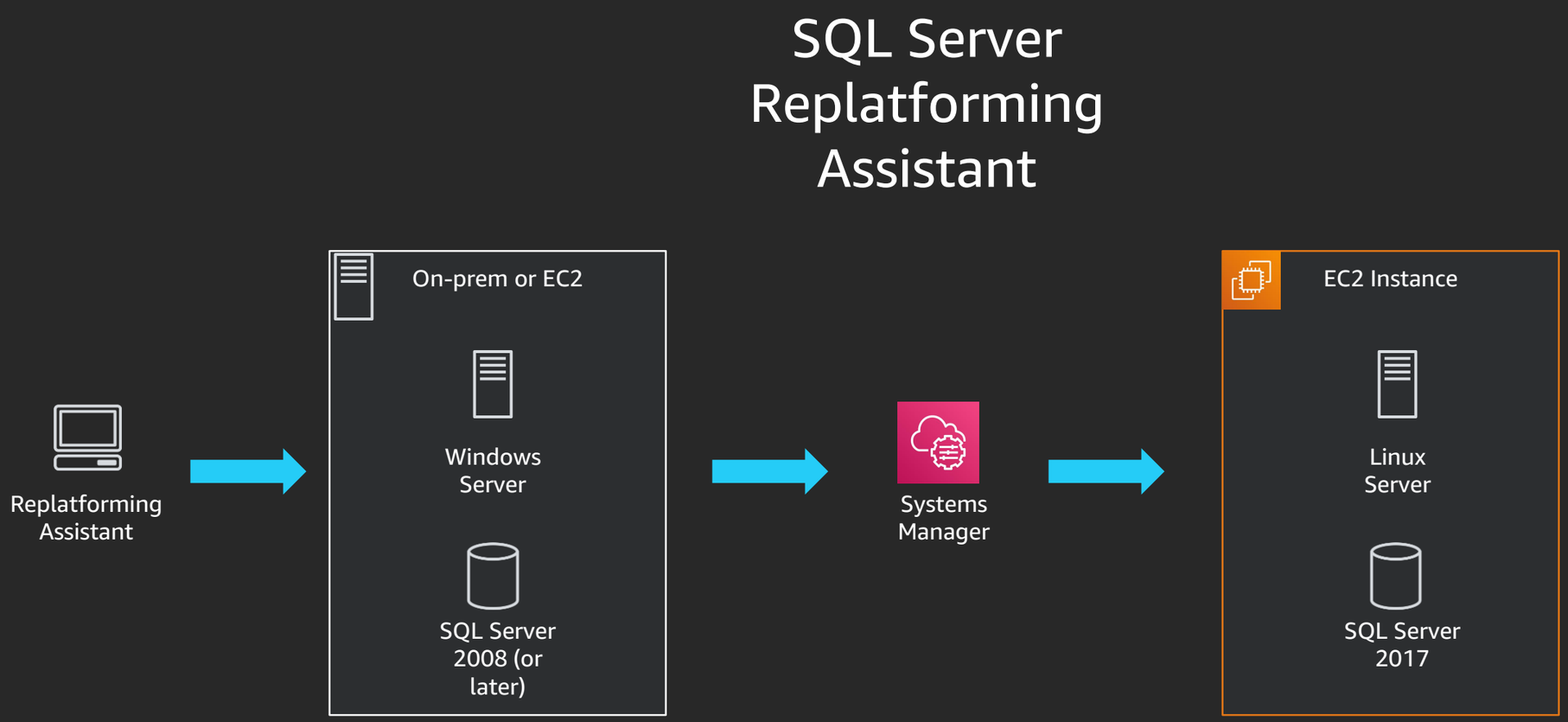
Core checks and recommendations available to all AWS customers

- Security
- AWS service limits

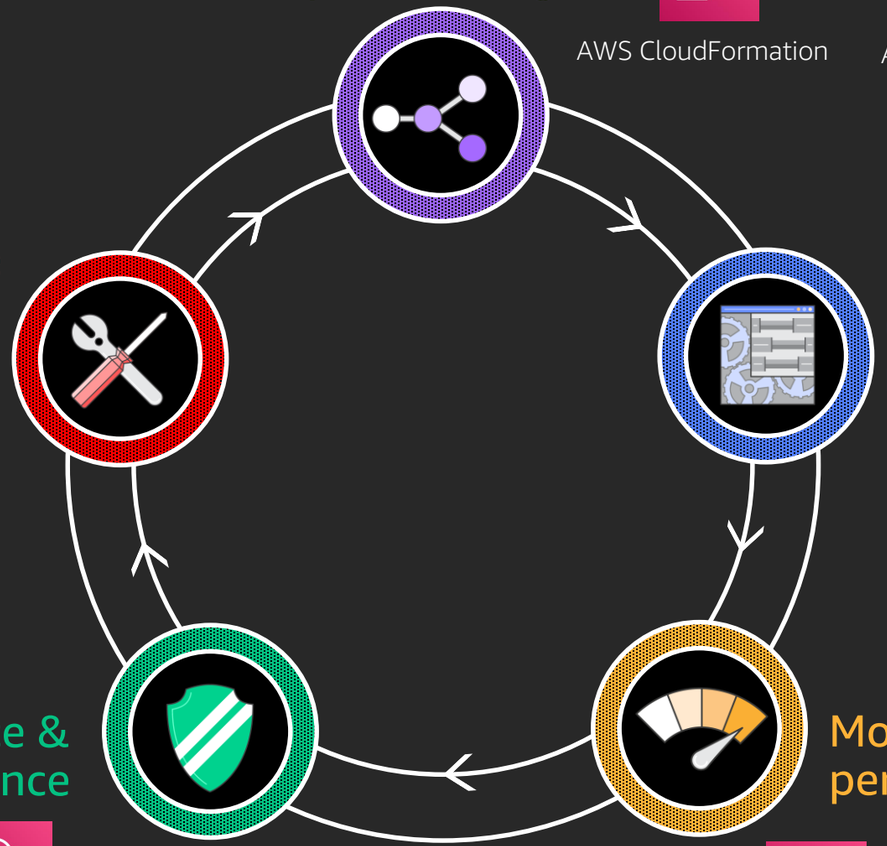
Full Trusted Advisor benefits available with business or enterprise support plans

- Security
- AWS service limits
- Cost optimization
- Performance
- Fault tolerance

Optimizing and re-platforming SQL Server



Summary


Infrastructure provisioning
AWS CloudFormation
AWS Launch Wizard
Configuration management
Systems Manager
Monitoring & performance
CloudWatch
CloudWatch Application Insights for .NET and SQL Server
CloudWatch Logs Insights
Governance & compliance
License Manager
AWS Config
Systems Manager
Resource optimization
Systems Manager
Trusted Advisor

Next steps

Apply what you've learned

- Revisit and assess your existing lifecycle management process
- Reinvent lifecycle management on AWS by leveraging the tools and services we discussed

Learn more

- Attend other AWS for Microsoft sessions
- Review resources
  - Windows on AWS - https://aws.amazon.com/windows/
- Reach out to AWS or AWS Partner Network Partner for assistance if necessary

Thank you!

Siavash Irani

siavashi@amazon.com

Pallavi Sharma

palsharm@amazon.com

AWS re:Invent

© 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved.

aws