
AWS
re:Invent

ENT302

Deliver cloud operations at scale with AWS Managed Services

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AWS

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Agenda



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The need for change

Timeliness to planned maintenance

Cost inefficiency to maintain compliance

Skilled resources performing **undifferentiated** tasks

Reactive approach to incident management

Cloud operations at scale: Building blocks

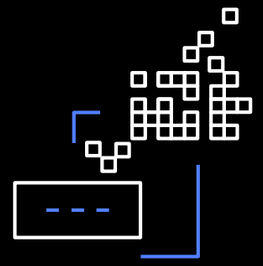


PLAN AND STANDARDIZE

Establish ops plan

Enforce through tags

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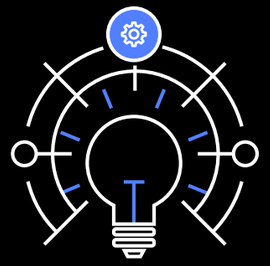


AUTOMATE WITH THE RIGHT TOOLS

AWS Systems Manager

AWS Backup

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CONSISTENT OUTCOME AT SCALE

Patch and backup compliance

Improve alert detection and remediation by 60%

Reduce planned maintenance by 30%

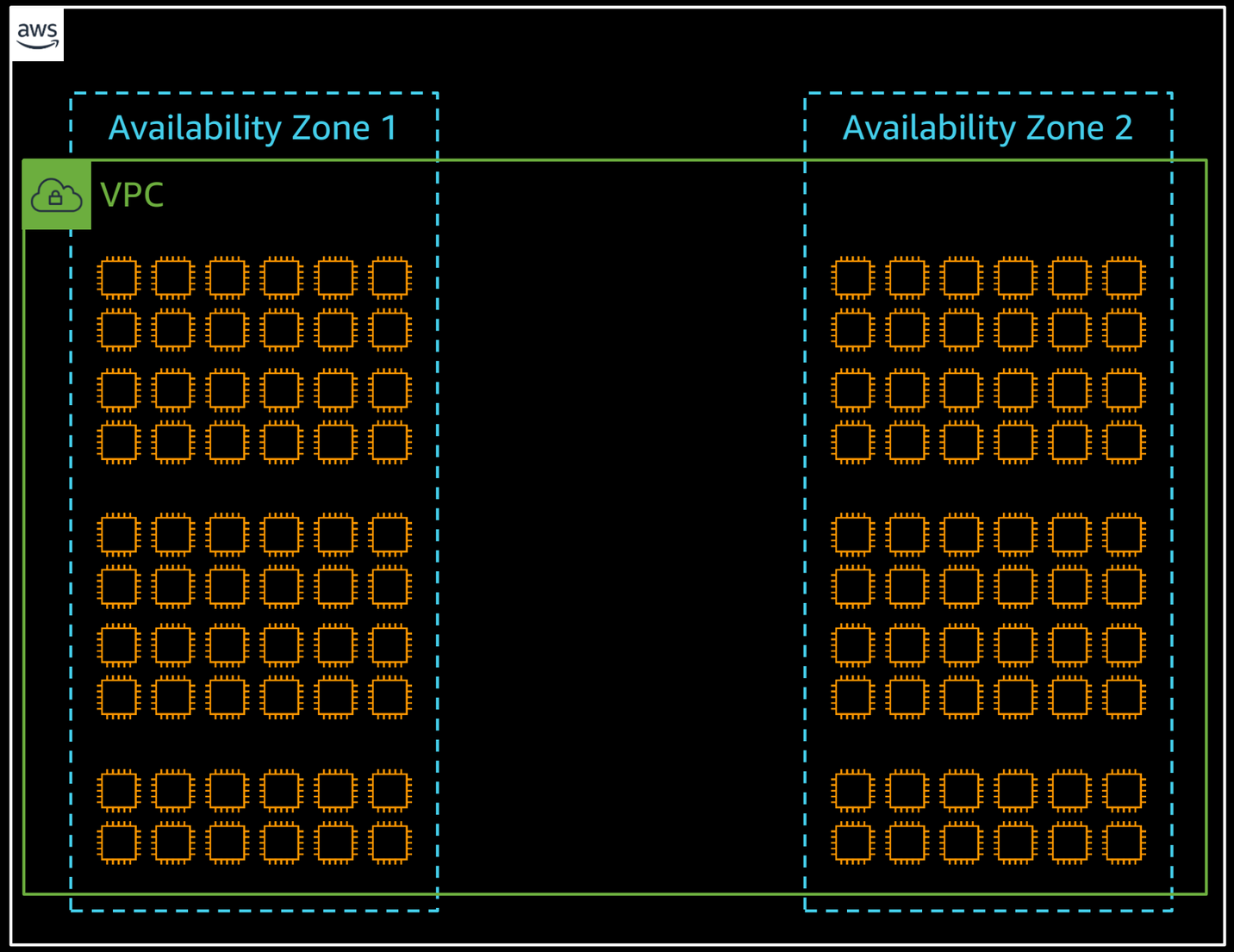
How we solved it with AWS tools



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Getting started

- Establish patch plans
- Logically categorize your workloads
- Set and forget through tags
- Govern through notification



Establish patch and backup plans

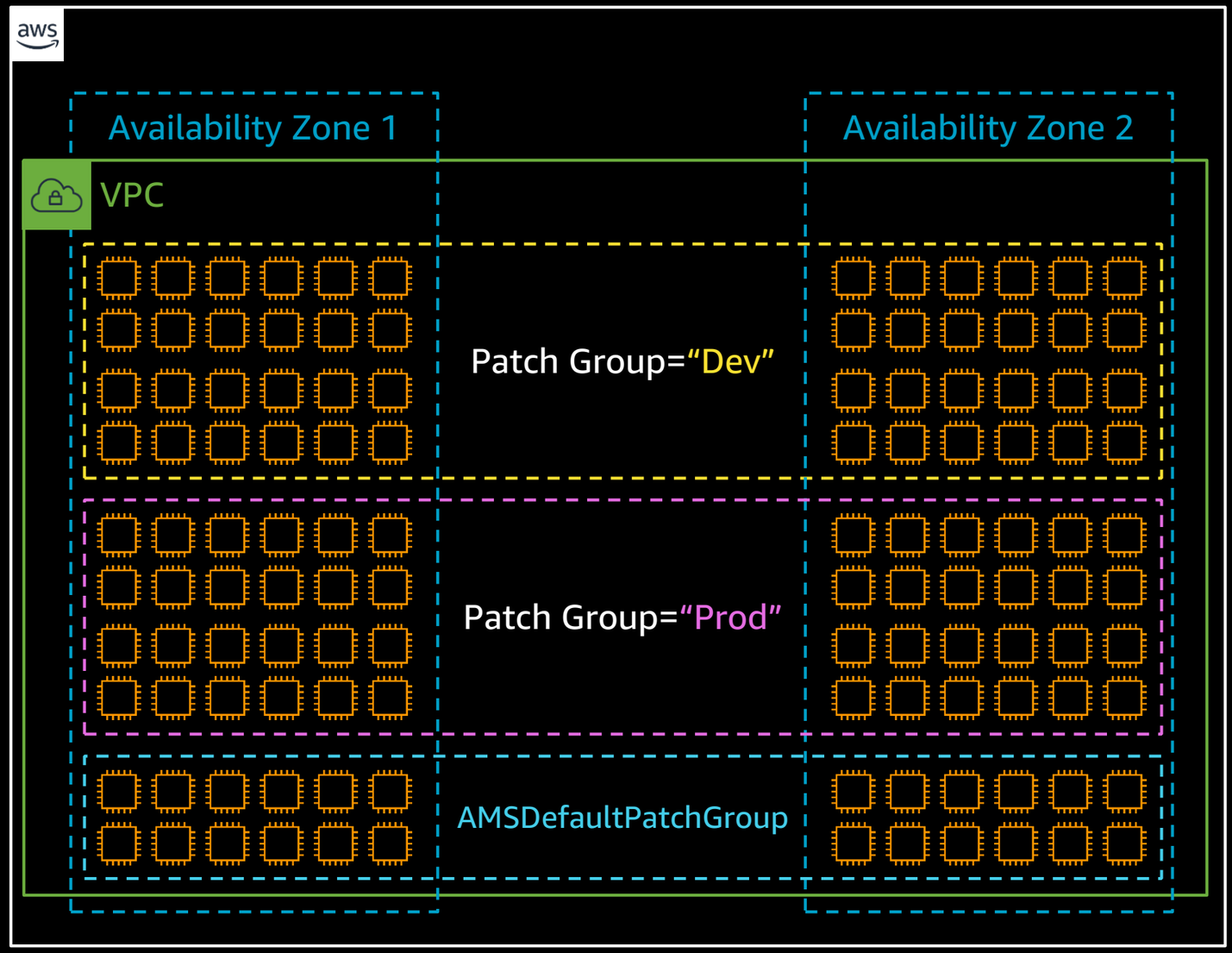
Patch plan

Patch Group=“**Dev**”
Mtc Schedule Window: 3rd Tuesday 12:00AM
Window schedule timezone: Australia/ACT
Duration: 5 hours
Cutoff point: 2 hours before window closes
Patch Baseline: Reject “KB4565912”
Email: me@my.com

EC2 Tag *Patch Group*=“**Dev**”

Default mtc window

AMSDefaultPatchGroup=**True**
Mtc Schedule Window: 1st Monday 12:00AM
Window schedule timezone: Australia/ACT
Duration: 8 hours
Cutoff point: 2 hours before window closes
Patch Baseline: Reject “KB4565912”
Email: tech-support@my.com



How it works

Patch Group="Dev"
Mtc Schedule Window: cron(0 0 ? * TUE#3 *)
Duration: 5 hours
Cutoff point: 2 hours before window closes
Window schedule timezone: Australia/ACT
Patch Baseline: Reject KB4565912
Email: me@my.com

AMS automation

Target instance identified by patch group tag

Create SSM maintenance window

Create SSM patch task and SNS topic

AWS CloudFormation template
› Create SSM mtc window
› SNS topic for notification

SSM maintenance window execution

AMS SSM doc

Notification on patch execution start

Take snapshot of the instance (AWS Backup)

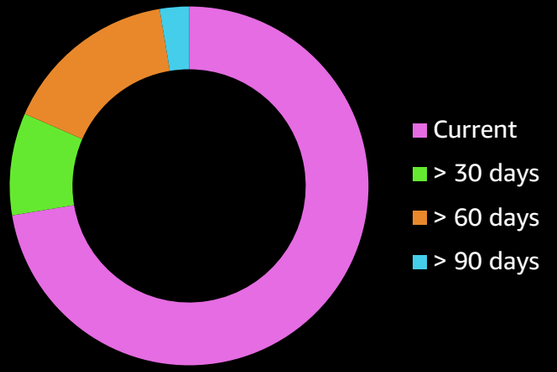
Obtain patch baseline of the patch group

Execute the patch with parameters

Notification on patch execution end with status

Automated ops remediation task AWS System Manager OpsCenter

Patch compliance dashboard



Sample AWS CloudFormation template

1

```
AmsPatchMaintenanceWindowTarget:
  Type: 'AWS::SSM::MaintenanceWindowTarget'
  Properties:
    Name: 'PatchGroupTarget'
    Description: !Sub 'Target for Patching instances in patch Group ${PatchGroupName}'
    WindowId: !Ref AmsPatchMaintenanceWindow
    ResourceType: 'INSTANCE'
    Targets:
    - Key: 'tag:Patch Group'
      Values:
        - Ref: PatchGroupName
```

2

```
AmsPatchMaintenanceWindowTaskPatch:
  Type:
AWS::SSM::MaintenanceWindowTask
  Properties:
    Name: 'AWS-RunPatchBaseline'
    WindowId: !Ref
AmsPatchMaintenanceWindow
    Targets:
      - Key: 'WindowTargetIds'
        Values:
        - !Ref
AmsPatchMaintenanceWindowTarget
    TaskArn: 'AWSManagedServices-
PatchInstanceFromMaintenanceWindow'
MaintenanceWindowAutomationParameters
:Parameters:
CreatePrePatchRootVolumeSnapshot:
        - 'true'
      InstanceId:
        - '{{TARGET_ID}}'
PatchServiceSnsTopicArn:
        - !ImportValue AmsPatchTopicArn
```

3

```
AmsPatchMaintenanceWindowTopic:
  Type: 'AWS::SNS::Topic'
  Properties:
    DisplayName: !Sub
      - 'ams-patch-customer-sns-${MaintenanceWindowId}'
      - MaintenanceWindowId: !Ref AmsPatchMaintenanceWindow
    TopicName: !Sub
      - 'ams-patch-customer-sns-${MaintenanceWindowId}'
      - MaintenanceWindowId: !Ref AmsPatchMaintenanceWindow
    Subscription:
      - Endpoint: !Ref NotificationEmailAddress1
        Protocol: email
```

Sample notification

Dear Customer,

The AMS Patch Maintenance Window THE_MAINTENANCE_WINDOW_NAME ended at: 2020-02-21T12:03:20.058Z, with status: SUCCESS.
Details:
Maintenance Window AccountId: YOUR_ACCOUNT_ID
Maintenance Window Region: YOUR_ACCOUNT_REGION
Maintenance Window Id: THE_MAINTENANCE_WINDOW_ID
Maintenance Window Description: MaintenanceWindow for patching patch Group PATCH_GROUP_NAME
Maintenance Window Patch Group: PATCH_GROUP_NAME
Targets:

RfcId	InstanceId	InstanceName	StackId	Status
THE_RFC_ID	THE_INSTANCE_ID	THE_INSTANCE_NAME	THE_STACK_NAME	STATUS

You can view the current Patch Compliance of your EC2 Instances by following this URL: https://console.aws.amazon.com/systems-manager/compliance?region=YOUR_ACCOUNT_REGION

Please raise an Incident if an issue is impacting one of your production applications by following this URL: https://console.aws.amazon.com/managedservices/incident/new

Kind Regards,
Amazon Web Services Amazon Managed Services Patch Team

Sample backup plan

Backup policies	Gold	Silver	Bronze
When will this run?	At minute 0 every 4th hour from 10 through 23	At minute 0 every 4th hour from 12 through 23	Every day at 10
RPO	4 hours	12 hours	23 hours
Tag name	RPO	RPO	RPO
Tag value	Gold	Silver	Bronze
Backup retention period	Delete after 36 days	Delete after 36 days	Delete after 36 days
When to move to cold storage	After 15 days	After 15 days	After 15 days

Showcase



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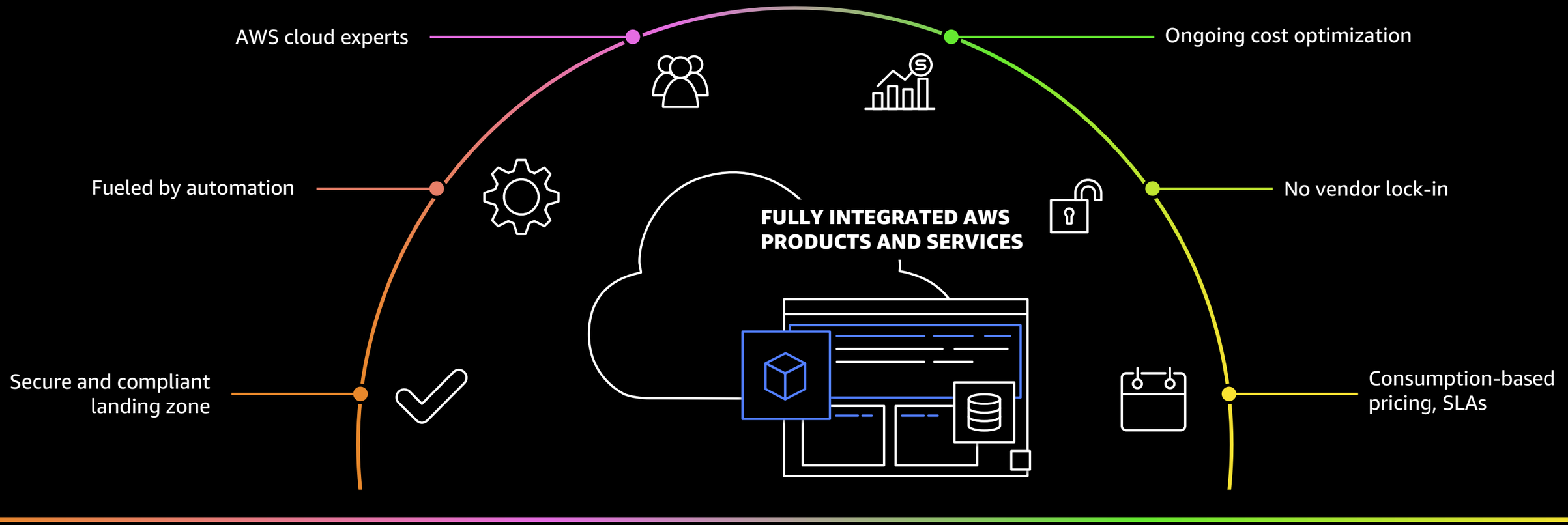
AWS Managed Services



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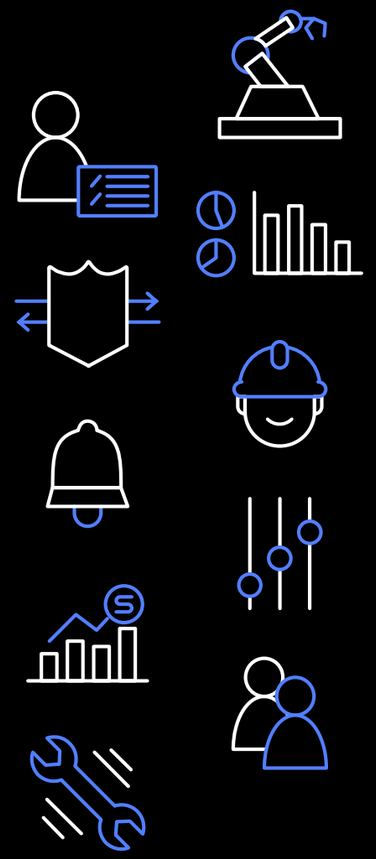
AWS Managed Services



Built on standard AWS tools and user-owned assets

AWS Managed Services

AUGMENT INFRASTRUCTURE OPERATIONS DOMAINS



Provisioning / onboarding

100+ security and operational guardrails and compliance checks

Monitoring / alerting

Insights and cost optimization – average 25% savings

88% self-service automation

Patch and backup compliance

Change management

Incident management – 47% proactively detected

Service integration

Designated cloud architect and service delivery manager

Operational compliances: ISO, HIPAA, AICPA SOC, PCI, GDPR, FedRAMP, HITRUST

AWS Customer Enablement

MIGRATE AND BUILD FASTER IN THE CLOUD



AWS Professional Services
Accelerate your business outcomes

AWS Managed Services
Operate your AWS infrastructure on your behalf

AWS Training and Certification
Build skills and validate expertise

AWS Partners
A global network with deep AWS expertise

AWS IQ
On-demand help from AWS Certified third-party experts

AWS Support
People, technology, and programs to optimize and secure your environment

AWS Managed Services partners

GLOBAL	AMERICAS	EMEA	APAC
lemongrass	SIRIUS	tecRACER Cloud Enabling Your Business	CloudComrade
	InterVision INNOVATION DELIVERED		TECHX
	alestra		

Next steps



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Takeaway

Learn more about AWS Managed Services

https://aws.amazon.com/managed-services/

Download the Forrester Total Economic Impact of AWS Managed Service study

https://pages.awscloud.com/forrester-tei-managed-service-2020.html

Thank you!



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