

AWS re:Invent

NOV. 28 – DEC. 2, 2022 | LAS VEGAS, NV

ENT321-R

Secrets to a successful migration at scale

Jonathan Shapiro-Ward

Principal Product Manager
AWS

Sigal Weiner

Software Development Manager
AWS



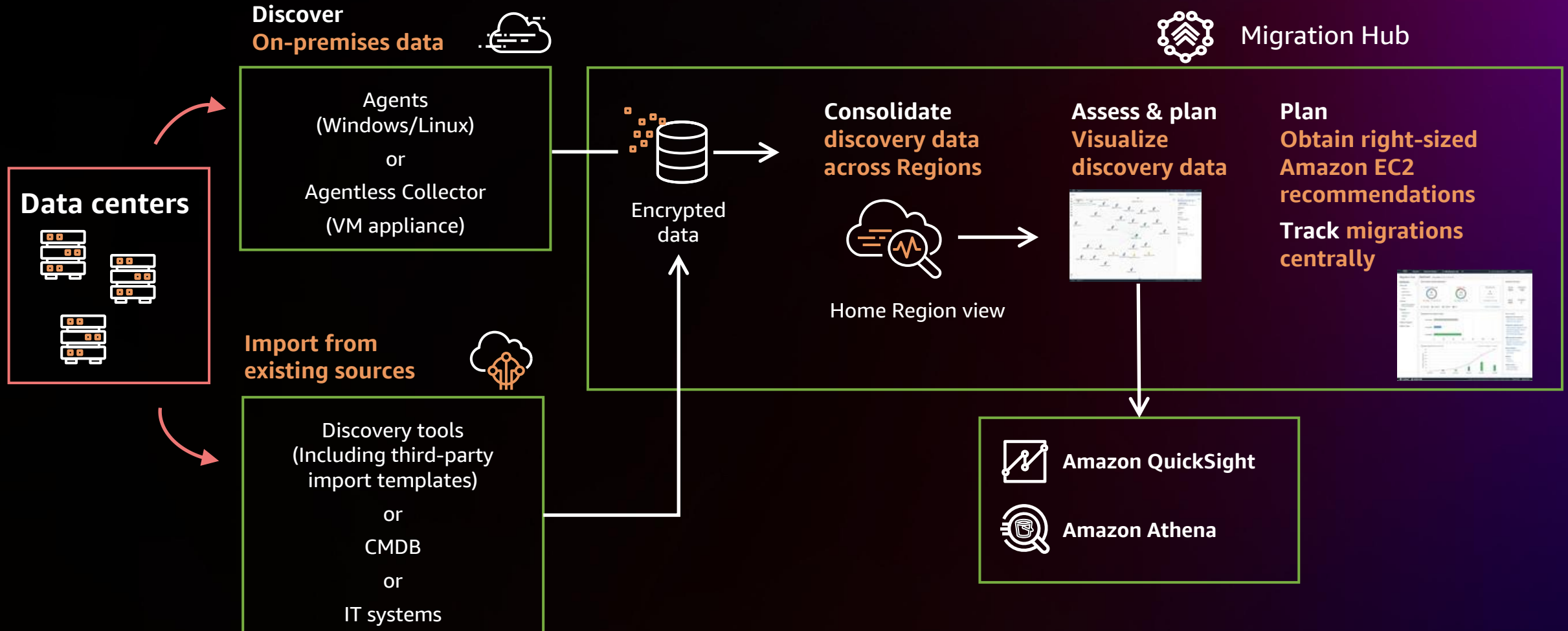
© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Workshop agenda

1. Discover your on-premises workloads with the AWS Application Discovery Service
2. Create a business case with Migration Evaluator
3. Plan your migration with AWS Migration Hub
4. Execute your migration with the AWS Application Migration Service (AWS MGN)

Migration Hub: Discover, assess, plan & track

CAPTURE AND VISUALIZE SERVER INVENTORY, PERFORMANCE, AND DEPENDENCIES



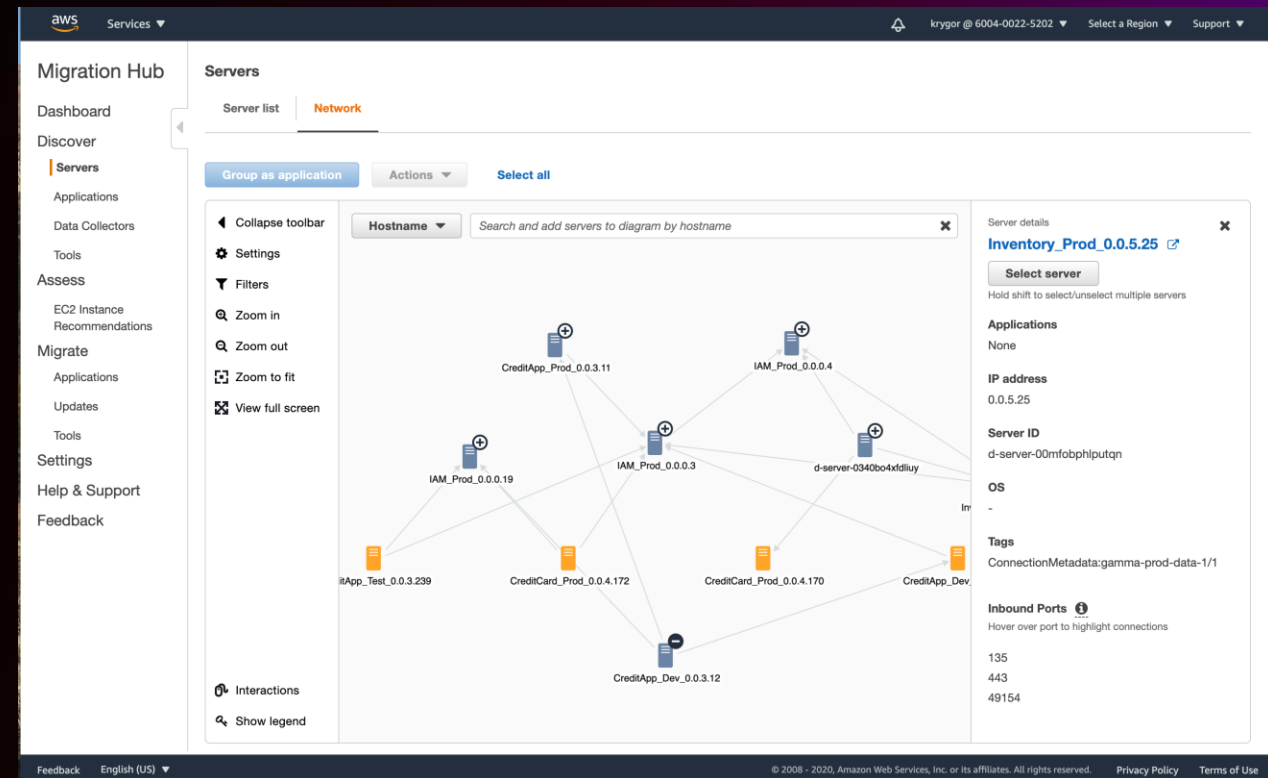
Visualize on-premises discovery data in Migration Hub



MIGRATION HUB NETWORK VISUALIZATION

Accelerate planning by making server discovery data planning-ready

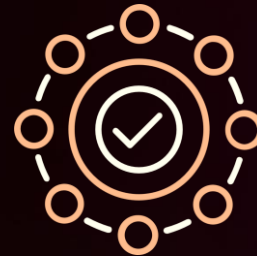
- ➔ Visually identify server dependencies
- ➔ Identify the role of a server
- ➔ Use a data-driven approach to grouping servers as applications
- ➔ Use output to plan migration strategies, build migration waves
- ➔ Free to use, reducing migration tooling costs










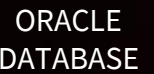















Migrate and modernize using AWS MGN

Starting with migration is a fast, cost-effective, and minimally disruptive way to move to the cloud

- Migrate applications to AWS **with or without changes** to applications or workflows
- **AWS MGN automates** migration to AWS
- You can **start modernizing using AWS MGN** post-launch actions during cutover
- Access the full range of AWS capabilities to **modernize applications** running on AWS



AWS MGN wide platform support*

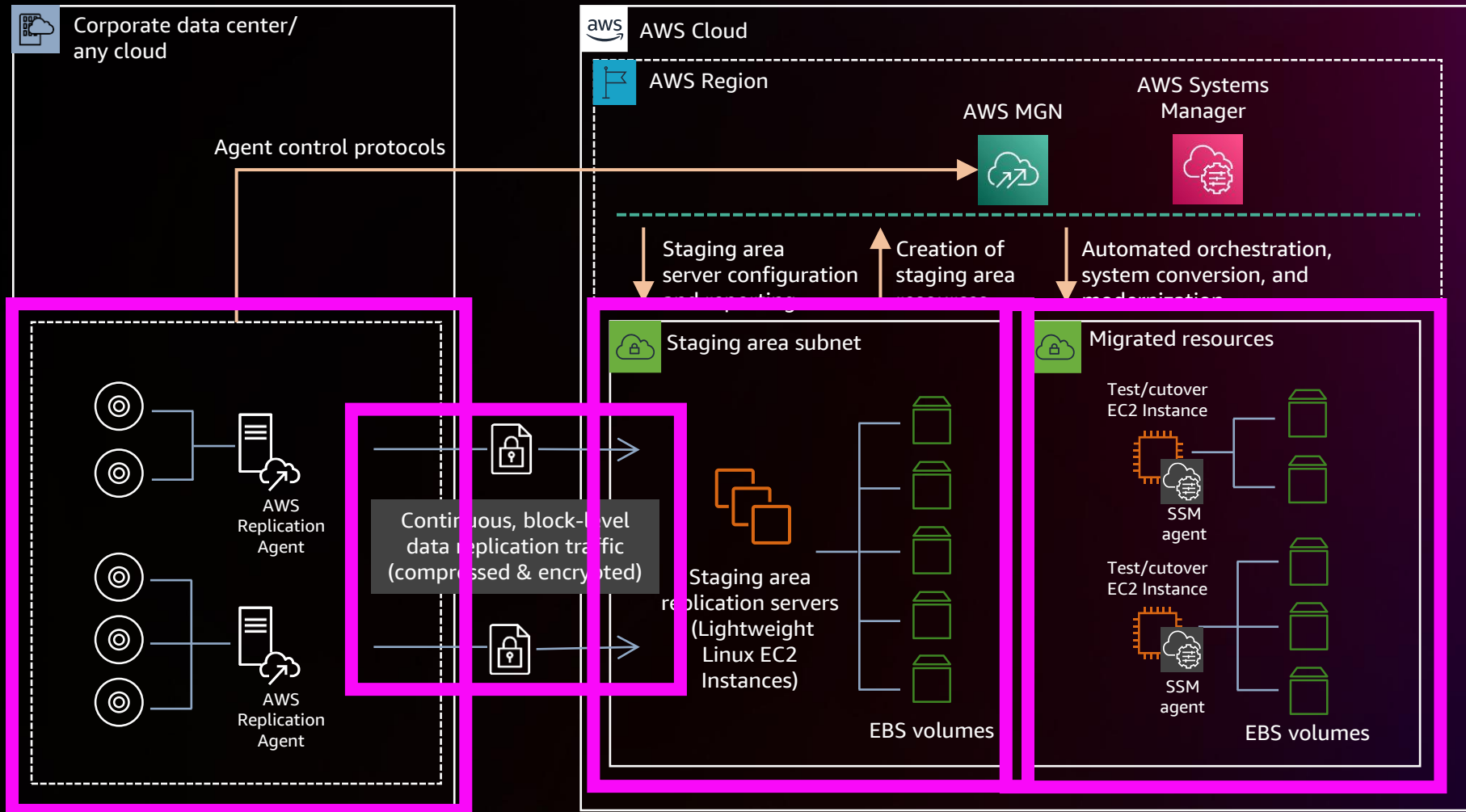
Any application	 	 Microsoft IIS	 Microsoft SharePoint	 Microsoft Active Directory	 Microsoft Exchange	 Microsoft Dynamics CRM
Any database	Microsoft SQL Server					
x86 operating systems	 Windows Server 2008	 Windows Server 2012	 Windows Server 2016	 Windows Server 2019	 Windows Server 2022	 Windows 10
Source infrastructure	  Physical data centers	 Microsoft Hyper-V	 	Cloud provider		

*See documentation for a complete list and supported versions



© 2022, Amazon Web Services, Inc. or its affiliates. All rights reserved.

How does AWS MGN work?



Set up global launch templates

- Configure launch template defaults that suit your needs: right-sizing, instance type, subnet, and more
- Fine-tune settings for each server, in its Amazon EC2 launch template

The screenshot shows the AWS Management Console interface for the 'Application Migration Service' in the 'N. Virginia' region. The breadcrumb trail is 'Application Migration Service > Settings > Launch template'. The page title is 'Edit launch template' with an 'Info' link. A descriptive paragraph states: 'Every source server added to this service has an EC2 launch template that controls its launch settings. The EC2 launch template is created automatically based on the Launch template. Once a server is added to MGN, you can modify its EC2 template at any time.'

The settings are organized into four sections:

- General launch settings** (Info link):
 - ☐ **Activate instance type right-sizing**: If this option is selected, the service will determine the best match instance type. The default instance type defined in the EC2 template will be ignored.
 - ☐ **Start instance upon launch**: If this option is not selected, launched instance will need to be manually started after launch.
 - ☐ **Copy private IP**: Enable this setting to copy the private IP of your source server to the target.
 - ☐ **Transfer server tags**: Transfer the tags from the source server to the launched instances.
 - Operating system license**: Specify whether to continue to use the license of the source server or use an AWS provided license.
 - ☒ **Bring your own license (BYOL)**
 - ☐ **Use AWS provided license**
- Default EC2 launch template** (Info link):
 - Default target subnet**: This is the target subnet to be associated with any instance launched by this service. (Dropdown menu: 'Choose an option')
 - Target security groups**: These are the security groups to associate with all instances launched by this service. (Dropdown menu: 'Choose an option')
 - Default instance type**: This is the default instance type to be used for all instances launched by this service. (Dropdown menu: 'Choose an option')
 - EBS volume type**: This is the default volume type used for EBS volumes. You can overwrite this value for small volumes, using API. (Dropdown menu: 'Choose an option')
- Map program tagging** (Info link):
 - Configure MAP resource tags to be applied to instances launched by this service.
 - Select this option to automatically add the MAP program tag to instances launched by this service.
 - ☒ **Add MAP tag to launched instances**
 - MAP tag value**: (Field for specifying the tag value)

Plan and monitor your migration process

- Group related servers into applications
- Plan your migration waves
- Perform bulk actions across applications and waves: launch test and cutover instances
- Monitor your migration process

The screenshot displays the AWS Application Migration Service console for a specific migration wave. The top navigation bar shows the AWS logo, 'Services', and user account information. The breadcrumb trail indicates the path: Application Migration Service > Waves > My wave 1. The main heading is 'Wave: My wave 1'. A dropdown menu is open over the 'Actions' button, showing options: Testing, Cutover, and Archive wave. The 'Overview' section provides details about the wave, including its description, start time, state, last status update, and current duration. Below the overview are three pie charts: 'Alerts', 'Data replication status', and 'Migration lifecycle'. The 'Alerts' chart shows the distribution of server statuses: Launched (54 servers, 54%), Healthy (36 servers, 36%), Stalled (4 servers, 4%), and Lagging (6 servers, 6%). The 'Data replication status' chart shows: Healthy (60 servers, 57%), Launched (30 servers, 29%), Stalled (10 servers, 10%), and Lagging (5 servers, 5%). The 'Migration lifecycle' chart shows: Ready for testing (60 servers, 59%), Test in progress (20 servers, 13%), Cutover in progress (17 servers, 11%), Ready for cutover (5 servers, 3%), Cutover complete (20 servers, 13%), and Not ready (30 servers, 20%). Below the charts is the 'Applications (45)' section, which includes a search bar and a table listing applications. The table has columns for Application name, Alerts, Migration lifecycle, Data replication status, Next step, and Archived. The 'Tags (1)' section at the bottom shows a single tag with the key 'WaveType' and value 'Priority_1'.

Application name	Alerts	Migration lifecycle	Data replication status	Next step	Archived
App1	Healthy	Ready for testing	-	Initiate test	Active
App2	Healthy	Test in progress	-	Mark as tested	Active
App3	Healthy	Cutover complete	Disconnected	Mark as archived	Active
App4	Stalled	Cutover in progress	Stalled	Resolve cause of stalled data replication	Active
App5	Lagging	Continuous Data Protection	Successful, 2w ago	-	Active
App6	Stalled	Cutover in progress	Stalled	Resolve cause of stalled data replication	Active

Post-migration modernization framework

4 pre-configured actions now available:

- Install AWS Systems Manager agent – prerequisite for all other actions
- Configure disaster recovery, using AWS Elastic Disaster Recovery Service
- Convert CentOS to Rocky Linux distribution
- Convert SUSE BYOS to AWS license

aws Services Customer Account N. Virginia Support

Application Migration Service > Settings > Post-launch settings

Edit post-launch settings template [Info](#)

Configure actions to be executed on every server, upon server launch

Post-launch actions [Info](#)

MGN can execute actions on your servers, after they are launched, using Systems Manager. MGN will install the SSM agent, and execute the action you select.

☒ Install the Systems Manager agent and allow executing actions on launched servers

[i](#) By continuing, you are allowing AWS Application Migration Service to install the SSM agent and create the IAM rules required to execute automation on launched servers.

Deployment [Info](#)

Choose whether to execute the post-launch actions on your cutover instances only, or on both your cutover and test instances.

☒ **Test and cutover instances (recommended)**
All post-launch actions will be executed on test and cutover instances

☐ **Cutover instances only**
All post-launch actions will only be executed on the cutover instances

Disaster recovery [Info](#)

Configure disaster recovery using the AWS Elastic Disaster Recovery Service. Charges are applied based on usage.

☒ **Configure disaster recovery on migrated servers**
Install the AWS Elastic Discovery Service agent on each of the launched servers, and configure replication to the target region

Target disaster recovery region
Select the region the recovery instances will be deployed in. AWS Elastic Disaster Recovery service must be available in the selected region, and set up for your account in that region.

US East (N. Virginia) [▲](#) ✔ Service ready

Operating system [Info](#)

Perform changes to the target machine operating system

☒ **Convert CentOS to Rocky Linux distribution**
This action must be completed successfully before finalizing cutover

License & subscription [Info](#)

Perform changes to the target machine licenses and subscriptions

☐ **Change SUSE Linux subscription to AWS provided SUSE subscription**
This action must be completed successfully before finalizing cutover

Post-migration modernization framework – Custom actions

- Automate process for any AWS Systems Manager document on migrated servers
- Create your own AWS Systems Manager documents, to handle your unique needs
- Supported via account post-launch template and via server settings

The screenshot shows the 'Add custom action' page in the AWS Management Console. The breadcrumb trail is 'Application Migration Service > Settings > Post-launch template > Add custom action'. The page title is 'Add custom action' with an 'Info' link. Below the title is a descriptive sentence: 'You can associate any Systems Manager document with a post-launch action.' The main form area is titled 'Custom action' with an 'Info' link. It contains several fields: 'Action name' with a text input and a note 'Provide the action name to display in MGN' and 'The name must be unique, limited to 256 characters.'; 'Systems Manager document' with a dropdown menu labeled 'Choose a Systems Manager document' and a 'View in Systems Manager' link; 'Document version' with a dropdown menu labeled 'Use latest version'; 'Order' with a text input and a note 'Specify the order in which the actions will be executed (range 1-10,000)'; 'Operating systems' with a dropdown menu labeled 'Windows and Linux'; and two checkboxes: 'Activate this custom action' (checked) and 'This action must be completed successfully before finalizing cutover' (unchecked). At the bottom right are 'Cancel' and 'Add action' buttons. The footer includes 'Feedback', 'English (US)', copyright information, and links to 'Privacy Policy' and 'Terms of Use'.

aws Services Customer Account N. Virginia Support

Application Migration Service > Settings > Post-launch template > Add custom action

Add custom action [Info](#)

You can associate any Systems Manager document with a post-launch action.

Custom action [Info](#)

Action name
Provide the action name to display in MGN
The name must be unique, limited to 256 characters.

Systems Manager document
Select any Systems Manager document that is available for this account.
Choose a Systems Manager document [View in Systems Manager](#)

Document version
Select the document version to use
Use latest version

Order
Specify the order in which the actions will be executed (range 1-10,000).
Enter order

Operating systems
Select the operating systems this script can be executed on.
Windows and Linux

☒ **Activate this custom action**
Active actions will be executed after the instance is launched.

☐ This action must be completed successfully before finalizing cutover

Cancel Add action

Feedback English (US) © 2008 - 2019, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use

AWS Windows Migration Accelerator

Accelerate migrations of Windows workloads and earn AWS Promotional Credits

How does it work?

Qualify for \$200 credit per migrated Windows server

Migrate 40 or more servers per month – including at least 15 Windows servers – with AWS MGN

Qualify for \$250 credit per migrated Windows server

Migrate 80 or more servers per month – including at least 25 Windows servers – with AWS MGN

Benefits

Decrease migration costs

Help offset costs of simultaneously running two environments during migration

Complete migration on time and within budget

- Set a more predictable migration schedule
- Better plan for costs

<https://s12d.com/PZVZdDpm>

<https://catalog.us-east-1.prod.workshops.aws/join?access-code=6117-0de186-a2>



Summary

- In this session you learned techniques that can help you execute a large-scale migration, including:
 - Discovering On-premises servers with ADS
 - Using Migration Hub to analyze on-premises inventory data and perform dependency mapping, and group on-premises servers into applications.
 - Use AWS Application Migration Service (MGN) to:
 - Configure a custom modernization action.
 - Launch a migrated instance in AWS, in the process executing the modernization action.
 - Create an application and a wave (optional steps).
 - Monitor the migration process.

Resources

Learn more about AWS Application Migration Service (MGN)

- Visit the MGN product page: <https://aws.amazon.com/application-migration-service/>
- Take the free MGN training: <https://docs.aws.amazon.com/mgn/latest/ug/mgn-training.html>
- Schedule a Migration Immersion Day: <https://migration-immersionday.workshop.aws/>
- View Windows Migration Accelerator (WMA) terms: <https://aws.amazon.com/application-migration-service/windows/>

Learn more about Migration Evaluator and AWS Migration Hub

- Request a migration evaluator assessment: <https://aws.amazon.com/migration-evaluator/getting-started/>
- Migration Hub Product Page: <https://aws.amazon.com/migration-hub/>
- [Auction.com](#) case study: <https://aws.amazon.com/solutions/case-studies/auction-case-study/>



Thank you!



Please complete the session survey in the **mobile app**

