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Automazione for Dummies: come creare i VM Template in automatico

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Agenda

We (almost) automated anything

EC2 ImageBuilder

How it works

The solution

We (almost) automated anything

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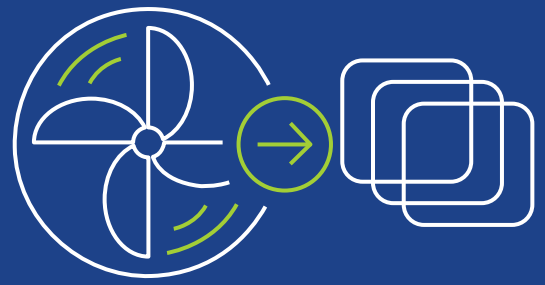
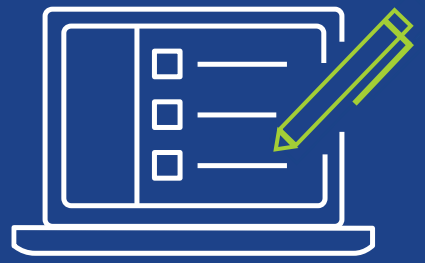
Golden VM images



Template image.
Saves time & ensure consistency



Pre-installed & pre-configured with custom software & settings

Hardened to meet IT standards

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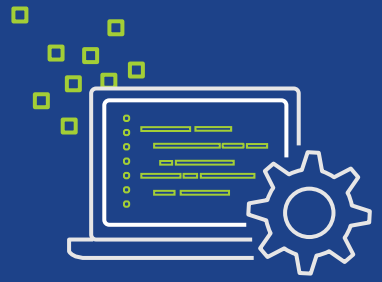
How do admins build golden images today?

Manually build each golden images



Build and maintain custom automation

Build automation with opensource frameworks

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VMWare vRealize Automation Cloud Image Profiles lessons learned

Dana Gertsch Cloud Assembly Services, Code Stream, vRealize

2 Minutes

Virtually Jason

Notes about interesting problems that I've come across and their solutions. Focuse accompanying technologies that make it all possible!

Updating VM Templates with vRealize Orchestrator, Part

vmware VMware Cloud Management

Uploading VM Template OVAs to Con with vRealize Orchestrator

guest OS using Aria Automation cloudConfig

Aria Automation | Cloud Automation | Code Stream | DevOps | vRealize Code Stream

Build, test and release VM images with vRealize Automation Code Stream and Packer

AUTOMATION PRO

CODESTREA

vRA 8.3, Code Stream Pipelines and Hashicorp Packer = Automated Ce ...

BY · PUBLISHED MARCH 5, 2021 · UPDATED MARCH 5, 2021

VMware CodeStream

UD MANAGEMENT DISCLAIMER

vRealize Automation Cloud – Cloud Assembly – Create a New Image Mapping

Automatic Update of vSphere Templates with Codestream

What's needed?

Quickly and easily build automation to create golden images without writing code

Easily test images with provided tests before deploying to production

Secure images with provided & custom settings to meet internal/industry standards

Distribute and share images easily with centralized enforcement

Limited maintenance of the automation pipeline

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EC2 Image Builder

What it is

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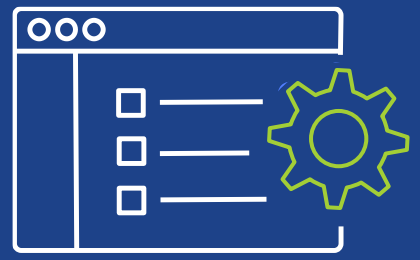
EC2 Image Builder features 1/2

Quickly and easily automate the creation, management, and deployment of up-to-date and compliant “golden” VM images



Automated pipelines to keep images secure and up-to-date

Minimize unnecessary exposure to security vulnerabilities

Validate and deploy high quality images into production

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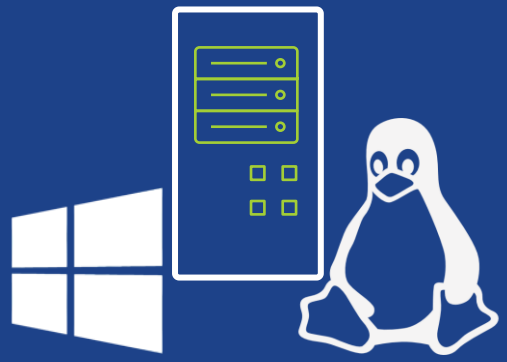
EC2 Image Builder features 2/2

Centralized Policy Enforcement



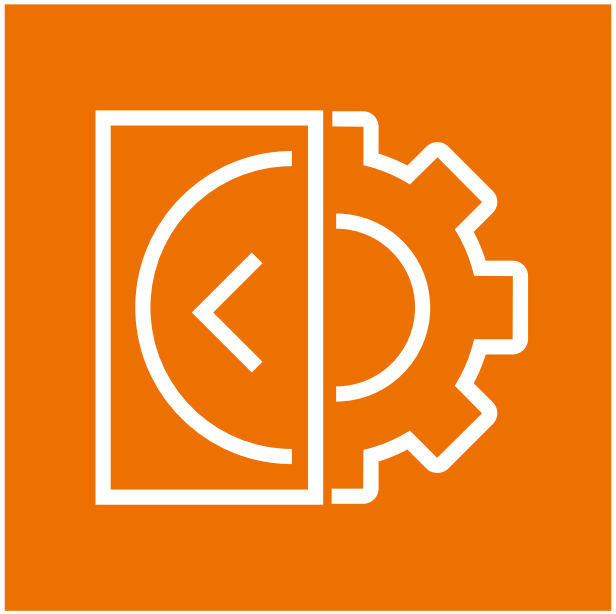
Support for both AWS and on-premises as well as Windows and Linux image creation

Simplified sharing of images across AWS accounts

Fully managed service, you just focus defining your template automation

EC2 Image Builder

How it works



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How it works

All EC2 Image Builder operations run in your AWS account

Start with a source image

Customize software and configurations

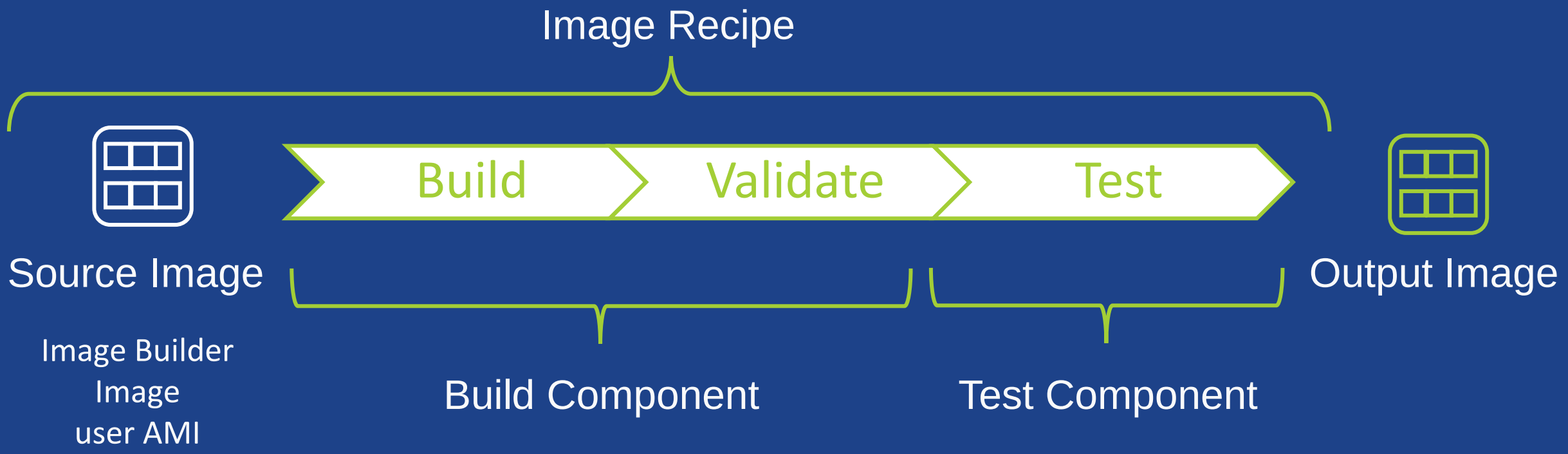
Secure image with AWS-provided or custom hardening templates

Test image with AWS provided or custom tests

Distribute “golden” image to VMware Cloud and selected AWS regions

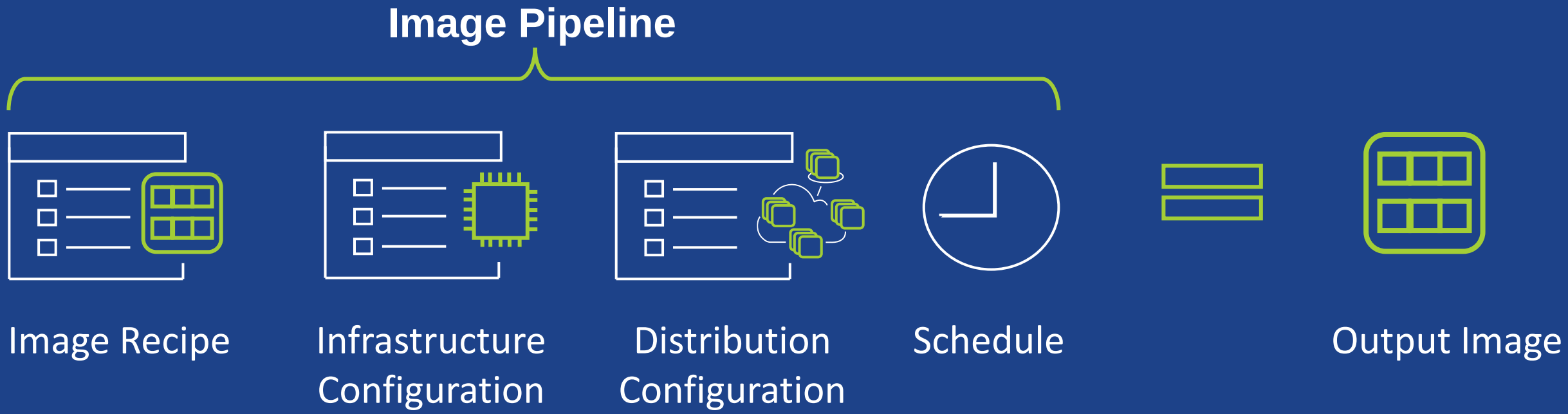
EC2 Image Builder - Image Recipe

Image Recipe defines image configuration. It consists of source image and one or more components to be applied to the source image. Component describes how to build, validate, and test your image



EC2 Image Builder - Image Pipeline

An **Image Pipeline** is the automation configuration for building secure OS images. The Image Builder image pipeline is associated with an image recipe, infrastructure configuration, distribution configuration, and how the pipeline is triggered



EC2 Image Builder Components

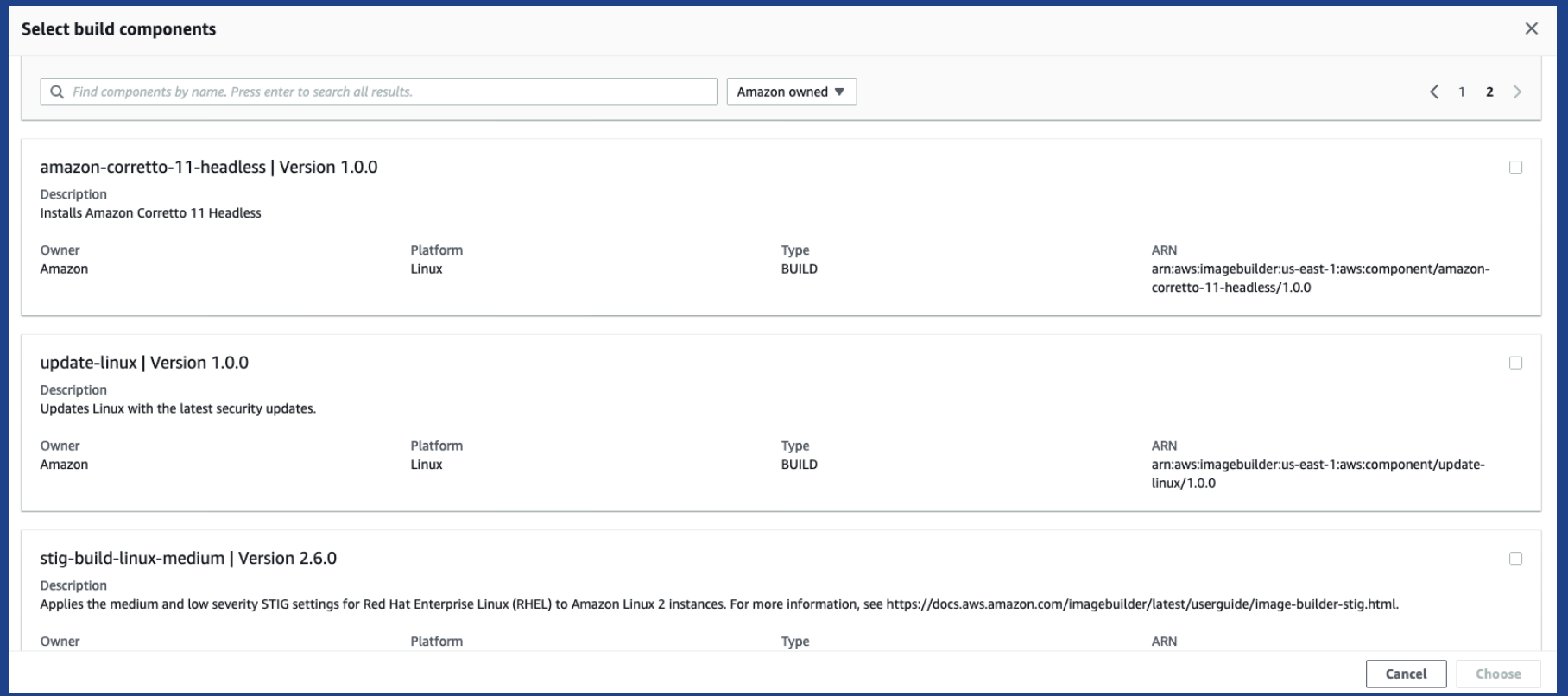
Build components are orchestration documents that define a sequence of steps for downloading, installing, and configuring software packages. **Test components** are orchestration documents that define tests to run on software packages

- Phases
- Steps
- Supported Action
- Output Files

```
phases:
  -
    name: 'build'
    steps:
      -
        name: SampleS3Download
        action: S3Download
        timeoutSeconds: 60
        onFailure: Abort
        maxAttempts: 3
        inputs:
          -
            source: 's3://sample-bucket/sample1.ps1'
            destination: 'C:\Temp\sample1.ps1'
          -
            source: 's3://sample-bucket/sample2.ps1'
            destination: 'C:\Temp\sample2.ps1'
```

Amazon provided components

Select from **out of the box components** or build your own. EC2 Image Builder provides **STIG components** to help you quickly build compliant images for STIG standards.



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Cascade Pipeline - Always build latest version

Versioning your image with **Always build latest version option**. The downstream pipeline uses the latest version output image from the upstream pipeline

Recipe name	Version	Image OS	Source image
MyBasicLinuxRecipe	1.0.0	Linux	arn:aws:imagebuilder:us-east-1:aws:image/amazon-linux-2-x86/2020.1.8
MyBasicLinuxRecipe	1.0.1	Linux	arn:aws:imagebuilder:us-east-1:aws:image/amazon-linux-2-x86/2020.1.8
Web-Server2029-IIS	1.0.5	Windows	arn:aws:imagebuilder:us-east-1:[redacted]image/windows2019-stig-low-recipe-6ef66b4c9974/x.x.x
Web-Server2029-IIS	1.0.7	Windows	arn:aws:imagebuilder:us-east-1:[redacted]mage/windows2019-stig-low-recipe-6ef66b4c9974/x.x.x
Web-Server2029-IIS	1.0.8	Windows	arn:aws:imagebuilder:us-east-1:[redacted]mage/windows2019-stig-low-recipe-6ef66b4c9974/x.x.x

VM Import/Export Processes

Among the others, allows to export an Amazon EC2 instance or an AMI to VMware vSphere among the others

Start an export image task

```
aws ec2 export-image --image-id ami-id --
disk-image-format VMDK --s3-export-location
S3Bucket=my-export-bucket,S3Prefix=exports/
```

Monitor an export image task

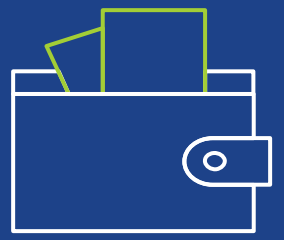
```
aws ec2 describe-export-image-tasks --export-
image-task-ids export-ami-1234567890abcdef0
```

Cancel an export image task

```
aws ec2 cancel-export-task --export-task-id
export-ami-1234567890abcdef0
```

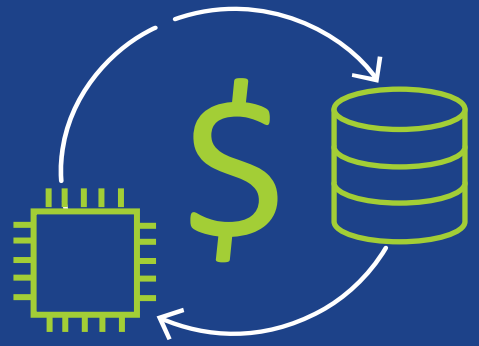
- Export EC2 instances or AMIs to Citrix Xen, Microsoft Hyper-V, or VMware vSphere
- Import from OVA, VMDK, VHD/VHDX
- Import as AMI, EBS Snapshot or Instance

Pricing



No cost

All operations run in your AWS account



Pay for the resources used in your account

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The solution

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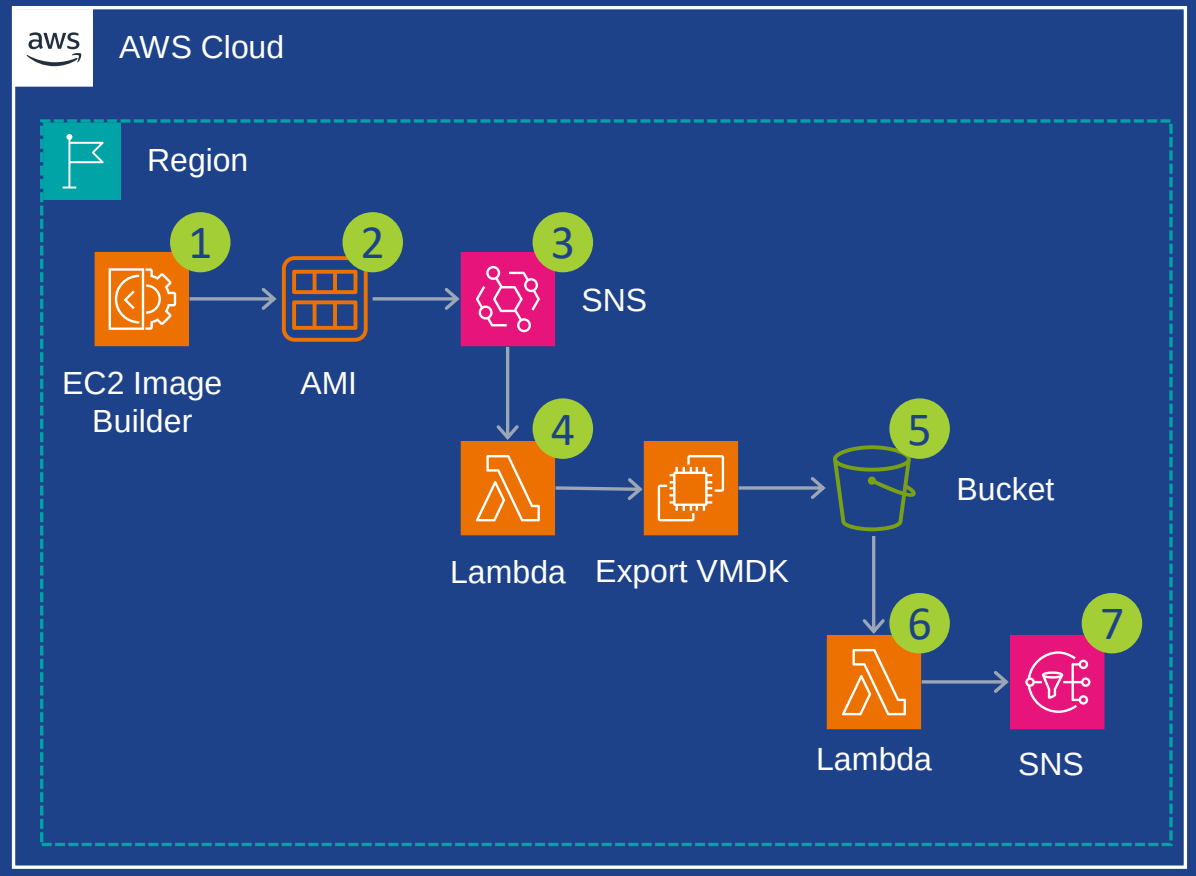
Simple EC2 Image Builder vmdk Export



1. The EC2 Image Builder pipeline is run to create, distribute and share the AMI
2. Once the AMI is available, an event is generated on EventBridge
3. A EventBridge rule configured to trigger a Lambda function execution
4. The Lambda function kick-off the .wmdk export process job execution
5. Once the VM export is completed the .vmdk file is available in S3 bucket
6. The S3 object creation event triggers the Lambda function that generates pre-signed S3 URL for the exported .vmdk and email message which it publishes to a SNS topic
7. SNS topic sends a email message containing the instructions on how to download the exported .vmdk file

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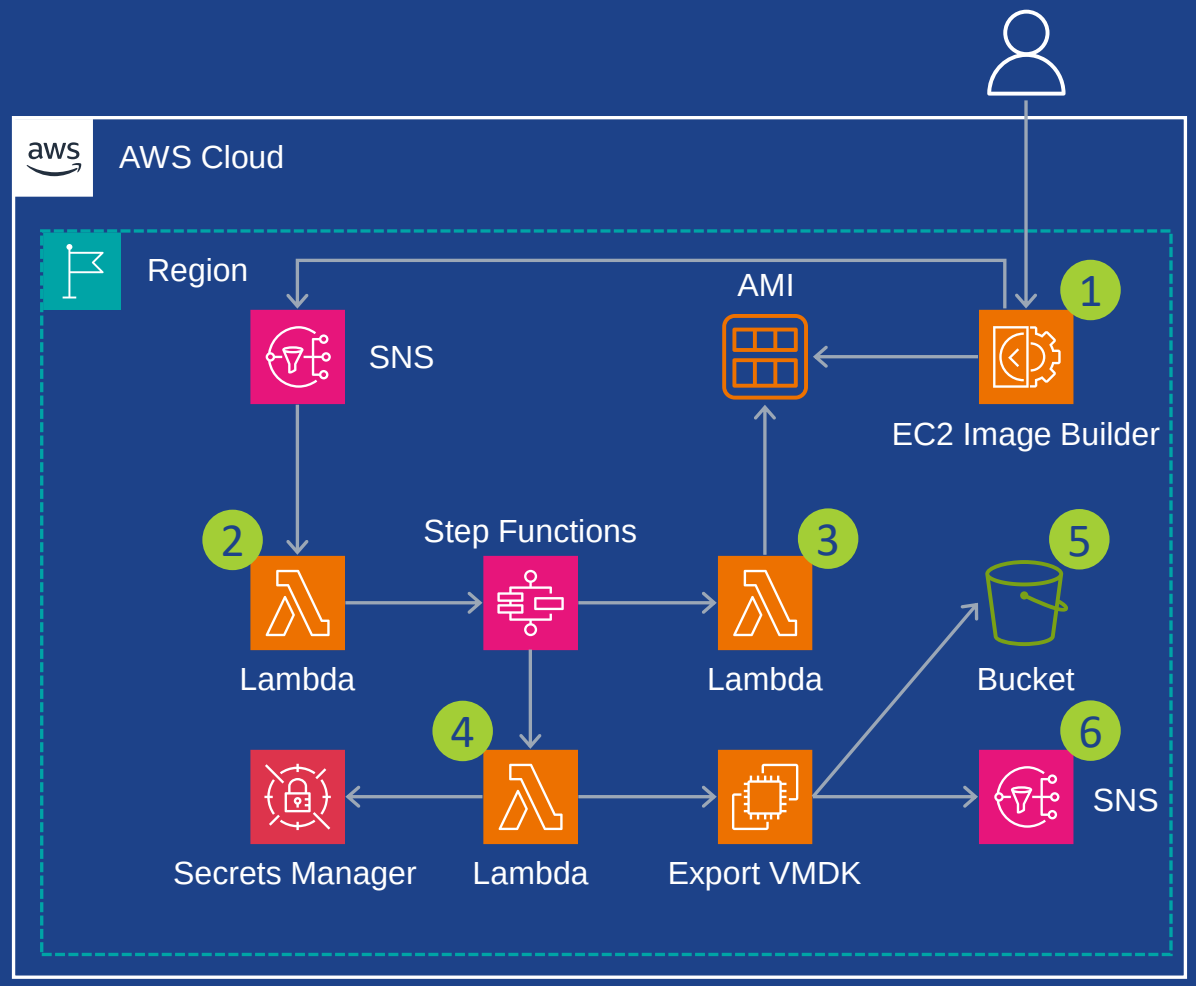
Enterprise EC2 Image Builder vmdk Export



1. The EC2 Image Builder pipeline is run to create, distribute and share the AMI and a message is published to a SNS topic containing the ARN of the executing EC2 Image Builder pipeline
2. The SNS topic invokes a Step Functions State Machine via Lambda function
3. The State Machine using a Lambda function polls the AWS EC2 API to check when the AMI gets available
4. Once the AMI is available, the State Machine proceeds to begin the AMI export process and the State Machine polls the AWS EC2 API to determine when the VM export process has entered the Completed state
5. Once the VM export is completed, the State Machine creates a pre-signed S3 URL for the exported .vmdk file saved in S3
6. The Lambda function generates an email message which it publishes to a SNS topic that sends a email message containing the instructions on how to download the exported .vmdk file

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Thanks