

ColdFusion To The Cloud - A Real World Example



Adobe ColdFusion Summit 2017

16th-17th November | The Mirage, Las Vegas



ThermoFisher
S C I E N T I F I C

Keen Haynes

Senior ColdFusion Engineer

18+ years with ColdFusion

keen.haynes@thermofisher.com

This is not a “best practices” discussion but an overview of how we accomplished the migration of our ColdFusion driven Supply Center application to AWS at ThermoFisher Scientific and some of the lessons we learned along the way.

Agenda

Why ThermoFisher
Moved to the Cloud

Coldfusion Deployment
Options (AMIs)

Jenkins

- What is it
- Deployment Pipelines
- OpsWorks

AWS Console

- What is it
- S3 Buckets – creating and accessing
- OpsWorks

Chef

- Environment files (yaml)
- Creating dynamic CF installs

API Manager in the
Cloud

Questions

Why ThermoFisher Went to the Cloud

Productivity

- Automate just everything – one step build, test and deploy
- Provision new infrastructure in minutes compared to days to weeks
- Enable automated, secure, consistent and repeatable website release process



Reliability and Scalability

- 99.99%+ availability for a single server
- Scale up/down the websites on-demand to achieve cost savings
- Support disaster recovery



Speed and Agility

- Faster to Market – Roll out new features to the websites faster
- Experiment often, iterate quickly and establish data-driven feedback from customers
- Global expansion of IT capabilities – Build foundation of setting up local data centers (e.g., in China) cost effectively



What Is An AMI

An AMI is an encrypted Amazon Machine Image. It is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance.

When you launch an EC2 (Amazon Elastic Compute Cloud) instance, you're launching an instance of a previously created AMI. The idea here is that you launch some "base" instance to get started, install necessary software, configure, and otherwise get this instance into a shape that you'd want to deploy repeatedly. To do that, you'll take the instance you previously created and create an image out of it. After you have an image, you can then launch multiple instances of it, thereby achieving the provisioning that brought you to AWS EC2 in the first place.

ColdFusion Deployment Options (AMIs)

- **AWS Marketplace:** this is a service provided by AWS, and all AMIs here are verified by AWS. It is basically used for software vendors to sell their products through AWS. The customers will be billed by AWS only, but then AWS will pay the AMI owner in return.
- **Community AMIs:** Whenever you create an AMI, you can add permissions to it to make it public. In that case, it goes to "community AMIs". These are AMIs that comes from AWS users, and are not verified by AWS
- **Custom AMI** – build your own (Be sure to confirm licensing models with Adobe)



Jenkins

Allows for the continuous integration and continuous delivery of projects

It is an open source tool with great community support

It supports Python, Ruby, Java, Android, C/C++

It is built with Java and hence, it is portable to all the major platforms.

It has 1000+ plugins to ease your work.

It is available on the AWS Marketplace



Infrastructure Pipeline

1. Package infrastructure templates (CloudFormation)
2. Package configuration scripts (Chef)
3. Publish packaged resources to AWS
4. Delete current Stack
5. Create / Recreate new Stack
6. Rerun (update) current Stack

Release Pipeline

1. Build and package application
2. Publish packaged resources to AWS
3. Perform automated tests
4. Deploy to existing infrastructure in target environment
5. Request approval from manual QA testing
6. Release to next environment

Jenkins

- + New Item
- People
- Build History
- Project Relationship
- Check File Fingerprint
- My Views

Build Queue















No builds in the queue.

Build Executor Status

master

- 1 Idle
- 2 Idle
- 3 Idle
- 4 Idle
- 5 Idle
- 6 Idle

all

S	W	Name ↓
		Admin
		DeploymentPipelines
		Endeca-Indexing
		microservice-ui-pipeline
		OpsWorks
		QA5-endeca-iti-de-workbench-dimensions-export
		Sandbox

Icon: S M L

Jenkins – OpsWorks

		qa1-psa-recreate-stack	2 mo 2 days - #10	2 mo 2 days - #10	1 min 10 sec
		qa1-psa-rerun-chef	26 days - #1	N/A	6 min 35 sec
		qa1-raas-DELETE-STACK	3 mo 0 days - #2	N/A	2 min 59 sec
		qa1-raas-recreate-stack	1 mo 19 days - #10	1 mo 22 days - #9	13 min
		qa1-raas-rerun-chef	26 days - #3	2 mo 3 days - #1	5 min 56 sec
		qa1-scms-recreate-stack	2 mo 7 days - #42	1 mo 8 days - #43	41 min
		qa1-scms-rerun	25 days - #9	1 mo 17 days - #4	14 min
		qa1-search-DELETE-STACK	N/A	8 mo 15 days - #5	11 sec
		qa1-search-deploy	8 mo 22 days - #2	N/A	16 sec
		qa1-search-recreate-stack	4 mo 28 days - #23	3 mo 5 days - #24	14 min

Jenkins - OpsWorks

ThermoFisher
SCIENTIFIC

PRODUCTION

Jenkins

OpsWorks

prod-scms-recreate-stack

Up

Status

Changes

Build with Parameters

Delete Pipeline

Configure

Move

Full Stage View

Pipeline Syntax

Build History

trend

find

#16

Oct 4, 2017 7:00 PM

#15

Oct 4, 2017 6:58 PM

#14

Sep 18, 2017 8:27 PM

#13

Sep 18, 2017 8:20 PM

#12

Jul 26, 2017 3:15 PM

#11

Jul 14, 2017 2:39 PM

#10

Jul 13, 2017 9:48 PM

#9

Jul 13, 2017 9:13 PM

Pipeline prod-scms-recreate-stack

Full project name: OpsWorks/prod-scms-recreate-stack

Recent Changes

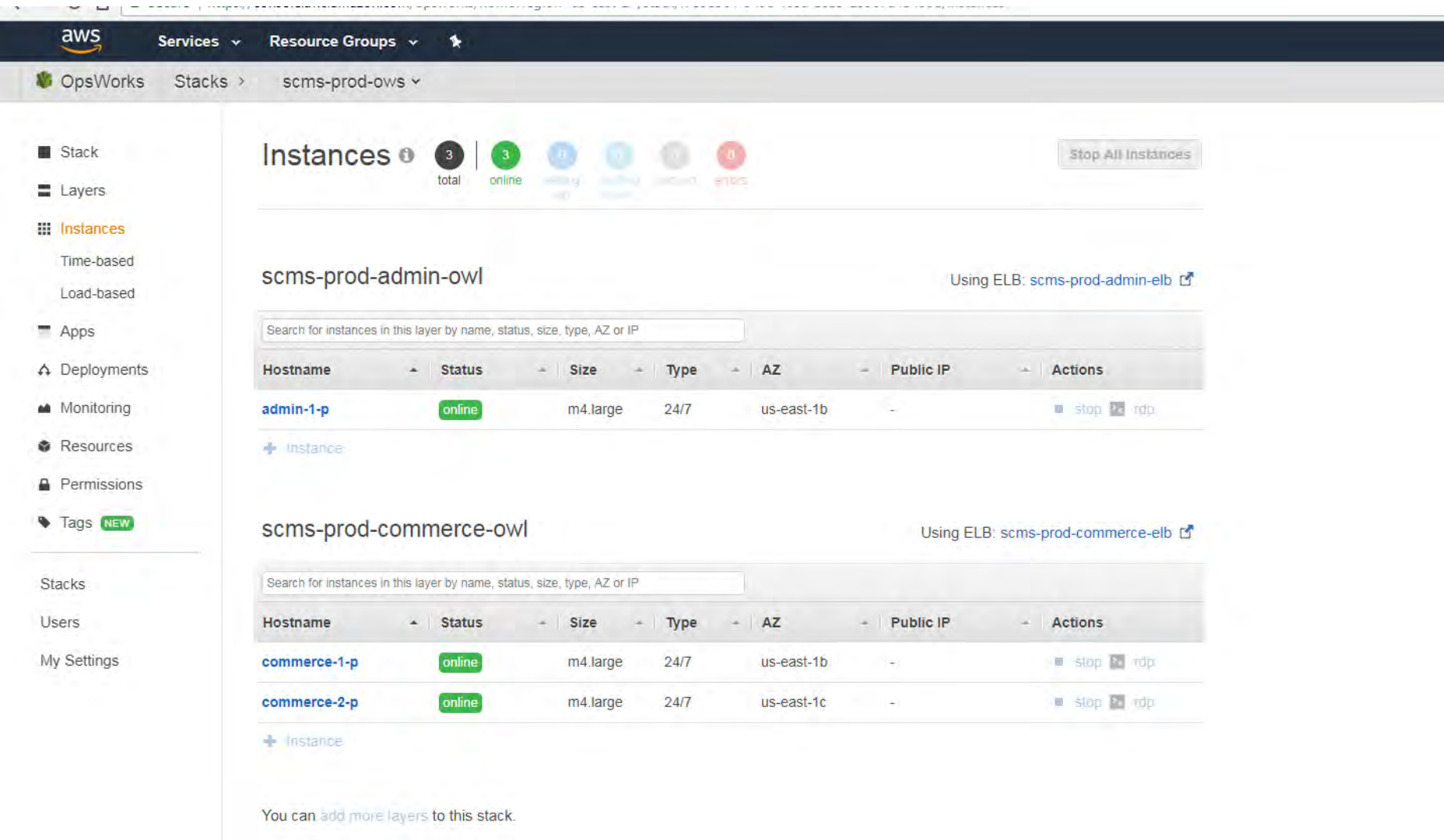
Stage View

This Pipeline has run successfully, but does not define any stages. Please use the `stage` step to define stages.

Permalinks

- Last build (#16), 1 hr 36 min ago
- Last stable build (#14), 16 days ago
- Last successful build (#14), 16 days ago
- Last failed build (#16), 1 hr 36 min ago
- Last unsuccessful build (#16), 1 hr 36 min ago
- Last completed build (#16), 1 hr 36 min ago

Jenkins – OpsWorks – Was It A Failure



The screenshot displays the AWS OpsWorks console interface. At the top, the navigation bar shows 'aws', 'Services', and 'Resource Groups'. Below this, the 'OpsWorks' section is active, showing 'Stacks' and the selected stack 'scms-prod-ows'.

The left sidebar contains navigation links: Stack, Layers, Instances, Time-based, Load-based, Apps, Deployments, Monitoring, Resources, Permissions, Tags (marked as NEW), Stacks, Users, and My Settings.

The main content area shows the 'Instances' page for the 'scms-prod-admin-owl' stack. It indicates 3 total instances, with 3 online, 0 pending, 0 stopping, 0 stopped, and 0 errors. A 'Stop All Instances' button is visible. The stack is using ELB: scms-prod-admin-elb.

A search bar allows searching for instances by name, status, size, type, AZ, or IP. The instance list table is as follows:

Hostname	Status	Size	Type	AZ	Public IP	Actions
admin-1-p	online	m4.large	24/7	us-east-1b	-	stop rdp

Below the table is a '+ Instance' link.

The 'scms-prod-commerce-owl' stack is also shown, using ELB: scms-prod-commerce-elb. It has two online instances:

Hostname	Status	Size	Type	AZ	Public IP	Actions
commerce-1-p	online	m4.large	24/7	us-east-1b	-	stop rdp
commerce-2-p	online	m4.large	24/7	us-east-1c	-	stop rdp

Below this table is also a '+ Instance' link.

At the bottom, a message states: 'You can add more layers to this stack.'

Jenkins – deployment pipeline

		raas-pipeline	12 days - raas-cloud-89	12 days - raas-cloud-88	1 min 36 sec
		registration-ms-ui-pipeline-dev	1 mo 22 days - tfapache-cloud-registration-129	2 mo 3 days - tfapache-cloud-registration-106	7 min 38 sec
		scms-pipeline	4 days 17 hr - scms-1.0-97	4 days 18 hr - scms-1.0-95	22 min
		scms-pipeline-dev	5 days 17 hr - scms-1.0-2	5 days 18 hr - scms-1.0-1	8 min 41 sec
		search-pipeline	1 hr 47 min - search-6.0-87	19 hr - search-7.0-83	2 min 56 sec
		Search-SVCS	N/A	N/A	N/A
		shared-list-pipeline-DEV	16 hr - sharedlist-1.0-86	4 days 18 hr - sharedlist-1.0-85	1 min 58 sec
		shared-list-pipeline-QA	12 days - sharedlist-1.0-54	21 days - sharedlist-1.0-42	3 min 0 sec

Jenkins scms-pipeline

ThermoFisher
SCIENTIFIC

DEV + QA

search

KEEN HAYNES | LOG OUT

Jenkins > DeploymentPipelines > scms-pipeline > ENABLE AUTO REFRESH

Up

Status

Changes

Build with Parameters

Configure

Move

Full Stage View

Pipeline Syntax

Pipeline scms-pipeline

Full project name: DeploymentPipelines/scms-pipeline

Recent Changes

add description

Build History

trend

find

scms-1.0-97
Aug 17, 2017 10:38 PM

scms-1.0-96
Aug 17, 2017 10:04 PM

scms-1.0-95
Aug 17, 2017 9:56 PM

scms-1.0-94
Aug 17, 2017 9:53 PM

scms-1.0-93
Aug 17, 2017 9:15 PM

scms-1.0-92
Aug 17, 2017 7:28 PM

scms-1.0-91
Aug 17, 2017 7:19 PM

scms-1.0-90
Aug 16, 2017 10:04 PM

scms-1.0-89
Aug 16, 2017 9:37 PM

scms-1.0-88
Aug 1, 2017 6:37 PM

Stage View

Average stage times:

	Building QA1	Deploying QA1
scms-1.0-97 Aug 17 17:38 No Changes	14min 6s	Success Logs
scms-1.0-96 Aug 17 17:04 No Changes	7min 41s	8min 27s
scms-1.0-95 Aug 17 16:56 No Changes	56s failed	
scms-1.0-94 Aug 17 16:53 No Changes	27s failed	
scms-1.0-93 Aug 17 16:15 No Changes	7min 14s	7min 45s
scms-1.0-92 Aug 17 14:28 No Changes	13min 9s	8min 24s

When is a success really a failure?



[22:20:24] {/apps/jenkins/workspace/DeploymentPipelines/scms-pipeline@2/util/opsworks_util.py:593} INFO - DEPLOYING APP VERSION scms-1.0-100 WITH ROLLBACK TO VERSION 1 IF ERROR ENCOUNTERED

[22:22:47] {/apps/jenkins/workspace/DeploymentPipelines/scms-pipeline@2/util/opsworks_util.py:723} WARNING - ROLLING BACK FROM APP VERSION scms-1.0-100 TO PREVIOUS APP VERSION 1

[22:26:10] {/apps/jenkins/workspace/DeploymentPipelines/scms-pipeline@2/util/opsworks_util.py:725} WARNING - ROLLBACK COMPLETE

The **AWS Management Console** is a browser-based GUI for Amazon Web Services (**AWS**). Through the **console**, a customer can manage their cloud computing, cloud storage and other resources running on the Amazon Web Services infrastructure.



Coming soon! We are updating the sign-in experience. [Learn more](#)

Sign In or Create an AWS Account

What is your email (phone for mobile accounts)?

E-mail or mobile number:

awsking@yahoo.com

☐ I am a new user.

☒ I am a returning user
and my password is:

Sign in using our secure server

[Forgot your password?](#)

Try AWS with a
10-Minute Tutorial



"Hello, World!" technical documents to
help you get started with AWS.

[View all tutorials](#)

Learn more about [AWS Identity and Access Management](#) and [AWS Multi-Factor Authentication](#), features that provide additional security for your AWS Account. View full [AWS Free Usage Tier](#) offer terms.

About Amazon.com Sign In

Amazon Web Services uses information from your Amazon.com account to identify you and allow access to Amazon Web Services. Your use of this site is governed by our Terms of Use and Privacy Policy linked below. Your use of Amazon Web Services products and services is governed by the AWS Customer Agreement linked below unless you purchase these products and services from an AWS Value Added Reseller. The AWS Customer Agreement was updated on June 28, 2017. For more information about these updates, see [Recent Changes](#).



[Terms of Use](#) [Privacy Policy](#) [AWS Customer Agreement](#) © 1996-2017, Amazon.com, Inc. or its affiliates

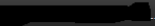
An  amazon.com company

The screenshot displays the AWS Management Console interface. At the top, there's a navigation bar with 'Services', 'Resource Groups', and a search bar. Below the navigation bar, the console is organized into a grid of service categories. On the left, a 'History' sidebar lists recently visited services: Console Home, S3, OpsWorks, EC2, Certificate Manager, and IAM. The main content area features a search bar and a grid of service categories, each with an icon and a list of services. Two red arrows are drawn on the image: one points to the 'S3' service under the 'Storage' category, and the other points to the 'OpsWorks' service under the 'Management Tools' category. The categories and their services are as follows:

- Compute**: EC2, EC2 Container Service, Lightsail, Elastic Beanstalk, Lambda, Batch
- Storage**: S3, EFS, Glacier, Storage Gateway
- Database**: RDS, DynamoDB, ElastiCache, Redshift
- Networking & Content Delivery**: VPC, CloudFront, Direct Connect, Route 53
- Migration**: AWS Migration Hub, Application Discovery Service, Database Migration Service, Server Migration Service, Snowball
- Developer Tools**: CodeStar, CodeCommit, CodeBuild, CodeDeploy, CodePipeline, X-Ray
- Management Tools**: CloudWatch, CloudFormation, CloudTrail, Config, OpsWorks, Service Catalog, Trusted Advisor, Managed Services
- Security, Identity & Compliance**: IAM, Inspector, Certificate Manager, Directory Service, WAF & Shield, Artifact, Amazon Macie, CloudHSM
- Analytics**: Athena, EMR, CloudSearch, Elasticsearch Service, Kinesis, Data Pipeline, QuickSight, AWS Glue
- Artificial Intelligence**: Lex, Polly, Rekognition, Machine Learning
- Internet Of Things**: AWS IoT, AWS Greengrass
- Contact Center**: Amazon Connect
- Game Development**: Amazon GameLift
- Mobile Services**: Mobile Hub, Cognito, Device Farm, Mobile Analytics, Pinpoint
- Application Services**: Step Functions, SWF, API Gateway, Elastic Transcoder
- Messaging**: Simple Queue Service, Simple Notification Service, SES
- Business Productivity**: WorkDocs, WorkMail, Amazon Chime
- Desktop & App Streaming**: WorkSpaces, AppStream 2.0

AWS Console – S3

 Services ▾ Resource Groups ▾ 

ADFS  Global ▾ Support ▾

Visualize S3 analytics data using Amazon QuickSight [Learn More »](#) [Documentation](#)

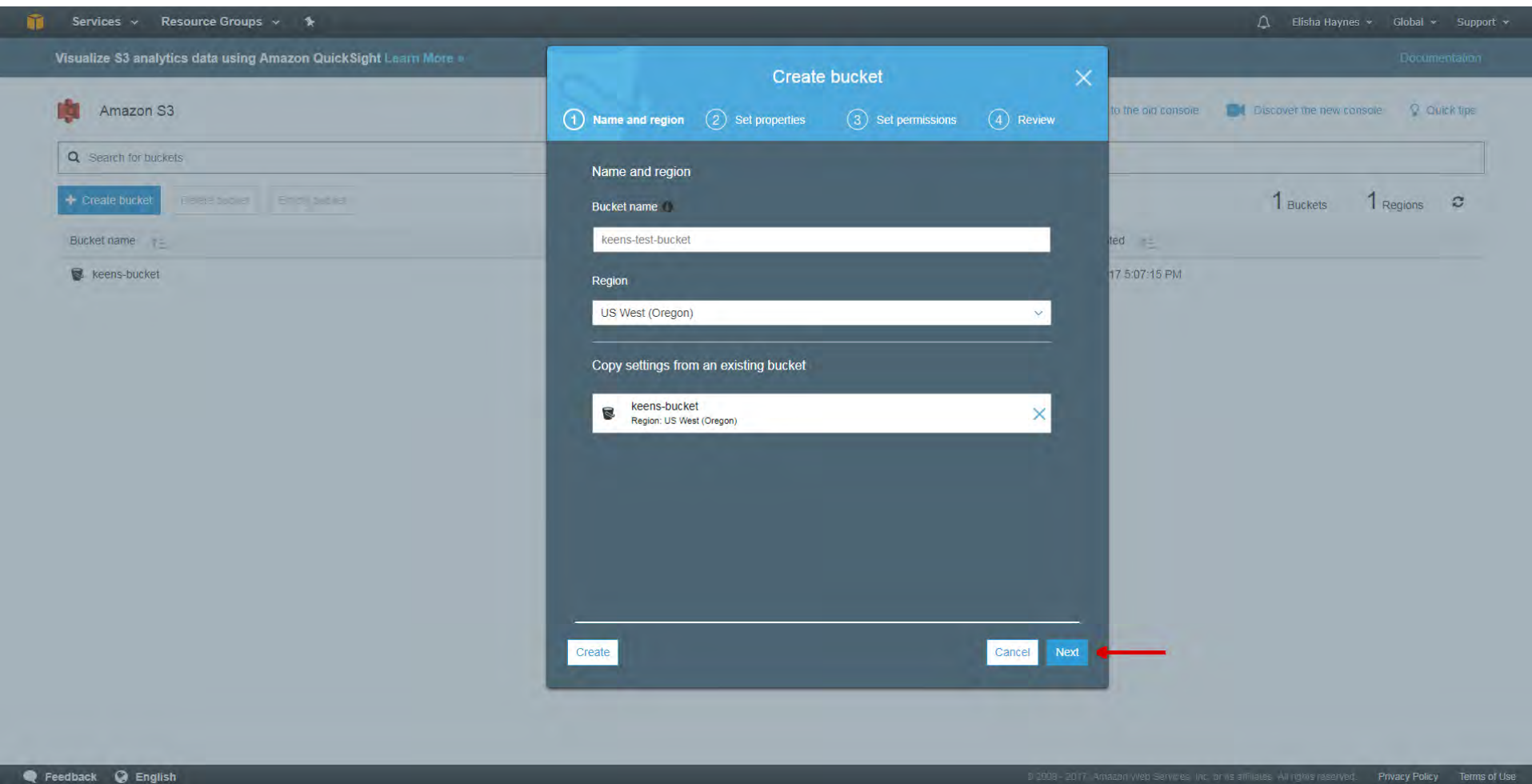
 Amazon S3

[Switch to the old console](#) [Discover the new console](#) [Quick tips](#)

[+ Create bucket](#) [Delete bucket](#) [Empty bucket](#)

102 Buckets 1 Regions 

AWS Console – S3



AWS Console – S3

The screenshot displays the AWS S3 console interface. A modal window titled "Create bucket" is open, showing the "Set properties" step. The wizard has four steps: 1. Name and region (checked), 2. Set properties (active), 3. Set permissions, and 4. Review. The "Set properties" step contains three sections: "Versioning" (Keep multiple versions of an object in the same bucket, Disabled), "Logging" (Set up access log records that provide details about access requests, Disabled), and "Tags" (Use tags to track your cost against projects or other criteria, 0 Tags). At the bottom of the modal, there are "Previous" and "Next" buttons. A red arrow points to the "Next" button. The background shows the S3 console with a search bar, a "Create bucket" button, and a list of buckets including "keens-bucket".

AWS Console – S3

Services ▾ Resource Groups ▾

Visualize S3 analytics data using Amazon QuickSight [Learn More](#)

Amazon S3

Search for buckets

[+ Create bucket](#) [Delete bucket](#) [Empty bucket](#)

Bucket name

keens-bucket

Documentation

to the old console [Discover the new console](#) [Quick tips](#)

1 Buckets 1 Regions [Refresh](#)

17 5:07:15 PM

Create bucket

1 Name and region 2 Set properties 3 Set permissions 4 Review

Manage users

User ID	Objects	Object permissions
keenallr(Owner)	<input checked="" type="checkbox"/> Read <input checked="" type="checkbox"/> Write	<input checked="" type="checkbox"/> Read <input checked="" type="checkbox"/> Write

Manage public permissions

Grant public read access to this bucket ▾

Do not grant public read access to this bucket (Recommended)

Grant public read access to this bucket ←

Do not grant Amazon S3 Log Delivery group write access to this bucket ▾

Previous Next ←

Feedback English

© 2009 - 2017, Amazon Web Services, Inc. or its affiliates. All rights reserved. [Privacy Policy](#) [Terms of Use](#)

AWS Console – S3

The screenshot shows the AWS S3 console with the 'Create bucket' wizard open. The wizard is in the 'Review' step, indicated by a blue circle with the number 4. The wizard displays the following information:

- Name and region:** Bucket name: keens-test-bucket, Region: US West (Oregon). There is an 'Edit' link next to the region.
- Properties:** Versioning: Disabled, Logging: Disabled, Tagging: 0 Tags. There is an 'Edit' link next to the properties.
- Permissions:** Users: 1, Public permissions: Disabled, System permissions: Disabled. There is an 'Edit' link next to the permissions.


At the bottom of the wizard, there are two buttons: 'Previous' and 'Create bucket'. A red arrow points to the 'Create bucket' button.

The background shows the AWS S3 console interface with a search bar, a 'Create bucket' button, and a list of buckets. The top navigation bar includes 'Services', 'Resource Groups', and user information. The bottom footer contains 'Feedback', 'English', and copyright information.

AWS Console – S3

Services ▾ Resource Groups ▾ ★

Visualize S3 analytics data using Amazon QuickSight [Learn More »](#)







 Amazon S3 Switch to the old console

Q Search for buckets

+ Create bucket

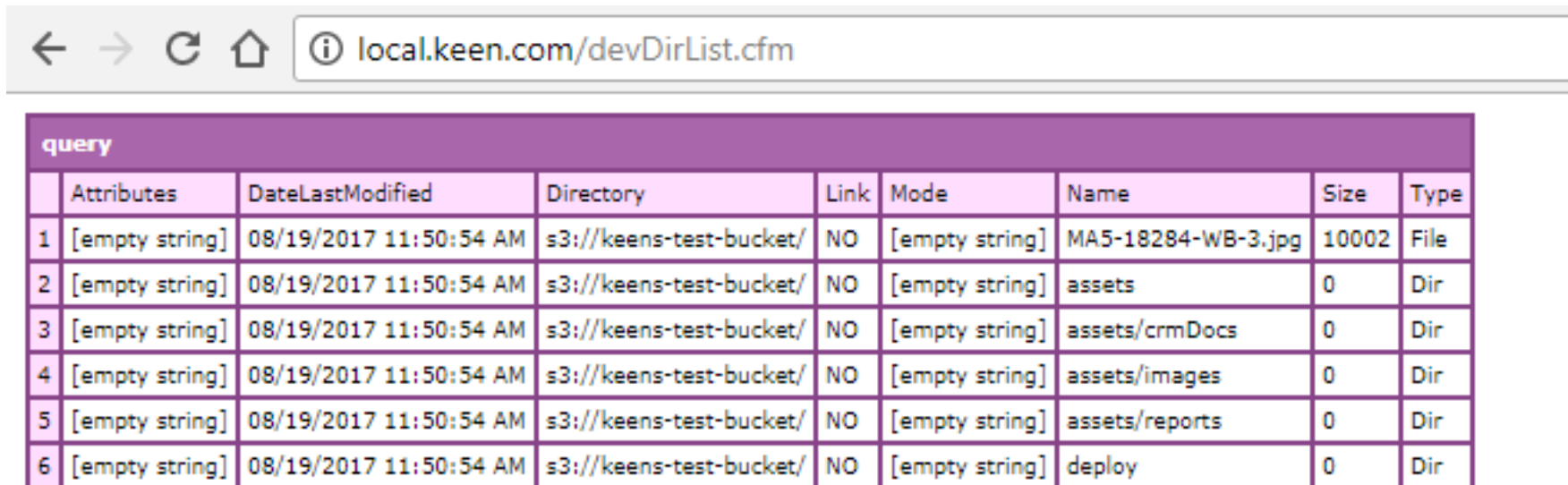
Delete bucket

Empty bucket

Bucket name 	Region 	Date created 
 keens-bucket	US West (Oregon)	Aug 4, 2017 5:07:15 PM
 keens-test-bucket 	US West (Oregon)	Aug 19, 2017 11:48:22 AM

```
<cfdirectory action="list" directory="s3://keens-test-bucket" name="dirList">
```

```
<cfdump var="#dirList#">
```



query	Attributes	DateLastModified	Directory	Link	Mode	Name	Size	Type
1	[empty string]	08/19/2017 11:50:54 AM	s3://keens-test-bucket/	NO	[empty string]	MA5-18284-WB-3.jpg	10002	File
2	[empty string]	08/19/2017 11:50:54 AM	s3://keens-test-bucket/	NO	[empty string]	assets	0	Dir
3	[empty string]	08/19/2017 11:50:54 AM	s3://keens-test-bucket/	NO	[empty string]	assets/crmDocs	0	Dir
4	[empty string]	08/19/2017 11:50:54 AM	s3://keens-test-bucket/	NO	[empty string]	assets/images	0	Dir
5	[empty string]	08/19/2017 11:50:54 AM	s3://keens-test-bucket/	NO	[empty string]	assets/reports	0	Dir
6	[empty string]	08/19/2017 11:50:54 AM	s3://keens-test-bucket/	NO	[empty string]	deploy	0	Dir

```
<cfinclude template="credentials.cfm">
```

```
<cfdirectory action="list"
    directory="s3://#s3.accessKeyId#:#s3.awsSecretKey#@keens-bucket"
    name="dirList">
```

```
<cfdump var="#dirList#">
```

query									
	Attributes	DateLastModified	Directory	Link	Mode	Name	Size	Type	
1	[empty string]	08/14/2017 12:51:43 PM	s3://AKIAJNLUYRWV57QHVVQAA:wqfMghMsTgD6rI/nu5XQ+o7CFOC7kGB3IA/Z1ikz@keens-bucket/	NO	[empty string]	MA5-18284-WB-3.jpg	10002	File	
2	[empty string]	08/19/2017 11:20:53 AM	s3://AKIAJNLUYRWV57QHVVQAA:wqfMghMsTgD6rI/nu5XQ+o7CFOC7kGB3IA/Z1ikz@keens-bucket/	NO	[empty string]	assets	0	Dir	
3	[empty string]	08/19/2017 11:21:37 AM	s3://AKIAJNLUYRWV57QHVVQAA:wqfMghMsTgD6rI/nu5XQ+o7CFOC7kGB3IA/Z1ikz@keens-bucket/	NO	[empty string]	assets/crmDocs	0	Dir	
4	[empty string]	08/19/2017 11:21:48 AM	s3://AKIAJNLUYRWV57QHVVQAA:wqfMghMsTgD6rI/nu5XQ+o7CFOC7kGB3IA/Z1ikz@keens-bucket/	NO	[empty string]	assets/images	0	Dir	
5	[empty string]	08/19/2017 11:22:06 AM	s3://AKIAJNLUYRWV57QHVVQAA:wqfMghMsTgD6rI/nu5XQ+o7CFOC7kGB3IA/Z1ikz@keens-bucket/	NO	[empty string]	assets/reports	0	Dir	
6	[empty string]	08/19/2017 11:21:11 AM	s3://AKIAJNLUYRWV57QHVVQAA:wqfMghMsTgD6rI/nu5XQ+o7CFOC7kGB3IA/Z1ikz@keens-bucket/	NO	[empty string]	deploy	0	Dir	

(In credentials.cfm)

```
<cfscript>
    s3.name = "Object Operations";
    s3.accessKeyId = "AKIAJNL.....";
    s3.awsSecretKey = "wqfMghMs.....";
    s3.defaultLocation = "us-west-2";
    s3.defaultBucket = "keen-test";
</cfscript>
```

(In Application.cfc)

```
<cfscript>
    this.s3.name = "Object Operations";
    this.s3.accessKeyId = "AKIAJNL.....";
    this.s3.awsSecretKey = "wqfMghMs.....";
    this.s3.defaultLocation = "us-west-2";
```

AWS Console – write / delete file with cffile

```
<cfset fileName = "s3://#s3.bucket#/assets/crmDocs/#xmlPacketName#">
```

```
<cfset fileName2 =  
"s3://#s3.accessKeyId#:#s3.awsSecretKey#@#s3.bucket#/assets/crmDoc  
s/#xmlPacketName#">
```

```
<CFFILE ACTION="WRITE" FILE="#fileName#"  
OUTPUT="#registrationXML#" addNewLine="no" charSet="utf-8">
```

```
<CFFILE ACTION="DELETE" FILE="#fileName2#" >
```

If you have set the accessKeyId and awsSecretKey in both the URL and Application.cfc, the value provided in the URL takes precedence.

```
<!-- s3 credentials --->  
<cfinclude template="/credentials/credentials.cfm">  
  
<cfset path = #s3.baseImageDir#>  
  
<cffile action="readBinary" file="#path##fileName#" variable="fileData"/>  
  
<cfset result = uploadToAmazonS3(fileName, fileData)/>
```

```
<cffunction name="uploadToAmazonS3">
  <cfargument name="fileName" required="true"/>
  <cfargument name="data" required="true"/>
  <cfargument name="bucket" default="#s3.bucket#"/>
  <cfargument name="acl" default="public-read"/>
  <cfargument name="accessKeyId" default="#s3.accessKeyId#"/>
  <cfargument name="secretKey" default="#s3.awsSecretKey#"/>

  <cfset var cs = "PUT\n\n#contentType#\n#dateTimeString#\nx-amz-
acl:#arguments.acl#\nx-amz-storage-
class:#arguments.storageClass#\n/#arguments.bucket#/#assetFile#/#arguments.fileName#"/>

  <cfset var signature = createSignature(cs, arguments.secretKey)/>
```

```
<cffunction name="createSignature" returntype="string" access="public" output="false">
  <cfargument name="cs" required="true"/>
  <cfargument name="secretKey" required="true"/>

  <!-- replace "\n" with "chr(10)" to get a correct digest --->
  <cfset var fixedData = replace(arguments.cs,"\n", chr(10), "all")/>

  <!-- calculate the hash of the information --->
  <cfset var digest = HMAC_SHA1(arguments.secretKey,fixedData)/>

  <!-- fix the returned data to be a proper signature --->
  <cfset var signature = ToBase64(digest)/>
  <cfreturn signature/>
</cffunction>
```

```
<cfhttp method="PUT" url="#urlstring#" timeout="#arguments.HTTPtimeout#"
result="response">
    <cfhttpparam type="header" name="Authorization" value="AWS
#arguments.accessKeyId#:#signature#"/>
    <cfhttpparam type="header" name="x-amz-acl"
value="#arguments.acl#"/>
```


AWS Console - OpsWorks

Services

Resource Groups

OpsWorks

Stacks

Select stack

OpsWorks Stacks

Stacks

Users

My Settings

OpsWorks for Chef Automate

Chef Automate servers

OpsWorks Stacks

Add stack

Register instances

Regional API endpoints are default for new stacks.

AWS OpsWorks changed the default API endpoint for new stacks created in the console. When you create a stack, the region of the API endpoint will match the region you choose for your stack. Be aware that if you create a stack in a different API endpoint, your existing AWS SDK or CLI tooling must support them, and might require changes.

scms

Stack name	Resource region	Layers	Instances	Apps	Actions
scms-qa1-ows	us-east-1	2	3	2	<div>edit clone delete</div>
scms-qa2-ows	us-east-1	2	2	2	<div>edit clone delete</div>
scms-qa3-ows	us-east-1	2	2	2	<div>edit clone delete</div>
scms-qa4-ows	us-east-1	2	2	2	<div>edit clone delete</div>
scms-qa5-ows	us-east-1	2	2	2	<div>edit clone delete</div>

+

Stack

Getting started

Getting Started Guide

Documentation

Learn more

Learn how to color-code your AWS OpsWorks stacks for better instance and resource tracking.

Learn how to quickly explore the Chef environment in AWS OpsWorks Stacks.

What's New?

AWS OpsWorks Stacks now supports Chef 12 for Linux.

Changelog

Chef 12 OpsWorks agent

Chef 11.10 OpsWorks agent

Feedback

English

© 2008 - 2017, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

AWS Console - OpsWorks

Services

Resource Groups

OpsWorks

Stacks

scms-qa1-ows

Stack

Layers

Instances

Time-based

Load-based

Apps

Deployments

Monitoring

Resources

Permissions

Tags

Stacks

Users

My Settings

ADFS-TFT

Global

Support

scms-qa1-ows

Run Command

Stack Settings

Delete Stack

A stack represents a collection of EC2 instances and related AWS resources that have a common purpose and that you want to manage collectively. Within a stack, you use layers to define the configuration of your instances and use apps to specify the code you want to deploy. [Learn more.](#)

Layers

Instances

Apps

Deployments and Commands

Resources

Monitoring

Permissions

Tags

scms-qa1-admin-owl

scms-qa1-commerce-owl

3

0

0

0

0

online

setting up

shutting down

error

scms-qa1-admin...

scms-qa1-comm...

deploy

deploy

3 days ago

TFAccountDevTrustedAutomationA...

3 days ago

TFAccountDevTrustedAutomationA...

3 days ago

TFAccountDevTrustedAutomationA...

3 days ago

TFAccountDevTrustedAutomationA...

The Resources page enables you to use any of your account's Elastic IP addresses, volumes, or RDS instances in your stack. [Register resources](#)

AWS OpsWorks uses Amazon CloudWatch to provide thirteen custom metrics with detailed monitoring for each instance in the stack. [Show monitoring](#)

Tags

AWS Console - OpsWorks

Services

Resource Groups

OpsWorks

Stacks

scms-qa1-ows

Stack

Layers

Instances

Time-based

Load-based

Apps

Deployments

Monitoring

Resources

Permissions

Tags

Stacks

Users

My Settings

ADFS-TFTeamAdminUserSCMS...

Global

Support

Instances

3 total

3 online

0 pending

0 stopped

0 error

Stop All Instances

scms-qa1-admin-owl

Using ELB: [scms-qa1-admin-elb](#)

Search for instances in this layer by name, status, size, type, AZ or IP

Hostname	Status	Size	Type	AZ	Public IP	Actions
admin-1-qa1	online	m4.large	24/7	us-east-1b	-	stop reboot

[+ Instance](#)

scms-qa1-commerce-owl

Using ELB: [scms-qa1-commerce-elb](#)

Search for instances in this layer by name, status, size, type, AZ or IP

Hostname	Status	Size	Type	AZ	Public IP	Actions
commerce-1-qa1	online	m4.large	24/7	us-east-1b	-	stop reboot
commerce-2-qa1	online	m4.large	24/7	us-east-1c	-	stop reboot

[+ Instance](#)

You can add more layers to this stack.

Feedback

English

© 2008 - 2017, Amazon Web Services, Inc. or its affiliates. All rights reserved.

Privacy Policy

Terms of Use

AWS Console - OpsWorks

Services

Resource Groups

OpsWorks

Stacks

scms-qa1-ows

Stack

Layers

Instances

Time-based

Load-based

Apps

Deployments

Monitoring

Resources

Permissions

Tags

Stacks

Users

My Settings

commercen-1-qa1

RDPRun CommandRebootStopEdit

Details

Hostname	commercen-1-qa1
Status	online
Layers	scms-qa1-commerce-owl
EC2 instance ID	i-0357509aad26d53c
OpsWorks ID	0c5ea1e7-4a04-4c21-bde8-7fdbaec59dbf
Instance type	24/7
Size	m4.large
Subnet	subnet-e6f7d6bd - qa-vpc-subnet-private-b-1 10.253.9.8.0/24 - us-east-1b
Operating system	Custom
AMI ID	ami-780a746e (scms-2017-05-16)
Reported OS	Microsoft windows server 2012 r2 standard
Reported OW Agent	71500020160927200752
Tenancy	default
Architecture	64bit
Virtualization type	hvm
EBS Optimized	yes
Root device type	EBS backed
Root device ID	vol-01d6299e6a3a34f34

Network and Security

Public DNS	-
Public IP	-
Private DNS	ip-10-253-09-104.ec2.internal

Elastic Load Balancing

scms-qa1-commerce-elb InService

Elastic IP

No Elastic IP. Manage in resources.

AWS Console – EC2

The screenshot shows the AWS Management Console interface for the EC2 service. The left sidebar contains navigation links for various AWS services. The main content area displays the details for an EC2 instance with ID `i-0357509aadc26d53c`. The instance is in a 'running' state and is associated with the key pair `dtd-opsworks-layer-default`. A modal dialog titled 'Retrieve Default Windows Administrator Password' is open, providing instructions on how to access the instance remotely. The dialog includes a text area with the encrypted password and a 'Decrypt Password' button.

Retrieve Default Windows Administrator Password

To access this instance remotely (e.g. Remote Desktop Connection), you will need your Windows Administrator password. A default password was created when the instance was launched and is available encrypted in the system log.

To decrypt your password, you will need your key pair for this instance. Browse to your key pair, or copy and paste the contents of your private key file into the text area below, then click Decrypt Password.

The following Key Pair was associated with this instance when it was created.

Key Name `dtd-opsworks-layer-default`

In order to retrieve your password you will need to specify the path of this Key Pair on your local machine:

Key Pair Path `Choose File` No file chosen

Or you can copy and paste the contents of the Key Pair below:

```
iDuX7vq9aWNI+WPWQNph6T3RJ3n0uYz5oKCZHAIQ4CYGQKBgQCdE0lI28QvN8sVaB1DNkkqypXk
1u3nGCX2Ooq5A5qxFlPbzGwXNCW4dvTs73DXJ2UEe2k6PUGS6MZu3xPPBT+IB3r7be3tZRX6USn
aVXof5uqYd075TyEo7zvddp6kA5YhwWp4l/zh8QIOUIdKcGtGLmuDlvsEFQj1r8zBn3QXg==
-----END RSA PRIVATE KEY-----
```

Cancel **Decrypt Password**

OpsWorks – EC2

The screenshot shows the AWS OpsWorks console interface. A modal dialog box titled "Retrieve Default Windows Administrator Password" is open in the center. The dialog contains two main sections: a green success message and an orange warning message. Below these, it provides connection information for the instance.

Retrieve Default Windows Administrator Password

✓ Password Decryption Successful
The password for instance i-0357509aadc26d53c (scms-qa1-ows - commerce-1-qa1) was successfully decrypted.

⚠ Password change recommended
We recommend that you change your default password. Note: If a default password is changed, it cannot be retrieved through this tool. It's important that you change your password to one that you will remember.

You can connect remotely using this information:

Private IP 10.253.98.194
User name Administrator
Password [REDACTED]

Close

The background shows the AWS OpsWorks console with a table of instances. The instance "scms-qa1-ows - commerce-1-qa1" is highlighted. The console also shows a sidebar with navigation links and a top navigation bar with the AWS logo and user information.



- Open source system integration framework – benefits of configuration management to infrastructure
- Integrated with **AWS OpsWorks** for handling instance configuration updates
- Performs custom tasks for each app, such as:
 - Installing software and packages (e.g. ColdFusion, IIS)
 - Pulls resources from secure AWS storage (S3) for deployment

Chef Config – envname-scms.yaml

```
s3:
  resource-bucket: scms-bucket-name
layers:
  # commerce
  - instance:
      type: m3.large
      count-247: 2 (tells OpsWorks how many servers to build)
      scaling-load:
        count: 0
      scaling-time:
        count-weekday: 0
        count-weekend: 0
        count-custom: 0
  # admin
  - instance:
      type: m3.large
      count-247: 1
      scaling-load:
        count: 0
      scaling-time:
        count-weekday: 0
        count-weekend: 0
        count-custom: 0
```


Chef Config – dev-scms.yaml

```
tf_gis:
  ansible_register_enabled: true

tf_scms:
  max_jvm: Xmx512m
  min_jvm: Xms512m
  server_environment: 'dev'
  server_hostname: 'commerce.dev.thermofisher.com'

ecom:
  primary_db: zue1-XXXXXXXXXX.thermofisher.biz
  secondary_db: zue1-XXXXXXXXXX.thermofisher.biz
  service: ECOMCD
  user_name: scms_user
  user_password: wVPZ6btFkO1F3LDWE6kFjk2Xk=

e1_oracle:
  primary_db: x04e1s-XXXXXXXXXX.thermo.com
  service: E1V9IPY
  user_name: SCMSIFACE
  user_password: cMdYXzxvtwZ3M2lfKYZQ/SY=
```

```
Chef::Log.info("EXECUTING SETUP PHASE RECIPE -- PLATFORM-----***** " +
"#{node['platform']}")

#Sets common attributes
include_recipe 'tf_scms::_common_set_attributes'

#Stop CF Windows Service
include_recipe 'tf_scms::_setup_1_cfstop'

#Update jvm.config
include_recipe 'tf_scms::_setup_2_jvmconfig'

#Update neo-datasources.xml
include_recipe 'tf_scms::_setup_4_neodatasource'

#Update neo-cron.xml
include_recipe 'tf_scms::_setup_5_neocron'
```

```
Chef::Log.info('*** start cfstop')
```

```
#stop cf windows services
```

```
include_recipe 'tf_scms::_cfstop'
```

```
Chef::Log.info('*** stop cfstop')
```

_cfstop.rb

```
service_names = ['ColdFusion 2016 Application Server','ColdFusion 2016 .NET  
Service','ColdFusion2016Add-onServices','ColdFusion 2016 ODBC Agent','ColdFusion  
2016 ODBC Server']
```

```
service_names.each do |service_name|  
  service "#{service_name}" do  
    action :stop  
    timeout 300  
  end  
end
```

```
Chef::Log.info('*** start jvmconfig')

#app = search("aws_opsworks_app").first

# directory should already exist
directory "#{node['tf_scms']['cf_home']}/bin" do
  recursive true
end

template "#{node['tf_scms']['cf_home']}/bin/jvm.config" do
  variables(
    min_jvm: node['tf_scms']['min_jvm'],
    max_jvm: node['tf_scms']['max_jvm'],
    server_environment: node['tf_scms']['server_environment'],
    server_hostname: node['tf_scms']['server_hostname']
  )
  source 'jvm.config.erb'
end

Chef::Log.info('*** stop jvmconfig')
```

```
java.home=D:\\ColdFusion2016\\jre  
application.home=D:\\ColdFusion2016\\cfusion
```

Arguments to VM

```
java.args=-server -<%= @min_jvm %> -<%= @max_jvm %> -Xdebug -  
Xrunjdwp:transport=dt_socket,server=y,suspend=n,address=5005 -XX:MaxMetaspaceSize=192m -  
XX:+UseParallelGC -Xbatch -Dges.config.serverEnvironment=development -  
Dcoldfusion.home={application.home} -Duser.language=en -Dcoldfusion.rootDir={application.home}  
Dges.config.serverEnvironment=<%= @server_environment %> -  
Dges.config.webServerHostName=<%= @server_hostname %> -  
Dcoldfusion.classPath={application.home}/lib/updates,{application.home}/lib,{application.home}/lib/  
axis2,{application.home}/gateway/lib/{application.home}/wwwroot/WEB-  
INF/flex/jars,{application.home}/wwwroot/WEB-INF/cfform/jars
```

Comma separated list of shared library path

```
java.library.path={application.home}/lib/international
```

```
java.class.path={application.home}/lib/oosdk/lib,{application.home}/lib/oosdk/classes
```

Cookbooks / Recipes – _setup_5_neocron

```
::Chef::Recipe.send(:include, TFAWSCommon::Functions)

app_short_name = get_opsworks_app_name
search_criteria = "shortname:#{app_short_name}"
Chef::Log.info("Searching for app #{search_criteria}")
app = search("aws_opsworks_app", "#{search_criteria}").first

template "#{node['tf_scms']['cf_home']}/lib/neo-cron.xml" do
  if app['environment']['layer'] == 'commerce'
    source 'commerce-neo-cron.xml.erb'
  elsif app['environment']['layer'] == 'admin'
    source 'admin-neo-cron.xml.erb'
  else
    Chef::Log.fatal("***** Unknown layer ***** ")
  end
end

End
```

```
## download the shared-static file from S3
aws_s3_file local_scms_file_path do
  bucket s3_bucket_name
  remote_path s3_path
  region s3_region
end
```

```
Chef::Log.info('*** start unzip')
## unzip the scms
windows_zipfile "D:\\web\\scms" do
  source local_scms_file_path
  action :unzip
  overwrite true
end
```

```
Chef::Log.info('*** stop unzip')
```

```
Chef::Log.info('*** start cfstart deploy')
```

```
#stop cf windows services
include_recipe 'tf_scms::_cfstart'
```

```
Chef::Log.info('*** stop cfstart deploy')
```

The API Manager

Why API Management?



Security & Access



Versioning



Analytics



Documentation



SLA



Caching



Testing



Portals

API Manager vs API Gateway

API Gateway – acts as an interface (front door) to services, offering possibly authorization and authentication semantics. Some API Gateways provide some additional functionality but basic concept remains.

API Manager - provide functionality like versioning, caching, rate limiting, usage reporting, credential administration, diagnostics, scalability, access control and security. Provides a API Gateway

- Speedy**
 - Throughput on single node – More than a billion requests per day!
 - Negligible latency for thousands of concurrent users – less than 30ms
- Scalable**
 - Throughput – 1.8x per additional node
 - Users – 2x more per additional node
 - Latency – continues to be less than 30ms
- Simple**
 - Easy to import / create APIs
 - Intuitive user interface
 - Easy to comprehend analytics interface
 - Simplified and distinct API workflows
 - Built for integration with ColdFusion

- 100% open source, yet with support (multiple partners to include yento)
- Offer APIs to their customers and partners, as well as other internal users.
- Display and promote APIs in an API store
- Enable developers to sign up and subscribe to APIs
- Collect usage, performance, and quality of service metrics to analyze and understand how APIs are being used
- Use a policy-based approach to securing APIs, managing access, and throttling usage.
- Supports publishing SOAP, REST, JSON, and XML style services as APIs
- Generate SDKs for multiple languages – **does not include ColdFusion**
- Cloud based SaaS solution that you can have up and running in minutes

Metering. You define a set of plans, configure throttling, and quota limits on a per API key basis. API Gateway automatically meters traffic to your APIs and lets you extract utilization data for each API key.

Security. API Gateway provides you with multiple tools to authorize access to your APIs and control service operation access. Amazon API Gateway allows you to leverage AWS administration and security tools, such as AWS Identity and Access Management (IAM) and Amazon Cognito, to authorize access to your APIs.

Operations Monitoring. The Amazon API Gateway dashboard, through integration with Amazon CloudWatch, provides you with backend performance metrics covering API calls, latency data and error rates. You can enable detailed metrics for each method in your APIs and also receive error, access or debug logs in CloudWatch Logs.

Lifecycle Management. API Gateway lets you operate multiple API versions and multiple stages for each version simultaneously so that existing applications can continue to call previous versions after new API versions are published.

Helpful Links

- [Why Move To The Cloud? 10 Benefits Of Cloud Computing](#)
- [Moving to the cloud? Three things to think about before you make the jump](#)
- [5 Financial Benefits of Moving to the Cloud](#)
- [AWS Training and Certification](#)
- [10-Minute Tutorials with Amazon Web Services \(AWS\)](#)
- [AWS and Chef](#)
- [Alternatives to Chef](#)
- [Chef basics](#)
- [AWS Management Console - Amazon Web Services](#)
- [Jenkins](#)
- [Deploying Jenkins On AWS](#)
- [Jenkins Alternatives](#)
- [Adobe API Manager](#)
- [WSO2](#)
- [ColdFusion \(2016 release\) on Cloud – Adobe](#)
- [Installing ColdFusion Silently](#)
- [GitHub - wharton/chef-coldfusion10: Chef cookbook to install ColdFusion 10.](#)
- [Upload to Amazon S3](#)
- [Chef Examples](#)
- [CF Summit AWS Real World Example](#)

QUESTIONS?

keen.haynes@thermofisher.com

keen@focusedoncf.com

<http://focusedoncf.com>