

Hands-on MarkLogic in the Cloud Workshop (AWS)

Unit 1

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Unit 1 - Create the MarkLogic Cluster

In unit 1, we will create a three node MarkLogic cluster using CloudFormation templates on Amazon Web Services. For our purposes, a **node** is an Amazon EC2 server instance running MarkLogic. A **cluster** is one or more MarkLogic nodes working together.

It's simple to create a MarkLogic cluster in Amazon Web Services. But before you do, you should become familiar with the process. It's highly recommended to read through the [MarkLogic Server on Amazon EC2 Guide](#).

An overview of the procedures follows with links to MarkLogic documentation.

Procedure	For Details See...
If you don't already have an Amazon EC2 account, create one.	Creating an Amazon EC2 Account
Enable a MarkLogic Server AMI.	Enabling a MarkLogic Server for EC2 AMI
Open the Amazon AWS Management Console.	Accessing the AWS Management Console
Create an IAM role.	Creating an IAM Role
If you don't already have a key pair, create one.	Creating a Key Pair
Create a Simple Notification Service (SNS) Topic.	Creating a Simple Notification Service (SNS) Topic
Create CloudFormation stack from a CloudFormation template.	Deploying MarkLogic on EC2 Using CloudFormation
Open the MarkLogic Server Admin interface.	Accessing a MarkLogic Server Instance

Process to Create a MarkLogic Cluster using CloudFormation Templates (ALREADY COMPLETED)

Before starting, make sure you have done the following.

- You have created an IAM Role to use for your MarkLogic cluster.
- You have created an EC2 Key-Pair to securely shell into your MarkLogic cluster.

Let's begin.

Enable a MarkLogic AMI (ALREADY COMPLETED)

1. Go to <https://aws.amazon.com/marketplace> .
2. In the top search bar, leave the dropdown at the default setting of **AMI & SaaS** then enter the search term **marklogic** .
3. Click the Search icon or press the ENTER key to begin the search.
4. In the results, click on **MarkLogic Developer 9**.

The screenshot shows the AWS Marketplace search results page. The search term 'marklogic' has returned 5 results. The results are listed below, each with a title, rating, version, seller, description, and a link to the product details page.

marklogic (5 results) showing 1 - 5

MarkLogic Developer 9
★★★★★ (0) | Version 9.0-4 | Sold by **MarkLogic**
MarkLogic for AWS Marketplace is the only Enterprise NoSQL database. It is a new generation database built with a flexible data model to store, manage, and search JSON, XML, ...
Linux/Unix, Amazon Linux 2017.03 - 64-bit Amazon Machine Image (AMI)

MarkLogic Essential Enterprise 9
★★★★★ (0) | Version 9.0-4 | Sold by **MarkLogic**
Starting from \$0.99/hr or from \$4,500.00/yr (up to 48% savings) for software + AWS usage fees
MarkLogic for AWS Marketplace is the only Enterprise NoSQL database. It is a new generation database built with a flexible data model to store, manage, and search JSON, XML, ...
Linux/Unix, Amazon Linux 2017.09 - 64-bit Amazon Machine Image (AMI)

MarkLogic Developer 8
★★★★★ (0) | Version 8.0-8 | Sold by **MarkLogic**
MarkLogic for AWS Marketplace is the only Enterprise NoSQL database. It is a new generation database built with a flexible data model to store, manage, and search JSON, XML, ...
Linux/Unix, Amazon Linux 2017.09 - 64-bit Amazon Machine Image (AMI)

MarkLogic Essential Enterprise 8
★★★★★ (0) | Version 8.0-8 | Sold by **MarkLogic**
Starting from \$0.99/hr or from \$4,500.00/yr (48% savings) for software + AWS usage fees
MarkLogic for AWS Marketplace is the only Enterprise NoSQL database. It is a new generation database built with a flexible data model to store, manage, and search JSON, XML, ...
Linux/Unix, Amazon Linux 2017.09 - 64-bit Amazon Machine Image (AMI)

5. Click the **Continue to Subscribe** button.
6. Click the **Service Catalog** tab.
7. Click the **Accept Software Terms** button.

Launch on EC2:
MarkLogic Developer 9

1-Click Launch
Review, modify and launch

Manual Launch
With EC2 Console, API or CLI

Service Catalog
Copy to SC and Launch

Click Accept Software Terms to copy this software to Service Catalog

After you accept the terms, you can copy any version of this software to Service Catalog in any region where the service is supported. You can then manage and launch the software from Service Catalog. [Learn more about Service Catalog](#).

Version
9.0-4, released 02/22/2019

Copy to Service Catalog

Select a region into which to copy the software. Repeat this process for each region you choose.

Service Catalog Region
Asia Pacific (Mumbai)

To view pricing information use the region selector to the right

Product: MarkLogic Developer 9

Choose the versions to copy to the selected region. Each time you complete a copy operation, a new entry will be created in Service Catalog, even if an identical entry already exists.

Price for your Selections:
Price will be dependent on usage

Accept Software Terms

You will be subscribed to this software and agree that your use of this software is subject to the pricing terms and the seller's [End User License Agreement \(EULA\)](#) and your use of AWS services is subject to the [AWS Customer Agreement](#).

Pricing Information
Use the Region dropdown selector to see software and infrastructure pricing information for the chosen AWS region.

For Region
US East (N. Virginia)

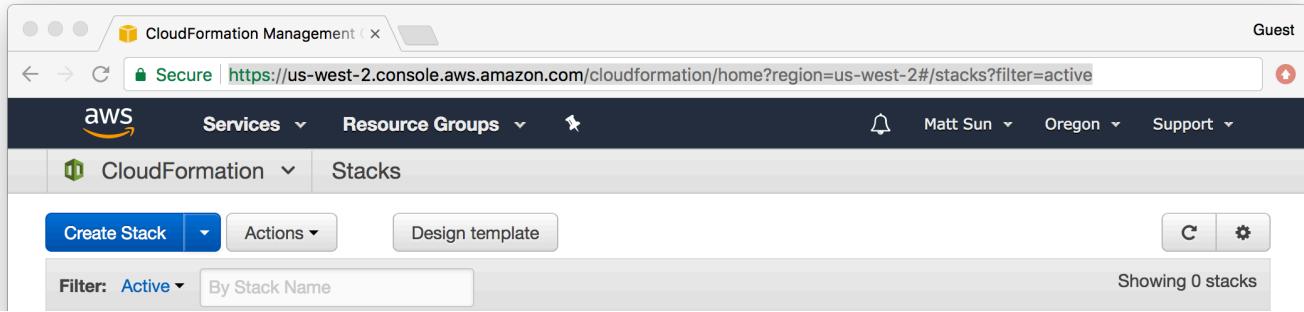
Free Tier Eligible EC2 charges for Micro instances are free for up to **750 hours** a month if you qualify for the [AWS Free Tier](#).

Bring Your Own License (BYOL) Available for customers with current licenses purchased via other channels.

8. You've now subscribed to the MarkLogic AMI and can proceed to use a CloudFormation template to create your running instance.

Launch your cluster using a CloudFormation template

1. Log in via the link provided and with the your credentials.
2. Go to [CloudFormation page](#) of AWS Web Console. Change your region at the top right corner to **Oregon**. For the purpose of this excercise, we are using this region (US West 2).



3. Click the **Create stack** button.
4. In the **Select Template** section, select the radio button "Specify an Amazon S3 template URL". Copy and paste the URL to the `mlcluster-vpc.template` provided.

CloudFormation Management > Stacks > Create Stack

Create stack

Select Template

Select the template that describes the stack that you want to create. A stack is a group of related resources that you manage as a single unit.

Design a template Use AWS CloudFormation Designer to create or modify an existing template. [Learn more.](#)

Choose a template A template is a JSON/YAML-formatted text file that describes your stack's resources and their properties. [Learn more.](#)

Select a sample template

Upload a template to Amazon S3
Choose File No file chosen

Specify an Amazon S3 template URL
https://s3-us-west-2.amazonaws.com/cf-templates-g11hbnbsw4v0-us- [View/Edit template in Designer](#)

Cancel Next

5. Click the **Next** button.

Screenshot of the AWS CloudFormation 'Create Stack' wizard - Step 2: Specify Details.

The page shows the 'Specify Details' step selected in the left sidebar. The main area displays configuration options:

- Stack name:** development-env
- Resource Configuration:**
 - IAM Role:** myRole
 - Volume Size:** 10 (The EBS Data volume size (GB) for all nodes)
 - Volume Type:** gp2 (The EBS Data volume Type)
 - Instance Type:** c3.large (Type of EC2 instance to launch)
 - Spot Price:** 0 (Spot price for instances in USD/Hour – Optional/advanced)

6. Fill in the following information.

- Stack Name - a **unique** stack name across the account (example: your full name). Take a note of this stack name. You will need it later for tags.
- IAM Role - a previously created Identity and Access Management role name. **Use the value provided.**
- Volume Size - leave at the default of 10 GB.
- Volume Type - leave at the default.
- Instance Type - Use **m3.medium** for this exercise.
- Spot Price - leave at the default.
- SSH Key Name - a previously created EC2 Key-Pair name. **Use the value provided.**
- Number of Zones - leave at the default of 3.
- Nodes Per Zone - total number of nodes per Zone. Leave this at 1 to create a simple 3-node cluster.
- Availability Zone - select **us-west-2a, us-west-2b** and **us-west-2c** from dropdown menu.
- Instance Public IP - leave at the default of disable.

- Logging SNS ARN - optional. Leave at the default value.
- VPC CIDR - leave at the default value.
- Subnet 1 CIDR - leave at the default value.
- Subnet 2 CIDR - leave at the default value.
- Subnet 3 CIDR - leave at the default value.
- Admin User - the MarkLogic administrator user name. The user and password will be created when the cluster is created. We will use `mlwadmin` for the administrator name.
- Admin Password - the MarkLogic administrator user password. The user and password will be created when the cluster is created. We will use `MarkLogicWorld_2018` as the password.
- Licensee - leave at the default value "none" to use the included Developer's License.
- LicenseKey - leave at the default value "none"

7. Click the **Next** button.
8. On the **Options** page, create a tag with key as `Name` and value as your stack name specified in the previous page. Leave all other settings to the defaults, scroll to the bottom and click the **Next** button.

Create stack

Options

Tags

You can specify tags (key-value pairs) for resources in your stack. You can add up to 50 unique key-value pairs for each stack. [Learn more.](#)

Key	(127 characters maximum)	Value	(255 characters maximum)
1	Name	development-env	+

Permissions

You can choose an IAM role that CloudFormation uses to create, modify, or delete resources in the stack. If you don't choose a role, CloudFormation uses the permissions defined in your account. [Learn more.](#)

IAM Role Choose a role (optional)

Enter role arn

Rollback Triggers

Rollback triggers enable you to have AWS CloudFormation monitor the state of your application during stack creation and updating, and to rollback that operation if the application breaches the threshold of any of the alarms you've specified. [Learn more.](#)

9. On the **Review** page, scroll to the bottom and check the box "I acknowledge that AWS CloudFormation might create IAM resources with custom names". This is to authorize CloudFormation to create IAM role based on the permissions specified in the template. Then click the **Create** button.

The screenshot shows the 'Create A New Stack' review page. At the top, there are three circular progress indicators followed by the title 'Create A New Stack'. To the right is a 'Guest' link. Below the title is a URL bar showing 'Secure | https://us-west-2.console.aws.amazon.com/cloudformation/home?region=us-west-2#/stacks/new?templateURL=https%3A%2F%2F...'. The main content area includes sections for monitoring, rollback triggers, and advanced settings. Under 'Advanced', there is a table:

Notification	
Termination Protection	Disabled
Timeout	none
Rollback on failure	Yes

Below this is a 'Capabilities' section containing a message about required IAM resources:

i The following resource(s) require capabilities: [AWS::CloudFormation::Stack]
This template contains Identity and Access Management (IAM) resources. Check that you want to create each of these resources and that they have the minimum required permissions. In addition, they have custom names. Check that the custom names are unique within your AWS account. [Learn more.](#)

A checkbox labeled 'I acknowledge that AWS CloudFormation might create IAM resources with custom names.' is checked. At the bottom of the page are links for 'Feedback', 'English (US)', and 'Create Stack'. The footer includes copyright information: '© 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved.', 'Privacy Policy', and 'Terms of Use'.

10. You are returned to the **Create Stack** page while your CloudFormation stack is being created.
11. After the stack is created, the page will refresh with the name of your completed stack. You should expect to see "CREATE COMPLETE" of your stack. This process may take up to 10 minutes.

The screenshot shows the AWS CloudFormation Management console. The top navigation bar includes tabs for 'CloudFormation Management' and 'AWS SNS'. The main header shows 'Guest', the URL 'Secure | https://us-west-2.console.aws.amazon.com/cloudformation/home?region=us-west-2#/stacks?tab=overview&filter=active&st...', and user information 'matt.sun @ marklogic' with dropdown menus for 'Oregon' and 'Support'.

The main content area is titled 'Stacks' under 'CloudFormation'. It features a search bar with 'Filter: Active' and a search term 'development'. Below the search is a table with the following columns: Stack Name, Created Time, Status, and Description. The table lists five stacks, with the last one, 'development-env', having a checked checkbox in the first column and highlighted in blue.

	Stack Name	Created Time	Status	Description
<input type="checkbox"/>	development-env-NodeMgrL...	2018-04-08 17:27:09 UTC-0700	CREATE_COMPLETE	Launch Lambda functio...
<input type="checkbox"/>	development-env-ManagedE...	2018-04-08 17:26:32 UTC-0700	CREATE_COMPLETE	Launch Managed ENI f...
<input type="checkbox"/>	development-env-VpcStack...	2018-04-08 17:25:31 UTC-0700	CREATE_COMPLETE	Create interface endpoint...
<input type="checkbox"/>	development-env-VpcStack...	2018-04-08 17:24:48 UTC-0700	CREATE_COMPLETE	Create a VPC for MarkL...
<input checked="" type="checkbox"/>	development-env	2018-04-08 17:24:42 UTC-0700	CREATE_COMPLETE	Deploy a MarkLogic Cl...

Below the table, there is a section titled 'Overview' with the following details:

- Stack name:** development-env
- Stack ID:** arn:aws:cloudformation:us-west-2:027394069461:stack/development-env/66042cd0-3b8c-11e8-94a1-50a68a2012f2
- Status:** CREATE_COMPLETE
- Status reason:** (empty)
- Termination protection:** Disabled
- IAM role:** (empty)

At the bottom of the page are links for 'Feedback', 'English (US)', '© 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved.', 'Privacy Policy', and 'Terms of Use'.

12. Scroll down to find the **Outputs** tab, click it.
13. The URL to access MarkLogic's Administrative Interface page on port 8001 is in the **Value** column.
Note this URL to use later.

The screenshot shows the AWS CloudFormation Management console. At the top, there are tabs for 'CloudFormation Management' and 'AWS SNS'. The main navigation bar includes 'Services', 'Resource Groups', and 'CloudFormation'. The 'CloudFormation' dropdown is open, showing 'Stacks'. The top navigation bar also displays the user 'matt.sun @ marklogic', location 'Oregon', and support links.

The main content area is titled 'Stacks' and shows a table of five stacks. A filter bar at the top of the table says 'Filter: Active' and has a dropdown set to 'development'. To the right, it says 'Showing 5 stacks'. The table columns are 'Stack Name', 'Created Time', 'Status', and 'Description'. The first four stacks are collapsed (indicated by a minus sign), while the fifth stack, 'development-env', is expanded, showing its detailed configuration.

The expanded 'development-env' stack details are as follows:

Output	Value	Description	Export Name
http://developeme-ElasticL-1S8S9T	TCQC4CT-1028959607.us-west-2.elb.amazonaws.com:8001	The URL of the MarkLogic Cluster	

At the bottom left, a sidebar menu lists options: Overview, Outputs (which is selected and highlighted in orange), Resources, Events, Template, Parameters, Tags, Stack Policy, Change Sets, and Rollback Triggers. The bottom right of the page includes links for 'English (US)', '© 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved.', 'Privacy Policy', and 'Terms of Use'.

Check the Status of the New Instance

1. Open another tab in your browser.
2. Go to the AWS Console page at <https://console.aws.amazon.com>.
3. In the **Compute** section, click on **EC2**.
4. On the left side, click on **Instances** in the **Instances** group.

The screenshot shows the AWS EC2 Management Console interface. On the left, there's a navigation sidebar with links like EC2 Dashboard, Events, Tags, Reports, Limits, Instances, Launch Templates, Spot Requests, Reserved Instances, Dedicated Hosts, Scheduled Instances, Images, AMIs, Bundle Tasks, Elastic Block Store, Volumes, Snapshots, Network & Security, Security Groups, Elastic IPs, Placement Groups, and Key Pairs. The main area has tabs for Launch Instance, Connect, and Actions. A search bar at the top says "Name : development-env". Below it is a table of instances with columns for Name, Instance ID, Instance Type, Availability Zone, Instance State, and Status Checks. The table shows three rows of data. At the bottom, there's a detailed view for the first instance, showing fields like Instance ID, Instance state, Instance type, Elastic IPs, Availability zone, Security groups, Scheduled events, Public DNS (IPv4), IPv4 Public IP, IPv6 IPs, Private DNS, Private IPs, Secondary private IPs, and VPC ID.

5. In the list of EC2 instances, make sure the state is `started` in the **Instance State** column and the **Status Checks** column is `2/2 checks passed` with a green checkmark icon.
6. If the status passes both checks, the instance has started successfully.

Check the Status of the New Cluster

Note: it takes approximately 10 to 15 minutes for the created MarkLogic server instances to pass their validation checks and initialize MarkLogic clusters.

1. Go to CloudFormation page at <https://us-west-2.console.aws.amazon.com/cloudformation/home>
2. Select the stack you just created. Note that you should select the parent stack, not those substacks with a "NESTED" label.
3. Click on the **Resource** tab at the bottom.
4. From the list of resources, find the ElasticLoadBalancer. Most likely, it's on top.
5. Click on the **Physical ID** of ElasticLoadBalancer. You will be redirected to ElasticLoadBalancer page.

The screenshot shows the AWS CloudFormation Management console. At the top, there's a navigation bar with 'Services' (selected), 'Resource Groups', 'EC2', 'S3', 'VPC', 'CloudWatch', 'DynamoDB', and 'Support'. Below the navigation is a search bar with 'development-env' and a filter dropdown set to 'Active'. The main area displays a table of stacks:

Stack Name	Stack ID	Created Time	Status	Status Reason
development-env-NodeMgr...	arn:aws:cloudformation...	2018-04-25 13:27:33 UTC-0700	CREATE_COMPLETE	
development-env-ManagedE...	arn:aws:cloudformation...	2018-04-25 13:26:42 UTC-0700	CREATE_COMPLETE	
development-env-VpcStack...	arn:aws:cloudformation...	2018-04-25 13:24:07 UTC-0700	CREATE_COMPLETE	
development-env-VpcStack...	arn:aws:cloudformation...	2018-04-25 13:23:24 UTC-0700	CREATE_COMPLETE	
development-env	arn:aws:cloudformation...	2018-04-25 13:23:18 UTC-0700	CREATE_COMPLETE	

Below the stack list is a tab navigation bar with 'Overview', 'Outputs', 'Resources' (selected), 'Events', 'Template', 'Parameters', 'Tags', 'Stack Policy', 'Change Sets', and 'Rollback Triggers'. Under the 'Resources' tab, there's another table showing detailed resource information:

Logical ID	Physical ID	Type	Status	Status Reason
ElasticLoadBalancer	developme-ElasticL-9HIEUVJKFUL4	AWS::ElasticLoadBalancing::Load...	CREATE_COMPLETE	
ElbSecurityGroup	sg-8b88cbf5	AWS::EC2::SecurityGroup	CREATE_COMPLETE	
InstanceRecoveryAlarm1	development-env-InstanceRecoveryAlarm1-5L62WDDGCU...	AWS::CloudWatch::Alarm	CREATE_COMPLETE	
InstanceRecoveryAlarm2	development-env-InstanceRecoveryAlarm2-15IW28UXVDLU...	AWS::CloudWatch::Alarm	CREATE_COMPLETE	
InstanceRecoveryAlarm3	development-env-InstanceRecoveryAlarm3-R4LVB6MX1AZU...	AWS::CloudWatch::Alarm	CREATE_COMPLETE	
InstanceSecurityGroup	sg-938dceed	AWS::EC2::SecurityGroup	CREATE_COMPLETE	

At the bottom of the page are links for 'Feedback', 'English (US)', and copyright information: '© 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved.' and 'Privacy Policy' and 'Terms of Use'.

6. Click on the **Instances** tab at the bottom of Load Balancer page.
7. You should see three instances of status "In Service" when the MarkLogic cluster is up. If not yet, wait for a few minutes and refresh.

The screenshot shows the AWS EC2 Management Console. On the left, there's a sidebar with 'EC2 Dashboard', 'Events', 'Tags', 'Reports', 'Limits', 'INSTANCES' (selected), 'Instances', 'Launch Templates', 'Spot Requests', 'Reserved Instances', 'Dedicated Hosts', 'Scheduled Instances', 'IMAGES', 'AMIs', 'Bundle Tasks', 'ELASTIC BLOCK STORE', 'Volumes', 'Snapshots', 'NETWORK & SECURITY', 'Security Groups', 'Elastic IPs', 'Placement Groups', and 'Key Pairs'. The main area has tabs for 'Create Load Balancer' and 'Actions'. A search bar shows 'search : developme-Elasticl-9HIEUVJKFUL4'. The 'Instances' tab is selected, showing a table of instances:

Instance ID	Name	Availability Zone	Status	Actions
i-005451df5749651c1	development-env	us-west-2b	InService	Remove from Load Balancer
i-01e2b81d56d1698da	development-env	us-west-2c	InService	Remove from Load Balancer
i-021179cdf072acd15	development-env	us-west-2a	InService	Remove from Load Balancer

Below the instance table is an 'Edit Availability Zones' section with a table:

Availability Zone	Subnet ID	Subnet CIDR	Instance Count	Healthy?	Actions
us-west-2a	subnet-cd35b5b4	10.0.0.0/23	1	Yes	Remove from Load Balancer
us-west-2b	subnet-e73e9cac	10.0.32.0/23	1	Yes	Remove from Load Balancer
us-west-2a	subnet-091477d0	10.0.0.0/23	1	Yes	Remove from Load Balancer

At the bottom of the page are links for 'Feedback', 'English (US)', and copyright information: '© 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved.' and 'Privacy Policy' and 'Terms of Use'.

Access the Cluster

Use the URL in the CloudFormation stack's **Outputs** tab to navigate to MarkLogic's Admin Interface.

The screenshot shows the MarkLogic Admin Interface with the following details:

- Header:** CloudFormation Management, EC2 Management Console, Cluster Summary - MarkLogic, Guest.
- Address Bar:** developme-elasti1-1s8s9tcqc4ct-1028959607.us-west-2.elb.amazonaws.com:8001
- Page Title:** Cluster Summary - MarkLogic
- Page Content:**
 - Left Sidebar (Configure):** Groups, Databases, Hosts, Forests, Mimetype, Clusters, Security.
 - Summary Tab:** ip-10-0-32-134.us-west-2.compute.internal, April 9, 2018, 12:35 AM, No license key has been entered, Software pre-release expires in 89 days.
 - Cluster Summary Section:** Default :: Admin : 8001 [HTTP], Default :: App-Services : 8000 [HTTP], Default :: HealthCheck : 7997 [HTTP], Default :: Manage : 8002 [HTTP].
 - Groups Section:** Default.
 - Databases Section:** App-Services, Documents, Extensions, Fab, Last-Login, Meters, Modules, Schemas, Security, Triggers.
 - Forests Section:** App-Services, Documents, Extensions, Fab, Last-Login, Meters, Modules, Schemas, Security, Triggers.
 - Security Section:** Resources describing the role-based security model.
 - Hosts Section:** Default :: ip-10-0-0-124.us-west-2.compute.internal, Default :: ip-10-0-32-134.us-west-2.compute.internal, Default :: ip-10-0-64-247.us-west-2.compute.internal.
 - Clusters Section:** Clusters (1) -- Cluster configuration, ip-10-0-0-124.us-west-2.compute.internal-cluster (Local Cluster).
- Footer:** Copyright © 2011-2018 MarkLogic Corporation. All rights reserved.

If you need to copy the URL again:

- Navigate to the **CloudFormation** service by clicking on the **Services** link at the top of the AWS Console page.
- Select your CloudFormation stack by clicking the checkbox.
- Click the **Outputs** tab below the list of CloudFormation stacks for the URL.

Optional Exercise

Once you go through the basic flow of deploying a cluster, you can also customize the cluster by using different

deployment type.

- Use the CloudFormation template that deploys cluster into **existing VPC**. Copy and paste the URL to the `mlcluster.template` provided. ([Step 3 of Launching](#))
- Fill in the following parameters. ([Step 5 of Launching](#))
 - Stack Name - a **unique** stack name across the account (example: your full name). Take a note of this stack name. You will need it later for tags.
 - IAM Role - a previously created Identity and Access Management role name. **Use the value provided**.
 - Volume Size - leave at the default of 10 GB.
 - Volume Type - leave at the default.
 - Instance Type - Use **m3.medium** for this exercise.
 - Spot Price - leave at the default.
 - SSH Key Name - a previously created EC2 Key-Pair name. **Use the value provided**.
 - **Number of Zones - Set to 1. Deploy to only 1 availability zone.**
 - Nodes Per Zone - total number of nodes per Zone. Leave this at 1 to create a simple 3-node cluster.
 - **Availability Zone - select "us-west-2a" from dropdown menu.**
 - Instance Public IP - leave at the default of disable.
 - Logging SNS ARN - optional. Leave at the default value.
 - **VPC - Select the VPC you created in this exercise unit.**
 - **Subnets - Select one subnet you created in this excercise unit.**
 - Admin User - the MarkLogic administrator user name. The user and password will be created when the cluster is created. We will use `mlwadmin` for the administrator name.
 - Admin Password - the MarkLogic administrator user password. The user and password will be created when the cluster is created. We will use `MarkLogicWorld_2018` as the password.
 - Licensee - leave at the default value "none" to use the included Developer's License.
 - LicenseKey - leave at the default value "none"

Now you should see a new one node cluster is coming up!