**SOURCE CODE FILE**

**Course-end Project 1**

**Set Up and Monitor a WordPress Instance**

{

"AWSTemplateFormatVersion": "2010-09-09",

"Description": "AWS CloudFormation Sample Template WordPress\_Single\_Instance: WordPress is web software you can use to create a beautiful website or blog. This template installs WordPress with a local MySQL database for storage. It demonstrates using the AWS CloudFormation bootstrap scripts to deploy WordPress. \*\*WARNING\*\* This template creates an Amazon EC2 instance. You will be billed for the AWS resources used if you create a stack from this template.",

"Parameters": {

"KeyName": {

"Description": "Name of an existing EC2 KeyPair to enable SSH access to the instances",

"Type": "AWS::EC2::KeyPair::KeyName",

"ConstraintDescription": "must be the name of an existing EC2 KeyPair."

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"InstanceType": {

"Description": "WebServer EC2 instance type",

"Type": "String",

"Default": "t2.small",

"AllowedValues": [

"t1.micro",

"t2.nano",

"t2.micro",

"t2.small",

"t2.medium",

"t2.large",

"m1.small",

"m1.medium",

"m1.large",

"m1.xlarge",

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"hs1.8xlarge",

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"cg1.4xlarge"

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"ConstraintDescription": "must be a valid EC2 instance type."

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"SSHLocation": {

"Description": "The IP address range that can be used to SSH to the EC2 instances",

"Type": "String",

"MinLength": "9",

"MaxLength": "18",

"Default": "0.0.0.0/0",

"AllowedPattern": "(\\d{1,3})\\.(\\d{1,3})\\.(\\d{1,3})\\.(\\d{1,3})/(\\d{1,2})",

"ConstraintDescription": "must be a valid IP CIDR range of the form x.x.x.x/x."

},

"DBName": {

"Default": "wordpressdb",

"Description": "The WordPress database name",

"Type": "String",

"MinLength": "1",

"MaxLength": "64",

"AllowedPattern": "[a-zA-Z][a-zA-Z0-9]\*",

"ConstraintDescription": "must begin with a letter and contain only alphanumeric characters."

},

"DBUser": {

"NoEcho": "true",

"Description": "The WordPress database admin account username",

"Type": "String",

"MinLength": "1",

"MaxLength": "16",

"AllowedPattern": "[a-zA-Z][a-zA-Z0-9]\*",

"ConstraintDescription": "must begin with a letter and contain only alphanumeric characters."

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"DBPassword": {

"NoEcho": "true",

"Description": "The WordPress database admin account password",

"Type": "String",

"MinLength": "8",

"MaxLength": "41",

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"ConstraintDescription": "must contain only alphanumeric characters."

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"Type": "String",

"MinLength": "8",

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"AllowedPattern": "[a-zA-Z0-9]\*",

"ConstraintDescription": "must contain only alphanumeric characters."

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"ap-northeast-1": {

"HVM64": "ami-0c3e3e7af817ad732",

"HVMG2": "NOT\_SUPPORTED"

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"ap-northeast-2": {

"HVM64": "ami-0f8dbbf156e3a5cc6",

"HVMG2": "NOT\_SUPPORTED"

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"ap-northeast-3": {

"HVM64": "ami-02a371c41f08cc499",

"HVMG2": "NOT\_SUPPORTED"

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"ap-south-1": {

"HVM64": "ami-0f4ab3c8db917e421",

"HVMG2": "NOT\_SUPPORTED"

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"ap-south-2": {

"HVM64": "ami-008b9c53bb1dcd29c",

"HVMG2": "NOT\_SUPPORTED"

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"ap-southeast-2": {

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"ap-southeast-3": {

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"ap-southeast-4": {

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"HVM64": "ami-0054be7d7d9d65a1d",

"HVMG2": "NOT\_SUPPORTED"

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"ca-central-1": {

"HVM64": "ami-05f40104305a2cdf7",

"HVMG2": "NOT\_SUPPORTED"

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"cn-north-1": {

"HVM64": "ami-03f1e08d409b1e5fd",

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"cn-northwest-1": {

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"eu-south-1": {

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"HVMG2": "NOT\_SUPPORTED"

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"eu-west-1": {

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"eu-west-2": {

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"eu-west-3": {

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"HVMG2": "NOT\_SUPPORTED"

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"me-south-1": {

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"me-central-1": {

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"HVMG2": "NOT\_SUPPORTED"

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"us-east-1": {

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"HVMG2": "NOT\_SUPPORTED"

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"Resources": {

"WebServerSecurityGroup": {

"Type": "AWS::EC2::SecurityGroup",

"Properties": {

"GroupDescription": "Enable HTTP access via port 80 locked down to the load balancer + SSH access",

"SecurityGroupIngress": [

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"IpProtocol": "tcp",

"FromPort": "80",

"ToPort": "80",

"CidrIp": "0.0.0.0/0"

},

{

"IpProtocol": "tcp",

"FromPort": "22",

"ToPort": "22",

"CidrIp": {

"Ref": "SSHLocation"

}

}

]

}

},

"WebServer": {

"Type": "AWS::EC2::Instance",

"Metadata": {

"AWS::CloudFormation::Init": {

"configSets": {

"wordpress\_install": [

"install\_cfn",

"install\_wordpress",

"configure\_wordpress"

]

},

"install\_cfn": {

"files": {

"/etc/cfn/cfn-hup.conf": {

"content": {

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"",

[

"[main]\n",

"stack=",

{

"Ref": "AWS::StackId"

},

"\n",

"region=",

{

"Ref": "AWS::Region"

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"\n"

]

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"group": "root"

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"content": {

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"[cfn-auto-reloader-hook]\n",

"triggers=post.update\n",

"path=Resources.WebServer.Metadata.AWS::CloudFormation::Init\n",

"action=/opt/aws/bin/cfn-init -v ",

" --stack ",

{

"Ref": "AWS::StackName"

},

" --resource WebServer ",

" --configsets wordpress\_install ",

" --region ",

{

"Ref": "AWS::Region"

},

"\n"

]

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"owner": "root",

"group": "root"

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"services": {

"sysvinit": {

"cfn-hup": {

"enabled": "true",

"ensureRunning": "true",

"files": [

"/etc/cfn/cfn-hup.conf",

"/etc/cfn/hooks.d/cfn-auto-reloader.conf"

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}

}

}

},

"install\_wordpress": {

"packages": {

"yum": {

"php73": [],

"php73-mysqlnd": [],

"mysql57": [],

"mysql57-server": [],

"mysql57-devel": [],

"mysql57-libs": [],

"httpd24": []

}

},

"sources": {

"/var/www/html": "http://wordpress.org/latest.tar.gz"

},

"files": {

"/tmp/setup.mysql": {

"content": {

"Fn::Join": [

"",

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"CREATE DATABASE ",

{

"Ref": "DBName"

},

";\n",

"CREATE USER '",

{

"Ref": "DBUser"

},

"'@'localhost' IDENTIFIED BY '",

{

"Ref": "DBPassword"

},

"';\n",

"GRANT ALL ON ",

{

"Ref": "DBName"

},

".\* TO '",

{

"Ref": "DBUser"

},

"'@'localhost';\n",

"FLUSH PRIVILEGES;\n"

]

]

},

"mode": "000400",

"owner": "root",

"group": "root"

},

"/tmp/create-wp-config": {

"content": {

"Fn::Join": [

"",

[

"#!/bin/bash -xe\n",

"cp /var/www/html/wordpress/wp-config-sample.php /var/www/html/wordpress/wp-config.php\n",

"sed -i \"s/'database\_name\_here'/'",

{

"Ref": "DBName"

},

"'/g\" wp-config.php\n",

"sed -i \"s/'username\_here'/'",

{

"Ref": "DBUser"

},

"'/g\" wp-config.php\n",

"sed -i \"s/'password\_here'/'",

{

"Ref": "DBPassword"

},

"'/g\" wp-config.php\n"

]

]

},

"mode": "000500",

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"group": "root"

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"services": {

"sysvinit": {

"httpd": {

"enabled": "true",

"ensureRunning": "true"

},

"mysqld": {

"enabled": "true",

"ensureRunning": "true"

}

}

}

},

"configure\_wordpress": {

"commands": {

"01\_set\_mysql\_root\_password": {

"command": {

"Fn::Join": [

"",

[

"mysqladmin -u root password '",

{

"Ref": "DBRootPassword"

},

"'"

]

]

},

"test": {

"Fn::Join": [

"",

[

"$(mysql ",

{

"Ref": "DBName"

},

" -u root --password='",

{

"Ref": "DBRootPassword"

},

"' >/dev/null 2>&1 </dev/null); (( $? != 0 ))"

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},

"02\_create\_database": {

"command": {

"Fn::Join": [

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"mysql -u root --password='",

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"Ref": "DBRootPassword"

},

"' < /tmp/setup.mysql"

]

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"test": {

"Fn::Join": [

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"$(mysql ",

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"Ref": "DBName"

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" -u root --password='",

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"Ref": "DBRootPassword"

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"' >/dev/null 2>&1 </dev/null); (( $? != 0 ))"

]

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}

},

"03\_configure\_wordpress": {

"command": "/tmp/create-wp-config",

"cwd": "/var/www/html/wordpress"

}

}

}

}

},

"Properties": {

"ImageId": {

"Fn::FindInMap": [

"AWSRegionArch2AMI",

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"Ref": "AWS::Region"

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"Fn::FindInMap": [

"AWSInstanceType2Arch",

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"Ref": "InstanceType"

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"Arch"

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"KeyName": {

"Ref": "KeyName"

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"UserData": {

"Fn::Base64": {

"Fn::Join": [

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[

"#!/bin/bash -xe\n",

"yum update -y aws-cfn-bootstrap\n",

"/opt/aws/bin/cfn-init -v ",

" --stack ",

{

"Ref": "AWS::StackName"

},

" --resource WebServer ",

" --configsets wordpress\_install ",

" --region ",

{

"Ref": "AWS::Region"

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"\n",

"/opt/aws/bin/cfn-signal -e $? ",

" --stack ",

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"Ref": "AWS::StackName"

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" --resource WebServer ",

" --region ",

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"Ref": "AWS::Region"

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"\n"

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"CreationPolicy": {

"ResourceSignal": {

"Timeout": "PT15M"

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"Outputs": {

"WebsiteURL": {

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"Fn::Join": [

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"http://",

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"Fn::GetAtt": [

"WebServer",

"PublicDnsName"

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"/wordpress"

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"Description": "WordPress Website"

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