

WordPress on the AWS Cloud

Quick Start Reference Deployment

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Contents

Overview	2
WordPress on AWS	2
Costs and Licenses	2
Architecture	3
Prerequisites	4
Specialized Knowledge	4
Technical Requirements	4
Deployment Options	5
Deployment Steps	5
Step 1. Prepare Your AWS Account	5
Step 2. Subscribe to the <software> AMI	5
Step 3. Launch the Quick Start	5
Step 4. Test the Deployment	9
Best Practices Using <software> on AWS	9
Security	9
<Other Useful Information>	9
FAQ	9
Git Repository	10

Additional Resources	10
Document Revisions	11
Style Guide.....	13
Terminology and usage	13
Bullet lists	13
Numbered lists for procedures	13
Tips, Notes, Warnings.....	14
Figures	14
Tables	14
References	14
Code	15
Sidebars	15
Colors.....	16

This Quick Start deployment guide was created by Amazon Web Services (AWS) in partnership with Bitnami.

[Quick Starts](#) are automated reference deployments that use AWS CloudFormation templates to deploy key technologies on AWS, following AWS best practices.

Overview

This Quick Start reference deployment guide provides step-by-step instructions for deploying WordPress on the Amazon Web Services (AWS) Cloud.

This Quick Start is for users who... (*target audience*).

WordPress on AWS

Brief description of software and its use. Include the benefits of using the software on AWS, and provide details on usage scenarios.

Costs and Licenses

You are responsible for the cost of the AWS services used while running this Quick Start reference deployment. There is no additional cost for using the Quick Start.

The AWS CloudFormation template for this Quick Start includes configuration parameters that you can customize. Some of these settings, such as instance type, will affect the cost of deployment. For cost estimates, see the pricing pages for each AWS service you will be using. Prices are subject to change.

Provide information about licensing requirements for the product being deployed.

Architecture

Deploying this Quick Start for a new virtual private cloud (VPC) with **default parameters** builds the following WordPress environment in the AWS Cloud.

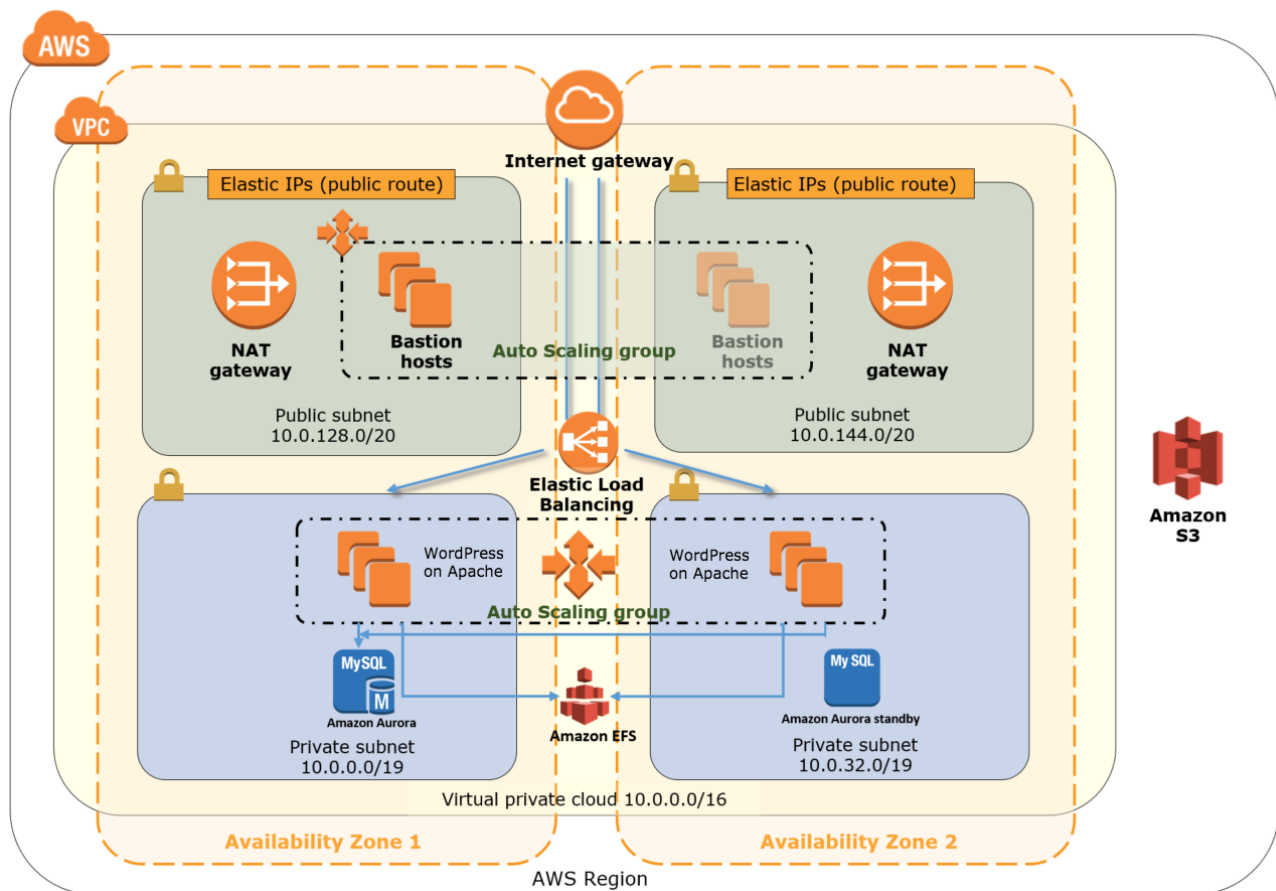


Figure 1: Quick Start architecture for WordPress on AWS

The Quick Start sets up the following:

- A highly available architecture that spans two Availability Zones.*

- A VPC configured with public and private subnets according to AWS best practices, to provide you with your own virtual network on AWS.*
- An internet gateway to allow access to the internet. This gateway is used by the bastion hosts to send and receive traffic.*
- In the public subnets, managed NAT gateways to allow outbound internet access for resources in the private subnets.*
- In the public subnets, a Linux bastion host in an Auto Scaling group to allow inbound Secure Shell (SSH) access to EC2 instances in public and private subnets.*
- An Elastic Load Balancing (ELB) to distribute HTTP and HTTPS requests across multiple WordPress instances.
- In the private subnets, Amazon EC2 instances to host WordPress application on top of Apache. These instances belong to an Auto Scaling group to ensure high availability.
- An Amazon Relational Database Service (Amazon RDS) with Amazon Aurora support in the private subnet.
- In the private subnets, Amazon Elastic File System to share assets (plugins, themes, images...) across WordPress instances.

* The template that deploys the Quick Start into an existing VPC skips the tasks marked by asterisks and prompts you for your existing VPC configuration.

Prerequisites

Specialized Knowledge

Before you deploy this Quick Start, we recommend that you become familiar with the following AWS services. (If you are new to AWS, see [Getting Started with AWS](#).)

- [Amazon EC2](#)
- [Amazon EBS](#)
- [Amazon VPC](#)
- [AWS CloudFormation](#)
- *Links to other relevant AWS services, and other knowledge expectations*

Technical Requirements

AWS account configuration, operating system, licensing, DNS, etc. requirements

Deployment Options

This Quick Start provides two deployment options:

- **Deploy <software> into a new VPC** (end-to-end deployment). This option builds a new AWS environment consisting of the VPC, subnets, NAT gateways, security groups, bastion hosts, and other infrastructure components, and then deploys <software> into this new VPC.
- **Deploy <software> into an existing VPC**. This option provisions <software> in your existing AWS infrastructure.

The Quick Start provides separate templates for these options. It also lets you configure CIDR blocks, instance types, and <software> settings, as discussed later in this guide.

Deployment Steps

Step 1. Prepare Your AWS Account

1. If you don't already have an AWS account, create one at <https://aws.amazon.com> by following the on-screen instructions.
2. Use the region selector in the navigation bar to choose the AWS Region where you want to deploy <software> on AWS.
3. Create a [key pair](#) in your preferred region.
4. If necessary, [request a service limit increase](#) for the Amazon EC2 <type> instance type. You might need to do this if you already have an existing deployment that uses this instance type, and you think you might exceed the [default limit](#) with this deployment.

Step 2. Subscribe to the <software> AMI

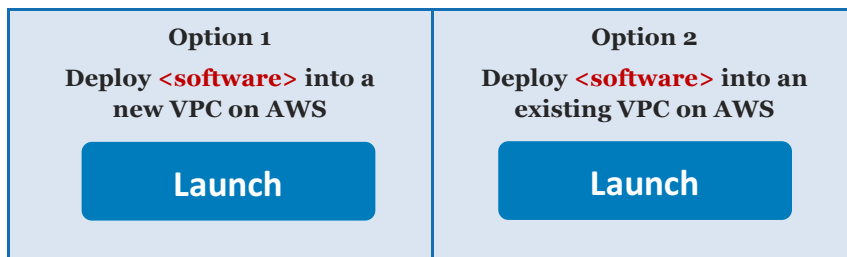
1. Log in to the AWS Marketplace at <https://aws.amazon.com/marketplace>.
2. Open the page for <software>, and choose **Continue**.
3. Use the **Manual Launch** option to launch the AMI into your account on Amazon EC2. This involves accepting the terms of the license agreement and receiving confirmation email. For detailed instructions, see the [AWS Marketplace documentation](#).

Step 3. Launch the Quick Start

Note You are responsible for the cost of the AWS services used while running this Quick Start reference deployment. There is no additional cost for using this Quick

Start. For full details, see the pricing pages for each AWS service you will be using in this Quick Start. Prices are subject to change.

1. Choose one of the following options to launch the AWS CloudFormation template into your AWS account. For help choosing an option, see [deployment options](#) earlier in this guide.



Important If you're deploying **<software>** into an existing VPC, make sure that your VPC has two private subnets in different Availability Zones for the database instances. These subnets require NAT gateways or NAT instances in their route tables, to allow the instances to download packages and software without exposing them to the internet. You will also need the domain name option configured in the DHCP options as explained in the [Amazon VPC documentation](#). You will be prompted for your VPC settings when you launch the Quick Start.

Each deployment takes about **<x>** hours to complete.

2. Check the region that's displayed in the upper-right corner of the navigation bar, and change it if necessary. This is where the network infrastructure for **<software>** will be built. The template is launched in the US East (Ohio) Region by default.
3. On the **Select Template** page, keep the default setting for the template URL, and then choose **Next**.
4. On the **Specify Details** page, change the stack name if needed. Review the parameters for the template. Provide values for the parameters that require input. For all other parameters, review the default settings and customize them as necessary. When you finish reviewing and customizing the parameters, choose **Next**.

In the following tables, parameters are listed by category and described separately for the two deployment options:

- [Parameters for deploying **<software>** into a new VPC](#)
- [Parameters for deploying **<software>** into an existing VPC](#)

- **Option 1: Parameters for deploying <software> into a new VPC**

[View template](#)

<The following parameter tables are generated automatically from the templates. Don't enter the parameter information manually. The information below is provided only as an example. We recommend that you use these group and parameter labels if you're providing similar functionality in your CloudFormation templates.>

VPC Network Configuration:

Parameter label (name)	Default	Description
Availability Zones (AvailabilityZones)	<i>Requires input</i>	The list of Availability Zones to use for the subnets in the VPC. The Quick Start uses two Availability Zones from your list and preserves the logical order you specify.
VPC CIDR (VPCCIDR)	10.0.0.0/16	The CIDR block for the VPC.
Private Subnet 1 CIDR (PrivateSubnet1CIDR)	10.0.0.0/19	The CIDR block for the private subnet located in Availability Zone 1.
Private Subnet 2 CIDR (PrivateSubnet2CIDR)	10.0.32.0/19	The CIDR block for the private subnet located in Availability Zone 2.
Public Subnet 1 CIDR (PublicSubnet1CIDR)	10.0.128.0/20	The CIDR block for the public (DMZ) subnet located in Availability Zone 1.
Public Subnet 2 CIDR (PublicSubnet2CIDR)	10.0.144.0/20	The CIDR block for the public (DMZ) subnet located in Availability Zone 2.
Permitted IP range (AccessCIDR)	<i>Requires input</i>	The CIDR IP range that is permitted to access <software>. We recommend that you set this value to a trusted IP range. For example, you might want to grant only your corporate network access to the software.

Amazon EC2 Configuration:

Parameter label (name)	Default	Description
Key Name (KeyPairName)	<i>Requires input</i>	A public/private key pair, which allows you to connect securely to your instance after it launches. When you created an AWS account, this is the key pair you created in your preferred region.

AWS Quick Start Configuration:

Parameter label (name)	Default	Description
Quick Start S3 Bucket Name (QSS3BucketName)	quickstart-reference	The S3 bucket you have created for your copy of Quick Start assets, if you decide to customize or extend the Quick Start for your own use. The bucket name can include numbers, lowercase letters, uppercase letters, and hyphens, but should not start or end with a hyphen.
Quick Start S3 Key Prefix (QSS3KeyPrefix)	atlassian/bitbucket/latest/	The S3 key name prefix used to simulate a folder for your copy of Quick Start assets, if you decide to customize or extend the Quick Start for your own use. This prefix can include numbers, lowercase letters, uppercase letters, hyphens, and forward slashes.

- **Option 2: Parameters for deploying <software> into an existing VPC**

[View template](#)

<The following parameter tables are generated automatically from the templates. Don't enter the parameter information manually. The information below is provided only as an example. We recommend that you use these group and parameter labels if you are providing similar functionality in your CloudFormation templates.>

Network Configuration:

Parameter label (name)	Default	Description
VPC ID (VPCID)	<i>Requires input</i>	The ID of your existing VPC (e.g., vpc-0343606e).
Private Subnet 1 ID (PrivateSubnet1ID)	<i>Requires input</i>	The ID of the private subnet in Availability Zone 1 in your existing VPC (e.g., subnet-a0246dcd).
Private Subnet 2 ID (PrivateSubnet2ID)	<i>Requires input</i>	The ID of the private subnet in Availability Zone 2 in your existing VPC (e.g., subnet-b58c3d67).
Bastion Security Group ID (BastionSecurityGroupID)	<i>Requires input</i>	The ID of the bastion security group in your existing VPC (e.g., sg-7f16e910).

Amazon EC2 Configuration:

Parameter label (name)	Default	Description
Key Pair Name (KeyPairName)	<i>Requires input</i>	A public/private key pair, which allows you to connect securely to your instance after it launches. When you created an AWS

Parameter label (name)	Default	Description
		account, this is the key pair you created in your preferred region.

- On the **Options** page, you can [specify tags](#) (key-value pairs) for resources in your stack and [set advanced options](#). When you're done, choose **Next**.
- On the **Review** page, review and confirm the template settings. Under **Capabilities**, select the check box to acknowledge that the template will create IAM resources.
- Choose **Create** to deploy the stack.
- Monitor the status of the stack. When the status is **CREATE_COMPLETE**, the **<software>** cluster is ready.
- Use the URLs displayed in the **Outputs** tab for the stack to view the resources that were created.

Step 4. Test the Deployment

Add steps as necessary for accessing the software, post-configuration, and testing.

Best Practices Using <software> on AWS

Provide information about best practices for using the technology on AWS, including considerations such as migrating data, backups, ensuring high performance, high availability, etc. Link to software documentation for detailed information.

Security

Discussion of security-related components, considerations, responsibilities, best practices.

<Other Useful Information>

Provide any other information of interest to users, especially focusing on areas where AWS or cloud usage differs from on-premises usage.

FAQ

Any tips or answers to anticipated questions. This could include the following troubleshooting information. If you don't have any other Q&A to add, change this heading to "Troubleshooting" and remove the Q/A headings below.

Q. I encountered a `CREATE_FAILED` error when I launched the Quick Start.

A. If AWS CloudFormation fails to create the stack, we recommend that you relaunch the template with **Rollback on failure** set to **No**. (This setting is under **Advanced** in the AWS CloudFormation console, **Options** page.) With this setting, the stack's state will be retained and the instance will be left running, so you can troubleshoot the issue. (Look at the log files in `%ProgramFiles%\Amazon\EC2ConfigService` and `C:\cfn\log`.)

Important When you set **Rollback on failure** to **No**, you will continue to incur AWS charges for this stack. Please make sure to delete the stack when you finish troubleshooting.

For additional information, see [Troubleshooting AWS CloudFormation](#) on the AWS website.

Q. I encountered a size limitation error when I deployed the AWS Cloudformation templates.

A. We recommend that you launch the Quick Start templates from the location we've provided or from another S3 bucket. If you deploy the templates from a local copy on your computer or from a non-S3 location, you might encounter template size limitations when you create the stack. For more information about AWS CloudFormation limits, see the [AWS documentation](#).

Git Repository

You can visit our [GitHub repository](#) to download the templates and scripts for this Quick Start, to post your comments, and to share your customizations with others.

Additional Resources

Additional reading, with full URLs. Revise the following as appropriate.

AWS services

- Amazon EBS
<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AmazonEBS.html>
- Amazon EC2
<https://aws.amazon.com/documentation/ec2/>
- Amazon VPC
<https://aws.amazon.com/documentation/vpc/>

- AWS CloudFormation
<https://aws.amazon.com/documentation/cloudformation/>

<software> documentation

- *Links for the technology that's deployed by the Quick Start*

Quick Start reference deployments

- AWS Quick Start home page
<https://aws.amazon.com/quickstart/>

Document Revisions

Date	Change	In sections
<month> 2017	Brief description of change. Formatting and minor text changes don't warrant any mention; major additions and changes do.	Links to revised sections
<month> 2017	Initial publication	—

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Style Guide

Delete this section after following these guidelines.

Terminology and usage

- For a word list and usage guidelines for AWS content, see the [AWS Usage Dictionary](#) (internal AWS use only).
- For AWS service names and allowed variations, see the [AWS Service Names](#) wiki page (internal AWS use only).

Bullet lists

- Use the **List Bullet** style instead of using the bullets control on the Word ribbon.
- Use the **List Paragraph** style for additional paragraphs under the bullet.
- Use nested bullet lists sparingly.

Use the **List Bullet 2** style for second-level bulleted lists.

Keep both first-level and second-level lists short. Three to seven items is a good rule of thumb to follow.

Because bullet lists have less spacing after each paragraph, consider manually changing the spacing after the last item to 14 pt.

Numbered lists for procedures

1. Use a numbered list only when there's a sequence (of steps, or priorities, etc.) involved.
2. Use the **List Number** style instead of using the numbered list control on the Word ribbon.
3. Use the **List Paragraph** style for additional paragraphs under the number.
4. Use nested lists sparingly.
 - a. Use the **List Number 2** style for second-level numbered lists.
 - b. Because numbered lists have less spacing after each paragraph, consider manually changing the spacing after the last item to 14 pt.

Tips, Notes, Warnings

Use the **Note** style, which provides the following formatting. Change “Note” to “Tip” or “Warning” as needed.

Note You are responsible for all costs incurred by your use of the AWS services used while running this Quick Start Reference Deployment. See the pricing pages of the specific AWS services you will be using for full details.

Figures

- Use the **Picture** style, which centers the illustration.
- Below the figure, add the figure caption using the **Caption** style. Specify the number in the format **Figure n: Caption**. Use sentence capitalization for captions (that is, just capitalize the first word and any proper nouns).
- For architecture diagrams, use the [Visio](#) or [PowerPoint](#) templates we provided, and the [AWS simple icons](#), and please send us the source file.

Tables

- Create a table in Word (**Insert > Table**), and apply the **AWS** table style from the menu on the **Table Tools, Design** tab. There’s also an **AWS wide** style if you need a wider table.
- Use the **Table text** style for the contents of the table.
- Add boldface for headings.
- Turn on the **Repeat Header Rows** option on the **Table Tools, Layout** tab.

	January	February	March	April
North	Red	Green	Blue	Black
South	Red	Green	Blue	Black
East	Red	Green	Blue	Black
West	Red	Green	Blue	Black

References

- Use the **Hyperlink** style.
- Use the title of the paper or website as link text. Don’t use phrases like “click here” or “this website” for your links.

- In some cases, you might want to shorten the link text and weave it into the sentence, e.g., “Create a [key pair](#) in your preferred region.”
- Don’t display the URL in text (unless you’re linking to a home page or to a main section under the home page), but make sure to include the full title and URL in the “Additional Resources” section.
- When providing information from other sources, be sure to use your own words. Use short quotations if necessary. It’s OK to use text from the AWS documentation.

Code

For code that appears within a sentence, use the `Code Inline` style.

For code blocks, use the **Code Snippet** style:

```
"Conditions": {
  "GovCloudCondition": {
    "Fn::Equals": [
      {
        "Ref": "AWS::Region"
      },
      "us-gov-west-1"
    ]
  }
},
```

In the HTML version of the deployment guide, we can use syntax highlighting for selected languages, including JSON, PowerShell, Bash, and Python. The PDF format doesn’t support syntax highlighting.

Sidebars

If you want to use a sidebar to highlight content, create a text box (**Insert > Text Box**) and style the text inside as **Side Body**. There is no heading style, so if you want to add a heading, style it as **Side Body** and then manually apply the bold attribute.








Avoid using multiple paragraphs, because these are converted to separate text boxes in the PDF. (You can use soft returns to work around this limitation.)

Create Sidebars with an Inset Text Box

You may have to apply a text wrap to your text box. The Square option is usually best. Avoid using multiple paragraphs.

Colors

When you need to use color, select from the following color palette.

						
R: 242 G: 165 B: 44	R: 178 G: 36 B: 145	R: 0 G: 124 B: 188	R: 139 G: 201 B: 66	R: 0 G: 0 B: 0	R: 166 G: 166 B: 166	R: 89 G: 89 B: 89