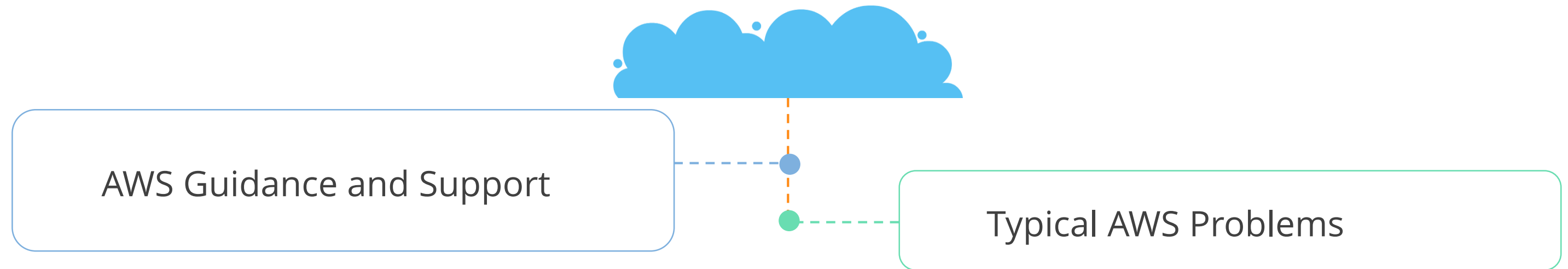


AWS Solutions Architect—Associate Level

Lesson 12: Troubleshooting



What You'll Learn



AWS Support

Overview of AWS Support

Types of AWS Support

AWS provides a number of support options to help resolve issues with the AWS environment:

1. Documentation
2. Troubleshooting Guides
3. Support
4. Discussion Forums

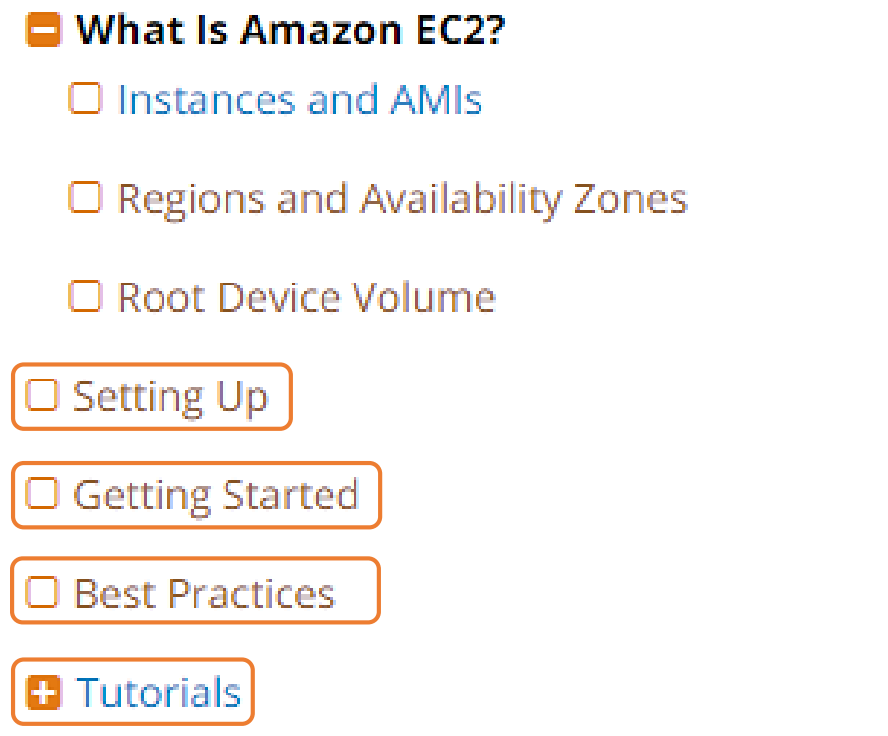
Documentation

AWS provides a comprehensive set of online documentation for all of its products and services.

Services	Getting Started		
Compute Amazon EC2 Amazon EC2 Container Registry Amazon EC2 Container Service AWS Elastic Beanstalk AWS Lambda Auto Scaling Elastic Load Balancing Amazon VPC	Developer Tools AWS CodeCommit AWS CodeDeploy AWS CodePipeline AWS Tools & SDKs Management Tools AWS Application Discovery Service Amazon CloudWatch AWS CloudFormation AWS CloudTrail AWS Command Line Interface AWS Config AWS Management Console AWS OpsWorks AWS Service Catalog Trusted Advisor AWS Tools for Windows PowerShell Security & Identity Identity & Access Management AWS Certificate Manager AWS Directory Service Amazon Inspector AWS CloudHSM AWS KMS AWS WAF Analytics Amazon EMR AWS Data Pipeline Amazon Elasticsearch Service Amazon Kinesis Amazon Machine Learning Amazon Redshift	Internet of Things AWS IoT Game Development Amazon Lumberyard (beta) Amazon GameLift Mobile Services AWS Mobile Hub Amazon API Gateway Amazon Cognito AWS Device Farm Amazon Mobile Analytics AWS Mobile SDK for Android AWS Mobile SDK for iOS AWS Mobile SDK for Unity AWS Mobile SDK for Xamarin Amazon SNS Application Services Amazon API Gateway Amazon AppStream Amazon CloudSearch Amazon Elastic Transcoder Amazon FPS Amazon SES Amazon SNS Amazon SQS Amazon SWF Enterprise Applications Amazon WorkSpaces Amazon WAM Amazon WorkDocs Amazon WorkMail Additional Software & Services AWS Billing and Cost Management AWS Marketplace AWS Support Alexa Top Sites Alexa Web Information Service Amazon Silk AWS GovCloud (US)	SDKs & Toolkits AWS SDK for Go AWS SDK for Java AWS SDK for JavaScript (Node.js) AWS SDK for JavaScript (Browser) AWS SDK for .NET AWS SDK for PHP AWS SDK for Python (Boto 3) AWS SDK for Ruby AWS Toolkit for Eclipse AWS Toolkit for Visual Studio General Reference Regions and Endpoints Security Credentials ARNs & Service Namespaces Service Limits AWS Glossary AWS Whitepapers AWS Management Console Resource Groups Tag Editor Resources AWS Quick Starts AWS Whitepapers AWS Training & Certification AWS Case Studies AWS Documentation on Kindle AWS Documentation Archive

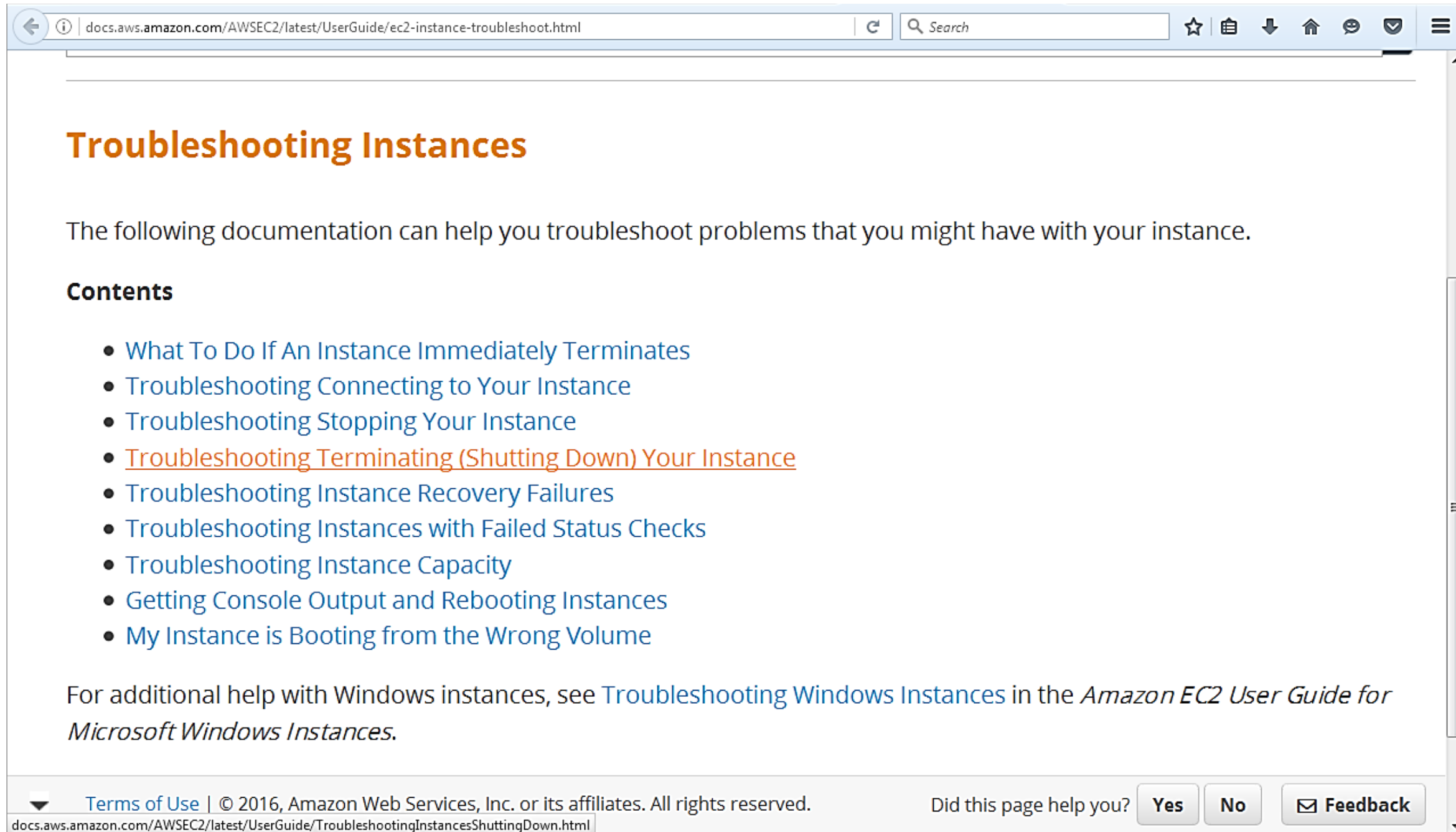
Documentation (contd.)

Each product has a series of documents and whitepapers to provide you with all the information you need.



Troubleshooting Guides

Within each User Guide you will find a Troubleshooting section with details specific to the product.



The screenshot shows a web browser window displaying the AWS documentation page for Troubleshooting Instances. The browser's address bar shows the URL: docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-instance-troubleshoot.html. The page title is "Troubleshooting Instances". Below the title, a paragraph states: "The following documentation can help you troubleshoot problems that you might have with your instance." Under the heading "Contents", there is a list of links: "What To Do If An Instance Immediately Terminates", "Troubleshooting Connecting to Your Instance", "Troubleshooting Stopping Your Instance", "Troubleshooting Terminating (Shutting Down) Your Instance" (highlighted in orange), "Troubleshooting Instance Recovery Failures", "Troubleshooting Instances with Failed Status Checks", "Troubleshooting Instance Capacity", "Getting Console Output and Rebooting Instances", and "My Instance is Booting from the Wrong Volume". At the bottom of the page, there is a footer with the text: "For additional help with Windows instances, see [Troubleshooting Windows Instances](#) in the *Amazon EC2 User Guide for Microsoft Windows Instances*." The footer also includes a "Terms of Use" link, a copyright notice for 2016 Amazon Web Services, Inc., and a feedback section with "Yes", "No", and "Feedback" buttons.

docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-instance-troubleshoot.html

Troubleshooting Instances

The following documentation can help you troubleshoot problems that you might have with your instance.

Contents

- [What To Do If An Instance Immediately Terminates](#)
- [Troubleshooting Connecting to Your Instance](#)
- [Troubleshooting Stopping Your Instance](#)
- [Troubleshooting Terminating \(Shutting Down\) Your Instance](#)
- [Troubleshooting Instance Recovery Failures](#)
- [Troubleshooting Instances with Failed Status Checks](#)
- [Troubleshooting Instance Capacity](#)
- [Getting Console Output and Rebooting Instances](#)
- [My Instance is Booting from the Wrong Volume](#)

For additional help with Windows instances, see [Troubleshooting Windows Instances](#) in the *Amazon EC2 User Guide for Microsoft Windows Instances*.

Terms of Use | © 2016, Amazon Web Services, Inc. or its affiliates. All rights reserved. Did this page help you? [Yes](#) [No](#) [Feedback](#)

docs.aws.amazon.com/AWSEC2/latest/UserGuide/TroubleshootingInstancesShuttingDown.html

Troubleshooting Guides Example

For example, with RDS the following sections exist in the troubleshooting section:

- Cannot Connect to Amazon RDS DB Instance
- Amazon RDS Security Issues
- Resetting the DB Instance Owner Role Password
- Amazon RDS DB Instance Outage or Reboot
- Amazon RDS DB Parameter Changes Not Taking Effect
- Amazon RDS DB Instance Running Out of Storage
- Amazon RDS MySQL and MariaDB Issues
- Amazon RDS for Aurora Issues
- Amazon RDS Oracle GoldenGate Issues
- Cannot Connect to Amazon RDS SQL Server DB Instance
- Cannot Connect to Amazon RDS PostgreSQL DB Instance

AWS Support

AWS offers support contracts to suit all budgets.

1. Basic
2. Developer
3. Business
4. Enterprise



Basic Support

The following features are provided with Basic Support:

Allows support only for Health Checks and with no specified response time

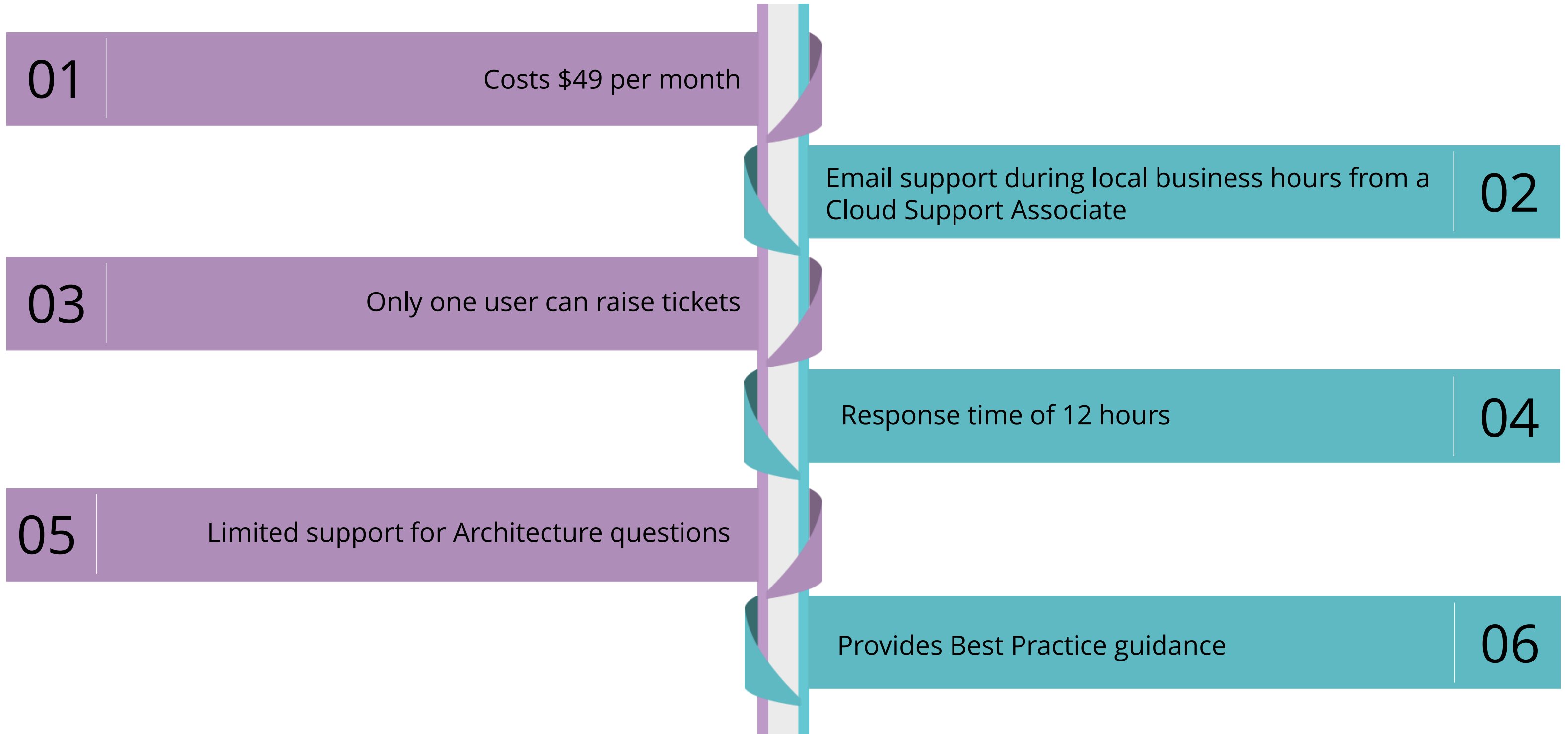
Only suitable for basic AWS use

Access to 4 core Trusted Advisor checks



Developer Support

The following features are provided with Developer Support:



Business Support

The following features are provided with Business Support:

Starts at \$100 per month and is based on a percentage of your monthly spend up to 3% of spend over \$2,50,000

Provides phone, chat, email, and live screen sharing from a Cloud Support Engineer

Unlimited number of users can raise tickets

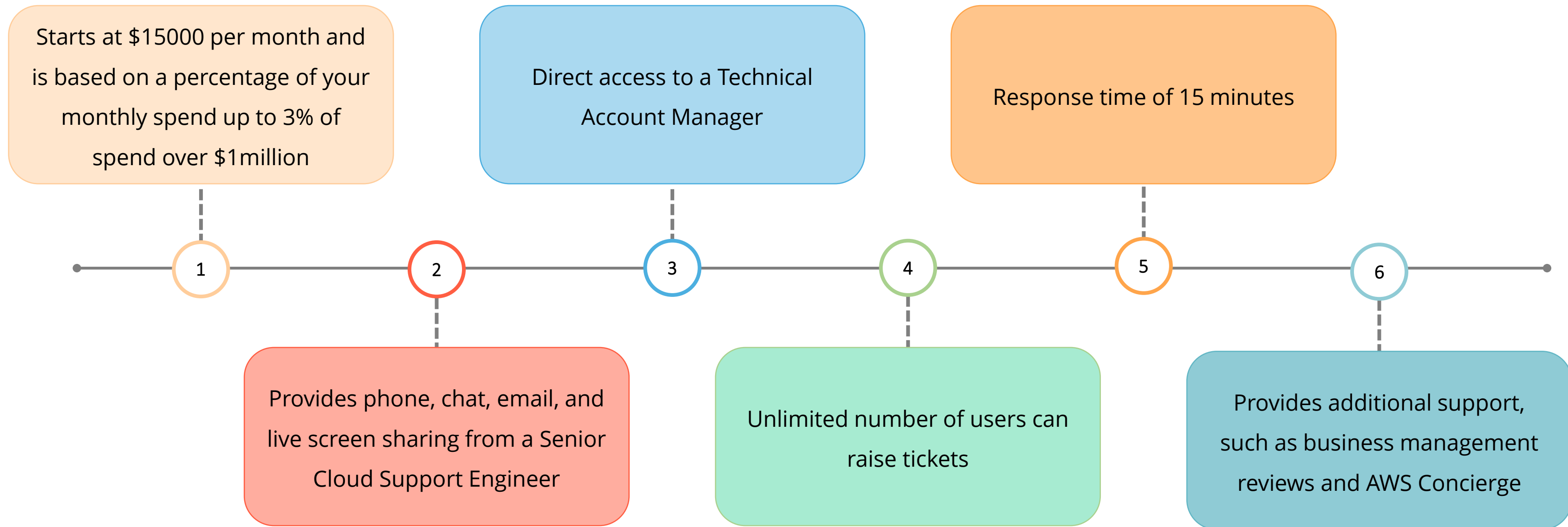
Response time of 1 hour

Provides additional support, such as advice for 3rd party software

Access to full set of Trusted Advisor checks

Enterprise Support

The following features are provided with Enterprise Support:



AWS Support Contracts Comparison

The table lists the differences between the various AWS support contracts.

	Basic	Developer	Business	Enterprise
Cost per month	Free	\$49	Starts at \$100	Starts at \$15000
Trusted Advisor	Basic	Basic	Full	Full
Technical Support	N/A	Business hours access to Cloud Support Associates via email	24x7 access to Cloud Support Engineers via email, chat, and phone	24x7 access to Sr. Cloud Support Engineers via email, chat, and phone
Response Times	N/A	Normal: < 12 hours Low: < 24 hours	Urgent: < 1 hour High: < 4 hours Normal: < 12 hours Low: < 24 hours	Critical: < 15 minutes Urgent: < 1 hour High: < 4 hours Normal: < 12 hours Low: < 24 hours

Discussion Forums

AWS managed technical forums provide a place to ask the AWS user community for help and advice.

<https://forums.aws.amazon.com/index.jspa>

Forum / Category	Views	Threads / Messages	Last Post
Amazon Web Services Click Amazon Web Services to see a list of AWS Forums for each service. Then click on the forum for the service you have a question for.			
AWS Startups The following forums are for customers using AWS Startups only. For all other customers please choose Amazon Web Services and choose the specific service.			
AWS Web Site & Resources			
● General Feedback This forum is designed for you to provide general feedback on AWS Services. For Support please find the specific forum for the service you are looking to discuss. AWS Services can be found here .	376,857	2,315 / 6,106	Jun 1, 2016 2:47 AM by: JaydJaws
● AWS Quick Start Reference Deployments AWS Quick Start Reference Deployments outline the architectures for popular enterprise solutions on AWS and provide AWS CloudFormation templates to automate their deployment.	19,541	76 / 187	Jun 1, 2016 6:30 AM by: labsapbcn
● Java Development	131,958	1,251 / 3,325	May 27, 2016 2:07 AM by: berni112233
● JavaScript Development	34,673	345 / 996	Jun 1, 2016 5:29 AM by: vmasule



Knowledge Check

KNOWLEDGE
CHECK

What is the quickest response time available with AWS Support?

- a. 1 hour with Enterprise Support
- b. 15 minutes with Business Support
- c. 5 minutes with Business Support
- d. 15 minutes with Enterprise Support



KNOWLEDGE
CHECK

What is the quickest response time available with AWS Support?

- a. 1 hour with Enterprise Support
- b. 15 minutes with Business Support
- c. 5 minutes with Business Support
- d. 15 minutes with Enterprise Support



The correct answer is **d**

For critical tickets AWS offers a 15 minute response time with Enterprise Support.

Typical AWS Problems

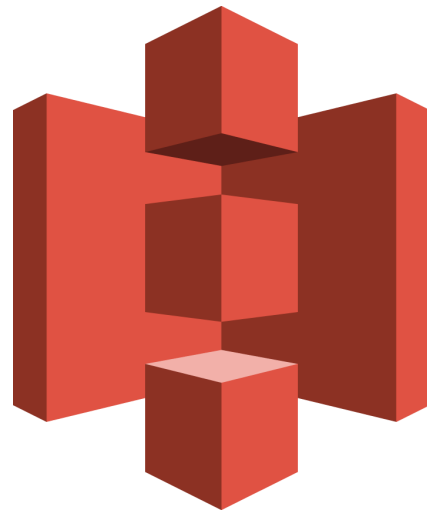
Overview of Typical AWS Problems

Typical AWS Problems

The best way to learn about troubleshooting is to use AWS products and services and resolve any issues as you come across them.



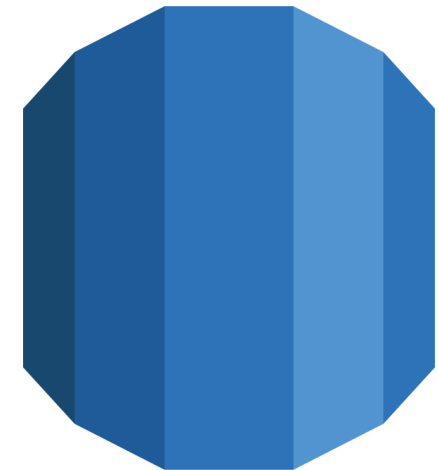
EC2



S3



VPC



RDS

Typical Problems: EC2

- A newly launched instance should go from “pending” to “running”. If it goes to “termination”, then check whether:
 - The EBS volume limit has reached
 - The snapshot used to launch the instance is corrupt
 - The instance store-backed AMI is missing a required part
- To get information about the reason the instance is not running, check the **Description** tab and check **State transition reason**.



EC2

Typical Problems: EC2 (contd.)

A common problem is connecting to EC2 instances:

- Are your instances running?
- Are the connections timed out?
 - Check the security group rules to see if inbound traffic is permitted
- Are you using the correct private key?
- Are you using the correct username?
 - Linux: ec2-user or Ubuntu: Ubuntu



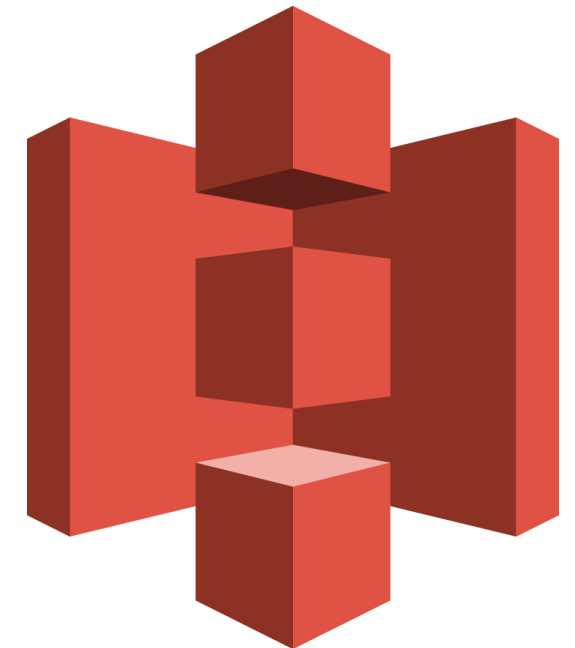
Typical Problems: S3

Possible reasons for changes not showing up immediately:

- Amazon S3 provides read-after-write consistency for PUTS of new objects in your S3 bucket—until a change is propagated it might not appear in the list
- Amazon S3 provides eventual consistency for overwrite PUTS and DELETES in all regions—changes are eventually reflected and not available immediately

Reasons for being unable to create a new bucket:

- Bucket name is not unique; bucket names need to be unique globally
- Reached the S3 bucket limit



S3

Typical Problems: S3 (contd.)

To prevent files being deleted and lost:

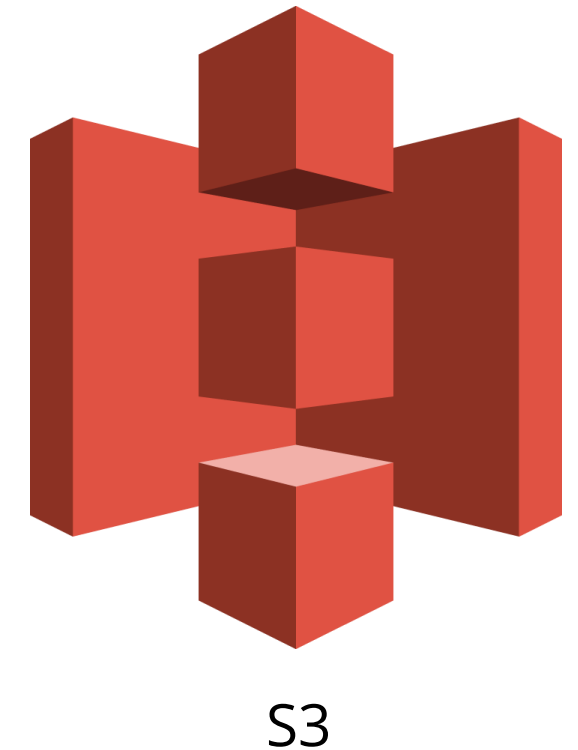
- Enable versioning and Multi-Factor Authorization

If you are unable to upload large files:

- Design applications to use the multi-part upload API

If websites are linking to the images on your site rather than the HTML pages:

- Remove public access to images
- Use signed URLs with expiry dates



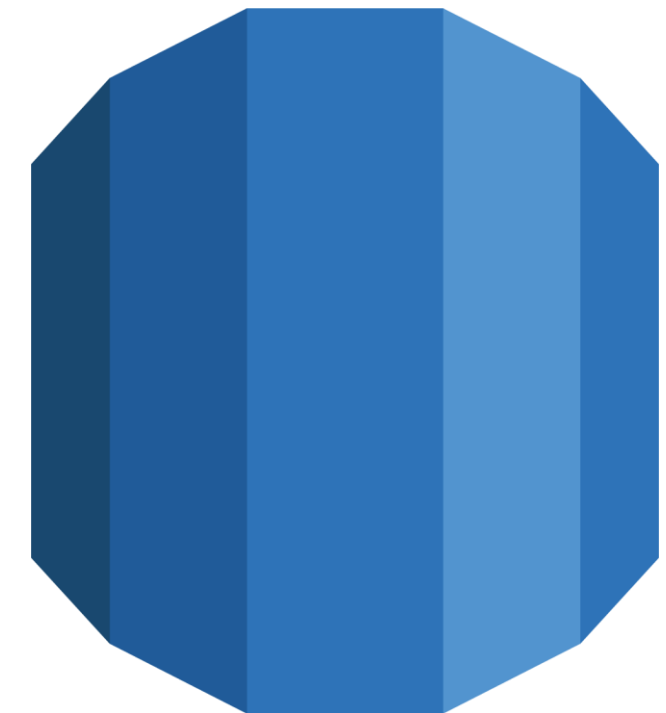
Typical Problems: RDS

A common problem with RDS is that you cannot connect to Amazon RDS DB Instances.

- Security Group does not allow connection—add ingress rule for database port
- Local firewall might not allow connection—add rule to allow in and outbound traffic
- Your DB instance is still being created and is not yet available—it can take up to 20 minutes

If RDS instance is unavailable, check if you've:

- Run out of storage—Monitor FreeStorageSpace in CloudWatch
- Modified a DB setting—Backup retention period or DB Instance class or Storage type



RDS

Typical Problems: VPC

Security group rules are common problems with Virtual Private Cloud.

- Check Security Group rules
- Check if Route Tables have outbound access to Internet Gateway
- Instances launched in private subnets
- No public IP address
- IP address changed? Use Elastic IP address
- ACLs allowing inbound and outbound traffic on correct ports
- Service limits reached





Knowledge Check

KNOWLEDGE
CHECK

What could be the cause of a connection timeout to a newly launched EC2 instance?

- a. Security Groups do not allow the inbound traffic to the correct port
- b. Instance has been launched in a private subnet
- c. Instance has been restarted and it now has a different IP address
- d. All of the above



KNOWLEDGE
CHECK

What could be the cause of a connection timeout to a newly launched EC2 instance?

- a. Security Groups do not allow the inbound traffic to the correct port
- b. Instance has been launched in a private subnet
- c. Instance has been restarted and it now has a different IP address
- d. All of the above



The correct answer is **d**

All of the answers listed are reasons why you would get a connection timeout to a newly launched EC2 instance.

Key Takeaways

Key Takeaways

- AWS provides a number of support options to help resolve issues with your AWS environment, such as Documentation, Troubleshooting Guides, Support, and Discussion Forums.
- The various support AWS provides are Basic, Developer, Business, and Enterprise.
- The best way to learn about troubleshooting is to use AWS products and services and resolve the issues as you come across them.



This concludes “Troubleshooting.”

The next lesson is “AWS Solutions Architect Exam.”