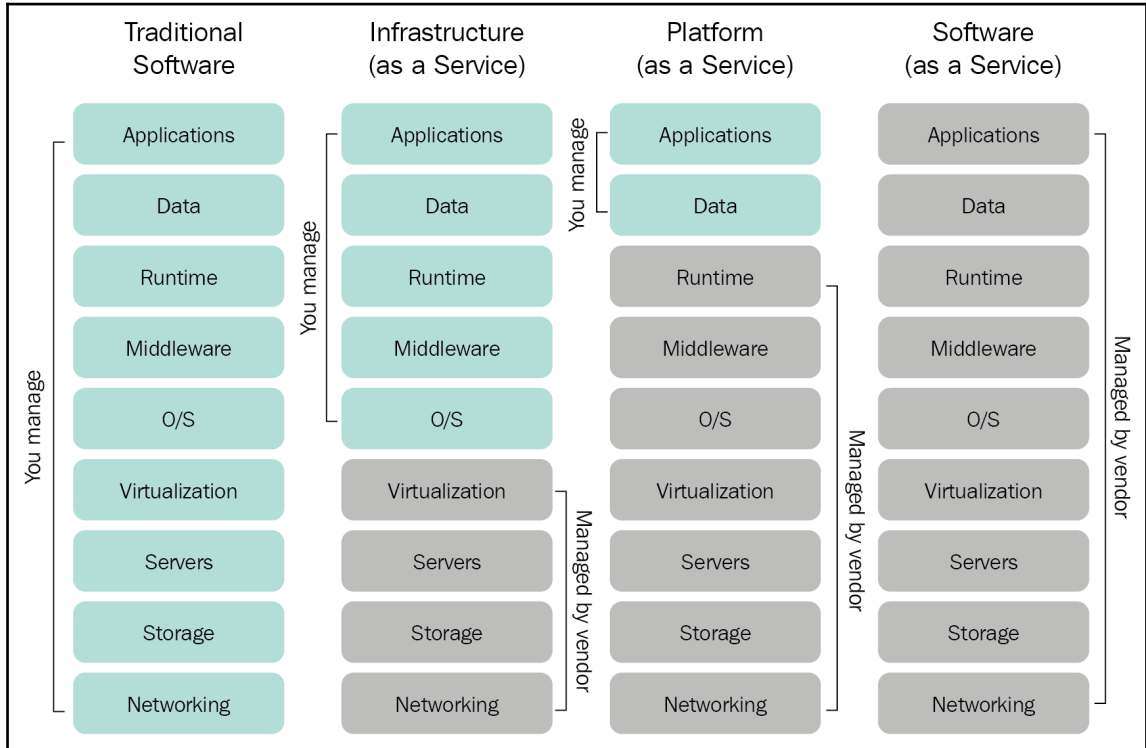
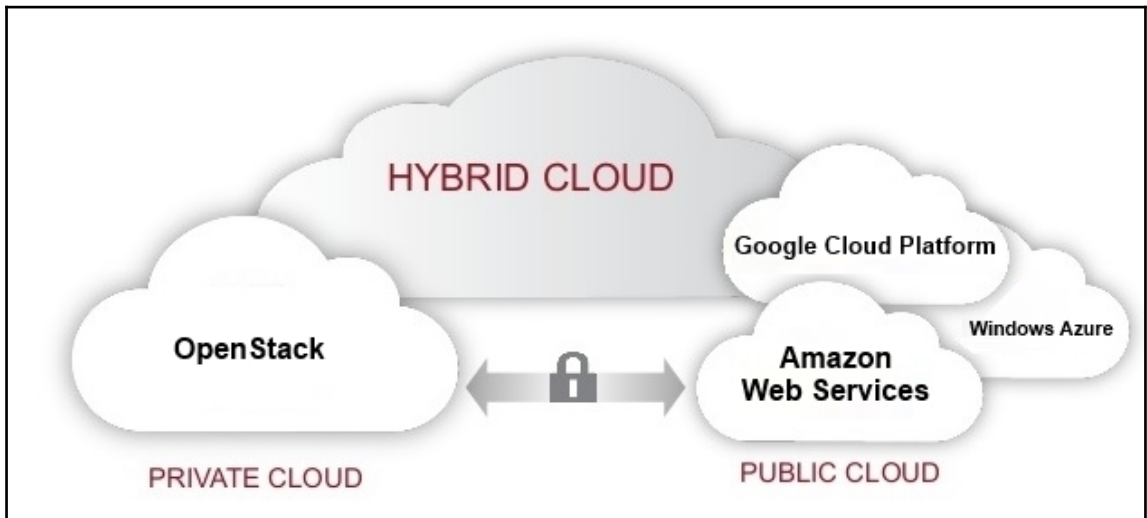
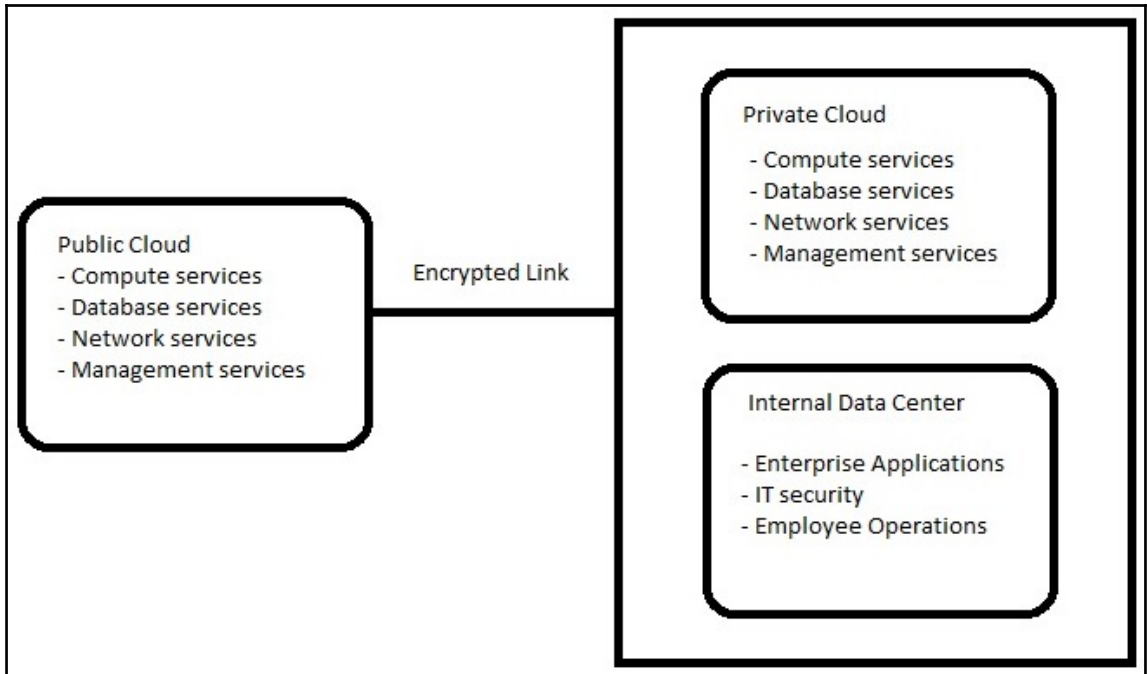
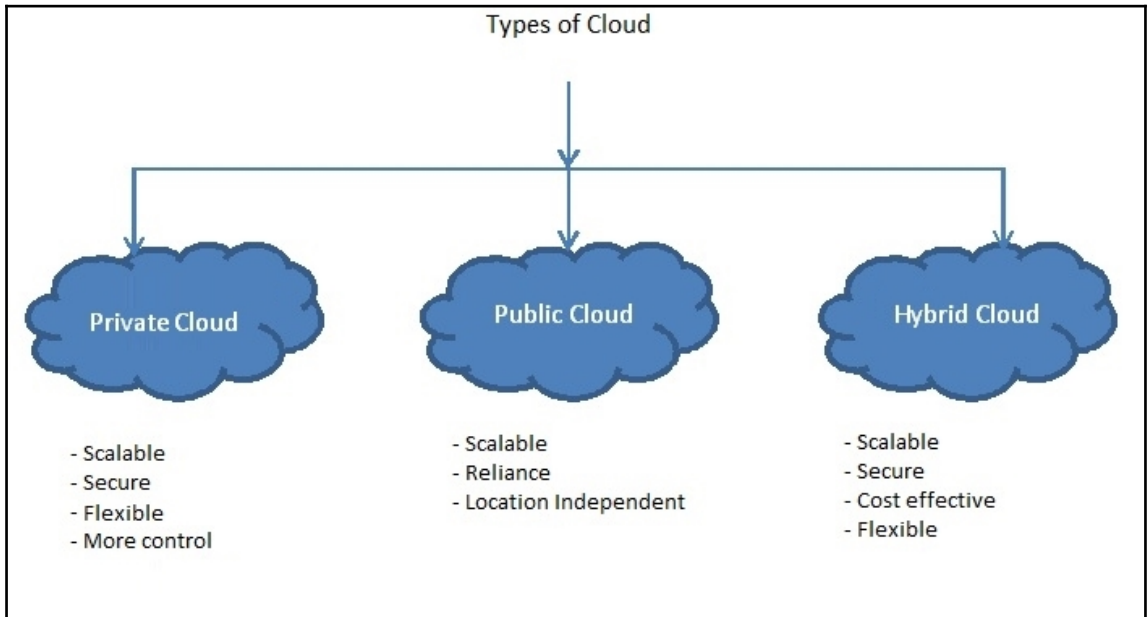
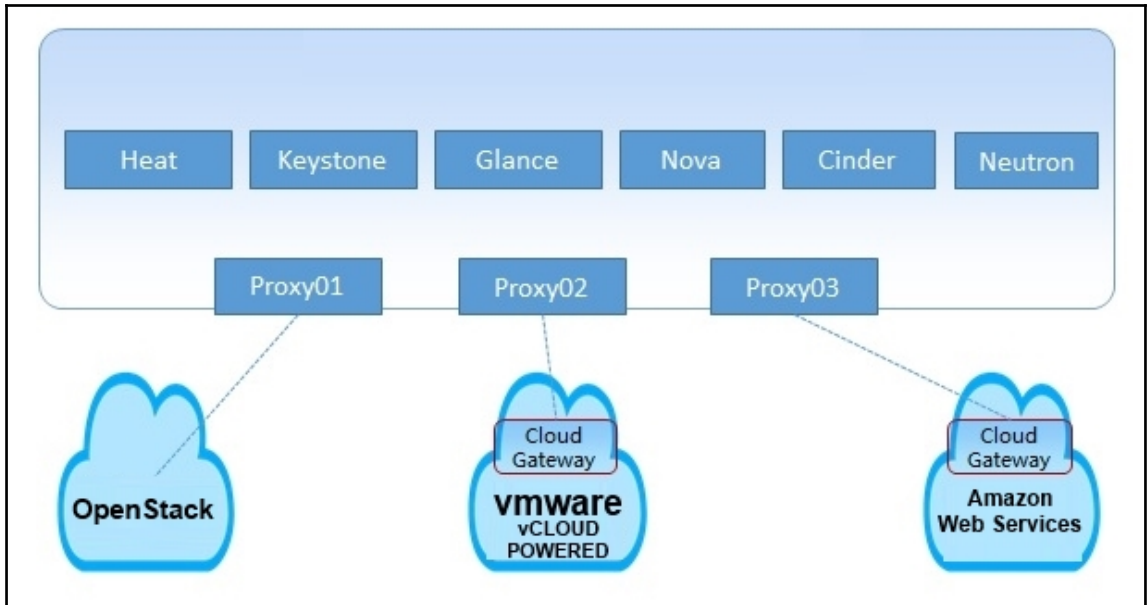
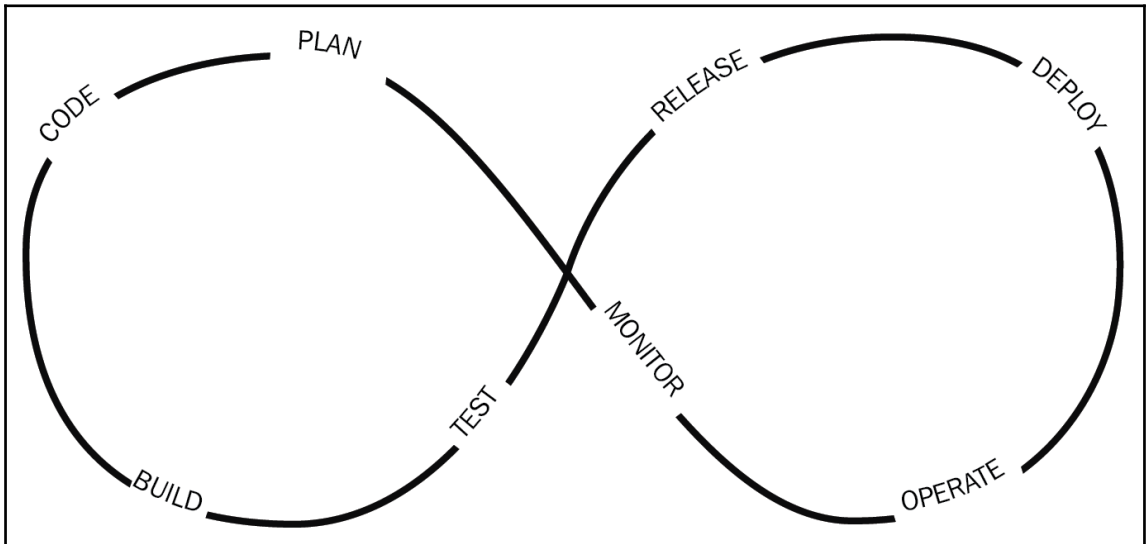
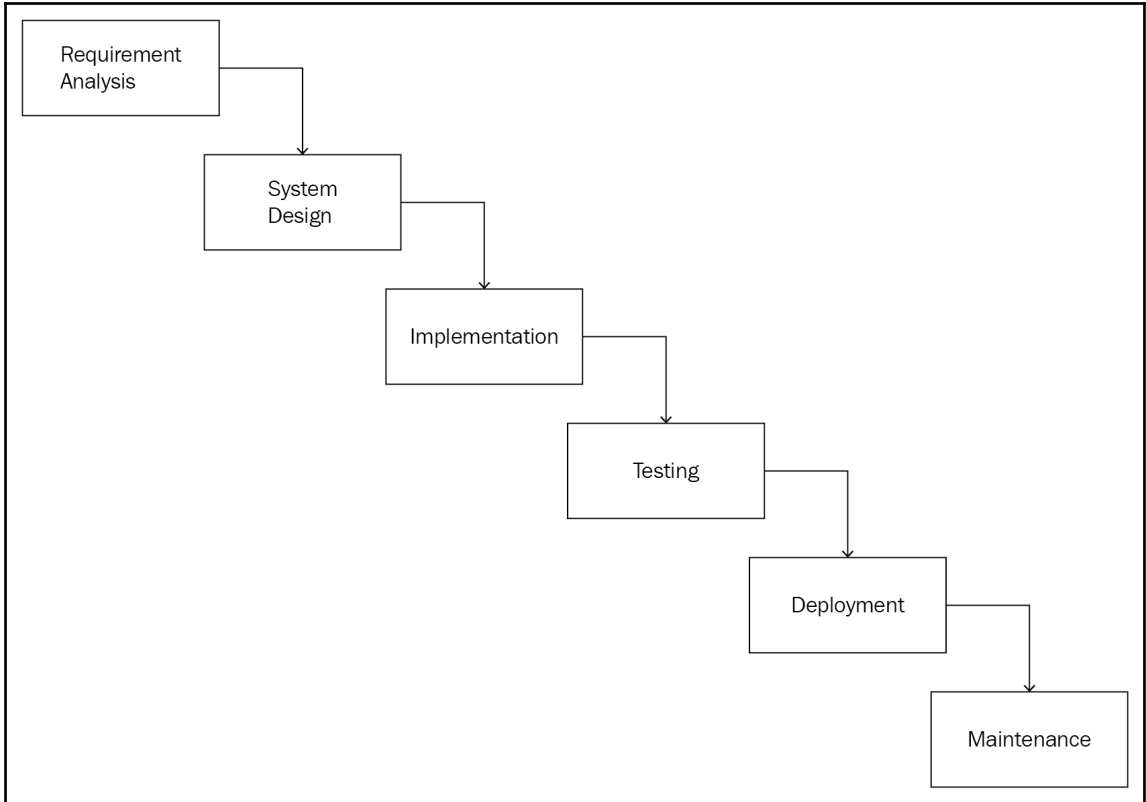


Chapter 1: Introducing Hybrid Clouds









Chapter 2: Exploring AWS Cloud

Contact Information All fields are required.

Please select the account type and complete the fields below with your contact details.

Account type ⓘ
 Professional Personal

Full name

Company name

Phone number

Country

* If you select India, your country selection cannot be changed after creating the account

Address

City

State / Province or region

Postal code

Amazon Internet Services Pvt. Ltd. Customer Agreement
Customers with an India contact address are now required to contract with Amazon Internet Service Private Ltd. (AISPL), AISPL is the local seller for AWS infrastructure services in India.

Check here to indicate that you have read and agree to the terms of the AISPL Customer Agreement

Payment Information

Please type your payment information so we can verify your identity. We will not charge you unless your usage exceeds the [AWS Free Tier Limits](#). Review [frequently asked questions](#) for more information.



As part of our card verification process we will charge INR 2 on your card when you click the "Securely Submit" button below. This will be refunded once your card has been validated. Your bank may take 3-5 business days to show the refund. Mastercard/Visa customers may be redirected to your bank website to authorize the charge.

Credit/Debit card number

Expiration date

Cardholder's name

Billing address

Use my contact address

Pune India
Pune Maharashtra 411061
IN

Use a new address

Do you have a PAN?

You can go on the [Tax Settings Page](#) on [Billing and Cost Management Console](#) to update your PAN information.

Yes No

Secure Submit

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace, or you can select one of your own AMIs.

Quick Start 1 to 34 of 34 AMIs

- Amazon Linux AMI 2017.09.1 (HVM), SSD Volume Type** - ami-15e9c770
 The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.
 Root device type: ebs Virtualization type: hvm **Select** 64-bit
- Red Hat Enterprise Linux 7.4 (HVM), SSD Volume Type** - ami-cf5afaa
 Red Hat Enterprise Linux version 7.4 (HVM), EBS General Purpose (SSD) Volume Type
 Root device type: ebs Virtualization type: hvm **Select** 64-bit
- SUSE Linux Enterprise Server 12 SP3 (HVM), SSD Volume Type** - ami-36f5db53
 SUSE Linux Enterprise Server 12 Service Pack 3 (HVM), EBS General Purpose (SSD) Volume Type: Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.
 Root device type: ebs Virtualization type: hvm **Select** 64-bit
- Ubuntu Server 16.04 LTS (HVM), SSD Volume Type** - ami-02f4dae7
 Ubuntu Server 16.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).
 Root device type: ebs Virtualization type: hvm **Select** 64-bit
- Microsoft Windows Server 2016 Base** - ami-21587144
 Microsoft Windows 2016 Datacenter edition. [English]
 Root device type: ebs Virtualization type: hvm **Select** 64-bit

Are you launching a database instance? Try Amazon RDS.
 Amazon Relational Database Service (RDS) makes it easy to set up, operate, and scale your database on AWS by automating time-consuming database management tasks. With RDS, you can easily deploy **Amazon Aurora, MariaDB, MySQL, Oracle, PostgreSQL, and SQL Server** databases on AWS. Aurora is a MySQL- and PostgreSQL-compatible, enterprise-class database at 1/10th the cost of commercial databases. [Learn more about RDS](#)

Launch a database using RDS

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: **All instance types** **Current generation** **Show/Hide Columns**

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	m4.large	2	8	EBS only	Yes	Moderate	Yes
<input type="checkbox"/>	General purpose	m4.xlarge	4	16	EBS only	Yes	High	Yes
<input type="checkbox"/>	General purpose	m4.2xlarge	8	32	EBS only	Yes	High	Yes
<input type="checkbox"/>	General purpose	m4.4xlarge	16	64	EBS only	Yes	High	Yes

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances Launch into Auto Scaling Group

Purchasing option Request Spot instances

Network Create new VPC

Subnet Create new subnet

Auto-assign Public IP

IAM role Create new IAM role

Shutdown behavior

Enable termination protection Protect against accidental termination

Monitoring Enable CloudWatch detailed monitoring
Additional charges apply.

Tenancy
Additional charges will apply for dedicated tenancy.

T2 Unlimited Enable
Additional charges may apply

Advanced Details

User data As text As file Input is already base64 encoded
(Optional)

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 4: Add Storage

Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. Learn more about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encrypted
Root	/dev/sda1	snap-0bc297f6637ec77c6	<input type="text" value="8"/>	General Purpose SSD (GP2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. Learn more about free usage tier eligibility and usage restrictions.

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver.
 A copy of a tag can be applied to volumes, instances or both.
 Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key (127 characters maximum)	Value (255 characters maximum)	Instances	Volumes
dev	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

(Up to 50 tags maximum)

aws Services Resource Groups

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: Create a new security group
 Select an existing security group

Security group name:
 Description:

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop

Warning
 Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Select an existing key pair or create a new key pair ✕

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair

Key pair name

access

Download Key Pair

You have to download the **private key file** (*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

Cancel
Launch Instances

aws
Services ▾ Resource Groups ▾
Manoj ▾ Ohio ▾ Support ▾

Launch Status

✔ **Your instances are now launching**
 The following instance launches have been initiated: i-05808ff1cfa7a0e1f [View launch log](#)

i **Get notified of estimated charges**
 Create billing alerts to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier).

How to connect to your instances

Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances. Click **View Instances** to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the instances screen. Find out how to connect to your instances.

▾ **Here are some helpful resources to get you started**

- [How to connect to your Linux instance](#)
- [Learn about AWS Free Usage Tier](#)
- [Amazon EC2: User Guide](#)
- [Amazon EC2: Discussion Forum](#)

While your instances are launching you can also

- [Create status check alarms to be notified when these instances fail status checks.](#) (Additional charges may apply)
- [Create and attach additional EBS volumes](#) (Additional charges may apply)
- [Manage security groups](#)

View Instances

Connect To Your Instance



I would like to connect with

- A standalone SSH client
 A Java SSH Client directly from my browser (Java required)

To access your instance:

1. Open an SSH client. (find out how to [connect using PuTTY](#))
2. Locate your private key file (access.pem). The wizard automatically detects the key you used to launch the instance.
3. Your key must not be publicly viewable for SSH to work. Use this command if needed:

```
chmod 400 access.pem
```

4. Connect to your instance using its Public DNS:

```
ec2-18-221-178-235.us-east-2.compute.amazonaws.com
```

Example:

```
ssh -i "access.pem" ubuntu@ec2-18-221-178-235.us-east-2.compute.amazonaws.com
```

Please note that in most cases the username above will be correct, however please ensure that you read your AMI usage instructions to ensure that the AMI owner has not changed the default AMI username.

If you need any assistance connecting to your instance, please see our [connection documentation](#).

Close

```
[root@localhost ~]# ssh -i aws.pem ubuntu@ec2-18-221-178-235.us-east-2.compute.amazonaws.com
Welcome to Ubuntu 16.04.3 LTS (GNU/Linux 4.4.0-1041-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

0 packages can be updated.
0 updates are security updates.

Last login: Wed Dec 13 11:04:36 2017 from 67.220.186.52
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-44-228:~$
```

The screenshot shows the AWS Management Console interface. On the left, the navigation menu includes categories like INSTANCES, IMAGES, ELASTIC BLOCK STORE, NETWORK & SECURITY, LOAD BALANCING, and AUTO SCALING. The 'Volumes' link under ELASTIC BLOCK STORE is highlighted with a red circle. The main area is titled 'Resources' and shows a summary of EC2 resources in the US East (Ohio) region: 1 Running Instance, 0 Dedicated Hosts, 1 Volume, 1 Key Pair, and 0 Placement Groups. There are also 0 Elastic IPs, 0 Snapshots, 0 Load Balancers, and 2 Security Groups. A 'Create Instance' button is visible. Below the resources, the 'Service Health' section indicates that the US East (Ohio) region is operating normally, with all three availability zones (us-east-2a, us-east-2b, us-east-2c) also operating normally.

aws Services Resource Groups

Volumes > Create Volume

Create Volume

Volume Type General Purpose SSD (GP2) ⓘ

Size (GiB) (Min: 1 GiB, Max: 16384 GiB) ⓘ

IOPS 300 / 3000 (Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS) ⓘ

Availability Zone* us-east-2a ⓘ

Throughput (MB/s) Not applicable ⓘ

Snapshot ID ⓘ

Encryption Encrypt this volume ⓘ

Tags Add tags to your volume

* Required

Cancel **Create Volume**

aws Services Resource Groups

EC2 Dashboard

Events

Tags

Reports

Limits

INSTANCES

Instances

Launch Templates

Spot Requests

Reserved Instances

Dedicated Hosts

IMAGES

AMIs

Bundle Tasks

ELASTIC BLOCK STORE

Volumes

Snapshots

NETWORK & SECURITY

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

LOAD BALANCING

Load Balancers

Target Groups

AUTO SCALING

Launch Configurations

Auto Scaling Groups

Filter by tags and attributes or search by keyword

Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State	Alarm Status	Attachment Information	Monitoring	Volume Status
	vol-031bcd0...	1 GiB	gp2	100 / 3000		December 13, 2017...	us-east-2c	available	None			Okay
	vol-007076a...	8 GiB	gp2	100 / 3000	snap-0bc297f6...	December 13, 2017...	us-east-2c	In-use	None	i-05008f1cfa7a0e1f...		Okay

Attach Volume

Volume ⓘ vol-031bcd0b67551ccd3 in us-east-2c

Instance ⓘ i-05008f1cfa7a0e1f In-use us-east-2c

Device ⓘ /dev/sdf
Linux Devices: /dev/sdf through /dev/sdp

Note: Newer Linux kernels may rename your devices to /dev/xvdf through /dev/xvdp internally, even when the device name entered here (and shown in the details) is /dev/sdf through /dev/sdp.

Cancel **Attach**

Volumes: vol-031bcd0b67551ccd3

Description	Status Checks	Monitoring	Tags
Volume ID vol-031bcd0b67551ccd3	Alarm status None	Snapshot -	
Size 1 GiB	Availability Zone us-east-2c	Encrypted Not Encrypted	
Created December 13, 2017 at 5:17:20 PM UTC+5:30	KMS Key ID	KMS Key ARN	
State available			
Attachment Information			
Volume type gp2			
Product codes -			

EC2 Dashboard

Services Resource Groups

Create Volume Actions

Filter by tags and attributes or search by keyword

Name	Volume ID	Size	Volume Type	IOPS	Snapshot	Created	Availability Zone	State	Alarm Status
	vol-031bcd0...	1 GiB	gp2	100 / 3000		December 13, 2017...	us-east-2c	available	None
	vol-007078a...	8 GiB	gp2	100 / 3000	snap-0bc297f6...	December 13, 2017...	us-east-2c	in-use	None

Create Snapshot

Volume

Name

Description

Encrypted

Cancel Create

Create bucket

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

Versioning

Keep multiple versions of an object in the same bucket.

[Learn more](#)

Disabled

Server access logging

Set up access log records that provide details about access requests.

[Learn more](#)

Disabled

Tags

Use tags to track your cost against projects or other criteria.

[Learn more](#)

0 Tags

Object-level logging

Record object-level API activity using the CloudTrail data events feature (additional cost).

[Learn more](#)

Disabled

Default encryption

Automatically encrypt objects when stored in Amazon S3

[Previous](#) [Next](#)

Create bucket ✕

✓ Name and region✓ Set properties3 **Set permissions**4 Review

Manage users

User ID ⓘ	Objects ⓘ	Object permissions ⓘ	
manoj.hirway(Owner)	<input checked="" type="checkbox"/> Read <input checked="" type="checkbox"/> Write	<input checked="" type="checkbox"/> Read <input checked="" type="checkbox"/> Write	✕

Access for other AWS account + Add account

Account ⓘ	Objects ⓘ	Object permissions ⓘ	
-----------	-----------	----------------------	--

Manage public permissions

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

Manage system permissions

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

PreviousNext

Create bucket ✕

✓ Name and region✓ Set properties✓ Set permissions4 Review

Name and region Edit

Bucket name awsbucketdev **Region** US East (Ohio)

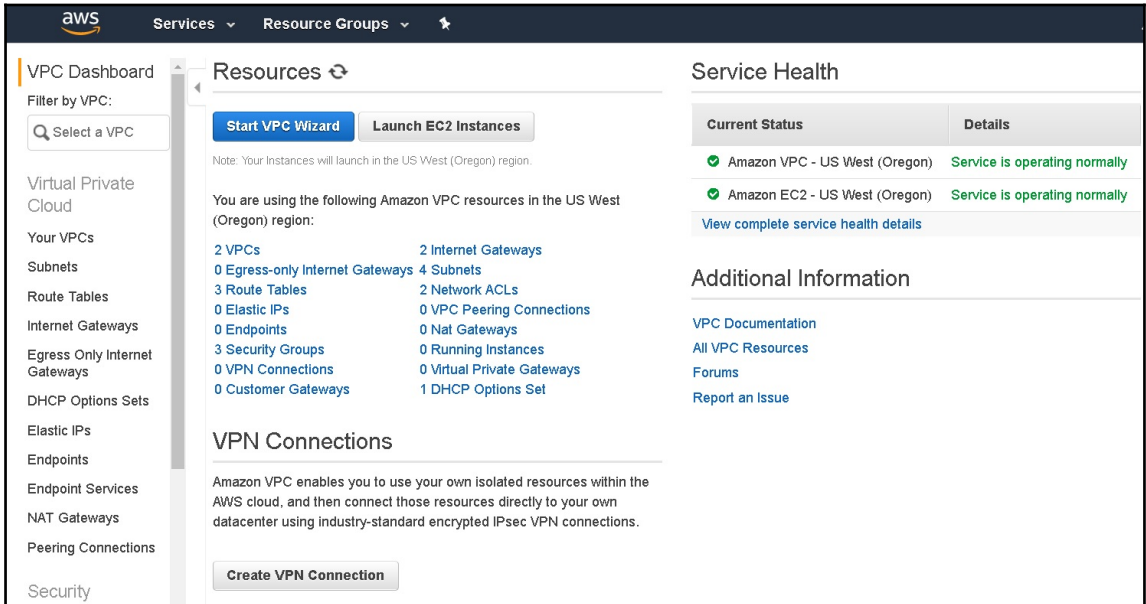
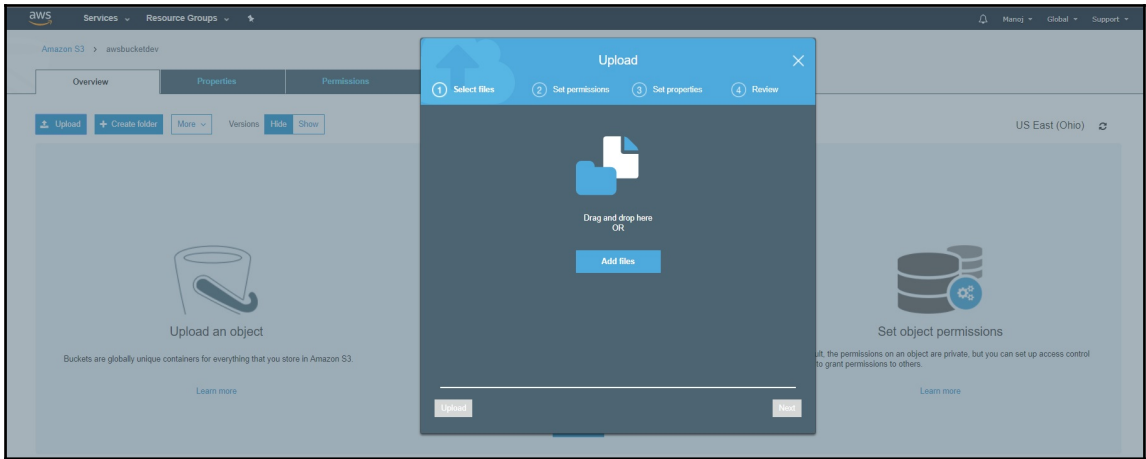
Properties Edit

Versioning	Enabled
Server access logging	Disabled
Tagging	0 Tags
Object-level logging	Disabled
Default encryption	None

Permissions Edit

Users	1
Public permissions	Disabled
System permissions	Disabled

PreviousCreate bucket



Step 2: VPC with a Single Public Subnet

IPv4 CIDR block:* 10.0.0.0/16 (65531 IP addresses available)

IPv6 CIDR block: No IPv6 CIDR Block
 Amazon provided IPv6 CIDR block

VPC name: packt-pub

Public subnet's IPv4 CIDR:* 10.0.0.0/24 (251 IP addresses available)

Availability Zone:* us-west-2a ▼

Subnet name: Public subnet

You can add more subnets after AWS creates the VPC.

Service endpoints

Add Endpoint

Enable DNS hostnames:* Yes No

Hardware tenancy:* Default ▼

Cancel and Exit

Back

Create VPC

Create VPC Actions

Search VPCs and their props X

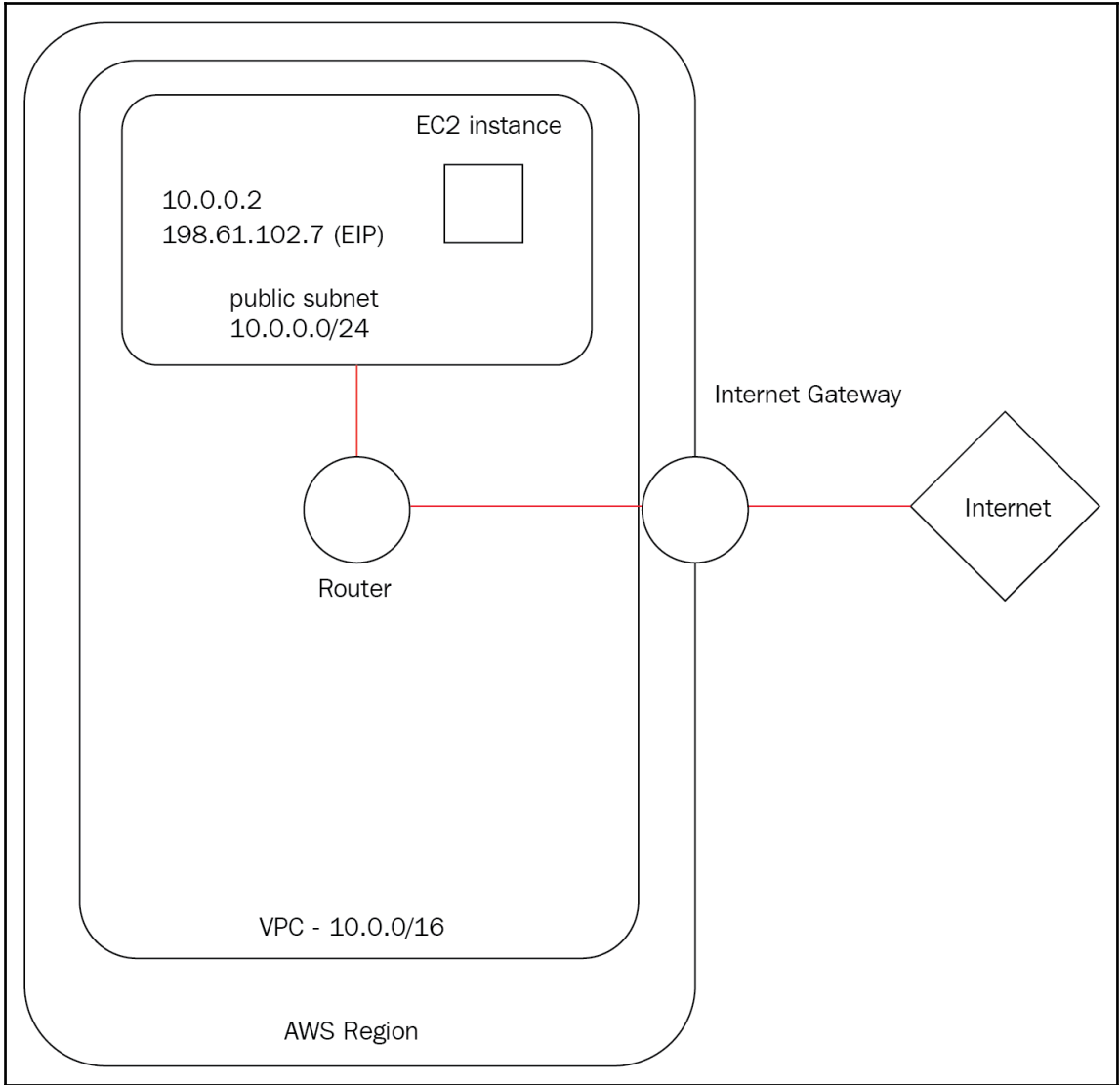
Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCP options set	Route table	Network ACL	Tenancy
Default	vpc-3abd7a43	available	172.31.0.0/16		dopt-2b0a174d	rtb-cda4b3b4	acl-c12958b8	Default
packt-pub	vpc-966106ef	available	10.0.0.0/16		dopt-2b0a174d	rtb-6ca22a14	acl-597e9a21	Default

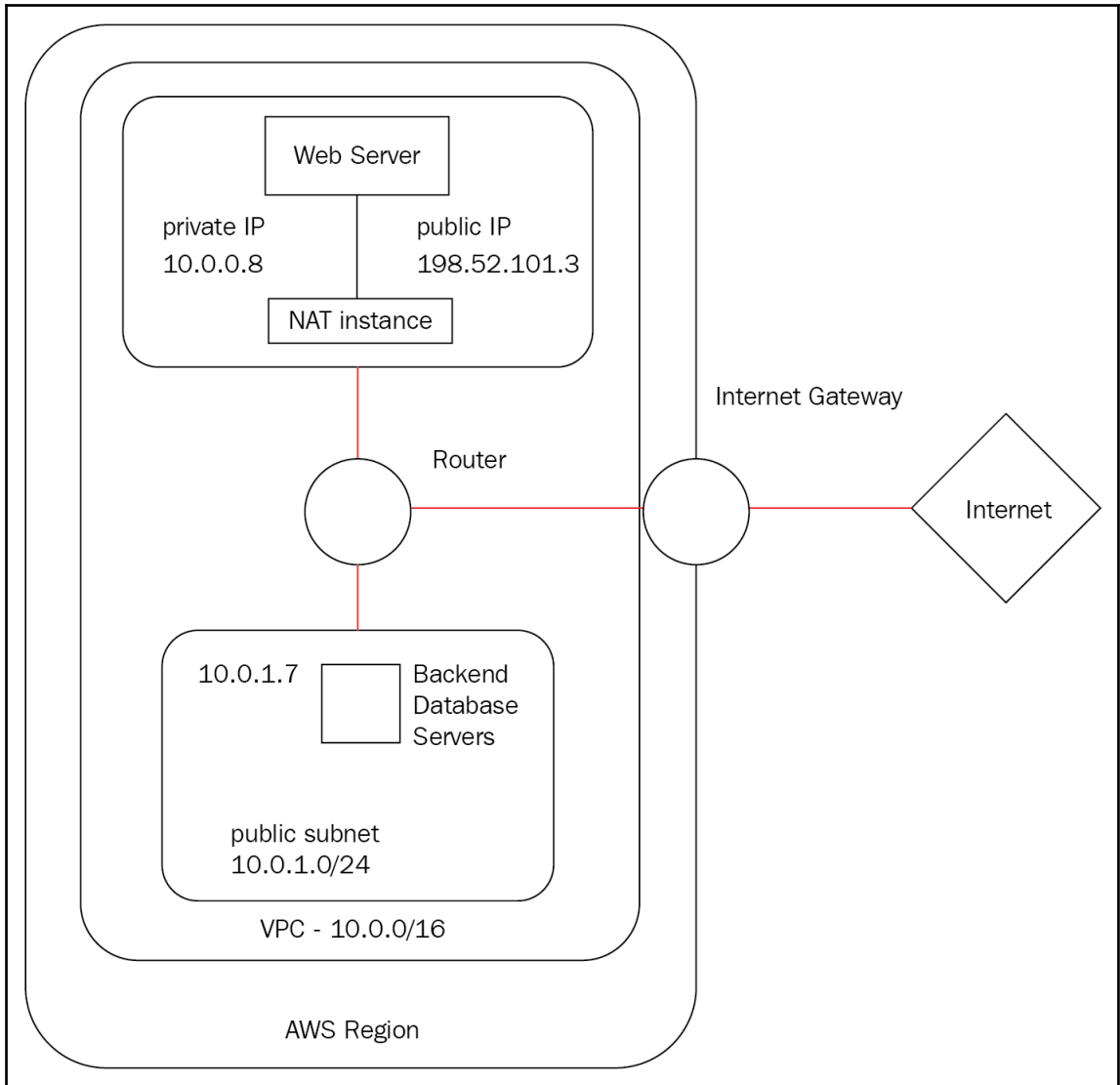
vpc-3abd7a43

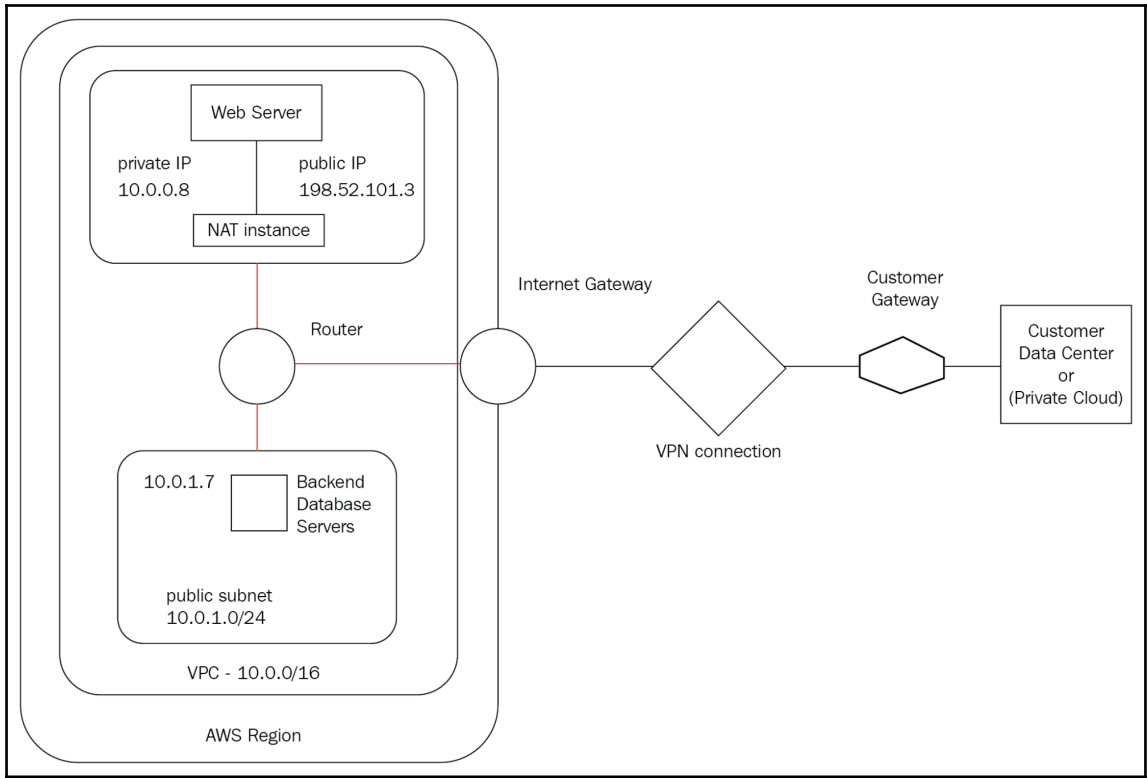
Summary CIDR Blocks Flow Logs Tags

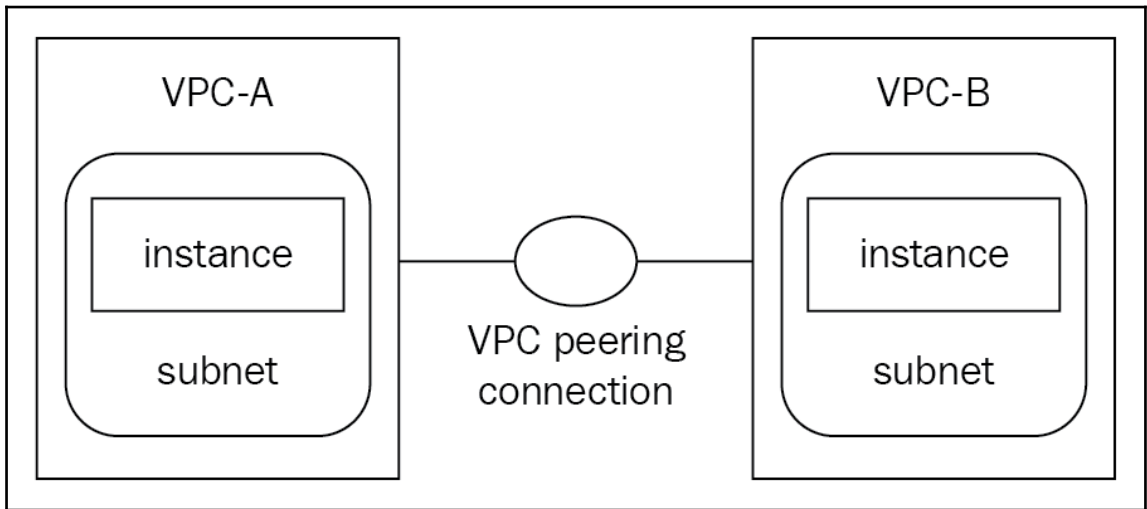
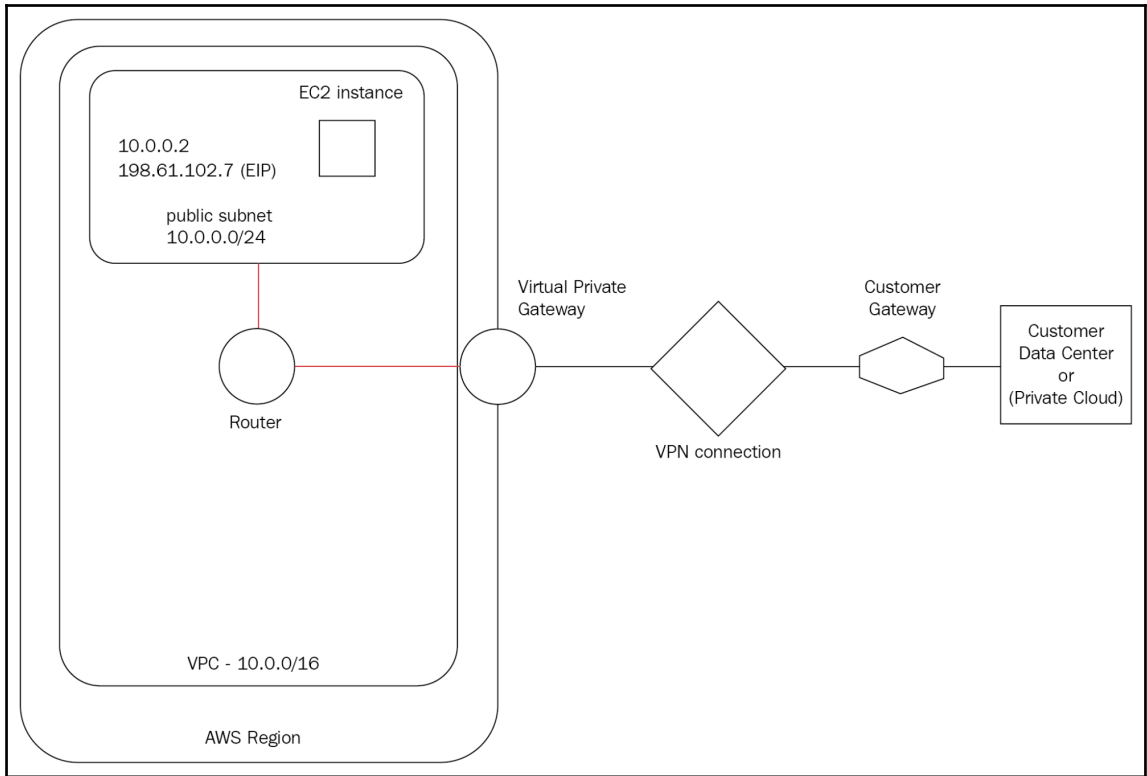
VPC ID: vpc-3abd7a43 | Default
State: available
IPv4 CIDR: 172.31.0.0/16
IPv6 CIDR:
DHCP options set: dopt-2b0a174d
Route table: rtb-cda4b3b4

Network ACL: acl-c12958b8
Tenancy: Default
DNS resolution: yes
DNS hostnames: yes
ClassicLink DNS Support: no

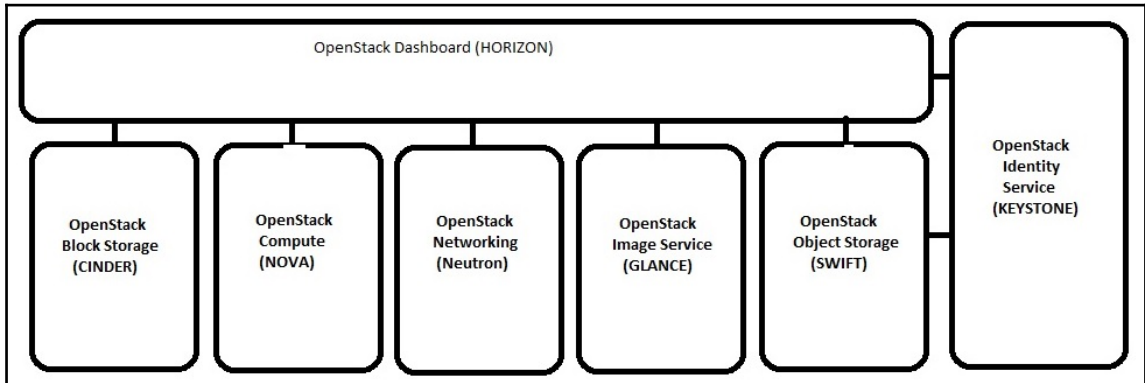




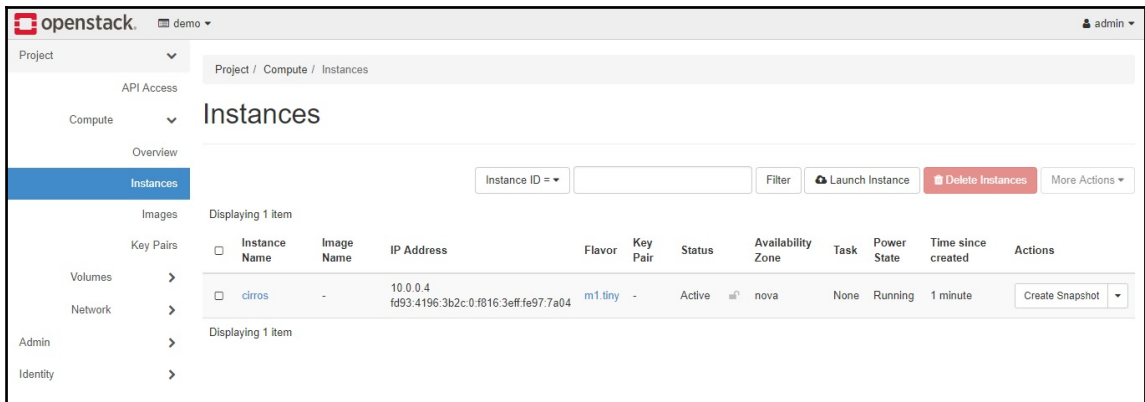




Chapter 3: Exploring OpenStack Private Cloud



```
This is your host IP address: 10.0.2.81
This is your host IPv6 address: ::1
Horizon is now available at http://10.0.2.81/dashboard
Keystone is serving at http://10.0.2.81/identity/
The default users are: admin and demo
The password: mypassword
```



openstack demo admin

Project / Network / Networks

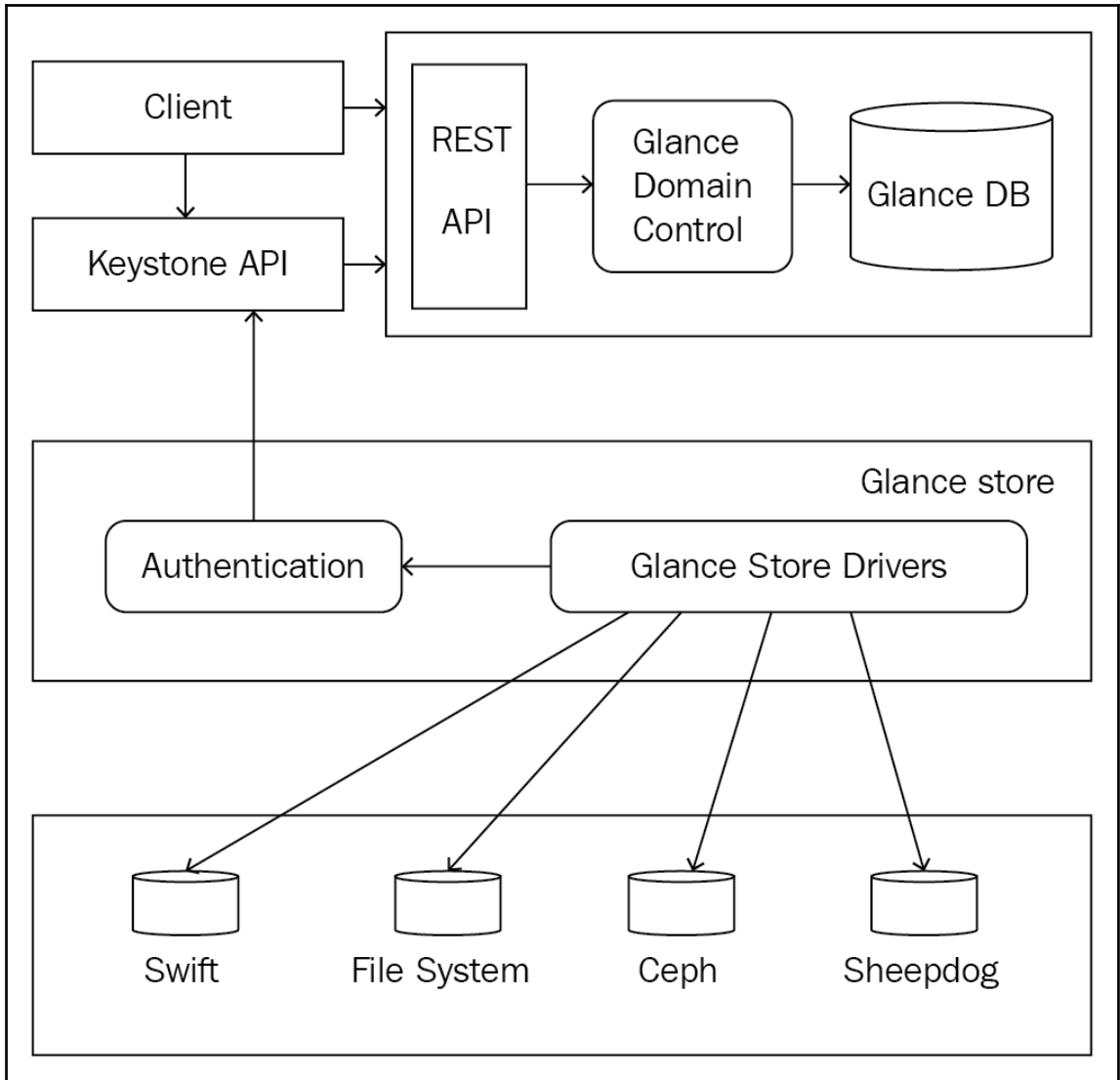
Networks

Displaying 2 items

Name = Filter [+ Create Network](#) [Delete Networks](#)

<input type="checkbox"/>	Name	Subnets Associated	Shared	External	Status	Admin State	Availability Zones	Actions
<input type="checkbox"/>	private	ipv6-private-subnet fd93:4196:3b2c::/64 private-subnet 10.0.0.0/26	No	No	Active	UP	nova	Edit Network
<input type="checkbox"/>	public	public-subnet 172.24.4.0/24 ipv6-public-subnet 2001:db8::/64	No	Yes	Active	UP	nova	Edit Network

Displaying 2 items



Project / Compute / Images

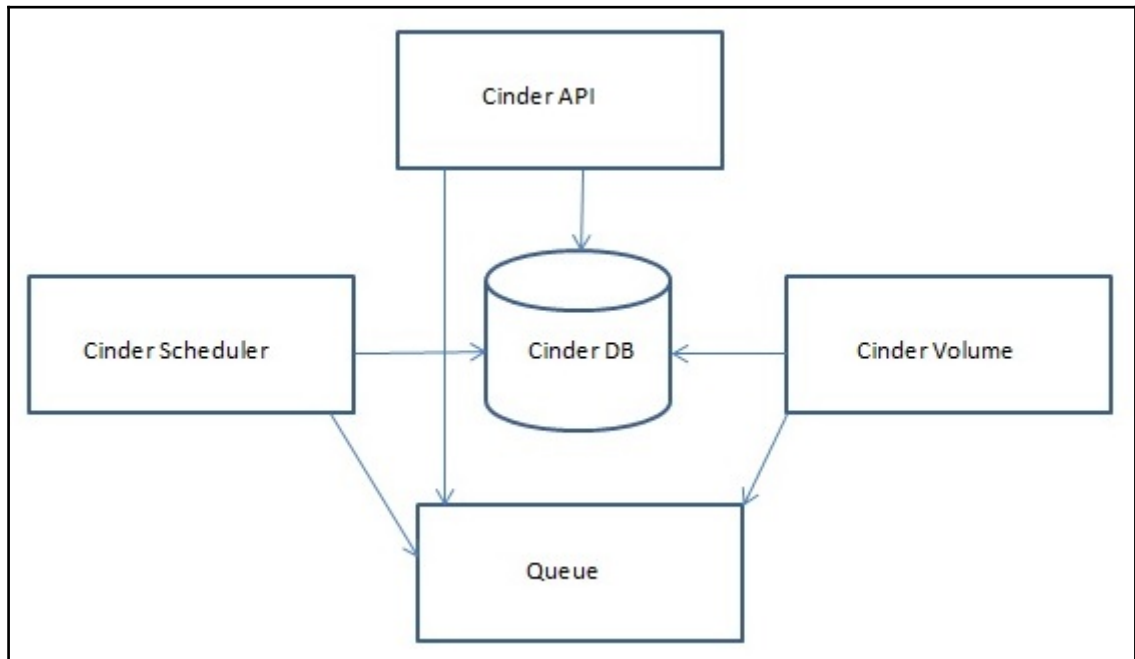
Images

Click here for filters. + Create Image Delete Images

Displaying 2 items

<input type="checkbox"/>	Owner	Name ^	Type	Status	Visibility	Protected	Disk Format	Size	
<input type="checkbox"/>	> admin	cirros-0.3.5-x86_64-disk	Image	Active	Public	No	QCOW2	12.65 MB	Launch ▾
<input type="checkbox"/>	> demo	test-image	Snapshot	Active	Image from Other Project - Non-Public	No	QCOW2	0 bytes	Launch ▾

Displaying 2 items



openstack demo

Project / Volumes / Volumes

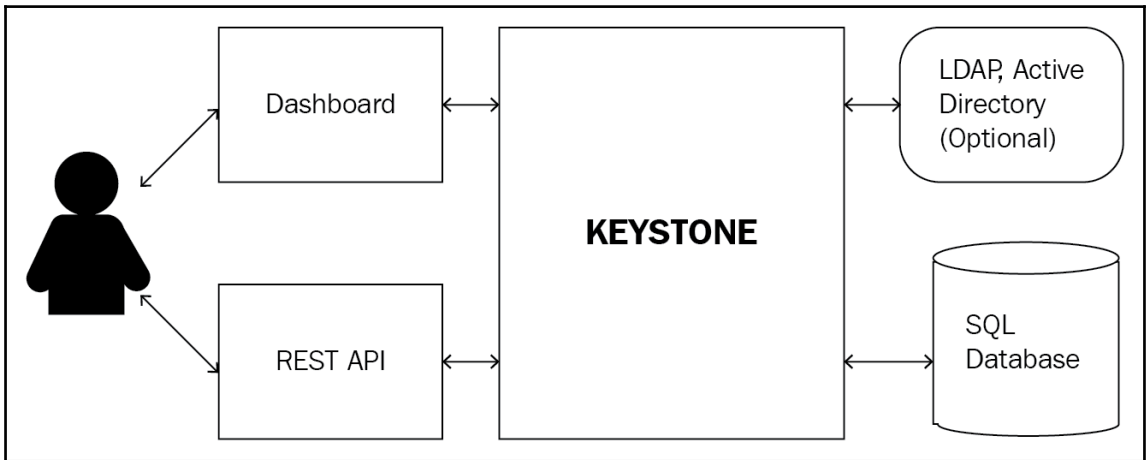
Volumes

Filter

Displaying 1 item

<input type="checkbox"/>	Name	Description	Size	Status	Type	Attached To	Availability Zone	Bootable	Encrypted	Actions
<input type="checkbox"/>	de25ab6a-4787-410f-8ef1-fbbfeab6f04c	-	1GiB	In-use	lvmdriver-1	/dev/vda on cirros	nova	Yes	No	<input type="button" value="Edit Volume"/> <input type="button" value="⌵"/>

Displaying 1 item



openstack demo admin

Project > Identity / Projects

Projects

Project Name Filter [+ Create Project](#) [Delete Projects](#)

Displaying 6 items

<input type="checkbox"/>	Name	Description	Project ID	Domain Name	Enabled	Actions
<input type="checkbox"/>	service		03040a47997c4ebfa505980821160851	Default	Yes	Manage Members
<input type="checkbox"/>	demo		0d29d68703264fa2979168678c6a982e	Default	Yes	Manage Members
<input type="checkbox"/>	admin	Bootstrap project for initializing the cloud.	20571eec62f1412a88238253eb55494e	Default	Yes	Manage Members
<input type="checkbox"/>	alt_demo		2355fb74c1624db2a188619b1e453d37	Default	Yes	Manage Members
<input type="checkbox"/>	invisible_to_admin		b8fe94e5aed247c59aafce50f0baecb0	Default	Yes	Manage Members
<input type="checkbox"/>	packpub		eba78c87dbc44bbdb8e97a9ba075b8fa	Default	Yes	Manage Members

openstack demo admin

Identity > Users

Users

User Name Filter [+ Create User](#) [Delete Users](#)

Displaying 9 items

<input type="checkbox"/>	User Name	Description	Email	User ID	Enabled	Domain Name	Actions
<input type="checkbox"/>	demo	-	demo@example.com	1c7ea9a152674928b61cc881f3fa7640	Yes	Default	Edit
<input type="checkbox"/>	admin	-		22f5f8f0da0042c5b78a23016fd540ae	Yes	Default	Edit
<input type="checkbox"/>	pack-pub-user	-	manoj@pack-pub.com	296719d772484e71a24e96dac24752d6	Yes	Default	Edit
<input type="checkbox"/>	glance	-		4c036bf31cd147b7be4cb6e989a48d1d	Yes	Default	Edit
<input type="checkbox"/>	cinder	-		624bf93610f44dec86745df09fe8a33a	Yes	Default	Edit
<input type="checkbox"/>	neutron	-		6d481be7c42249559776120f3f9a96bb	Yes	Default	Edit
<input type="checkbox"/>	alt_demo	-	alt_demo@example.com	9847c0a174c340949f3130ca6e0bcb6e	Yes	Default	Edit
<input type="checkbox"/>	nova	-		f457539a06a84c9a8a2541e979dc1da6	Yes	Default	Edit

openstack demo admin

Project > Identity / Groups

Admin >

Identity > **Groups**

Projects

Users Filter [+ Create Group](#) [Delete Groups](#)

Displaying 2 items

<input type="checkbox"/>	Name	Description	Group ID	Actions
<input type="checkbox"/>	nonadmins	non-admin group	bcbefba9e1a245538bdb7a702df23ad6	Manage Members
<input type="checkbox"/>	admins	openstack admin group	c8d9dabd8218490b92f594d956527a30	Manage Members

openstack demo admin

Project > Identity / Roles

Admin >

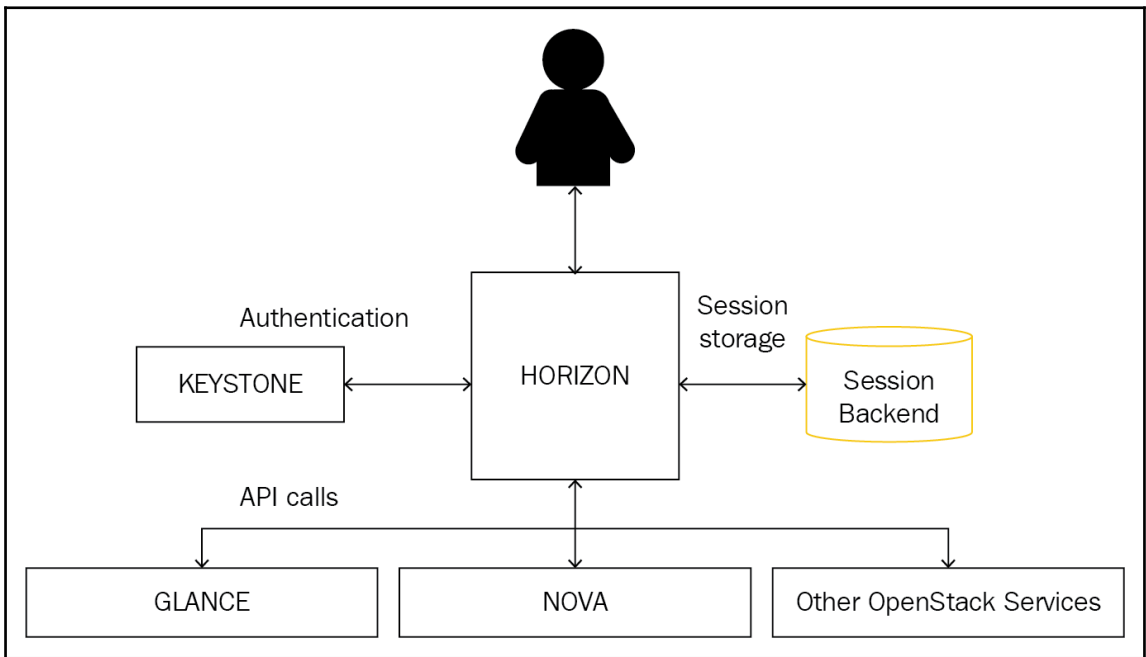
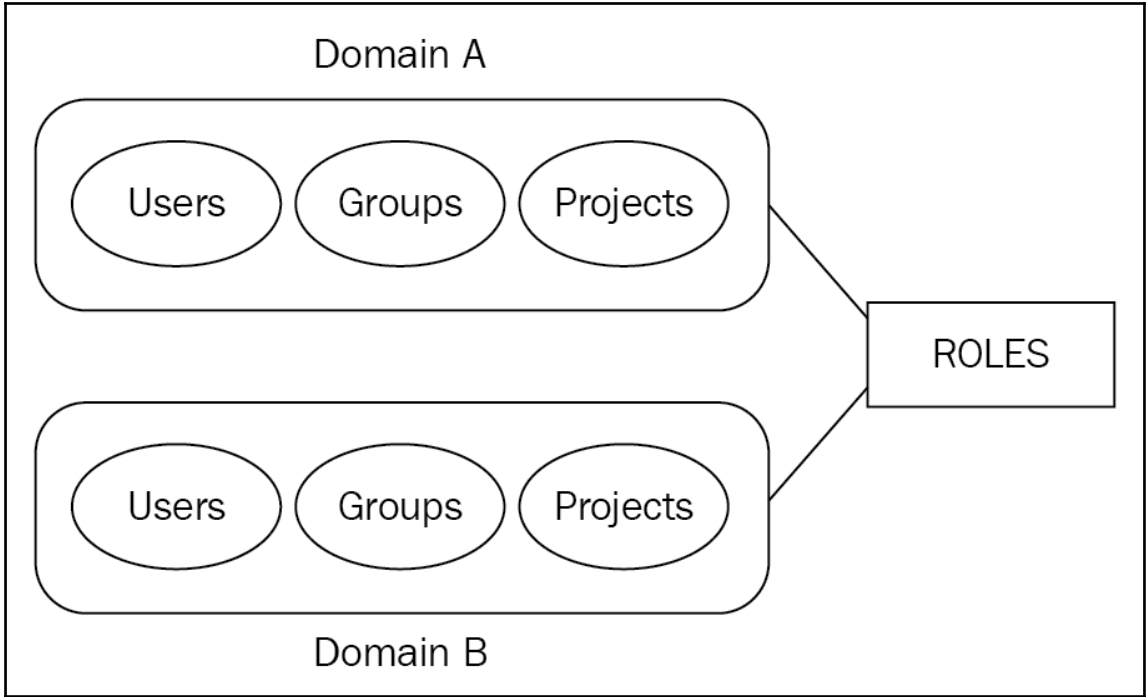
Identity > **Roles**

Projects

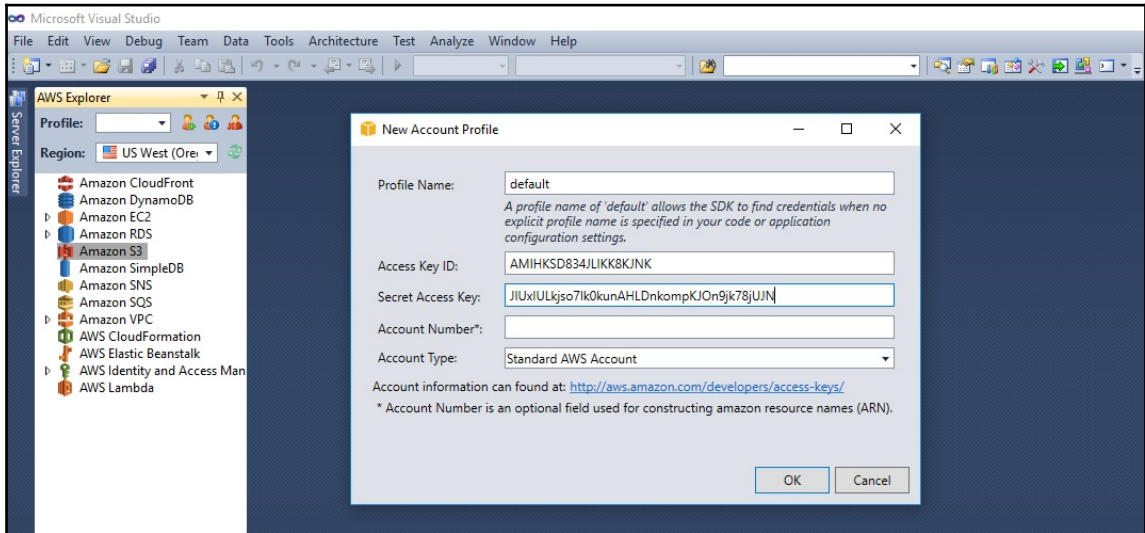
Users [+ Create Role](#) [Delete Roles](#)

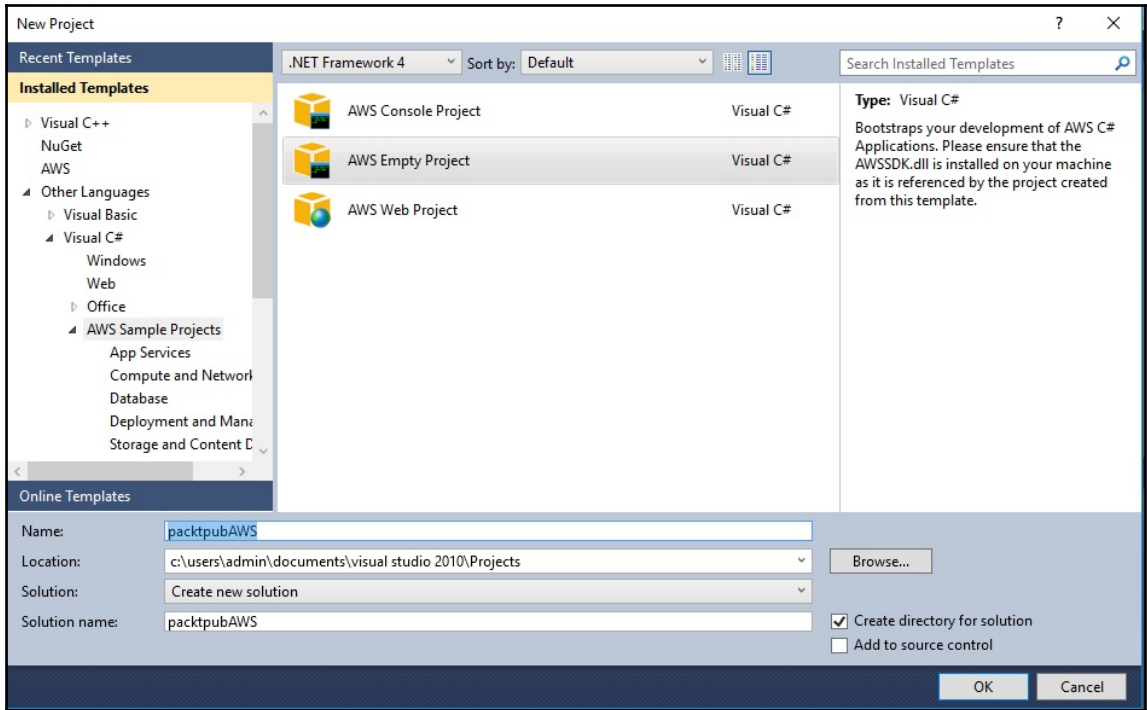
Displaying 6 items

<input type="checkbox"/>	Name	ID	Actions
<input type="checkbox"/>	admin	6a3f8f8cb4e24732b9cd0bf6ea7035c8	Edit Role
<input type="checkbox"/>	anotherrole	085f5b3d75b04adca13fa87c2b1b7eb7	Edit Role
<input type="checkbox"/>	Member	be0ade5c13d47d38968aa4cecec1f2	Edit Role
<input type="checkbox"/>	pact-pub	3f7a0ffa574d4c809ead4043f879b49	Edit Role
<input type="checkbox"/>	ResellerAdmin	17b2203b39674e369e5ef1764d42dcad	Edit Role
<input type="checkbox"/>	service	a1f1dbe4091e4e43bbd3193311867c77	Edit Role



Chapter 4: Developing AWS Cloud Applications





Chapter 5: Developing OpenStack Applications

Project / Network / Floating IPs

Floating IPs

Floating IP Address = Filter [Allocate IP To Project](#) [Release Floating IPs](#)

Displaying 2 items

<input type="checkbox"/>	IP Address	Description	Mapped Fixed IP Address	Pool	Status	Actions
<input type="checkbox"/>	172.24.4.10	packtpub public network	-	public	Down	Associate ▼
<input type="checkbox"/>	172.24.4.5	packtpub public network	-	public	Down	Associate ▼

Displaying 2 items

Project / Network / Security Groups / Manage Security Group Rules...

Manage Security Group Rules: default (44c975e3-eeb9-47ec-9f76-2245b2cb59e1)

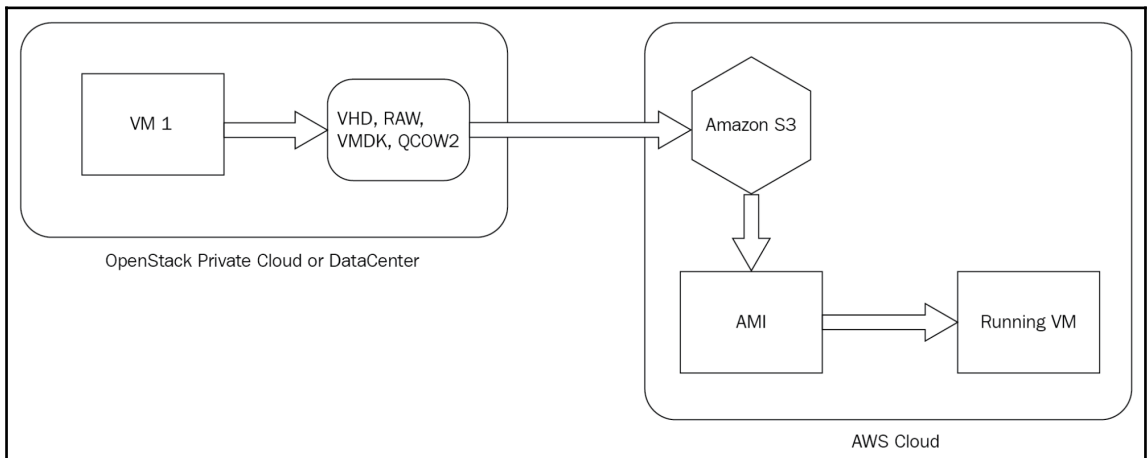
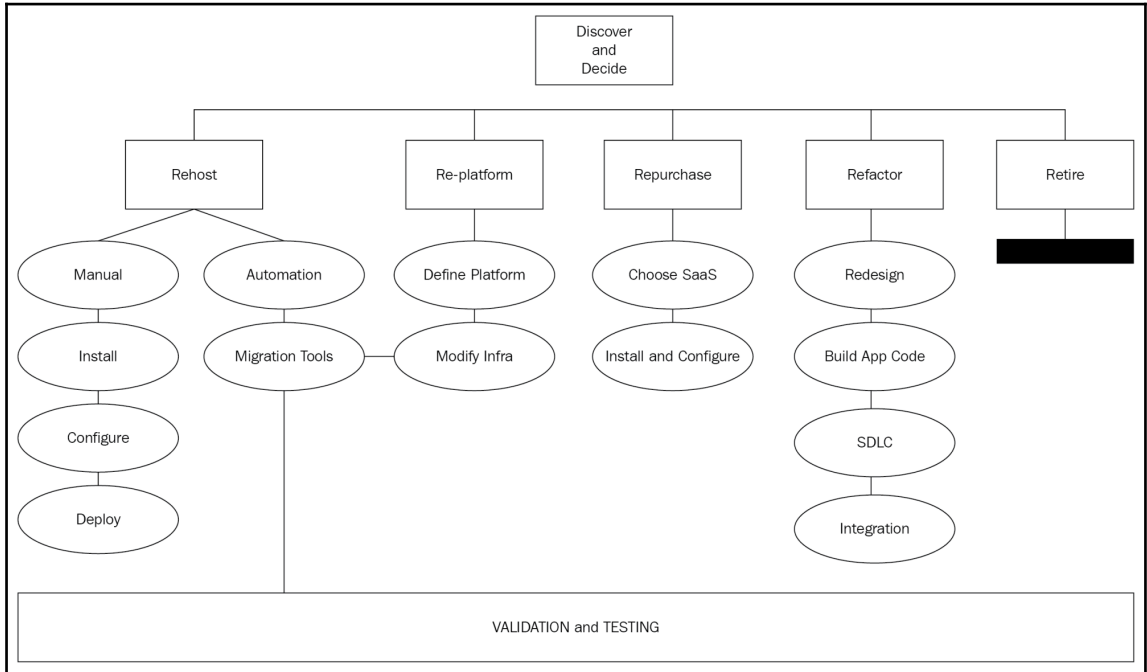
[+ Add Rule](#) [Delete Rules](#)

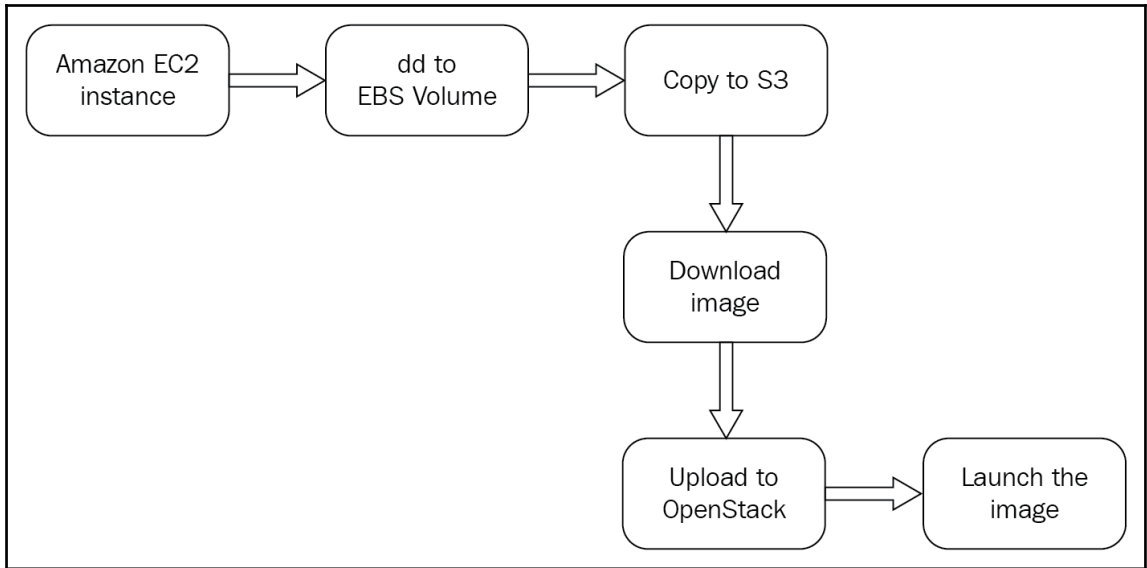
Displaying 4 items

<input type="checkbox"/>	Direction	Ether Type	IP Protocol	Port Range	Remote IP Prefix	Remote Security Group	Actions
<input type="checkbox"/>	Egress	IPv4	Any	Any	0.0.0.0/0	-	Delete Rule
<input type="checkbox"/>	Egress	IPv6	Any	Any	:::0	-	Delete Rule
<input type="checkbox"/>	Ingress	IPv4	Any	Any	-	default	Delete Rule
<input type="checkbox"/>	Ingress	IPv6	Any	Any	-	default	Delete Rule

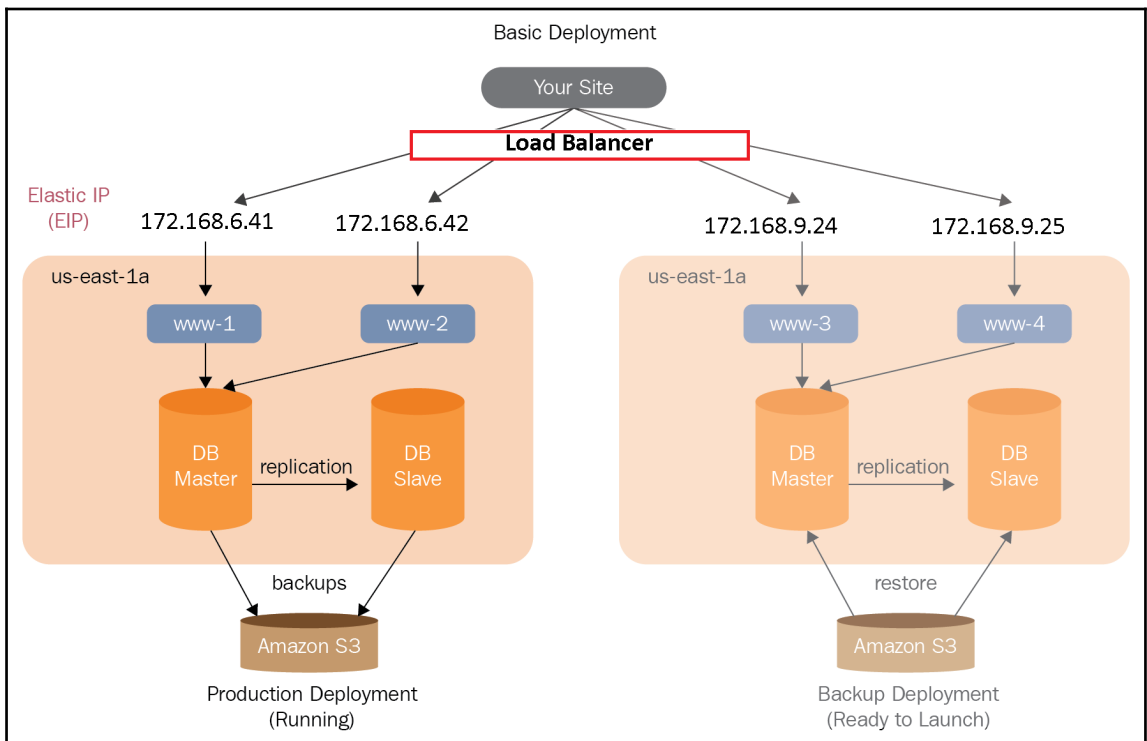
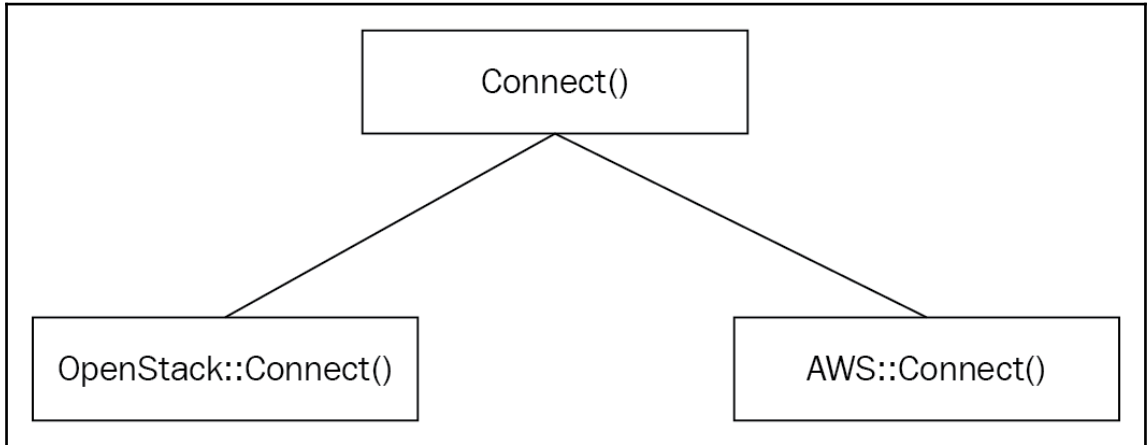
Displaying 4 items

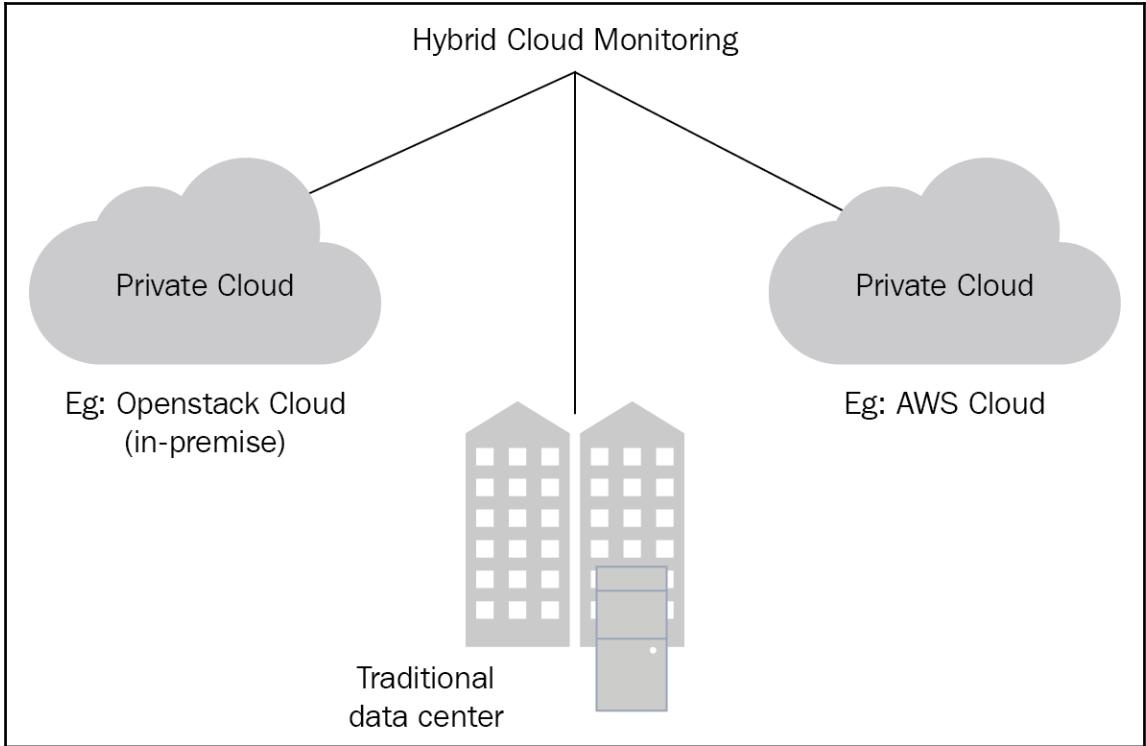
Chapter 6: Cloud Migration



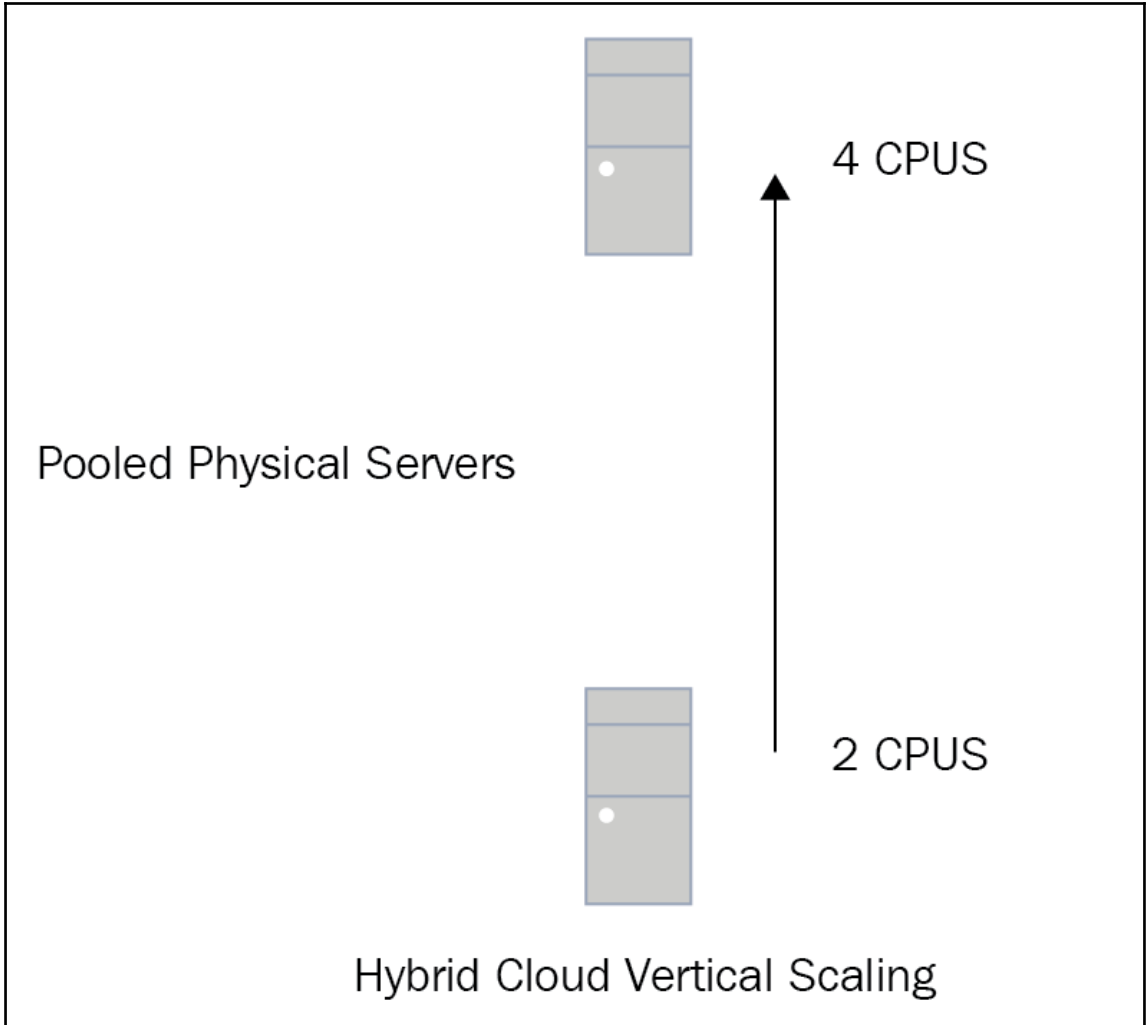


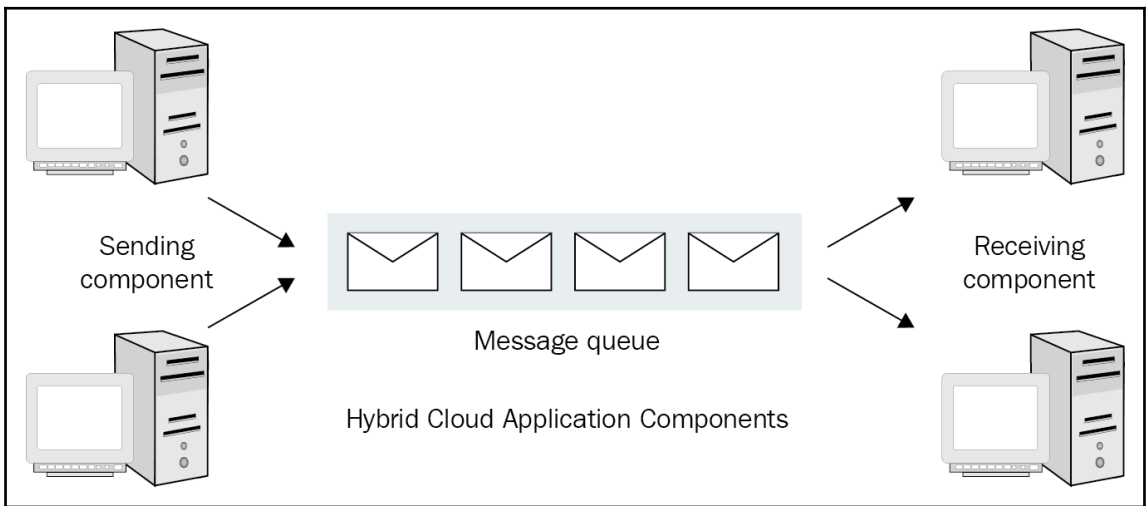
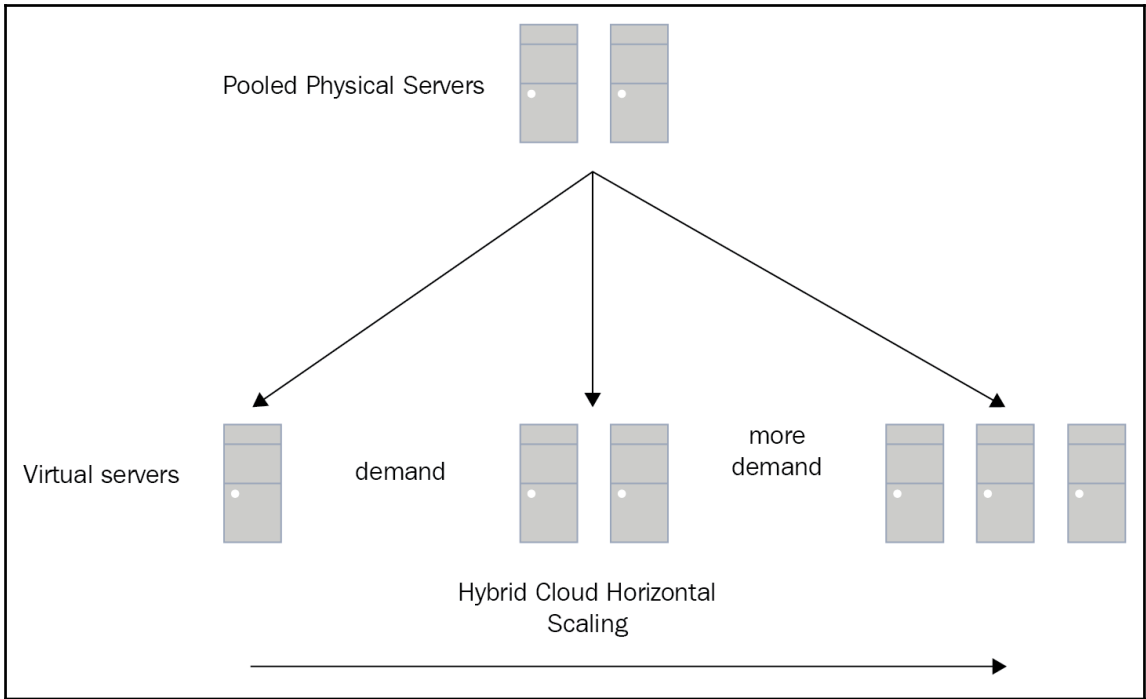
Chapter 7: Hybrid Cloud Best Practices

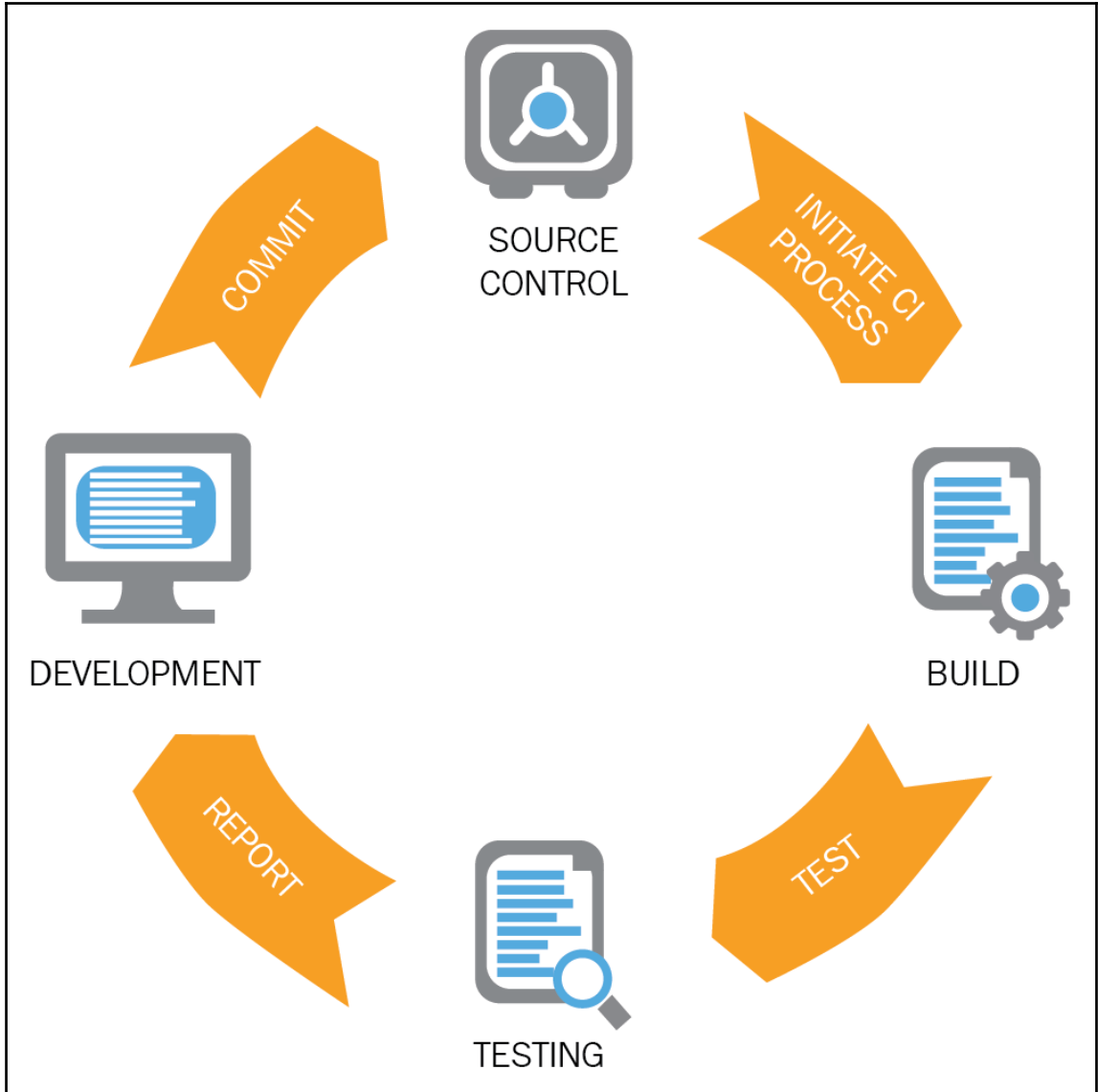


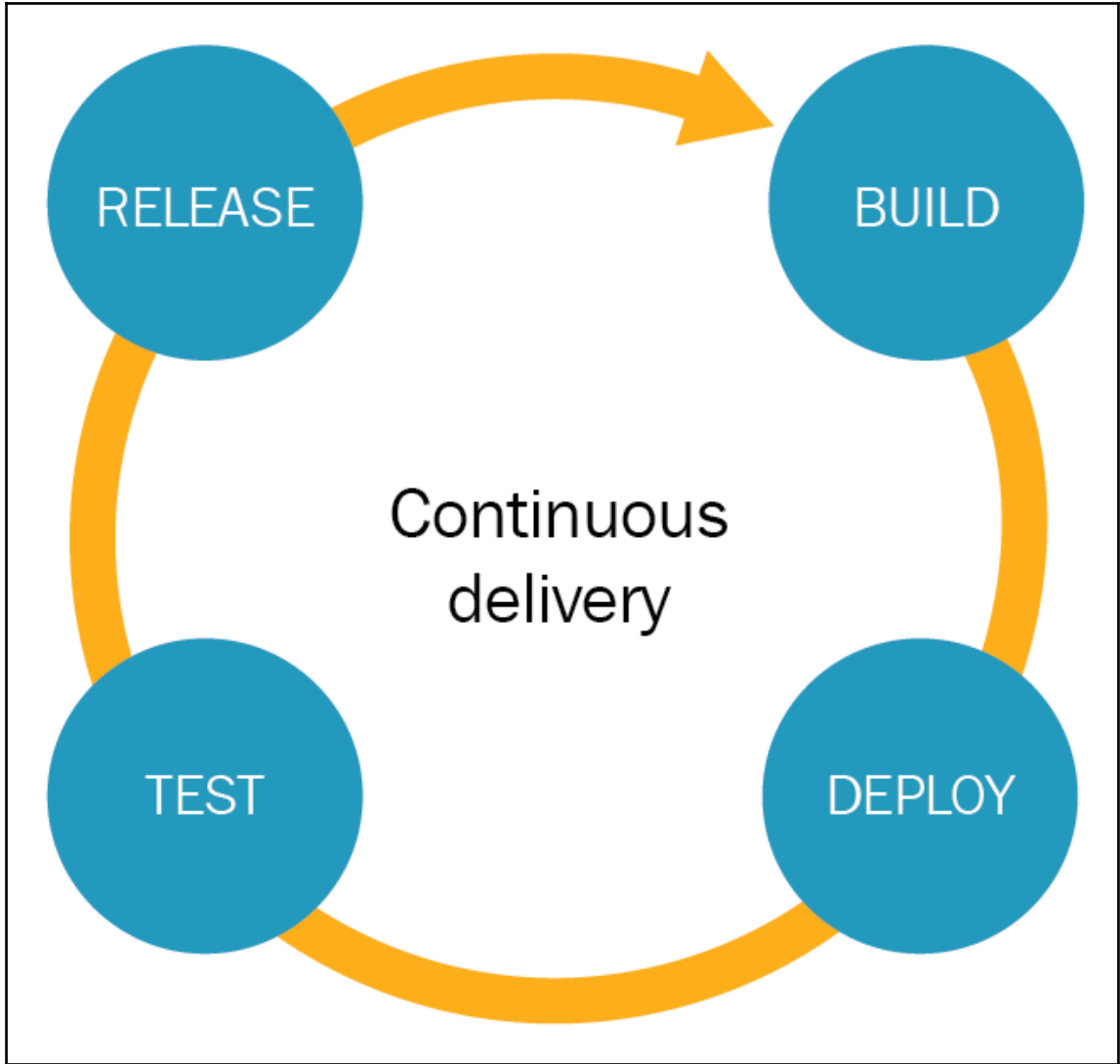


Configuration Management	CHEF	puppet labs	ANSIBLE	SALTSTACK
CI/CDE orchestration	Travis CI	Jenkins	Bamboo	circleci
Container orchestration	docker	kubernetes	mesosphere	
Cloud-specific orchestration	AWS CloudFormation	Microsoft Azure		
PaaS orchestration	OPENSIFT	CLOUDFOUNDRY	Elastic Beaststack	Google app engine

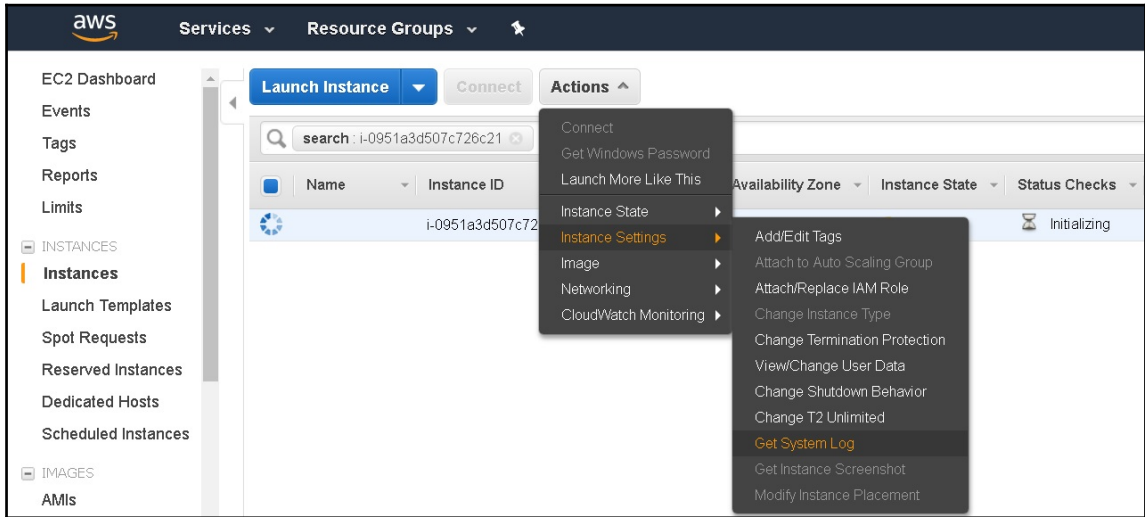








Chapter 8: Monitoring and Troubleshooting Hybrid Cloud



Chapter 9: Hybrid Cloud Security

