

# Cloud Operations Architecture Framework

*Full Stack Disaster Recovery  
Operations Workshop*

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JUL 2023 | v0.2



# Topics to Cover

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1. **Introduction** [1 m]
2. **Overview** [30m]
3. **Configuring Operations Scenarios** [25m]
4. **Executing Operations Scenarios** [15m]



# 1. INTRODUCTION

# Introduction

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- This Workshop is intended to give an overview of the Full Stack Disaster Recovery Service (FSDR) and its different components, features, and some of the typical use cases and operations
- We'll also deep dive into the provisioning and execution operations of DR plans using different interfaces





# 2. OVERVIEW

# Full Stack Disaster Recovery Service | Overview

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- Full Stack Disaster Recovery Service (FSDR) is an OCI managed service to facilitate the management and orchestration of disaster recovery plans for all layers of an application stack, as infrastructure, middleware, database and application
- Can be integrated with Oracle platforms and non-Oracle applications
- Generates, runs and monitors disaster recovery plans for services and apps deployed in your tenancy
- You can run FSDR prechecks to validate and monitor business continuity readiness and compliance

# Full Stack Disaster Recovery Service | Benefits

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- **Provides Full Application Recovery.** not single components, but entire application stack
- **Intelligent Plan Generation.** Evaluates topology and automatically create DR workflow
- **Minimizes Disaster Recovery Time,** eliminating manual steps
- **Validates Disaster Recovery Workflows and Configurations,** provides prechecks to validate the plan against configuration changes
- **Reduces Human Errors**
- **Flexible and Customizable DR Workflows.** You can adapt the custom logic and steps
- **Eliminates the Need for Special Skills**
- **Single Pane of Glass Monitoring and Management,** from OCI console



# Full Stack Disaster Recovery Service | General Concepts

<b>Disaster Recovery (DR)</b>	Process to restoring some or all parts of a business system after an outage	<b>Warm Standby</b>	DR model in which some or all of the components of an application or service are pre-deployed in the standby region. Involved higher operating cost but lower RTO
<b>Recovery Point Objective (RPO)</b>	Maximum amount of data loss tolerated as part of DR restoration	<b>Cold Standby</b>	DR model in which very few or none of the components of an application or service need to be pre-deployed in the standby region. Involved lower operating costs but higher RTO
<b>Recovery Time Objective (RTO)</b>	Maximum amount of time the application or service can be unavailable until service is restored	<b>Role</b>	Whether an application and its region is currently the Primary or Standby version. Application and region's role changes as a result of a DR transition
<b>Primary</b>	Production version of an application or service currently in use	<b>Switchover</b>	Planned and order transition of services from Primary and Standby regions
<b>Standby</b>	Reserved version of an application or service where service is restored	<b>Failover</b>	Unplanned, immediate transition of services to the Standby region without attempting to shut down the services in Primary region. Usually performed when an outage or disaster affects the primary region





# Full Stack Disaster Recovery Service | FSDR Concepts

Resource	A component in OCI that can be used and managed independently	Plan Group	Group of steps in a DR Plan. DR Plan consists in one or more Plan Groups executed sequentially. All steps in a Plan Group execute in parallel
DR Protection Group	Represent a consistent group of OCI resources that must be treated as a group defined for the purposes of disaster recovery for an application	Plan Step	Single indivisible unit of execution in a DR Plan. Must belong to a Plan Group
Association	Relationship defined between two DR Protection Groups	Built-In Groups or Steps	Type of Plan Group or Step generated automatically by FSDR when DR Plan is created
DR Plan	Represent a DR workflow associated with a pair of DR Protection Groups. Represent a sequence of Plan Groups (Steps)	User-Defined Groups or Steps	Type of Plan Group or Step added by the user to a DR Plan after the DR plan is created by FSDR
DR Plan Execution	Represent the execution of a DR Plan. Can only be created (launched) at a Standby DR Protection Group	Precheck	A predetermined set of checks associated with a DR Plan to validate DR Plan is compliant with the members and configuration of the DR Protection Groups



# Full Stack Disaster Recovery Service | Supported Resource Types

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- Compute Instances
- Boot and Block Volumes (Volume Groups)
- Oracle Exadata Database Service
- Oracle Base Database Service
- Oracle Autonomous Database on Shared Exadata Infrastructure

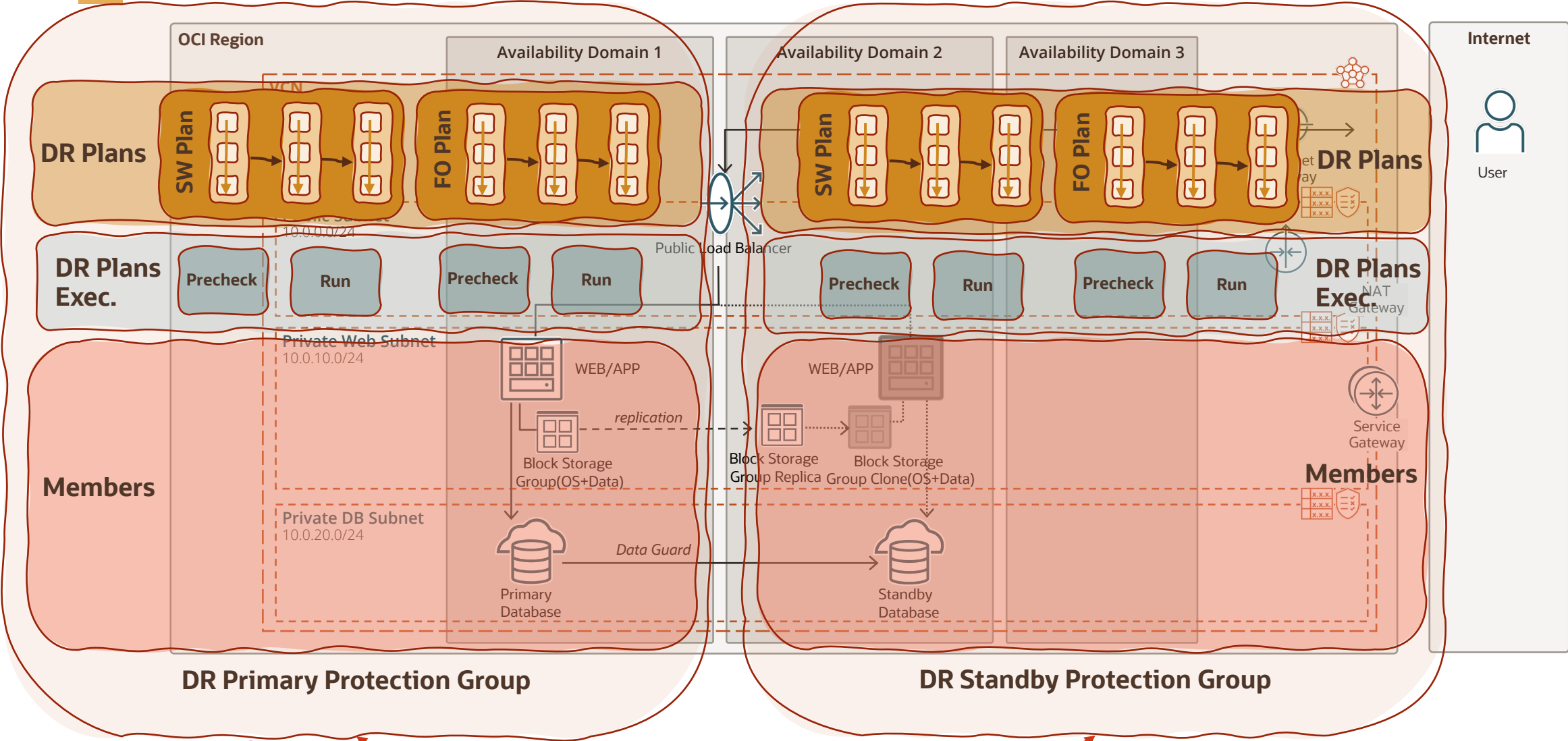
# Full Stack Disaster Recovery Service | Available Interfaces

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- OCI Console (UI): Migration & Disaster Recovery → Disaster Recovery
- [OCI CLI](#): oci disaster-recovery
- [REST API](#)
- SDK (Java, Python, Typescript/Javascript, .NET, Go, Ruby)
- [Terraform Provider](#)
- [Ansible Collection](#): oci\_disaster\_recover\_\*

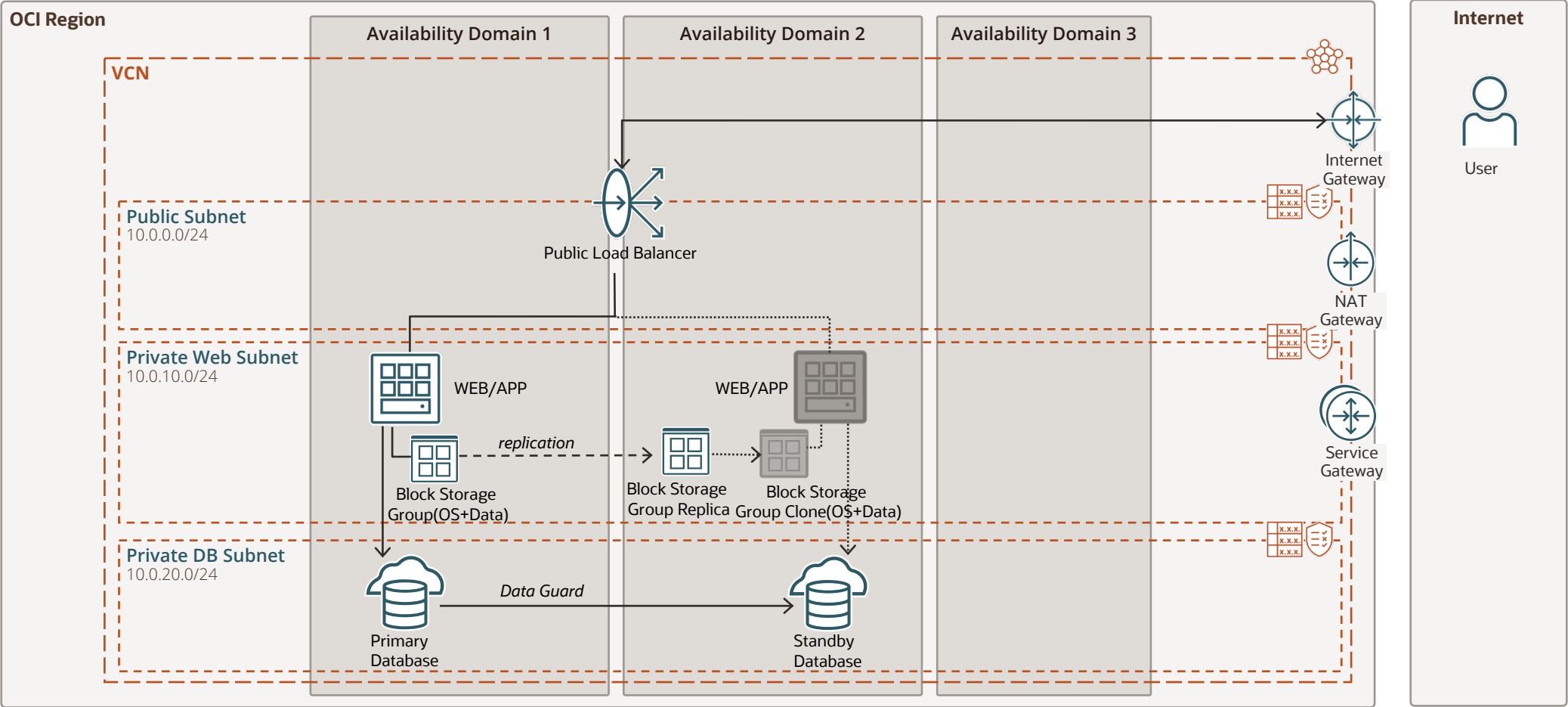
# Full Stack Disaster Recovery Service | How It Works?

- DR Plan
- DR Plan Group
- DR Plan Step



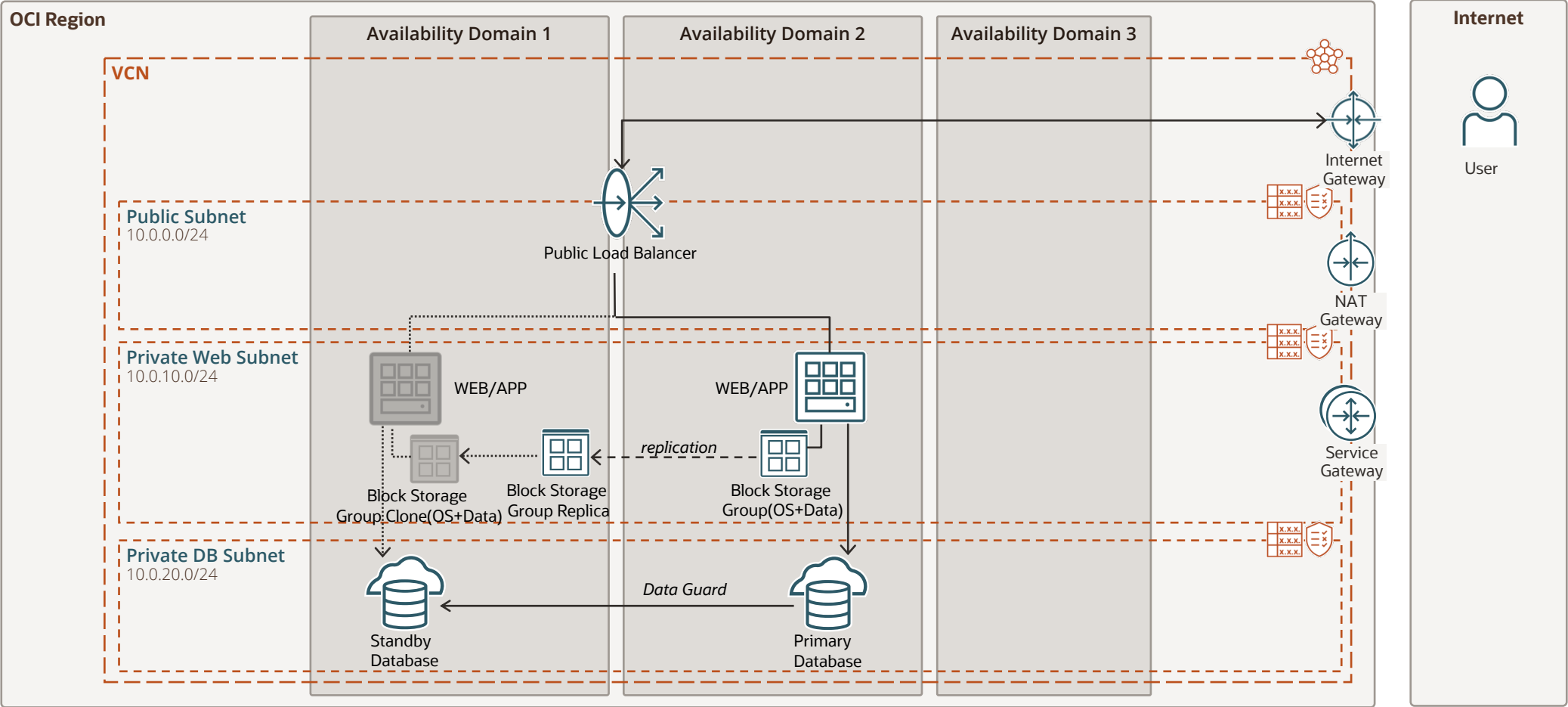
# Full Stack Disaster Recovery Service | Example Use Case 1

## Inter-Availability Domains Cold Standby



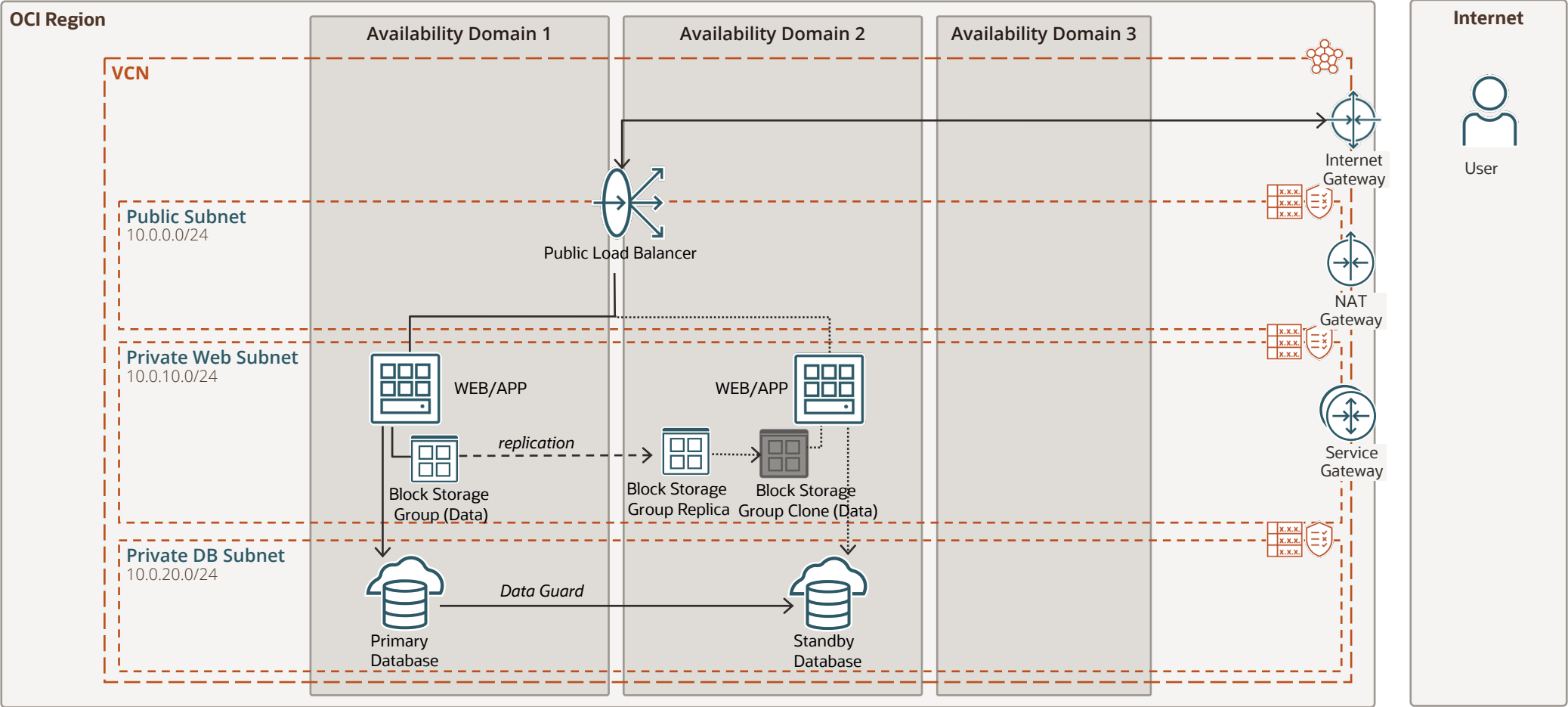
# Full Stack Disaster Recovery Service | Example Use Case 1

## Inter-Availability Domains Cold Standby



# Full Stack Disaster Recovery Service | Example Use Case 2

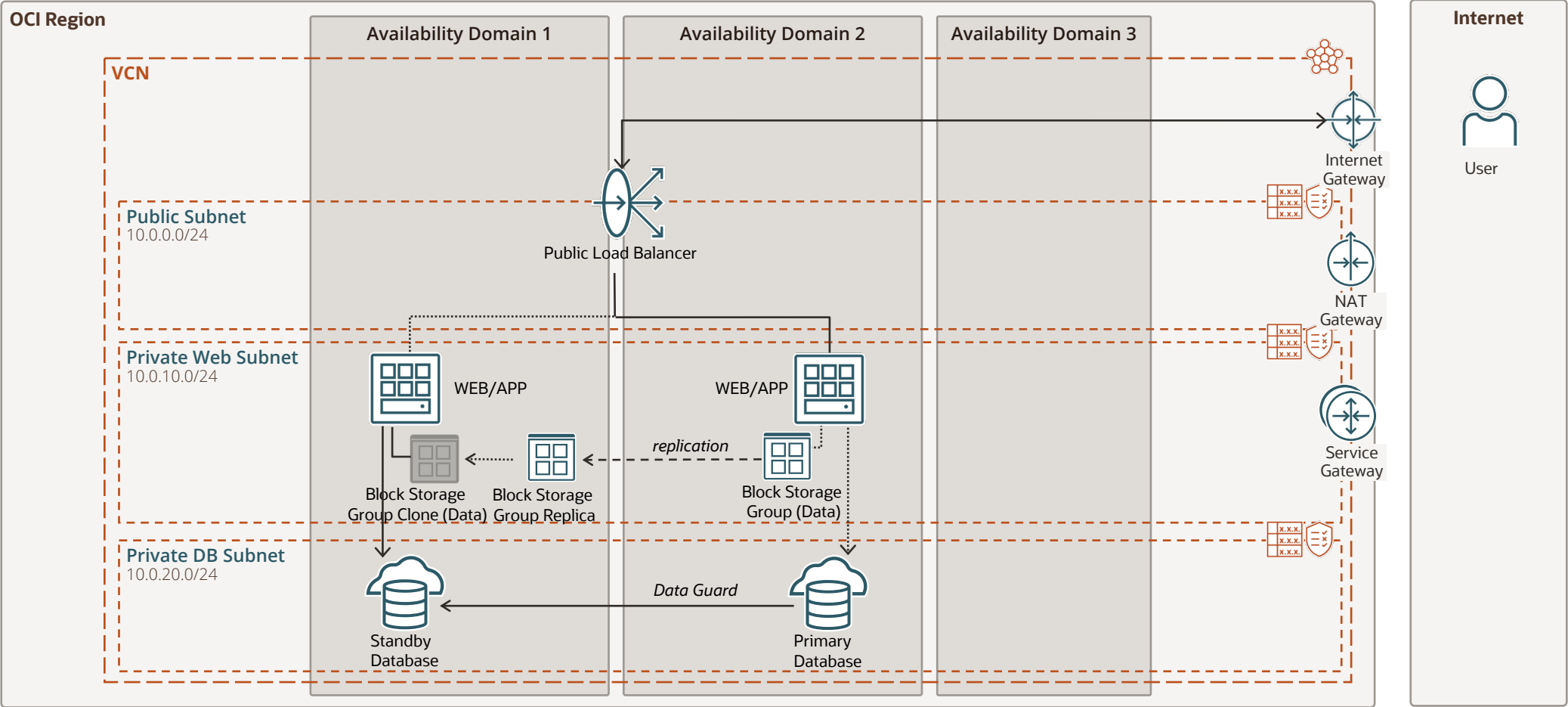
## Inter-Availability Domains Warm Standby





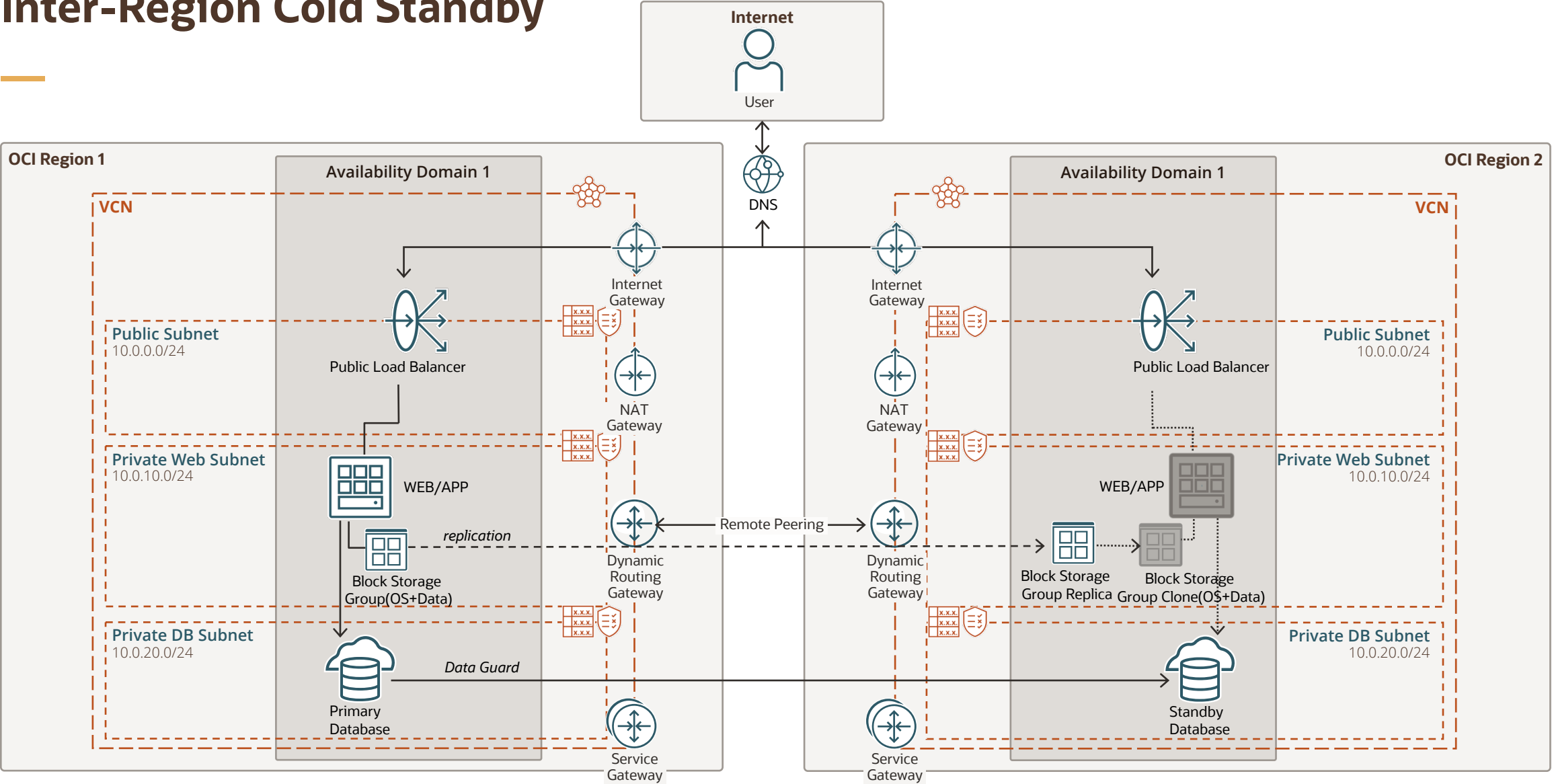
# Full Stack Disaster Recovery Service | Example Use Case 2

## Inter-Availability Domains Warm Standby



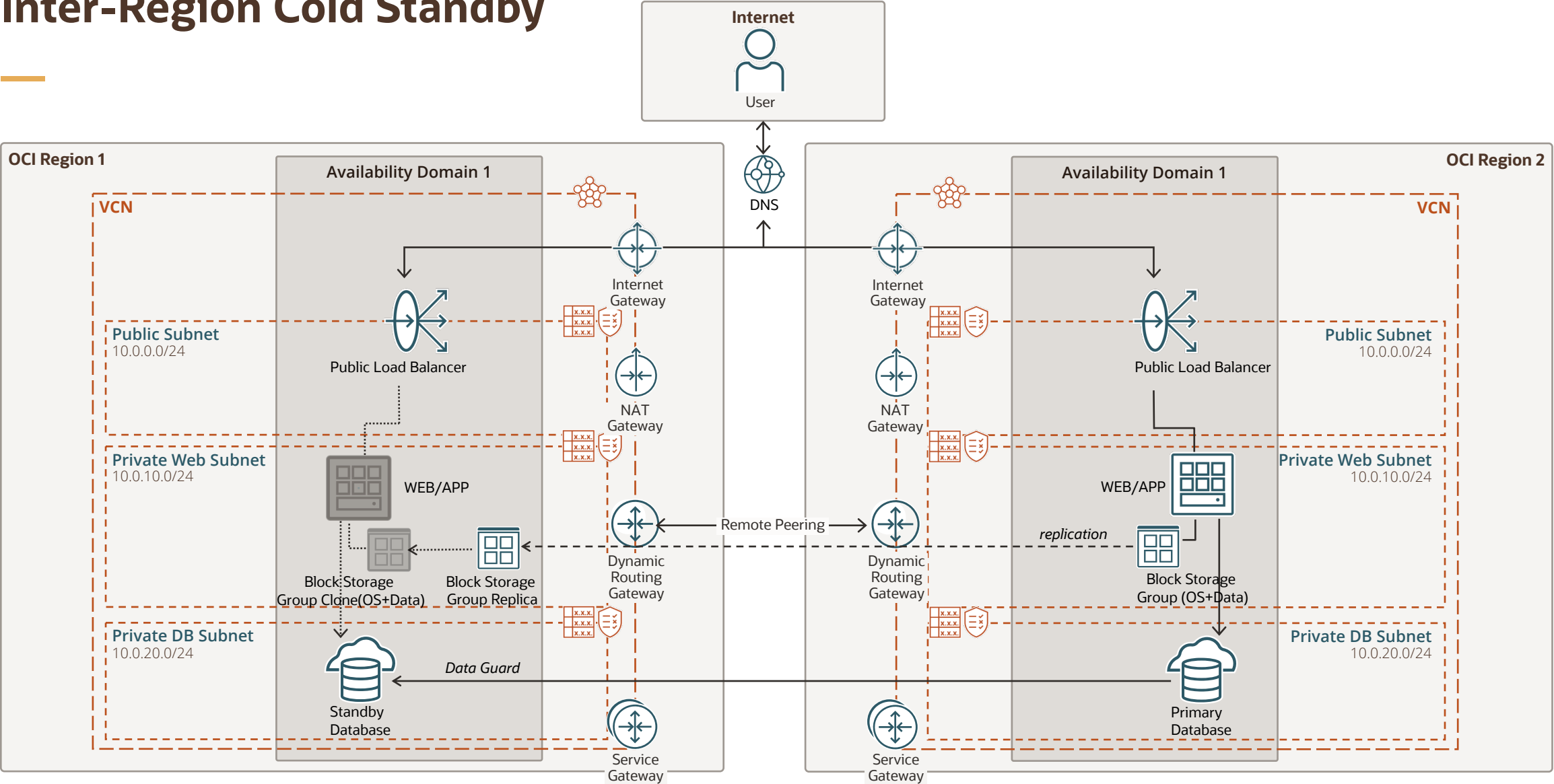
# Full Stack Disaster Recovery Service | Example Use Case 3

## Inter-Region Cold Standby



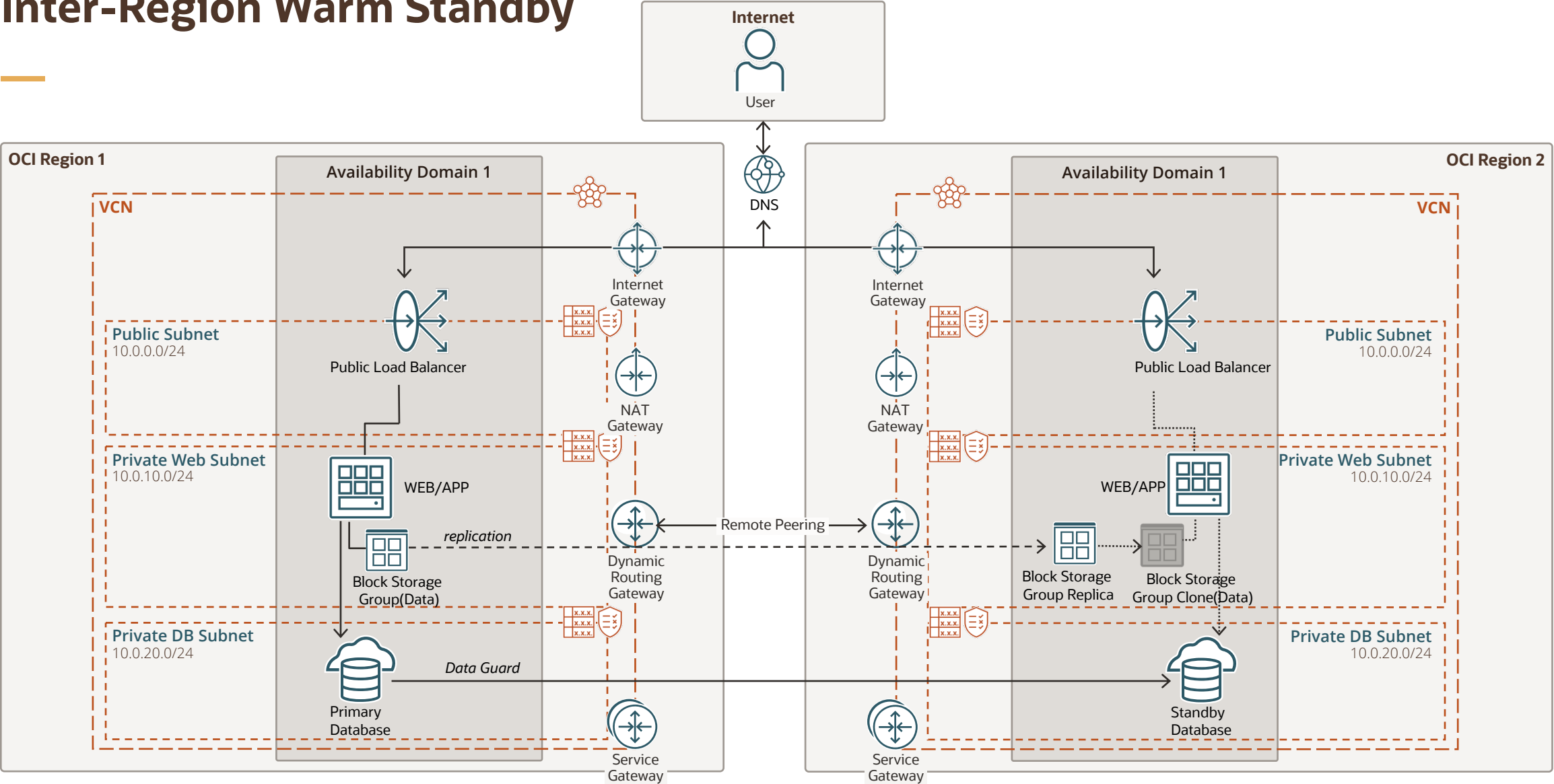
# Full Stack Disaster Recovery Service | Example Use Case 3

## Inter-Region Cold Standby



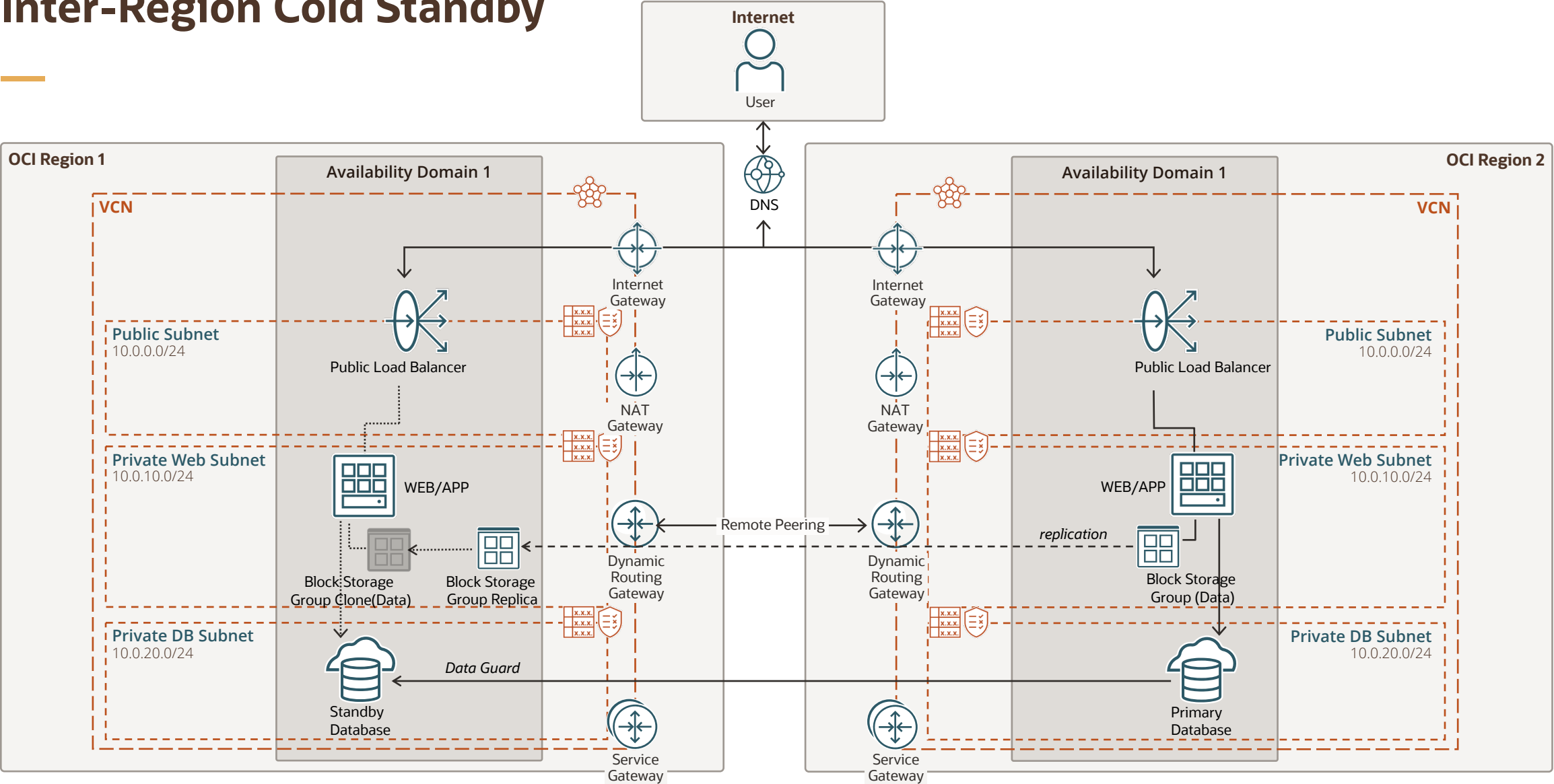
# Full Stack Disaster Recovery Service | Example Use Case 4

## Inter-Region Warm Standby



# Full Stack Disaster Recovery Service | Example Use Case 3

## Inter-Region Cold Standby





**THERE ARE MANY DR ARCHITECTURES AND POSSIBILITIES**

FOR **TAILORING** THE DR PLANS FOR NON-OUT-OF-THE-BOX  
SERVICES, WE SUPPORT ON ***USER-DEFINED GROUPS AND STEPS***



# 3. PROVISIONING OPERATIONS SCENARIOS



# Provisioning Operation Scenarios

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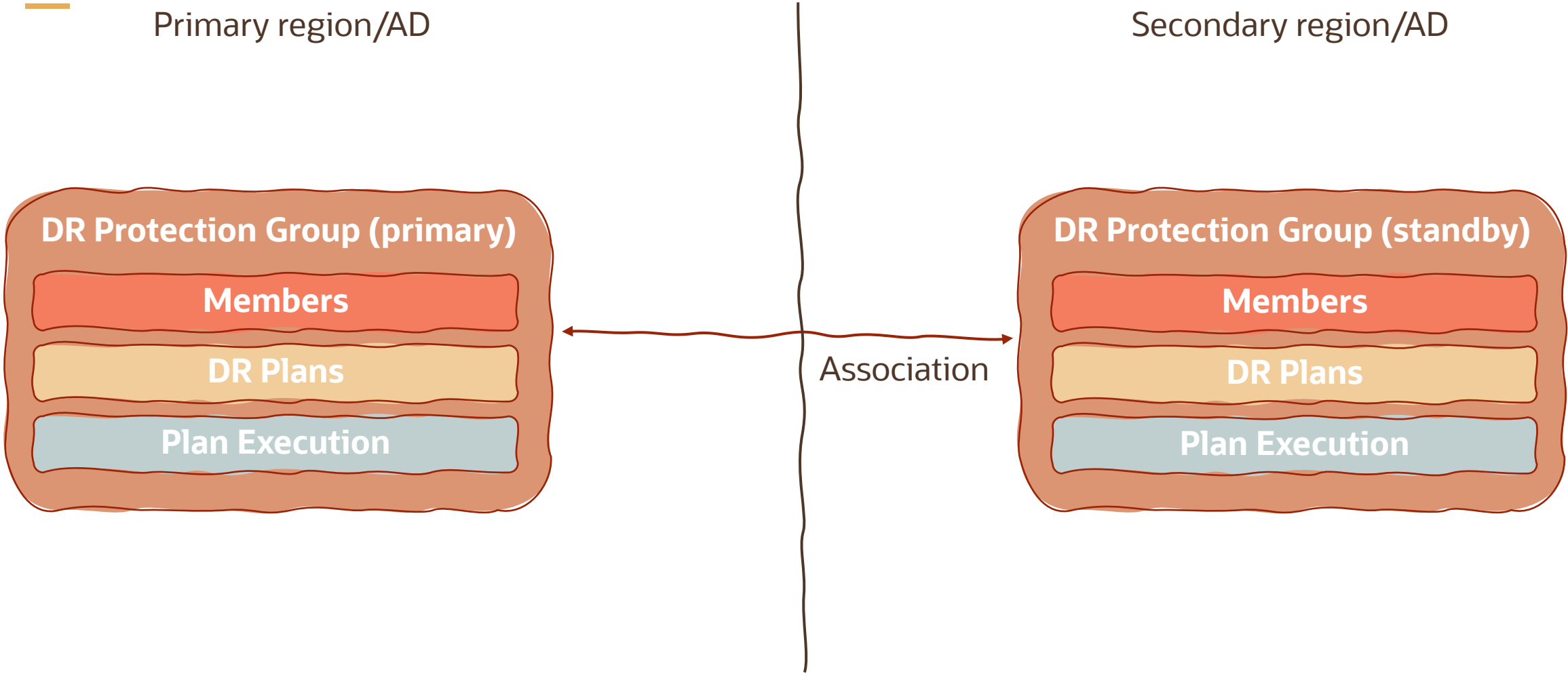
- In this section we'll talk about the following Provisioning Operations Scenarios:
  - Create DR Protection Group
  - Create DR Plan
  - Re-order DR Plan Groups
  - Adding User-Defined Plan Groups

# Full Stack Disaster Recovery Service | Requirements

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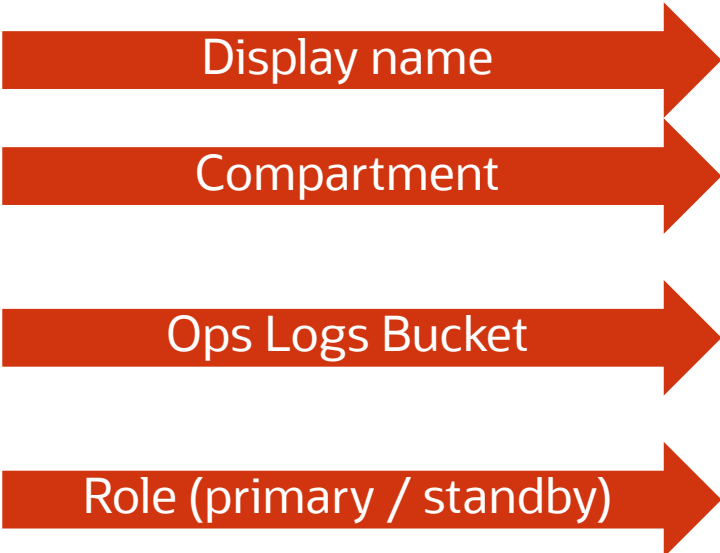
- [Object Storage Bucket for Operation Logs](#)
- [Prepare compute VMs for FSDR](#)
- [Prepare block storages attached to VMs](#)
- Prepare [DBs](#) / [ADBs](#)
- [Prepare apps](#)
- [Prepare user-defined customizations](#)
- [IAM policies to manage the different components](#)

# Full Stack Disaster Recovery | DR Protection Group



# Create DR Protection Group (primary)

- Menu → Migration & Disaster Recovery → Disaster Recovery → DR Protection Groups → Create DR protection group



## Create DR protection group

[Help](#)

Name

drpg-fsdr-AD1

Compartment

fsdr-test

/fsdr-test

Object storage bucket in fsdr-test

[\(Change compartment\)](#)

bk-fsdr-pg1-opslogs

Object storage bucket will be used for DR plan execution logs.

Role

Not configured

Add member

Remove members

<input type="checkbox"/>	Member	State	Service	Compartment
No items found.				

0 selected

Showing 0 items < 1 of 1 >



# Create DR Protection Group (primary) | Add members

- Adding members to the DR Protection Group

Compute type

Compute instance

Select flag if VM will move

Volume group type

Volume group name

Add member

[Help](#)

Resource type

Compute

Instance in fsdr-test

(Change compartment)

coa-demo-web0

☒

Move instance on switchover or failover

Add

Cancel

Add member

[Help](#)

Resource type

Volume group

Volume group in fsdr-test

(Change compartment)

vg-fsdr-web

Add

Cancel



# Create DR Protection Group (primary) | Add members

- Adding members to the DR Protection Group

Database type

DB Service type

DB System

DB Home

DB

DB Admin pw secret (in vault)

## Add member

[Help](#)

Resource type

Database

Database type

Oracle Base Database

Database system in **fsdr-test** [\(Change compartment\)](#)

coa-demo-vmdb1

Database home

dbhome20230306124806

Database

DBCOA1

Database password secret in **fsdr-test** [\(Change compartment\)](#)

DBCOA1\_admin\_pw (in vault-fsdr vault)



Add

[Cancel](#)

# Create DR Protection Group (primary)

Create DR protection group

[Help](#)

Name

drpg-fsdr-AD1

Compartment

fsdr-test

fsdr-test

Object storage bucket in fsdr-test

[\(Change compartment\)](#)

bk-fsdr-pg1-opslogs

Object storage bucket will be used for DR plan execution logs.

Role

Not configured

Add member

Remove members

<input type="checkbox"/>	Member	State	Service	Compartment
<input type="checkbox"/>	coa-demo-web0	Running	Compute instance	fsdr-test
<input type="checkbox"/>	DBCOA1 (DBCOA1_lhr1j9)	Available	Database	fsdr-test
<input type="checkbox"/>	vg-fsdr-web	Available	Volume group	fsdr-test

0 selected

Showing 3 items < 1 of 1 >

Show advanced options

Create

Cancel





# Create DR Protection Group (primary)

Disaster Recovery > DR Protection Groups > DR protection group details

PG

ACTIVE

Run prechecks

Execute DR plan

Rename

Associate

More actions

drpg-fsdr-AD1

DR protection group information

Tags

OCID: ...qkkeua

Show

Copy

Compartment:

/fsdr-test

Created:

Wed, Mar 8, 2023, 15:37:56 UTC

Updated:

Wed, Mar 8, 2023, 15:38:14 UTC

Log location:

bk-fsdr-pg1-opslogs

Edit

Role:

Not configured

Peer DR protection group:

None

Peer region:

Resources

Plans

Plan executions

Members

Work requests

Create plan

Name	State	Plan type	Created
No items found.			

Showing 0 items < 1 of 1 >



# Create DR Protection Group (standby)

Q: Retake snapshot without volume group

- You need to create another DR Protection Group for the peer region/AD
- Follow the same steps as before but select this time as role “standby”
- Remember that every DR Protection Group needs its own operation logs bucket
- As we didn’t indicate in the primary region its role, and now were associating the standby with the primary DR Protection Group peer, we are defining implicitly the DR Protection Group **Association**

Create DR protection group

Name

drpg-fsdr-AD2

Compartment

fsdr-test

Object storage bucket in fsdr-test

bk-fsdr-pg2-opslogs

Role

Standby

Peer region

UK South (London)

Peer DR protection group in fsdr-test

drpg-fsdr-AD1

Add member

Remove members

<input type="checkbox"/>	Member	State	Service	Compartment
<input type="checkbox"/>	DBCOA1 (DBCOA1_lhr2jk)	Available	Database	fsdr-test
<input type="checkbox"/>	vg-fsdr-web	Available	Volume group	fsdr-test

0 selected

Showing 2 items < 1 of 1 >

Show advanced options

Create

Cancel

# Create DR Protection Group | OCI CLI Cheat sheet

- **Create a VM Cluster Network:**

```
$ oci disaster-recovery dr-protection-group create --compartment-id <Compartment's OCID> --display-name <Display name of the DR Protection Group> --log-location file://path/to/log-ops-bucket.json [--association file://path/to/association.json --members file://path/to/members.json]
```

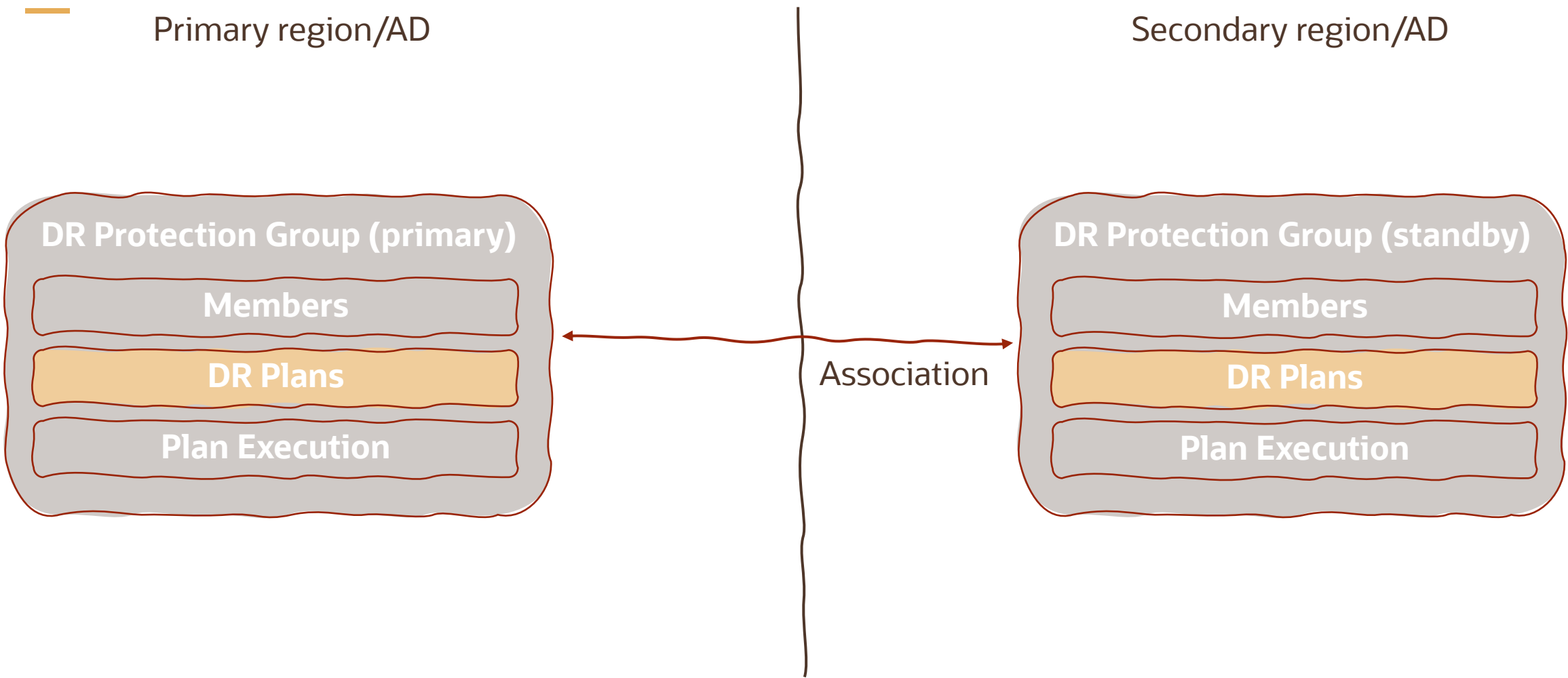
- **Generate a JSON of just some field:**

```
$ oci disaster-recovery dr-protection-group create --generate-param-json-input log-location
```

- **Associate a DR Protection Group to another:**

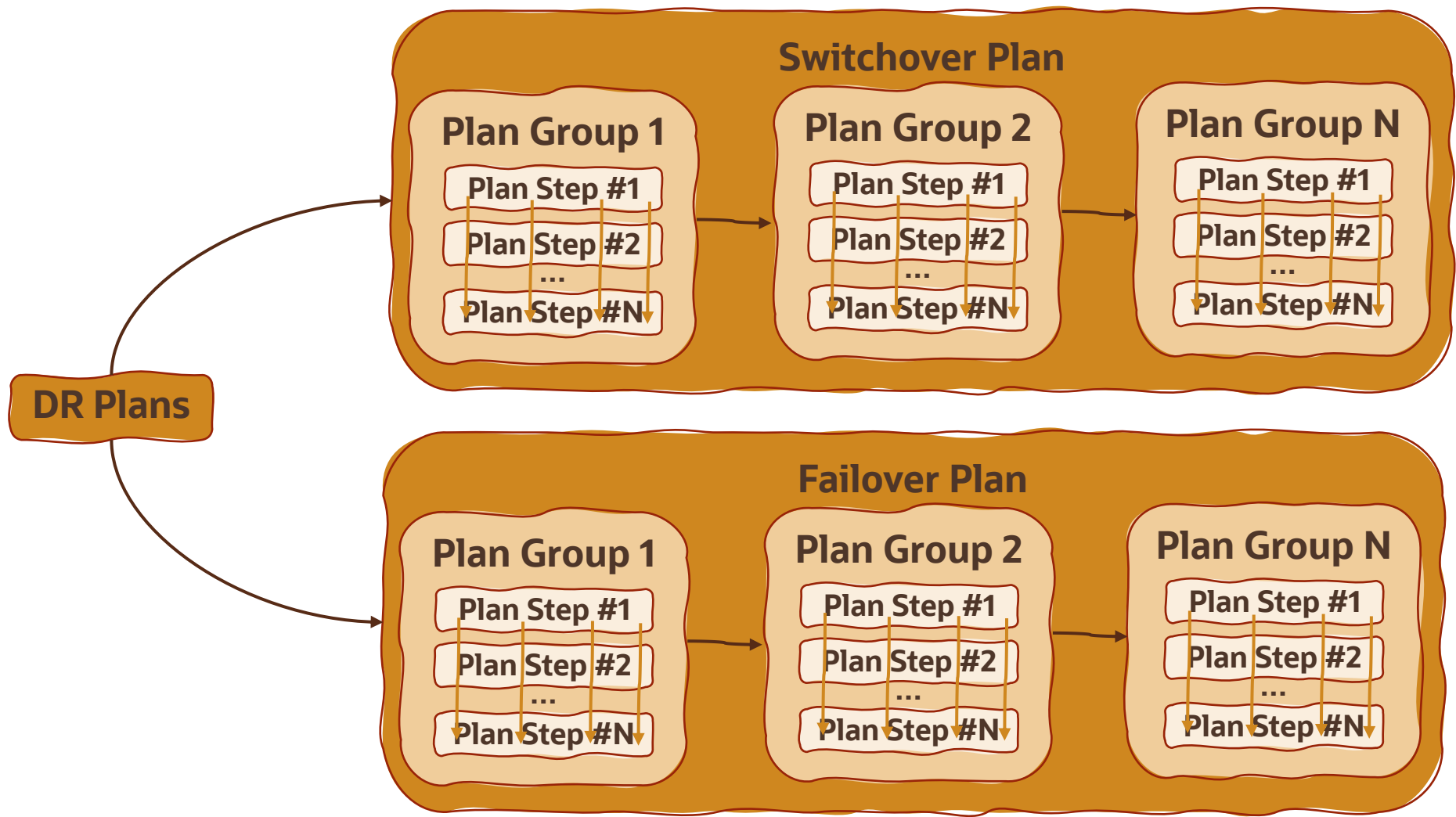
```
$ oci disaster-recovery dr-protection-group associate --dr-protection-group-id <OCID of the DR Protection group> --role <PRIMARY|STANDBY|UNCONFIGURED> [--peer-id <OCID of the peer DR Protection Group> --peer-region <Region of the peer>]
```

# Full Stack Disaster Recovery | DR Recovery Plan



# DR Recovery Plans

—→ Executes serially  
—→ Executes in parallel



# DR Plans | Guidelines

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- FSDR create automatically DR Plans after performing an intelligent analysis of the contents of the primary and standby DR Prot. Groups
- Plan groups and steps generated by FSDR are called Build-in. Plan groups and steps added by users are called User-defined
- You can add user-defined groups and steps, reorder the sequence or customize the execution behavior of any kind of groups and steps
- DR Plans can just be created in DR Protection group with standby role. You must first transition the primary DR protection group to standby role executing a DR Plan to create the DR Plan of the primary (old)
- Only DR plans in the standby DR Protection Group are in Active state. DR Plans in primary DR Protection Groups are in Inactive state and cannot be modified or executed until there it assumes the standby role
- Adding/deleting members to a DR Protection Group triggers the deletion of all DR Plans for that respective DR Protection Group and its peer DR Protection Group
- You can not delete a built-in group and steps, but you can disable them
- User-defined steps needs of Oracle Cloud Agent's Run Command feature on instances. Oracle Functions can be used also to run user-defined steps

# Create DR Plan

- Menu → Migration & Disaster Recovery → Disaster Recovery → DR Protection Groups → Select the Standby DR Protection Group you want to create the DR Plan → Create plan

Display name

DR Plan type

## Create plan


[Help](#)

Name

drpg-fsdr-AD2-swover-plan

Plan type

Switchover (planned)

 [Hide advanced options](#)

Tags

Add tags to organize your resources. [What can I do with tagging?](#)

Tag namespace	Tag key	Tag value	
None (add a free-form ...)			×

Add tag

Create

[Cancel](#)



# Create DR Plan | OCI CLI Cheat sheet

- **Create a VM Cluster Network:**

```
$ oci disaster-recovery dr-protection-group create --compartment-id <Compartment's OCID> --display-name <Display name of the DR Protection Group> --log-location file://path/to/log-ops-bucket.json [--association file://path/to/association.json --members file://path/to/members.json]
```

- **Generate a JSON of just some field:**

```
$ oci disaster-recovery dr-protection-group create --generate-param-json-input log-location
```

- **Associate a DR Protection Group to another:**

```
$ oci disaster-recovery dr-protection-group associate --dr-protection-group-id <OCID of the DR Protection group> --role <PRIMARY|STANDBY|UNCONFIGURED> [--peer-id <OCID of the peer DR Protection Group> --peer-region <Region of the peer>]
```

# DR Plans, Plan Groups and Steps

ORACLE Cloud

Search resources, services, documentation, and Marketplace

UK South (London)

Disaster Recovery > DR Protection Groups > DR protection group details > DR plan details

drpg-fsdr-AD2-swover-plan

Run prechecks Execute DR plan Rename Add tags Delete

DR plan information

Tags

OCID: ...b56ezq Show Copy

Compartment: ...S/fs

Created: Mon, Mar 13, 2023, 12:39:27 UTC

Updated: Mon, Mar 13, 2023, 12:39:51 UTC

Plan type: Switchover

DR protection group: drpg-fsdr-AD2

Peer DR protection group: drpg-fsdr-AD1

Peer region: UK South (London)

ACTIVE

Resources

Plan groups

Work requests

Add group Actions

Name	Type	Enabled / Disabled	Timeout	Error mode
> Built-In Prechecks	Built-in precheck	Enabled	—	—
> Stop Compute Instances (Primary)	Built-in	Enabled	—	—
> Switchover Volume Groups (Standby)	Built-in	Enabled	—	—
> Switchover Databases (Standby)	Built-in	Enabled	—	—
> Launch Compute Instances (Standby)	Built-in	Enabled	—	—
> Remove Compute Instances From DR Protection Group (Primary)	Built-in	Enabled	—	—
> Terminate Compute Instances (Primary)	Built-in	Disabled	—	—
> Reverse Volume Groups' Replication (Standby)	Built-in	Enabled	—	—
> Remove Volume Groups From DR Protection Group (Primary)	Built-in	Enabled	—	—
> Terminate Volume Groups (Primary)	Built-in	Disabled	—	—

Showing 10 items

Plan Groups

Plan Groups Steps

Add group Actions

Name	Type	Enabled / Disabled	Timeout	Error mode
> Built-In Prechecks	Built-in precheck	Enabled	—	—
> Stop Compute Instances (Primary)	Built-in	Enabled	—	—
> Switchover Volume Groups (Standby)	Built-in	Enabled	—	—
> Switchover Databases (Standby)	Built-in	Enabled	—	—
> Launch Compute Instances (Standby)	Built-in	Enabled	—	—
> Remove Compute Instances From DR Protection Group (Primary)	Built-in	Enabled	—	—
> Terminate Compute Instances (Primary)	Built-in	Disabled	—	—
> Reverse Volume Groups' Replication (Standby)	Built-in	Enabled	—	—

Add group Actions

Name	Type	Enabled / Disabled	Timeout	Error mode
> Built-In Prechecks	Built-in precheck	Enabled	—	—
> Stop Compute Instances (Primary)	Built-in	Enabled	—	—
> Switchover Volume Groups (Standby)	Built-in	Enabled	—	—
> Switchover Databases (Standby)	Built-in	Enabled	—	—
> Launch Compute Instances (Standby)	Built-in	Enabled	—	—
> Remove Compute Instances From DR Protection Group (Primary)	Built-in	Enabled	—	—
> Terminate Compute Instances (Primary)	Built-in	Disabled	—	—
> Reverse Volume Groups' Replication (Standby)	Built-in	Enabled	—	—


You can enable/disable/re-order the Plan Groups and/or customize Plan Group Steps























# DR Plans | Reorder groups

- Menu → Migration & Disaster Recovery → Disaster Recovery → DR Protection Groups → Select the Protection Group → Select Plan → Actions → Reorder groups

Reorder plan groups



Specify the order in which the plan groups should be executed

Order	Name	Type
 	Built-In Prechecks	Built-in precheck
 	Stop Compute Instances (Primary)	Built-in
 	Switchover Volume Groups (Standby)	Built-in
 	Switchover Databases (Standby)	Built-in
 	Launch Compute Instances (Standby)	Built-in
 	Remove Compute Instances From DR Protection Group (Primary)	Built-in
 	Terminate Compute Instances (Primary)	Built-in
 	Reverse Volume Groups' Replication (Standby)	Built-in
 	Remove Volume Groups From DR Protection Group (Primary)	Built-in
 	Terminate Volume Groups (Primary)	Built-in

Showing 10 items

Save changes

[Cancel](#)



# Reorder DR Plan Groups | OCI CLI Cheat sheet

- **Create a VM Cluster Network:**

```
$ oci disaster-recovery dr-protection-group create --compartment-id <Compartment's OCID> --display-name <Display name of the DR Protection Group> --log-location file://path/to/log-ops-bucket.json [--association file://path/to/association.json --members file://path/to/members.json]
```

- **Generate a JSON of just some field:**

```
$ oci disaster-recovery dr-protection-group create --generate-param-json-input log-location
```

- **Associate a DR Protection Group to another:**

```
$ oci disaster-recovery dr-protection-group associate --dr-protection-group-id <OCID of the DR Protection group> --role <PRIMARY|STANDBY|UNCONFIGURED> [--peer-id <OCID of the peer DR Protection Group> --peer-region <Region of the peer>]
```

# DR Plans | Adding User-defined Plan Groups

- Menu → Migration & Disaster Recovery → Disaster Recovery → DR Protection Groups → Select the Protection Group → Select Plan → Actions → Add group

### Add plan group

Group name

Manage Flask application

Add Step

Name	Type	Enabled / Disabled	Timeout	Error mode
Run flask application	Run script	● Enabled	1 h	Continue on error

Showing 1 item

Add

Cancel

### Add plan group step

Step name

Run flask application

☒ Enable step

Error mode

Continue on error

Timeout in seconds

3600

Region

UK South (London)

☐ Run object storage script

☒ Run local script

☐ Invoke function

Target instance in fsdr-test ⓘ (Change compartment)

coa-demo-web0

Script parameters

nohup /tmp/flask\_DBCS.sh > /data/flask\_DBCS.log &

Run as user Optional

root

Add Step

Cancel



# User-defined Plans Groups | Guidelines

---

- User-defined steps scripts can reside in Object Storage, local to the nodes or as an Oracle Function
- When using **script stored in Object Storage**:
  - Script that finish with a non-zero code are considered as failed
  - Script executes on the instance using default user ID “ocarun”. No other user can be used
  - You cannot provide additional arguments
- When using **local instance scripts**:
  - Script that finish with a non-zero code are considered as failed
  - You can use script parameters
  - You can select to run the script as any user
- When **using an Oracle Function**:
  - Select the region where the Oracle Function is located
  - Select the target application and function
  - Optionally you can provide a request-body for the function, which is useful to use it as input parameters

# Adding User-Defined Plan Groups | OCI CLI Cheat sheet

- **Create a VM Cluster Network:**

```
$ oci disaster-recovery dr-protection-group create --compartment-id <Compartment's OCID> --display-name <Display name of the DR Protection Group> --log-location file://path/to/log-ops-bucket.json [--association file://path/to/association.json --members file://path/to/members.json]
```

- **Generate a JSON of just some field:**

```
$ oci disaster-recovery dr-protection-group create --generate-param-json-input log-location
```

- **Associate a DR Protection Group to another:**

```
$ oci disaster-recovery dr-protection-group associate --dr-protection-group-id <OCID of the DR Protection group> --role <PRIMARY|STANDBY|UNCONFIGURED> [--peer-id <OCID of the peer DR Protection Group> --peer-region <Region of the peer>]
```



# **4. DR PLAN EXECUTION OPERATIONS SCENARIOS**

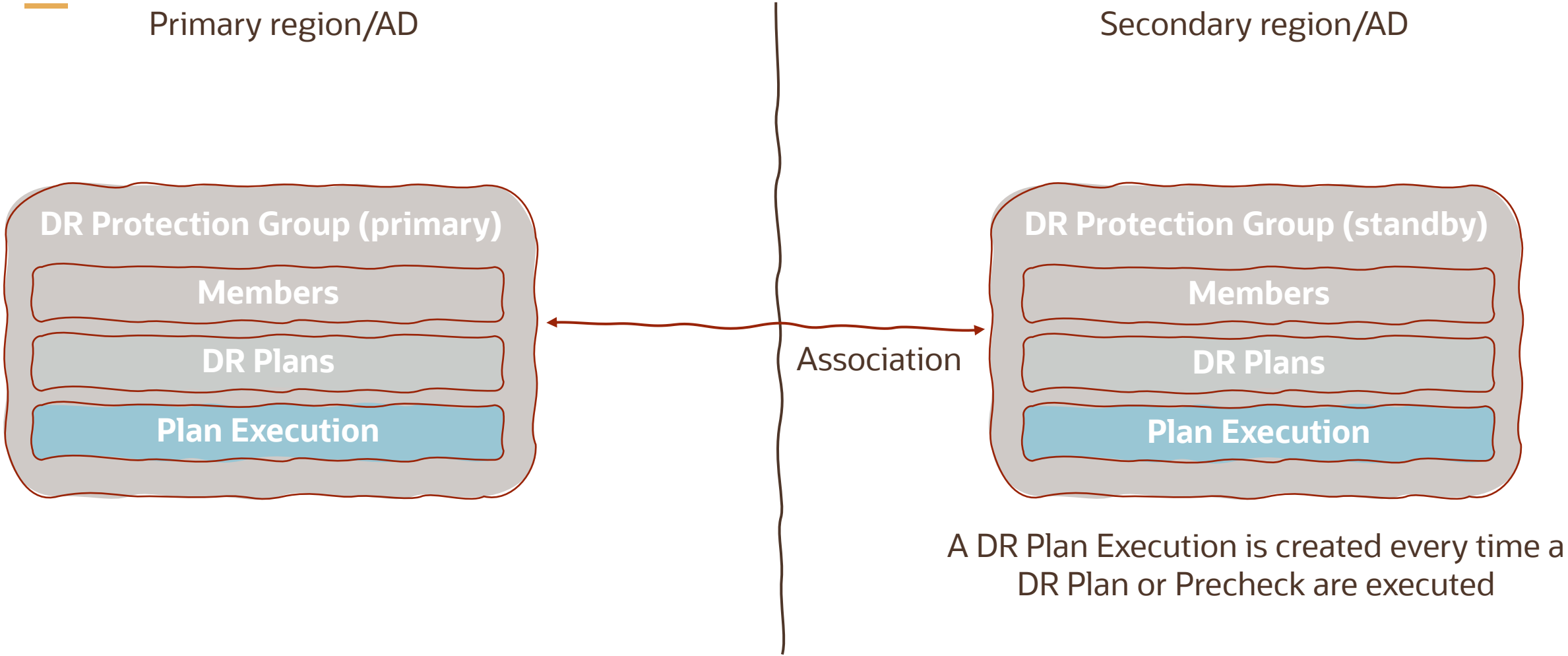


# DR Plan Execution Operation Scenarios

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- In this section we'll talk about the following DR Plan Execution Operation Scenarios:
  - Create DR Plan Execution
  - Precheck DR Plan Execution
  - Pause DR Plan Execution
  - Cancel DR Plan Execution

# Full Stack Disaster Recovery | DR Plan Executions



# DR Plan Executions | Operations


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- **Precheck:** Validates all the steps in a DR Plan
- **Execute DR Plan (create):** Starts a manually created DR Plan Execution
- **Monitor:** Check progress of the plan execution and view logs to check for errors
- **Pause:** Pauses an in progress plan execution
- **Resume:** Resumes paused plan executions
- **Cancel:** Stops an execution plan
- **Retry a Group:** Retries a group in a precheck or execution that is in failed state
- **Retry a Step:** Retries a failed state executed step
- **Skip a Step:** Skips an step when the plan execution is in a failed state
- **Skip a Group:** Skips a group when a precheck or execution is in failed state
- **Delete:** Deletes a plan execution in terminal state, which is either in Succeeded or Canceled

# Run DR Plan Precheck

- Menu → Migration & Disaster Recovery → Disaster Recovery → DR Protection Groups → Select the Standby DR Protection Group you want to create the DR Plan → Plans → Select the Plan → Run prechecks

Disaster Recovery > DR Protection Groups > DR protection group details > DR plan details



ACTIVE

## drpg-fsdr-AD2-swover-plan

Run prechecks

Execute DR plan

Rename

Add tags

Delete

DR plan information

Tags

**OCID:** ...b56ezq Show Copy

**Compartment:** [REDACTED]

**Created:** Mon, Mar 13, 2023, 12:39:27 UTC

**Updated:** Mon, Mar 13, 2023, 16:46:15 UTC

**Plan type:** Switchover

**DR protection group:** drpg-fsdr-AD2

**Peer DR protection group:** drpg-fsdr-AD1

**Peer region:** UK South (London)

DR Plan Execution name

### Run prechecks

Are you sure you want to run precheck for plan **drpg-fsdr-AD2-swover-plan**?

☐ Ignore warnings

Plan execution name *Optional*

20230314\_precheck\_drpg-fsdr-AD2-swover-plan

Show advanced options

Run prechecks

Cancel

### 20230314\_precheck\_drpg-fsdr-AD2-swover-plan

Rename

Pause

Resume

Cancel

More actions

DR plan execution information

Tags

**OCID:** ...3kcoua Show Copy

**Compartment:** [REDACTED] /fsdr-test

**Created:** Tue, Mar 14, 2023, 15:10:29 UTC

**Updated:** Tue, Mar 14, 2023, 15:12:46 UTC

**Started:** Tue, Mar 14, 2023, 15:10:31 UTC

**Ended:** Tue, Mar 14, 2023, 15:12:46 UTC

**Duration:** 2 m 17 s

**DR protection group:** drpg-fsdr-AD2

**DR plan:** drpg-fsdr-AD2-swover-plan

**Plan type:** Switchover precheck

**Prechecks:** Enabled

**Ignore warnings:** Disabled

**Log location:** bk-fsdr-pg2-opslogs

### Plan execution groups

Expand all

Collapse all


Name	Type	State	Started	Ended	Duration
Built-In Prechecks	Built-in precheck	Succeeded	Tue, Mar 14, 2023, 15:10:42 UTC	Tue, Mar 14, 2023, 15:12:21 UTC	1 m 39 s
vg-fsdr-web	Restore volume group switchover precheck	Succeeded	Tue, Mar 14, 2023, 15:10:42 UTC	Tue, Mar 14, 2023, 15:10:52 UTC	9 s
DBCOA1_jhr1j9	Database switchover precheck	Succeeded	Tue, Mar 14, 2023, 15:10:42 UTC	Tue, Mar 14, 2023, 15:11:21 UTC	39 s
coa-demo-web0	Stop compute instance precheck	Succeeded	Tue, Mar 14, 2023, 15:10:42 UTC	Tue, Mar 14, 2023, 15:10:51 UTC	8 s
coa-demo-web0	Launch compute instance precheck	Succeeded	Tue, Mar 14, 2023, 15:10:42 UTC	Tue, Mar 14, 2023, 15:12:21 UTC	1 m 39 s
coa-demo-web0	Remove compute instance precheck	Succeeded	Tue, Mar 14, 2023, 15:10:42 UTC	Tue, Mar 14, 2023, 15:10:51 UTC	8 s
Run flask application	User defined precheck	Succeeded	Tue, Mar 14, 2023, 15:10:42 UTC	Tue, Mar 14, 2023, 15:11:21 UTC	38 s

Showing 7 items

# Execute DR Plan

- Menu → Migration & Disaster Recovery → Disaster Recovery → DR Protection Groups → Select the Standby DR Protection Group you want to create the DR Plan → Plans → Select the Plan → Execute DR Plan

Disaster Recovery > DR Protection Groups > DR protection group details > DR plan details



ACTIVE

## drpg-fsdr-AD2-swover-plan

[Run prechecks](#)[Execute DR plan](#)[Rename](#)[Add tags](#)[Delete](#)

DR plan information

Tags

**OCID:** ...b56ezq [Show](#) [Copy](#)

**Compartment:** [REDACTED]

**Created:** Mon, Mar 13, 2023, 12:39:27 UTC

**Updated:** Mon, Mar 13, 2023, 16:46:15 UTC

**Plan type:** Switchover

**DR protection group:** [drpg-fsdr-AD2](#)

**Peer DR protection group:** [drpg-fsdr-AD1](#)

**Peer region:** UK South (London)

DR Plan Execution name

Execute DR plan [Help](#)

Are you sure you want to execute plan **drpg-fsdr-AD2-swover-plan**?

☒ Enable prechecks

☐ Ignore warnings

Plan execution name *Optional*

20230314\_execute\_drpg-fsdr-AD2-swover-plan

[Show advanced options](#)

[Execute DR plan](#) [Cancel](#)

20230314\_execute\_drpg-fsdr-AD2-swover-plan

[Rename](#)[Pause](#)[Resume](#)[Cancel](#)[More actions](#)

DR plan execution information

Tags

**OCID:** ...g5dbq [Show](#) [Copy](#)

**Compartment:** [REDACTED]

**Created:** Tue, Mar 14, 2023, 15:16:31 UTC

**Updated:** Tue, Mar 14, 2023, 15:49:36 UTC

**Started:** Tue, Mar 14, 2023, 15:16:35 UTC

**Ended:** Tue, Mar 14, 2023, 15:49:36 UTC

**Duration:** 33 m 5 s

**DR protection group:** [drpg-fsdr-AD2](#)

**DR plan:** [drpg-fsdr-AD2-swover-plan](#)

**Plan type:** Switchover

**Prechecks:** Enabled

**Ignore warnings:** Disabled

**Log location:** [bk-fsdr-02-opslogs](#)

Plan execution groups

[Expand all](#) [Collapse all](#)

Name	Type	State	Started	Ended	Duration
> Built-in Prechecks	Built-in precheck	Succeeded	Tue, Mar 14, 2023, 15:16:45 UTC	Tue, Mar 14, 2023, 15:19:25 UTC	2 m 40 s
> Stop Compute Instances (Primary)	Built-in	Succeeded	Tue, Mar 14, 2023, 15:19:48 UTC	Tue, Mar 14, 2023, 15:20:27 UTC	38 s
> Switchover Volume Groups (Standby)	Built-in	Succeeded	Tue, Mar 14, 2023, 15:20:49 UTC	Tue, Mar 14, 2023, 15:21:59 UTC	1 m 9 s
✓ Switchover Databases (Standby)	Built-in	Succeeded	Tue, Mar 14, 2023, 15:22:20 UTC	Tue, Mar 14, 2023, 15:26:00 UTC	3 m 40 s
DBCOA1_lhr1j9	Database switchover	Succeeded	Tue, Mar 14, 2023, 15:22:20 UTC	Tue, Mar 14, 2023, 15:30:03 UTC	3 m 40 s
> Launch Compute Instances (Standby)	Built-in	Succeeded	Tue, Mar 14, 2023, 15:26:22 UTC	Tue, Mar 14, 2023, 15:30:03 UTC	3 m 40 s
> Remove Compute Instances From DR Protection Group (Primary)	Built-in	Succeeded	Tue, Mar 14, 2023, 15:30:25 UTC	Tue, Mar 14, 2023, 15:30:34 UTC	9 s
> Terminate Compute Instances (Primary)	Built-in	Disabled	—	—	—
> Reverse Volume Groups' Replication (Standby)	Built-in	Succeeded	Tue, Mar 14, 2023, 15:30:56 UTC	Tue, Mar 14, 2023, 15:31:34 UTC	38 s
> Remove Volume Groups From DR Protection Group (Primary)	Built-in	Succeeded	Tue, Mar 14, 2023, 15:31:57 UTC	Tue, Mar 14, 2023, 15:32:06 UTC	9 s

# DR Plan Executions | OCI CLI Cheat sheet

- **Create a DR Plan Execution:**

```
$ oci disaster-recovery dr-plan-execution create --plan-id <DR Plan OCID> --execution-options <JSON complex type>
```

- Generate a JSON of just some field:

```
$ oci disaster-recovery dr-plan-execution create --generate-param-json-input execution-options
```

- The complex type for the generation will give us:

```
[
  "This parameter should actually be a JSON object rather than an array - pick one of the following object variants to use",
  {
    "arePrechecksEnabled": true,
    "areWarningsIgnored": true,
    "planExecutionType": "FAILOVER"
  },
  {
    "areWarningsIgnored": true,
    "planExecutionType": "FAILOVER_PRECHECK"
  },
  {
    "arePrechecksEnabled": true,
    "areWarningsIgnored": true,
    "planExecutionType": "SWITCHOVER"
  },
  {
    "areWarningsIgnored": true,
    "planExecutionType": "SWITCHOVER_PRECHECK"
  }
]
```

- Example: To create the execution options for a Switchover Precheck we'd use a file with the following contents:

```
{
  "areWarningsIgnored": true,
  "planExecutionType": "SWITCHOVER_PRECHECK"
}
```

# DR Plan Executions | OCI CLI Cheat sheet

- Instead of using the create command, we can use specific commands for switchover/failover prechecks/executions:
- Switchover Precheck:

```
$ oci disaster-recovery dr-plan-execution create-switchover-precheck --plan-id <DR Plan OCID> [--display-name <name of the Plan execution> --warnings-ignored [boolean]]
```

- Switchover:

```
$ oci disaster-recovery dr-plan-execution create-switchover --plan-id <DR Plan OCID> [--display-name <name of the Plan execution> --prechecks-enabled [boolean] --warnings-ignored [boolean]]
```

- Failover Precheck:

```
$ oci disaster-recovery dr-plan-execution create-failover-precheck --plan-id <DR Plan OCID> [--display-name <name of the Plan execution> --warnings-ignored [boolean]]
```

- Failover:

```
$ oci disaster-recovery dr-plan-execution create-failover --plan-id <DR Plan OCID> [--display-name <name of the Plan execution> --prechecks-enabled [boolean] --warnings-ignored [boolean]]
```



# DR Plan Executions | OCI CLI Cheat sheet

- Other operations on DR Plan Executions:
- Cancel a DR Plan Execution:

```
$ oci disaster-recovery dr-plan-execution cancel --action-type CANCEL --dr-plan-execution-id <DR Plan Execution OCID>
```

- Pause a DR Plan Execution:

```
$ oci disaster-recovery dr-plan-execution pause --action-type PAUSE --dr-plan-execution-id <DR Plan Execution OCID>
```

- Resume a paused DR Plan Execution:

```
$ oci disaster-recovery dr-plan-execution resume --action-type RESUME --dr-plan-execution-id <DR Plan Execution OCID>
```

- Retry a failed group or step in a DR Plan Execution:

```
$ oci disaster-recovery dr-plan-execution retry --dr-plan-execution-id <DR Plan Execution OCID> --group-id <Group or step's group OCID>  
[--step-id <OCID of the step to retry>]
```

- Ignore a failed group or step in a DR Plan Execution:

```
$ oci disaster-recovery dr-plan-execution ignore --dr-plan-execution-id <DR Plan Execution OCID> --group-id <Group or step's group OCID>  
[--step-id <OCID of the step to retry>]
```



# THANK YOU!

