

PAAS Pattern4 - Backup and Disaster Recovery (SQL database failover)

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Overview

Platform:	Azure
Owner of this SOP:	Fully Managed POD A
Cloud Services:	Azure SQL PaaS

Problem

When requesters are asking to failover SQL database from primary to secondary.

tester	Reviewer
@ Senthilkumaran Gurusamypandian	

Solution

Cloud Services operators will perform basic health checks and update the associated record as required. In most cases, the record will be an Incident Task (which may be assigned or manually created).

Pre-requisites

- The operator needs to have access to the **Cloud Factory ServiceNow Dashboard**. If this access is missing raise a request for [Access to ServiceNow](#) and request the group "Cloud Factory - Dashboard Access".
- Must be a member of the "Cloud Svcs- CloudOne" assignment group to work on ServiceNow tickets. As well access to the required report in this SOP. Use the same [Access to ServiceNow](#) request to gain this group if needed.
- The operator needs to be part of **OperationsCloudOneAccess** role in AWS & **CloudOne Operator** role in Azure . If this is missing raise a [Manage Cloud Access](#) request to get this custom role.

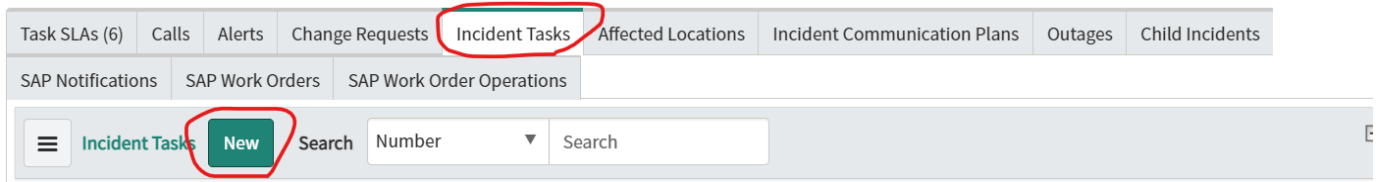
Procedure

Steps to create & manage Incident Task

Create Incident Task

Follow the below steps to create incident task. This step is required when the operator has received only an Incident.

On *Incident Tasks* Tab of the Incident ticket, click *New* and assign it to "CloudOne" team. Populate the Assignment group and Configuration item (CI). (Hint the CI is the VM on which the health check is being performed)



Process

Raise a Normal Change Request

Please open a Normal change request and get it approved before executing the SQL database failover activity, And respective stake holders and application owners should be informed prior to this activity as downtime is required.

Note: Active geo-replication is a feature that lets you to create a continuously synchronized readable secondary database for a primary database <https://docs.microsoft.com/en-us/azure/azure-sql/database/active-geo-replication-overview>

Steps

- Login to Azure portal. Check the SQL database
- Go to Azure SQL database on which the database is running.
- Create and query SQL database table in primary location

Home > it-aue1-npe-paasapp-db (it-aue1-npe-paasapp-dbs-bjizri/it-aue1-npe-paasapp-db)

it-aue1-npe-paasapp-db (it-aue1-npe-paasapp-dbs-bjizri/it-aue1-npe-paasapp-db) | Query editor (pre...
SQL database

- Check for the replicas (Active geo-replication is a feature that lets you to create a continuously synchronized readable secondary database for a primary database)
-

Microsoft Azure Search resources, services, and docs (G+/)

Home > it-aue1-npe-paasapp-db (it-aue1-npe-paasapp-dbs-bjizri/it-aue1-npe-paasapp-db)

it-aue1-npe-paasapp-db (it-aue1-npe-paasapp-dbs-bjizri/it-aue1-npe-paasapp-db) | Replicas

SQL database

Search (Ctrl+/) << + Create replica Refresh Feedback

Connection strings
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Locks

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Sync to other databases

Integrations
Stream analytics (preview)
Add Azure Search

Geo replicas for your database are listed below. Geo replicas reside on a different logical server from the primary and protect against regional failures or prolonged data center outage. [Learn more](#)

Name ↑↓	Server ↑↓	Region ↑↓	Failover policy ↑↓	Pricing tier ↑↓	Replica state ↑↓
▼ Primary					
it-aue1-npe-paasapp-db	it-aue1-npe-paasapp-d...	Australia East	None	Basic	Online
▼ Geo replicas					
it-aue1-npe-paasapp-db	it-aue-npe-paasapp-db...	Australia Southeast		Basic	Readable

- In Secondary region, we could see the SQL DB and queried

Home > it-aue1-npe-paasapp-db (it-aue1-npe-paasapp-dbs-bjizri/it-aue1-npe-paasapp-db) > it-aue1-npe-paasapp-db (it-aue-npe-paasapp-db-soezlj/it-aue1-npe-paasapp-db)

it-aue1-npe-paasapp-db (it-aue-npe-paasapp-db-soezlj/it-aue1-npe-paasapp-db) | Query editor (pre...

SQL database

Search (Ctrl+/) << Login + New Query ↑ Open query Feedback

Overview
Activity log
Tags
Diagnose and solve problems
Quick start
Query editor (preview)

Power Platform
Power BI
Power Apps
Power Automate

Settings
Compute + storage

Showing limited object explorer here. For full capability please open SSDT.

▼ Tables
> dbo.firsttbl
> dbo.seconddb1
▼ Views
▼ Stored Procedures

Query 1 ✕

Run Cancel query Save query Export data as Show only Editor

```
1 select * from [dbo].[secondtbl]
```

Results Messages

Search to filter items...

name	location
ram	blg

- For failover, click on Replicas and select the secondary region and click "Forced failover"

Home > it-aue1-npe-paasapp-db (it-aue1-npe-paasapp-dbs-bjizri/it-aue1-npe-paasapp-db) > it-aue1-npe-paasapp-db (it-aue-npe-paasapp-db-soezlj/it-aue1-npe-paasapp-db)

it-aue1-npe-paasapp-db (it-aue1-npe-paasapp-dbs-bjizri/it-aue1-npe-paasapp-db) | Replicas

SQL database

Search (Ctrl+/) << + Create replica Refresh Feedback

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Pin to dashboard
Stop replication
Forced failover

SQL database

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Failover

Forced failover will switch it-ause-npe-paasapp-db-soezlj/it-ae1-npe-paasapp-db to the primary role. The old primary it-ae1-npe-paasapp-dbs-bjizri/it-ae1-npe-paasapp-db will automatically become the new secondary if it is online. All TDS sessions will be disconnected. This operation may cause data loss. Are you sure you want to proceed?

Yes No

- After failover, Secondary region will be online

Microsoft Azure

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SQL database

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Related articles

- [AWS VPC Endpoints configuration change](#)
- [Renewal / Upload SSL certificate for existing Application](#)
- [Monitoring GitLab Access Audit Report](#)
- [Azure Storage Account Blueprint SOP - BPAZR022](#)
- [Azure App Service FTP Credential Sharing and Reset Procedure](#)