Dropped Server restore (CSS only)

Last updated by | Simon Redman | Mar 2, 2023 at 11:27 PM PST

Contents

IMPORTANT: This TSG is not applicable to SQL Managed Instance

Issue

Restoring the Server with master database and allow customer to restore their databases as self-service. Engineering decoupled server restore from database restore. The server restore essentially restores just the master database and brings the server online. As long as server is in deferred drop state, CSS can issue the server restore via ACIS after which the customer can self-service restore individual dropped databases via portal or PS.

Investigation/Analysis

This will come as support case from customer when customer drop his/her server by mistake and want to restore the server with all the databases or just the database under that server. If the customer drops the Azure resource group by mistake, as part of resource group drop workflow, the server also gets dropped.

NOTE: If the resource group was deleted, as part of the recovery workflow, the resource group will be recreated as well. We don't need to ask customer to recreate the resource group.

Limitations

Restore of a dropped server is not an officially supported scenario and this will be best effort attempt to recover the server and databases.

If support ticket is filed more than 7 days from drop of server, neither PG nor CSS will be able to recover the database.

Once the server is restored, the number of concurrent database restores is limited to 60.

NOTE: For all server restores, CSS or PG initiated, approval is required from the subscription owner before proceeding with the restore.

Customer Ready Email

Thank you for reaching out to us. Restore of a dropped server is not an officially supported scenario and this will be best effort attempt to recover the server and databases. If the server was dropped more than 7 days ago, we will not be able to recover the database.

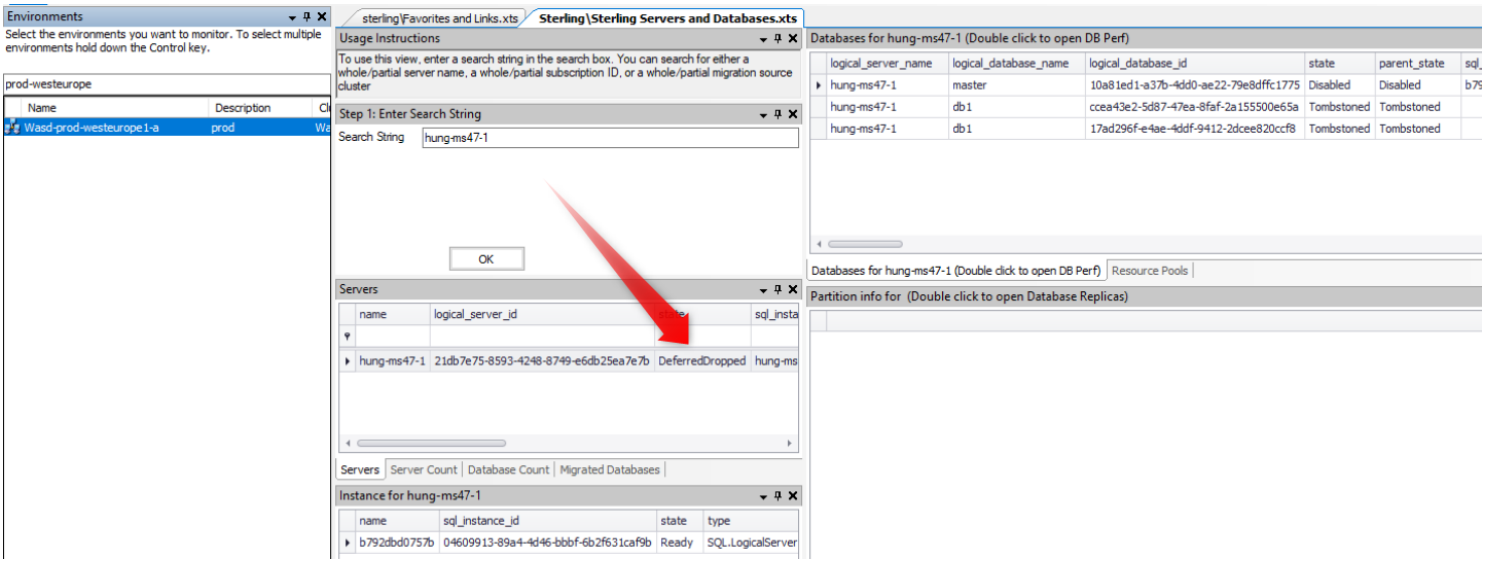
Could you please share the following information:

1. Region (e.g. West Europe).
2. Server Name
3. Is this a Production server? Yes /No. If not, recovery attempts are currently limited to production databases.
4. Was the server dropped directly? Or did you attempt to drop the resource group which resulted in force drop of the server?
5. Approximate date and time that the server was dropped?
6. Have you tried to re-create the server with the same name after the original server was dropped? If yes, for future occurrences, you should avoid re-creating server with same name if it needs to be recovered.
7. Could you please provide a business justification for the requested restore.
8. Request Approval from Subscription Owner for any restore operation of droppped server or database.

Mitigation

1. Check if the server is in DeferredDropped state.

- In XTS, select the cluster the server was on.
- Open **Sterling Servers and Databases.xts** view and input the server name to verify that state = DeferredDropped.
    - If the state = DeferredDrop, you can restore this via Jarvis using the step for **Scenario 1 (No ICM needed)**.
    - If the state is something else, follow the steps in **Scenario 2 (Requires ICM)**.



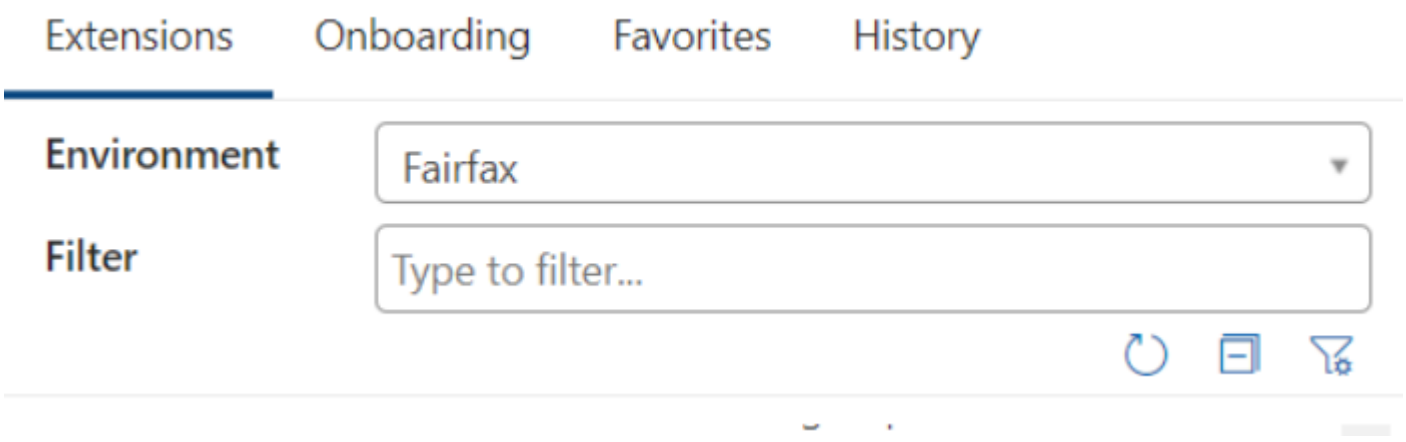
Scenario 1 (No ICM needed)

Follow the steps below to recover the server.

> These steps **require ReadWrite** permission level for **Azure SQL CSS Std CAS** myaccess project. Note that a- and v- accounts are only granted **Read** access (per Azure security policy) and **do not have permissions** to run this command. In case you don't have permissions, ask for help on Teams/from a colleague. Proceed with filing an ICM only if there is nobody else around who can help.

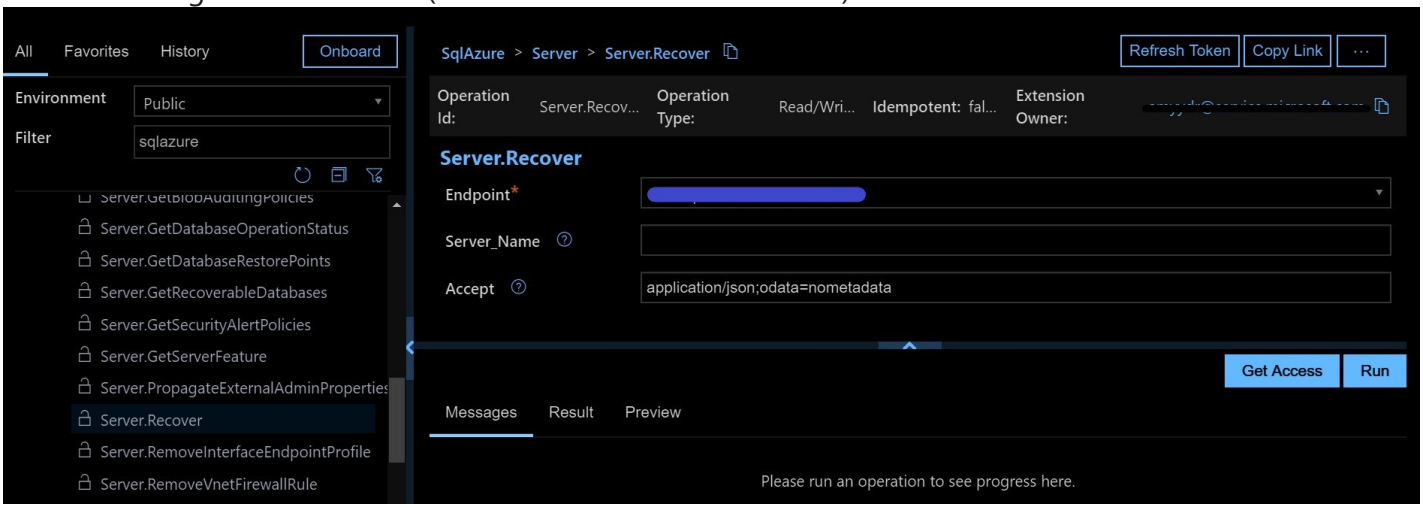
1. Login to Jarvis from SAVM or SAW laptop. https://jarvis-west.dc.ad.msft.net/ (SAVM can be requested here https://tdc.azure.net/)
2. Go to Actions menu.
3. Ensure your environment is set to Public. Filter for SqlAzure

1. For government customers , ensure to set the Environment to "Fairfax" and filter for SqlAzure



1. Scroll down to SqlAzure, Server folder, then select Server.Recover action
2. For Endpoint, select the region of the deferred drop server

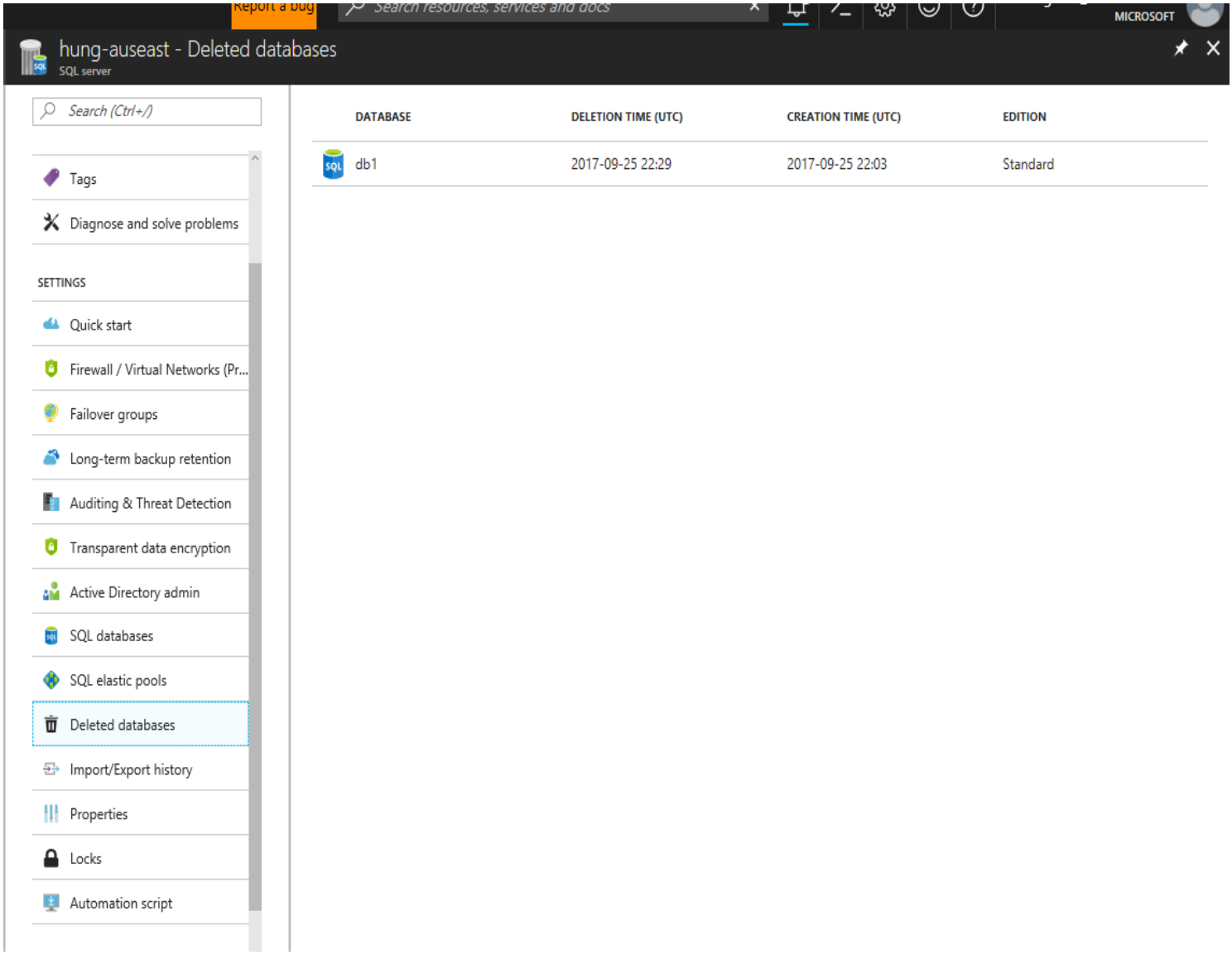
3. Enter in the logical server name (without .database.windows.net) and click Run.



The request to recover server is async, you can monitor the progress with the same XTS view in 1. When server is in Ready state, the recover process is done.

Verify with customer if they see the server from their side (portal / Azure Powershell). This usually takes 30 seconds to 2 minutes for the resource rehydration. If the resource doesn't appear you may need to force an ARM cache re-sync.

User databases are not automatically recovered and will show up in Deleted Databases. Customer can self-service the restore of each dropped database they want, either from Azure Portal or Powershell.



Customer can use below script to generate the restore Powershell commands to restore all the databases from Cloud Shell quickly.

```
# Update the following parameters based on your environment
$ResourceGroupName="XXXXXXXXXXXXXXXXX" # Change the resource group name
$ServerName="XXXXXXXXXXXXXXX"  # Change the server Name Without database.windows.net

# Get the deleted databases to restore
$DeletedDatabase = Get-AzSqlDeletedDatabaseBackup -ResourceGroupName $ResourceGroupName -ServerName $ServerNam

# Generate the Restore commands for the deleted databases
For ($i=0; $i -le $DeletedDatabase.length-1; $i++) {

Write-Host -ForegroundColor Green "#############################################################################
Write-Host -ForegroundColor Green "########################################" $DeletedDatabase[$i].DatabaseNa

$1 = "$" +"RestoredDatabase = Restore-AzSqlDatabase -FromDeletedDatabaseBackup -DeletionDate " + "'"  + $Delet
$2 = " -ResourceGroupName " + "'" + $DeletedDatabase[$i].ResourceGroupName + "'"
$3 = " -ServerName " + "'" + $DeletedDatabase[$i].ServerName + "'"
$4 = " -TargetDatabaseName " + "'" + $DeletedDatabase[$i].DatabaseName + "'"
$5 = " -ResourceId " + "'" +$DeletedDatabase[$i].ResourceID+ "'"
$1 + $2 + $3 + $4 + $5

# Generate the database verify command
Write-Host -ForegroundColor Green "# Verify the status of restored database"
Write-Host '$RestoredDatabase.status'
}
```

Scenario 2 (Requires ICM)

If customer re-created the dropped server with the same name in same region, it force drops the deferred drop server. In this case ONLY engineering can attempt to restore the server. You will need an ICM in this case.

If you are creating an ICM, please make sure:

1. You include all responses from the customer facing email in the incident.
   If customer does not know the region, then run the following query in adhoc global kusto query with links.xts

   ```
   MonManagement
   | where TIMESTAMP > ago(7d)
   | where keys == "rserver-sqldw-srv-prod" and state_machine_type == "LogicalServerStateMachine"
   | summarize min(PreciseTimeStamp), max(PreciseTimeStamp) by ClusterName, SourceMoniker, state_machine_typ
   ```

   If a row is returned, note the region. If no rows are returned then this server was likely dropped > 7 days ago and we will not be able to restore the server/db.

2. You have obtained a confirmation on Step 1.
3. CRI for PG (Product Group) is filed within 7 days of the drop of the server
4. PG will need this to be Production environment and/or very strong business justification to I attempt the recovery. If not sure, CSS should confirm with TA's or EEE's on whether this request meets the bar for filing CRI for Product Group.
5. Enclose Subscription Owner approval for any restore operation on dropped resource as Mandatory for ICM request.
6. Ask the customer to create an empty database for each database to restore, with name identical to the database to be restored, and all the parameters (backup retention, SLO, backup storage redundancy, etc.)

they want to use for the restored database. These databases will be used as the restore source once PG copies the old backups. Please include this list of databases in the IcM.
    - If the customer does not know the names of the databases to be restored, you can query `MonAnalyticsDbSnapshot` to get the old databases, like:

```
MonAnalyticsDBSnapshot
| where end_utc_date < datetime(old_server_drop_time) // Or, for example "ago(3d)", if the drop was
| where logical_server_name == "old_server_name"
| project end_utc_date, logical_server_name, logical_database_name, edition, service_level_objective
| summarize arg_max(end_utc_date, *) by logical_server_name, logical_database_name
```

7. CRI should be filed as Sev3. Only if the customer Production environment is down and with proper business justification, please create a Sev-2. For non-production environments, please don't create as Sev-2

Other scenarios where escalation to PG may be required

If the above steps do not solve the issue, or you cannot confirm whether the issue has been resolved, please create CRI for owning the team Backup/Restore Service queue with [RestoreOfDroppedServer] in the title. Note: CRI should be filed as Sev2 only if the customer production environment is impacted and the server was dropped in the last 7 days, else please create Sev3 for all non-production environments. Inform the customer that the recover server is in the best of efforts and not guaranteed operation.

Root Cause Classification

Root Cause: Azure SQL DB v2\Backup/Restore\User Request\DroppedServerRecovery

How good have you found this content?