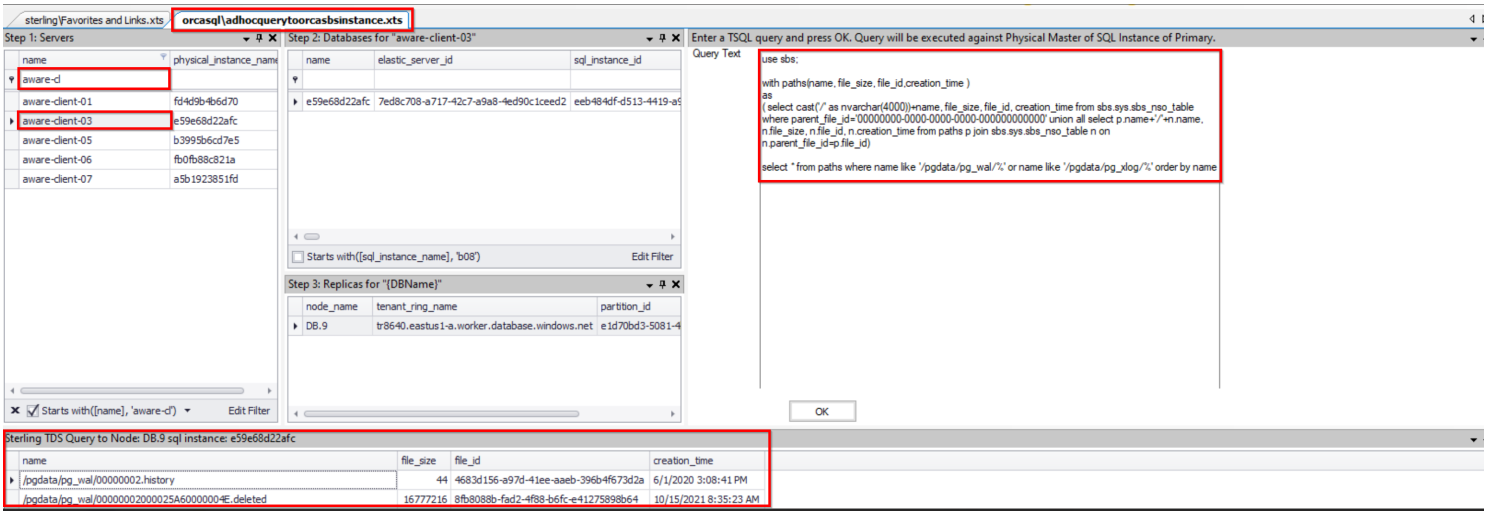
Restore taking long time

Last updated by | Ahmed Mahmoud | Nov 18, 2021 at 8:34 AM PST

Find the last WAL file in SBS to restore to using this XTS view and query: List all PG WAL files in SBS storage with the following SBS query in XTS View "AdhocQueryToOrcaSBSInstance.xts".

```
use sbs;
with paths(name, file_size, file_id,creation_time )
as
(
select cast('/' as nvarchar(4000))+name, file_size, file_id, creation_time from sbs.sys.sbs_nso_table where
parent_file_id='00000000-0000-0000-0000-000000000000'
union all
select p.name+'/'+n.name, n.file_size, n.file_id, n.creation_time
from paths p
join sbs.sys.sbs_nso_table n
on n.parent_file_id=p.file_id
)
select * from paths where name like '/pgdata/pg_wal/%' or name like '/pgdata/pg_xlog/%' order by name
```



And you can find the most recent WAL file restored on server with this Kusto query;

```
MonRdmsPgSqlSandbox
| where LogicalServerName == "servername"
| where originalEventTimestamp > ago(1d)
| where text contains "recovering"
| order by originalEventTimestamp desc
| project originalEventTimestamp, NodeName, process_id, text=trim("((\r)?(\n)?)*", text)
```

Old Internal Information don't share with customers

In this configuration, the PG/MySQL database uses SQL Server as a filesystem. The max size of supported database is 4TB and the database backups are kept on Standard Blobs. There is a differential database backup done every 12 hours and transaction log backup done every 5 minutes. Based on this frequency, here are rough times taken to do backup/restore

Backup

- Full Database Backup: SQL Server physical backup compresses on average 4x which limits the size of backup to 1TB. With IO bandwidth of 60 MBsec (3.6 GB/minute), a full database backup can take up to ~300 minutes (5 hours). IO size is 4MB (maps to 64 IOs of size 64k) and with 60MB/sec limit, we can push 15 such IOs or equivalent 64*15 = 960 IOPS (15% of total IO bandwidth available). This provides an automatic resource governance for IOPS.

- Differential Database Backup: The time taken will depend upon the data churn. Let us assume we churn 20% data/week, this will take 1 hour

- Transaction Log Backup: Depends on the transaction throughput which should be < 18 GB assuming that log backup completes in 5 mins for 99+ percentile cases otherwise it will spill into another log backup slot.

Restore/Restart

- Restart – It applies the transaction log since the last checkpoint. General rule of thumb is that 5 minutes of transaction log takes 5 minutes to apply.

- Restore: The worst case here is to restore the full database backup and last differential backup and then apply last 12 hours of the log. This will take 18 hours (5 hours (restoring full backup) + 1 hour (differential) and 12 hours to apply the log).

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