

Restore taking long time

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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
```

The screenshot shows the XTS interface with the following components:

- Step 1: Servers**

name	physical_instance_name
aware-d	
aware-client-01	fd4d9b-4b6d70
aware-client-03	e59e68d22afc
aware-client-05	b3995b6cd7e5
aware-client-06	fb0fb88c821a
aware-client-07	a5b1923851fd
- Step 2: Databases for "aware-client-03"**

name	elastic_server_id	sql_instance_id
e59e68d22afc	7ed8c708-a717-42c7-a9a8-4ed90c1ced2	eeb484df-d513-4419-a5
- Step 3: Replicas for "DBName"**

node_name	tenant_ring_name	partition_id
DB.9	tr8640.eastus1-a.worker.database.windows.net	e1d70bd3-5081-4
- Query Text**

```
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
```
- Sterling TDS Query to Node: DB.9 sql instance: e59e68d22afc**

name	file_size	file_id	creation_time
/pgdata/pg_wal/00000002.history	44	4683d156-a97d-41ee-aaeb-396b4f673d2a	6/1/2020 3:08:41 PM
/pgdata/pg_wal/000000002000025A60000000-4E-deleted	16777216	8fb8088b-fad2-4f88-b6fc-e41275898b64	10/15/2021 8:35:23 AM

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 $64 \times 15 = 960$ 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).

How good have you found this content?

