

Database restore keeps ongoing with multiple Dumps

Last updated by | Vitor Tomaz | Feb 24, 2023 at 3:29 AM PST

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Issue


Customer might report that a restore from a backup that has been taken on on-prem is slow/stuck or that has been cancelled after long hours.

The Managed Instance where the backup is being restored is on General Purpose.


Investigation/Analysis

On ASC multiple dumps ocuring:

Dumps based on MonNodeTraceETW

 Shows all dumps based on MonNodeTraceETW, dump is responsible for unavailability.

Drag a column header and drop it here to group by that column

	PreciseTimeStamp 	NodeName	AppName	BucketString
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
+	2021-11-04 10:40:27	DB16C.0	fa1fa29b4587	00000001438E81CF
+	2021-11-04 10:40:27	DB16C.0	fa1fa29b4587	00000001438E81CF
+	2021-11-04 10:40:27	DB16C.0	fa1fa29b4587	00000001438E81CF

The restore could show that has been canceled:

MonRestoreRequests

```

| where start_time >= datetime(2021-10-29 00:00:00) and start_time <= datetime(2021-11-05 13:27:00)
| extend SourceServer = iif(archived_backup_resource_id!= '', extract('/longTermRetentio
    source_managed_server_name)
| extend SourceDatabase = iif(archived_backup_resource_id!= '', extract('/longTermRetentio
    source_managed_database_name)
| extend TargetServer = target_managed_server_name, TargetDatabase = target_managed_database_name
| where (SourceServer =~ 'server'
    and (isempty('') or SourceDatabase =~ ''))
) or
(TargetServer =~ 'server'
    and (isempty('') or TargetDatabase =~ ''))
)
| summarize arg_max(TIMESTAMP, *) by restore_request_id
| project restore_request_id = tolower(restore_request_id), TargetServer, TargetDatabase
| join kind=inner (

```

MonRestoreEvents

```

| project originalEventTimestamp, restore_request_id = tolower(restore_request_id), restore_databa
) on restore_request_id
| sort by originalEventTimestamp desc nulls last
| project originalEventTimestamp, restore_request_id = tolower(restore_request_id), TargetServer,
| limit 100

```

originalEventTimestamp	restore_request_id	TargetServer	TargetDatabase	restore_database_progress	details	event	message	restore_configuration_info	restore_database_result	exception_type
2021-11-04 11:50:28.9151940	afc5c77-d5e4-402...	sk14...	MiscData	Restore cancelled.		restoring_database_progress				
2021-11-04 11:50:28.9136542	afc5c77-d5e4-402...	sk14...	MiscData	Report restore status Canceled.		restoring_database_progress				
2021-11-04 11:50:28.9128712	afc5c77-d5e4-402...	sk14...	MiscData			restoring_database_end				
2021-11-04 11:50:28.9022890	afc5c77-d5e4-402...	sk14...	MiscData			restoring_database_failure	A task was canceled.		Finished restore with Canceled.	TaskCanceledException
2021-11-04 11:50:28.9021355	afc5c77-d5e4-402...	sk14...	MiscData			restoring_database_failure	One or more errors occurred.			AggregateException
2021-11-04 11:50:28.8965683	afc5c77-d5e4-402...	sk14...	MiscData			restoring_database_failure	One or more errors occurred.			AggregateException
2021-11-04 11:50:28.8923726	afc5c77-d5e4-402...	sk14...	MiscData			restoring_database_failure	A task was canceled.			TaskCanceledException
2021-11-04 11:50:28.8902056	afc5c77-d5e4-402...	sk14...	MiscData			restoring_database_failure	One or more errors occurred.			AggregateException
2021-11-04 11:50:28.8877264	afc5c77-d5e4-402...	sk14...	MiscData	Executing restore query RESTORE DATABASE [a982955-491d-410f-9296-fd04f1ab206] WITH RECOVERY, CHECKSUM, KEEP_CDC, NEW_BROKER on D818C2D818C2-fa1fa...		restoring_database_progress				
2021-11-04 11:50:28.8845705	afc5c77-d5e4-402...	sk14...	MiscData	Notification is sent successfully.		restoring_database_progress				
2021-11-04 11:50:28.8259783	afc5c77-d5e4-402...	sk14...	MiscData	Start sending notification.		restoring_database_progress				
2021-11-04 11:10:47.8131838	afc5c77-d5e4-402...	sk14...	MiscData	Cancelling restore.		restoring_database_progress				
2021-11-04 10:42:29.1143783	afc5c77-d5e4-402...	sk14...	MiscData	Notification is sent successfully.		restoring_database_progress				
2021-11-04 10:42:29.0736692	afc5c77-d5e4-402...	sk14...	MiscData	Start sending notification.		restoring_database_progress				
2021-11-04 10:42:29.0732371	afc5c77-d5e4-402...	sk14...	MiscData	Executing restore query RESTORE DATABASE [a982955-491d-410f-9296-fd04f1ab206] FROM URL = N'https://sk1456a.blob.core.windows.net<this part of the url is scr...		restoring_database_progress				
2021-11-04 10:42:29.0657324	afc5c77-d5e4-402...	sk14...	MiscData	Total size of backup: 174532		restoring_database_progress				
2021-11-04 10:42:29.0653389	afc5c77-d5e4-402...	sk14...	MiscData	Name:MiscData, Physical file name: I:\DATA\MiscData.mdf, Size: 3185099008, Physical file size: I:\DATA\MiscData.mdfName:MiscData_log, Physical file name: H:\Log\Misc...		restoring_database_progress				
2021-11-04 10:42:29.0638048	afc5c77-d5e4-402...	sk14...	MiscData	Calculating storage requirement for backup		restoring_database_progress				
2021-11-04 10:42:29.0626168	afc5c77-d5e4-402...	sk14...	MiscData	Read total size for database a982955-491d-410f-9296-fd04f1ab206		restoring_database_progress				
2021-11-04 10:42:29.0239230	afc5c77-d5e4-402...	sk14...	MiscData	Reserved storage space: 6750208, Used storage space: 3183895		restoring_database_progress				
2021-11-04 10:42:28.9382407	afc5c77-d5e4-402...	sk14...	MiscData	Replacing the logical name MiscData_log to physical file https://wasdpcus1aprm15802.blob.core.windows.net/managedserver-40a91664-6964-4843-bdffa-1ee4ac30e422/...		restoring_database_progress				
2021-11-04 10:42:28.9378485	afc5c77-d5e4-402...	sk14...	MiscData	Replacing the logical name MiscData to physical file https://wasdpcus1aprm15802.blob.core.windows.net/managedserver-40a91664-6964-4843-bdffa-1ee4ac30e422/data...		restoring_database_progress				
2021-11-04 10:42:28.9362429	afc5c77-d5e4-402...	sk14...	MiscData	ndf paths are		restoring_database_progress				

But the database is still in creation mode:

MonAnalyticsDBSnapshot

```

| where PreciseTimeStamp >= ago(7d)
| where logical_server_name == 'server_name'
| where logical_database_name like 'database_name'
| summarize by logical_database_name, customer_subscription_id, resource_group, logical_server
|| extend ResourceUri = strcat('/subscriptions/', customer_subscription_id ,'/resourcegroups/'
| project Database = logical_database_name,
SLO = service_level_objective,
FsmState = state,
TIMESTAMP
| order by TIMESTAMP desc
| take 100

```

Database	SLO	FsmState	TIMESTAMP
MiscData	MIGP16G5	WaitingForPhysicalDatabaseCreation	2021-11-04 17:36:00.9982389
MiscData	MIGP16G5	WaitingForPhysicalDatabaseCreation	2021-11-04 17:06:09.9176535
MiscData	MIGP16G5	WaitingForPhysicalDatabaseCreation	2021-11-04 16:35:31.9303832
MiscData	MIGP16G5	WaitingForPhysicalDatabaseCreation	2021-11-04 16:05:54.9897063
MiscData	MIGP16G5	WaitingForPhysicalDatabaseCreation	2021-11-04 15:36:00.0181900

The database had memory-optimized objects while onprem.

Mitigation

The RCA is that the customer DB is already corrupted on onprem.

Suggested mitigation is to:

- create a new database
- verify the Hekaton fields in the bootpage are zeroed out use query

```
DBCC DBINFO('<db_name>') WITH TABLERESULTS
```

and these fields value should be zero: dbi_hkRecoveryLSN, dbi_hkLogTruncationLSN, dbi_hkRootFile, dbi_hkRootFileWatermark, dbi_hkTrimLSN

- migrate data to new database -
- verify the Hekaton fields in the bootpage are zeroed out

use query

```
DBCC DBINFO('<db_name>') WITH TABLERESULTS
```

and these fields value should be zero: dbi_hkRecoveryLSN, dbi_hkLogTruncationLSN, dbi_hkRootFile, dbi_hkRootFileWatermark, dbi_hkTrimLSN

- take a full backup
- restore on Managed Instance

The PG is already working on a fix where the customer is prompted about the issue.

Internal reference

Work item: [1852942](#) 

ICM:

[356531097](#) 

[352490213](#) 

[309687205](#) 

[270529546](#) 

[267412886](#) 

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