

IncompatiblePhysicalLayoutNonOnlineDataFilesExist or no online data files exist

Last updated by | Balaji Barmavat | Nov 30, 2020 at 5:31 PM PST

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Behavior

Customer tries to cutover an Online Managed Instance Data Migration that fails with error stack like below from Azure portal:

Screenshot of error:

Error type



Database migration error

Error Detail

```
Restore Operation failed for operation Id '267abbc3-88dc-40a8-84a6-145d31a54d83'. Code
'IncompatiblePhysicalLayoutNonOnlineDataFilesExist',
Message 'The database contains incompatible physical layout.
Non-online data files exist.'.
The database contains incompatible physical layout. Non-
online data files exist.
Restore Operation failed for operation Id '7ec990f0-5d83-4ffe-8278-aaf0db10cedf'. Code
'IncompatiblePhysicalLayoutWrongNumberOfLogFiles',
Message 'The database contains incompatible physical layout.
Multiple log files are not supported.'.
The database contains incompatible physical layout. Multiple
log files are not supported.
```

Different variations of errors:

Restore Operation failed for operation Id 'fc38ea79-f7c1-45aa-a863-3e2ccca71d4a'. Code
'IncompatiblePhysicalLayoutNonOnlineDataFilesExist', Message 'The database contains incompatible physical layout.
Non-online data files exist.'. The database contains incompatible physical layout. Non-online data files exist.

```
{ 'resourceId': '/subscriptions/Input SubscriptionId/resourceGroups/temp-migration-rg/providers/Microsoft.DataMigration/services/am-dbmigration', 'errorType': 'Database migration error',
'errorDetail': 'Restore Operation failed for operation Id '267abbc3-88dc-40a8-84a6-145d31a54d83'. Code
'IncompatiblePhysicalLayoutNonOnlineDataFilesExist', Message 'The database contains incompatible physical layout.
Non-online data files exist.'.The database contains incompatible physical layout. Non-online data files exist.Restore
```

Operation failed for operation Id '7ec990f0-5d83-4ffe-8278-aaf0db10cedf'. Code 'IncompatiblePhysicalLayoutWrongNumberOfLogFiles', Message 'The database contains incompatible physical layout. Multiple log files are not supported.'.The database contains incompatible physical layout. Multiple log files are not supported.' }

Restore Operation failed for operation Id '7d1da266-ec0c-46a0-a037-36c620a36bb9'. Database Migration Service encountered an error that is typically caused by having offline log files in the database. This is a known issue. Please contact us to help mitigate the issue while we are working on the fix. Code 'IncompatiblePhysicalLayoutWrongNumberOfLogFiles', Message 'The database contains incompatible physical layout. Multiple log files are not supported.'.

The errors vary from 'Multiple log files are not supported' to 'Non-online data files exist'.

Investigation steps:

Use the "Operation ID" listed in the Azure Portal or the activities log JSON to query the AlrManagement table in the respective region cluster of the Managed Instance where this restore throws error.

Sample Kusto with result set:

AlrManagement

| where request_id == 'D11B9239-8CA5-4ABD-B2B4-8A4ED091321D'

//Start: datetime(2019-02-19 17:59:05.3420000)

//End:datetime(2019-02-20 00:13:33.8020000)

//Elapsed time: time(06:14:24.1340000)

=====

<?xml version="1.0"?>

<InputParameters xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<SubscriptionId>Input SubscriptionId3c</SubscriptionId>

<RestoreId>a5942824-ff67-4894-a177-97e0b23a2c70</RestoreId>

<TargetManagedServerName>leadexec-sql</TargetManagedServerName>

<TargetManagedDatabaseName>IReloLE</TargetManagedDatabaseName>

<TargetManagedDatabaseMaxSize xsi:nil="true" />

<BackupContainerUrl>https://uwleaudits.blob.core.windows.net/ec2e4277-75e2-4644-a820-670200661f33</BackupContainerUrl>

<Collation>SQL_Latin1_General_CP1_CI_AS</Collation>

<SubmitResourceHydration>>false</SubmitResourceHydration>

<ShouldAutoCompleteExternalBackupRestoreRequest>false</ShouldAutoCompleteExternalBackupRestoreRequest>

<ShouldPauseBackupServices>true</ShouldPauseBackupServices>

<ShouldValidateStorageContainerArguments>true</ShouldValidateStorageContainerArguments>

</InputParameters>

=====

<?xml version="1.0"?>

<OutputParameters xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">

<RestoreRequestId>a5942824-ff67-4894-a177-97e0b23a2c70</RestoreRequestId>

<OperationDetails>Unknown error. External backup restore failed. Unknown error. The database contains incompatible physical layout. Not online data files exist.</OperationDetails>

<SubscriptionId>Input SubscriptionId3c</SubscriptionId>

<ResourceGroup>LeadExec-SQL</ResourceGroup>

<ManagedServerName>leadexec-sql</ManagedServerName>

<ManagedDatabaseName>IReloLE</ManagedDatabaseName>

<ManagedDatabaseId>baadf00d-baad-baad-baad-f0000000000d</ManagedDatabaseId>

<CreatedDate>2019-02-20T00:13:26.3656778Z</CreatedDate>

<MaxSizeBytes>0</MaxSizeBytes>

<Collation>SQL_Latin1_General_CP1_CI_AS</Collation>

</OutputParameters>

AlrManagement

| where request_id = ~ '267abbc3-88dc-40a8-84a6-145d31a54d83'

//DB: AMZOPERATIONSDB

// <OperationDetails>The database contains incompatible physical layout. Non-online data files exist.
</OperationDetails>

AlrManagement

| where request_id = ~ '7ec990f0-5d83-4ffe-8278-aaf0db10cedf'

//DB: AMZWEBLEGACYDB

// <OperationDetails>The database contains incompatible physical layout. Multiple log files are not supported.
</OperationDetails>

AlrManagement

| where request_id =~ 'fc38ea79-f7c1-45aa-a863-3e2ccca71d4a'

//DB: AMZSERVICESDB

// <OperationDetails>The database contains incompatible physical layout. Non-online data files exist.
</OperationDetails>

Customers can use following query to check the list of database files from the On-Premise SQL DB that is being restored via this method:

```
select * from sys.database_files
```

The result set can show multiple files, online files and/or the offline files. The issue here is not at the source but on the MI itself.

Root Cause:

After recovery of database (in log replay) we check all files in sys.sysprufiles. This checks don't allow offline data files.

From <<https://portal.microsofticm.com/imp/v3/incidents/details/116220745/home>>

Solution:

Engineering team is working on providing this fix for all tenant rings but whenever this issue reports, raise ICM for the PG to help with this investigation and possibly CAS like below that disables the check on the sys.sysprufiles hidden system table/disables the physical layout check during this log replay:

CAS executed in sample ICM:

```
Set-ManagedServerConfigurationParameters -ManagedServerName am-sqlmi-w -Parameters  
@('SQL.Config_FeatureSwitches_EnableSuppressPhysicalLayoutErrorsAfterExternalBackupRestoreV2') -Values @('on')
```

ICM example:

<https://icm.ad.msft.net/imp/v3/incidents/details/105867312/home>

How good have you found this content?

