Database X cannot be opened. It has been marked SUSPECT by recovery - secondary database

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Issue

Customer not able to run queries on the secondary instance (managed instance as part of a Failover group). Queries fail with the error:

Database '...' cannot be opened. It has been marked SUSPECT by recovery. See the SQL Server errorlog for more information.

Skipping the default startup of database '...' because the database belongs to an availability group (Group ID: -...). The database will be started by the availability group. This is an informational message only. No user action is required.

When the customer accesses the secondary instance, he can see some databases on SUSPECT state. Other databases have now a GUID instead of the database name.

Investigation/Analysis

First look at the secondary instance error log. Pay attention to any kind of exception, especially errors that prevent the normal functioning of the secondary database, like the lack of space:

```
MonSQLSystemHealth
| where LogicalServerName == "azuresqlmi2"
| where TIMESTAMP > ago(30m)
| project TIMESTAMP, message
```

Example of an error that can be seen:

MODIFY FILE encountered operating system error 112(There is not enough space on the disk.) while attempting to expand the physical file

This error means that a data file expansion was issued (for example data that came in on the primary), but the secondary doesn't have enough space to grow.

Due to this the secondary database becomes unavailable.

Mitigation

Look at both instances allocated and used storage. You can generate an ASC report for both Managed instances. Both instances should have the same allocated space and advise customer if this is the case

Next step would be to check the databases sizes - on ASC, **Performance** -> **Space Issues** -> **Database on Disk and Max Size**. Check for databases with abnormal sizes and shrink opportunities.

Now, system databases aren't replicated. So make sure that you also look and those (master, msdb, distribution and tempdb)

Free space on the secondary instance (shrink databases on primary) and/or increase Storage on secondary depending on what was found.

Internal reference

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