Implementing Unicenter Desktop and Server Management (DSM) r11.1 with Microsoft SQL Server Clusters

High availability ("fault tolerance", "failover") based on Microsoft Cluster Service is a common architectural requirement and future releases of Unicenter Desktop and Server Management (DSM) will be completely cluster-aware. Also common is the requirement that the MDB reside in a remote, clustered instance of Microsoft SQL Server. For performance reasons, the recommended best practice is to install the MDB local to the Unicenter manager components but valid arguments for having a highly available database installed remotely can also be made. Ultimately (when Unicenter DSM is "cluster aware" in a future release) the recommendation will be to install both the DSM Manager components and the MDB on the same cluster.

In the interim, however, if you need to install MDB remotely on a cluster, there are certain challenges that must be addressed. Currently, while the installation does support installation of the MDB only, the installation must be run locally on the Microsoft SQL Server host. In the case of a cluster, that is impossible since it is a virtual node. While the Unicenter NSM installation does support cluster installation and the procedure has been documented, there is a reluctance to use another product (that is currently beta) to install the MDB and also installs code on the MDB host.

Until a cluster aware version of Unicenter DSM is available the procedures outlined in this document can be used to implement the product with an MDB hosted on a remote clustered instance of Microsoft SQL Server using the Unicenter DSM installation media only.

Prerequisite Check

To successfully complete the implementation procedures, the following is assumed:

- Clustered Microsoft SQL Server instance has been installed and functioning
- Intended Unicenter DSM Manager server meeting recommended hardware and software specifications has been installed and functioning
- Name resolution and communications between the Unicenter DSM Manager host and Microsoft SQL Server cluster have been verified
- Host system with a local instance of Microsoft SQL Server is available to be used (temporarily) to create the MDB. Means to transfer the database files created on this host to the SQL cluster (network connectivity, DVD burner) is also required.
Install MDB to Temporary Host

Using the Unicenter DSM media, install the MDB only to the temporary host. Follow the standard documentation and on screen instructions. Do not install any DSM components at this time. The installation process should create and patch the MDB.

Detach the MDB from the Temporary Host

Before the database files can be transferred to the Microsoft SQL Server cluster, the database must be detached from the temporary host. Methods to perform the operation are described in detail in the vendor’s online documentation. For convenience, examples for Microsoft SQL Server 2000 and Microsoft SQL Server 2005 are provided.

Microsoft SQL Server 2000 - Detach Database

To detach an existing database:

1. Verify all database connections are closed
2. Open the SQL Server Enterprise Manager, drill down to the database, right click and choose "All Tasks" then "Detach Database" from the in context menus
The “Detach Database…” dialog will display the number of open connections, if any, and provide a button to clear the connections if applicable.

3. Click the “Clear” button and respond when prompted to close the open connections if necessary.
Enabling the "Update statistics prior to detach" option is recommended.

4. When the connections are closed and the option is set, detach the database by clicking “OK”.

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Detach Database - mdb

Detach the database from the server so that the database files can be copied. A detached database cannot be used until it is attached again.

Database status:
- Connections using this database: 1
- Database being replicated: No

ATTENTION: The database cannot be detached while there are connections using this database.

Detach options:
- Update statistics prior to detach

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Detach Database - mdb

Detach the database from the server so that the database files can be copied. A detached database cannot be used until it is attached again.

Database status:
- Connections using this database: 0
- Database being replicated: No

STATUS: The database is ready to be detached.

Detach options:
- Update statistics prior to detach

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Once the database has been detached, the related data and log files can be moved to a new location to be re-attached.

**Microsoft SQL Server 2005 - Detach Database**

To detach an existing database:

1. Verify all database connections are closed
2. Open the SQL Server Management Studio, drill down to the database, right click and choose "Tasks" then "Detach Database" from the in context menus.

The "Detach Database" dialog will display status of "Ready".

3. Click the "Drop Connections" box to close open connections if appropriate. It is recommended that the "Update statistics prior to detach" and "Keep Full Text Catalogs" options be enabled.

4. When the required options are set, detach the database by clicking "OK".
Once the database has been detached, the related data and log files can be moved to a new location to be re-attached.

**Copy Database Files to the Microsoft SQL Cluster**

Database data and log files (mdb.mdf and mdb_log.ldf) must be copied from the temporary host to the designated shared resource drive(s) on the cluster system. Consult with the cluster administrator to determine the correct location(s) for the database files.

**Attach the MDB to the Microsoft SQL Cluster**

Methods to perform the operation are described in detail in the vendor’s online documentation. For convenience, examples for Microsoft SQL Server 2000 and Microsoft SQL Server 2005 are provided.

**Microsoft SQL Server 2000 - Attach Database**

To attach a database:

1. Open the SQL Server Enterprise Manager, drill down to "Databases", right click and choose "All Tasks" then "Attach Database" from the in context menus
2. Using the "Attach Database” dialog, locate the data file (".mdf" file) to be attached. When the log file (".ldf" file) is located in the same directory, it will be found automatically. Otherwise, the path to the corresponding log file must be entered. The database name ("Attach as") and database owner should not be altered.

3. Attach the database by clicking "OK" after the dialog properties are properly updated.
Microsoft SQL Server 2005 - Attach Database

To attach a database:

1. Open the SQL Server Management Studio, drill down to "Databases", right click and "Attach Database" from the in context menus

2. On the "Attach Database" dialog, click the "Add" button then locate the data file (".mdf" file) to be attached. When the log file (".ldf" file) is located in the same directory, it will be found automatically. Otherwise, click the ellipse button next to the "Current File Path" for the "Log" and locate it. The database name ("Attach as") and database owner should not be altered.

3. Attach the database by clicking "OK" after the dialog properties are properly updated.
Install Unicenter DSM Management Components

Once the MDB has been attached to the clustered Microsoft SQL Server instance, Unicenter DSM management components can be installed following standard documentation and online instructions. When prompted for the database server name, simply insert the virtual Microsoft SQL Server name. The installation should establish a connection to the MDB then perform required configuration and content insertion tasks.