

Using dbmod utility

HP Output Server uses Character Large Object (CLOB) to store all the attributes of HP Output Server databases. Some of the HP Output Server attributes are indexed and are stored in CLOB. HP Output Server database CLOB data is represented in XML format. The `dbmod` utility moves an attribute or set of attributes from the CLOB and make it to indexed or non-indexed column and viceversa.

By default, the HP Output Server installation's most frequently updated or accessed attributes of HP Output Server are moved out of the CLOB and stored as indexed and non-indexed columns.

Advantages

The following are the advantages of moving the attributes out of the CLOB:

- The CLOB data is easily accessible.
- Optimized database operations by accessing the CLOB only when required.

DBmod Utility

Perform the following steps to use the `dbmod` utility:

1. Stop all or a specific HP Output Server to which the required attribute needs to be moved into or outside the CLOB by executing the following command:

```
stop_server -t all
```

NOTE: The servers include DSM, DLM, JQM, or CM.

NOTE: The `dbmod` utility is not required for DSM server and you need to restart the server.

NOTE: Ensure that the MySQL database server must be running before using the `dbmod` utility.

Example: `stop_server -t dsm`

2. Identify the attribute(s) to be taken out of CLOB or moved in to CLOB and modify the DPAOIDs file as follows:
 - If an attribute has to be indexed, enter the value for the corresponding server in the 4th column of the attribute entry of the DPAOID file.
 - If an attribute has to be moved to a non-indexed column, enter the values for the corresponding server in the 11th column of the DPAOID file.

- If an attribute has to be moved to CLOB from indexed or non-indexed column, remove the corresponding entry from the 4th or 11th column of the DPAOID file.

NOTE: The multi-valued attributes should never be marked as indexed.

NOTE: The `-job-owner` attribute cannot accept more than 128 characters. If you specify more than 128 characters, the Delivery Manager (DLM) server might crash.

The DPAOID file gives an option to specify whether an attribute needs to be indexed or non-indexed for a particular server or a specific set of servers. The 4th column represents the indexed column and 11th column represents the non-indexed column respectively. The field can take the following value(s):

Server Name	Value
CM	1
DLM	2
JQM	3
DSM	4

The maximum size of VARCHAR data type value in MySQL and ORACLE databases is 4000. If you specify a value greater than 4000, HP Output Server will make that column as CLOB in the database and remove the database storage limit of an attribute value, because the CLOB has a limit of 4GB.

Example 1

```
mail-subject .1.3.6.1.4.1.0.1.3.11 TBSD - pmr Text 001 - - - 34 2000
```

In the above example, the modified `mail-subject` attribute's maximum column size is **2000**. Here the `mail-subject` attribute is a non-indexed column in both JQM and DSM tables.

Example 2

```
mail-message .1.3.6.1.4.1.0.1.3.64 TBSJ - pmr Text 001 - - - 34 4500
```

In the above example, the modified `mail-message` attribute maximum column size is set to **4500**. Since this value is greater than **4000**, HP Output Server will treat this attribute column as CLOB.

3. Run the `mkoiddb` command to reflect DPAOIDs changes in the OID database:

```
mkoiddb <DPAOIDsFile>
```

NOTE: Ensure that the system date must be set greater than the packaging date, since `mkoiddb` command might not update the DPAOIDs file.

4. Execute the `dbmod` command on the updated DPAOID file as follows:

```
dbmod -n <serverName (dlm|jqm|dsm|cm)> [-O DPAOIDsFile]
[-L[all|none|terse|debug|info|notice|warning|error|alert|crit|emerg]]
```

Example

If you have moved an attribute from CLOB into indexed or non-indexed column or vice versa for a DLM server, you can view the changes made by executing the following command:

```
dbmod -n dlm [-O DPAOIDsFile] -L none
```

5. Start the HP Output Server servers that were stopped, by executing the following command:

```
start_server -t all
```

NOTE: For information about the dbmod command, see the *System Administrator's Command Reference* for HP Output Server.

The syntax for the dbmod utility is as follows:

Execute the dbmod command on the updated DPAOID file as follows:

```
dbmod -n <serverName (dlm|jqm|dsm|cm)> [-O DPAOIDsFile]
[-L[all|none|terse|debug|info|notice|warning|error|alert|crit|emerg]]
```

To index a DLM server, the command is: Index the DLM server by executing the following command:

```
dbmod -n dlm [-O DPAOIDsFile] -L none
```

6. Start the HP Output Server servers by executing the following command:

```
start_server -t all
```

NOTE: For information about the dbmod command, see the *System Administrator's Command Reference* for HP Output Server.
