IBM Content Manager

Removing the required flag from a user-defined attribute with ICMRemoveRequire

1. Introduction

Use the ICMRemoveRequire tool to remove the required flag from a user-defined component attribute.

What ICMRemoveRequire does

ICMRemoveRequire does the following:

- Validates that the remove required flag request is to a user-defined attribute which is in or not in an attribute group in the component type.

- Validates this user-defined attribute is required.

- Validates this user-defined attribute is unique. If it is unique and you want to remove the unique flag, both the unique flag and the required flag are removed. If you do not want to remove the unique flag, ICMRemoveRequire returns an error, because IBM Content Manager only supports that the unique attribute must be required/not null.

- Validates that the user-defined attribute is not a primary key and is not linked to other attribute in auto-linking

- Issues an ALTER TABLE command with DROP NOT NULL to change the affected table definitions.

- Issues an UPDATE ATTRFLAGS command to remove the required flag and unique flag from the attribute from this component type definition.

- Runs the REORG function on affected table, *if* you use the `-reorg` parameter *and* the database manager is DB2 LUW.

  If the database manager is Oracle, REORG is not required.

- Rebuild affected component type views.

- If the remove required flag operation is successful, ICMRemoveRequire displays a confirmation message.

Effect of running ICMRemoveRequire

After you run ICMRemoveRequire and reorganize the database, you will see that the component type in the Content Manager database has different table and system definitions.

1.1 Prerequisites

ICMRemoveRequire requires:

- IBM Content Manager Connector v8.6 GA(or later)
- 64 bit Java 1.8.0 or later.

If you can use the System Administration Client on the computer that is running the library server, you can run this tool without additional setup.

Supported environments

- The IBM Content Manager Connector and the library server can be different versions.
- The library server can be on an DB2 database server or an Oracle database server.
- Microsoft Windows, AIX, Linux and zLinux.

1.2 Using ICMRemoveRequire

Notes

- ICMRemoveRequire can remove only one attribute for a component type at a time. To change more than one attribute, you must run the tool multiple times.
- Run ICMRemoveRequire when the system is offline.
- To use the reorg option, make sure that there is enough disk space to complete the operation. For information on the disk space that is required, see the DB2 or Oracle documentation.

To run ICMRemoveRequire

1. Delete the following definitions from the component type if they use the attribute which you want to change:

    - It is linked to other attribute in auto-linking
    - It is a primary key in a "primary key-foreign key" relationship.

2. Make sure that the IBMCMROOT environment variable is set to the directory in which IBM Content Manager is installed.

3. Extract the contents of the `ICMRemoveRequire.zip` file to a new directory. The file contains these items:

    `ICMRemoveRequire.bat`

```
ICMRemoveRequire.sh

ICMRemoveRequire.jar
```

4. Back up the database.

    The tool performs changes to the tables that can not be reversed.

    For Oracle databases, you can create a restore point that you can use later if the tool has errors.

5. If you run the tool remotely, make sure that the data store connector definition is configured properly.

6. Initialize the paths:

    Windows: Run `cmbenv81.bat`

    UNIX: Run `cmbenv81.sh`

7. Run ICMRemoveRequire in preview mode (that is, use the `-preview` parameter). Check the screen output to make sure that the changes are as expected.

    See:

    "Running ICMRemoveRequire from the command line" on page 5

    "Running ICMRemoveRequire interactively" on page 7.

8. Run ICMRemoveRequire in active mode (that is, without the `-preview` parameter).

9. If you are using DB2, and you did not specify the `-reorg` parameter, run the REORG command on the affected component table.

    To find the name of this table, look in the ICMRemoveRequire logfile.

    The default name for this logfile is `ICMRemoveRequire.log`.

Displaying help for ICMRemoveRequire

Windows   Type:

```
cmbenv81
ICMRemoveRequire -?
```

AIX, Linux and zLinux   Type:

```
. /opt/IBM/db2cmv8/cmbenv81.sh
ICMRemoveRequire.sh -?
```

Running ICMRemoveRequire from the command line

Syntax

```
ICMRemoveRequire[.sh] -d datastore -u db user -p password
    -comptype name -attribute name
    [-isinattrgroup] [-attrgroup [groupname]]
    [-removeunique] [-inifile [filename]]
    [-log [ERROR|INFO|DEBUG|DDEBUG|DDDEBUG] [filename]]
    [-preview] [-reorg]
```

Parameters

-d datastore

(Required.) The datastore name.

The default value is ICMNLSDB.

-u username

(Required.) The Content Manager administrator user for the database.

The default value is ICMADMIN.

-p password

(Required) The database password.

-comptype *name*

(Required.) The component type of the attribute.

-attribute *name*

(Required.) The attribute to be removed.

-isinattrgroup

(Optional.) Include this parameter if the attribute is in an attribute group. Specify the attribute group by using the −attrgroup parameter.

-attrgroup [*groupname*]

(Optional.) The group that the attribute is in.

-removeunique

(Optional.) Include this parameter to remove the unique flag.

If you do not specify −removeunique:

- If the attribute has the required flag, but does not have the unique flag, ICMRemoveRequire removes the required flag.

- If the attribute has both the required flag and the unique flag, ICMRemoveRequire does not change it, and reports an error.

-inifile [*filename*]

(Optional.) Gets the value for the parameters from an `.ini` file.

If you include the `-inifile` parameter, an INI file is updated each time that you run ICMRemoveRequire. For example, if you run it in preview mode (include `-preview`), the logfile and the screen show all the SQL statements to be issued. Then run the tool in active mode (omit `-preview`), using the INI file parameter to actually remove the required flag from the attribute.

The default file is `ICMRemoveRequire.ini`.

-log [ERROR|INFO|DEBUG|DDEBUG|DDDEBUG] [*filename*]

(Optional.) Records information in the specified log file.

The default log level is INFO.

The default logfile name is `ICMRemoveRequire.log`.

-preview

(Optional.) List the commands to remove the required flag from the attribute, but does not change anything.

-reorg

(Optional.) DB2 only: Reorganizes the database after updating the attribute.

The default value is N.

Example commands

This command removes the required flag from the attr1 attribute in the rootIT1 root component type:

```
ICMRemoveRequire.bat -d icmnlsdb -u icmadmin -p password -comptype
rootIT1 -attribute attr1
```

This command uses the preview mode to generate the `ICMRemoveRequire.ini` file for the previous example:

```
ICMRemoveRequire.bat -d icmnlsdb -u icmadmin -p password -comptype
rootIT1 -attribute attr1 -preview
```

This command removes the required flag from the attr1 attribute in the attrgroup1 attribute group in the childIT1 child component type:

```
ICMRemoveRequire.bat -d icmnlsdb -u icmadmin -p password -comptype
childIT1 -attribute attr1 -isinattrgroup -attrgroup attrgroup1
```

This command removes both the required and unique flags from the attr1 attribute in the rootIT1 root component type:

```
ICMRemoveRequire.bat -d icmnlsdb -u icmadmin -p password -comptype
rootIT1 -attribute attr1 -removeunique
```

Running ICMRemoveRequire interactively

To run the command interactively, run ICMRemoveRequire.sh or ICMRemoveRequire.bat without any parameters. The following example shows how to enter parameters in interactive mode:

```
C:\removerequire >ICMRemoveRequire
Enter the data store name [ICMNLSDB] :


Enter the IBM Content Manager administrative database user [ICMADMIN] :


Enter the password for the user :
Passw0rd
Enter the component type name :
requiredit1
Is this attribute in an attribute group in the component type? Y/N [N] :


Enter the attribute name :
Usrse
Do you also want to remove unique flag if this attribute has unique flag? Y/N [N
] :
Y
Do you want to run the REORG command? Y/N [N] :
Y
Do you want to run preview mode? Y/N [N] :


Please enter your log level (INFO, DEBUG or ERROR) [INFO] :


Please enter your log file [ICMRemoveRequire.log] :


Parameters
  p          = ********
  comptype   = requiredit1
```

```
d           = ICMNLSDB
u           = ICMADMIN
log         = INFO ICMRemoveRequire.log
reorg       = Y
attribute   = usrse
```

Find and drop related unique index if remove unique flag

The tool only removes unique flag from the attribute defined in IBM Content Manager if you choose remove unique. It will not drop the unique indexes or unique constraints in the database. The reason is as follows.

1. We must remove unique flag if we want to remove the required property from an attribute in IBM Content Manager. IBM Content Manager does not allow a unique attribute which is not required.

2. We do not remove unique indexes because customers, for performance reasons, create indexes that include this attribute. Therefore, we retain the unique indexes and do not drop them.

If you want to remove the unique indexes related to this attribute, you can use database tools to get the unique indexes for this attributes and review all of them, then decide whether you really want to drop the indexes. If you want to drop some or all of these unique indexes, you can run the drop index command.   Here are the steps needed to get and drop related unique indexes.

1. When you run the ICMRemoveRequire tool, you can get the table name and attribute name from the log or console output like the follows.

    ***SQL to alter the column to nullable: <" ALTER TABLE ICMUTXXXXX001 ALTER COLUMN ATTRZZZZZYYYYY DROP NOT NULL ">

    The table name is ICMUTXXXXX001 and the column name is ATTRZZZZZYYYYY.

2. If you create some unique indexes including this attribute for this item type in IBM Content Manager, you can delete these unique indexes from this item type in IBM Content Manager System administration client.

3. DB2 only: Run the db2look command to get the definition of the ICMUTXXXXX001 table.

    db2look -e -d <db name> -i <user > -w <icmadmin's password> -z <schema name> -tw <table name>

    For example:

    db2look -e -d icmnlsdb -i icmadmin -w password -tw ICMUT01026001 >1026.txt

Open 1026.txt, search attribute name ATTR0ZZZZYYYYY and find all unique indexes. Then decide whether drop them via drop index command. For example, if you see the index definition CREATE UNIQUE INDEX "ICMADMIN"."ICMUX01026001001U" ON "ICMADMIN"."ICMUT01026001" in 1026.txt and want to drop it, you can run db2 "drop index ICMUX01026001001U" to drop the unique index.

4. Oracle only: Get the unique indexes including this attribute via the following SQL.

    select a.index_name, a.column_name, a.column_position from user_ind_columns a, user_indexes b where a.table_name=b.table_name and a.index_name=b.index_name and a.table_name='ICMUTXXXXX001' and b.uniqueness='UNIQUE' and exists(select 1 from user_ind_columns c where a.table_name=c.table_name and a.index_name=c.index_name and c.column_name='ATTR0ZZZZYYYYY') order by a.table_name,a.index_name,a.column_position;

    Use the real table name and attribute name to replace the ICMUTXXXXX001 and ATTR0ZZZZYYYYY.

    If you want to drop some indexes, you can use drop index <index_name> to drop them one by one.

Troubleshooting

*   There is no rollback of DDL execution because Oracle does an implicit commit for all DDL operations. If the ALTER TABLE MODIFY NULL command runs successfully but the UPDATE ATTRFLAGS command fails, ICMRemoveRequire stops, and then returns an error.

    If you get this error, correct the problem; get the SQL command from the log file; and then run the UPDATE ATTRFLAGS command again.

*   If the remove required flag operation is not successful and any errors occur when the ALTER TABLE DROP COLUMN NOT NULL SQL command runs, ICMRemoveRequire returns the database manager code SQLCODE. For more information about restrictions to the ALTER TABLE DROP COLUMN NOT NULL command, see the database's documentation.

*   If the request is rejected or if the operation fails, an error message is returned indicating the cause of rejection or failure.

*   Use the -log parameter to record information in a logfile. If an error occurs, provide the logfile and the screen to IBM Support.