IBM® DB2® XML Extender

Release Notes

Version 7, Fixpak 5

IBM® DB2® XML Extender

Release Notes

Version 7, Fixpak 5

Contents

About the Release Notes for IBM® DB2® XML Extender Version 7.2, (Fixpak 5)

This document contains information about Fixpak 5 for DB2 XML Extender 7.2, supplementing information in *DB2 Universal Database® XML Extender Administration and Programming, Version 7, Fixpak 2*, released for DB2 Universal Database Version 7, Fixpak 2. The information in these Release Notes includes all topics except installation. For up-to-date information about installing DB2 XML Extender, see the Version 7.2 Installation Notes in readme.txt, in the root directory of the product CD-ROM.

This document also supplements information in *DB2 Universal Database Extenders for iSeries: XML Extender Administration and Programming, Version 7*.

Chapter 1. What's new in XML Extender with Fixpak 5?

The following fixes and updates are provided in Fixpak 5. Links are provided for changes that have more detailed information or documentation updates.

- All updates in Fixpak 5 are now available on DB2 UDB for iSeries: XML Extender.
- "Migrating to Fixpak 5 from prior releases" on page 3
- Improved performance
  - Miscellaneous improvements in performance and memory allocation
  - Improvements when extracting large documents with the extract user-defined functions
- Improvements for the condition element: <condition> in the DAD)
  - "Line ending characters allowed in condition elements" on page 4
  - "Increased flexibility in the order of the condition predicates for the top RDB node condition element" on page 4
- Miscellaneous
  - "Parameter changes for stored procedures that return CLOBs" on page 5
  - Decomposition stored procedures: Number of rows handled on Windows increased (now consistent with the documentation)
  - "Update user-defined function - redundant line ending characters no longer added after update" on page 6
  - "Code pages: increased support for 1252 and 1386 CCSIDs" on page 6
- Improved diagnostics
  - Chapter 3, "Message updates" on page 7
  - Improved trace output improving problem resolution by IBM technical support corroborate

Chapter 2. Updates for the *DB2 Universal Database XML Extender Administration and Programming, Version 7*

This section provides updates to information about topics in the *DB2 Universal Database XML Extender Administration and Programming, Version 7*, and follow on Release Notes for Fixpak 3 and Fixpak 4 for UNIX, Windows, and the iSeries operating systems.

The following changes have been made in Fixpak 5.

Migrating to Fixpak 5 from prior releases

If you have been using XML Extender V7.2 Fixpak 4 or earlier (on UNIX or Windows operating systems), you must migrate each database enabled for XML Extender before using an existing XML-enabled database with XML Extender V7.2 Fixpak 5. The migration program migrates you to DB2 XML Extender V7.2 Fixpak 5 from prior releases.

The following list describes the steps the migration program goes through, based on the level of the product you had installed:

From Fixpak 4

Drops the dxxGenXMLCLOB and dxxRetrieveXMLCLOB stored procedures and recreates them with the updated parameter values described in "Parameter changes for stored procedures that return CLOBs" on page 5.

From Fixpak 3

- Creates new stored procedures (dxxGenXMLCLOB and dxxRetrieveXMLCLOB) that return CLOBs
- Drops and recreates the user defined functions (UDFs) that allow you to use the parallel capability for the scalar UDFs

  Important: If you have enabled columns, the UDFs will not be dropped and recreated, and warning messages will be generated by the migration program.
- Migration "From Fixpak 4" updates

From Fixpak 2

- Creates XMLDBCLOB user-defined types (UDTs) and user-defined functions (UDFs) for use with Unicode and DBCS databases.
- Creates additional stored procedures for dxxGenXMLand dxxRetrieveXML, to support the use of temporary tables.

- Migration "From Fixpak 3" updates
- Migration "From Fixpak 4" updates

To migrate the database:

When using iSeries, refer to the cover letter forPTF 5722DE1 V5R1M0 SI02774 for migration instructions.

When using UNIX or Windows, using the following steps.

1. From the DB2 command line, enter:
   ```
   db2 connect to <database_name>
   db2 bind migv71.bnd
   ```
2. From the DB2 command line, enter:
   ```
   migv71 <database_name>
   ```

Failing to do the migration step can cause "dxxadm disable_db ..." to fail.

Line ending characters allowed in condition elements

This update documents a fix for a bug in which line ending characters in the condition element, <condition>, caused an error. Line ending characters are now allowed in conditions statements.

Increased flexibility in the order of the condition predicates for the top RDB node condition element

The restriction for the order of <condition> elements in the root node in the DAD has been removed. Prior to Fixpak 5, when decomposing, the condition required that all predicates for columns in the same table be grouped together. For example: the following <condition> would generate an internal error because the columns for tableA are mixed with the columns of tableB.

```
<condition>
        tableA.col1=tableB.col11 AND
        tableB.col33=tableC.col140 AND
        tableA.col2=tableB.col22 AND
        tableB.col44=tableC.col42
</condition>
```

Additionally, the predicates had to be listed in order of table hierarchy, so that if tableA is a higher level table than tableB, all predicates involving tableA's columns must go before those involving tableB's columns, when they do not include tableA's columns. In the previous example, the condition predicate would also generate an internal error because a lower level table was specified before the higher table.

In Fixpak 5, there is no restriction in the order of the condition predicates.

Chapter
    Preparing to use the XML Extender: administration

Sections
    Planning for XML collections->Mapping Schemes for XML
    collections->Requirements when using RDB node mapping

Update
    There are no ordering restrictions on predicates of the root node
    condition.

Parameter changes for stored procedures that return CLOBs

The CLOB parameter in the dxxRetrieveXMLCLOB and dxxGenXMLCLOB
stored procedures has been change from 2 gigabyte (G) to 1 megabyte (MB).

Figure 1 shows the changed parameter:

Figure 1. CLOB parameter

```
in     dadBuf       clob(100K),
in     overrideType integer,
in     override     varchar(32672),
out    resultDoc    clob(1M),
out    valid        integer,
out    numDocs      integer,
out    returnMsg    varchar(1024)
```

If you have CLOB files that are larger than 1 MB, XML Extender provides a
command file to redefine the stored procedure parameter. Download the
crtgenxc.zip file from the DB2 XML Extender Web site. This ZIP file contains
the following programs:

crtgenxc.db2
        For use on XML Extender V7.2 Fixpak 5 forUNIX and Windows.

crtgenxc.iseries
        For use with XML Extender V5R1 for iSeries

Using an extraction program, such as PKZIP, extract the file appropriate for
your operating system. Extract the file to the following locations:

UNIX or Windows
        No requirement where the file is located.

iSeries
        Place the file as a member into a file. (For example, put the file into
        DXXSAMPLES/SQLSTMT).

To specify the CLOB length: Open the file in an editor and modify the *resultDoc* parameter, shown in the following example.

```
out    resultDoc    clob(clob_size),
```

Size recommendation: The size limit of the *resultDoc* parameter depends on your system setup, but be aware that the amount specified in this parameter is the amount allocated by JDBC, regardless of the size of the document. The size should accommodate your largest XML files, but should not exceed 1.5 gigabytes.

To run the command file:

- **For UNIX or Windows:** From the DB2 command line and directory where the file is located, enter:

  ```
  db2   -tf crtgenxc.db2
  ```

- **For iSeries:** From the OS/400 command line, enter:

  ```
  RUNSQLSTM SRCFILE(DXXSAMPLES/SQLSTMT) SRCMBR(CRTGENXC) NAMING(*SQL)
  ```

  Where *DXXSAMPLES/SQLSTMT* matches the Library and File names into which you downloaded the file.

Update user-defined function - redundant line ending characters no longer added after update

In Fixpak 4, the Update user-defined function (UDF) generated extra line ending characters after the XML declaration and the DOCTYPE declaration.

In Fixpak 5, the Update UDF does not generate an extra line ending character added after the XML declaration and the DOCTYPE declaration.

Code pages: increased support for 1252 and 1386 CCSIDs

In Fixpak 4, XML Extenders did not work with databases in the following CCSIDs on the specified operating systems:

- CCSID 1252 on UNIX operating systems
- CCSID 1386 on UNIX and Windows operating systems

Fixpak 5 provides support for the CCSIDs on UNIX and Windows.

Chapter 3. Message updates

The following messages have been added to the XML Extender.

Error message DXXQ041W

Online error message DXXQ041W
This warning message is issued when a stored procedure has been run with an XML override and more that one path was specified. One path is supported, and the first one was used.

Message
XML document successfully generated. One or more override paths specified is invalid and ignored.

Explanation
One or more override path specified is invalid and ignored. This warning message is issued when a stored procedure has been run with an XML override. More that one path was specified, and only the first one was used. Multiple override paths are not supported.

User response
Specify only override path.

Error message DXXQ043E

Online error message DXXQ043E
This error message is issued when a required attribute name does not appear under an element, as defined in the DAD file.

Message
Attribute *attr_name* not found under element *elem_name*.

Explanation
The attribute *attr_name* was not present in element *elem_name* or one of its child elements.

User response
Ensure the attribute appears in the XML document everywhere that the DAD requires it.

Error message DXXQ044E

Online error message DXXQ044E
> This error message appears when an element in the XML document does not have ancestor element as specified by the DAD file.

Message
> Element *elem_name* does not have an ancestor element *ancestor*.

Explanation
> According to the DAD *ancestor* is an ancestor element of *elem_name*. In the XML document, one or more element *elem_name* does not have such an ancestor.

User response
> Ensure the nesting of elements in the XML document conforms to what is specified in the corresponding DAD.

Error message DXXQ045E

Online error message DXXQ045E
> This error message appears when more than one attribute uses the same name.

Message
> Subtree under element *elem_name* contain multiple attributes named *attrib_name*.

Explanation
> A subtree under *elem_name* in the XML document contains multiple instances of attribute *attrib_name*, which according to the DAD, is to be decomposed into the same row. Elements or attributes that are to be decomposed must have unique names.

User response
> Ensure that the element or attribute in the subtree has a unique name.

Trademarks

The following terms are trademarks of the International Business Machines Corporation in the United States, or other countries, or both:

AIX
DB2
DB2 Universal Database
IBM
MQSeries
OS/400
OS/390

Microsoft, Windows, Windows NT, and the Windows logo are registered trademarks of Microsoft Corporation in the United States, other countries, or both.

Java, JDK, and JDBC are registered trademarks of Sun Microsystems, Inc..

UNIX is a registered trademark of X/Open Company Limited.

Other company, product, or service names may be trademarks or service marks of others.

IBM ®