Introduction to ESQL

IBM Integration Bus (IIB) defines a language called Extended Structured Query Language (ESQL) to manipulate the data that flows through the message flows.

It is extended version of SQL as it can deal with the message flows. This is the reason it is termed as Extended SQL.

ESQL is stored in a .esql file.

IIB provides following built-in nodes where ESQL can be used to manipulate the data:

- Compute node
- Database node
- Filter node
- Mapping node

ESQL Data Types

A data type defines characteristics of an item of data and determines the operations that can be performed on it.

ESQL Supports following data types:

- Boolean
- DateTime
- Null
- Numeric
- Reference
- String
- Row

Boolean

For ESQL, Boolean data type has 3 values:

- TRUE
- FALSE
- UNKNOWN

When it is not possible to say if it is true or false, it is called as Unknown. For example, can we say all people in a city are educated? No, it can't be determined if this statement is true or false. So whenever, it is not possible to determine whether a given condition is true or false, in that case it will be unknown.

DateTime

All date and time values (including GMT time) are available in esql.

Null

Here, NULL is not directly a data type, but it is a special value. It is not a blank value. If we say something has blank value, it means it has some value. But if we say it has nothing, then it is null.

Numeric

Following 3 types come under Numeric:

- Decimal
- Float
- Integer

For any fractional digits, we go with the decimal, for any scientific value (very big range), we go with Float and for rounded values we go with the integer data type.

The range here is very big so we don't have to worry about that.

Reference

This is very important kind of data type in esql. This works as a pointer to point to or refer to any Simple type or Complex type in a logical tree.

String

Following 3 types come under String:

- BIT (rarely used)
- BLOB
- CHARACTER

BIT is basically used to represent arbitrary binary data which is not having exact number of bytes. Any number of digits having 0 and 1 can be specified. For example, ‘A’ of BIT data type can contain A=’01010110010’ kind of data.

BLOB is binary large object which basically contains some hexadecimal values.

Whenever IIB receives a message, it tries to understand the message structure (not the message content) meaning that, it tries to understand how the message is. If it is a BLOB message, it will not try to understand the message structure. It will just convert the message into hexadecimal value

CHARACTER data type supports all the alphanumeric values and the letters.

Row

A row is a data type which can contain a name value pair. For example, if you want to store logical tree in a variable, then declare it as a row data type. See Appendix.

Also, if you want to store records fetched from database in a variable, then declare it as a row data type.