Oracle Built-in Datatypes

The table that follows summarizes Oracle built-in datatypes. Please refer to the syntax in the preceding sections for the syntactic elements. The codes listed for the datatypes are used internally by Oracle Database. The datatype code of a column or object attribute is returned by the DUMP function.

***Table 2-1 Built-in Datatype Summary***

| **Code** | **Datatype** | **Description** |
| --- | --- | --- |
| 1 | **VARCHAR2**(***size*** [**BYTE** | **CHAR**]) | Variable-length character string having maximum length ***size***bytes or characters. Maximum***size*** is 4000 bytes or characters, and minimum is 1 byte or 1 character. You must specify ***size***for **VARCHAR2**.  **BYTE** indicates that the column will have byte length semantics;**CHAR** indicates that the column will have character semantics. |
| 1 | **NVARCHAR2**(***size***) | Variable-length Unicode character string having maximum length***size*** characters. The number of bytes can be up to two times ***size***for **AL16UTF16** encoding and three times ***size*** for **UTF8**encoding. Maximum ***size*** is determined by the national character set definition, with an upper limit of 4000 bytes. You must specify ***size*** for **NVARCHAR2**. |
| 2 | **NUMBER**[(***precision*** [, ***scale***]]) | Number having precision ***p*** and scale ***s***. The precision ***p*** can range from 1 to 38. The scale ***s***can range from -84 to 127. |
| 8 | **LONG** | Character data of variable length up to 2 gigabytes, or 231 -1 bytes. Provided for backward compatibility. |
| 12 | **DATE** | Valid date range from January 1, 4712 BC to December 31, 9999 AD. The default format is determined explicitly by the**NLS\_DATE\_FORMAT** parameter or implicitly by the **NLS\_TERRITORY**parameter. The size is fixed at 7 bytes. This datatype contains the datetime fields **YEAR**, **MONTH**, **DAY**,**HOUR**, **MINUTE**, and **SECOND**. It does not have fractional seconds or a time zone. |
| 21 | **BINARY\_FLOAT** | 32-bit floating point number. This datatype requires 5 bytes, including the length byte. |
| 22 | **BINARY\_DOUBLE** | 64-bit floating point number. This datatype requires 9 bytes, including the length byte. |
| 180 | **TIMESTAMP**[(***fractional\_seconds***)] | Year, month, and day values of date, as well as hour, minute, and second values of time, where***fractional\_seconds\_precision*** is the number of digits in the fractional part of the **SECOND**datetime field. Accepted values of***fractional\_seconds\_precision*** are 0 to 9. The default is 6. The default format is determined explicitly by the**NLS\_DATE\_FORMAT** parameter or implicitly by the **NLS\_TERRITORY**parameter. The sizes varies from 7 to 11 bytes, depending on the precision. This datatype contains the datetime fields **YEAR**, **MONTH**,**DAY**, **HOUR**, **MINUTE**, and **SECOND**. It contains fractional seconds but does not have a time zone. |
| 181 | **TIMESTAMP**[(***fractional\_seconds***)] WITH**TIME** **ZONE** | All values of **TIMESTAMP** as well as time zone displacement value, where***fractional\_seconds\_precision*** is the number of digits in the fractional part of the **SECOND**datetime field. Accepted values are 0 to 9. The default is 6. The default format is determined explicitly by the**NLS\_DATE\_FORMAT** parameter or implicitly by the **NLS\_TERRITORY**parameter. The size is fixed at 13 bytes. This datatype contains the datetime fields **YEAR**, **MONTH**, **DAY**,**HOUR**, **MINUTE**, **SECOND**,**TIMEZONE\_HOUR**, and**TIMEZONE\_MINUTE**. It has fractional seconds and an explicit time zone. |
| 231 | **TIMESTAMP**[(***fractional\_seconds***)] WITH**LOCAL** **TIME** **ZONE** | All values of **TIMESTAMP** **WITHTIME** **ZONE**, with the following exceptions:   * Data is normalized to the database time zone when it is stored in the database. * When the data is retrieved, users see the data in the session time zone.   The default format is determined explicitly by the**NLS\_DATE\_FORMAT** parameter or implicitly by the **NLS\_TERRITORY**parameter. The sizes varies from 7 to 11 bytes, depending on the precision. |
| 182 | **INTERVAL** **YEAR**[(***year\_precision***)] **TO** **MONTH** | Stores a period of time in years and months, where***year\_precision*** is the number of digits in the **YEAR** datetime field. Accepted values are 0 to 9. The default is 2. The size is fixed at 5 bytes. |
| 183 | **INTERVAL** **DAY** [(***day\_precision***)]**TO** **SECOND**[(***fractional\_seconds***)] | Stores a period of time in days, hours, minutes, and seconds, where   * ***day\_precision*** is the maximum number of digits in the **DAY** datetime field. Accepted values are 0 to 9. The default is 2. * ***fractional\_seconds\_precision*** is the number of digits in the fractional part of the **SECOND** field. Accepted values are 0 to 9. The default is 6.   The size is fixed at 11 bytes. |
| 23 | **RAW**(***size***) | Raw binary data of length ***size***bytes. Maximum ***size*** is 2000 bytes. You must specify ***size*** for a **RAW** value. |
| 24 | **LONG RAW** | Raw binary data of variable length up to 2 gigabytes. |
| 69 | **ROWID** | Base 64 string representing the unique address of a row in its table. This datatype is primarily for values returned by the **ROWID**pseudocolumn. |
| 208 | **UROWID** [(***size***)] | Base 64 string representing the logical address of a row of an index-organized table. The optional ***size*** is the size of a column of type **UROWID**. The maximum size and default is 4000 bytes. |
| 96 | **CHAR** [(***size*** [**BYTE** | **CHAR**])] | Fixed-length character data of length ***size*** bytes. Maximum***size*** is 2000 bytes or characters. Default and minimum ***size*** is 1 byte.  **BYTE** and **CHAR** have the same semantics as for **VARCHAR2**. |
| 96 | **NCHAR**[(***size***)] | Fixed-length character data of length ***size*** characters. The number of bytes can be up to two times ***size*** for **AL16UTF16**encoding and three times ***size*** for**UTF8** encoding. Maximum ***size*** is determined by the national character set definition, with an upper limit of 2000 bytes. Default and minimum ***size*** is 1 character. |
| 112 | **CLOB** | A character large object containing single-byte or multibyte characters. Both fixed-width and variable-width character sets are supported, both using the database character set. Maximum size is (4 gigabytes - 1) \* (database block size). |
| 112 | **NCLOB** | A character large object containing Unicode characters. Both fixed-width and variable-width character sets are supported, both using the database national character set. Maximum size is (4 gigabytes - 1) \* (database block size). Stores national character set data. |
| 113 | **BLOB** | A binary large object. Maximum size is (4 gigabytes - 1) \* (database block size). |
| 114 | **BFILE** | Contains a locator to a large binary file stored outside the database. Enables byte stream I/O access to external LOBs residing on the database server. Maximum size is 4 gigabytes. |