The Identity Code Package, a feature of Oracle® Database 11g, provides built-in support for standard Radio Frequency Identification (RFID) technology Electronic Product Code (EPC) tags and other identity code schemes. It provides data types, metadata tables and views, and PL/SQL packages to store, query, encode, decode, and translate identity codes stored in an application table.

Standards-based and extensible support for RFID

The Oracle Database Identity Code Package feature provides efficient storage and component (field) level retrieval for RFID tags that conform to the EPCglobal EPC Tag Data Standards version 1.1 (TDS) specification. All thirteen EPC TDS v1.1 tag-encoding schemes are preinstalled in Oracle Database 11g. The EPC Tag Data Translation version 1.0 (TDT) standard is also supported, enabling Oracle Database to decode, encode, and transcode EPC tag levels (formats) within an encoding scheme. The Identity Code Package is extensible, allowing proprietary and emerging standards-based identity codes to be managed in Oracle Database.

EPC support

The Identity Code Package establishes a new MGD_ID object for Oracle Database. The MGD_ID object predefines an EPC category that includes the EPC General Identifier type, the EAN.UCC System Identifier types, and the US Department of Defense (DoD) identity code type. Each type within a category has one or more encoding schemes. A scheme defines the components, levels, options, and rules metadata for a particular tag encoding. The thirteen EPC TDS v1.1 encoding schemes that are preinstalled in Oracle Database are listed below. Application developers can create additional categories, types, and schemes.

The preinstalled EPC TDS v1.1 encoding schemes are:

- 96-bit General Identifier scheme (GID-96)
- Serialized global trade identification number (SGTIN-64 and SGTIN-96),
- Serial shipping container code (SSCC-64 and SSCC-96),
- Serialized global location number (SGLN-64 and SGLN-96),
Oracle Database 11g Identity Code Package: Support For RFID and EPC

KEY BENEFITS

The Oracle Database Identity Code Package supports the EPCglobal standard and is extensible. It allows RFID applications to:

• Intelligently store and query EPC data in Oracle Database.
• Manage legacy identity code schemes in Oracle Database.
• Keep pace with evolving identity code standards by registering new coding schemes in Oracle Database.

RELATED SERVICES

The following services are available from Oracle Support Services:
• Update Subscription Services
• Product Support Services
• OnlineDBA
• OnlineDBA for Applications

• Global returnable asset identifier (GRAI-64 and GRAI-96),
• Global individual asset identifier (GIAI-64 and GIAI-96), and
• United States Department of Defense (USDOD-64 and USDOD-96).

The Identity Code Package supports the five EPC tag encoding levels (formats) specified by EPC TDT v1.0 for an encoding scheme; they are the commonly used BINARY, TAG_URI, and PURE_IDENTITY formats and the LEGACY and ONS_HOSTNAME formats. Lower levels (BINARY and TAG_URI) contain all information about a tag, while PURE_IDENTITY contains partial information.

Identity Code Package support for TDT v1.0 allows Oracle Database to decode a tag formatted at a particular level into component/value pairs, encode a tag into a level from component/value pairs, and transcode a tag from one level to another within an encoding scheme. The Identity Code Package supports EPC options to parse tags into components and EPC rules to validate and derive component values.

Support for Function-Based Indexing

A component within a scheme can be indexed using function-based or bitmap function-based indexing to enhance the performance of queries.

Utilities

The Identity Code Package includes a package of utilities.

• Metadata utility: This utility is provided to get a category ID, add a scheme to a category, remove a scheme from a category, and validate a tag scheme.

• Conversion utility: When a new tag type is defined its scheme must be loaded into Oracle Database before storing and querying the new tags. The scheme is stored as an interoperable XML-formatted TDT document in Oracle Database. The conversion utility must be used when loading new schemes based on the EPC TDS schema.

• Proxy utility: The Identity Code Package may require access to the Internet to lookup the company prefix index as part of the transcoding process. A proxy utility is provided to set and remove proxy information as needed.