

ONware™

Diagram and Relational DBMS Data Format Options

Overview

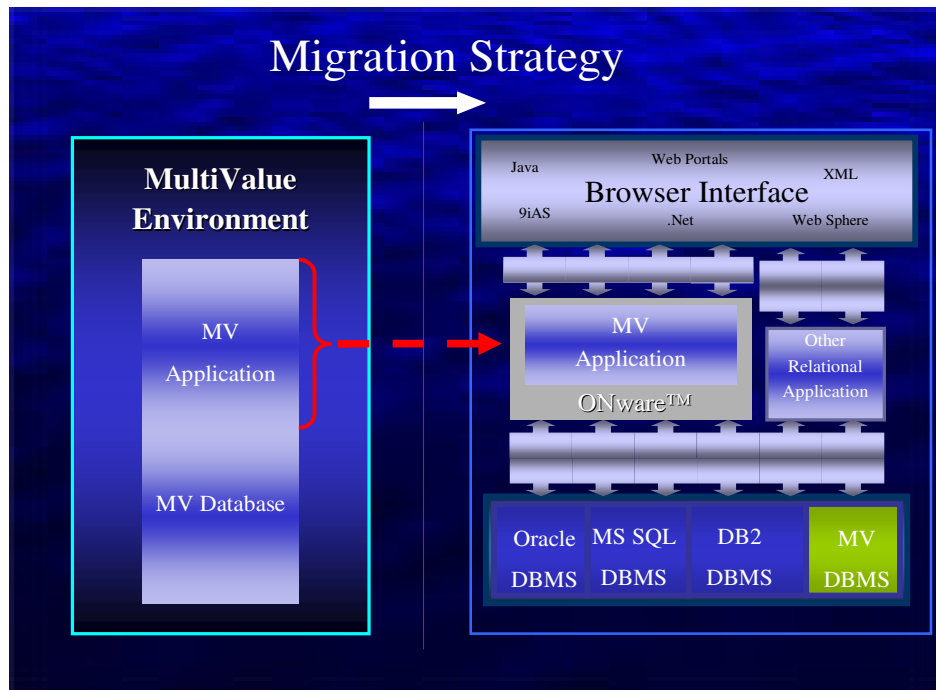
ONware separates the MultiValue toolset and application investment from the hardware, O/S, DBMS and user interface. Once liberated, data is strictly data, and may be stored anywhere on your network, in the database of your choice, and in the data structure best suited to the needs of the organization.

Regardless of how and where the organization's data is stored, ONware provides the ability to continue to get value out of the MultiValue tool set, the mission critical, MultiValue application logic, and the skilled staff.

Along with a visual illustration of how ONware liberates MultiValue technology from the underlying technology, this document describes the three database formats supported by ONware.

ONware Illustrated

As depicted on the left side of the figure, the MultiValue System depends on a MultiValue database. The application is isolated from current and future systems.



ONgroup recommends using ONware to equip the MultiValue System with technology independence and open the door to mainstream technologies. ONware runs the MultiValue System applications without the need for the

MultiValue DBMS and without re-engineering. The data may be stored in the database of choice. Your choice of technology for new applications, and web development tools are now open to mainstream relational technology.

Relational Data Format Options

With the MultiValue programs equipped with technology independence, as illustrated in the right side of the Figure, you have a number of options available. The ONware solution supports the following three database formats:

Object Format

Object format means that the contents of a record are unknown to the database manager. This is the case with all MultiValue database managers. The advantage of storing data in this format is 100% compatibility between the MultiValue and Relational database. The data is essentially stored in one big column, a large block of text and delimiters. The common delimiters used in a MultiValue style database include:

- Item marks, Char (225)
- Field marks, Char (254)
- Value marks, Char (253)
- Sub-value marks, Char (252)
- Text marks, Char (251)

Object Relational Format

Object-Relational format means that the contents of the record are known as the columns in the table are defined. There are structures in the records, however, that do require manipulation of the data outside of the capabilities of the ANSI definition of a compliant Relational database system; especially NF² (Non-First Normal Form). The manipulation is either by the application development tools or by using Object extensions of the database manager. MultiValue environments, including UniVerse and ONware, provide this capability. The Relational database managers can perform this function; however, you are depending on non-standard features of the database, which makes the application Database-dependent.

The benefit using the Object Relational format is that the MultiValue structures are the same as with the MultiValue view, and you can use the performance and data integrity features of the database manager rather than being dependent upon the MultiValue environment

Relational Format

Relational format means that the contents of the record are known and that there are no multivalues. The data is in First Normal Form (FNF). FNF means that every item of data can be located by the file name, the record ID and the column name. This is not the case with MultiValue

structures because there may be more than one item of data at each location—a nested relation.

The advantage of Relational format is that you are free to use the tools to support structures defined in the ANSI standards for a Relational database manager. This includes Crystal, Cognos, ONware Query, and others.

Summary

The ONware solution, not only supports all three of these data format options, but also supports a mixture of all three, allowing you to take advantage of each format, and only having to normalize that part of the System that needs to integrate with non-MultiValue tools and systems. Most organizations find it useful to use a combination of all three formats.