MET/TRACK Database Validation

Validation Report
On Time Support MET/BASE 7.01 System Validation

(Sample validation report page showing a series of test items each with "Pass" and "Fail" checkboxes, including sections: Test Initial Default Values in Inventory Fields; Test Source Copy Values in Inventory Fields; Test Destination Copy Values from Inventory Fields; Test Initial Access Level "0" for Inventory Fields.)

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Who Needs Database Validation?

There is a real need, for several major industries, to provide database validation to satisfy various government agency requirements. Food, Pharmaceutical, and Nuclear are just some of the industries that require a written test plan to verify the operation of the Asset Management Database. Another benefit of validating a database is making sure it works correctly. For example, security levels should be verified to eliminate unauthorized access or changes to your database. The Fluke MET/TRACK database contains information that ensures that your company's business is traceable to national standards. The MET/TRACK Database application is very flexible with many possible configurations.

The Problem

The two most common problems with creating a test plan is understanding all the areas of the asset management system and knowing how to write the test plan properly. Modern databases are very flexible, therefore, changes can be made quickly to satisfy new production requirements, or new report requirements. The problem with this flexibility is that after a database has been validated, any new changes to the structure of the database will require a new validation. Just changing a security level on a field can invalidate the whole system.

For some this means that you only need to validate the changed format, but for others you will have to start all over. Plus, it is important to understand the database, how it is structured, and the intended use. Performing the validation strongly enhances this understanding.

The Solution

As a Fluke Partner, On Time Support has worked with customers for several years performing MET/TRACK Database Validations.

The MET/BASE system utilizes a Sybase Anywhere 8.0 database. This is a true client/server format that utilizes an independent database manager (engine) which executes on a dedicated server (typically Microsoft Server 2000). This database technology is very robust and does not allow the operator to directly access the database file at any time thereby providing a secure environment. Additional features include the ability to perform system backups without having to stop the system. All queries and updates are processed via Structured Query Language (SQL) statements to the database manager. The database manager is shown in the following diagram.

The figure at left illustrates how the Sybase Database Manager communicates via several possible network protocols (typically TCP/IP). When one of the applications makes a database request, that request is sent through the network as an SQL statement. The database Network Request Manager verifies the SQL statement for correct syntax and then verifies the security level of the user making the request. Three things can stop a database request from occurring. First, the SQL statement is corrupted or invalid. Second, the user does not have the required security level to make the change. Third, the requested record has been locked out by another user. The Sybase Network Request Manager must always be running on the database server and has the only access to the database file.

For this application, the database file is located in the METDATA directory on the server. The database file is called mtrack.db. All Inventory and history records are contained in the mtrack.db data file. There are other supporting files for the applications that are discussed later in this report.

Each application communicates through an application called Open Database Connectivity (ODBC). ODBC acts as a translator for databases to communicate to other databases or to other applications. This forms an Open System that is still secure but has the ability to share data more easily. ODBC allows the user to choose a database server that is being broadcast and can select which database to use. ODBC will be described in more detail later in this document.

There is also a log file that exists in the same directory. The purpose of the log file is to record the transactions made to the database. Typically this is used if it is determined that the database has become corrupted. Normally, when the Network Request Manager performs a backup, it automatically truncates the log file and starts over. If the server should malfunction, the last backup can be re-loaded and the log file can be used to restored the updates which were made between the time the database was backed up and the system crashed thereby minimizing the loss of data.

We have developed the tools to accelerate the process and are now making our MET/TRACK database validation product available to our customers. The software analyzes your database configuration (including desktops) and develops a printed test plan based on the customization. A series of pass/fail questions are created for the database. Then, the test plan has instructions and can be manually validated against the database. Many tests can be quite lengthy and may require more than a day to perform. On Time Support will provide an onsite service technician along with our MET/TRACK Database Validation software for 5 days. The customer will be trained on the use of the software as well as interpreting the results. We will also customize the title page of the software to meet your company's validation format.

Some customers have also found configuration errors on their system before deployment, while in the process of using the Validation Report. By finding these problems before the actual deployment, the lab manager can be confident that the system is operating properly.

After the 5 days onsite are completed, the customer will be able to continue using the software in the future if the database has to be changed. Note: This software only works on version 7.x MET/TRACK databases and is only provided with on site service. The validation program only validates the MET/TRACK database operation, not MET/CAL procedures or On Time Support products used with MET/TRACK. We are available to help create a test plan for packages like Barcode Magician.

This package is only available in North America at this time.

Change/Log Audit Trail

If your company has a requirement to meet FDA, Pharmaceutical or Nuclear regulations, Change/Log may be a useful tool. Change/Log is a database plug-in for the Fluke MET/TRACK database. When a record is changed or deleted, information about the change or deletion is recorded and the operator is prompted to enter a reason for the change/deletion. For a change, the unique ID for the record, the field changed, the original value and the new value of the field, who was logged in, the date-time of change, and a reason for the change are recorded. For a deletion, a copy of the entire record along with who was logged in, the date-time of deletion and a reason for the deletion are recorded. For example, if someone changes the calibration due date, the Asset Number, the field (c2303), the original due date, the changed due date, who made the change, when the change was made and the reason for the change are all recorded. Change/Log is a great compliment to the Database Validation package..

ORDERING INFORMATION

MET/TRACK Database Validation
OTS Part: 8160-PKG
US Customers Only

Change/Log Audit Trail Package
OTS Part: 5040

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