

**METROLOGY XPLOER@**

**Operation and Setup Manual**

**Revision 1.3**

Blank Page

## Table of Contents

<b>Section 1 - Introduction.....</b>	<b>5</b>
METROLOGY XPLOER Overview .....	6
New Features for Metrology Xplorer 1.3.....	7
FAQs about Metrology Xplorer 1.3:.....	8
METROLOGY XPLOER is here, what do I do now?.....	9
To Segregate or not to Segregate.....	10
<b>Section 2 - Installation.....</b>	<b>11</b>
METEX13 Installation Notes .....	12
Choosing a web server.....	13
METDaemon Installation (Best Choice).....	13
Apache.....	13
Microsoft Internet Information Server .....	13
Overview of Metrology Xplorer Installation.....	14
Installation – Apache.....	14
Report Locations.....	19
Install the CGI program with the METDaemon and other Web Servers.....	20
Run the METEX13 CGI Program.....	20
Configure the METEX13 CGI Program for METDaemon.....	22
Metex1 Folder Notes.....	22
Configuring the CGI Metex.ini File (All Web Server Installs).....	23
Using Themes and Backgrounds – Please Read This.....	24
Configuring Sybase 8 ODBC for the Client Computer.....	25
METEX13 Administrator Installation.....	27
Software Registration.....	29
<b>Section 3 - Administration.....</b>	<b>31</b>
METEX13 Administrator.....	32
Local Configuration.....	32
Auto Layout Feature (New).....	33
“Tweaking” the Browser Display.....	34
Calibration results form Column Header.....	36
“Tree-view” Configuration.....	37
Configuring the Full Results.....	37
Web Page Configuration.....	38
Desktop Configuration (New).....	38
Creating/Configuring Reports.....	39
SQL Quick Reports.....	40
SQL Quick Reports and Segregation.....	44
Crystal Reports.....	44
Creating a Crystal Report.....	46
Using Dates in a Crystal Report .....	48
Custom Validation Prompts.....	48
Segregation and Crystal Reports.....	49
Using Cal Lists with Crystal Reports.....	49
Basic Security Topics.....	50
Advanced Security Topics.....	50
Overview.....	50
Adding Users to Groups.....	50
Group Creation/Modification.....	51
Sessions.....	52
<b>Section 4 – Browser Configuration.....</b>	<b>54</b>
Using your Browser.....	55
<b>Appendix A: Using different servers for the database and web services or serving multiple MET/TRACK databases.....</b>	<b>59</b>

Overview.....	59
Installing METEX13 on a server that is not running the MET/TRACK database.....	59
Serving multiple databases on the same server.....	60
<b>Appendix B: Customization of the METEX13 web pages.....</b>	<b>63</b>
Overview.....	63
Style Sheets.....	63
Background Color.....	63
Wallpaper.....	63
<b>Appendix C: Advanced SQL Report Topics.....</b>	<b>64</b>
Overview.....	64
SQL Linking.....	64
“Merge Data” reporting.....	65
Barcode Magician reporting.....	66
<b>Appendix D: Error Messages.....</b>	<b>67</b>
Run Diags Configuration (New).....	67
<b>Troubleshooting the Metrology Xplorer Installation.....</b>	<b>68</b>
Test 1: Web Server Installation .....	68
Step 1: Web Server Operation .....	68
Step 2: Network connection to the web server .....	69
Step 3: Web Server Directory Locations .....	69
Step 4: CGI/Database Connection .....	70

## Diagrams and Screen Shots

METROLOGY XPLOER Operation – Block Diagram.....	6
Using Netstat to check Windows Ports.....	14
IIS - 7.5 Port Configurations.....	15
IIS - cgi-bin Virtual Directory.....	16
IIS – Stopping and Starting the Web Service.....	16
IIS – Edit CGI Feature Settings.....	17
IIS – Selecting Handler Mappings.....	17
IIS – Edit CGI Feature Permissions.....	18
METDaemon Log In Screen and Version.....	20
Configure METDaemon Files.....	22
Metex.ini File Configuration.....	23
Different Background Themes.....	24
32 Bit ODBC Data Source Listing .....	25
Selecting the Sybase Drivers .....	25
ODBC Configuration for Sybase 8.....	26
ODBC Sybase 8 Network Options.....	26
Administration Installation Program.....	27
OTS Registration Manager.....	29
Administrator – Selecting the MET/TRACK Shared Directory.....	32
Configuring Auto Layout.....	33
Field Configuration – Permissions.....	34
Field Configuration – Display Offsets.....	35
Field Configuration – Display Offset / Other Browsers.....	35
Field Configuration – Calibration Results Header.....	36
Field Configuration – Tree-View.....	37
Full Results Configuration.....	37
Field Configuration – Web Page Properties.....	38
Desktop Configuration.....	38
SQL Report Configuration.....	39
Adding an SQL Report.....	41
Adding a Prompt for an SQL Report.....	42
Selecting a Pick List Prompt for an SQL Report.....	43
SQL Report Report Output in a Web Browser.....	43
Crystal Report Details with File Output Type.....	44
Adding a Prompt for a Crystal Report.....	45
Crystal Report in Design Mode.....	46
Crystal Report Record Selection Formula.....	46
Crystal Report Output.....	47
Passing Date prompts in METEX13 to Crystal Reports.....	48
Calibration Lists Display using Crystal Reports.....	49
Enabling Security Login.....	50
Assigning Users to Groups.....	50
Adding New Groups.....	51
Configuring Group Data Properties.....	51
Configuring Group Report Properties.....	52
Configuring Group Access Dates .....	53
Configuring Group Access Times.....	53
Initial Screen for METROLOGY XPLOER.....	55
System Login Screen.....	56
Activities Screen.....	56
Example Search Screen.....	57
Example Tree View.....	57
Example Inventory Screen.....	58
Configuring ODBC Sources for Multiple Databases.....	61
Example Error Screen.....	67
Run Diags Configuration.....	67



## **Section 1 - Introduction**

## METROLOGY XPLOER Overview

METROLOGY XPLOER allows you to provide access to your MET/TRACK Database ( 7.1 and higher) using most popular web browsers such as Mozilla Firefox® and Internet Explorer®.

There are many immediate benefits to providing access to MET/TRACK through a web-browsing interface:

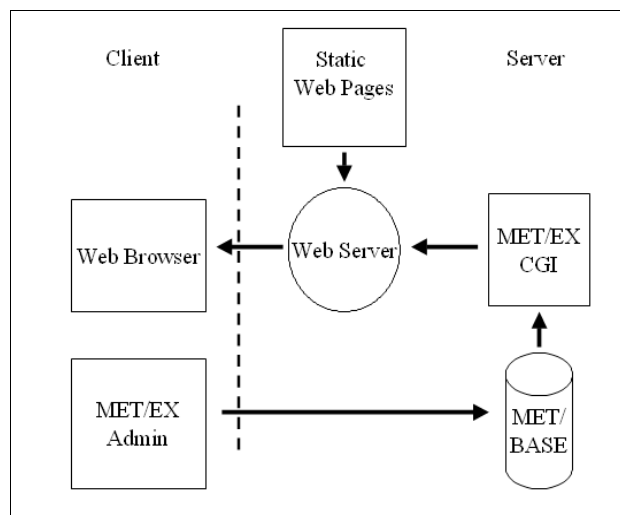
1. No on-site installation of Sybase client and MET/TRACK applications, thus simplifying the addition of view-only workstations to your network.
2. Simplification of training for users who do not use MET/TRACK as a data entry point.
3. Provides greater security for off-site users.
4. There is less workload on calibration lab personnel. Facility personnel can perform searches and run reports without asking the lab for assistance.

METROLOGY XPLOER 1.3 (referred to as METEX13), is a set of software programs that allow a web server to access the MET/TRACK database and provide information to web browsers. At this time, METEX13 is a view-only system and cannot write or modify instrument information in the database.

The METEX13 system includes:

1. A common gateway interface (CGI) application for interfacing with popular web servers
2. Instructions for installing the web server
3. An administration utility to configure the METEX13 system

### The METEX13 system works as follows:



On the client side, the user starts a web browser and uses it to retrieve the metrology lab's web page just as they would browse the internet/intranet. On this page, a link exists that when selected, tells the web server program to start the CGI. The CGI starts and connects to the MET/TRACK database, retrieves the requested information (report or MET/TRACK screen), and presents it to the web server program that passes this information on to the web browser. The METEX13 administration program is designed for operation on a MET/TRACK administrator's workstation, communicates directly with the database, and does not involve a web browser or web server.

**METROLOGY XPLOER Operation – Block Diagram**



## **New Features for Metrology Xplorer 1.3**

Several new features have been added for version 1.3. Please note that version 1.3 only supports MET/TRACK 7.1 and higher. Here is a list of the features:

- Updated the "Treeview Display" to include Inventory, Customers and the New Full Calibration Results. Is easy to configure the "Treeview" which is a list of links to various web pages. By making the links descriptive, you will save time looking for information.
- Updated standards so they can now be displayed in the calibration screen for each calibration record.
- Added new style sheets and "Themes" to present a pleasing and interesting display. Different themes are available. If you want a custom background, let us know and we may be able to create it for you. Below are the example background themes that come with Metrology Xplorer 1.3.
- A major improvement is the use of Crystal Reports 10. It is now much easier to configure a Crystal Report for Metrology Xplorer 1.3. In fact, you can take the default Fluke Results Certificate and load the report without modifications and the data will be displayed very nicely.
- A Crystal Report can be configured to export data in Word and Excel format.
- Added Date Calendars and Drop Down Lists for SQL and Crystal Reports.
- Selection of Desktops
- New Auto Layout for Screens
- Added a METDaemon option for viewing the Engineering Notes fields.
- You can select from a list of calibration histories after you have selected a calibration certificate. This means your customer can print separate AS-FOUND and AS-LEFT certificates.
- The installation procedure is a little easier when setting up ODBC on the server for Metrology Xplorer to use.
- Using the METDaemon as the web server allows for an easier installation and additional security options like SSL.

**NOTE: Metrology Xplorer 1.3 uses the Crystal Reports Version 10 Run Time System. You can use a later version of the Crystal Reports Editor, but there may be some functions that are not available.**

**FAQs about Metrology Xplorer 1.3:**

1. Do I need a connection to the Internet to use METEX13?

No. METEX13 only requires that your local area network (LAN) be running the TCP/IP protocol for proper operation.

2. Can I use METEX13 anywhere on any operating system I want?

METEX13 can be displayed to any user that has access to a web browser, regardless of the operating system. At this time, with the exception of the web server software, the server software must be installed on a server that is running Windows 2003/2008/2012. It is highly recommended that the web server be installed on the same server where the MET/TRACK database is installed.

3. Do I need to know how to create web pages in order to use METEX13?

A basic understanding of web page creation is helpful to customize METEX13, but is not a requirement. If you have an existing metrology lab web site, a simple link can be added to call METEX13. A simple metrology lab web page is included with METEX13, and is easily customized for your use.

4. Can I use METEX13 even though there are reports that I don't want others to see?

Yes. Reports for METEX13 are fully customizable, and you may select what fields/forms/reports your users may see.

5. What report types are available for METEX13?

METEX13 supports two types of reports, Crystal Reports and SQL Quick Reports that are unique to METEX13. You can run a Crystal Report from your Web Browser, but the server converts the report to text. It will take extra time to run a Crystal Report. Special graphics may not be displayed. The SQL Quick Reports are created with a single SQL statement. The system automatically formats the report and displays the data on the screen. There is less control of the format of the SQL Quick Report. However, they are very simple, very fast, and very easy to create. It is recommended the SQL Quick Reports be used for the majority of the reporting process.

6. How much can METEX13 be customized?

Besides being able to customize what data is available, the system can have themes or background pages configured to provide a more interesting display for the user. For example, a car company might want to have their new hot car displayed as wallpaper behind the screens.

7. How do I keep up with changes and application notes for METROLOGY XPLOER?

**Important Note:** Be sure to check the ON TIME SUPPORT web site at [www.ontimesupport.com](http://www.ontimesupport.com). Updates and application notes will be updated as they become available.

## METROLOGY XPLOER is here, what do I do now?

Congratulations! You now are about to install and configure a unique Internet/Intranet product for your Fluke MET/TRACK system. At this point, we would like to discuss the implications of allowing your data to be shared over the Web. First, let's define both terms.

An **Intranet** is usually the internal networking of a company. This usually encompasses other Sites in the same company connected by a WAN (Wide Area Network).

An **Internet** is usually external customers and Sites that are connected to your company or organization. Usually a company will have some kind of firewall that keeps unauthorized users from accessing the company's files.

Your MET/TRACK database may be available to several customers, maybe internal and external to your organization. Up to this point, you probably have a small group of users that understand and access the database. You should probably consider how much information to share with the users accessing the data through the web. Here are some things to consider:

Do you want to give access to all the screens and data (i.e. technician time)?

Do you limit the amount of history displayed, or do you show all the history?

Do you need reports and no historical screens?

The following table can be used to help the administrator plan what the users are going to see. When first installed, METROLOGY XPLOER will display all the data. The administrator can limit information displayed on a user or group of users basis. Let's take a look at the following table for our example:

Question to Ask	Yes	No
Do you allow the user to access the data Screens?	*	
Inventory Screens	*	
Allow all the Inventory Data to be displayed?	*	
Do you need to limit the data fields on the form?	*	
Calibration Screens	*	
Allow all the Calibration Data to be displayed?	*	
Do you need to limit the data fields on the form?	*	
Location Screens	*	
Allow all the Location Data to be displayed?	*	
Do you need to limit the data fields on the form?	*	
Maintenance Screens	*	
Allow all the Maintenance Data to be displayed?	*	
Do you need to limit the data fields on the form?	*	
Allow the Results Data to be displayed?		*
Allow the Merge Data to be displayed?		*
Allow the Customer Form to be displayed?		*
Do you want the users to be limited when then can log in?		*
Do you want the users to have access to reports?	*	

If you make reports available, we recommend using the SQL Quick Reports. They are not as formatted as Crystal Reports, but they are simple and fast. Use Crystal Reports when you need to display groups of data in the same report. Please understand that the Crystal Reports run time engine uses a large amount of server resources. If several users run reports at the same time, the system may become somewhat sluggish. By managing which reports are available and who has access to the reports, you can tune the system for optimum performance.

You may want to consider setting a time period when users can access the system. Many users may turn on their browser and not turn them off. Web servers have no way of knowing when a user has moved on to another page. If the user stays logged on, and leaves his or her computer, someone else can use that terminal without logging on. This method does not work within the web applications. METROLOGY XPLOER is properly licensed for unlimited users for Internet/Intranet applications. If security is enabled, the system will prompt the user for a login and password after the browser is started. If you stop the browser and start it again, it will prompt for a login. Security is of a major concern for most companies and you may want to review your company's policies regarding web-based access.

METROLOGY XPLOER does not differentiate between the Internet and your Intranet. It is up to your computer department to limit access of an internal server to the outside world, or to give only partial access.

### **To Segregate or not to Segregate**

Segregation is a powerful feature and you may want to consider adding this feature to your database. Chances are that you have not implemented segregation, but it may be a good idea. Let's look at an example. Suppose that you manage an independent calibration laboratory with several customers. Some of these customers depend on your lab to manage their assets, but they want access to the data. METROLOGY XPLOER allows them to have access and everyone else with a password to the database to have access. You might even manage the assets for two companies who are competitors, but they could see each other's data.

METROLOGY XPLOER supports the rules of segregation within MET/TRACK. You can assign the users to a segregate so that when they log in, they can only see the data they are associated with. In our example, the two companies will be able to log in and see their own data only. If you do utilize segregation and want to re-configure your database, you will probably have to do this with the SQL editor. It is advised to seek help before making a major change like this.

## **Section 2 - Installation**

## **METEX13 Installation Notes**

**NOTE: Metrology Xplorer 1.3 only supports MET/TRACK 7-8. Do not install this version on a MET/TRACK 5.x or 6.x system. Metrology Xplorer 1.3 only supports Crystal Reports installed with the Crystal Reports Run Time (version 10) application.**

**Installation of METEX13 requires several steps that must be followed COMPLETELY and IN ORDER for the installation to be a success. Before starting the installation process, identify the following items:**

1. The Network Address (TCP/IP) address of your MET/TRACK server.
2. Which web server package has been installed, if any?
3. The path to your MET/TRACK share.
4. The name of the MET/TRACK database engine.

The following is an outline for installing METEX13. These instructions tell you what you need to do to get the system up and running in a short time. When the outline tells you to refer to a specific package to install, refer to it and then come back to where you left off in the outline.

1. Install a web server software package on the MET/TRACK server. Refer to the section titled “choosing a web server” if you would like an overview of the supported web servers. If a web server has already been installed on the server, then proceed to the next step.
2. Configure the web server software for use with METEX13. Please note that basic instructions are provided for setting up your web server. Security and fine-tuning is not detailed in this manual. However, there are many books that are specific to each web server that go into more detail than described here.
3. Install the METEX13 software on the MET/TRACK Database server.
4. Configure the 32-Bit Open Database Connectivity (ODBC) on the MET/TRACK Database server.
5. Copy the default HTML (web) page to the proper directory on the MET/TRACK Database server. This directory varies between web server software packages. Refer to the section in this manual regarding the specific web server package for the location of this directory.
6. Install the METEX13 Administrator Program on one or more computers typically used by the MET/TRACK system administrator(s).
7. Run the registration program.
8. Test the operation of METEX13.

## Choosing a web server

If a web server software package has not been installed yet, then you need to make a choice regarding which web server to install. At this point in time, METEX13 has been tested for proper operation with three web server software packages:

- METDaemon
- Apache
- Microsoft Internet Information server (IIS)

To help you make a decision regarding which web server to use, each web server is listed below along with its strengths and weaknesses. After reading the descriptions, you should have a good idea about which to install.

### METDaemon Installation (Best Choice)

Metrology Xplorer 1.3 now has a third option for selecting a web server. The METDaemon (version 1.5.2.1 and higher) can now be used as a web server for METEX13. This option has several benefits.

- Allows for a smooth integration of the existing METDaemon web applications and METEX13 by allowing all the web applications to use the same port.
- Additional security (SSL) can be implemented in the METDaemon for all the web applications including METEX13.
- An additional feature using the Engineering Notes fields (Memo fields) will display properly when running METEX13 under the METDaemon.
- Eliminating applications like the Internet Information Server (IIS) which can be confusing to configure and can create port conflicts.

This installation process will assume that METDaemon version 1.5.2.1 has been installed on the server. Follow the installation steps carefully and the system should start up normally.

### Apache

Apache is a well known and extremely reliable web server. This server is fast, efficient, and makes good utilization of the computer's memory. It doesn't have the easy to use graphical interface for managing it, and does require the modification of text-based configuration files for some applications. There is no phone support for Apache, but its mature code-base and high number of sites using it make it a reliable choice. Apache is an excellent choice for labs supporting an Intranet web site. The version of Apache for Windows (2003/2008/2012) has proven to be dependable for this application. Apache can be obtained from [apache.org](http://apache.org). Apache can be installed as a service, allowing the web server to operate without having a user logged in. Usually, it will take much less time to install and configure Apache than it will to configure IIS. However, there may be situations where permissions may be difficult to configure.

### Microsoft Internet Information Server

Microsoft IIS is included with the Windows 2003/2008/2012 CD-ROM. It is fairly reliable, and has a good set of administration functions. It will easily handle Intranet and Internet hosting of METEX13, and will operate adequately if you are going to provide access to METEX13 from the Internet. If you have a Windows 2003/2008/2012 based METEX13 server, it is recommended to use Microsoft IIS if the METDaemon is not available to you. The main reason is that operating system permissions will be easier to work with.

First, there is a good chance that IIS is not installed as an option on your system. You can check where IIS is installed by right-clicking on my computer and selecting Manage. If you do not see IIS as an option under services, then you need to install it.

## Overview of Metrology Xplorer Installation

Metrology Xplorer 1.3 was originally designed before the implementation of 64 Bit operating systems and the Microsoft Internet Information System (IIS) 7.5. This version of Microsoft's web system can be difficult to understand and implement, especially in regards to security. Metrology Xplorer 1.3 utilizes a Common Gateway Interface (CGI). There are different methods used to interact with the user. CGI applications are common and used by some large organizations, for example Ebay. The user issues a request by clicking a field in the web browser. The request is passed to the web server and triggers the CGI to fire and retrieve the necessary data, send it to the user via the Web Server Application, and then shuts down. CGI applications can also be quite fast depending on the implementation.

Configuring web servers can be challenging and cumbersome. Because of this, we recommend using the METDaemon as the web server because the installation is simplified. IIS 7.5 can be a difficult product to document because companies will implement different builds and configurations of the operating system in order to satisfy their business/security objectives. This guide makes the following assumptions for IIS:

- IIS 7.5 is already installed on the server and is configured to run as a service.
- The IT support within the company has knowledge of the operation of IIS 7.5 and their security rules.
- During the initial configuration, the Windows Firewall is disabled while the application is configured.
- Any other firewalls or security constraints are disabled.
- A knowledge of which computer ports are in use is critical.
- Make sure you are logged in as Administrator, not a user with Administrator privileges.
- The Fluke Software has already been installed and is running the Sybase Database Engine.

Metrology Xplorer has two main components that operate on the web server, the basic CGI operation and the execution of Crystal Reports. We have learned to disable the Windows Firewall System at the start of this configuration. There are too many times where the application did not work and it was a firewall issue. It is much easier to install the application first and then apply the firewall rules after the system is operating. This will eliminate some of the confusion that can plague a web server application. The ports can be verified by running a netstat query from the command window. (netstat -a -n -o)

```

Administrator: Command Prompt
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

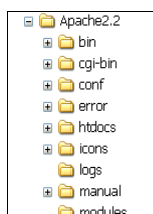
C:\Users\Administrator>netstat -a -n -o

Active Connections
Proto Local Address          Foreign Address         State       PID
TCP 0.0.0.0:80              0.0.0.0:0               LISTENING   4
TCP 0.0.0.0:81              0.0.0.0:0               LISTENING   4
TCP 0.0.0.0:82              0.0.0.0:0               LISTENING   1176
TCP 0.0.0.0:135            0.0.0.0:0               LISTENING   644
TCP 0.0.0.0:445            0.0.0.0:0               LISTENING   4
TCP 0.0.0.0:2383           0.0.0.0:0               LISTENING   1820
TCP 0.0.0.0:2638           0.0.0.0:0               LISTENING   2784
TCP 0.0.0.0:7200           0.0.0.0:0               LISTENING   736
TCP 0.0.0.0:7210           0.0.0.0:0               LISTENING   2324
TCP 0.0.0.0:7299           0.0.0.0:0               LISTENING   1976
TCP 0.0.0.0:47001          0.0.0.0:0               LISTENING   4
TCP 0.0.0.0:49152          0.0.0.0:0               LISTENING   376
TCP 0.0.0.0:49153          0.0.0.0:0               LISTENING   740
TCP 0.0.0.0:49154          0.0.0.0:0               LISTENING   788
TCP 0.0.0.0:49155          0.0.0.0:0               LISTENING   480
TCP 0.0.0.0:49176          0.0.0.0:0               LISTENING   472
TCP 0.0.0.0:50885          0.0.0.0:0               LISTENING   4024
  
```

Using netstat will provide a quick indication of which ports are in use. You may have to configure different ports. IIS will default to use port 80 for the first web server application. You can also use the task-list command to identify which tasks are associated with a particular PID. In the example above, ports 80, 81, and 82 are in use. We are actually using port 80 for our IIS example. Port 80 is preferable to use.

### Using Netstat to check Windows Ports

## Installation – Apache



If you would like to obtain the very latest version of Apache, visit [apache.org](http://apache.org) and download the version for Win32 and install it. The directory shown at left is a representation and may look a bit different on your system. You will need to follow the Apache installation instructions. Usually the installation will install the cgi-bin directory automatically and this is where the Metrology Xplorer 1.3 CGI application should be installed. Refer to the CGI Installation in this manual for additional details.



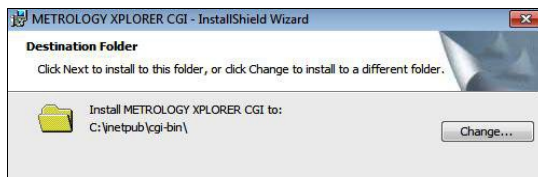
## Installation of the Metrology Xplorer Administration and License Application

On a client machine, you will need to install the Metrology Xplorer 1.3 (METEX13) Administration program. This part is critical. You can install this application wherever you want. The default location is Program Files(x86). The administration program also provides for the licensing program. The license registration program must be executed in order to create the necessary database tables for METEX13 to operate. If this part is not successful, then METEX13 will not operate at all. After you have installed the admin program, register the METEX13 license first, only if the program has not run the license program previously. Sometimes there is a need to install the admin program on additional computers, but the license should only be registered one time, if the license registration is successful. If there is a problem with the license registration program, contact On Time Support for assistance. Open the registration program per the METEX13 manual and verify that the admin functions operate correctly. If everything works correctly, then proceed to the next section.

## Installation of the Metrology Xplorer CGI Application

Follow the manual to install the Metrology Xplorer 1 CGI application. When using IIS, the user will have to create a sub directory under the inetpub directory first. For example `c:\inetpub\cgi-bin`. This is the physical directory where to install the CGI application. The `metex.ini` file allows you to enter the ODBC DSN. The default is Calibration Data. You can select ON for the RUNDIAGS. Double-click on the `met_ex.exe` executable and a running log should be created. Open the log and make sure there are no errors. Be sure to set RUNDIAGS back to OFF. RUNDIAGS only has the option of ON or OFF. In the METEX.INI file a “#” is used to comment out a line. The `metex.ini` file is always located in the same directory as the CGI Installation.

## Configuring IIS for Server 2008 for Metrology Xplorer 1.3



We have already installed the Metrology Xplorer 1 admin program on our system per the manual. After the installation of the CGI program, you should have a directory similar to the one shown at left.

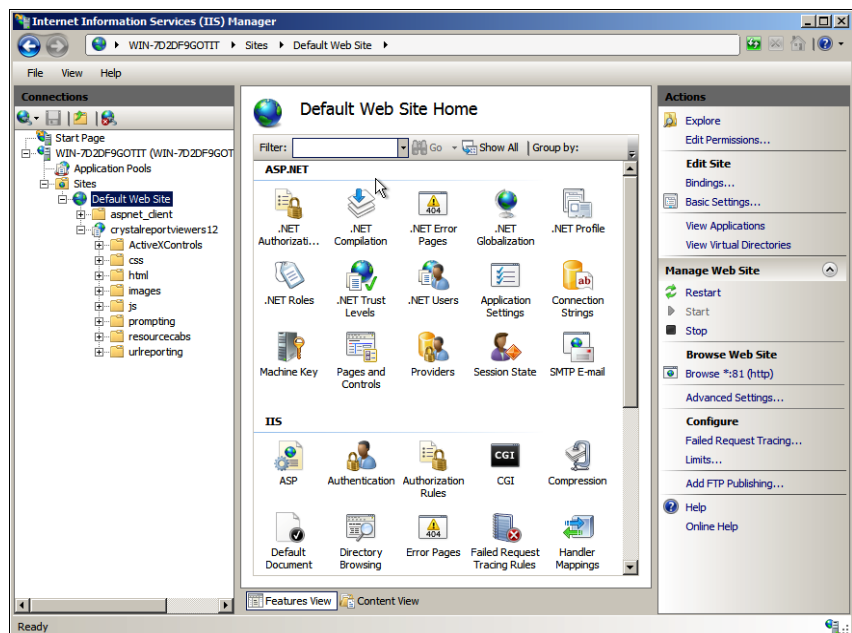
We have launched the IIS Manager and you should have a screen similar to the one at left. It is possible that you may have other sites for the web server enabled. Our example will use the Default Web Site.

### Ports

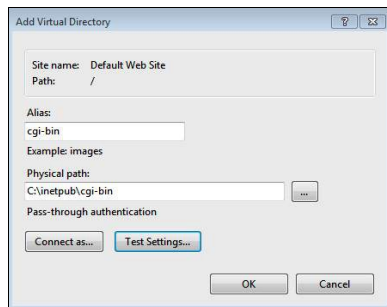
You can click on “Bindings” in the right pane and make any changes to the port. In most cases you will need to use port 80.

The next step is to create the cgi-bin virtual directory for METEX13

Right-click on Default Web Site and select Add Virtual Directory.

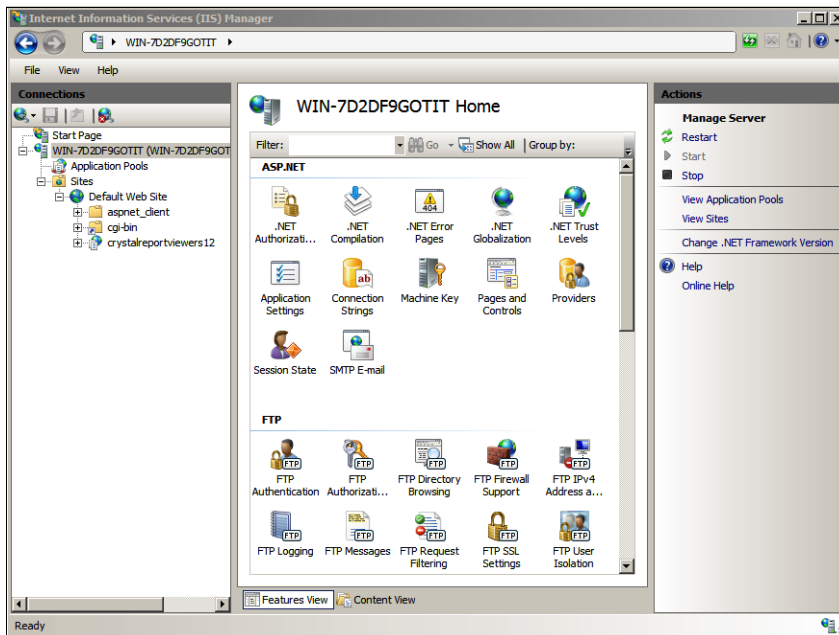


IIS - 7.5 Port Configurations



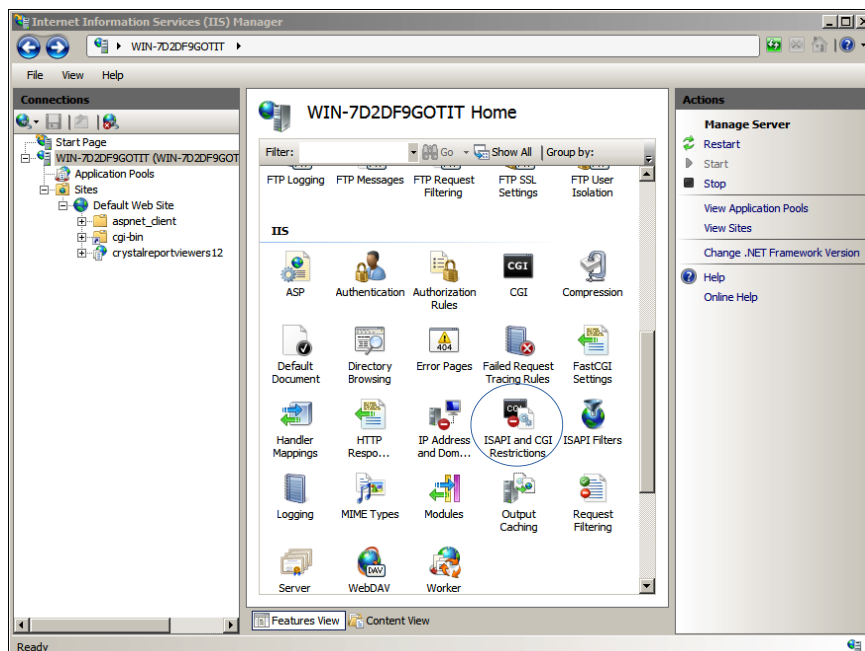
Type in the “cgi-bin” alias and then select the path to the actual cgi-bin directory as shown at right. Click OK. It is important that the virtual directory references the physical directory as shown.

## IIS - cgi-bin Virtual Directory



One thing we should do at this point is to make sure the web server is not running. As a default, the web server is started after the application is installed. To stop the Web Server, right-click on the web server name and select Stop if it is available.

## IIS – Stopping and Starting the Web Service

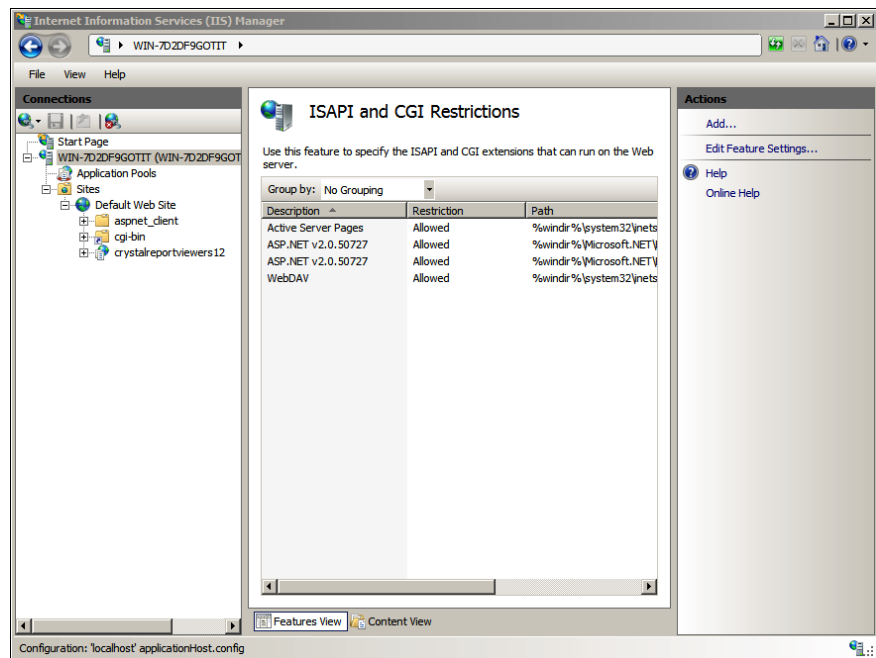
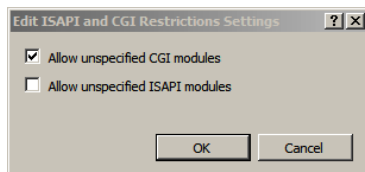


The next step is to make sure the Web Server is highlighted as shown at left. This highlight is in the very left pane. Double-click on ISAPI and CGI Restrictions Settings.

A screen will be displayed as shown at right.

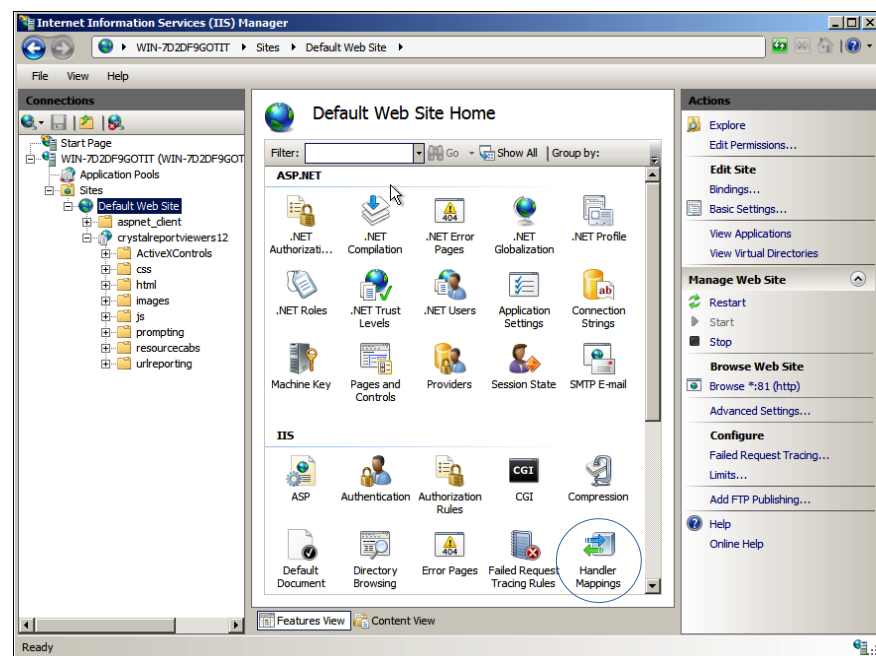
Click the “Edit Feature Settings” in the right pane.

You will see a pop up box as shown below. Check the box as shown below to allow CGI Modules to operate. Click OK.



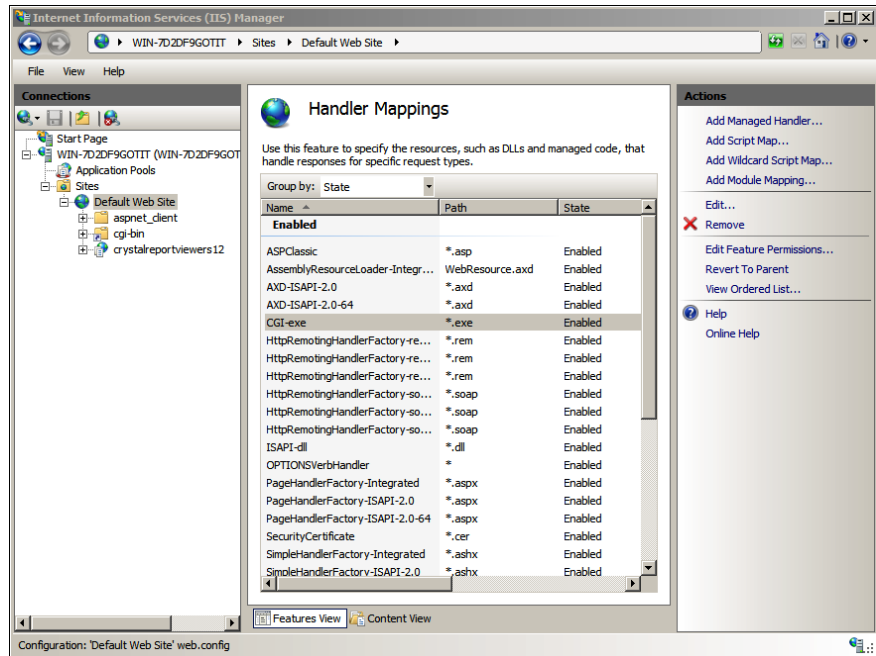
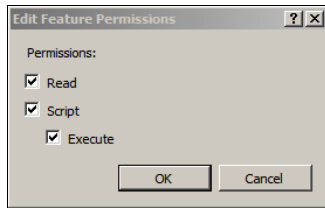
**IIS – Edit CGI Feature Settings**

Click on Default Web Site in the left pane. This will change the menu in the center pane. Double-click on Handler Mappings.



**IIS – Selecting Handler Mappings**

On your screen, the CGI-exe may be disabled. We will need to set the proper permissions to allow the CGI application to execute. Highlight the CGI-exe entry in the center pane and in the right pane, click on “Edit Feature Permissions”. A pop up box will be displayed like the one below. Select the check boxes as shown below and click OK.



## IIS – Edit CGI Feature Permissions

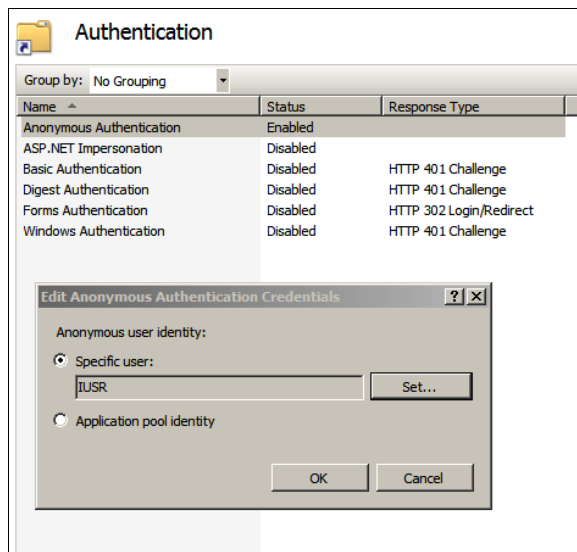
At this point the system should be ready to test. Be sure to start the web service and verify the web service is running.

You can try running the METEX13 application on the server by typing in on the URL:

[http://localhost/cgi-bin/met\\_ex.exe](http://localhost/cgi-bin/met_ex.exe). This should display the Metrology Xplorer main menu. If you are using a port different from port 80 insert at port as :<port>.

For example, if your system uses a different port it might be something like [http://localhost:81/cgi-bin/met\\_ex.exe](http://localhost:81/cgi-bin/met_ex.exe). See if you can search for any assets. If you can, then this part of the application is running correctly.

## Security/Authorization Issues with IIS and Server 2008



There have been some installations where METEX13 would not work properly due to a security issue. When you test METEX13, and you see a message that it did not respond, or reported misbehaved headers, you should check the authorization user ID for IIS. Security is not the same for all systems. In the picture at left, the security is set for Anonymous User which is correct. The IUSER is the system account. IUSER may not have the necessary permissions to allow METEX13 to pass the web pages through IIS. You may have to create a special account for METEX13. It must be stressed to not use a domain account, but use an administrator account specifically for the machine where METEX13 is installed. Our experience has shown that domain administrator accounts do not have the administrative privileges that a dedicated machine account has.

## Reports

METEX13 can execute SQL Reports and Crystal Reports. If you are able to search for assets, the SQL reports will already be functional because they exist in the database. However Crystal Reports can be more difficult because they are external reports. Earlier in this document, we mentioned the metex.ini file in the cgi-bin directory. The file also points at where the Crystal Reports are located. An easy way to test the system for Crystal Reports functionality is to comment out the Crystal Reports location in the metex.ini file with a “#” sign. This will tell the cgi application to execute reports from within the cgi-bin directory. Copy a simple MET/TRACK report that does not use prompts. The license.rpt is an excellent report to test with. Refer to the manual on configuring the Administration Program to select Crystal reports. You will have to point the administration program at a location where the reports exist, such as a shared directory. Remember, we copied a report to the cgi-bin application, we did not move it.

After configuring the report it should show up in the report list. Try running the report from the browser. It should run or it may generate an error. The two most common errors are file not found or permission denied. If you see a file not found, then the report is not configured correctly. The permission denied error may be more difficult. It has been our experience that this is a permissions related issue and try giving the Everyone group Full Control in the cgi-bin directory as a way of testing the permissions. It has been our experience that security on Server 2008 is not consistent and you may have to try some different permissions. After you get the reports to run, try changing the Report location in the metex.ini file. In our example below, the first line is where the reports are located. We removed the “#” sign and added the actual location of the reports. The report can exist in a shared directory and will be easy to edit and test from a client computer.

```
METCAL=D:\ProgramData\Fluke\METBASE\shared\reports
DATASOURCE=Calibration Data
RUNDIAGS=OFF
```

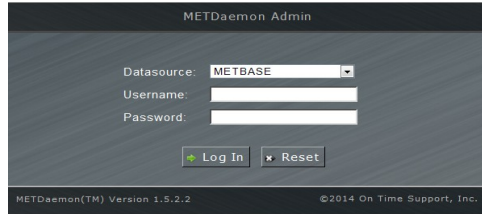
### *Report Locations*

When Using Metrology Xplorer 1.3, it might make reporting easier if you separate the reports into other directories. For example, the example above points to the reports in the D:\ProgramData\Fluke\METBASE\shared\reports directory. By adding an additional sub-directory the metex13 reports would be located at D:\ProgramData\Fluke\METBASE\shared\reports\Metex13. The benefit of this method is to separate web reports from the standard MET/TRACK reports. Its easier to see what reports are available. If you are modifying an existing MET/TRACK report to be used in Metex13, you might want to add MX1 to the file name. For example, for systems that use the Metrology Xplorer 2 application, we usually add MX2 to the file name. As always, its best to keep everything as simple as possible.

This completes this section on configuring IIS on Server 2008. If you have any questions or comments, please contact On Time Support.

## Install the CGI program with the METDaemon and other Web Servers

This installation procedure assumes that you are using a METDaemon version 1.5.2.1 or higher. The METDaemon version can be determined from the METDaemon Admin log in screen as shown below.



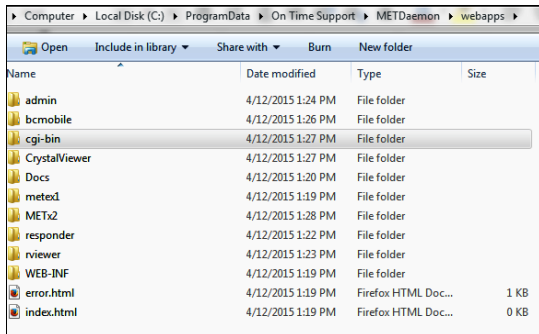
It is not necessary to have METDaemon web applications licensed to use the METDaemon for METEX13. However, it is necessary to have a METDaemon system license. If you currently are using a METDaemon and it is an older version, you should contact On Time Support and acquire an upgrade. **Note: This installation example will include notes for other web servers.**

### METDaemon Log In Screen and Version

#### Run the METEX13 CGI Program

Before installing the CGI program, its is very important to determine the location for the CGI installation. On the newer servers (2008/2012) there are hidden directories dedicated for data storage. This directory is usually called ProgramData. On the newer servers, we recommend the METDaemon be installed in ProgramData\On Time Support. On most servers, we request that there is an additional drive partition. For example, instead of using the C drive, we might use the E drive.


When working with the ProgramData directory, the Installation Program may not detect the ProgramData directory when you attempt to browse. For this reason, we usually copy the directory location first and then paste that location during the installation process. The example used in this section does use the C partition and we will install the METEX13 into the METDaemon and configure it.



The directory at left shows the webapps sub directory in the METDaemon. There are several applications represented by the sub-directories. The METEX13 CGI application will be installed in the cgi-bin directory which is highlighted. We have copied the directory installation:

C:\ProgramData\On Time Support\METDaemon\webapps\cgi-bin

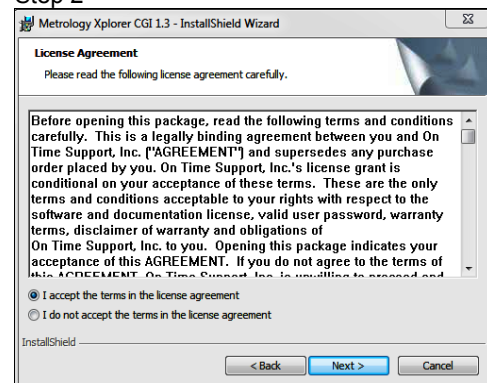
By copying the directory location now, it will accelerate the installation process.

The first step is to run the  **Metex13\_CGI\_Install.exe** installation program. Right click on the install program and Run as Administrator.

#### Step 1



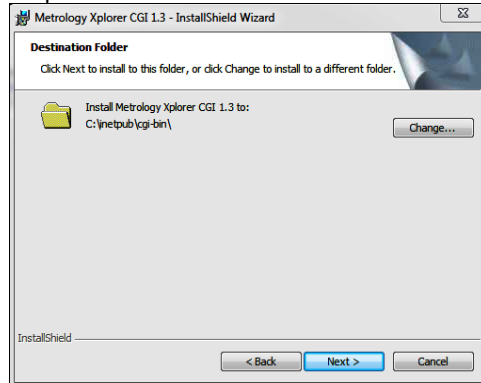
#### Step 2



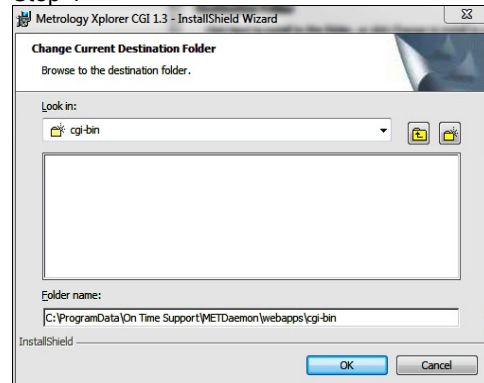


At this point in the procedure, the destination directory must be changed. The default directory is for the IIS program. Click the Change Button and change the destination directory. The image below right shows where the new destination METDaemon directory can be updated. Apache installations should install into the cg-bin sub-directory in the Apache application directory.

Step 3

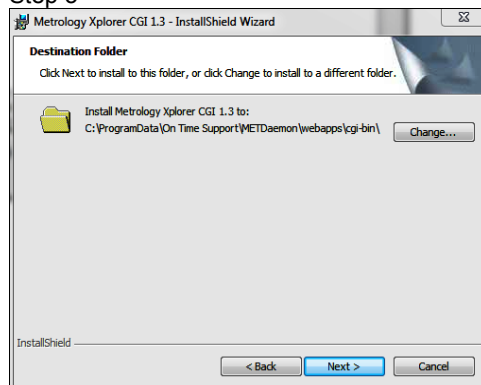


Step 4

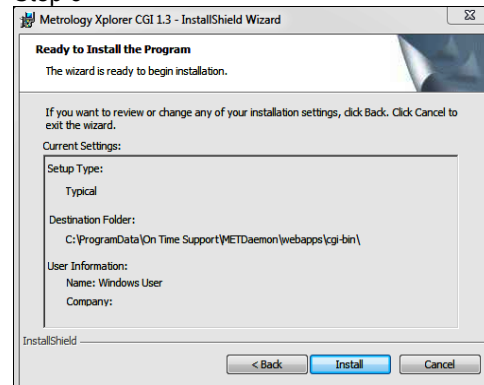


After changing the destination location, it is displayed below and on the summary screen below right.

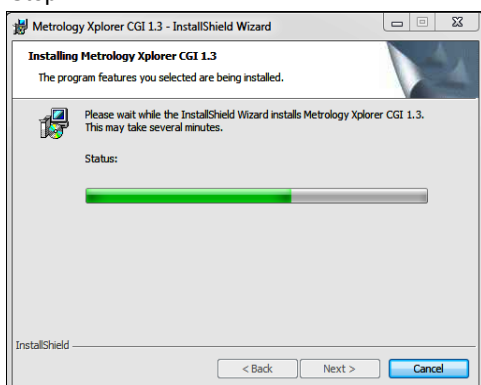
Step 5



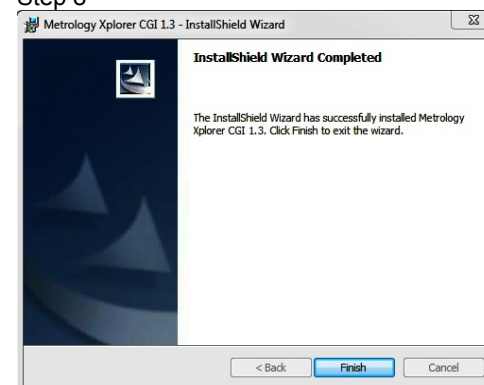
Step 6



Step 7



Step 8

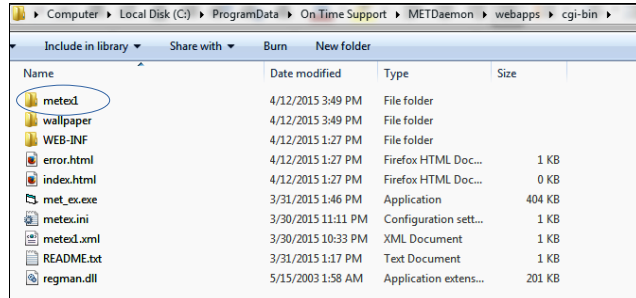


After completing the installation, it is usually not necessary to reboot the computer. However, there may be cases where this is necessary.

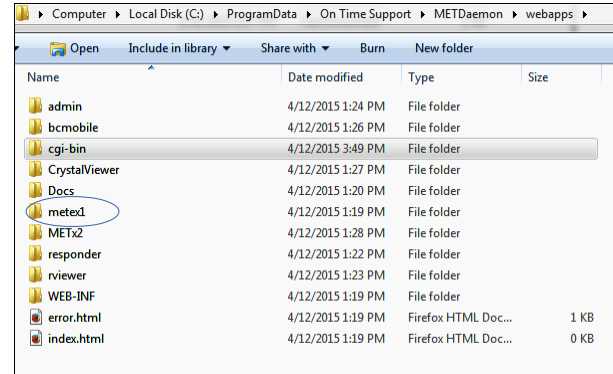
## Configure the METEX13 CGI Program for METDaemon

Now that the CGI application is installed, as shown below left, it is necessary to move some files and change some configurations. The first step is to copy the metex1 directory to the webapps folder and overwrite the existing metex1 folder in C:\ProgramData\On Time Support\METDaemon\webapps.

Copy the metex1 directory below.

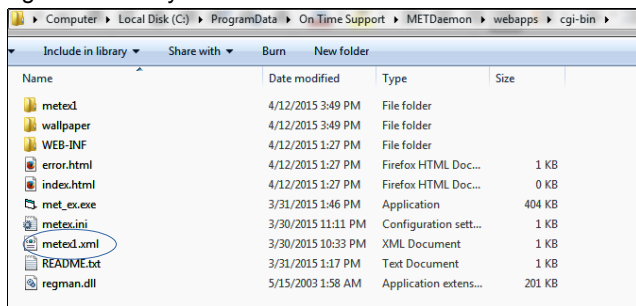


Replace the metex1 directory below.

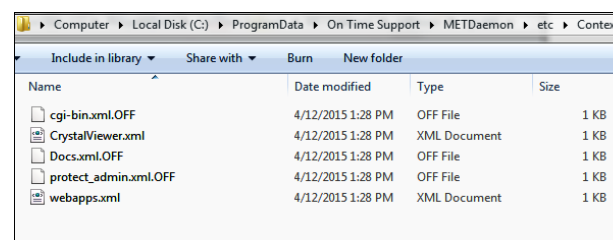


## Configure METDaemon Files

The next step is to copy the metex.xml file from the cgi-bin directory as shown below.



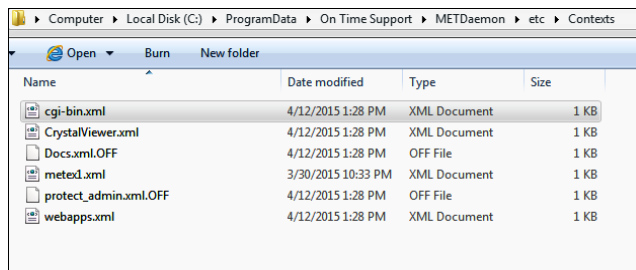
Before



In this step, copy the metex1.xml file from the C:\ProgramData\On Time Support\METDaemon\webapps\cgi-bin

to the directory listed below:  
C:\ProgramData\On Time Support\METDaemon\etc\Contexts

After



The next step is to rename the cgi-bin.xml.off to cgi-bin.xml. The image above shows the file to rename and the image at left shows the cgi-bin.xml after it has been renamed.

After making these configuration changes, and if the METDaemon is running, the changes will take effect in less than a minute.

## Metex1 Folder Notes

**Note:** When using the IIS Web Server copy the metex1 folder to the C:\inetpub\wwwroot directory. When using the Apache Web Server copy the metex1 folder to the htdocs sub-directory in the Apache installation group.



## Configuring the CGI Metex.ini File (All Web Server Installs)

After installing the CGI application, it is necessary to make the final updates in the metex.ini file, located in the cgi-bin directory. Every attempt was made to configure the default entries.

```
#Report location(directory)
METCAL=C:\ProgramData\Fluke\METBASE\Shared\reports\Metex1\

#ODBC Datasource
DATASOURCE=Calibration Data

#Diagnostics(running.log)
RUNDIAGS=OFF

#Automatic layout of met/track browse screens. Removed the need for "tweaking" fields in metex
AUTOLAYOUT=OFF

#Is running under METDaemon web server? This enables met/track "notes fields", with automatic RTF conversion
METDAEMON=OFF

#cgi-bin directory name(normally used for multiple installations of the cgi)
#CGIBIN=cgi-bin

#metex1 directory relative to web server root
#METEX1=metex1

#Default if ALLOWEDCHARS is left blank or commented out
#ALLOWEDCHARS=A-Za-z0-9.\=;\!\*\&\%\\_ -!+

#Also allow forward slash(as in 1/2) and parenthesis
ALLOWEDCHARS=A-Za-z0-9.\(\)\=;\!\*\&\%\\_ \+-
```

### Metex.ini File Configuration

The example above shows our Metex.ini file entries. Any line that starts with a # is a comment line. You can make all the comments that you want.

The "METCAL =" entry is the location of the Crystal Reports for METEX13. This entry is the actual server directory location, not a shared directory location.

The DATASOURCE entry is for the ODBC connection for METEX13. The CGI uses ODBC to connect to the database.

The RUNDIAGS entry is for testing the connection of the CGI. This is used when there is a connection problem and will be covered later in this manual.

The AUTOLAYOUT parameter is a new feature of METEX13. The previous method of tweaking the screen is still allowed. If you set the AUTOLAOUT = ON, METEX13 will generate a new screen that is automatically customized.

The METDAEMON parameter is used to configure METEX13 to use the METDaemon to convert the data in the Engineering Notes (Memo) fields into a readable format. If the METDaemon is not used as the web server, the data in the Engineering Notes fields will not be readable.

The ALLOWEDCHARS is used to turn on the security functions in METEX13. Certain characters can be used by computer hackers to gain access to a system. METEX13 has been tested against many different methods (hacks) used to break into a system. Adding SSL to the METDaemon can really enhance the system by encrypting the web queries and responses.

## Using Themes and Backgrounds – Please Read This

A new feature of Metrology Xplorer 1.3, are the themes and backgrounds that are automatically installed on the server. During the installation of the Metrology Xplorer CGI program, there are some new sub-directories that are installed under the CGI-BIN directory. In the CGI Installation procedure, the metex1 folder was copied from the cgi-bin directory to the location where static web pages are stored. For example, in IIS the wwwroot sub-directory contains these files and we added the themes and other support files in the new metex1 directory. It does not matter whether this is on an Apache, IIS, or METDaemon installation. There is a wallpaper sub-directory with the different picture files. They are CALLAB, METAL, SCRATCHPAD, NAVY\_STRIPES, TRANQUIL, UV, COLLIDER, and BW. These directories contain several style sheets for a new enhanced look and some JPG files. You can look through the directories with Windows Explorer for the JPG files and see what types of backgrounds are provided. Please note that BW is a black and white display only with no pictures and should be installed if no backgrounds are to be used. You can also add your own files to really customize your system.



**Different Background Themes**

These backgrounds and style sheets will not take effect unless the mx\_base\_style.css is modified and this is easy to do. The default installation will not turn on the background theme. This modification will also have to be performed on the server. Open an editor like NotePad++ and edit the file. The background image tag includes the wallpaper file name, for example, collider.jpg.

**This is what the entry should look like.**

```
#pagecontainer {/* <div> Page container */
  background-image : url("/metex1/wallpaper/collider.jpg");
  min-width : 100%;
  min-height : 100%;
  position : absolute;
    top      : 0px;
    left     : 0px;
}
```

**This is what the entry has the background configuration commented out with /\* ..... \*/. You will need to remove the comment characters.**

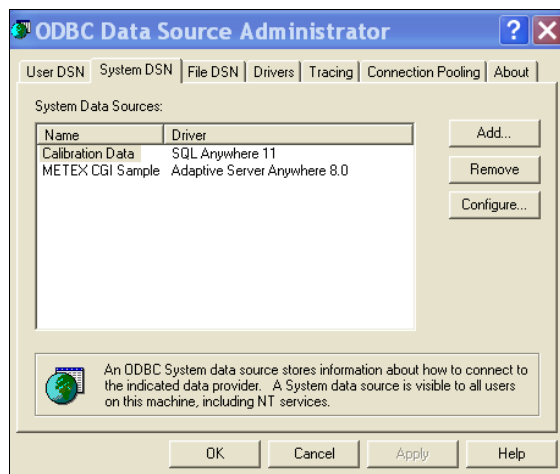
```
#pagecontainer {/* <div> Page container */
  /*background-image : url("/metex1/wallpaper/collider.jpg");*/
  min-width : 100%;
  min-height : 100%;
  position : absolute;
    top      : 0px;
    left     : 0px;
}
```

## Configuring Sybase 8 ODBC for the Client Computer

These instructions are for a client installation without a MET/TRACK installation. For a server installation, the ODBC should already be installed and configured.

**IMPORTANT:** The Sybase 8 or 11 ODBC drivers are automatically installed on the client machine during the installation of the MET/TRACK server application from the CD. It is only necessary to perform this step if ODBC has not been configured for the client computer.

This step configures the 32-Bit ODBC for use by the METEX13 CGI program. To start the configuration for Windows 2003/2008/2012, select | **Settings** | **Control Panel** | **32-Bit ODBC**. If you are using Windows 2000 or XP select | **Settings** | **Control Panel** | **Administrative Tools** | **Data Sources (ODBC)**. If the 32-Bit ODBC icon is not visible, close the Control Panel and select followed by RUN, and enter "odbcad32.exe". The following example is shown with Win2003.

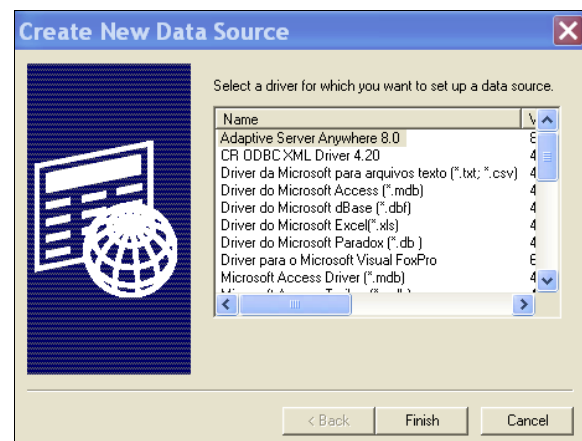


Select **System DSN** and you should have a screen like the one at left. Select **Add** and then double-click on **Adaptive Server Anywhere 8.0**.

### 32 Bit ODBC Data Source Listing

You should see the screen at right: (may be different for various versions of the operating system). You need to select the data source driver that is Adaptive Server Anywhere 8.0 or 11.0.

These instructions assume that the 32 Bit Sybase Adaptive Server Anywhere 8.0 or 11.0 drivers have been installed.



Selecting the Sybase Drivers

For **Data Source Name** enter “Calibration Data”. NOTE: It is possible to use another data source name, especially when more than one database has been configured. Refer to the end of this section for more information. Click on the ‘*Database*’ Tab.

For the **Server Name** replace “<default>” with the name of your MET/BASE database engine. Traditionally it is named **metbase**. However, most database installations will have an alias name assigned to the database.

### ODBC Configuration for Sybase 8

Click on the ‘*Network*’ Tab. A screen similar to the one at left is displayed. This screen is used to configure network options. In our example, we have selected TCP/IP for our network communication. It may be necessary to identify the database server to the Sybase Client. The Sybase Adaptive Server Anywhere does not have a separate network requester like the earlier versions of Sybase. The network requester is actually part of the ODBC driver. You can identify the network server with the following command:

**HOST=actual network name of server.**

This configuration will be entered adjacent to the checked TCP/IP option. Refer to the Sybase documentation for more information on configuring the ODBC settings.

### ODBC Sybase 8 Network Options

Click on the ‘*ODBC*’ Tab. There is a **Test Connection** button that will allow you to test the network connection to the database. This is a useful tool for troubleshooting connections.

Select **OK** and then select **OK** again to exit the ODBC configuration. You should now have the ODBC portion configured properly.

### Alternative ODBC Setup

When the CGI program is installed, the metex.ini file is installed in the CGI-BIN sub-directory. You should use the “Calibration Data” ODBC source. The metex.ini file is already configured to use Calibration Data. Open this file with Notepad and make sure the “DATASOURCE=Calibration Data” does not have any leading “#” or “;” characters which will comment out the line. However, you might need to create an alternative ODBC source like a METEX1 Data Source. This would be a rare condition. If you have questions about alternative configuration, contact On Time Support.


## METEX13 Administrator Installation

The METEX13 Administrator is the utility that allows you to configure the operation of METEX13 and allow access to users. This program should be installed on the workstation(s) that is(are) also used to administrate MET/TRACK. It is not recommended that the administrator be run from the server on a continuous basis.

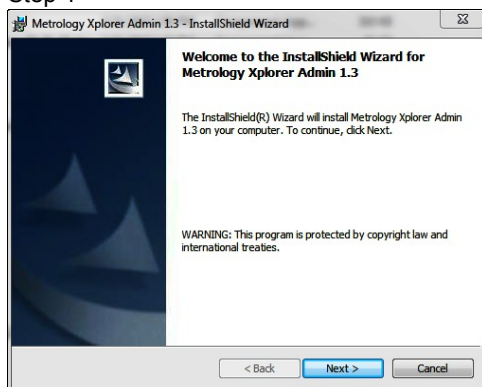
NOTE: If you are installing the administrator on Windows 2003/2008/2012 Workstation or 2003/2008/2012 Server, then you will need to log in as “Administrator” to allow for the updating of shared libraries and dependencies.

With the METROLOGY XPLOER CD-ROM inserted, click on Start, followed by Run, then enter “D:\Metex13\_Admin\_Install.exe” where “D:” is the drive letter for your CD-ROM.

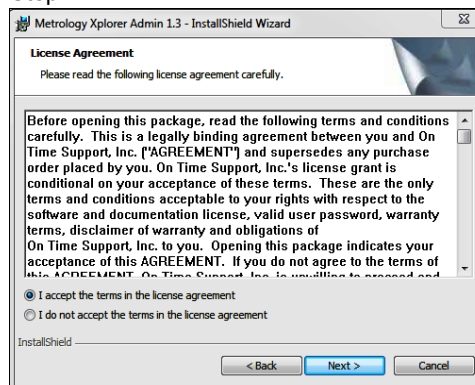
The administration utility installation program will run and present you with a few welcome screens. You will then be prompted to enter the destination directory that defaults to “C:\Program Files (x86)\On Time Support\Metrology Xplorer”. In most cases this should be the correct directory.

Run the  **Metex13\_Admin\_Install.exe** as Administrator on the client computer that will be used as a workstation. You can also install the Administrative Program on the server, but please perform most of the administrative work from the client computer. It is recommended that the client computer have MET/TRACK installed, because it will be easier to update screen layouts as described later in the this manual.

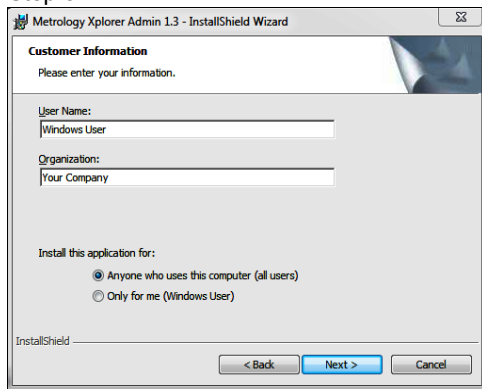
Step 1



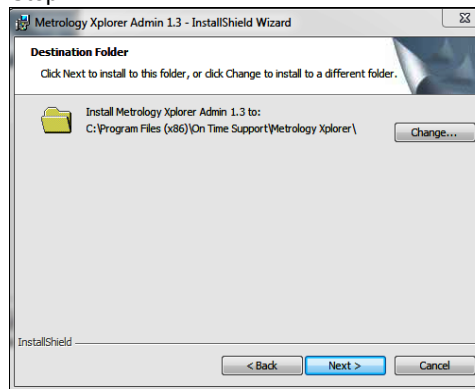
Step 2



Step 3

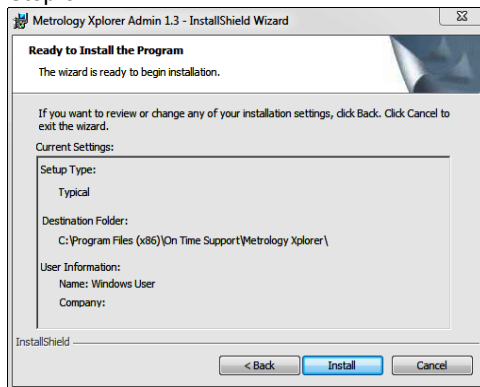


Step 4

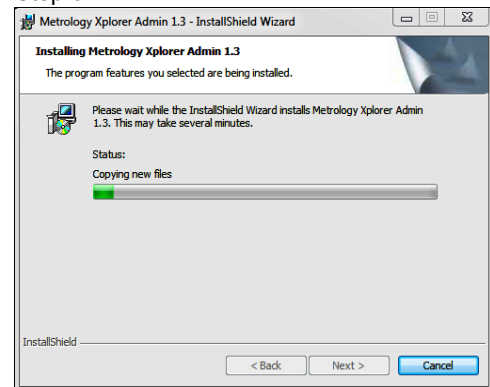


### Administration Installation Program

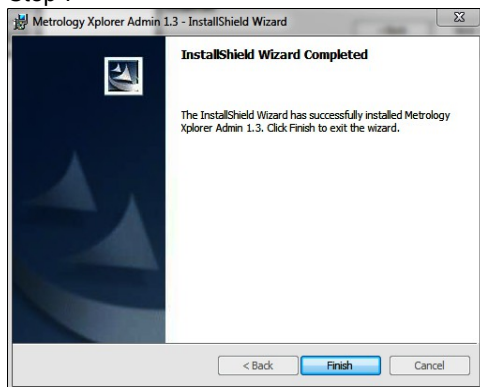
**Step 5**



**Step 6**



**Step 7**



The Admin installation program is quite easy and the default setting should suffice for most installations. If this is an installation on a computer without an existing ODBC configuration, the ODBC will have to be configured as describe earlier.

## Software Registration

METROLOGY XPLOER is not able to operate until it has been registered. A registration certificate may have been included in the materials that METEX13 was shipped in. If no registration certificate was included, or if you are installing METEX13 for evaluation purposes, then please call On Time Support using one of the methods listed on the back cover of this manual.

If you were given a registration certificate, or have obtained a registration code from On Time Support, then you are ready to proceed. Make sure that you have installed the METEX13 administration utility on one or more computers. If you have not done this already, then refer to the section of the manual titled "METEX13 Administrator Installation" for instructions on installing the administration and registration software tools.

In the "Metrology Xplorer Administrator" program group (or wherever you instructed the administration installer to place the icons), you should see an icon titled "OTS Registration Manager". Double-click on this icon to start the software registration utility.

You will be presented with a screen with 3 boxes requiring information. The first one requires your "MT" (MET/TRACK system administrator) password. Enter the password for the "MT" user.

The next box is for the entry of the registration code. Enter the registration code provided, including the "dashes" ( - ).

In the final box, select the 32-BIT ODBC data source that is used to connect to the MET/TRACK database.

Click on Register, and the program will register METEX13 and update MET/TRACK to allow for METEX13 operation. After the registration is complete, the program will ask if you want to install another license. Select No.

On Time Support Software Registration Manager

Exit Register Add License Without Installing Script

**OTS Software Registration**

Just fill in the blanks and click on "Register" to do a complete installation or click on "Add License Without Installing Script" to add additional licenses ...

xxx "MT" Password

12345-12345-12345-12345 Registration Code

Calibration Data ODBC Datasource Name (32-bit DSN's only)

Register Add License Without Installing Script Exit

OTS Registration Manager

Next Page



## **Section 3 - Administration**

## METEX13 Administrator

As the name implies, the administrator is where you control the features of METEX13. Everything from security to reports can be set up from the administrator's workstation.

This section is designed to instruct you in the topics that you will most likely encounter after successfully installing and registering METEX13. Each topic is followed by a series of instructions and screen shots. Menu options are selected according to the following example:

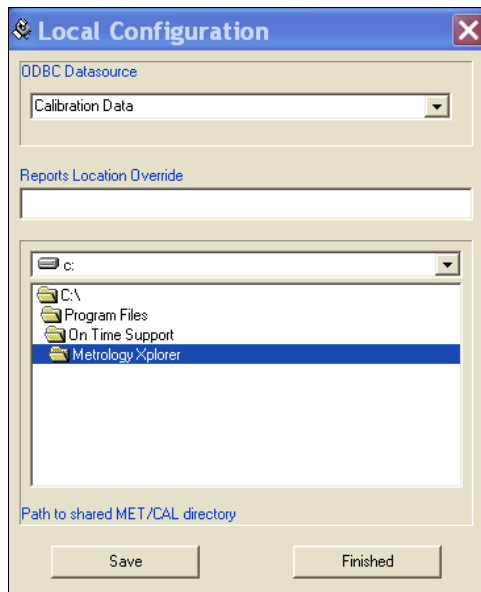
CLICK ON FIRST MENU OPTION | CLICK ON SECOND MENU OPTION | etc, etc.

After selecting the menu options given, you should see the screenshot that follows. Follow the instructions given and you will be able to accomplish the task in that portion of the administration utility.

## Local Configuration

After starting the METEX13 administrator for the first time, **and before you log in**, you may need to set local configuration options for the workstation.

### CONFIGURATION | LOCAL CONFIGURATION



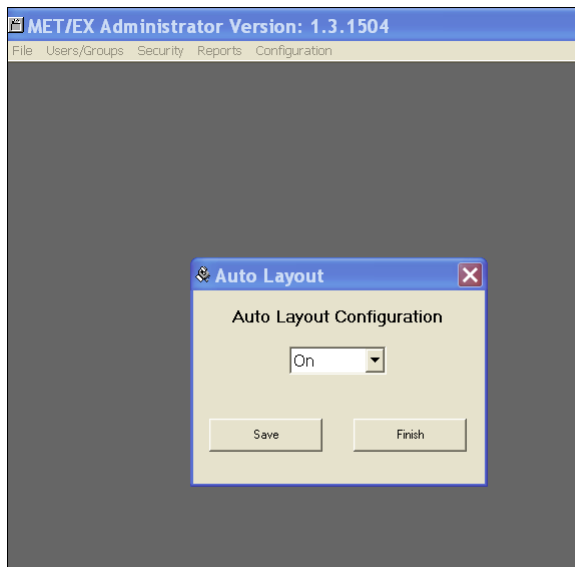
You'll need to tell METEX13 where the "Metcal" directory is on the server. Also you must choose the Open-Database Connectivity (ODBC) data source that METEX13 will use. In the ODBC DATA SOURCE box, use the drop down menu to choose METEX13. In the box directly below ODBC DATA SOURCE, select the absolute path to the "METCAL" share.

You can also paste in the file path to the Crystal reports used in METEX13 using the Reports Location Override function. In order to be able to select reports and change the report status, the admin program must be able to locate the report directory.

### Administrator – Selecting the METCAL Shared Directory

## Auto Layout Feature (New)

### CONFIGURATION | AUTO LAYOUT CONFIGURATION



The new Auto Layout feature is a new option that will automatically configure the screen without using the “Tweaking” feature. The application will make the decision on the spacing and layout. You can select the fields to display but you cannot change the view.

A valid option is to use the new Desktop feature. By configuring a specific Desktop for METEX13, you can create the layout that you want and then configure the Auto Layout feature to display the new layout. Tweaking can take some time to configure. The Auto Layout is immediate. Click “Save” to update the configuration.

### Configuring Auto Layout

The two screen shots below show the two configurations. The left picture below is configured by the Auto Layout feature. The right picture below was configured using the “Tweaking” feature and this screen has the wallpaper enabled. If you want to get started quickly, the Auto Layout feature will get the system running quickly with a pleasing display.

This screenshot shows the 'Metrology Xplorer | Inventory | VM0139' form with a clean, white background. The form contains fields for Asset No. (VM0139), Capital Asset #, Accessory Asset, Manufacturer (FLUKE), Model (87), Serial Number (69060329), Description (DVM), Category (VOLTMETER DMM), Range, Status, State (A), Trace Code (8), Cal Int (365), Type (D), Cost Center (412374), Special Instructions (Arrive), Cal Procedure, Equipment Custodian (DOUG LYNDE), Inventory Notes, Instrument Picture File (fluke87.jpeg), Allow SQL Reports (NO), and Accredited Cal.This screenshot shows the same 'Metrology Xplorer | Inventory | VM0139' form as the previous one, but with a background image of a laboratory setting. The form fields and layout are identical to the previous screenshot.

## “Tweaking” the Browser Display

**NOTE: METEX13 uses the Browse Screens in MET/TRACK in the Default Desktop to calculate the data locations. The Edit screens are not used by METEX13.**

When the browser displays the MET/TRACK forms, the field titles and data may not line up exactly as shown by the MET/TRACK clients. The discrepancy is due to rounding errors in the conversion calculations, differences in browser display mechanisms, and differences in how certain fonts are scaled and displayed.

The administration utility provides a mechanism for fine-tuning or “tweaking” browser displays so that the alignment is more accurate. This involves looking at a form in a browser and applying “offsets” to either the field title or data to position it correctly in the display.

Before starting the “tweaking” phase, you need to determine which browser/version is the most dominant in the facility or environment that METEX13 is being used in. For example, if most of the people that will be using METEX13 have version 8.0 of Internet Explorer, then Internet Explorer 8.0 is the dominant browser. Before you start tweaking displays, you should make sure that you have access to the dominant browser on the same machine that the administrator is installed on, or have an assistant look at a computer that is running the dominant browser and give you corrections to be made.

After determining what the dominant browser is, the next step is to pick a MET/TRACK form to work with. Start MET/TRACK in Browse Mode and view this form. Use Browse Mode as a reference when making adjustments to METEX13. Typically, the Inventory form is the starting point for browser tweaking. Start the dominant browser and display the same form that query is showing. In the administration program, select the following menu options:

### CONFIGURATION | FIELD CONFIGURATION

Start the tweaking process by working from top to bottom, left to right on the form you have selected to work with. This order must be used, since applying offsets may move fields to the right after the offset has been applied.

You should see the following screen in the administration program. Select the first field you would like to work with by selecting it from the list on the left side.

Under the PRIVILEGES tab, double-click a group that you want to allow or disallow to see the field you just highlighted. The left pane on the right side displays groups that will not see the field in question, and the right pane on the right displays groups that will see the fields in question.

### Field Configuration – Permissions

If you are going to have different screen configurations for different users, it will be easier if you set which fields are available to the groups.

**NOTE: If you are “Tweaking” the Search Form for version 7.x/8.x, be sure to select the “Display Search Fields” radio button.**

By default, all groups can see the field, and you must manually de-select groups in order for them not to see the field. This is very useful for limiting access to sensitive data. For example, you could have a “Guest” user and “QA” group that would not be able to see the calibration time recorded by the technician.

After selecting groups that you do not want to have access to this field (if any), click on the “Display Offsets” tab. You should see the following screen:

The screenshot shows the 'Field Configuration' window with the 'Display Offsets' tab selected. The 'Fields' list on the left includes '2301 Calibration Date', '2302 Interval', '2303 Due Date', '2307 Tech', '2308 Found/Left', '2311 Cert Temp', '2312 Cert RH', '2313 Shop', '2314 ORBITS Max Use Range', '2316 Arrive Date', '2320 Cal Procedure / Rev', '2321 Vendor Asset / Cal Nu...', '2322 Seals', '2323 Pass', '2324 Tech Cal Time', '2326 Additional Limitations (1...', '2327 Status', '2329 Vendor Certificate #', '2330 ORBITS Units of Meas...', and '2331 Type'. The 'Field Properties' section on the right shows the 'Display Offsets' tab with 'Field Title' set to '4' and 'Field Data' set to '4'. The 'General Offsets' section shows 'X Offset' and 'Y Offset' both set to '0'. The 'Browser-Specific Offsets' section is also visible.

In the “general offsets” section, enter the offsets required to bring the field into the proper position on the dominant browser. For example, if the field you are working with has a title that is too far to the right by 2 spaces, enter a “-2” in the “Field Title X Offset” box. Likewise, if the title was in the correct position, but the data field was too far to the left by three spaces, then enter a “3” in the “Field Data X Offset”. Positive numbers entered in the “X Offset” column move objects to the right, negative numbers to the left. Positive numbers entered in the “Y Offset” column moves objects down, negative numbers up. After entering offsets for the field, click **Save Changes**, then go to the browser and click on the “Refresh Data” link at the bottom of the form in your browser.

## Field Configuration – Display Offsets

The display should refresh, and show the changes made. Continue changes working your way to the right on the first row, then move to the second row and repeat until the form looks proper. After this form is finished, pick another one and repeat the previous step.

The screenshot shows the 'Field Configuration' window with the 'Display Offsets' tab selected. The 'Fields' list on the left is the same as the previous screenshot. The 'Field Properties' section on the right shows the 'Display Offsets' tab with 'Field Title' set to '4' and 'Field Data' set to '4'. The 'General Offsets' section shows 'X Offset' and 'Y Offset' both set to '0'. The 'Browser-Specific Offsets' section shows a 'Browser' dropdown menu with 'Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.0; Boeing kit)' selected. The 'Field Title' is set to '1' and 'Field Data' is set to '0'.

After the dominant browser has been “tweaked” to display the forms correctly, you may now make adjustments to other browsers/versions to make them display the forms correctly. Offsets specific to a browser are contained in the “Browser-Specific Offsets” section of the “Display Offsets” tab. Before you can enter browser-specific “tweaks”, that browser must view one of the forms in METEX13. When this happens, METEX13 records the identification string that the browser uses to identify itself when viewing web sites. The process of tweaking the different browser is very similar to tweaking the dominant browser. Start with a form/field, and in the “Browser-Specific Offsets” section, select the browser you want to “tweak” from the drop down browser list as shown.

## Field Configuration – Display Offset / Other Browsers

If there are settings for this browser, then they will be displayed. Make necessary corrections just as you did for the dominant browser, except that you will be entering corrections in the “Browser-Specific Offsets” section instead of the “General Offsets” section. You may need to access METEX13 first with the new browser so that it will show in the list.

If another browser/version is used in the future and you need to make corrections to the form display to compensate, then follow the same process but select that browser from the browser list and apply corrections for it.

**Here’s a tip.** You may encounter a user with a browser that has not been “tweaked”. This user may be some distance away or even in another city. Try tweaking the different browsers over the phone. For example, the administrator runs the administrative program and the user describes the field offsets. Over the phone the user could say, move the MFG label 2 characters to the left. The administrator makes the changes and tells the user to refresh his browser screen for the changes to take effect. This method has been proven even though it may take a little time to go through all the fields.

## Calibration results form Column Header

### CONFIGURATION | CALIBRATION RESULTS COLUMN HEADER

For experienced MET/TRACK users, you may have noticed that the results table does not have any type of formatting for the header. When the calibration results form is displayed in your browser, the data displayed will not have any column heading, thus making the displayed data difficult to understand.

In the large blank space, you can type a header to be displayed whenever the user requests calibration results. You may enter something like “Remarks Test Description UUT Indicated” so that this column header gives some meaning to the data displayed underneath it. The entry point for the calibration results column header is displayed below:

**Field Configuration – Calibration Results Header**

In past versions, MET/TRACK could only store the actual measurement results in a text format. The measurement results could not be separated into different fields. With version 7/8, there is the Full Results (about 250 columns) table. METEX13 supports both results formats. When viewing the “Treeview” the phrase “Cal Results” will link to the old text results format, and the phrase “Full Results” will link to the new results format.

**NOTE: There is only one result header available, so be sure to configure it to fit the results that you view the most.**

Whenever calibration results are displayed, the header row as you have entered it will be displayed. Click “Save Changes”.

Here’s a tip, you can open the Browser Page with the results displayed and overlay the Calibration Results Header above and actually line up the fields. The fonts are the same so everything will line up.

## “Tree-view” Configuration

The “tree-view” is the form that is displayed after a search is performed in METEX13. The tree-view contains links to the various forms associated with instruments returned by the query. You may customize what fields are displayed in the tree-view. Each “branch” of the tree represents a form, and the fields that identify the form can be customized. For example, if you want a calibration event displayed on the tree-view to show cal-date and due-date only, then this is where you would come to make that change.

### CONFIGURATION | TREE VIEW CONFIGURATION

Under SUMMARY FIELD DISPLAY, there are six tabs: Inventory, Calibration, Location, Maintenance, Customers, and Full Results. Each tab corresponds to the form of the same name in the MET/TRACK database. To make a field appear in the tree view, click on the appropriate tab and double-click the fields on the left to make them appear on the right pane, and appear in the tree view.

Under FEATURES, type in how many assets you want to show at once to the user in the tree-view. Keep in mind that higher numbers make it more difficult to use the tree-view and also increase the amount of data transferred to the browser. An entry of “0” (zero) allows unlimited numbers of instruments to be included on a search. Click “Save Changes” to save your work.

### Field Configuration – Tree-View

### Full Results Configuration

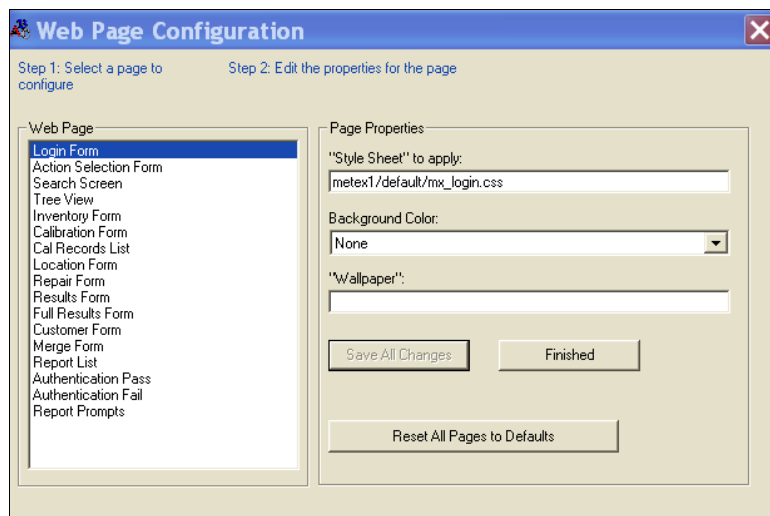
### Configuring the Full Results

The Full Results display is a new feature for METEX13. You can insert the results fields into the web display. However, there are some rules to note. The “Remarks” and “Test Description” fields are always hard-coded into the left side of the form. They cannot be removed. The Test Status Field is also hard-coded into the form, but it can be moved into a different position. The tol\_err and TUR fields, if used, are always positioned in a fixed position on the form. The form will work best if Test Status is located to the right side of the form. You can insert other variables like “High Limit” and “Low Limit” in the form or any of the other variables that are in the list. By double-clicking on the fields, you can have them displayed or removed from the form.



## Web Page Configuration

### CONFIGURATION | WEBPAGE CONFIGURATION



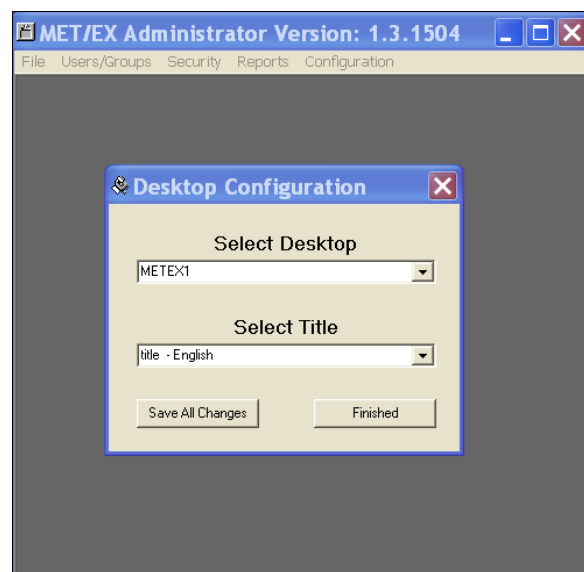
For each of the web pages that are generated automatically by METEX13, there are three properties that can be configured for each. To change the properties for a page, select the page from the list on the left, and modify its properties on the right. The background color can be selected from a drop-down list of available colors. Default file sheet names are automatically inserted for each web page. It is possible to modify these sheets. The “Style-Sheet” and “Wallpaper” properties are covered in more detail in Appendix B. Click “Save Changes” to save your work.

#### Field Configuration – Web Page Properties

The new METEX13 is automatically configured to use the specific style sheet shown in the screen above. This occurs during the upgrade and new installation process.

Clicking on “Reset All Pages to Defaults” will insert the default CSS file names. Default for the Wallpaper entry is set to “Blank” and the Background Color is set to “None”.

## Desktop Configuration (New)



### CONFIGURATION | DESKTOP CONFIGURATION

METEX13 has a new Desktop Configuration option. You can easily select the Desktop and choose the supported language. Click “Save Changes” to update the configuration.

The new Desktop feature can easily reduce the time it takes to create the screen views for METEX13. By using the MET/TRACK screen configuration, you can quickly create the new screens for METEX13. Only the browse screens on used by METEX13, so those are the only screens that should be configured.

#### Desktop Configuration



## Creating/Configuring Reports

There are two types of reports that can be made available to METEX13 users: SQL and Crystal. SQL Quick reports are simple database queries that return a set of data that is displayed to the user in a report-style format. **You must have Crystal Reports version 10 or higher to use Crystal Reports with METEX13.** Creating reports with prompts have been changed for METEX13 and there are many new capabilities. Previous versions of Metrology Xplorer had different configuration tools for SQL and Crystal Reports. This is now a consolidated procedure. There are new functions for renaming and cloning reports. You can also select between Active and Inactive reports. There are also the radio buttons to select between SQL and Crystal Reports. The screen below displays the new prompt configuration under the Prompt tab.

**Add/Edit/Remove Reports**

Step 1: Select a Report to modify, or click on Add Report to create a new Report

Step 2: Edit Report Properties

Reports: Instruments Due by Date Range

Report Properties

Report Details Prompts

Prompt	Replace String	Default Value	Type	DB	Table	Column	Custom	Force
Select a Start Date	\$startdate\$	Today	Date	N	NONE	NONE	N	V
Select an End Date today	\$enddate\$	today	String/Text	N	INVENTORY	I4205	N	V

You must click the Save Changes button after Adding/Editing/Removing Prompts and when saving Report Properties and Cloning Reports

Buttons: Add Report, Edit Report Title, Clone Report, Remove Report, Add Prompt, Remove Prompt, Edit Prompt, Save All Changes, Finished

Report Type: ☒ SQL Reports ☐ Crystal Reports

Report Status: ☒ Active Reports ☐ Inactive Reports

The Screen below shows the SQL window under the Report Details tab.

**Add/Edit/Remove Reports**

Step 1: Select a Report to modify, or click on Add Report to create a new Report

Step 2: Edit Report Properties

Reports: Instruments Due by Date Range

Report Properties

Report Details Prompts

SQL Statement or Report File Name

```
select i4201, i4202, i4203, i4204, i4234, c2301, C2303, mt.inventory.mtag, ctag from mt.inventory, mt.calibration where c2303 <= today(*) and mt.inventory.mtag=mt.calibration.mtag and c2339=1 and i4299 = 'A' and c2303 >= $startdate$ and c2303 <= $enddate$ order by c2303 asc
```

☒ Link to forms on key data fields

Buttons: Add Report, Edit Report Title, Clone Report, Remove Report, Save All Changes, Finished

Report Type: ☒ SQL Reports ☐ Crystal Reports

Report Status: ☒ Active Reports ☐ Inactive Reports

### SQL Report Configuration

The screen below shows the new Crystal Report configuration where the file is selected and the report output type is also selected. The prompts function is the same for SQL and Crystal reports. Having the same functionality for both report types saves time and there is no additional learning curve.

**Add/Edit/Remove Reports**

Step 1: Select a Report to modify, or click on Add Report to create a new Report | Step 2: Edit Report Properties

**Reports**

- Due Date with Chart and Date Range - Crystal Reports
- Due Date with Chart and Date Range Exported to Excel
- Instrument Lookup Report by Manufacturer - Crystal

**Report Properties**

Report Details | Prompts

Report Filename: metex1-due-report-with-date-prompts-charts.rpt

File Properties: PDF

SQL Statement or Report File Name

☒ Link to forms on key data fields

Save All Changes | Finished

**Report Type**

☐ SQL Reports ☒ Crystal Reports

**Report Status**

☒ Active Reports ☐ Inactive Reports

Add Report | Edit Report Title

Clone Report | Remove Report

## SQL Quick Reports

### REPORTS | ADD/EDIT/REMOVE REPORTS

Here you can draft SQL statements to be read directly by the database engine (server). Writing a direct query can be more versatile and faster than calling a standard Crystal report. If you are unfamiliar with writing an SQL statement, please use the Crystal Reports writer to make a report to be called by METEX13. If you are familiar with SQL, keep in mind that you won't be able to write destructive commands here; only queries are allowed.

**Add/Edit/Remove Reports**

Step 1: Select a Report to modify, or click on Add Report to create a new Report | Step 2: Edit Report Properties

**Reports**

- Instruments Due
- Instruments Due by Date Range

**Report Properties**

Report Details | Prompts

SQL Statement or Report File Name

select i4201, i4202, i4203, i4204, i4234, c2301, C2303, mt.inventory.mtag, ctag from mt.inventory, mt.calibration where c2303 <= today(\*) and mt.inventory.mtag=mt.calibration.mtag and c2339=1 and i4299 = 'A' and c2303 >= '\$startdate\$' and c2303 <= '\$enddate\$' order by c2303 asc

☒ Link to forms on key data fields

Save All Changes | Finished

**Report Type**

☒ SQL Reports ☐ Crystal Reports

**Report Status**

☒ Active Reports ☐ Inactive Reports

Add Report | Edit Report Title

Clone Report | Remove Report

Some examples of SQL statements, along with a discussion of using more advanced SQL queries in METEX13 are covered in Appendix C.

**Add/Edit/Remove Reports**

Step 1: Select a Report to modify, or click on Add Report to create a new Report

Step 2: Edit Report Properties

**Reports**

- Instruments Due
- Instruments Due by Date Range

**Report Properties**

Report Details | Prompts

select i4201, i4202, i4203, i4204, c2301, c2303, mt.inventory.mtag, ctag from mt.inventory, mt.calibration where c2303 <= today(\*) and mt.inventory.mtag=mt.calibration.mtag and c2339=1 and i4299 = 'A' and c2303 >= '\$startdate\$' and c2303 <= '\$enddate\$' order by c2303 asc

**Add/Edit/Remove Reports**

Enter a name for the new report:

Instrument Lookup by Department

OK Cancel

SQL

☒ Link to forms on key data fields

Save All Changes Finished

**Report Type**

☒ SQL Reports ☐ Crystal Reports

**Report Status**

☐ Active Reports ☒ Inactive Reports

### Adding an SQL Report

To add a new SQL report, click “Add Report”. You will be prompted to type the name of a new report. In this example we added “Instrument Lookup by Department”. Under the Report Details tab, type in the SQL statement you want to have METEX13 execute. Some examples of SQL statements, along with a discussion of using more advanced SQL queries in METEX13 are covered in Appendix C. We have created the following SQL statement to start with:

```
select i4234, i4201, i4202, i4203, i4204, c2301, c2303, mt.inventory.mtag, mt.calibration.ctag
from mt.inventory left outer join mt.calibration on mt.inventory.mtag = mt.calibration.mtag where (c2339 is
null or c2339 = 1)
```

This report will display all the assets whether or not they have calibration records. There has not been any prompts added. Whenever a new report is added, it is always configured as an inactive report to keep it from accidentally being displayed. When this report is executed, the labels for the fields will automatically be added. You can change a label for a field by adding the label in the SQL statement.

**Add/Edit/Remove Reports**

Step 1: Select a Report to modify, or click on Add Report to create a new Report

Step 2: Edit Report Properties

**Reports**

- Instrument Lookup by Department

**Report Properties**

Report Details | Prompts

select i4234, i4201, i4202, i4203, i4204, c2301, c2303, mt.inventory.mtag, mt.calibration.ctag from mt.inventory left outer join mt.calibration on mt.inventory.mtag = mt.calibration.mtag where (c2339 is null or c2339 = 1)

SQL Statement or Report File Name

☒ Link to forms on key data fields

Save All Changes Finished

**Report Type**

☒ SQL Reports ☐ Crystal Reports

**Report Status**

☐ Active Reports ☒ Inactive Reports

You can also provide prompts (questions) to the user. These prompts can be used to limit the query to more specific data, such as inventory for a certain department, or calibrations due by a certain date. SQL prompts are handled simply by replacing a key phrase in the query with information that the user enters. For example, to select a list of instruments for a certain department, create an SQL statement to select these instruments, but instead of specifically naming the department, put a key phrase such as \$DEPT\$ in the SQL statement where the department would normally go. Consider the following statement:

We are going to add a prompt to the example SQL query and add a tag name for the department \$dept\$.

```
select i4234, i4201, i4202, i4203, i4204, c2301, c2303, mt.inventory.mtag, mt.calibration.ctag
from mt.inventory left outer join mt.calibration on mt.inventory.mtag = mt.calibration.mtag where (c2339 is
null or c2339 = 1) and i4234 like '%dept%'
```

Click on the Prompts tab.

**Add/Edit/Remove Reports**

Step 1: Select a Report to modify, or click on Add Report to create a new Report | Step 2: Edit Report Properties

**Reports:**

- Instrument Lookup by Department
- Instruments Due
- Instruments Due by Date Range

**Report Properties:**

Report Details | Prompts |

Prompt:  ☐ Enable Custom Validation

Replace:  Custom Validation Values

Default:

Type:

☒ Enable Database Validation

Validation Table:

Validation Column:

☒ Pick List ☐ Valid List

You must click the Save Changes button after Adding/Editing/Removing Prompts and when saving Report Properties and Cloning Reports

**Report Type:**

☒ SQL Reports ☐ Crystal Reports

**Report Status:**

☒ Active Reports ☐ Inactive Reports

### Adding a Prompt for an SQL Report

In the screen above, we have some new features for prompts, including validation and pick-lists. We have entered the message for the user, identified the tag name for the prompt (\$dept\$), added a default wild-card character (%), and enabled a pick-list field to be displayed in the report. You can also enable a custom validation, even for fields that are not validated in MET/TRACK. In our sql statement, we used the "like" function which will allow the query to use a wild-card character. If the prompt uses the % wild-card character, then all the assets for all departments will be displayed. If the user enters or selects a department from the validation, then only those assets for that department will be displayed.

The new report configuration will allow the editing of prompts as well as the reports. After entering the prompts, click "Done", and then select "Save All Changes".

When we run the report in the web browser, the prompt is shown below. Our default value is the % character which will show all the assets and departments.

Metrology Xplorer | Report Prompts | INSTRUMENT LOOKUP BY DEPARTMENT

Select the Department: % 412374

Submit

### Selecting a Pick List Prompt for an SQL Report

We have selected the department for our report from the drop down list. The value is entered into the left side of the field and has replaced the default value.

Metrology Xplorer | Report Prompts | INSTRUMENT LOOKUP BY DEPARTMENT

Select the Department: 412404 412404

Submit

When we select the Submit button the report executes and the output is shown below.

Metrology Xplorer | INSTRUMENT LOOKUP BY DEPARTMENT

Cost Center	Asset No.	Manufacturer	Model	Description	Cal-Date	Due-Date
412404	TDS420	Tektronix	TDS420A	OSCILLOSCOPE	23-Aug-12	24-Aug-13
412404	PH0367	SENSOTEC	LV/B466-04		11-Apr-08	28-Aug-13
412404	al0409	Bruel & Kjaer	4188	Microphone		
412404	TDS540B	Tektronix	TDS540B	OSCILLOSCOPE	12-Sep-06	22-Mar-13
412404	SAMPLE-5700	FLUKE	5700	CALIBRATOR	29-May-08	15-Oct-13
412404	SAMPLE-VM2616	FAIRBANKS	42342334		14-Jul-08	26-Sep-13
412404	VM0169	FLUKE	87	DVM		

Total number of records for this report: 7

### SQL Report Report Output in a Web Browser

There are all kinds of possibilities for complex reports with multiple prompts. Using the field validations and custom date prompts, many different types of reports can be created. In report shown above, you can also click on the Asset Number and Cal Date columns, and the report will drill down to the actual screen with all the data fields.

## SQL Quick Reports and Segregation

Segregation is a popular topic because of security issues. Segregation allows the users to view only the section of the database that they are associated with. Remember, the segregate must exist first and the user must be part of a segregate. Let's look at an example. Let's assume that we have a user who belongs to the MECH segregate. He is only interested in mechanical tools. For your purposes, this segregate could be a department or a cost center. When this user logs in to look at the screens, the system will only retrieve information for this segregate. Here is an example SQL statement for segregation in reports:

```
select i4201,i4202,i4203,i4204,c2303 from mech.inventory,mech.calibration where c2339=1  
and mech.inventory.mtag=mech.calibration.mtag
```

Notice that we have to define the MECH segregate where the tables are linked together. If this user attempts to run a report for any other segregate, the system will generate an error screen and no data will be returned. If you segregate the database and the users, be sure to create reports for each segregate.

If you have several segregates, we suggest copying and pasting and then edit the segregate. For example, if we had an ELECtrical segregate, we could paste the SQL statement in our new report and change the MECH to ELEC. Another helpful tip, when creating reports, try using the SQL Editor first. You can easily debug the report first, then add it to the administration program, and add the prompts last. The prompts will not work in the SQL Editor.

## Crystal Reports

### REPORTS | ADD/EDIT/REMOVE REPORTS

**Crystal Report Details with File Output Type**

To add an existing Crystal Report's report to METEX13, you should have already created one in the Crystal Reports editor, and copied it to the shared Reports directory where you have the Metex1 reports saved. It is also important to make sure that the admin program can locate these reports as described earlier regarding the Local Configuration Settings. In the screen shown above, the Report Details show the report file-name and output type. The default output is PDF, but the system also supports spreadsheets and word processor documents. **Note: The link forms on key data fields does not have any affect on Crystal Reports and only works with SQL reports.**

The screen below shows that the “Instrument Lookup Report by Manufacturer – Crystal” report uses a prompt and has a pick-list selected. Under the Force heading shown below, the values can be N – None, P – Pick-list, or V – Validated. The Pick-list option allows to select from a list or the user can type in a value.

**Add/Edit/Remove Reports**

Step 1: Select a Report to modify, or click on Add Report to create a new Report | Step 2: Edit Report Properties

**Reports**

- Due Date with Chart and Date Range - Crystal Reports
- Due Date with Chart and Date Range Exported to Excel
- Instrument Lookup Report by Manufacturer - Crystal**

**Report Properties**

Report Details | Prompts

Prompt	Replace String	Default Value	Type	DB	Table	Column	Custom	Force
Select the Manufacturer or ALL	\$mfgprompt\$		String/Text	Y	INVENTORY	I4202	N	P

You must click the Save Changes button after Adding/Editing/Removing Prompts and when saving Report Properties and Cloning Reports

Buttons: Add Report, Edit Report Title, Clone Report, Remove Report, Add Prompt, Remove Prompt, Edit Prompt, Save All Changes, Finished

Report Type: ☐ SQL Reports ☒ Crystal Reports

Report Status: ☒ Active Reports ☐ Inactive Reports

The report prompts the operator to select from the Manufacturer list or enter ALL. The formula in the report will differentiate between the using ALL or the manufacturer list. The prompt tag name is \$mfgprompt\$. Using a prompt for the SQL reports is exactly the same as Crystal Reports. There is no difference.

**Add/Edit/Remove Reports**

Step 1: Select a Report to modify, or click on Add Report to create a new Report | Step 2: Edit Report Properties

**Reports**

- Due Date with Chart and Date Range - Crystal Reports
- Due Date with Chart and Date Range Exported to Excel
- Instrument Lookup Report by Manufacturer - Crystal**

**Report Properties**

Report Details | Prompts

Prompt: Select the Manufacturer or ALL

Replace: \$mfgprompt\$

Default:

Type: String

☒ Enable Database Validation

Validation Table: INVENTORY

Validation Column: I4202

☒ Pick List ☐ Valid List

☐ Enable Custom Validation

Custom Validation Values

You must click the Save Changes button after Adding/Editing/Removing Prompts and when saving Report Properties and Cloning Reports

Buttons: Add Report, Edit Report Title, Clone Report, Remove Report, Add Prompt, Remove Prompt, Edit Prompt, Done, Cancel Prompt

Report Type: ☐ SQL Reports ☒ Crystal Reports

Report Status: ☒ Active Reports ☐ Inactive Reports

**Adding a Prompt for a Crystal Report**

## Creating a Crystal Report

At this point, there needs to be a discussion on adding a prompt for a Crystal Report. One issue with Crystal Reports is using a validated list. It can be very difficult to configure a drop down list for a Crystal Report and keep the validation updated. Usually the validation is internal to the Crystal Report and stored in the report file. With METEX13, the validation/pick-list is external to the Crystal Report and SQL Reports. This means the validation will always be updated in real time and there are no Crystal Report updates to apply.

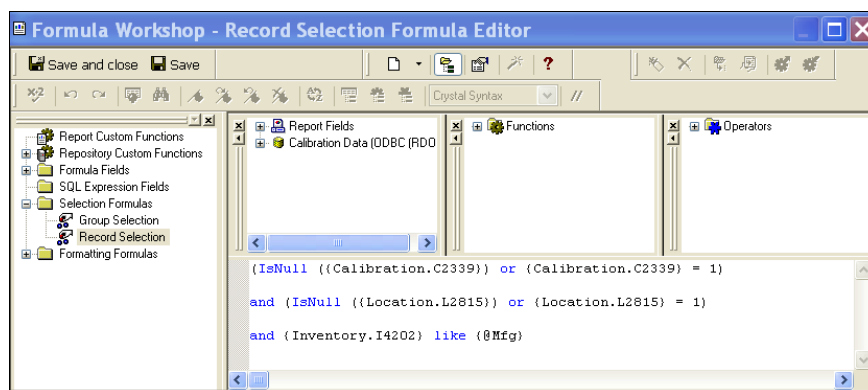
When writing Crystal Reports, the prompts are usually implemented through a parameter field. With METEX13, we do not use parameter fields, but instead use Formula Fields. When MET/TRACK for Windows was first released, Crystal Report prompts were also configured as formulas, not parameters. This process changed later in a later version of MET/TRACK because the parameters were a bit easier to implement.

Below is our example Crystal Report in design mode. You can see the fields names used on the report.

@Title						
Asset	Model	Description	Serial	User	Dept	Due Date
Manufacturer {Group #1 Name}						
4201	4203	4204	4206	2801	4234	2303

Page N of M

**Crystal Report in Design Mode**

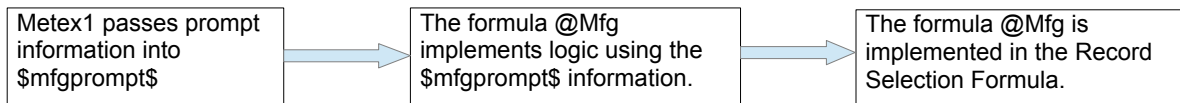


**Crystal Report Record Selection Formula**

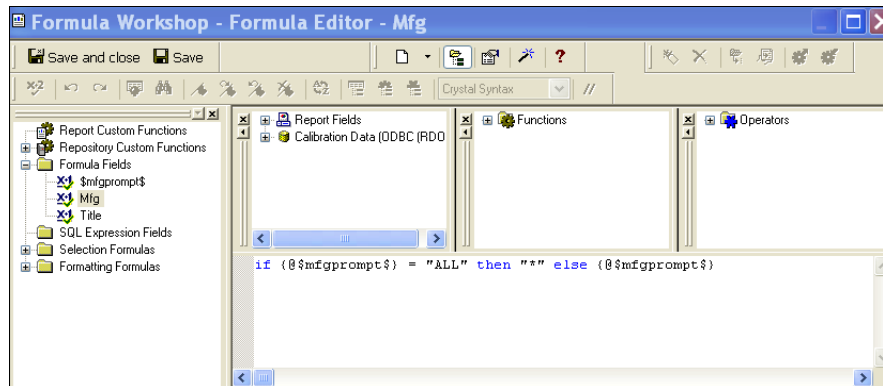
The screen shown above is the Record Selection Formula. If you look at the formula you will notice that the report is configured to display asset information even if there are no Calibration or Location records. We will want to pay attention to the formula @Mfg.



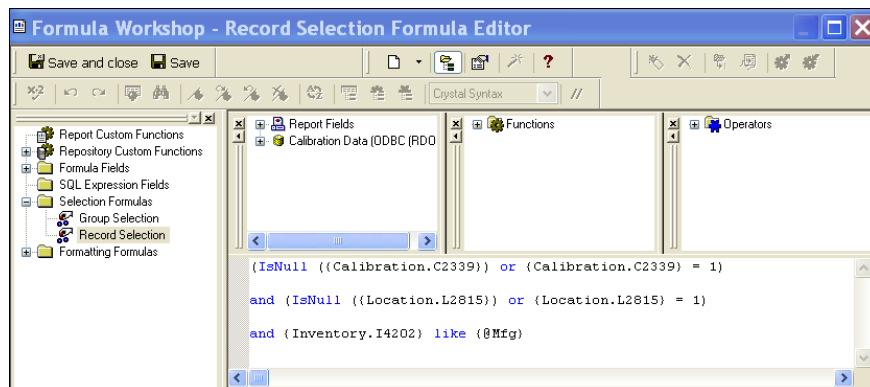
Let's take a look at the logic diagram below. METEX13 passes a prompt through the Crystal Report DLL's to the @\$mfgprompt\$ formula. The @\$mfgprompt\$ is only a place holder for the data value. The actual report value in Crystal Reports is blank.



The formula @Mfg is listed below and it very simple.



The @\$mfgprompt\$ is compared to ALL or a manufacturer value from the pick-list. Its quite simple. An asterisk (\*) in a Crystal report is a wild-card character. In the report, we could have had the \* as the default value, but it is a bit cleaner to have an descriptive value like ALL for the operators to use. They will have to type in the value. Going back to the Record Selection Formula, its all taken care of and the report works very well and the pick-list is always updated as changes occur.



## Crystal Report Output

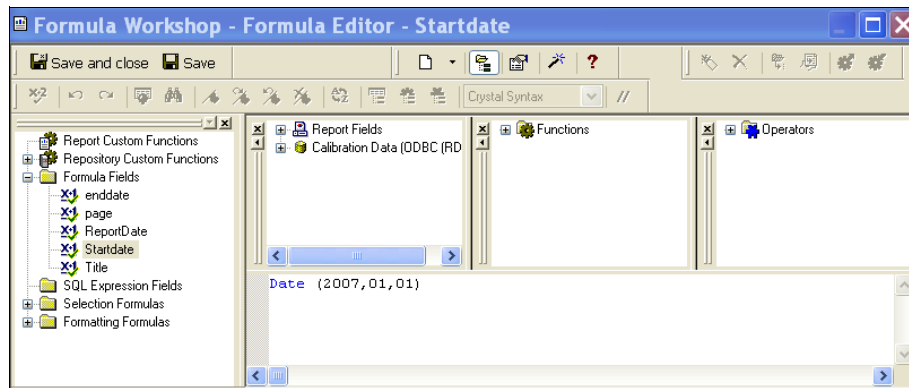
Instruments select by Manufacturer						
Asset	Model	Description	Serial	User	Dept	Due Date
<b>Manufacturer ASHCROFT</b>						
CE0010	1305	PORTABLE GAUGE TESTER & WEIGHTS	17108	DATA ACQ. GR	412624	08/10/2013
CE0034	1305D-50	PORTABLE GAUGE TESTER	11329	HYD LAB	412624	10/05/2013
CE0036	1305D-50/BA-350	PORTABLE GAUGE TESTER	2KH-04372	DRIVE TRAIN	412624	04/08/2013
PH0407	B424B		K42081	ENG GROUP	412374	
PH0409	B424B		K42084	ENG GROUP	412374	

The Crystal Report is a PDF (Portable Document Format) output and will print perfectly. Prompts in METEX13 are in 4 formats; Dates, Strings, Time, and Numbers.

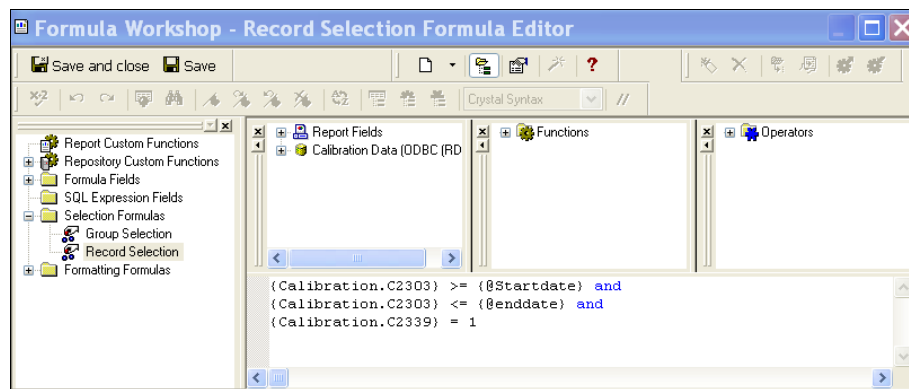
### Using Dates in a Crystal Report

Date ranges are always important when using Crystal Reports and dates are easy to implement. METEX13 now uses a drop down calendar function that stores the date in yyyy-mm-dd format. Since the operator is actually looking at a calendar, it does not matter to them what the date format looks like when it is passed to the report through the Crystal DLL.

Below is an example of a place holder for a date in Crystal Reports. The formula StartDate will be used in the Crystal Reports Record Selection Formula.



We used the Date function in Crystal Reports and it defaults to yyyy,mm,dd. This works perfectly with the Record Selection Formula as shown below.



### Passing Date prompts in METEX13 to Crystal Reports

### Custom Validation Prompts

You can use the custom validation prompt feature for Crystal Reports and SQL Reports. The benefit for using this feature is restricting the selection of information for the user. For example, you might want to allow a search on statuses for certain assets. Some companies have many statuses, but you may only want certain statuses searched on. This feature works great for that.

**Note:** When using the custom validation feature, this feature will override using the validation and pick-lists. It is not intended to be used in a combined mode with those features.

## Segregation and Crystal Reports

Segregation with Crystal Reports is possible, but you will have to build the reports with the Segregated Tables. If you have a report that uses “mt.inventory” for the inventory table, the corresponding segregated table will have to be used. For example, if you have a group of users connected with a MECHANICAL segregate, then the inventory would have to be mech.inventory. A drawback of using Crystal Reports for segregation is that there is not an easy way to convert a report for all users to a report for segregates. You will also have to use the historical tables that are also segregates. A simple report for our example would link “mech.inventory” and “mech.calibration” with mtag.

A good way to test your report is to run it in Crystal Reports first before adding it to METROLOGY XPLOER.

## Using Cal Lists with Crystal Reports

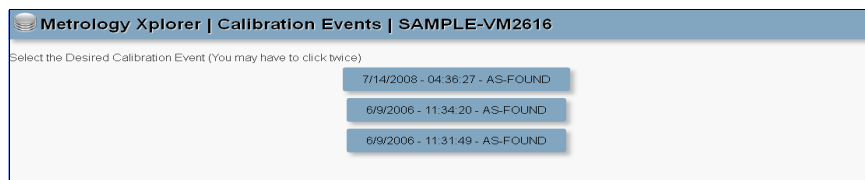
A feature of METEX13 is the use of stored procedures and being able to select a cal history for the report. This was a much-requested feature from our customers. There are basically two types of Crystal Reports:

- Reports that use individual tables that are linked together.
- Reports that use stored procedures.

Stored procedures have the advantage of running very fast. MET/TRACK uses stored procedures for reports such as calibration certificates. With METEX13, you can run a report that uses a stored procedure for calibration results. There are some rules:

- The procedure that is called must use ASSET\_CTAG for the parameter. However, in METEX13, you create a prompt that will ask for an asset number. METEX13 knows that a report using a ASSET\_CTAG will require an asset number prompt.
- Using a stored procedure with a ASSET\_CTAG parameter will automatically display a list of calibration events. These events are sorted by Cal Date, Cal Time, and Found/Left status.
- At this time METEX13 only supports stored procedures using ASSET\_CTAG as the parameter.
- You must create a prompt for the UUT Asset Number to run reports with the stored procedure.

When you run a report, METEX13 will prompt for the asset number and then a list of cal records is displayed. Here is an example:



After this list is displayed, you click on the link for the desired report and the report will be displayed.

### Calibration Lists Display using Crystal Reports

There are some things to note. First, if you want to print more than one report calibration history for the same asset, you will have to click at least twice on the same link to reset the report to the new history.

It is probably preferable to go back to the report prompt for the asset number and start over. If you click a link and the report does not display after the Windows hourglass disappears, click the link again.

## Basic Security Topics

When first installed, METEX13 does not ask for user identification (logins). All activities are performed as part of the default “MT” group. Adding/Removing/Editing groups are covered in the section titled “Advanced Security Topics”.

Previous versions of Metrology Xplorer allowed the administrator to add/remove MET/TRACK users. This capability has been removed because it would conflict with Desktops. Any users should be added or modified using the MET/TRACK application.

## Advanced Security Topics

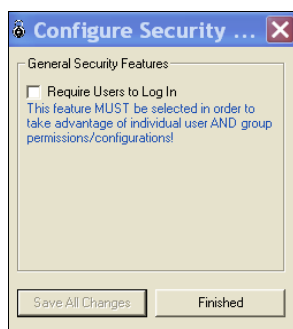
### Overview

When first installed, METEX13 does not have user logins enabled by default. The permissions of all users that access METEX13 are those of the default “MT” group.

Without first “activating security” in METEX13, users will not be asked to login and therefore cannot be assigned privileges or access rights. When users log in, METEX13 determines what privileges to assign based upon the group the user is assigned to. After a user has logged in, the session is assigned an identification that is stored in the web browser in the form of a “cookie”. Session properties are discussed later in this section.

Security features are first activated in the METEX13 Administrator by selecting the following menu options:

### SECURITY | CONFIGURE SECURITY FEATURES



Check this box to force users to log into your database. Remember that the users will need to have “cookies” enabled on their browsers for session settings to be recorded. Refer to the help menu in your browser about cookies if you are unsure about how to enable this feature.

After selecting the “Require Users to Log In” option, users will be asked to login using their MET/TRACK usernames and passwords. After a successful authentication, a session confirmation is sent to the web browser and the user may proceed to access METEX13.

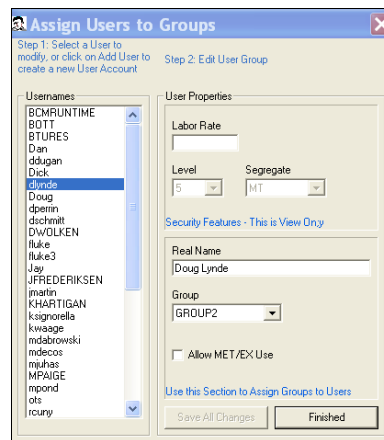
Click “Save Changes” to save your work.

### Enabling Security Login

## Adding Users to Groups

### Users/Groups | Assign Users to Groups

If you are going to implement the login security feature with METEX13, then you can assign MET/TRACK users to Groups. The Groups are created in another part of the admin program, but the picture at right shows how to assign users to groups. Select the user, select the Group, and Save Changes. You cannot change user levels or segregates. Those fields are displayed for information only.



### Assigning Users to Groups

## Group Creation/Modification

A group is a collection of users that share the same privileges. You may choose what reports the group can execute, when members of the group can access METEX13, and other such functions. When METEX13 is first installed, the default group of "MT" is created, and all users assume the privileges of this default group.

Assigning users to groups allows the administrator to tailor privileges for several people at once, and also allows for easy expansion of the user base.

For example, you could create a group for technicians, assign privileges and reports appropriate for technicians, and assign users (technicians) to this group. You could have a group for managers and have privileges appropriate for managers, along with reports that are useful for managers.

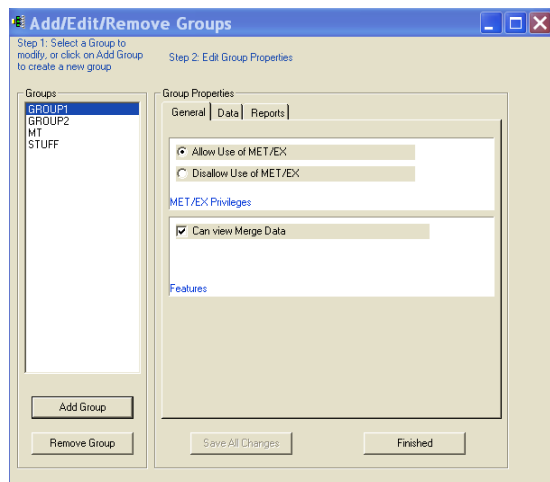
To create or modify groups, use the METEX13 administrator and select the following menu options:

### USERS/GROUPS | ADD/EDIT/REMOVE GROUPS

To create a new group, follow the steps listed below:

#### Step 1:

Create a new group by clicking on Add Group and entering a name for the new group in the box that appears and click OK. The group name should be somewhat descriptive to what the group does, such as 'validation' or 'QA'. You may also remove a group by highlighting the group and then clicking the REMOVE GROUP button. Keep in mind that all new users that are created are assigned to the MT group. Afterwards, you may put these users into another group. **When adjusting the features in the following sections, make sure that you have highlighted the correct group.**



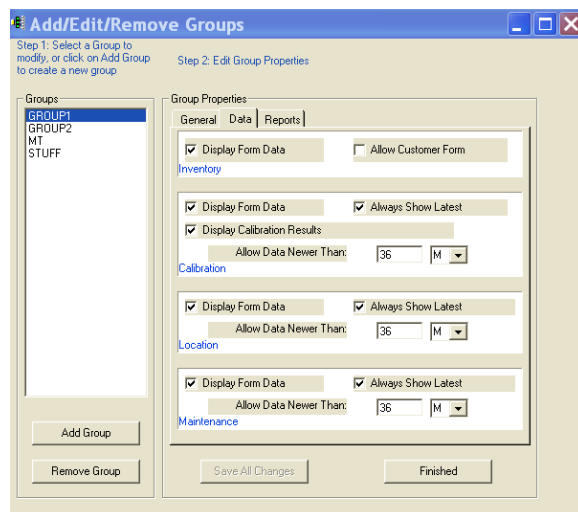
#### Adding New Groups

#### Step 3:

On the DATA tab, choose what forms the groups will see by checking the DISPLAY FORM DATA box for the appropriate table (Inventory, Customers, Location, Calibration, Maintenance). For example: If you don't want a group to see the Location screen, then you would un-check the DISPLAY FORM DATA box for location.

#### Step 2:

Adjust the properties of the group. On the GENERAL tab, you can allow or disallow the group to use METEX13 by toggling the radio buttons. You also can allow or disallow the group to view merge tables by checking or un-checking the CAN VIEW MERGE DATA box. Merge tables are tables that are associated with fields in a particular table. When you check this box, the title of the merged field is hyper-linked in the user's browser. Refer to your Fluke manual for more information on merge tables.

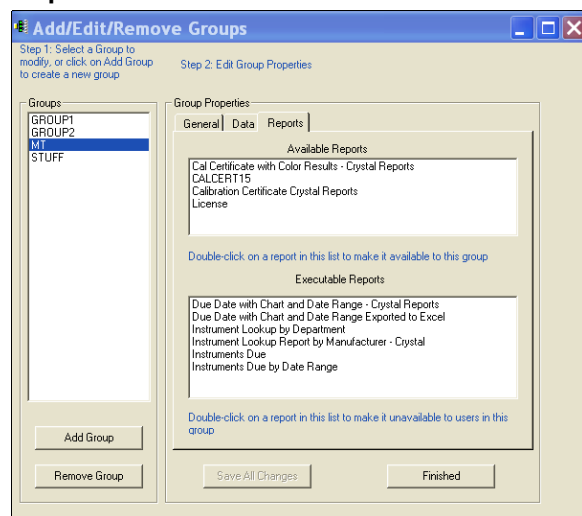


#### Configuring Group Data Properties

**Step 4:**

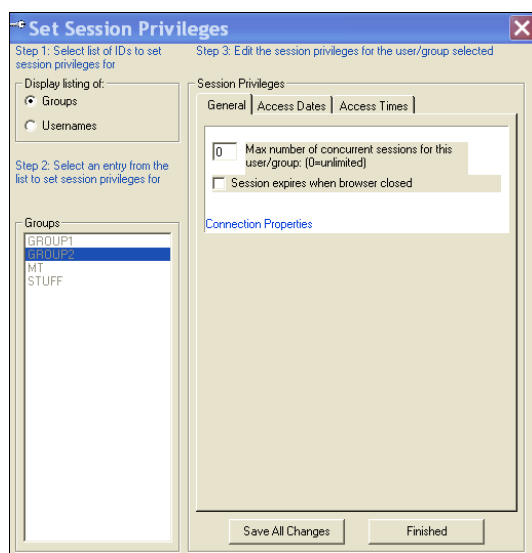
Determine how far in the past a group can view calibration records. Enter any natural number (positive integer) and pick a letter (D)ays, (M)onths, (Y)ears for the ALLOW DATA NEWER THAN boxes. Check the ALWAYS SHOW LATEST boxes if you want to show the latest records first.

**NOTE:** The Maintenance Forms in MET/TRACK work differently than the other historical records. There can be several current records, one for each maintenance type. If you check the “Always Show Latest” record box for Maintenance, then multiple records may appear, but they will be the current record for that Maintenance type.

**Step 5:**

In the REPORTS tab, you will find two panes. The top pane contains reports that are available for use, but cannot be executed. The bottom pane contains reports that can be executed. To make a report executable by a group, double-click on the report in the top pane to place it in the bottom pane. To make any report unavailable for use by a group, double-click on it from the bottom pane to place it in the top pane.

When you are finished in this section, click **Save Changes** and **Cancel/Exit**.

**Configuring Group Report Properties****Sessions**

A session is a period of access time beginning with the initial login of the user and lasting until a date/time configured by the METEX13 administrator. If the user attempts to login to METEX13 at a time that falls outside of the allowable session date/time range, then the login attempt is denied. You may define session privileges by group and by user. Thus, while a user is a member of a group that has certain session privileges, you may further restrict that user's access while still allowing the rest of the group to have normal group session privileges.

To modify session privileges for a user or group, select the following menu options from the METEX13 administrator:

**SECURITY | SET SESSION PRIVILEGES**

Follow the below listed steps to configure session privileges for a user or group.

**Step 1:**

Choose to modify a group's or an individual's privileges by clicking the radio button for either GROUPS or USERNAMES. The appropriate list will show up. Highlight the group or user-name.

**Step 2:**

Modify the properties. On the GENERAL tab, set the number of browser windows that can access the database at the same time. Also, check the SESSION EXPIRES WHEN BROWSER CLOSED box if you want the user to automatically log out after they close their browser window. Set the maximum number of instances of active browsers that may access the server at any one time. Keep in mind that this will allow the user to still use other browser instances for other tasks.

**Step 3:**

Set the session access date range. If you have specific requirements regarding dates that a user may log in, such as for contractors, then check the check-box either for start, stop, or both dates. A calendar will appear with the current date as default. Using the drop-down menus, select a month, year and day for the events to occur.

**Configuring Group Access Dates**
**Configuring Group Access Times****Step 4:**

Set the access times. To set when a user or group may log in during the day, set a specific time. For example, if you have shift work, then you can allow only swing-shift workers to view their data after they show up for work by setting the time they normally come in for work.

In our example, GROUP2 will be able to log in from 8:00 AM to 5:00 PM.

## **Section 4 – Browser Configuration**



## Using your Browser

Now that you have installed the Web Server, the CGI, and the Admin Program, how do you actually get data to display on the browser? Your situation may differ because there may be issues with proxy servers. These instructions will help get you started.

Start your Web Browser and make sure you have cookies enabled. Type in the following URL:

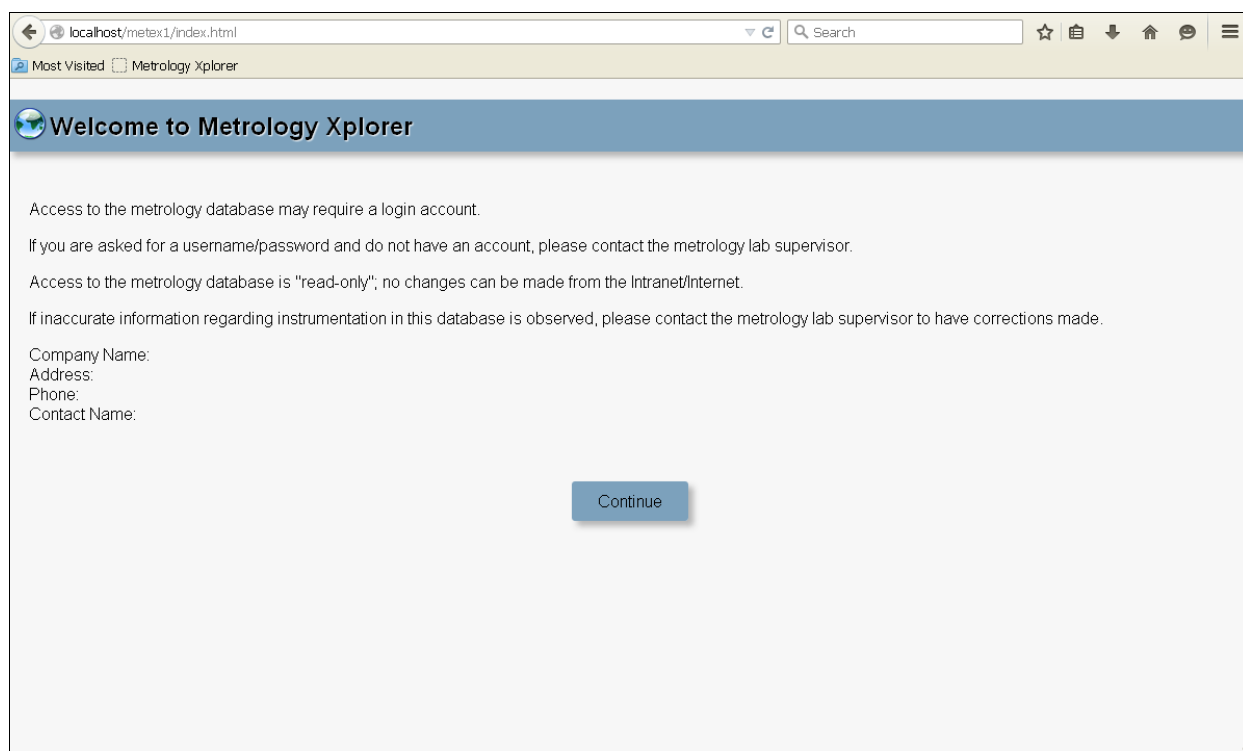
Apache Web Server / METDaemon System:

<http://<your server name>/metex1/index.html>

IIS Web Server System:

<http://<your server name>/metex1/default.htm>

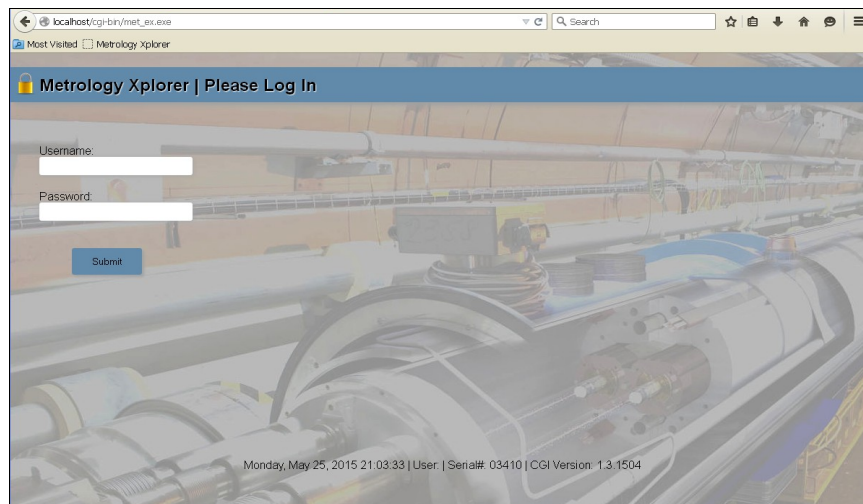
You may not have to type in the index/default part, but it is probably a good idea. Here is the system default screen:



### Initial Screen for METROLOGY XPLOER

The example shown has local host in the URL for our example. You or your company can modify this initial page to add graphics, special text, or some other information. The following pages will be automatically generated by the METEX13 system.

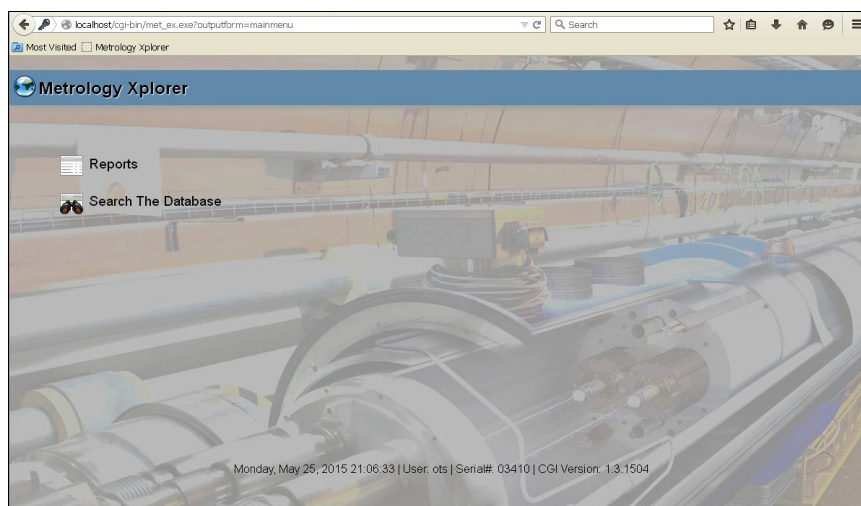
If security is enabled, you should see the following screen:



**System Login Screen**

After Logging in you will be presented with a screen either accepting your password or denying it. After you continue, you will access the METEX13 activities screen.

The METEX13 Activities Screen will display Reports, Search The Database, or both links, depending on the configuration for the user. At the bottom of the screen is the date the page was created and the user login. Click on the desired link to go to the next screen. We will click on Search the Database.



**Activities Screen**

This is the Search Screen that is automatically generated from the MET/TRACK Database in our example. Your screen will look different. We are going to type 87 in the Model field and search for Fluke 87's. You can use wildcards. METROLOGY XPLOER supports the "\*" and "?" characters. A search using the 87\* will return any model number starting with 87 whether or not there are following characters. A 87? will return a model number starting with 87 and an additional character.

You can also search on a combination of fields.

## Example Search Screen

Our Search returned three assets. What is displayed is called the Treeview. From the Treeview, you can click on a link and go to the desired screen. Remember, the system can be configured to limit events and the amount of history displayed on a per user basis.

We are going to click on the Inventory View for our example.

Asset No.	Manufacturer	Model	Description	Serial Number
SAMPLE-87	Fluke	87	DIGITAL MULTIMETER	87001001
<ul style="list-style-type: none"> <li>Calibration Events <ul style="list-style-type: none"> <li>Cal-Date: 20-Oct-12 Due-Date: 20-Oct-13 C-Tech: DICK Cal Procedure: FLUKE 87: (1 YEAR) CAL VER /5500</li> </ul> </li> <li>Location Events <ul style="list-style-type: none"> <li>Issue Date: 05-Mar-13 Return Date: 05-Mar-13 User Name: ots</li> <li>Issue Date: 26-Feb-13 Return Date: 26-Feb-13 User Name: ots</li> <li>Issue Date: 26-Feb-13 Return Date: 26-Feb-13 User Name: ots</li> <li>Issue Date: 13-Feb-13 Return Date: 13-Feb-13 User Name: fluke</li> <li>Issue Date: 13-Feb-13 Return Date: 13-Feb-13 User Name: FLUKE</li> <li>Issue Date: 13-Feb-13 Return Date: 13-Feb-13 User Name: fluke</li> <li>Issue Date: 13-Feb-13 Return Date: 13-Feb-13 User Name: fluke</li> <li>Issue Date: 09-Feb-13 Return Date: 09-Feb-13 User Name: fluke</li> <li>Issue Date: 09-Feb-13 Return Date: 09-Feb-13 User Name: fluke</li> <li>Issue Date: 09-Feb-13 Return Date: 09-Feb-13 User Name: FLUKE</li> <li>Issue Date: 09-Feb-13 Return Date: 09-Feb-13 User Name: fluke</li> </ul> </li> </ul>				
VM0139	FLUKE	87	DVM	69060329
<ul style="list-style-type: none"> <li>Location Events <ul style="list-style-type: none"> <li>Issue Date: 23-Apr-99 Return Date: (Blank) User Name: VEH DEV LAB</li> </ul> </li> </ul>				
VM0140	FLUKE	87	DVM	66190658

## Example Tree View

localhost/cgi-bin/met\_exe?inputform=formindex&outputform=form&inventory=10

Most Visited Metrology Xplorer

**Metrology Xplorer | Inventory | SAMPLE-87**

Asset No.	Capital Asset #	Accessory Asset
SAMPLE-87		
Manufacturer	Model	Serial Number
Fluke	87	87001001
Description	Category	Range
DIGITAL MULTIMETER		
Status	State	Trace Code
RETURNED	A	4
Cal Int	Type	Cost Center
365	D	412374
Special Instructions	Arrive	
	05-Mar-13	
Cal Procedure		
FLUKE 87: (1 YEAR) CAL VER/5500		
Equipment Custodian		
DOUG LYNDE		
Instrument Picture File	Allow SQL Reports	Accredited Cal
fluke87.jpeg	NO	
DateTime Entered	Who Entered	
14-Aug-96	fluke	
DateTime Modified	Who Modified	
05-Mar-13 10:09:04	BOCMRUNTIME	

**Example Inventory Screen**

Here is the Inventory Screen in our example. Your screen will look different.

Remember, you will need to tune your browser for field title alignment. This was covered under the administration section.

**This example is using the new Auto Layout feature.**

From here you should be able to navigate the system. Be sure to click on the “Back” button in your browser to go to previous screens.

## Appendix A: Using different servers for the database and web services or serving multiple MET/TRACK databases

### Overview

The instructions for installing and configuring METEX13 are written using the assumption that you are installing the web server and CGI to the same computer that is serving your MET/TRACK database, and you are only providing access to a single database. If this is not the case, then the following instructions will assist in the process of setting up METEX13 to run under these different conditions.

Warning: Using separate computers for the database and web serving functions has serious performance implications! It is not recommended that you use this configuration! In most cases, you can expect a reduction of 3-4 times (3-4x increase in delay times) using this configuration. In some cases, the use of METEX13 is impossible due to significant delay times and huge increases in network traffic. The use of separate machines for METEX13 should be carefully decided, since the use of this configuration can nullify any benefits of providing access through a web browser due to the impaired performance of the configuration.

The instructions for providing access to multiple MET/TRACK databases assume that you are running multiple databases on the same server/database engine. If you are using separate servers for each database, then you may use the normal METEX13 installation methods for each server. If you are using multiple METEX13 installations on the same site, then special licensing methods are required. Please contact On Time Support using one of the methods listed on the back cover of this manual to inquire about the licensing restrictions of METEX13.

### Installing METEX13 on a server that is not running the MET/TRACK database

Please note the warning listed above. Again, this is not a recommended configuration.

If you need to install METEX13 on a server that is not running the MET/TRACK database, then follow these instructions, referring when instructed to the appropriate section of the manual that gives details on the installation/configuration topic.

1. On the computer that is to become the web server, choose and install a web server software package. If you choose a web server that is supported in the METEX13 documentation, then you may follow the instructions in this manual for installing and configuring the web server. Please note that any mention of an IP address during the installation of the web server refers to the computer that you are installing the web server software on, not the MET/TRACK server.
2. You will probably need to install the 32-bit Sybase SQL Anywhere client software on the web server. This will allow the web server to connect to MET/TRACK. Follow the instructions in the appendix titled "32-Bit Sybase SQL Anywhere Client installation".
3. Configure ODBC on the web server. Follow the instructions listed in the chapter titled "ODBC Configuration". It is recommended that when entering the "Start Command" properties of the data source, to add the following parameter:

{host=xxx.xxx.xxx.xxx}

Add this to the end of the "Start Command" line immediately after the "-x tcpip" (no spaces following the "tcpip"). Replace the "xxx.xxx.xxx.xxx" with the IP address of the **MET/TRACK** server.

4. Install the METEX13 CGI onto the web server, using the instructions in this manual.
5. Install the METEX13 administrator utility as normal, and register the software.
6. Test the operation of METEX13, remembering that the IP address to be entered into the browser is for the web server and not the MET/TRACK server as described in the instructions. All future references to METEX13 by web browsers should be directed to the web server.

## **Serving multiple databases on the same server**

Installing and configuring METEX13 to serve multiple databases is straightforward, involving only a few additional steps to the regular installation and configuration. Here are the steps to perform if you want METEX13 to serve multiple databases on the same server:

### **Step 1:**

Install a web server software package on the MET/TRACK server using the installation and configuration instructions provided in this manual.

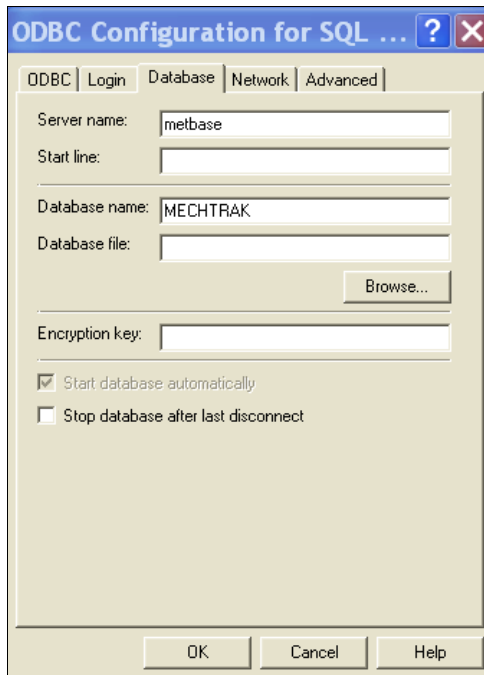
### **Step 2:**

After the web server software has been installed and configured, you will need to create additional directories under the "cgi-bin" directory that was created during the web server software installation/configuration process. For each MET/TRACK database that is being served by the database server, you must create a directory under "cgi-bin". It is a good practice to use short, descriptive names for these directories. For example, let's assume that you have two databases being served by a single SQL Anywhere database engine on the database server. One of the databases is for electrical assets and the other is for mechanical assets. In this example, you could create two directories under "cgi-bin"; one directory named "elec" and the other "mech".

### **Step 3:**

Create and configure a single data source **for each database**. For the example system given in the previous step, two data sources would need to be created, one for the electrical database and the other for the mechanical. When creating the data sources, use descriptive names. Do not use "METEX13" as the name for one of the data sources since it does not describe what database it connects to. It is recommended to use a more descriptive name, such as "Electrical", to assist with troubleshooting or upgrading METEX13 later. When configuring ODBC to connect to a database engine that is serving multiple databases, you will also need to specify the database file name in the "database name" blank. Your ODBC entry should look similar to the following picture:

You will need to enter the Server Name and the Database Name that match the configuration of your system.

**Step 4:**

Install the METEX13 CGI application into **EACH** of the subdirectories that you created in step 2. You do not need to restart after every installation, but you will need to restart after the final copy of the CGI has been installed. If it is more convenient, you may install the CGI into the first directory, and then copy the complete contents of the directory into the others that you have created.

**Step 5:**

Using notepad, or another text editor, create a file named "METEX13.ini" in each of the directories that you created under "cgi-bin". The contents of the file should look like the following:

```
DATASOURCE=xxxxxxxxx
CGIBIN=yyyyyyyyyy
```

**Configuring ODBC Sources for Multiple Databases**

Where "xxxxxxxxx" is the ODBC data source that connects to the database that the directory was created for. For example, in the previous situations listed above, in the "mech" directory, create the metex.ini text file and make the first line of the file "DATASOURCE=MECHANICAL". This will allow the CGI application located in the "mech" sub-directory to connect to the mechanical database.

Set "yyyyyyyyyy" equal to the directory where the CGI resides. For example, if you installed the CGI in the "mech" directory under "cgi-bin", then replace "yyyyyyyyyy" with "/cgi-bin/mech". NOTE: Use **forward** slashes, not reverse ones like are used with DOS and Windows. Forward slashes are the standard for web servers.

Do this for each of the sub-directories that you created.

NOTE: If you use "Notepad" to create the metex.ini file, the file may actually be named "metex.ini.txt". If this happens, you will need to change the name of the file back to "metex.ini". If the file does not have the name of "metex.ini", then the CGI will be unable to connect to your database!

**Step 6:**

On the client computer that has been designated as an administrator workstation, create multiple 32-bit ODBC data sources just as you did in step 3.

**Step 7:**

Install the METEX13 Administrator as usual and register the software. Please note that you will need to perform the registration process for each database, selecting the appropriate data source for connection to the database that you wish to register.



**Step 8:**

In order to view one of the METEX13 systems with your web browser, you need to direct it not only to the MET/TRACK server, but also to the correct directory that contains the CGI that will connect to the correct database. Using the examples given previously, if you wanted to view the mechanical database, you would enter the following URL into the web browser:

[http://xxx.xxx.xxx.xxx/cgi-bin/mech/met\\_ex.exe](http://xxx.xxx.xxx.xxx/cgi-bin/mech/met_ex.exe)

By entering this URL, the browser accesses the CGI that connects to the mechanical database, because in the “mech” subdirectory the METEX13.ini points to the “mechanical” data source.

This means that on the main introductory web page (index.html or default.htm), separate links must be provided so that the different databases can be accessed. The existing link on the sample web page looks like this:

```
<a href="../../../../cgi-bin/met_ex.exe">Access the metrology database</a>
```

You would need to add additional links (phrases just like what is listed above) for each database you would like to access. Modify the part containing “/cgi-bin/met\_ex.exe” so that it (using the mechanical database example) reads “/cgi-bin/mech/met\_ex.exe”. You will probably want to change the link text from “Access the metrology database” to “Access the mechanical database”, or something similar.

After completing these steps, it is a good idea to test each connection to the databases. Using your web browser, check each installation of the CGI by entering the URLs as listed above. Make sure that the CGI in that directory is connecting to the proper database by searching for individual assets that you know exist only in that database. You should perform this test on each of the METEX13 systems to verify proper connection to the intended database.



## **Appendix B: Customization of the METEX13 web pages**

### **Overview**

This section shows you how to customize the look of METEX13. METEX13 comes to you pre-configured with default html pages. These pages can easily be modified in the METEX13 Administrator by using several options. The different options that may be applied are: "Background Color", "Wallpaper", and "Style Sheets". Style sheets contain html code that is used to modify the current html code in the METEX13 default pages.

### **Style Sheets**

METEX13 retrieves all style sheets from the directory where your webserver application stores html pages, style sheets, code, etc. The default directory varies from webserver to webserver and may also have been changed manually by an administrator.

How to write a style sheet is beyond the scope of this manual. There are several books about how to write HTML code if you are not familiar with HTML or style sheets.

#### **Step 1:**

Inserting the style sheets is very easy. First, in the METEX13 administrator, select the CONFIGURATION | WEB PAGE CONFIGURATION menu options and simply select which METEX13 page you want to modify from the left under WEBPAGE.

#### **Step 2:**

Under PAGE PROPERTIES | STYLE SHEET TO APPLY, enter the filename only of the style sheet you want to apply. Remember, this filename must exist in the directory where your webserver keeps its style sheets. Typically, a style sheet filename ends in ".css".

### **Background Color**

For the BACKGROUND COLOR, pick a color from the drop down box. You can have a different background color for each screen and be sure to pick the appropriate screen from the list.

### **Wallpaper**

For WALLPAPER, insert the filename only of the background you want to use. This file can be in any format, but it must be in the same directory as your style sheets. It has been discovered that different browsers may not recognize certain file types like BMP's, GIF's and JPEG's. JPEG's are probably the preferred choice

You may also choose to use any combination of the above features and not all need to be used at once.

## Appendix C: Advanced SQL Report Topics

### Overview

The instructions in this appendix relate to the creation of SQL Reports for use with METEX13, using more advanced linking techniques and other features of METEX13 relating to the display of results from an SQL query.

### SQL Linking

If you have added an SQL report for use with METEX13, then you may have noticed the option “Link to forms on key data fields”. This option, when used in conjunction with a properly constructed SQL query, can allow METEX13 users to quickly view MET/TRACK forms by clicking on a link in the report. For example, if you have a report that lists overdue instrumentation, you may allow a link to the Inventory form from the report. When a user runs this report, the asset number or “I4201” field is displayed as a link, and when the user clicks on the link, the MET/TRACK Inventory form appears with information for that asset displayed. This can be a nice feature for your users.

Enabling this feature in a report requires two steps:

1. Create the SQL query, making sure to include the necessary columns (more on this later).
2. “Checkmark” the Link to forms option when adding the report in the METEX13 administrator.

The first step, creating the SQL query, involves adding a few columns to the query. The exact columns to add depends on the MET/TRACK form you are trying to link to. Refer to the following chart for a listing of the additional columns that must be returned by the query in order for the link to be generated:

Form to display	Columns that need to be present in query
INVENTORY	I4201, MTAG
CALIBRATION	C2301, CTAG
LOCATION	L2809, LTAG
MAINTENANCE	R3230, RTAG

At this time, these are the only fields that can be linked (I4201,C2301,L2809,R3230).

For example, if you would like an inventory list containing asset number (linked), manufacturer, and model number, then the query would look something like this:

```
SELECT I4201,MTAG,I4202,I4203 FROM MT.INVENTORY
```

When the output from the report is displayed, the “MTAG” column is not displayed, but is used to form the link for asset number. If you include any of the “Tags” (MTAG, CTAG, LTAG, RTAG) in your query, and the linking option is check-marked, then the Tags will not be displayed. The Tags are only used in the creation of the links.

If you use stored procedures, or other such methods to produce results for a report, and want to use this linking feature, then simply make sure that the query returns columns with the same names as listed in the table above. The best method to test the return results for proper column inclusion is to run the query in a tool such as ISQL, and observe the output from the query.

## “Merge Data” reporting

“Merge” data is additional information related to an entry in a field. For example, if you have an instrument with a manufacturer of “Fluke” listed in an inventory field, and would like to have additional information regarding Fluke (such as street address, phone number, etc.) stored in the database, you could create a Merge table using the database configuration tools provided with MET/TRACK.

Merge data is contained in a database table created when you create the merge definitions. The name of the merge table is “mrg” and the last four numbers of the field that the merge is linked to. For example, if you create a merge table for the manufacturer field (I4202), then the merge table that this data is contained in would be named mt.mrg4202.

To include data in the merge table in your SQL reports, you must link the merge table with the field that the merge data is based on. In the above example, the merge table, mt.mrg4202, needs to be linked to the manufacturer field (I4202), in order to provide meaningful results. The following SQL statements illustrate the linking of a merge table in a report:

A simple SQL statement to return asset numbers and manufacturers:

```
SELECT I4201,I4202 FROM MT.INVENTORY
```

The same statement, including “address1” and “address2” fields from the merge table:

```
SELECT I4201,I4202,ADDRESS1,ADDRESS2 FROM MT.INVENTORY LEFT OUTER JOIN  
MT.MRG4202 ON MT.INVENTORY.I4202 = MT.MRG4202.MERGE
```

When merge data is included in your reports, the column name returned by the query is the column name that will be listed in your report. When creating reports using columns from the “normal” MET/TRACK tables (inventory, calibration, etc.), METEX13 automatically translates the field number into the proper name given during customization. For example, if you include field I4202 in your query, the column name will be taken from your customization and your definition for field I4202 will be displayed, instead of “I4202”.

Since merge definitions are not customizable after you make the definitions, you may need to change the column header for a merge field in your reports. To do this, alter your SQL query slightly to include a more proper field definition than what was created previously. Consider the following example:

```
SELECT ADDRA,ADDRB,CITYA FROM MT.MRG4202
```

In the above listed example, the columns ADDRA, ADDR B, CITYA are selected from the merge table. When this report is run, the column headers displayed in the report will be ADDRA, ADDR B, and CITYA. These column headings, while making sense to the system administrator at the time of configuration, will probably be very meaningless to the user running the report. To display more meaningful column titles, modify the query as shown:

```
SELECT ADDRA ADDRESS,ADDRB P.O. BOX,CITYA CITY FROM MT.MRG4202
```

The revised query will instead show ADDRESS, P.O. BOX, and CITY. Make sure to place a space between the column name and the desired column name. When the report is run, the user will see these new column names, and understand the report information much more easily.

## Barcode Magician reporting

Barcode Magician is a separate utility offered by On Time Support used to make repetitive entries in MET/TRACK easier and faster using a keyboard or barcode system. When Barcode Magician is installed, it creates several tables in the MET/TRACK database that can be used in your SQL reports run from METEX13.

Although several tables are created, only one contains useful information for inclusion in a report – the Barcode Magician users database (table). The table name is mt.bcmusers. The contents of this table is listed below:

Column name -----	Purpose -----
USERID	User identification scanned
USERNAME	The user's real name
NOTES	Any additional notes about the user
GUESTEXPIRE	Date the user's account in Barcode Magician terminates
U0001	
U0002	
U0003	User-defined fields (configured in the Barcode Magician system configuration tool)
U0004	
U0005	
U0006	
U0007 - U0012	

A common use of this table is displaying more detailed information about a person associated with a location record entry. For this example, the Barcode Magician USERNAME is an entry in the L2801 field in location history. This query will display an instrument, its' current user, and fields from the Barcode Magician users table in the query:

```
SELECT
    I4201,
    L2801,
    U0001,
    U0002,
    NOTES
FROM
    MT.INVENTORY LEFT OUTER JOIN MT.LOCATION ON MT.INVENTORY.MTAG =
    MT.LOCATION.MTAG, MT.LOCATION LEFT OUTER JOIN MT.BCMUSERS ON
    MT.BCMUSERS.USERNAME = MT.LOCATION.L2801
```

Note that this query returns column names such as U0001, and U0002, which are not meaningful to the user running this report. It would be a good idea to modify the "select" portion of the query to something like this for readability:

```
SELECT
    I4201,
    L2801,
    U0001 Office,
    U0002 Phone Number,
    NOTES
```

This is the same method described previously in the section describing methods of linking merge tables in your SQL reports.

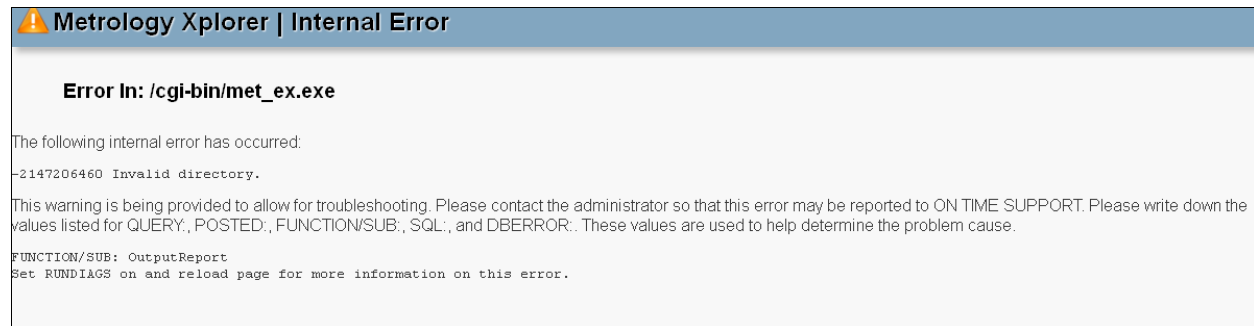
## Appendix D: Error Messages

When creating reports, you are going to encounter errors. When an error occurs, the CGI is going to generate a page with an error message. This page is meant to be used for troubleshooting. It is impossible to cover all the possible errors with this package. However, let's take a look at an error screen.

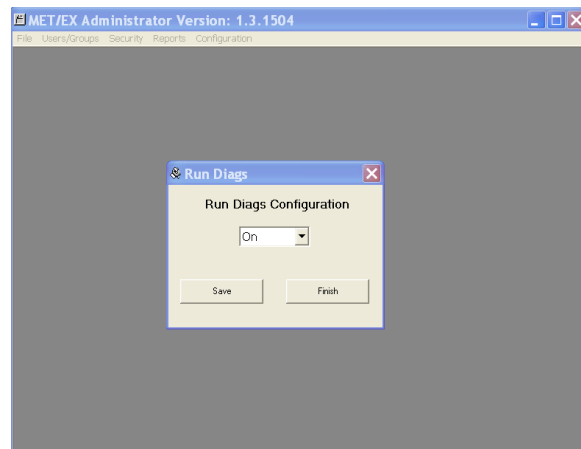
### Run Diags Configuration (New)

#### Configuration | Run Diags

We have a Crystal Report that that will not run. The error is generated below. We



#### Example Error Screen

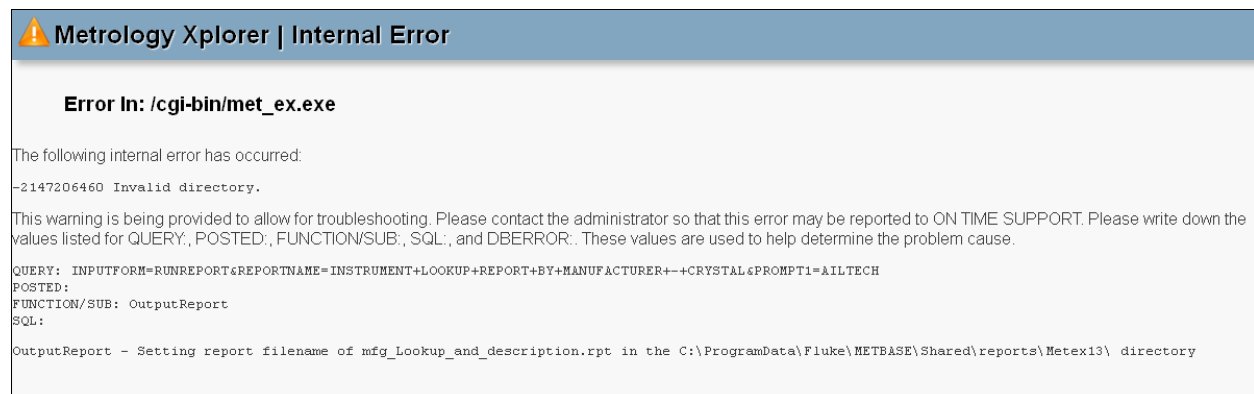


We get an Invalid Directory error. However, having more information would be helpful to locate the problem. METEX13 has a new feature to help troubleshoot problems without having to work directly from the server.

From with the Admin Program select Configuration | Run Diags. Select On and Save changes.

After running the report again, we now see a more detailed error and the directory name for the report is incorrect and has to be changed. This feature really helps to find those types of problems. Be sure to turn off the diagnostics after the problem is solved.

#### Run Diags Configuration



## **Troubleshooting the Metrology Xplorer Installation**

By its nature, Metrology Xplorer can be difficult to make operational under certain environments. Usually, when Metrology Xplorer is installed on a typical system, using the default installation method and selections, there are no problems implementing an operational system. However, under situations where the software is performing in a non-standard environment (directories in different places, using another existing web server, etc.), complications may arise that can make getting Metrology Xplorer operational more difficult.

This application note was written for those situations where Metrology Xplorer is in a non-standard installation, or there have been complications in getting the software to operate. This document is written with the assumption that you are unable to view any Metrology Xplorer screens, and that you may or may not be getting any error messages from Metrology Xplorer, or from the web server software. The assumption is also made that the troubleshooting methods listed in the Metrology Xplorer manual have not assisted in getting the system operational. It is important that you follow the instructions in this document in order from start to finish, even if you can skip a step or two if a certain section of this procedure is working correctly. Performing steps in the incorrect order may not be able to solve your problem since each test builds upon itself.

Each test in this document must pass in order for Metrology Xplorer to operate! If a test fails, then refer to instructions in the test for solutions to the problem. Do not continue until the system is able to pass the test. After correcting the problem, you may try to operate Metrology Xplorer to see if that was the problem preventing operation, or you may continue testing.

### **Test 1: Web Server Installation**

Before any other tests can be performed, you must first verify that all of the required web server software has been installed and located. It is not within the scope of this document to include troubleshooting procedures for every web server software package that Metrology Xplorer is compatible with. However, general testing procedures will be provided to verify that the web server you are using is operational and that you are comfortable with the location of special directories.

### **Step 1: Web Server Operation**

Start a web browser on the server (if a browser is installed on it). For the URL (web site) enter localhost. Do not add "www" or anything else to the location – just enter "localhost". You will see one of two types of pages displayed (possibly after several seconds), one page should be either a welcoming page (such as the "welcome to the metrology lab web site" page included with Metrology Xplorer), or an error page or message. A welcoming page may be one that is included with the web server software. For example, when Apache is installed, a test page with links to apache.org and other messages are displayed. If you see any page at all that is not an error (such as "page not found" or "site unavailable"), then your web server software on the server is operating correctly. If you received an error, then you have not installed the web server software on this computer, or it may not be running. Refer to the documentation provided with the web server software to check installation and configuration settings, and to correctly start the software.

## Step 2: Network connection to the web server

With the web server software operating correctly, the next step is to test your connection to the server. To test your network connection, start a web browser on a computer other than the server that is connected to the same network as the server. For the web site location (URL), enter the network name of the computer, or its "TCP/IP" address (such as 192.168.0.5). You should see the same web page you saw in the previous test. If you do not see this page and get an error, then you may be entering the incorrect network address or name, or you may not have a complete network connection to the server. If you are running MET/TRACK on the same server that you are attempting connection to, and MET/TRACK operates on the computer you are at now, then you are probably entering the wrong network address. Contact your Information Services department to obtain the correct network name or address for the server.

## Step 3: Web Server Directory Locations

A common problem with Metrology Xplorer installations is that the web server software is located in a directory other than what was initially thought at the time of installation. By default, Metrology Xplorer assumes that you are using Internet Information Server (IIS) as your web server software, and allows you to change the installation directory if you are using another web server (such as Apache). If the Metrology Xplorer CGI is located in a directory other than what the web server software is using, then Metrology Xplorer will not operate properly.

You will need to be located the "CGI-BIN" directory. This directory name can vary by software selected and version. The best way to find them is to locate the "top level" directory of the web server software (for example, "inetpub" for IIS or "apache" for Apache) and look below that directory for the directories that may contain HTML documents (the "htdocs" or "wwwroot" directory), and CGI applications ("CGI-BIN"). To make sure that you have located the proper directories, follow these steps:

- Start (if not already running) the web server software on the server. If you had to start the web server software, then make sure it is running properly by performing STEP 1 listed above
- Locate the "top level" directory for your web server software. For IIS, it is usually "inetpub". For Apache, it is usually located under "program files/apache group/apache". You may need to refer to the documentation for the web server software for assistance in finding this directory. You may also proceed to the next step to help you locate the "top level" directory for your web server software.
- Locate the HTML directory ("wwwroot" (IIS) or "htdocs" (Apache)) and "CGI-BIN" directories on the server. If you are not completely sure if you have found the correct directory, then this is not a problem since the remaining steps will insure if you have or have not located the proper directories. The "CGI-BIN" directory is usually named just that – you can use the "find files" utility to locate this directory if you like.
- In the directory you believe to be the "HTML" directory, create a temporary file named "test.html" and enter the following text into this new file:

```
<HTML><HEAD>This is the HTML directory!</HEAD></HTML>
```

- Start a web browser on the server (since you are already there) and enter the following for the URL: localhost/test.html. You should see a blank web page with the following text: "This is the HTML directory!". If you do, then you have located the proper "HTML" directory. If you get an error such as "page not found", then the directory you saved the test.html file in is not the "HTML" directory that your web server software is using. Perform a search on the server for files with a .htm or .html extension to locate a possible "HTML" directory. Also refer to the documentation for the web server software you are using to assist in finding this directory.
- Once the "HTML" directory has been located, the "CGI-BIN" directory may be easy to find. Usually the "CGI-BIN" directory resides under the same directory level as the "HTML" directory. Verifying the correct "CGI-BIN" directory requires that you have the latest version of the Metrology Xplorer CGI. You can obtain a complete installation from our download site at: <http://www.ontimesupport.com> to automatically obtain the latest version. Once you have obtained the latest version of the CGI, either install it (full installation) or copy it (met\_ex.exe only) into the directory you believe to be the "CGI-BIN" directory. Once you have done that, enter the following for the URL (still using the browser on the server): localhost/cgi-bin/met\_ex.exe?diag. You should see a page titled "MET\_EX.EXE CGI Output". If you see this page, then you have located the proper "CGI-BIN" directory, and have installed the Metrology Xplorer CGI into this directory. If you receive an error similar to "page not found", then the directory you are working with is not the "CGI-BIN" directory, or the directory has not been created (IIS only) correctly. Refer to the Metrology Xplorer manual or IIS documentation for creating the "CGI-BIN" directory and the associated virtual directory entry. If the browser attempts to download MET\_EX.exe rather than execute it, then "execute" permissions may not be granted on the "CGI-BIN" directory. This is usually the case with IIS; Apache already creates a "CGI-BIN" directory with execute permissions by default. Refer to the Metrology Xplorer manual for information on configuring the IIS "CGI-BIN" directory with execute permissions.

## **Step 4: CGI/Database Connection**

After you have verified that the web server software is operational, and that the proper directories have been located and the permissions are proper, then it is time to verify that the CGI can connect to the database. Most Metrology Xplorer installation problems can be traced to an inability of the CGI to connect to the database. Also, make sure that the license has been registered first from the License Registration Manager.

The Metrology Xplorer CGI uses ODBC to connect to Sybase, and usually most connection problems involve improperly configured ODBC. At this point, check your configuration of the METEX13 ODBC datasource. Refer to the Metrology Xplorer manual for screen-shots for reference if you like. Verify the proper configuration settings/steps for these items:

- Make sure the ODBC datasource name is "METEX13". The name is not case-sensitive.
- Make sure that this datasource is listed under "System DSN" and not "User DSN" or "File DSN". If it is not in "System DSN", remove this entry and add a new one under "System DSN" using settings listed in the Metrology Xplorer manual.
- Check the "options" for this datasource. This is usually a service and you can check this via Sybase Central on the server. If the "METEX13" ODBC datasource appears to be correct, then the next step is to actually attempt connection to the database with Metrology Xplorer. To do this, perform the following steps on the server:
- Open a DOS window.
- "CD" to the "CGI-BIN" directory where the Metrology Xplorer CGI resides. Edit the metex.ini file and change RUNDIAGS=ON. Save the metex.ini file. Double-click met\_ex.exe and a running.log file will be created. This file has all the connection messages and system variables. It should be easy to verify that the connection is correct. Be sure to reset the RUNDIAGS = OFF and re-save metex.ini.