Remote Pipeline®

Operation and Setup Manual

Revision 1.2

Blank Page

This manual, as well as the software described in it, is furnished under license and may be used or copied only in accordance with the terms of such license. The content of this manual is furnished for informational use only, is subject to change without notice, and should not be construed as a commitment by On Time Support, Inc.

Although every precaution has been taken in the preparation of this manual, the publisher and author assume no responsibility for errors or omissions. Neither is any liability assumed for damages resulting from the use of such information contained herein. On Time Support Inc. assumes no responsibility or liability for any errors or inaccuracies that may appear in this manual.

Except as permitted by such license, no part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, recording, or otherwise, without the prior written permission of On Time Support Inc.

All terms mentioned in this manual that are known to be trademarks or service marks have been appropriately denoted. Use of a term in this manual should not be regarded as affecting the validity of any trademark or service mark.
.

Blank Page

Table of Contents

Table of Figures

Section 1- Introduction

Remote Pipeline Overview

Remote Pipeline allows you to merge added and changed data from a remote MET/CAL Plus database (Version 7.x) with a MET/CAL Plus *Master Database*. This gives the calibration laboratory the added flexibility of performing calibrations and database updates with a remote computer and updating the master server at a later time through the company's Local Area Network (LAN) or Wide Area Network (WAN). The following diagrams show the two basic modes of operation with Remote Pipeline.
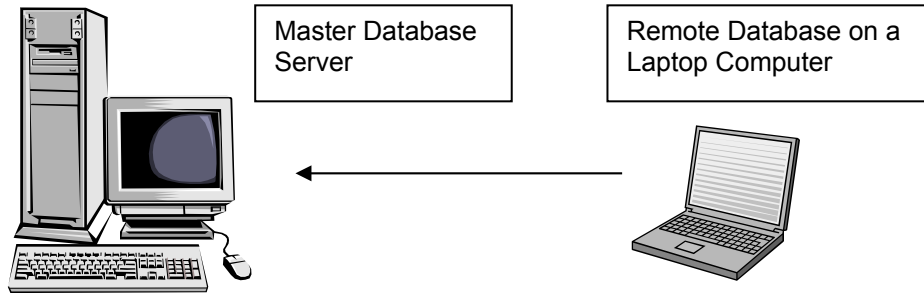
Figure 1 - Single Remote with a laptop Computer
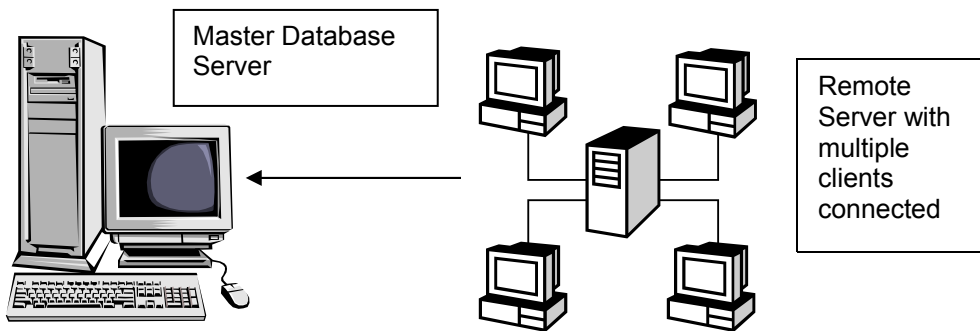
Figure 2 - Remote Server with Multiple Clients

In Figure 1, we have a simple laptop installation. The *Master Database* on the server is copied to the laptop computer. The laptop computer is operated as a standalone system. After the remote work with the laptop is completed, the additions and updates are uploaded to the *Master Database* via networking.

In Figure 2, we have a remote server with clients. The *Master Database* from the master server is copied to the remote server. The remote server operates with the client computers connected via networking. An example of this configuration might be used where a remote server is taken to another site, and connected to client computers on a small LAN to perform calibrations. After the work is complete, the remote server is connected via WAN or LAN to the master server and the updates are sent to the *Master Database*.

The following terminology is defined for this document and will aid in understanding the different operational modes of Remote Pipeline:

Replication – The process of creating a complete copy of the *Master Database* and then replacing the previous *Remote Database* with a copy of the *Master Database* on the remote system.

Synchronization – The process of updating the *Master Database* from the *Remote Database*. This process will update modified records and add new records to the *Master Database* from the *Remote Database*.

New Changes for Remote Pipeline

This version of Remote Pipeline has some new features. This product does not support the Fluke version 6.x database. Remote Pipeline version 1.1 will still support the Fluke version 6.x database.

There is a new table, mt.ots_rp_transfer_log, which keeps a record of the transfers and replications from the remote database(s) and the master database. Email Notification can be used to check this log table and send updates to the database administrator and let them know when updates were transferred and how many records were affected. There will be more of a discussion in the appendix of this manual.

This version of Remote Pipeline can be configured to run as a service as a sub server system. This allows for the sub server to be logged out

ODBC is configured differently for this version of Remote Pipeline. The Sybase Data Engine should be configured as a service for Sybase 8 and Sybase 11. This information is covered in this manual.

Remote Pipeline Restrictions

The following is a list of restrictions on the use of Remote Pipeline with the *Remote Database*:

- When using MET/CAL version 7.x, the "MT" administrator logon is disabled on the *Remote Database.* Be sure that any user accounts required by the *Remote Database* are entered into the *Master Database* before creating the *Remote Database*.
- Merge Data is not updated from the *Remote Database* to the *Master Database*. This includes any changes, additions, or deletions. However, OTS can create a modification to Remote Pipeline for an additional fee to support Merge tables, but there will be restrictions. Contact On Time Support for additional information.
- Deleted records on the *Remote Database* are not deleted on the *Master Database*. For example, if you delete an existing calibration record or inventory item on the *Remote Database*, this deletion will not occur on the *Master Database* during synchronization.
- Licenses must be installed on the *Master Database* first and then transferred to the *Remote Database* using Remote Pipeline. When the data is synchronized from the *Remote Database* back to the *Master Database*, these licenses can be transferred back to the *Master Database*. You cannot load license disks into a *Remote Database* since DBSETUP is disabled.
- There is only one level of *Remote Databases* supported in Remote Pipeline. For example, you cannot have a *Master Database* connected to a *Remote Database*, then the first *Remote Database* connected to another *Remote Database*. There is no peer-to-peer mode in Remote Pipeline. Two *Remote Databases* cannot synchronize with each other.
- Both the *Master Database* and *Remote Database(s)* must be the same version/revision of software and the database applications used on the *Master Database* and *Remote Database(s)* must be the same version and revision. Remote Pipeline supports all of the METCAL and MET/TRACK 7.x versions
- **The *Master Database* and *Remote Database(s)* must have the same physical file name for each database.** You must apply an alias name for these databases to make them appear unique through ODBC. This subject will be discussed in more detail under "Configuring ODBC".
- Remote Pipeline does not replicate or copy MET/CAL procedures and Crystal reports. It is the responsibility of the database administrator to provide the procedures and reports on the remote system. However, this function can be accomplished by using a batch file calling the XCOPY Command.
- *Remote Pipeline* users must exist in the MT segregate. They cannot be associated with another segregate.

- When using the remote database as a server (servicing multiple clients as opposed to just running standalone on a laptop), Remote Pipeline MUST access the *Remote Database* server and not a client on the remote system.
- The user must have a security level of 4 or 5 for a normal user to sync data. The MT user is OK.

Database Licenses Supported by Remote Pipeline

The following database licenses are supported by Remote Pipeline and can be transferred from the *Master Database* to the *Remote Database* and back to the *Master Database* when required:

- **MET/CAL-L** (Fluke) – Used for automated calibration systems that require IEEE-488 automation.
- **5500/CAL-L** (Fluke) – Used for automated calibration systems that do not require IEEE-488 automation. Great for manual type procedures.
- **MET/TRACK–L** (Fluke) – Used for manual data entry updates and new record database entries.
- **Barcode Magician** (ON TIME SUPPORT) – Used for automating redundant database entries such as inventory status updates and adding new location records.
- **PROCESS/TRACK** (ON TIME SUPPORT) – Used to automate the Fluke Documenting Calibrators (702, 743B, 744A) and record the data using the existing MET/CAL format.

Later in this document, we will describe the procedure to allocate licenses between the *Master Database* and *Remote Database(s)*.

Section 2-Installation

Upgrading Existing Remote Pipeline 1.1 Systems

If you are upgrading from an older Remote Pipeline version, you will need to uninstall the existing Remote Pipeline applications first. The new Remote Pipeline version 1.2 will update the existing installations after the program is installed and after the new Remote Pipeline license(s) has been registered.

Program Installation

Before actually installing the software, **the remote system must already have a standalone MET/CAL Plus installation (Version 7.x)** using a separate MET/BASE system engine than what is installed on the *Master Database*. In order for the remote system to operate properly, all of the MET/CAL applications, OTS applications, and a database have to be installed on the remote system. The customer should purchase a separate MET/BASE system engine for each *Remote Database*.

The installation procedure comprises two steps. First, the Remote Pipeline application should be installed on the computers that will host the *Remote Database(s)*. If you have more than one remote computer with a database, then Remote Pipeline will have to be installed on each remote system and each remote system requires a separate MET/BASE system engine and Remote Pipeline software license.

Second, the Remote Pipeline software will have to be registered with the *Master Database*. The software registration should be performed for each installation of Remote Pipeline.

Insert the CD into the CD-ROM drive. Select **Start** followed by **Run** and enter "D:\Remote_Pipeline_1_2_install.exe" where 'D' is the drive letter of your CD-ROM, then select 'OK'. The program default installation is in the Program Files directory on the Remote Computer. A separate program group is created for Remote Pipeline.

Software Registration

Remote Pipeline is not able to operate until it has been registered. A registration certificate may have been included in the materials that Remote Pipeline was shipped in. If no registration certificate was included, then please contact 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. **You should backup your database before installing Remote Pipeline.**

Choose a workstation that is configured for operation with the *Master Database* and close all the Fluke client applications. Make sure all users are disconnected from the database prior to installing the Remote Pipeline Program.

NOTE: If you already have Remote Pipeline installed on a version of MET/CAL and you upgrade to a newer version of MET/CAL, then you will need to re-register Remote Pipeline. Remote Pipeline is customized to the database format of each version of MET/CAL. Remote Pipeline installs the appropriate components into the database for your version of MET/CAL. Remote Pipeline cannot automatically update the database when a MET/CAL version is updated. If you have questions about this process, please call ON TIME SUPPORT for assistance.

In the "Remote Pipeline" program group (or wherever you instructed the 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/CAL 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 32BIT-ODBC data source that is used to connect to the **Master** MET/CAL database. This is normally a source called "Calibration Data".

Click on Register, and the program will install and register Remote Pipeline and update MET/CAL to allow for Remote Pipeline operation.

If there is an ODBC connection problem during the registration process, then refer to the section of this manual on configuring ODBC, and then re-register Remote Pipeline after making modifications.

Figure 3 - OTS Registration Manager

Adding additional licenses for more remote databases maybe done by entering each registration code then clicking on the [Add License Without Installing Script] button. (This is an important new feature that allows adding new licenses without having to disconnect all users.)

Blank Page

Section 3-ODBC Configuration

Creating a Database Service for Sybase Version 8 (Remote Database)

As stated earlier in this document, we are now using the Database Service to configure the remote database. This configuration is very similar to creating a service for the Master Database on the Server. After you have installed a standalone installation of the MET/CAL/TRACK Database, you should create the service. This part is quite simple. "Click Programs | SQL Anywhere 8 | Sybase Central". A screen like the one below will be displayed. Click on the Services folder.

Figure 4 – MET/CAL 7.2 – Configuring Sybase 8 Database Service
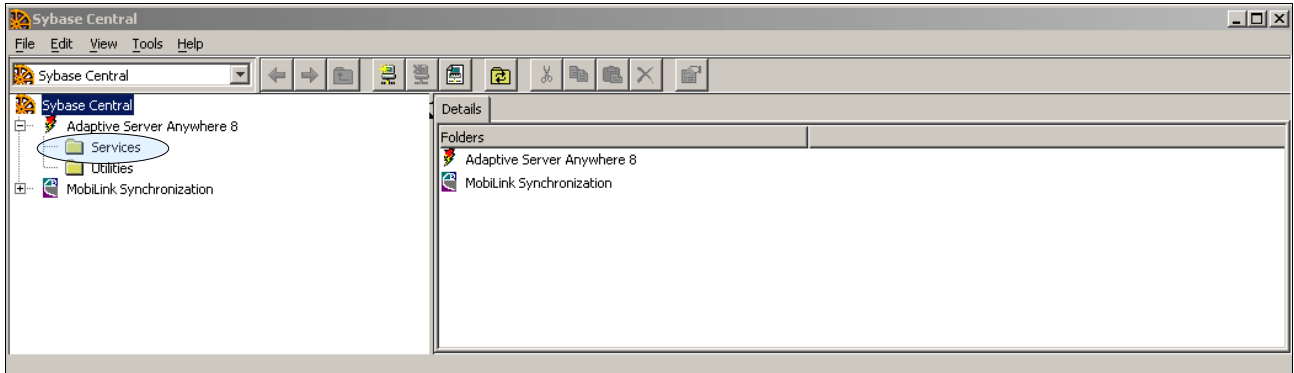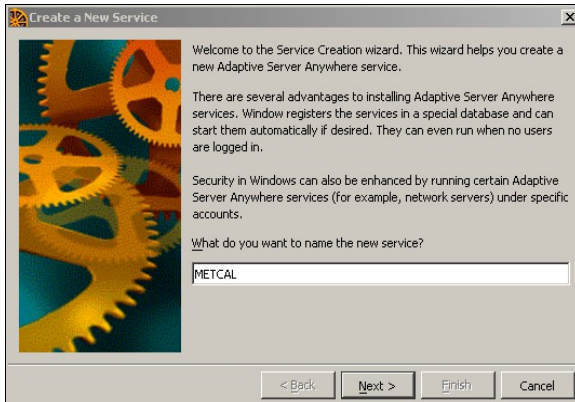
The panel at the right will now show a "Add Service" icon. Double-click this icon.

This is the screen where we will define the name of our database service. In our example, we called it METCAL.

Click Next.

Figure 5 – MET/CAL 7.2 – Defining the Database Service Name

The screen at right will be displayed. Select the Network Database Service.

Click Next.
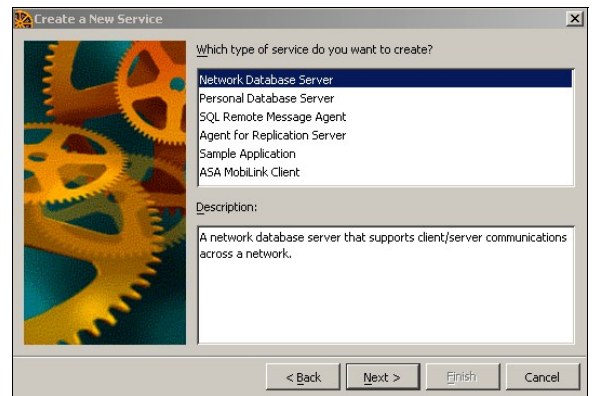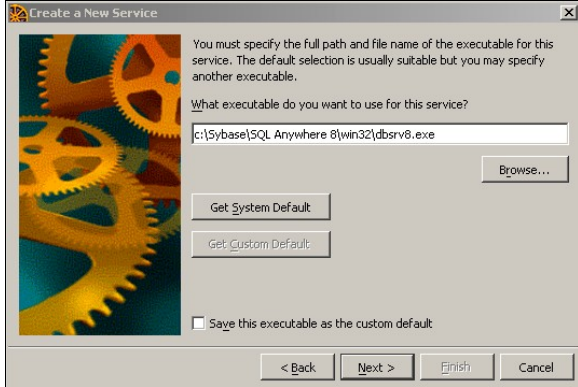
The screen at left will be displayed. It should automatically have entered the executable for the Sybase Database Engine.

Click Next.

The box at right should be displayed. You will need to enter the database parameters. In our example, we will enter the following:

c:\metdata\entergy\mtrack.db
-n Laptop1
-c 8m
-gl dba
-x none
-ti 0
-tl 14400
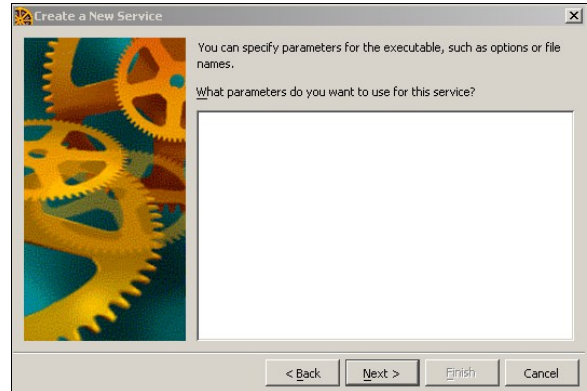
The parameters show above are basically the same as the parameters that are defined in the Calibration Data icon. The entry with the -n option defines the database alias name. This is the name that ODBC uses to communicate between applications.

The -x option in our example is set to "none" because we do not want the laptop database to interfere with any other databases that are available on the network. If this was a sub server installation, we would change this to TCPIP. After entering the database parameters, click Next.
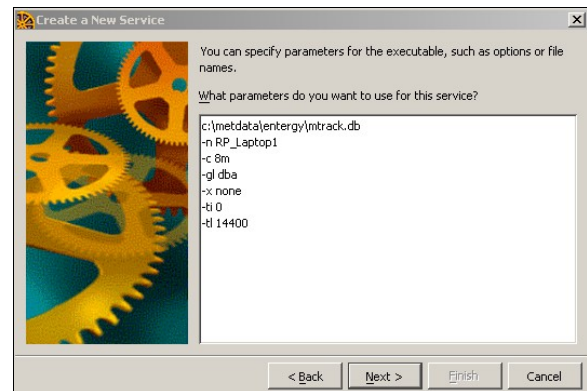
Figure 6 – MET/CAL 7.2 – Defining the Database Parameters
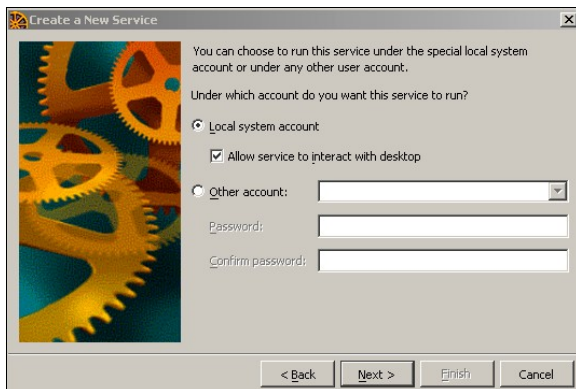
After setting the database parameters, the program will prompt for the account to execute the service. Normally, the system account should be used. The box with the "Allow service to interact with desktop" should be checked when you are using a laptop only remote database. This way you can see the database icon in the system tray on the computer and you can also turn it off without using the service manager. If this configuration is to used with a sub server, then this option should not be checked. After clicking Next, the system will verify that this is an Automatic service and will allow you to Start the service. You now have the Sybase 8 Database service configured.

MET/CAL Plus Ver 7.2 ODBC Configuration for the *Remote Database*

NOTE: Before using Remote Pipeline with MET/CAL Plus version 7.x for the first time, be sure to review this section.

Configuring the ODBC Data Source name for the *Remote Database* is a different configuration than for the *Master Database*. For example, if Remote Pipeline is going to be installed on a laptop computer, then two different database sources have to be configured, one for the *Master Database* and one for the *Remote Database*. In our example, the remote laptop computer is going to communicate with the *Master Database* via the client's Sybase ODBC configuration over the network. The *Remote Database* ODBC source is configured differently and actually starts the database server engine. Each remote system should have a different "alias name" and this will be described later in this section. In our example, we are going to assume that the remote laptop computer is already communicating with the *Mater Database*. We are only going to describe the ODBC configuration for the *Remote Database*.

MET/CAL/TRACK versions 7.0 to 7.2 utilize the Sybase 8 Database Engine and supports Windows 2000 and Windows XP. MET/TRACK versions 7.3+ utilize the Sybase 11 database Engine and supports Windows XP, Vista, and Windows 7.

Adding the Sybase Data Source for the *Remote Database*
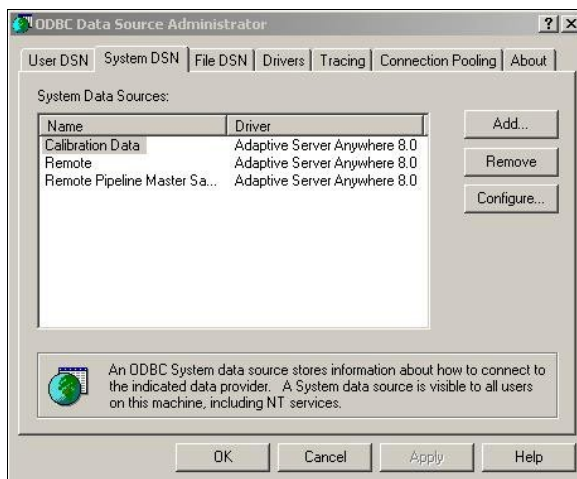
This step configures the 32-Bit ODBC for use by Remote Pipeline. To start the configuration for Windows 2000 and XP, select **Start | Settings | Control Panel | Administrative Tools | Data Sources (ODBC).** The following example is shown with Windows 2000 and XP.

Select the System DSN tab and you should have a screen like the one at left. Select Add.

Figure 7 – MET/CAL 7.2 - 32 Bit ODBC Data Source Listing (Win 2000 and XP)
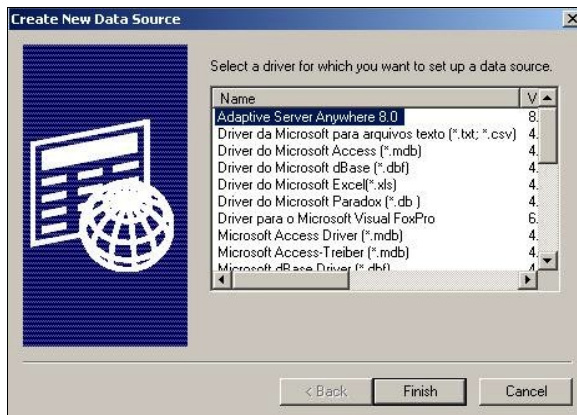
You should see the screen at left: (may be different for various versions of the operating system). You need to select the data source, which is Adaptive Server Anywhere 8.0.

As stated earlier, these instructions assume that the 32 Bit Sybase drivers have been installed. After selecting the Sybase driver, click on Finish.

Figure 8 – MET/CAL 7.2 - Selecting the Sybase Drivers (Win 2000 and XP)

Setting the Remote ODBC Data Source Name using the Sybase 8 Database Engine
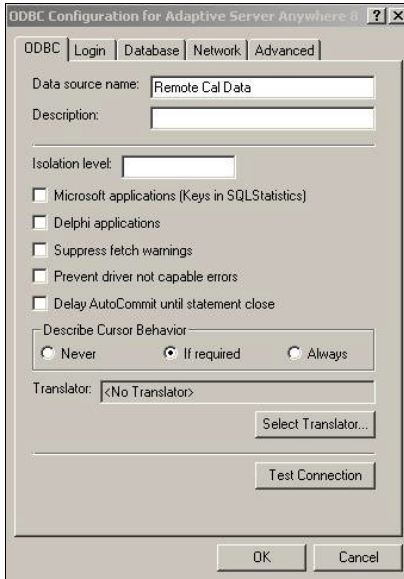
Because the *Master Database* uses Calibration Data for the ODBC **D**ata **S**ource **N**ame, we need to add a data source name for the *Remote Database*. Enter "Remote Cal Data" for the *Remote Database*. NOTE: It is possible to use another data source name, especially when more than one database has been configured.

Note: It is very important to determine an "alias name" for the *Remote Database*. If you do not configure an alias name, the server name will be "mtrack" or "metbase" depending on the version of MET/TRACK, and if the *Master Database* uses mtrack or metbase, you will not be able to run the *Remote Database*. For practical purposes the *Master Database* should not use "mtrack" either and also should have an alias name.

So for our example, we are going to make up an alias name for our *Remote Database* and our alias name is **LAPTOP1**. Select the Database Tab so we can add the database alias name.

Figure 9 – MET/CAL 7.2 – Remote ODBC Data Source Name (Win 2000 and XP)
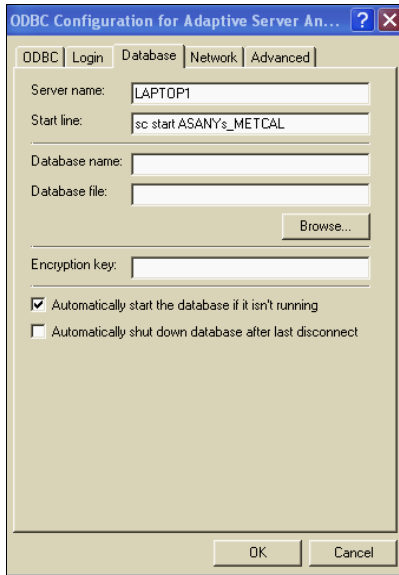
The next step is to create the Start Options for the *Remote Database*. In the previous version, the system utilized a more complex configuration of ODBC. In this version, we will utilize database services to automatically start the database. Therefore, it is quite easy to configure the ODBC. We will need to add the commands to start the *Remote Database* automatically when Remote Pipeline is started.

A screen similar to the one at left is displayed. For our example we have entered the following in the Database screen. Our example is using MET/TRACK 7.2 running the Sybase 8 Database Engine.

We have entered **LAPTOP1** in the "Server name" field. That will be our database alias name.

The Start line is different for this version of Remote pipeline. We are using the DOS "sc" command which is used to start and stop services. For the Sybase 8 Database Engine, our line at left displays as: "sc start ASANYs_METCAL".

Figure 10 – MET/CAL 7.2 – Remote ODBC Database Start Options Configuration

Make sure the box is checked for the database engine to start automatically. However, please make sure the database does not automatically shutdown when an application terminates.

How to Determine the Database Service Name

When a database service is created, the Windows operating system creates a name designation for this service. An example is displayed on the next page.
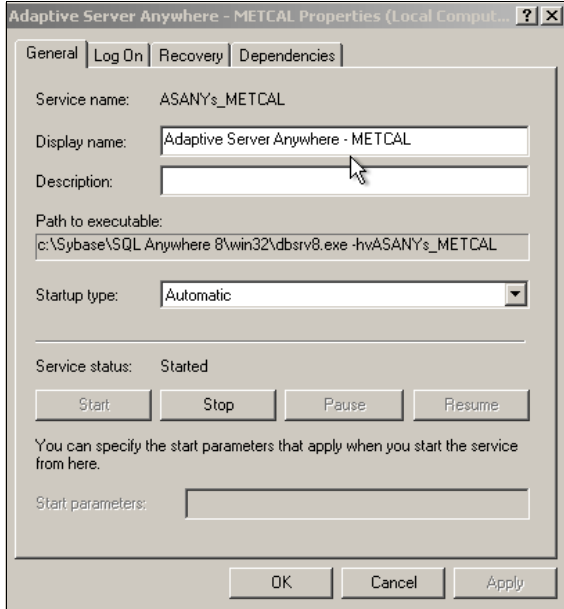
The picture at left shows the properties screen of the database service. Services can be created and modified using the Sybase Central application. When the service is created, it is assigned a name.   A database service should not be confused with the database alias name. These are two completely different functions.   In our example, when the database service name was created, we called it METCAL for the local database running on the Remote Computer.   Windows assigned "ASANYs_METCAL" as the name and we used that name in our ODBC configuration shown on the previous page.

Figure 11 – MET/CAL 7.2 – Determining the Service Name for Sybase 8
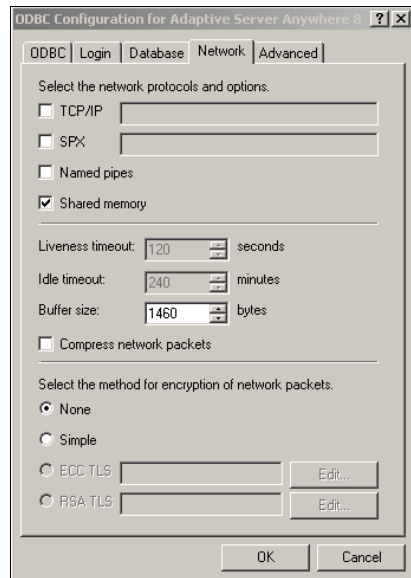
When configuring a standalone laptop, be sure to configure the Network tab as shown at left. The database should not broadcast over the network and therefore will utilize a share memory configuration. Click Ok and save the ODBC configuration.

Figure 12 – MET/CAL 7.2 – Remote ODBC Network Configuration

Testing the ODBC Configuration

A feature of Sybase Adaptive Server Anywhere 8.0, is the ability to perform an ODBC test. After setting up the ODBC configuration, it is suggested that you test the configuration and make sure it works. The procedure is quite simple. First, click on the Login Tab.
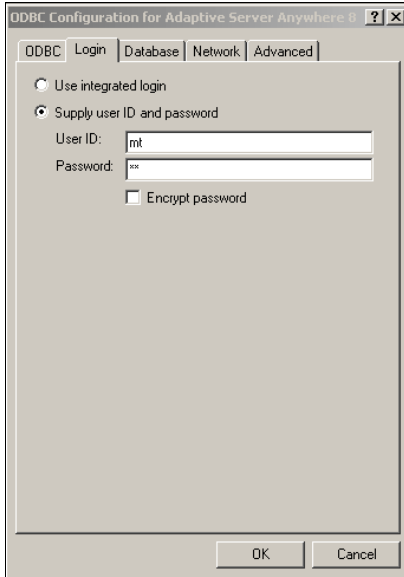
As shown at the screen at left, enter MT as the User ID and enter your MT Password. Click on the ODBC Tab.

Click on the Test Connection button. A dialog box will appear asking if you want to leave the database running after test has completed. You can answer either Yes or No. It does not matter.
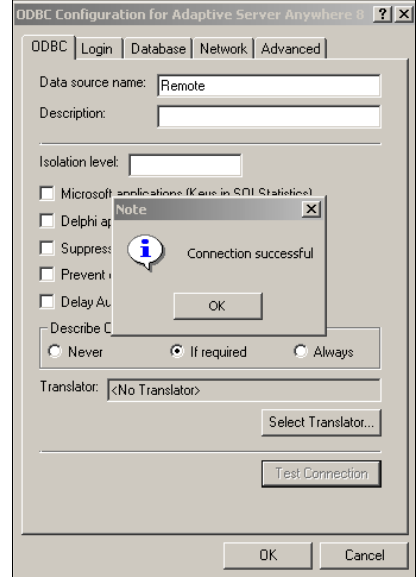
Figure 13 – MET/CAL 7.2 - Testing the ODBC Connection

If the test has completed successfully, then you have completed a successful ODBC Configuration. If the test does not work, go back through these instructions and review the configuration. **VERY IMPORTANT, be sure to go back to the Login Tab and remove the MT login and Password.** Select OK to exit the ODBC configuration program.

Stopping a Database Service

You can stop a database service by accessing the Windows Service Manager and stopping the service.
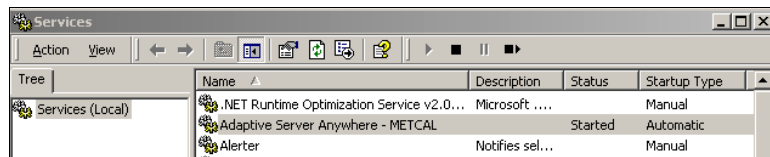
Figure 14 – MET/CAL 7.2 – Stopping the Database Service

You can stop the service by highlighting the Adaptive Server Anywhere service and then clicking on the little black square which is the stop button.

You can also create a batch file to stop the service and create an icon on the desktop. Your IT representative can help you with this. The command to stop the database service for our example is:
"sc stop ASANYs_METCAL".

PLEASE NOTE: Every organization has different security rules. There may be cases where the Windows user does not have the proper permissions to start and stop services using Remote Pipeline. This should be tested with all the different windows logins that may be used. The Database service can have a different account established for the service allowing a Windows user to control the database service. This will have to be configured by your IT representative.

MET/CAL Plus Ver 7.3 ODBC Configuration for the *Remote Database*

NOTE: Before using Remote Pipeline with MET/CAL Plus version 7.3 for the first time, be sure to review this section.

Configuring the ODBC Data Source name for the *Remote Database* is a different configuration than for the *Master Database*. For example, if Remote Pipeline is going to be installed on a laptop computer, then two different database sources have to be configured, one for the *Master Database* and one for the *Remote Database*. In our example, the remote laptop computer is going to communicate with the *Master Database* via the client's Sybase ODBC configuration over the network. The *Remote Database* ODBC source is configured differently and actually starts the database server engine. Each remote system should have a different "alias name" and this will be described later in this section. In our example, we are going to assume that the remote laptop computer is already communicating with the *Mater Database*. We are only going to describe the ODBC configuration for the *Remote Database*. MET/CAL/TRACK version 7.3 utilizes the Sybase 11 Database Engine and supports Windows XP and Windows 7.

NOTE: When using MET/CAL/TRACK 7.3 on a remote computer, you must perform a standalone installation of the Sybase 11 Database Engine, MET/CAL, MET/TRACK and the Database Files.

Adding the Sybase Data Source for the *Remote Database*
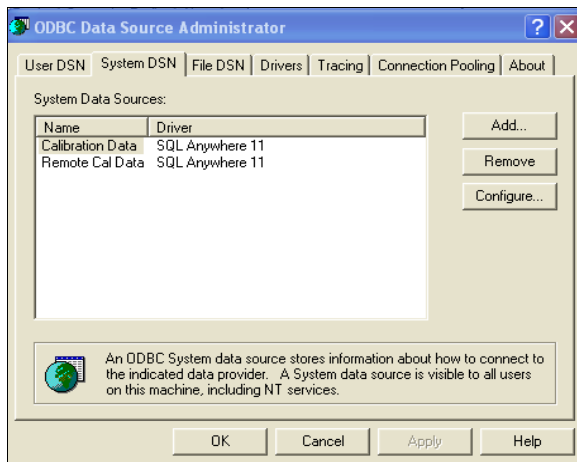
This step configures the ODBC for use by Remote Pipeline. To start the configuration for Windows XP, select **Start | Settings | Control Panel | Administrative Tools | Data Sources (ODBC).** The following example is shown with Windows XP.

Select the System DSN tab and you should have a screen like the one at left. Select Add.

Figure 15 – MET/CAL 7.3 - ODBC Data Source Listing (Win XP and Win 7)
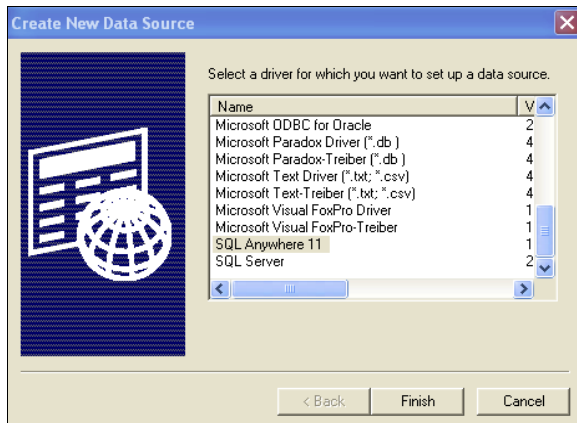
You should see the screen at left: (may be different for various versions of the operating system). You need to select the data source, which is SQL Anywhere 11.

As stated earlier, these instructions assume that the Sybase drivers have been installed. After selecting the Sybase driver, click on Finish.

Figure 16 – MET/CAL 7.3 - Selecting the Sybase Drivers (Win XP and Win 7)

Setting the Remote ODBC Data Source Name using the SQL Anywhere 11 Database Engine
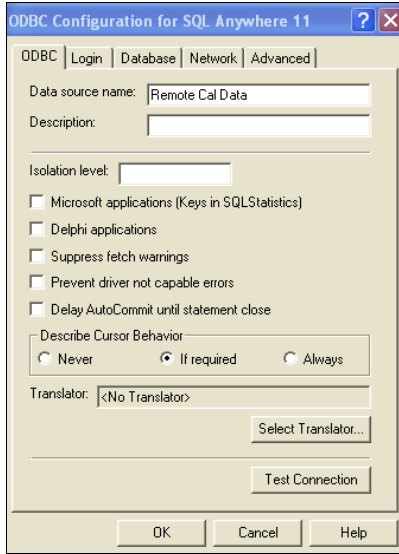
Because the *Master Database* uses Calibration Data for the ODBC **D**ata **S**ource **N**ame, we need to add a data source name for the *Remote Database*. Enter "Remote Cal Data" for the *Remote Database*. NOTE: It is possible to use another data source name, especially when more than one database has been configured.

Note: It is very important to determine an "alias name" for the *Remote Database*. If you do not configure an alias name, the server name will be "metbase" for version 7.3 of MET/TRACK, and if the *Master Database* is also metbase, you run the risk of a communication conflict between the Master and Remote databases. For practical purposes the *Master Database* should not use "metbase" either and also should have an alias name.

So for our example, we are going to make up an alias name for our *Remote Database* and our alias name is **LAPTOP1**. Select the Database Tab so we can add the database alias name.

Figure 17 – MET/CAL 7.3 – Remote ODBC Data Source Name (Win XP and Win 7)

The next step is to create the Start Options for the *Remote Database*. In the previous version, the system utilized a more complex configuration of ODBC. In this version, we will utilize database services to a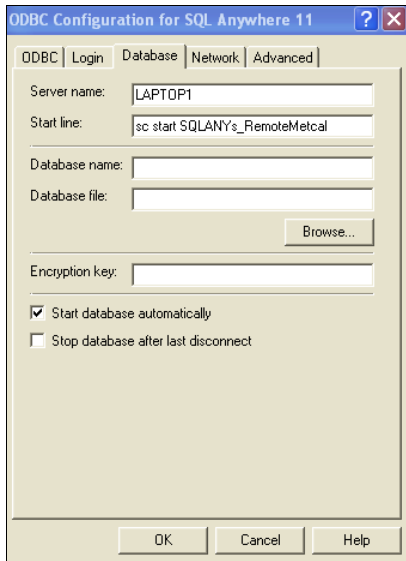utomatically start the database. Therefore, it is quite easy to configure the ODBC. We will need to add the commands to start the *Remote Database* automatically when Remote Pipeline is started.

A screen similar to the one at left is displayed. For our example we have entered the following in the Database screen. Our example is using MET/TRACK 7.3 running the Sybase 11 Database Engine.

We have entered **LAPTOP1** in the "Server name" field. That will be our database alias name.

The Start line is different for this version of Remote pipeline. We are using the DOS "sc" command which is used to start and stop services. For the SQL Anywhere11 Database Engine, our line at left displays as: "sc start SQLANYs_RemoteMetcal".

Figure 18 – MET/CAL 7.3 – Remote ODBC Database Start Options Configuration

Make sure the box is checked for the database engine to start automatically. However, please make sure the database does not automatically shutdown when an application terminates.

How to Determine the Database Service Name

When a database service is created, the Windows operating system creates a name designation for this service. Our example of the next page will display an example of this on the next page.

Figure 19 – MET/CAL 7.3 – Determining the Service Name for SQL Anywhere 11
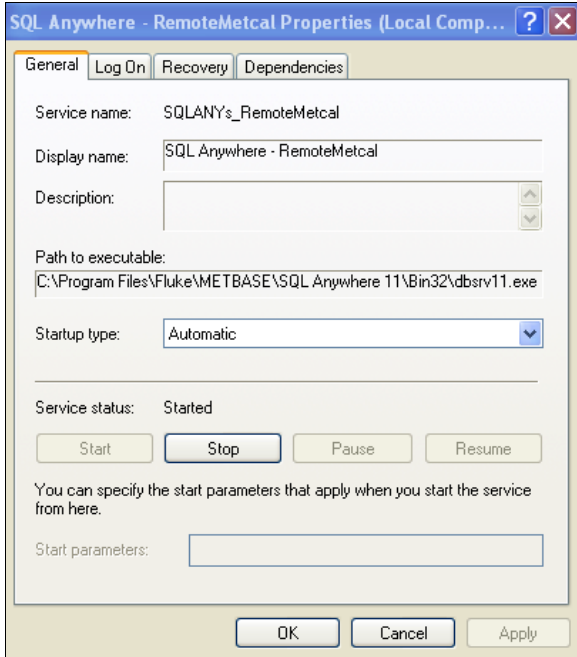
The picture at right shows the properties screen of the database service. Services can be created and modified using the Sybase Central application. When the service is created, it is assigned a name. The area at left, is the name of our service. A database service should not be confused with the database alias name. These are two completely different functions. In our example, when the database service name was created, we called it RemoteMetcal for the local database running on the Remote Computer. Windows assigned "SQLANYs_RemoteMetcal" as the name and we used that name in our ODBC configuration for SQL Anywhere 11 shown on the previous page.

Figure 20 – MET/CAL 7.3 – Remote ODBC Network Configuration

When configuring a standalone laptop, be sure to configure the Network tab as shown at left. The database should not broadcast over the network and therefore will utilize a shared memory configuration. Click Ok and save the ODBC configuration.

Testing the ODBC Configuration

A feature of SQL Anywhere 11, is the ability to perform an ODBC test. After setting up the ODBC configuration, it is suggested that you test the configuration and make sure it works. The procedure is quite simple. First, click on the Login Tab.
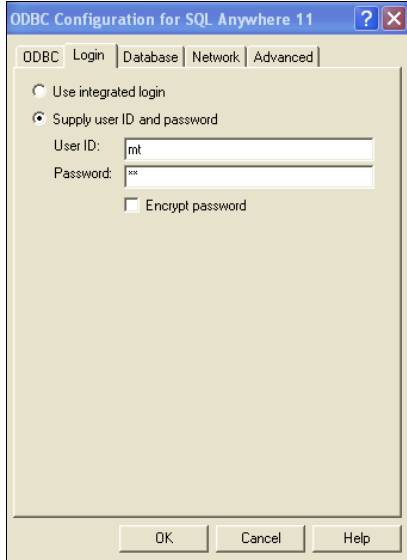
As shown at the screen at left, enter MT as the User ID and enter your MT Password. Click on the ODBC Tab.

Click on the Test Connection button. A dialog box will appear asking if you want to leave the database running after test has completed. You can answer either Yes or No. It does not matter.
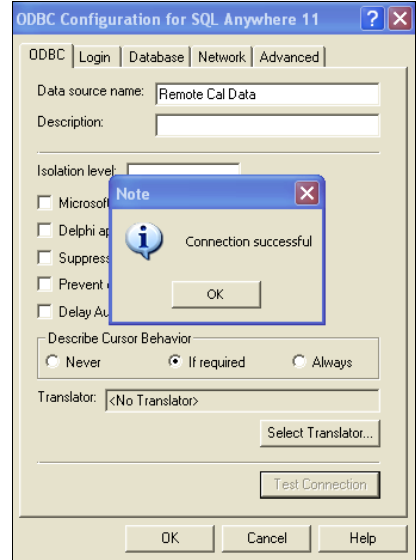
Figure 21 – MET/CAL 7.3 - Testing the ODBC Connection

If the test has completed successfully, then you have completed a successful ODBC Configuration. If the test does not work, go back through these instructions and review the configuration. **VERY IMPORTANT, be sure to go back to the Login Tab and remove the MT login and Password.** Select OK to exit the ODBC configuration program.

Stopping a Database Service

You can stop a database service by accessing the Windows Service Manager and stopping the service.
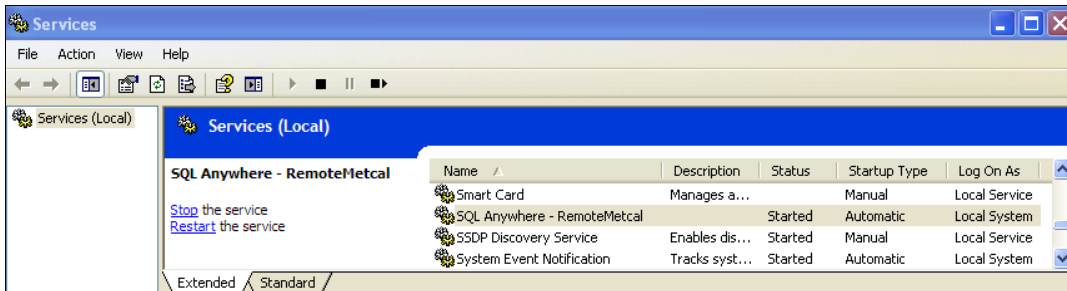
Figure 22 – MET/CAL 7.3 – Stopping the Database Service

You can stop the service by highlighting the SQL Anywhere service and then clicking on the little black square which is the stop button. The Fluke MET/CAL Installation also provides an Icon for stopping the Database Engine.

You can also create a batch file to stop the service and create an icon on the desktop. Your IT representative can help you with this. The command to stop the database service for our example is: "sc stop SQLANYs_RemoteMetcal".

PLEASE NOTE: Every organization has different security rules. There may be cases where the Windows user does not have the proper permissions to start and stop services using Remote Pipeline. This should be tested with all the different windows logins that may be used. The Database service can have a different account established for the service allowing a Windows user to control the database service. This will have to be configured by your IT representative.

Blank Page

Section 4 – Configuring MET/CAL Plus on the Remote System

Installing MET/CAL Plus on the Remote System – MET/CAL Ver 7.x

When Installing MET/CAL plus Ver 7.x on the Remote System, follow the standard installation procedure, but always install MET/CAL plus as a *__Standalone Database.__* This will allow the computer to function as a client and/or a database server.

The MET/CAL INI File – MET/CAL Ver 7.x

NOTE: This step is only required if you want to connect the client to the *Master Database* or the *Remote Database* on demand.

When MET/CAL Plus is installed, the installation program assumes that the system will use the **Calibration Data** ODBC Source. This is acceptable while running the MET/CAL programs, Barcode Magician, and Process/Track on the *Master Database*. This name has to be changed according to the ODBC Data Source Name used for the remote system. However, some installations will want to be able to log into the *Master Database* when the computer is back in the lab. During the installation process, the METCAL.INI file is only configured to operate with one Database.

**Note: If you decide to configure the remote computer to be able to operate as a client for the *Master Database* and a Standalone system for the *Remote Database*, you will have to keep track of all the Crystal Reports and MET/CAL Procedures. Remote Pipeline does not synchronize procedures or reports.**

Configuring Program Icons for MET/CAL version 7.x

With MET/CAL version 7, we recommend that <u>you do not modify</u> the METCAL.INI. There are several differences in the ODBC configurations between the master client and remote client configurations. If you try to comment out the "DSN" entry in the METCAL.INI file and run the MET/TRACK program, the program will not start properly
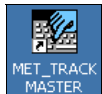
 Instead, you will need to create dedicated Program icons. This is a simple process. You will notice that we have two icons at left. The first icon is created by the standard MET/CAL Plus installation. We renamed the icon and added "Master" so that we will identify it with the Master Database. We used the Windows copy and paste to copy the "MET_TRACK Master" icon and then pasted the icon into the program group. We renamed the new icon to "MET_TRACK Remote". You can modify the properties of the icon with the –l option and specify the **D**ata **S**ource **N**ame (DSN). In our example we changed the icon properties to:

C:\metcal\mettrack.exe -l dsn=Remote Cal Data

This will change the ODBC source without having to modify the METCAL.INI file. This is also an easier way to start the application because you do not have to select a Data Source. You can also use the same method to create additional remote icons for the other METCAL programs.

Note: MET_TRACK 7.3 will allow configuring more than 1 database in the metcal.ini file.
How to configure MET/TRACK for use in a multiple-database environment

Edit metcal.ini in %PROGRAMDATA%\Fluke

```
[database]
DB_login                =dsn=Calibration Data
DB_login_2              =dsn=Remote Cal Data
```

Using Barcode Magician and Process/Track on the Remote System

If you plan to use Barcode Magician or Process/Track, you will have to perform a Standalone installation for these programs. These programs require additional Windows files that are installed on the remote system

NOTE: When installing these programs, there are two steps to follow:

1. Make sure the program files are installed on the local computer.

2. When the programs are registered, the registration must be pointed at the *Master Database*. This must be performed prior to replicating the *Remote Database.*

By following these two steps during the installation, these programs will operate properly and the licenses will move between the *Master Database* and *Remote Database*.

Refer to the installation manual for the proper installation for both products.

Using Change/Log with Remote Pipeline

Change/Log keeps track of changes made to the database using a series of carefully implemented triggers and procedures. Change/Log should be installed on the *Master Database*. During database replication, Change/Log will also be implemented on the *Remote Database*. There are some differences in how Change/Log will report changes when the *Remote Database* is synchronized to the *Master Database*. The following is a list of observations describing the operation on how Change/Log operates when data is synchronized to the *Master Database*.

1. The Change/Log triggers and tables are copied to the *Remote Database* during replication.
2. Change/Log acts normally in the *Remote Database*.
3. When synchronization occurs, the Change/Log entries are not transferred from the *Remote Database* to the *Master Database*. Any Change/Log entries on the *Remote Database* are lost during replication.
4. When synchronization occurs, the transfer of the Standard used is treated as a change and every Cal record with STD's used that is synchronized, will have an entry in mt.ots_cl_log. These changes are time stamped for when the synchronization occurred and the "mtuser" listed is who logged into Remote Pipeline for the synchronization.
5. When synchronization occurs, If any change was made to a record that was created on the *Remote Database*, but had not been synchronized yet are not registered as changes in the *Master Database*.
6. When synchronization occurs, any change made to a record that existed at the time of replication is registered as a change at the time of synchronization. These changes are time stamped for when the synchronization occurred and the "mtuser" listed is who logged in for the synchronization. The Change-DateTime & Change-User fields in the Database will reflect the correct information for the last change.

Blank Page

Section 5 – Replicating and Synchronizing Databases

Getting Started with Remote Pipeline

After Remote Pipeline has been registered and the ODBC has been configured, then you are ready to start the database replication process. Start Remote Pipeline by clicking on **Start | Programs | Remote Pipeline**.

### First Time to Use Remote Pipeline

If this is the first time to use Remote Pipeline on the remote computer, then you must log in as the database administrator (MT Login). A MET/CAL user can log in and perform the synchronization/replication process after the initial configuration of Remote Pipeline. If you do not log in as the MT user the first time, the *Remote Database* will not be created.
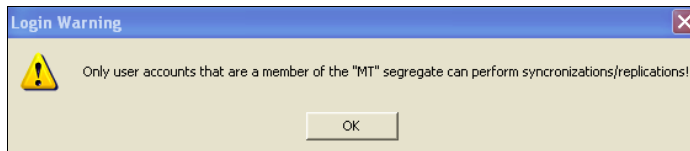
If this is the first time to log in with Remote Pipeline and you do not log in as the MT administrator you will see the message displayed at left.

Figure 23 - Login Warning Screen

If you see this warning message, then someone else is using Remote Pipeline and you may want to add more licenses.
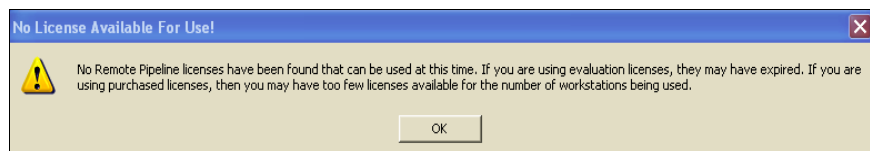
Figure 24 - License Available Warning Message

When Remote Pipeline starts, a dual database entry screen is presented to the operator.
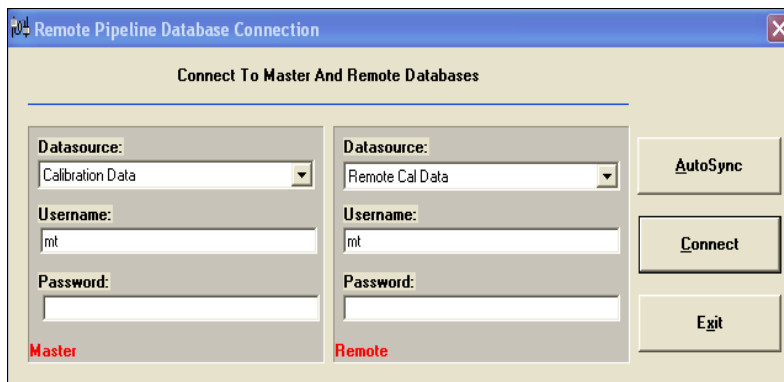
On the left side of the screen you will log in to the *Master Database*. On the right side you must log in to the *Remote Database*. In our example at left, we are logging in as the MT Administrative user. Click the Connect Button. After successfully logging into both databases, Remote Pipeline checks both databases and determines whether this is the first time the *Remote Database* has been started.

Figure 25 - Database Login Screen

If this is the first time that Remote Pipeline has been used on the *Remote Database*, the program will display the message box at the right.
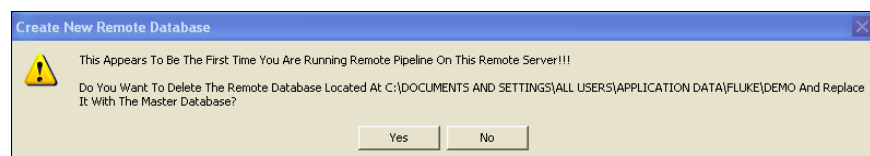
Figure 26 - First Time to Sync *Remote Database* Message

Figure 27 - Sybase DBBACKUP utility during replication
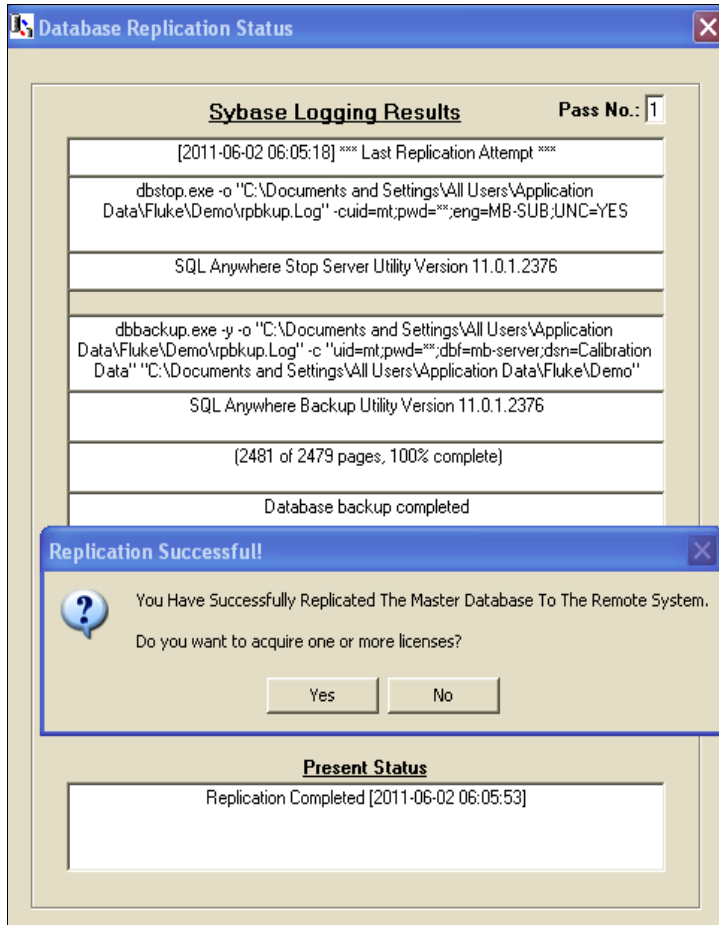
It is necessary to replicate a new *Remote Database*. If the operator selects Yes, the replication process will continue and a new *Remote Database* will be created on the remote system. **NOTE: This will overwrite the existing *Remote Database* with a copy of the *Master Database*.**

Remote Pipeline utilizes the Sybase DBBACKUP utility to replicate the database from the *Master Database* to the *Remote Database*. Even though the Sybase backup utility can backup a database while the users are logged in, the backup utility will pause the backup if it detects a record is locked on the *Master Database*. Because there is a potential conflict**, it is highly recommended that the users log out of the *Master Database* before the *Master Database* is replicated to the Remote Database.**

If you selected Yes, then Remote Pipeline stops the existing *Remote Database* engine and performs a replication using the Sybase Backup utility. The screen at left displays the backup utility during the *Remote Database* replication process.

After the replication process has completed, the program will display a message alerting the operator that the replication process was successful. **Please wait for this message to display before performing any additional operation in Remote Pipeline.**

Allocating Program User Licenses

Figure 28 - User Licenses
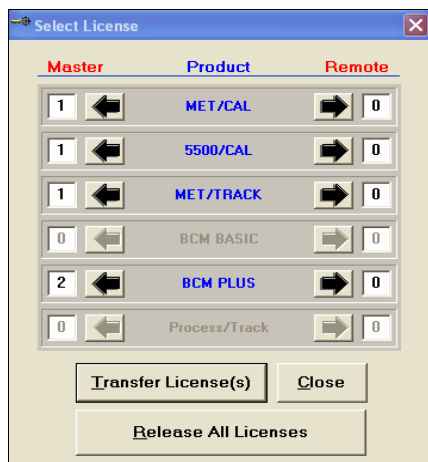
The next step is to allocate the required user licenses for the remote system to operate. From the menu bar, click on **Transfer | Select License**. This is automatically selected if this is the first time use of Remote Pipeline.

A similar screen to the one at left will appear. Remote Pipeline supports 6 user license types for MET/CAL Plus. They are MET/CAL, 5500/CAL, MET/TRACK, Barcode Magician Basic/Plus, and Process/Track. When the license allocation is selected, Remote Pipeline detects the licenses that currently reside on the *Master Database*. If a product label is grey'd out, then the license was not detected on the *Master Database*.
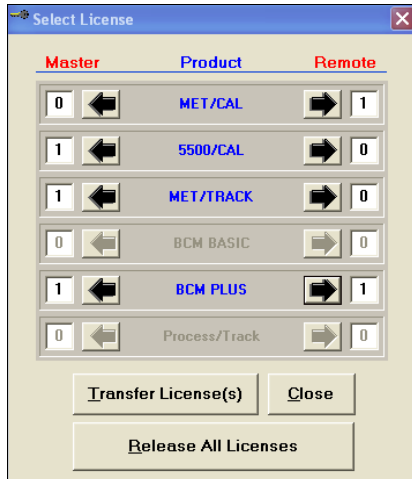
By clicking on the arrows, you can easily allocate a user license from the *Master Database* to the *Remote Database*. In our example at left, we have allocated one MET/CAL license and one Barcode Magician Plus license. After all the desired licenses have been allocated to the *Remote Database* and *Master Database*, click Transfer License(s) and the changes will be implemented. Clicking on Release All Licenses will release the licenses back to the *Master Database*. After transferring the required licenses, the user can now exit the Remote Pipeline program, disconnect the remote system from the LAN, and start using the remote system.

Figure 29 - Allocating User Licenses

Releasing "In Use" Licenses on the *Remote Database*

There may be a situation where the "in use" licenses need to be released on the *Remote Database*. This could be attributed to a Windows program that froze, or the computer had to be re-booted while an application was still open. If this situation occurs, you will need to release the licenses. Since the DBSETUP program is disabled on the *Remote Database*, there is another way to release and reset the licenses without re-connecting Remote Pipeline to the *Master Database*.
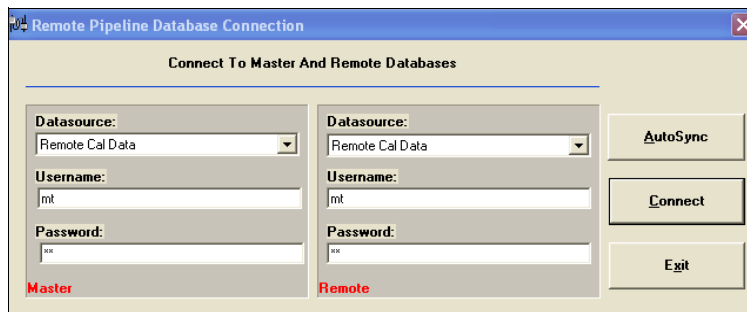
In our example at left, we are logging into the *Remote Database* on both sides of the log in screen. If you enter the Remote Data source in both the Master and Remote log in areas and click on Connect, you should see the following message.
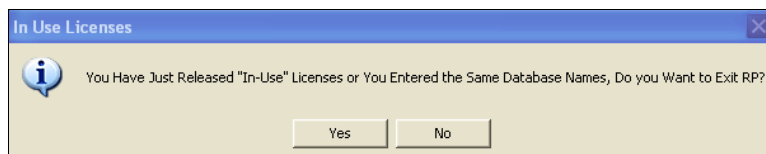
When you see the message at left, be sure to close Remote Pipeline. If you need to continue using Remote Pipeline, start the program and log in.

Figure 30 - Resetting "In Use" Licenses on the *Remote Database*

Synchronizing the *Remote Database* and *Master Database*

NOTE: When using the remote database as a server (servicing multiple clients as opposed to just running standalone on a laptop), Remote Pipeline MUST access the *Remote Database* server and not a client on the remote system.

NOTE: It is a good idea to back up the *Master Database* and *Remote Database* prior to synchronizing the databases. Refer to the section on Database Backups. It is assumed that the *Remote Database* has been used to add and change records and the operator is ready to update the *Master Database*.   The remote computer must be connected to the LAN or WAN in order for the synchronization process to work. **Be sure to close any applications, like MET/CAL, that are connected to both databases prior to synchronization**.

You can log into both databases either as an MT administrator or as MET/CAL user. In our example we are going to log in as a mt user and we will manually transfer the database changes and manually replicate the database. Click on the Connect button.
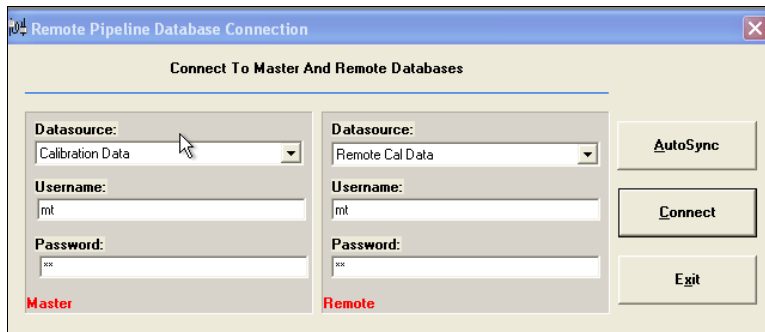
The program will connect to both the Master and Remote Databases.

When Using the Autosync Button, the program will automatically transfer the Changes and Additions from the Remote Database to the Master Database and then will replicate a new copy of the Master Database.

Figure 31 - Connecting To Both Databases
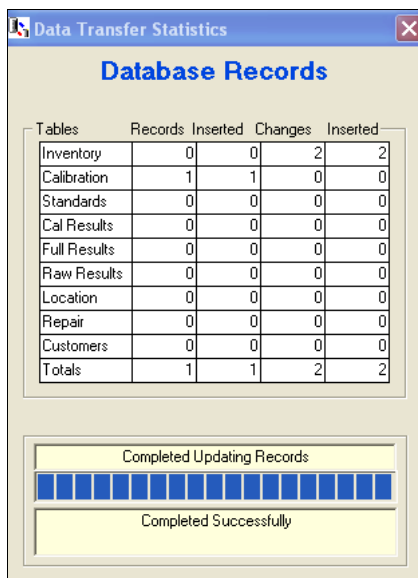
In our example, we have been using the Remote Database and need to transfer the changes to the Master Database. On the Menu Bar click Transfer | Transfer changes to Master Database (or press F1).   Remote Pipeline will transfer the changes to the Master Database and display a statistics screen similar to the one shown at left.

After transferring the changes and additions to the database, you can either create a new Remote Database or you can continue to use the existing Remote Database. It is important to consider that the Remote Database will gradually become out of sync as the Master Database is updated.

Replication is the process of copying the Master Database to the Remote Database. This is a very simple process. Click Transfer | Create New Remote Database (or press F2). A window will display on the screen showing the replication process.

Figure 32 - Data Transfer Statistics

NOTE: You should back up your databases prior to synchronizing or replicating the databases.

Using the Remote Pipeline Logs

Remote Pipeline has two display logs that are available to the operator. The Remote Pipeline Log displays the assets which have been modified or added. An advantage to transferring the data manually is being able to review the data prior to synchronization. This table is in the Remote Database and is OTS_RP_LOG. You cannot change any of the data in this screen. Click Administration | Remote Pipeline Log (or Ctrl L) to display the screen

Figure 33 - Remote Pipeline Log

The log displayed below shows the process of data transfers and database replications. This log is usually accessed on the Master Server. You can display this log on the Remote Database, but the permanent log is on the Master Database. Click Administration | RP Transfer History Log (or Ctrl T). An example of this log is shown below. This table is OTS_RP_TRANSFER_LOG.

Figure 34 - Remote Pipeline History Log

Crystal Reports

There are two Crystal Reports supplied in the installation. These reports will display data in the log tables. These reports can be modified for use by the System Administrator.

SECTION 6 – Appendix A

Database Backups

Backing up the *Remote Database – MET/CAL Ver 7.x*

As stated earlier in this manual, it is a good idea to back up your databases. This section describes an example procedure for backing up the *Remote Database* with MET/CAL version 7.x.   A recommended procedure is to create an icon on the computer's desktop. We are going to assume that this is a standalone laptop computer running MET/CAL Plus. When the backup program is started, it will make a copy of the *Remote Database* and put it in a separate backup directory.
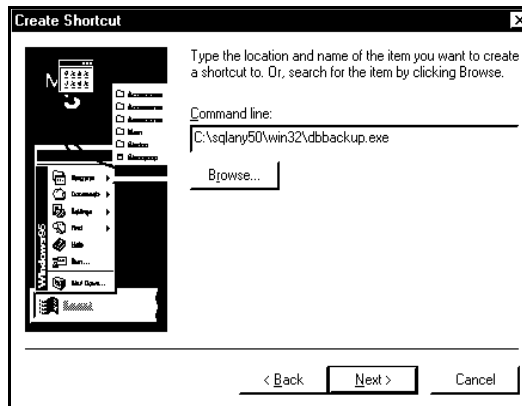
First, from the desktop, point the mouse cursor at a blank space on the desktop and right click your mouse. Click on **New | Shortcut**. A form similar to the one at left should be displayed. Next, click on Browse. Normally the Sybase database programs are located on the C Drive. Use the browse feature to locate the SQLANY80 directory for version 7.2 and older. Next, click on WIN32. Next, click on DBBACKUP.EXE. and then click Open. This will insert **C:\SQLANY80\WIN32\DBBACKUP.EXE** on the command line. Next, we need to add more to the command line to identify the database to be backed up. Version 7.3 has the DBBACKUP.EXE utility located at C:\Program Files\Fluke\METBASE\SQL Anywhere 11\BIN32.

Figure 35 - Creating the Remote Backup Shortcut

With your mouse, click on the end of the command line. Press the space bar to add a space, and then add the following:

-x -y -cuid=mt;pwd=mt;dsn="remote data" c:\metcal\remote\backup

The complete command line now reads:

dbbackup.exe -x -y -cuid=mt;pwd=mt; dsn="remote data" c:\metcal\remote\backup

The –x tells the system to start a new transaction log.
The –y tells the system to answer yes to any questions.
The –c tells the system that commands are to follow.
For version 7.3 MET/BASE systems, you may want to choose a different location to store the backup database.

If you have a different MT password than MT, then you have to enter your MT password after the "**pwd=**". Be very careful when changing your MT administrative password. Unless the password is updated on the command line, the Backup program will not work.

Click Next>. Next, enter a name for the icon. In our example we will use Remote DB Backup. Click Finish, and your backup icon should be ready to use. Be sure that the database engine for the *Remote Database* is running.

When you run the database backup, a copy of the *Remote Database* and transaction log are placed in the C:\METCAL\REMOTE\BACKUP directory. If you need to replace the database file with the backup, just copy the 2 files in the backup directory and overwrite the files in the C:\METDATA directory. Be careful replacing database files and ask for help if there are any questions about the procedure.

Backing up the *Master Database – MET/CAL Ver 7.x*

As stated earlier in this manual, it is a good idea to back up your databases. This section describes the procedure for backing up the *Master Database*. The procedure for MET/CAL version 7.x is the same except for the Sybase directory name. A recommended procedure is to create an icon on the computer's desktop. We are going to assume that this is a laptop computer that is connected to the *Master Database* via a LAN running on a separate server. When the backup program is started, it will make a copy of the *Master Database* and put it in a separate backup directory.
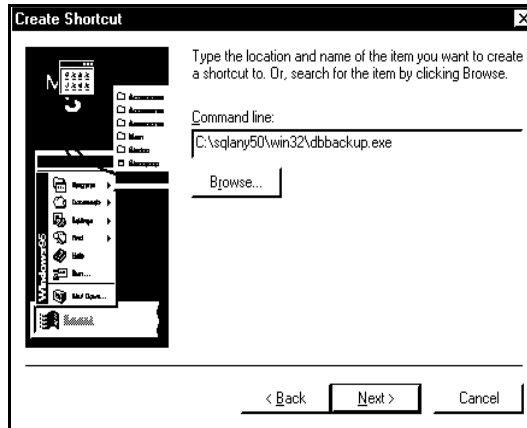
First, from the desktop, point the mouse cursor at a blank space on the desktop and right click your mouse. Click on **New | Shortcut**. A form similar to the one at left should be displayed. Next, click on Browse. Normally the Sybase database programs are located on the C Drive. Use the browse feature to locate the SQLANY80 directory. Next, click on WIN32. Next, click on DBBACKUP.EXE. and then click Open. This will insert **C:\SQLANY80\WIN32\DBBACKUP.EXE** on the command line. Next, we need to add more to the command line to identify the database to be backed up. Version 7.3 has the DBBACKUP.EXE utility located at C:\Program Files\Fluke\METBASE\SQL Anywhere 11\BIN32.

Figure 36 - Creating the Master Backup Shortcut

With your mouse, click on the end of the command line. Press the space bar to add a space, and then add the following:

-x -y -cuid=mt;pwd=mt;dsn="calibration data" c:\metcal\master\backup

The complete command line now reads:

dbbackup.exe -x -y -cuid=mt;pwd=mt; dsn="calibration data" c:\metcal\master\backup

The –x tells the system to start a new transaction log.
The –y tells the system to answer yes to any questions.
The –c tells the system that commands are to follow.
For version 7.3 MET/BASE systems, you should choose a different location to store the backup database.

If you have a different MT password than MT, then you have to enter your MT password after the "**pwd=**". Be very careful when changing your MT administrative password. Unless the password is updated on the command line, the Backup program will not work.

Click Next>. Next, enter a name for the icon. In our example we will use Master DB Backup. Click Finish, and your backup icon should be ready to use. Be sure that the Sybase Database Network Requester for the *Master Database* is running.

When you run the database backup, a copy of the *Master Database* and transaction log are placed in the C:\METCAL\MASTER\BACKUP directory. If you need to replace the database file with the backup, just copy the 2 files in the backup directory and overwrite the files in the C:\METDATA directory. Because this is the *Master Database*, you should acquire help from the server administrator before replacing database files. Be careful replacing database files and ask for help if there are any questions about the procedure.

NOTE: Version 7.3 MET/TRACK systems use a different location for the Master Database usually located at C:\Documents and Settings\All Users\Application Data\Fluke\METBASE for a Server 2003 system.

Custom Labels and Phrases

Remote Pipeline has new features that will allow the system administrator to customize all of the program labels. For example, instead of having the program prompt for "AutoSync", it might say "Sync Data". If there is a need to operate Remote Pipeline in a different language, then the phrases can be customized for that language. Remote Pipeline utilizes a file called "rplphrases.txt". It is a simple text file. A default file is provided for Remote Pipeline. The simple file format is as follows:

101   Remote Pipeline
102   &File
103   E&xit
104   &Transfer

The example above is a small section of the "rplphrases.txt" file. There are a lot of entries. The format is the line number, a tab character, and then the phrase with no carriage returns or line breaks. Edit the phrase file using the Notepad Editor that comes with MS Windows. Remote Pipeline does not write to the phrase file. You can save this file as read only if there is a concern about it being accidentally edited or deleted. The phrase file must exist in the same directory as the Remote Pipeline executable programs. If the phrase file is not available, Remote Pipeline will not start properly and it will display a message with the following error:

Automating Replication Functions as a Service

This version of Remote Pipeline has a new function, the ability to perform a complete "AutoSync" or just a one-way data transfer. There are many possibilities that include the creation of an icon or even setting up an automated schedule.   For example, you could have Remote Pipeline perform a complete "AutoSync" during off hours after work. This requires setting up parameters.

C:\Program Files\On Time Support\Remote Pipeline\rpl1.exe -autosync;mdsn=calibration data;muid=mt;mpwd=mt;rdsn=remote cal data;ruid=mt;rpwd=mt

C:\Program Files\On Time Support\Remote Pipeline\rpl1.exe -transfer;mdsn=calibration data;muid=mt;mpwd=mt;rdsn=remote cal data;ruid=mt;rpwd=mt

You could paste either of these examples into the properties field of a new icon, but make sure the Remote Pipeline executable is in the same directory or change the command for your system.
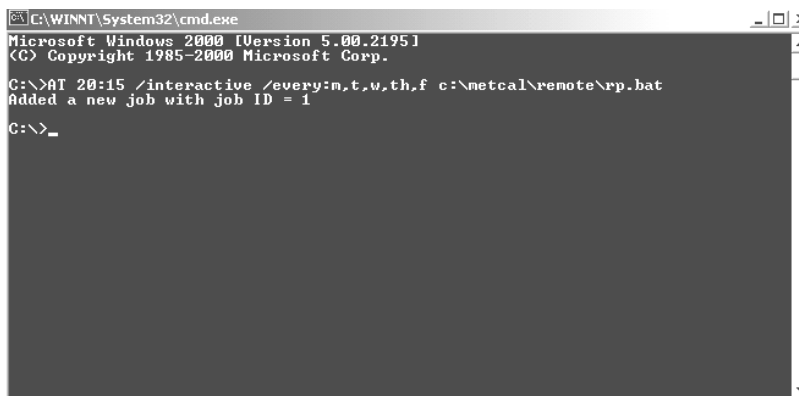
You could also set up the automatic scheduler with Windows XP or Windows 7 using the AT commands. For example, we are going to create a DOS batch file called RP.BAT and we are going to save it in the same directory as Remote Pipeline. Our file has the following entries.

cd C:\Program Files\On Time Support\Remote Pipeline
rpl1.exe -autosync;mdsn=calibration data;muid=mt;mpwd=mt;rdsn=remote cal
data;ruid=mt;rpwd=mt

The first command in our batch file set the directory where Remote Pipeline is installed. This is because Remote Pipeline must have access to the rplphrases.txt file.

Next we go to the AT scheduler in the command line mode. Click on **Start | Run** and enter **CMD**. This will bring up the command line mode. We will enter the following command:

AT 20:15 /interactive /every:m,t,w,th,f c:\metcal\remote\rp.bat

Figure 37 - Configuring the AT Scheduler for Automatic Transfers

You can run this service with the computer locked out and the Master Database will be updated. This method may save you a lot of time.   However, please remember that our example used the administrators MT password, and this information could be easily accessible to someone else.

NOTE: When running an automated service with Remote Pipeline, it is very important that the database has been replicated manually when the system is first installed. There are certain pop up boxes that are not suppressed when replicating a database for the first time.

Using Remote Pipeline with Email Notification

A new feature for Remote Pipeline 1.2 is the capability to use Email notification to read the OTS_RP_TRANSFER_LOG table and send the lab manager a summary of transactions at the end of the day. Below is an example SQL statement that could list all the Remote Pipeline transactions at the end of the day. This table should be queried from the Master Database.

select user_name "User ID", transfer_type "Transfer Type", num_records "New Records", num_mods "Modified Records", start_time "Start Time" from mt.ots_rp_transfer_log
where dateformat(start_time, 'yyyy-mm-dd') = today(*)

Below is an example listing of a report.

	User ID	Transfer Type	New Records	Modified Records	Start Time
1	mt	Synchronize	1	1	2011-06-13 10:30:05.000
2	mt	Replicate	1	(NULL)	2011-06-13 10:30:06.000

Figure 38 - Remote Pipeline History Transactions

Name ▼
user_name
user_account
transfer_type
stop_time
std_new
start_time
resr_new
resf_new
resc_new
rep_new
rep_mod
num_records
num_mods
loc_new
loc_mod
inv_new
inv_mod
host_name
cus_new
cus_mod
comments
cal_new
cal_mod

This table has additional fields which are listed at left. An email could easily be created to display the list of new vs modified records. You can also compare the start and stop times to determine how long it takes to update the master database. The Email Notification product has a task scheduler. A task could be configured to run at the end of the work day.

On Time Support can assist with questions regarding how to query the data from the log tables.

Blank Page

NOTES

NOTES

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

NOTES

NOTES