

Meta5

New Features in Meta5

Version 4.3

Note

Before using this information and the product it supports, be sure to read the general information under “Notices”.

Third Edition (January 2013)

This edition applies to Version 4 Release 3 Modification Level 3 of Meta5, and to any subsequent releases until otherwise indicated in new editions or technical newsletters. Make sure you are using the correct edition for the level of the product.

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Contents

Notices	v	Count of Invoices by Country	31
Trademarks	vi	Brand Sales by Region	42
About This Book	vii	Chapter 5. DBA Tool with	
Who Should Read This Book	vii	NOWTDD	47
We'd Like Your Comments	vii	Overview	47
Chapter 1. Terminal Server Session		What can a DBA Tool without a WTDD do? ..	47
Manager	1	The DBA Tool Icon Options Window	48
Overview	1	Using the DBA Tool	48
Parameters and Set Up	1	Administering Tables with the DBA Tool	51
Examples for Use	2	Deleting Tables	51
Chapter 2. Meta5 Trace Facility	3	Run SQL	52
Overview	3	Run SQL	52
Console Logging	3	Capture SQL	54
How to start Meta5 Trace	4	Chapter 6. New Icons in Meta5	55
M5Trace Command	5	Overview	55
NineOneOne Error Logging	6	Integrator Icons	55
Dr. Watson Log File	7	Other New Icons	57
Chapter 3. Meta5 Configuration		Chapter 7. Drag & Drop from Meta5	
Tools	9	and Windows	59
Overview	9	Overview	59
The Meta5 Server Configuration Tool	9	Examples for Use	59
Server Settings	10	Parameters	59
Advanced Settings	12	Examples for Use	59
Tuning and Diagnostic Settings	14	Chapter 8. Windows Application	
Workstation Settings	15	Icon	63
Email Settings	15	Overview	63
The Meta5 Server Manager	17	What can a Windows Application Icon do? ..	63
The Meta5 Start Center	18	Parameters	64
Standard Settings	19	Examples of Use	65
Advanced Settings	21	Drag and Drop	65
Chapter 4. Query Tool with		Importing from a PC hard drive	66
NOWTDD	25	Distributing Windows Applications	68
Accessing Data that has no Meta5 Data	25	Note on @-variable usage	69
Dictionary	25	Chapter 9. PC Directory	
What can a Query Tool without a WTDD do? ..	25	Enhancements	71
Configuring the Query for use without a		Overview	71
WTDD	26	Examples for Use	71
The Query Tool Icon Options Window	26	Parameters	71
Selecting the Tables to use in the Query	26	Examples for Use	72
Building the Query	28	Sending an Excel Document into PC	
Joining the Tables	29	Directory	72
Examples of use	31	Sending Word Data into a Capsule	

Application 73

**Chapter 10. Copy Icon Transformer
Enhancements 77**

Overview 77

Examples for Use 77

Parameters 77

Examples for Use 79

**Chapter 11. Connecting to ODBC
Data Sources 81**

Overview 81

Examples for Use 81

Parameters 81

Examples for Use 83

 Build Meta5 Queries Using MS Access ... 83

 Build Meta5 Queries Using SQL Server... 89

Index 93

Meta5 Publications 95

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About This Book

The PC Integration Tools user guide contains information about Meta5's integration capabilities with Microsoft Word, Excel and Outlook, and the BusinessObjects and BrioQuery tools. These PC Applications may be run from within a Meta5 Capsule enabling the user to create powerful Business Intelligence solutions by utilizing the best of breed tools.

Note: Keep in mind that although the Meta5 environment supports multi-threading of capsules via Capsule Services, the PC Applications we are relying on for integration typically do not support multi-threading.

Who Should Read This Book

The information and instructions contained in this book are written on the premise that you have:

- A working knowledge of PC use and the Microsoft Office suite
- A working knowledge of the Spreadsheet, Capsule, and Transformer tools
- A working knowledge of BusinessObjects and BrioQuery

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There you'll find a feedback page where you can enter comments and send them to us.

Chapter 1. Terminal Server Session Manager

Overview

The purpose of Terminal Server Session Manager is to keep applications from interfering with each other during execution on a Meta5 Capsule Server. It ensures the running (with no delays) of multiple capsule applications that may simultaneously be using the same program, such as Excel. This feature is pertinent when running Meta5 capsule applications that integrate with Microsoft Office, Business Objects, and Brio Query.

The Terminal Server maintains separate address spaces for each of the individual capsule execution engines running in individual sessions, although only one capsule execution engine must be configured in Meta5's Asset Manager to run on the Terminal Server. If the Meta5 assets are mis-configured so that more than one engine is running on a Terminal Server session, no protection is offered as multiple engines will run in each session. Also, the Capsule Manager must not be configured to run on the Terminal Server because a copy of the Capsule Manager will already be started in each Terminal Server session. Therefore, ensure that Capsule Manager is running on a separate server/node from the Terminal Server node.

Parameters and Set Up

The management program required for initiating the capsule engines is called M5ts.exe. M5ts.exe has very few settings. The most important setting is the "Root Directory" located under the "Settings" menu option. This setting is the Meta5 install directory on the Terminal Server. If this value is set incorrectly, the capsule engine will not start since the Meta5 software will not be able to be found.

Besides the root directory setting mentioned above (such as d:\Meta5), there are five fields that need to be filled in on the sign-on screen:

Server: The NetBIOS name or DNS name of the Terminal Server.

Username: The username to login to the Terminal Server as.

Password: The password for the username.

Log on To: The Windows domain to login under.

Sessions: A drop down box for selecting the number of engines to create from 1 to 19.

A checkbox is also available to prevent the startup of the Meta5 Capsule Engine software. This should not normally be used but is available for testing purposes.

If this feature is enabled, the Logoff menu item on the session screen is unavailable.

Examples for Use

Let's now review how to use Terminal Server Session Manager.

Once the variable fields have been filled in, the "Connect" button is clicked. This will cause the session manager to initiate the sessions on the terminal server. A new screen will be displayed with a tab for each session being created.

Once connected, the menu bar provides two main options: Connection and Logoff.

Under the Connection option, you have the ability to disconnect the currently displayed session, disconnect all active sessions or attempt to reconnect all disconnected sessions.

Under the Logoff menu, which is only available if the capsule software is running, you have the option to logoff the currently displayed session or all sessions.

If more than one Capsule Engine session is configured, a checkbox on the lower left of the screen called "Scan Sessions" is enabled. When this box is checked, the session manager will switch between the various sessions on an interval defined by the slider bar on the lower right of the screen. The default interval is five seconds and the maximum interval is 30 seconds. While scanning is enabled, the Connection and Logoff menu options are disabled.

Chapter 2. Meta5 Trace Facility

Overview

Introduced into Version 4.2 of Meta5 is a much improved and consolidated Trace facility for all the Meta5 services.

The Meta5 Trace Facility has two components. The first, Meta5 Trace, provides the tracing capabilities that are available from the Console of each of the services. This new facility has been consolidated into a single location, and with a simple front end to provide complete, real time control over what is to be traced.

The second, a new command called M5Trace.exe, provides additional trace facilities for individual services or groups of services.

It is now possible to run Meta5 in Service Mode and capture all the information from each Console as if it were running in Maintenance Mode.

Also, new information on the NineOneOne Error Logging, and Dr. Watson Logs are supplied at the end of this chapter.

Console Logging

Running Meta5 in Service Mode does not display command windows for services running on the server. This means that the System Administrator is unable to capture diagnostic information as it appears on any of the Meta5 Service Consoles.

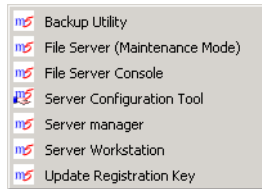
The alternative is to run Meta5 in Maintenance Mode. In Maintenance Mode, all Console windows are available to view for each of the services running on the server.

In Version 4.2 you can simply turn on default tracing and all Consoles will record to their log files.

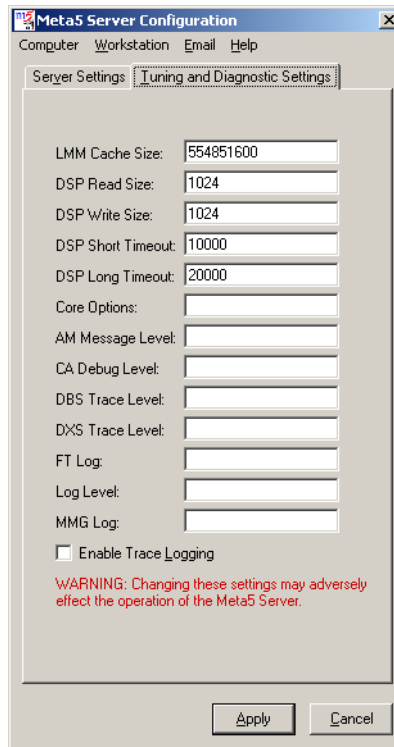
These log files are created in the Meta5 logs directory with only the three most recent trace files per service/type preserved to conserve disk space.

How to start Meta5 Trace

To turn on the Meta5 Trace Facility, you must go to the Windows Start menu, and under the Meta5 program group, select the Server Configuration Tool.



The Server Configuration Tool will automatically open to the Server settings tab. Click on the Tuning and Diagnostic tab.



When Meta5 is first installed, the default setting for the Trace Facility is OFF. The 'Enable Trace Logging' check box in the Configuration Panel is the global Meta5 Trace on/off switch. When selected, "Console" service tracing is enabled for all processes on this server.

This is the minimum trace configuration and is meant to provide diagnostic functionality equivalent to the console window output when Meta5 is running in Maintenance Mode.

The remainder of the settings on the Tuning and Diagnostic tab of the Server Configuration Tool are indicators to the trace facility to tell it what information levels should be recorded to the Meta5 Trace Logs. These settings should be left as they are unless advised specifically by the Meta5 Technical Support team while researching a problem.

Note: Meta5 Trace settings remain on

Trace settings are persistent between file server resets, and machine reboots by using a memory-mapped file to avoid excessive disk access.

Remember to turn off the Meta5 Trace Facility after you have recorded the information you need.

For other service types, the 'm5trace' command may be used to selectively enable or disable individual services or a combination of services.

M5Trace Command

The M5Trace command enables trace logging for trace type other than 'Console'. M5trace.exe is a standalone executable that resides in the meta5\exe directory, and does not link to any Meta5 dlls so there is no need to set a path statement. Typing the command 'M5Trace' at the command prompt without any switches will display a usage statement as follows:

```
=====
```

```
C:\meta5\exe\m5trace
```

```
Usage: m5trace +name1, name2,...
```

```
    Enables tracing for service name1 and service name 2
```

```
m5trace -name1, name2,...
```

```
    disables tracing for service name1 and service name2
```

```
m5trace +all
```

```
    enables tracing for all services
```

```
m5trace -all
```

```
    disables tracing for all services.
```

```
m5trace show
```

shows current trace settings

=====

To show current trace settings, issue the 'show' command

=====

```
C:\meta5\exe\m5trace show
```

```
Meta5 tracing enabled for...ds core amsvc catrans dxssm dxsee dxseep dbgw  
dxsdb appc dscl
```

```
s411 s411fwds 911
```

Tracing may be configured for any one of the following services:

```
ds core amsvc catrans dxseep dbgw dxsdb appc dscl s411 s411 fwds 911
```

NineOneOne Error Logging

NineOneOne events no longer trigger debug assertions. Instead, an event file is created for every event instance in the meta5\logs directory. The naming convention for 911 event files is 911.process_id.log. Below are the contents of a 911 event file call '911.1872.log' in the meta5\logs directory:

=====

```
Meta5 911 Event Log for process 1872: diskuser
```

```
Even occurred Wed Jun 18 10:56:38 2003
```

```
msg= LoadXti: Transport Type unknown, or Corelnit not called, code=1,param=0
```

```
file=m:\Src\loadxti.c, line=527, timestamp(build)=Wed May 10 14:58:42 2000
```

=====

The event file contains the file name, source line and build timestamp of the related event, along with the usual 911 msg, code and parameter.

NineOneOne events are logged in the Windows Event Viewer as well as the Meta5 Trace log.

Dr. Watson Log File

The Dr. Watson log file path is automatically reconfigured to place the drwtsn32.log file in the meta5\logs directory. Existing Dr. Watson settings are saved in the registry, and code is available that restores these settings should they be required.

Chapter 3. Meta5 Configuration Tools

Overview

This chapter describes the various configuration tools that are available to configure the Meta5 service to operate the way you want it to.

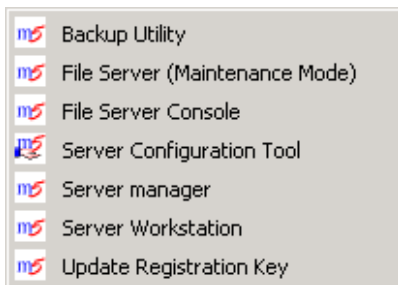
Three main tools are available to assist with this:

- The Meta5 Server Configuration Tool - This allows you to modify the settings under which the Meta5 Server will function.
- The Meta5 Server Manager - This tool allows you to easily stop and start Meta5 services.
- Meta5 Start Center - This Workstation utility allows the user to select which Meta5 Realm the Meta5 Workstation should connect to.

Each of these tools is described in detail throughout this chapter.

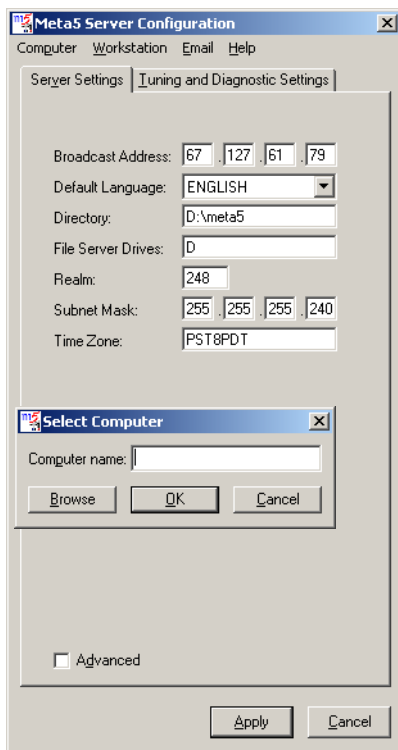
The Meta5 Server Configuration Tool

The Meta5 Server Configuration Tool is a quick and intuitive way to modify server settings. The Meta5 Server Configuration Tool can be found in the Meta5 Program group under your Start menu.



The Server Configuration Tool can be used to specify the settings on any Meta5 server on your network. The local system is available for configuration by default; however, you can connect to other Meta5 servers by selecting the "Computer" menu at the top of the window. The Select Computer Window appears, you can

enter the name of the computer to connect to, or use the Browse button to locate the computer on the network.



Server Settings

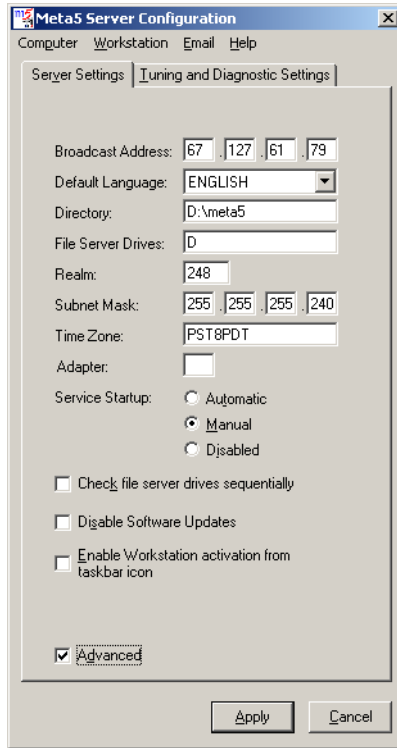
The Server Settings control the basic functionality of your Meta5 Primary file server and have the following meanings:

- | | |
|--------------------|---|
| Broadcast Address: | The address Meta5 should use to broadcast its presence to the Primary File Server (PFS). You might want to specify just the IP address of the PFS or you may want to widen the horizon and broadcast across a range of addresses. It will be determined by your network topology. |
| Default Language: | The language Meta5 should use in communicating with the user. |
| Directory: | The directory where Meta5 is installed. |

File Server Drives:	A list (of up to 3) disk letters that denote where the Meta5 File Server Pods reside. Note if more than one disk letter is used (more than one disk pod on this server) they are separated by commas (.).
Realm Number:	The unique Meta5 supplied number to identify the Realm that this server is part of. A Realm is a logical grouping of Meta5 Services and Workstations that make up a Meta5 LAN. More than one Meta5 Realm can reside on the same physical LAN. Their Realm Number separates them.
Subnet Mask:	The Subnet Mask of this server. This aids Meta5 in determining who is locally attached and who is remote. Meta5 will automatically tune the timing components of network communication based on whether the server is remote or not.
Time Zone:	The international standard on how to identify the time zone this server is working in. This is used by Meta5 to "translate" times when a Meta5 Realm spans a number of time zones.
Advanced:	Check box that will expand the options available to include the Advanced Settings. These are dealt with in the next section.

Advanced Settings

When the Advanced box is checked, four more options appear:



Service Startup: This allows the System Administrator to decide how Meta5 Server should startup.

Automatic: The Server will startup when Windows starts up.

Manual: The Server will only start when requested to do so. The Server is started via the Meta5 Server Manager described later in this chapter.

Disabled: The Meta5 Server will not start up automatically nor will it start in response to a request from Server Manager.

Check file server drives sequentially:

Check this box if you are experiencing significant disk contention when Meta5 File Services starts up and performs its disk checks. Checking this box will ensure that each pod is checked sequentially avoiding the possibility of disk contention and speeding up the time it takes to start the Meta5 Server.

Disable Software Updates:

Check this box if you have been told by Meta5 Technical Support (MetTech) to do so. Whenever the Meta5 PFS has been updated with newer code, the Meta5 servers will automatically update themselves on the next startup unless told otherwise by checking this box.

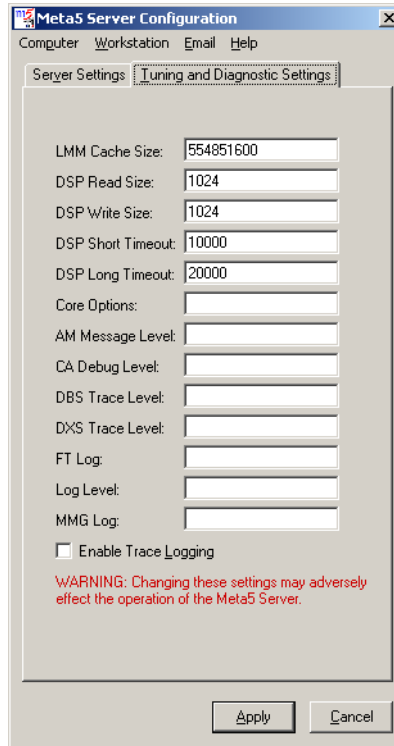
Enable Workstation activation from taskbar icon:

Check this box if you wish to have access to a Meta5 workstation from the Meta5 Server icon in the Windows System Tray. Right click on the Meta5 Server Icon in the Windows System Tray to select the Start Meta5 Workstation option.

Note: For security purposes it is recommended to manually start services and not to allow Workstation activation from the taskbar icon.

Tuning and Diagnostic Settings

For more advanced users, Meta5 performance can be optimized by changing to the Tuning and Diagnostic Settings tab. Click on the Tuning and Diagnostic Settings tab.

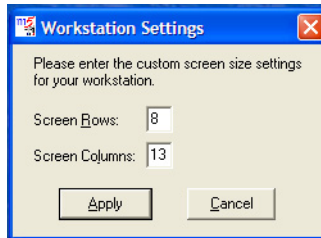


The Advanced Options, and Tuning and Diagnostic Settings are intended only for experienced System Administrators. Do not change any of these settings without consulting either your System Administrator or Meta5 Technical Support.

When contacting Meta5 Technical Support, you may be asked to enter information under the Tuning and Diagnostic Settings tab. Do not enter any information unless specifically instructed to do so by Meta5.

Workstation Settings

Click on the Workstation tab in the Meta5 Server Configuration Tool. This allows you to change the size of your Meta5 desktop in relation to your screen.



The Screen Rows parameter is set to 9 by default and the Screen Columns is set to 14 as the default. Using values of 8 and 13, as in the example shown will allow you to see some of your Windows desktop.

Screen Rows: This defines the number of Icon Rows you wish to have on your desktop. The range is between 5 and 9 rows.

Screen Columns: This defines the number of Icon Columns you wish to have on your Meta5 desktop. The range is between 7 and 14.

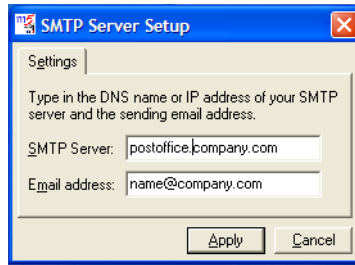
NOTE

Reducing the number of row and columns will shrink your Meta5 Desktop, but will not delete the Icons. These icons will re-locate to other vacant space on your desktop. If there is no more empty space available to fit the icons, then you must clear some space, logoff and logon again in order to see the missing icons. Once the Screen Rows and Screen Columns are set, you must exit the desktop and the restart using Server Workstation before seeing these changes.

Email Settings

Meta5 contains the capability to Email across the internet utilizing capsule technology in conjunction with the Email Outbox and Envelope icons. Meta5 version 4.2 achieves Internet e-mail capability by directing its mail to any SMTP mail server.

Click on the Email tab and choose "SMTP Server" to configure your SMTP mail server of choice.



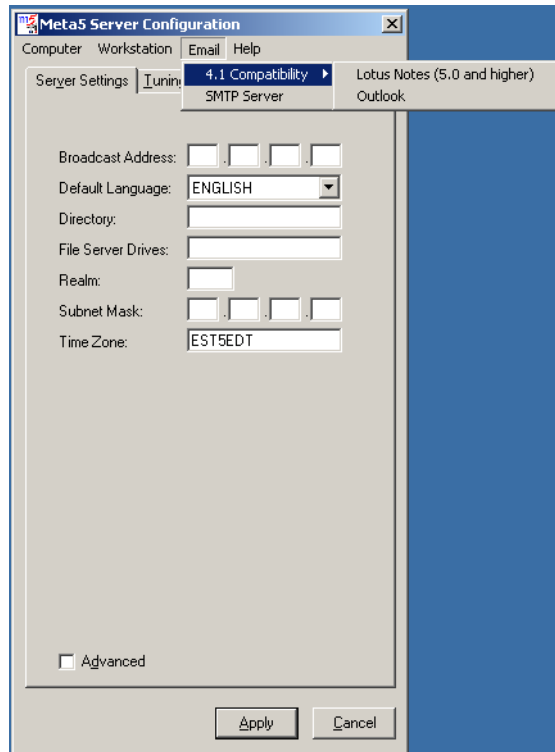
IMPORTANT NOTE

You may simultaneously retain configurations with Lotus Notes or Outlook **ONLY** for backward compatibility with earlier versions of your Meta5 applications (V4.1) using Meta5's PC Integration Tool: Sendmsg.

Click on the Email tab and choose "4.1 Compatibility" to setup configurations for your Sendmsg applications.

Selecting Lotus Notes (5.0 and higher) will prompt for a Notes user name and password.

Selecting Outlook requires no further action.



The Meta5 Server Manager

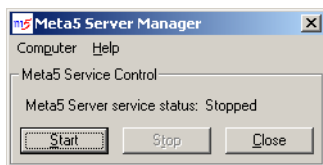
The Meta5 Server Manager is available in the Meta5 Program Group within the Windows Start Menu.

Server Manager allows you to easily start and stop Meta5 Services on any machine running a Meta5 Server on your network. Use the Computer menu on the header to browse for the computer you wish to control.

Note: Meta5 must be running in Service Mode for this technique to work. Service Mode is the mode Meta5 is running in when started through the Meta5 Server Manager.

The alternative to running Meta5 in Service Mode is starting Meta5 in Maintenance Mode. This option is also available from the Meta5 Program Group within the Start Menu - File Server (Maintenance Mode). This will open command

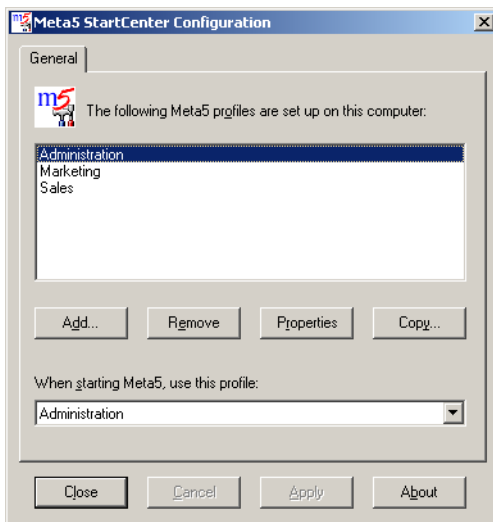
windows for each of the Meta5 services, allowing you to monitor closely the operation of Meta5.



The Meta5 Server Manager interface provides a simple way to restart Meta5 services when running in Service Mode.

The Meta5 Start Center

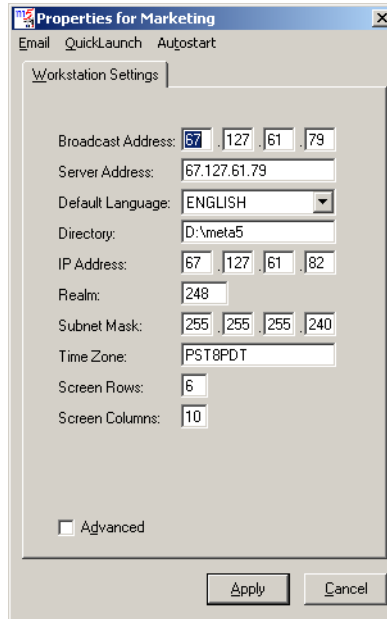
The Meta5 Start Center is for exclusive use with workstations. Start Center has been changed significantly from 4.1 to 4.2 to support multiple configuration profiles. Choose the Configure StartCenter option when you right click on the Meta5 Start Center icon in the Windows System Tray. The following window is displayed.



We already have a number of "profiles" defined here: Administration, Sales, and Marketing. Each of these profiles is separately configurable so that one workstation can work on several different Meta5 systems each with a different workstation configuration defining things like the screen size.

To modify an existing profile simply select it from the list and click on Properties.

Selecting Marketing from our list we click on Properties:



The settings you see above are very similar to the ones described earlier for the Server Configuration tool. A description of each follows:

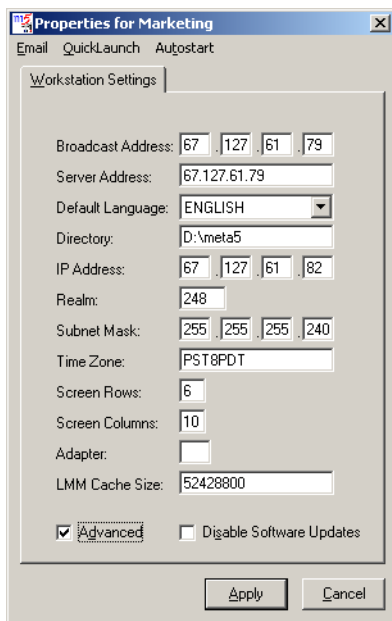
Standard Settings

- | | |
|--------------------|---|
| Broadcast Address: | The address Meta5 should use to broadcast its presence to the Primary File Server (PFS). You might want to specify just the IP address of the PFS or you may want to widen the horizon and broadcast across a range of addresses. It will be determined by your network topology. |
| Server Address: | The IP Address of the Meta5 Primary File Server (PFS). |
| Default Language: | The language Meta5 should use in communicating with the user. |
| Directory: | The directory where Meta5 is installed. |

IP Address:	The IP Address of the workstation being configured. Enter 0.0.0.0 if this workstation uses DHCP to allocate the IP Address.
Realm Number:	The unique Meta5 supplied number to identify the Realm that this server is part of. A Realm is a logical grouping of Meta5 Services and Workstations that make up a Meta5 LAN. More than one Meta5 Realm can reside on the same physical LAN. Their Realm Number separates them.
Subnet Mask:	The Subnet Mask of this server. This aids Meta5 in determining who is locally attached and who is remote. Meta5 will automatically tune the timing components of network communication based on whether the server is remote or not.
Time Zone:	The international standard on how to identify the time zone this server is working in. This is used by Meta5 to "translate" times when a Meta5 Realm spans a number of time zones.
Screen Rows:	Specify the number of rows here to set the height of the Meta5 workstation.
Screen Columns:	Specify the number of columns here to set the width of the Meta5 workstation.
Advanced:	Check box that will expand the options available to include the Advanced Settings. These are dealt with in the next section.

Advanced Settings

When the Advanced box is checked, three more options appear:



The screenshot shows a dialog box titled "Properties for Marketing" with a close button (X) in the top right corner. Below the title bar are three tabs: "Email", "QuickLaunch", and "Autostart". The "Workstation Settings" tab is selected and highlighted. The dialog contains several configuration fields:

- Broadcast Address: 67 . 127 . 61 . 79
- Server Address: 67.127.61.79
- Default Language: ENGLISH (dropdown menu)
- Directory: D:\meta5
- IP Address: 67 . 127 . 61 . 82
- Realm: 248
- Subnet Mask: 255 . 255 . 255 . 240
- Time Zone: PST8PDT
- Screen Rows: 6
- Screen Columns: 10
- Adapter: (empty field)
- LMM Cache Size: 52428800

At the bottom of the dialog, there are two checkboxes: Advanced and Disable Software Updates. Below these are "Apply" and "Cancel" buttons.

Adapter:	For workstations with multiple network adapters, you can specify the number of the adapter that you wish Meta5 to communicate through.
LMM Cache Size:	<p>The LMM is the Meta5 Local Media Manager It is a subdirectory of the Meta5 installation directory and provides an area for Meta5 to optimize its overlay loading.</p> <p>As tools are opened on the Meta5 desktop, the workstation software checks to see if it is already loaded down as part of the base product. If not there it checks to see if it has been downloaded dynamically before in which case it will be found in the LMM. If it isn't there, then Meta5 downloads it from the PFS and stores a copy in the LMM for future use. This reduces network traffic between the PFS and the workstation.</p> <p>Increasing this value may, in some instances, improve performance. Use your judgment in deciding whether to change the default value.</p> <p>Decreasing this value may adversely affect the workstation performance. Care must be exercised when deciding to alter this value.</p>
Disable Software Updates:	Check this box if you have been told by Meta5 Technical Support (MetTech) to do so. Whenever the Meta5 PFS has been updated with newer code, the Meta5 servers will automatically update themselves on the next startup unless told otherwise by checking this box.

In addition to setting the default profile in the Start Center Configuration tool, you can right click on the Meta5 System Tray icon, and select the profile you wish to activate.



Figure 1. Meta5 has completed initialization

The Meta5 System Tray icon will appear in the lower right hand corner. If there is a red X on the M5 icon, the service has not completely started. Please wait for the red X to disappear, as this will signify that the M5 service is up and running.



Figure 2. Meta5 is starting up

Chapter 4. Query Tool with NOWTDD

Accessing Data that has no Meta5 Data Dictionary

Normally, you are required to define a Workstation Tools Data Dictionary (WTDD) in a database that you wish Meta5 to access. The WTDD provides the user with friendly names for tables and columns. The WTDD also allows you to set up default joins between tables that form a category. The setting up of the WTDD is a simple task with all the procedures and statements supplied as part of the Meta5 software.

However, when accessing data on an ad hoc basis or accessing a data source where a WTDD would be inappropriate, this step can be ignored. It can be ignored because Meta5 Version 4.2 introduces the Query tool that can be operated without a WTDD in place. The benefits of the WTDD are therefore lost in this scenario but the ability to access this data quickly will often outweigh this inconvenience.



Figure 3. Query Icon

What can a Query Tool without a WTDD do?

- Leverage the power of the Query tool against any ODBC compliant data source.
- Respond quickly to new data sources and include them in your business analysis.
- Avoid the delays associated with the provision of new data on the corporate data warehouse.

Configuring the Query for use without a WTDD

The Query Tool Icon Options Window

Figure 4 shows the window displayed when you option the Query tool icon and select Other Data.

Note the use of the WTDD Owner field. We have specified nowtdd as the WTDD Owner, which tells the Query tool that there are no WTDD tables associated with this data source.

Note that this parameter is case sensitive. It must be typed in as nowtdd.

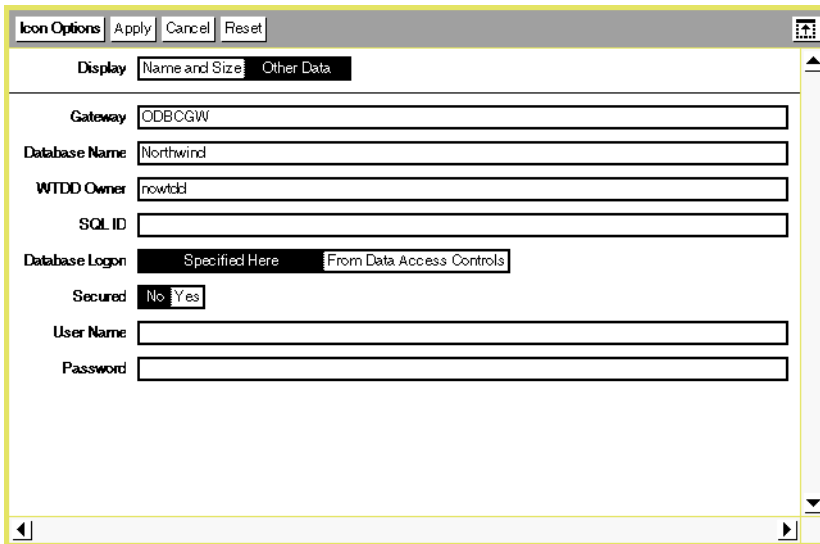


Figure 4. Query Tool Icon Options Window when there is no WTDD

Selecting the Tables to use in the Query

A conventional Query tool that has been configured to go against a database that includes a WTDD, will display the list of Categories and their associated table names in terms familiar to the business. If we compare the DBA Catalog of a Query with a WTDD and a Query without, you will quickly see the difference. Figure 5 shows the DBA catalog displayed as the WTDD has them described whereas Figure 6 shows the physical database names as described in the data source (without the WTDD).

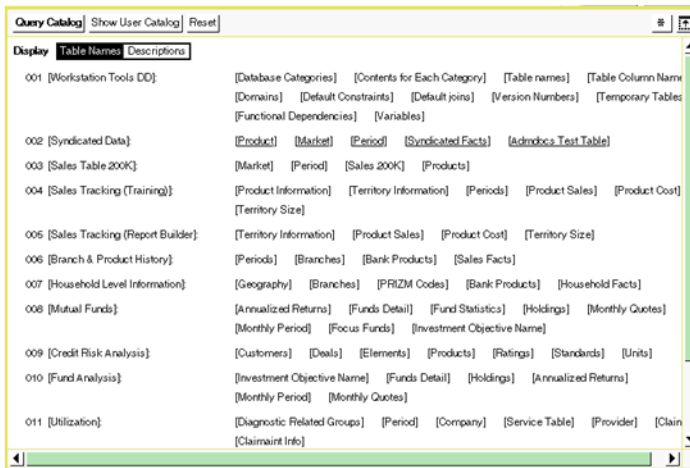


Figure 5. DBA Catalog with the WTDD present

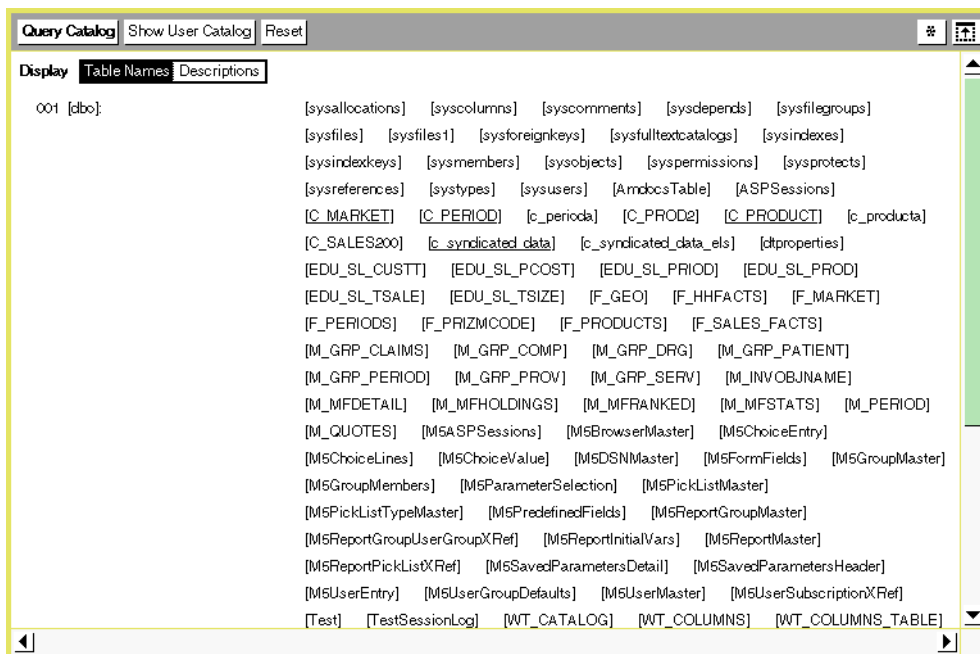


Figure 6. DBA Catalog without the WTDD being used

From the DBA Catalog above, select the tables you want to work with and display the User Catalog. Again we have differences between what you would see if there were a WTDD in place versus what you see when you don't. Figure 7 and 8 demonstrate these differences.

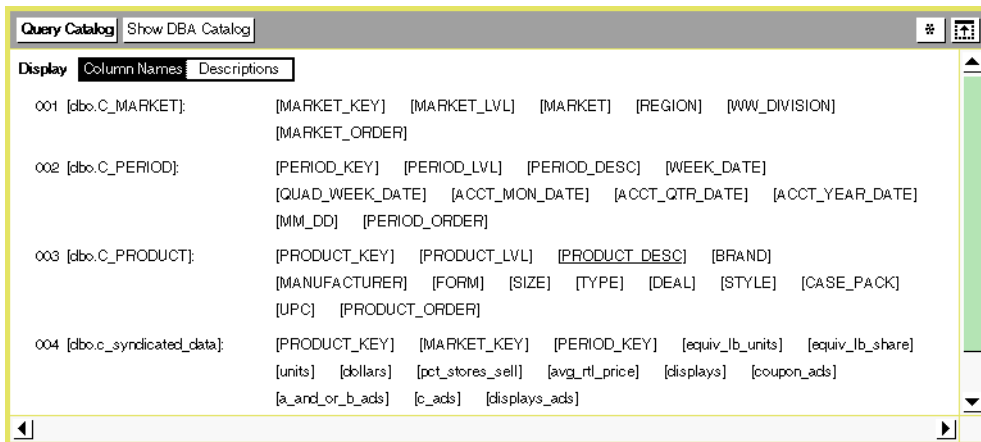


Figure 7. User Catalog of selected tables when a WTDD is used

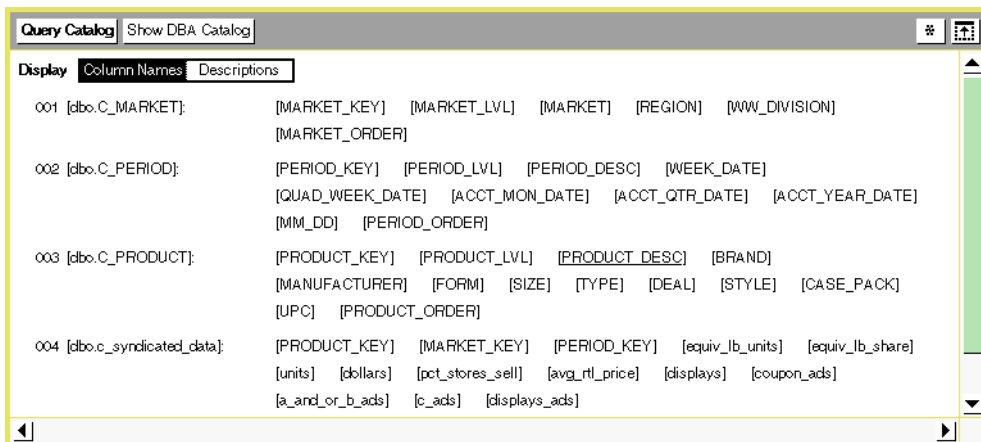


Figure 8. User Catalog of selected tables without a WTDD being used

Building the Query

The next step, after selecting the tables you wish to work with, is to build the Query Control.

There are a number of ways to build the Query Control. The Meta5 Data Access Tools Guide provides a full explanation of the methods available. We will use one of these methods to build our Query.

Select the tables from the User Catalog and copy them into the Query Control window.

Joining the Tables

When all the tables, you wish to use in the Query, have been copied in, you need to define the relationships between them (joins).

When using the Query tool with a WTDD in place, there is normally no need to perform this step. All of the logical joins will have been predefined in the WTDD when the Category was built by the Systems Administrator or similar.

Without a WTDD, the Query designer is responsible for declaring these relationships (joins). A join is created between two tables by selecting the column of the first table, in the Query Control window, with the left mouse button and clicking on the column of the second table with the right mouse button. A line is drawn between these two columns and the tables are joined.

The choice of these columns is important. The lack of a WTDD means you are presented with the physical names of any tables and columns you are working with. Some knowledge of the data, being employed, is required to ensure that meaningful joins are created. Joining dissimilar columns will result in errors or incorrect results.

Complete the process by defining each of the joins in turn. Next, click on Show Query and Meta5 will redraw the Query Control window, placing the tables in appropriate positions so that the depiction is easy to follow.

Define all the constraints required to retrieve the data needed for the application or task. The Meta5 Data Access Tools Guide provides full details on how to build a Query. Examples are provided as part of the Meta5 software and can be found in the Meta5 Sample Applications file drawer in New Icons.

Figure 9 shows a fully configured Query that uses a WTDD whereas Figure 10 depicts the same Query without a WTDD. Note all of the joins in the second example were created manually.

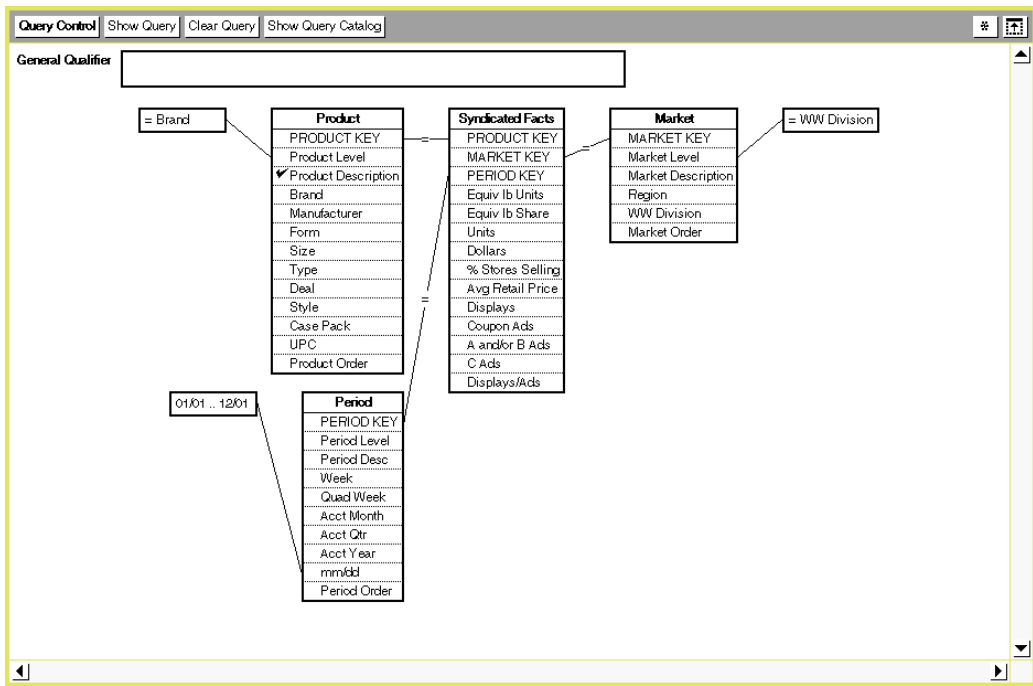


Figure 9. Query Control window that uses a WTD

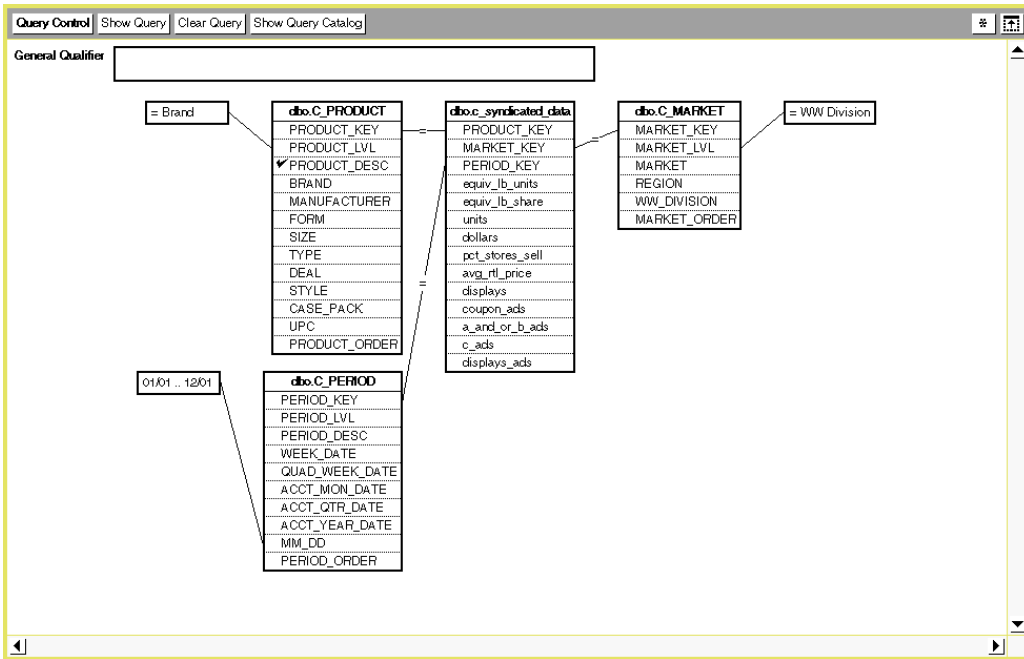


Figure 10. Query Control window that does not have a WTDD defined

Examples of use

Count of Invoices by Country

Microsoft's Access product includes a number of optional sample databases. One of these is called Northwind.mdb.

The Northwind database has no Meta5 Data Dictionary (WTDD) associated with it.

We wish to derive the total number of invoices generated by Northwind for each country in which they operate. An example of this report follows:

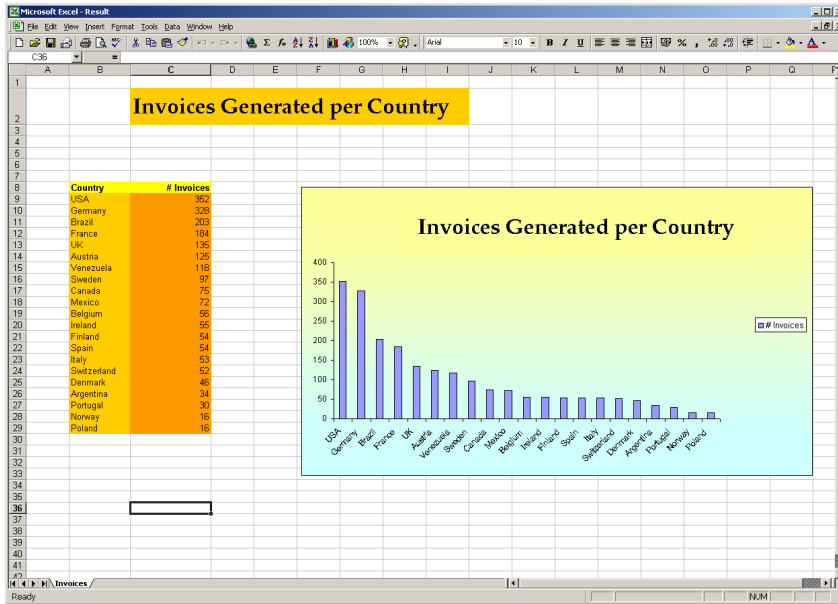


Figure 11. Sample Report demonstrating the use of a Query without a WTDD

We therefore need to undertake the following steps.

1) Acquire the following details from your Systems Administrator:

Gateway Name	<p>The name of the Meta5 Database Gateway Service you wish to use to access this database.</p> <p>You will use this name in the Gateway Name field of the Query Options sheet.</p>
DSN Name	<p>The name of the DSN that contains the correct driver for the data source that you are using. (i.e. Microsoft's Access Driver *.mdb) It must be configured to access the correct database and use the correct credentials to connect to it.</p> <p>You will use this name in the Database Name field of the Query Options sheet.</p> <p>Note: The ODBC DSN must reside on the same machine that is running the Meta5 Database Gateway Service you wish to employ.</p>
User Name	<p>The user name that has permission to connect to this database. If a user name is not required then specify a single blank character.</p>
Password	<p>The password for the user name that will access this database. Note the password appears only while typing. When you come to look at it later it will be invisible. If a password is not required then leave this box empty.</p>

2) Configure the Query tool.

Open the Query tool and select Other Data. Fill in the Gateway Name and Database Name fields with the information derived earlier. In the WTDD Owner field, specify nowtdd and in the User Name and Password fields use the information derived earlier.

3) Build the Query.

Open the Query tool and click on Show Controls. Open the Catalog by clicking on Show Query Catalog. In the Query Catalog window click on the Show DBA Catalog button. You are now in a position to select the tables you need for the application.

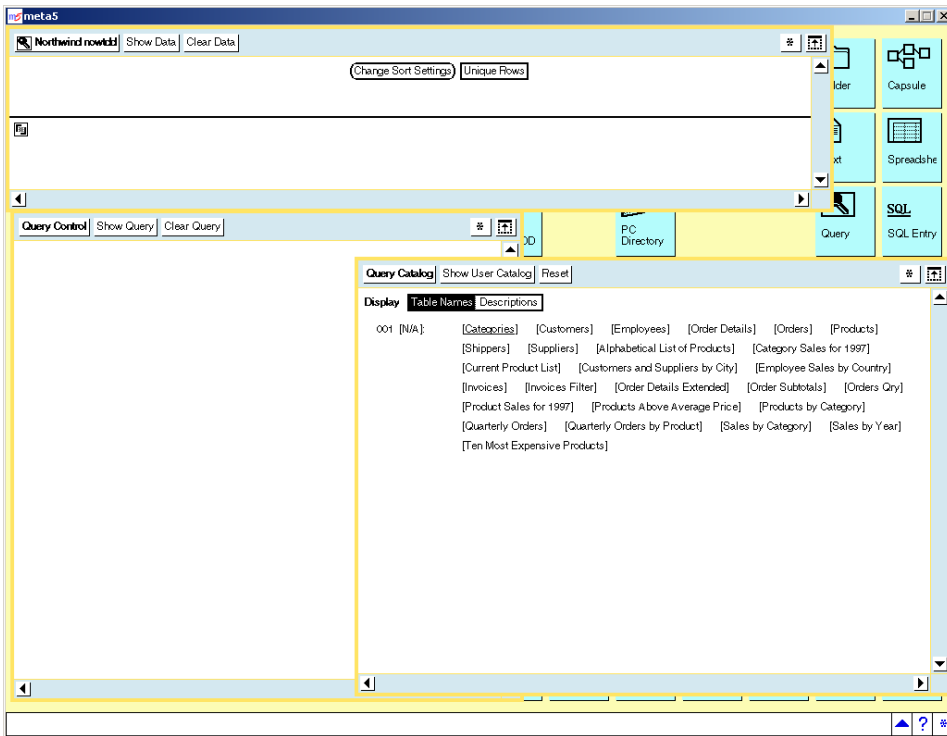


Figure 12. DBA Catalog window displaying all of the tables available for use

Figure 13 shows the user catalog after the required files have been selected. Copy the tables into the Query Control Window (see Figure 14.) and create the joins needed.

Figure 15 shows the tables after the joins have been created and Figure 16 shows the tables redrawn after the Show Query button was clicked on.

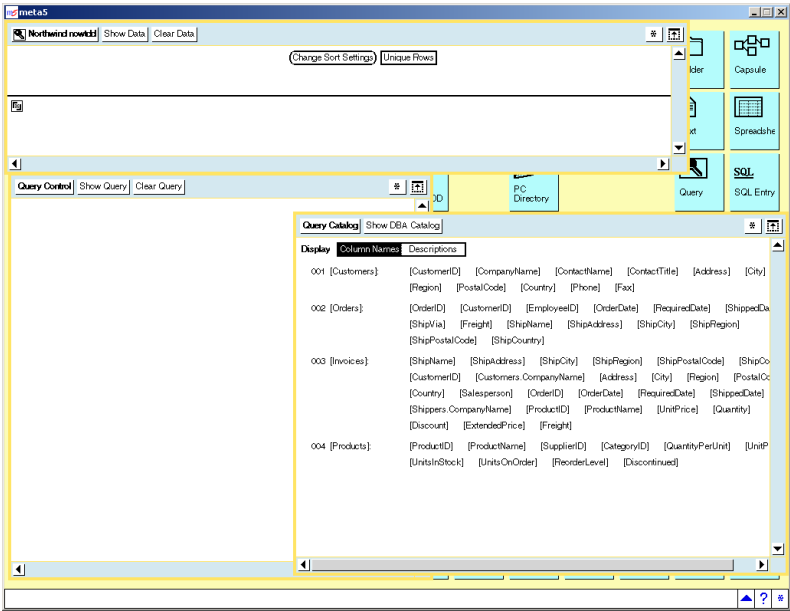


Figure 13. User Catalog after the tables have been selected from the DBA Catalog

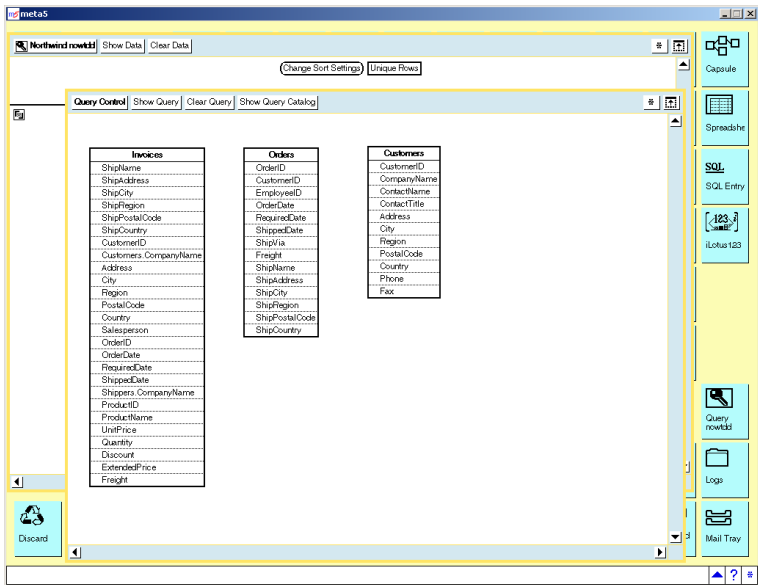


Figure 14. The Query Control window after the tables have been copied in

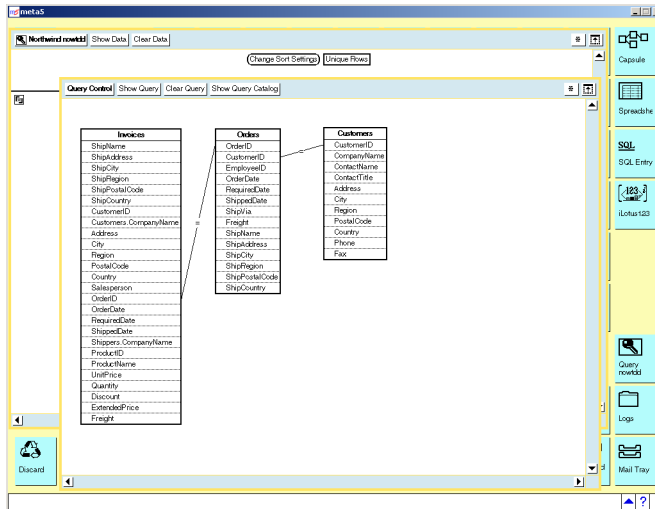


Figure 15. The Query Control window after the Joins have been created

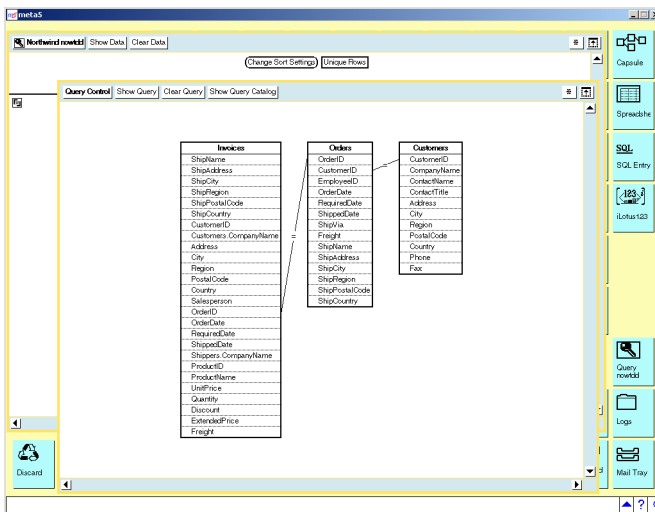


Figure 16. The Query Control window after Show Query has been activated

4) Constrain the Query

Constraining the Query, limits the data returned down to a selection that matches the business requirement.

We are looking for the total number of invoices issued for each country that Northwind trade in. Since we want the total number of invoices by country from when Northwind started trading we have no date constraints to worry about.

5) Select the columns to display

From the Query Control window, select the columns you wish to display and copy them to just below the line in the Query Results window. Drop each column over the last column added and the new column will be placed to the right of it.

In our example we are interested in seeing the country displayed along with a calculated column that we will come on to next. For the moment, simply copy the Country column from the Customers table to Query Results window.

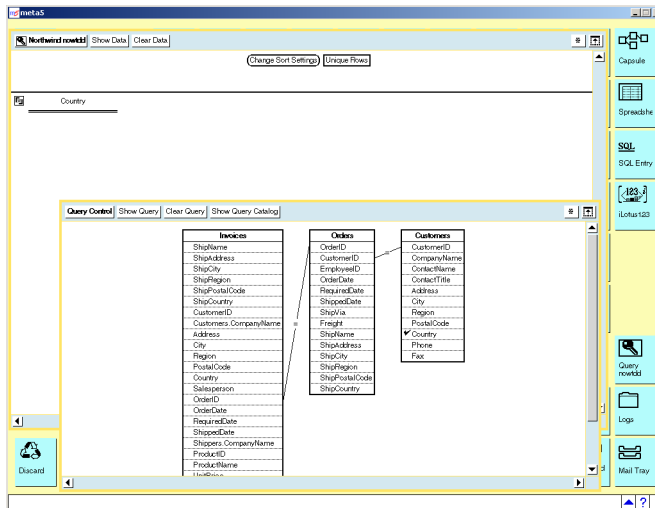


Figure 17. Populate the Results area with the columns to retrieve

6) Perform any Calculations.

In our example we are looking to retrieve a count of invoices produced since the company started trading and to break them out by country. We have placed the Country column in the Results area already. Now we wish to add the count of invoices as a computed column.

Set Expert Functions on by selecting the Add Expert Functions from the drop down list on the Special Button (*) in the top right hand corner of the Query Results window.

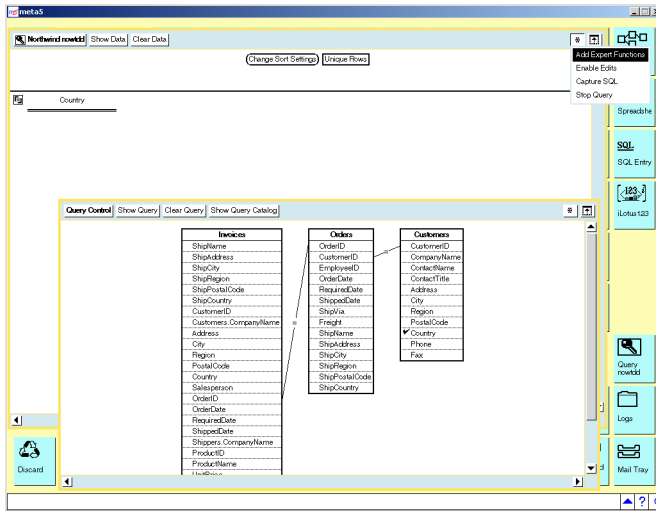


Figure 18. Select Add Expert Functions to create a computed column

A new button appears on the Query Results window header called Create Column.

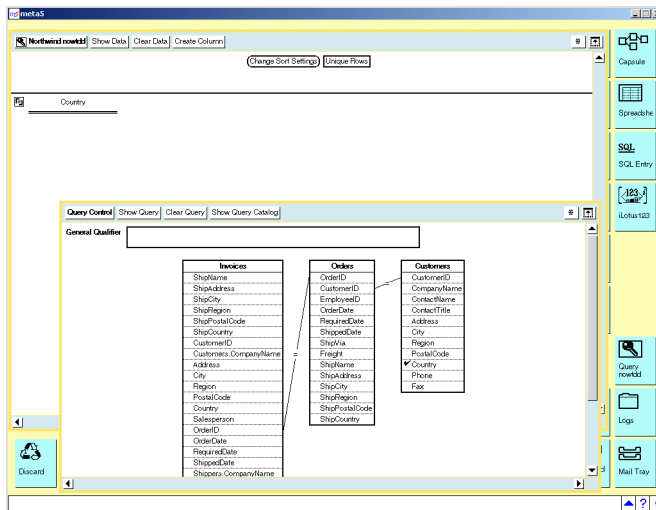


Figure 19. The Create Column button appears after selecting Add Expert Functions

Select this button and enter a name to display as the column header and select the Count function. Enter an * in the Formula field to denote a count of occurrences.

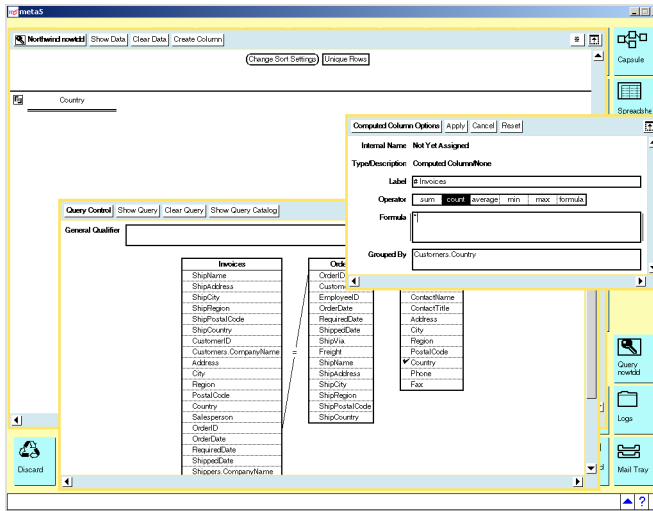


Figure 20. Enter the details for the Computed Column (Count of Invoices)

Close the Computed Column Options window. The new column appears to the right of the last column displayed.

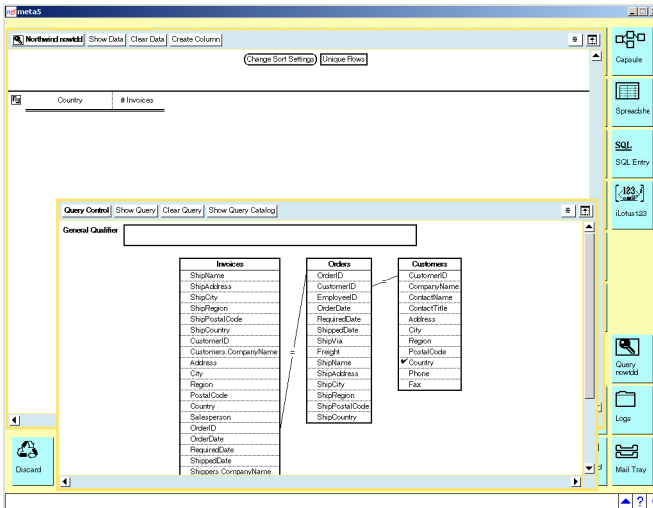


Figure 21. The new computed count of invoices has been added to the Results area

7) Sort the Data

You may choose to sort the query results in the Query so that the data appears in the order you want it. In our example we want to display the count of Invoices by

Country and we want to see the largest number of invoices per country first. We therefore want to sort descending on our count of invoices column.

Click on Change Sort Settings and copy the count of invoices column to the Column field of the Sorting Level 1 row. Change the sorting method to Descending and close the window. The data will now be sorted the next time you retrieve the data.

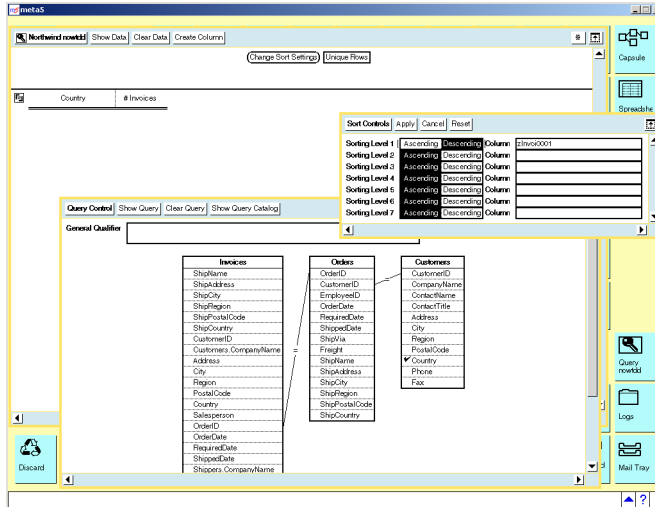


Figure 22. Sorting the data, descending on Count of Invoices

Sort in Effect appears in the Query Results window to remind you that Sorting has been turned on.

8) Retrieve the Data

Click on Show Data to see the results.

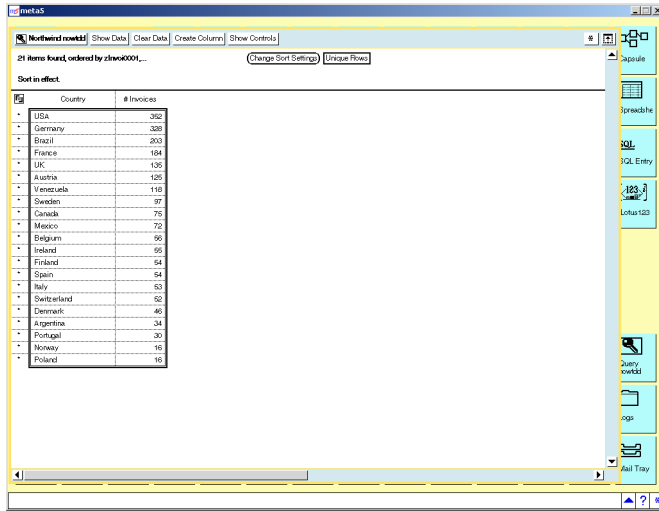


Figure 23. The results of the Query after clicking on Show Data

The Query tool is now ready to be used in an application. An example of such an application or Capsule is provided in the Meta5 Sample Applications file drawer, which can be found in the New Icons file drawer.

This Capsule takes the data from the Query tool and using an Excel Template Spreadsheet and some Title information generates the following Excel Spreadsheet report.

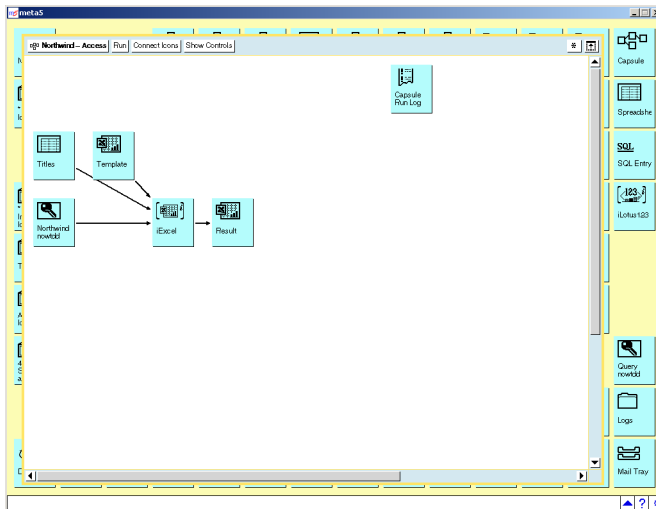


Figure 24. Example Application using the results of the Query from earlier

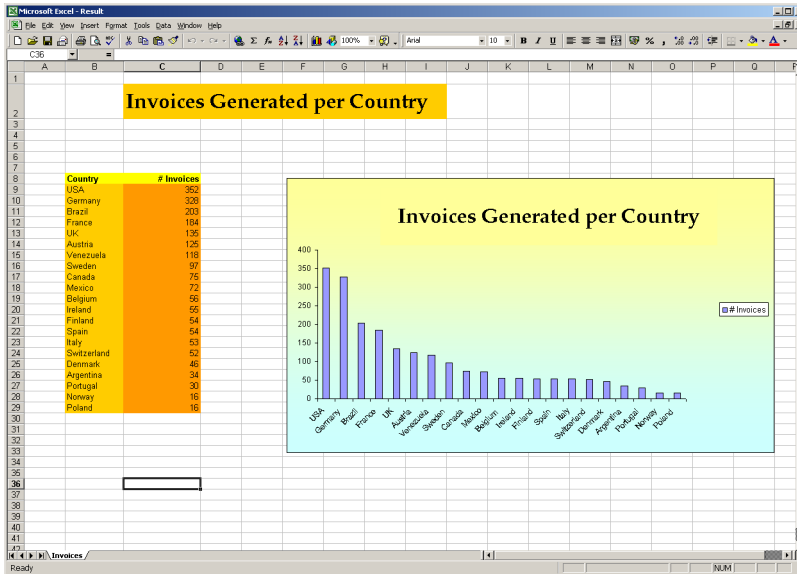


Figure 25. Excel Spreadsheet report using the Data from our Query

Brand Sales by Region

This example is taking data from the Meta5 supplied Coffee Database residing on Microsoft's Access. We have defined an ODBC link to this data source by following the wizard in the Microsoft Data Sources (ODBC tool in Windows Administrator Tools.

The Coffee Database is used in our training manuals for all the examples. It is also used here for demonstration purposes. This database is supplied as part of the Meta5 software but is an optional component to install. Check with your Meta5 System Administrator if this database has been loaded at your site.

The Coffee Database contains data relating to the sales and marketing of a range of brands of coffee by fictitious manufacturers within a global market.

It does not contain a WTDD.

We want to get the Brand Sales and Units values for each market in the Central Region of the USA for Quarter 2 of 2003. Each Brand will be reported on a separate sheet of the resultant workbook.

The following is an example of the report we want to generate.

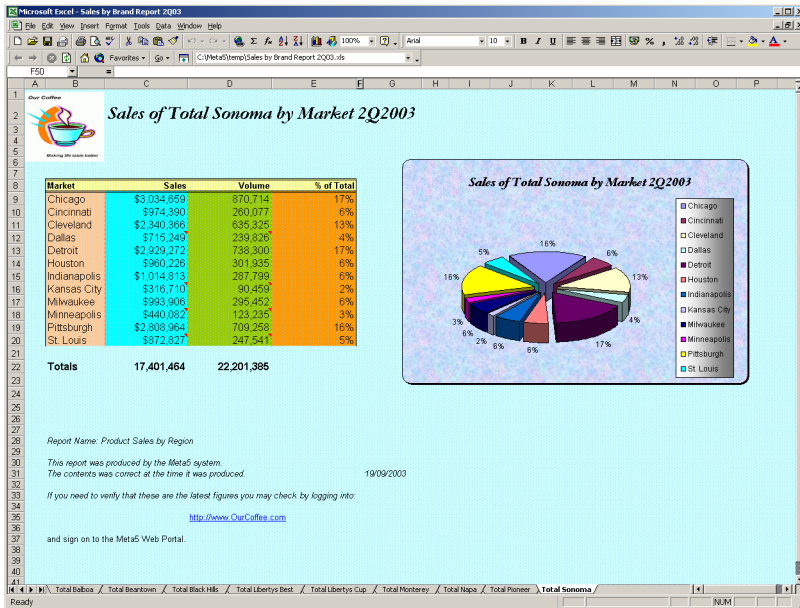


Figure 26. Report using the Coffee Access database without a WTDD

Again we follow the exact same procedure as with the previous example.

1) Acquire the following details from your Systems Administrator:

- Gateway Name** The name of the Meta5 Database Gateway Service you wish to use to access this database.

You will use this name in the Gateway Name field of the Query Options sheet.
- DSN Name** The name of the DSN that contains the correct driver for the data source that you are using. (I.e. Microsoft's Access Driver *.mdb) It must be configured to access the correct database and use the correct credentials to connect to it.

You will use this name in the Database Name field of the Query Options sheet.

Note: The ODBC DSN must reside on the same machine that is running the Meta5 Database Gateway Service you wish to employ.

User Name	The user name that has permission to connect to this database. If a user name is not required then specify a single blank character.
Password	The password for the user name that will access this database. Note the password appears only while typing. When you come to look at it later it will be invisible. If a password is not required then leave this box empty.

2) Configure the Query tool.

Option the Query tool and select Other Data. Fill in the Gateway Name and Database Name fields with the information derived earlier. In the WTDD Owner field, specify nowtdd and in the User Name and Password fields use the information derived earlier.

3) Build the Query.

Open the Query tool and click on Show Controls. Open the Catalog by clicking on Show Query Catalog. In the Query Catalog window click on the Show DBA Catalog button. You are now in a position to select the tables you need for the application.

4) Constrain the Query

Constraining the Query, limits the data returned down to a selection that matches the business requirement.

We need to select Dollars and Units from the fact table and constrain to Brand for the product_lvl and iterate on the product_desc (Brand). We need to constrain the period_lvl to Quarter and the period_desc to Q2 2003. Lastly we constrain the Market table so that market_lvl is Market and market is set to Central.

5) Select the columns to display

From the Query Control window, select the columns you wish to display and copy them to just below the line in the Query Results window. Drop each column over the last column added and the new column will be placed to the right of it.

In our example we are interested in seeing the market_desc displayed along with the UNITS and DOLLARS columns.

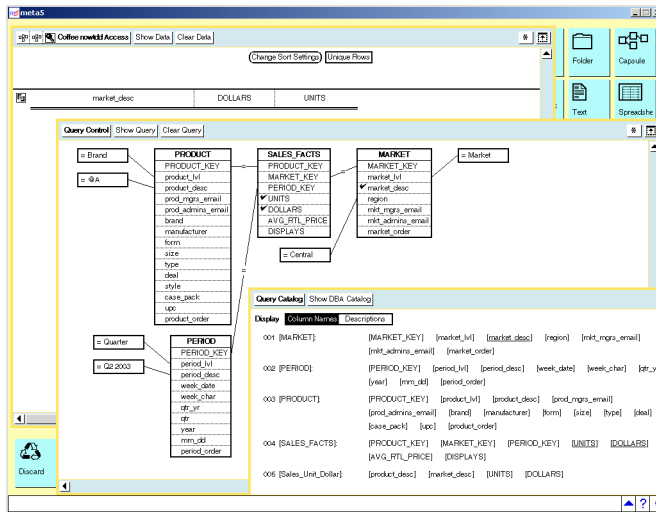


Figure 27. The fully configured and constrained Query without a WTDD

6) Perform any Calculations.

There are no calculations to perform in this example.

7) Sort the Data

There is no sorting required in this example.

8) Retrieve the Data

Click on Show Data to see the results.

12 items found, ordered as located in database. (Change Sort Settings) (Unlink Rows)

market_desc	DOLLARS	UNITS
Chicago	3,034,669	875,714
Cincinnati	674,390	260,977
Cleveland	2,340,368	635,325
Dallas	715,249	239,694
Detroit	2,525,972	738,900
Houston	960,226	301,535
Indianapolis	1,014,813	287,739
Kansas City	316,710	90,489
Milwaukee	183,906	295,452
Minneapolis	440,062	123,635
Pittsburgh	2,808,964	709,850
St. Louis	872,627	247,641

Figure 28. The results of our Query

Chapter 5. DBA Tool with NOWTDD

Overview

Normally, you are required to define a Meta5 Workstation Tools Data Dictionary (WTDD) in a database that you wish Meta5 to access. The WTDD provides the user with friendly names for tables and columns. The WTDD also allows you to set up default joins between tables that form a logical grouping or category. The setting up of the WTDD is a simple task with all the procedures and statements supplied as part of the Meta5 software.

However, when accessing data on an ad hoc basis or accessing a data source where a WTDD would be inappropriate, this step can be ignored. It can be ignored because Meta5 Version 4.2 introduces the DBA (Database Administration) tool that can be operated without a WTDD in place. The benefits of the WTDD are therefore lost in this scenario but the ability to access this data quickly will often outweigh this inconvenience.



Figure 29. DBA Tool Icon

The DBA Tool icon is one of the Meta5 data access tools. It has to be configured to tell it which Meta5 database gateway it is going to use and which database to access. It also requires a user name and password to get through the RDBMS' security. One of the optional fields in the DBA Tool configuration is the WTDD Owner field. This allows the WTDD to be owned by another user but accessible to the user name and password that is using the DBA tool.

For data sources without a WTDD defined, you must specify the keyword `nowtdd` to the WTDD Owner field. The Meta5 DBA tool will then only display information about the tables at the physical level. In other words, only the physical table and column names.

What can a DBA Tool without a WTDD do?

- Display the physical tables, by user, within an ODBC compliant database.
- Interrogate the definitions of the tables and their columns.

- Perform housekeeping on the tables within a database.
- Run SQL from within the tool.

The DBA Tool Icon Options Window

The DBA Tool can be found in the Administrator Icons file drawer.

Figure 30 shows the window displayed when you option the DBA tool icon and select Other Data.

Note the use of the WTDD Owner field. We have specified nowtdd as the WTDD Owner, which tells the DBA tool that there are no WTDD tables associated with this data source.

Note that this parameter is case sensitive. It must be typed in as nowtdd.

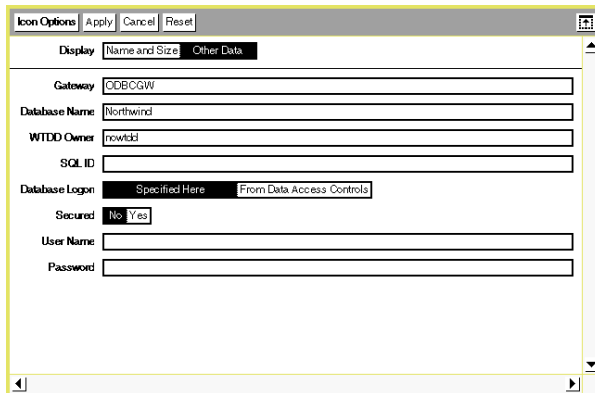


Figure 30. DBA Tool Icon Options Window when there is no WTDD

Using the DBA Tool

After configuring the DBA tool Options Window, the icon is ready to use. When we open the tool (Figure 31) we are presented with the initial display of the host Physical Data Dictionary. In our example we are looking at the Northwind database, as provided by Microsoft's Access product.

The display shows a list of users that have access to this database. Since there is no "owner" as such within this database, all the tables are owned by N/A.

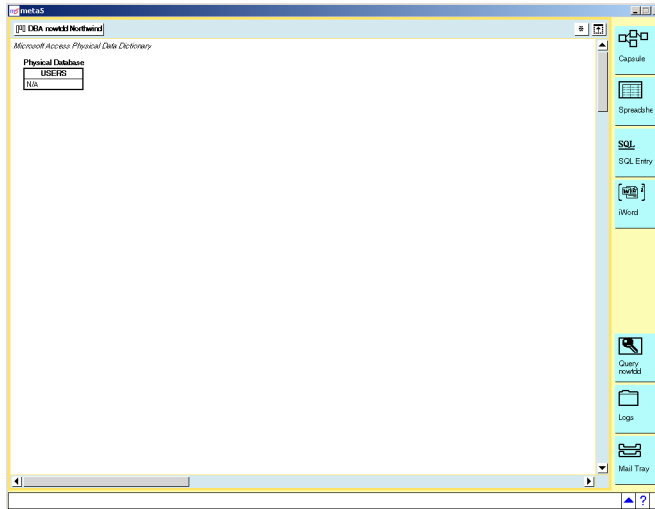


Figure 31. DBA tool without the WTDD present

By double clicking on the N/A user, the tool will open up to display a list of all the tables and queries (queries that are already saved in Access) owned by this user. In our example this means all the tables and queries of the Northwind database. Figure 32 shows all the physical table and query names associated with the user N/A.

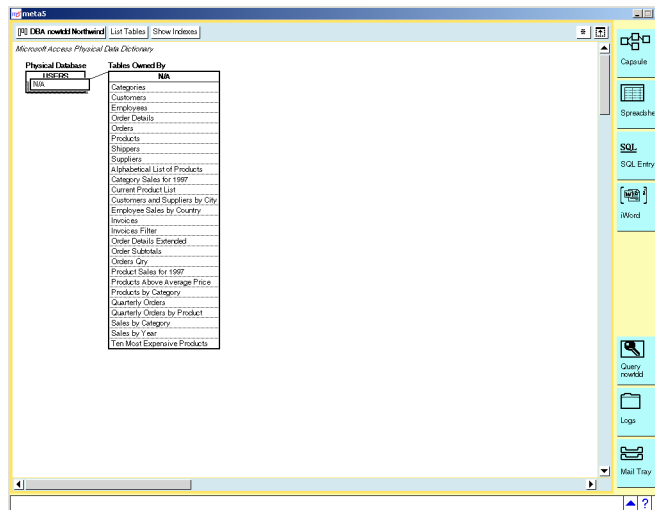


Figure 32. Display of all the tables "owned" by user - N/A

From this list of tables and queries, we can expand the display to show us the columns defined to the object. By double clicking on the table or query name, the

DBA tool displays a list of the physical column names belonging to this table or query, in the order they are found in the database. Figure 33 shows all the physical columns defined to the table - Products.

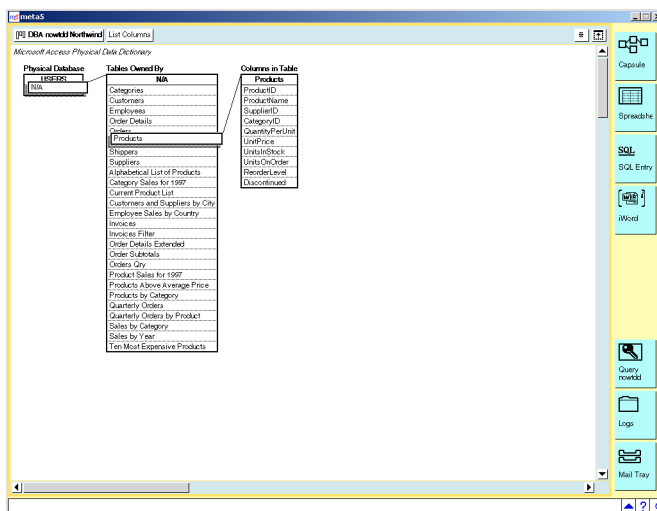


Figure 33. Double click on the table and the table's associated columns are displayed

We can further drill down to understand the properties of each column. These properties are the column name, data type, field length and whether nulls are accepted. Figure 34 shows the properties of the ProductName column of the Products table.

Note that the properties describe this column as a variable character field of 40 characters maximum and nulls are allowed.

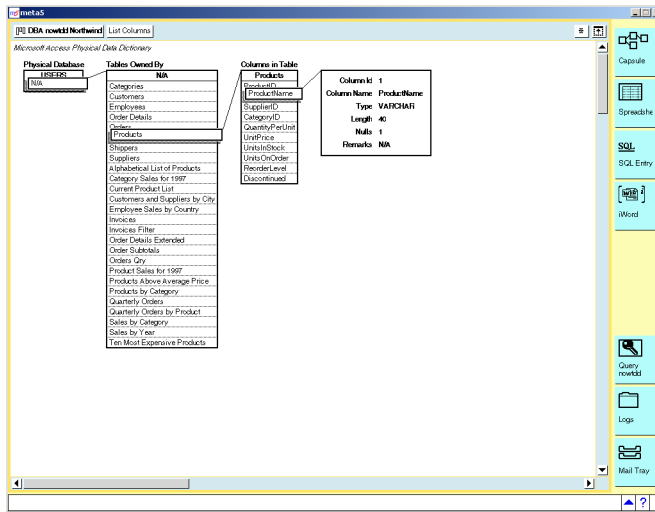


Figure 34. Examining the properties of the column - ProductName - in table Products

Administering Tables with the DBA Tool

One of the functions of the DBA tool is to be able to administer the tables and columns of a database. When dealing with a DBA tool that is using the Meta5 WTDD, we have many more options. For example, we can create the logical definitions of a new table and then, when complete, request that the physical table be created based on the definitions in the WTDD. Since we do not have a WTDD we are restricted to what we can achieve.

The DBA tool without a WTDD is able to interrogate the structure of a database, table or column. In addition it can perform deletes of tables within a database that the DBA tool is connected to.

Deleting Tables

Simply configure the DBA tool with the appropriate names of the database you wish to administer and the associated user name and password. Open up the tool and open the user that owns the tables you wish to administer.

With the list of tables displayed, select the table you wish to delete and either click with the mouse to the delete option or press the delete key or press F5. You will be asked to confirm if you wish to delete this table. Click on Proceed to delete the table. The table is dropped from the database and can only be retrieved through the administration facilities of the host database system.

We have a table called Geography in the Northwind database. We want to delete it. Note we have added this table to the Northwind database to demonstrate the delete facility. It does not form part of the standard offering from Access.

Open a DBA tool that has been configured to connect to the Northwind database. Note it must have nowtdd specified in the WTDD Owner field of the DBA tool Options window.

Double click on the user entry called N/A to display the complete list of tables on this database. Locate the table called Geography and select it with the mouse. While it is highlighted, press the F5 key or the Delete key or using the cording technique select the Delete option. You will be prompted to confirm the delete by clicking on the Proceed button as in Figure 35.

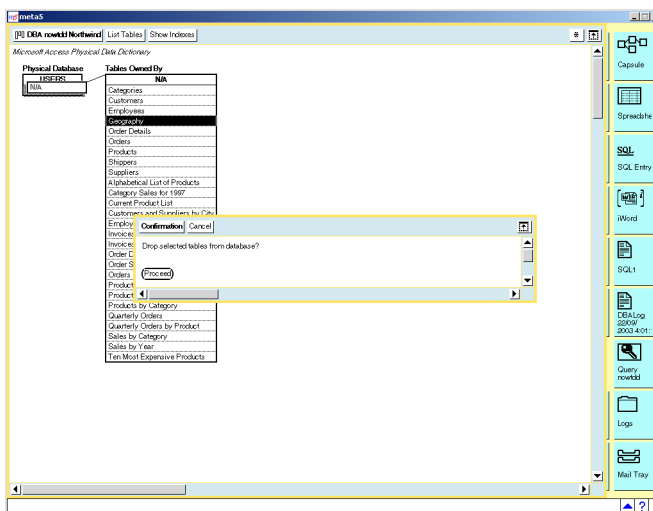


Figure 35. Click on Proceed to confirm the deletion of the table called Geography

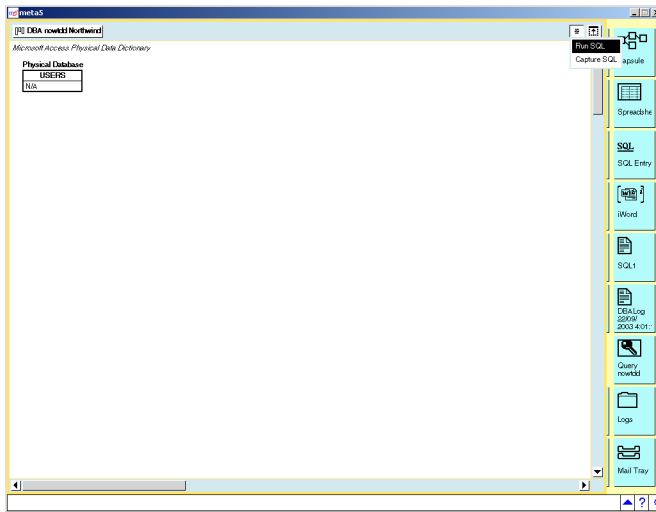
Run SQL

The Special button (*) in the top left hand corner of the DBA tool window provides two options. The first is to Run SQL and the second to Capture SQL.

Run SQL

The Run SQL option provides the user of the DBA tool with the ability to execute SQL statements directly from the tool without the need to use alternative data access tools such as SQL Entry.

Figure 36 shows where the Run SQL option is located.



*Figure 36. The Run SQL option is available from the Special (*) button of the DBA tool*

Once the Run SQL option is selected, two windows open. The first of these contains a log of all the statements issued and the results of those statements. The second is the SQL Control window for entering the SQL statements.

Enter the SQL statement you wish executed for you in the SQL Control window and click on Run to execute it. The results will be returned in the DBA Log window.

For example, you may wish to understand how many records are in a particular table. To do this you would open up the SQL Control and DBA Log windows by clicking on Run SQL in the Special (*) button in the window header.

Type the SQL statement in the SQL Control window and click on Run when complete. The results indicate there are 9 records in the Employees table.

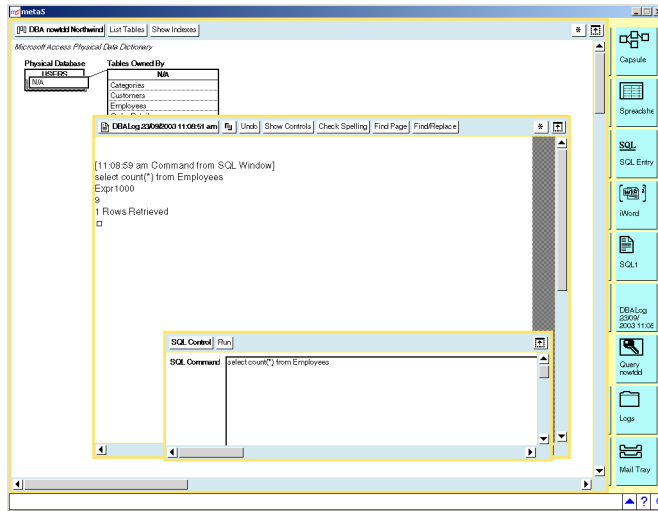


Figure 37. Using Run SQL to determine the count of records in table Employees

Capture SQL

The Capture SQL option is provided solely for use by the Meta5 Technical Support group. It can assist this team to better understand a customer reported problem with this tool.

Chapter 6. New Icons in Meta5

Overview

Meta5 Version 4.2 has included some exciting new icons to enhance capsule development and make it easier to create and deliver reports. A summary of the new icons is described below. More detailed information can be obtained in each specific icon's chapter as contained within the PC Tool User Guide.

Integrator Icons

The following tools have been developed to allow integration between your Meta5 environment and your Windows applications. They function in a similar manner as Meta5 Transformer tools, with parameter controls that can be set to create the desired output. They are contained in their own file drawer called *Integrator Icons.



Figure 38. iExcel

The iExcel icon was created to give Meta5 users more power and flexibility when creating Excel Spreadsheets. Parameters include advanced options for templates, charts, and multiple sheet reports. This integrator will take the place of the Xlaunch tool found in prior versions of Meta5. See the PC Tool User Guide for more information.

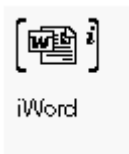


Figure 39. iWord

The iWord icon was created to give Meta5 users more power and flexibility when creating Word Documents. Parameters include advanced options for complex reports in Word. This integrator will take the place of the WordTool tool found in prior versions of Meta5. See the PC Tool User Guide for more information.



Figure 40. iDirList

iDirList enables you to list the contents of any directory accessible from your computer, allowing complex filtering, integration and manipulation of data between various applications. See the PC Tool User Guide for more information.



Figure 41. iWeb

iWeb allows you to integrate Web data into Meta5 using a URL. See the PC Tool User Guide for more information.



Figure 42. Email Outbox

Email Outbox allows you to send mail and attachments using Meta5's Envelope to any internet email address from within a Meta5 capsule. See the PC Tool User Guide for more information.

Other New Icons



Figure 43. Excel Spreadsheet

The Excel Spreadsheet icon allows you to work on Excel Spreadsheets from within the Meta5 desktop. Excel can also be used in capsule to receive data or send data to another tool. See the PC Tool User Guide for more information



Figure 44. Word Document

The Word Document icon allows you to work on Word Documents from within the Meta5 desktop. Icons such as a Text icon can be connected to Word from within a Capsule to create reports. See the PC Tool User Guide for more information.



Figure 45. BrioQuery

The Brio Query icon can be used in Meta5 Capsules and on the Meta5 Desktop so users can work with their Brio Query while in the Meta5 environment. A Brio Query can be started from Meta5. See the PC Tool User Guide for more information.



Figure 46. Business Objects Query

The Business Objects Query icon can be used in Meta5 Capsules and on the Meta5 Desktop so users can work with Business Objects while in the Meta5 environment. Business Objects can be opened from within Meta5. See the PC Tool User Guide for more information.



Figure 47. Windows Application

This icon can be pointed to any file that a user has access to such as a ppt or jpg file. After the file name is set, the file can be accessed on the Meta5 desktop. See the Chapter on this topic contained within this manual for more information.

Chapter 7. Drag & Drop from Meta5 and Windows

Overview

The Meta5 workstation allows you to drag and drop a file or a group of files from windows directly to a Meta5 desktop or inside a capsule. When dragging and dropping a file, the workstation uses the file extension to determine the type of icon it should utilize to convert the file. Only known extensions are converted to the appropriate icons. Unknown extensions are converted to the generic Windows Application icon. For example, a file with an .xls extension will convert to a known Excel icon where as a file with a .bmp or .ppt extension is converted to a Windows Application icon.

Note that you can not drag and drop icons that are connected by arrows within a Meta5 Capsule. You must first disconnect the icons before successfully dragging and dropping.

Examples for Use

- Drag and drop Excel or Word reports from Windows into Meta5 to use as templates in Capsules.
- Drag and drop Excel or Word reports from Meta5 into your Windows Explorer to save or share files.
- Drag and drop a Power Point presentation into Meta5.

Parameters

There are no parameters, since this file conversion occurs interactively on a file by file basis.

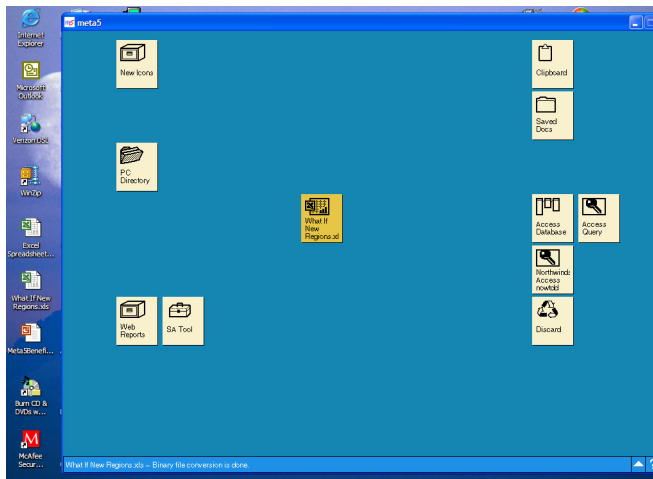
You only need to make your Meta5 desktop smaller than the entire screen to have enough room between both environments to allow the file transfer. We recommend that you use the Configuration tool to customize your desktop size to 8 (rows) X 13 (columns) or smaller.

Examples for Use

Drag the "What If New Regions.xls" from the left side of your Windows desktop into your Meta5 desktop. An exact copy is made !

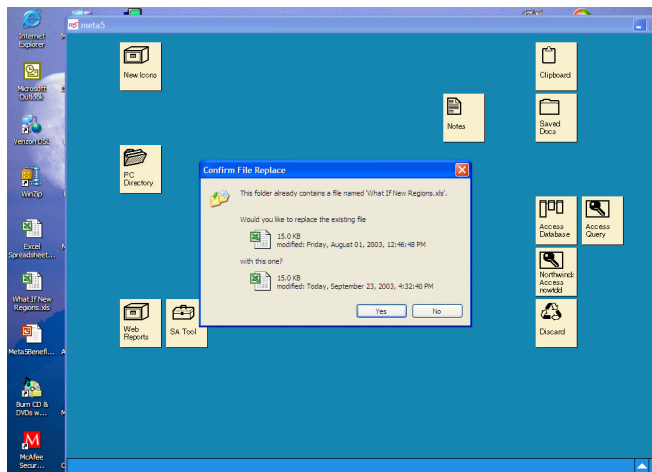
You will receive a message on your desktop Message Bar confirming the file conversion: "What If New Regions.xls - Binary file conversion is done."

Note that the same procedure applies if you use Windows Explorer for dragging and dropping files.



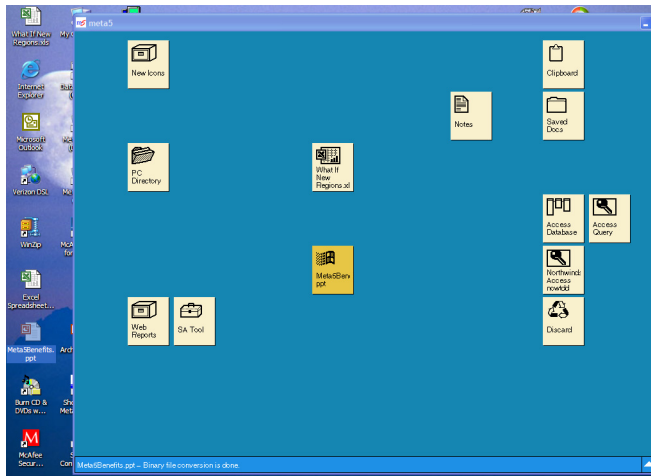
On the converse, drag an icon from your Meta5 desktop into Windows. A copy of the icon is made to Windows.

If you drag the "What If New Regions.xls" back to your Windows desktop, you will receive a message asking you if you want to replace the current file:

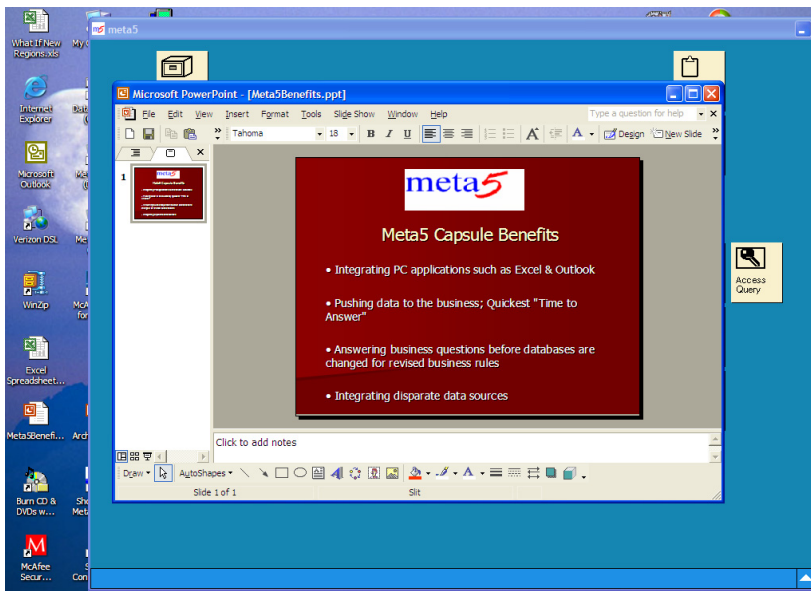


If you drag and drop a file type from Windows that has no Meta5 icon associated with it, you will get a Meta5 Windows Application icon. An example of this

occurring would be by dragging a Power Point presentation into Meta5 (Meta5Benefits.ppt).



If you open the Meta5 Windows Application icon, you will invoke PPT.



Chapter 8. Windows Application Icon

Overview

The Windows Application tool allows the user to look at Windows applications from inside Meta5 and to distribute them as a package with other Meta5 generated results.

A number of Windows applications are automatically recognized by Meta5. These include Excel Spreadsheets, Word Documents, Brio Queries and Business Objects Reports. When any of these icons are imported to Meta5, via the Meta5 Explorer tool (PC Directory) or dragged onto the Meta5 desktop directly from Windows, the copied icon is automatically converted to the appropriate Meta5 icon.

When an icon that is not recognized by Meta5 is copied onto the Meta5 desktop, Meta5 converts them to a Windows Application icon bearing the same name as the file name and extension of the original.

The Windows Application Icon can be found in the * Blank Icons file drawer inside the New Icons file drawer.



Figure 48. Windows Application Icon

What can a Windows Application Icon do?

The Windows Application icon can be employed on an ad hoc basis to view the contents of a Windows desktop icon from inside Meta5. Simply drag and drop the application onto the Meta5 desktop and open it!

Alternatively, you may wish to include a Windows application as part of the results of a Meta5 generated set of reports. Simply use a Meta5 Explorer tool (PC Directory) to locate the application file and direct it to a template Windows Application icon. The resultant Windows Application can then be included in an Email and sent out to any number of recipients.

Using the powerful Meta5 @-Variable capability, you can dynamically copy any number of Windows applications from different locations and include them as part of an Email to be distributed amongst the intended audience.

Parameters

There are no parameters associated with this tool.

This icon works by interrogating the extension that was supplied in the name of the icon. Using this extension it requests Windows to open this file with the appropriate program. Windows uses the File Types table that is administered through Folder Options in the Windows Control Panel to identify the associated program. Providing the extension on the icons name is recognized, the correct application is invoked to process the contents of the icon. The content of the icon is the binary data that made up the original source file. This data is passed to the associated application to complete the operation.

In summary, therefore, the name given to the Windows Application icon is the only configuration necessary. Ensure that the icon has a name that includes an extension in the standard Windows way. (I.e. Any Name You Like.ppt will ensure that Windows PowerPoint program is used to open the contents of this icon)

Note: The icon that is copied onto the Meta5 desktop to be used in this way cannot be a shortcut. Shortcuts have a file extension of .lnk, which has no associated program linked to it. Ensure you are copying an original file into Meta5 and not a shortcut!

The following figure (49) shows the File Types tab of the Folder Options utility in Control Panel. Note that an extension of .ppt is recognized as being associated with Microsoft PowerPoint for Windows.

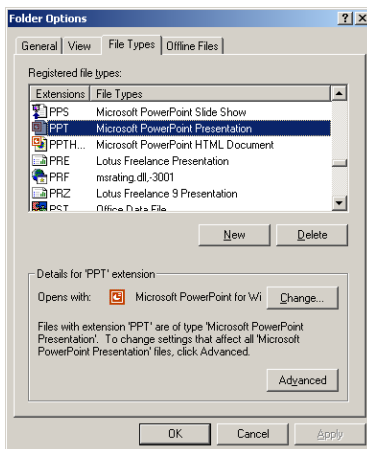


Figure 49. PowerPoint files have an extension of .ppt

Examples of Use

Drag and Drop

Use drag and drop in ad hoc situations where you need to view the contents of one application whilst processing in Meta5.

Simply locate the file you would like to view inside Meta5 and drag and drop it to the Meta5 desktop. The icon produced will be the Windows Application icon with a name of the original file copied in. In our example here, we will drag and drop a copy of the Meta5 Text Tool User Guide Acrobat file (.pdf extension) from the Windows desktop to the Meta5 desktop. Figure 50 demonstrates this concept.

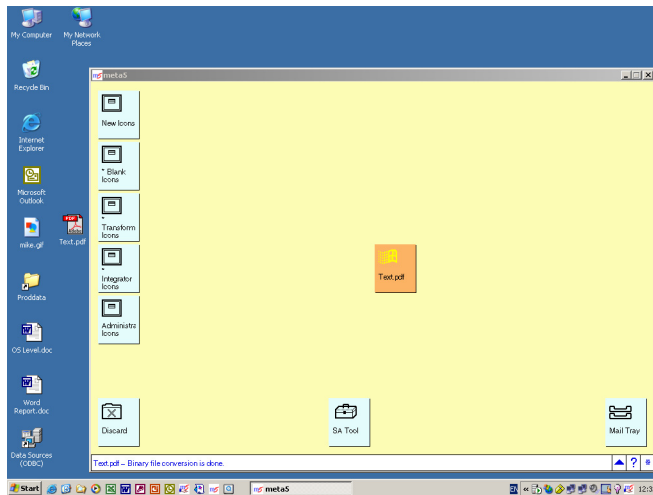


Figure 50. Drag and Drop an Acrobat file from Windows desktop to Meta5 desktop

This pdf file has been successfully copied onto the Meta5 desktop. It has become a Windows Application icon with the same name as the source file (Text.pdf). Double click the icon and the associated program (Adobe's Acrobat Reader) is called to open the contents.

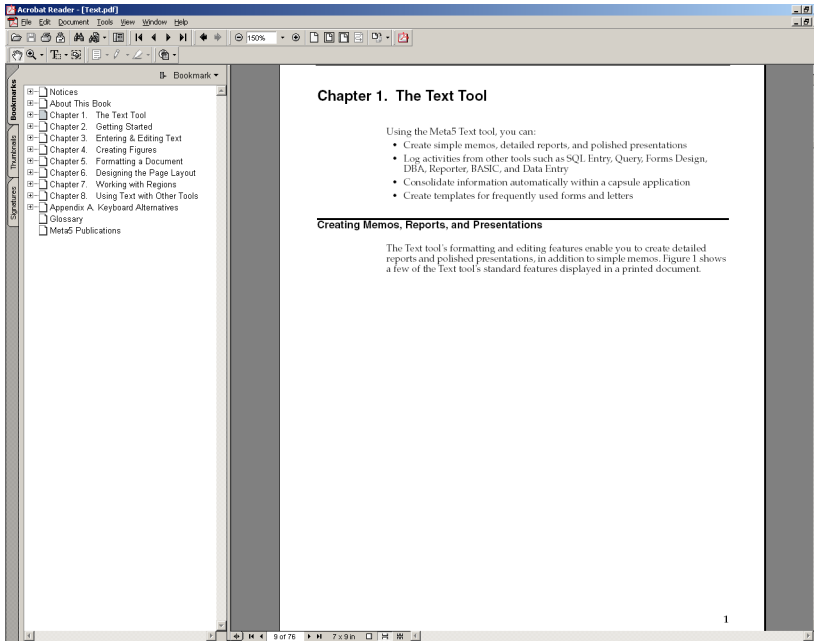


Figure 51. Double click the Meta5 Windows Application and Acrobat Reader starts up

Importing from a PC hard drive

For use inside an application (Capsule), you can use the Meta5 Explorer tool (PC Directory) to locate the source file and allow it to copy the file into Meta5.

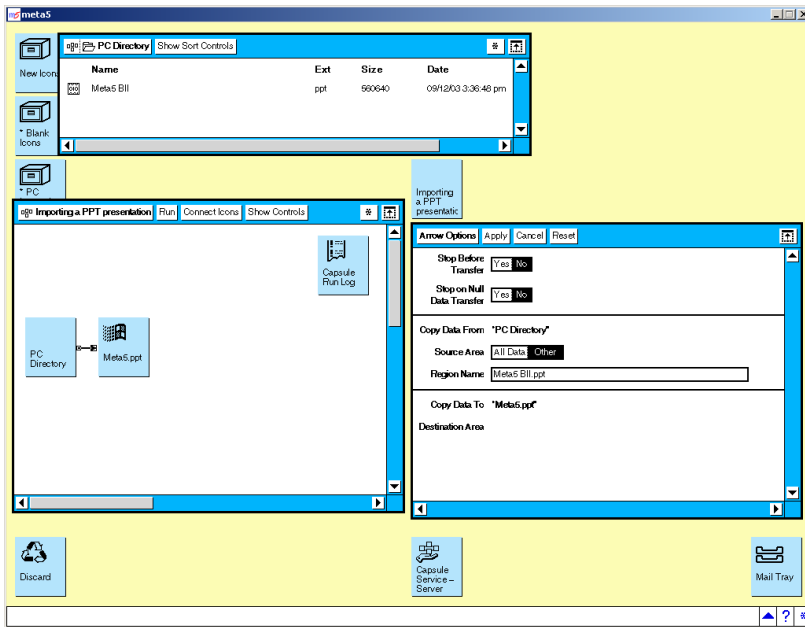


Figure 52. Import a PPT file from the PC's hard drive or mapped network drive

The above example (Figure 52) demonstrates how we can import a PPT file. We set up the options of the Meta5 Explorer tool (PC Directory) to point at the directory that contains the file we want to import. The presentation called Meta5 BII.ppt is located in the display of the Meta5 Explorer (PC Directory) tool (see Figure 52).

Next we option the arrow to specify the file name in the Source Region Name field (Meta5 BII.ppt). Lastly we name the receiving Windows Application icon so that it can be associated with the PowerPoint program. (Meta5.ppt).

Note: The name is down to user choice as long as the extension is recognizable by Windows.

Close all the windows and Run the Capsule. The Windows Application called Meta5.ppt will be populated with the data from the source file and as it has an extension in the name of .ppt, we can open the icon and invoke PowerPoint (see Figure 53).

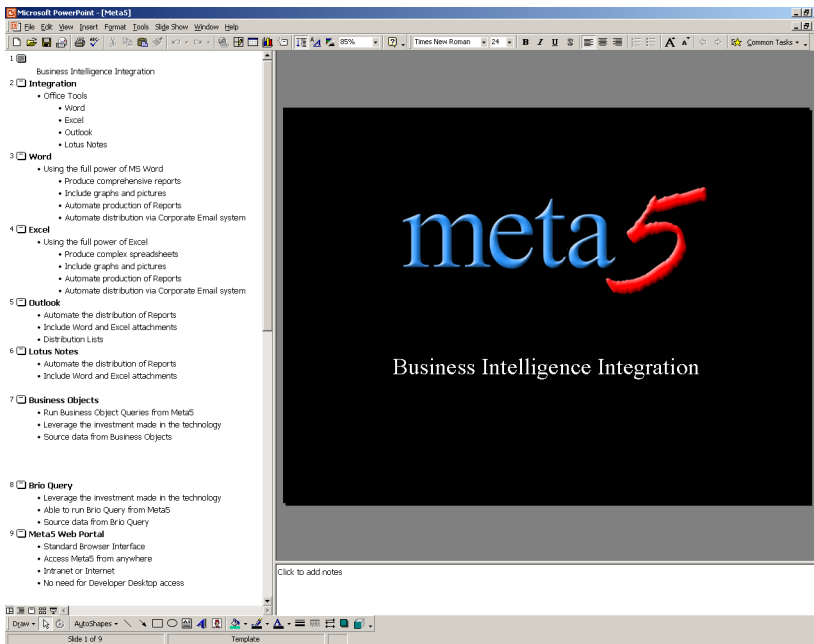


Figure 53. Double click on the resultant Windows Application icon to open PowerPoint

Note the name of the resultant PowerPoint presentation has changed from Meta5 BII.ppt to Meta5.ppt. This is because we named the Windows Application icon, inside the Capsule, with the new name. This facility can be very useful if the source name is not appropriate for general consumption.

Distributing Windows Applications

In some circumstances it may be useful to include another file type as part of an information pack that Meta5 has produced a number of reports for. For example, a Meta5 Capsule may be run every week to send out the latest sales figures to the sales team management. It would be useful to send out with the reports that Meta5 produces (Word Documents and Excel Spreadsheets for example) an Adobe Acrobat file that contains the instructions on how to interpret the data.

We can employ the same method we used to import the file from the PC's hard drive and use the resultant Windows Application to be included in a Meta5 Envelope, along with the other reports, and emailed out to the management team. The following is an example (see Figure 54).

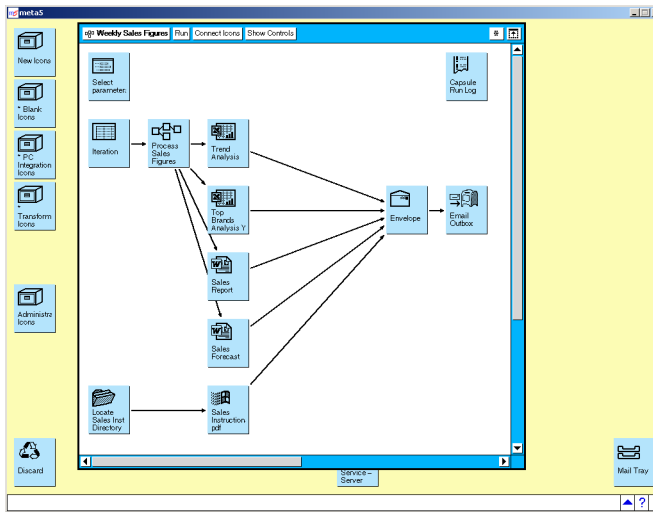


Figure 54. A pdf file added to the Weekly Sales Team pack and distributed via Email

Note on @-variable usage

Lastly, remember that wherever a fixed name is used in a Capsule, whether it is the icons name, an arrows region name or a Meta5 region name, we can substitute an @-variable. This means that the directory, pointed to by the Meta5 Explorer (PC Directory) tool, the name of the file to retrieve (on the arrow option) and the name of the resultant Windows Application can all be replaced by an @-variable and can therefore be totally dynamic in its execution.

Chapter 9. PC Directory Enhancements

Overview

The PC Directory tool has been enhanced to work with Excel and Word files. Users can now copy up Excel files and Word documents from PC directory or connect them to PC directory in a Capsule Application. In addition, they can send data from Excel or Word from PC Directory into a Meta5 Capsule. PC Directory is located in the *Blank Icons file Drawer. Examples using Word and Excel can be found in the Meta5 Sample Applications File Drawer.



Figure 55. Meta5 PC Directory

Examples for Use

- Automatically send Excel or Word documents into a specified path on your Windows desktop. This can be a shared drive to be accessed by other users.
- Create multiple Excel or Word documents to be saved in a folder on the Windows desktop.
- Bring Excel or Word data from a PC Directory into a Capsule for further manipulation.
- Bring Excel or Word data into a Capsule from a PC Directory to be joined to data from the corporate data warehouse.

Parameters

A Directory/Path name must be set up in the PC Directory Icon. This can be set by optioning the icon and selecting "Other Data". Note that @-variables can be used for this setting when PC directory is used in a Capsule.

In addition, the arrow connecting the Excel or Word icon to PC directory must contain the file name in the Destination Area (i.e. sales.xls). Conversely, if the Excel or Word data is being exported from PC Directory, then the exact file name must be specified in the Source Area.

Examples for Use

Sending an Excel Document into PC Directory

To send an Excel Document to a folder called Reports on your C drive:

- Ensure the Excel file is inside the Capsule Application
- Copy a PC Directory to the right of the Excel icon.
- Connect the Excel icon to PC Directory.

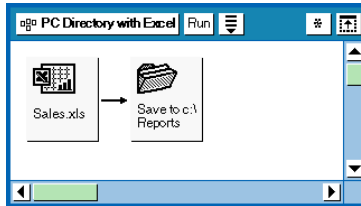


Figure 56. Excel Icon connected to PC Directory

- Option the arrow and make sure the Destination area is set to the name you will give to your Excel file. (Sales.xls)

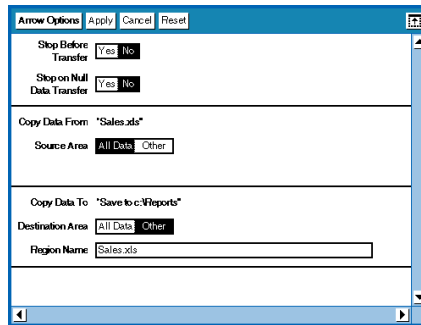


Figure 57. Arrow Options when sending Excel icon to PC Directory

- Option the PC directory icon and select Other Data. Make sure the Path is set to C:\Reports

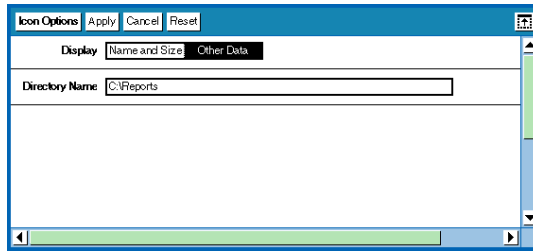


Figure 58. PC Directory Path

- Run the Capsule and the resulting file will appear in C:\Reports.
- The PC directory options can be set so files are overwritten during future runs.

Sending Word Data into a Capsule Application

A basic client letter written in Word is stored on your C: drive in a folder called Letters. Extract the letter data into the capsule by sending it into a Word icon. Send specific address data from a Meta5 Spreadsheet into a Bookmark in Word. Finally, send it back to your C: drive as a final letter:

- Copy a PC Directory into the Capsule and a Word Icon to the right of the PC Directory.
- A Meta5 Spreadsheet containing a name and address is also connected to the Word icon. The data from the spreadsheet will be sent to a Bookmark in Word.
- Connect another PC Directory to the Word Icon.

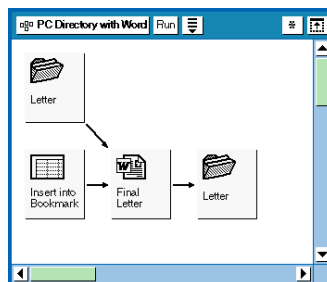


Figure 59. Example of PC Directory using a Word Document

- Option the arrow connecting the PC directory (called "Letter") to the Word icon and make sure the Source area is set to the name of your Word Document. (example: confirmationtemplate.doc)

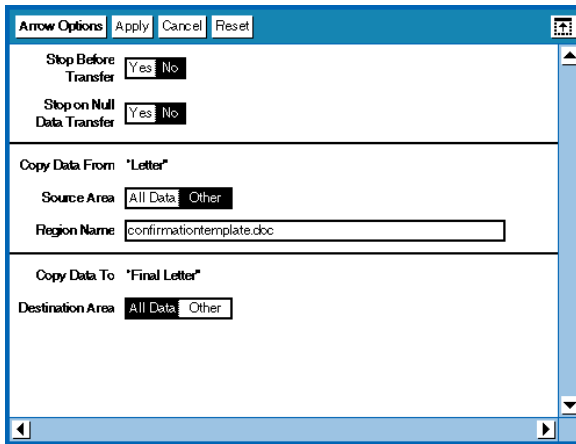


Figure 60. Source Area when copying Word Data from PC Directory

- Option both PC directory icons and select Other Data. Make sure the Path is set to C:\Letters

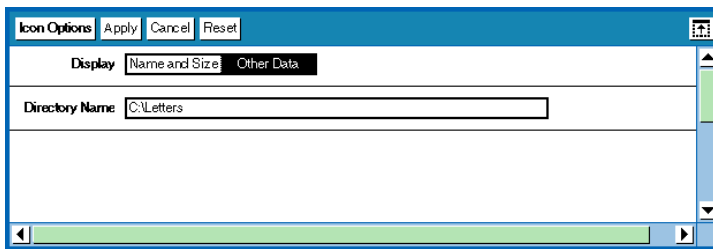


Figure 61. PC Directory Path Settings

- Option the arrow connecting the final Word icon to PC directory and make sure the Destination area is set to the name of your Final Word Document. (example: John_Smith.doc). Note that @-variables can effectively be used here.

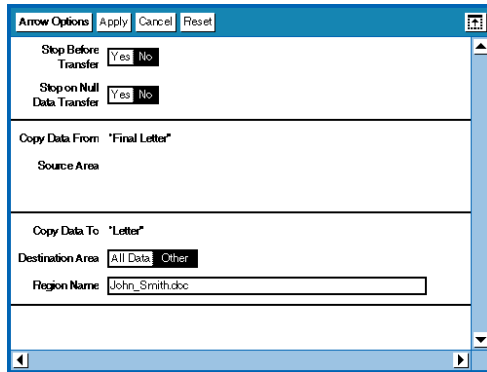


Figure 62. Destination Area when sending Word icon back to PC directory

- Run the Capsule and the file will appear in the designated path.
- Note that @variables can be used for the names and addresses and iterated to produce multiple letters.

Chapter 10. Copy Icon Transformer Enhancements

Overview

The Copy Icon Transformer has been enhanced to copy icons from the Meta5 desktop to a directory accessible by the local machine running Meta5. The prior version could only copy icons to a Meta5 folder. The Copy Icon Transformer is a *Base Transformer located inside the *Transformer Icons File Drawer.



Figure 62. Meta5 Copy Icon Transformer

Examples for Use

- Send an output file (such as Excel or Word) in a capsule to a destination on your C:\ drive as an alternative method to using PC directory.
- Send multiple files to various destination directories using an iterating capsule.

Parameters

When the Copy Icon Transformer is opened, you can select Show Controls to enter parameters as shown below:

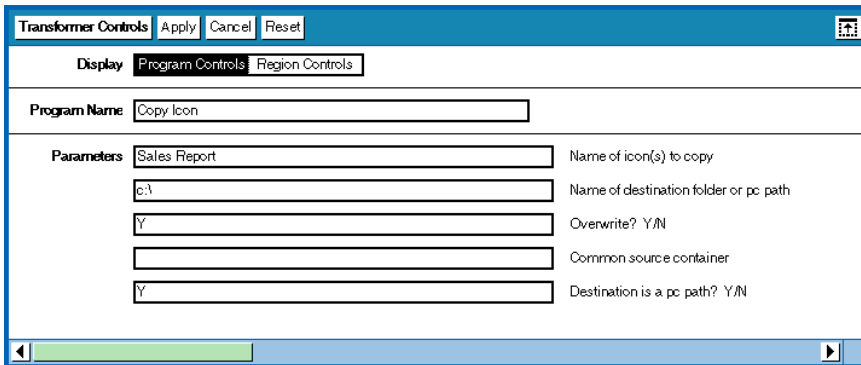


Figure 63. Copy Transformer Controls

Name of icon(s) to copy: Specifies which icons to copy. You can enter multiple icon names separated by a comma and a space. Icon names containing commas must be surrounded by single quotes. (Ex: Sales Report, 'May 6th, 2003',)

Name of destination folder or pc path: This parameter specifies the name of the folder or path to which you want the icons copied. In this case, a PC path is specified.

Overwrite? Y/N: This parameter specifies whether to replace (Y) an existing icon with the copied icon, or add it (N) to the icons in the destination folder. Note that a PC path will always overwrite by default.

Common source container: This parameter specifies a container or path name that is added to the beginning of each icon name listed in the "Name of icon(s) to copy" parameter when the transformer is run. The container or path must be valid for all icons listed. For example, if the New York, Dallas, and Los Angeles icons are all contained in the Sales folder on the desktop, you can enter the icon names in the first parameter, then type: DESKTOP|Sales in the Common source container field.

Destination is a pc path ? Y/N: This new parameter will trigger whether the icon will be copied to a Windows directory. If Y is specified, then it will copy the icon to a Windows directory. The default is N.

Note that @-variables can be used in all Parameters.

Supported Icons

Only certain Meta5 icons are supported when the destination is a directory path.

Icons supported are editable icons including:

Meta5 Spreadsheet Icon

Text Icon

Excel Icon

Word Icon

Windows Application Icon

Business Objects Icon

Brio Icon

DIF Icon

RTF Icon

WK1 Icon

TXT Icon

Bin Icon

Error Log Icon

Examples for Use

An Excel Report is created from Data Warehouse data retrieved from a Query Tool. This reports needs to be placed in a folder called Presentations located on the C:\ drive.

- Copy a Copy Icon Transformer either below or to the right of the icon to be copied to ensure it runs after the report is created.
- Connect a Spreadsheet to the Copy Icon Transformer. This is necessary for the Transformer to run in the capsule.

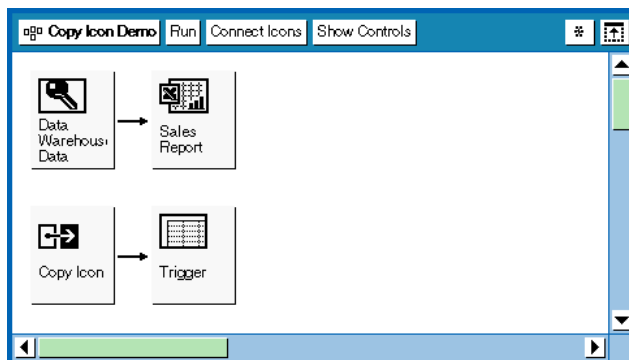


Figure 64. Capsule with Copy Transformer

- Open the Copy icon and select Show Controls to fill in the parameters. The parameters will appear as shown below.

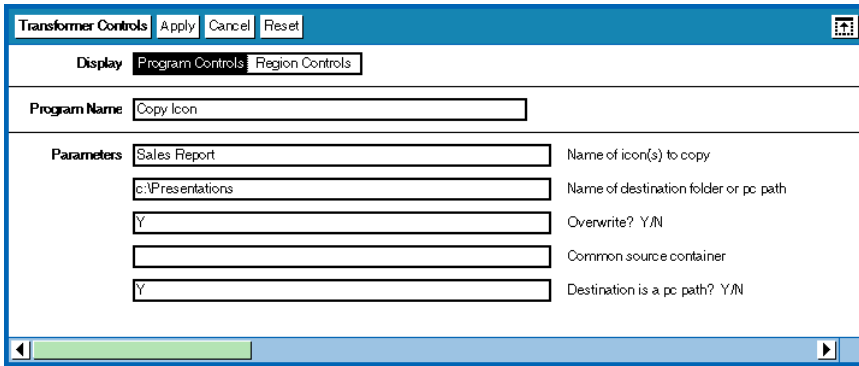


Figure 65. Copy Transformer parameters

- Run the capsule and a report called Sales Report.xls will appear in the path c:\Presentations.

Chapter 11. Connecting to ODBC Data Sources

Overview

Meta5 can utilize ODBC Data Sources for data accessibility. The main requirements to effectively use this capability are as follows:

- Create an ODBC Gateway in the Meta5 environment with enough sessions to support the user community
- Create the ODBC data sources on the Meta5 Server via your Windows Administrative tools with the appropriate DBMS drivers.
Note that you or the System Administrator may need to install ODBC drivers for the appropriate versions of the DBMS that you will be accessing.
- Configure your Meta5 data access icons such as Query, SQL Entry, DBA Tool, etc. to point to the defined ODBC data sources.

Examples for Use

- Build queries against your MS Access databases.
Note that Meta5 can query MS Access tables as well as any saved or pre-defined MS Access queries. These objects will be available via the Meta5 DBA Catalog.
- Utilize industry standard ODBC drivers to gain access from Meta5 to your data warehouses residing in Oracle, SQL Server or other DBMS'.
- Build queries against any ODBC compliant data source - even Excel !

Parameters

Your Meta5 data access tools require that they are configured to match the definitions you have established for Gateway Services and for each ODBC Data Source. Here are definitions of the main parameters that require configuring:

Gateway	The name of the Meta5 Database Gateway you wish to use to access the ODBC compliant database.
Database Name	The name of the DSN that contains the correct driver for the data source that you are using. (i.e. Microsoft's Access Driver (*.mdb)). It must be configured to access the correct database and use the correct credentials to connect to it. Note: The ODBC DSN must reside on the same machine that is running the Meta5 Database Gateway Service you wish to employ.
WTDD Owner	If you are using an ODBC compliant database that does not have nor requires the Meta5 WTDD, then you may set this value to "nowtdd". This will enable you to immediately query the data source as it appears in the respective DBMS' catalog. Please refer to the chapter on "Query with NOWTDD" to get more detailed information on this capability.
SQL ID	The high level qualifier to all objects, only if required.
User Name	The user name that has permission to connect to this database. If a user name is not required then specify a single blank character or leave it empty.
Password	The corresponding password for the user name that will access this database. Note the password appears as * characters only while typing. When you look at it later, it will be invisible. If a password is not required then leave this box empty.

Example Query Tool Configuration for MS Access database with DSN = "N_WINDS" and with "nowtdd":

The screenshot shows a configuration dialog box with the following fields and options:

- Display:** Name and Size (selected), Other Data
- Gateway:** rtcbgw
- Database Name:** N_WINDS
- WTDD Owner:** nowtdd
- SQL ID:** (empty)
- Database Logon:** Specified Here (selected), From Data Access Controls
- Secured:** No (selected), Yes
- User Name:** lisa
- Password:** (empty)

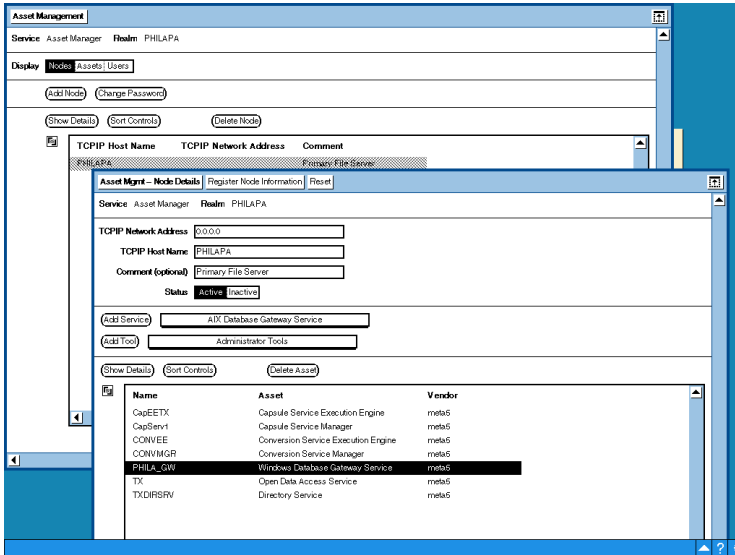
Examples for Use

Build Meta5 Queries Using MS Access

Set up the Gateway with ODBC sessions (via Meta5's SA Tool)

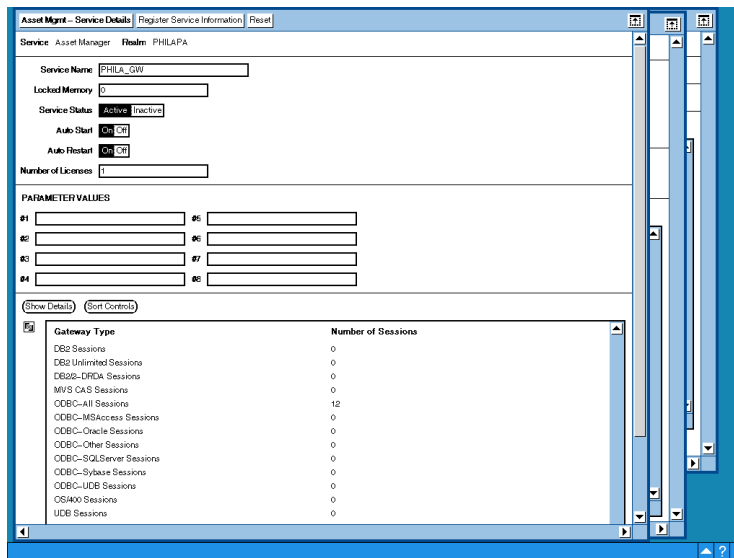
Open the Meta5 SA Tool, connect to Asset Management, and add "Windows Database Gateway Service" to the server/node where the gateway service should reside. We recommend that you name the service with up to 8 characters.

Example service names:
 PHILA_GW
 NEWYK_GW
 Sales1GW.



[Show Details] on the service to establish the appropriate number of ODBC sessions. There are several ODBC session choices to choose from and what you use will depend on your DBMS platforms and the configuration that is optimal for your site. Please check with Meta5 Customer Support if you are uncertain of your assets, as the assets will define how you should set this up.

In this particular example: "ODBC - All Sessions" is being used to achieve ODBC connectivity with up to 12 sessions to both SQL Server and MS Access databases.



Next, go back out of Asset Manager and connect into the Gateway Service that you just defined (example PHILA_GW) and create the gateway.

Click on the [Show Gateway Configuration] button.

Next, click on [Add Gateway] button.

Fill in all parameters, ensuring you enter the Macro Folder: DBS-NT-ODBC.

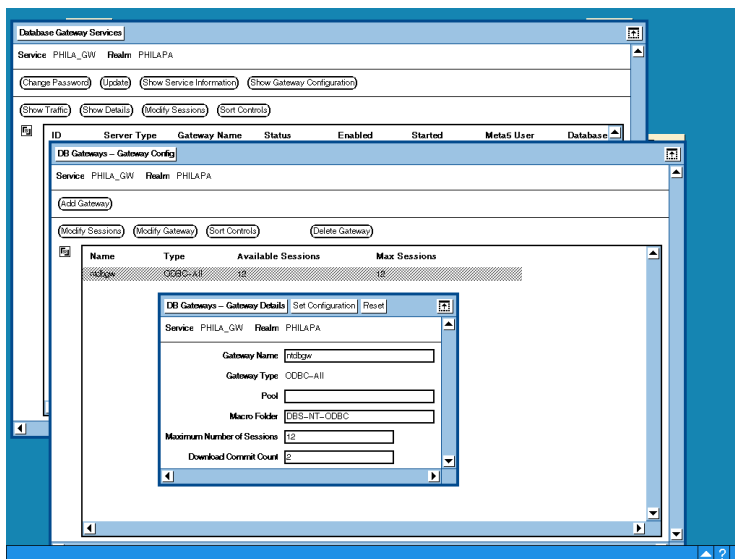
We recommend that you name the gateway with up to 8 characters.

Examples:ntdbgw

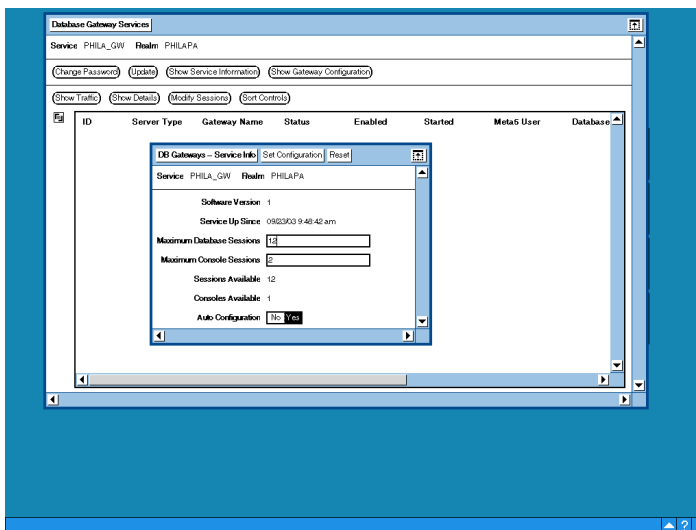
dbgw2003.

Then click on [Set Configuration] to save your configuration.

NOTE: Do NOT name the service or gateway M5ODBC, as this is an illegal name to use in Meta5.



Close the DB Gateways - Gateway Details and DB Gateways - Gateway Config windows down when you are done, and then choose [Show Service Information] button to set the sessions. Type in the appropriate parameters, and then register by clicking [Set Configuration] to save.



Now you are ready to test connectivity to you ODBC data sources. Follow the next sections to get a good understanding of how to set up MS Access and SQL Server. Note that similar types of steps will be required for other DBMS's.

Copy the MS Access database to a directory accessible by the Primary File Server.: For this example, we will use: C:\M5_Coffee_WTDD.mdb

Define the ODBC connection via Windows Administrative Tools on the Server: Go to the Windows Control Panel -> Administrative Tools -> Data Sources (ODBC)

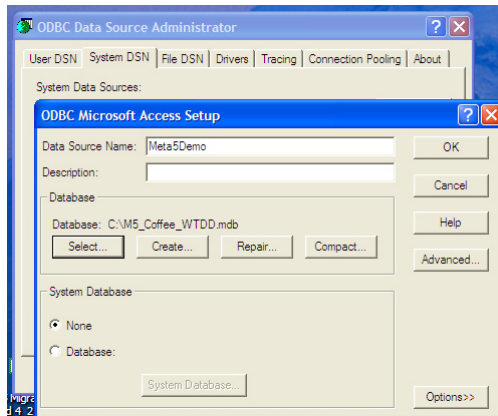
Go to tab "System DSN" and choose the [Add...] button.

Click on the "Microsoft Access Driver (.mdb)" and then click [Finish] button

Fill in the next window (ODBC Microsoft Access Setup) with the name of the Data Source (you choose this value by filling in "Data Source Name"; (note that this will be needed for configuring the Meta5 Query tool) and the path to the mdb (choose the [Select...] button to specify the location of the mdb).

In this example, Data Source Name: Meta5Demo

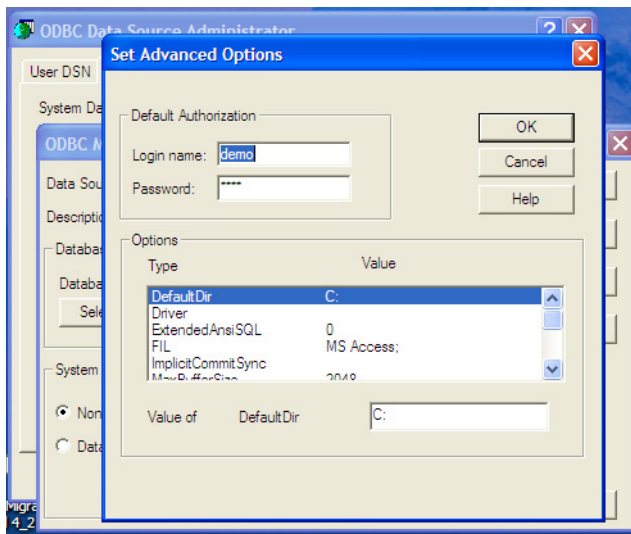
Database (path): C:\M5_Coffee_WTDD.mdb



Click on the [Advanced...] button to define a Login name and Password.

For example: demo / demo

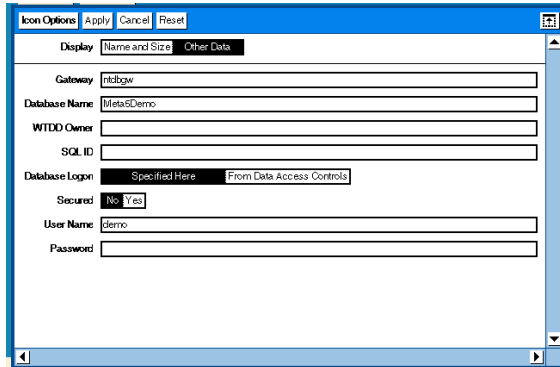
(Note: It is not necessary to specify a Login name and Password, although most clients prefer that this be done to have some security).



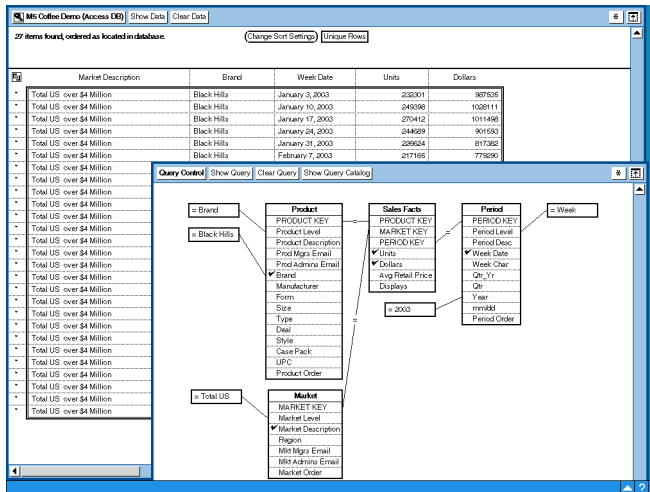
Create Query Tool and test accessibility to the data: Configure a Query tool with your gateway and the information you established when creating the ODBC connection.

- Fill in the Gateway with the appropriate gateway name that you created for Meta5 to enable ODBC sessions.
- Fill in the Database Name with the Data Source Name established in the ODBC connection (Meta5Demo, for this example).
- Fill in User Name and Password with values established in the ODBC connection (demo and demo for this example).
Note: If you did not create a Login name and password in the ODBC connection, then you can leave the User Name and Password as blanks in the Query Tool).
- Lastly, open the Query Tool, go to the DBA Catalog, choose tables from the DBA Catalog, and then build a Query !

Query Tool Options Window:



Example Query:



Build Meta5 Queries Using SQL Server

In this example, we will utilize the same gateway established for "ODBC - All Sessions".

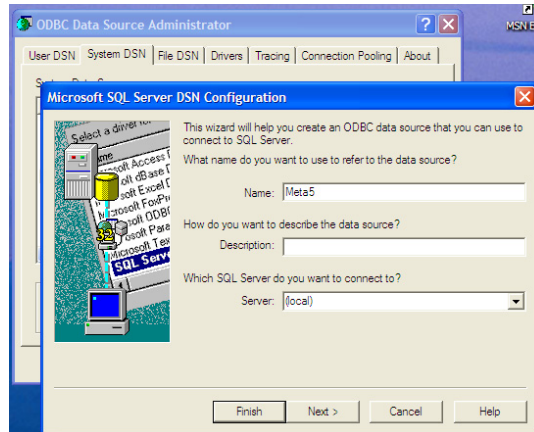
Define the ODBC connection via Windows Administrative Tools on the Server

Go to the Windows Control Panel -> Administrative Tools -> Data Sources (ODBC)

Go to tab "System DSN" and choose the [Add...] button.

Click on the "SQL Server" and then click [Finish] button.

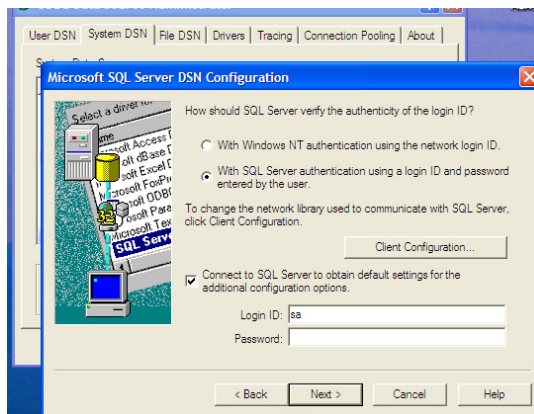
Fill in the next window with the Name of the database (as defined to SQL Server), an optional Description, and the Server (there is a drop down list if the server is not local for where you are defining the ODBC data source).



Click on Next > button.

In the next window, fill in the appropriate authentication for the database. This is a level of security that is already established by the SQL Server DBA.

After selecting the appropriate choices, enter the Login ID and Password.



Create Query Tool and test accessibility to the data

Configure a Query tool with your gateway and the information you established when creating the ODBC connection.

Fill in the Gateway with the appropriate gateway name that you created for Meta5 to enable ODBC sessions.

Fill in the Database Name with the Data Source Name established in the ODBC connection (Meta5, for this example).

Fill in User Name and Password with values established in the ODBC connection (sa and sa for this example).

(Note: If you did not create a Login name and password in the ODBC connection, then you can leave the User Name and Password as blanks in the Query Tool).

Lastly, open the Query Tool, go to the DBA Catalog, choose tables from the DBA Catalog, and then build a Query !

Query Tool Options Window

The screenshot shows the 'Query Tool Options Window' with the following fields and values:

- Display:** Name and Size (selected), Other Data
- Gateway:** intibgw
- Database Name:** meta5
- WTDD Owner:** (empty)
- SQL ID:** (empty)
- Database Logon:** Specified Here (selected), From Data Access Controls
- Secured:** No (selected), Yes
- User Name:** sa
- Password:** (empty)

Example Query

Coffee Regions Show Data Clear Data Create Column

5 items found, ordered as located in database. Change Sort Settings Unique Rows

Brand	Region	Sales \$ YTD
Pioneer	Central	33324940
Pioneer	Northeast	18700354
Pioneer	Northwest	11034297
Pioneer	Southeast	8513160
Pioneer	Southwest	17498608

Query Control Show Query Clear Query Show Query Catalog

General Qualifier

Product

- PRODUCT KEY
- Product Level
- Product Description
- Brand
- Manufacturer
- Form
- Size
- Type
- Deal
- Style
- Case Pack
- UPC
- Product Order

Period

- PERIOD KEY
- Period Level
- Period Desc
- Week
- Quad Week
- Acct Month
- Acct Qtr
- Acct Year

Syndicated Facts

- PRODUCT KEY
- MARKET KEY
- PERIOD KEY
- Equiv lb Units
- Equiv lb Share
- Units
- Dollars
- % Stores Selling
- Avg Retail Price
- Displays
- Coupon Ads
- A and/or B Ads
- C Ads
- Displays/Ads

Market

- MARKET KEY
- Market Level
- Market Description
- WW Division
- Market Order

Filters:

- = Brand
- = Pioneer
- = Quad Week
- = 2003
- ≠ Canada, Europe

Index

Numerics

911 3

B

Brio Query 1
Business Objects 1

C

Capsule Manager 1
Capsule Server 1
Copy Icon 77
 Examples 77
 Overview 77
 Parameters 77

D

DBA Tool 47
 Overview 47
DBA Tool with NOWTDD 47
Distributing Windows Applications 68
Dr.Watson 3
Drag & Drop 59
 Examples of Use 59
 Overview 59
 Parameters 59

M

M5Trace 5
Microsoft Office 1

N

New Icons 55
 Integrator Icons 55
 Other New Icons 57
 Overview 55
NineOneOne 6
NOWTDD 47

O

ODBC 81
 Database Name 82
 Examples 81, 83, 89
 Gateway 82
 Overview 81
 Parameters 81
 Password 82
 SQL ID 82
 User Name 82
 WTDD Owner 82

P

PC Directory 71
 Examples 72, 73
 Overview 71
 Parameters 71

S

Server Config Tool 9
 Advanced 11
 Broadcast Address 10
 Check file server drives sequentially 13
 Default Language 10
 Directory 10
 Disable Software Updates 13
 Email Settings 15
 Enable Workstation activation from taskbar
 13
 File Server Drives 11
 Realm Number 11
 Server Settings 10
 Service Startup 12
 Subnet Mask 11
 Time Zone 11
 Tuning and Diagnostic Settings 14
 Workstation Settings 15
Server Manager 17
Service Config Tool
 Service Startup 4
Service Mode 3
Start Center 18
 Advanced 20
 Broadcast Address 19
 Default Language 19
 Directory 19
 IP Address 20
 Realm Number 20
 Screen Columns 20
 Screen Rows 20
 Server Address 19
 Subnet Mask 20
 Time Zone 20

T

Terminal Server Session Manager 1
Trace Facility 4
 Console Logging 3
 Dr.Watson 3
 Overview 3
 Starting 4, 5

W

Windows Application Icon 63
 @-variable 69
 Drag & Drop 65

Meta5 Publications

This section lists Meta5 publications. To order copies of the books listed here, or to get more information about a book, see your Meta5, Inc. representative.

- **Meta5 Volume 1**
 - Getting Started with the Meta5 Developer's Desktop*
 - PC Integration Tools*
- **Meta5 Volume 2**
 - Spreadsheet User's Guide*
 - Plot User's Guide*
- **Meta5 Volume 3**
 - Text User's Guide*
 - Layout User's Guide*
- **Meta5 Volume 4**
 - Capsule User's Guide*
 - BASIC Tool User's Guide*
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 - Installing Meta5 LAN Components*
 - System Administration Guide and Reference*
- **Meta5 Volume 10**
 - Database Gateway Services Guide*
 - Administering Databases with Meta5*
- **Meta5 Volume 11**
 - Installing and Configuring Meta5 Open Clients*
 - Developing Applications with Open Data Access Service*
- **Meta5 Volume 12**

Administering Host Services for MVS:DB2 and Cooperative Application Services

Planning and Installing Host-to-LAN Communications for MVS