

# MetaXpress<sup>®</sup> PowerCore<sup>™</sup>

High Content Distributed Image Analysis Software

## Installation and User Guide

0112-0183 E  
April 2015



This document is provided to customers who have purchased Molecular Devices equipment, software, reagents, and consumables to use in the operation of such Molecular Devices equipment, software, reagents, and consumables. This document is copyright protected and any reproduction of this document, in whole or any part, is strictly prohibited, except as Molecular Devices may authorize in writing.

Software that may be described in this document is furnished under a non-transferrable license. It is against the law to copy, modify, or distribute the software on any medium, except as specifically allowed in the license agreement.

Furthermore, the license agreement may prohibit the software from being disassembled, reverse engineered, or decompiled for any purpose.

Portions of this document may make reference to other manufacturers and/or their products, which may contain parts whose names are registered as trademarks and/or function as trademarks of their respective owners. Any such usage is intended only to designate those manufacturers' products as supplied by Molecular Devices for incorporation into its equipment and does not imply any right and/or license to use or permit others to use such manufacturers' and/or their product names as trademarks.

Each product is shipped with documentation stating specifications and other technical information. Molecular Devices products are warranted to meet the stated specifications. Molecular Devices makes no other warranties or representations express or implied, including but not limited to, the fitness of this product for any particular purpose and assumes no responsibility or contingent liability, including indirect or consequential damages, for any use to which the purchaser may put the equipment described herein, or for any adverse circumstances arising therefrom. The sole obligation of Molecular Devices and the customer's sole remedy are limited to repair or replacement of the product in the event that the product fails to perform as warranted.



**For research use only. Not for use in diagnostic procedures.**

The trademarks mentioned herein are the property of Molecular Devices, LLC or their respective owners. These trademarks may not be used in any type of promotion or advertising without the prior written permission of Molecular Devices, LLC.

Patents: <http://www.moleculardevices.com/productpatents>

Product manufactured by Molecular Devices, LLC.

1311 Orleans Drive, Sunnyvale, California, United States of America 94089.

Molecular Devices, LLC is ISO 9001 registered.

© 2015 Molecular Devices, LLC.

All rights reserved.

# Contents

- Chapter 1: Overview and Requirements . . . . . 7**
  - Introduction. . . . . 7
  - About MetaXpress PowerCore Software . . . . . 7
  - Before You Begin. . . . . 8
  - Requirements for Existing Systems . . . . . 8
  - Installation Overview . . . . . 9
    - Installation Order and Workflow . . . . . 9
  - About Firewalls and Antivirus Software . . . . . 10
  - Obtaining Technical Support . . . . . 10
- Chapter 2: MetaXpress PowerCore Server  
Installation and Configuration . . . . . 13**
  - Introduction. . . . . 13
  - Prerequisites . . . . . 14
  - Information You Need . . . . . 14
  - Installing the MetaXpress PowerCore Server and  
License Key Server Applications. . . . . 14
  - Registering the MetaXpress PowerCore  
Software License . . . . . 16
  - Configuring the MetaXpress PowerCore Server Settings and  
Preferences . . . . . 18
- Chapter 3: Database Client Configuration . . . . . 21**
  - Introduction. . . . . 21
  - Prerequisites . . . . . 21
  - Information You Need . . . . . 21
  - Supported Database Client Software . . . . . 22
  - Installation Order and Workflow . . . . . 22
  - Oracle Client Installation and Configuration. . . . . 22
    - Installing and Configuring the Oracle Client. . . . . 22
    - Configuring the Oracle Net Service. . . . . 27
    - Configuring the Oracle ODBC Data Source. . . . . 31
  - SQL Client Configuration. . . . . 33

Configuring the SQL Client .....	34
<b>Chapter 4: MetaXpress PowerCore Client</b>	
<b>Installation and Configuration .....</b>	<b>39</b>
Introduction .....	39
Prerequisites .....	40
Information You Need .....	40
Installing the MetaXpress PowerCore Client Application .....	41
Setting MetaXpress PowerCore Client Service LogOn Properties ..	42
Configuring the MetaXpress® PowerCore™ Client .....	43
<b>Chapter 5: MDCStore Database and File Server</b>	
<b>Updates .....</b>	<b>45</b>
Introduction .....	45
Prerequisites .....	46
Required Documents .....	47
Updating the MDCStore Database Schema from	
Version 2.0 or later .....	47
Choosing the Appropriate Installer .....	47
Updating the MDC File Server Application .....	48
Configuring Database Clients .....	48
<b>Chapter 6: MetaXpress PowerCore Analysis-Job Management 49</b>	
Introduction .....	49
How the MetaXpress PowerCore Software Processes Jobs .....	50
About Jobs with Journals .....	51
Processing Filtered Measurements .....	51
Using a Processing Algorithm .....	51
Monitoring the MetaXpress Software Auto Run Queue	
for Jobs .....	52
Starting Auto Run Queue Monitoring .....	52
Stopping Queue Monitoring and Canceling Jobs .....	53
Viewing Job Status and Information .....	53
Information on the Job History Page .....	54
Viewing Information about Jobs Processed in	
Previous Sessions .....	55
Restarting Jobs .....	55
Managing Information on Lists .....	56

<b>Chapter 7: MetaXpress PowerCore Server and License Management</b>	<b>57</b>
Introduction	57
About Running MetaXpress PowerCore Applications and Services	57
About Closing the MetaXpress PowerCore Server Application	58
About Restarting MetaXpress PowerCore Applications and Services	58
Changing MetaXpress PowerCore Server Settings	58
Changing MetaXpress PowerCore Server Preferences	59
About MetaXpress PowerCore Software Licensing	59
Viewing MetaXpress PowerCore Software License Settings	59
Viewing MetaXpress PowerCore Software License Usage and Capacity	60
Using Multiple MetaXpress PowerCore Servers	61
Reserving Processes for Servers	61
How Clients are Connected to Servers	62
Increasing License Capacity	62
<b>Chapter 8: MetaXpress PowerCore Client Management</b>	<b>63</b>
Introduction	63
About MetaXpress PowerCore Client Status	63
Information on the Active Clients Page	64
Changing MetaXpress PowerCore Client Settings	64
Stopping and Restarting the MetaXpress PowerCore Client Service	65
Adding Clients to the Server's Selected Clients List	66
<b>Chapter 9: Troubleshooting</b>	<b>67</b>
Introduction	67
About MetaXpress PowerCore Server-Client Communication	67
Verifying MetaXpress PowerCore Server-Client Communication	68
Viewing and Changing MetaXpress PowerCore Port Number Settings	68
Viewing Error Handling Preferences and Log Files	69

Viewing Errors . . . . .	69
Information on the Errors Page . . . . .	70
About Work Unit Failures . . . . .	70
Removing Entries from the Errors Page . . . . .	70
Viewing Timeout Settings . . . . .	71
Symptoms and Solutions . . . . .	71
Contacting Technical Support . . . . .	80

<b>Appendix 10: MetaXpress PowerCore Installation and Configuration Notes. . . . .</b>	<b>81</b>
Introduction . . . . .	81
Installation Checklist . . . . .	82
MetaXpress PowerCore Software and License Information . . . . .	83
Database Settings . . . . .	85
MetaXpress PowerCore Server Settings . . . . .	87
MetaXpress PowerCore Server Preferences . . . . .	90
MetaXpress PowerCore Client Settings . . . . .	92
MetaXpress PowerCore Clients and Processing Capabilities . . . . .	95
<b>Glossary . . . . .</b>	<b>97</b>
<b>Index . . . . .</b>	<b>101</b>

# Overview and Requirements

## Introduction

This guide explains how to install, configure, and use MetaXpress® PowerCore™ High Content Distributed Image Analysis Software version 1.4 and newer. This section provides an overview of the product, system requirements, and installation procedures.

Topics in this section:

- [About MetaXpress PowerCore Software on page 7](#)
- [Before You Begin on page 8](#)
- [Requirements for Existing Systems on page 8](#)
- [Installation Overview on page 9](#)
- [About Firewalls and Antivirus Software on page 10](#)
- [Obtaining Technical Support on page 10](#)

## About MetaXpress PowerCore Software

The MetaXpress PowerCore Software is a server-client system that increases the speed of analysis for the MetaXpress® High Content Image Acquisition and Analysis Software application modules. The MetaXpress PowerCore server seamlessly obtains application module analysis jobs from the MetaXpress Auto Run Queue. It then divides those analysis jobs into the smallest possible work units, usually at the *well* or *site* level (an image), and distributes the work units to MetaXpress PowerCore clients where the analysis is performed.

When the analysis is complete, MetaXpress PowerCore clients send the results back to the MetaXpress PowerCore server, which in turn saves the data to the MDCStore™ Data Management Solution database.

The MetaXpress PowerCore Software processes only those jobs that contain MetaXpress application modules. If a job contains any MetaXpress journals, it is ignored by the MetaXpress PowerCore Software and processed by the MetaXpress Software.

Jobs that have been processed by the MetaXpress PowerCore Software are available in the MDCStore database for review in MetaXpress Software and for data mining in AcuityXpress™ High Content Informatics Software.

## Before You Begin

---

**CAUTION!** To get the best performance from the MetaXpress PowerCore Software, a database administrator, with the proper expertise, must configure and optimize, or tune, your database for your facility. If you do not have a database administrator, contact Molecular Devices for a list of consultants. In addition, the database-related information in this document is provided for guidance only. Molecular Devices is not responsible for damage to existing user data due to network problems, power failure, or unexpected termination of the database. For more information about database installation, security, operation, and optimization, contact the appropriate software vendor.

---

Before you install the MetaXpress PowerCore Software, you should review the detailed system requirements and information in these documents:

- *Molecular Devices Complete Solution HCS Computer Specifications*
- *Molecular Devices Complete Solution HCS IT Requirements*
- *Molecular Devices Complete Solution HCS IT Presentation*
- *MetaXpress® PowerCore™ Software Release Notes*

These documents are available in the knowledge base on the Molecular Devices support site: <http://www.moleculardevices.com/support.html>  
For technical support, see [Obtaining Technical Support on page 10](#).

## Requirements for Existing Systems

To use the MetaXpress PowerCore Software, you must have:

- One or more ImageXpress® System workstations that perform image acquisition using MetaXpress Software, version 3 or later.
- A working MDCStore database, version 2 or later.
- Images accessible through a UNC (Universal Naming Convention) file storage location or the MDC File Server system.
- Computers to be used as MetaXpress PowerCore servers and MetaXpress PowerCore clients.



---

**Note:** The MetaXpress PowerCore Software has been tested in client configurations of up to 32 processor cores.

---



## Installation Overview

To install the MetaXpress PowerCore Software you must:

1. Read the documents listed in [Before You Begin on page 8](#).
2. Obtain the MetaXpress PowerCore Software installation package, including the license key USB device, from Molecular Devices.
3. Install and configure a MetaXpress PowerCore server. See [Chapter 2: MetaXpress PowerCore Server Installation and Configuration on page 13](#).
4. Back up your existing MDCStore database and images.
5. Update the schema of your existing MDCStore database. See [Chapter 5: MDCStore Database and File Server Updates on page 45](#).
6. If you use the MDC File Server application, and if your version is older than 1.1.0.22, update the application. See [Chapter 5: MDCStore Database and File Server Updates on page 45](#).
7. Install and configure the Oracle or SQL database client software on MetaXpress PowerCore servers and clients. See [Chapter 3: Database Client Configuration on page 21](#).
8. Install and configure MetaXpress PowerCore clients. See [Chapter 4: MetaXpress PowerCore Client Installation and Configuration on page 39](#).

For configuration tables and an installation checklist, see [Appendix 10: MetaXpress PowerCore Installation and Configuration Notes on page 81](#).

## Installation Order and Workflow

You can modify the installation order to improve workflow and efficiency. For example, it is not necessary to install and configure the Oracle or SQL database client software on all MetaXpress PowerCore clients before you install the MetaXpress PowerCore application on them.

## About Firewalls and Antivirus Software

When working with firewalls and antivirus software, follow these guidelines:

- Avoid having firewalls between MetaXpress PowerCore servers and clients. Install clients and servers on the same subnet if possible.
- Verify that firewalls are configured to permit both UDP (User Datagram Protocol) and TCP (Transmission Control Protocol) transmissions on the port used by MetaXpress PowerCore servers and clients.
- Verify that antivirus software permits UDP and TCP transmissions on the port used by MetaXpress PowerCore servers and clients.

For more information about port number settings, see [MetaXpress PowerCore Server Settings on page 87](#) and [MetaXpress PowerCore Client Settings on page 92](#).

## Obtaining Technical Support

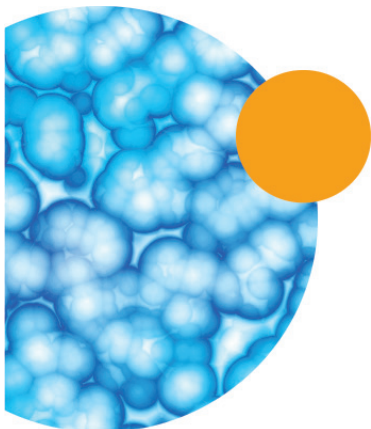
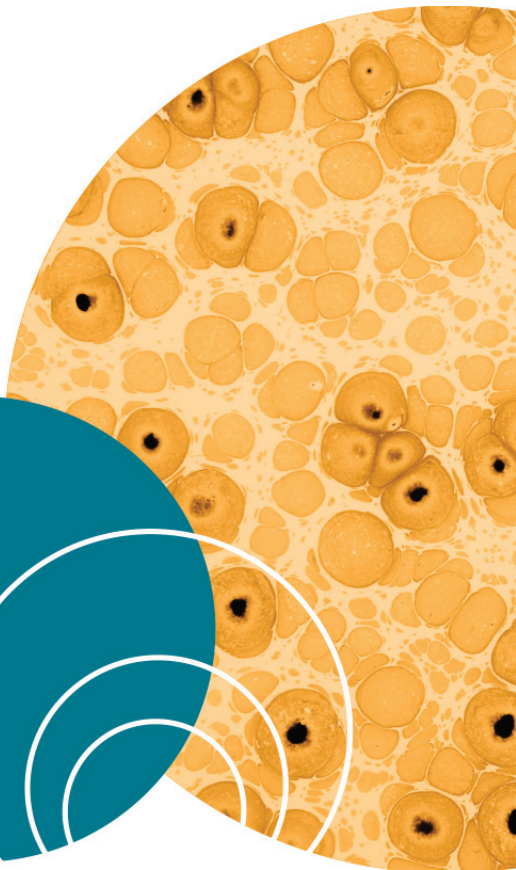
Molecular Devices is a leading worldwide manufacturer and distributor of analytical instrumentation, software, and reagents. We are committed to the quality of our products and to fully supporting our customers with the highest possible level of technical service.

Our support web site, <http://www.moleculardevices.com/Support>, has a link to the Knowledge Base with technical notes, software upgrades, safety data sheets, and other resources. If you do not find the answers you are seeking, follow the links to the Technical Support Service Request Form to send an email message to a pool of technical support representatives.

You can contact your local representative or contact Molecular Devices Technical Support by telephone at 800-635-5577 (U.S. only) or +1 408-747-1700. In Europe call +44 (0) 118 944 8000.

When you contact Technical Support, have the following information ready:

- Your system information, such as server and client operating systems and MetaXpress PowerCore Software application settings.
- The license key ID of your system. To find the license key ID, start the MetaXpress PowerCore server application, and then click **Tools > Licensing**.
- A description of the problem including when it happened and what the system was doing when it happened.
- Screen captures of any error messages displayed by the software of operating system.
- A description of any changes made to the system recently, such as updates, patches, or configuration changes.
- The MetaXpress PowerCore Software log. To view the log file location, start the MetaXpress PowerCore server application, and then click **Edit > Preferences**.
- Your contact information.



# MetaXpress PowerCore Server Installation and Configuration

## 2

### Introduction

To use the MetaXpress® PowerCore™ Software, you must install and configure a MetaXpress PowerCore server as described in this section. The MetaXpress PowerCore server connects to the MDCStore™ database to retrieve analysis jobs, it divides those jobs into work units, and it distributes the work units to MetaXpress PowerCore clients for processing.

You can install and configure more than one computer as a MetaXpress PowerCore server to increase your analysis capability or to accommodate test and production needs. MetaXpress PowerCore servers can share a single license key USB device, and you specify the number of processes available to each server. However, the combined number of analysis processes running simultaneously on MetaXpress PowerCore clients cannot exceed the number of simultaneous processes allowed by the license.

Topics in this section:

- [Prerequisites on page 14](#)
- [Information You Need on page 14](#)
- [Installing the MetaXpress PowerCore Server and License Key Server Applications on page 14](#)
- [Registering the MetaXpress PowerCore Software License on page 16](#)
- [Configuring the MetaXpress PowerCore Server Settings and Preferences on page 18](#)

## Prerequisites

Before you begin, you must:

1. Have a system in place that meets the requirements referenced in [Chapter 1: Overview and Requirements on page 7](#).
2. Obtain the High Content Image Acquisition and Analysis Software Suite Installation flash drive, or download the installation software, from theMolecular Devices Knowledgebase.
3. Obtain the network license key USB device, registration code, and authorization code from Molecular Devices.
4. If you have any version of the MetaXpress PowerCore Software already installed, manually uninstall the server and client software before installing this new version of the software.

## Information You Need

During installation and configuration, you need to know settings such as the port number you want to use for MetaXpress PowerCore server-client communication. These settings are described in [MetaXpress PowerCore Server Settings on page 87](#).

## Installing the MetaXpress PowerCore Server and License Key Server Applications

These instructions are for installing the MetaXpress PowerCore Server Software from a downloaded installation file. To install the software from the MetaXpress Software Suite Installation flash drive, see the *MetaXpress High Content Image Acquisition and Analysis Software Suite Installation and Update Guide*.

To install the MetaXpress PowerCore server application from a downloaded installer:

1. Turn user access level to low.
2. On the computer where you want to install the MetaXpress PowerCore server application, log in as administrator.

Remove any Sentinel USB keys attached to this computer, to prevent the configuration of the key from getting erased.



---

**Note:** During the installation, only one Sentinel USB key from a Molecular Devices product can be installed on the computer.

---

If you are installing from the MetaXpress Software Installation flash drive, see the *MetaXpress High Content Image Acquisition and Analysis Software Suite Installation and Update Guide*.

3. Double-click the downloaded MetaXpress PowerCore archive file.
4. In the WinZip Self Extractor dialog, click **Setup**.  
The system checks for prerequisites.
5. If required components are missing, a warning appears, and you must click **Install** to install the components and continue. Follow the installation instructions for any required components.  
After the prerequisite check is complete and all required components are installed, the **MetaXpress PowerCore Software** installation dialog appears.
6. Click **Install License Key Server**.
7. Follow the instructions in the wizard to complete the installation.  
During installation, you might see a message that Windows Firewall settings on the license key server are being changed. This is because the license key driver opens a port on the computer for licensing access. If you have other firewall software installed, make sure it permits the license key driver, **spnsrvnt.exe**, to send and receive TCP/IP communications on port 6002.
8. Plug the license key device in to a USB port on the server. If you have more than one license key, install each key on a separate server. You cannot have multiple license keys on the same server.



**Tip:** It is best to install the license key USB device and license key server application on the server where the MetaXpress PowerCore server application is installed. This ensures that the key is always accessible to the server. However, you can plug the license key into a USB port on any network computer provided that all MetaXpress PowerCore servers can communicate over the network with the license key computer at all times.

The license key server application must be installed on the computer where the license key USB device is installed.

9. When the license key server installation is complete, click **Install MetaXpress PowerCore Server** on the MetaXpress PowerCore Software installation screen.

The MetaXpress PowerCore server installation starts.

10. Follow the instructions in the wizard to complete the installation.

## Registering the MetaXpress PowerCore Software License

To register the MetaXpress PowerCore Software license:

1. Click **Start > All Programs > Molecular Devices > MetaXpress PowerCore > MetaXpress PowerCore Server** to start the MetaXpress PowerCore server application.

The **License Registration Information** property sheet appears.

MetaXpress PowerCore Server - License Registration Information 1.4.0.2

License Key Host Computer: 10.133.8.134

License Key ID: 291 Refresh

Registration Code: 1tmcq5xa-61d7nplm-8g5bq5h9-6xd8xph5-8j5cq5k9-erd5

Authorization Code: SDS-RPNS-YRMS

Get Code from Internet

Total Parallel Processes Permitted: 116

Validate Register



2. In the **License Key Host Name** field, type the IP address or the computer name of the server where the license key USB device is plugged in.

If you are using an IP address for the license key host name, ensure that you are using a static IP address.

3. **Select a License Key ID and click Refresh.**

The identification number of the license key USB device appears. If the number does not appear, check network connections, unplug the license key USB device, and then plug the device in again. To verify that the key is valid and working, go to the license key host web page, <http://localhost:6002/>. To view the web page on a network computer, substitute **localhost** with the computer name or IP address of the network computer.

4. To provide the registration and authorization codes, use one of these methods:
  - ◆ Click **Get Code from Internet** to obtain the codes from the Molecular Devices license server. To use this method, your server must have an Internet connection.
  - ◆ In the **Registration Code** and **Authorization Code** text boxes, type the codes that you received from Molecular Devices.
  - ◆ Go to <http://www.meta.moleculardevices.com/authorize/> and type your system ID number as listed on the USB key. Then, follow the instructions to display the latest codes. Type these codes in the dialog.




---

**Tip:** The registration and authorization codes are case-sensitive. The registration code is 44 characters in length, and the authorization code is 11 characters in length. To collect and manage license information, use [Table 10-2: MetaXpress PowerCore Software and License Information on page 83](#).

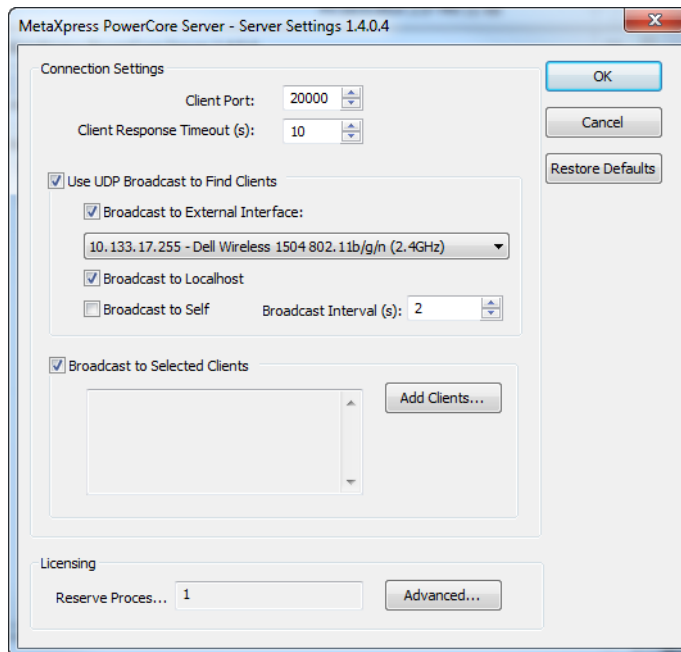
---

5. Click **Validate** to verify that the codes are correct.  
The **Total Parallel Processes Permitted** field indicates the number of MetaXpress PowerCore analytical processes that can run simultaneously on MetaXpress PowerCore clients.
6. Click **Register** to authorize the use of the license.  
A dialog appears. It states that the MetaXpress PowerCore server application must close to complete the registration.
7. Click **OK**.

## Configuring the MetaXpress PowerCore Server Settings and Preferences

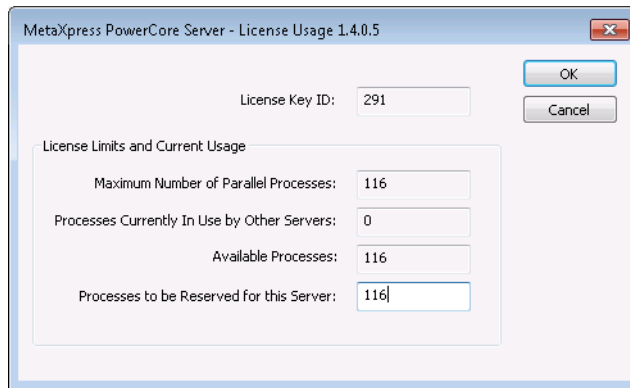
1. Click **Start > All Programs > Molecular Devices > MetaXpress PowerCore > MetaXpress PowerCore Server** to start the MetaXpress PowerCore server application.

The **Server Settings** property sheet appears.



2. Choose the settings for MetaXpress PowerCore server communications. For descriptions of settings, see [MetaXpress PowerCore Server Settings on page 87](#).
3. In the **Licensing** section at the bottom of the property sheet, click **Advanced**.

The **License Usage** property sheet appears.



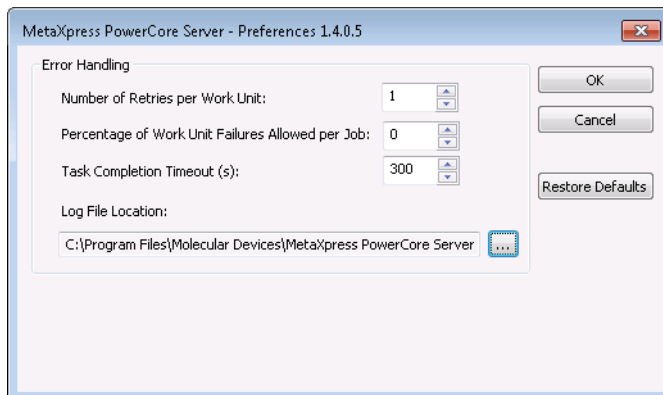
4. In the **Processes to be Reserved for this Server** field, type the number of processes you want to reserve for the server.

The number of processes reserved for the server in the **License Usage** property sheet determines the number of simultaneous processes the server can run. Until processes are reserved for it, the server cannot run any analysis processes.

Also, if the license permits 100 simultaneous processes, but only 50 processes are reserved for the server, the server cannot run more than 50 processes simultaneously even though the license permits 100. For more information on licensing settings, see [MetaXpress PowerCore Server and License Management on page 57](#).

5. Click **OK** to close the **License Usage** property sheet, and then click **OK** to close the **Server Settings** property sheet.
6. In the MetaXpress PowerCore server application, click **Edit > Preferences**.

The **Preferences** property sheet appears.



7. In the **Preferences** property sheet, set the error handling preferences. These preferences are explained in [MetaXpress PowerCore Server Preferences on page 90](#).

8. Click **OK** to close the **Preferences** property sheet.

After you have installed and configured the MetaXpress PowerCore server, update the MDCStore database schema as described in [Chapter 5: MDCStore Database and File Server Updates on page 45](#).

# Database Client Configuration

## Introduction

To use the MetaXpress® PowerCore™ Software, you must install and configure the Oracle or SQL database client software on all MetaXpress PowerCore servers and clients as described in this section.

Topics in this section:

- [Prerequisites on page 21](#)
- [Information You Need on page 21](#)
- [Supported Database Client Software on page 22](#)
- [Installation Order and Workflow on page 22](#)
- [Oracle Client Installation and Configuration on page 22](#)
- [SQL Client Configuration on page 33](#)

## Prerequisites

Before you begin, you must:

1. Make sure your system meets the requirements in [Chapter 1: Overview and Requirements on page 7](#).
2. Install and configure a MetaXpress PowerCore server as described in [Chapter 2: MetaXpress PowerCore Server Installation and Configuration on page 13](#).
3. Update the MDCStore™ database schema as described in [Chapter 5: MDCStore Database and File Server Updates on page 45](#).

## Information You Need

When you configure the database clients, you need to know the port number and other settings used by your MDCStore database. For a description of these settings, see [Database Settings on page 85](#).

## Supported Database Client Software

The MetaXpress PowerCore Software can be used with Oracle and SQL database software. For database client installation and configuration instructions, see:

- [Oracle Client Installation and Configuration on page 22](#)
- [SQL Client Configuration on page 33](#)

## Installation Order and Workflow

You can modify the installation order to improve workflow and efficiency. For example, it is not necessary to install and configure the Oracle or SQL database client software on all MetaXpress PowerCore clients before you install the MetaXpress PowerCore Software application on them. To reduce the number of times you need to log in to separate client computers, you could:

1. Log in to a MetaXpress PowerCore client and install and configure the Oracle or SQL database client software (see [Chapter 3: Database Client Configuration on page 21](#)).
2. Install and configure the MetaXpress PowerCore client application on that computer (see [Chapter 4: MetaXpress PowerCore Client Installation and Configuration on page 39](#)).
3. Repeat steps 1 and 2 for each additional MetaXpress PowerCore client.

## Oracle Client Installation and Configuration

If you are using an Oracle database, you must install and configure Oracle client drivers and services on all MetaXpress PowerCore servers and clients as described in this section.

Oracle installation and configuration tasks include:

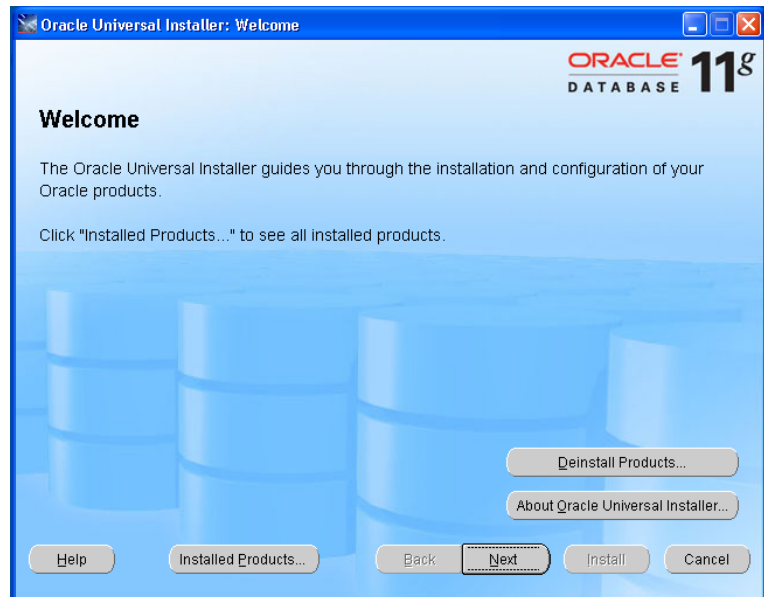
- [Installing and Configuring the Oracle Client on page 22](#)
- [Configuring the Oracle Net Service on page 27](#)
- [Configuring the Oracle ODBC Data Source on page 31](#)

### Installing and Configuring the Oracle Client

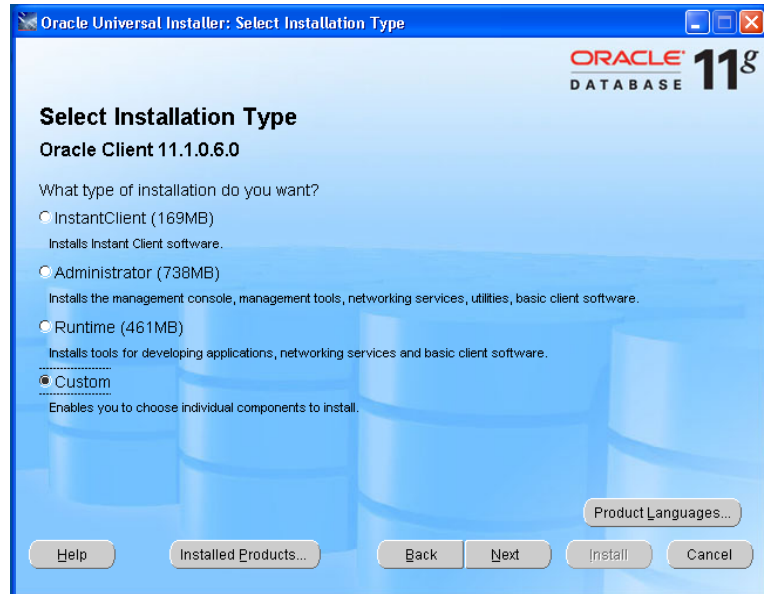
Before installing or configuring the Oracle client, make sure that you are using the correct Oracle client. See *Molecular Devices Complete Solution HCS Computer Specifications*.

To install and configure the Oracle client:

1. On the MetaXpress PowerCore server or client, log in as administrator.
2. Download the appropriate Oracle database **client** drivers from <http://www.oracle.com>.
3. Unzip the downloaded package and double-click **setup.exe** to start the installation.
4. On the **Welcome** page, click **Next**.



5. On the **Select Installation Type** page, click **Custom**.



6. If your system uses a language other than English (United States), click **Product Languages**, and then select **English (United States)**.

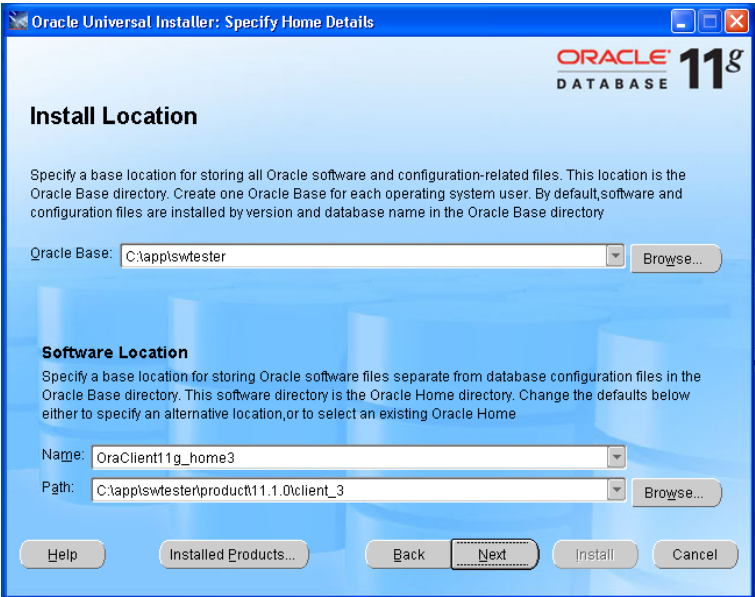


**Note:** The MetaXpress PowerCore Software requires the Oracle installers to use English (United States) regional and language settings.

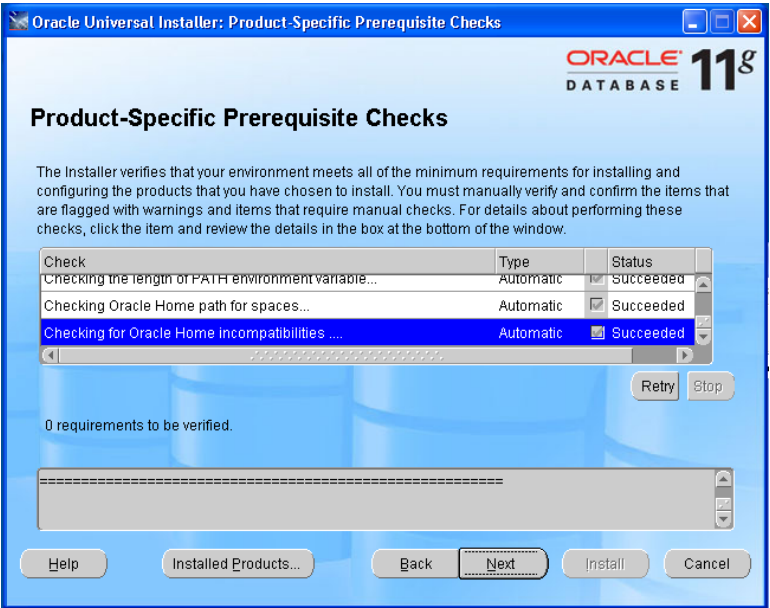
7. Click **Next**.

In the **Specify Home Details** page, select the installation location and then click **Next**.

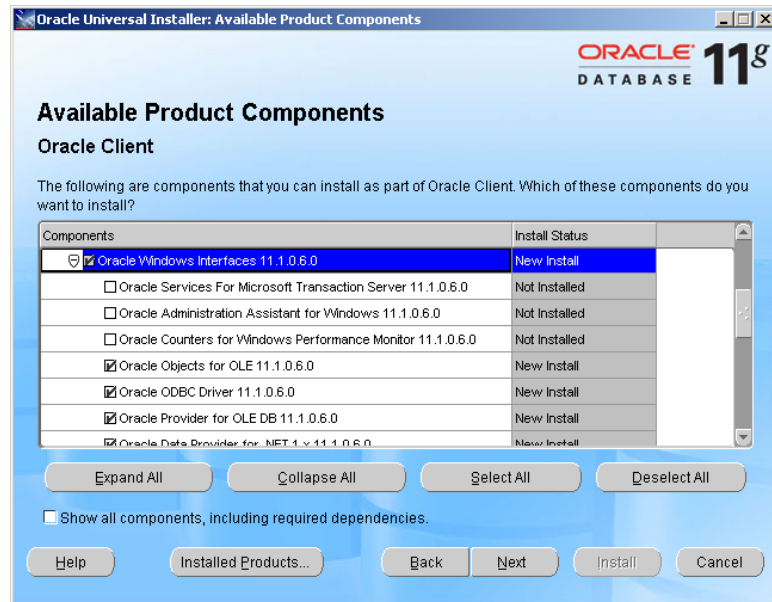




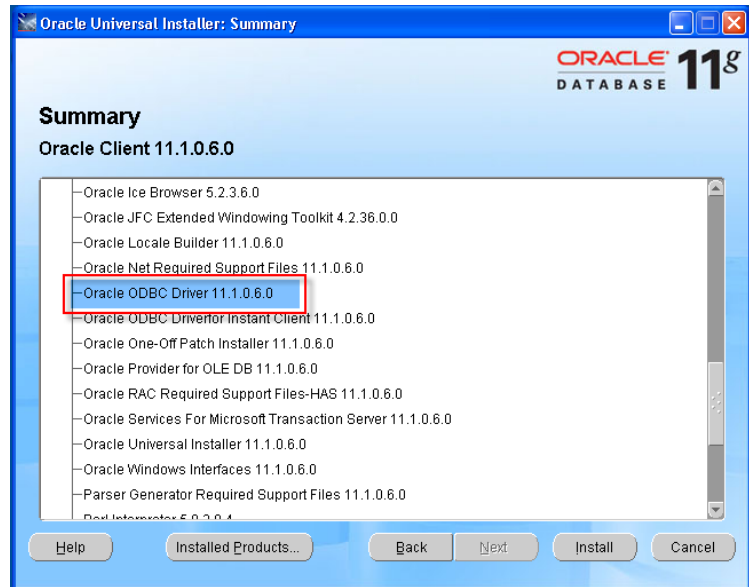
8. Resolve any issues identified on the **Product-Specific Prerequisite Checks** page, and then click **Next**.



9. On the **Available Product Components** page, select **Oracle Windows Interfaces** and deselect **Oracle Services for Microsoft Transaction Server** that gets selected when you select **Oracle Windows Interfaces**. Select the drivers to be installed, including **ODBC Driver** and **Oracle Net Manager**. Then, click **Next**.



10. On the **Summary** page, expand the **New Installations** section to verify that the installation summary includes the correct version of the ODBC driver, and then click **Install**.




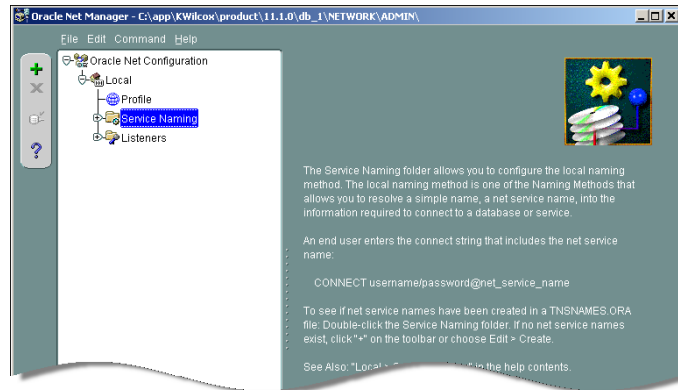
The Oracle client software is installed.

Repeat this procedure for all MetaXpress PowerCore servers and clients.

## Configuring the Oracle Net Service

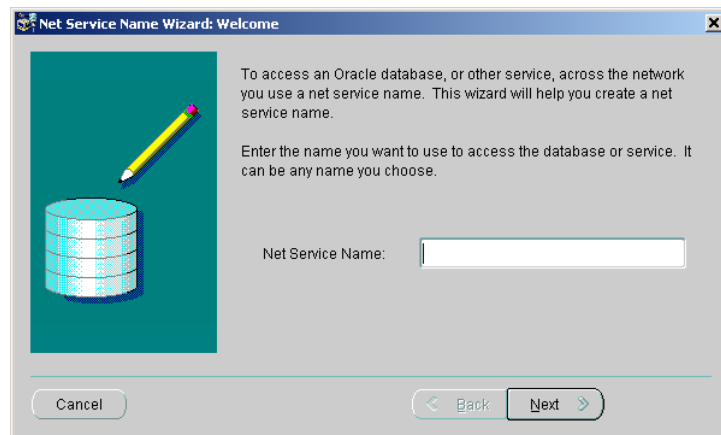
To configure the Oracle Net Service:

1. On the MetaXpress PowerCore server or client, click **Start > All Programs > Oracle Client > Configuration and Migration Tools > Net Manager**.
2. In the **Oracle Net Manager** window, select **Service Naming**, and then click the green plus sign (  ).

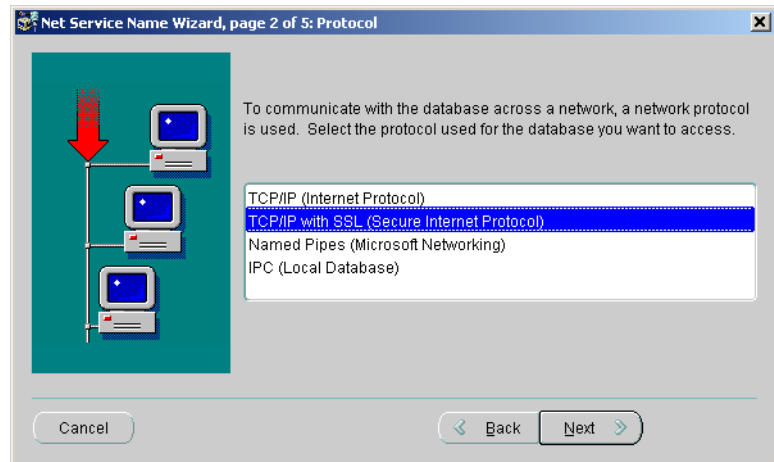


The Net Service Name wizard appears.

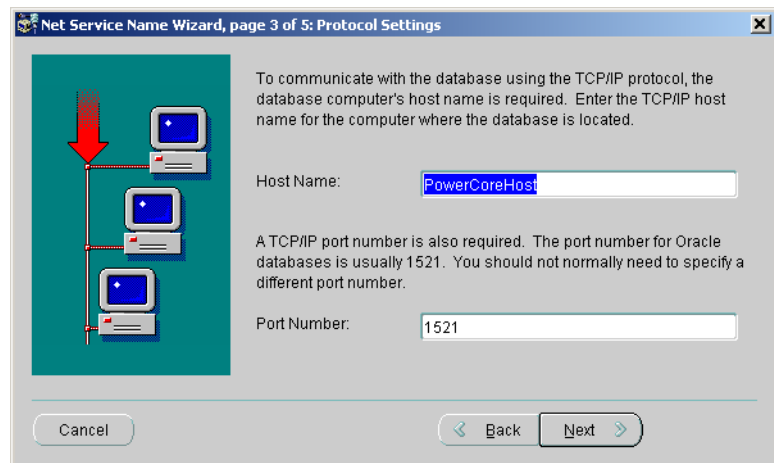
3. On the **Welcome** page, in the **Net Service Name** field, type a name for the service, and then click **Next**.



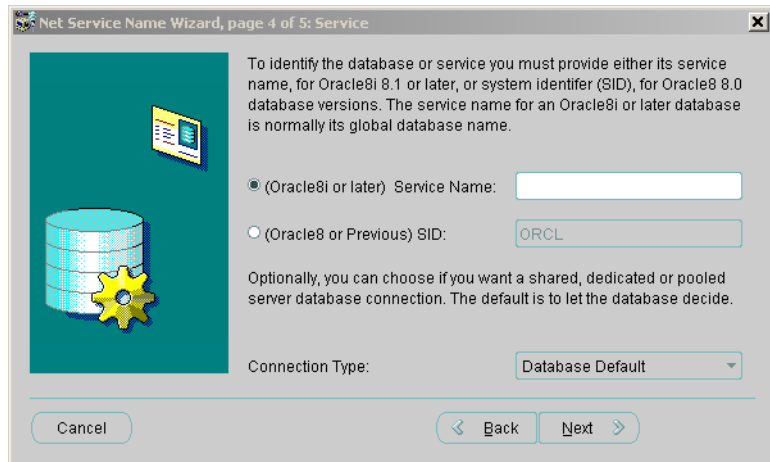
4. On the **Protocol** page, select a protocol that is supported by your system and by your Oracle database, and then click **Next**.



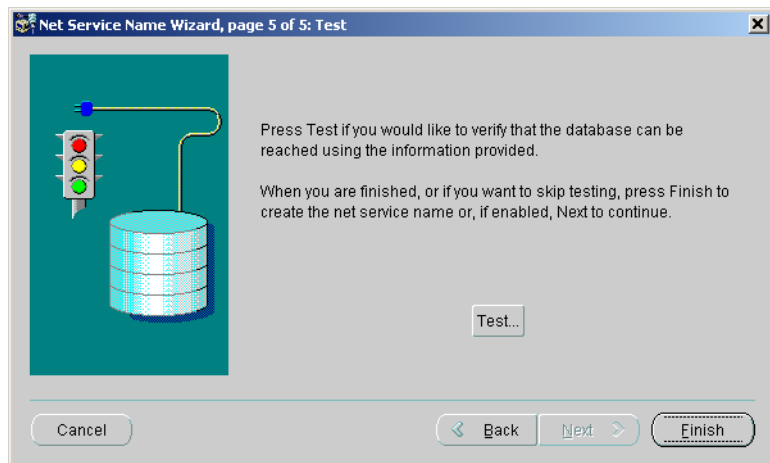
5. On the **Protocol Settings** page, type the host name of the server that hosts your Oracle database and the port number that the database server listens to, and then click **Next**.



6. On the **Service** page, type the service name that is used by the Oracle database you are connecting to, or provide the system identifier, and then click **Next**.



7. Click **Test** to verify your settings.



If configuration is complete, a confirmation message appears.

If a problem is detected, change your connection settings and try again.

Repeat this procedure for all MetaXpress PowerCore servers and clients.

## Configuring the Oracle ODBC Data Source

64-bit applications use only data sources configured with a 64-bit ODBC driver.

Molecular Devices recommends that you configure new data sources using the New Data Source button on the dialog that appears when you start the MetaXpress Software. For instructions, see “Set Up the MetaXpress Software” in the *MetaXpress High Content Image Acquisition and Analysis Software Suite Installation Guide* included on the MetaXpress High Content Image Acquisition and Analysis Software Installation flash drive.

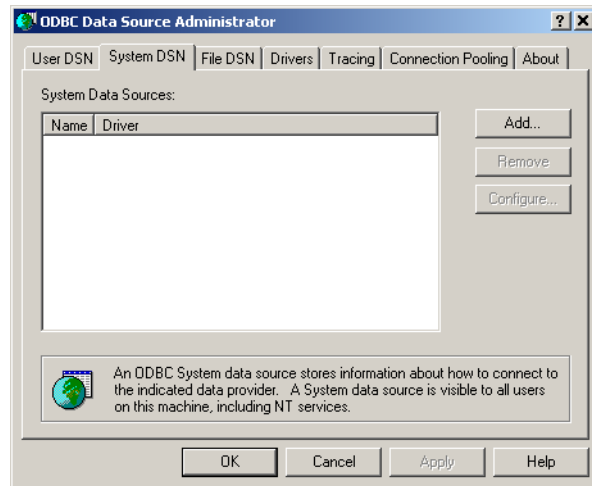
If you do not have MetaXpress Software or MDCStoreTools installed on the client computer, you can configure the ODBC data source using the Administrative Tools section of the Windows Control Panel as described in the following procedure.



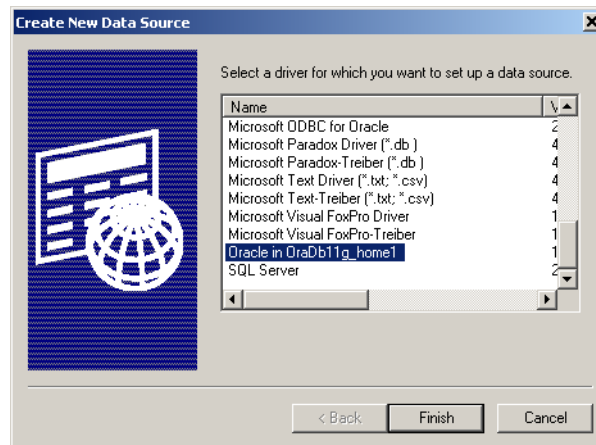
Do not use the following procedure if you have MetaXpress Software installed on the client computer. Molecular Devices recommends that you configure new data sources using the **New Data Source** button on the dialog that appears when you start the MetaXpress Software. For instructions, see “Set Up the MetaXpress Software” in the *MetaXpress High Content Image Acquisition and Analysis Software Suite Installation Guide* included on the MetaXpress High Content Image Acquisition and Analysis Software Suite Installation flash drive.

To configure the Oracle ODBC data source using Control Panel:

1. On the MetaXpress PowerCore server or client, log in as administrator.
2. Go to the **Administrative Tools** section of the Windows Control Panel.
3. On the **Administrative Tools** list, double-click **Data Sources (ODBC)**, and then click the **System DSN** tab.



4. Click **Add**.
5. On the **Create New Data Source** page, select the Oracle driver provided by Oracle Corporation.



6. Click **Finish**.  
The **ODBC Driver Configuration** property sheet appears.



The screenshot shows the 'Oracle ODBC Driver Configuration' window. The 'Data Source Name' field contains 'MDCSTORE\_ORA'. The 'Description' field is empty. The 'TNS Service Name' dropdown is set to 'MDCStore'. The 'User ID' field contains 'system'. On the right, there are buttons for 'OK', 'Cancel', 'Help', and 'Test Connection'. Below these fields, there is a tabbed interface with 'Application', 'Workarounds', and 'SQLServer Migration' tabs. The 'Application' tab is active, showing several checked options: 'Enable Result Sets', 'Enable Query Timeout', 'Read-Only Connection' (unchecked), 'Enable Closing Cursors', and 'Enable Thread Safety'. There are also dropdowns for 'Batch Autocommit Mode' (set to 'Commit only if all statements succeed') and 'Numeric Settings' (set to 'Use Oracle NLS settings').

7. In the **Data Source Name** field, type the name of your data source. This name must be the same for all MetaXpress PowerCore servers and clients.
8. In the **TNS Service Name** field, select a name from the drop-down list. The TSN Name must match the name of the service that is set up in the Oracle Net Manager.
9. In the **User ID** field, type the ID of a user account that has access to the MDCStore database.
10. Click **Test Connection**.
11. If the connection test is successful, data source configuration is complete. If a problem is detected, change your connection settings and try again.
12. Repeat this procedure for all MetaXpress PowerCore servers and clients.

After you have configured the Oracle database client connections on MetaXpress PowerCore servers and clients, install and configure the MetaXpress PowerCore client application as described in [Chapter 4: MetaXpress PowerCore Client Installation and Configuration on page 39](#).

## SQL Client Configuration

If you are using an SQL database, you must configure the SQL client on all MetaXpress PowerCore servers and clients as described in this section.

## Configuring the SQL Client

64-bit applications use only data sources configured with a 64-bit ODBC driver.

Molecular Devices recommends that you configure new data sources by clicking the New Data Source button on the dialog that appears when you start the MetaXpress Software. For instructions, see “Set Up the MetaXpress Software” in the *MetaXpress High Content Image Acquisition and Analysis Software Suite Installation Guide* included on the MetaXpress High Content Image Acquisition and Analysis Software Suite Installation flash drive.

If you do not have MetaXpress Software or MDCStoreTools installed on the client computer, you can configure the ODBC data source using the Administrative Tools section of the Windows Control Panel as described in the following procedure.



---

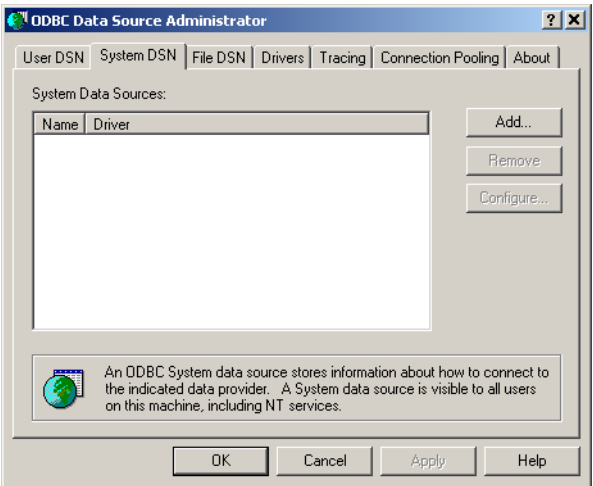
**Note:** Do not use the following procedure if you have MetaXpress Software or AcuityXpress Software installed on the client computer. Molecular Devices recommends that you configure new data sources using the New Data Source button on the dialog that appears when you start the MetaXpress Software. For instructions, see “Set Up the MetaXpress Software” in the *MetaXpress High Content Image Acquisition and Analysis Software Suite Installation Guide* included on the MetaXpress High Content Image Acquisition and Analysis Software Suite Installation flash drive.

---

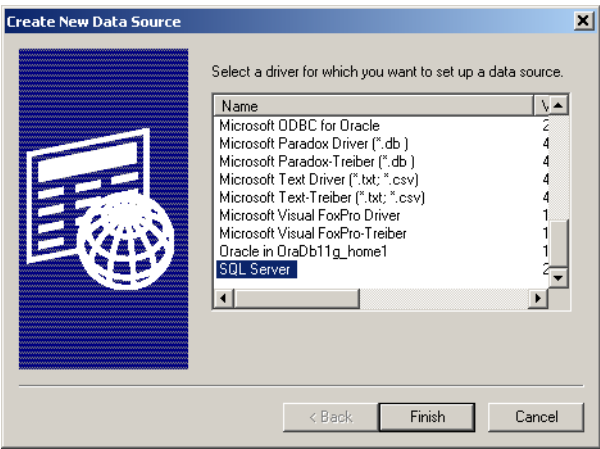
To configure the SQL client using Control Panel:

1. On the MetaXpress PowerCore server or client, log in as administrator.
2. Go to the **Administrative Tools** section of the Windows Control Panel.

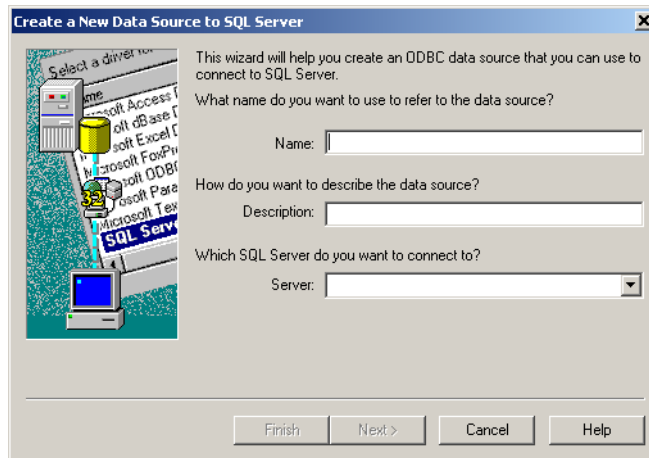
3. Double-click **Data Sources (ODBC)**, and then click the **System DSN** tab.



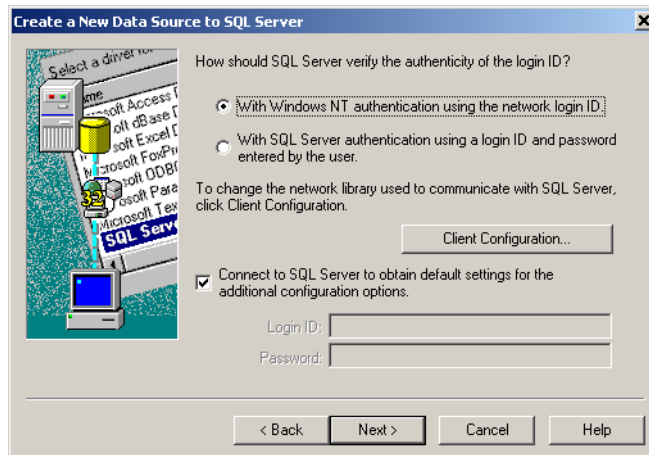
4. Click **Add**.
5. On the **Create New Data Source** page, select **SQL Server** or **SQL Native Client**, and then click **Finish**.



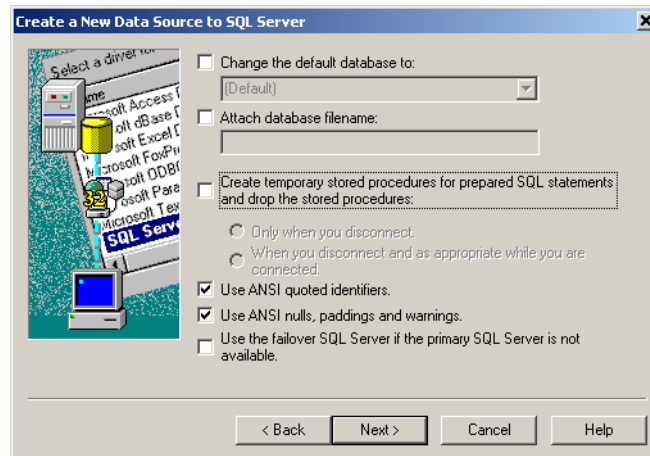
6. On the first page of the **Create a New Data Source to SQL Server** wizard, type the name and description of the SQL server, select the server you want to connect to, and then click **Next**.



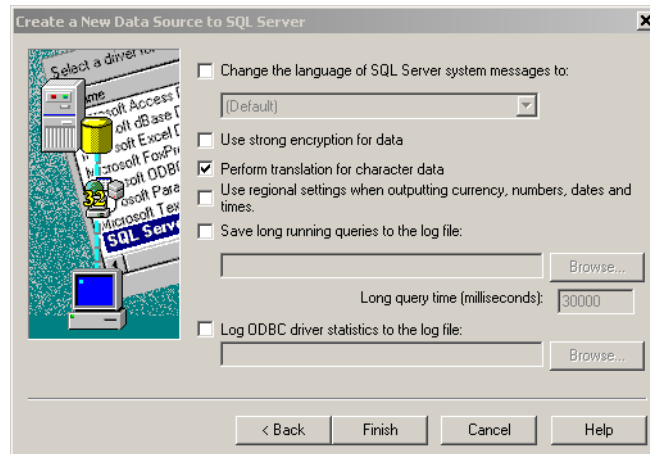
7. On the second page of the wizard, provide authentication information, and then click **Next**.



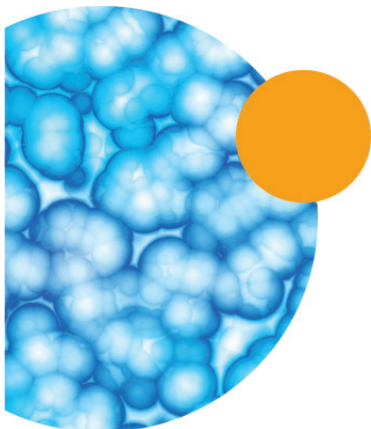
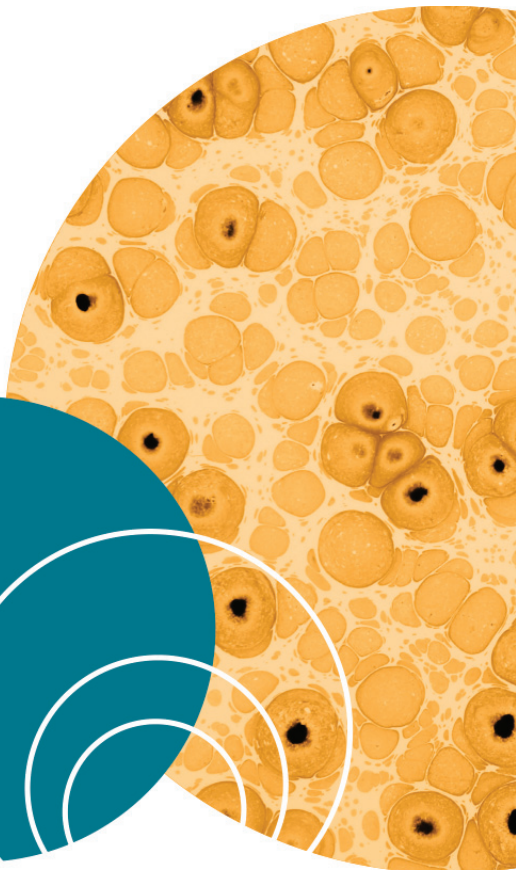
8. On the third page of the wizard, choose the database you are using as the MDCStore database, select **Use ANSI quoted identifiers** and **Use ANSI nulls, paddings and warnings**, and then click **Next**.



9. Select the **Perform translation for character data** check box.
10. Clear the **Use regional settings when outputting currency, numbers, dates, and times** check box, and then click **Finish**.



Repeat this procedure for all MetaXpress PowerCore servers and clients. After you have configured the SQL database client connections on MetaXpress PowerCore servers and clients, install and configure the MetaXpress PowerCore client application as described in [Chapter 4: MetaXpress PowerCore Client Installation and Configuration](#) on page 39.



# MetaXpress PowerCore Client Installation and Configuration

## 4

### Introduction

MetaXpress® PowerCore™ clients process the work units they receive from the MetaXpress PowerCore server and return those work units to the server after processing.

Each MetaXpress PowerCore client must have the MetaXpress PowerCore client application installed and configured on it as described in this section. The MetaXpress PowerCore Software has been tested in client configurations of up to 48 processor cores.

If a MetaXpress PowerCore server is also used as a MetaXpress PowerCore client, it must have both the MetaXpress PowerCore server and the MetaXpress PowerCore client applications installed on it. However, if you have more than ten MetaXpress PowerCore clients, having the client and server installed on the same computer is not recommended. Depending on the server's speed and memory, running MetaXpress PowerCore client processes on the server might impair the server's ability to manage multiple clients and analysis jobs in a timely manner.

Topics in this section:

- [Prerequisites on page 40](#)
- [Information You Need on page 40](#)
- [Installing the MetaXpress PowerCore Client Application on page 41](#)
- [Configuring the MetaXpress® PowerCore™ Client on page 43](#)

## Prerequisites

Before you begin, you must:

1. Install and configure a MetaXpress PowerCore server as described in [Chapter 2: MetaXpress PowerCore Server Installation and Configuration on page 13](#).
2. Set up one or more computers to be used as MetaXpress PowerCore clients. Client computers must meet the system requirements referenced in [Chapter 1: Overview and Requirements on page 7](#).
3. Install and configure the database client on MetaXpress PowerCore servers and clients as described in [Chapter 3: Database Client Configuration on page 21](#).

The MetaXpress PowerCore client is configured to run as a service and requires a Windows account with Logon privileges.

4. Make sure you have a Windows user account with Logon privileges and sufficient privileges to access the MDC File Server or image storage location. The port to the MDC File Server must be open and the Windows account must have read access to the UNC location. If you have a version of the MetaXpress PowerCore Software version 1.1 or earlier, you need to manually uninstall the server and client software before installing this new software version. All server and client software must be upgraded to this new software version.

## Information You Need

During installation and configuration, you need to know the port number for MetaXpress PowerCore server-client communications and other settings. These settings are described in [MetaXpress PowerCore Client Settings on page 92](#).



## Installing the MetaXpress PowerCore Client Application

These instructions are for installing the MetaXpress PowerCore Server Software from a downloaded installation file. To install the software from the MetaXpress Software Suite Installation flash drive, see the *MetaXpress High Content Image Acquisition and Analysis Software Suite Installation and Update Guide*.

### To install the MetaXpress PowerCore client application from a downloaded installer

1. On the computer where you want to install the MetaXpress PowerCore client application, log in as administrator.  
If you are installing from the MetaXpress Software Installation flash drive, see the *MetaXpress High Content Image Acquisition and Analysis Software Suite Installation and Update Guide*.
2. Double-click the downloaded MetaXpress PowerCore archive file.
3. In the WinZip Self Extractor dialog, click **Setup**.  
The system checks for prerequisites.
4. If required components are missing, a warning appears, and you must click **Install** to install the components and continue. Follow the installation instructions for any required components.  
After the prerequisite check is complete and all required components are installed, the **MetaXpress PowerCore Software** installation dialog appears.
5. Click **Install MetaXpress PowerCore Client**.  
The installation starts.
6. Follow the instructions in the wizard to complete the installation.  
During installation, the *MetaXpress PowerCore Client* service starts, and it appears on the **Windows Services** list. The client uses this service to receive work units from the MetaXpress PowerCore server, and the service must be running for the computer to be recognized as a MetaXpress PowerCore client. The service starts automatically whenever the computer is restarted. For more information, see [Setting MetaXpress PowerCore Client Service LogOn Properties on page 42](#).

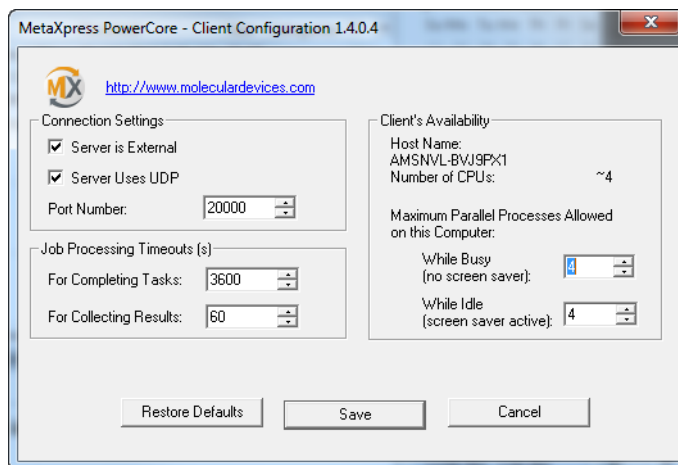
## Setting MetaXpress PowerCore Client Service LogOn Properties

If you use a UNC storage location for image storage, and your MetaXpress PowerCore clients are on the same domain, set the LogOn properties of the *MetaXpress PowerCore Client* service to use a network domain user account. This ensures that the client service can access and load images from the UNC storage location.

If your MetaXpress PowerCore clients are not on the same domain, create an identical user account, with Administrator privileges, on the computer with UNC image storage and on all MetaXpress PowerCore clients. Use the same account use for the LogOn account for the *MetaXpress PowerCore Client* service on all MetaXpress PowerCore clients.

To set the LogOn properties of the *MetaXpress PowerCore Client* service

1. On the Windows Control Panel, double-click **Administrative Tools**.
2. Double-click **Services**.
3. On the Services list, double-click **MetaXpress PowerCore Client**. The **MetaXpress PowerCore Client Properties (Local Computer)** property sheet appears.



4. Click the **LogOn** tab.
5. Select **This account**.
6. If your MetaXpress PowerCore clients are on the same domain, type the name and password of a network domain user account.
7. If your MetaXpress PowerCore clients are not on the same domain, create an identical account, with Administrator

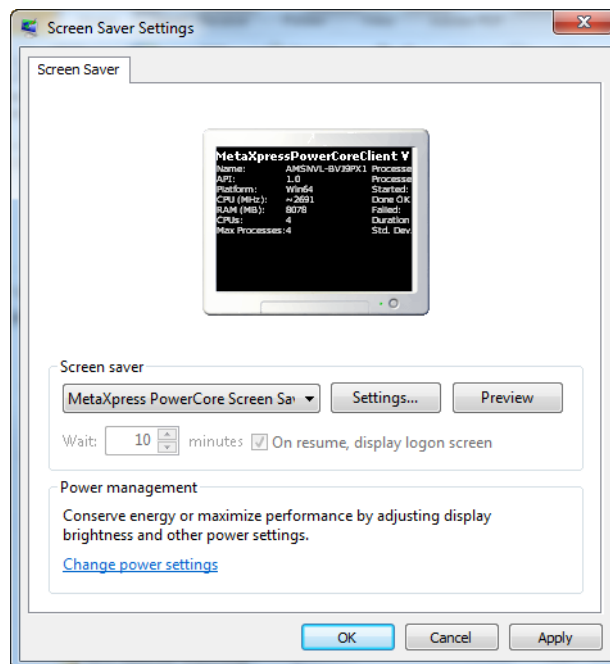
privileges, on the computer with UNC image storage and on all MetaXpress PowerCore clients, and then type the name and password of that account.

8. Click **OK**.

## Configuring the MetaXpress® PowerCore™ Client

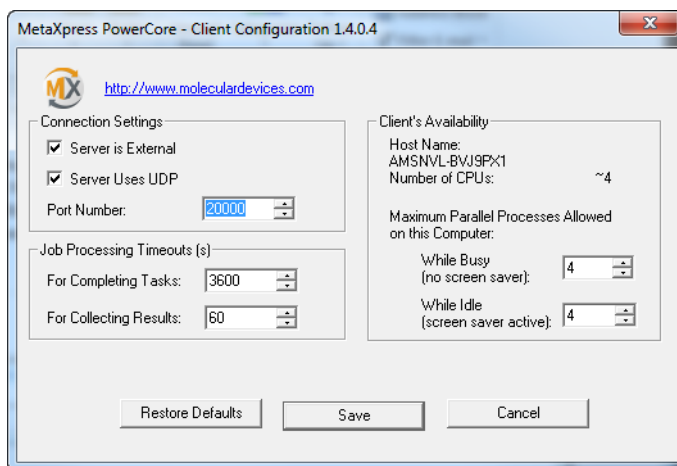
To configure the MetaXpress PowerCore client:

1. On the computer where the MetaXpress PowerCore client application is installed, configure the screen saver to use **Dcscscreensaver**. The MetaXpress PowerCore server checks the client's screen saver state to determine how to use the client's CPUs. If the client's screen saver is not set to use Dcscscreensaver, the MetaXpress PowerCore server considers the client to be busy, even if the client is idle, or if another screen saver is active.



2. Click **All Programs > Molecular Devices > MetaXpress PowerCore > MetaXpress PowerCore Client** to start the MetaXpress PowerCore client application.

The **MetaXpress PowerCore Client Configuration** property sheet appears.



3. In the **MetaXpress PowerCore Client Configuration** property sheet, select the settings for the MetaXpress PowerCore client. Settings are described in [MetaXpress PowerCore Client Settings on page 92](#).

After you have installed and configured the MetaXpress PowerCore client, monitor and manage MetaXpress® Software analysis jobs as described in [Chapter 6: MetaXpress PowerCore Analysis-Job Management on page 49](#).

## Introduction

The MDCStore™ Data Management Solution database stores:

- Images or the location of images acquired using ImageXpress® imaging instruments.
- The analysis and acquisition settings as well as the results of the analysis of these images with MetaXpress® Software application modules and journals.
- AcuityXpress™ Software data mining results.

To use the MetaXpress® PowerCore™ Software with the MDCStore database, you must update the database schema as described in this section. In addition, the MDCStore database should be running on a networked computer. Molecular Devices recommends that you do not run the MDCStore database on the computer that hosts the MetaXpress PowerCore server or MetaXpress PowerCore client. For additional information, see *Computer and Server Specifications for AcuityXpress or MetaXpress Offline Analysis*.

If you are using an older version of the MDC File Server application, update that application as described in this section.

---

**CAUTION!** To get the best performance from the MetaXpress PowerCore Software, a database administrator, with the proper expertise, must configure and optimize, or tune, your database for your facility. If you do not have a database administrator, contact Molecular Devices for a list of consultants. In addition, the database-related information in this document is provided for guidance only. Molecular Devices is not responsible for damage to existing user data due to network problems, power failure, or unexpected termination of the database. For more information about database installation, security, operation, and optimization, contact the appropriate software vendor.

---

Topics in this section:

- [Prerequisites on page 46](#)
- [Updating the MDCStore Database Schema from Version 2.0 or later on page 47](#)
- [Updating the MDC File Server Application on page 48](#)
- [Configuring Database Clients on page 48](#)

## Prerequisites

Before you begin, you must:

1. Make sure your system meets the requirements in [Chapter 1: Overview and Requirements on page 7](#).
2. Verify that the MDCStore database is at version 2.3 , and that it is installed and configured as described in the *MDCStore Database and File Server Solution User Guide*.

If you have an earlier version of the MDCStore Data Manager database schema, you must update to at least version 2.0 before you can update to version 2.3. For instructions, see the MetaXpress 2.0 Software installation guide, which is included on the MetaXpress® Software and AcuityXpress™ Software version 2.0 CDs and downloadable from the Knowledgebase.

---

**CAUTION!** The tablespace of the MDCStore database must be allowed to expand past its initial size, since the database might grow significantly. Molecular Devices recommends starting with 20 GB of space and installing the database on a dedicated data partition, not on the primary drive. Using external hard drives is not recommended because they can be turned off and prevent data access.

---

3. Back up your existing database and images before you update the database schema.

## Required Documents

Before you install the MetaXpress Data Manager database schema, you should review the information in the following documents:

- *Molecular Devices High Content Screening Computer Specifications*
- *Molecular Devices Complete Solution HCS IT Requirements*

These documents are available in the knowledge base on the Molecular Devices support site: <http://www.moleculardevices.com/support.html>

## Updating the MDCStore Database Schema from Version 2.0 or later

Updating the MDCStore Data Manager database schema from version 2.0 to version 2.1 or later adds a column to the table that handles the MetaXpress Auto Run Queue.




---

**Note:** Existing data is not affected by the update, however you should back up your database before you update it.

---

## Choosing the Appropriate Installer

The MDCStore Data Management Solution database schema installer is available on the MetaXpress® Software version 6.0 USB flash drive and also as a standalone installer. You must install the 64-bit version of each component. If you are installing the software on a 32-bit operating system, refer to the previous version of this guide.

- If you are installing from the MetaXpress Software Installation flash drive, install the 64-bit version. For complete instructions, see the *MetaXpress High Content Image Acquisition and Analysis Software Suite Installation and Update Guide*.
- If you are installing from a standalone installer, make sure that you download the 64-bit version of the MetaXpress installation package. Instructions for using the standalone installer are included in this chapter. See the *MDCStore High Content Data Management Solution Database Schema Installation and Update Guide*.



---

**Tip:** If you are not using the default port for your MDCStore database, make a note of the port number the database uses. You need to know this port number when you configure the database client software on MetaXpress PowerCore servers and clients. To record this number, use the [Table 10-3: Database Client Settings on page 85](#).

---

## Updating the MDC File Server Application

If you are using the MDC File Server application, you must use version 1.1.0.22 or later. If you have an older version of the application, you must update it as described in this section.

To update the MDC File Server application

1. Log in to the server where the MDC File Server is installed as administrator.  
If you are installing from the MetaXpress Software Installation flash drive, see the *MetaXpress High Content Image Acquisition and Analysis Software Suite Installation and Update Guide*.
2. Double-click the downloaded MDC File Server archive file.
3. In the WinZip Self Extractor dialog, click **Setup**.
4. On the MetaXpress PowerCore Software installation screen, click **Install or Update File Server**.
5. Follow the onscreen instructions to complete the installation.  
When the update is complete, a message appears stating that the application has been updated successfully.

The MDC File Server installer installs two files:

- The File Server Manager program (FileServerManager.exe) is installed in the following location:  
C:\Program Files\Molecular Devices\MDC File Server
- The file server (FileServer.exe) is installed in the following location:  
C:\Windows\System64

## Configuring Database Clients

When you have completed the updates, configure the Oracle or SQL database clients on MetaXpress PowerCore servers and MetaXpress PowerCore clients as described in [Chapter 3: Database Client Configuration on page 21](#).



## Introduction

The MetaXpress® PowerCore™ server connects to the MDCStore™ database to retrieve analysis jobs for processing, and you manage those jobs through the MetaXpress PowerCore server application. You do not manage jobs through the MetaXpress PowerCore client application.

Topics in this section:

- [How the MetaXpress PowerCore Software Processes Jobs on page 50](#)
- [Monitoring the MetaXpress Software Auto Run Queue for Jobs on page 52](#)
- [Starting Auto Run Queue Monitoring on page 52](#)
- [Stopping Queue Monitoring and Canceling Jobs on page 53](#)
- [Viewing Job Status and Information on page 53](#)
- [Restarting Jobs on page 55](#)
- [Managing Information on Lists on page 56](#)

## How the MetaXpress PowerCore Software Processes Jobs

The MetaXpress PowerCore server processes analysis jobs one at a time using this procedure:

1. If there is at least one active MetaXpress PowerCore client and if Auto Run Queue Monitoring is enabled, the MetaXpress PowerCore server connects to the MDCStore database and retrieves the first analysis job in the queue that can be processed by the MetaXpress PowerCore Software. For more information, see [Starting Auto Run Queue Monitoring on page 52](#).
2. The MetaXpress PowerCore server divides the analysis job into work units. These work units consist of an analysis on a well or a site (an image).
3. The MetaXpress PowerCore server distributes the work units among the available MetaXpress PowerCore clients to be processed independently. MetaXpress PowerCore clients receive work units for processing based on their processor speed and CPU availability. The client with the fastest processor and the highest number of available CPUs is the first client used; the client with the second fastest processor and available CPUs is the second client used, and so on.

The MetaXpress PowerCore Software processes data using the algorithm, Standard or Fast, selected in the MetaXpress® Software. See [Using a Processing Algorithm on page 51](#).

4. When the analysis is complete, MetaXpress PowerCore clients send the results back to the MetaXpress PowerCore server.
5. The MetaXpress PowerCore server saves analysis results to the MDCStore database.

Only the results defined in the MetaXpress Software Summary Log and Data log are processed. See [Processing Filtered Measurements on page 51](#).

6. During job processing, job information appears on the **Job History** page in the MetaXpress PowerCore server application. For more information, see [Viewing Job Status and Information on page 53](#).
7. During work unit processing, error information, if any, appears on the **Errors** page, and it is possible for work units to have some errors even if they are eventually processed successfully. For example, if retries are permitted, work units that encountered errors are sent to different clients for re-processing, and those clients might process the work units successfully. For more information on retry settings, see [MetaXpress PowerCore Server](#)

[Preferences on page 90.](#)

8. If an analysis job fails, the **Status** column on the **Job History** page in the MetaXpress PowerCore server application shows its status as **Failed**. You can restart the job if necessary. For more information, see [Viewing Errors on page 69](#) and [Restarting Jobs on page 55](#).
9. When job processing is complete, the MetaXpress PowerCore server retrieves the next analysis job in the queue for processing.
10. If analysis jobs are re-started, the MetaXpress PowerCore server puts them in the processing queue and prioritizes them according to their Job ID. The job with the lowest ID number in the queue is processed first, regardless of when it was sent to the queue. For example, if you simultaneously restart jobs 8 and 5, job 5 would be processed first.

## About Jobs with Journals

The MetaXpress PowerCore Software processes only those jobs that contain MetaXpress Software application modules. MetaXpress journals might contain application modules as well, but they can also contain specialized calculations and other functions that cannot be performed by the MetaXpress PowerCore Software. If a job contains any MetaXpress journals, it is ignored by the MetaXpress PowerCore server and must be processed by the MetaXpress Software.

## Processing Filtered Measurements

If you configured the Summary Log and the Data log in the MetaXpress Software to choose the measurements that you want to log into each log file, MetaXpress PowerCore Software processes only those measurement results that meet the configuration requirements for these logs. All other measurement data is ignored. For more information, see the *MetaXpress Software Analysis Guide*.

## Using a Processing Algorithm

Some modules provide two algorithms options: Standard and Fast. These algorithms determine how quickly the analysis is performed. Both algorithms produce similar but not exactly identical results. The Standard algorithm is the same algorithm that was used in version 3.1 and earlier of the MetaXpress Software. The MetaXpress PowerCore Software processes data using the algorithm selected in the MetaXpress Software. For more information, see the *MetaXpress Software Analysis Guide*.

## Monitoring the MetaXpress Software Auto Run Queue for Jobs

The MetaXpress PowerCore server does not automatically start processing analysis jobs from the MetaXpress Auto Run Queue after installation, or after the MetaXpress PowerCore server application is re-started. To begin processing analysis jobs, you must start Auto Run Queue Monitoring as described in this section. When Auto Run Queue Monitoring is started, the MetaXpress PowerCore server automatically connects to the MDCStore database and retrieves jobs that meet the MetaXpress PowerCore processing requirements.

Auto Run Queue Monitoring can be started only if MetaXpress PowerCore clients are set up and connected to the MetaXpress PowerCore server. You cannot start Auto Run Queue Monitoring without having active MetaXpress PowerCore clients. For more information, see [About MetaXpress PowerCore Client Status on page 63](#).

Jobs that are being processed by the MetaXpress Software cannot be accessed by the MetaXpress PowerCore server, and information about those jobs does not appear on the **Job History** page of the MetaXpress PowerCore server application.

### Starting Auto Run Queue Monitoring

To start Auto Run Queue Monitoring:

1. In the MetaXpress PowerCore server application, click the **Job Monitoring** tab.

The **Job Monitoring** page appears.

2. In the **Auto Run Queue Monitoring** section, click **Start**. This option is available only if MetaXpress PowerCore clients are connected to the server.

The MetaXpress PowerCore server checks the MetaXpress Auto Run Queue and begins processing the next available job.

3. Log into the MDCStore database that the MetaXpress PowerCore server needs to monitor.
4. Ensure that you use login credentials that have the appropriate access for the analysis, or belong to a group that has the appropriate access.



---

**Note:** Typically, this will be a login part of the administrator group. See MDCStoreTools guide.

---

## Stopping Queue Monitoring and Canceling Jobs

Although the MetaXpress PowerCore Software is designed to operate continuously, you can stop Auto Run Queue Monitoring and cancel the current job at any time. You should do this if you need to close the MetaXpress PowerCore server application, shut down the server for maintenance, or change the server's broadcast and connection settings. MetaXpress PowerCore server settings cannot be changed when jobs are being processed.

To stop Auto Run Queue Monitoring and cancel the current job

1. In the MetaXpress PowerCore server application, click the **Job Monitoring** tab.
2. To prevent the MetaXpress PowerCore server from starting the next job in the queue, in the **Auto Run Queue Monitoring** section, click **Stop**.
3. In the **Active Job Status** section, click **Cancel**.

The MetaXpress PowerCore server stops processing the current job. Any work units being processed by MetaXpress PowerCore clients are discarded.

## Viewing Job Status and Information

The MetaXpress PowerCore server processes one analysis job at a time. You can view the status of the current job, and you can view the status of jobs that have been processed since the MetaXpress PowerCore server application was started.

To view job status and information

1. In the MetaXpress PowerCore server application, click the **Job Monitoring** tab.

The current job appears in the **Active Job Status** section.

2. To view additional information about the current job, or previously processed jobs, click the **Job History** tab.

The **Job History** page appears. This page shows information for all the jobs that have been processed since the MetaXpress PowerCore server application was started.

## Information on the Job History Page

The **Job History** page shows:

- **Name:** The name of the analysis job or the MetaXpress application module, such as Count Nuclei. This does not include the settings name.
- **Job ID:** The unique number that identifies the analysis job in the database.
- **Total Units:** The number of work units (wells or sites) to be analyzed as part of the job.
- **Units Started:** The number of work units that are being or have been analyzed.
- **Units Completed:** The number of work units that have been completed successfully. Work unit failures are listed on the **Errors** page.
- **Start Time:** The time when the MetaXpress PowerCore Software began processing the job.
- **Elapsed Time:** The amount of time that has passed since the MetaXpress PowerCore Software started processing the job.
- **% Complete:** The percentage of work units that have been processed as part of the job.
- **Status:** The current status of the job. States include:
  - ◆ **In progress:** The MetaXpress PowerCore Software is currently processing the job.
  - ◆ **Completed:** The MetaXpress PowerCore Software has successfully finished processing the job.
  - ◆ **Canceled:** The job was canceled from the MetaXpress PowerCore **Job Monitoring** page.
  - ◆ **Failed:** The MetaXpress PowerCore Software could not successfully complete the job. To identify the cause of the failure, click the **Errors** tab.

## Viewing Information about Jobs Processed in Previous Sessions

The MetaXpress PowerCore server **Job History** page shows information about analysis jobs processed since the MetaXpress PowerCore server application was started. When the application is closed, the session ends, and the entries on the page are removed.

To find information about jobs that no longer appear on the **Job History** page, view the processing log files. For the log file location, see [Viewing Error Handling Preferences and Log Files on page 69](#).

## Restarting Jobs

You can restart any job that has failed or been canceled.

To restart a job

1. In the MetaXpress PowerCore server application, click the **Job History** tab.
2. Right-click the name of the job you want to restart, then click **Restart Job**.

The MetaXpress PowerCore server sends the job to the processing queue and processes it according to its Job ID priority. The job with the lowest ID number in the queue is processed first. For example, if you simultaneously restart jobs 8 and 5, job 5 would be processed first.

## Managing Information on Lists

On the **Active Clients**, **Job History**, and **Errors** pages, you can right-click to access options for managing the information on lists.

Right-click options include:

- **Search All Errors for Selected Job:** Search for and highlight all errors reported during the processing of the selected job. Available on the **Job History** page only.
- **Restart Job:** Send the selected job to the queue for re-processing. The MetaXpress PowerCore server processes the job according to its Job ID priority. Available on the **Job History** page for canceled jobs and for jobs with errors.
- **Select All:** Select all items on the list. This is useful if you want to apply a command, such as **Copy** or **Remove All**, to all of the items on the list. Available on the **Job History** and **Errors** pages.
- **Copy:** Copy the selected items to the clipboard. Copied items can be pasted into other applications, such as text editors. Available on all pages.
- **Remove All:** Remove all entries from the list. This is useful if the list becomes too long and you want to remove all of the old entries at once. Available on the **Errors** page.
- **Remove Selection:** Remove the selected items from the list. Available on the **Job History** and **Errors** pages.
- **Auto Scroll:** Turn auto scroll on and off. When auto scroll is on, it always scrolls the list to show the last item on the list. Available on all pages.
- **Auto Fit Column:** Resize the columns to fit the text. Available on all pages.



# MetaXpress PowerCore Server and License Management

## 7

### Introduction

To use the MetaXpress® PowerCore™ Software, you must have at least one computer set up as a MetaXpress PowerCore server. In addition, you must have a license key USB device installed on your network and registered. This section explains how to manage MetaXpress PowerCore servers and licensing.

Topics in this section:

- [About Running MetaXpress PowerCore Applications and Services on page 57](#)
- [Changing MetaXpress PowerCore Server Settings on page 58](#)
- [Changing MetaXpress PowerCore Server Preferences on page 59](#)
- [About MetaXpress PowerCore Software Licensing on page 59](#)
- [Using Multiple MetaXpress PowerCore Servers on page 61](#)
- [Increasing License Capacity on page 62](#)

### About Running MetaXpress PowerCore Applications and Services

The MetaXpress PowerCore Software is designed to operate continuously and to process analysis jobs as they become available. To accomplish this, the MetaXpress PowerCore server application should run continuously on all MetaXpress PowerCore servers. In addition, the *MetaXpress PowerCore Client* service should always be running on all available MetaXpress PowerCore clients. For more information about running the *MetaXpress PowerCore Client* service, see [Stopping and Restarting the MetaXpress PowerCore Client Service on page 65](#).

The MetaXpress PowerCore client application, which is launched from the Windows Programs menu, does not have to be running when jobs are being processed.

## About Closing the MetaXpress PowerCore Server Application

Before you close the MetaXpress PowerCore server application for maintenance or other activities, you must stop Auto Run Queue Monitoring and job processing. For instructions see [Stopping Queue Monitoring and Canceling Jobs on page 53](#).

When you close the MetaXpress PowerCore server application, entries on the **Job History** and **Errors** pages are removed, but job information is retained in the log file. For more information, see [Viewing Error Handling Preferences and Log Files on page 69](#).

## About Restarting MetaXpress PowerCore Applications and Services

You must restart the MetaXpress PowerCore server application whenever you restart the MetaXpress PowerCore server, and you must start Job Queue Monitoring as well. The *MetaXpress PowerCore Client* service, however, starts automatically when the client computer restarts.

## Changing MetaXpress PowerCore Server Settings

MetaXpress PowerCore server settings determine how MetaXpress PowerCore servers communicate with MetaXpress PowerCore clients. Server settings cannot be changed while jobs are being processed.

To change MetaXpress PowerCore server settings

1. Stop Auto Run Queue Monitoring, and if a job is running, cancel it. For instructions, see [Stopping Queue Monitoring and Canceling Jobs on page 53](#).
2. In the MetaXpress PowerCore server application, click **Edit > Server Settings**.
3. Change the server settings as needed. If you change the MetaXpress PowerCore server's port number settings, you must also change the port number settings on MetaXpress PowerCore clients. For information about server settings, see [MetaXpress PowerCore Server Settings on page 87](#).
4. Restart queue monitoring as described in [Monitoring the MetaXpress Software Auto Run Queue for Jobs on page 52](#).

## Changing MetaXpress PowerCore Server Preferences

MetaXpress PowerCore server preferences determine how the MetaXpress PowerCore Software handles errors. You can change error handling preferences at any time, and the changes take effect immediately.

To change MetaXpress PowerCore server preferences

1. In the MetaXpress PowerCore server application, click **Edit > Preferences**.
2. Change preferences as needed. For information about server preferences, see [MetaXpress PowerCore Server Preferences on page 90](#).

## About MetaXpress PowerCore Software Licensing

To use the MetaXpress PowerCore Software, you must obtain a license key USB device from Molecular Devices as well as registration and authorization codes. The USB device must be installed on a network computer and registered as described in [Installing the MetaXpress PowerCore Server and License Key Server Applications on page 14](#). The license authorizes the use of the MetaXpress PowerCore Software and specifies how many processes can be running simultaneously on MetaXpress PowerCore clients.

### Viewing MetaXpress PowerCore Software License Settings

To view MetaXpress PowerCore Software license settings:

- In the MetaXpress PowerCore server application, click **Tools > Licensing**.

For a description of license settings, see [MetaXpress PowerCore Software and License Information on page 83](#).

## Viewing MetaXpress PowerCore Software License Usage and Capacity

You can view the number of MetaXpress PowerCore client processes that are reserved, running, and available through your MetaXpress PowerCore Software license.

To view MetaXpress PowerCore Software license usage and capacity

1. In the MetaXpress PowerCore server application, click **Edit > Server Settings**.

The number of active processes appears in the **Licensing** section.

2. To view additional license usage and capacity information, click **Advanced** in the **Licensing** section.

The **License Usage** property sheet appears. This property sheet shows:

- ◆ **License Key ID:** The identification number of the license key USB device installed on the host computer.
  - ◆ **Maximum Number of Parallel Processes:** The number of analysis processes that can be running simultaneously on MetaXpress PowerCore clients. If you have multiple servers, they can share the same license information but their combined number of simultaneous processes, as specified on the **License Usage** property sheet for each server, cannot exceed the number allowed by the license.
  - ◆ **Processes Currently in Use by Other Servers:** The number of processes that are currently being run by other servers.
  - ◆ **Available Processes:** The current number of processes that can start and run simultaneously under the license. To determine the number of available processes, the software subtracts the number of processes running on clients, from the maximum number of processes allowed by the license. The remainder is the number of available processes.
  - **Processes to be Reserved for this Server:** The number of processes that have been set aside for use by this server. Until processes are reserved for it, the server cannot run any analysis processes, and each server is limited to the number of processes reserved for it.
3. To view license limits and registration codes, click **Tools > Licensing**.

## Using Multiple MetaXpress PowerCore Servers

You can install and configure more than one computer as a MetaXpress PowerCore server to increase your analysis capability or to accommodate test and production needs. MetaXpress PowerCore servers can share a single license key USB device, and you specify the number of processes available to each server. However, the combined number of analysis processes running simultaneously on MetaXpress PowerCore clients cannot exceed the number of simultaneous processes allowed by the license.

### Reserving Processes for Servers

Before you can begin processing analysis jobs with a MetaXpress PowerCore server, you need to reserve the number of processes available to the server. Servers cannot process jobs until they have processes reserved.

If you have multiple MetaXpress PowerCore servers, you can reserve the number of processes to be used by each server. If a server is online and running analysis processes on clients, those client processes are deducted from the total number of processes available under the license. If a server is offline, processes reserved for that server are not deducted from the number allowed by the license. Servers are considered to be offline if they are not connected to the network, or if the MetaXpress PowerCore server application on the server has been closed.

To reserve processes for a server

1. In the MetaXpress PowerCore server application, click **Edit > Server Settings**.
2. On the **Server Settings** property sheet, in the **Licensing** section, click **Advanced**.
3. On the **License Usage** property sheet, in the **Processes to Be Reserved for this Server** field, type the number of processes you want to reserve for the server.

## How Clients are Connected to Servers

When a MetaXpress PowerCore server makes a connection to a client, that client is available to that server only; it is not available to other MetaXpress PowerCore servers in the system. Further, the client-server relationship continues until the connection ends. The connection ends if the MetaXpress PowerCore Software application on the server is closed, if the *MetaXpress PowerCore Client* service on the client is stopped, or if the network connection is interrupted for more than a few minutes.

If you have multiple MetaXpress PowerCore servers and a pool of clients, you can:

- **Use the same port number for all clients and servers:** In this case, the servers establish connections with clients as they become available. This method offers the most flexibility, but it does not enable you to control which servers connect to which clients.
- **Use a different port number for each set of clients and servers:** The servers connect to clients according to port number assignment. This enables you to designate the clients you want to make available to each server.
- **Use the selected clients list to broadcast to specific clients:** This enables servers to broadcast directly to clients using TCP. If you do not use UDP broadcast, the servers broadcast only to the selected clients. On busy networks, broadcasting to specific clients can be more efficient than using UDP broadcast alone. If you do not select UDP, however, you must broadcast to selected clients to find clients running on network computers.

## Increasing License Capacity

Your MetaXpress PowerCore license settings determine the maximum number of analysis processes that can run simultaneously on MetaXpress PowerCore clients. To purchase additional license capacity, contact your sales representative.

## Introduction

After you install and configure the MetaXpress® PowerCore™ Software application on clients, you manage the client computers as described in this section.

Topics in this section:

- [About MetaXpress PowerCore Client Status on page 63](#)
- [Changing MetaXpress PowerCore Client Settings on page 64](#)
- [Stopping and Restarting the MetaXpress PowerCore Client Service on page 65](#)
- [Adding Clients to the Server's Selected Clients List on page 66](#)

## About MetaXpress PowerCore Client Status

The MetaXpress PowerCore server application shows the status of MetaXpress PowerCore clients that can communicate with the server and process work units for that server.

To view MetaXpress PowerCore client status

- In the MetaXpress PowerCore server application, click the **Active Clients** tab.

The **Active Clients** page appears. See [Information on the Active Clients Page on page 64](#).

## Information on the Active Clients Page

The **Active Clients** page shows:

- **Host Name:** The name of the client.
- **CPU Speed (MHz):** The client's processor speed in megahertz.
- **RAM (MB):** The client's Random Access Memory in megabytes.
- **Total CPUs:** The total number of processors on the client.
- **Active Processes:** The number of processors on the client that are analyzing work units. When there is no active process, this number is zero.
- **Free Processes:** The number of additional parallel processes that can start and run simultaneously on the client. To determine this number, the client's active processes are subtracted from the maximum number of processes specified in the client settings. For more information, see [Changing MetaXpress PowerCore Client Settings on page 64](#).
- **Units Started:** The number of work units started on the client.
- **Units Completed:** The number of work units finished successfully on the client.
- **Units Failed:** The number of work units that the client failed to complete.
- **Client Status:** The status of the client. States include:
  - ◆ **Downloading:** The client is obtaining analysis modules from the server.
  - ◆ **Idle:** The client is not currently running an analysis.
  - ◆ **Busy:** The client is currently running an analysis.

## Changing MetaXpress PowerCore Client Settings

MetaXpress PowerCore client settings determine how the MetaXpress PowerCore client communicates with the MetaXpress PowerCore server and how the client's CPUs are used to process work units for analysis jobs.

To change MetaXpress PowerCore client settings

1. Log in to the client computer as administrator.
2. Click **Start > All Programs > Molecular Devices > MetaXpress PowerCore > MetaXpress PowerCore Client**.
3. Change the settings as needed. For a description of client settings, see [MetaXpress PowerCore Client Settings on page 92](#).



## Stopping and Restarting the MetaXpress PowerCore Client Service

The *MetaXpress PowerCore Client* service is the service MetaXpress PowerCore clients use to receive work units from the MetaXpress PowerCore server. The service is started during installation, and it starts automatically whenever the client computer is restarted. If the client is available, the *MetaXpress PowerCore Client* service should always be running, because the MetaXpress PowerCore server cannot send work units to the client unless the service is running.

You can stop and restart the *MetaXpress PowerCore Client* service for maintenance and other tasks as needed. If the client is processing work units when the service is stopped, however, those work units are marked as having failed.

To stop and restart the *MetaXpress PowerCore Client* service

1. On the Windows Control Panel, double-click **Administrative Tools**.
2. Double-click **Services**.
3. On the services list, double-click **MetaXpress PowerCore Client**.
4. In the **Service status** section, click **Stop**.
5. In the **Service status** section, click **Start**.
6. Click **OK**.

## Adding Clients to the Server's Selected Clients List

The MetaXpress PowerCore server's selected clients list shows the clients that the server broadcasts to directly using the protocol TCP.

Broadcasting directly to clients is required if you do not select **Use UDP Broadcast to Find Clients**. Also, broadcasting directly to clients can be an efficient method of communication on busy networks, and it enables you to verify server-client connections.

To add clients to the selected clients list:

1. In the MetaXpress PowerCore server application, click **Edit > Server Settings**.  
The **Server Settings** property sheet appears.
2. In the **Broadcast to Selected Clients** section, click **Add Clients**.
3. To view computers and resources that respond to pings, select the **Ping** check box. If the **Ping** check box is cleared, the status of network computers and resources is not verified, and obsolete or disconnected machines might be displayed.
4. To search for clients on your local domain only, select your domain name under the **Ping** option.
5. To search for clients on all available domains, clear the domain name check box.
6. Click **Refresh** to update the list of clients.
7. Select the clients you want to add, and then click **=>**.
8. To add clients by typing their computer names, click **Add**, type a computer name, and then click **OK**.
9. When you have finished, click **OK**.

The selected clients appear on the **Broadcast to Selected Clients** list.

## Introduction

This section explains how to resolve issues that might arise when you work with the MetaXpress® PowerCore™ Software.

Topics in this section:

- [About MetaXpress PowerCore Server-Client Communication on page 67](#)
- [Viewing and Changing MetaXpress PowerCore Port Number Settings on page 68](#)
- [Viewing Error Handling Preferences and Log Files on page 69](#)
- [Viewing Errors on page 69](#)
- [Viewing Timeout Settings on page 71](#)
- [Symptoms and Solutions on page 71](#)
- [Contacting Technical Support on page 80](#)

## About MetaXpress PowerCore Server-Client Communication

The MetaXpress PowerCore Software uses the protocols UDP and TCP for communication between servers and clients.

The MetaXpress PowerCore server uses UDP broadcasts to look for client computers. If a subnet gateway or router does not allow the transmission of UDP packages, the server might not be able to find client computers. In addition, communication problems can result if servers and clients are on different subnets or separated by firewalls. For more information, see [Symptoms and Solutions on page 71](#).

If your network cannot accommodate UDP transmissions, you can configure the MetaXpress PowerCore server to broadcast to selected clients using TCP. For instructions, see [Adding Clients to the Server's Selected Clients List on page 66](#).

Once communication is established and the MetaXpress PowerCore client has begun processing a work unit, the software uses TCP to send and receive analysis results across the network.

## Verifying MetaXpress PowerCore Server-Client Communication

To verify network connections between MetaXpress PowerCore servers and clients, make sure that the client names appear on the server's **Active Clients** page. To view the **Active Clients** page, click the **Active Clients** tab in the MetaXpress PowerCore server application.

## Viewing and Changing MetaXpress PowerCore Port Number Settings

The MetaXpress PowerCore server and client applications both have port number settings, and these settings must match.

To change the port number in the server application:

1. Stop Auto Run Queue Monitoring, and if a job is running, cancel it. For instructions, see [Stopping Queue Monitoring and Canceling Jobs on page 53](#).
2. In the MetaXpress PowerCore server application, click **Edit > Server Settings**.  
The **Server Settings** property sheet appears.
3. Change the port number, and then click **OK**.
4. Restart queue monitoring as described in [Monitoring the MetaXpress Software Auto Run Queue for Jobs on page 52](#).

To change the port number in the client application:

1. Log in to the client computer as administrator.
2. Click **Start > All Programs > Molecular Devices > MetaXpress PowerCore > MetaXpress PowerCore Client**.  
The **MetaXpress PowerCore Client Configuration** property sheet appears.
3. In the **Connection Settings** section, change the port number, and then click **Save**.  
The **Client Configuration** property sheet closes, the service restarts, and the new settings are applied.

## Viewing Error Handling Preferences and Log Files

Error handling preferences determine the number of times the MetaXpress PowerCore Software tries to analyze a work unit or site after an error is encountered. Preferences also determine the percentage of work units that can fail before an entire job is marked as having failed.

In addition, error handling preferences specify the location of the log files that contain job processing details. You can use the information in the files to troubleshoot errors encountered during job processing. A new log file is created each time the MetaXpress PowerCore server application starts.

To view the MetaXpress PowerCore Software error-handling preferences and log file location:

- In the MetaXpress PowerCore server application, click **Edit > Preferences**.

For information about preferences, see [MetaXpress PowerCore Server Preferences on page 90](#).

## Viewing Errors

The **Errors** page in the MetaXpress PowerCore server application shows information about job errors encountered since the MetaXpress PowerCore server application was started. When the application is closed, the entries on the **Errors** page are removed. To find information about errors that no longer appear on the **Errors** page, see the log files.

To check for processing errors:

- In the MetaXpress PowerCore server application, click the **Errors** tab.

The **Errors** page appears.

## Information on the Errors Page

The **Errors** page shows:

- **Time of Error:** The time when the MetaXpress PowerCore Software encountered the error.
- **Job ID:** The number that identifies the job in the database. If you restart the job, it is processed according to its Job ID number. The job with the lowest ID number in the queue is processed first.
- **Work Unit:** The unique ID of the work unit for which the error was reported.
- **Client Name:** The name of the client computer on which the error occurred.
- **Message:** Details of the error.
- **Process ID:** The process ID that encountered the error.
- **Exit Code:** The code that identifies the error.

## About Work Unit Failures

Depending on the error handling settings in the MetaXpress PowerCore server application, work units that fail might be picked up and analyzed by another client. Therefore, jobs that have completed successfully might have errors reported.

A common reason for jobs to fail is that the analysis settings that are selected are not valid for the plate or the saved analysis settings contain an error. In the MetaXpress Software, select the plate and the desired analysis settings and perform a run. If an error occurs open the Configure Settings dialog and make the appropriate changes before saving.

You can re-start any job that encounters errors during processing or is canceled. For instructions, see [Restarting Jobs on page 55](#).

## Removing Entries from the Errors Page

Entries are removed automatically whenever you restart the MetaXpress PowerCore server application. You can manually remove entries as described in this section.

To remove entries from the **Errors** page:

1. In the MetaXpress PowerCore server application, click the **Errors** tab.
2. Select the entry or entries you want to remove, and then right-click and select **Remove Selected**.
3. To remove all entries, right-click on the **Errors** page and select **Remove All**.

## Viewing Timeout Settings

The timeout settings in MetaXpress PowerCore server and client applications determine how much time client computers have to complete analysis tasks and communicate with the server.

To view MetaXpress PowerCore client timeout settings

- Click **Start > All Programs > Molecular Devices > MetaXpress PowerCore > MetaXpress PowerCore Client**.

Timeout settings appear on the **Client Configuration** property sheet.

To view MetaXpress PowerCore server timeout settings

1. In the MetaXpress PowerCore server application, click **Edit > Server Settings**.

The client response timeout settings appear on the **Server Settings** property sheet.

2. Click **Edit > Preferences**.

The task completion timeout settings appear on the **Server Preferences** property sheet.

## Symptoms and Solutions

[Table 9-1](#) provides information to help you resolve issues with the MetaXpress PowerCore Software.

**Table 9-1:** Symptoms and Solutions

Symptoms	Possible Causes and Solutions
The MetaXpress PowerCore server cannot communicate with client computers	<p>Incorrect port numbers, broadcast settings, network configuration, and service status can prevent communication. Things to check:</p> <ul style="list-style-type: none"> <li>• <b>Network connections:</b> Verify that the server and all clients have appropriate network connections.</li> <li>• <b>Port number agreement:</b> Verify that the MetaXpress PowerCore server and all MetaXpress PowerCore clients use the same port number for connections. For instructions, see <a href="#">Viewing and Changing MetaXpress PowerCore Port Number Settings on page 68</a>.</li> <li>• <b>Port number availability:</b> Verify that the port number used for MetaXpress PowerCore Software communications allows UDP and TCP communications and that no other applications are using the port.</li> <li>• <b>Firewall or antivirus settings:</b> Avoid having firewalls between servers and clients. It is best to keep servers and clients within the same firewall and on the same subnet. In addition, verify that firewalls are configured to permit both UDP and TCP transmissions on the port used for MetaXpress PowerCore communications. To determine whether the MetaXpress PowerCore server can communicate with client computers, start the MetaXpress PowerCore server application, and then click the <b>Active Clients</b> tab. The page shows the clients that can communicate with the server.</li> <li>• <b>MetaXpress PowerCore server and client connection settings:</b> Verify connection settings in the server and client applications. These settings include UDP and selected clients' settings. Unless the server and client are installed on the same computer, make sure the <b>Server is External</b> option, which is located in the client application, is selected.</li> <li>• <b>The status of the MetaXpress PowerCore Client service:</b> For the server to find a client, the client must be running the <i>MetaXpress PowerCore Client</i> service. For more information, see <a href="#">Stopping and Restarting the MetaXpress PowerCore Client Service on page 65</a>.</li> </ul>



**Table 9-1:** Symptoms and Solutions (cont'd)

Symptoms	Possible Causes and Solutions
The MetaXpress PowerCore server cannot communicate with client computers (continued)	<ul style="list-style-type: none"> <li> <b>The MetaXpress PowerCore client connection status:</b> If the MetaXpress PowerCore server application is closed while an analysis is in progress, clients connected to the server might not be disconnected correctly. If this happens, MetaXpress PowerCore clients that were previously connected are not available when the MetaXpress PowerCore server application is started. To avoid the issue, do not close the MetaXpress PowerCore server application during an analysis. Always stop Auto Run Queue Monitoring and cancel the current job before closing the application. To resolve the issue, restart the <i>MetaXpress PowerCore Client</i> service. For more information, see <a href="#">Stopping and Restarting the MetaXpress PowerCore Client Service</a> on page 65. </li> </ul>
Auto Run Queue Monitoring cannot be started.	MetaXpress Auto Run Queue Monitoring can be started only if clients are connected to the server. You must set up clients and they must be connected to the server before you can monitor the Auto Run Queue. In addition, the <i>MetaXpress PowerCore Client</i> service must be running on client computers. For more information, see <a href="#">Installing the MetaXpress PowerCore Client Application</a> on page 41.

**Table 9-1:** Symptoms and Solutions (cont'd)

Symptoms	Possible Causes and Solutions
The MetaXpress PowerCore server cannot automatically find analysis jobs in the MetaXpress® database	<p>Things to check:</p> <ul style="list-style-type: none"> <li>• <b>Database client configuration:</b> Verify database client settings on the MetaXpress PowerCore server and all MetaXpress PowerCore clients. For instructions, see <a href="#">Chapter 3: Database Client Configuration on page 21</a>.</li> <li>• <b>The Auto Run Queue:</b> Verify that MetaXpress Software is configured to send jobs to the Auto Run Queue, and that there are jobs in the queue. For instructions, see the MetaXpress documentation.</li> <li>• <b>Journal usage in MetaXpress jobs:</b> Verify that the MetaXpress jobs do not contain journals. For instructions, see the MetaXpress documentation.</li> <li>• <b>MetaXpress PowerCore server Auto Run Queue Monitoring status:</b> Make sure Auto Run Queue Monitoring is turned on. For instructions, see <a href="#">Monitoring the MetaXpress Software Auto Run Queue for Jobs on page 52</a>.</li> <li>• <b>Licensing issues:</b> Verify that the network license key USB device is installed correctly. For instructions, see <a href="#">Chapter 2: MetaXpress PowerCore Server Installation and Configuration on page 13</a>.</li> <li>• Make sure that the user login used to log into the MetaXpress PowerCore server database connection, has access to the plate submitted for analysis.</li> </ul>
A job cannot be removed or restarted from the <b>Job History</b> page	If a job is currently being processed, it cannot be removed or restarted. Cancel the job as described in <a href="#">Stopping Queue Monitoring and Canceling Jobs on page 53</a> , and then remove or restart the job.

**Table 9-1:** Symptoms and Solutions (cont'd)

Symptoms	Possible Causes and Solutions
The license key USB device cannot be initialized or read	<p>Installation, network, and hardware problems can prevent the MetaXpress PowerCore Software from reading the license key USB device. Things to check:</p> <ul style="list-style-type: none"> <li>• Verify that the newest Sentential driver is installed.</li> <li>• <b>Correct installation:</b> Verify that the license key USB device and driver are installed as described in <a href="#">Installing the MetaXpress PowerCore Server and License Key Server Applications on page 14</a>. Update the driver if necessary.</li> <li>• <b>USB drive functionality:</b> Verify that the license key device is plugged in to a functional USB drive.</li> <li>• <b>Network connections:</b> Verify that the computer where the license key USB device is installed has appropriate network communication capability, including UDP and TCP.</li> </ul>
Jobs cannot be started because the server cannot start new processes	<p>License settings determine the number of analysis processes that can run simultaneously on MetaXpress PowerCore servers. Things to check:</p> <ul style="list-style-type: none"> <li>• <b>License limit:</b> Verify the total number of parallel processes permitted by the license.</li> <li>• <b>Reserved processes:</b> Verify the number of processes reserved for the server. Even if there are available processes under the license, the server cannot exceed the number of simultaneous processes reserved for it. For more information, see <a href="#">Reserving Processes for Servers on page 61</a>.</li> <li>• If the MetaXpress PowerCore server was terminated in an unusual way, such as by restarting the hardware or ending the program using the Task Manager, wait 15 minutes for the licenses to clear, and then restart the software.</li> </ul>
Image files or temporary files cannot be saved to a client computer	<p>Verify disk space and read/write settings on the MetaXpress PowerCore client. Things to check:</p> <ul style="list-style-type: none"> <li>• If clients on multiple computers are used, disable the clients from all but one computer.</li> <li>• Settings are not correct for the plate. Run the plate and settings in MetaXpress Software to see if they are valid.</li> </ul>

**Table 9-1:** Symptoms and Solutions (cont'd)

Symptoms	Possible Causes and Solutions
The image is not available	MetaXpress analysis settings might be incorrect. Verify analysis settings in the MetaXpress Software. Then, correct the settings and resubmit. For instructions, see the MetaXpress documentation.
Data cannot be added to the Oracle database	Verify that the Oracle client is configured to use US standards. For instructions, see <a href="#">Chapter 3: Database Client Configuration on page 21</a> .
Images cannot be loaded	<p>Database settings or logon settings for UNC image storage might prevent image loading. Things to check:</p> <ul style="list-style-type: none"> <li>• <b>Database DSN:</b> The DSN specified in the MetaXpress PowerCore server and client database settings might be incorrect. This can happen if database information changes or if a new database is created. Verify the database settings on the MetaXpress PowerCore server and clients as described in <a href="#">Chapter 3: Database Client Configuration on page 21</a>.</li> <li>• <b>Client service LogOn for UNC:</b> If you are using UNC for image storage, the <i>MetaXpress PowerCore Client</i> service running on each client computer must be configured to log on correctly. For instructions, see <a href="#">Setting MetaXpress PowerCore Client Service LogOn Properties on page 42</a>.</li> <li>• <b>Accessibility of UNC paths or MDC File Server:</b> Verify that the image storage location is accessible to MetaXpress PowerCore servers and clients. If you are using the MDC File Server application, verify that the application is running and that TCP port 9200 used by the file server is open on any applicable firewall.</li> </ul>

**Table 9-1:** Symptoms and Solutions (cont'd)

Symptoms	Possible Causes and Solutions
MetaXpress PowerCore servers or clients cannot connect to the MDC database or UNC shared folders	If you use a non-server based operating system for your MDC database server or UNC image storage server, you might have reached the operating system's limit for connections that can be made to shared folders. For example, the Windows XP operating system has a limit of ten simultaneous connections. When this limit is reached, MetaXpress PowerCore servers or clients might not be able to connect to the MDCStore database or UNC shared folders. Molecular Devices recommends using server-based operating systems as described in the system requirements. For more information about the connection limit, see <a href="http://support.microsoft.com/kb/328459">http://support.microsoft.com/kb/328459</a> .
Timeout errors appear during processing	Timeout settings might not allow enough time for processing. Check the timeout settings on the MetaXpress PowerCore server and client. For instructions, see <a href="#">Viewing Timeout Settings on page 71</a> .

**Table 9-1:** Symptoms and Solutions (cont'd)

Symptoms	Possible Causes and Solutions
Adding MetaXpress PowerCore clients does not improve the speed of image analysis and processing	<p>Hardware, database, and network issues might affect processing speed. Things to check:</p> <ul style="list-style-type: none"> <li>• <b>System requirements:</b> Verify that your system meets all of requirements. For more information, see <a href="#">Before You Begin on page 8</a>.</li> <li>• <b>Server resources:</b> When processing images, MetaXpress PowerCore clients return analysis results to the MetaXpress PowerCore server. Verify that the server has sufficient RAM and CPU speed to handle these results. Monitor server performance during processing and increase RAM if necessary.</li> </ul> <p>If you are using the MetaXpress PowerCore server as a MetaXpress PowerCore client, consider removing the client application from the server and using the computer for MetaXpress PowerCore server processes only.</p> <ul style="list-style-type: none"> <li>• <b>Database status:</b> Make sure that the database is running optimally and that it is not full.</li> <li>• <b>Database connections:</b> The MetaXpress PowerCore server makes frequent, brief connections to the database to get images and settings. The MetaXpress PowerCore server also spawns many threads to write analysis results data to the database. If the maximum number of database connections is reached, the MetaXpress PowerCore server might have to wait in line to read data from, or write data to, the database. Monitor the database performance to see if the database settings can be optimized for the MetaXpress PowerCore Software.</li> <li>• <b>Network bottlenecks:</b> During image analysis, MetaXpress PowerCore clients send analysis results to the server, and the server saves the results to the database. Heavy network traffic during image analysis can impact performance. Monitor network traffic on the server, and decrease traffic or add bandwidth to your network if possible.</li> </ul>

**Table 9-1:** Symptoms and Solutions (cont'd)

Symptoms	Possible Causes and Solutions
The work unit could not be processed because the settings for custom module analysis could not be saved to the client computer.	<p>The job takes longer to process than the time out setting allows. Things to check:</p> <ul style="list-style-type: none"> <li>• Change the time out settings for the MetaXpress PowerCore Server software.</li> <li>• Change the Job processing time out setting for the MetaXpress PowerCore Client software.</li> </ul>
The job was skipped because it does not contain any work units.	<p>The plate and the setting that were selected are not a match. The settings and the plate have different wavelength selections. Things to check:</p> <ul style="list-style-type: none"> <li>• An incorrect plate or setting was selected when the analysis was added to the MetaXpress PowerCore queue. Resubmit the plate with the proper setting.</li> </ul>
An unknown error occurred while accessing \\servername\folder\folder~\imagefilename.tif	<p>The MetaXpress PowerCore client does not have the correct permission level to access the images. Things to check:</p> <ul style="list-style-type: none"> <li>• Set up MetaXpress PowerCore client Logon Properties.</li> <li>• Check if the screensaver is set up for this computer.</li> </ul>
Data source name not found and no default driver specified.	<p>There is an issue with the ODBC connection. Things to check:</p> <ul style="list-style-type: none"> <li>• Is the ODBC connection configured?</li> <li>• Is the ODBC connection configured correctly?</li> <li>• Does the ODBC driver version match the OS (both 64-bit version)?</li> <li>• Check Windows and firewall permissions.</li> </ul>

## Contacting Technical Support

Before you contact Technical Support at Molecular Devices, always check with your organization's IT department to find out if network, database, or other internal issues might be causing problems.

If you still have questions after checking with your IT department, go to the Molecular Devices support site on the Web at <http://www.moleculardevices.com/support.html>.

To speak to a Technical Support representative by phone, call 800-635-5577.

Please have your instrument serial number or Work Order number, and your software version number available when you call.

When you contact Technical Support, also have the following information ready:

- Your system information, such as server and client operating systems and MetaXpress PowerCore Software application settings.
- The license key ID of your software. To find the license key ID, start the MetaXpress PowerCore server application, and then click **Tools > Licensing**.
- A description of the problem including when it happened and what the system was doing when it happened.
- Screen captures of any error messages displayed.
- A description of any changes made to the system recently, such as updates, patches, or configuration changes.
- Your contact information.
- Have the log file available from the MetaXpress PowerCore server. To find the path to the log file, click **Edit > Preferences**. See [Log File Location on page 92](#).



## Introduction

This section provides tables to help you manage MetaXpress® PowerCore™ Software installation tasks and configuration information.

Tables in this section:

- [Table 10-1: MetaXpress PowerCore Software Installation Task Checklist on page 82](#)
- [Table 10-2: MetaXpress PowerCore Software and License Information on page 83](#)
- [Table 10-3: Database Client Settings on page 85](#)
- [Table 10-4: MetaXpress PowerCore Server Connection Settings on page 87](#)
- [Table 10-5: MetaXpress PowerCore Server Licensing Settings on page 89](#)
- [Table 10-6: MetaXpress PowerCore Server Preferences on page 90](#)
- [Table 10-7: MetaXpress PowerCore Client Connection Settings on page 92](#)
- [Table 10-8: MetaXpress PowerCore Client Job Processing Timeout\(s\) Settings on page 93](#)
- [Table 10-9: MetaXpress PowerCore Client Client's Availability \(Maximum Number of Parallel Processes Allowed on this Computer\) Settings on page 94](#)
- [Table 10-10: MetaXpress PowerCore Clients and Processing Capabilities on page 95](#)

## Installation Checklist

Use the checklist in [Table 10-1](#) to track MetaXpress PowerCore Software installation tasks.

**Table 10-1:** MetaXpress PowerCore Software Installation Task Checklist

Task	Comments	Done?
Review the <i>Molecular Devices Complete Solution HCS</i> documents including: <ul style="list-style-type: none"> <li>• <i>Computer Specifications</i></li> <li>• <i>IT Requirements</i></li> <li>• <i>IT Presentation</i></li> </ul>		<input type="checkbox"/>
Obtain the MetaXpress PowerCore Software installation package, including the license key USB device and the license registration and authorization codes, from Molecular Devices.		<input type="checkbox"/>
Install and configure MetaXpress PowerCore servers. See <a href="#">Chapter 2: MetaXpress PowerCore Server Installation and Configuration on page 13</a> .		<input type="checkbox"/>
Back up your existing MDCStore™ database and images. To manage and optimize the database for your facility, consult a database administrator (DBA).		<input type="checkbox"/>
Update the schema of your existing MDCStore database. See <a href="#">Chapter 5: MDCStore Database and File Server Updates on page 45</a> .		<input type="checkbox"/>
Install and configure the Oracle or SQL database client software on MetaXpress PowerCore servers and clients. See <a href="#">Chapter 3: Database Client Configuration on page 21</a> .		<input type="checkbox"/>
Install and configure MetaXpress PowerCore clients. See <a href="#">Chapter 4: MetaXpress PowerCore Client Installation and Configuration on page 39</a> .		<input type="checkbox"/>

## MetaXpress PowerCore Software and License Information

Use [Table 10-2](#) to record MetaXpress PowerCore Software license information. You use this information when you install the MetaXpress PowerCore server application and the license key server application as described in [Chapter 2: MetaXpress PowerCore Server Installation and Configuration](#) on page 13.

**Table 10-2:** MetaXpress PowerCore Software and License Information

Item	Description	System Notes
Firewall settings for the license key USB device	All firewall software on the server, including Windows Firewall and other firewall applications, must be configured to permit the license key driver <b>spnsrvnt.exe</b> to send and receive TCP/IP communications on port 6002.	
License Key Host Computer	The network address of the server where the license key USB device is installed.	
License Key ID	The identification number of the license key USB device installed on the host computer.	
Registration Code	The 44-character code used with the license key USB device to enable the MetaXpress PowerCore Software license. The code is entered on a single line in this format: xxxxxxxx-xxxxxxxx-xxxxxxxx-xxxxxxxx-xxxx.	
Authorization Code	An 11-character code required to authorize the use of MetaXpress PowerCore Software. The code is entered on a single line in this format: xxx-xxxx-xxxx.	

**Table 10-2:** MetaXpress PowerCore Software and License Information

Item	Description	System Notes
Total Parallel Processes Permitted	The maximum number of analysis processes that can be running simultaneously on MetaXpress PowerCore clients. This number is determined by the license. If you have multiple servers, they can share the same license. However, the combined number of processes running simultaneously on all MetaXpress PowerCore clients cannot exceed the number allowed by the license. You can increase license capacity as needed. For more information, contact your Molecular Devices sales representative.	

## Database Settings

Use [Table 10-3](#) to record your database settings. You use this information when you configure the MetaXpress PowerCore server and MetaXpress PowerCore client database settings for Oracle or SQL as described in [Chapter 3: Database Client Configuration on page 21](#).

**Table 10-3:** Database Client Settings

Item	Description	System Notes
Host Name (for Oracle and SQL databases)	The TCP/IP name of the computer that hosts the MDCStore database.	
MDCStore Database Port Number (for Oracle and SQL databases)	<p>The port number used by the MDCStore database server. This port number must be different from the port number used for communication between the MetaXpress PowerCore server and MetaXpress PowerCore clients.</p> <p><b>Note:</b> The default port for an Oracle database is 1521, and for an SQL database is port 1433.</p>	
User ID for Login (for Oracle and SQL databases)	<p>The User ID of an account that is permitted to access the MDCStore database server.</p> <p><b>Note:</b> This account should have the appropriate access to the data being analyzed.</p>	
MetaXpress PowerCore Database DSN (for Oracle and SQL databases)	The DSN (Data Source Name) you want to use for the MetaXpress PowerCore Software.	

**Table 10-3:** Database Client Settings (cont'd)

Item	Description	System Notes
Net Service Name (for Oracle databases only)	The service name used to access the MDCStore database across the network.	
Database Protocol (for Oracle databases only)	The protocol supported by the MDCStore database.	
TNS Service Name (for Oracle databases only)	The TNS (Transport Network Substrate) name of the MDCStore Oracle database (not used with SQL). The TNS Service Name is the name by which an Oracle database instance is known on a network. This name must match the name of the service in Net Manager.	
Default Database (for SQL databases only)	The name of the MDCStore database used with the MetaXpress PowerCore Software.	

## MetaXpress PowerCore Server Settings

Use [Table 10-4](#) and [Table 10-5](#) to record MetaXpress PowerCore server settings. To access these settings, click **Edit > Server Settings** in the MetaXpress PowerCore server application.

**Table 10-4:** MetaXpress PowerCore Server Connection Settings

Item	Description	Settings
Client Port	The port number used for communication between the MetaXpress PowerCore server and MetaXpress PowerCore clients. A MetaXpress PowerCore server and its clients must use the same port number, and the port cannot be in use by other applications. Firewalls and antivirus software must be configured to permit UDP and TCP communication among computers on the assigned port. The default port is 20000. For information on assigning port numbers, see <a href="http://www.iana.org/assignments/port-numbers">http://www.iana.org/assignments/port-numbers</a> .	
Client Response Timeout (s)	The amount of time, in seconds, allowed for clients to respond to MetaXpress PowerCore server requests. The MetaXpress PowerCore server disconnects from clients if it does not receive a response from them within this time frame.	
Use UDP Broadcast to Find Clients	Enables the MetaXpress PowerCore server to use the protocol UDP to find clients installed and running on the network. If UDP is not enabled, the only way for the server to find external clients is if they are on the selected clients list, and the server broadcasts to them directly using TCP.	

**Table 10-4:** MetaXpress PowerCore Server Connection Settings (cont'd)

Item	Description	Settings
Broadcast to External Interface	Enables the MetaXpress PowerCore server to broadcast through a network card to find any local MetaXpress PowerCore client that is running on the internal network.	
Broadcast to Localhost	Enables the MetaXpress PowerCore server to broadcast through the localhost port to find any client that is running on the server itself. These clients must be configured to use the server's localhost port number in the Port Number setting.	
Broadcast to Self	Enables the MetaXpress PowerCore server to broadcast to its computer name to find any client that is running on the server itself.	
Broadcast Interval (s)	The amount of time, in seconds, that elapses between broadcasts.	
Broadcast to Selected Clients	Used to broadcast to known MetaXpress PowerCore client computers through TCP. On busy networks, this can be more efficient than using UDP broadcast alone.  If the server does not use the UDP broadcast option, it must use the <b>Broadcast to Selected Clients</b> option to find clients running on network computers.	



**Table 10-5:** MetaXpress PowerCore Server Licensing Settings

Item	Description	Settings
Reserved Processes	The number of processes currently reserved for this server.	
Processes to Be Reserved for this Server	<p>The number of processes that have been set aside for use by this server. Until processes are reserved for it, the server cannot run any analysis processes, and each server is limited to the number of processes reserved for it.</p> <p>For example, if the license permits 100 processes, but only 50 processes are reserved for the server, the server cannot run more than 50 processes simultaneously.</p> <p>If a server is online and running analysis processes on clients, those client processes are deducted from the total number of processes available under the license. If a server is offline, processes reserved for that server are not deducted from the number allowed by the license. Servers are considered to be offline if they are not connected to the network, or if the MetaXpress PowerCore server application on the server has been closed.</p> <hr/> <p><b>Note:</b> To view this setting, click <b>Advanced</b> in the <b>Licensing</b> section on the <b>Server Settings</b> property sheet.</p> <hr/>	

## MetaXpress PowerCore Server Preferences

Use [Table 10-6](#) to record MetaXpress PowerCore server preferences. To access these preferences, click **Edit > Preferences** in the MetaXpress PowerCore server application.

**Table 10-6:** MetaXpress PowerCore Server Preferences

Item	Description	Settings
Number of Retries per Work Unit	<p>The number of times the MetaXpress PowerCore Software tries to analyze a work unit, for which errors have been reported, before marking that work unit as having failed. Allowing retries increases the likelihood of successful processing, since some errors can be corrected when work units are retried.</p> <p>If the software encounters an error when it processes a work unit, and if retries are allowed, the MetaXpress PowerCore server sends the work unit to the next available client for processing.</p> <p>All work unit errors, including the initial error and errors resulting from retries, are listed on the <b>Errors</b> page. The number of work units started, and the number of work units completed successfully, appear on the <b>Job History</b> page.</p>	

**Table 10-6:** MetaXpress PowerCore Server Preferences (cont'd)

Item	Description	Settings
Percentage of Work Unit Failures Allowed per Job	<p>The percentage of work units that can fail before an analysis job is marked as having failed. For example, if the percentage is set to 10, and a job has 100 work units, the MetaXpress PowerCore Software continues to process the job even if 9 work units fail. If 10 work units fail, however, processing stops, and the job is marked as having failed.</p> <hr/> <p><b>Tip:</b> To enable the MetaXpress PowerCore Software to process jobs completely, use a high percentage of work unit failures, such as 75% to 99%. The higher the percentage, the greater the chance that the MetaXpress PowerCore Software can complete the job.</p> <hr/>	
Task Completion Timeout (s)	The amount of time, in seconds, the client computer can take to process a work unit. The MetaXpress PowerCore server marks work units as failed if results are not returned within this time frame. Work units are typically processed in 60 to 360 seconds, but processing can take longer depending on complexity.	

**Table 10-6:** MetaXpress PowerCore Server Preferences (cont'd)

Item	Description	Settings
Log File Location	<p>The location of MetaXpress PowerCore log files. The MetaXpress PowerCore server records processing details in a log file at this location when processing jobs.</p> <p>The default location of the log file is the MetaXpress PowerCore application folder. To change the location, click the ellipsis (...). Whenever you restart the MetaXpress PowerCore server application, the software starts a new log file.</p>	

## MetaXpress PowerCore Client Settings

Use [Table 10-7](#), [Table 10-8](#), and [Table 10-9](#) to record MetaXpress PowerCore client settings. To access these settings, log in to the client computer as administrator, and then click **Start > All Programs > Molecular Devices > MetaXpress PowerCore > MetaXpress PowerCore Client**.

**Table 10-7:** MetaXpress PowerCore Client Connection Settings

Item	Description	Settings
Server is External	Whether the client listens for broadcasts from an external MetaXpress PowerCore server. This setting should be selected unless the client is installed on the MetaXpress PowerCore server itself.	
Server Uses UDP	Whether the MetaXpress PowerCore server uses UDP to find clients installed and running on the network. Unless the server broadcasts only to selected clients, this setting should be selected.	

**Table 10-7:** MetaXpress PowerCore Client Connection Settings (cont'd)

Item	Description	Settings
Port Number	<p>The port number used for communication between the MetaXpress PowerCore server and MetaXpress PowerCore clients. The MetaXpress PowerCore server and all of its clients must use the same port number and the port cannot be used by other applications. Firewalls and antivirus software must be configured to permit UDP and TCP communication among computers on the assigned port. The default port is 20000.</p> <p>For information about assigning port numbers, go to <a href="http://www.iana.org/assignments/port-numbers">http://www.iana.org/assignments/port-numbers</a>.</p>	

**Table 10-8:** MetaXpress PowerCore Client Job Processing Timeout(s) Settings

Item	Description	Settings
For Completing Tasks	The maximum amount of time, in seconds, allowed for the processing of each work unit. If a work unit is not analyzed within the specified time period, the client stops processing the work unit, and the work unit is marked as having failed. Work units are typically processed in 60 to 360 seconds, but processing can take longer depending on complexity.	
For Collecting Results	The maximum amount of time, in seconds, for the MetaXpress PowerCore server to collect results after the client's analysis is complete. If the results are not picked up within the specified time interval, the client discards them.	

**Table 10-9:** MetaXpress PowerCore Client Client's Availability (Maximum Number of Parallel Processes Allowed on this Computer) Settings

Item	Description	Settings
While Busy (no screen saver)	<p>The number of MetaXpress PowerCore analysis processes that can be running on the client when the screen server is not active or the client is busy.</p> <p>If the client is dedicated to the MetaXpress PowerCore Software, or if you want the client to be available for MetaXpress PowerCore analyses all the time, this number should be the total number of processors on the computer.</p> <p>If the client is used for other applications in addition to the MetaXpress PowerCore application, lower this number to allow proper processing power for the other applications.</p> <p>If you want the client to perform analyses only when it is idle, set this number to 0.</p> <hr/> <p><b>Tip:</b> The recommended ratio of processes to CPUs is 1 to 1, depending on PC power and memory and on the complexity of the process. Performance might decrease if a CPU runs more than one complex process at a time.</p>	
While Idle (screen saver active)	<p>The number of MetaXpress PowerCore analysis processes that can be running on the client when the computer is idle and the screen saver named <b>Dcscreensaver</b> is active.</p>	

## MetaXpress PowerCore Clients and Processing Capabilities

Use [Table 10-10](#) to record information about MetaXpress PowerCore clients and their processing capabilities. Client information is also available on the MetaXpress PowerCore server **Active Clients** page. To view that page, click the **Active Clients** tab in the MetaXpress PowerCore server application.

**Table 10-10:** MetaXpress PowerCore Clients and Processing Capabilities

MetaXpress PowerCore Client Name	Parallel Processes Allowed When Busy (no screen saver)	Parallel Processes Allowed When Idle (screen saver active)

**Table 10-10:** MetaXpress PowerCore Clients and Processing Capabilities (cont'd)

MetaXpress PowerCore Client Name	Parallel Processes Allowed When Busy (no screen saver)	Parallel Processes Allowed When Idle (screen saver active)



# Glossary

## AcuityXpress Software

Software used for data mining and meta-analysis. AcuityXpress™ Software is used with MetaXpress® Software, ImageXpress® imagers, and the MDCStore™ database.

## analysis

The separation of an image into its constituent parts for study.

## analysis job

Microplate-based information, generated by MetaXpress Software, that is ready to be analyzed.

## application module

Assay-specific modules used with the MetaXpress Software. Application modules automate common analysis tasks such as segmentation and cell scoring.

## Auto Run Queue

The sequence of MetaXpress Software analysis jobs waiting to be processed automatically.

## client (database)

Software required for communication with the MDCStore database. Database client software must be installed and configured on MetaXpress® PowerCore™ servers

and clients. For more information, see [Supported Database Client Software on page 22](#).

## client (MetaXpress PowerCore)

See [MetaXpress PowerCore client](#).

## client service (MetaXpress PowerCore)

See [MetaXpress PowerCore Client service](#).

**core** A computer processor. MetaXpress PowerCore client software can run on computers with multiple processor cores; the MetaXpress PowerCore Software has been tested in client configurations of up to 48 processor cores.

## Dcscreensaver

The screen saver used with MetaXpress PowerCore clients. Screen saver settings on MetaXpress PowerCore clients determine how CPUs are used by the MetaXpress PowerCore Software. For more information, see [Configuring the MetaXpress® PowerCore™ Client on page 43](#).

## File Server (MDC)

A Molecular Devices software that manages the data files stored in the MDCStore database. For more

information, see the *MDCStoreTools User Guide*.

## **image**

A picture captured by an instrument, such as an ImageXpress acquisition system.

## **ImageXpress System**

Instruments used for image acquisition. The ImageXpress® Ultra instrument is an automated point-scanning confocal imager. The ImageXpress® Micro instrument is a widefield automated microscope.

## **job queue monitoring**

The process of checking the MetaXpress Software Auto Run Queue for analysis jobs that are ready for processing. You can configure the MetaXpress PowerCore server to monitor the Auto Run Queue continuously and process jobs automatically. For more information, see [Monitoring the MetaXpress Software Auto Run Queue for Jobs on page 52](#).

## **journals**

Custom analysis macros used with the MetaXpress Software. The MetaXpress PowerCore Software does not process analysis jobs that contain journals.

## **license key**

A USB device that verifies the MetaXpress PowerCore Software license. Obtain this key from Molecular Devices.

## **license key server**

Software required to use the license key. This software is installed on the server where the license key USB device is plugged in. For more information, see [Installing the MetaXpress PowerCore Server and License Key Server Applications on page 14](#).

## **MDCStore database**

The Molecular Devices database that stores ImageXpress System screening data and images, image locations, results of MetaXpress Software analyses, and AcuityXpress Software data mining results. For information about using the MetaXpress PowerCore Software with this database, see [Updating the MDCStore Database Schema from Version 2.0 or later on page 47](#).

## **MetaXpress Software**

Software used to control and review high-content imaging systems.

## **MetaXpress PowerCore Software**

The server-client system used to increase the speed of analysis of MetaXpress Software application modules.

## **MetaXpress PowerCore client**

A computer with the MetaXpress PowerCore client software installed. MetaXpress PowerCore clients process the work units they receive from the MetaXpress PowerCore

server and return the analysis results to the server after processing. For more information, see [MetaXpress PowerCore Client Management on page 63](#).

## MetaXpress PowerCore Client service

The MetaXpress PowerCore client service that runs on client computers. This service is installed and started during MetaXpress PowerCore client installation, and it enables MetaXpress PowerCore clients to receive work units for processing from the MetaXpress PowerCore server. The service must be running for the MetaXpress PowerCore client to process work units. If the service is stopped, the client cannot process work units. For more information, see [Stopping and Restarting the MetaXpress PowerCore Client Service on page 65](#).

## MetaXpress PowerCore client software

The MetaXpress PowerCore Software application installed on MetaXpress PowerCore client computers. This application is used to set properties such as the port number for server-client communication. The application does not have to be running for the client to process work units. For more information, see [Chapter 4: MetaXpress PowerCore Client Installation and Configuration on page 39](#).

## MetaXpress PowerCore server

A computer with the MetaXpress PowerCore server application installed. MetaXpress PowerCore servers seamlessly obtain analysis jobs from the MetaXpress Software Auto Run Queue, divide the jobs into work units, and send the work units to MetaXpress PowerCore clients for processing. For more information, see [MetaXpress PowerCore Server and License Management on page 57](#).

## MetaXpress PowerCore server software

The MetaXpress PowerCore Software application installed on the MetaXpress PowerCore server. This application is used to set the MetaXpress PowerCore server properties and manage analysis jobs. For more information, see [Chapter 2: MetaXpress PowerCore Server Installation and Configuration on page 13](#).

**microplate** Multi-well trays that contain the samples being studied.

## process

A single instance of the MetaXpress PowerCore AMExecutioner program that is running on a client computer. License settings determine the total number of processes allowed. For more information, see [About MetaXpress PowerCore Software Licensing on page 59](#).

## server (license key)

See [license key server](#).

## **server (MetaXpress PowerCore)**

See [MetaXpress PowerCore server](#).

## **site**

A set of images from the same location in a well. Wells can contain one site or multiple sites.

## **well**

In a microplate, the sections that contain the samples being studied.

## **work unit**

The smallest possible component of an analysis job. A work unit is usually a site or a well to be analyzed. MetaXpress PowerCore servers divide analysis jobs into work units, and send the work units to MetaXpress PowerCore clients for processing.

# Index

---

## A

- active processes 63, 89
- AcuityXpress Software 7
- adding clients to selected clients lists 66
- AMExecutioner program 99
- analysis jobs
  - about 7
  - canceling 53
  - definition of 97
  - restarting 55
  - starting and stopping 52
  - viewing status of 53
- analysis, definition of 97
- antivirus software and firewalls
  - guidelines for 10
  - troubleshooting 72
  - Windows Firewall settings 15
- application modules 7, 97
- authorization code 17
- Auto Run Queue
  - changes to table 47
  - definition of 97
  - monitoring 52
  - overview of 7
- available processes 94

---

## B

- broadcast settings
  - definition of 87
  - property sheet 18
- broadcasting to specific clients 62

---

## C

- canceling analysis jobs 53
- changing
  - client settings 64
  - license settings 59
  - server settings 58
- checklists
  - for client process settings 95
  - for client settings 92
  - for database client settings 85
  - for installation tasks 82
  - for license information 83
  - for server settings 87
- client service settings 42, 76

- clients
  - available processes on 94
  - broadcasting to specific 87
  - changing settings of 64
  - configuration of 92
  - CPUs, usage of 43
  - installing 41
  - response timeouts for 87
  - restarting services on 65
  - screen saver for 43
  - viewing status of 63
- closing MetaXpress PowerCore Software applications 58
- codes, for registering software 17
- communications, server-client 67
- configuration
  - of client CPUs 43
  - of database clients 22
  - of databases 33
  - of firewalls 72
  - of licenses 83
  - of MetaXpress PowerCore clients 16, 43
  - of MetaXpress PowerCore servers 87
  - of Oracle database 27
- connection settings
  - for clients 92
  - for servers 58, 87
- contacting Technical Support 80
- cores
  - definition of 97
- CPUs
  - configuring usage of 43
  - ratio of processes to 94
  - speed of 64
  - total 64
  - usage during job processing 50

---

## D

- database
  - host name of 85
  - Oracle client settings of 22, 27
  - port number of 48, 85
  - protocol for MDCStore 86
  - SQL client settings 33
  - tablespace requirements 46
- Dcsccreensaver 43, 97
- default SQL database 86
- drivers
  - license key 15
  - Oracle 23

---

## E

- errors
  - changing settings for 59
  - log file, location of 92
  - preferences for handling 91
  - searching for 56
  - troubleshooting 67
  - viewing 69

---

## F

- File Server
  - definition of 97
  - updating 48
- firewalls and antivirus software
  - guidelines for 10
  - troubleshooting 72
  - Windows Firewall settings 15

---

**H**

history, of analysis jobs 55  
 host name  
     of license key server 17, 83  
     of MDCStore database 85  
     of MetaXpress PowerCore clients 64  
     of Oracle database server 29

---

**I**

images 7, 50  
     acquisition of 8  
     definition of 98  
     problems with 75  
 ImageXpress®  
     definition of 98  
     workstation 8  
 increasing license capacity 62  
 installing  
     license key server software 15  
     MetaXpress PowerCore clients 41  
     MetaXpress PowerCore servers 14  
     Oracle database client 22, 23

---

**J**

job queue monitoring 52, 98  
 jobs  
     canceling 53  
     overview of 7, 50  
     restarting 55  
     with journals 51

---

journals  
     processing jobs with 7, 51

---

**K**

key, for license 16

---

**L**

license key  
     definition of 98  
     installing 15  
     Web page for 17  
 license key server  
     definition of 98  
     installing 15  
 license settings 83  
     configuring 16  
     increasing capacity of 62  
     viewing 59  
 loading images 76  
 localhost settings 88  
 log files  
     location of 92  
     overview of 69  
 LogOn settings, for client service 42

---

**M**

managing  
     analysis jobs 50  
     clients 63  
     license settings 59  
     servers 58

MDCStore database  
     overview of 45  
 MetaXpress Software  
     Auto Run Queue, overview of 7  
     jobs with journals 7  
 MetaXpress® software 98  
 microplate 99  
 monitoring the Auto Run Queue 52  
 multiple servers, using 61

---

## N

network domain user account 42  
 network settings  
     and firewalls 72  
     UDP and TCP 67

---

## O

Oracle client settings 22, 27

---

## P

port number settings  
     changing 68  
     of database server 48, 85  
     of MetaXpress PowerCore clients 92  
     of MetaXpress PowerCore servers 87  
 preferences  
     for error handling 91  
     property sheet 20

prerequisites  
     for configuring database clients 21  
     for installing MetaXpress PowerCore clients 40  
     for installing MetaXpress PowerCore servers 14  
     for updating the database 46  
 processes  
     definition of 99  
     increasing license capacity for 62  
     reserving, for servers 61  
     viewing active 64  
 processing analysis jobs, overview of 50  
 protocols  
     for MDCStore database 86  
     UDP and TCP 67

---

## R

ratio of CPUs to processes 94  
 registration code 17  
 requirements  
     database tablespace 46  
     MetaXpress PowerCore Software 8  
 reserving processes for servers 61  
 restarting  
     analysis jobs 55  
     client computers 65  
     MetaXpress PowerCore Software applications 58

---

## S

screen saver settings 43, 94



- searching for errors 56
- selected clients list 66
- servers
  - changing settings of 58
  - configuring 87
  - installing 14
  - selected clients, list of 66
  - using multiple 61
- sites 7, 50
  - definition of 100
- SQL client settings 33
- starting analysis jobs 52
- status
  - of analysis jobs 53
  - of clients 63
- stopping analysis jobs 52
- subnets 67
- Support 80
- system requirements 8

---

## T

- tablespace requirements 46
- TCP communications 67
- Technical Support 80
- timeout settings
  - client response 87
  - errors related to 77
  - task completion, client 93
  - task completion, server 91
  - viewing 71
- TNS service name 86
- troubleshooting 71

## U

- UDP protocol 67, 92
- UNC image storage 42, 76
- updating
  - MDC File Server 48
- USB port 16
- user account for network domain 42
- user ID for MDCStore™ login 85

---

## V

- viewing
  - client settings 64
  - client status 63
  - errors 69
  - license settings 59
  - server settings 58
- virus-protection software 10, 72

---

## W

- Web sites
  - for license key host 17
  - for Oracle database client drivers 23
  - for port number information 87
- wells 7, 50
  - definition of 100
- Windows Firewall settings 15
- work units
  - definition of 100
  - number of retries for 90
  - processing of 50

## Contact Us

Phone: [800.635.5577](tel:800.635.5577)  
Web: [www.moleculardevices.com](http://www.moleculardevices.com)  
Email: [info@moldev.com](mailto:info@moldev.com)

Check our website for a current listing  
of worldwide distributors

## Regional Offices

USA and Canada	China (Beijing)	Japan (Osaka)	Brazil
<a href="tel:+18006355577">+1.800.635.5577</a>	<a href="tel:+861064108669">+86.10.6410.8669</a>	<a href="tel:+81671748831">+81.6.7174.8831</a>	<a href="tel:+551136166607">+55.11.3616.6607</a>
United Kingdom	China (Shanghai)	Japan (Tokyo)	
<a href="tel:+441189448000">+44.118.944.8000</a>	<a href="tel:+862133721088">+86.21.3372.1088</a>	<a href="tel:+81363625260">+81.3.6362.5260</a>	
Europe*	Hong Kong	South Korea	
<a href="tel:0080066532860">00800.665.32860</a>	<a href="tel:+85222486000">+852.2248.6000</a>	<a href="tel:+82234719531">+82.2.3471.9531</a>	

*\*Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Netherlands, Spain, Sweden and Switzerland*

The trademarks used herein are the property of Molecular Devices, LLC or their respective owners.  
Specifications subject to change without notice. Patents: [www.moleculardevices.com/productpatents](http://www.moleculardevices.com/productpatents)  
FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES

©2015 Molecular Devices, LLC.  
All rights reserved.  
0112-0183 E

