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Honeywell Process Solutions

MasterLogic-Experion Integration User's Guide

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ii

About This Document

This document describes how to integrate the MasterLogic 200R/200 IEC with Experion Process Knowledge System. The guide describes the installation, configuration, operations, and troubleshooting tasks associated with the MasterLogic PLC - Experion integration. The term PLC used throughout this document refers to MasterLogic PLC. The MasterLogic PLC - Experion integration discussed in this guide is tested with ML200 IEC / ML200R and Experion R400.

Intended Audience

The intended audiences for this guide include:

- Project Engineers.
- Operators.
- Service Engineers.

Prerequisites for using this guide

Before you begin, ensure that you are familiar with the following information.

Experion concepts and Quick Builder usage

REFERENCE – EXTERNAL

- For details about Experion, see Experion Knowledge Builder > Experion PKS R400 > Purpose > Overview > Introduction > Experion Process Knowledge System.
- For details about Quick Builder features and operations, see Experion Knowledge Builder > Experion PKS R400> Configuration > Quick Builder Guide.
- PLC concepts and SoftMaster tool usage.

REFERENCE - EXTERNAL

For details about PLC concepts and SoftMaster tool usage, see SoftMaster User Guide and PLC User Guide.

How to use this guide

Here is a list of topics covered in this guide:

 Topic

 Introduction

 Installing ML Server

 MLServer License

 Configuration

 Troubleshooting

References

The following list identifies references for material discussed in this publication:

Experion Knowledge Builder

Acronyms and Definitions

The following section describes some commonly used industry-wide and Honeywell-specific terminology:

Terminology	Description
MLServer	MasterLogic Server software which interfaces MasterLogic PLC with Experion.
MLPLC	MasterLogic Programmable Logic Controller.
PLC	Programmable Logic Controller.
PV	Process variable parameter of a standard Point.
QDB	Quick Builder project file containing one or more Channels, Controllers and Points.
SM	SoftMaster PLC monitoring tool.
MLDP	MasterLogic Dedicated Protocol supported by ML200/ML200R.
RTC	Real Time Clock data represents the current time in the PLC.
SP	Set point parameter for the Experion Analog point.
OP	Output parameter for the Experion Analog / Status point.
SCADA	Supervisory Control and Data Acquisition

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Symbol Definitions

The following table lists the symbols used in this document to denote certain conditions:

Symbol	Definition
	ATTENTION: Identifies information that requires special consideration.
	TIP: Identifies advice or hints for the user, often in terms of performing a task.
	REFERENCE -EXTERNAL: Identifies an additional source of information outside of the bookset.
F	REFERENCE - INTERNAL: Identifies an additional source of information within the bookset.
Â	CAUTION: Indicates a situation which, if not avoided, may result in work (data) on the system being damaged or lost, or may result in the inability to properly perform the process.
	WARNING: Indicates a potentially hazardous situation, which, if not avoided, could result in serious injury or death.

About This Document Symbol Definitions

1. INTRODUCTION	13
1.1 Overview MasterLogic PLC - Experion integration solution	13
MasterLogic PLC-Experion integration elements Supported MasterLogic PLCs	
2. INSTALLING ML SERVER	21
2.1 Installing ML Server in Experion Server MLServer media Installing MLServer Verifying MLServer installation	21 21 21 21 23
2.2 Installing in Client machines Overview Prerequisites for installing MLServer MLServer media Installing MLServer Verifying MLServer installation	27 27 27 27 27 27 27 29
2.3 Getting started Configuring MasterLogic PLC - Experion integration	
2.4 Removing MLServer Using Add/Remove programs Using MLServer.exe in the installation CD	31
2.5 Repairing MLServer Using MLServer.exe in the installation CD	
3. MLSERVER LICENSE	35
3.1 Overview	35 3535353535363636
3.2 Obtaining a new license	
R400MasterLogic-Experion Integration User's GuideMarch 2011Honeywell	іх

Obtaining a new license through e-mail Installing license certificate	
3.3 Updating license certificate Updating license certificate	41 41
3.4 Transferring license certificate Terminating license certificate Transferring license certificate	45
4. CONFIGURATION	49
4.1 Overview Configuring MasterLogic server	49 49
4.2 Configuring MLServer using Configuration Tool	
Configuring PLC Information	
Configuring PLC Log information	
Configuring MLServer advanced information	
Adding a new PLC	
Configuring MLServer general information	
4.3 Configuring MLServer using Quick Builder Overview of Quick Builder components Configuring the Quick Builder component manager Configuring a MasterLogic Channel Configuring a MasterLogic Controller Configuring an Experion Point (Analog and Status) PLC Point configuration details Defining data formats	
4.4 Downloading Quick Builder Points to Experion Overview	92
4.5 Verifying the configuration	93
Overview	
Verifying data exchange between PLC and Experion	
5. MONITORING PLC STATUS FROM EXPERION DIS	SPLAYS 101
5.1 Overview Experion displays	101 101
5.2 Building a Point in Experion corresponding to the PLC Using Configuration tool	102
x MasterLogic-Experion Integration User's Guide Honeywell	R400 March 2011

Г	
March 2	

5.3 Using Experion custom displays	
PLC System Status Display	
Config Info	105
Status Info	109
Driver Info	119
5.4 Using Experion standard Station displays	
Channel Summary page	
Point Detail display	126
5.5 Monitoring PLC displays from an Experion client system	
Overview	127
5.6 Bad quality items	
Overview	
Viewing bad quality item in Point Detail display	130
6. ALARMS AND EVENTS INTEGRATION	135
6.1 Alarm integration	
Types of Alarms	135
Viewing PLC alarms in Experion Station	136
Sample alarms raised in Experion	137
6.2 PLC Events	
6.2 PLC Events	138 138
6.2 PLC Events Types of PLC events Transferring PLC events to Experion/Log files	138
6.2 PLC Events Types of PLC events Transferring PLC events to Experion/Log files Transferring SOE events from PLC to Experion Station	138
6.2 PLC Events Types of PLC events Transferring PLC events to Experion/Log files Transferring SOE events from PLC to Experion Station	138
 6.2 PLC Events	138
6.2 PLC Events	
6.2 PLC Events	
6.2 PLC Events	

1. Introduction

1.1 Overview

MasterLogic PLC - Experion integration solution

The MasterLogic PLC-Experion integration solution unifies the MasterLogic PLCs with Experion. The solution enables Experion to read/write PLC data and monitor PLC alarms and events from Experion Station. The solution is achieved by connecting PLCs to Experion server through FTE and mapping PLC data items to standard Experion Points.

The following figure illustrates the integration solution:





The PLC can also be connected directly to the system installed with SoftMaster.

Redundancy is implemented at three different levels:

- 1. **Redundant PLC** Redundancy in PLC can be achieved using many methods:
 - Having two FENET modules within the same PLC.
 - Having redundant CPUs.
 - Having redundant IO Modules or Bases, and so on.

1. Introduction

1.1. Overview

- The underlying principle is that when the master module fails, the standby module takes over the control without interrupting the operation of the process in control.
- 2. **FTE Network** Two Ethernet cables are connected between the Experion and the PLC or other devices. When the master network connection fails, the standby network connection is used for the communication between the Experion and the PLC.
- 3. **Redundant Experion PKS server** The secondary Experion server takes over when the primary Experion server fails. All the MasterLogic Channels, Controllers, Points and Graphics are also available when the secondary Experion server is active.



ATTENTION

The MasterLogic PLC functions as a non-FTE node together with other FTE nodes on the network.

Integration scope

Experion integration gains special access to intricate areas of MasterLogic PLC through proprietary MLDP:

- Direct variables (%I Input image, %Q Output image, %M internal Memory variables)
- %R File Register variables (non-volatile memory variables data retention)
- CPU, I/O module, communication Status and Alarms Flags (CPU error, battery error, I/O module)
- Real Time Clock (RTC) areas
- I/O Configuration parameters
- PLC History Logs (Error, Activity, Mode changes, Power shutdown)
- DISOE module integration

MasterLogic PLC-Experion integration elements

SoftMaster

The SoftMaster tool is used for the following:

- · Writing ladder logic programs which contain the engineering logics
- Monitoring the PLC values and/or force values into PLC.

The following figure depicts the **Address Monitoring** window (available only in SoftMaster):



Figure 1.1-2: Address monitoring window

1. Introduction

1.1. Overview

Quick Builder

Quick Builder is the tool used for the following:

- Configuring MasterLogic Channel, MasterLogic Controller, and Analog and Status Point.
- Uploading/downloading Channel, Controller, and Point from/to the Experion server. The downloaded items are stored in the Experion server database.

Experion Station

Experion station is used for the following:

- Monitoring the online status of PLCs integrated with Experion as Alarms/Events or through Custom graphics.
- Change the online status of MasterLogic Controllers and MasterLogic Channels.
- View the point values obtained from Experion through custom graphics.

Experion has the following two types of stations:

Flex Station – This is generally installed on a computer other than the server computer.

Console Station – Console Station has direct access to the Process Controllers, as well as the Experion server.

MasterLogic PLC

MasterLogic PLC performs the following:

- Replaces the necessary sequential relay circuits for machine control.
- Used in any application that needs some type of electrical control.
- Operates by looking at its inputs and depending on their state, turning on/off its outputs.
- Current MasterLogic PLCs available are ML200 IEC and ML200R.

The high speed Ethernet communication modules (FEnet) of MasterLogic-200 system reside as non FTE nodes on FTE network providing a high-level interface with Experion servers.

MLDP (MasterLogic Dedicated Protocol) server embedded in the FENET modules offer Experion servers, a special proprietary access on TCP-IP layer to various memory variables of the PLC CPU.

MasterLogic Server

The PLCs are integrated to Experion server, through the MLServer software. After downloading the Points to Experion server, MLServer performs the following:

- Starts communicating with PLCs.
- Reads PLC information and writes to the Experion server.
- Writes values from the Experion server to PLCs.
- Transfers system status, IO module information, alarms/events associated with PLCs to Experion server which can be monitored via the Experion Station.

Experion Server

The Experion is a standard distributed control system that provides plant-wide control. The Experion server contains supervisory control functions, the Experion Global Data infrastructure and optional redundancy. The server hosts graphical tools such as Control Builder and HMIWeb Display Builder and acts as the central repository for all system data. It also runs all the core system functions, including:

- Data acquisition and processing
- Alarm and event management

The following picture illustrates the software architecture of the MasterLogic PLC-Experion integration solution.

1. Introduction

1.1. Overview



Figure 1.1-3: Components of MasterLogic PLC – Experion Integration solution

Supported MasterLogic PLCs

The supported PLCs are:

- ML200R
- ML200 IEC

ML200R

These are Honeywell's next generation Programmable Logic Controllers that support CPU-level redundancy. It provides real power, performance and versatility with a compact size, high speed scanning of I/O Channels, and execution of program instructions. It also provides open network through Ethernet, ProfibusTM-DP, DeviceNetTM, remote I/O, and engineer-friendly programming and diagnostic software tools.

ML200

Honeywell's next generation Programmable Logic Controllers providing real power, performance and versatility with compact size, high speed scanning of I/O Channels and execution of program instructions, open network through Ethernet, ProfibusTM-DP, DeviceNet TM, remote I/O and engineer-friendly programming and diagnostic software tools.

1. Introduction

1.1. Overview

2. Installing ML Server

2.1 Installing ML Server in Experion Server

This section describes the procedure for installing the MLServer.

- Install Experion server with OPC client license. (The MLServer information • provided in this guide is compatible with Experion R400.)
- Install MS-XML version 6.
- Have Administrative privileges to log into the Experion server machine.



REFERENCE - EXTERNAL

For more details on hardware and software requirements, refer to Hardware and Software requirements section in Experion Knowledge Builder.



ATTENTION

You must have Experion OPC client license (Model#: EP-OPCCLI) to configure MasterLogic Channel, Controller, and Point.

MLServer media

The MLServer CD contains the MLServer.exe file required to install the MLServer.

Installing MLServer

To install MLServer, perform the following steps:

	Step	Action
	1	Click MLServer.exe in the MLServer installation CD.
		ATTENTION
		If an earlier version of MLServer is installed already, the wizard displays an error message indicating that the previous MLServer version must be removed before installing the new version.
		After performing the initial checks, the wizard displays the welcome screen.
	2	Click Next.
		The wizard displays the License Agreement screen.
400		MasterLogic-Experion Integration User's Guide 21

2. Installing ML Server

2.1. Installing ML Server in Experion Server

Step	Action
3	Select I accept the terms in the license agreement.
4	Click Next.
	The wizard displays the Destination Folder screen.
5	Click Next.
	OR
	Click Change to select a different folder.
	TIP
	Honeywell recommends retaining the default destination folder for installing MLServer.
	The wizard displays the Ready to Install the Program screen.

6 Click Install.

The wizard displays the **Installing Honeywell – MasterLogic Server** screen, displaying the status messages and the progress bar during the installation process.

- 7 The wizard completes the installation and displays the **Install Shield Wizard Completed** screen:
- 8 Click **Finish** to close the wizard.



ATTENTION

MLServer installer displays an error message "Error opening Installation log file. Verify that the specified log file location exists and is writeable". This occurs if Experion is not installed in the machine or if the installer is not run with administrator privileges.

Click OK.

If the Experion server is installed, run MLServer installer with administrator privileges else install Experion server with OPC client license and install MLServer again.

Verifying MLServer installation

Verification of MLServer installation involves the following:

Verify graphics pages and xml files copied to the installation path (*C:\ProgramData\Honeywell\Experion PKS\Client\Abstract*) during installation, as displayed in the following figure.

Ele Edt Yew Fayorites Jools Help Back • ③ • ⑨ P Search Image: Search Image: Search Address Image: ClipProgram Files/Honeywell/Experion PKS/Client/Abstract Image: Search Image: Search
Q Back ▼ ② ▼ ② ▼ ② P Search ▷ Folders ▷ ③ ③ ★ ③ □ □ ▼ Address ⊇ C:\Program Files\Honeywell\Experion PKS\Client\Abstract
Address 📄 C:\Program Fles\Honeywell)Experion PKS\(Client)Abstract
Folders X Name A Size Type Date Modified Attributes
Common Files Image: Config_files File Folder 5/27/2008 10:46 AM
ComPlus Applications File Folder 5/27/2008 10:46 AM
B
H
E Carlo Honeywell
Add_Route
Experion PKS III MCConfig.xsd 13 KB XSD File 3/27/2008 12:41 PM A
Client Implement State State
E Dastract MLMonitor.xsd 55 KB XSD File 5/3/2008 2:10 PM A
B C MLPLC_Config_fil J MLPLC_Config.htm 312 KB Display File 5/7/2008 3:39 PM A
⊞ B MLPLC_Status_fil HIPLC_Status.htm 380 KB Display File 5/7/2008 2:35 PM A
Carl Styles 2 KB XML Document 4/26/2007 5:34 PM A
H Tabs MLSOEConfig.xsd 3 KB XSD File 4/12/2007 10:32 AM RA
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Carl Xidataex
🗄 🥁 Engineering Tools
Con Eum
🗄 🧰 Migrate
🗄 🛅 ProfitLoopAssistant
🗄 🧰 Server
🗄 🦳 Utilities
🗄 🦳 FTE_Driver
C MasterLogicServer
🗄 🧰 PST_Client
🗄 🚞 PST_Server
🚞 SES

Figure 2.1-1: Graphics pages and xml files copied during installation

2.1. Installing ML Server in Experion Server

Туре	Filename	Description
xml files	MLConfig.xml	This file contains the PLC specific configuration.
	MLMonitor.xml	This file contains common settings for the MLServer and the Graphics.
	MLSOEConfig.xml	This file contains SOE configuration for all PLCs.
Graphics pages	MLPLC_Config.htm	This Experion graphics page displays the base slot information of the PLCs.
	MLPLC_Status.htm	This graphics page displays the PLC status information.
	MLPLC_Driver.htm	This Experion graphics page displays the MLServer (Driver) diagnostics information.
Schema files	MLConfig.xsd	XML schema file for MLConfig.xml
	MLMonitor.xsd	XML schema file for MLMonitor.xml
	MLSOEConfig.xsd	XML schema file for MLSOEConfig.xml

The following table lists the graphics pages and xml files copied during installation:

Verify xml, exe, dll files and document copied to the installation path (typically *C:\Program Files\Honeywell\MasterLogicServer*) during installation, as shown in the following figure:

👔 MasterLogicServer						_8×
😋 🕞 🕨 - Computer - Local Disk (C:) - Program F	iles • Honeywell • MasterLogicServe	r		🔻 🔯 Search		<u></u>
Eile Edit View Iools Help ↓ Organize ▼ III Views ▼ _ Open		1 1				0
Fevorite Links	Name A SAtherop.MSFlexGridLib.dll GormoniLcensing.dll FKSAPIHelpler.dll Interop.MSFlexGridLib.dll Shrterop.MSKH2.dll Shrterop.Scripting.dll	 Date modified 9/1/2010 4:02 PM 9/23/2010 1:02 PM 9/23/2010 1:02 PM 8/7/2009 5:05 PM 9/1/2010 4:02 PM 9/21/2010 2:38 PM 9/1/2010 4:02 PM 	Type Application Exte Application Exte Application Exte Application Application Exte Application Exte Application Exte	 Size 48 KB 47 KB 46 KB 478 KB 60 KB 200 KB 32 KB 		
Configuration Studio Configuration Studio Configuration Studio Configuration Studio Configuration C	Chemeckomponent.al Mc_Sample.qdb McAppSettings McAppSettings.ad McAppSettings.ad McApScettings.ad McApScet	9/20/2019 3:24 MP	Application Exte QDB File XML Document XSD File CEXTFile OUT File Application Text Document Adobe Acrobat Application Exet. Document Application Exte Application Exte Application Exte Text Document	1,U24483 2,104469 344K8 42,K6 23346 23346 23346 23346 2,3794K6 146 2,3794K6 2,3794K6 2,3794K6 2,3794K6 2,3794K6 2,3794K6 2,32446 2,32446 2,32446 2,32446 2,32446 2,32446 2,32446 2,32446 2,32446 2,32446 2,32446 2,32446 2,32446 2,3246 2,34666 2,34666 2,34666 2,34666 2,346666 2,34666 2,34666 2,34666	-	

Figure 2.1-2: Files copied during installation

The following table lists the xml file, user guide and the template file copied during installation:

Туре	Filename	Description
xml file	MLAppSettings. xml	This file is used for configuring the MasterLogic server application settings.
Schema files	MLAppSettings. xsd	XML schema file for MLAppSettings.xml.
Document	MLServer_User s_Guide.pdf	This user's guide describes how to integrate the MasterLogic 200R/200 IEC with Experion Process Knowledge System.
Template	StatusPointBuild Template.txt	This is the template file for Point building.
Configuration Tool	MLServerConfig Tool.exe	This utility is used for configuring the PLC information and other information for the

2. Installing ML Server

2.1. Installing ML Server in Experion Server

Туре	Filename	Description
		MLServer.
Point Build Utility	PointBuildUtility. exe	This utility is used for building the Point corresponding to the PLC and the parameters associated with the Point.
License Application	MLServerLicens eRegistration.ex e	This application is used for obtaining a new license, update, terminate and transfer the license.
Demo certificate	MLPLC_Demo.c ert	This is a demo certificate file for MLServer for 100 PLC points.
QDB file	ML_Sample.qdb	This file contains sample ML Channel, ML Controller and sample Analog/Status Points.

The MLServer configuration tool, user's guide and the license application is accessed through **Start > Programs > Honeywell MasterLogic Server**. The shortcut for the Configuration tool is available on the desktop.



Figure 2.1-3 Shortcuts to MLServer utilities

2.2 Installing in Client machines

Overview

This section describes the procedure for installing the MLServer in Client machines

Prerequisites for installing MLServer

Following are the prerequisites.

- Ensure that you have installed Experion R400 Client (Console/ Flex).
- Ensure that you have logged into the Experion Client machine with Administrative privileges.

MLServer media

The MLServer CD contains the MLServer.exe file required to install MLServer.

Installing MLServer

To install MLServer, perform the following steps:

Step	Action					
1	Click MLServer.exe in the MLServer installation CD.					
	ATTENTION					
	If an earlier version of MLServer is installed already, the wizard displays an error message indicating that the previous MLServer version must be removed before installing the new version.					
	After performing the initial checks, the wizard displays the welcome screen.					
2	Click Next.					
	The wizard displays the License Agreement screen.					
3	Select I accept the terms in the license agreement.					
4	Click Next.					
	The wizard displays the Destination Folder screen.					
5	Click Next.					
	OR					
	Click Change to select a different folder.					

2. Installing ML Server 2.2. Installing in Client machines

Step	Action					
		TIP				
		Honeywell recommends retaining the default destination folder for installing MLServer.				
	The wizard displays the Ready to Install the Program screen.					
6	Click Install.					
	The wizard displays the Installing Honeywell – MasterLogic Server s displaying the status messages and the progress bar during the installa process.					
7	The wizard completes the installation and displays the Install Shield Wizard Completed screen:					
8	Click Finish to close the wizard.					
	8	ATTENTION				
		MLServer installer displays an error message "Error opening Installation log file. Verify that the specified log file location exists and is writeable". This occurs if Experion is not installed in the machine or if the installer is not run with administrator privileges.				
	Click OK.					

If the Experion client is installed, run MLServer installer with administrator privileges else install Experion client and install MLServer again.

Verifying MLServer installation

Verify dll files copied to the installation path (typically C:\Program

Files\Honeywell\MasterLogicServer) during installation, as displayed in the following figure.

MasterLogicServer								_ 8 ×
😋 🖓 🗢 Computer		MasterLogicServer			👻 🛃 S	earch MasterLogicServer		2
Organize 👻 Indude in libra	ary 👻 Share with 💌 New folder						i≡ • E	
🔆 Favorites	Name *	Date modified	Туре	Size				
E Desktop	🚳 QBcMasterLogic.ocx	1/25/2008 12:26 PM	ActiveX control	304 KB				
Downloads Recent Places	QBHelperRef_MLPLC.dll	8/6/2009 11:01 AM	Application extension	20 KB				
A Recent Places								
🕞 Libraries								
Documents								
Pictures								
🚼 Videos								
: Computer								
Network								
2 items								

2.3 Getting started

Configuring MasterLogic PLC - Experion integration

After installation, the following tasks are performed:

Step	Action
1	Installing one or more Ethernet modules (EUTB/FENET) in each PLC. Connecting the Ethernet modules to the Experion server through Ethernet cables.
2	Configuring the IP Addresses of these modules using the SoftMaster tool. Ping the IP Address from the Experion server for verifying the communication between the PLC and the Experion server.
3	Obtaining the license.
4	Configuring MLServer using Configuration Tool.
5	Verifying data exchange between PLC and Experion.

2.4 Removing MLServer



ATTENTION

- After removing the MLServer, the integration between the PLC and the Experion does not work.
- The MLServer must be removed only if the software is upgraded.
- Ensure that the MLServer is stopped before removal.
- Back up the xml files before performing the removal.

Using Add/Remove programs

To remove MLServer, perform the following steps:

Step	Action
1	Click Start > Settings > Control Panel.
2	Double-click Add/Remove Programs.
	The Add/Remove Programs window appears.
3	Select MLServer <version>and click Remove.</version>
4	Click Yes.
	The wizard displays Remove the Program screen.
5	Click OK .
	The wizard displays the MLServer <version></version> screen, displaying the status messages and the progress bar while the remove operation is in progress.

2. Installing ML Server

Using MLServer.exe in the installation CD

To remove MLServer using the MLServer.exe file in the installation CD, perform the following steps:

Step	Action
1	Click MLServer.exe in the installation CD.
	The Program Maintenance screen appears.
2	Click Remove and then Next.
	The Remove the Program screen is displayed.
3	Click Remove.
	The MLServer is successfully removed. There is no explicit message displayed on completion of removal.

2.5 Repairing MLServer

Using MLServer.exe in the installation CD

The MLServer application can be repaired to fix the installation errors. The missing or corrupt files, shortcuts, and registry entries can be fixed using this option.

To fix the installation errors, perform the following steps:

Step	Action		
1	Click MLServer.exe file in the installation CD.		
	The Program Maintenance screen appears.		
2	Select Repair and click Next .		
3	Click Repair .		
	The installation errors are successfully repaired. There is no explicit message displayed on completion of repair.		

2. Installing ML Server 2.5. Repairing MLServer

3. MLServer License

3.1 Overview

Background

After installing the MLServer, you must register and obtain the license prior to using it.

Before you begin

Before obtaining the license, ensure that you have the following items:

- Voucher ID This is provided by Honeywell when you purchase the MLServer.
- Host ID Files These files are automatically created when you open the MLServer License Registration Application or enable the ML Channel for the first time. Names of the Host ID files are <Computer Name>.Zip and <Computer Name>.HID, example: If the computer name is EPKSSRVRPC1 then the Host ID files created are EPKSSRVRPC1.zip and EPKSSRVRPC1.HID. These files are available in the installation path (typically C:\Program files\Honeywell\MasterLogicServer).

Obtaining the license

Request by email – Send an e-mail to <u>License.Server@honeywell.com</u> attaching the Host ID files that is <Computer Name>.Zip and <Computer Name>.HID and mentioning the voucher ID to obtain the license.



- Separate e-mail needs to be sent for getting license for each Experion server attaching the Host ID files of the corresponding computer.
- For a redundant Experion server two licenses must be obtained, one for each server machine.

Using the demo versions of MLServer

The license certificate for the demo version of MLServer is automatically created and activated when the MLServer is installed. The demo version of MLServer allows configuring 100 Points and there is no restriction on the number of PLCs. There is no validity period for the demo license.

ATTENTION

After obtaining the original license, the demo license of MLServer is replaced with the original license.

MLServer license features

The following two features are licensed for MLServer:

- Number of PLCs
- Number of PLC points that can be used across all the PLCs

For example, if the obtained license supports 10 PLCs and 1000 PLC points,

- The MLServer communicates with a maximum of 10 PLCs.
- A maximum of 1000 PLC points can be used for data communication across all the PLCs.

Experion point and PLC point

Experion Analog/Status points are configured using the Quick Builder in the MasterLogic Controllers for data communication with the PLC. The PLC points defined within these Experion points provide a way of addressing the location in PLC where the values are stored.
3.2 Obtaining a new license

Obtaining a new license through e-mail

8	AT	TENTION
	You lice	u must be a member of Product Administrators group to obtain the new onse. If not, perform the following steps:
	1.	Choose Start > Programs > Honeywell MasterLogic Server.
	2.	Right-click License Registration.
	3.	Select Run as administrator.

The process of obtaining a new license through e-mail involves the following steps:

Step	Action
1	Obtain the voucher ID from Honeywell.
2	Create the Host ID files by opening the MLServer License Registration Application or enable the ML Channel for the first time.

3. MLServer License

3.2. Obtaining a new license

 Send an e-mail to License.Server@honeywell.com with the following details In the Subject line, type the voucher ID as – VOUCHID :< voucher ID>. Fexample, type – VOUCHID: MLPLC_1PLC_50POINTS. Attach the Host ID files that is <computer name="">.zip and <computer name="">.HID files.</computer></computer> 	Action
 In the Subject line, type the voucher ID as – VOUCHID :< voucher ID>. F example, type – VOUCHID: MLPLC_1PLC_50POINTS. Attach the Host ID files that is <computer name="">.zip and <computer name="">.HID files.</computer></computer> 	honeywell.com with the following details:
 Attach the Host ID files that is <computer name="">.zip and <computer name="">.HID files.</computer></computer> VOUCHID:MLPLC_IPLC_SOPOINTS - Message File Edit View Insert Format Iools Table Window Help X Send Image: Server Image: Cc Subject: VOUCHID:MLPLC_IPLC_SOPOINTS 	her ID as – VOUCHID :< voucher ID>. For LC_1PLC_50POINTS.
VOUCHID:MLPLC_1PLC_SOPOINTS - Message Elle Edit Yiew Insert Format Iools Table Window Help Arial Image: Server Image: Cc Subject: VOUCHID:MLPLC_1PLC_SOPOINTS	omputer Name>.zip and <computer< th=""></computer<>
File Edit View Insert Format Tools Table Window Help X Image: Server Image: Server Image: Server Image: Server Image: Server Image: Subject: VOUCHID:MLPLC_1PLC_SOPOINTS	ige
Arial Arial Send Image: Comparison of the server Image: Comparison of the server Subject: VOUCHID:MLPLC_1PLC_SOPOINTS	Table Window Help X
Image: Send Image: Send </th <th>😫 🞯 📖 Read 🍟 🕻 Arial 🔹 🙄</th>	😫 🞯 📖 Read 🍟 🕻 Arial 🔹 🙄
License Server Cc Subject: VOUCHID:MLPLC_1PLC_50POINTS	📸 🖹 Options 🔹 HTML 🔹
Subject: VOUCHID:MLPLC_1PLC_50POINTS	
Subject: VOUCHID:MLPLC_1PLC_50POINTS	
	5
Attach B <u>EPKSSRVR1A.HID (424 B);</u> B <u>EPKSSRVR1A.zip (568 B)</u>	EPKSSRVR1A.zip (568 B)
	▲ ↓ ↓ ↓
ATTENTION	
The Subject line is case-sensitive.	se-sensitive.
 Other than the Subject line, do not type any information in the-mail. 	ot line, do not type any information in the
 After receiving the e-mail, Honeywell sends the new license certificate in zip file. This file must be unzipped using the password, password. 	well sends the new license certificate in a dusing the password, password .
4 Save the license certificate in the MLServer system. This license certificate can be re-installed if the Experion server machine is reformatted.	_Server system. This license certificate erver machine is reformatted.

Installing license certificate

To install the new license certificate received from Honeywell, perform the following steps:

Step	Action		
1	Click Start > Programs > Honeywell MasterLogic Server > License Registration.		
	The MLServer License Registration dialog box appears.		
2	Click Browse to select the license certificate received from Honeywell.		
	Select License Certificate file		
	Look jn: 🗀 MasterLogicServer 💽 🖛 🗈 📸 🕬		
	HIDUtil.exe MLPLC_Demo.cert		
	SLicenseComponent.dll		
	ML_Sample.qdb 🔤 MLPLC_StatusPoints.pnt		
	2 MLAppSettings.xml HLPLCServer.exe		
	MLAppSettings.xsd		
	MLPLC_1PLC_50POINTS Node 0.cert MLServer_User's_Guide.pdf		
	File name: MLPLC_1PLC_50P0INTS Node 0.cert Open		
	Files of type: Certificate files(*.cert) Cancel		

3. MLServer License

3.2. Obtaining a new license

Step

Action

• The selected license certificate appears in **Certificate file path** as shown in the following figure:

ML Server License Registration	×
Pagistered Llagre	
negistered Osers.	
To obtain certificate file, please send an E-mail with subject VOUCHID: <your voucher<br="">Number> to License.Server@Honeywell.com attaching the following HostID files:</your>	
C:\Program Files\Honeywell\MasterLogicServer\EPKSSRVR1A.HID	
C:\Program Files\Honeywell\MasterLogicServer\EPKSSRVR1A.ZIP	
Certificate file path:	
C:\Program Files\Honeywell\MasterLogicServer\MLPLC_1PLC_50POINT	0
Non Registered Users:	
If you are interested to register, please feel free to contact:	
Honeywell Process Solutions, 17, Changi Business Park Central 1, Singapore 486 073. Tel: (65) 6355-2828. Fax: (65) 6445-3033. License.Server@honeywell.com	
OK Cancel	

3 Click OK.

The **MLServer License** dialog box appears displaying the licensed number of PLCs and PLC points.



ATTENTION

The license need not be terminated before uninstalling MLServer software. The license is retained and active when the MLServer software is re-installed in the same machine.

3.3 Updating license certificate

Updating license certificate

The updated license certificate can be received from Honeywell with additional features (like more number of points). After installing the license certificate on an Experion server, the features including the number of points are updated.

To update the license certificate, perform the following steps:

Step	Action	
1	Obtain the new voucher ID (supersede of the original voucher) from Honeywell.	
2	Send an e-mail to License.Server@honeywell.com with the following detail:	
	 In the Subject line, type the voucher ID as – VOUCHID :< voucher ID>. For example, type – VOUCHID: MLPLC_1PLC_50POINTS _Supersede. 	
	 Attach the Host ID files that is <computer name="">.zip and <computer Name>.HID files.</computer </computer> 	
	The Subject line is case-sensitive.	
	• Other than the Subject line, do not type any information in the e-mail.	
	 After receiving the e-mail, Honeywell sends the new superseded license certificate in a zip file. This file must be unzipped using the password, password. 	
3	Save the license certificate in the MLServer system. This license certificate can be re-installed if the Experion server machine is reformatted.	
4	Choose Start > Programs > Honeywell MasterLogic Server > License Registration.	

3. MLServer License

3.3. Updating license certificate

The server cicense	
License Information	
Product Name	MLPLC
Version	R300
Licensed Number of PLCs	0
Licensed Number of PLC Points	; 50000
Supersede License	Terminate License Cancel
Supersede License	Terminate License Cancel

6 Type the password as mlplcr400 and click OK.



Step	Action
	The Re-license MLServer dialog box appears.
	Re-License ML Server
	New certificate file path:
	Browse
	If you want to obtain certificate with upgraded features, please feel free to contact:
	Honeywell Process Solutions, 17, Changi Business Park Central 1, Singapore 486 073. License.Server@honeywell.com
	OK Cancel

- 8 Click **Browse** to select the new license certificate.
- 9 Select the file and click **Open**.
 - The selected certificate appears in **New certificate file path** as shown in the following figure:

New certificate file path:	
D:\MLPLC_5PLCS_20000	PTS Node 0.cert Brow
Honeywell Process 17, Changi Busines License.Server@h	s Solutions, ss Park Central 1, Singapore 486 073. oneywell.com



3. MLServer License

3.3. Updating license certificate

Step	Action
10	Click OK.
	The following message box appears.
	MLServerLicenseRegistration
	MasterLogic Server has been successfully Re-Licensed Please restart ML Server for the new license to take effect
	OK]
11	Click OK.
	The MLServer License Registration dialog box appears displaying the superseded license features.

12 Restart MLServer for the new license to take effect.

3.4 Transferring license certificate

The process of transferring the license certificate from one Experion server to another involves the following tasks:

- Terminate the license certificate on the first Experion server.
- Install the license certificate on the new Experion server.



CAUTION

If the license is terminated, it cannot be re-installed in the same machine. To re-install the license the machine must be formatted.

3. MLServer License

3.4. Transferring license certificate

Terminating license certificate

To terminate the license certificate, perform the following steps on the first Experion server:

Step	Action
1	Click Start > Programs > Honeywell MasterLogic Server > License Registration.
	The MLServer License dialog box appears.
	ML Server License Registration
	Registered Users:
	To obtain certificate file, please send an E-mail with subject VOUCHID: <your voucher<br="">Number> to License.Server@Honeywell.com attaching the following HostID files:</your>
	C:\Program Files\Honeywell\MasterLogicServer\MLPLCSERVER.HID
	C:\Program Files\Honeywell\MasterLogicServer\MLPLCSERVER.ZIP
	Certificate file path:
	Browse
	Non Registered Users:
	If you are interested to register, please feel free to contact:
	Honeywell Process Solutions, 17, Changi Business Park Central 1, Singapore 486 073. Tel: (65) 6355-2828. Fax: (65) 6445-3033. License.Server@honeywell.com
	OK Cancel

2 Click Terminate License.

The Enter Password dialog box appears.

3 Type the password as mlplcr400 and click OK.



3. MLServer License 3.4. Transferring license certificate

Step	Action
	The following message box appears.
	MLServerLicenseRegistration
	If you terminate this license, ML Server will not run on this machine!! If you want to re-license ML Server, Terminate License is not required, use Supersede license option Do you want to proceed with the termination?
	Yes No
4	Click Yes to continue.The license is terminated and the following message appears.
	MLServerLicenseRegistration
	ML Server license has been successfully terminated on this machine!! Termination file generated at C:\Program Files\Honeywell\MasterLogicServer\MLPLCR100.term Please use this for transfering license to a different machine
	<u>ок</u>
	ATTENTION
	The *.term file generated after terminating the license can be used for transferring the license to a different machine.

Transferring license certificate

To transfer the license certificate to a different Experion server, perform the following steps:

	Step	Action
_	1	Create the Host ID files by opening the MLServer License Registration Application or enable the ML Channel for the first time.
	2	Send an e-mail to License.Server@honeywell.com with the following details:
		 In the Subject line, type the voucher ID as – VOUCHID :< voucher ID>. For example, type – VOUCHID: MLPLC_1PLC_50POINTS.
		 Select the <computer name="">.HID and the termination certificate (*.term) files and create a zip file with the password, password. Attach this zip file to the e-mail.</computer>
_		Note: Ensure not to select the option to save the folder information while
R400 March 201	1	MasterLogic-Experion Integration - User's Guide 4 Honeywell

3. MLServer License

3.4. Transferring license certificate

Step	Action
	zipping the files.
	ATTENTION
	The Subject line is case-sensitive.
	• Other than the Subject line, do not type any information in the e- mail.
	• After receiving the e-mail Honeywell sends the new license certificate in a zip file. This file must be unzipped using the password, password .
4	Save the license certificate in the MLServer system. This license certificate can be re-installed if the Experion server machine is reformatted.
5	Install the new license certificate.
	REFERENCE – INTERNAL
	Installing license certificate.

48

4.1 Overview

Configuring MasterLogic server

To communicate with the PLCs, the MLServer must be configured with PLC information. This configuration involves the following tasks:

- Configuring MLServer using Configuration Tool
- Configuring MLServer using Quick Builder
- Downloading Quick Builder Points to Experion

The following diagram depicts the configuration of MLServer:



Figure 4.1-1: MasterLogic Server configuration

4.2 Configuring MLServer using Configuration Tool

MLServer Configuration Tool

The PLC information must be configured for the MLServer using the MLServer Configuration Tool. The PLC information like PLC Name, Id, Type, IP Address, and Logs are configured for each PLC in the plant. The tool consists of the following tabs:

- PLC
- LOGS
- ADVANCED

ATTENTION The PLC information configured using the configuration tool must be saved.

The MLServer must be restarted for the changes to take effect. However, the exception is that when the MLServer or Protocol Log file settings are changed, there is no need to restart the MLServer.

To configure the PLC information, perform the following steps:

Step	Action
1	Choose Start > Programs > Honeywell MasterLogic Server > Configuration Tool.

The following window appears.

ML Server Configuration				
ML Server	General			
	General			
	EPKS Asset Name	mitest	Log Retention Days	30
	PLC Info Update Rate	30	l	
	ML Server Logs			
	Log Folder Path	C:\\Program Files\\H	oneywell\\MasterLogic	Server\\GeneralLogs\
		🔽 Request 🛛 🔽	Response 🔽 Tra	ace 🔽 Monitor
	Protocol Logs			
	Log Folder Path	C:\\Program Files\\H	oneywell\\MasterLogic	Server\\GeneralLogs\
		🔽 Request 🛛 🕅	Response 🛛 🗖 Tra	ice 🗖 Hex
	Scan Period (sec	ə)		
	General Diagnostic	s 30 PLC Diag	nostic 30	IO Read 600
	AD Module Read	10 Special M	odule Read 10	All Module Read 10

By default, the PLC ML01 appear in the window.

Note: The first PLC is selected in the tool.

- 2 <u>Configuring PLC Information.</u>
- 3 <u>Configuring PLC Log information.</u>
- 4 <u>Configuring MLServer advanced information</u>
- 5 Click Save Configuration.

The configuration is saved successfully:

6 Click OK.

Step

_

4.2. Configuring MLServer using Configuration Tool

Step	Action
7	Repeat steps 1 through 7 for each PLC in the plant.
	Note: The PLCs must be added using the procedure Adding a new PLC.
-	Tip The ToolTip appears when the cursor is placed over the options available in the MLServer Configuration tool. The ToolTip provides additional information about the setting options

Configuring PLC Information

The PLC tab in the configuration tool is used for the following purposes:

- Configuring the general PLC information used by MLServer to communicate with the PLC.
- Enabling/Disabling the IO Read and other features within the MLServer.

To configure the PLC information, perform the following steps:

Step

1

Action

Select the PLC ID from the left pane.

The PLC information appears in the **PLC** tab as shown in the following figure.

ML Server	PLC LOGS ADVANCED	
	General	
	PLC ID ML01	IP Address1 10.0.0.131
	PLC Name MLPLC1	IP Address2 10.0.0.132
	PLC Type ML200-IEC	IP Address3 10.0.1.131
	EPKS Asset Name MLTEST	IP Address4 10.0.1.132
	Monitor	RTC
	🔽 EPKS Write 🔽 Status Read	I Enable Read/Write
	IO Read I⊄ Alarm Raising	Sync Interval 5
	✓ Auto Point Build	Deadband 10

S	Step	Action				
	3	Enter PLC Name.				
		Note: The PLC Name is a unique name for each PLC. It is alphanumeric and there is no limit on the number of characters. Example – MLPLC1. Separate logs are created for each PLC based on the PLC ID.				
	4	Select the PLC type from the PLC Type list box				
		Note: The supported PLCs are ML200-IEC and ML200R.				
	5	Enter the EPKS Asset Name for this PLC. All the Alarms/Events raised by the MLServer are in this asset.				
		REFERENCE – EXTERNAL				
		For more details on configuring and creating asset, refer Experion Knowledge Builder > Experion R400 > Configuration > Enterprise Model Builder User's Guide > Accessing Enterprise Model Builder > Creating and Configuring Assets.				
	6	Enter IPAddress1, IPAddress2, IPAddress3 and IPAddress4.				
		Note:				
		IPAddress1- Represents the primary PLC's IP address in Primary Network.				
		IPAddress2- Represents the secondary or redundant PLC's IP address in Primary Network.				
		IPAddress3- Represents the primary PLC's IP address in Secondary Network, in case of dual network.				
		IPAddress4- Represents the secondary or redundant PLC's IP address in Secondary Network, in case of dual network.				
		The MLServer searches for a valid PLC connection in the following sequence: IP Address1, 2, 3 and 4.				
7		To view PLC status information in the Experion graphics display select Status Read and EPKS Write check boxes in Monitor .				
	8	To view IO module information in the Experion graphics display select IO Read and EPKS Write check boxes in Monitor .				
	9	Auto Point Build check box is used for building the ML points. It must be enabled to use the PLC.				
		If any PLC is configured and not used, then disable the check box.				
R400 March 2011	1	MasterLogic-Experion Integration - User's Guide				

4. Configuration 4.2. Configuring MLServer using Configuration Tool

Step		Action
10	To view PLC status Ala display select Status R	rms / Messages in the Experion Alarm summary ead and Alarm Raising check boxes in Monitor.
11	To view the updated RT Read/Write in RTC and	C time in Experion graphics display select Enable EPKS Write under Monitor.
	Enable Read/Write	If Yes , it allows MLServer to read/write RTC time from/to PLC.
	Synch Interval	Indicates the time frequency for reading the RTC time from the PLC and updating in Experion.
		Note: If this value is 0 then the RTC time is not read or written from/to the PLC.
	Deadband	The value set for Deadband under RTC indicates the difference in time between the PLC and System Time beyond which the RTC time is written to the PLC.
		The PLC time is updated with the Experion system time, if the time difference is equal to or greater than RTC Deadband.
		Note: If this value is 0 then the RTC time is not written to the PLC.
12	To view PLC related ala and disconnection in the check box under Monit	arms like MLServer Licensing Alarms, PLC connection e Alarm summary display, select Alarm Raising or.

Configuring PLC Log information

The LOGS tab in the configuration tool is used for the following purposes:

- Configuring settings for transfer of the PLC Logs into the MLServer
- Enabling/Disabling the PLC level MLServer and Protocol logs

To configure the PLC log information, perform the following steps:

Step Action

1

Select the PLC ID from the left pane and click LOGS tab.

ML01			3 1			
	PLC Logs	nitial History	Log To File	Events	Event Category	Scan Period (sec
	Error			Γ	System Event 💌	10
	System	Γ		Г	System Event 💌	10
	Mode				System Event 💌	60
	Shutdown			Г	System Event 💌	60
	ML Server	Logs				
	Log Folder F	ath C:\\\	Program Files\\	Honeywell\	\MasterLogicServer\	\PLCLogs\\
		F	lequest F	Respons	e 🗖 Trace	Monitor
	Protocol Lo Log Folder F	ath	Program Files\\	Honeywell\	\MasterLogicServer\	\PLCLogs\\
		F	lequest 🛛	Respons	e 🗖 Trace	☐ Hex

2 Select the **Initial History** check box if the already existing events in the PLC Log need to be transferred to Experion server or Log files during startup of the MLServer.

Note: Honeywell recommends that this option need not be selected.

3 Select the Log To File check box if the events in the PLC Log need to be transferred to corresponding MLServer log files.

Note: Honeywell recommends that this option need not be selected.

4.2. Configuring MLServer using Configuration Tool

Step	Action
4	Select the Events check box if the events in PLC Log need to be transferred to Experion server as Events/Alarms.
	Note: Honeywell recommends that this option can be selected for the desired PLC log.
5	The Event Category selection indicates whether the event needs to be transferred to Experion as Alarms or Events. The possible values are System Alarm and System Event.
	Note: Honeywell highly recommends that the default System event setting must not be changed.
6	Click under MLServer Logs to browse and select the folder path to save the MLServer log files.
7	Click under Protocol Logs to browse and select the folder path to save the Protocol log files.
8	Select Request, Response, Trace and Monitor under MLServer Logs to enable the generation of corresponding logs.
9	Select Request, Response, Trace and Hex under MLServer Logs to enable the generation of corresponding logs.
R	ATTENTION

Honeywell recommends not enabling Hex log as the Hex logs need more disk space and reduce the overall system performance.

Configuring MLServer advanced information

The **ADVANCED** tab in the configuration tool is used for configuring MLServer advanced settings.

To configure the MLServer advanced information, perform the following steps:

Step	Action

1 Select the PLC ID from the left pane and click **ADVANCED** tab.

The MLServer advanced information appears as shown in the following figure:

ML Server	PLC LOGS ADVANCE	Ð		
	General	20		#Bases(Optional)
	Heart Beat Timeout	130	B1 B2 B3	
	Protocol PLC Command Timeou Number Of Connection Attempts Connect Attempt Gap	R 2000	85 86 87	>>
1				



ATTENTION

Honeywell recommends that these settings and the default values (except for configured bases) need not be changed. If you need to change this configuration, contact the Honeywell technical support team.

4.2. Configuring MLServer using Configuration Tool

Configure Bases is an option provided to configure the existing Bases to improve the performance of MLServer. This is an optional setting, For ML200R, bases 1 to 31 are available and for ML200IEC bases 1 to 7 are available.

© ML Server └─ ¶ ML01	PLC LOS ADVANCED	ConfiguredBases(Optional)
	Protocol PLC Command Timeout 2000 Number Of Connection Attempts 3 Connect Attempt Gap 2000	B5 B6 B7 >>
Save Configuration		

Figure 4.2-1: Advanced tab for ML200IEC

ML Server	PLC LOGS ADVANCED	
	General Heart Beat Timeout 30	dd Subscription
	Protocol PLC Command Timeout 2000 Number Of Connection Attempts 3 Connect Attempt Gap 2000	B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B15 B15 B15 B15 B15 B15 B15 B15 B15
		818 819 820 821 822 *

Figure 4.2-2: Advanced tab for ML200R

MasterLogic-Experion Integration User's Guide	
Honeywell	

For example, to configure bases 2 and 30, perform the following steps.

Step	Action
1	Select Base2 from the left list.
2	Click >> button.
3	B2 will be visible in the list on right side.
4	Click Save Configuration.

Note: If the configured bases are given, only the configured bases will be visible in Station. If not configured, few non-existing bases will also be visible in the Station.

Adding a new PLC

The PLCs in the plant must be added and configured in the MLServer Configuration tool for the MLServer to communicate with the PLCs.

To add a new PLC, perform the following steps:

Step	Action
1	Click Start > Programs > Honeywell MasterLogic Server > Configuration Tool.
2	Right click MLServer and select Add PLC.

4. Configuration 4.2. Configuring MLServer using Configuration Tool

E-Q ML Server				
Add PLC	Coneral			
	General EPKS Asset Name PLC Info Update Rate	mitest	Log Retention Days	30
	ML Server Logs	C:\\Program Files\\H	oneywell\\MasterLogic Response 🔽 Tr	Server\\GeneralLogs\ ace
	Protocol Logs Log Folder Path	C:\\Program Files\\H	oneywell\\MasterLogic Response 「Tr	Server\\GeneralLogs\ ace
	Scan Period (sea General Diagnosti AD Module Read	c) c 30 PLC Diagr 10 Special M	nostic 30 odule Read 10	IO Read 600 All Module Read 10

A new PLC is added as shown in the following figure.

ML01	[1000]1001000]	
IIIII 1 ML02	General	
	PLC ID ML02	IP Address1 0.0.0.0
	PLC Name MLPLC2	IP Address2 0.0.0.0
	PLC Type ML200R -	IP Address3 0.0.0.0
	EPKS Asset Name System	IP Address4 0.0.0.0
	Monitor	RTC
	🔽 EPKS Write 🔽 Status Read	I Enable Read/Write
	✓ IO Read ✓ Alarm Raising	Sync Interval 5
	🔽 Auto Point Build	Deadband 10

4.2. Configuring MLServer using Configuration Tool

Deleting a PLC

_

To delete a PLC, perform the following steps:

Step	Action
1	Click Start > Programs > Honeywell MasterLogic Server > Configuration Tool.

2 Right-click the PLC ID from the left pane and select **Delete PLC**.

I Delete	PLC			
	PLC ID	ML02	IP Address1	0.0.0.0
	PLC Name	MLPLC2	IP Address2	0.0.0.0
	PLC Type	ML200R 💌	IP Address3	0.0.0
	EPKS Asset Name	System	IP Address4	0.0.0.0
	Monitor		RTC	
	F EPKS Write	🔽 Status Read	🔽 Enable Re	ad/Write
	🔽 10 Read	🔽 Alarm Raising	Sync Interval	5
	🔽 Auto Point Build	J	Deadband	10

The following confirmation message appears.

ML Server Configu	ration			×
This will remove al	the configuration details	for PLC ML <u>N</u> o	.05. Do you want	to continue?

If you select Yes, the PLC configuration information is deleted.

Configuring MLServer general information

To configure the MLServer general information, perform the following steps:

Step	Action
1	Click Start > Programs > Honeywell MasterLogic Server > Configuration Tool.

- 2 Select **MLServer** from the left pane.
 - The following window appears:

-® ML Server L ML01	General					
	General	100.00				
	EPKS Asset Name	e mitest		Log Retention Days 30		
	PLC Info Update Rate	30				
	ML Server Logs					
	Log Folder Path	C:\\Progra	am Files\\Honey	well\\MasterLo	ogicServer\\Gene	ralLogs'
		✓ Reques	st 🔽 Res	sponse 🔽	Trace 🔽	⁷ Monitor
	Protocol Logs					
	Log Folder Path	C:\\Progra	am Files\\Honey	well\\MasterLo	ogicServer\\Gene	ralLogs ^v
		☑ Reque	st 🔽 Res	sponse 🗖	Trace 🗌	Hex
	Scan Period (see	3		2		
	General Diagnosti	30	PLC Diagnostic	_c 30	IO Read	600
	AD Module Read	10	Special Module	e Read 10	All Module R	lead 10
1	22					

- 3 Enter the **EPKS Asset Name** for the general MLServer Alarms. All Alarms raised by the MLServer is in this asset.
- 4 Enter the Log Retention Days for the MLServer and Protocol Logs. The MLServer automatically deletes the log files that are older than these days.
- 5 Enter the PLC Info Update Rate which indicates how fast the changes in the dynamic MLConfig XML parameters (Log files enabling / disabling, and so on) are detected.

4.2. Configuring MLServer using Configuration Tool

Step	Action
6	Click under MLServer Logs to browse and select the folder path to save the MLServer log files.
7	Select Request, Response, Trace and Monitor under MLServer Logs to generate the corresponding general logs.
8	Click under Protocol Logs to browse and select the folder path to save the Protocol Stack log files.
9	Select Request, Response, Trace and Hex under Protocol Logs to generate the corresponding general logs.
10	Enter the scan period for General Diagnostic, PLC Diagnostic, IO Read, AD Module Read, Special Module Read and All Module Read under Scan Period.
	General Diagnostics – Frequency at which the general diagnostics parameters in the Driver Info Experion display are collected.
	PLC Diagnostics – Frequency at which the PLC specific diagnostics parameters in the Driver Info Experion display are collected.
	IO Read – Frequency at which the IO Module information is read from all the PLCs.
	AD Module Read – Frequency at which the AD Module information is read from the PLCs.
	Special Module Read – Frequency at which the Special Module parameters are read from the U memory area of the PLCs. The Bad PV is set for the corresponding Experion parameters based on this parameter.
	All Module Read – Frequency at which the module level errors, Max/Min/Current Scan periods are read from the F Area for the ML200 PLCs.
11	Click Save Configuration.
	ATTENTION
	The configuration must be performed with MLConfig utility only in primary server.
	For all the configuration changes to be reflected in backup server, the replication of abstract folder and the Database

the replication of abstract folder and the Database synchronization must be performed between the primary and backup servers.

4.3 Configuring MLServer using Quick Builder

Overview of Quick Builder components

The MLServer must be configured using the Quick Builder. The configuration involves the following tasks:

- Configuring the Quick Builder component manager
- Configuring a MasterLogic Channel
- Configuring a MasterLogic Controller
- Configuring an Experion Point (Analog and Status)



REFERENCE - EXTERNAL

For more details on Experion Quick Builder tool, see Experion PKS Knowledge Builder > Experion PKS R400 > Configuration > Quick Builder Guide.



TIP

For example on configuring ML Channel, Controller and Points, refer to the sample QDB file (ML_Sample.qdb) in the installation folder.

Configuring the Quick Builder component manager

To enable configuring the MasterLogic Channel, MasterLogic Controller and Analog and Status Points in Quick Builder, the Quick Builder component manager must be configured.



ATTENTION

You must have Experion OPC client license (Model number: EP-OPCCLI) to configure the MasterLogic Channel, Controller and Point.

4.3. Configuring MLServer using Quick Builder

To configure the Quick Builder component manager, perform the following steps:

Step	Action
1	Create a new project in Quick Builder.
	The Enable Components dialog box is displayed.
2	Select Experion server from Server drop-down list.
3	Click Enable Components tab.
4	Select MasterLogic from Other components.
	LCS620 MA500 MasterLogic Maxpro Micromax Modbus Moore APACS Moore Mycro

5 Select Analog Point and Status Point from Point components.





Configuring a MasterLogic Channel

The MasterLogic Channel forms the interface between one or more MasterLogic Controllers and the MLServer.



ATTENTION

Configure only one MasterLogic Channel in an Experion server even if there are many PLCs that need to be connected through MLServer.

To configure the MasterLogic Channel, perform the following steps:

Step	Action
1	Create a new project in Quick Builder.
2	Right-click the Channel icon from the right-pane of the Quick Builder window and select Add Item .
	Open Item Type Add Item Channels

The following dialog box appears.

4.3. Configuring MLServer using Quick Builder

Step	Action	
	Add Item(s)	
	Add Items: Number of items to Add: Max:	ОК
	Channel Name-CHAMAS Type: CHAMAS1	Cancel
	MasterLogic Channel C Format	
	Prefix CHAMAS	
	C numeric Variable C numeric with a character field C letter Start 0 Step 1	width
	Suffix	
	Summary Add one item named 'CHAMAS'	

- 3 Select Channel and MasterLogic Channel type in the Add Item(s) dialog box.
- 4 Select **Channels** icon from the left-pane of the Quick Builder window. From the right pane, select the channel that you want to configure.
- 5 Configure the **Main** tab of the Channel as follows:

Step	Action
	Main
	Name CHAMAS1
	Description
	Marginal Alarm Limit 25
	Fail Alarm Limit 50
	Connect Timeout
	Read Timeout 2 secs
	Host Name (Preferred Data Source) localhost
	Host Name (Alternate Data Source)
	Diagnostic Scan Period 60 Scan HCI Component Hci.MLPLCServer
	Item Type MasterLogic Channel Last Modified 4/24/2007 12:34:47 PM Item Number CHN01 Last Downloaded
6	Ensure that the Host Name contains localhost.
7	Select the Background Scan period.
	Note: This parameter is used in conjunction with the Controller's Background Scan parameter. Honeywell recommends you to retain the default value (60).
	Ensure that the Item Number for the channel configured is unique.
	If the number of OPC channels configured in the Experion server is more than 5 or the number of OPC controllers configured is more

more than 5 or the number of OPC controllers configured is more than 20, then increase the channel "Connect Timeout" parameter to 15 seconds and "Read Timeout" parameter to 3 seconds. If the load is more than this limit, increase the connect timeout to 20 seconds.

4.3. Configuring MLServer using Quick Builder



Configuring a MasterLogic Controller

The MasterLogic Controller is Quick Builder's mechanism for configuring one or more groups with the same deadband. It is a logic grouping and does not represent a physical device (that is the PLC controller).

To configure the MasterLogic Controller, perform the following steps:

Step	Action	
1	Create a new project in Quick Builder.	
2	Add a MasterLogic Channel to the project.	
	For more details on adding a MasterLogic Channel, see Co a MasterLogic Channel.	onfiguring
3	Right-click the Controller icon from the right-pane of the Quick Buil window and select Add Item .	der
	The Add Item(s) dialog box appears:	
4	Select Controller and MasterLogic Controller in the Add Item(s) box.	dialog
5	Select the Controllers icon from the left-pane of the Quick Builder From the right pane, select the controller that you want to configure.	window.
	MasterLogic-Experion Integration User's Guide Honeywell	R400 March 2011

Step	Action
6	Configure the Main tab of the Controller as follows:
	Main
	Name CONMAS1
	Description Master Logic Controller
	Channel Name CHAMAS1
	Marginal Alarm Limit 25
	Fail Alarm Limit 50
	Background Scan Enabled
	Deadband 0.000
	Item Type MasterLogic Controller Last Modified 5/30/2007 3:40:02 PM Item Number RTU001 Last Downloaded
7	Select the appropriate Channel from Channel Name list.
8	Select Enabled from Background Scan list.
	Note: The PLC Points are scanned at Channel's Background Scan period interval if the Background scan period is enabled.
9	Select deadband value from Deadband drop-down list.
	Note: This deadband applies to all items referenced by Point parameters belonging to this Controller. The unit of measurement is %.
	REFERENCE - EXTERNAL
	For more details on adding and configuring a Controller, see Experion Knowledge Builder > Experion PKS R400 > Configuration > Quick Builder Guide > Configuring Controllers and Channels.

4.3. Configuring MLServer using Quick Builder

Configuring an Experion Point (Analog and Status)

Analog and Status Points are used for exchanging the MasterLogic data with Experion. The Quick Builder Point parameter represents a mapping to an item on the MLServer.



Configuring an Experion Analog Point

To configure the Experion Analog Point, perform the following steps:

Step	Action									
1	Create a new project in Quick Builder.									
2	Add a MasterLogic Channel and one (or more) MasterLogic Controller (s) corresponding to each PLC configured in the Plant.									
	For more details on adding MasterLogic Channel and Controller, see <u>Configuring a MasterLogic Channel</u> and <u>Configuring a MasterLogic Controller</u> .									
3	Right-click the Point icon from the right-pane of the Quick Builder window and select Add Item .									
	The Add Item(s) dialog box appears:									
4	Select Point and Analog Point type in the Add Item(s) dialog box.									
5	Select the Points icon from the left-pane of the Quick Builder window. From the right pane, select the point that you want to configure.									
6	Configure the Main tab as follows:									
Step	Action									
---	--	--	--	--	--	--	--	--	--	--
Main Display Alarms Control Auxilary History Scripts User Defined										
Point ID	Point ID POIANA1									
Enterprise Mode Item Name Description	Address Builder									
Parent Asse	ML_ASSET1									
PV Source Address	CONMAST MLC Controller CONMAST									
PV Scan Period	Location MI 01 2MW/20\$DEV									
Engineering Units	Help									
100% Range Value	100									
Drift Deadband (%)	0.000									
PV Algo	NONE									
Action Algo	NONE									
	🔽 Scanning Er									
Item Type	Analog									
Last Modified										
Last Downloaded										
7 Enter t (value	e Parent Asset for the point. All Alarms/Events raised by Experion hange Events, Range checking Alarms, and so on.) is in this Asset.									
	ТІР									
	Honeywell recommends that the Parent Asset configured for the points here must be the same as the EPKS Asset Name configured in the MLServer Configuration Tool for the PLC referred in this point.									
8 Select	ellipse button next to PV Source Address.									

The Address Builder dialog box is displayed.

9 Select **Controller** from **Address Type** drop-down list and appropriate Controller name from **Controller** drop-down list. Enter PLC Point name in **Location.**

Note: The PLC Point name includes the PLC ID, memory area, command, and data type. The name of the user-defined data format is also provided in the PLC Point name.

4. Configuration 4.3. Configuring MLServer using Quick Builder

5	Step	Action									
			• For more configura	details on PLC Point name, refer to <u>F</u> tion details.	letails on PLC Point name, refer to <u>PLC Point</u> on details.						
			 For more details on user-defined data format, see <u>Defining</u> <u>data formats</u>. 								
			WARNING								
		_	If the user def entire item is i	ined data format is not defined in Exp not recognized by the MLServer.	erion, then the						
	10	Configur	e the Control ta	ab as follows:							
	Main	Display Alarn	ns Control Auxilary	History Scripts User Defined							
			Source Address	Dest Address Scan Period (secs)							
		Setpoint (SP)	%MW21\$DEV								
		Output (OP)	%MW22\$DEV	Auuress builder							
		Mode (MD)		Address Lype Controller	ОК						
				- Details	Cancel						
			Control Confirmat								
			Low Control Limit								
	C)utput (OP) (%)	0	Location ML01.%MW21\$DEV							
	Set	point (SP) (EU)			Help						
		,									
	Contro	Deadband (%)	1.000 💌								
	C	Control Timeout	None								
		Control Level	0								
		Normal Mode	AUTO -								
			Disable mode ch								

Step	Action							
11	Enter setpoint's Source Address and Dest Address through Address Builder dialog box. (Optional)							
	Note:							
	• Setpoint Source Address: This denotes the address from where SP reads the associated parameter value that can be viewed in the Experion Station.							
	 Setpoint Dest Address: The value written to SP is transferred to this location in the PLC. 							
	Honeywell recommends you to configure the same PLC memory address for both the source and destination addresses of the SP parameter.							
12	Select the Scan Period for SP.							
	Note: This represents the interval at which the SP parameter's value is updated from the PLC Address specified in SP Source Address.							
	WARNING							
	The Scan Period,							
	 Must be less than the Background Scan Period configured for the MasterLogic Channel. 							
	 Must not be equal to 0. 							
13	Enter Output 's Source Address and Dest Address through Address Builder dialog box. (Optional)							
	Note:							
	• Output Source Address : This denotes the address from where OP reads the associated parameter value that can be viewed in the Experion Station.							
	 Output Dest Address: The value written to OP is transferred to this location in the PLC. 							
	TIP							
	Honeywell recommends you to configure the same PLC memory address for both the source and destination addresses of the OP							

R400 March 2011

4.3. Configuring MLServer using Quick Builder

Step	Action								
14	Select the Scan Period for OP.								
	Note: This represents the interval at which the OP parameter's value is updated from the PLC Address specified in OP Source Address.								
		WARNING							
		The Scan Period,							
 Must be less than the Background Scan Period configuration the MasterLogic Channel. 									
	 Must not be equal to 0. 								
		TIP							
		The values for SetPoint and Output need not be defined for every Experion point.							
		REFERENCE – EXTERNAL							
	V	For more details on adding and configuring Points, see Experion Knowledge Builder > Experion PKS R400 > Configuration > Quick Builder Guide > Point Properties.							

Configuring an Experion Status Point

₽₽ I	REFERENCE - INTERNAL							
	Configuring the Main tab of Status Point is similar to configuring the Main tab of an Analog Point . Instead of selecting an Analog Point, select a Status Point. For details about configuring an Analog Point, see <u>Configuring an Experion Analog Point</u> .							

To configure an Experion Status Point, perform the following:

Step	Action
1	Create a new project in Quick Builder.
2	Add a MasterLogic Channel and one (or more) MasterLogic Controller corresponding to each PLC configured in the Plant.

4. Configuration 4.3. Configuring MLServer using Quick Builder

Step	Action								
	REFERENCE – INTERNAL For more details on configuring a MasterLogic Channel and Controller, see <u>Configuring a MasterLogic Channel</u> and <u>Configuring</u> <u>a MasterLogic Controller</u> .								
3	Right-click the Point icon from the right-pane of the Quick Builder window and select Add Item .								
	Open Item Type Add Item								
	The following dialog box appears:								
	Add Item(s)								
	Add Items: Number of items to Add: 1 · Max: OK								
	Point Name-POISTA								
	Type: PoistAl								
	Status Point Prefix Prefix Prefix								
	C numeric								
	Variable C numeric with a 1 character field width								
	C letter								
	JUNA								
	Summary Add one item named 'POISTA'								
4	Select Point and Status Point type in the Add Item(s) dialog box.								
5	Select the Points icon from the left-pane of the Quick Builder window. From								
	the right pane, select the point that you want to configure.								

6 Configure the **Main** tab as follows:

4. Configuration 4.3. Configuring MLServer using Quick Builder

)isplay Alarms	Contiol History So	cripts Jser Defined	
	Point ID 00	N_ST4000	🌠 Address Builder	- 0 >
Enteij	prse Model Item Name Description		Address Type Controller	ОК
Ρ	arent Asset ML	TEST		Cancel
PV Sou	ce Address CO	N3_SFA ML01.%MX4		
PV S	Scan Period 1	•	LUCAUUN IMLUT.%MX46EU6\$CUN	Help
Numb	er of States 2	•		
	PV Algo NC	INE		
,	Action Algo	INE		
	▼	Scanning Enabled		
	Item Type Si	tatus		
La	as: Modified 20	09-06-25 오전 9:40	6:29	
Last	awnloaded 20	09-06-25 9 7		
Last D	ownloaded 20	09-06-25 오전		
Last D	ownloaded 20 Enter the in this As	09-06-25 오전 e Parent Asse sset.	et for the point. All Alarms/Events raised	by Experion i
Last C	Enter the in this As	09-06-25 오전 e Parent Asse sset. TIP	et for the point. All Alarms/Events raised	by Experion i
Last [7	Enter the in this As	09-06-25 오전 e Parent Asse sset. TIP	et for the point. All Alarms/Events raised	by Experion i
Last [7	Enter the in this As	e Parent Assesset. TIP Honeywell re must be the MLServer C	et for the point. All Alarms/Events raised recommends that the Parent Asset config same as the EPKS Asset Name config configuration Tool for the PLC referred in	by Experion i gured here ured in the this point.
Last [7	Enter the in this As	e Parent Assesset. TIP Honeywell ro must be the MLServer C	et for the point. All Alarms/Events raised recommends that the Parent Asset config same as the EPKS Asset Name config configuration Tool for the PLC referred in ton next to PV Source Address.	by Experion i gured here ured in the this point.
Last [7 8	Enter the in this As	e Parent Assesset. TIP Honeywell ru must be the MLServer C lipse butt	et for the point. All Alarms/Events raised recommends that the Parent Asset config same as the EPKS Asset Name config configuration Tool for the PLC referred in ton next to PV Source Address. der dialog box appears.	by Experion i gured here ured in the this point.
Last [7 8 9	Select el Select C Controlle Location	e Parent Assesset. TIP Honeywell romust be the MLServer C lipse butt address Build ontroller from er name from 0	et for the point. All Alarms/Events raised recommends that the Parent Asset config same as the EPKS Asset Name config configuration Tool for the PLC referred in ton next to PV Source Address. der dialog box appears. In Address Type drop-down list and app Controller drop-down list. Enter PLC Po	by Experion i gured here ured in the this point.

Step	Action
Ì	
,	 For more details on PLC Point name, see <u>PLC Point</u> <u>configuration details.</u>
	 For more details on user-defined data format, see <u>Defining</u> <u>data formats</u>.
10	Configure the Control tab as follows:
	Main Display Alams Control History Scapts User Defined Source Address Dest Address Scan Period (secs) Output (0P) [X47523\$CON [] I Mode (MD) [X47523\$CON [] I Mode (MD) [X47523\$CON [] I Reverse Dutput [] Address Builder [] Control Continnation Output State [] Cancel Number of Output [] Associations Cancel Pulse Width Latched secs OP State 0 [] OP State 2 [] [] Location ML01.3MK47523\$CON Help Normal Mode [] [] States [] [] Location [] Normal Mode [] [] [] [] [] [] [] [] [] Disable mode checking or output [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []

Note:

- **Output Source Address**: This denotes the address from where OP reads the associated parameter value that can be viewed in the Experion Station.
- **Output Dest Address**: The value written to OP is transferred to this location in the PLC.
- 12 Select the Scan Period for OP.

Note: This represents the interval at which the OP parameter's value is updated from the PLC Address specified in OP Source Address.

4.3. Configuring MLServer using Quick Builder

Action					
WARNING					
The Scan Period,					
 Must be less than the Background Scan Period configured for the MasterLogic Channel. 					
 Must not be equal to 0. 					
TIP					
The value for Output need not be defined for every Experion point.					
REFERENCE – EXTERNAL					
For more details on adding and configuring Points, see Experion Knowledge Builder > Experion PKS R400 > Configuration > Quick Builder Guide > Point Properties.					

PLC Point configuration details



Honeywell does not recommend modifying the QB database when MLServer is executing. After modifying QDB, restart MLServer by disabling and enabling the MLchannel.

The PLC Point name configured in Quick Builder provides a way of addressing the location in PLC where the values are stored. The PLC Point name specifies the PLC ID, memory address, the command to be executed, and the data type. For example, **ML01.%MW95\$CON**. The PLC Point name entered in the **Source Address** of Quick Builder for the Analog/Status Points is used for reading PLC data. The PLC Point name entered in the **Dest Address** is used for writing data into the PLC.

After downloading standard Points to Experion, enable the Channel, Controller and Points from the Experion Station. This triggers off connections to the MLServer based on the configured Channel, Controllers and Points. The MLServer then starts reading from or writing into PLCs using the commands embedded in the PLC Point name.

This section describes the various PLC Point name formats supported in ML200 IEC , ML200R and the commands used for reading or writing PLC information.

The following are the list of PLC Point name formats supported in ML200 R, ML200:

Table 4.3-1: PLC Point name formats supported in ML200R, ML200-IEC

√

PLC Point Name Format	ML200R	ML200-IEC

Direct Variable

The following table lists the different memory areas supported in ML200R and its associated data type, range and read/write property:

Memory Area	Г	Ц	۶D	RD	RD	L	DINT	DINT	⊨	л П	Range		Readable/ Writable
Alou	BI.	ВYI	MOI	DWO	LWO	Ľ				Low	High		
I	~	~	~	~	~	×	×	×	00.00.00	127.15.63	R		
Q	~	~	~	~	~	×	×	×	00.00.00	127.15.63	R/W		
М	~	√	~	~	~	×	×	×	00000	131071F	R/W		
L	~	√	~	✓	~	~	~	~	00000	11263F	R/W		
F	~	✓	~	~	~	~	✓	~	00000	2047F	R		
R	×	×	~	~	~	1	~	~	00000	32767	R/W		
U	*	×	*	*	*	*	*	*	00.00.00 0	31.15.511	R/W		
W	×	×	~	~	~	~	~	~	00000	65535	R/W		

Table 4.3-2: Memory areas supported in ML200R

Note: The R and W memory areas refer to the same storage locations for the first 32767 words. For example, %RW10 and %WW10 is referring to the same PLC memory address and therefore always have the same value.

4.3. Configuring MLServer using Quick Builder

The following table lists the different memory areas supported in ML200-IEC and its associated data type, range and read/write property:

Memory		щ	ð	RD	RD		F	F	Ra	inge	ble/ ble				
Alea	BI	ВҮТ	WOF	DWO	LWO							L	Low	High	Reada Writa
I	~	~	1	~	~	×	×	×	00.00.00	127.15.63	R				
Q	~	~	~	~	~	×	×	×	00.00.00	127.15.63	R/W				
М	~	~	~	~	~	×	×	×	00000	131071F	R/W				
L	1	1	~	1	~	1	~	1	00000	11263F	R/W				
F	~	~	~	~	~	~	~	~	00000	2047F	R				
R	×	×	~	~	~	~	~	~	00000	32767	R/W				
U	~	×	~	~	~	~	~	~	00.00.0	3F.31.F	R/W				
W	×	×	~	~	~	~	~	~	00000	65535	R/W				

Table 4.3-3: Memory areas supported in ML200-IEC

Note: The R and W memory areas refer to the same storage locations for the first 32767 words. For example, %RW10 and %WW10 is referring to the same PLC memory address and therefore always have the same value.

The following table lists the various commands supported in ML200/ML200R:

Commands	Read	Write	Remarks		
CON	Continuous Read command	Continuous Write command	Advantages:		
(ML200/ML20 0R)	If the PLC Point name ML01.%MW002\$CON and ML01.%MW\K004\$CON#RE AL are passed for read, a single Continuous Read command is used for reading the 2 nd and 4 th Word of M memory area from PLC 01.	If value is written to a Point's parameter that is configured as ML01.%MW002\$CON and ML01.%MW004\$CON#REAL a single Continuous Write command is used for writing the 2 nd and 4 th Word of M memory area in PLC 01 .	 Useful when contiguous memory addresses need to be read from the PLC. Up to 1400 bytes can be read / written in a single packet. However, multiple CON packets can be created serving more number of points. This is the recommended method for ML200 when some continuous memory locations need to be read from PLC. 		
			Disadvantages:		
			This command is not useful when a number of variables need to be read, where		
			• the addresses are not contiguous or		
			 belong to different memory areas 		

Table 4.3-4: Commands supported	in	ML200R/ML200-IEC
---------------------------------	----	------------------

MasterLogic-Experion Integration - User's Guide Honeywell

4. Configuration 4.3. Configuring MLServer using Quick Builder

Commands	Read	Write	Remarks
DEV (ML200	Device Area Read	Device Area Write	Advantages:
IEC/ML200R)	If the PLC Point name ML01.%MW95\$DEV is passed for read, the Device Area Read command is used for reading the 95 th Word of M memory area from PLC 01.	If value is written to a Point's parameter that is configured as ML01.%MW95\$DEV, the Device Area Write command is used for writing the 95 th Word of M memory area in PLC 01.	This command is useful for reading/writing a few variables from/to different memory areas of the PLC. It reads/writes up to 80 variables in a single packet. However, multiple DEV packets can be created serving more number of points. Disadvantages:
	Device area read is also used to configure DISOE module points. For example, <u>ML01.U1.0.0\$DEV#BIT@S</u> <u>OE</u> . Here, device area read is used for reading 1st bit of U1.0.0 word.		It is not useful for a larger number of variables. (For example: 500 variables.)
Note:			

- A single **Continuous Read/Write** command is used for reading or writing data together for multiple addresses within the same memory area.
- In ML200/ML200R, the maximum number of bytes read/written is 1400.
- The examples given in the previous table refer to ML200.

MasterLogic-Experion Integration User's Guide Honeywell



MasterLogic-Experion Integration - User's Guide Honeywell

Direct Variable

The following figure depicts the Direct Variable format:





- **PLCID**: This refers to the PLC. It is a two digit number ranging from 01 through 99 and always prefixed by ML. This must be configured in MLServer Configuration Tool.
- **MemoryAddress**: This refers to the address within the PLC memory area where information is stored.

Format: %<MemoryArea><DataType><Offset>

In ML200-IEC, for I and Q memory areas <Offset> are
 <Base>.<Slot>.<Position>. For other areas, it represents the address within the memory area.



REFERENCE – INTERNAL

For more details on memory areas supported in ML200R, see Table 4.3-2.

For more details on memory areas supported in ML200-IEC, see Table 4.3-3.

- **Command Type:** This refers to the different commands used for reading/writing data from/to PLC by MLServer. For more details on command types, see <u>Table 4.3-4</u>.
- Data Type: This refers to the PLC data type.

ATTENTION

Only the following combinations of data types can be used in a Direct Variable.

Data type in Memory Address	Data type at the end of the PLC point name (after #)		
X	BIT		
В	BYTE		
W	WORD and INT		
D	DWORD, DINT and REAL		
L	LWORD, LINT and LREAL		

The request is sent to PLC with the data types configured in the memory address part (that is X, B, W, D and L) of the PLC point name. After receiving the responses, the MLServer converts it to the data type configured after #.

If no data type is configured in the PLC point name (that is no # part), by default the corresponding basic data type is used by the MLServer. For example, if the PLC point is configured as ML01.%MW90\$CON, then it would be assumed as ML01.%MW90\$CON#WORD.

The following table contains a list of examples for Direct Variable:

Table 4.3-5: Examples of Direct Variable

Direct Variable

Note: In the following examples, ML01 is a ML200-IEC PLC. The bit / word positions are 0-based.

- **Examples** ML01.%MB105\$CON This denotes the 1st Byte of the 53rd Word in the Internal memory area of PLC ML01. Continuous Read / Write is used for communication with PLC.
 - ML01.%IW2.3.1\$CON#INT This denotes the 1st word in 3rd slot of Base2 in the Input memory area of PLC ML01. Continuous command is used for getting values from the PLC. The data is converted by MLServer and available as a signed integer value on the Experion side.

4.3. Configuring MLServer using Quick Builder

Direct Variable

Note: In the following examples, ML01 is a ML200-IEC PLC. The bit / word positions are 0-based.

• ML01.%RD80\$CON#REAL – This denotes the 80th double word (that is 160th and 161st words) in R memory area of PLC ML01. The Continous command is used for communication with the PLC. The data is converted by MLServer and available as a decimal (or REAL) value on the Experion side.

Defining data formats

Data formats are defined for converting PLC field values into engineering values. Experion provides default data formats for converting these field values. You also can define customized data formats.



REFERENCE - EXTERNAL

For more details on user-defined data formats, see Experion Knowledge Builder > Experion PKS R400 > Configuration > Server and Client Configuration Guide > Understanding and configuring points > Advanced point configuration > Creating user-defined data formats.

To create a customized data format, perform the following:



TIP

The following is a sample procedure explaining how to create a user-defined data format.



4. Configuration 4.3. Configuring MLServer using Quick Builder

🛞 Station - Default - Data Fo	rmat Configuration(sysCfgDataf	ormatsUnscaled.dsp)		
Station Edit View Control	Action Configure Help			
) 🛋 et - (b) - (b) 💌 (₩ ▲ ▼ ✓ × ፵ở Q, zoo	m To Fit • Command	
💴 — System Configu	ation User-defined D	ata Formats		
🗉 General	Unscaled	Scaled		
System Hardware				
Profiles	Nam	e		
■Alarm & Event Manager	nent 101 -			
Operator Security	102			
History	103 _			
Reports	104			
Trand & Group Dieplays	105 _			
Acronyms	106 _			
Applications	107 _			
■ Application Developme	108 _			
Applications (User Develo	ped) 109 _			
Application Point Lists System Singuran	110			
Task Timers	111 _			
Watchdog Timers	112			
Used Defined Data Forma	ts 113 _			
a server scripting	114 _			
	110 _			
	117			
	119			
	110			
	120			
	120			

3 Click an empty data format row.

System Configuration	Data Command
General System Hardware Profiles Operator Security History Geports Schedules Trend & Group Displays Aconyms Applications Applications Applications System Sinewave Task Times Watchdog Times Watchdog Times Watchdog Times Used Define Data Formats Sinever Scripting	Data Format UI Introv Image: Converted incorrectly. Definition Name: Image: Converted incorrectly. Field Value Image: Converted incorrectly. Data type: Introv Image: Converted incorrectly. Field Value Image: Converted incorrectly. Minimum: 0.000 Enter Hall to specify no limit for minimum or maximum Maximum: 16000.000 Enter Hall to specify no limit for minimum or maximum Maximum: 16000.000 Enter Hall to specify no limit for minimum or maximum Maximum: 16000.000 Enter Hall to specify no limit for minimum or maximum Maximum: 16000.000 Enter Hall to specify no limit for minimum or maximum Maximum: 16000.000 Enter Hall to specify no limit for minimum or maximum Maximum: 16000.000 Enter Hall to specify no limit for minimum or maximum Maximum: 16000.000 Enter Hall to specify no limit for minimum or maximum Maximum: 1000000 Enter Hall to specify no limit for minimum or maximum Maximum: 1000000 Enter Hall to specify no limit for minimum or maximum Type: © Linear C Piecewise linear curve Field value </th
15-Aug-0	6 13:22:02 CDA Comms CDA Comms COMMS U 15 Server: Lost comms with CDA Server





Step	Action				
4	Enter data format name in Name .				
5	Select data type from Data Type	drop-down list. For Example INT2.			
6	Enter the minimum and maximum For Example 0 and 16000 respec	n field values in Minimum and Maximum. tively.			
7	Enter Field value and correspond 2 to define the conversion. For Ex	ding Converted value for Point 1 and Point ample 0 and 1000 respectively.			
	Example: If the field value is 800 be 500.	0, the corresponding converted value must			
	ATTENTION				
	While configuring the Points in Quick Builder,				
	If 100% Range value is	Converted value ranges from			
	1000	0 to 1000			
	100	0 to 100			

The following table describes some sample field values and their corresponding engineering values in Experion:

Input	Data F	ormat	Field	PLC	Engineering	
Range	PLC	Engineering	value	value	(Converted value)	
0 to 5 volts	Minimum: 0 Maximum: 16000	Point 1: 0 Point 2: 1000	2.5 volts	8000	500	
1 to 5 volts	Minimum: 0 Maximum: 16000	Point 1: 0 Point 2: 1000	2 volts	4000	250	

4.4. Downloading Quick Builder Points to Experion

4.4 Downloading Quick Builder Points to Experion

Overview

After adding and configuring items, you must download all or part of your project to the server database. The Channel, Controller or Point that have been imported or manually created in Quick Builder must be downloaded to Experion server database before you can use them.

The items are downloaded in the following sequence:

- MasterLogic Channel.
- MasterLogic Controller(s).
- Analog/Status Point(s).



REFERENCE – EXTERNAL

For more details on downloading items to Experion, see Experion Knowledge Builder > Experion PKS R400 > Configuration > Quick Builder Guide > Managing items > Downloading items.

After downloading, the MasterLogic Channel and MasterLogic Controller are enabled in the Experion Station using **View** > **System Status** > **Channels**.

4.5 Verifying the configuration

Overview

After downloading Points to the Experion, enable the Channel and Controller from the Experion Station.

After enabling the Channel and Controller, the following events occur:

- The MasterLogic server starts communicating with the PLCs using the configuration information from the Experion server database. A connection is established with the MLServer based on the Channel configuration.
- MLServer establishes communication with the PLCs using the IP Address & other PLC specific details configured using the configuration tool.
- The MLServer reads data from the PLC and transfers the values to the corresponding parameters in Experion Points. The data values written into these parameters are written into the appropriate memory locations in the PLC.
- Based on the status of the PLCs, the alarms/events are raised by the MLServer, in the Experion.
- The data, alarms raised by the PLCs and change of event in the PLCs can be monitored from the Experion Station.

You must ensure that PLCs are configured with correct IP address.

Verifying data exchange between PLC and Experion

The Point Detail display in the Experion Station helps in monitoring the online status of each parameter for a particular Point and the data exchange between the PLC and the Experion server.

- The parameter values set in the Point Detail display reflects in the Address monitoring window of the SoftMaster tool.
- The parameter values set in the Address monitoring window reflects in the Experion station.

The following procedure is an example to verify data exchange between the PLC and the Experion:

Step	Action				
1	Configure the PLC information using the MLServer Configuration Tool.				
2	Ensure that the ML16K user defined data format is configured in Experion.				
3	Configure the MasterLogic Channel, MasterLogic Controller, Status and Analog Point in the Quick Builder and download to the Experion Server.				
	Note: Consider a standard Analog Experion Point configured in Quick Builder as follows:				
	 PV source address as ML01.%MW10\$DEV ML16K 				
	SP source and destination address as ML01.%MW80\$DEV ML16K				
	The user-defined data format ML16K is used here to convert between the field value (0 to 16000) and the engineering value (0 to 1000).				
4	Download the MasterLogic Channel, MasterLogic Controller and Point to the Experion Server.				
5	Enable the Channel from the Channel Summary page in the Station.				
	 The MasterLogic Server starts communicating with the PLC using the configuration information. 				
	• The MasterLogic Server reads data from the PLC and transfers the values to the corresponding parameters in Experion Points. The data values written into these parameters are written into the appropriate memory locations in the PLC.				

4. Configuration 4.5. Verifying the configuration

Step	А	ction		
	Assume that the data value store 8000. The following image shows Monitoring window of the SoftMa	ed in the 10th v s the value dis ster tool:	word of M mer played in the <i>i</i>	nory area is Address
	Address Monitoring - NewPLC - [M]			
	Eile Edit View PLC Window Help			_ _ 5 ×
	🖙 🔛 X 🖻 🛍 🚠 📥 🎒 [à ?		
	1 8 16 32 64 2 80 10 11			
			0 1	2 3 🔺
	E- 2MLI-CPUU	2MW0	0000 0000 00	0000 000
		8MW4	0000 0000 00	0000 000
	Q	<u> %MW8</u>	0000 0000 80	
	M	%MW12		0000 0000
	- 🛱 R	<u>%MW16</u>		0000 0000
		%MW20		
		26MW24		
		~MW28		
		~MW32		
		~MW36		
		26MW40		
		26MW44		
		2k40722		
		2/10/02 2/10/07/50		
		26MW30		
		2MW64		
		2MW68		
		2MW72		
		2MW76		
		2MW80		
		2MW84	0000 0000 00	
		%MW88	0000 0000 00	. 0000 000
		2×MW92	0000 0000 00	ב החחה החר
	C Address	🛱 I 🔯	q 🖾 w 🗔	В 💭 м
	Ready	2MLI-CPU	JU	Online //

R400 March 2011

4.5. Verifying the configuration

Step

Action

The raw value (8000) is converted to the engineering value (500) because of the ML16K data format and updated in the PV parameter. This value is displayed in the **Station** as shown in the following image:

Analog Point Detail	P U 7a () ,POIANA1
POIANA1	General Scanning Alarms History Auxiliary
	Range
1000.00	
	0% <u>puu</u>
1	
	Services
	Soanning and Control enabled
	P Alarms enabled
	Bealand
0.00	
×	Associated Display
SP 0.00 EU	Agorithms
PV (500.00 E)	PV Algorithm 0 Performing Detail (or double clicking) on the Algorithm No.
OP 0.00 %	Action Algorithm 0 will callup the Algorithm Configuration Page
MD MAN	
	Performing Detail (or double clicking) on the PV, SP, OP or MD will callup details from the controller
	(where the controller interface supports this)

Step	Action	
6	Change the value of M0010 memory location through the Change Value dialog box in Address Monitoring Window as shown in the image:	Current following
	🛄 Address Monitoring - NewPLC - [M]	
	Eile Edit View PLC Window Help	_ 8 ×
	🛛 😅 🔛 X 🖻 🛍 🚣 🔈 🚑 💁 🦿	
	1 8 16 32 64 2 00 10 10 II 🔍 🔍 🔍 🐳	
	Address Tree × 0 1 2	3 🔺
	□-₩ 2MLI-CPUU	
	MW4 0000 0000	0000
	Q 2MW8 0000 8000	0000
	M 8000 0000 0000 0000	0000
		0000
	Change Current Value	0000
	Address: \$10,000 0000 0000	0000
	Aduless. %MW10 0000 0000 0000	0000
	Bit number: 16 bit 0000 0000 0000	0000
		0000
	Display: Hexadecimal0000_0000	0000
		0000
	Data value	0000
		0000
		0000
		0000
	USWW%U 0000 0000 0000 0000	0000
	2 XMW84 0000 0000 0000	0000
	XMW88 0000 0000 0000	0000
	20001_0000_0000	
	Address	в 🛄 м
	Ready 2MLI-CPUU	Online //

4.5. Verifying the configuration

Step

Action

The raw value (12000) is converted to the engineering value (750) because of the ML16K data format and updated in the PV parameter. This value is displayed in the **Station** as shown in the following image:

** \7 & U C]•∭∘[£] 8	≝ ₩ ▲ ヽ	V X	(Marci I	Zoom To Fit 💌	Command			
SERVER_101:POIA	NA1.OP = 0 9	60								7
Analog Point Detail		/POIANA1	-			-				
POIA NA1		General	Scanning		Alarms	Hist	ory	Auxiliary		
		Range								
		Units								
1000.00		100 %		1000.00						
		0%		0.00						
	-									
		Services								
		🗹 Scanning and	Control en abled							
		🗹 Alarms enable	đ							
0.00		Displays						_		
0.00	de la	👔 Associated	Display							
	<u>*</u>									
SP	0.00 EU	Algorithms								
PV (750	0.00	PV Algorithm		0	Performing	Detail (or doub	le clicking) on i	the Algorithm No.		
OP	0.00 %	Action Algorithm		0	will callup t	he Algorithm Co	nfiguration Pag	e		
MD MAN	•									
		Performing Detail Where the control	(or double clickin) Ier interface sunn	g) on the P vts this (V, SP, OP or MD	will callup detail	s from the cont	roller		
		(milere are consor	er meerave supp	/10 0107						

Step		Action	
7	Set a value 250 image:) to SP parameter in the Station as shown in the following	3
	🏠 Station - Default - Analog Point De	tail(sysdtlana.htm)	_ 8 ×
	Station Edit View Control Action	Configure Help	
		🖸 • 😥 - 😰 🔯 🚻 🔺 🔻 🗸 👷 🔾 Zoom To Fit • Command	٠
	O Value not accepted because i	t is above the maximum allowed	
	Analog Point Detail	JPOIANA 1	Ĩ
	POIANA1	General Scanning Alarms Hstory Auxiliary	
	ĺ		
		Range	
		Units	
	1000.00	100%	
		0% 0.00	
	•		
		Services	
		✓ Soanning and Control enabled	
		✓ Alarms enabled	
		Techne	
	0.00	uspreje	
	Ŕ		
	SP (250 EU)	Agorithms	
	PV 500.00 EU	PV Algorithm 0 Performing Detail (or double clicking) on the Algorithm No.	
	OP 0.00 %	Action Algorithm 0 will callup the Algorithm Configuration Page	
	MD MAN -		
		Performing Detail (or double clicking) on the PV, SP, OP or MD will callup details from the controller	
		(musue mus vom musue andbouts aus).	
		24-Aug-06 15:59:37 SERVER 101 dealy WDT U 00 TASK FAILED: 493	
	Honeywell 24-Aug-06	18:15:43 Alarm System ie10dt8kkdg1s Stn01	Mngr

4.5. Verifying the configuration

Step

Action

The engineering value (250) is converted to the raw value (4000) and updated in the %MW80 memory location. This can be observed in the Address Monitoring window of the SoftMaster tool as shown in the following image:

Address Monitoring - NewPLC - [M]						×
🖽 File Edit Yiew PLC Window Help					_ 8	×
📽 🔛 X 🖻 🛍 🚠 📥 🚑 [à 🤋					
1 8 16 32 64 2 10 10 10		Q Q	J •5•	ş.		
le 4 () 2 2 2 1	6					
Address Tree 👻 👻		0	1	2	3	
	2MW/0	0000	0000	0000	0000	
	2MW/4		0000	0000	0000	
	2MW8	0000	0000	8000	0000	
	2/2/2/2	0000	0000	0000	0000	
	%MW16	0000	0000	0000	0000	
	%MW20	0000	0000	0000	0000	
	%MW24	0000	0000	0000	0000	
	%MW28	0000	0000	0000	0000	
	%MW32	0000	0000	0000	0000	
	%MW36	0000	0000	0000	0000	
	%MW40	0000	0000	0000	0000	
	%MW44	0000	0000	0000	0000	
	%MW48	0000	0000	0000	0000	
	%MW52	0000	0000	0000	0000	
	%MW56	0000	0000	0000	0000	
	%MW60	0000	0000	0000	0000	
	%MW64	0000	0000	0000	0000	
	%MW68	0000	0000	0000	0000	
	%MW72	0000	0000	0000	0000	
	%MW76	0000	0000	0000	0000	
	%MW80	4000	0000	0000	0000	
	%MW84	0000	0000	0000	0000	
	%MW88	0000	0000	0000	0000	Ţ
	1%MW92		0000	: 0000		Ľ
Address	🛱 I 🔯	Q 🖾	W	🛱 R		М
Ready	2MLI-CP	יטט			Onlin	e /

MasterLogic-Experion Integration User's Guide	
Honeywell	

5.1 Overview

Experion displays

The Experion standard Station displays and the Custom displays are used for monitoring the PLC status.

The following are the Experion standard Station displays:

- Channel Summary page
- Point Detail display

The following is the Experion Custom display:

• PLC System Status display



ATTENTION

To view the PLC information in the graphics pages, ensure that the points corresponding to the PLCs are configured using the Point Build utility.

5.2 Building a Point in Experion corresponding to the PLC

Using Configuration tool

The information required by the Experion Graphics is stored in the user-defined parameters of Experion points configured for each PLC. These PLC level Points are built by enabling the Auto Point Build option in ML Server Configuration Tool. If these points are not built, then the data communication between the MLServer and Experion does not appear in the Experion custom displays.

To build Points for the configured PLCs, perform the following steps:

	Action
Configu each PL Asset N	re the PLC information using the MLServer Configuration Tool, for .C with which the MLServer must communicate. Ensure that EPKS lame is configured in the tool.
F	REFERENCE – INTERNAL For more information about configuring the PLC information, see
	Configur each PL Asset N

5.2. Building a Point in Experion corresponding to the PLC

2	Select the Auto	
_		
	🕎 ML Server Configuration	
	⊡®, ML Server I ML01	PLC LOGS ADVANCED
		General
		PLC ID ML01 IP Address1 10.0.0.131
		PLC Name MLPLC1 IP Address2 10.0.0.132
		PLC Type ML200R IP Address3 10.0.1.131
		EPKS Asset Name MLTEST IP Address4 10.0.1.132
		Monitor
		Image: FPKS Write Image: Formation of the status Read Image: Formation of the st
		VID Read V Alarm Raising Sync Interval 5
		Auto Point Build Deadband 10
	Save Configuration	
	Save Configuration	

3 Click Save Configuration.

4 The output files with extension **.out** and **.pnt** are created.

For example:

- The MLPLC_StatusPoints.pnt file is created. This file contains the information about the points to be built in Experion corresponding to the selected PLCs.
- The MLPLC_StatusPoints.out file shows the status of Point building.

5.2. Building a Point in Experion corresponding to the PLC



Restart MLServer for any configuration changes to take effect.



5.3 Using Experion custom displays

PLC System Status Display

The PLC information is displayed in the Experion Station using custom displays.

The following are the three tabs available in the custom displays used for viewing the PLC information:

Tab name	File name	Description
Config Info	MLPLC_Config.htm	This page displays the basic PLC information and diagrammatic representation of the modules with base/slot information.
Status Info	MLPLC_Status.htm	This page displays the PLC status diagnostics information.
Driver Info	MLPLC_Driver.htm	This page displays the MLServer interface driver diagnostics information.

Config Info

The **Config Info** page is used for monitoring the base slot information of each PLC and the status of communication between the PLC and the Experion server.

The following PLC information appears in the **Config Info** page:

- PLC Name
- PLC ID
- PLC Type
- Base number
- Last RTC time
- Diagrammatic representation of the modules with base/slot information

5.3. Using Experion custom displays

To view the general PLC and base/slot information in the Experion display, perform the following steps:

 Step
 Action

 1
 Ensure the Auto Point Build check box in Config tool is enabled.

ML Selver	PLC LOGS ADV.	ANCED		
	General			
	PLC ID	ML01	IP Address1	10.0.0.131
	PLC Name	MLPLC1	IP Address2	10.0.0.132
	PLC Type	ML200R 💌	IP Address3	10.0.1.131
	EPKS Asset Name	MLTEST	IP Address4	10.0.1.132
	Monitor		RTC	
	F EPKS Write	🔽 Status Read	🔽 Enable Re	ead/Write
	🔽 10 Read	🔽 Alarm Raising	Sync Interval	5
(🔽 Auto Point Buil	d	Deadband	10

- 2 Click Start > Programs > Honeywell MasterLogic Server > Configuration Tool and select the PLC.
- 3 Select EPKS Write and IO Read check boxes under Monitor using the MLServer Configuration Tool.

Monitor	
EPKS Write	🔲 Status Read
☑ IO Read	🔲 Alarm Raising
🗖 Auto Point Build	

- 4 Invoke the Experion Station.
- 5 Enter MLPLC_config.htm in the Command zone. Press Enter.

5.3. Using Experion custom displays

<text></text>	Acti	
	ears for ML 2	R:
Baton Edit gene Gaton Configure tell Configure Conf		
Pict Pic Di Mot Pict Di Mot Pict Di Mot Di Mot Di di glico Datarato Divario Pri Di Altar Pic Di Mot Pic Di Mot Pic Di Mot Pic Di Mot Pri Di Altar Pic Di Altar Pic Di Di Divario Pic Di Mot Pic Divario Image: Divario di Divario Pic Divario di Divario Pic Divario di Divario Pic Divario di Divario Image: Divario di D	▼ ✓ × 🤧 Q, Zoom To Fi	Command
Pr: 10.1.41 Pr: 10.1.41 Pr: 10.1.41 Pr: 10.1.41 Pr: 10.1.41 With and an	ML200R Base : Base	ler) 9 Last RTC Read Time : 19-May-2009 11:04:23
Module Fund Module Description SubStance Fund Fait Ethernet Module, Optical Marter	4: 0.0.0.0	
Module# Module Description Sk023kLEFAT Fat Ethernet Medek, Optical Marter Sk023kLEFAT Fat Ethernet Medek, Optical Marter Sk02 Endpt Fat Ethernet Medek, Optical Marter Sk02 Endpt Sk05 Endpt Sk45 Endpt Sk65 Endpt Sk45 Endpt Sk65 Endpt		4
SND2NLEEMT Fait Shore A Shore		Module Description
	FastEthe	duo: Optical Master duo: Optical Master
18-May-09 23:38:37 DBGSRVR MLPLC1 DISCONNECTED U01 Disconnected from IP 10.14.11 DISCONNECTED Honewell 19 May 00 11104 27 System	MLPLC1 DISCONNECTED	1 Disconnected from IP 10.1.4.11 DISCONNECTED

- 6 Select the name of a PLC from the **PLC** dropdown list.
 - The PLC ID, PLC Type, Base, IP Addresses and Last RTC Read Time are displayed.

Note: All the fields in the page (except the **PLC Name** and **Base Number)** are not editable. The **IP Address** indicated in green is the active IP Address.

7 Select base number from the **Base** dropdown list.

Note: Base 0 is selected by default.

The following information is displayed diagrammatically:

- CPU status
- Different slots of the selected base.

5.3. Using Experion custom displays

Step	Action
	The following information appears in 3 columns in the lower part of the window:
	• The Name column indicates the slot position and module name.
	The Assigns Information column indicates the module information.
	 The Description column indicates the module description.

Viewing RTC time in Config Info page

The PLC time must be synchronized with the Experion system time. The MLServer reads the PLC time and compares with the Experion system time, based on the settings in MLServer Configuration Tool. If there is a time difference, the PLC time is updated with the Experion system time. The RTC time read from the PLC is displayed in the Config Info graphics page.

The following figure depicts how the PLC time is synchronized with the Experion system time:



To view the RTC time in the Config Info page, perform the following steps:

Step	Action
1	Click Start > Programs > Honeywell MasterLogic Server > Configuration Tool and select the PLC.

_
5. Monitoring PLC status from Experion displays

5.3. Using Experion custom displays

itep	Act	tion			
2	Select EPKS Write under Monitor and Enable Read/Write under RTC using the MLServer Configuration tool.				
	Monitor	RTC			
	I EPKS Write I ■ Status Read	🔽 Enable Re	ead/Write		
	IO Read ✓ IO Read ✓ Alarm Raising	Sync Interval	5		
	🔽 Auto Point Build	Deadband	10		
3	Enter SynchInterval under RTC.	J . <u>L </u>			
3	Enter SynchInterval under RTC . Note: This indicates the time frequence PLC. If this value is 0 then the RTC tin	by for reading the is not read	the RTC time from the or written from/to the		
3	Enter SynchInterval under RTC. Note: This indicates the time frequence PLC. If this value is 0 then the RTC tim PLC. Enter Deadband under RTC .	ey for reading ne is not read	the RTC time from the or written from/to the		
3	Enter SynchInterval under RTC . Note: This indicates the time frequence PLC. If this value is 0 then the RTC tim PLC. Enter Deadband under RTC . Note: The PLC time is updated with the difference is equal to or greater Deadt the RTC time is not written to the PLC	ey for reading ne is not read ne Experion sy band (in secon	the RTC time from the or written from/to the /stem time, if the time nds). If this value is 0 the		

Status Info

The **Status Info** page is used for monitoring the online status of each PLC, the MLServer and the data exchange between the PLC and the Experion server.

• The parameter value for the PLC status set in the xml files is used for updating the PLC status information in the Experion graphics pages.

5. Monitoring PLC status from Experion displays

5.3. Using Experion custom displays

To verify the PLC status information updates in the Experion graphics pages, perform the following steps:

Step Action

1 Ensure the **Auto Point Build** check box in Config tool is enabled.

ш. ¶ мL01				
	General			
	PLC ID	ML01	IP Address1	10.0.0.131
	PLC Name	MLPLC1	IP Address2	10.0.0.132
	PLC Type	ML200R -	IP Address3	10.0.1.131
	EPKS Asset N	ame MLTEST	IP Address4	10.0.1.132
	Monitor		RTC	
	🔽 EPKS Writ	e 🔽 Status Read	🔽 Enable Re	ead/Write
	🔽 IO Read	🔽 Alarm Raising	Sync Interval	5
	🔽 🔽 Auto Point	Build	Deadband	10

- 2 Click Start > Programs > Honeywell MasterLogic Server > Configuration Tool and select the PLC.
- 3 Select EPKS Write and Status Read check boxes under Monitor using the MLServer Configuration tool.

Monitor	
F EPKS Write	🔽 Status Read
🗖 IO Read	🗖 Alarm Raising
🔽 Auto Point Build	

• The status of the CPU operation mode is updated in the Experion graphics display.

5. Monitoring PLC status from Experion displays 5.3. Using Experion custom displays

tep						Action		
4	Open MLPLC_Config.htm from t which you want to view the status			n from t e status	he Experion Static . See <u>Config Info</u> f	on and select the PLC for more details.	or	
	Click Sta	tus Inf	f o tal	b.				
	The fol	lowing	pag	e app	ears for	ML 200R:		
	Station - Default - (MLPI	LC_Status.htm)						_ @ ×
	At Contro	a <u>H</u> coon Conngui	ire <u>H</u> eip ∑) - (⊈) [2 III 🔺 ·	- √ × 9¢ 0	Com To Fit 💌 Command		•
	PLC : MLPLC1	PLC ID : MLO1		PLC Type	: ML200R	Last RTC Read Time : 19-May-2009 11	.04:54	
	Config Info	Status Info	Driver I	'nfo				
	CPU Type : 2MLI	R-CPUH/T		OS Version :	1.6			
	Master ᢙ RUN	Sta	RUN			Scan Time (Milli Seconds) Maximum 146.50 Minimum 100.4	0 Current 132,40	
	CPU_A	() ()	STOP CPU_A			CPU Error Status	- 2 70m may degla - 1956 - 1966 -	
	CPU_B		CPU_B REDUN			 Configuration Error Module Detach Error 	 Module Type Mismatch Module Fuse Blown 	
	G RIN G	G	RING			Digital VO Module Error	Special / Comn. Module	
	REM Dalipe Editing		REM			External Equipment	SCAN W atchdog Error	
	Download	Internal Proc	Done	• Error		Basic Parameter Error	VO Parameter Error	
	Miscellaneous Fla	igs				 Special Module Parameter Error Program Error 	Comn. Module Parameter Error Program Code Error	
	 Forced input Skin I/O 		Forced Outp	ut		System Watchdog Error	Base Power Ettor	
	ESTOP Instruction	on 🗣	CPU MOD B	US Port				
	Stop Instruction					CPU Warnings RTC Error	Data Backup Error	
	Communication St	tatus Flags				Task Collision	Battery Failure	
	HSL1	HSL5 🗣	HSL 0	 P2P 1 P2P 2 	P2P 6	Fixed Cycle Scan Error	Log Memory Full	
	HSL3	HSL7	HSL 11	 P2P 3 	 P2P 0 P2P 7 	External Equipment		
	● HSL 4	HSL8 🕈	HSL 12	P2P 4	P2P 8			
	Honeywell 19-	18-May-09 2 -May-09	23:38:37 E	BGSRVR M	MLPLC1 DISCO	ONNECTED U 01 Disconnected from System	IP 10.1.4.11 DISCONNECTED vistaserver Stn01 Mn(gr
	CPU Ope	ration	Мос	de				
	RUN				CPL	operation is in ru	n mode.	
	CTOD							
	510P				CPL	CPU operation is in stop mode.		
	ERROR				CPL	CPU operation is in error mode.		
	DEBUG				CPL	l operation is in de	bug mode.	
	Last Mod	le Cha	nge	Ву				
	KEY				Ope	ration mode chang	ge by key.	

5. Monitoring PLC status from Experion displays 5.3. Using Experion custom displays

Step		Action	
	Remote PADT	Operation mode change by remote	SoftMaster.
	Remote Comn.	Operation mode change by remote communication module.	
	Local / Remote		
	Local	Operation mode change only by mo	de key.
	Remote	Remote mode operation.	
	Online Editing		
	Download	Revised program stand-by when rev	rising on the
	Internal Proc	Revising on the run during internal p	rocessing.
	Done	Revising on the run is completed as	normal.
	Error	Revising on the run is completed as	normal.
	Miscellaneous Flags		
	Forced Input	Force on/off by input points.	
	Forced Output	Force on/off by output points.	
	Skip I/O	Designated Input/output module for trouble check and data refresh.	stopping
	Fault Mask	Designated Input/output module for operation even in time of trouble.	proceeding
	Monitor Mode	External monitor running for prograr variables.	n and
	CPU MODBUS Port	CPU Mode bus slave service is activ	/e.
	Stop Instruction	Stop after scan completion by STOF during RUN mode operation.	P function
	ESTOP Instruction	Immediate stop by ESTOP function mode operation.	during RUN
	Scan Time (Milli Seconds		
	Maximum	Maximum PLC CPU scan period.	
	Minimum	Minimum PLC CPU scan period.	
	MasterLogic-Experior Hoi	n Integration User's Guide	R400 March 2011

5. Monitoring PLC status from Experion displays 5.3. Using Experion custom displays

Step		Action
	Current	Current PLC CPU scan period.
	CPU Error Status	
	Configuration Error	Normal operation is impossible because of the CPU module self-diagnosis error.
	Module Detach Error	When actual module and each slot I/O configuration parameter are not matched.
	Digital I/O Module Error	When each slot module's input/output module cannot normally read and write this error is displayed.
	External Equipment	External equipments serious trouble written in ANC_ERR[n] is shown by user program.
	Module Type Mismatch	When actual module and each slot I/O configuration parameter are not matched.
	Module Fuse Blown	When each slot module with fuse is short, this error is displayed.
	Special / Comn. Module	When interface does not work because of special or communication module's malfunction its error is displayed.
	SCAN Watchdog Error	When scan watchdog time is exceeded because of its parameter.
	Basic Parameter Error	Basic parameter error is checked and displayed.
	I/O Parameter Error	When each slot module's input/output module cannot normally read and write this error is displayed.
	Comn. Module Parameter Error	Communication module parameter error is checked and displayed.
	Program Code Error	User program error is checked and displayed.
	Base Power Error	Base power error.
	CPU Warnings	
	RTC Error	RTC data error.

5. Monitoring PLC status from Experion displays 5.3. Using Experion custom displays

Step		Action
	Task Collision	An identical task is double-requested during user program running; the collision with the previous task is displayed.
	Fixed Cycle Scan Error	If scan time is longer than the designated 'fixed cycle', it becomes 'ON'.
	External Equipment	When external equipments' warning written in ANC_WB[n] by user program, its trouble is displayed.
	Data Backup Error	Data memory is destroyed because of back-up error and thus, restart program (hot or warm) revision is impossible. Regarding cold restart running, this flag is possible to use for initializing program and is automatically reset once initializing program is completed.
	Battery Failure	When battery voltage for user program and data memory back-up is below the standard.
	Log Memory Full	When PLC's log memory becomes full.
Communication Status Flags		s Flags
	HSL1	They are representative flags when high speed link is impossible after checking each high speed link error on high speed link Enabling situation. If high speed link is disabled, it is reset.
	P2P1	They are representative flags when P2P running is impossible after checking each P2P parameter error on P2P Enabling situation. If P2P is disabled, it is reset.
	• The CPU Type and	OS Version (CPU firmware version) are displayed.
	The PLC Status inform	ation is displayed in 5 different tabs.
	SYS State tab	Displays the PLC system operation status.
	Slot Info	Displays the information for different slots.
	PADT_CNF	Displays the PADT configuration information.
	CNF_ER	Displays error messages and status of stopping the operation.

5. Monitoring PLC status from Experion displays 5.3. Using Experion custom displays

Step		A	ction			
	CNF_WAR	Displays the operations.	warning flags wi	th respect to quick		
	DOMAIN_ST	Displays the i configuration.	nformation on S	System software		
		N				
	The option of page. To vie Config Info	of selecting anot ew another PLC' page and click s	f selecting another PLC is not available in Status Ir <i>w</i> another PLC's status, select a PLC name from page and click Status Info tab.			
	 The CPU operation display as shown 	n in run mode is in the following f	displayed in the gure:	e Experion graphics		
	Station - Default - (MLPLC_Status.htm) Sation Edit Yew Control Action Configure Heb 本(人 女 仕) () () () () () () () () ()	≝ 111 ▲ ▼ ✓ × % Q, Zoo	n To Fit 💌 Command	r (b) r		
	Control Linfo Datus Indo Datus CPU Type : 2x4,8-CPUWT Master StandBy (master) StandBy (master) G RUN StandBy (master) StandBy (master) G RUN StandBy (master) StandBy (master) G RUN StandBy (master) StandBy (master) G REVUN StandBy (master) StandBy (master) Online Editing (master) Named Type Date Online Editing (master) Internal Proc Date MasterInnecus: Flags Faster Master (master) Faster Master (master) Step UP Faster Master (master) Faster Master (master) Communication Status Plags HSL 10 HSL 10 HSL 2 HSL 2 HSL 11 HSL 3 HSL 10 HSL 12	nto DB Varsien : 1,5 Error JS Post P2P 1 P2P 6 P2P 2 P2P 6 P2P 7 P2P 7 P2P 6	ion Time (Mill Seconds) actions 16:50 Minimum 100.40 20 Enro Rubas 10 Enro Rubas 10 Option Caluba 10 Option Caluba 10 Option Caluba 10 Option Calubas 10 Opt	Current 122.00 M Gooden Type Mille match M Gooden Type Mille match M Gooden Type Mille match M Gooden Type Mille match M Gooden Type Mille Mille M Gooden Type Mille Mille M Gooden Type Mille		
	18-May-09 23:38:37 I Honeywell 19-May-09 11:04:5	BGSRVR MLPLC1 DISCONNEC 9 System	TED U 01 Disconnected from IP	10.1.4.11 DISCONNECTED vistaserver Stn01 Mngr		
6	Click Stop button in	the SoftMaster to	ol or using the	keys on the PLC,		

Click **Stop** button in the SoftMaster tool or using the keys change the CPU operation mode to stop.

5. Monitoring PLC status from Experion displays 5.3. Using Experion custom displays

Step	Action
	📡 SoftMaster - [NewProgram[Program]]
	Project Edit Eind/Replace View Online Monitor Debug Iools Window Help
	D 😅 🕭 📕 🎒 😫 📾 😸 🔲 🗭 😓 🗠 🗴 🖻 🛍 🗙 🗠 🛠 🔅
	``` \$`   <mark>```</mark>   \$`   \$`   \$`   \$`   \$`   \$`   \$`
	🔂 🖾 👘 👘 👘 👘 👘 👘 👘 👘 👘
	Project Window x
	Items
	Function/FB
	Most Recently Used
	Function Name NewProgram[Program]
	PLC Program     Global Variable is being checked
	No error occured.
	Execution codes: 408Bytes are used. 449Bytes
	NewPLC Run L

## 5. Monitoring PLC status from Experion displays 5.3. Using Experion custom displays

Step		Action
	The following m	nessage appears:
		SoftMaster
		Change to Stop mode?
		<u>Y</u> es <u>N</u> o
7	Click Yes.	
	<ul> <li>The CPU operative seconds as</li> </ul>	ation mode status is updated in the graphics display within s shown in the following figure:
	Station - Default - (MLPLE_Config.htm) Station Edit View Control Action Config	
		≥ 2   ≥ III   ≤ ▼ X   92 Q   Zoom ToFK = Command
	Config Info Status Info	FLUippe : NLXXIN Base: <u>UNEXTEE M</u> Laat NULkest Inne : 77-Jun-2008 113137 Ditwe Into
	• Karenti bageni (	
	Module# StotP:Empty Stat1:Empty Stat2:ALL-EMMT Stat2:Empty Stat4:Empty Stat4:Empty Stat4:Empty	Address Information Module Description  PROBO - Recorr)  Proble -
	27-Jun-08         11:31:31         SE           Honeywell         27-Jun-08         1	ERVER_102 MLPLC1_MSTR_SYS_STATE_STOP ALARM U 01 12015 - MASTER CPU Stopped 1 131.39 System vistaserver Stn01 Mngr
8	Click in the S CPU operation mo	SoftMaster tool or using the keys on the PLC, change the ode to run.
	The following n	nessage appears:

## **5. Monitoring PLC status from Experion displays** 5.3. Using Experion custom displays

Step	Action	
	SoftMaster	
	Change to Run mode?	
	<u>[Yes</u> ] <u>N</u> o	

- 9 Click Yes.
  - The CPU operation mode status is updated in the graphics display within few seconds as shown in the following figure:

Info Driver In	fo		
174			
	OS Version : 1.5		
StandBy		Scan Time (Milli Seconds)	
RUN		Maximum \$46.50 Minimum 100.40	Current 132.40
G STOP		CPU Error Status	
CPU_A		Configuration Error	Module Type Mismatch
C REDUN		Module Detach Error	Module Fuse Blown
G RING		<ul> <li>Daini 10 Modula Error</li> </ul>	Consider Comp. Madda
@ REM			· special / comit income
		External Equipment	SCAN Watchdog Error
ternal Proc 厳 Done	• Error	Basic Parameter Error	VO Parameter Error
		Special Module Parameter Error	Comn. Module Parameter Error
Estand Output		Program Error	Program Code Error
G fact Male		System Watchdog Error	Base Power Error
· Fauk mask			
🗣 СРИ МОДВИ	S Port	CRII Wardoor	
		DTC Entry	<ul> <li>Data Banhan Fana</li> </ul>
lags			
5 🗣 HSLD	P2P 1 P2P 6		· Datiery Faller
	A	<ul> <li>Fored Lyrole Scan Error</li> </ul>	<ul> <li>Log Memory Full</li> </ul>
o 🛥 HSL10	• F2F 2 • F2F 6	External Equipment	
7 🌘 HSL 11	P2P3 P2P7		
8 🔶 HSL 12	P2P 4		
	StandBy G RN G RN G STOP CPU_A CPU_B G REDN G REDNN G	StandBy G RIW G RIW STOP STOP CPU,A CPU,B CPU,B CPU,B REM REM STOP REM STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP STOP	StandBy     Son Tine (Mit Scond)

#### **Driver Info**

The MLServer diagnostic parameter information appears in the **Driver Info** page. This page is used for viewing the status of communication between the MLServer, PLC and the Experion.

To view the MLServer diagnostics information, perform the following steps:

Step	Action
1	Click Start > Programs > Honeywell MasterLogic Server > Configuration Tool and select the PLC.

2 Select EPKS Write check box under Monitor using the MLServer Configuration tool.

Monitor	
EPKS Write	🔽 Status Read
🗌 IO Read	🗖 Alarm Raising
🔽 Auto Point Build	

3 Select MLServer from the left pane. Enter the frequency for General Diagnostic and PLC Diagnostic under ScanPeriod of the MLServer tab.

Scan Period			
General Diagnostic	60	PLC Diagnostic 30	IO Read 3600
AD Module Read	10	Special Module 10 Read	All Module 10 Read

- 4 Open MLPLC_Config.htm from the Experion Station and select the PLC for which you want to view the Driver Diagnostics information. See <u>Config Info</u> for detailed procedure.
- 5 Select **Driver info** tab.

#### 5. Monitoring PLC status from Experion displays

 $\cap$ 

5.3. Using Experion custom displays

#### Step

#### Action

• The following page appears:

	.CID: ML01	PLC Type : ML200-IEC	Last RTC Read Time :	19-May-2009 10:54:03			
Config Info Status	Info Driver Info						
LC General Parameters		PLC Specific Parameters					
Server Parameters		MLServer Parameters		Protocol Stack Parameters			
MLConig XML Status	Success	PLC Connection Status	Success	Large Buffers Available	1000		
MLMonitor XML Status	Success	Request Thread Status	Success	Small Buffers Available	1000		
MLApp Settings IML Status	Success	Response Thread Status	Success	Medium Buffers Autilable	29969		
MLS ever Start Time	19-Nay-2009 10:54:01	Monitor Thread Status	Success	Request Queue Size	c	0	
PSCommunication Status	Connected	Response Queue Size	0	PS Request Thread Status	Success	2	
Main Response Thread Status	Running	EPKS White Queue Size	0	PS Response Thread	Success	5	
HCI CallBack Thread Status	Running	EPKS Alarm Queue Size	0	PS TB COS Thread Status	Failed	C.	
EPKS Commn Thread	Running	Current Static RequestID	5039	Last Response Received Time	19-05-2009 10:54:32:921		
Main Response Queue Size	Running	Current Dynamic RequestID	25131	Last Request Sent Time	19-05-2009 10:54:32:921		
Current Statio RequestID	1000	No. Of Requests Per Sec	37.00	Last TBResponse Received Tim	e 00-00-00 00:00:00:00	6	
Current Dynamic RequestID	15002	No. Of Responses Per Sec	3.00	Last COSResponseReceived Ti	me 00-00-00 00:00:00:000	i,	
Number Of Requests	2	No. Of EPKSWittes Per Sec	21.00	Max Response Time (ms)	281.00		
Number Of Responses	3	No. Of EPKS Alarms/Events Per	1.00	Min Response Time (ms)	0.00		
Diagnostics UDP Updated Time	19-May-2009 10:54:02	Status UDP Updated Time	19 - Na y-2009 10:54:04	Aug Response Time (ms)	199.00		
rotocci Stack Parameters		Base Slot UDP Updated Time	19 May-2009 10:54:26	Last PLC Connected Time	19-05-2009 10:54:02:595	15	
Engine Thread Status	Running	ADModule UDP Updated Time	19-May-2009 10:54:24	Last PLC Disconnected Time	00-00-00 00:00:00:000	6	
1996. <del>-</del> Anna 2011 Anna Anna Chailte	2020/07/22	Special Module UDP Updated	19-May-2009 10:54:23	Last HB Sent Time	00-00-00 00:00:00	C.	
icense Parameters		Miscellaneous UDP Updated	19-May-2009 10:54:03	Last Status Received Time	19-05-2009 10:54:32:65		
Licensed Number Of PLCs	UnLimited	Diagnostics UDP Updated Time	19-May-2009 10:54:33				
	50000	RTC Read UDP Updated Time	19-May-2009 10:54:04				
Licensed Number Of Points			Mark Handa & at				

The option of selecting another PLC is not available in **Driver Info** page. To view another PLC's driver diagnostics, select a PLC name from **Config Info** page and click **Driver Info** tab.

**Parameter Name** Description PLC General Parameters – MLServer Parameters ML Config XML Status Indicates the status of MLConfig XML read. ML Monitor XML Status Indicates the status of MLMonitor XML read. ML AppSettings XML Status Indicates the status of MLAppSettings XML read. **MLServer Start Time** Indicates the latest start time of the MLServer. **PSCommunication Status** Indicates the status of the communication between the MLServer and Protocol Stack. Main Response Thread Status Indicates the status of MLServer main response thread. HCI CallBack Thread Status Indicates the HCI call back thread Status **EPKS** Commn Thread Status Indicates the Experion communication thread Status Main Response Queue Size Indicates MLServer main queue size. Current Static Request ID Indicates the static Request ID assigned to the command sent to PLC. Current Dynamic Request ID Indicates the dynamic Request ID assigned to the command sent to PLC. Number of Requests Indicates number of requests sent to Protocol stack in one second. Number of Responses Indicates the number of responses received from Protocol stack in one second. **Diagnostics UDP Updated Time** Indicates the time when the Diagnostics related Experion UDP parameters were last written by MLServer. PLC General Parameters – Protocol Stack Parameters **Engine Thread Status** Indicates the status of ML protocol engine thread.

The following table lists the MLServer diagnostics parameters displayed in the graphics page:

R400 March 2011

## **5. Monitoring PLC status from Experion displays** 5.3. Using Experion custom displays

Parameter Name	Description
PLC Specific Parameters – MLSer	ver Parameters
PLC Connection Status	Indicates the status of the connection between the PLC and MLServer.
Request Thread Status	Indicates the status of the thread sending requests to the Protocol stack.
Response Thread Status	Indicates the status of the thread processing responses from the Protocol stack.
Monitor Thread Status	Indicates the status of the thread sending requests on Status, Base slot, AD Module to the Protocol stack.
Response Queue Size	Indicates the size of the response queue holding the responses from the Protocol stack.
EPKS Write Queue Size	Indicates the queue holding the UDP values to be written to the Experion.
EPKS Alarm Queue Size	Indicates the queue holding the alarms to be raised in Experion.
Current Static Request ID	Indicates the static Request ID assigned to the command sent to the PLC.
Current Dynamic Request ID	Indicates the dynamic Request ID assigned to the command sent to the PLC.
Number of Requests Per Sec	Indicates the number of requests sent to Protocol stack in a second.
Number of Response Per Sec	Indicates the number of responses received from the Protocol stack in a second.
Number of EPKS Writes Per Sec	Indicates the number of Experion UDP writes in a second.
Number of EPKS Alarms/Events Per Sec	Indicates the number of Experion alarms raised in a second.
Status UDP Updated Time	Indicates the time when the Status related Experion UDP parameters were last written by MLServer

#### 5. Monitoring PLC status from Experion displays 5.3. Using Experion custom displays

Parameter Name	Description
Base Slot UDP Updated Time	Indicates the time when the Base slot related Experion UDP parameters were last written by MLServer
AD Module UDP Updated Time	Indicates the time when the AD Module related Experion UDP parameters were last written by MLServer
Special Module UDP Updated Time	Indicates the time when the Special Module related Experion UDP parameters were last written by MLServer
Miscellaneous UDP Updated Time	Indicates the time when the Miscellaneous Experion UDP parameters were last written by MLServer
Diagnostics UDP Updated Time	Indicates the time when the Diagnostics related Experion UDP parameters were last written by MLServer
RTC Read UDP Updated Time	Indicates the time when the RTC read related Experion UDP parameters were last written by MLServer
RTC Write Updated Time	Indicates the time when the RTC write related Experion UDP parameters were last written by MLServer
PLC Specific Parameters – Protoco	ol Stack Parameters
Large Buffers Available	Indicates the number of large buffers maintained by Protocol stack.
Small Buffers Available	Indicates the number of small buffers maintained by Protocol stack.
Medium Buffers Available	Indicates the number of medium buffers maintained by Protocol stack.
Request Queue Size	Indicates the size of the request queue maintained by Protocol stack.
PS Request Thread Status	Indicates the status of thread that processes requests in Protocol stack.
PS Response Thread Status	Indicates the status of thread that processes responses in Protocol stack.

## **5. Monitoring PLC status from Experion displays** 5.3. Using Experion custom displays

Parameter Name	Description
PS TB COS Thread Status	Indicates the status of thread that processes TB COS responses in Protocol stack.
Last Response Received Time	Indicates the time of receiving last response from the PLC socket.
Last Request Sent Time	Indicates the time of sending last request to the PLC socket.
Last TB Response Received Time	Indicates the time of receiving last TB response from the PLC socket.
Last COS Response Received Time	Indicates the time of receiving last COS response from the PLC socket.
Max Response Time (ms)	Indicates the maximum time taken to receive response from PLC.
Min Response Time (ms)	Indicates the minimum time taken to receive response from PLC.
Avg. Response Time (ms)	Indicates the average time taken to receive response from PLC.
Last PLC Connected Time	Indicates the last time when protocol stack was connected to PLC socket.
Last PLC Disconnected Time	Indicates the last time when protocol stack was disconnected from PLC socket.
Last HB Sent Time	Indicates the last time when Heart Beat message was sent to PLC.
Last Status Received Time	Indicates the last time when status response was received from PLC.

### 5.4 Using Experion standard Station displays

#### **Channel Summary page**

To enable the ML Channel through Channel Summary page, perform the following steps:

Step			Action	ì	
1	Invoke the Expe	erion Station			
2	Select View > S	system Stat	us > Channel	s.	
	The Channel	Summary p	age appears.		
	Station - Default - Channel State	us Summary(65)			
	· · · · · · · · · · · · · · · · · · ·	_gangure Heip D ▼ ₱₱ × 🕑   💌 111	▲ ▼ ✓ X   ® <b>ÿ</b> Q   Zoon	n To Fit 👻 Command	
	System Status	Channels	System Interfaces	Controllers	
	System Hardware Controller Interfaces Channels	Enable (	Channel Type	Status	
	System Interfaces Controllers OPC Integrator Consoles			Controlle Controlle Controlle Controlle	175
	Stations Flex Stations Consolo Stations Printers Server Redundancy Distributed Servers	6       8       -         7       -       -         8       -       -         9       -       -         10       -       -         11       -       -         13       -       -         14       -       -         16       -       -         17       -       -         18       -       -         19       -       -         20       -       -	IAMASI OPC	OK     Controlle     Cont	1930 1930 1931 1932 1932 1933 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 1935 193
	Honeywell 09-Feb-07	16:31:15			ie10lt1z3zl1s Stn01 Mngr
3	Soloot the chool	k hav aarraa	nonding to the	Channel to a	nahla it

3 Select the check box corresponding to the Channel to enable it.



#### ATTENTION

The Channel status OK corresponds to the communication status between MLServer and Experion server (OPC Communication). It does not correspond to the communication with PLC. If communication is lost with PLC, the alarm for corresponding IP will be raised and all the point status will set in inverted state.

#### 5. Monitoring PLC status from Experion displays

5.4. Using Experion standard Station displays

#### **Point Detail display**

-

To view Point Detail display, perform the following steps:

Step		Action	
1	Invoke the Experion Station.		

- 2 In the Station Command Zone, enter the name of the Point. Press F12.
  - The Point Detail page appears.

Analog Point Detail	Assets/Unassigned items					
ML_AI_M12	General Soa	nning	Alarms	History	Auxiliary	
	Panga					
	Units					
100.00	100%		100.00			
	0%		0.00			
	Services					
	🗹 Scanning and Control enal	oled				
	🗹 Alarms enabled					
0.00						
<i>x</i>	Associated Display					
	L <u>\$</u>					
SP 79.00 EU	Algorithms					
PV 79.00 EU	PV Algorithm	0	Performing De	etail (ordouble clicking)	on the Algorithm No.	
OP 0.00 %	Action Algorithm	0	will callup the	Algorithm Configuration	Page	
MD MAN						
	Performing Detail (or double o	licking) on the	PV, SP, OP or MD will	callup details from the	controller	



#### **REFERENCE - EXTERNAL**

For more information on Experion displays, see **Experion Knowledge Builder**.

# 5.5 Monitoring PLC displays from an Experion client system

#### Overview

The PLC status can be viewed from an Experion client system using the PLC displays. To view the PLC status from an Experion client system, perform the following steps:

Step	Action
1	The graphics pages and the xml files must be available in the client system for viewing the PLC information in the client system. If the files are not available, ensure to copy the graphics pages and xml files from the installation path (typically C:\Program Data\Honeywell\Experion PKS\Client\Abstract) to the client system in the same path.
2	The connection properties of the Experion Station must have the folder path C:\Program Data\Honeywell\Experion PKS\Client\Abstract in the list. This allows the viewing of PLC information in the client system.

#### 5. Monitoring PLC status from Experion displays

5.5. Monitoring PLC displays from an Experion client system

Connection Displays Appearance Toolbars Sounds Web Access So
Search for displays in: Add
C:\ProgramData\Honeywell\Experion PKS\Client\Abstract C:\ProgramData\Honeywell\Experion PKS\Client\MenusAnd C:\Program Files\Honeywell\Experion PKS\Client\System\R4 C:\Program Files\Honeywell\Experion PKS\Client\Dspbld
•
Search subdirectories for shapes
<ul> <li>Search subdirectories for shapes</li> <li>DSP page background color: Default</li> </ul>

To view the PLC status from an Experion client system, the points need not be built using the Point Build utility.

To invoke the PLC display pages, follow the procedures explained in <u>Using</u> Experion custom displays.

3

### 5.6 Bad quality items

#### **Overview**

Experion Point parameters are configured in Quick Builder with PLC Points for data exchange between PLC and Experion. The quality of the Experion Point parameter indicates the status of the data in PLC or the data communication with Experion.

MasterLogic-Experion integration enables the monitoring of analog input signal failures such as transmitter failure or disconnection of input signal. All channels of all analog input modules are constantly monitored for input signal failure. If the input signal fails, all Experion points configured for this input channel is set to BADPV status for safer control of the plant.

The BADPV setting is applicable for the following modules:

Module Type	Model#	Description
Analog Input module	2MLF-AV8A	Voltage Input: 8 channel
		• DC 1 ~ 5V / 0 ~ 5V / 0 ~ 10V / -10 ~ +10V
	2MLF-AC8A	Current Input: 8 Channel
		• DC 4 ~ 20mA / 0 ~ 20mA
	2MLF-AD8A-	Voltage/Current Input 8 Channel
		<ul> <li>DC 1 ~ 5V / 0 ~ 5V / 0 ~ 10V / -10 ~ + 10V 4~20mA/0~20mA</li> </ul>
	2MLF-	Voltage/Current Input: 16 channel
	AD16A	DC 1 ~ 5V / 0 ~ 5V / 0 ~ 10V/ -10 ~ + 10V4 ~ 20mA / 0 ~ 20mA

The following explains the two ways of setting quality for the Point parameter:

- Setting quality for Channel disconnection in the field.
- Setting quality for the item based on the PLC Read command responses.

#### 5. Monitoring PLC status from Experion displays

5.6. Bad quality items

#### Viewing bad quality item in Point Detail display

To view the bad quality for Analog Input modules data in the Point Detail display, perform the following steps:

Step	Action
1	Click Start > Programs > Honeywell MasterLogic Server > Configuration Tool and select the PLC.
2	Select EPKS Write and IO Read check boxes under Monitor in the

Select EPKS Write and IO Read check boxes under Monitor in the configuration tool to view the IO module information in the Experion graphics display. To view PLC status information in Experion graphics display, select Status Read and Alarm Raising check boxes.

Monitor	
🔽 EPKS Write	🔲 Status Read
🔽 10 Read	🔲 Alarm Raising
🔽 Auto Point Build	

- **3** Consider an IO Module in Base 0 Slot 2 that is also an AD Module and Special Module.
- 4 Configure the Input Range as 1~5V in the SoftMaster tool. Ensure to write the IO Module configuration to the PLC.

Parameter	CH 0	CH 1	CH 2	CH 3	CH 4	CH 5	CH 6	CH 7
Channel status	Enable							
🔲 Input range	1~5V							
Output type	0~16000	0~16000	0~16000	0~16000	0~16000	0~16000	0~16000	0~16000
Filter process	Disable							
Filter constant	1	1	1	1	1	1	1	1
Average setting	Disable							
Average processing	Count-Avr							
Average value	2	2	2	2	2	2	2	2

#### 5. Monitoring PLC status from Experion displays 5.6. Bad quality items

Main Display Alar	ms   Control   Auxilary   History	Scripts User Defined	
Point ID	BADTEST		
Enterprise Model Item Name Description		K Address Builder	
Parent Asset	System	Address Type Controller	OK
PV Source Address	CON10_CON ML01.U01.(	Details	Cancel
PV Scan Period	1	Controller CON10_CON	
Engineering Units		Location U01.02.06\$DEV#WORC	
100% Range Value	100 0%		Help
Drift Deadband (%)	0.000		
PV Algo	NONE		
Action Algo	NONE		
Item Type Last Modified	Scanning Enabled		
Last Downloaded		2	

6 Enable the Channel containing the configured PLC Point.

7 Connect the input signal to Channel 4 (first Channel is 0) of the IO Module.

## **5. Monitoring PLC status from Experion displays** 5.6. Bad quality items

• View the status of the data communication in the Station display.          States = Default - Analog Point Detail(systHams.htm)       Image: States = Default - Analog Point Detail(systHams.htm)         States = Default - Analog Point Detail(systHams.htm)       Image: States = Default - Analog Point Detail(systHams.htm)         Image: States = Default - Analog Point Detail(SystHams.htm)       Image: States = Default - Analog Point Detail(SystHams.htm)         Image: States = Default - D
Image: Station - Default - Analog Point Detail(syskilona.htm)         Saton Edit Vew Control Attion Configure Help         Image: Station - Default - Analog Point Detail(syskilona.htm)         Image: Station - Default - Analog Point Detail - Default - Default - Default - Default - Analog Point Detail - Default
Available      A
An alog Point Natal     Auxiliary       POIANA1     Omerail     Scanning     Alarms     History     Auxiliary       65350.00     Image     Image     Image     Image       Unite     Image     Image     Image       55350.00     Image     Image     Image       Image     Image     Image     Imag
POLANA1     Qeneral     Seanning     Alarms     History     Auxiliary       65350.00     Image     Image     Image     Image     Image       0.00     Image     Image     Image     Image     Image       0.00     Image     Image     Image     Image       0.00     Image     Image     Image     Image       Image     Image     Image     Image     Image
66350.00       Image         0.00       Image         0.00       Image         Image       Image
65350.00 0% ESSO.00 0% Doo Services F ⁷ Scanning and Control enabled P ⁷ Alarmo enabled Dapinys Marcoited Diplay
Services
0.00 Associated Déplay
SP 0.00 HU Agorithms
PV     65344.00     PV     PV     Agorithm     0     Performing Detail (or double clicking) on the Algorithm No.       0P     0.00     Action Algorithm     0     will calugative Algorithm Configuration Page
MD MAN Performing Detail (or double clicking) on the PV, SP, OP or MD will callup details from the controller (where the controller interface supports this)
21-Apr-07 10:22:46 SERVER_101 B0S2_ChannelConnection_0 ALARM U 00 Base 0, Slot 2 Channel 0 Connected 1           Honeywell         21-Apr-07         10:24:11         Alarm         System         Message         ie10dt8kkdg1s         Stn01         Mngr

#### 5. Monitoring PLC status from Experion displays 5.6. Bad quality items

Step		Action							
8	Disconnect the	input signal from Channel 4.							
	View the stat	us of the data communication in the Station display.							
	Station - Default - Analog Point Det Station Edit View Control Action	all(sysdtlana.htm) Configure Help	_ ē ×						
	C SEKVER_IVI:PUIANAI.UP = U % ()								
	Analog Folin Becan								
	POIANA1	beneral Scanning Alarms History Auxiliary							
		Range							
		Units							
	65350.00	100% 85350.00							
		0% 000 Services 1 ² Scanning and Control enabled 1 ² Alarmy enabled							
	000 ×	Osplays							
	SP 0.00 EU	Agorithms							
	PV B 65344.00 EU	PV Algorithm 0 Performing Detail (or double clicking) on the Algorithm No.							
	OP 0.00 %	Action Algorithm 0 will callup the Algorithm Configuration Page							
		Performing Detail (or double clicking) on the PV, SP, OP or MD will callup details from the controller (where the controller interface supports this)							
		13-Apr-07 10:04:16 System POISHUT1 RSHI U 00 13276							
	Honeywell 21-Apr-07	10:29:43 Alarm System Message ie10dt8kkdg1s Stn01	Mngr						

**Note:** The previous example is for Channel 4. If you want to test with a different channel in the IO module, ensure that the data item configured in Experion is also changed appropriately.

#### 5. Monitoring PLC status from Experion displays

5.6. Bad quality items

#### Step Action

 Alarm is raised corresponding to the disconnected channel with Base number and Slot number as shown in the following figure.

System Status Disula	V 189138				Alarm S
Location:	View: (all alarr	ns) * <del>-</del>	<u>Ta</u>	Clear All Filters 📑 🚺	1 🗄 🗗 (
Date & Time ∇	Location Tag	Source	Condit Prio Description		Trip V
10:37:29	SERVER_101	BOS2_ChannelConnection_O	ALARM U 00 Base 0, Slot	2 Channel D Connected	1.00
4/21/2007 10:37:29	SERVER_101	BOS2_ChannelConnection_2	ALARM UOO Base O, Slot	2 Channel 2 Connected	
10:37:29	SERVER_101	BOS2_ChannelConnection_3	ALARM U 00 Base 0, Slot	2 Channel 3 Connected	
4/21/2007 10:37:29	SERVER_101	BOS2_ChannelConnection_4	ALARM U 00 Base 0, Slot	2 Channel 4 Disconnecte	d 0.00
4/21/2007 10:37:29	SERVER_101	BOS2_ChannelConnection_5	ALARM U 00 Base 0, Slot	2 Channel 5 Connected	1.00
<b>1</b> 4/21/2007 10:37:29	SERVER_101	BOS2_ChannelConnection_6	ALARM U 00 Base 0, Slot	2 Channel 6 Connected	
Unacknowledged alarms:	8	Acknowledged alarms: 50	Pause	🗴 Resume 🕹 Ack	nowledge Pa

System Me

### 6. Alarms and Events integration

### 6.1 Alarm integration

#### **Types of Alarms**

The following are the two types of Alarms raised by the MLServer:

- PLC Status diagnostics Alarms These alarms are raised based on the current PLC Status.
- Error indicating Alarms / Messages Important errors that require immediate attention are also raised as System Alarms. The other errors are raised as Messages.

The Asset configured in the PLC tab of the configuration tool, for that particular PLC, is used while generating the Alarms/Events.

#### PLC Status Diagnostics alarms

After downloading Points to the Experion server, the MLServer starts receiving the status data from the PLC at every configured interval (default is 10 seconds).

Alarms are raised based on the present PLC status. Another PLC level alarm is raised corresponding to the PLC Point if any of the alarming conditions is active at that point of time for the PLC. These alarms can be viewed in the Alarm Summary display of the Experion Station.



#### ATTENTION

If one or more alarms are raised at the status bit level of a Point, the OP parameter value of the Point is set ON and the corresponding alarm is raised at the PLC level.

#### Error indicating Alarms / Messages

The important system level error messages such as PLC connection errors are raised as System Alarms in Experion. The less important errors are logged as Messages. This includes errors such as errors in point configuration, and so on.

#### 6. Alarms and Events integration

6.1. Alarm integration

tion <u>E</u> dit <u>V</u> iew <u>C</u> ontrol <u>A</u> ction (	C <u>o</u> nfigure <u>H</u> elp					
	ù • 🖻 • 🕼 🔟 1	╢╽╸┙╱┆	× 9;¢ Q,	Zoom To Fit 💌 🛛 Command		
Messages						Alarm Sum
ocation View: (all me	:ssages) * <del>↓</del>			🚡 Clear All Filters	🖸 Reset View	E 🛛 1 🗄 🖡 🖨
cation Pane       x         tow All Locations       i         Ag Alarm Groups       i         Assets       i         ML_ASSET1       ML_ASSET3         ML_ASSET3       ML_ASSET4         ML_ASSET4       ML_ASSET4         ML_SERVER_ASSET4       NL_SERVER_Iscals         NLSERVER_Iscals       Consoles         ML_SERVER [local s       Consoles         Consoles       Stations         System Interfaces       System Interfaces	Date & Time 7/25/2007 17:56:28 7/25/2007 17:56:28 7/25/2007 17:56:28	Location Tag ML_SERVER ML_SERVER ML_SERVER	Source ML01 ML01 ML01	Message PLC: MLPLC1 PLC: MLPLC1 PLC: MLPLC1	Item Name: %WD0I Item Name: %WD0I Item Name: %WD0I	DOO\$CON#INT Invalid Data typ DOO\$CON#INT Invalid Data typ DOO\$CON#INT Invalid Data typ
acknowledged messages:	3			_		
nowladaad maeesaae:	0			🛄 Paus	se 🚺 🔿 Resuma	e 🛛 😽 Acknowledge Page

#### Viewing PLC alarms in Experion Station

The Alarms are raised based on the present status of the PLC. A PLC level alarm is raised corresponding to the PLC Point if any of the alarming condition is active at that

R400

point of time for the PLC. These alarms are displayed in the Alarm Summary display in the Experion Station.

#### Sample alarms raised in Experion

🔆 Station - Default - Alarm Su	ımmary(sysAlarm9	5ummary.htm)					_
Station Edit View Control A	Action Configure <u>F</u>	<u>t</u> elp					
☆   △ 🌣 🗈   🗅 💽		😰 🛛 🖬 🔺 🗢 🗸 🗡	©¢⊂  2	Zoom To Fit	Command		
Alarms			- Sector	660			Message Summ
Location 🚽 View:	(all alarms) <del>"</del>			🚡 Cle	ar All Filters 🛛 💆 Reset View	<b>E</b>	1 🗄 🗗 🖨 🛛
Date & Time 🔻	Location Tag	Source	Condition	Priority	Description		T L
1/27/2007 12:49:26	ML_ASSET1	MLPLC1_SYS_STATE_ERROI	RALARM	H 01	CPU Operation - ERROR Mod	9	ON
7/27/2007 12:49:26	ML_ASSET1	MLPLC1_CNF_ER_IO_TY_ER	ALARM	U 01	Module type discordance error		ON
7/27/2007 12:49:26	ML_ASSET1	MLPLC1_CNF_ER_IO_DE_ER	ALARM	U 01	Module disconnection error		ON
7/27/2007 12:48:15	ML_ASSET1	ML01	ALARM	U 01	Base 0, Slot 4 Module detachm	ent/disconnec	tion error ON
A 7/27/2007 12:44:05	ML_ASSET1	MLPLC1_SYS_STATE_USTO.	ALARM	H 01	Stop by Stop function		ON
Inacknowledged alarms:	5						
A alwayda daad alarmaa	0					··   🚔 🗛	oknowlodzo Pozo
Acknowledged alarms:	U						cknowledge Page
07 + 1 67	40.40.00 14						
27-Jul-07	12:49:26 ML_	ASSET1 MLPLC1_CNF_ER	10_1Y_E	r alai	KM U 01 Module type disco	rdance erro	Str UN
oneywen 27-Jul-01	1 12.00.1				epkssi	VIID   3	suloi Mirig

Figure 6.1-1: Sample alarms in Experion

### 6.2 PLC Events

#### **Types of PLC events**

The PLCs record the following four different types of events:

Event Type	Description	Buffer Size in CPU
Error log	This log provides information about the errors generated during the operation. The error code, date, time and error details are saved in this file.	2048 events
Shutdown log	This log provides the time details of ON/OFF information of the system. The date, time and the ON/OFF state are saved in this file.	1024 events
Mode log	This saves the changed CPU mode information and time in case there is a change in mode of operation.	1024 events
System log	This saves the operation history of system events that occur during operation.	2048 events
DISOE	These are the sequence of events in the DISOE module captured by CPU.	3000 events

#### Transferring PLC events to Experion/Log files

The Experion Station can be used for viewing a summary of the events.

To transfer the PLC events to Experion/Log file, the parameters in the PLC Logs must be configured for each PLC using the MLServer Configuration Tool.

The following table lists the PLC Log parameters and their descriptions:

#### 6. Alarms and Events integration 6.2. PLC Events

Parameter	Possible Values	Description
Initial History	Enabled/Disabled	<ul> <li>If it is Enabled, the already existing PLC events are transferred to Experion server or Log files during startup of the MLServer based on the LogToFile and Events settings.</li> </ul>
		• If it is <b>Disabled</b> , backlog events are not transferred during the MLServer startup. However the events that occur when the MLServer is running are transferred to Experion server or Log files.
Log To File	Enabled/Disabled	If it is <b>Enabled</b> , the PLC events are transferred to log files. These log files are stored in the same folder path used for storing the MLServer log files.
Events	Enabled/Disabled	If it is <b>Enabled</b> , the PLC events are transferred to Experion server as System Events / Alarms.
ScanPeriod		It represents the interval in which the PLC log is scanned for changes and events are logged into the log file and /or Experion server. If this is 0 then the corresponding PLC log is not scanned for changes at all.

After the MLServer starts communicating with the PLCs, depending on the values of these parameters, the events are transferred to the Experion server or the Log files.

The backlog events are saved in the memory area of the respective PLCs. These events can be viewed in the SoftMaster, as shown in the following figure:

### **6. Alarms and Events integration** 6.2. PLC Events

PLC	history	- NewPLC		
E	rror Log	Mode Log   9	Shut down Log	Sytstem Log
	Index	Date	Time	Contents
	<b>🖾</b> 84	2005-08-18	18:41:33.001	Data trace, Use
	🖾 85 👘	2005-08-18	18:43:32.865	Momently shut-down
	🖾 86 👘	2005-08-18	18:46:09.001	Data trace, Use
	🖾 87	2005-08-18	18:57:16.181	USB, OK, Connect
	🖾 88	2005-08-18	18:57:19.876	USB, OK, Disconnect
	89 🖾	2005-08-18	18:57:23.541	USB, OK, Connect

After restarting the MLServer, these events are transferred to the Experion server or log files based on the PLC log parameters settings. To get the backlog of the PLC logs into Experion, the Initial history option could be enabled.

To view a summary of events select View > Events > Event Summary from the Experion Station Display. The following figure depicts the list of events viewed from the Experion Station:

The following figure depicts how the PLC events are transferred to Experion server and are saved in the log files:



#### Transferring SOE events from PLC to Experion Station



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#### WARNING

Honeywell does not recommend modifying the Quick Builder database when MLServer is executing. After modifying QDB, please restart MLServer by disabling and enabling the MLchannel.

The Experion Station can be used for viewing a summary of the sequence of events generated in the PLC. To transfer the PLC events to Experion/Log file, perform the following steps.

Step	Action
1	Connect to PLC with DISOE module using SoftMaster.
2	In the <b>I/O Parameter Setting</b> dialog box, select the SOE module base and slot.
3	Configure the SOE module by selecting the type of events to be captured by the PLC, chattering time and others.
	In the <b>I/O Parameter Setting</b> dialog box, double-click the SOE module or click <b>Details</b> .
	The <b>SOE Module</b> dialog box appears.
4	Under SOE History, click Reset with recent history option button.

### **6. Alarms and Events integration** 6.2. PLC Events

		Action	1		
SOE M	odule				? ×
	sic Settings but Filter E History Reset with recent Retain initial histo	3 ms			
Eve	nt setting details:	IDE	Chai	terina	
#	Rising event	▼ Falling event	Time(ms)	Event(No.)	
00	<u> </u>	<b>V</b>	0	2	1
01			0	2	
02			0	2	<u> </u>
02	· · · · · · · · · · · · · · · · · · ·				
03	<u> </u>	V	0	2	
03	ব	<u>र</u>	0 0	2 2	
03 03 04 05	고 고 고	<u>য</u> য য	0 0 0	2 2 2	
03 03 04 05 06	ববর	বিবে	0 0 0 0	2 2 2 2 2	
03 04 05 06 07	ববব	র ব ব ব	0 0 0 0 0 0	2 2 2 2 2 2 2	
03 04 05 06 07 08	বেরব	<u>।</u> । । । । । ।	0 0 0 0 0 0 0	2 2 2 2 2 2 2 2 2	
000 000 000 000 000 000 000 000 000 00	য বিব য ব ব ব	<u>হ</u> হ হ হ হ হ হ হ হ হ হ হ হ হ হ হ হ হ হ		2 2 2 2 2 2 2 2 2	
000 000 000 000 000 000 000 000 000 00	য বির্বার বির্বার বির্বার বির্বার বির্বার বির্বার	ৰেৰেৰেৰে	0 0 0 0 0 0 0 0 0	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	য ব ব ব ব ব য ব ব ব ব ব ব ব ব ব ব ব ব ব	বেরেরেরেরের		2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	

5 In the Basic Parameter Setting dialog box, click Save the latest SOE events option button.

Fixed period operation mode (1 ~ 999ms):       50 ms         Time Setup       200 ms         (10 ~ 1000ms)       200 ms         Standard Ingut Filter:       3 T ms         Restart Method       © Lold Restart         © Lold Restart       © Warm Restart         Reset Switch Setup       Image: Disable the reset switch         Image: Disable the overall reset switch       Image: Disable the overall reset switch	Output during gebugging Keep output when an error occurs Keep output when converting <u>B</u> UN>STOP Keep output when converting <u>S</u> TOP>RUN SOE History Save the latest SOE events Save the first SDE events Save the first SDE events D.CLR Overall Reset Switch Setup Disable the D.CLR reset switch Disable the overall D.CLB reset switch
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

MasterLogic-Experion Integration User's Guide Honeywell

#### 6. Alarms and Events integration 6.2. PLC Events

Step	Action
6	Ensure Write to PLC after changing these parameters.
7	In Quick Builder, configure a status point in the device area format.
8	Configure a PLC Point as <u>ML01.U1.2.6\$DEV#BIT@SOE</u> in Quick Builder and download to the Experion server.
	Note: The PLC point must be configured with U1.2.6, where 1 is Base No1, 2 is Slot no 2, and 4 for Channel no 4. Also, @SOE must be added to string at the end to indicate that the point is an SOE module point. You should not configure PLC point as <u>ML01.U01.02.06\$DEV#BIT@SOE</u> in Quick Builder.
	ATTENTION All the SOE points must be configured with DEV command and #BIT type. Ensure that base number, slot number, and channel number does not preced with '0'.
9	Enable the Channel containing the configured PLC Point.
10	The SOE events are transferred to the Experion server SOE summary page.

### **6. Alarms and Events integration** 6.2. PLC Events

#### Step

#### Action

11 To view a summary of events, select **View > Events > SOE Summary** from the Experion Station Display.

The following figure depicts the list of events viewed from the Experion Station.

			1			
Sequence of Even	ts					Event Summ
ocation <del>v</del> View:	: (all recent events	with live updates)+	🔀 Cle	ear All Filters	💙 Reset View 🛛 🔟 🕕	e 7 e 1
te & Time	Location Tag	Source	Condition Action	n Priority	Description	Value U
2010 16:03:20.0540	MLTEST	SOEPOINT	SOEEVENT	J 00	Event Description will come here	0.00
2010 16:03:20.0540	MLTEST	SOEPOINT	SOEEVENT		Event Description will come here	0.00
2010 16:03:20.0540	MLTEST	SOEPOINT	SOEEVENT		Event Description will come here	0.00
2010 16:03:20.0540	MLTEST	SOEPOINT	SOEEVENT		Event Description will come here	
2010 16:03:20.0540	MLTEST	SOFPOINT	SOEEVENT		Event Description will come here	
2010 16:03:20.0540	MLTEST	SOEPOINT	ALARM		Timestamp	
2010 16:03:20.0540	MLTEST	SOEPOINT	ALARM		Timestamp	0.00
2010 16:03:20.0540	MLTEST	SOEPOINT	ALARM		Timestamp	0.00
2010 16:03:20.0540	MLTEST	SOEPOINT	ALARM		Timestamp	0.00
2010 16:03:20.0540	MLTEST	SOEPOINT	ALARM		Timestamp	
2010 16:03:20.0540	MLTEST	POIANA1	ALARM		Timestamp	0.00
2010 16:03:20.0540	MLTEST	POIANA1	ALARM		Timestamp	0.00
2010 16:03:20.0540	MLTEST	POIANA1	ALARM		Timestamp	0.00
2010 16:03:20.0540	MLTEST	POIANA1	ALARM		Timestamp	0.00
2010 16:03:20.0540	MLTEST	POIANA1	ALARM		Timestamp	0.00
2010 16:03:20.0540	MLTEST	POIANA1	ALARM		Timestamp	0.00
2010 16:03:20.0540	MLTEST	POIANA1	ALARM		Timestamp	0.00
2010 16:03:20.0540	MLTEST	POIANA1	ALARM		Timestamp	0.00
2010 16:03:20.0540	MLTEST	POIANA1	ALARM		Timestamp	0.00
2010 16:03:20.0540	MLTEST	POIANA1	ALARM		Timestamp	
2010 16:03:20.0540	MLTEST	POIANA1	ALARM		Timestamp	0.00
2010 16:03:20.0540	MLTEST	POIANA1	ALARM	J 00	Timestamp	0.00
ching evente:	51					

12 On double-clicking the SOE event, the point's detailed display page opens.



#### **ATTENTION**

DISOE physical I/O points must be configured as SOE SCADA point in Quick Builder to view the corresponding SOE events in Experion Station.
### 7. Troubleshooting

#### 7.1 MasterLogic Server logs

#### **Overview**

The MLServer has two modules, the ML Protocol and the MLServer. The modules generate a series of logs, which are useful for various troubleshooting, analysis and recording purposes.

The following is the list of logs generated by the ML Protocol and the MLServer:

- Activity •
- Request
- Response
- Trace
- Error •
- Hex
- MLMonitor •

#### **MLServer** logs

The Parameters under MLServerLogs to enable/disable the generation of logs are selected using the MLServer configuration tool. The path to store the log files are also configured The LogFolderPath parameter value indicates the path, where the MLServer logs are saved.

ML Server Logs					
Log Folder Path	C:\\Program Fi	C:\\Program Files\\Honeywell\\MasterLogicServer\\PLCLogs\\			
	🔽 Request	🔽 Response	Trace	Monitor	

The following table explains the logs generated by the MLServer:

	Log	Optional / Mandatory	Description	
	Activity	Mandatory	This log provides general information like M initialization, thread start/stop and successfu messages.	LServer ul add item
R400 March 20	11	MasterLogic-I	MasterLogic-Experion Integration - User's Guide Honeywell	

### 7. Troubleshooting

7.1. MasterLogic Server logs

Log	Optional / Mandatory	Description
Error	Mandatory	This log provides information about unsuccessful add item, exceptions and general error messages.
		The information in this log helps for troubleshooting.
Request	Optional	This log provides information about requests sent to the PLC by the MLServer.
		To generate this log, set <b>RequestLog</b> to <b>Yes.</b>
Response	Optional	This log provides information about responses received from the PLC by the MLServer.
		To generate this log, set <b>ResponseLog</b> to <b>Yes.</b>
Trace	Optional	This log provides detailed information that helps debugging.
		To generate this log, set <b>TraceLog</b> to <b>Yes.</b>
MLMonitor	Optional	This log provides information about the status of UDP writing to Experion, PLC status, base slot information, RTC, IP Address and alarms raised.
		To generate this log, set MLMonitorLog to Yes.

### ML protocol logs

The parameters under **MLProtocol Logs** to enable/disable the generation of logs are selected using the MLServer Configuration tool. The path to store the log files is also configured.

The **LogFolderPath** parameter value indicates the path, where the ML protocol logs are stored.

Protocol Logs -					
Log Folder Path	C:\\Program Files\\Honeywell\\MasterLogicServer\\PLCLogs\\				
	🔽 Request	🔽 Response	Trace	<b>▼</b> Hex	

The following table explains the logs generated by the ML protocol:

# 7.1. MasterLogic Server logs

Log	Optional / Mandatory	Description
Activity	Mandatory	This log provides information on initial xml settings, socket connection/disconnection status.
Error	Mandatory	This log provides information on errors occurred during communication between the PLC and the MLServer and all exceptions.
Request	Optional	This log provides information on requests sent to the PLC by the MLServer.
		To generate this log, set RequestLog to Yes.
Response	Optional	This log provides information on responses received from the PLC.
		To generate this log, set <b>ResponseLog</b> to <b>Yes.</b>
Trace	Optional	This log provides detailed information that helps debugging.
		To generate this log, set TraceLog to Yes.
Hex	Optional	This log displays Hex dump packets sent to/received from the MLServer.

The Activity and Error logs are mandatory and generated by default. These logs are not controlled by any parameter setting.

The optional log settings can be enabled or disabled at Runtime by changing the appropriate XML parameters. Any change for these configurations are updated every 30 seconds.

## Honeywell

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