JUN / 21

STUDIO302

Version 1.12



Studio302







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web: www.smar.com/contactus.asp

INTRODUCTION

This user's manual describes the features of the Studio302 application.

Studio302 is the user-friendly, easy-to-use software tool that integrates all applications included in Smar's Enterprise Automation package, the **System302**. **Studio302** does not incorporate the functionality of the applications, **Studio302** only starts the selected application, and each software application is executed apart from the others.

One of the *Studio302* characteristics is managing the information from different plant project configurations imported to a single integrated database. This enables integration of all control, operation, and maintenance tools to several workstations.

The access rights defined for each engineer or technician operating the plant process guarantee the integrity of the project configuration data. Specific user groups for *Studio302* can be created by the operational system in the workstation and they are transparently incorporated to the *Studio302* login system.

Allowing simultaneous access to different users minimizes repetitive re-configuring of the same project to different client machines. It also maintains continuous data flow for file transfer.

With *Studio302*, the maintenance of the plant instruments is more efficient. Using the *Wizard*, the user can perform the maintenance and even replace an instrument in an effective way, reducing the idle time of the plant.

Studio302 runs on Microsoft[®] Windows. If the user needs further information about versions and types of supported operating systems, refer to the **README** of *SYSTEM302*.

This manual refers to version 1.12 of Studio302.

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INSTALLATION AND CONFIGURATION

Installation and Configuration

Studio302 is installed by the **SYSTEM302** Installation media, along with all the other integrated applications you will use to configure, maintain and supervise your plant.

Please refer to the **SYSTEM302 HANDBOOK**, which describes the procedures to install and configure **SYSTEM302**.

Starting Studio302

After configuring your system using the **System302 Settings** tool, you can start using **Studio302**. On the **Start** menu, click **Programs > SYSTEM302 > Studio302** to run the application.

The first time **Studio302** is executed on the local machine, it is not necessary to type the username and password to gain access to the **SYSTEM302** tools.

To enable the secure mode, click **Settings > Security**, and click **Enable Login**.

After changing this definition, users must log in every time the **Studio302** is initialized. **Studio302** incorporates Windows User Groups. Windows' users can log to **Studio302** using the same login name and password configured for the operating system.

The figure below shows the Login dialog box:

🔭 Login 📃 💌
Login: Password:
Login Cancel

Figure 1.1. User Login

Type the user's login and password and click **Login**. Click **Cancel** to cancel the login procedure and the **Studio302** application will close.

Changing the Current Studio302 User

It is not necessary to close the **Studio302** application to change the user logged to the application. On the **File** menu, click the option **Log Off** to change the current **Studio302** user.

A message box will open to confirm the operation:



Figure 1.2. Confirm the Log Off procedure

Click **Yes** and the **Login** dialog box will open. Type the name and password of the new user to connect to the **Studio302** again.

If the user clicks Cancel on the Login dialog box, the Studio302 application will be shut down.

USER INTERFACE

The figure below shows the Studio302 interface:



Figure 2.1. Studio302 Interface

The left panel shows shortcuts to open the windows from where the user can access the information related to strategy controls, logics, workstations, controllers, I/O points, and field devices, created in areas configuration files managed by **Studio302**.

The following subsections describe the toolbars, their functionality, and how the users access the plant process control information.

Toolbars

Studio302 has two toolbars located under the main menu:



Figure 2.2. Studio302 Toolbars

Main toolbar

- Show/Hide the Topology Click this button to open or close the left panel that displays the topology tree in Studio302.

www. - New Detect Devices List

Click this button to open the window with the list of new devices detected that can be added to the plant. See the figure below:

Device ID	Device Tag	Bridge Tag	Port Number	Status
0003020025:SMAR-DF73:122	DF73	HSE HOST 2	1	ACK
DeviceIdentNr:0000-Adr:005		DF73_1	1	ACK
0003020002:SMAR-TT302:004809066	TT302_1	DF62_227_ACY	1	ACK
DeviceIdentNr:0000-Adr:018		DF73_1	1	ACK
000302000b:SMAR-TP302:000809407	Device 1	DF62_227_ACY	1	ACK
📅 🖲 Device ID 🛛 TAG 🔿 Device	Tag 🐏 🤆 Brid	lge Tag 🏾 🍠 🔿 Port Nu	mber 🐺 🔿 St	atus
Convet		Search by [

Figure 2.3. New field device detected window

See section **Detecting New Devices**.

🔮 - Database

Click this button to open the **Database** window. See section **Database** for details. See the figure below:

为 Database	
Database	
Current Database	: System302
New	
Selected	
	Database List
	System302
Manufacturer ID:	Unregistered Browse
Search	Search
	OK Cancel Help

Figure 2.4. Database Configuration Window

📃 - Reports

Click this button to generate the reports related the **SYSTEM302** tasks, the active instruments from the current Database, the *Firmware* versions, or the **SYSTEM302** files installed on the local machine along with the local machine hardware description.

It is not possible to generate two or more reports simultaneously. Only one report window can be shown at a time in the **Studio302** window.

The following dialog box will open:

🗞 Choose Report 📃
Reports
Choose the report
Checking
Firmwares
Inventory
Processes
System302 Tools
Close Help

Figure 2.5. Choose a Report

Click the option **Checking** to generate the report that indicates the instruments (field devices and controllers) from the current database which are communicating to the system. This report will show the instrument tag, Device ID, the revision of the Device Description (DD) and the instrument revision.

The communication servers (HSE Server, DFI Server, DD Server e AE Server) must be active on

the local machine to generate this report. Click the button Solution Communication to activate the servers.

See the example in the figure below:

ports			
	1 of 1 🕨 🕨 🏙 🖄		
		Studi	o302 Report 🛛 🚴
Field Information			
<u>DeviceTag</u>	<u>DeviceID</u>	Device Revision	DD Revision
DF73_1	0003020025:SMAR-DF73:192	1	2
DF73	0003020025:SMAR-DF73:122	1	2
DF62_227_ACY	0003020026:SMAR-DF62:227	1	2
DF62_018_ADN	0003020026:SMAR-DF62:18	1	2
HSE HOST 1	000000001:FF-HSE HOST:000000001	1	2
TT302-2	0003020002:SMAR-TT302:004803386		
FI302-4	0003020005:SMAR-FI302:006801718		
LD302_9	0003020001:SMAR-LD302:000804538		

Figure 2.6. Checking Report

Click the option **Firmwares** to generate the report that indicates the versions and date of each installed firmware. See the example in the figure below:

Dorts	of 1+ 🕨 🕨 🖄	
		Studio302 Report
Firmwares Information Name	<u>Versions</u>	Date
DC Firmware(s)		
	DC302_v350J.abs	1/4/2008 11:54:32
DF51 Firmware(s)		
	DF51FBViewEth008.ABS	7/10/2004 15:27:44
	DF51V3.9.4.ABS	9/4/2007 10:39:14
	DF51V3.9.4R.ABS	9/4/2007 10:24:46
	DF51VCF3.9.4.ABS	9/4/2007 10:57:28
	DF51VCF3.9.4R.ABS	9/4/2007 10:03:06
DF62 Firmw are(s)		
	DF62-V1 2 16 RC1.abs	19/5/2008 17:23:30

Figure 2.7. Firmwares Report

Click the option **Inventory** to generate the report that lists all files located in the **SYSTEM302** installation folder and indicates the hardware characteristics for the local machine (where **SYSTEM302** was installed).

This report has two sections. The **Hardware** section shows the configuration of the local machine, including the machine name, operating system version, hard disk space, network adapters, etc. The **Software** section reports the **SYSTEM302** version and the number of files related to this installation.

See the example in the figure below:

Reports		
😂 100% 💌 🛛 📢 🚽 👥 1 of 237 🔹 🕨	· • • •	
		1
		ŀ
	Studio302 Report	
System302 Structure		
Local Hardware Configuration & System302 In	iformation	
Operational System:		
Name: Microsoft Windows XP Professional		
Service Pack: Service Pack 2		
Version: 5.1.2600		
Network adapter(s):		
Name: Intel(R) PRO/100+ Management Adapter		
Default IP Gateway: 192.168.163.2		
IP Address: 192.168.163.90 DNS Domain: smar.com.br		
Hard Disk:		
Partition C: size: 8.39 GB. free space: 970.81 MB.		Ц

Figure 2.8. Inventory Report

Click the **Processes** option to generate the report that indicates all processes that are running on the station, the related products, their versions and the memory space occupied by them.

See the example in the following figure:

User Interface

< ▶ ₩ <u>1</u> /1+ £	100% 🗾 🖾		
		Studio302	Report
Processes			
Name	Product name	Version	Memor
SmarStudioBridgeProxy	Studio302	1.09.0004	8.655K
csrss			3.473K
FnTypeWizard	FFB Manager	3, 1, 0, 28	7.229K
winlogon			6.480K
sqlwriter	Microsoft SQL Server	9.00.4035.00	3.772K
spoolsv	Microsoft® Windows® Operating System	5.2.3790.3959	7.500K
spnsrvnt	SPI	7, 6, 0, 6	3.740K

Figure 2.9. Processes Report

Click the option System302 Tools to generate the report that indicates the version, installation path and status of each application available with SYSTEM302. See the example in the figure below:

H • • H 1	/1+ m 100% V 🖄		
sks Informations ——		Studio3(02 Report
Name	<u>Path</u>	Version	<u>Status</u>
AE Server	C:\Arquivos de programas\Smar\OleServers\AESvr.exe	1.2.0.1	Installed
AreaLink Tool	C:\Arquivos de programas\Smar\AreaLinkTool\AreaLinkTool.jar	1.2.1.16	Installed
AssetView	C:\Arquivos de programas\Smar\AssetView\Bin\SmarAssetServer.exe	4.2.23	Installed
AssetView FDT	C:\Arquivos de programas\Smar\Asset Management Services\bin\SmarAVFDTConfigurator.exe	2.0.0.1	Installed
Database Manager	C:\Arquivos de programas\Smar\ConfigurationWorkspace\CWServer.exe	2.4.2.26	Installed
DFI Diver	C:\Arquivos de programas\Smar\FBTools\DfiDiver.exe	2.0.1.1	Installed
DFI Server	C:\Arquivos de programas\Smar\OleServers\DfiSvr.exe	4.3.0.7	Installed
FBTools Wizard	C:\Arquivos de programas\Smar\Studio302\Bin\SmarStudioFBTools.exe	1.0.0.5	Installed
FBView	C:\Arquivos de programas\Smar\FBView\FBView.exe	5.0.6.0	Installed
COllina		5 2 8 7	

Figure 2.10. Tasks Report

- Process Equipment Database Click this button to open the Process Equipment Database window. See the following figure:



Figure 2.11. Process Equipment Database Window

See section Process Equipment Database.



Click this button to compact all system information, such as configuration files, block support and device support files, into a single file to be copied to a remote machine.

See section Pack & Go.

🐎 Pack & Go	×
Pack & Go	
 Type Full (Configuration Files, dependency files and entire Block Support and Device Support). Light (Configuration Files and dependency files). 	
Create Close Cancel	Help

Figure 2.12. Pack & Go Options

🍧 - Unpack

Click this button to unpack a compacted file that contains the information about a remote system, which will be copied to a local machine. See section **Unpacking Database Files**.

🐎 Unpack	×
Unpack	*
Select a file to unpack	
Select the temporary path to extract the files	Browse
C:\Users\smar\AppData\Local\Temp	Browse
List all files	Unpack Help

Figure 2.13. Unpacking files

1

- Diagnostics Click this button to open the Diagnostics window. See section Diagnostics.

🗞 Studio302 - Diagnostics		×
😑 🌉 Diagnostics	Live Links Customize	
Live Links	A4	×
🛛 🎡 Devices Summary	Customize 🔊	
	Area Links Image: Second sec	
	This operation may impact the supervision due to the burden on OPCs points requests	
	Next Cancel Help	
Status		:

Figure 2.14. Diagnostics Window



Click this button to update the information of all configurations saved on the *Database Manager*. This procedure is available in the *Multi-User* mode.

C

Click this button to toggle between the online and offline communication mode. This button also activates the detection service for new devices connected to the communication network.

Tasks toolbar

These buttons are related to the **SYSTEM302** applications. The following list indicates the correspondence with the applications:

•	Area Link Configuration (Area Link Tool)
P	Asset Management (AssetView)
	DFI Diver
<u>8</u>	Firmware Download (FBTools Wizard)
Đ.	Network Analysis (FBView)
- DT	FDT Hart Configurator (AssetView)
	License Information (LicenseView)
	IEC-61131 Ladder Logic Configuration (LogicView)
S.	Profibus PA Device Parametrization (ProfibusView)
8	ProcessView
Q	OPC Server Management (System302 Server Manager)
FORC	OPC Tag Visualization (TagView)
	Strategy Configuration (Syscon)
Ç,	Strategy Simulation (SimulationView)
GPC	Tag List Generator for DF65 (TagList)
S	System302 Documentation

When you click these buttons, the corresponding application is initialized. **Studio302** does not incorporate the functionality of the application; **Studio302** only initializes the selected application, and each software application is executed apart from the others.

Customizing the Toolbars

You can select the applications that will be initialized from the toolbar. Go the **Settings** menu and select the option **Toolbar**. The dialog box to select the applications will open.

🐎 Toolbar			×	
Available toolbar buttons	add	Current toolbar buttons AreaLink Tool AssetView AsseView FDT AsseView FDT AsseView FBTools FBView LicenseView	* III	
	Ok	Cancel Hel	p	



- To enable the button for an application in the toolbar, select the icon of the application in the **Available toolbar buttons** list and click **Add**.
- To disable the button for an application in the toolbar, select the icon of the application in the **Current toolbar buttons** list and click **Remove**.

If the button for an application is not available in the dialog box showed above, it means that the application was not installed by **SYSTEM302**.

Topology Tree

To open the topology tree, click the button **Show/Hide Topology**, or go to the **File** menu and select the option **Topology**.

To close the topology tree, click the button **Show/Hide Topology** again or go to the **File** menu and unselect the option **Topology**.

You can expand the visualization area hiding the topology tree of Studio302.

Click the button **Hide Topology (**, and the topology tree will collapse to the left, increasing the visualization area.



Figure 2.16. Hiding the topology tree

To display the topology tree again, move the mouse cursor over the **SYSTEM302** label. The name displayed on the label of the left panel corresponds to the name of the current Database.



Figure 2.17. Displaying the topology tree

Defining User's Preferences

On the File menu, click the option Preferences to configure the user's preferences.

Path to Configurations Removed from the Database

If a configuration is removed from the current Database, the files related to this configuration are moved from the **Studio302** working directory to a directory defined by the user.

In case it is necessary to restore that configuration, import the configuration file again, from the directory defined by the user to the current Database and all files related to the configuration will be restored to the **Studio302** working directory.

እ Prefe	erend	es					×
Pref	ier	ences					
Rep	orts	License Monitor	Diagnostics	Replicate			
Files	Pro	c. Equip. Database	SimulationV	iew Manuf. ID	Samples	Field. dev. list result	5
Re Co	emov onfig :\Pro	ved uration files dired ogram Files (x86)	ctory: \\Smar\Studio	0302\Remo`	Bro	owse	
					[Close Hel	p

Figure 2.18. Preferences Dialog Box: Files Tab

Click the **Browse** button to open the **Browser** dialog box. Browse the directories to locate the folder, select the folder icon and click **Ok** to conclude.

Process Equipment Database

Define the database of the Process Equipment Database.

Click the **Process Equipment Database** button to open the **Data Link Properties** dialog box and select the server. You can also test the connection with the database clicking the **Test Connection** button.

No. Preferences	×
Preferences	Y I
Reports License Monitor Diagnostics Replicate	
Files Proc. Equip. Database SimulationView Manuf. ID Samples Field.	dev. list results
Click on the button to set the database of the Process Equipment Database.	
Close	e Help

Figure 2.19. Preferences Dialog Box: Process Equipment Database Tab

If you select a remote data server, it will only be possible to view the data information and you will not be allowed to alter the **Process Equipment Database** items. In this case, the **Process Equipment Database** will be operating in **View Mode**.

SimulationView

This option enables the simulation mode of the **SYSTEM302**. For further information, please, refer to the **SimulationView** manual.

Notes Preferences	×
Preferences	
Reports License Monitor Diagnostics Replicate	
Files Proc. Equip. Database SimulationView Manuf. ID	Samples Field. dev. list results
☑ Enable the System302 simulation mode	
	Close Help

Figure 2.20. Preferences Dialog Box: SimulationView Tab

Manufacturer ID

The profile numbers are grouped according to the Manufacturer IDs.

🐎 Preferences				×
Preferences				
Reports License Monitor	Diagnostics Replicate			
Files Proc. Equip. Database	SimulationView Manuf. ID	Samples	Field. dev. list result	:s
Mode: O Unique Engineering				
			Close He	p

Figure 2.21. Preferences Dialog Box: Manufacturer ID Tab

- Unique: select this mode to define a default Manufacturer ID for all databases.
- Engineering: select this mode to specify a Manufacturer ID for each database created.

Samples Screen

Check the option **Enable the Studio302 Samples** to open the **Samples Screen** every time the user starts the **Studio302**. If this option is not checked, the **Samples Screen** will not appear.

Not the second s	×
Preferences	
Reports License Monitor Diagnostics Replicate	
Files Proc. Equip. Database SimulationView Manuf. ID	Samples Field. dev. list results
☑ Enable the Studio302 Samples	
	Close Help

Figure 2.22. Preferences Dialog Box: Samples Tab

See sections **Configuration Samples** and **Process Equipment Database Samples** for details on how to open a **Studio302** Sample.

Field Devices List Results

Check this option to enable the dialog box that displays the status after reading the information related to the devices from each configured OPC Server.

Notes Preferences				Х
Preferences				
Reports License Monitor Diagnos	ics Replicate			
Files Proc. Equip. Database Simula	tionView Manuf. ID	Samples F	ield. dev. list results	
Enable field devices list readin	g results dialog			
		(Close Help	

Figure 2.23. Preferences Dialog Box: Field Devices List Results Tab

Reports

Check the option **Generate the Inventory Report when Studio302 is started** to generate that report each time **Studio302** is launched. This report lists all files related to **SYSTEM302** and indicates the hardware characteristics for the local machine (where **SYSTEM302** was installed). This report is generated transparently to the user. You can use the **Backup Wise Inspector** to compare the first and the last inventory report generated.

Check the option **Do not compare image and video files** to skip the comparison of image and videos files when generating a report with **Wise Inspector**. The **Wise Inspector** tool is used by *Smar Tech Support* team to troubleshoot system configurations.

> Preferences
Preferences
Files Proc. Equip. Database SimulationView Manuf. ID Samples Field. dev. list results
Reports License Monitor Diagnostics Replicate
Inventory Report: Generate Inventory Report when Studio302 is started. Wise Inspector: Do not compare image and video files
Close Help

Figure 2.24. Preferences Dialog Box: Reports Tab

License Monitor

The **License Monitor** window shows the number of licensed devices, **Process Equipment Database** items and blocks according to the user's software licenses and periodically checks the number of points being used by the configuration files and the points available for the project configurations.

No. Preferences	×
Preferences	
Files Proc. Equip. Database SimulationView	W Manuf. ID Samples Field. dev. list results
Reports License Monitor Diagnostics Repli	cate
 Refresh time to check the licenses (Low limit (%) for remaning license (40 Average limit (%) for remaning license ((in minutes) (red) Inse (orange)
	Close Help

Figure 2.25. Preferences Dialog Box: License Monitor Tab

Refresh Time: set the time interval (in minutes) to refresh the information related to the licenses for the **SYSTEM302** applications in the **License Monitor** dialog box.

Low Limit Percentage: set the minimum percentage of the number of licensed points (devices, items or blocks). If the number of available points is inferior to this percentage, the indicative number will be displayed in red.

Average Limit Percentage: set the average percentage of the number of licensed points (devices, items or blocks). If the number of available points is inferior to this percentage, the indicative number will be displayed in orange.

Diagnostics

From the **Diagnostics** window, open the **Devices Summary** dialog box and monitor instruments with maintenance, diagnostic and tracking events. Also, open the **Live Links** dialog box and periodically check the block links created using **Syscon** and their state.

No. Preferences	×
Preferences	
Files Proc. Equip. Database SimulationView Manuf. ID	Samples Field, dev. list results
Reports License Monitor Diagnostics Replicate	
Devices Summary Auto start Live Links Consider an oscillating link after 60 seconds.	
	Close Help

Figure 2.26. Preferences Dialog Box: Diagnostics Tab

Auto Start: mark this option to automatically start monitoring the devices on the Devices Summary dialog box.

Consider an oscillating link after ## seconds: set the time interval to wait until stabilizing the reading of the status of each link, before considering the link as oscillating on the **Live Links** dialog box.

Replicate

In the **Replicate** tab, the user will configure the databases number by spreadsheet that will be replicated. The options are 250, 500, 750 or 1000 databases. The time interval between replications can also be configured, ranging from 2 to 20 seconds.

🐎 Prefere	ences)	×
Prefe	erences						
Files	Proc. Equip. Database	SimulationView	Manuf. ID	Samples	Field. dev	list results	
Reports	License Monitor Dia	gnostics Replica	ite				1
The da 750 d Sleep 10 se	atabases number by s latabases time between replicat conds	preadsheet to re ions:	eplication:				
					Close	Help	

Figure 2.27. Preferences Dialog Box: Replicate

CONFIGURING THE COMMUNICATION NETWORK

Communication Settings

To configure the communication in **Studio302**, go to the **Settings** menu and click the option **Communications**.

The Communication Settings dialog box will open.

Detect Device

At the **Detect Device** tab, you can set the time interval to detect a device in your communication network.

🇞 с	ommunicatio	n Settings		×
De	tect Device	Servers	Services	
	Stat	vilizing time: 10 ration time: 300	(s)	
		Cla	ose Help	

Figure 3.1. Communication Settings Dialog Box: Detect Device Tab

- **Stabilizing Time:** Set the time interval, in seconds, that the server will wait until the device is stable in the network, before alerting the user the device was detected.
- **Strategy Operation Time:** Set the time interval, in seconds that the server will wait while the device is commissioned or decommissioned. After this interval, if the device does not conclude the operation, all events sent by the device will be discarded.

Click **Apply** to confirm the configuration and apply the changes. The default values are those recommended, in case of doubt, contact Smar technical support.

Servers

At the Servers tab, you can configure the communication server.

If the **Local** server is selected, choose the Server ID from the list and click the **Add to list** button to include this server to the list of selected servers. To remove a server from the list of selected servers, select the icon of the server and click **Remove**.

🗞 Communication	Settings	X		
Detect Device	Servers	Services		
● HSE ○ SE	⊙ Local ○ Remote	Browse		
Server Machine:	WINXP-EST13	94		
Server ID: Smar.HseOleServer.0 Add to list				
Configured Servers WINXP-EST1394\Smar.HSEOLEServer.0				
Remove				
-		Close Help		

Figure 3.2. Communication Settings Dialog Box: Servers Tab

If the **Remote** server is selected, click the **Browse** button to locate the server machine. The **Browser Network** dialog box will open. Select the icon of the target machine and click **Ok**.

Srowser network	
<mark>≷ Entire Network</mark> ⊡ہ ⁴ Microsoft Windows Network	
Computer selected: MyComputer	
Ok Close	Help

Figure 3.3. Browser Network dialog box

Services

At the Services tab, you can alter the initialization mode for the device detection service.

h Communication	Settings	
Detect Device	Servers	Services
Detect Device	tart Stop	
	Clo	se Help

Figure 3.4. Communication Settings Dialog Box: Services Tab

Click the button Start to initialize the service manually. To stop the service, click the button Stop.

When the detection service is active, the **Studio302** icon appears in the Windows taskbar, as indicated in the figure below:



Figure 3.5. Detecting New Devices

The device detection service is also active when you start the communication clicking the **Online/Offline Communication** button,

System302 ServerManager Settings

Click the button \bigcirc to execute the **System302 ServerManager**. For detailed information refer to Appendix A in this manual that describes the **System302 ServerManager** application.

System302 ServerManager
System302 ServerManager 📿
Change settings to:
Q Network
Startup
Show minimized
Ok Cancel Help

Figure 3.6. Configuring the System302 ServerManager

Network Settings

Click the link **Network** to configure the *Network Interface Cards* used by the **System302** ServerManager:

- At the **General** tab, configure the number of NICs (Network Interface Cards) and the IP addresses.
- At the HSE Redundancy tab, configure the Device and LAN redundancy.
- At the Advanced tab, configure the synchronization and the schedule for the supervisory.
- The **HSE Maintenance** tab is only available for users with *Administrator* rights and allows the administrator to delete the files related to the HSE persistency.
- At the **SNTP** tab, configure the *Application Clock Time*. This option is used to configure the parameters related to the time synchronism.
- The RTU tab must be configured only if the application uses remote access. Through this tab, the RTU mode is enabled or disabled, and the necessary parameters are configured for proper operation.

Log Settings

Click the link Logs to configure the options to enable or disable the log messages.

Startup Settings

Click the link **Startup** to configure the **System302 ServerManager** to automatically start the OPC servers when the operating system is starting up.

When an OPC server is active, the icon of the **System302 ServerManager** will change to green (\square) on the Windows taskbar.

If the server is stopped, the icon of the **System302 ServerManager** will change to red (^(C)) on the Windows taskbar.

Refer to the tutorial **Network Settings** for further information on how to configure the network servers or refer to **Appendix A** in this manual that describes the **System302 ServerManager** application.

OPC Settings

Click the link OPC to configure the options related to the Smar's OPC Servers:

- At the SNMP tab, configure the list of available agents and their supervision settings.
- At the **A&E** tab, create the database with the initial conditions for the *Smar A&E OPC Server* to identify which events will be monitored.
- At the **HDA** tab, configure the options to execute maintenance on the database related to the Smar's *Historical Data Access Server*.
- The **UA** tab provides access to the *wrapper* that provides the HSE Server for the UA standard.

USING STUDIO302

Defining the Site Name

To define a new name for the site, click the first topic in the topology tree. For example:



The Site dialog box will open. Type the new name and click Ok to conclude.

🏠 Site		×
Site Name		00
Smar		
	Ok Cancel	Help

Figure 4.2. Type the new Site Name

Database

Database functionally corresponds to the **Studio302** workspace that groups the configuration data of the plant (logic, control modules, equipment, etc.). The information is stored in the file with the extension **.scw*.

Click the button **Database** in the main toolbar to display the Database information. The **Database** dialog box will open:

Current Databas	e: System302
New	r
- Jeresteu	Database List
	System302

Figure 4.3. Database dialog box

The field **Current Database** indicates the name of the current Database.

Creating a Database

A database can only be created in the **Client/Server** mode, when the **Database Manager** is being executed.

In the Database dialog box:

- 1. Select the option **New** and type the name for the new Database in the text field. The files for all Databases are created in the **Studio302** default.
- 2. In the **Manufacturer ID** box, click **Browse** to open the **ManufacturerID** dialog box. Select the **All** tab and click the name related to the desired Manufacturer ID. The profile numbers related to the selected Manufacturer ID will be used in the new Database. Click **Ok** to return to the **Database** dialog box.
- 3. In the **Database** dialog box, click **Ok** to create the Database. A message box will open confirming the operation. Click **Ok** to conclude and the Database will be displayed in the **Studio302** window.

	Database Database	
	Current Database: System302	
	© New © Selected Database List System302 Manufacturer ID: Unregistered Browse	2
	Search Search	
3	OK Cancel Help	ĺ

Figure 4.4. Creating a Database

Changing the Current Database

To change the Database displayed in the **Studio302** window, open the **Database** dialog box clicking the button and select the icon corresponding to the desired Database.

Click Ok and the message box will open to confirm the operation.

Studio302	×
2	Are you sure you want to change the database?
	Yes No

Figure 4.5. Changing the Current Database

Click Yes to conclude and change the Database. A message will appear to confirm the operation.

Importing Syscon Files to the Database

To import an existent configuration file to the current Database, go to the **File** menu, select **Import** and click **Syscon file**. The dialog box to import the configuration file will open.

Browse the directories to locate the configuration file. Select the file icon and click **Open** to import the configuration.

The Syscon window will open while the configuration is added to the Studio302.

A message box will open informing the user that the configuration was imported by **Studio302**, indicating the corresponding Database.



Figure 4.6. Importing Files

Click Ok to close the message box and return to the Database.

To list all the configurations included in a Database, click the icon **Areas** in the topology tree, and the list of the configurations will be displayed. In the **Areas** dialog box, double-click the project icon to open the configuration in the **Syscon** application.

IMPORTANT

The **Database Manager** manages all configuration files, and the configurations created using **Syscon** are saved in a common storage directory where all machines connected to the communication network can access those files.

It is important to have a common practice to name tags in your company, to avoid consistency problems.

For example, in *Multi-user* mode, if *User A* creates a configuration in a machine with the same name that *User B* created the configuration in another machine, one of the configuration files will be deleted and overlaid by the other file, when the configurations are committed.

Likewise, it will not be possible to import a project configuration that contains the same tag for two or more control modules (or devices, blocks, etc) of another project configuration file already included in the Database.

Databases Replication

- a) Prerequisites
- Spreadsheet editor (LibreOffice, Office) installed on the workstation.
- System302 version 8 or higher installed on the workstation. (Note: see requirements for installation).
- Follow the steps below for the database replication process to work correctly.
- b) Creation of the database that will be replicated.
- Open the Studio302, click the databases icon.



Figure 4.7. Creating databases

• Select **New** and create a database with the name of configuration that will be replicated (E.g.: PPH).

Jatabase		
Current Datab	ase: System302	
New	PPH	
Selected		
	Database List	
	System302	
Manufacturer	ID: Unregistered	Browse
Sear	ch	Search

• Click **OK** and a message confirming that the operation succeeded will appear.

atabase		
Current Database	· DDH	9
Current Database	. FFN	
New	РРН	
Selected	Studio302	×
	Operation succeeded.	
	ОК	
Manufacturer ID:	Unregistered	Browse
Search		Search
	OK Can	el Heln

Figure 4.9. Creating databases

• Click **OK**. The database is created.

Database		
Current Database	: PPH	
© New		
Selected	PPH Database List PPH System302	
Manufacturer ID:	Unregistered Browse	
Search	Search	
	OK Cancel Help	

Figure 4.10. Database Created

- c) Unpack the configuration to be replicated in the created Database.
- With Studio302 opened in the Database created (Ex: PPH), click the **Unpack** icon.

🐎 Studio302 :: Site: Smar : <mark>:</mark> Current Database:	РРН		
File Settings Tools Window Help			
\lambda 🔮 🎱 🗐 🔓 📚 📔 🛤	0 🔍 🔑 📜	📆 🗟 🥞 🚝 🌮 🖁	5 Q 🔛 💏 🍽 🐝 🌺 🧱
Engineering Database			
🔍 Areas			
Applications			
Control Modules			
🖃 嶷 Network Devices			
Controllers			
in the second se			
Net I/O			
Field Devices			
Process Equipment Database			
Documentation			

Figure 4.11. Unpack the database created

• In the **Unpack** window, click **Browse** and select the configuration file (.tgz) saved on the computer, which will be replicated (E.g.: PPH.tgz).

	PL I
Studio302 :: Site: Smar :: Current Database: P	PH
File Settings Tools Window Help	
\lambda 📽 🍳 📃 🔓 📚 🕴 🕅 🛤 🖲	9 🔘 🤌 🎘 📆 🖏 🚅 🎧 🖏 🖓 🖓 🥥
Smar E Engineering Database Areas Areas Areas Control Modules Control Modules E Control Modules Control Iters Controllers	
Process Equipment Database	Impack files Image: System 302 > Studio 302 - Typicals > PPH 4 Organize New folder Image: Search PPH Image: Desktop Name Date modified Image: Desktop Image: Desktop Image: Desktop Image: Desktop Image: Desktop Image: Desktop

Figure 4.12. Select the database file
After selecting the file, just click Unpack, wait until the operation is complete, and click OK.



Figure 4.13. Unpack the database

In the sequence, an Unpack record will appear that will confirm the successful operation.

	Studio302 Report
pack —	
Summary	
Total files:	1204
Unpacked files:	1204
Not unpacked files:	0
Studio302 Version:	1.11.0.11
Author:	
Date:	15/01/2021
Time:	15:52:09
Package file:	E:\2018.04320 - Project 110\Backups\System302\Studio302 - Typicals\PPH\PPH.tgz

Figure 4.14. Confirmation of the database Unpack

- d) Create the templates of Database that will be replicated.
- After creating the database and unpacking the configuration, it is necessary to create a template for this configuration.
- In Studio302 click Tools in the toolbar and then Create Database Templates.



Figure 4.15. Creation of the database template

Click Start and wait until the templates are created.

🕒 Create Database Template Wizard	×
This wizard creates the current database template for replication.	
Click start button to begin the creation process.	
Database been replicated	
РРН	
Details Start Cancel	Help

Figure 4.16. Starting the creation of the database template

• Then click **Next**, select the directory where the templates will be saved on the computer and click **OK**. In the example below it will be saved in the Documents folder.

ick start b	utton to begin the creation process.		Y
Database	been replicated		
	PPH		
	Details	ext Cancel	Help
	Select Save Template Location		
	Select Save Template Location Select the directory to save the CSV fi	es that contains current	
	Select Save Template Location Select the directory to save the CSV fil database structure information. User n with the information about the new dat the new fase of replication process.	les that contains current eeds to fill up the CSV files abases, that will be used on	
	Select Save Template Location Select the directory to save the CSV fil database structure information. User m with the information about the new dat the next fase of replication process.	les that contains current eeds to fill up the CSV files abases, that will be used on	
	 Select Save Template Location Select the directory to save the CSV fill database structure information. User in with the information about the new dat the next fase of replication process. C: 	les that contains current eeds to fil up the CSV files abases, that will be used on	
	 Select Save Template Location Select the directory to save the CSV fil database structure information. User in with the information about the new dat the next fase of replication process. c: C:\ Users Fabio 	les that contains current eeds to fill up the CSV files abases, that will be used on	
	 Select Save Template Location Select the directory to save the CSV fil database structure information. User in with the information about the new dat the next fase of replication process. c: C:\ Users Fabio Contacts Desitors 	les that contains current eeds to fill up the CSV files abases, that will be used on	
	 Select Save Template Location Select the directory to save the CSV fil database structure information. User in with the information about the new dat the next fase of replication process. c: C:\ Users Fabio Contacts Desktop Documents 	es that contains current eeds to fill up the CSV files abases, that will be used on	
	 Select Save Template Location Select the directory to save the CSV fil database structure information. User in with the information about the new dat the next fase of replication process. c: C:\ Users Fabio Contacts Desktop Documents Downloads 	es that contains current eeds to fill up the CSV files abases, that will be used on	
	 Select Save Template Location Select the directory to save the CSV fil database structure information. User in with the information about the new dat the next fase of replication process. c: C:\ Users Fabio Contacts Desktop Documents Downloads Favorites Links 	ies that contains current eeds to fill up the CSV files abases, that will be used on	
	 Select Save Template Location Select the directory to save the CSV fil database structure information. User in with the information about the new dat the next fase of replication process. c: C:\ Users Fabio Contacts Desktop Documents Downloads Favorites Links Music 	ies that contains current eeds to fill up the CSV files abases, that will be used on	

Figure 4.17. Selecting the database template folder

After that, just click **OK** again, and then, **Close**. The templates have already been created.

Create Database Template Wizard	
This wizard creates the current database template for replication	
Cli	🛱 Create Database Template Wizard
Before proceeding, place all information about the database that will be created in those files and then select Replicate in the tools menu to finish the replication process.	This wizard creates the current database template for replication.
	Click start button to begin the creation process.
ОК	Database been replicated
Copying XLSX LOGIC files C:\Users\Fabio\Documents\Studio302 -	РРН
Details Next Cancel Hep	Details Close Cancel Help

Figure 4.18. Database template created

٠

- e) Creation of new Databases in the generated templates.
- After creating the templates, go to the directory where they were saved and note that there are three folders: LogicView, Network, and Syscon.

🕞 🕤 🗸 📔 🕨 Libraries 🕨 D	ocuments 🕨 Studio302 - Template	s ▶ PPH ▶		
Organize 🔻 Share with 🔻	Burn New folder			
쑦 Favorites 💻 Desktop	Documents library			
🗼 Downloads	Name	Date modified	Туре	Size
🖳 Recent Places	🌗 LogicView	01/04/2021 13:39	File folder	
🚍 Libraries	퉬 Network	01/04/2021 13:39	File folder	
Documents	퉬 Syscon	01/04/2021 13:39	File folder	
J Music				
Pictures				
📑 Videos				

Figure 4.19.Templates folders

• Within each folder there is a CSV file that must be modified according to the new databases defined by the user.

LogicView spreadsheet:

• Inside the **LogicView** folder, open the generated spreadsheet (CSV file) and notice that there are standard tags of the area which the templates were generated from.

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2	PPH_ZSO	HW														
3	PPH_ZSF	чw														
4	PPH_DS	HW														
5	PPH_XS	HW														
6	PPH_VDO	HW														
7	PPH_VDF	нw														
8	PPH_DAI5M_1	HW	_													
9	PPH_DAI5M_2	нw														
10	PPH_DAI5M_3	HW	_													
11	PPH_DAI5M_4	HW	_													
12	PPH_OCB	HW	_													
13	PPH_CA	HW	_													
14	PPH_PC	HW	_													
15	PPH_PS	HW														
16	PPH_IAI	HW	_													
17	TAG01017	HW										L!				
18	TAG01100	HW	_													
19	TAG01101	HW														
20	TAG01102	HW	_													
21	TAG01103	HW														
22	TAG01104	HW	_													
23	TAG01105	1VV														
24	TAG01100															
25	TAG01107															
20	TAG01111	HW/														
28	TAG01112	HW														
29	TAG01113	HW														
30	TAG01114	HW														
31	TAG01115	HW														
32	TAG01116	HW														
33	TAG01117	HW														
34	PPH XV	HW														
35	PPH AS	нw														
36	PPH_AL	HW														
37	TAG01203	HW														
38	TAG01204	HW														
39	TAG01205	HW														
40	TAG01206	HW														
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Figure 4.20. LogicView spreadsheet

• To create identical configurations, just create new columns with the names of the desired databases and copy the information from the DefaultTag tab to them.

	А	В	С	D	F	F	G
1	DefaultTag 🔽	Туре 🔽	TESTO01 🛛 💌	TEST002 🛛 💌	TEST003 🛛 💌	TEST004 🛛 💌	TEST005 🛛 💌
2	PPH_ZSO	HW	PPH_ZSO	PPH_ZSO	PPH_ZSO	PPH_ZSO	PPH_ZSO
3	PPH_ZSF	нw	PPH_ZSF	PPH_ZSF	PPH_ZSF	PPH_ZSF	PPH_ZSF
4	PPH_DS	нw	PPH_DS	PPH_DS	PPH_DS	PPH_DS	PPH_DS
5	PPH_XS	HW	PPH_XS	PPH_XS	PPH_XS	PPH_XS	PPH_XS
6	PPH_VDO	HW	PPH_VDO	PPH_VDO	PPH_VDO	PPH_VDO	PPH_VDO
7	PPH_VDF	HW	PPH_VDF	PPH_VDF	PPH_VDF	PPH_VDF	PPH_VDF
8	PPH_DAI5M_1	HW	PPH_DAI5M_1	PPH_DAI5M_1	PPH_DAI5M_1	PPH_DAI5M_1	PPH_DAI5M_1
9	PPH_DAI5M_2	HW	PPH_DAI5M_2	PPH_DAI5M_2	PPH_DAI5M_2	PPH_DAI5M_2	PPH_DAI5M_2
10	PPH_DAI5M_3	HW	PPH_DAI5M_3	PPH_DAI5M_3	PPH_DAI5M_3	PPH_DAI5M_3	PPH_DAI5M_3
11	PPH_DAI5M_4	HW	PPH_DAI5M_4	PPH_DAI5M_4	PPH_DAI5M_4	PPH_DAI5M_4	PPH_DAI5M_4
12	PPH_OCB	HW	PPH_OCB	PPH_OCB	PPH_OCB	PPH_OCB	PPH_OCB
13	PPH_CA	HW	PPH_CA	PPH_CA	PPH_CA	PPH_CA	PPH_CA
14	PPH_PC	HW	PPH_PC	PPH_PC	PPH_PC	PPH_PC	PPH_PC
15	PPH_PS	HW	PPH_PS	PPH_PS	PPH_PS	PPH_PS	PPH_PS
16	PPH_IAI	HW	PPH_IAI	PPH_IAI	PPH_IAI	PPH_IAI	PPH_IAI
17	TAG01017	HW	TAG01017	TAG01017	TAG01017	TAG01017	TAG01017
18	TAG01100	HW	TAG01100	TAG01100	TAG01100	TAG01100	TAG01100
19	TAG01101	HW	TAG01101	TAG01101	TAG01101	TAG01101	TAG01101
20	TAG01102	HW	TAG01102	TAG01102	TAG01102	TAG01102	TAG01102
21	TAG01103	HW	TAG01103	TAG01103	TAG01103	TAG01103	TAG01103
22	TAG01104	HW	TAG01104	TAG01104	TAG01104	TAG01104	TAG01104
23	TAG01105	HW	TAG01105	TAG01105	TAG01105	TAG01105	TAG01105
24	TAG01106	HW	TAG01106	TAG01106	TAG01106	TAG01106	TAG01106
25	TAG01107	HW	TAG01107	TAG01107	TAG01107	TAG01107	TAG01107
26	TAG01110	HW	TAG01110	TAG01110	TAG01110	TAG01110	TAG01110
27	TAG01111	HW	TAG01111	TAG01111	TAG01111	TAG01111	TAG01111
28	TAG01112	HW	TAG01112	TAG01112	TAG01112	TAG01112	TAG01112
29	TAG01113	HW	TAG01113	TAG01113	TAG01113	TAG01113	TAG01113
30	TAG01114	HW	TAG01114	TAG01114	TAG01114	TAG01114	TAG01114
31	TAG01115	нw	TAG01115	TAG01115	TAG01115	TAG01115	TAG01115
32	TAG01116	HW	TAG01116	TAG01116	TAG01116	TAG01116	TAG01116
33	TAG01117	нw	TAG01117	TAG01117	TAG01117	TAG01117	TAG01117
34	PPH_XV	HW	PPH_XV	PPH_XV	PPH_XV	PPH_XV	PPH_XV
35	PPH_AS	нw	PPH_AS	PPH_AS	PPH_AS	PPH_AS	PPH_AS
36	PPH_AL	HW	PPH_AL	PPH_AL	PPH_AL	PPH_AL	PPH_AL
37	TAG01203	HW	TAG01203	TAG01203	TAG01203	TAG01203	TAG01203
38	TAG01204	HW	TAG01204	TAG01204	TAG01204	TAG01204	TAG01204
39	TAG01205	HW	TAG01205	TAG01205	TAG01205	TAG01205	TAG01205
40	TAG01206	HW	TAG01206	TAG01206	TAG01206	TAG01206	TAG01206
41		HW Dan 2	TAG01207	TAG01207	TAG01207	TAG01207	TAG01207

Figure 4.21. LogicView spreadsheet

• Save the LogicView spreadsheet. It is ready for replication.

Network spreadsheet:

Within the Network folder there is a Network spreadsheet (CSV file) that refers to the IPs configuration for System302 ServerManager. Open the spreadsheet and fill the file with the desired IPs for each database as shown in the following figure.

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	A	В	-	0	r	-	- C	
1	Parameter	Description	TEST001	TEST002	TEST003	TEST004	TEST005	
2	RTU_ETH1	DF63_IP1	192.168.0.120	192.168.0.120	192.168.0.120	192.168.0.120	192.168.0.1	20
з	RTU_ETH2	DF63_IP2	192.168.165.100	192.168.165.100	192.168.165.100	192.168.165.100	192.168.16	5.100
4	ROUTER_IP	Router_IP	172.2.1.2	172.2.1.3	172.2.1.4	172.2.1.5	172.2.1.6	
5								
6								
8								

Figure 4.22. Network spreadsheet

- Note that the Router's IP information is for when RTU mode is enabled. If you are not using RTU mode, there is no need to fill in this parameter.
- Save the Network spreadsheet and it is ready for replication.

Syscon spreadsheet:

- For Syscon, you must perform the same steps as for LogicView.
- Inside the **Syscon** folder, open the generated spreadsheet (CSV file) and notice that there are standard tags of the area which the templates were generated from.

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3	4 P	PH_PT102															
4	5 P	PH_PT103															
5	6 P	PH_PT104															
6	7 P	PH_TT101															
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10																	
11																	
							Fig	ure 4 2	3 Sve	scon si	nread	shoot					

- To create identical configurations, just create new columns with the names of the desired
- databases and copy the information from the **Tag** tab to them.

	А	В	С	D	E	F	G	Н
1	Id 🔽	Tag 🔽	Description 💌	TEST001 🔽	TEST002 💌	TESTOO3 💌	TEST004 🔽	TEST005 🔽
2	3	PPH_PT101		PPH_PT101	PPH_PT101	PPH_PT101	PPH_PT101	PPH_PT101
3	4	PPH_PT102		PPH_PT102	PPH_PT102	PPH_PT102	PPH_PT102	PPH_PT102
4	5	PPH_PT103		PPH_PT103	PPH_PT103	PPH_PT103	PPH_PT103	PPH_PT103
5	6	PPH_PT104		PPH_PT104	PPH_PT104	PPH_PT104	PPH_PT104	PPH_PT104
6	7	PPH_TT101		PPH_TT101	PPH_TT101	PPH_TT101	PPH_TT101	PPH_TT101
7	9	AFFICHEUR		AFFICHEUR	AFFICHEUR	AFFICHEUR	AFFICHEUR	AFFICHEUR
8	1	HSE HOST		HSE HOST				
9	2	PPH		PPH	PPH	PPH	PPH	РРН ,
10								

Figure 4.24. Syscon spreadsheet

Save the **Syscon** spreadsheet. It is ready for replication.

٠

f) Replicating databases

•

Done successfully all the steps above, now just replicate the databases. In **Studio302** click **Tools** in the toolbar and select **Replicate Database Templates**.



Figure 4.25. Replicating databases

• Click **Validate** and choose the directory where the templates were created. In this example it was saved in the **Documents** folder.

	Select Load Template Location	3
Replicate Database Template Wizard	□ c:	•
This wizard replicates the current database template.	Subsers Fabio Contacts Desktop Documents Downloads	II
PPH	Favorites Links Music Pictures	•
Details Validate Cancel Help	Ok Cancel Help	

Figure 4.26. Selecting database to be replicated

Wait for the information validation and then click **Replicate**.

🛱 Replicate Database Template Wizard	×
This wizard replicates the current database template.	
Click validate button to begin the replication process.	S-
Database been replicated	
РРН	
Details Replicate Cancel	Help
Figure 4.27. Replicating databases	

• Wait for the replication process to finish, click **OK** and **Close**.

🛱 Replicate Database Template Wizard		
This wizard replicates the current database 💫	C: Replicate Database Template Wizard	×
template.	This wizard replicates the current database	
Click validate button to begin the replication process.	template.	5
Database been replicated	Click validate button to begin the replication process.	2
PPH Restantion Wound	Database been replicated	
The replication process finished successfully.	РРН	
OK	Details Close Cancel Help	lp

Figure 4.28. Completion of the database replication process

• Open the databases window to check the replicated databases.

🏷 Database			×
Database			\$
Current Database	: РРН		
© New			
Selected			
	Database List		<u>^</u>
	NTEST001		
	STEST002		
	🔮 TEST003		=
	🔮 TEST004		
	STEST005		-
Manufacturer ID:	Unregistered	•	Browse
Search			Search
		ОК Са	ncel Help

Figura 4.29. Replicated databases

Areas

Click the **Areas** icon in the topology tree to open the **Area** dialog box. The **Areas** dialog box will show all the configurations imported from the **Syscon** files to the Database.

Local	The file is located in the local machine.
	The file is located in the local machine and it is being edited.
Server	The file is located in the server machine.
Server	The file is located in the server machine and it is being edited.
Server	The file is located in the server machine and it is being edited by another user.
€	The project configuration created using a previous SYSTEM302 version must be upgraded to SYSTEM302 version 7.2.x or higher. Right-click the area icon and select the option Upgrade .
	The file located in the server machine contains the most recent alterations for the configuration file. Right-click the area icon and select the option Update to update the project configuration.

Right-click the area icon and click Multiuser Details to open the Multi User Details dialog box. This

dialog box indicates the status of the configuration file, whether it is being edited in the local machine or locked for edition by another user, for example.

Creating an Area

In the Areas dialog box, right-click the dialog box and click New Area.

Studio302 will launch **Syscon** and open the dialog box that lists the templates available for each *linking device*. Select the desired template and click **Ok**. Type the name of the strategy configuration and click **Ok** to conclude.

Creating a HART Area

In the Areas dialog box, right-click the dialog box and click New HART Area.

Studio302 will launch the **FDT HART** tool. In the dialog box, type the name of the topology and click **Ok**. The Topology window will open for edition.

Opening the Area in View Mode

ATTENTION

Right-click the area icon and click **Update** to update the local information about the configuration project before opening the file. This option is only available after the area had been commissioned.

Right-click the area icon, in the **Areas** dialog box, and click **View**. **Studio302** will launch **Syscon** and open the configuration file corresponding to the selected area in **View Mode**.

If the configuration file is being edited in other machine, the user will not be able to alter or edit this configuration. On the other hand, if the file is not being edited, click the **Edit Mode** button in **Syscon** to switch modes and alter the configuration file.

Editing the Area

ATTENTION

Right-click the area icon and click **Update** to update the local information about the configuration project before editing the file. This option is only available after the area had been commissioned.

Right-click the area icon in the **Areas** dialog box and click **Edit Area**. **Studio302** will launch **Syscon** and open the configuration file corresponding to the selected area.

Refer to the Syscon User's Manual for details on how to edit the configuration.

Exporting an Area for Standalone Mode

When you export an area to the **Standalone** mode, the area is removed from the database and the configuration files related to the area are saved in a target directory.

Right-click the area icon in the **Areas** dialog box and click **Export for Standalone**. The **Browse for Folder** dialog box will open. Select the path to the directory where the configuration files will be exported. Click **Ok** to conclude.

Removing an Area

To remove an area from the database, right-click the area icon in the **Areas** dialog box and click **Remove Area**.

It is only possible to remove an area created in a local configuration file, that is, a file stored in the

local machine.

		NO	TE						
If the Syscon application removing the area.	is being	executed,	it will	be	necessary	to	close	Syscon	before

Replacing an Area

To replace an area in the database, right-click the area icon in the **Areas** dialog box and click **Replace Area**. The **Replace** dialog box will open. Type the path to the new area or click the **Browse** button to locate the *.ffp file that contains the new area.

h Replace		×
Replace		
DF51.ffp		
		Browse
	Ok Cancel	Help

Figure 4.30. Replacing an Area

Click **Ok** to conclude. **Studio302** will automatically launch **Syscon** to import the new area.

Searching Areas

To search an area by name, type its name on Search field and click Search by Name.

eas :: Site: Smar :: Curre	ent Database: System302
Areas	
Name	Multi-user status
🥎 Manual	
Course I	Search by Name
search	
	CloseHelp

Figure 4.31. Searching Areas

HINT

The wild char '*' (asterisk) can be used to replace one or several characters. The asterisk may be placed anywhere in a search string, and the string may include several asterisks. The "?" (Question mark) can be also used as a wild char.

Control Modules

To open the list of all control modules in the Database, expand the icon **Applications** and click **Control Modules** in the topology tree.

The **Control Modules** dialog box will open. This dialog box lists the control modules related to the configurations created using **Syscon**, and then imported to the current Database.

Local	The file containing the control module is located in the local machine.
Local	The file containing the control module is located in the local machine and it is being edited.
Server	The file containing the control module is located in the server machine.
Server	The file containing the control module is located in the server machine and it is being edited.
Server	The file containing the control module is located in the server machine and it is being edited by another user.

Right-click the control module icon and click **Edit control module** to open the corresponding configuration in **Syscon** and edit the **Strategy** window.

If the configuration file is being edited in other machine, the user will not be able to alter or edit this configuration. Right-click the control module icon and click **View** to open **Syscon** in **View** mode and visualize the **Strategy** window.

Searching Control Modules

To search the name of the control module, select the option **Control Module** at the bottom of the **Control Modules** dialog box, type the name of the control module and click **Search by Control Module**.

To search the name of the area, select the option **Area** at the bottom of the **Control Modules** dialog box, type the name of the area and click **Search by Area**.

HINT

The wild char '*' (asterisk) can be used to replace one or several characters. The asterisk may be placed anywhere in a search string, and the string may include several asterisks. The "?" (Question mark) can be also used as a wild char.

Control Modules :: Site: Smar : Control Modules	:: Current Database: System 302
Name	Area
Server Control Module 1	proj01
Server Control Module 2	proj02
🔁 💿 c	ontrol Module 🗢 🔿 Area
Search	Search by Control Module
Advanced Search	Close Help

Figure 4.32. Searching Control Modules

Advanced Search

Click **Advanced Search** at the bottom of the **Control Modules** dialog box. Use the **Advanced Search** dialog box to find the items that match the two criteria.

Advanced Search	×
Criteria	Value
😵 Control Module	-
🗢 Area	·
	Add Value
Ok	Cancel Help

Figure 4.33. Advanced Search

Type the word to be searched on the text box, click the criteria icon to select it and click the button **Add <Value>**. See the example below:

hdvanced Search	×
Criteria	Value
Control Module	Boil
😁 Area	-
Boil	Add Coptrol Module
Ok	Cancel Help

Figure 4.34. Defining Search Criteria

Repeat the steps above to add other criteria.

To delete the value from one criterion, right-click the value and click the option **Delete**. To delete all values from the **Advanced Search** dialog box, right-click the dialog box area and click the option **Delete All**.

Logics

Expand the icon **Applications** and click **Logics** in the topology tree to open the list of all logics in the *Database*.

The **Logics** dialog box will open. Each control logic is related to an Area, indicated in the **Area** column. The **Type** column indicates whether the configuration is a logic configuration or a logic template.

	The file containing the control logic is located in the local machine.
Local	The file containing the control logic is located in the local machine and it is being edited.
Server	The file containing the control logic is located in the server machine.
Server	The file containing the control logic is located in the server machine and it is being edited.
Server	The file containing the control logic is located in the server machine and it is being edited by another user.
 Server	The file located in the server machine contains the most recent alterations for the control logic. Right-click the logic icon and select the option Update to update the logic configuration file.

Right-click the logic icon and click **Multiuser Details** to open the **Details** dialog box. This dialog box indicates the status of the logic configuration file, whether it is being edited in the local machine or locked for edition by another user, for example.

At the bottom of the **Logics** dialog box, mark the option **Logic** to list all logic configurations, and mark the option **Logic Template** to list all templates. If one of the options is unmarked, the corresponding type of logic will not be displayed on the **Logics** dialog box.

Viewing and Editing the Control Logic

The **Database Manager** manages the alterations made to the logic configuration file. Using **Studio302** in multi-user mode, it is necessary to commit the alterations after editing the logic.

If the logic is not being edited by any user, the option **Edit Logic** will be available when right-clicking the logic icon. **LogicView for FFB** will open the corresponding configuration to edit the control logic. Refer to the **LogicView for FFB Manual** for details on how to edit the logic.

ATTENTION

Right-click the logic icon and click **Update Logic** to update the local information related to the logic before editing the logic configuration file. This option is only available after the area/logic has been commissioned.

After you finished editing the logic, right-click the logic icon and click the option **Commit Logic**. The alterations will be saved to the **Database Manager** and other users will be able to edit the logic configuration.

When the logic configuration is being edited by another user, right-click the logic icon and click **View Logic** to open the configuration file on **View Mode** using **LogicView for FFB**.

Defining Parameters

Right-click the logic icon and click **Define Parameters**. **Studio302** will automatically launch **Syscon** and open the **FFB Parameters Definition** dialog box.

Edit the parameters, if necessary, and click Ok to return to the Studio302.

Refer to the Syscon User's Manual for details on how to edit the parameters.

Creating Logic Templates

To create a logic template, right-click the **Logics** dialog box and click the option **New Logic Template**. Using **LogicView for FFB**, type the tag for the new logic configuration, click **Ok** and edit the logic template.

Refer to the LogicView for FFB User's Manual for details on how to edit the logic.

Close LogicView for FFB and return to Studio302. The new logic template is displayed on the Logics dialog box.

Searching Logic Blocks

Right-click the logic icon and click **Search Logic Block**. The **Logic Block Search** dialog box will open. Double-click the icon corresponding to the logic where the block is located to open and edit the strategy configuration.

To search the location, type the name on the Search text box and click the button Search.

HINT

The wild char '*' (asterisk) can be used to replace one or several characters. The asterisk may be placed anywhere in a search string, and the string may include several asterisks. The "?" (Question mark) can be also used as a wild char.

Searching Logics

To search the name of the logic, select the option **Logic** at the bottom of the **Logics** dialog box, type the name of the logic and click **Search by Name**. The logic templates can also be searched selecting the **Logic Template** option.

To search the name of the area, select the option **Area** at the bottom of the **Logics** dialog box, type the name of the area and click **Search by Area**.

ogics			-++
lame	Multi-user status	Area	Туре
DF63-FFB2		Manual	Logic
	🗹 Logic 🗹 L	ogic Template	e
	🗹 Logic 🗹 L	ogic Template	8

Figure 4.35. Searching Logics

Advanced Search

Click **Advanced Search** at the bottom of the **Logics** dialog box. Use the **Advanced Search** dialog box to find the items that match the two criteria.

🏠 Advanced Search	×
Criteria	Value
⊣⊢ Logic	-
😁 Area	·
	Add Value
Ok	Cancel Help

Figure 4.36. Advanced Search

Type the word to be searched on the text box, click the criteria icon to select it and click the button **Add <Value>**. See the example below:

Advanced Searc	h 🛛 🗙
Criteria	Value
⊣⊢ Logic	-
Area	Boil
Boil	Add.Area
	Canaal Hala

Figure 4.37. Defining Search Criteria

Repeat the steps above to add other criteria.

To delete the value from one criterion, right-click the value and click the option **Delete**. To delete all values from the **Advanced Search** dialog box, right-click the dialog box area and click the option **Delete All**.

Stations

To open the list of all workstations connected to the same database, expand the icon **Network Devices** and click **Stations** in the topology tree. The **Network Devices - Stations** dialog box opens.

Network Devices - S	tations						X
Stations							
Name	Login/Logout	IP	Role	User	OPC Servers	Simulating	Description
WINXP-EST1394	login	192.168.80.130	Not defined	Administrador		No	Edit
				Add	Report	Close	Help

Figure 4.38. Stations

This dialog box indicates the name of the workstations, IP addresses, the workstation role and detailed descriptions. In a multi-user system, a workstation can be classified in two types: Client or Client-Server. There can only be **one** Client-Server workstation and one or many **Client** stations in a multi-user system.

The Client-Server workstation is not connected to the multi-user system.
The Client-Server workstation is connected to the multi-user system.
The Client workstation is not connected to the multi-user system. This status is usually indicated right after the workstation is added to the multi-user system, using the Network Devices - Stations dialog box.
The Client workstation is connected to the multi-user system.
The Client workstation is not publishing its active status in the multi-user system. This may occur because the communication between Client workstation and the Client-Server workstation is interrupted.

Right-click the workstation icon and click the option **Multiuser information** to open the dialog box that indicates which areas and logics are being edited in the selected workstation.

hetwork Devices - Station		×
Multiuser information WINXP-EST1394		
File	Last Date Time	
Server proj01	21.Nov.11 - 16:05:27	
Server Bridge 2-FFB2-1	21.Nov.11 - 16:05:05	
	Refresh Close Help	

Figure 4.39. Multiuser information

Editing Station Information

On the **Description** column, click **Edit** to include information related to the workstation, such as the workstation role and a brief description. If the information has already been included for the workstation, the **Description** column will indicate the option **Details**.

Clicking Edit or Details, the Network Devices - Stations Information dialog box opens.

\lambda Network De	vices - Station Information	
Edit sta	tion	
Name:	WINXP-EST1394	Validate
Role:	Not defined	~
Description:		~
	Update Can	cel Help

Figure 4.40. Station Description

On the **Role** box, select the role that the workstation represents on the current database. On the **Description** box, type a brief description of the workstation.

Click Update to confirm the alterations and return to the Network Devices - Stations dialog box.

Adding Stations

On the **Network Devices – Stations** dialog box, click **Add** to include a workstation to the database. The **New Station** dialog box opens.

🚴 Network D	evices - Station Information	
New st	ation	
IP:		Validate
Role:	Maintenance	~
Description:		
	Save Can	cel Help

Figure 4.41. Adding a Station

On the **IP** box, type the IP address of the new workstation and click **Validate**. If the IP address is correct, a green check mark will indicate the workstation was located.

🗞 Network D	evices - Station Information	×
New st	ation	
IP:	192.168.163.19	Validate 🖉
Role:	Maintenance	~

Figure 4.42. New Station

On the **Role** box, select the role that the workstation represents on the current database. On the **Description** box, type a brief description of the workstation.

Click Save to conclude and return to the Network Devices - Stations dialog box.

Multiuser Information

Right-click the workstation icon and click the option **Multiuser information** to open the dialog box that indicates which areas and logics are being edited in the selected workstation.

Network Devices - Station		×
Multiuser information WINXP-EST1394		Ű
File	Last Date Time	
proj01	21.Nov.11 - 16:05:27	
Bridge 2-FFB2-1	21.Nov.11 - 16:05:05	
	Refresh Close	Неір

Figure 4.43. Multiuser information

This dialog box indicates the names of the areas or logics in **Edit** mode, and the date and time of the last access.

Click the **Refresh** button to update the information on the dialog box. Click **Close** to return to the **Network Devices – Stations** dialog box.

Generating Reports

On the **Network Devices – Stations** dialog box, click **Report** to generate a report listing all workstations connected to the database, and the information related to each workstation, such as the IP address and role, and also the physical workstation specification, for example, PC processor and RAM memory.

Name	<u>IP(s)</u>	Туре	Specification
EST-1089	192.168.163.14	Data logger / server	Microsoft Windows XP Professional. 5.1.2600,196608, 2,00 GB of RAM. Intel(R) Pentium(R) 4 CPU 3.06GHz.
ADRIANOREIS		Operation	
ALBERNAZ		Not definied	
VEIGA		Operation	
Additional informa	tion:		
Database of stations:	System302		

On the **Reports** dialog box, click it to print the Stations report. Or click to export the report to a PDF file.

Controllers

The **Network Devices – Controllers** dialog box lists the bridges and controllers from all areas created in the current *Database*.

To open this dialog box, expand the icon **Network Devices** and click **Controllers** in the topology tree.

% Network Devices - Controllers								
	Controllers [6] Devices, [0] On-Line	, [6] Off-Line, [0] Commis:	sioned, [6] Uncommissic	ned				
	Device Tag	Device ID	IP	Status	Comm.	Model	Area	
	Bridge 1			Off-Line	No	DF62	proj01	
	Bridge 2			Off-Line	No	DF62	proj02	
	Bridge 3			Off-Line	No	DF62	teste	
	DF63			Off-Line	No	DF63	PROJ_DF116	
	DF75_H			Off-Line	No	DF75	PROJ_HART	
	DF75			Off-Line	No	DF75	PROJ_RSERIES	
	🎆 💿 Device Ta	g 🏢 🔿 Device ID 📲 🔿)IP 🎆 🔿 Status 🍿	🔘 Commissi	oned 🎆	🗸 🔘 Model	Name 🍮 🔿 Area	
		Search		Se	arch by T	ag		
	Refresh A	dvanced Search					Close	Help

Figure 4.45. Controllers

Configuring the Controller

On the **Network Devices – Controllers** dialog box, right-click the controller icon and click the option **Configuration**.

Syscon will open the configuration that contains the selected controller. Refer to the **Syscon Help** for details on configuring a controller.

Commissioning the Controller

On the **Network Devices – Controllers** dialog box, right-click the controller icon and select the option **Commission**. **Syscon** will open the configuration that contains the selected controller.

In the **Commission** dialog box, click the button to select the controller ID.

The **Device Selection** dialog box will open. Select the icon of the controller ID and click **Ok** to conclude.

Refer to the Syscon Manual for details on commissioning a controller.

Decommissioning the Controller

You can remove the controller from the process control after the controller has been commissioned. Right-click the icon of the controller to be decommissioned and select the option **Decommission**.

Syscon will be executed, and the controller will be removed from the process control.

Refer to the Syscon Manual for details on decommissioning a controller.

Downloading the Controller

You can download the controller configuration right-clicking the controller icon and selecting the option **Download**.

The download is executed using **Syscon**. Refer to the **Syscon Help** or the **Syscon User's Manual** for details on downloading the configuration to the controller.

Managing Controllers

Using the **AssetView** pages, you can manage the controller's maintenances and diagnostics. Rightclick the controller icon and select the desired page.

Note that:

- The Configuration, Calibration, Diagnostic, Identification, Maintenance, Monitoring, Display or DeviceView pages will be available in the controller's menu only if **AssetView** is installed and the controller has already been commissioned.
- The SQL Server must have been started and should be running.
- The controller must have been registered in the AssetView database, using the AssetServer.

Refer to the AssetView User's Manual for details on registering controllers.

Searching Controllers

To search the controller:

- 1. Select one of the filter options: Device Tag, Device ID, IP, Status, Commissioned, Model Name, or Area.
- 2. Type the word related to the controller to be searched.
- 3. Click the button Search.

HINT

The wild char '*' (asterisk) can be used to replace one or several characters. The asterisk may be placed anywhere in a search string, and the string may include several asterisks. The "?" (Question mark) can be also used as a wild char.

Advanced Search

Click **Advanced Search** at the bottom of the **Controllers** dialog box. Use the **Advanced Search** dialog box to find the items that match two or more criteria simultaneously.

🗞 Advanced Search	
Criteria	Value
📕 Device Tag	-
🖷 Device ID	-
🐺 IP	-
Status	-
Commissioned	-
🚛 Model Name	-
🗢 Area	-
	Add Value
Ok	Cancel Help

Figure 4.46. Advanced Search

Type the word to be searched on the text box, click the criteria icon to select it and click the button **Add <Value>**. See the example below:

为 Advanced Search	
Criteria Device Tag Device ID IP Status Commissioned Model Name Area	Value DF63 - - - - - -
DF63	Add Device Tag Cancel Help

Figure 4.47. Defining Search Criteria

Repeat the steps above to add other criteria.

To delete the value from one criterion, right-click the value and click the option **Delete**. To delete all values from the **Advanced Search** dialog box, right-click the dialog box area and click the option **Delete All**.

I/O Points

List of I/O Points

To open the list of all devices in the Database and the configured I/O points, expand the icon **Network Devices > I/O Points** and click **Net I/O** in the topology tree. The **Studio302 I/O** window will open.

ew Help									
NET I/O	NET I/O								
	NET I/O								•
	[5] Total Rointr [3] Toput Pointr [2 1 Output Pointe						
	Current Nodes All	o j inpact onici/ [2] 00000000000						0
	Current Node: An								
	B 🌮 <u>All</u>		I/O user tag	Mode	Block	Device	Network	Area	Value
			[]] FY_AI_1	Analog	Yes	FY	Profibus 1	ProjDF73	
	B FY	4_40-1	D LD_AI_1	Analog	Yes	LD	Profibus 1	ProjDF73	
	FY-P	A AO-1	DLD_AI_2	Analog	Yes	LD	Profibus 1	ProjDF73	
		-	@ FI_AO_1	Analog	Yes	FI	Profibus 1	ProjDF73	
	- 👩 LD-F	A_AI-1	@ FY_AO_1	Analog	Yes	FY	Profibus 1	ProjDF73	
	🎒 LD-F	A_TOT-1							
			Show I/O u	ser tag					
						El tasut 🛞 E	Output		
					(2)	🗹 Input 🍈 🖥	Output		
	Ø ③ Device	🗐 🔿 Group) I/O us	ertag 📷		🗹 Input 🍈 🖥 🕒 Block 👹	🛛 Output	C Network	🏐 🔾 Area
	Ø ⊙ Device	🗐 🔾 Group) I/O us	ertag 📷	(B) O Mode	🗹 Input 🍈 🖬	Output	C Network	• 〇 Area
	Ø ⊙ Device	🗐 🔿 Group	● ⊙ I/O us Se	er tag 📷 arch	⑧ ○ Mode	☑ Input @ 6	Output	Network	🏐 🔿 Area
		Group	● ⊙ I/O us Se	ertag 📕 arch	Ø∣ ⊖ Mode 🗧	🗹 Input 🏼 🔘 🖌	Output	ONetwork	● ○ Area
	Ø ⊙ Device	Group	● ⊙ I/O us Se	er tag 🔚 arch	Ø∣ ⊖Mode []	☑ Input @ 6	Output	ONetwork	● () Area
	O Device NET I/O symbology win	Group Find	● ⊙ I/O us Se	er tag 📻 arch	₿ ○ Mode 1	☑ Input @ 6	Output	S O Network	🏐 🔿 Area
	O Device NET I/O symbology win Supervision	Group Find	● ⊙ I/O us Se Point statu	er tag 📻 arch 🔄	Mode	☑ Input @ 6	Output	S O Network	• O Area
	O Device NET I/O symbology win Supervision Orf Orf	Group Find dow Point quality	© ⊙ I/O us Se Point statu	er tag 📰 arch s	Mode	☑ Input ③ 5	Output Output Certain Search	Network by I/O user 1 tatus.) Area
	O Device NET I/O symbology wini Supervision Or On	Group Find Gow Point quality Bad	Point statu	er tag 📰 arch 🔄 s J	Mode	✓ Input Ø Block Ø block Ø the database wit the cPU is if the CPU is	Output Output Certification C	Network by I/O user to the second) Area
	O Device MET 1/0 symbology win Supervision Orf On On On	Group Find Find Over quality Bad Good Cood	O I/O us Se Point statu Good	er tag 💼 arch 🔄 s /	Mode Meaning Noint read from Noint offline. No No Noint offline. No N	Input () Slock () Block () the database with eck if the CPU is of problems detected	Output Output Search hout supervision s online. d.	Network	● () Area
	O Device NET L/O symbology win Supervision Orf On On	6 Group Find dow Point quality Bad Good Good	Point statu Good Bad	er tag 📷 arch 🔄 s I	Mode Meaning Point read from Point online. No Point online on (Point on	Input	Output Output Certain Search Search hout supervision s online. d. ary to check if the	Network by I/O user I tatus. device is online	• O Area
	Image: Supervision Or On On On On On On	6 Group Find Find dow Point quality Bad Good Good	Point statu	er tag 📷 arch 🔤	Mode Meaning Point read from Point offine. Ch Point online on O	Input () S Block () the database with eack if the CPU is a problems detecte CPU but is necessa cted. It is necess	Dutput Device Search hout supervision s online. d. ary to check if the ary to have physic	Network h by I/O user I tatus. device is online al equipment co	O Area ag

Figure 4.48. Net I/O Window

On the **Studio302 I/O** window, mark the option **Show I/O user tag** to list the points according to the tag defined by the user in **Syscon**.

Besides displaying details about I/O Points, such as their mode, device tag and network channel, you can also view their mapping offset. Right-click the I/O Point icon at the **I/O Tag** column and click **Details**.

I/O Points Details

On the **Studio302 I/O** window, right-click the I/O Point icon on the **I/O Tag** column and click **Details**. The **I/O points details** dialog box opens.

For analog I/O points, this dialog box indicates the memory offset and the scale defined for the selected I/O Point, using the **Mapping Tool** application.

For discrete I/O points, this dialog box indicates the memory offset and the data bit offset for the selected I/O Point.

It is not possible to edit I/O point information in the **I/O points details** dialog box. To edit the I/O point, open the Area that contains the corresponding device in **Syscon**. Refer to **Syscon Manual** for details.

I/O Points Supervision Mode

On the **Studio302 I/O** window, mark the option **Supervision** to launch **System302 ServerManager** and start monitoring the values of the I/O points, which are indicated in the **Value** column.

The I/O User Tag column indicates the quality and the status of the point during supervision.

To open the **Symbology** window that details the point supervision indication, go to the **View** menu and click the option **NET I/O symbology window**. References for the point quality and status are indicated at the bottom of the **Studio302 - I/O** window.

Points signalized in red may indicate there is a problem in the OPC communication. Points signalized in green indicate the communication is good and the point value is being read from the device.

It is necessary to export tags using **Syscon** to guarantee the OPC communication.

Searching I/O Points

To search the I/O point, first select one of the filter options: I/O Tag, Mode, Block, Device or Network.

Type the word related to the I/O Point to be searched and click **Search**. Points related to your search will be displayed at the I/O points table.



Customizing the Studio302 I/O Window

You can customize the **Studio302 I/O** window and select the columns that will be displayed. Rightclick the window area and click the option **Customize View**.

The dialog box will open. Select the desired columns and click Apply.

褖 Studio302 - I / O	×
Customize View-	
🗹 Tag / User tag	✓ Network
Mode	🖌 Area
Block	✓ Value
Device	
Apply	Cancel

Figure 4.49. Customizing the Studio302 I/O Window

Saving the Log File

To save the information related to the I/O Points supervision, right-click the **Studio302 I/O** window area and click the option **Save Log File**.

Field Devices

Detecting New Devices

The *Device Detection Service* alerts you about new devices being added to the plant, when the plant is already operating.

You can initialize this service manually, in **Settings > Communication**, clicking the **Start** button on the **Services** tab in the **Communication Settings** dialog box or by clicking the **Online/Offline Communication** button ⓐ on the main toolbar.

When a new device is detected, the **Studio302** icon in the taskbar blinks and a dialog box opens informing the user about the new device detected. See the example in the figure below:

💫 Studio302 - New fie	ld device detected 🛛 🗙				
New field device detected					
Device Tag:	None				
Device ID:	0003020025:SMAR-DF73:122				
Bridge Tag:	HSE HOST 2				
Port Number:	1				
Server Machine:	Not identified yet				
Woul	d you like to commission it? Yes No				

Figure 4.50. Detecting Devices

IMPORTANT

If a device is replaced in the plant in the maintenance procedure, this device will be detected by this service and can only be commissioned if its logical representation exists in a configuration included in the current Database of the **Studio302**.

That is, a device – virtual or not commissioned – should exist in the **Syscon** configuration that represents the plant process control, to be associated to the new physical instrument detected.

To commission the new device, click **Yes** and **Syscon** will be executed, automatically opening the project that contains the bridge where the device was detected.

If the user clicks No, the device will appear in the list of new devices detected in Studio302, waiting

for the commissioning. To open the **New Device** window, click the button **w** on the toolbar.

To commission the device from the **New Device Detect** window, right-click its icon and click **Commission**. **Syscon** will be executed. Refer to the **Syscon User's Manual** for details on commissioning a device.

Field Device List

To open the list of all devices in the Database, expand the icon **Network Devices** and click **Field Devices** in the topology tree.

The **Field Devices List** dialog box will open. You can execute several procedures, such as opening the device's pages with **AssetView**, commissioning and decommissioning a device, or downloading the configuration using **Syscon**.

The **Field Devices List** dialog box displays the information related to the devices in the current Database, such as the device ID, the tag of the fieldbus channel connected to the device, the number of the port that connects the bridge to the fieldbus and the device status in the plant configuration.

Click **Refresh** at the bottom of the **Field Devices List** dialog box to read the information of all devices from every configured OPC Server.

	The file containing the device is located in the local machine.
	The file containing the device is located in the local machine and it is being edited.
Server	The file containing the device is located in the server machine.
Server	The file containing the device is located in the server machine and it is being edited.
Server	The file containing the device is located in the server machine and it is being edited by another user.

Managing Devices

Using the **AssetView** pages, you can manage the device's maintenances and diagnostics. Rightclick the device icon and click the corresponding device page.

Note that:

- The Configuration, Calibration, Diagnostic, Identification, Maintenance, Monitoring, Display or DeviceView pages will be available in the device's menu only if **AssetView** is installed and the device has already been commissioned.
- The SQL Server must have been started and should be running.
- The device must have been registered in the AssetView database, using the AssetServer.

Refer to the AssetView User's Manual for details on registering devices.

Searching Devices

To search the device, first select one of the filter options: *Device Tag, Device ID, Protocol, Bridge, Port, Status, Commissioned, Network, Address, or Area.*

Type the word related to the device to be searched and click **Search**.

Device Tag	Device ID	Protocol	Bridge Tag	Port	Status	Commissioned	Network Name	Address	Area
FI302	00110010	H1	Bridge 2	1	Off-Line	No	Fieldbus 5	24	proj02
JF302		H1	Bridge 1	1	Off-Line	No	Fieldbus 1	26	proj01
LD302		H1	Bridge 1	1	Off-Line	No	Fieldbus 1	24	proj01
TT302		H1	Bridge 1	1	Off-Line	No	Fieldbus 1	25	proj01
🗳 💿 Device Ta	g 🦉 🔿 Device ID 慮 🔿 Proto	col 🥵 🔿 Bridge	3 🔿 Port 📲	🕽 🔿 Sta	tus 🤯 🔿)Commissioned 💑	🔿 Network 🛛 🕷	🔿 Address	🕙 🔿 Area

Figure 4.51. Searching Devices

HINT
The wild char '*' (asterisk) can be used to replace one or several characters. The asterisk may be placed anywhere in a search string, and the string may include several asterisks. The "?" (Question mark) can be also used as a wild char.

Advanced Search

Click **Advanced Search** at the bottom of the **Field Devices List** dialog box. Use the **Advanced Search** dialog box to find the items that match two or more criteria simultaneously.

http://www.ced Search	×
Criteria	Value
🛱 Device Tag	-
📸 Device ID	-
🕵 Protocol	-
🎭 Bridge	-
🝠 Port	-
🐺 Status	
Sommissioned 😳	-
码 Network	
🐯 Address	-
🤭 Area	-
	Add Value
Ok	Cancel Help

Figure 4.52. Advanced Search

Type the word to be searched on the text box, click the criteria icon to select it and click the button **Add <Value>**. See the example below:

Advanced Search	×
Criteria	Value
🔀 Device Tag	Π
🖁 Device ID	-
🕵 Protocol	-
🎭 Bridge	·
🍠 Port	
🐺 Status	-
🏟 Commissioned	·
👪 Network	-
🐯 Address	·
🥗 Area	-
П	Add Device Tag
Ok	Cancel Help

Figure 4.53. Defining Search Criteria

Repeat the steps above to add other criteria.

To delete the value from one criterion, right-click the value and click the option **Delete**. To delete all values from the **Advanced Search** dialog box, right-click the dialog box area and click the option **Delete All**.

Fieldbus Devices

Configuring a Fieldbus Device

Right-click the device icon and click **Configuration** to access the information on the device configuration.

Syscon will open the configuration that contains the selected device. Refer to the Syscon User's Manual for details on configuring a device.

Commissioning a Device

Right-click the device icon and click **Commission** to commission a device. **Syscon** will open the configuration that contains the selected device.

In the **Commission** dialog box, click the button is to select the device ID. The **Device Selection** dialog box will open. Select the icon of the device ID and click **Ok** to conclude.

Refer to the Syscon User's Manual for details on commissioning a device.

Decommissioning a Device

You can remove a device from the process control after the device has been commissioned. Rightclick the icon of the device to be decommissioned and click **Decommission**.

Syscon will be executed, and the device will be removed from the process control. Refer to the **Syscon User's Manual** for details on decommissioning a device.

Device Download

You can download the device configuration right-clicking the device icon and clicking Download.

The download is executed using **Syscon**. Refer to the **Syscon Help** or the **Syscon User's Manual** for details on downloading the configuration to the device.

HART Devices

Configuring a HART Device

Right-click the HART device icon and click the option **Open DTM** to open the area that contains the selected device on the **FDT HART Configurator** tool.

Refer to the AssetView FDT HART manual for details on configuring the HART device.

Profibus Devices

Configuring a Profibus Device

Open the **Field Devices List** dialog box, right-click the Profibus device icon and click the option **Cyclic Configuration** to open **Syscon** and edit the configuration file that contains the selected device. Refer to the **Syscon User's Manual** for details on configuring a Profibus device.

Right-click the Profibus device icon and click the option **Acyclic Configuration** to access the information on the device configuration. The **ProfibusView** application will open the device dialog box. Refer to the **ProfibusView User's Manual** for details on configuring the Profibus device.

Right-click the Profibus device icon and click **Open DTM** to open the **Smar AssetView FDT** application. This application allows you to parameterize blocks from the device, in *online* or *offline* mode. Refer to the **AssetView FDT User's Manual** for details.

Detecting a Profibus Device

When a new Profibus device is connected to the plant, it is necessary to configure the address.

Click the button and the **Applications** toolbar to open the **ProfibusView** dialog box:



Figure 4.54. Detecting Profibus Devices

Select the device manufacturer and the type of the device. Type the master IP address and the slave address. Click \mathbf{Ok} to conclude.

It will be necessary to open the configuration file and add the device to the plant strategy.

DeviceNet, AS-i and Modbus Devices

Configuring a DeviceNet, AS-i or Modbus Device

Open the **Field Devices List** dialog box, right-click the device icon and click the option **Configuration** to open **Syscon** and edit the configuration file that contains the selected device.

Refer to the Syscon User's Manual for details on configuring a DeviceNet, AS-i or Modbus device.

Configuration Samples

When you run **Studio302** for the first time, the **Samples Screen** opens and you can select a configuration file sample to be opened.

The **Studio302 Samples** are created by Smar engineers to provide standard examples of plant control applications.



Figure 4.55. Studio302 Samples Screen

Click the link **Configuration Files** to select a configuration sample. The **Unpack Files** dialog box will open.

b Unpack		×
Unpack		*
Select a file to unpack		Browse
Select the temporary path to extract th C:\DOCUME~1\JULIAN~1\LOCALS	ne files ∾1\Temp	Browse
🗖 List all files	Unpack	Help

Figure 4.56. Selecting a Sample File

In the area **Select a file to unpack**, click **Browse** to locate the sample file. During the **SYSTEM302** installation, the samples files created by Smar are copied to the default installation folder: *C:\Program Files\Smar\Studio302\Samples\Configurations*.

Unpack files		? ×
Look in:	🔁 Configurations 💽 🌀 🏂 🔛 🗸	
My Recent Documents Desktop My Documents My Computer	Demo_Project.tgz	
My Network Places	File name: Demo_Project.tgz Open Files of type: *.tgz Cance © Open as read-only •	

Figure 4.57. Unpacking a Sample File

Select the file icon and click **Open** to return to the **Unpack** dialog box.

In the area **Select the temporary path to extract the files**, click **Browse** to select a temporary folder that will be used during the unpack process.

Click **Unpack** to execute the procedure and unpack the sample file to the current **Studio302** database. The configuration and support files will be extracted to the current database.

PROCESS EQUIPMENT DATABASE

Click the **Process Equipment Database** icon on the topology tree to open the **Process Equipment Database** window.

All information about the instruments in the plant will be stored in a Database. A node in the database will represent an instrument. This node gathers specific attributes of the instrument, and common links and attributes inherit from the category.

🐎 Process Equipment Database	- • •
Process Equipment Database	L
Process Equipment Database	
ter web	
Tandem	
Smar_Demo_Plant	
Columns A and B	
Energy Generation	
Action or Information Aspect	
Close	Help

Figure 5.1. Process Equipment Database

Specific instrument attributes includes links to documentation files, instrument images, Web pages, process visualization and supervision screens, and executable files.

Importing the Process Equipment Database

To import the information from the **Process Equipment Database** of another machine:

- 1. Go to the File menu, select the option Import and then click Process Equipment Database.
- 2. The **Import Process Equipment Database** dialog box will open.
- 3. Click Browse to select the folder where the compacted file is located.
- 4. Select the file icon and click **Open**.
- 5. **Studio302** will verify the information in the compacted file, comparing it to the information in the current **Process Equipment Database**. The **Import Process Equipment Database** dialog box will indicate if there are any conflicts with the parameters.



Figure 5.2. Importing the Process Equipment Database

- 6. If there is a conflict with the tags of the nodes and types, you will have to edit the tags:
 - i. Select the icon of the tag;
 - ii. Type the new tag on the text box at the bottom of the dialog box;
 - iii. Click Update.
- 7. Click **Ok** to conclude and import the new nodes to the **Process Equipment Database**.

Exporting the Process Equipment Database

You can compact the information from the **Process Equipment Database** in one single file and send this file to another machine.

On the File menu, click Export and then click Process Equipment Database. The Export Process Equipment Database dialog box will open.

Export Process E	quipment Databa	ise					? ×
Save in:	Contraction temp		•	3	1 🖻	•	
My Recent Documents Desktop							
My Documents							
Wy Computer							
S	File name:	PED_Smar			•		Save
My Network Places	Save as type:	*.tgz			•		Cancel

Figure 5.3. Exporting the Process Equipment Database

Browse the directories to select the folder to save the file, and type the name for the compacted file. The file extension will be "*.tgz". Click **Save** to compact the information and save the file.

Saving an equipment template

On the **Process Equipment Database** window, right-click the icon of the equipment and select the option **Save as Template**. The dialog box will open.

System302 Studio	×
Type the name for the Template: Do not type a file extension.	OK Cancel
Distillery	

Figure 5.4. Saving an equipment template

Type the name for the template file but **do not** type a file extension. Click **Ok** and a message box will open indicating the location to the template file. The default path for equipment template files is *C*:*Program Files**Smar**Studio302**Bin**Templates*.

Click **Ok** to conclude.

Importing an equipment template

On the **Process Equipment Database** window, right-click the **Process Equipment Database** icon, or the icon of the parent equipment where the new equipment will be created, and select the option **Import Template**.

The **Import Template File** dialog box will open. Select the icon of the desired template file and click **Open**. Remember that the default path for equipment template files is *C:\Program Files\Smar\Studio302\Bin\Templates*.

Import Templat	e File					? ×
Look in:	🗀 Templates		•	G 🦻	ب 🔝 🔊	
My Recent Documents Desktop My Documents	Distillery.xml					
My Computer My Network Places	 File name: Files of type:	Distillery.xml *.xml Open as read-only			• [•]	Open Cancel

Figure 5.5. Importing an equipment template

A message box will open informing that the procedure was successful. Click Ok to conclude.

IMPORTANT
It is not possible to import the same template file again, in the Process Equipment Database .

Searching similar equipment

Similar equipment is instance of an equipment or special item created as a copy from another equipment in the **Process Equipment Database**. Similar equipment is displayed in green in the **Process Equipment Database**. See the example below:

🇞 Studio302 - Process Equipment Database	_ 🗆 ×
Process Equipment Database	
Smar web Tandem chart Smar web Smar web Smar web Tandem chart Motor 1 Coriginal Equipment Mill 2 Smar web Tandem chart Motor 2 Motor 1 Coriginal Equipment Motor 2 Motor 1 Coriginal Equipment Smar Demo Plant Action or Information Aspect Select an Action Aspect or Information Aspect to see the details.	•
Close	elp

Figure 5.6. Similar Equipment

To locate all equipment similar to a specific equipment or special item, right-click the icon of the instance of an equipment or special item and select **Find Similar Equipments**.

The **Similar Equipments** dialog box will list the parent equipment that contain instances similar to the selected equipment.

褖 Equipment Database	×
Similar Equipments Similar Equipment: [Boiler 1]	Q
Equipment(s) Parent	
Alcohol Distillation	
Close	Help

Figure 5.7. Locating Similar Equipment

From the **Similar Equipments** dialog box, right-click an item and click **Delete the Similar Equipment** to remove the occurrences of similar equipment. See the following section **Removing an Equipment**.

Right-click the icon of the equipment and click **Save as Template** to create the xml template file based on the selected similar equipment.

Equipment

Creating an Equipment

On the **Process Equipment Database** window, right-click the **Process Equipment Database** icon and select the option **New Equipment**. The **New Equipment** dialog box will open.

Notess Equipment Database	×
New Equipment	Ø
Functional Name	
Description	
Customize Ok Cancel	Help

Figure 5.8. Creating Equipment

Type the name in **Functional Name** and a brief description for the equipment. Click the button **Customize** to open the **Customize Aspects** dialog box and edit the aspects for the new equipment. See section **Customizing Aspects** for details.

Click Ok to conclude.

Creating Aspects for the Equipment

On the **Process Equipment Database** window, right-click the equipment icon and click **New Equipment**. The **New Equipment** dialog box will open.

🐎 Process Equipment Database	×
New Equipment	Ø
Functional Name	
Description	
✓ to inherit aspects of the parent equipment	
Customize Ok Cancel	Help

Figure 5.9. Creating Types

Type the name in Functional Name and a brief description for the equipment type.

Mark the option **Inherit the aspects of the parent equipment** to apply the aspects defined for the Parent node to the equipment being created. If this option is not marked, the aspects will not be applied to the new equipment.

Click the button **Customize** to edit the aspects for the new equipment. See section **Customizing Aspects** for details.

Click **Ok** to conclude.

Replicating Equipment

To create a new instance of an equipment or special item, right-click the icon and click **Copy** from the popup menu.

Then, right-click the other equipment or special item where the new instance will be created and select the option:

- **Paste as reference:** all information and aspects will be copied to the new instance of the equipment or special item, and any changes made to the new instance will be applied to the original equipment, and vice-versa.
- Create new equipment from: all information and aspects will be copied to the new instance of the equipment or special item, but changes made to the new instance will not affect the original equipment, and the changes made to the original equipment will not be applied to the new instance created.

Searching Equipment

Right-click an **Equipment** icon and click **Search Equipment**. The **Search Equipment** dialog box will open.
earch Equip uggar Mill	ment		Ĺ
action Aspect	Equipment	Value	DatabaseName
🖠 Smar web	Mill 1	http://www.smar.com	System302
🖠 Smar web	Mill 2	http://www.smar.com	System302
Tandem chart	Mill 1	D:\Arquivos de Progra	System302
Tandem chart	Mill 2	D:\Arquivos de Progra	System302
Search	pect C Equipment	: O Value O Database i	Name

Figure 5.10. Searching Nodes

Select one of the filter options: *Action Aspect, Equipment, Value, or Database Name.* Type the word related to the node to be searched and click **Search**.

НІМТ
The wild char '*' (asterisk) can be used to replace one or several characters. The asterisk may be placed anywhere in a search string, and the string may include several asterisks. The "?" (Question mark) can be also used as a wild char.

Removing an Equipment

To remove equipment from the **Process Equipment Database**, right-click the equipment icon, in the **Process Equipment Database** dialog box, and click **Delete Equipment**.

A message box will open to confirm the operation. Click **Yes** to delete the equipment and the aspects related to the equipment will be removed from the **Process Equipment Database**. Or click **No** and the equipment will not be deleted.

If there is one "similar equipment", that is, an instance of an equipment or special item created as a copy from another equipment, in the **Process Equipment Database**, a dialog box will open to confirm the operation:

- Select **Delete this Similar Equipment only from this Equipment Parent** to remove only the selected item from the **Process Equipment Database**.
- Select Delete this Similar Equipment from all Equipments to remove all references to the selected item from the Process Equipment Database.

Removing Inherited Aspects

To remove inherited aspects from the equipment, right-click the equipment icon and click **Remove Inherit**. The aspects inhered from the Parent node will be deleted and new aspects created for the Parent node will no longer be inhered by the sub-node.

Only the aspects from the sub-nodes will be deleted. The aspects from the Parent node will not be affected.

Special Items

A special item can be an instrument, a control module or an area, that is part of the configuration file managed by **Studio302**.

Creating Special Items

On the **Process Equipment Database** window, right-click the **Process Equipment Database** icon and click **New Special Item**. The **New Special Item** dialog box will open.

🐎 Process Equipment Database 🛛 💽
New Special Item
🕙 🔿 Areas 🛛 🔯 🔿 Control modules 🖓 🍥 Field devices
H Controllers
Selected Tag: DT303
 ♀ DT303 ♀ LD303 ♀ TT303
Functional Name:
DT303
Description:
Density Transmitter
Customize Ok Cancel Help

Figure 5.11. Creating Special Items

Select the category of the special item: Areas, Control Module, Field Devices, Logics or Controllers. Then, select the icon of the tag related to the special item being created.

Type a brief description for the special item. Click the button **Customize** to edit the aspects for the new special item. See section **Customizing Aspects** for details.

Click Ok to conclude.

Aspects

The **Aspects** window shows details about customized aspects, which are information or actions associated to the selected equipment, such as the description, charts, web links, executable files, etc. Right-click the icon of the equipment and click **View Aspects Window**.

Creating Aspects

On the **Process Equipment Database** window, right-click the icon of the equipment and click **Customize Aspects**. The **Customize Aspects** dialog box will open. Click **New**.

🐎 Process Equipment Database		×
Customize Aspects		S
New Edit Delete	Action Aspects	Information Aspects
Default Aspects	🞑 🔘 File	
F.N. DT303	🕘 🔘 Executable	
ab Description	🔰 🔘 ProcessView	
Custom Aspects	🔘 Web Link	
	OPC Aspect	
<u>+</u>		
+		
		Cancel
	Ok	Cancel Help

Figure 5.12. Creating Aspects

Select the type of the new **Action** or **Information Aspects**. Configure the information related to the new aspect. Click **Ok** to conclude. This process can be repeated as many times as necessary without having to close the window. See section **Customizing Aspects** for details.

Editing an Aspect

Click the aspect icon and then **Edit**. The **Customize Aspects** dialog box will expand and the **Update** tab will appear. Configure the information related to the aspect. See section **Customizing Aspects** for details.

Click Ok to conclude.

Copy and Paste an Aspect

Right-click the aspect you want to copy in the main **Process Equipment Database** window and select **Copy Aspect**.

Select the equipment icon where the copy of the aspect will be created. Right-click the equipment and select **Paste Aspect**.

ATTENTION

If you want to move an aspect from one equipment to another, right-click the aspect icon and select **Cut Aspect** instead of the option **Copy Aspect**. Then, right-click the target equipment icon and select **Paste Aspect**. The aspect will be deleted from the original equipment and added to the target equipment.

Customizing Aspects

Click the button **Customize** when creating an aspect or in the **Aspects** window to open the **Customize Aspects** dialog box.

Default Aspects

In the Default Aspects box, double-click the default aspect to edit the information.

- **F.N.:** type the tag for the equipment or special item.
- Image: click Browse to select an image to represent the equipment or special item.
- **Description:** type a brief description for the equipment or special item.

nocess Equipment Database		
Customize Aspects		S
New Edit Delete	Update =	
Default Aspects	Name:	Mill 1
F.N. Mill 1		
🔛 Image		
ab Description		
Custom Aspects		
		Ok Cancel
		Ok Cancel Help

Figure 5.13. Default Aspect

Action Aspects

At the Customize Aspects dialog box, select the Action Aspects tab.

• File: Include a link to any type of files related to the aspect, such as user's manuals, technical documentation and pictures. Click the **Browse** button to locate the file and type the name for the new aspect.

Action Aspects	Information Aspects
🞑 💿 File	Browse
🞽 🔘 ProcessView	
🔘 Web Link	
OPC Aspect	
Aspect Name:	Ok Cancel

Figure 5.14. Attaching Files

• **Executable:** Include a link to an executable file related to the aspect. Click the **Browse** button to locate the file and type the name for the new aspect.

Action Aspects	Information Aspects
File File File	Browse
OPC Aspect	
Aspect Name:	Ok Cancel

Figure 5.15. Attaching Executable Files

• **ProcessView:** Include a link to **ProcessView** files related to the aspect, such as process mimic screen, alarm screens and trend view screens. Click the **Browse** button to locate the file and type the name for the new aspect.

Action Aspects	Information Aspects
 ○ File ● Executable 	
ProcessView	Browse
o or o hapted	
Aspect Name:	Ok Cancel

Figure 5.16. Attaching ProcessView Files

• Web Link: Include a link to a Web page related to the aspect, such as the device manufacturer's pages. Type the URL address and type the name for the new aspect.

Action Aspects	Information Aspects
问 🗇 File	
intersective 🕘 🕘	
🔰 🔘 ProcessView	
🖲 Web Link	
IN OPC Aspect	
Aspect Name:	
	Ok Cancel

Figure 5.17. Linking to a Web Page

• **OPC Aspect:** Include a representation for an OPC tag. The value will be monitored in the **Process Equipment Database** window. This aspect is only available for the *Device* special item. See section **Configuring OPC Aspects**.

Action Aspects	Information Aspects
🞑 🔘 File	
🔀 🔘 ProcessView	
💮 Web Link	
In OPC Aspect	Browse
Aspect Name:	
	Ok Cancel

Figure 5.18. OPC Aspects

Information Aspects

At the Customize Aspects dialog box, click New and select the Information Aspects tab.

• **Input Text:** Include a text field for the equipment. Type the name for the new aspect and add the information text.

Action Aspects	Information Aspects
ab 💿 Input text	
📑 🔘 Multi Options	
Aspect Name:	
	Ok Cancel

Figure 5.19. Input Text

• **Multi Options:** Include a multiple options text field to list the information related to the aspect. Type the name for the new aspect; add each option by typing the option text and clicking the **Add** button.

Action Aspects	Information Aspects
ab 🔘 Input text	
Multi Options	
	Add
	Edit
	Delete
Selected Option:	
Aspect Name:	
	Ok Cancel

Figure 5.20. Multi Options

To edit an option, select this option and click **Edit**. Type the new information and press **Enter** on your keyboard. The **Selected Option** field indicates which is the default option that appears selected when the user clicks on this aspect.

OPC Aspects

Configuring OPC Aspects

When creating an **OPC Aspect** on the **Customize Aspects** dialog box, click **New**, and then select **Action Aspects** tab. Click **OPC Aspect** option and then click the **Browse** button to open the **OPC Browser** dialog box.

🐎 Process Equipm	ent Database - OPC Browser		×
OPC Bro	wser		browser
Server List:	WIN7JBI\SMAR.HSEOLESE	RVER.0 V	Connect
HSE_DIAG HSE_SO HSE_SO HSE_CLI	_SYSTEM302 URCE1 URCE2 IENTS	NOT_VALID ACTIVE TOTAL	
OPC Parameter:	#HSE_DIAG_SYSTEM302.H	HSE_SOURCE1.ACTIVE	
		Ok Cancel	Help

Figure 5.21. OPC Browser dialog box

Select the OPC server from the list and click **Connect** to read the list of available parameters from the selected server.

Click the block icon on the box on the left side of the dialog box and the list of parameters related to this block will be displayed on the box at the right side of the dialog box.

Select the OPC parameter icon and click Ok to return to the Customize Aspects dialog box.

When you click **Ok** at the **Customize Aspects** dialog box, the value of the OPC parameter will be read from the server and indicated on the **Process Equipment Database** window.

Connecting and disconnecting OPC Aspects

On the **Process Equipment Database** window, right-click the **Process Equipment Database** icon and select **Connect all OPC Aspects**. The values of all OPC parameters will be read from the server and indicated on the **Process Equipment Database** window.

🗞 System302 Studio - Process Equipment Database	_ 🗆 ×
Process Equipment Database	L
Image: Process Equipment Database Image: Process Equipment Database	
Action or Information Aspect	
TT302-2-AI-1.MODE_BLK.TARGET :: 16	
Close	Help

Figure 5.22. Monitoring OPC Aspects

To monitor only a specific OPC parameter, right-click the corresponding OPC Aspect icon and click **Connect OPC Aspect**.

To stop monitoring the OPC parameters, right-click the **Process Equipment Database** icon and click **Disconnect all OPC Aspects**. To stop monitoring only a specific OPC parameter, right-click its icon and click **Disconnect OPC Aspect**.

OPC Aspects details

Right-click an OPC Aspect icon and click Details. The OPC Aspect Details dialog box will open.

🗞 System302 Studio - Process Equ	iipmei	nt Database	_	. 🗆 🗙
Process Equipmen	it D	atabase	Ľ	
🔓 Process Equipment Database				
🗄 🤣 Config_Anderson				
DF62_ADN				
⊟ 🧼 TT302-2	OPC	Aspect Details	×	
TT302-2-BLK-1	I.	Good Quality		
TT302-2-AI-1.	ę	LOCAL		
W LD302-9	#4SE smar	SMAR.HSEOLESERVER.0		

Figure 5.23. OPC Aspect Details dialog box

The **OPC Aspect Details** dialog box indicates the quality of the communication, the location (remote or local) of the project configuration file where the block parameter was created and the OLE server selected for the communication.

Process Equipment Database Samples

When you run **Studio302** for the first time, the **Samples Screen** opens and you can select a **Process Equipment Database** sample to be opened.

The **Studio302 Samples** are created by Smar Engineers.



Figure 5.24. Studio302 Samples Screen

Click the link Process Equipment Database to select a Process Equipment Database sample.

The **Import Process Equipment Database** dialog box will open. Browse the directories to locate the sample file. The default location for samples files is: *C:\Program Files\Smar\Studio302\Samples\EquipDatabase*.

Process Equipme	ent Database	Тур	K Browse e			
	Import Process I Look in: Wr Recent Documents Desktop My Documents	çquipment Datal	1996 1999 22	×	C 🕸 🖻 🖩	? X
	My Network Places	File name: Files of type:	AA_Sample.tgz *.tgz Open as read-on	ly	v	Open Cancel

Figure 5.25. Selecting a Process Equipment Database Samples

Select the file icon and click Ok on the Import Process Equipment Database dialog box.

The **Import** procedure will be executed and the items from the sample file will be imported to the current **Process Equipment Database**. Click **Ok** to conclude.

ATTENTION

If there are conflicts between the tags of the nodes and types from the template, and the existent tags in the current **Process Equipment Database**, you will have to edit the tags. See section **Importing the Process Equipment Database**.

USERS AND GROUPS MANAGEMENT

Studio302 incorporates the Group of Users from the Windows Operating System. Windows' users can log to **Studio302** using the same login name and password.

The **SYSTEM302** default installation does not enable the secure mode for **Studio302**. To enable the secure mode and be able to manage users and groups, click **Settings > Security**, and click **Enable Login.**

When **Studio302** is initialized, the **Login** dialog box will open:



Figure 6.1. User Login

Using the **Group Management** window in **Studio302**, the System Administrator can configure the access rights and permissions for the other users.

To open the **Group Management** window, go to the **Settings** menu, select the option **Security** and then click **Group Management**.



Figure 6.2. Group Management

ATTENTION				
The Enable Login option must be enabled first for the Group Mana	agement option to become			
available as well.				

The following window will open:

Group	Permissions
System302_Engineer	Full Control
System302_Operator	System - Start
System302_Viewer	System - Start
	8 (a) Group 👶 🔿 Permission
	🎉 🖲 Group 🛛 👶 🔘 Permission

Figure 6.3. Groups and Permissions

Editing Group Permission

Select the group icon in the **Group Management** window and click **Edit** to configure the access rights for the users in that group.

The Group Permission dialog box will open:

Group permissions				<u> </u>
Group Permissions				
Group				
Name: System302_Operator				
List: Full Control Area - ExportStandalone Area - Remove Area - Replace Database Diagnostics Equipment Database Pack&Go - Pack Pack&Go - Unpack Stations System - Manager	>> <<	owea: ystem - Starl	t	
		Save	Close	Help

Figure 6.4. Editing Groups Permissions

To allow the group access to a system functionality, select the feature at the **List of Permissions** and click the button . The selected feature will be added to the **Allowed** list.

To deny the group access to a system functionality, select the feature at the Allowed list and click

the button _____. The selected feature will be removed from the **Allowed** list.

Click the button **Save** to apply the changes to the group and click **Close** to conclude.



Searching Groups

To search the name of a group:

- 1. Select the option Group at the bottom of the Group Management window.
- 2. Type the name of the group.
- 3. Click the button Search by Group.

To search the permission for any system functionality:

- 1. Select the option **Permission** at the bottom of the **Group Management** window.
- 2. Type the name of the system functionality.
- 3. Click the button Search by Permission.

HINT The wild char '*' (asterisk) can be used to replace one or several characters. The asterisk may be placed anywhere in a search string, and the string may include several asterisks. The "?" (Question mark) can be also used as a wild char.

Multiuser Security

The **Multiuser Security** dialog box lists the users logged to the **Database Manager** in a multi-user scenario, indicating their IP addresses, status and the **Studio302** installation mode.

On the right lower corner of the **Studio302** window, double-click the **Multiuser Security** icon ¹⁰⁰ to open the dialog box.

nultiuser Security			×
Security			
Status Station	Login	IP	Install mode
🚱 Win73Bi	smar	10.0.2.15	Client/Server
Refresh		Clo	se Help

Figure 6.5. Multiuser Security

The **Multiuser Security** icon will blink on the **Studio302** window if there is a workstation in unsecured mode.

ATTENTION The SQL Server 2014 must be installed on each workstation and the workstations must be using the same SQL data communication port.

MANAGEMENT TOOLS

Defining the Manufacturer ID

The **Manufacturer ID** is defined when creating a database. A database can only be created in the **Client/Server** mode, when the **Database Manager** is being executed. In the **Database** dialog box, select **New** and then click **Browse** on the **Manufacturer ID** box to open the **Manufacturer ID** dialog box.

Database		
Database		<u></u>
Current Databa	se: System302	
C New		
Selected		
	Database List	
	🗳 System302	
	1	

Figure 7.1. Creating a Database

All **Manufacturer IDs** registered on the **FFB Manager** are listed on the **All** tab. The **Recently** tab will list the most recent **Manufacturer IDs** selected by the user.

Click the icon corresponding to the name of the manufacturer to select it. The profile numbers related to the selected Manufacturer ID will be used in the new Database. Click **Ok** to conclude.

1anufacturerID		×
All	Recently	
Name	ID	
Cebrace CMM Deten Duke Kodak Petrobras Rhodia Unregistered	800004 800003 800008 800005 800007 800002 800006 800001	
ManufacturerID:	Cancel Help	Live Update

Figure 7.2. Defining the Manufacturer ID

IMPORTANT

To register a non-listed **Manufacturer ID**, please contact a **Smar** representative and request your **Manufacturer ID**.

Pack & Go

Packing Database Files

The **Pack** procedure in **Studio302** includes the project configuration files created in **Syscon**, configuration files created in **LogicView**, initialization files for these tools, **Block Support** and **Device Support** files, **Studio302** files related to the current *Database*, configuration files, description files and image files of devices used by the **Network Configurator** tool, initialization files for the OPC servers, and **ProcessView** configuration files consolidated by the **ProjectWorX** tool.

Those files are grouped in a single compacted file. The compacted file has the extension *.*tgz*, and it is compatible with **Winzip** and other applications.

This package can be sent and unpacked into another machine. Follow the procedure below to pack the Database files:

- Pack & Go
 Image: Configuration Files, dependency files and entire Block Support and Device Support).

 Image: Display the main toolbal. The Pack & Go dialog box will open.

 Type

 Image: Display the main toolbal. The Pack & Go dialog box will open.

 Type

 Image: Display the main toolbal. The Pack & Go dialog box will open.

 Type

 Image: Display the main toolbal. The Pack & Go dialog box will open.

 Type

 Image: Display the main toolbal. The Pack & Go

 Type

 Image: Display the main toolbal. The Pack & Go

 Type

 Image: Display the main toolbal. The Pack & Go

 Type

 Image: Display the main toolbal. The Pack & Go
- 1. Click the button 🤍 on the main toolbar. The **Pack & Go** dialog box will open.

- 2. Select the type of files that will be packed:
 - Full: all configuration files (Studio302, Syscon, LogicView, Network Configurator and ProcessView) imported to the current database, dependency files and the folders related to the Block Support and Device Support will be included in the package.
 - Light: all configuration files (Studio302, Syscon, LogicView, Network Configurator and ProcessView) imported to the current database will be included in the package but only the Block Support and Device Support folders used by the configuration files will be included in the package.
- 3. Click **Create**. A dialog box opens and the user selects the path to the compacted file. Browse de directories and select the destination folder.

🚴 Choose the path to pack the files 🛛 🛛 💌
🖃 c: 🔹
C: Binaries inetpub PerfLogs Program Files Program Files (x86) Users Windows
Name:
Ok Cancel Help

Figure 7.4. Selecting the Destination Folder

- 4. Type the name for the package and click **Ok**. The procedure to pack all files selected may take a few minutes. To cancel this procedure, click **Cancel** on the **Pack & Go** dialog box and the operation will be aborted.
- 5. A message box will appear informing the user if the operation was successful.
- 6. Click **Ok** to conclude.

Unpacking Database Files

The **Unpack** procedure will delete the list of areas in the current database and include the areas listed in the compacted file.

Syscon project configuration files where removed areas were created are not deleted from the working directory in the local machine, therefore after executing the **Unpack** procedure you may include areas from the previous database to the current one, importing the **Syscon** configuration files where those deleted areas were configured.

IMPORTANT

To execute the **Unpack** procedure, the current database name must be the same name used by the database from where the files were compacted and the same **ManufacturerID** must be selected. If the database or the **ManufacturerID** do not exist, it will be necessary to create them before executing the **Unpack**. If the database already exists, make sure it is the current database used by **Studio302**.

If **Studio302** is being executed in **Multi-User** mode, it will be necessary to remove the files from the server database before unpacking the configuration files. Refer to the tutorial **Pack & Go procedure in Multi-User Mode** in this manual for further details about the procedure.

Follow this procedure to unpack the database files:

1. Click the button ^w on the main toolbar. The **Unpack** dialog box will open.

🐎 Unpack	
Unpack	*
Select a file to unpack C:\temp\project01.tgz	Browse
Select the temporary path to extract the files	
C:\Users\smar\AppData\Local\Temp	Browse
🕅 List all files	Unpack Help

Figure 7.5. Unpacking Database Files

- 2. At the **Select a file to unpack**, click **Browse** to open the **Unpack files** dialog box and locate the compacted file. Click **Ok** to return to the **Unpack** dialog box.
- 3. At the **Select the temporary path to extract the files**, click **Browse** to open the **Extract to** dialog box and select the directory where the compacted file will be extracted.

The selected folder will only be used as a temporary folder and will be automatically deleted after the **Unpack** procedure is complete. The files related to the configuration will be located in the **SYSTEM302** working directory.

Click Ok to return to the Unpack dialog box.

- 4. Click **Unpack** on the **Unpack** dialog box to extract the files. If the option **List all files** is selected, a list of all files saved to the destination folder will be displayed at the end of the **Unpack** procedure.
- 5. A message box will appear informing the user that the operation was successful.
- 6. Click **Close** to conclude.

Unpack Trace

The **Unpack Trace** dialog box will open when the **Unpack** procedure detects inconsistencies in the compacted configuration files.

The Trace procedure verifies the following items:

- Configuration files: the Trace procedure checks if the Syscon configuration files were locked, pending or outdated when the Pack procedure was executed.
- Logic files: the Trace procedure checks if the ladder logics were locked, pending or outdated when the Pack procedure was executed.
- Device Support and Block Support: the Trace procedure checks if there are Device Support, Block Support and Capabilities files missing.

Right-click the **Unpack Trace** dialog box and click **Save** to save the information to a log file in HTML format.

Pack & Go in Multi-User Mode

In a multi-user scenario, there is **one** station configured as **Client/Server** and one or more stations configured in **Client** mode.

The **Client/Server** station has two databases managed by specific applications. The **Database Manager** stores the information in the server machine and manages the project configuration files configured by the users in the local machine or in another **Client** station, using **Syscon** or **LogicView**, for example. The **Database Manager** has a list of areas imported in **Studio302** and controls the alterations made to the projects. This means the information stored in the **Database Manager always** overwrites the information in the database located in the client machines. A Client station has one database installed locally and managed by the Database Client, which stores the information related to the configuration files in the client machine, and this information is synchronized with the Database Manager in the Client/Server station. The Database Client from every Client station reflects the data from the Database Manager and, therefore, the information from the Database Manager overwrites data in the Client stations when the Update All procedure is executed.

ATTENTION

When a user is editing an area or logic, that is, the configuration file is in Edit Mode, data in the client machine are not overwritten.

Packing Files

The configuration files should be packed in the **Client/Server** station.

Before packing the files, make sure the information related to the configurations are updated in the Database Manager in the Client/Server station. It is also important to assure that areas and logics are NOT in Edit Mode.

The **Commit** procedure sends the information related to a project file to the **Database Manager** and, at the same time, changes the status to View Mode. This procedure must be executed for every project file managed by the Database Manager in the Client station where each project configuration was most recently updated.

To execute the Commit procedure in the Client stations, using Studio302, open the Areas window and for each area in Edit mode, right-click its icon and select the option Commit. Repeat this procedure for all logics in the Logics window.



on the main toolbar to open the Pack & Go dialog box. Select the type of files Click the button to be packed and click Create. Select the folder where the compacted file is saved, type the name for the file and click Ok. A message box informs the user that the operation is completed. Click Ok to conclude.

Unpacking Files

It is recommended to unpack files in the Client/Server station, and assure the Database Manager has no information about old configurations in order to prevent conflicts with new areas and logics.

To remove the configurations from the Database Manager, double-click the icon 🧐 of the Database Manager displayed in Windows taskbar (or right-click the icon and select Show).

On the Database Manager window, right-click the name of the configuration at the column Name and select the option **Delete**, as indicated in the following example.

Figure 7.6. Database Manager window

Repeat this procedure to remove all areas and logics from the **Database Manager**. This procedure deletes the configurations from the current database in **Studio302**. If there are other databases, even when the system is not being executed in Multi-User mode, areas and logics from those other databases will be affected.

To delete configurations related to other databases, go to the Databases menu, and click the option **Change Current Database** to change the current database in **Database Manager**. Select the desired database and click **Change**. Click the button indicated in the status bar at the bottom of the **Database Manager** window.

After removing the configurations, execute the **Unpack** procedure. Click the button **Select** on the main toolbar to open the **Unpack** dialog box. Select the backup file and click **Unpack** to unpack the configuration files.

Click **Close** in the **Unpack** dialog box to conclude. Refer to the topic **Unpacking Database Files** for further details.

After concluding the **Unpack** procedure, the **Update All** procedure is automatically executed to update the database information in all **Client** stations. The icon of the areas and logics will indicate the Local mode.

Execute the **Commit** procedure for ALL areas and ALL logics. Using **Studio302**, open the **Areas** window and for each area in **Edit** mode, right-click its icon and select the option **Commit**. Repeat this procedure for the logics in the **Logics** window.

ATTENTION

From **SYSTEM302 version 7.1.3** on, when the **Commit** procedure is executed in an area for the first time, for example, right after the **Unpack** procedure, FFBs are automatically stored in the **Database Manager**, therefore in this scenario the **Commit** procedure for logics is executed transparently to the user.

Now, new information is stored in the database from the **Client/Server** station and managed by the **Database Manager**. When a **Client** station connects to the **Database Manager**, the information in that station is synchronized with the server.

License Monitor

The **License Monitor** window shows the number of licensed devices, *Process Equipment Database* items and blocks according to the user's software licenses.



Click the button License Monitor on the LicenseView window and the following window will appear:

License Monitor			- • •
License Moni	tor		R
	used	available	
unlicensed			(devices)
Engineering			
50			(tags)
OPC Servers			
50	0	50	(tags)
	Connect		
		Close	Help

Figure 7.7. License Monitor window

- The column Licensed shows the number of points (devices, blocks or items) available for the registered license key.
- The column **Used** shows the number of points (devices, blocks or items) being used in the configuration files or the applications.
- The column **Available** shows the remaining number of points (devices, blocks or items) available for the registered license key.

If the number of **Available** points is higher than the average limit percentage defined by the user, that number will be displayed in orange. Likewise, if number of **Available** points is higher than the low limit percentage defined by the user, that number will be displayed in red. See section **Defining User's Preferences** for further information about defining the limit percentages.

Diagnostics

Click **M** on the main toolbar to open the **Diagnostics** window and monitor devices with maintenance, diagnostic and tracking events, and the status of block links created using **Syscon**.

Devices Summary

The **Devices Summary** dialog box shows the number of devices with maintenance, diagnostic and tracking events.

Right-click the Devices Summary icon on the Diagnostics window and click the option Start

Devices Summary to start communicating with AssetView.



Figure 7.8. Devices Summary dialog box

- **Devices with Diagnostic Events:** indicates the number of devices with diagnostic event(s). Click this option to open the **Diagnostic View** page.
- **Devices with Scheduled Maintenances:** indicates the number of devices with scheduled maintenance(s). Click this option to open the **Maintenances** Page.
- Devices with Tracking Events: indicates the number of devices with tracking event(s). Click this option to open the Tracking View page.

Click each option to open the respective **AssetView** web page.

Live Links

The Live Links dialog box shows the block links created using Syscon and their state.

ATTENTION
The procedure to connect the links may take a few minutes depending on how many links were created in the project configuration files. To cancel the procedure that reads the status of the links, click Abort at the bottom of the Live Links dialog box.
After closing the Live Links dialog box, wait a few seconds until Server Manager updates the monitoring information about the links. Otherwise, if the Live Links dialog box is quickly reopened, an error may occur while reading data from the OPC Servers and it will be necessary to restart Server Manager along and one the Diagnostic window again
to restart Server Manager, close and open the Diagnostic window again.

On the **Customize** tab, select the links from the configuration projects and **Area Links** that should be monitored. See the example below:

Studio302 - Diagnostics		
🖃 🌠 Diagnostics	Live Links Customize	
🔊 Live Links 🤯 Devices Summary	Customize	х¥ *
	Area Links	
	Warning! Warning! Next Cancel Next Cancel	Helo
	Output	×
	Description	
	1 AM Building links structure	
	1 AM Building Area Links Tree	
	AW Building Links Tree	
	Output	
Status		.:i



Click **Next** to continue.

Live Lin	د 								~*
LIV [0]	e LINKS Actives, [0] Uncertains, [0] Dubior	ıs, [0] Brokens	. [0] Oscillatings, [2	1 No Communicatio	ins				SS -
		Publisher		·		Subs	criber		
St.	Tag	Status	Ctrl. Mod.	Area	Tag	Status	Ctrl. Mod.	Area	SC
1	FI302-AO-1.BKCAL_OUT		Control Module 2	proj02	Bridge 2-APID-1.BKCAL_IN		Control Module 2	proj02	0
S.	Bridge 2-APID-1.BKCAL_OUT			proj02	Bridge 1-PID-1.8KCAL_IN			proj01	0
			State Ø ☑ Active Ø Communication S ☑ No Communication	Uncertain Behavion	Image: Second system Image: Second system </td <td>ag inks</td> <td></td> <td></td> <td></td>	ag inks			
		• Pu	b. Tag O Pub. Contro Search	ol Mod. 🔿 Pub. An	ea O Subs. Tag O Subs. Control Mod. O Search by Pub. Tag	Subs. Area			
Re	fresh Reload							Close	Help

Figure 7.10. Live Links dialog box

The SC column (State Change) indicates the number of changes in the parameter status.

NOTE
You can set the time interval to wait until stabilizing the reading of the status of each link in the Preferences dialog box. See section Defining User's Preferences .

At the bottom of the **Live Links** dialog box, use the **States** filter to select the type of links that are listed:

- Active: shows only links that are communicating.
- **Uncertain:** shows links that the quality of the value is less than normal, but the value might be useful.
- **Dubious:** shows links where the status of the publisher and subscriber parameter is *out of service*.
- **Broken:** shows links that are communicating but the status in the subscriber is different from the publisher.

Use the **Behavior** filter and mark the option **Oscillating** to show links that oscillated their status (*active, broken* and *dubious*) during the monitoring period.

Use the filter **No Communication** at the **Live Links Comm** area to show links that are not communicating.

Right-click the parameter tag and select **Details** to open **Syscon** and edit the link on the Strategy window.

Right-click the parameter tag and select **Reset State Change** to reset the counter in the **SC** column related to the selected parameter. Or click **Reset All State Change** to reset all counters in the **SC** column.

Click Refresh to read the information from the OPC Servers.

IMPORTANT

Do not change the project configuration files in **Syscon** while the **Live List** dialog box is reading the information from the OPC Servers to update the status of the links, otherwise it will be necessary to reconnect all links again, clicking the button **Reconnect**.

At the **Search** box, search a specific parameter tag from the Publisher node, the Subscriber node or the control module. Use the wild char '*' (asterisk) to replace characters at the beginning and the end of the parameter tag. For example, to locate the parameters from a PID block, type **PID** on the **Search** box and click **Search**.

ADVANCED USERS - FILTERS FOR LINK TYPES								
The filters for the link types in the Live Links dialog box were defined based on the value related to the quality of the communication between blocks. Studio302 shows the status value represented by a number in decimal format. This value is interpreted in Syscon when opening the Block Characterization dialog box.								
Click the link icon and select Details to open Syscon and check the quality of the communication specific for the selected block parameter.								
The link can be classified as:								
S Broken Link: the link is classified as broken when:								
 The status of the Subscriber parameter is: 								
Bad::NoCommunicationWithLastUsableValue								
 Bad::NoCommunicationWithNoUsableValue 								
 The status of the Subscriber parameter is Bad::OutOfService or different from the status of the Publisher parameter. 								
• The status of the Subscriber and Publisher parameters is inferior to 27, that is, the value is between 0 and 27 (refer to the descriptive table below).								
Dubious Link: the link is classified as dubious when:								
• The status of the Subscriber and Publisher parameters is Bad::OutOfService, which means the value is that is between 28 and 31 (refer to the descriptive table below).								
Uncertain Link: the link is classified as uncertain when:								
 The status of the Subscriber and Publisher parameters is Uncertain, which means the value is that is between 64 and 91 (refer to the descriptive table below). 								
SS Oscillating Link: the link is classified as oscillating when during monitoring (while the Live Links dialog box is open), the <i>Quality Change</i> of the link is not zero, indicating that the status of the link changed.								
No Communication: the link is classified as not communicating when it is not possible to read the values of the Publisher and/or Subscriber parameters.								
Active Link: to be classified as an active link:								
• The status of the Subscriber parameter must be the same status from the Publisher parameter.								
 Both values, from the status of the Subscriber parameter and the Publisher parameter, must be above 64 (refer to the descriptive table below). 								

Descriptive Table for the Status value of the Block Parameters

The figure in the example below shows the value of the *Status* for the parameter **IN** of the block **APID**, of the **LD302**, interpreted in the **Block Characterization** dialog box, in **Syscon**:

Liv	ve	L	.ink	S																				
[5]	Ac	tive	∍,[1]	Brok	ken,[0]	Dubio	ous, [0]	Oscil	latin	ig, [:	1]N	o Con	nmu	nicati	on							
				P	ublishe	er								S	Subso	criber								
St.				Tag	,			Stat	tus				Tag				Status	s C1	trl. M	odule				
×5	DF	52_	AALM.	OUT_	ALM					DF6	2_FF	B.IN	_D_0	_LAB	EL			Co	ontrol	м				
S.	LD:	302	2_15-A	I-1.0	UT			131	L	TP3	02_8	8-PID	-1.C	AS_IN	I		131	C١	12					
S.	τta	302	-2-AI-	1.00	т			131	· [LD3	02-9	-API	D-1.I	N			131	CM	11					
S.	FI3	02	4-40-	1.82	CAL C	ынт	-	20/	1	IDS	02.0	L A D I	D.1 P	wear	TN		204	<u>_</u>	4 1					
~~	π	On	Line: L	D302	2-9 - A	dva	anced	PID -	LD3	02-9	API	D-1										_		×
		AU	TO MAN	CAS	005	<	8 8	0	Ē	₿_\		8	B	8	DầD									
			Parame	eter			Value							Qua	ility				Ch	ι O	ff	Han.	. 🔺]
			⊡-SP	_																8				
			山.PV	SCAL	F															9				1
			₫-ouī	r_sca	LE															11	,			H
			CON	ITROL	L_OPTS	5 K	None>							Good	:Non	Specil	ic:Not L	.imited		13	}	RW		H
				.TUS_	OPTS	<	None>							Good	:Non	Specil	ic:Not L	.imited		14		RW	- 1	H
				STAT	US	Ē	iood N	onCas	scad	e::Nor	Spec	cific:C	onstar	tGood	:Non	Speci	ic:Not L	.imited		13	1	BW		H
				VALU	E	0) –				•			Good	l:Non	Specil	fic:Not L	.imited	I		2	RW		1
			E-CAS	_IN										~						18	}	D		
			SP_	HI_UM	м	0	00							Good	ENON.	Specil	ic:Not L Se:Not L	imited.		21	,	HW RW		
			GAI	N N	in i	Ö	,)							Good	l:Non	Specil	ic:Not L	.imited		23		BW		
			-RES	έT		+	Inf							Good	:Non	Specil	ic:Not L	.imited	l	24	ļ	RW	-	1
			LRAT	F		n)							Good	Mon	Snecil	ie:Not I	imited		26	:	PW	ЪĒ	1
		L				-	_			_								_				-		
						9	let Defa	ault	6	Cancel	Edit	1.	E	dit	1	Cle	sar		Clos	e		He	lp	1
						_			_												_			-

Figure 7.11. Example of a parameter status

The values of the status are described below:

Decimal Value	Status of the parameter indicated in Syscon	Hexadecimal Value
0	Bad::NonSpecific:NotLimited	(0x0)
1	Bad::NonSpecific:LowLimited	(0x1)
2	Bad::NonSpecific:HighLimited	(0x2)
3	Bad::NonSpecific:Constant	(0x3)
4	Bad::ConfigurationError:NotLimited	(0x4)
5	Bad::ConfigurationError:LowLimited	(0x5)
6	Bad::ConfigurationError:HighLimited	(0x6)
7	Bad::ConfigurationError:Constant	(0x7)
8	Bad::NotConnected:NotLimited	(0x8)
9	Bad::NotConnected:LowLimited	(0x9)
10	Bad::NotConnected:HighLimited	(0xa)
11	Bad::NotConnected:Constant	(0xb)
12	Bad::DeviceFailure:NotLimited	(0xc)
13	Bad::DeviceFailure:LowLimited	(0xd)
14	Bad::DeviceFailure:HighLimited	(0xe)
15	Bad::DeviceFailure:Constant	(0xf)
16	Bad::SensorFailure:NotLimited	(0x10)
17	Bad::SensorFailure:LowLimited	(0x11)
18	Bad::SensorFailure:HighLimited	(0x12)
19	Bad::SensorFailure:Constant	(0x13)
20	Bad::NoComm_WithLastUsableValue:NotLimited	(0x14)
21	Bad::NoComm_WithLastUsableValue:LowLimited	(0x15)
22	Bad::NoComm_WithLastUsableValue:HighLimited	(0x16)
23	Bad::NoComm_WithLastUsableValue:Constant	(0x17)

Decimal Value	Status of the parameter indicated in Syscon	Hexadecimal Value
24	Bad::NoComm_WithNoUsableValue:NotLimited	(0x18)
25	Bad::NoComm_WithNoUsableValue:LowLimited	(0x19)
26	Bad::NoComm_WithNoUsableValue:HighLimited	(0x1a)
27	Bad::NoComm_WithNoUsableValue:Constant	(0x1b)
28	Bad::OutOfService:NotLimited	(0x1c)
29	Bad::OutOfService:LowLimited	(0x1d)
30	Bad::OutOfService:HighLimited	(0x1e)
31	Bad::OutOfService:Constant	(0x1f)
64	Uncertain::NonSpecific:NotLimited	(0x40)
65	Uncertain::NonSpecific:LowLimited	(0x41)
66	Uncertain::NonSpecific:HighLimited	(0x42)
67	Uncertain::NonSpecific:Constant	(0x43)
68	Uncertain::LastUsableValue:NotLimited	(0x44)
69	Uncertain::LastUsableValue:LowLimited	(0x45)
70	Uncertain::LastUsableValue:HighLimited	(0x46)
71	Uncertain::LastUsableValue:Constant	(0x47)
72	Uncertain::SubstituteValue:NotLimited	(0x48)
73	Uncertain::SubstituteValue:LowLimited	(0x49)
74	Uncertain::SubstituteValue:HighLimited	(0x4a)
75	Uncertain::SubstituteValue:Constant	(0x4b)
76	Uncertain::InitialValue:NotLimited	(0x4c)
77	Uncertain::InitialValue:LowLimited	(0x4d)
78	Uncertain::InitialValue:HighLimited	(0x4e)
79	Uncertain::InitialValue:Constant	(0x4f)
84	Uncertain::EngUnitRangeViolation:NotLimited	(0x54)
85	Uncertain::EngUnitRangeViolation:LowLimited	(0x55)
87	Uncertain::EngUnitRangeViolation:Constant	(0x57)
88	Uncertain::Subnormal:NotLimited	(0x58)
89	Uncertain::Subnormal:LowLimited	(0x59)
90	Uncertain::Subnormal:HighLimited	(0x5a)
91	Uncertain::Subnormal:Constant	(0x5b)
128	Good_NonCascade::NonSpecific:NotLimited	(0x80)
129	Good_NonCascade::NonSpecific:LowLimited	(0x81)
130	Good_NonCascade::NonSpecific:HighLimited	(0x82)
131	Good_NonCascade::NonSpecific:Constant	(0x83)
135	Good_NonCascade::ActiveBlockAlarm:Constant	(0x87)
192	Good_Cascade::NonSpecific:NotLimited	(0xc0)
193	Good_Cascade::NonSpecific:LowLimited	(0xc1)
194	Good_Cascade::NonSpecific:HighLimited	(0xc2)
195	Good_Cascade::NonSpecific:Constant	(0xc3)
204	Good_Cascade::NotInvited:NotLimited	(0xcc)
205	Good_Cascade::NotInvited:LowLimited	(0xcd)
206	Good_Cascade::NotInvited:HighLimited	(0xce)
207	Good_Cascade::NotInvited:Constant	(0xcf)

Decimal Value	Status of the parameter indicated in Syscon	Hexadecimal Value
208	Good_Cascade::NotSelected:NotLimited	(0xd0)
209	Good_Cascade::NotSelected:LowLimited	(0xd1)
210	Good_Cascade::NotSelected:HighLimited	(0xd2)
211	Good_Cascade::NotSelected:Constant	(0xd3)
212	Good_Cascade::DoNotSelect:NotLimited	(0xd4)
213	Good_Cascade::DoNotSelect:LowLimited	(0xd5)
214	Good_Cascade::DoNotSelect:HighLimited	(0xd6)
215	Good_Cascade::DoNotSelect:Constant	(0xd7)
216	Good_Cascade::LocalOverride:NotLimited	(0xd8)
217	Good_Cascade::LocalOverride:LowLimited	(0xd9)
218	Good_Cascade::LocalOverride:HighLimited	(0xda)
219	Good_Cascade::LocalOverride:Constant	(0xdb)
220	Good_Cascade::FailSafeActive:NotLimited	(0xdc)
221	Good_Cascade::FailSafeActive:LowLimited	(0xdd)
222	Good_Cascade::FailSafeActive:HighLimited	(0xde)
223	Good_Cascade::FailSafeActive:Constant	(0xdf)
224	Good_Cascade::InitiateFailSafe:NotLimited	(0xe0)
225	Good_Cascade::InitiateFailSafe:LowLimited	(0xe1)
226	Good_Cascade::InitiateFailSafe:HighLimited	(0xe2)
227	Good_Cascade::InitiateFailSafe:Constant	(0xe3)

Wise Inspector

The Wise Inspector window lists all Inventory Reports saved on the database.

🔍 Wis	e Inspector			(- • ×					
Wi	ise Insp	oector			Q					
	Date		User Logged	Version						
V	Oct 10 2012	3:00PM	[without authentication]	7.3.5.6						
	Oct 16 2012	6:04PM	[without authentication]	7.3.5.6						
	Oct 17 2012	6:05PM	[without authentication]	7.3.5.6						
	Do not compare image and video files									
Ва	ckup Ir	mport	Export Compare	Close	Help					

Figure 7.12. Example of a parameter status

The **Inventory Report** lists all files located in the **SYSTEM302** installation folder and indicates the hardware characteristics for the local machine (where **SYSTEM302** was installed). This report has two sections. The **Hardware** section shows the configuration of the local machine, including the machine name, operating system version, hard disk space, network adapters, etc. The **Software** section lists all files related to each installed **SYSTEM302** application, including the file name, installation path, date, size and file version.

To generate an Inventory Report, go to the Tools menu and click Reports > Inventory, or click

the button 📃 to open the **Choose Report** dialog box and click **Inventory**.

You can also configure **Studio302** to generate the **Inventory Report** each time **Studio302** is launched. On the **File** menu, click **Preferences**. On the **Preferences** dialog box, click the **Reports** tab and mark the option **Generate an Inventory Report when Studio302 is launched**.

You can select only two reports to compare system configurations.

On the **Tools** menu, click **Wise Inspector** to open the **Wise Inspector** window. Mark the two reports you want to compare and click **Compare**. See the example below:

1	UWse Inspector								
١	N	ise Insp	oector				Q		
		Date		User Lo	gged	Version			
[v	Oct 10 2012	3:00PM	[without	authentication]	7.3.5.6			
1		Oct 16 2012	6:04PM	[without	authentication]	7.3.5.6			
1	1	Oct 17 2012	6:05PM	[without	authentication]	7.3.5.6			
Image and video files									
	Ba	ckup Ir	nport	Export	Compare	Close	Help		

Figure 7.13. Comparing Inventory Reports

This procedure may take some minutes. Click **Background** on the progress dialog box to execute this procedure in background while you continue using **Studio302**. Click **Abort** on the **Wise Inspector** window at any time to cancel the comparison.

When the procedure is concluded, the report containing the differences between the selected **Inventory Reports** will be displayed. Differences are generated according to three cases:

- 1. If a file exists on the first **Inventory Report** and does not exist on the second, the final report will indicate the file as *not found*.
- 2. A new file does not exist on the first Inventory Report.
- 3. A modified file, that is, the file exists on the first **Inventory Report** and it was modified.

🚴 Reports 📃 💷 💌								
3								
					-			
					Studio302 Report	3		
	Report Information							
	<u>FileName</u>	SizeBefore	<u>SizeAfter</u>	DateBefore	<u>DateAfter</u>			
	System302_Configuration.xml	1 Kb	1 Kb	16/10/2012	17/10/2012			
	ExchangeFile.log	1 Kb	1 Kb	16/02/2012	16/10/2012			
	MdlErrLg.ffl	0 Kb	0 Kb	16/02/2012	16/10/2012			
	Syscon.ini	7 Kb	8 Kb	26/07/2012	16/10/2012			
	StudioServer.udl	0 Kb	0 Kb	16/10/2012	17/10/2012			
	TraceFile.log	1 Kb	176 Kb	16/10/2012	17/10/2012			
	Settings.xml	6 Kb	6 Kb	16/10/2012	17/10/2012			
	SmarStudioDB.xml	0 Kb	1 Kb	16/10/2012	17/10/2012			

Figure 7.14. Report Information

On the **Reports** window, click ^[2] to print the report or click the button ^[2] to save the report in PDF format.

Importing an Inventory Report

You can import the information from an **Inventory Report** previously saved on the workstation, and then compare this report to other **Inventory Reports** available.

On the **Tools** menu, click **Wise Inspector** to open the **Wise Inspector** window. Click the button **Import**.

On the **Open** dialog box, locate the folder where the file was saved. Double-click the file icon to import the report to the **Wise Inspector** window.

Exporting an Inventory Report

You can export the information from an Inventory Report and save it to a file.

On the **Tools** menu, click **Wise Inspector** to open the **Wise Inspector** window. Select the **Inventory Report** available and click **Export**. You can select one or more reports at the same time, each report will be export as one file.

On the **Browse for Folder** dialog box, select the folder where the files will be saved. Click **Ok** to export the selected file(s). The file extension will be "*.*wif*".

Wise Inspector Backup

The **Wise Inspector Backup** is a new feature in **Studio302** version 1.11 on. This feature creates a backup from a set of **SYSTEM302** files by comparing two **Inventory Reports**.

How to use the Wise Inspector Backup?

From **SYSTEM302 version 7.3.5** on, when launching **Studio302** for the first time, an **Inventory Report** related to the installation is automatically generated, and the information is store on the *Inventory* database.

After the **SYSTEM302** installation/configuration, it might have been necessary to alter an element from the original installation, which means a component may have been added or altered due to improvements or specific customizations made by the **Smar Tech Support** team.

Once the alteration is validated, another **Inventory Report** related to the installation should be generated. This report will also be stored on the *Inventory* database.

How to generate a backup?

On the **Tools** menu, click **Wise Inspector** to open the **Wise Inspector** window. Click the button **Backup**. The tool will automatically select the first and the last **Inventory Report** from the current **SYSTEM302** version.

You will save the information about the differences and the altered components in a compacted file. This file can be stored on the current workstation, and could be used for comparison if it is necessary to reinstall **SYSTEM302**. These records of the **SYSTEM302** validated installation and the components that were altered follow the same directory structure of the **Smar** directory.

On the **Save As** dialog box, select the folder where the file will be saved and type the name for the compacted file. Click **Save** to continue. This procedure may take some minutes. Click **Background** on the progress dialog box to execute this procedure in background while you continue using **Studio302**.

At the end of the backup procedure, the compacted file is generated in zip format. This file contains:

- the **Source** directory: files are copied according to the **SYSTEM302** directory structure, making it easy to locate files that were altered.
- the info.txt file: this file contains the information related to the files that were copied.

TASKS

Area Link Tool

Click the button to select the Area	Link Tool application.
AreaLink Tool	
Eile Preferences Help	
	<u> </u>
Mixed IO Separated IO	
Input Parameter(s)	DF62_proj_02-APID-1.IN
	DF62_proj_02-APID-1.OUT
TF62_proj_02-APID-1.IN	
	proj_oz
Output Parameter(s)	
····· II DF62_broj_02-AP10-1.001	Communication

Figure 8.1. Area Link Tool Window

AssetView

Click the button 🎾 to select the **AssetView** Application. The following dialog box will open:



Figure 8.2. Initializing AssetView

Click the option **AssetView Web Browser** to launch the Internet Explorer browser and navigate through the **AssetView** pages related to the configurations imported to the current database.

Click the option **AssetView Server** to run the application and manage the device information on the **AssetView** database. Refer to the **AssetView User's Manual** for further details.

Click the option AssetView HART and Profibus Features to run the FDT HART Configurator tool

and manage the topology and DTMs from HART and Profibus devices.

DFI Diver

by to launch the **DFI Diver** application and select a DF51 card to debug. Click the button DfiDiver - Debug Information X Settings **DF51** DFI Diver Card -Task updating (in milliseconds): Please, select a card and press Apply Performance Messages Watch: RAM: Close Aplicar About

Figure 8.3. Initializing DFI Diver

Select the DF51 card and click Apply to apply the debug the card.

FBTools

Click the button is to launch the **FBTools Wizard**. This is an application which allows the firmware upgrade of any Smar field device - FOUNDATION[™] fieldbus and PROFIBUS PA, PCI302 cards, DFI302 controllers and communication gateways such as the FB700, MB700, and HI302. This tool also allows configuring TCP/IP properties of those modules network interfaces. Refer to the **FBTools Help** for further details.

FBTools Wiza	rd		
Controllers Field Device: Controllers DFI302	Batch Download		
Image: Constraint of the	Select Group IP	Serial Version	Date/Time
		Group A 🔲 Group B	3 Check All Uncheck All

Figure 8.4. Initializing FBTools

FBView

Click the button to launch the **FBView** application and analyze the network communication. Refer to the **FBView User's Manual** for further information.

FBView - C\\Program Files (x86)\Smar\FBView\10.0.2.15.cap			x				
File Edit View Preferences Window Help							
📋 🗅 🗃 🖬 🕉 🖻 🖻 🖷 🗰 🖷 🖿 🗰 🗢 🔶 C 🥅 🤀 🗞 🗞 🖆 👹 👹 🤗 ^H ex Dec FF 🖬 🛲	н. н	. 9	?				
Decoder							
Ready	NUM	1	1				

Figure 8.5. Initializing FBView

FDT HART Configurator

Click the button to launch the FDT HART Configurator.

This FDT tool manages specific functions for each instrument, providing online asset management.

Refer to the FDT HART Configurator manual for further details.

LicenseView

Click the button vor the LicenseView application and authorize the installed products.

Figure 8.6. Initializing LicenseView

Refer to the SYSTEM302 HANDBOOK for further information about licenses.

LogicView

Click the button to open the dialog box to select the **Action Mode** for the **LogicView** application:



Figure 8.7. Initializing LogicView

- New FFB Logic Template: opens LogicView for FFB to configure and edit the FFB templates.
- **DF65 Logic:** opens **LogicView** to configure the logic for the coprocessor DF65.

Refer to the LogicView User's Manual for further information.

Profibus View

Click the button *to open the ProfibusView* dialog box and configure a Profibus device. Refer to section **Detecting a Profibus Device** on the **Studio302 User's Manual** for further details.

nofibusView	—
ProfibusView	
Manufacturer: Smar	•
Field Device Type: LD303	•
Master IP Address: 192.168.168.177	
Slave Address: 05	
Ok Cancel	Help

Figure 8.8. Opening the Profibus View dialog box

ProcessView

Click the button to open the **ProjectWorX** application and organize the **ProcessView** configuration and supervision files.

Refer to the ProcessView User's Manuals for further information.

System302 ServerManager

Click the button \bigcirc to open the **System302 ServerManager** window. When an OPC server is executing, the icon of the **System302 ServerManager** will change to green (\bigcirc) at the Windows taskbar. If the server is stopped, the icon of the **System302 ServerManager** will change to red (\bigcirc) at the Windows taskbar.



Figure 8.9. Initializing the System302 Server Manager

Refer to the Appendix A System 302 ServerManager for further details about this application.

ATTENTION

When closing the **System302 ServerManager** application, wait a few seconds before initializing it again. This way, the list of processes executed by the operational system will be updated and the **System302 ServerManager** application will be removed from this list.

If the user tries to execute the **System302 ServerManager** right after closing the application, the **System302 ServerManager** icon will not appear on the Windows taskbar because the process will be still active on the list of processes.

SimulationView

Click the button **i** to open the **SimulationView** that is a control strategy simulator developed specifically to simulate control strategies with Foundation[™] Fieldbus function blocks and ladder logic IEC 61131-3 standard.

Refer to the SimulationView Manual for further information.

-	Simulation	n¥iew - Strateg	y Simulator					_ 🗆 🗙
E	ile <u>S</u> imulatio	n <u>H</u> elp						
E ^A	Areas							
	DF63 FFB							
								3
	letwork åden	tor						
F	000000009] M	icrosoft Loopback	Adapter					
2	imulated nod	es						
Г	Nodes							
	Process ID	Virtual IP	Device ID	Device Tag	Serial Number	Device type	Status	
] 3312	192.168.2.184	000302002D:SMAR-DF63:100	Bridge 1	100	😼 DF63	🧠 online	
								0
	Item Configu	ration						
I	-Item IP	radon		Paramet	ers			
				Device T/	AG			
				Device ID	L.			
	Available IP:							
	1							

Figure 8.10. Initializing the SimulationView

Syscon

Click the button 🔛 to launch the **Syscon** application and edit a project configuration. Refer to the **Syscon User's Manual** for further details.




Figure 8.11. Initializing Syscon

TagList

Click the button to launch the **TagList** application and configure the database for the **DF65** OPC Server.



Figure 8.12. Initializing TagList

TagView

Click the button **For** to launch the **TagView** application and monitors the Function Blocks and their parameters.



Figure 8.13. Initializing TagView

System302 Documentation



Figure 8.14. SYSTEM302 Main Documentation Browser

ATTENTION

To open the files of the user's manuals, it is necessary to install **Adobe Acrobat Reader** version 8.0 or higher. The installation file is available on the **SYSTEM302 Installation media**, on the **Tools** folder.

TUTORIAL: DEVICE MAINTENANCE

Replacing the Device in the Plant

This section describes the steps of the device maintenance in the plant.

When the fieldbus device is replaced in the plant, first it must be decommissioned using the configuration tool, and then the device can be removed from the plant and a new device is connected. To conclude this procedure, the new device must be commissioned by the configuration tool.

The **Studio302** wizard guides the user during the maintenance procedure, interacting with the configuration tool and assisting the user.

Step 1: Decommissioning the device

In the **Studio302** window, open the device list expanding the icon **Network Devices** and clicking **Field Devices** in the topology tree.

The list of the devices will open. Right-click the icon of the device that will be replaced and click **Decommission**.

Wait a few seconds while **Syscon** is decommissioning the device. When this procedure is complete, the device status will be updated in the **Devices** dialog box.

After decommissioning the device, replace the physical instrument with the new equipment in the plant.

Step 2: Detecting the new device

IMPORTANT

Remember that the device detection service must be started for the new device installed in the plant to be detected.

If the **Detect Device** icon is not activated in the Windows taskbar, go to the **Settings** menu in the **Studio302** window, click **Communication** to open the **Communication Settings** dialog box, select the **Services** tab and click **Start** to activate the device detection service.

It is also possible to initialize the device detection service clicking the **Online/Offline Communication** button on the main toolbar.

When a new device is connected to the plant communication channel, the **Studio302** icon blinks in the Windows taskbar.

Open the Studio302 window and the New Device Detected message box will open.

Click **Yes** to commission the new device. The commissioning process will enable the device communication with the plant control.

Step 3: Commissioning the Device

Syscon will be automatically executed, and the Commission dialog box will open.

Click the button to open the list of device IDs available.

Select the icon corresponding to the new device and click **Ok** to close this dialog box and return to the **Commission** dialog box. Click **Ok** again and wait until the device is commissioned.

The message box will open informing the user the commissioning procedure was completed.

Step 4: Download

After commissioning the new device, a message box will open informing the user that it will be necessary to send the information about the device configuration to the physical instrument in the plant. Click **Yes** to download the configuration and conclude the device maintenance.

If any attribute of the new device installed in the plant differs from the configuration of the virtual device in the project file, the message below will open after the device is commissioned, alerting the user that it will be necessary to execute the **Exchange Device** procedure to check the inconsistencies, incompatibilities and the instability of the device.



Figure 9.1. Editing Groups Permissions

Click **Yes** to analyze the differences of the devices and select the blocks and parameters compatible to the new device.

Refer to the Syscon User's Manual for further details about the Exchange Device procedure.

After confirming the alterations on the device configuration, download the configuration to conclude the device maintenance.

SYSTEM302 SERVERMANAGER

The **System302 ServerManager** configures the parameters for the plant network communication. Parameters can be configured before starting the online communication, and some parameters can be modified while the system is already operating.

The **System302 ServerManager** is executed from the **Studio302** toolbar. Note that an option can be configured in order to also execute **System302 ServerManager** automatically every time an OPC server is accessed.

💫 SI	tudio302 :	:: Site:	Smar :: C	urren	t Dat	abas	se: S	yster	n302	2												-	
File	Settings	Tools	Window	Help													_						
&	new 🍳		Ĺŋ 🍀	۲		74	0	0		ß	1	8 2	8	= ?[**	K	ą	r.	smar Torc	•	ŵ		
&	Smar			ŧ									Sys	stem30	2 Serv	erMa	anage	er - Of	PC Sei	rver n	nanag	ement	



IMPORTANT
Parameters available in System302 ServerManager are read from the files SmarOleServer.ini,
IDShell HSE.ini and SnmpOpcServer.ini.
Any alterations made directly on these files, for other parameters non-accessible through
System 302 ServerManager without previous knowledge or technical orientation may cause
aveter melfunctioning
system manufictioning.

The sections below describe the System302 ServerManager interface and its main characteristics.

User Interface

Click the button **System302 ServerManager** on the **Studio302** toolbar and the following dialog box will open:

System302 ServerManager
System302 ServerManager ૣ
Change settings to:
Q Network
Q <u>Startup</u>
Show minimized
Ok Cancel Help

Figure A.2. Starting the System302 ServerManager

Select one of the options according to the configuration settings to be edited:

- Network: configure the network interface cards used by the System302 ServerManager, and also redundancy, advanced parameters for HSE network, specific parameters for SNTP and parameters for the case of a system composed by RTUs.
- Logs: configure the options to enable or disable the event logs.
- Startup: configure the System302 ServerManager to activate the OPC servers

automatically when the operational system starts, and also read the tag list to create a cache for the DA server (DFI or HSE).

OPC: configure specific parameters for the *Alarms and Events*, *SNMP* and *HDA* servers. ٠ Access to wrapper of OPC UA standard.

While being executed, System302 ServerManager alerts the user about events related to system components through its icon on Windows taskbar. There are four possible events indicated by the System302 ServerManager icon:

- Error in the COM/DCOM configuration;
- Event generated by an application, creating a *.sml log file;
- Database from A&E OPC Server must be updated;
- A new dump file (from a fatal exception of one of the components related to the OPC • Servers) was generated by the system (see section **Displaying Log Files** for details).

See the example in the figure below:

AE OPC Server datab	ase needs to be generated !
🦉 imagem - Paint	🔍 🏀 🔽 🔂 🥵 16:36

Figure A.3. Events in System302 ServerManager

When an OPC server is active, System302 ServerManager icon changes to green (12) on the Windows taskbar. On the other hand, if the server is stopped, System302 ServerManager icon changes to red ((on the Windows taskbar.

The figure below shows the System302 ServerManager interface:

🗟 System302 ServerManager					_	Х
Application About						
DFI HSE OPC HDR						
System302 ServerManager Settings Network Startup OPC D-Logs	General HSE R If more than If more than (NIC) or two Parameters Numbe NIC : NIC2 : Networ	edundancy one NIC (Net e it is necess (NIC and NIC) r of NICs : k Startup : Apply All	Advanced HS twork Interface aray to inform the 22) adapters.	E Maintenance SNTP BTUs Card) are installed in the OPC Server to use one		
Í	SE S	erver - OFFLI Source 1	NE Source 2	Servers running		
	NOT VALID:	00000	00000			
	ACTIVE:	00000	00000			
	TOTAL:	00000	00000			
	HSE S	Gerver - OFFL Source 1	INE Source 2			
	NOT VALID:	00000	00000			
	ACTIVE:	00000	00000			

Figure A.4. System302 ServerManager Window

The panel on the left shows the configuration options and the reports generated during the communication server operation.

The panel on the right shows the configuration parameters according to the option selected from the menu on the left. Place the mouse cursor over a parameter to active the tool tip and display a brief description about the parameter.

The panel on the bottom of the **System302 ServerManager** window shows information related to databases from DFI and HSE OPC Servers, indicating which servers are valid and non-valid, and the total number of servers. This panel also indicates which servers are being executed.

	erver - OFFLI	VE	Servers running					
	Source 1	Source 2	HSE	തി	HDA			
NOT VALID:	00000	00000	Sinar		smar			
ACTIVE:	00000	00000	HSE OLE Server	DD Server	HDA OPC Serve			
TOTAL	00000	00000						
HSE S	Server - ONLII	NE						
HSE :	Server - ONLII Source 1	NE						
HSTAL.	Server - ONLII Source 1	NE Source 2						
NOT VALID:	Server - ONLII Source 1 0	Source 2						

Figure A.5. Information related to the OPC Servers

After editing the configuration parameters, click **Apply All** to confirm the alterations and close the **System302 ServerManager**. Depending on which parameters were edit, it may be necessary to restart **System302 ServerManager** to apply the changes.

To shut down **System302 ServerManager**, go to the **Application** menu and click **Exit**, or right-click the **System302 ServerManager** icon on the taskbar and select **Exit**. The close button in the upper right side of the **System302 ServerManager** window simply minimizes the application.

Check Server role
Maximize
Minimize
About System302 ServerManager
Exit

Figure A.6. Shutting down System302 ServerManager

System302 ServerManager shuts down only if there is no OPC Server being executed. Close all OPC clients and if there are OPC servers being executed, then System302 ServerManager itself is being considered an OPC client. To disconnect System302 ServerManager as an OPC client, go to the Application menu and click Disconnect OPC Servers.

You can also use the buttons on the OPC toolbar to disconnect an OPC server. When the button related to a server is selected on the OPC toolbar, it indicates the server is connected to **System302 ServerManager**. Refer to section **Configuring Startup** for further details.



Figure A.7. OPC Toolbar

IMPORTANT When closing System302 ServerManager, wait a few seconds before initializing it again. This way, the list of processes executed by the operational system will be updated and the System302 ServerManager application will be removed from this list.

If the user tries to execute **System302 ServerManager** right after closing the application, the **System302 ServerManager** icon will not appear on the Windows taskbar because the process will be still active on the list of processes.

Another **System302 ServerManager** functionality is to verify the current role of the **Host**. The *IDShell HSE* can execute two roles in a fieldbus network: it may be a **Configurator** or being executed on **Supervision Only** mode. To check the current role of a *HSE OPC Server* while it is being executed, go to the **Application** menu, and click **Check Server role**, or right-click the **System302 ServerManager** icon on the taskbar, and click **Check Server role**.

Maximize	
Minimize	
About System302 ServerManager	
Exit	

Figure A.8. Checking the IDShell HSE role

Configuring the Communication Network

On the System302 ServerManager window, select the option Settings > Network to configure the interface cards used by the System302 ServerManager.

🗟 System 302 ServerManage	er:
Application About	
DFT HSE OFC	
System302 ServerManager	_
🖃 Settings	0
Network	
Startup	
OPC	

Figure A.9. Configuring the Communication Network

- At the General tab, configure the number of NICs (Network Interface Cards) and the IP addresses.
- At the HSE Redundancy tab, configure the network and HSE device redundancy.

- At the Advanced tab, configure the synchronization and the schedule for the supervisory.
- The **HSE Maintenance** tab is only available for users with Administrator rights and allows the administrator to delete the files related to the HSE persistency.
- At the **SNTP** tab, configure the *Application Clock Time*. Used for configuring the parameters related to time synchronism.
- The RTU tab must be configured only if the application uses remote access. In this tab, mark the option to enable the RTU mode and configure the necessary parameters for proper operation.

Configuring the number of Network Interfaces (NIC)

Click the option Network to open System302 ServerManager at the Network > General tab.

local machine it is ner (NIC) or two (NIC and	cessary to inform the O INIC2) adapters.	PC Server to use a	one
Parameters			
Number of NICs	: 1		
NIC :	192.168.164.22	•	
NIC2 :	None	Ŧ	
Network Startup); 13 s		

Figure A.10. System302 ServerManager: General Tab

- Type the number of NICs used by the **System302 ServerManager** in the HSE network. The number of NICs depends on the system redundancy, that is:
 - If the system is **not** redundant, only one NIC will be used to manage the communication, therefore type **1** in the **Number of NICs** textbox.
 - If the system is redundant, two NICs will be necessary to manage the communication, therefore type 2 in the Number of NICs textbox.
- Select the IP address of the NICs used by the System302 ServerManager. System302 ServerManager automatically lists the addresses of the adapters available in the local machine.

Configuring the HSE Redundancy

If the system is redundant, select the HSE Redundancy tab and configure the following parameters:

Redun Device	dancy. e index should b	e unique in	the subn	et	
- Parar	neters	Le Le		1	1
	Jevice Redund	ancy: Ju		1	
1	LAN Redundan	cy: 🏳	IFF 👱	1	
1	Device Index:	2			

Figure A.11. System302 ServerManager: HSE Redundancy Tab

- Select ON for the parameters Device Redundancy and LAN Redundancy.
- At the Device Index text box, type a value between 1 and 9 for each machine, and every
 machine must have a unique number. In the HSE network, the Device Index represents the
 network address for each equipment, therefore if the values are not unique for each
 machine, the network redundancy will not work correctly.

Configuring Synchronization and Supervision

At the Advanced tab:

I SM Limer	14		Message Loncatenation
H1 Dev. T1: 15000 ms L	inking Dev. T1: 15000	ms	Transmit Delay Time: 0 ms
H1 Dev. T2: 90000 ms L	inking Dev. T2: 90000	ms	H1 Sync And Scheduling
H1 Dev. T3: 45000 ms L	inking Dev. T3: 45000	ms	Clock Sync Interval: 20 s
upervision		_	Primary Publisher: 16
Jpdate Time: 2000 ms A	nalog Views: ON	_	Server role
/lvc Enable: ON 🗾	_		Server Tole
lo DataChange Timeout: 4000	ms		Configurator C Supervision Only

Figure A.12. System302 ServerManager: Advanced Tab

Supervision:

- The **Update Time** parameter indicates the desired time interval to update the supervisory system. This interval should not be smaller than the macrocycle.
- The **MVC Enable** parameter enables the supervision optimization using the MVC resources available.
- The **No DataChange Timeout** parameter indicates the time interval to update the parameters that have not changed their values.
- The Analog Views parameter allows the user to create views for the 1131 supervision of analog variables.

Server role:

 Mark the option Configurator only for the machine where the plant configuration files are created. For the other machines where SYSTEM302 is also installed, mark the option Supervision Only to indicate that they are acting in supervision mode only.

Configuring Message Concatenation

Starting with **SYSTEM302 version 7.0.6**, firmwares of all HSE controllers in **DFI302** implements the *Message Concatenation* method. This feature allows you to configure a control strategy with a higher number of external control links between controllers, because it reduces processing load in the controllers.

At the Advanced tab:

H1 Dev. T1: 15000 ms Linking Dev. T1: 15000 ms	Transmit Delay Time: 🕅 ms
H1 Dev. T2: 90000 ms Linking Dev. T2: 90000 ms	H1 Sync And Scheduling
H1 Dev. T3: 45000 ms Linking Dev. T3: 45000 ms	Clock Sync Interval: 20 s
ipervision	Primary Publisher: 16
Avo Enable: ON 💌	Server role
lo DataChange Timeout: 4000 ms	Configurator C Supervision Only
Appl	u

Figure A.13. Configuring message concatenation

Message Concatenation:

• The **Transmit Delay Time** parameter indicates the time interval that controls the concatenation of link publishing messages by the HSE controllers. This interval must be equal to half of the macrocycle, in milliseconds.

IMPORTANT

After configuring the **Transmit Delay Time**, **restart** the **HSE OLEServer** and **download the plant configuration or the HSE fieldbus channel using Syscon** to enable the message concatenation method in all HSE controllers.

Deleting HSE persistency files

The **HSE Maintenance** tab is only available if the user is the *System Administrator* or a member of the *Administrators Group*. Only the user with *Administrator* rights can delete the files related to the IDShell HSE persistency.

Before deleting the persistency files, make sure the *HSE OLE Server* is not active and stop the network communication with all OPC clients, such as **Studio302** and **Syscon**. On the **System302 ServerManager** window, go the **Application** menu and click **Disconnect OPC Servers**. A message box will appear to confirm the operation. Click **Yes** to conclude.

IMPORTANT The procedure to delete the files related to the HSE persistency can hazard the system operation. Since this procedure is not often executed and it is considered an immediate solution, the **HSE**

Maintenance tab will only be available during a 5-minute interval when the System302 ServerManager is executed for the first time.

At the **HSE Maintenance** tab, click the button **Delete** to remove the files related to the HSE persistency.

Use this optic Make sure th	on to delete the files related to HSE persistency. Jat the HSE OLEServer is not running.	
This feature IDShell HSE IDShell HSE IDShellHSE IDShellHSE	will remove the following files: .bin P2.bin _P1_CRC32.sfr _P2_CRC32.sfr	
	Delete	

Figure A.14. System302 ServerManager: HSE Maintenance Tab

A message box will appear informing the user about the hazards when executing this procedure. Click **Yes** to conclude.



Figure A.15. Confirming the operation

Configuring the SNTP

Click the **SNTP** tab to configure parameters to synchronize computer clocks on the network.

Primary SNTP: 0	. 0 . 0 . 0	Standard Time Diff.:	0.00 Hs	
Secundary SNTP: 0	. 0 . 0 . 0	Daylight Time Diff.:	0.00 · Hs	
Request Timeout: 1000	00 ms	Start Daylight:	1/1/1972	•
Request Interval: 2500	00 ms	End Daylight:	1/ 1 /1972	-

Figure A.16. System302 ServerManager: SNTP Tab

Sync And Scheduling:

- Set the IP addresses of the SNTP Servers. If there is only one SNTP Server, type the **Primary SNTP Server** address and leave the **Secondary** address blank. If the machine where the SNTP Server is running has more than one NIC, you may choose an alternative IP as the **Secondary** address as long as both IPs are reachable on the network. Contact the information technology administrator and request the SNTP time server addresses available for the system.
- The parameters Request Timeout and Request Interval should not be altered. Request Timeout is the time (in milliseconds) that the SNTP Time Client waits for the Time Server to answer a time request in the HSE Network (the default value is 10,000 ms). Request Interval is the time (in milliseconds) that the SNTP Time Client waits to send requests to the Time Server in the HSE Network (the default value is 25,000 ms).
- **Standard Time Difference**: This variable contains the value to add to the current time to obtain **Standard time-stamp**. The default value is 0.
- **Daylight Time Difference**: This variable contains the value to add to the current time to obtain **Daylight time-stamp**. The default value is 0.
- Start Daylight: This variable indicates the beginning of Daylight Saving Time.
- End Daylight: This variable indicates the last day of Daylight Saving Time.

Note that the fields on the **SNTP** tab will be disabled if the system is configured as **Supervision Only**. To check the supervision mode, click the **Advanced** tab and the option **Supervision Only** must be selected on the **Server Role** area.

Cync And Scheduling				
	To change those fields the Server's role must be in Configurator. (Advanced tab)			
Primary SNTP:	0.0.0.0 Standard Time Diff.: 0.0 🛃 Hs			

Figure A.17. Configuring SNTP

Configuring the RTUs option

Click the RTUs tab to configure the parameters related to RTUs (Remote Terminal Unit) system.

General HSE Redundancy Advanced HSE Maintenance SNTP RTUs						
 Enable RTU Mode HSE Persistency Workstation Role Read only (locked) Writeable (unlocked) Operation (eth1) 						
Network Settings						
RTU Ethernet 1: 0 . 0 . 0 . 0						
RTU Ethernet 2: 0 . 0 . 0 . 0						
Router IP: 0 . 0 . 0 . 0						
Apply						

Figure A.18. System302 ServerManager: RTUs tab

Enable RTU Mode:

Use this checkbox to enable or disable RTU mode. For RTU mode, it is necessary to have a NATcompatible router between the workstation and the RTU. It is assumed that the RTU is connected behind this router using its first Ethernet interface (eth1). The second ethernet interface (eth2) will only be used for engineering / maintenance through an Ethernet cable between a workstation and the RTU. After connecting this Ethernet cable, all HSE communications through eth1 will be interrupted. When the crossover cable is disconnected, HSE communications via eth1 are enabled again.

HSE Persistency:

- Read Only (Locked) It does not allow any additional recording to the HSE device database.
- Writable (unlocked) - Allows recordings in the HSE device database.

Workstation Role:

- Engineering/Maintenance (eth2) In this function, the second ethernet interface (eth2) is
 used for engineering / maintenance through an ethernet cable between a workstation and
 the RTU.
- **Operation (eth1)** In this function, the first ethernet interface (eth1) is used for the operation. A NAT-compatible router is required between the workstation and the RTU.

Network Settings:

- RTU Ethernet 1 IP address used on the RTU for its first Ethernet port.
- RTU Ethernet 2 IP address used on the RTU for its second Ethernet port.
- Router IP IP address used on a NAT-compatible router for its Ethernet WAN port.

IMPORTANT

There is a parameter directly related to OPC operations by LogicView that is changed from the options defined in this RTUs tab.

OPC Timeout - is changed by default from the choices made on this tab, namely:

1500 milliseconds if RTU mode is disabled or in Engineering / Maintenance mode, or from the value determined in LogicView (see the LogicView Manual to learn more) or 15000 milliseconds for operation mode.

Configuring Startup

Click the option **Startup** to configure **System302 ServerManager** to activate OPC servers based on a list of tags. Servers can be automatically executed when the operation system starts.

System302 ServerManager Application About			
System302 ServerManager	Configure System302 ServerMar with tag list. You can set the app Load Server DFI OPC Server I HSE OPC Server OPC Server Concentrator	hager to launch the OPC Servers at start up, basi lication to be launched at start up machine too. Create Group and Items from file No File selected No File selected ProgID:	ed or not in a list Browse Browse Browse
	Ask for confirmation on Start System302 Serve	r exit rManager when Windows starts up rManager when OPC Server starts up	

Figure A.19. System302 ServerManager: Startup Tab

In the **Load Server** area, select the standard OPC server to be activated (**DFI** and/or **HSE**). When selecting the DFI and HSE servers, click the **Browse** button to select the **.Ist** file that contains the list of tags from the plant process control.

To select another OPC server, mark the option **OPC Server**, click the **Browse** button to select the **.lst** file and type the **ProgID** (OPC server identification) of the server that will be activated by **System302 ServerManager**.

The **Concentrator** option will be detailed in the next item. Check this option to launch the **Concentrator** as soon as the **System302 ServerManager** is run.

The following options are available on the Startup tab:

- Check the item **Ask for confirmation on exit** to force the user to confirm the operation when shutting down **System302 ServerManager**.
- Check the item Start System302 ServerManager when Windows starts up to start System302 ServerManager with the operational system.
- Check the item Start System302 ServerManager when OPC Server starts up to start System302 ServerManager every time an OPC server is initialized.

The OPC toolbar located below the main menu indicates which OPC servers are currently connected to **System302 ServerManager** when the button related to the server is selected. To disconnect an OPC server, click the corresponding button.

🗟 System302 ServerManager		
Application About		
DFI HSE OPC		
System302 ServerManager		
En Settings		

Figure A.20. OPC Toolbar

Generating the lst file

The **Ist** file is generated according to the supervisory system configuration related to the plant process control. Follow the procedure below to enable the **Ist** file and create the list of tags for supervision:

- 1. Close all SYSTEM302 applications, including the supervisory tools and the System302 ServerManager.
- 2. Locate the file SmarOleServer.ini on the OleServers directory. The default path of the SYSTEM302 installation folder is "C:\Program Files\Smar\OleServers".
- 3. Edit the **SmarOleServer.ini** file using the Windows Notepad or other text editor. See the example below:

	SmarO	leServe	r.ini - N	otepad	_ 🗆 🗵
File	e Edit	Format	View	Help	
;=	=1 =2		Defa Defa	ult array and can deal with BSTR when requested ult BSTR (visible string Foundation)	
S] ;; ;= ;;	MFILI SMFII =0 =1	EGEN= .EGEN	0 enabl	e/disable the feature of to generate lst file (default) default Turn Off Turn On the feature. All the items you added will be copied to a : (SMFileGen_DDMMMYY_HHMM.1st) The value will automatically return to 0 (turn off) if you release the Server, or you can change it by hand.	file 🔜
т ; 7	OPOL TOPO	.OGY_ LOGY_	CACI _CAC	亚二〇N 出臣 defines if the server will upload the network topology. The	•

Figure A.21. SmarOleServer.ini file

- 4. Locate the section **SMFILEGEN** and type the value **1** to generate the **Ist** file. Save the alterations and close the text editor.
- 5. Run System302 ServerManager.
- 6. Using the supervisory tool, open the screens which contain the points that will be read when the operational system is started. This step will update the list of tags in the **Ist** file.
- 7. At this point, there are two options to conclude the process:
 - a. Close all SYSTEM302 applications, including supervisory tools and System302 ServerManager. In this case, System302 ServerManager will be automatically configured with the lst file generated and for being executed when the operational system restarts, initializing the OPC server.

OR

b. Edit the file **SmarOleServer.ini** and change the **SMFILEGEN** key value to **0** (zero). Close the editor saving the file, which will be created with all added items.

Now the **Ist** file is created. The steps below are optional and specifically to test the **Ist** file and create the cache list for the OPC server.

- 8. Run System302 ServerManager again.
- If you execute step 7.a, System302 ServerManager is already configured with a file with the name format SMFileGen_DDMMMYY_HHMM.Ist. otherwise, if you executed step 7.b, select the OPC server that will be executed and click the button Browse to select the Ist file.
- 10. Restart System302 ServerManager so the changes will take effect.

When the operating system is restarted, the selected OPC servers will be automatically executed. In order to use the **Ist** file with other application, such as **TagView**, unmark the options automatically configured during the process to create the **Ist** file.

Configuring the OPC

On the **System302 ServerManager** window, select the option **Settings > OPC** to configure the Smar's OPC servers.

- At the SNMP tab, configure the list of available agents and their supervision settings.
- At the A&E tab, create the database with the initial conditions for the Smar A&E OPC Server to identify which events will be monitored.
- At the UA tab, the Concentrator (wrapper) can be enabled that allows access to the OPC Server by the OPC UA standard.

Configuring the SNMP OPC Server

The **SNMP OPC Server** provides important diagnostics information from the **DFI302** to compliant OPC clients via the SNMP (Simple Network Management Protocol).

The SNMP protocol defines agents and managers. Using **SYSTEM302**, **DFI302** acts as an agent and the **SNMP OPC Server** act as a manager. The SNMP allows read and write transactions between agents and managers.

The **SNMP OPC Server** configuration consists of listing the agents available and their respective network addresses.

SNMP A&E UA	
Supervision Scan Rate: 5 ms Timeout:	30000 ms Apply
Agents	
device_type:user tag	IP of first NIC/IP of second NIC
Apply All	

Figure A.22. System302 ServerManager: SNMP Tab

Supervision:

- At the **Scan Rate** text box, define the rate interval for the server to poll the agents for information. The value is defined in seconds and it should not be changed often.
- At the **Timeout** text box, define the timeout for SNMP requests. The value is defined in milliseconds. Requests with responses exceeding the timeout period will result in bad quality for the associated OPC items. This setting should be changed only in cases of extremely loaded networks.

Agents:

• The **Agents** field lists all configured agents. There should be a user-defined tag assigned to each agent, limited to 32 characters. This tag will be used to build the OPC tags available in the server address space. Besides the tag, the user must specify the network addresses of the agents. Agents with two network interfaces should have both addresses specified. If only one address is specified, the **System302 ServerManager** will only send SNMP requests to that interface and the network redundancy will not be available.

The **SNMP server** supports 64 agents. To add an agent, right-click the **Agents** list and select the option **Insert** from the popup menu:

SNMP A&E UA Supervision Scan Rate: 5 ms Timeout:	1000 ms Apply
Agents device_type:user tag Insert Delete Clear All	IP of first NIC/IP of second NIC
I <	

Figure A.23. Adding a new Agent

On the SNMP Agent dialog box:

SNMP Agent		×
Device type:	DF62	
User tag:		
IP address NIC 1:		
IP address NIC 2:	0.0.0.0	
This change will t	ake effect on the next Server Start Up	
0	IK Cancel	

Figure A.24. Setting a new Agent

- 1. Select one of the DF modules from the **Device Type** list.
- 2. Type the tag name, which should not exceed 32 characters.
- 3. Type the IP address for the NIC 1. This address must be always specified.
- 4. If there is another network interface available, type the IP address for the NIC 2.

To remove an agent, right-click the agent icon that should be removed and select **Delete**.

SNMP A&E UA	
Scan Rate: 5 ms Timeout:	1000 ms Apply
Agents	
device_type:user tag	IP of first NIC/IP of second NIC
DF63:DF(DF63:DF(Delete	192.168.167.43
Clear All 45	
<< >> Apply All	

Figure A.25. Deleting an Agent

On the SNMP Agent dialog box, click Delete to confirm the operation.

SNMP Agent		×
Device type:	DF62 🗾	
User tag:	DF62_ADN	
IP address NIC 1:	192 . 168 . 163 . 90	
IP address NIC 2:	0.0.0.0	
This change will t	ake effect on the next Server Start Up	
Del	ete Cancel	

Figure A.26. Confirming the operation

To remove all agents from the list, right-click the **Agents** list and select **Clear All**. A message box will appear to confirm the operation. Click **Yes** to remove all agents from the list.



Figure A.27. Deleting all agents

Configuring the A&E Server

The **Alarms & Events OPC Server** uses the information from the **AlarmInfo.ini** file to generate the initial conditions and identify which events will be monitored.

When executed for the first time, before creating the database, the **A&E OPC Server** may take a few minutes to startup depending on the number of devices configured to generate alarms and events that should be monitored by the server. Use **System302 ServerManager** to create the database for the **A&E OPC Server** with the information generated by the configuration tools and, therefore, the server startup will be faster.

Click the button **Generate Database** to create the database with the initial conditions for the **A&E OPC Server.** A message box will open alerting the user that this operation may take a few minutes

to be completed. Click Yes to proceed.

SNMP A&E UA	
A&E OPC Server	
Total	Generate Database
Tasks 0%	
Number of devices with A&E data: 0 Number of configured Blocks: 0	
Apply All	

Figure A.28. Generating initial database for A&E OPC Server

System302 ServerManager alerts the user when the alarm database is not updated. When a new AlarmInfo.ini file is created by Syscon, System302 ServerManager detects this event and the icon on Windows taskbar indicates the database is outdated. See the following example:

	•
AE OPC Server datab	ase needs to be generated !
🦉 imagem - Paint	🛛 « 🔏 😋 🔂 🗛 16:36

Figure A.29. Alert from A&E OPC Server

This tab also displays information related to the number of devices and blocks configured with alarms.

Using the Concentrator (Wrapper) for the OPC UA Server

The wrapper for OPC UA provides data from the **OPC DA 2.0 HSE OPC Server** or **DFI OPCServer**, to the OPC UA standard.

SNMP A&E UA
OPC UA
I con tray available to more actions.
Execute

Figure A.30. System302 ServerManager: UA Tab

The first time the application is executed, it automatically guides the user to record the certificates required for the application to work properly.

Click **Execute** and use an OPC UA client to connect to the **OPC UA wrapper**.

Configuring Logs

Click the option Logs on the left panel in the System302 ServerManager window to configure the options to enable or disable event logs.

able (1) or disable (0) lo E)Events.log, (HSE)Ev	og messages. rentOPC.log and (HSE)Eve	entsThreads.log	
	Log for OPC	Log for Threads	HSE IDShell
Transaction	🗖 General	🗖 General	🗖 General
CONF	🗖 Debug	🗖 Debug	Profile
OPC	C OPC	Memory	DDServer
OPC_Debug			Supervision
🗖 IDShell			🔲 MachineCtrl
Def	faults Empty	LOG files	
	able (1) or disable (0) ld E)Events.log, (HSE)Ev Transaction CONF OPC OPC_Debug IDShell De	able (1) or disable (0) log messages. E)Events.log, (HSE)EventOPC.log and (HSE)EventOPC. Transaction CONF OPC OPC_Debug IDShell Defaults Empty	able (1) or disable (0) log messages. E)Events.log, (HSE)Event0PC.log and (HSE)EventsThreads.log Transaction General CONF Debug 0PC 0PC IDShell Defaults Empty LOG files

Figure A.31. System302 ServerManager: Logs Tab

It is not necessary to restart each OPC server to generate event logs. However, for the options related to the **IDShell HSE**, it is necessary to restart the OPC server to start registering logs after configuring the events.

It is recommended to click the button **Empty LOG files** before selecting reports to assure that previous information is deleted from the log files before registering new logs.

Displaying Log Files

System302 ServerManager manages log files from SYSTEM302 applications that generate alerts to the users.

For each new message, the **System302 ServerManager** icon on the taskbar alerts the user about the event and the file related to that log is highlighted on the panel at the left side of the **System302 ServerManager** window.

🗟 System 302 ServerMan	nager		
Application About			
DFI HSE OPC			
System302 ServerManager			
		ServerMana	ger.sml
- Logs - HseLreComp.sml - LiveList.sml - ServerManager.sml - Serv	<	07/29/2015 07/29/2015 07/29/2015 07/29/2015 07/29/2015 07/29/2015 07/29/2015 07/29/2015 04/20/2021	14:56:24 14:57:24 14:58:24 16:01:09 16:02:09 16:03:09 16:04:10 16:35:58 16:05:24

Figure A.32. List of Log Files

When an event log file is generated, it is available on the list of reports from the **Log** menu, on the left panel. Click the name of the log file to open the report and display the last messages generated.

Click the button **Open the file** available on the message panel to open the log file and display all messages stored in that file.

You can see here just the end of the log file, if you want to analyze the entire file, please use the button "Open the file"
Message
Mon Sep 01 11:49:15 2008:IpAddress for NICs mismatch. Using interface associated with host name: 192.168.163.90.
Wed Sep 03 17:46:10 2008:IpAddress for NICs mismatch. Using interface associated with host name: 192.168.163.90.
Fri Sep 12 10:17:54 2008:IpAddress for NICs mismatch. Using interface associated with host name: 192.168.163.90.
Fri Sep 12 11:23:30 2008:IpAddress for NICs mismatch. Using interface associated with host name: 192.168.163.90.
Mon Sep 15 15:12:19 2008:IpAddress for NICs mismatch. Using interface associated with host name: 192.168.163.90.

Figure A.33. Opening a Log File

You can associate a text editor application, such as **Notepad**, to open log files with the extension ***.sml** (ServerManager Log) automatically.

Every time a new message is generated in a log file, the **System302 ServerManager** icon on the taskbar will alert the user about that event. See the following example:



Figure A.34. Alert from the System302 ServerManager icon

CONFIGURING THE DCOM PROPERTIES FOR STUDIO302 GROUPS

This tutorial describes the procedure to configure some security properties in order to enable proper communication among components.

The DCOM properties must be configured only for the **Studio302 Groups** where the default permissions were edited. To verify which groups should be configured, open the **List of Groups** and **Permissions** dialog box. In the **Studio302** window, go to the **Settings** menu, select **Security** and click **Group Management**.

The figure below shows an example where the permissions for the groups "*Users*" and "*Administrators*" were altered and therefore only these two groups must be configured in the DCOM properties.

htist of Groups and Permissi	ions	X
List of Groups a	and Permissions	
Group	Permissions	
😹 HelpServicesGroup		
🞎 Engineer		
Sea AssetViewGuest		
Sea Administrators	Full Control	
Sers Users	System - Start	
😹 Guests		
💐 Power Users		
😹 Backup Operators		
Seplicator		
Remote Desktop Users		•
	🥵 🖲 Group 🛛 👶 🔿 Permission	
Search	Search by Group	
	Edit Close Help	

Figure B.1. List of groups and permissions

The DCOM properties must be configured every time the List of Permissions is altered.

ATTENTION

By default, if the user is logged on the local machine, the groups "*Users*" and "*Administrators*" will have pre-configured permissions for **Studio302**. If the user is logged on a domain, the groups "*Domain Users*" and "*Domain Admins*" will have pre-configured permissions for **Studio302**. Therefore, these groups must be initially configured in the DCOM properties according to the workgroup or domain to which the computer belongs.

Accessing the DCOM properties

To start DCOM configuration, type DCOMCNFG.EXE from the Start menu.

Use the Start Menu option or the Windows button option directly on the keyboard.



Figure B.2. Running Dcomcnfg

The **DCOM** configuration tool should take a few seconds to open and will be as shown in the following figure.

Component Services			100	
Eile Action View Window	Help			_ 8 ×
🗢 🄿 🔰 📰 🖾 🛛 🖬	1 1 <u>1</u> 2 2 2 1 0			
Console Root		Actions		
Component Services Event Viewer (Local)	Computers	Component Services		•
> Gervices (Local)	computers	More Actions		×

Figure B.3 Component Services

Click Computers and then right-click My Computer. Select Properties.



Figure B.4. Accessing computer properties

In the dialog box, select the **Default Properties** tab and the option **Enable Distributed COM on this computer** should be marked.

ly Computer Properties ?
Default Protocols MSDTC COM Security General Options Default Properties
Enable Distributed COM on this computer
Enable COM Internet Services on this computer
Default Distributed COM Communication Properties
The Authentication Level specifies security at the packet level.
Default Authentication Level:
Connect
who is calling them, and whether the application can do operations using the client's identity. Default Impersonation Level:
Identify
Security for reference tracking can be provided if authentication is used and that the default impersonation level is not anonymous. Provide additional security for reference tracking
OK Cancel Apply

Figure B.5. Default properties

There are two possibilities to configure the DCOM properties:

- Default Access
- Individual Component Access

Default Access Configuration

This procedure will configure the permissions for all of the components in the DCOM. It will not be necessary to configure the DCOM permissions for each **Studio302** component.

In the **Component Services** window, right-click the icon **My Computer** and select the option **Properties**. In the **My Computer Properties** dialog box, select the **COM Security** tab.

omputer Properti	es	
General	Options	Default Properties
Default Protocols	MSDTC	COM Security
Access Permissions-		
You may edit who also set limits on a	is allowed default access pplications that determine	to applications. You may their own permissions.
	Edit Limits	Edit Default
Launch and Activation You may edit who activate objects. Y determine their ow	on Permissions is allowed by default to lau ⁄ou may also set limits on a m permissions.	inch applications or pplications that
Launch and Activation You may edit who activate objects. Y determine their ow	on Permissions is allowed by default to lau /ou may also set limits on a n permissions. Edit Limits	nch applications or pplications that Edit Default
Launch and Activatie You may edit who activate objects. Y determine their ow	on Permissions is allowed by default to lau /ou may also set limits on a n permissions. Edit Limits	inch applications or pplications that Edit Default
Launch and Activatie You may edit who activate objects: Y determine their ow	on Permissions is allowed by default to lau fou may also set limits on a n permissions. Edit Limits	inch applications or pplications that Edit Default
Launch and Activatie You may edit who activate objects. 't determine their ow	on Permissions is allowed by default to lau /ou may also set limits on a n permissions. Edit Limits	nch applications or pplications that Edit Default
Launch and Activatie You may edit who activate objects: Y determine their ow	on Permissions is allowed by default to lau fou may also set limits on a n permissions.	inch applications or pplications that

Figure B.6. Access permissions

Click the button **Edit Default** in the **Access Permissions** area. Add the users and groups related to **Studio302** and select **Local** and **Remote Access** permissions for each user and group added.

Click the button **Edit Default** in the **Launch and Activation Permissions** area and repeat the procedure to add users and groups related to **Studio302**. Select **Local** and **Remote Launch**, and **Local** and **Remote Activation** permissions for each user and group added. The figure below shows an example for the groups "Users" and "Administrators":

	?
(VAdministrators)	
Add	Remove
Allow	Deny
	_
	\Administrators) Add Allow V V V V

Figure B.7 Launch and activation permissions

Individual Component Access Configuration

This procedure will configure the permissions for each **Studio302** component in the DCOM. The list below shows the components that will be configured manually:

Studio302 Components

Name	AppID	
SmarProxyAE	{124BB93B-1681-41F9-A1B6-88CA170C938B}	
SmarProxySE	{1061A2BF-0909-4DCC-BAC3-B2E3BCDBDED1}	
SmarStudio	{0094EBDD-277C-4322-866C-C70134F5F5E7}	
SmarStudioBridgeProxy	{05931DBE-7809-4C81-815D-DBA87A62AC3A}	
SmarWatcher	{E970545E-C8C8-47A5-85E5-7BB9E04B3CF9}	
SSSDetectDevice	{24A7E20D-7AFA-4F0A-8405-FFCB2421F088}	
StudioTerminal	{9800A1DD-1C44-4C59-9837-5168AA5E4E68}	

NOTE If AssetView is installed on your machine, include the AssetView user and groups to each of the components indicated above

The following example will describe the procedure to configure the component SmarWatcher. Refer

to this example to configure all components listed above.

- 1. In the **Component Services** window, expand the *Console Root* tree and locate the *DCOM Config* folder: **Component Services > Computers > My Computer > DCOM Config**.
- The DCOM components will be listed. The user can click the menu View > Detail to view a detailed list of components.
- 3. Locate the component SmarWatcher with the corresponding AppID.



Figure B.8. Configuring DCOM properties of SmarWatcher component

- 4. Right-click this component and select Properties.
- 5. In the Component Properties dialog box, select the Security tab.

neral Location Security Endpoints Identity	
Launch and Activation Permissions	
O Use Default	
Customize	E dit
Access Permissions	
C Use Default	
Customize	E dit
Configuration Permissions	
🔿 Use Default	
Customize	Edit
	non

Figure B.9. Configuring the security

- 6. In the Launch and Activation Permissions area, select the option Customize and click Edit.
- 7. Add the Studio302 groups and select Local and Remote permissions for all groups.
- 8. Return to the **Component Properties** dialog box. In the **Access Permissions** area, select the option **Customize** and click **Edit**. Add the **Studio302** groups as described on item 7.

9. Return to the **Component Properties** dialog box and select the **Identity** tab. Mark the option **The interactive user** and click **Ok** to conclude.



Figure B.10. Identity tab

10. Repeat these steps to configure all components listed at the beginning of this subsection.

Configuring the DCOM properties for AssetView groups

If **AssetView** is installed on your machine, it will be necessary to configure DCOM permissions for these additional user and groups:

Administrators - Group Interactive - Group System - Group ASP.NET - User Engineer - Group AssetViewGuest - Group

The procedure to configure DCOM permissions for **AssetView** Users and Groups is the same described for **Studio302** Users and Groups.

When configuring the **Default Access**, add the **AssetView** user and groups indicated above to the list of users and groups in the **Access Permissions** dialog box and the **Launch Permissions** dialog box, selecting **Local** and **Remote** permissions. Refer to the topic Default Access Configuration.

When configuring **Individual Component Access**, add the **AssetView** user and groups indicated above to the following **AssetView** component and to the list of other components indicated previously:

Name	AppID	
AvTerminal	{E9504C4B-F9C4-4A55-8C1F-97B0C6C0B447}	

Refer to the topic Individual Component Access Configuration.