### Legal information

#### Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DANGER</strong></td>
<td>Indicates that death or severe personal injury will result if proper precautions are not taken.</td>
</tr>
<tr>
<td><strong>WARNING</strong></td>
<td>Indicates that death or severe personal injury may result if proper precautions are not taken.</td>
</tr>
<tr>
<td><strong>CAUTION</strong> with a safety alert symbol</td>
<td>Indicates that minor personal injury can result if proper precautions are not taken.</td>
</tr>
<tr>
<td><strong>CAUTION</strong> without a safety alert symbol</td>
<td>Indicates that property damage can result if proper precautions are not taken.</td>
</tr>
<tr>
<td><strong>NOTICE</strong></td>
<td>Indicates that an unintended result or situation can occur if the corresponding information is not taken into account.</td>
</tr>
</tbody>
</table>

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

#### Qualified Personnel

The product/system described in this documentation may be operated only by personnel qualified for the specific task in accordance with the relevant documentation for the specific task, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

#### Proper use of Siemens products

Note the following:

<table>
<thead>
<tr>
<th>Severity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WARNING</strong></td>
<td>Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be adhered to. The information in the relevant documentation must be observed.</td>
</tr>
</tbody>
</table>

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#### Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.
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1 Resources

1.1 Installation Requirements

Introduction
Certain hardware and software configuration requirements must be fulfilled for installation.

Hardware requirements
To work with WinCC DataMonitor efficiently, select a system that meets the recommended specifications for an optimal configuration.

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<tr>
<th>DataMonitor Server</th>
<th>Minimum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>DataMonitor server on WinCC server for more than 10 Clients</td>
<td>CPU: Intel Pentium 4; 2.2 GHz</td>
<td>Dual-Core; &gt; 2.2 GHz</td>
</tr>
<tr>
<td></td>
<td>Working memory: 2 GByte</td>
<td>&gt; 2 GByte</td>
</tr>
<tr>
<td>DataMonitor Server on WinCC Server with WinCC Project in Runtime</td>
<td>CPU: Intel Pentium III; 1 GHz</td>
<td>Server: Intel Pentium 4, 2 GHz</td>
</tr>
<tr>
<td></td>
<td>Working memory: 2 GByte</td>
<td>&gt; 2 GByte</td>
</tr>
<tr>
<td>DataMonitor server on WinCC server</td>
<td>CPU: Intel Pentium III; 1 GHz</td>
<td>Server: Intel Pentium 4, 2 GHz</td>
</tr>
<tr>
<td></td>
<td>Working memory: 1 GByte</td>
<td>&gt; 1 GByte</td>
</tr>
<tr>
<td>DataMonitor server on WinCC stand-alone system or WinCC client with its own project</td>
<td>CPU: Intel Pentium III; 1 GHz</td>
<td>Server: Intel Pentium 4, 2 GHz</td>
</tr>
<tr>
<td></td>
<td>Working memory: 512 MB</td>
<td>1 GByte</td>
</tr>
</tbody>
</table>
WinCC/DataMonitor Installation Notes

1.1 Installation Requirements

DataMonitor client

<table>
<thead>
<tr>
<th>Minimum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td></td>
</tr>
<tr>
<td>Intel Pentium II; 300 MHz</td>
<td>Intel Pentium III; 1 GHz</td>
</tr>
<tr>
<td>Working memory</td>
<td></td>
</tr>
<tr>
<td>256 MByte</td>
<td>512 MB</td>
</tr>
</tbody>
</table>

Software requirements

For the installation, certain requirements concerning operating system and software configuration must be met.

DataMonitor server on WinCC server

<table>
<thead>
<tr>
<th>Operating system</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows Server 2003 SP2 or Server 2003 R2 SP2</td>
<td>Internet Explorer V6.0 SP1, V6.0 SP2 or V7.0</td>
</tr>
<tr>
<td></td>
<td>WinCC Basic system V7.0 SP1 or WinCC File Server V7.0 SP1</td>
</tr>
</tbody>
</table>

If you want to publish Intranet information, the following is required:

- A network-capable computer with a LAN connection
- A system that converts computer names into IP addresses (IP = Internet Protocol). This step allows users to use "alias names" instead of IP addresses when connecting to your server.

If you want to publish information in the Internet, the following is required:

- An Internet connection and an IP address from your Internet service provider (ISP). You can only publish information in the Internet, if you have a connection to the Internet provided by the ISP.
- A network adapter that is suitable for connecting to the Internet.
- A DNS registration for your IP address. This step allows users to use "alias names" instead of IP addresses when connecting to your server.

DataMonitor server on WinCC stand-alone system or WinCC client with its own project

<table>
<thead>
<tr>
<th>Operating system</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows XP Professional SP3 (max. 3 clients)</td>
<td>Internet Explorer V6.0 SP1, V6.0 SP2 or V7.0</td>
</tr>
<tr>
<td>Windows Vista SP1 (max. 3 clients)</td>
<td>WinCC Basic System V7.0 SP1 or WinCC File Server V7.0 SP1</td>
</tr>
<tr>
<td>Windows Server 2003 SP2 or Server 2003 R2 SP2</td>
<td>Windows Office 2003 SP3 or Office 2007 for the components</td>
</tr>
<tr>
<td></td>
<td>&quot;Excel Workbook Wizard&quot; and &quot;Excel Workbook&quot;</td>
</tr>
</tbody>
</table>

You also need access to the intranet/Internet or a TCP/IP connection to the Web client.
DataMonitor client

<table>
<thead>
<tr>
<th>Operating system</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows XP Professional SP3</td>
<td>Internet Explorer V6.0 SP1, V6.0 SP2 or V7.0</td>
</tr>
<tr>
<td>Windows Vista SP1</td>
<td>Windows Office 2003 SP3 or Office 2007</td>
</tr>
<tr>
<td>Windows Server 2003 SP2 or Server 2003 R2 SP2</td>
<td>for the components</td>
</tr>
<tr>
<td>Other operating systems such as WinCE, Win95 via MS</td>
<td>&quot;Excel Workbook Wizard&quot; and &quot;Excel Workbook&quot;</td>
</tr>
<tr>
<td>Terminal Services</td>
<td></td>
</tr>
</tbody>
</table>

You also need access to the Intranet / Internet or a TCP/IP connection to the Web server.

**Note**

Use of Internet Explorer V7.0 is preferable.

1.2 User Authorizations for Installing the DataMonitor Client

**Introduction**

The following options are available for installing DataMonitor client.

- **Installation from the product DVD**
  In this case, certain Windows user authorizations are necessary, depending on the operating system.

- **Installation via the Intranet/Internet**
  In this case, certain Windows user authorizations are necessary, depending on the operating system.

- **Installation using the group policy-based software distribution in networks**
  This can be done without any user interaction and using the Windows user permissions of the current user.

**Windows user permissions required for installation and initial logon of the client**

Specific minimum user rights are required to install the DataMonitor client via Intranet/Internet depending on the operating system.

After the installation, the client must log in under the following user identification for the initial registration on the DataMonitor server:

- Under a user identification with Windows user rights higher or equal to those defined by the user identification that was given for the installation.

The connections must be established successfully. The subsequent logins can then be performed under a different Windows user authorization with possibly limited rights.
1.2 User Authorizations for Installing the DataMonitor Client

Note
The required minimum user permissions are especially important for the installation and use of "Process Screens".

<table>
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<th>Operating system</th>
<th>Required minimum user permission</th>
</tr>
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<tbody>
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<td>Windows Server 2003</td>
<td>&quot;Power User&quot;</td>
</tr>
<tr>
<td>Windows XP Professional</td>
<td>&quot;Power User&quot;</td>
</tr>
<tr>
<td>Windows Vista</td>
<td>&quot;Power User&quot;</td>
</tr>
</tbody>
</table>

Installing the DataMonitor client with limited Windows user permissions

Using Microsoft Windows Installer technology (MSI), DataMonitor clients from Version V6.0 SP1 can also be installed with limited Windows user permissions, i.e. permissions other than "Power user" or "Administrator".

This procedure can be set during the installation using the group policy based software distribution in networks.

Even the add-ins and plug-ins for the the DataMonitor client can be installed. The minimum user permissions described above are also required to install plug-ins created with WinCC Plug-In Builder.

Using MSI technology, it is also possible to install the DataMonitor client for a configured group of users or computers.

Installation for a configured group of users or computers

The following is possible with the Microsoft Systems Management Server or a group policy on a Domain Controller:

- The installation for a group of users or computers configured by the administrator
  - To do this, the "WinCCDataMonitorClient.msi" MSI file is published on the domain controller and then released for a user group. The installation is then performed according to the configuration of the group policy based software distribution either during login of the defined users or when the computer is started. Windows Server 2003 can be used as operating system on the domain controller.
  - When using a Microsoft Systems Management Server, the installation is configured by the administrator, triggered and executed when the relevant computer boots. Additional information on Microsoft Systems Management Server is available in the Internet on the Microsoft Homepage.

Group policy based software distribution

The software installation is normally executed with the access rights of the current Windows user. When using MSI technology, the installation is performed by an operating system service with a higher level of rights. This enables installations to be performed for which the Windows user has no permission. Applications which require installations with a higher permission level are referred to as "privileged installations" in MSI technology. Installation of these applications is possible when a Windows user is assigned the "Always install with elevated privileges" permission.
In order to use the group policy based software distribution, a group policy is created on the domain controller and assigned to the distributing software or published using Active Directory.

- **Assignment**: The software distribution can be assigned to a user or a computer. In this case, the software to be distributed is automatically installed when the user logs in or the computer is started.

- **Publication**: The software distribution can be published for single users. In this case, when the user logs onto the client computer, the software to be distributed appears in a dialog and can be selected for installation.

### Installation without user interaction

During installation of the DataMonitor client, the user is normally prompted to enter information, such as the destination directory, agreement to the software license requirements or components to be installed. Using a configuration file, installation can be performed via a network without user interaction. The required path specification and user information are provided in the "options.ini" configuration file. The file must be in the same folder as the DataMonitor client setup.

This installation procedure is advantageous when using the group policy based software distribution.

Installation from the product DVD occurs with user interaction.

The default settings in the table are used under the following conditions:

- The "options.ini" configuration file is missing and there is no corresponding entry available in the client registry, for example, due to another installed SIMATIC HMI product.

- Alternatively, the installation is performed via the group policy based software distribution with assignment to the computer.

<table>
<thead>
<tr>
<th>Information</th>
<th>Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target directory for DataMonitor client</td>
<td>INSTALLDIR=&quot; &lt;syspath1&gt;\Siemens\WinCC&quot;</td>
</tr>
<tr>
<td>Target directory for common components</td>
<td>COMMONDIR=&quot; &lt;syspath2&gt;\Siemens &quot;</td>
</tr>
<tr>
<td>User information / user name</td>
<td>USER</td>
</tr>
<tr>
<td>User information / organization</td>
<td>COMPANYNAME</td>
</tr>
</tbody>
</table>

The "<syspath?>" parameters result from the settings in the registry under the key "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion":

- "<syspath1>" corresponds to the key "ProgramFilesDir" for example "C:\Program Files"
- "<syspath2>" corresponds to the key "CommonFilesDir", for example "C:\Program Files\Common Files"

**Example of a "options.ini" configuration file**

```ini
[USERINFO]
USER=Integration
COMPANYNAME=Siemens AG

[INSTALLPATH]
COMMONDIR=" C:\Programs\Common files\Siemens ";
INSTALLDIR=" C:\Programs\Siemens\WinCC ";
```

MDM - WinCC/DataMonitor System Manual, 11/2008,
1.3 Installing the Internet Information Service (IIS)

Settings

Under Windows Vista you will first have to install the Internet Information Service (IIS) before you install the WinCC/DataMonitor server. You will specify the settings for the DataMonitor server during installation.

Activate the following settings under Windows Vista:

- Web management tools:
  - IIS management service
  - IIS management console
  - IIS management scripts and tools
  - Compatibility with IIS Metabasis and IIS 6 configuration
  - Compatibility with WMI for IIS 6
- WWW services > General HTTP features:
  - Standard document
  - Static content
- WWW services > Application development features:
  - .NET extendibility
  - ASP
  - ASP.NET
  - ISAPI extensions
  - ISAPI filters
- WWW services > Security:
  - Requirement filtering
  - Standard authentication
  - Windows authentication
Note

If the logging functions are active with IIS, the log files must be monitored and deleted, if necessary. The event views should be configured so that the log files do not become too large.

Requirements

- To do this, you must have administrator rights.

Procedure

1. Insert the Windows CD-ROM into the drive.
2. In the Windows Start Menu, select the menu item "Settings > Control Panel", then click on the "Software" symbol.
3. Open the "Add or Remove Programs" dialog and click "Add or Remove Windows Components".
4. Activate the settings listed above under Windows Vista.
   You can also use the command line "Start > Run > cmd" to install the IIS components located on the installation CD:
   pkgmgr.exe /iu:IIS-WebServerRole;IIS-WebServer;IIS-CommonHttpFeatures;IIS-StaticContent;IIS-DefaultDocument;IIS-HttpErrors;IIS-ASPNET;IIS-ASP;IIS-ISAPIExtensions;IIS-ISAPIFilter;IIS-BasicAuthentication;IIS-WindowsAuthentication;IIS-ManagementConsole;IIS-ManagementService;IIS-IIS6ManagementCompatibility;IIS-Metabase;IIS-WMICompatibility
5. Close the dialog with the "OK" button. The required data is transferred and the IIS is configured accordingly.

1.4 Installation

Introduction

This chapter describes the installation of the DataMonitor server and DataMonitor client. The installation on the DataMonitor client is dependent on the DataMonitor tool used.

Installation Scope of DataMonitor Server

To use the WinCC DataMonitor, a DataMonitor Server is installed and set up as the Web server.

You can access the WinCC Runtime Archive in this installation using "Trends and Alarms".
On a computer WinCC File server, used - for example - as a long-term archive server, only "Webcenter" and "Trends and Alarms" are installed as the other components need a WinCC runtime server. "Webcenter" and "Trends and Alarms" install all the required components.

**Note**
The Microsoft Management Console must not be running when you install DataMonitor under Windows XP, the Administration Tools Pack will otherwise not be included in the installation.

### Installation Conditions DataMonitor Client

You need not install the DataMonitor client if you want to use only "Webcenter" and "Trends and Alarms".

You can install "ExcelWorkbook Wizard" extra on the client PC. Installation of "Excel Workbooks" on the client PC requires "Microsoft Excel 2003 SP3" or "Office Excel 2007", because "Excel Workbooks" and "ExcelWorkbook Wizard" are installed as Excel add-ins.

An installation on the client PC is not mandatory for "Process Screens" because the client software can be downloaded from the DataMonitor server as in the case of Web Navigator client. However, DataMonitor client can also be installed directly from the DVD.

Specific user rights are responsible to install the DataMonitor client depending on the operating system. For detailed information see "User Rights while Installing DataMonitor Client".

**Note**
When downloading the client software, select the "Save" option to save the client setup on the client computer. It is recommended to save the Setup file because, in the event of a restart of the client computer being necessary, the Setup need not be downloaded again.

If the DataMonitor client was installed previously from the DVD and you want to install an updated version of the clients via the Intranet/Internet, the client setup must also be saved on the target computer.

**Note**
To also install DataMonitor client or Web Navigator Client on a DataMonitor server, you need to proceed as follows:

Use the Services Manager in Windows to set the start type of the "CCArchiveConnMon" service to manual and then restart the computer. You can then install the client. During the installation, ensure that no Web Navigator clients or DataMonitor clients access the server. When the installation is completed successfully, the start type of the "CCArchiveConnMon" service must be switched back to automatic.
Requirements

- DataMonitor Server requires the Internet Information Services (IIS).
- The DataMonitor server requires the WinCC configuration data.
- You need Windows "Administrator" rights for installing DataMonitor server.

Procedure

1. Insert the WinCC DVD into the DVD drive.
2. The setup program starts automatically after a few seconds, provided that the autorun functionality has not been deactivated.
3. The setup can also be started manually in case the installation is performed from a network drive or the autorun function has been disabled. From the Windows XP Start menu, select the "Settings > Control Panel > Software" option and click the "Add New Programs" icon. Then select the required installation medium.
4. The setup program is started.
5. To install, click the text "Install Software".
6. In the following dialog, select the component "DataMonitor Server V7.0 SP1" or "DataMonitor Client V7.0 SP1."
7. Follow the instructions of the setup program.

1.5 Licensing

DataMonitor Client

DataMonitor client does not need a license.

DataMonitor Server

Licenses must be installed on the DataMonitor server for the DataMonitor clients. The license check is different for the following function groups.

- "WebNavigator" with functions:
  "Process Screens" and "Excel Workbooks"
  A "WinCC DataMonitor" license is required on the server computer for each DataMonitor client.

- "Webcenter" with functions:
  "Webcenter", "Trends and Alarms", "Reports"
  It is not the number of clients but the number of connections that is relevant for the license count with the "Webcenter" function group.

The following table shows the number of possible clients based on the function group and license.
### 1.5 Licensing

<table>
<thead>
<tr>
<th>License</th>
<th>&quot;WebNavigator&quot; function group</th>
<th>&quot;WebCenter&quot; function group</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Client</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>3 Clients</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>10 Clients</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>25 Clients</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>50 Clients</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

#### Example

With a "3 Clients" license, the following users can log on simultaneously:

- 3 users of the "WebNavigator" function group
- 6 users of the "WebCenter" function group

#### Operation without valid license

If no license is available, DataMonitor displays a page requiring acknowledgement indicating the missing license at start-up.

- Click the "OK" button to acknowledge the notice.
  The start page of the DataMonitor is displayed.

Help:

- Check the existing licenses. If necessary, install the required licenses.

#### Note

If the user does not log out with the "Logout" button and the browser is closed, the connection is maintained and the license remains occupied. The license will only be released again after approximately 20 minutes.

### License for "Process Screens"

The WinCC Basic system along with the corresponding WinCC Basic license RT are required on the server computer. You do not need a WinCC server license if you do not want to operate local WinCC clients.
2 Resources

2.1 Release notes

Contents

These release notes contain important instructions.
The statements in these release notes are more binding than the instructions in the manuals
and in the online help.
Please read these release notes carefully as they contain useful information.

2.2 Notes about DataMonitor

Notes about DataMonitor

DataMonitor server on a computer with Windows Vista: Behavior in case of restart

After a restart the standard website will be activated for a DataMonitor server on Windows
Vista. This means the connection between DataMonitor client and DataMonitor server will no
longer be possible.

Solution: Restart the DataMonitor site in the Internet Information Service (IIS).

Office Excel 2003: Install Office patch "KB 907417" prior to "Excel Workbook" and "ExcelWorkbook
Wizard"

If you install "Excel Workbook" and "ExcelWorkbook Wizard" and want to use Office Excel
2003, you will first have to check if the Office patch "KB 907417" has been installed.

The patch will be installed automatically if you install the "Excel Workbook" and
"ExcelWorkbook Wizard" using the DVD setup.

Otherwise you will have to install the patch prior to "Excel Workbook" and "ExcelWorkbook
Wizard". The patch is available on the WinCC product DVD under "\InstData".
User authentication: Activated setting "Automatic logon with current user name and password" in Internet Explorer

If the setting "Automatic logon with current user name and password" is activated in Internet Explorer, this can lead to the following unexpected behavior:

**Requirement**
- The "Automatic logon with current user name and password" setting is activated in Internet Explorer.
- The user logs onto the DataMonitor client as a WinCC user who is not configured in the user groups on the DataMonitor server.
- The user is logged onto the computer with a Windows logon who is not configured as a user name on the DataMonitor server.

**Reaction**
1. DataMonitor server does not recognize the WinCC user name the user has used to log onto the DataMonitor client and therefore rejects it. The user cannot see this behavior.
2. Internet Explorer automatically starts a new logon using the current Windows logon as user name.
3. The DataMonitor server recognizes the Windows logon as DataMonitor user name and accepts the logon for this user.
4. The user is logged on but not with the DataMonitor user name he has entered. The current DataMonitor user is not displayed.

**Recommendation**
Disable the "Automatic logon with current user name and password" setting in Internet Explorer.
- Menu "Tools" > "Internet Options" > "Security" tab > "Custom Level" button > "User Authentication" > "Logon".

Use the setting only when there is a clear difference between Windows logon and DataMonitor user name.

**DataMonitor server: WinCC client without its own project**
Operation of a DataMonitor server on a WinCC client without its own project is not enabled.

**DataMonitor server: Installation sequence for the Web Server for Windows Vista and Windows XP**
Adhere to the following setup sequence if installing a Web Server on a computer with Windows Vista or Windows XP:
1. Install the Internet Information Service (IIS).
2. Install the SQL server.
Error messages may occur if the installation sequence is not maintained when opening DataMonitor Reports.

In this happens, correct the problem as follows:

1. Start the "Web Configurator" in the Windows Start menu by selecting "SIMATIC > WinCC > Web Configurator" and configure the Web server.
2. Start the SIMATIC Security Control in the Windows start menu by selecting "SIMATIC > Simatic Security Control" and configure the security settings.

DataMonitor server: Remote access to WinCC file server

Remove access from one DataMonitor server to a WinCC file server is possible only if the firewall is disabled on the WinCC file server.

DataMonitor "Process Screens": The Internet option "Active Scripting" will have to be activated

Follow the steps below to set up the Internet option "Active Scripting":
1. Open "Tools > Internet Options" in the Internet Explorer and click on the "Security" tab.
2. Select the zone in which the DataMonitor server is located.
3. Click the button "Custom Level."
4. Select the option "Activate" or "Prompt" under “Scripting/Active Scripting”.

Excel Workbooks: Using Office 2007

If you are using Excel 2007, you are only permitted to use Excel files with the extension "XLS, "XLSX, "XLSB", and "XLSM" such as "file.xls."

If you also use Excel 2003, you will have to switch on the compatibility mode in Excel 2007.

Language for the Office package and the Windows Regional Settings

Make sure that the language is the same for the Office package, the "Microsoft Office Language Settings", and the Windows Regional Options.

If you are using Office 2007 with the language "English (United Kingdom)" for instance, select the regional setting "English (United Kingdom)."

More information can be obtained through Microsoft Support:
• http://support.microsoft.com/kb/320369/en

Excel Workbooks: Tags with local computer updating are not supported

In multiple station projects, you can activate the "Computer-local update" option for internal tags.

This function is not supported by Excel Workbooks.
Excel Workbooks: Number of tags

A maximum of 32,767 process and archive tags can be configured in an Excel spreadsheet using the Excel Workbook Wizard. With an online display of the Excel Workbook, noticeable delays may occur in updating if there are numerous tags in this area.

Excel Workbooks: Exporting online tags to XML file

To export online tags to an XML file with the "Export Engineering Data" function, one of the following requirements will have to be met:

- The tags are part of one tag group.
- The tags are part of one structure type.

If you do not want to create the online tags in one tag group or one structure type, use the "Without structure (fast export)" option for the export.

Excel Workbooks: Local times on client and server

When requesting archive data, it should be noted that there may be time differences between the local times on the DataMonitor server and DataMonitor client if these times have not been sufficiently synchronized, for example, because no automatic synchronization is taking place or available.

The DataMonitor client attempts to maintain the current time of the DataMonitor server when requesting archive data. If this is successful, the query is based on the server time. For the display of data in the Excel table, the time stamp represents the server time but in the local time zone of the client.

If the query is unsuccessful, the DataMonitor client uses its local time as the basis for the time period of the query. Additionally, an entry is made in the event display of Windows on the DataMonitor Client. For the display of data in the Excel table, the time stamp represents the client time.

Excel Workbooks: Configuring the display of data via an XML file

If you want to display WinCC project data from a dedicated Web server / WinCC client in the Excel datasheet, you need to observe the following when configuring the Excel sheet via an XML file:

The XML file now includes the data of subordinate servers whose packages are located on the DataMonitor server. The export of the loaded packages to the dedicated DataMonitor server / WinCC client can take several minutes, depending on the size of the package.

This XML file must be available on the Excel configuration computer. You then import the configuration data in the Excel Workbook wizard by specifying the server prefix.

If you configure the data display in the data sheet on the WinCC client via the WinCC project which is open, the explicit specification of the server prefix is not necessary. The server prefix is automatically used when data is inserted from the package.
Excel Workbooks: Client on terminal server

Operating on a terminal server, a Excel Workbook client runs on a session of the terminal service. A maximum of only 10 Excel Workbook clients can be operated, otherwise MS Excel overloads the computer.

DataMonitor Reports: Event-controlled print jobs

You can create event-controlled print jobs only if the tag triggering the job is stored locally on the DataMonitor Server.

If you want to use tags from other servers, you will have to add the respective server prefix in front of the tag name in the "PDFVariableTable.xml" file located in the WinCC project directory.

DataMonitor Reports: Language in PDF files is determined by language in WinCC Explorer

The reports in PDF format are generated in the language set in WinCC CS. The WinCC Runtime language does not have an effect.

This setting particularly influences the display of dynamic elements, such as tables.

DataMonitor Reports: Acrobat Reader requires the country-specific version or the respective font package for Asian PDF files.

To open the Asian PDF files created with DataMonitor Reports, you will need the country-specific version of the respective font package of the Adobe Acrobat Reader.

The four Asian languages are fixed to one font each. This means the font settings in the report layout will not have an effect on the Asian languages.

DataMonitor Web Center: Setting the language in the connection management

To display archive variable names correctly with an Asiatic character set, you have to configure the configuration language to be used.

This is done by selecting the desired language during the connection configuration on the "Connection Management" page in the "Linguistic region" area.

Trends and alarms: No access to archive tags in main memory archives

"Trends and Alarms" supports access to database archives but not access to main memory archives.

Archive tags configured in main memory archives in WinCC Tag Logging may appear in the selection dialogs in "Trends and Alarms". However, they are not supported for display in tables or trends. This behavior especially applies when accessing archives which were generated and swapped out with WinCC versions prior to V6.0 SP4.
Trends and alarms: Display of archive data after copying a project

To copy a WinCC project between different computers and then display the archive data of the project on the target computer in "Trends and Alarms", you need to copy the project using the WinCC Project Duplicator.

If you use the Windows Explorer to copy the project instead of the Project Duplicator, the runtime data, such as archives, are not adapted on the target computer. The computer name of the source computer and not that of the target computer is displayed when selecting archives in "Trends and Alarms". The computer name of the target computer is displayed in the selection field only after the archive has been reset in Alarm Logging and Tag Logging.

2.3 What is new in DataMonitor V7.0?

Introduction

The following chapter informs you in brief about the most important novelties in WinCC/DataMonitor V7.0 as compared to WinCC/DataMonitor V6.2.

Overview

SIMATIC WinCC/DataMonitor is a component of SIMATIC WinCC/Plant Intelligence. You can use DataMonitor to provide data from the process level in the Office world.

WinCC/DataMonitor offers you a collection of powerful functions for displaying and analyzing production data. You thus have direct access to production data via Intranet or Internet. You can efficiently monitor and analyze production lines and create reports.

Extended user administration

WinCC DataMonitor 7.0 offers the following

- Creating WebCenter pages in directories within the WebCenter
- Access rights of Windows user groups for directories in the WebCenter

This makes user group-specific viewing possible on the WebCenter.

You can also get information about the highlights of the new version in the DataMonitor V7.0 and in the Internet.

Excel Workbook

"Excel Workbook" is an add-in for Microsoft Excel. The Excel Workbook replaces the earlier "Dat@Workbook".

Excel Workbook offers, amongst other things, the following functions:

- Simple, menu-driven creation of reports.
- Direct access to WinCC data via MS Excel or Internet Explorer.
- VBA interface to integrate Excel Workbook in own applications.
Reports

The component "Reports" allows you to configure and run report templates in Internet Explorer. The created reports can be distributed via e-mail or Download in Internet Explorer. Reports offers, amongst other things, the following functions:

- Creation of templates in DataMonitor Excel Workbook or WinCC Reports.
- Event-driven or time-based generation of reports: hourly, daily, weekly, monthly.
- Generation of PDF files using WinCC Report Templates.
- Saving reports or sending them via e-mail. You thus have the choice of saving information as public reports that can be accessed by all or personal reports for information of specific persons.

Process Screens

"Process Screens" are used for observing and navigating using WinCC process screens using Microsoft Internet Explorer. Thus on the server-side, DataMonitor uses the same mechanisms as the WinCC Web Navigator but works as View Only client.

You can thus use Process Screens to implement the new functions of WinCC Web Navigator and the functions of Basic Process Control. Similar to the basic system, you can use standard functions, global C tags and images with own header files in C-scripts as well as in the web client.

"Process Screens" replace the earlier "Dat@Symphony".

Trends and Alarms

"Trends and Alarms" are used to display and analyze historical data from WinCC Runtime, from central archive server (WinCC CAS) or from WinCC long-time archive servers. "Trends and Alarms" replaces the earlier "Dat@View".

Trends and Alarms offers amongst other things, the following functions:

- Display data in tables and diagrams.
- Multiple x-axes and y-axes for maximum of three axes.
- Configurable relative time ranges.

Web center

Webcenter allows central access to production-related data via the Internet/ Intranet. Different view of the WebCenter are possible based on the access rights of the user this way.

WebCenter offers, amongst other things, the following functions:

- Templates for a uniform basic structure.
- Access to swapped out WinCC archives, to WinCC runtime and to WinCC CAS.
- Combination of different views, for e.g. for management or maintenance engineer.
- Data comparison via different time periods.
You can use Webparts to design the desired contents of a Webcenter page. You do not need to possess any programming knowledge to use these special tools. You can use the Webcenter without download or installation.

Licenses

With the new license for one client you can integrate one station for evaluation and observation in the system as part of a Web Navigator Client.

2.4 Service and Support

2.4.1 Warnings

Safety notes

This manual contains information that must be observed to ensure your personal safety and to prevent property damage. Notices referring to your personal safety are highlighted in the manual by a safety alert symbol; notices referring to property damage only have no safety alert symbol. Depending on the hazard level, warnings are displayed in a descending order as follows:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="DANGER" /></td>
<td>means that there can be severe physical injury or even death if the corresponding safety measures are not followed.</td>
</tr>
<tr>
<td><img src="image" alt="WARNING" /></td>
<td>means that there can be severe physical injury or even death if the corresponding safety measures are not followed.</td>
</tr>
<tr>
<td><img src="image" alt="CAUTION" /></td>
<td>means that there can be slight physical injury if the corresponding safety measures are not followed.</td>
</tr>
<tr>
<td><img src="image" alt="CAUTION" /></td>
<td>means that there can be damage to property if the corresponding safety measures are not followed.</td>
</tr>
</tbody>
</table>
NOTICE

means an undesirable result or state can occur if the corresponding instruction is not followed.

Note

is an important information about the product, the way to handle the product or the respective part of the documentation and we wish to especially bring this to your notice.

If multiple levels of hazards can occur, the warning is always displayed with the highest possible level. If a warning with a warning triangle is to be indicate physical injury, the same warning may also contain information about damage to property.

Qualified Personnel

The corresponding machine/ system may only be set up and operated with the help of this documentation. A device/system must only be commissioned and operated by qualified personnel. Qualified persons in the sense of safety instructions in this documentation stand for persons who are authorized to operate, earth and mark machines, system and electrical circuits according to safety standards.

Proper use

Please observe the following:

WARNING

The machine may only be used for the application instances that have been described in the technical description and only in combination with third-party devices and components recommended and/or approved by Siemens. Smooth and safe operations demand proper transport, proper storage, installation and assembling as well as careful operations and maintenance.

Brands

All designations with the trademark symbol ® are registered trademarks of Siemens AG. Other designations in this documentation may be trademarks whose use by third parties for their own purposes can violate the rights of the owner.

Disclaimer of liability

We have checked the contents of the description to ensure that it matches with the hardware and the software it describes. Nevertheless, we cannot assume responsibility for any
deviations that may arise. The details outlined in this description are checked regularly and the required corrections are done in the subsequent editions. Suggestions for improvement are welcomed.

The statements in the online documentation are more binding than the statements in the manuals and PDF files.

Please follow the Release Notes and Installation Notes. The information in these Release Notes and Installation Notes has priority over that in the manuals and online help with regard to legal validity.

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Siemens AG
Automation and Drives
SIMATIC Human Machine Interfaces
P.O. Box 4848
D-90327 Nuremberg, Germany

2.4.2 Customer Support

Customer Support and Technical Support

Accessible from anywhere in the world - at any time! The languages used by the SIMATIC hotlines are German and English. Authorization hotline support is also available in French, Italian and Spanish.

Technical support

Nuremberg (GMT +1:00)
Service Hours Monday - Friday, 7:00 to 17:00 (Local Time)
Phone +49 (180) 5050-222 (0.14 €/min from German landlines),
cell phone prices vary.
Fax +49 (180) 5050-223
E-mail http://www.siemens.com/automation/support-request (http://www.siemens.com/automation/support-request)
SIMATIC Customer Support Online Services

SIMATIC Products

Go to the following URL for additional information about SIMATIC products:


Product Information and Downloads

You can get the latest product information and downloads useful for your application on the Internet at the following URL or on the Bulletin Board System:


Contact person database

To contact your local agent, search our contact database at the following URL:


Technical documentation for SIMATIC products

You can find a guide to the technical documentation provided for individual SIMATIC products and systems at the following URL:


Up-to-Date Information for WinCC

SIMATIC WinCC

Go to the following URL for additional information about WinCC products:

- http://www.siemens.com/wincc (http://www.siemens.com/wincc) (in English)

WinCC Online Support and FAQs

WinCC Online Support with information on FAQs (Frequently Asked Questions) and replacement parts as well as Tips & tricks may also be found in the Internet under:
2.4 Service and Support

There, you find for example downloads of firmware updates, service packs and useful utilities.

See also

Technical Support: E-mail (http://www.siemens.com/automation/support-request)
Internet: SIMATIC Products (http://www.siemens.com/simatic)
Internet: WinCC FAQs (http://www.siemens.de/automation/csi/faq)
Internet (English): Technical documentation for SIMATIC products (http://www.siemens.com/simatic-tech-doku-portal)
Internet (English): Information about WinCC (http://www.siemens.com/wincc)

2.4.3 Support Request

Dear customer

In order to provide you with fast and effective support, please complete the error report online on the Internet. Describe the problem in as much detail as possible. We would appreciate if you would provide us with all project data, so that we can reproduce the error situation or shorten the turn-around time.

Before filling out the error report, check whether your configured quantity structure is within the range of tested quantity structures (see topic "Performance Data”).

Form for the error report

The error report form is available at URL:


When filling out the report, you will be guided through several steps, which will ask about all required information.
1. Open the "Support Request" form using the link on the Internet. Step 1 "Select product" is displayed:

2. Enter the project name in the "Product/Order number" box. Upper/lower case is not relevant. Search for parts of the product name or enter the full product name in the correct order. You can e. g. search for the following terms:
   - "WinCC Runtime"
   - "WinCC DataMonitor"
   - "wincc webnavigator"
   - "Connectivity"

   The found products are offered in the "Product selection" field.

3. Select the desired product and click on "Next" to switch to step 2 "Select use case".

4. Select a use case or describe your specific use case in the "Other use case" field.

5. Press "Next" to switch to step 3 "Our solutions".
   Suggested solutions and FAQs for the selected key words are listed. The search terms in the "Your search term" field can be modified in any manner.

   Once you have found a suggested solution for your problem, you can close the form in the browser.

   If you did not find any applicable suggested solutions, press "Next" to switch to step 4 "Describe problem".

6. Describe your problem as exactly as possible in the "Details" field.

   Pay particular attention to the following questions and comments. Please also check the WinCC installation and configuration with regard to the following references.

   If you have any idea what has caused the error, please let us know. No detail should be omitted, even if you consider it unimportant.
   - Was the configuration data created with older WinCC versions?
   - How can the error be reproduced?
   - Are other programs running simultaneously with WinCC?
   - Have you deactivated the screen saver, virus checker and power management function?
   - Search the computer for log files (WinCC\Diagnose\*.log, drwatson.log, dwtsgn32.log).

   The log files are needed for error analysis. Thus, be sure to send the log files as well.

7. Use the "Search" button to upload your affected project and the log files (e. g. as a Zip file) to the error report.

   Press "Next" to switch to step 5 "Provide contact information".

8. Enter your contact information.

   Read the privacy notice and choose whether your personal data should be permanently saved.

   Press "Next" to switch to step 6 "Summary & Send".

9. Press the "Print" button if you would like to print the error report.

   Close the error report by clicking on the "Send" button.

   Your data will be transmitted to Customer Support and processed there.

   Thank you for your cooperation. We hope that we can be of assistance in solving your problems.

Your WinCC Team
See also

Error report (http://www.siemens.com/automation/support-request)
3 Resources

3.1 Getting Started for DataMonitor

Overview

SIMATIC WinCC/DataMonitor provides a collection of analysis tools for the interactive data display and the analysis of current process statuses and historical data. The DataMonitor client is a pure display and evaluation system for process values from WinCC or data from the WinCC long-term archive server.

WinCC DataMonitor includes the following functions and analysis tools that can be selected depending on the application:

- The function "Process Screens" is used exclusively for monitoring and navigating using WinCC process pictures with MS Internet Explorer as the so-called "View Only Client". On the server-side, the DataMonitor utilizes the same mechanisms as the WinCC Web Navigator, e.g. for the communication, user management and displaying of graphical data.

- The function "Webcenter" serves as the center for different settings, such as connection configuration and the creation and management of web center sites. The user can assemble and save the displayed objects of DataMonitor, the so-called web parts, as screen views.

- The function "Trends and Alarms" is used for the display and analysis of historical data from the WinCC Runtime / central archive server or from WinCC long-term archive servers. The data can be displayed in tables and diagrams.

- The function "Excel Workbooks" is a tool that integrates messages, archive data and current process values from WinCC in MS Excel, supporting online analyses. The created Excel workbooks can be published and made available to the Intranet/Internet. For the function "Reports", Excel workbooks can be published as templates for the creation of reports with WinCC data.

- The function "Reports". The user can trigger report with time control or event control, based on print jobs in PDF format or by published Excel workbooks. This also allows for statistics and analyses of certain process data or historical data.

Since the DataMonitor builds on the WinCC Web Navigator, the entry "Web Navigator" will appear in the WinCC Explorer following the installation of the DataMonitor.
3.2 Preparations

Introduction
With the documentation "Getting Started" you will get an overview of the configuration and functions of WinCC DataMonitor.

Configuration
For the Getting Started, you will implement a WinCC single user system, on which the DataMonitor server will be installed. In order to access the data and display them with the DataMonitor client, the client is started on the DataMonitor server in "Getting Started".

Installing DataMonitor
You will need a processor with the following software installed:
- "Internet Information Service IIS". The presence of IIS is checked when the DataMonitor server is installed.
- WinCC V7.0
- WinCC DataMonitor Server V7.0
- WinCC DataMonitor Client V7.0

Please see the installation notes of WinCC and the chapter "Installing WinCC DataMonitor" in the WinCC DataMonitor documentation.

Licensing
Licensing is done with the help of the "Certificate of License (CoL)" document and the so-called "WinCC DataMonitor (xx)" license key. The license key is transferred to the DataMonitor server and licenses (xx) number of DataMonitor clients. The "Automation License Manager" program is used to manage the licenses.

Demo Project
For the Getting Started of DataMonitor, you will implement the demo project of WinCC Web Navigator V7.0. The demo project is located on the installation CD.

Copy the installation file "Webdemoproject.exe" of the demo project from the installation CD from the directory "DemoProject" to a local drive of the DataMonitor server. Start the installation by double-clicking on the file and follow the instructions.
3.3 Goal of Getting Started for WinCC DataMonitor

Goal of WinCC DataMonitor - Getting Started

After installing DataMonitor server and client and the demo project, this description will help you become familiar with the functions of the WinCC DataMonitor.

- For this, the chapter "Configuration" describes the necessary configuration steps for all DataMonitor functions.
- The chapter "Use of WinCC DataMonitor" introduces the different functions. The documentation of WinCC DataMonitor shows a detailed description.

The sequence of the subjects in Getting Started was selected to allow functions. When introducing the functions, the DataMonitor client is started on the DataMonitor server.

3.4 Configuration

3.4.1 Defining Users and Access Rights in Windows

Introduction

When using DataMonitor, different authentications are required. Therefore, the users with certain user rights must be defined.

- For the functions "Process Screens" and "Excel Workbooks", a user is required in the WinCC project.
- For the functions "Trends and Alarms", "Reports" and "Webcenter", a user in the Microsoft Windows operating system is required.

This section describes the configuration of the user and certain user rights in Windows.

User groups that are set up as defaults for using DataMonitor

The following user groups are created automatically in Windows when the DataMonitor server is installed:
• "DM_Admin"
  The membership in the user group "DM_Admin" is required for extended rights, especially for configuration purposes. You must create at least one user and assign the user group "DM_Admin".
  – Therefore, the connection configuration and the creation of templates for Web Center pages are possible in the function "Webcenter"; as well as the creation and configuration of public and private Web Center pages.
  – In the function "Reports", reports can be configured on the basis of print jobs or Excel workbooks.

• "DM_User"

Your own user groups for using of DataMonitor

The membership in the user group "DM_User" or in your own user group is required for the functions "Webcenter", "Trends and Alarms" and "Reports".

• In the function "Webcenter", the setting and configuration of private Web Center pages are possible. The WebCenter pages can be created in different directories.

• Public pages can only be opened.

• In the function "Reports", reports can be opened on the basis of print jobs or Excel workbooks.

You can set up access for the members of the user groups according to the respective requirements. You store the contents in directories within the WebCenter. Members of the user group "DM_Admin" create the directories and assign the desired access rights to these directories for the individual Windows user groups.

In function "Trends and Alarms", pages can be configured for the respective users.

Note

Depending on the use of the functions of the DataMonitor, you might have to log in twice, for authentication purposes as a WinCC user as well as a DataMonitor user. Two alternatives exist for allowing a one-time logon for a user:

1. The DataMonitor user and the WinCC user are identical regarding their name and password. This user must be configured in Windows and in WinCC.

2. SIMATIC logon allows the central administration of users. In order to use SIMATIC logon in connection with DataMonitor, DataMonitor users must added to the user group "SIMATIC HMI VIEWER".

The following procedures describe how to create a new user and to assign a user group using the user group "DM_Admin" as an example.
Procedure - Creating users and assigning the user group "DM_Admin" using Windows XP as an example

1. From the Windows start menu, select the "Settings" > "Control Panel" menu command. The "Control Panel" dialog opens.
2. Double-click the "Administration" entry.
4. Navigate to the directory "System > Local Users and Groups / Groups" in the navigation directory. Open the shortcut menu and select the "New User..." command.
5. Enter a name such as "DM_demo_windows" in the dialog "New User" in the "User Name" field. Enter a description such as "User for DataMonitor" in the "Complete Name" field. Type the desired password into the "Password" field and then repeat it in the "Repeat Password" field. Create the user with "Create". Close the "New user" dialog.
6. Click "Groups" in the navigation directory. You must assign the new user to the group "DM_Admin" so that the configurations are possible in the function "Webcenter".
7. In the right part of the table window, click the "DM_Admin" group. Open the shortcut menu and select the "Add Member..." command. Click the "Add..." button in the dialog "Properties of the DM_Admin".
8. Check the entry in the "Search Path" field in the next dialog. If the computer name, where the new user was created, is not listed there, click on "Paths..." and select the correct computer.
9. In the field "Enter the object name to be used", enter the name of the new user, such as "DM_demo_windows". Close the dialog by clicking "OK".
10. The new user will be displayed in the list in the dialog "Properties of DM_Admin". Close the dialog by clicking "OK".
11. Close the dialog "Computer Management" with the menu command "File > Exit".
12. Close the dialog "Management" with the menu command "File > Close".

Result

A user, such as "DM_demo_windows" with a membership in the user group "DM_Admin" has been set up.
3.4.2 Defining user and access rights in the WinCC Project

Introduction

When using DataMonitor, different authentications are required. Therefore, the users and certain user rights must be defined.

- For the functions "Trends and Alarms", "Reports" and "Webcenter", a user in the Microsoft Windows operating system is required.
- For the functions "Process Screens" and "Excel Workbooks", a user is required in the WinCC project.

This section describes the configuration of the user in WinCC Project.

Note

Depending on the use of the functions of the DataMonitor, you might have to log in twice, for authentication purposes as a WinCC user as well as a DataMonitor user. There are two alternatives available to allow a one-time logon for a user:

1. The DataMonitor user and the WinCC user are identical regarding their name and password. This user must be configured in Windows and in WinCC.
2. SIMATIC logon allows the central administration of users. In order to use SIMATIC logon in connection with DataMonitor, DataMonitor users must added to the user group "SIMATIC HMI VIEWER".
Procedure

1. Select the "User Administrator" entry in WinCC Explorer in the navigation window. Open the shortcut menu and select "Open". The editor "User Administrator" opens.

2. In the demo project, different user groups have already been created. In the navigation window, select a group such as "Clients".


4. Enter a name, such as "DM_Demo" into the "Log on" field. Type a password consisting of at least six characters into the "Password" field and then confirm this entry in the "Repeat" field. Confirm your entries with "OK."

5. Highlight the newly created user in the navigation window of the User Administrator. Activate the "Web Navigator" check box in the table window. The "Web Options" area is displayed.
6. Click the "..." button to the right of the "Startup Picture" field. The selection dialog for pictures will open. Select the startup picture, such as "StartManager.PD_" and click "OK".

7. Check the selected language in the "Language" field and change this setting if desired using the "..." button. Only languages that have been installed in WinCC are available for selection.

8. The user needs at least the authorization "1002 - WebAccess - observe only!". Assign this authorization by double-clicking the column "Release" in the table window in the line of this authorization. A red dot indicates the activated authorization.

9. Close the "User Administrator" by selecting "File > Close".

Result
A user, e.g. "DM_Demo", is set up in the WinCC Project.

3.4.3 Configuring settings using Web Configurator

Introduction
For the use of the WinCC DataMonitor, the data and process screens are made available on the DataMonitor server to be accessed and displayed on the DataMonitor client. For this, different settings are made with the Web Configurator and certain data, such as the process screens, are published via the Web View Publisher.

In this step, the settings are described using the Web Configurator.

Procedure
1. Select the "Web Navigator" entry in WinCC Explorer in the navigation window. Open the shortcut menu and select "Web Configurator". This starts the WinCC Web Configurator.

2. In the "Welcome to the configuration of the internet information server" dialog, click "Next".
3. When starting the Web Configurator for the first time, the following dialog will be opened, giving you two choices. Select the option "Create a new standard web page (standalone)". Click "Next".
4. In the following dialog, the field "Web page name" with the text "WebNavigator" is assigned.
Select the IP address of the DataMonitor server in the "IP Address" field.
Select "DataMonitor.asp" as the standard web page.
Click "Next".
If the button "Next" is deactivated, the Windows firewall is not active on the computer. In this case, click on "Complete" and continue with step 9.

**Note**
If the Windows firewall is deactivated on this computer, you should contact your network administrator and check why this setting was selected and whether the safety guidelines are correct.
5. Click "Windows firewall" in the "Configuring the Windows firewall" dialog.

6. The "Windows Firewall" dialog will open. Select "LAN connection" on the "Advanced" tab. Click "Settings". Activate the "Webserver (HTTP)" entry in the list in the dialog "Advanced settings". With the first-time activation, the dialog "Service Settings" will open. Check the settings and confirm them by clicking "OK".

7. Click "OK" to close the "Advanced Settings" dialog. Close the "Windows Firewall" dialog by clicking "OK".

8. Click "Finish" in the "Configuring the Windows firewall" dialog.

9. The Web Configurator executes different settings and shows the respective messages.

10. After completing this process, the message "Inetinfo parameters set. It is recommended to restart the computer" will be displayed. Confirm the entry by clicking "OK".

11. Close the WinCC Explorer and restart the computer.

Result

The configuration of the DataMonitor server will be completed.
3.4.4 Publishing process screens using Web Publisher

Introduction

For the use of the WinCC DataMonitor, the data and process screens are made available on the DataMonitor server to be accessed and displayed on the DataMonitor client. For this, different settings are made with the Web Configurator and certain data, such as the process screens, are published via the Web View Publisher.

This step describes the publishing of the process screens using the Web View Publisher.

Procedure

1. Select the "Web Navigator" entry in WinCC Explorer in the navigation window. Open the shortcut menu and select "Web Publisher". This starts the WinCC Web View Publisher.

2. The "Select files and folders" dialog is displayed.

   Check the displayed path to the WinCC project and the folder for the web access. The path to your WinCC project will be displayed as "<Project path> \ <Project name>". The folder for the web access will be displayed as "<Project path> \ <Project name> \ WebNavigator". If required, you can change another path via the "..." button.

   ![WinCC Web Publishing Wizard - Select directories]

   Click "Next".
3. In the dialog "Select pictures", click the ">>" button to select all files.

Click "Next".
4. The "Select functions" dialog is displayed. Via ">"., select the C Project Functions that are to be published.

Click "Next".
5. The "Referenced graphics" dialog is displayed. Select the graphics referenced in the process screens (*.PDL) that you would like to publish (e.g. bitmaps).

Click "Next".

6. Click "Finish" in the Dialog "Exit" to publish the pictures.

7. After the process is completed, an appropriate message is displayed. Confirm the entry by clicking "OK".

8. To exit the Web View Publisher, click "Finish".

Result

The process screens are now published.

3.4.5 Publishing Process Pictures for the WebCenter

Introduction

The web part "Show Process Screen" shows the process pictures. The DataMonitor server creates graphics from the process pictures in a definable cycle and provides them to the client. Only process pictures of the DataMonitor server can be displayed in a web part.

The process pictures cannot be operated.

The following settings apply to all process pictures:
Cycle

Note
Select the size corresponding with this cycle. Performance problems may occur with cycles that are too small.

In order to display a process picture within the web part "Show Process Screen", the desired process pictures must be published.

Publishing the process pictures requires that the process pictures have already been published with the Web View Publisher. For additional information on this topic, please refer to chapter "".

This chapter describes how you publish process pictures for the WebCenter.

Procedure

1. Select the entry "Web Navigator" in the navigation window of the WinCC Explorer. Open the shortcut menu and select "Web Settings".
2. Switch to tab "WebCenter".
3. Select a process picture in the "Name" field.
4. Select the desired language.
5. To display only a portion of the process picture, enter the following in pixels in the "Zoom area" area:
   - Start positions in x direction
   - Start positions in y direction
   - Height
   - Width
6. To add the process picture for the publishing procedure, click on the "Add" button.
7. In order to output a time, at which the graphic for the process picture has been created by the server, activate "Time stamp".
8. In order to change the update cycle, enter the desired value in "Update time interval".
9. Repeat steps 3 to 8 for all the process pictures you want to publish.
10. Start the publishing process with "OK".

Result

The process pictures are published for the WebCenter.
3.4.6 Determine settings for reports on the DataMonitor server

Introduction

To create and use template files in PDF format for the "Reports" function, the option "Report Runtime" must be activated in the startup list of the WinCC project on the DataMonitor server.

Requirements

- The WinCC project must be deactivated on the DataMonitor server.

Procedure

1. Open the WinCC project on the DataMonitor server. Select the entry "Computer" in the navigation window of WinCC Explorer. Click the displayed computer of this project in the right window. Select the "Properties" menu command in the context menu. The "Computer properties" dialog is displayed.
2. Switch to the "Startup" tab. Activate the option "Report Runtime" in the table "WinCC runtime start up order".
3. Close the dialog by clicking "OK". Close the WinCC project on the DataMonitor server.

Result

The option "Report Runtime" in the startup list of the WinCC project on the DataMonitor-Server is required to use Reports.

3.5 Using WinCC DataMonitor

3.5.1 Configuring security settings in Internet Explorer

Introduction

In order to have the full functionality available on the DataMonitor Client, you have to adapt the security settings in the Internet Explorer.

Procedure

1. Click "Tools" > "Internet Options" in the Internet Explorer.
2. Switch to the "Security" tab in the dialog "Internet Options".
3. Select the "Trusted Sites" icon and click the "Sites..." button. The "Trusted Sites" dialog opens.
4. Enter the address of the DataMonitor server in the "Add this Website to the zone" field. Possible formats and wildcards include "*://157.54.100 - 200", "ftp://157.54.23.41", or "http:// *.microsoft.com".

5. Deactivate the "Require server verification (https:) for all sites in this zone" check box. Click "Add". Confirm the entry by clicking "OK".

6. Select the "Trusted Sites" icon.

7. Click the "Standard level" button and then the "Custom Level" button. The "Security settings" dialog box is opened.
   - Activate the "Activate" option under "Initialize and script ActiveX controls not marked as safe".
   - Confirm the entry by clicking "OK".

8. Close the "Internet Options" dialog by clicking "OK".

Result

This completes all necessary settings of the DataMonitor client in the Internet Explorer.

3.5.2 Starting the DataMonitor homepage on the DataMonitor client

Introduction

The start page of the DataMonitor summarizes the functions of the DataMonitor.

- "Process Screens" to display process screens.
- "Webcenter" to configure connections and create publish web center pages for the display of archived data.
- "Trends and Alarms" for the display of messages and process values from archives in tables and diagrams.
- "Published Reports" for the creation and display of the reports.
- "Excel Workbooks" to display process and archive values in Excel workbooks.

In Getting Started, the DataMonitor client is started on the DataMonitor server.

Requirements

- The respective users have been set up under MS Windows and in the WinCC project and have been assigned the corresponding rights.
- The WinCC project on the DataMonitor server has been configured, published and activated for DataMonitor access.
Procedure

1. Open the MS Internet Explorer on the DataMonitor client.
2. Enter the name of the DataMonitor server in the format "http://<servername>" in the URL. Confirm the entry with "Enter".
3. The log-in dialog is opened. In the field "User name", enter the name of a user that exists in MS Windows, e.g. "DM_demo_windows". The user must be a member of the Windows user groups "DM_User" or "DM_Admin". Enter the respective password and confirm with "OK".
4. The start page with the DataMonitor functions will be displayed.

Result

The start page with the DataMonitor functions will be displayed on the DataMonitor client and the functions can be used.

3.5.3 Create connection and set up language

Introduction

For the DataMonitor client to access the data, a connection to the data source, which is supposed to be accessed, must be configured in "Webcenter".

A connection has to be created for each data source, e.g. the WinCC server, CAS or swapped archives. In the following description, a new connection will be created for Getting Started. The configured connection is required for example for the function "Trends and Alarms" and the webcenter page.
Requirements

- In order to configure a connection and create public web center pages in "Webcenter", the logged in user must be a member of the Windows user group "DM_Admin".

Procedure

1. Select the entry "Webcenter" on the DataMonitor start page. The "Webcenter" is displayed.
2. Select the entry "Administration". The "Connection Administration" page is displayed.

3. Select the option "New connection" in the view "Connection management". After the new installation, no selection is possible in the "Connection" field, as no connections have been configured yet.

4. Enter a name into the field "Connection name", e.g. "Con01_WinCCRuntime_Archives". The name can be selected freely; however, it should contain a hint to the selected connection type. Do not use spaces and special characters in the connection name.

5. Enter the computer name, whose data you would like to access, in the "Computer name" field.
6. Choose the desired option in the "Connection type" line. If you select "WinCC Runtime + Swapped archive" for instance, "CC_ExternalBrowsing" is automatically entered in the "Database" line.
   If you select the connection type "WinCC Runtime" or "CAS", you must indicate the Runtime database of the activated WinCC project.
   You can only recognize the name of the database on the WinCC server in the SIMATIC shell.
   For this, select the computer name of the WinCC server or CAS to be connected. Click the entry of the opened WinCC project in the right field. In the "DSN" field, the database name will be displayed.
   Supplement this database name with the character "R" at the end. Enter this name in the line "Database" in the format: "CC_<project name>_<date>R".
7. Click the "Create" button. The connection will now be created and the status of the procedure can be seen at the progress display in the status line.
8. After completion of the process, the new connection will be displayed or can be selected in the field "Connection".

Result
A connection is configured to the data source that is being accessed.

3.5.4 Displaying process values and messages via "Trends and Alarms"

3.5.4.1 Overview of the function "Trends and Alarms"

Precondition
A link must have been configured in DataMonitor WebCenter to use the "Trends and Alarms" function.

Overview
"Trends & Alarms" offers the following functions for process values and messages:
- Displaying a process value in a table.
- Displaying a maximum of three process values in a diagram.
- Statistics functions for process values.
- Hit list for messages.
- Displaying messages in a table.
3.5.4.2 Displaying process values in a table

Introduction
With the function "Trends & Alarms", display and analysis functions for archived process values and messages are possible.
This section describes the display of process values in a table.

Procedure
1. Select the entry "Trends & Alarms" on the DataMonitor start page.
   The overview with the options of "Trends & Alarms" is displayed.
2. Click the entry "Process value table" in the menu bar.
   The "Process value table" is displayed.
3. Click 🏷.  
The configuration dialog of the Web part opens.
### PROCESS VALUE TABLE

<table>
<thead>
<tr>
<th>Process value table</th>
<th>Trend (process values)</th>
<th>Alarm table</th>
<th>Hit list of alarms</th>
<th>Statistics functions for process values</th>
</tr>
</thead>
</table>

#### Process value table
- **Heading**: Process value table
- **Tooltip**:

#### Value selection
- **Link**: Con01.WinCCRuntime
- **Archive selection**: ProcessValueArchive
- **Tags filter**: trend
- **Select tags**

#### Selecting a tag
<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add ProcessValueArchiveTrend_1</td>
</tr>
<tr>
<td>Add ProcessValueArchiveTrend_2</td>
</tr>
<tr>
<td>Add ProcessValueArchiveTrend_3</td>
</tr>
</tbody>
</table>

**Current selection:** ProcessValueArchiveTrend_0

#### Time frame

Relative period
- **Years**
- **Months**
- **Days**
- **Hours**
- **Minutes** -10
- **Seconds**

Absolute period
- **From**: 0
- **To**: 0

**Preview time range**: 10/10/2008 7:41:04 AM to 10/10/2008 7:43:04 AM

#### Display of decimal places
- **Decimal places**: 2

#### Table size
- **Height in Pixel**: 300
- **Width in Pixel**: 300

---

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4. In the section "Process value table", you can enter a different title in the field "Heading" and you can add a brief tip in the field "Tooltip".

5. Select one of the configured connections, such as "Con01_WinCCRuntime" in the section "Value selection" in the field "Connection". The archive tags available via this connection will be displayed. You can limit the number of tags displayed using the "Archive selection" and "Tag filter" fields. Select a value, such as "TREND_0".

6. In the section "Time frame", select the time span from which the process values are to be displayed.
   With relative times, enter a negative value into the respective field.
   So, for example, to display the values of the past 10 seconds, you would activate the option in the column "Seconds" and in the line "Relative time frame". Enter the value "-10" into the column "Seconds" in the row "From".
   Click the "Preview" button. In the column "Preview time frame", the selected time span with date and time will be displayed.

7. In the "Displaying decimal places" section, you can select the number of decimal places when displaying numerical values such as "2".

8. In the "Table size" area, define the size of the display window. For example, enter a height of "200" and a width of "400". If the value "0" is entered into both fields, the size will be determined automatically.

9. The names of the WebCenter pages that are available are shown in the "Links to WebCenter Pages" area. No configuration is required for this example in this area.
10. Click "OK" to display the available values in the table.

11. In order to change the settings, go back to step 3 and repeat the respective settings.

Result

The process values are displayed in a table.

3.5.4.3 Displaying process values in a diagram

Introduction

With the function "Trends & Alarms", display and analysis functions for archived process values and messages are possible.
This section describes the display of the trends with a maximum of three value axes and three time axes in a diagram, the so-called trend display.

**Procedure**

1. Select the entry “Trends & Alarms” on the DataMonitor start page.
2. Click the entry "Trend (process values)" in the menu bar. The Web part "Trend (process values)" is displayed.
3. Click \( \text{F6} \).
   The configuration dialog of the Web part opens.
### Trend (Process Values)

**Process value table**

<table>
<thead>
<tr>
<th>Trend (process values)</th>
<th>Alarm table</th>
<th>Hit list of alarms</th>
<th>Statistics functions for process</th>
<th>Process value table</th>
<th>Trend (process values)</th>
<th>Alarm table</th>
<th>Hit list of alarms</th>
<th>Statistics functions for process</th>
</tr>
</thead>
</table>

**Value selection**

- **Link:** Con01.WinCCRuntime
- **Archive selection:** ProcessValueArchive
- **Tags filter:** trend

**Current selection:**

- **ProcessValueArchive\_Trend\_0**
  - **Connect trace points in a linear fashion (no trace points):**

**Value axis editor**

<table>
<thead>
<tr>
<th>Value axis 1</th>
<th>Value axis 2</th>
<th>Value axis 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic scaling</td>
<td>Automatic scaling</td>
<td>Automatic scaling</td>
</tr>
<tr>
<td>Minimum value</td>
<td>Minimum value</td>
<td>Minimum value</td>
</tr>
<tr>
<td>Maximum value</td>
<td>Maximum value</td>
<td>Maximum value</td>
</tr>
</tbody>
</table>

**Time frame**

- Year
- Month
- Day
- Hour
- Minute
- Second
4. In the section "Trend (process values)", you can enter a different title in the field "Heading" and you can add a brief tip in the field "Tooltip".

5. Select one of the configured connections, such as "Con01_WinCCRuntime" in the section "Value selection" in the field "Connection". The archive tags available via this connection will be displayed. You can limit the number of tags displayed using the "Archive selection" and "Tag filter" fields.
   - Select three values, such as "TREND_1", "TREND_2", "TREND_3". To the right of the name of the process values, you can determine the color of each trend.
   - To do this, click the colored field and select the desired color in the opening selection dialog. Besides the names, you can also assign the time and value axes, and the form of the trend display.
     In this example, all settings remain on "Time axis 1" and "Value axis 1", and the "Connect trend points linearly (no trend points)".

6. In the section "Value axis editor", you can activate the automatic scaling for the different value axes or you can assign a minimum and a maximum value to each axis. In this example, the automatic scaling remains activated for all value axes.

7. In the section "Time frame", select the time span from which the process values are to be displayed.
   You will be able to define a specific time frame for each time axis. With relative times, enter a negative value into the respective field. So, for example, to display the values of the past 10 seconds, you would activate the option in the column "Seconds" and in the line "Relative time frame". Enter the value "-10" into the column "Seconds" in the row "From". In this example, only the "Time axis 1" is used; therefore, the entry must be made only in this section of the table.
   Click the "Preview" button. In the column "Preview time frame", the selected time span with date and time will be displayed.

8. In the section "Diagram settings", you can define the size of the display window. The fields have been preassigned certain values. If needed, you can edit these values respectively. Activate the option "Show legend".

9. The names of the WebCenter pages that are available are shown in the "Links to WebCenter Pages" area. No configuration is required for this example in this area.
10. Click "OK" to display the selected values in the diagram.

The legend shows the assignment of the colors to the archive tags. Skip forward or back by the selected time frame in the absolute time using the and buttons. Enlarge the display and you can zoom into the diagram area to the left and right of the center line using the "Zoom left" and "Zoom right" buttons. With the button, the original view is restored.

Export the table displayed in CSV format using the icon.

11. In order to change the settings, go back to step 3 and repeat the respective settings.

Result

The selected process values are displayed as trends in a diagram.
3.5.4.4 Displaying the hit list of messages

Introduction

With the function "Trends & Alarms", different analysis functions for archived process values and messages are possible.

This subject describes the analysis of messages in a hit list.

Procedure

1. Select the entry "Trends & Alarms" on the DataMonitor start page. The overview with the options of "Trends & Alarms" is displayed.
2. Click the entry "Hit list of alarms" in the menu bar. The so-called web part "Hit list of the alarms" is displayed.
3. Click ☰. The configuration dialog of the web part is opened.
4. In the section "Hit list of the alarms", you can enter a different title in the field "Heading" and you can add a brief tip in the field "Tooltip".

5. Select one of the configured connections, such as "Con01_WinCCRuntime" in the section "Connection selection" in the field "Connection".

6. In the section "Time frame", select the time span, from which the messages are to be displayed. With relative times, enter a negative value into the respective field. So, for example, to display the messages of the past 10 seconds, you would activate the option in the column "Seconds" and in the line "Relative time frame". Enter the value "+10" into the column "Seconds" in the row "From".
   Click the "Preview" button. In the column "Preview time frame", the selected time span with date and time will be displayed.

7. In the section "Language of the alarm texts", select the language, in which the messages are to be displayed.

8. You can select a corresponding WinCC server in the section "Selection of the WinCC Server". In this example, only the server that is configured in the connection, is displayed.

9. In the section "Filter selection", you may limit the expected search results by means of filter conditions in SQL syntax. Here, filter conditions for individual columns can be specified or in the field "Expanded filter", a filter condition for all columns. In this example, you will not set any filter conditions.

10. In the section "Sorting conditions", you can define the sorting of the output data (if needed) in the field "Sorting order". In this example, no entry is necessary.

11. In the section "Visible columns", click on "Select all" to display all possible analysis values for the messages.

12. In the "Displaying decimal places" section, you can define the number of decimal places when displaying numerical values such as "2".

13. In the section "Table size", you can define the size of the display window. The fields have been preassigned certain values. If needed, you can edit these values respectively.

14. The names of the existing public or private WebCenter pages are displayed in the "Configuration Favorites" area. No configuration is required for this example in this area.
15. Click "OK" to display the messages in the selected time range and the defined conditions.

The table contains configured data, e.g. "InfoText" and statistical values, e.g. frequency of message, cumulated duration for "Message came in" to "Message went out". You will receive explanations for the columns as a tool tip when pointing the mouse to the respective column header.

With the arrow keys you can skip to the other pages with multi-page tables.

With the icon , the values of the displayed analysis values of the messages can be exported into the CSV format.

16. In order to change the settings, go back to step 3 and repeat the respective settings.

Result

The analysis values for the messages are displayed in a hit list.

3.5.4.5 Displaying messages in the alarm table

Introduction

With the function "Trends & Alarms", different analysis functions for archived process values and messages are possible.

This subject describes the display of messages in an alarm table.
Procedure

1. Select the entry "Trends & Alarms" on the DataMonitor start page. The overview with the options of "Trends & Alarms" is displayed.

2. Click the entry "Alarm table" in the menu bar. The so-called web part "Alarm table" is displayed.
3. Click 🎨. The configuration dialog of the web part is opened.

4. In the section "Alarm table", you can enter a different title in the field "Heading" and you can add a brief tip in the field "Tooltip".

5. Select one of the configured connections, such as "Con01_WinCCRuntime" in the section "Connection selection" in the field "Connection".

6. You can select a corresponding WinCC server in the section "Selection of the WinCC Server". In this example, only the server that is configured in the connection, is displayed.

7. In the section "Time frame", select the time span, from which the messages are to be displayed. With relative times, enter a negative value into the respective field. So, for example, to display the messages of the past 30 seconds, you would activate the option in the column "Seconds" and in the line "Relative time frame". Enter the value "-30" into the column "Seconds" in the row "From". Click the "Preview" button. In the column "Preview time frame", the selected time span with date and time will be displayed.

8. In the section "Language of the alarm texts", select the language, in which the messages are to be displayed.
9. In the section "Filter selection", you may limit the expected search results by means of filter conditions in SQL syntax. Here, filter conditions for individual columns can be specified or in the field "Expanded filter", a filter condition for all columns. In this example, you will not set any filter conditions.

10. In the section "Sorting conditions", you can define the sorting of the output data (if needed) in the field "Sorting order". In this example, no entry is necessary.

11. In the section "Visible columns", different columns have already been selected. Change the selection if necessary and add for example "Process text 1".

12. In the "Displaying decimal places" section, you can define the number of decimal places when displaying numerical values such as "2".

13. In the section "Table size", you can define the size of the display window. For example, enter a height of "200" and a width of "400". If the value "0" is entered into both fields, the size will be determined automatically.

14. The names of the existing public or private WebCenter pages are displayed in the "Configuration Favorites" area. No configuration is required for this example in this area.
15. Click "OK" to display the available values in the table.

With the arrow keys under the table, you can skip to the other pages with multi-page tables. Via the icon, the displayed table can be exported into the CSV format.

16. In order to change the settings, go back to step 3 and repeat the respective settings.

Result

The messages are output in a table.
3.5.4.6 Displaying statistics function for process values

Introduction

With the function "Trends & Alarms", different analysis functions for archived process values and messages are possible.

This section describes the use of statistics functions for process values.

Procedure

1. Select the entry "Trends & Alarms" on the DataMonitor start page. The overview with the options of "Trends & Alarms" is displayed.
2. Click the entry "Statistics functions for process values" in the menu bar. The Web part "Statistics functions for process values" is displayed.
3. Click 

The configuration dialog of the Web part is opened
WinCC / DataMonitor

STATISTICS FUNCTIONS FOR PROCESS VALUES

Process value table | Trend (process values) | Alarm table | Hit list of alarms | Statistics functions for process values

<table>
<thead>
<tr>
<th>Heading</th>
<th>Statistics functions for process values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tooltip</td>
<td></td>
</tr>
</tbody>
</table>

Value selection

Link: Con01 WinCCRuntime

Archive selection: ProcessValueArchive

Tags filter: trend

Select tags

Selecting a tag | Name
Add | ProcessValueArchive\nTrend_3

Current selection:

Remove | ProcessValueArchive\nTrend_0
Remove | ProcessValueArchive\nTrend_2
Remove | ProcessValueArchive\nTrend_1

Time frame

Relative period: Years: Months: Days: Hours: Minutes: Seconds: Preview time range

Absolute period: From: To: 10/10/2008 7:31:35 AM

Display of decimal places

Decimal places: 3

Aggregate selection

- Average value
- Standard deviation
- Minimum value
- Double standard deviation
- Maximum value
- Three times the standard deviation
- Variance
- Number

Select All | Do not select
4. In the section "Statistics functions for process values", you can enter a different title in the field "Heading" and you can add a brief tip in the field "Tooltip".

5. Select one of the configured connections, such as "Con01_WinCCRuntime" in the section "Value selection" in the field "Connection". The process values available via this connection will be displayed. You can limit the number of tags displayed using the "Archive selection" and "Tag filter" fields. Select several values, such as "TREND_1", "TREND_2", "TREND_3".

6. In the section "Time frame", select the time span from which the process values are to be displayed. With relative times, enter a negative value into the respective field. So, for example, to display the values of the past 10 seconds, you would activate the option in the column "Seconds" and in the line "Relative time frame". Enter the value "-10" into the column "Seconds" in the row "From". Click the "Preview" button. In the column "Preview time frame", the selected time span with date and time will be displayed.

7. In the "Displaying decimal places" section, you can select the number of decimal places when displaying numerical values such as "2".

8. In the section "Aggregate selection", select the analysis function, which is to be applied to the process values. For this example, click the "All" button.

9. In the "Table size" area, define the size of the display window. For example, enter a height of "200" and a width of "400". If the value "0" is entered into both fields, the size will be determined automatically.

10. The names of the WebCenter pages that are available are shown in the "Links to WebCenter Pages" area. No configuration is required for this example in this area.

11. Click "OK" to display the available values in the table.

You can export the displayed table in CSV format using the icon.

12. In order to change the settings, go back to step 3 and repeat the respective settings.
Result

Statistics functions for the selected process values were executed and output in the table.

View in the Web part "Statistics functions for process values".

The Web part displays the complete archive name and the tag name as a tool tip in the column header.

3.5.5 Displaying process screens with "Process Screens"

3.5.5.1 Overview of the function "Process Screens"

Overview

The function "Process Screens" of DataMonitor serves exclusively to monitor and navigate via the WinCC process screens with the MS Internet Explorer and is therefore a so-called "View Only Client".

The cursor is a "View Only Cursor" indicating that process-related operations are not allowed. Certain operations, such as opening the Properties dialog of an online trend control, are still possible.

Note

As a system feature, some operations that are actually disabled, are still possible on the DataMonitor client in the function "Process Screens", e.g. the entry into an I/O field. However, process-related access to the WinCC project is safely blocked by the DataMonitor server.

3.5.5.2 First starting process screens

Introduction

The function "Process Screens" of DataMonitor serves exclusively to monitor and navigate using the WinCC process screens with the MS Internet Explorer and is therefore a so-called "View Only Client". The DataMonitor client is used to display process screens.

This section describes the installation of the Web DataMonitor client on a client computer during the first start of Process Screens.

Requirements

- A "WinCC DataMonitor" license is installed on the DataMonitor server.
- The WinCC project on the DataMonitor server has been configured, published and activated for DataMonitor access.
Procedure

1. Select the entry "Process Screens" on the DataMonitor start page.
   The logon dialog opens.

2. In the "User name" field, enter the name of a user that is listed in the WinCC User Administrator, e.g. "DM_demo".
   The user must be assigned the system authorization 1002 - "Web Access - monitoring only!". Enter the respective password and confirm with "OK".
   The dialog for the installation of the DataMonitor client is displayed with the first start of "Process Screens".

3. Click the text "Click here to install" to start the installation.
   The query to execute the saving of the setup file is displayed.

4. Click the "Save" button. In the next dialog, select the directory in which the setup files are to be saved.

5. Leave the Internet Explorer open and open Windows Explorer. Navigate to the folder in which the Setup file was saved and start the setup by double clicking on the file. The file is now decompressed and the setup of the DataMonitor client starts.

6. Click "Next" in the next dialog.

7. Activate the option "I accept the terms of license agreement" in the dialog "License Agreement". Click "Next".

8. Enter the user name and organization in the "Customer information" dialog. Click "Next".

9. Select the "Complete" option in the "Setup type" dialog to install the components of the DataMonitor client. Click "Next".

10. Click the "Install" button in the next dialog.

11. Click the "Finish" button in the "InstallShield Wizard completed" dialog.

12. When the installation is completed successfully, the DataMonitor client connects to the activated WinCC project. The dialog "Download/Installation - DataMonitor Client Components" is displayed and shows the installed components with their version.

13. Click the "Process Screens" link.
   The published process screens to monitor and navigate are displayed.

Result

On the client computer, the DataMonitor client is installed and the process screens of the published WinCC project are displayed.

Note

As an option, you can install the DataMonitor client in the Download area. To do this, go to the Download area, start the installation and perform steps 4 to 11. The call the "Process Screens" function of the DataMonitor.

The cursor is a "View Only Cursor" indicating that process-related operations are not allowed. Certain operations, such as opening the properties dialog of an online trend control, are still possible.
As a system feature, some operations that are actually disabled can still be performed on the DataMonitor client in the "Process Screens" function, for example you can still enter information in an I/O field. However, process-related access to the WinCC project is safely blocked by the DataMonitor server.

3.5.5.3 Display process screens

Introduction

The function "Process Screens" of DataMonitor serves exclusively to monitor and navigate via the WinCC process screens with the MS Internet Explorer and is therefore a so-called "View Only Client".

In order to display the process screens on the DataMonitor client, the WinCC/Web Navigator client is used. The Web Navigator Client is installed during the initial start of "Process Screens". For further information, please see "Starting process screens for the first time".

In this subject, the display of the process screens via "Process Screens" on a client computer is described.

Requirements

- A "WinCC DataMonitor" license is required on the DataMonitor server.
- The WinCC project must be configured, published and activated on the DataMonitor server.

Procedure

1. Select the entry "Process Screens" on the DataMonitor start page.
2. If a user has already been logged into the DataMonitor client, no log-in dialog is displayed. Continue at step 4.
3. If no user has been logged into the DataMonitor client, the log-in dialog is displayed. In the field "User name", enter the name of a user that exists in the WinCC User Administrator, e.g. "DM_demo". The user must be assigned the authorization "1002 - DataMonitor - observe only!". Enter the respective password and confirm with "OK".
4. The DataMonitor client connects to the activated WinCC project and the published process screens to monitor and navigate will be displayed.

Result

The published process screens are displayed.
The cursor is a "View Only Cursor" indicating that process-related operations are not allowed. Certain operations, such as opening the Properties dialog of an online trend control, are still possible.

Note
As a system feature, some operations that are actually disabled, are still possible on the DataMonitor client in the function "Process Screens", e.g. the entry into an I/O field. However, process-related access to the WinCC project is safely blocked by the DataMonitor server.

3.5.6 Displaying process values in an Excel workbook

3.5.6.1 Overview of the function "Excel Workbooks"

Overview
With "Excel Workbooks" of the WinCC DataMonitor, it is possible to display messages and values of process or archive tags of a WinCC project in an Excel table. In addition to the current values, additional information, such as the time stamp or quality code of the tag, can be displayed. The WinCC data can then be further processed in Excel or be graphically prepared (e.g. mean value computation, diagram display) and summarized in a report. The access to the data is also possible via the Internet.

With the Excel Workbook Wizard, Excel-based reports for WinCC data can be published and made available to the Intranet/Internet.

The created Excel workbooks can also be configured as templates for the function "Reports".

Note
You need the DataMonitor client to use the "Excel Workbooks" function. You can find the installation file for the DataMonitor client in the Download area.

The configuration of this function is carried out with the following steps:

- Using the "Export Engineering Data" function, an XML file with the relevant data of the opened WinCC project is created on the WinCC computer. This procedure is used, if a separation between the process and the analysis is desired.
- Use the Excel add-in "Excel Workbook Wizard" to import project-relevant data in an Excel workbook and display the process data such as messages and tag values configured.
  The data can either be transferred from an XML file or a local WinCC project.
- The process data is displayed online in the Excel table via the Excel add-in "Excel Workbook". The values can also be further processed in Excel.
3.5.6.2 Configuring the display of process data in Excel

Introduction

With "Excel Workbooks", it is possible to display process data such as messages and values of process or archive tags in an Excel table on the DataMonitor client. Data of archive tags of swapped out archives is not displayed.

The Excel workbook is configured to display the process data using the Excel Workbook Wizard. The online display of the process data is performed via the "Excel Workbook" Excel add-in.

This chapter describes the example of the configuration of the display of the values of an online tag and an archive tag as well as a message window.

In the Excel workbook, each table cell configured for displaying a tag value or message window is assigned a short text and a comment. In the case of tag values, the short text is "AV" for archive tags and "OV" online tags.

In the comments, the source of the displayed values is shown in the format "WDWx_<nummer>_<variablenname>".

The values for x mean:
- A = Archive value
- O = Online value

With alarms, the short text "AL" and the comment are shown in the format "WDWL_<nummer>_<feldbezeichnung>".

Procedure

1. Open MS Excel and start the "Excel Workbook Wizard" via the icon in the toolbar.
2. In the dialog box, select an existing Excel workbook or select the option "New workbook".
   Deactivate the check box "Load configuration data from file" not to take the data from an XML file.
   If you start the "Excel Workbook Wizard" on a DataMonitor client, the check box "Create connection with WinCC server" is displayed. Activate the check box "Create connection with WinCC server" to have the current tags available during the tag selection.
3. Click "Continue >". The dialog "Add / delete tags" will open.

![Add/Delete Excel Workbook Wizard - tags](image)

**Add tags**
Select a tag from the tag tree and drag it onto your selected cell.
This process cannot be executed with groups. It is possible to select several tags and use Drag-and-Drop to insert them into the table.
- Insert group in vertical sequence
- Insert group in horizontal sequence

**Delete tags**
Delete either a line in the tag list or the comment in the cell.

**Change the properties of the tag display**
Double-click on the element in the variable list, or select the "Properties" in the shortcut menu.

<table>
<thead>
<tr>
<th>Tag</th>
<th>Cell</th>
<th>Update cycle</th>
<th>Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trend_1</td>
<td>Sheet1:8</td>
<td>On Update</td>
<td><a href="http://IAS">http://IAS</a></td>
</tr>
</tbody>
</table>

Check the option for the inserting sequence of tag groups and change these as needed, e.g. to "Insert groups in vertical sequence" in the section "Add tags".

4. In the "Tag tree" area, click the directory icon. The selection dialog for tags will open. Navigate in the directory structure and select the desired tag, e.g. "Trend_1". Drag this tag to a cell in the Excel table. Close the selection dialog by clicking "OK". The assigned tag will be displayed in the window "Tag list".

5. In the window "Tag list", highlight the tag and select the menu command "Properties" from its pop-up menu. The dialog "Tag properties" will be opened. Define further properties for the display of these tags in the table, e.g. the sorting of headers, time stamp, quality code. Activation of check box "Save as default" will save the settings. Settings in the area "Display in sheet" and in the "Additional Data" area for time stamp and quality code are not saved, though.
6. You can change the server name and configure the login via the pop-up menu "Server Settings".

You can set the login and the password via the pop-up menu in the "Server" column. A login will no longer be necessary if you check the option "Activate automatic login" when displaying process data online. This option makes sense for Reports via Excel Workbooks.

7. After that, close the dialog. If needed, the previous steps can be repeated to display further online tags. Multiple selection of tags is also possible in the "Tag list" window.
8. Click "Continue >". The dialog "Add/delete archive tags" will open.

9. Click on the button "Archive tree". The selection dialog for archive tags will open. Navigate in the directory structure and select the desired tag, e.g. the tag "T01" in the directory "Archive". Drag this tag to a cell in the Excel table. Close the selection dialog by clicking "OK". The assigned archive tag will be displayed in the window "Archive tag list".

10. In the window "Archive tag list", highlight the tag and select the menu command "Properties" from its pop-up menu. The dialog "Archive tag properties" will be opened. Define further properties for the display of these tags in the table, e.g. the insert sequence, data resolution, display time window. Activation of check box "Save as default" will save the settings. Settings in the area "Advanced display and position" for time stamp and quality code are not saved, though.

Note

Note for the "Data resolution" property with the setting "user-defined resolution" and the enabled option "Number of data":

You have to enter an even value in the input field to ensure proper trend display.

11. After that, close the dialog. If needed, the previous steps can be repeated to display further archive tags. Multiple selection of tags is also possible in the "Archive tag list" window.
12. Click "Continue >". The dialog "Add/remove alarms" will open.

Add alarm
Click on the desired cell and add a new alarm.
The "Properties" window automatically opens, where you can configure the alarm.

Delete alarm
Delete either a row in the alarm list or the comment from the cell.

Change alarm properties
Double-click on the element in the alarm list or select "Properties" in the context-sensitive menu.

13. Select the required cell in the Excel table. Click on the "Add alarm" button. The dialog "Alarm - properties" will be opened. Define the properties for this Alarm View in the Excel table, such as headings and insertion sequence of attributes. Enter a filter condition in the "Filter string" field or use the selection dialog to define specific alarms to be displayed, for example. Use the "Maximum number of alarms" option to limit the number of most recent alarms displayed. You can display maximum 1,000 messages. Select the attributes to be displayed from the list. Activation of check box "Save as default" will save the settings.

14. Close the "Alarm - properties" dialog box. If needed, the previous steps can be repeated to display further alarm displays. Multiple selection of alarm views is also possible using the "Alarm list" window.

15. Click "Continue >". The "Description" dialog box will open. You can enter a comment if needed. This comment will be displayed when selecting files provided for download by the DataMonitor server.
16. Use the "Publish" button to prepare the Excel workbook the DataMonitor server to be downloaded by the Clients. 
   Via the button "Template", you can provide the Excel worksheet as a template for the function "Published Reports". 
   The buttons are only displayed if the DataMonitor server has been installed. Close the Wizard by clicking on "Finish".

17. Save the workbook. Once you have created a new workbook, assign a name such as "My_workbook_1.xls". Close MS Excel.

**Result**

The display of the values of an online tag, an archive tag as well as a message window in the Excel table sheet is configured.

**Note**

After deleting/moving cells filled with configuration data or deleting/inserting new lines/columns in the Excel worksheet, the Excel Workbook Wizard must be executed again. The configuration data is checked and automatically adapted as a result. Confirm the data displayed simply by using the "Next >" button. Save the workbook and close Excel.

### 3.5.6.3 Displaying process data in an Excel Workbook online

**Introduction**

With Excel Workbooks, you display process data such as messages and values from process or archive tags in an Excel table on the DataMonitor client. You configure the Excel Workbook for displaying process data via the Excel Workbook Wizard. The online display of the process data is performed via the Excel Add-In "Excel Workbook".

The Excel workbook can be prepared on the DataMonitor Server and downloaded to the DataMonitor clients or opened directly in Internet Explorer, as necessary.

This chapter describes the display of the values of an online tag, an archive tag as well as a message window in the Excel table sheet.

**Requirements**

- The Excel workbook with the configuration of the process value display must be available on the computer.
- One of the following Excel versions is necessary for online display in the Excel Workbook:
  - Office 2003 SP3
  - Office 2007
- The WinCC Excel Workbook has to be installed to be available as an Excel Add-In.
• On the WinCC computer, the DataMonitor Server must be installed and configured.
• The WinCC project, whose process data is to be displayed in an Excel workbook, must be activated.

Procedure

1. Select the entry "Reports" on the DataMonitor start page.
2. Select the menu item "Report tools".
   The Excel workbooks that were published in the Excel Workbook Wizard, are shown in an overview.

3. Select a workbook. Click on the respective icon of the Excel workbook in the column "Open in browser" to download the file to the DataMonitor client.
   When the start page of DataMonitor is opened in the Internet Explorer on the DataMonitor server, the column "Open/save" will be displayed in the table. Via this icon, the file can be opened, edited and saved on the DataMonitor server in Excel.

4. The dialog to open or save the file is displayed. Click "Open".
   The Excel workbook is displayed in the Internet Explorer. Start the Excel Workbook from the toolbar. The "Excel Workbook" dialog will open.

5. The name of one of the servers, whose tags are configured in the Excel table, is displayed in the "WinCC Server" field. In case of access from outside the network domain, the domain will have to be indicated along with the name of the WinCC server. Via the button in the field, the server name can be changed.
   If DataMonitor has been configured as a separate Web page on the desired WinCC server, only the server name is required in the field "WinCC Server". However, if the DataMonitor has been configured as a virtual folder, the name of the virtual folder needs to be specified after the server name, e.g. "/webnavigator".
6. Activate the "All servers" check box when the tags from several servers are configured in an Excel sheet and the tag values of all the servers should be updated in the Online display.

Note
If connections to all the servers should be established, the check box must be activated before pressing the "Connect" button to establish the connection.

7. Activate the connection to the WinCC project via the button "Connect". After a successful connection, the log-in dialog will be opened. In the log-in dialog, enter the user name configured in the WinCC User Administrator, e.g. "DM_demo" and the respective password. Confirm the entry by clicking "OK".
When several servers are used and the "All servers" check box is activated, the logon dialogs of the servers concerned open one after the other. If no connection could be created, a corresponding message is displayed. Clicking on the dialog will display further information about the error (if available).

Note
The dialog of ExcelWorkbook must not be closed as long as the login dialog for connection establishment to the server persists.

8. The connection status will be displayed in the dialog. Click the buttons "Read tags", "Read archive tags" and "Read alarms" buttons to update the respective values or displays.

If necessary, activate the check box "Read cyclically" to update the tag values in cycles.

9. Close the dialog "Excel Workbook" after ending your calculations in Excel.

10. Save the results in the workbook and close Excel.

Result
The values of an online tag, an archive tag as well as a message window are displayed in the Excel table.
3.5.6.4 Configuring the display of process data via XML file in Excel

Introduction

With "Excel Workbooks", it is possible to display process data such as messages and values of process or archive tags in an Excel table on the DataMonitor client. Data of archive tags of swapped out archives is not displayed.

The Excel workbook is configured to display the process data using the Excel Workbook Wizard. The online display of the process data is performed via the "Excel Workbook" Excel add-in.

During the configuration of the displays with the Excel Workbook Wizard, the project-relevant data can either be transferred from a local, opened WinCC project or an XML file. The XML file is generated with the "Export Engineering Data" function. The data is imported into an Excel workbook and the display of the process data configured using the Excel Workbook Wizard.

This section describes the configuration of the project-relevant data via an XML file. This makes sense, for example, if a separation between the process and the analysis is desired.

In the Excel workbook, each table cell configured for displaying a tag value or message window is assigned a short text and a comment. In the case of tag values, the short text is "AV" for archive tags and "OV" online tags.

In the comments, the source of the displayed values is shown in the format "WDWx_<nummer>_<variablename>".

The values for x mean:
- A = Archive value
- O = Online value

With alarms, the short text "AL" and the comment are shown in the format "WDWL_<nummer>_<feldbezeichnung>".

Requirements

- In order to create the XML file, the DataMonitor server must be installed and configured on the WinCC computer.
- The WinCC project, whose process data is to be displayed in an Excel workbook, must be open.
- In order to configure the display of process data in the Excel workbook, Excel 2003/Office XP or higher is required. In addition, the Excel Workbook Wizard has to be installed (to be available as an Excel add-in).
Procedure

1. In the navigation window of the WinCC Explorer, select the entry "Web Navigator" and access its pop-up menu.

2. Select the "Export Engineering Data" menu command. The function generates an XML file with project data of the opened WinCC project and saves it in the subdirectory "Web Navigator/Reports" of the current project. The file name is automatically generated using the format "<projectname>.XML". Provided that no Excel installation is present on the WinCC computer, transfer the XML file to another computer with MS Excel and the Excel Workbook Wizard and perform the steps below. The transfer can also be performed through the Intranet/Internet by placing the XML file in the download folder of the DataMonitor server and then downloading it on the DataMonitor client.

3. Open MS Excel and start the Excel Workbook Wizard from the toolbar. Select an existing workbook in the dialog or select "New Workbook". Activate the check box "Load configuration data from file" to transfer the data from the XML file. Click "Continue >".

Note

If you start the "Excel Workbook Wizard" on a DataMonitor client, the check box "Create connection with WinCC server" is displayed in this dialog.
If you activate the check box and a connection to the DataMonitor server is created, the current tags of the DataMonitor server are available during tag selection. The configuration via the XML file is no longer required.

4. Select the XML file in the dialog "Configuration data", whose process data is to be displayed in the Excel workbook. For this, open the selection dialog via the button "..." and navigate to the desired XML file. Confirm the selection by clicking "OK".

5. The "Insert with server prefix" option is required for access to process data via dedicated Web server or a subordinate server with server-server communication. Enter the server prefix of the underlying server, which the process data stem from into the field "Inserting with server prefix". Select the name of the superordinated server in the "Web Server" field via which the connection to the subordinate server with the process data required should be established. This may be a dedicated Web Server or a WinCC Server with the DataMonitor server.
6. Click "Continue >". The dialog "Add / delete tags" will open.

- **Add tags**
  Select a tag from the tag tree and drag it onto your selected cell.
  It is also possible to drag and drop a whole tag group. Every tag of the group will then be inserted in either horizontal or vertical sequence after the selected cell.

- **Delete tags**
  Delete either a line in the tag list or the comment in the cell.

- **Change the properties of the tag display**
  Double-click on the element in the variable list, or select the 'Properties' in the shortcut menu.

Check the option for the inserting sequence of tag groups and change these as needed, e.g. to "Insert groups in vertical sequence" in the section "Add tags".

7. Navigate in the directory structure in the section "Tag tree" and select the desired tag, e.g. "Trend_1". Drag this tag to a cell in the Excel table. The assigned tag will be displayed in the window "Tag list".

8. In the window "Tag list", highlight the tag and select the menu command "Properties" from its pop-up menu. The dialog "Tag properties" will be opened. Define further properties for the display of these tags in the table, e.g. the sorting of headers, time stamp, quality code. Activation of check box "Save as default" will save the settings. Settings in the area "Display in sheet" and in the "Additional Data" area for time stamp and quality code are not saved, though.
9. You can change the server name and configure the login via the pop-up menu "Server Settings".

You can set the login and the password via the pop-up menu in the "Server" column. A login will no longer be necessary if you check the option "Activate automatic login" when displaying process data online. This option makes sense for Reports via Excel Workbooks.

10. After that, close the dialog. If needed, the previous steps can be repeated to display further online tags.
    Via the button "Change", the XML file can be changed to transfer additional data.
11. Click "Continue >". The dialog "Add/delete archive tags" will open.

Add archive tags
Select a tag from the archive tree and drag it onto your selected cell.
This operation is not allowed for an entire archive tag group because archive tags may need several sequential
cells. The number of these cells depends on the properties 'time window' and 'resolution' of the archive tag.

Delete archive tags
Delete either a line in the archive list or the comment in the cell.

Change the properties of the archive tags display
Double-click on the element in the archive tag list, or select 'Properties' in the shortcut menu.

12. Navigate in the directory structure in the section "Archive Tree" and select the desired tag,
e.g. the tag "T01" in the directory "Archive". Drag this tag to a cell in the Excel table. The
assigned archive tag will be displayed in the window "Archive tag list".

13. In the window "Archive tag list", highlight the tag and select the menu command "Properties"
from its pop-up menu. The dialog "Archive tag properties" will be opened. Define further
properties for the display of these tags in the table, e.g. the insert sequence, data resolution,
display time window. Activation of check box "Save as default" will save the settings.
Settings in the area "Advanced display and position" for time stamp and quality code are
not saved, though.

**Note**
Note for the "Data resolution" property with the setting "user-defined resolution" and the
enabled option "Number of data":
You have to enter an even value in the input field to ensure proper trend display.

14. After that, close the dialog. If needed, the previous steps can be repeated to display further
archive tags. Via the button "Change", the XML file can be changed to transfer additional
data.
15. Click "Continue >". The dialog "Add/remove alarms" will open.

16. Select the required cell in the Excel table. Click on the "Add alarm" button. The dialog "Alarm - properties" will be opened. Define the properties for this Alarm View in the Excel table, such as headings and insertion sequence of attributes. Enter a filter condition in the "Filter string" field or use the selection dialog to define specific alarms to be displayed, for example. Use the "Maximum number of alarms" option to limit the number of most recent alarms displayed. You can display maximum 1,000 messages.

Select the attributes to be displayed from the list. Activation of check box "Save as default" will save the settings.

17. Close the "Alarm - properties" dialog box. If needed, the previous steps can be repeated to display further alarm displays. Via the button "Change", the XML file can be changed to transfer additional data.

18. Click "Continue >". The "Description" dialog box will open. You can enter a comment if needed. This comment will be displayed when selecting files provided for download by the DataMonitor server.
19. Use the "Publish" button to prepare the Excel workbook the DataMonitor server to be downloaded by the Clients. Via the button "Template", you can provide the Excel worksheet as a template for the function "Published Reports". The buttons are only displayed if the DataMonitor server has been installed. Close the Wizard by clicking on "Finish".

20. Save the workbook and close Excel.

Result

The display of the values of an online tag, an archive tag as well as a message window in the Excel table sheet is configured by using an XML file.

Note

After deleting/moving cells filled with configuration data or deleting/inserting new lines/columns in the Excel worksheet, the Excel Workbook Wizard must be executed again. The configuration data is checked and automatically adapted as a result. Confirm the data displayed simply by using the "Next >" button. Save the workbook and close Excel.

Note

When configuring the display of process data in an Excel workbook using the Excel Workbook Wizard, the associated configuration data is stored by the wizard in a hidden workbook. The worksheet can be displayed via the key combination <CTRL> + <U> while the Excel workbook or the Excel Workbook Wizard is active and can be hidden by <CTRL + H>. By this you can, for example, easily check the configuration data.

3.5.7 Outputting data using "Reports"

3.5.7.1 Overview of the function "Reports"

Overview

By means of the function "Reports" of DataMonitor, you can use print jobs from WinCC and published Excel workbooks to output analysis results and process data. The output can be in the following formats.

- PDF file: You must have a PDF Reader.
- Excel workbooks: The templates are published on the DataMonitor server in the Excel Workbook Wizard as templates.
By means of the function "Reports", reports can be created using Excel workbooks and print jobs in PDF format.

A report can be triggered in different ways.
- Immediately
- Time-controlled
- Event-controlled

### 3.5.7.2 Making Settings for Reports

**Introduction**

Different settings are required for using the function "Reports" from DataMonitor.

**Requirements**

- PDF Reader is installed.
- The WinCC project is activated on the DataMonitor server.
- The option "Report Runtime" is activated in the WinCC project on the DataMonitor server.
Procedure

1. Select the entry "Reports" on the DataMonitor start page.

2. Select the menu command "Settings". The "Settings" page is displayed.

3. Check the entries in the section "General project settings".
   - In order to enable the output to a PDF file, activate option "Activate API print"
4. Enter the data for sending mail in the "Mail" area:
   – Server
     Outgoing mail server (SMTP)
   – User name
     Name for the sender
   – Password
   – Sender
     Email account, through which you send your Email
5. Click the disk icon in the section "General project settings" to save your settings.
6. In the "Circular buffer" area, you can define how many reports can be stored for the selected destination directory. The field has a pre-assigned value of 20.
7. Click the disk icon in this section to save your settings.

Result

The settings for "Reports" have now been made.

In the menu, you can switch directly to the overview of "Prints jobs" or "Excel Workbooks" with the command "Reports". Alternatively, you can go back to the overview page in the menu with the command "Published Reports".

3.5.7.3 Displaying a report with an Excel Workbook

Introduction

You can create reports using Excel Workbooks and print jobs in PDF format using function "Reports".

A report can be triggered in different ways.
   • Immediately
   • Time-controlled
   • Event-controlled

This chapter describes the creation of a report with an Excel workbook.

Requirements

   • The option "Report Runtime" is activated in the WinCC project on the DataMonitor server.
   • The WinCC project is activated on the DataMonitor server.
**Procedure**

1. Select the entry "Reports" on the DataMonitor start page.
2. Select the entry "Excel Workbooks" on the DataMonitor start page.
   The dialog for the time-controlled or event-controlled triggering of reports is displayed.

3. Select the desired Excel workbooks, e.g. "My_workbook_1.xls" in the "Existing Excel Workbooks" field.
   This field only shows Excel Workbooks that meet the following conditions:
   - Workbooks that are published as templates in the Excel Workbook Wizard
   - Workbooks in directories for which the current user has the "Read" access right.
   
   Via the icon [3], you can create the report immediately.

4. Select the directory, in which the reports will be stored in the "Target directory" field.
   Only the directories, for which the user that is logged in has "Create" access rights, can be selected.
5. An Email address can be entered into the field "Email recipient". The report is e-mailed to this address.

6. If you cannot create the report immediately, as described in step 3, you can configure a time-controlled or event-controlled triggering in the following steps.

7. If you would like to configure a time-controlled triggering, you can enter the desired date in the section "Time-controlled Excel Workbooks" in the field "Date". Alternatively, you can open a calendar for selection via the icon "Display calendar". Define the triggering time in the "Time" field. Define the repetition rate, e.g. "Once" or "Weekly" in the "Repetition" field.

To trigger this time-controlled report with an Excel workbook, click the "Add" button in the section "Time-controlled Excel workbooks". The report is displayed in the "List of time-controlled Excel workbooks".

8. If you would like to configure an event-controlled triggering, you can select the triggering tag in the section "Event-controlled Excel Workbooks". Click on the icon to open a selection dialog and select the tag there. You will define the triggering event in the field "Define event control". Depending on the setting in the field "Define event control", you must enter a value into the fields "Low limit" and "High limit".

To trigger this event-controlled report, click on the "Add" button in the section "Event-controlled Excel Workbooks". The report is displayed in the "List of event-controlled Excel workbooks".

Result

A time-controlled or event-controlled report has been triggered with an Excel workbook.

The report is displayed in one of the lists "List of time-controlled Excel workbooks" and "List of event-controlled Excel workbooks". The report can be changed or deleted in the list.

Note

An event-controlled print job will not be initiated if the time, in which the time changes, is less than one minute.

Please consider that a frequent triggering of the event-controlled print job over a long time period will use a lot of memory and resources, such as the frequent signal change of a tag.

3.5.7.4 Creating a report with a print job

Introduction

By means of the function "Reports", reports can be created using Excel workbooks and print jobs in the PDF format.

A report can be triggered in different ways.
This chapter describes the creation of a report with print jobs in PDF format.

Requirements

- The option "Report Runtime" is activated in the WinCC project on the DataMonitor server.
- The WinCC project is activated on the DataMonitor server.

Procedure

1. Select the entry "Reports" on the DataMonitor start page.
2. Select "Print jobs" from the menu.

The icons in front of the lists "List of time-controlled print jobs" and "List of event-controlled print jobs" are deactivated and show that currently no reports are triggered.
3. Select the desired print job, such as Report OnlineTableControl-CP" in the "Existing print jobs" field.

   Via the icon 🖥️, you can create the report immediately.

4. In "Target directory: ", select the directory in which the reports are created.

   Only the directories, for which the user that is logged in has "Create" access rights, can be selected.

5. An Email address can be entered into the field "Email recipient". The report is e-mailed to this address.

6. If you cannot create the report immediately, as described in step 3, you can configure a time-controlled or event-controlled triggering in the following steps.

7. If you would like to configure a time-controlled triggering, you can enter the desired date in the section "Time-controlled print jobs" in the field "Date". Alternatively, you can open a calendar for selection via the icon "Display calendar". Define the triggering time in the "Time" field. Define the repetition rate, e.g. "Once" or "Weekly" in the "Repetition" field.

   To trigger this time-controlled report, click on the "Add" button in the section "Time-controlled print jobs". The report is displayed in the "List of time-controlled print jobs".

8. If you would like to configure an event-controlled triggering, you can select the triggering tag in the section "Event-controlled print jobs". Click on the icon 📆 to open a selection dialog and select the tag there. You will define the triggering event in the field "Define event control". Depending on the setting in the field "Define event control", you must enter a value into the fields "Low limit" and "High limit".

   To trigger this event-controlled report, click on the "Add" button in the section "Event-controlled print jobs". The report is displayed in the "List of event-controlled print jobs".

---

**Result**

A time-controlled or event-controlled report with print job in PDF format has been triggered.

The report is displayed in one of the lists "List of time-controlled print jobs" and "List of event-controlled print jobs". The report can be changed or deleted in the list.

---

**Note**

An event-controlled print job will not be initiated if the time, in which the time changes, is less than one minute.

Please consider that a frequent triggering of the event-controlled print job over a long time period will use a lot of memory and resources, such as the frequent signal change of a tag.
3.5.8 Create web center page and insert with "Web center"

3.5.8.1 Overview of web center pages

Overview

By means of the function "WebCenter", the displaying objects from DataMonitor, the so-called web parts, can be assembled and saved in WebCenter pages.

There are two types of WebCenter pages.

- "Public": For the creation, modification and saving, the logged-in user must be a member of the Windows user group "DM_Admin". Public web center pages can also be used by other users.
- "Private": For the creation, modification and saving, the logged-in user can be a member of the Windows user groups "DM_Admin" or "DM_User". Private web center pages can only be used by the creating user.

- Members of your own user groups

The following chapters show the procedures for a member of the Windows user group "DM_Admin".

For the creation of the web center pages, there are several template files following the installation of DataMonitor, the so-called layout templates. A user, who is a member of the Windows user group "DM_Admin" can create new layout templates.

3.5.8.2 Creating Layout Templates for WebCenter Pages

Introduction

Combine the web parts to create the WebCenter pages and store them in the "Webcenter".

You require a Layout Template to create a WebCenter page. Many prefabricated Layouts have been installed during the installation. Additionally, you can create your own Layout Templates.

This chapter describes how you create a Layout Template.
Requirements

- For the creation and saving of a layout template, the logged-in user must be a member of the Windows user group "DM_ADMIN".

Procedure

1. Select the entry "Web center" and then the "Configuration" entry on the DataMonitor start page.
2. Select menu item "Create Layout".
   The page "Create Layout" will open and step 1 of the process will be displayed.
3. Select the number of columns, e.g. "2".
4. Select the number of lines, e.g. "3".
5. Enter the name in the "Name of the layout file" box, "MyLayout_2x3" for instance.
6. Click "Next".
   Step 2 will be displayed.

7. In step 2, you summarize the requirements of the table fields. For this, click the desired arrow symbol, such as "Arrow left", in the desired field, for example line 2 / column 2. The modified view will be displayed.

8. If necessary, you can restore the original table form via the button "Reset configuration", to create a different constellation.
9. Click "Next". Step 3 will be displayed. In step 3 of the template creation, you define the order of the web parts in the table fields.

10. If necessary, activate the corresponding symbol in a table field to place the web parts vertically or horizontally.

11. Click "Save".

**Result**

The Layout Template is created. You can use the layout template as a template for creating a WebCenter page.

**3.5.8.3 Creating web center pages**

**Introduction**

Combine the web parts to create the WebCenter pages and store them in the "WebCenter". WebCenter pages are stored in directories.

You can only change or create WebCenter pages in directories, for which the user group has the "Change" or "Create" access rights.
WebCenter pages of a directory can only be viewed by the users of a user group that has at least the "Read" access rights to the directory.

In this example, the WebCenter page is saved in directory "Public". Public web center pages can be read by all users.
Requirements

- For creating and saving a WebCenter page in the "Public" directory, the logged-in user must be a member of the Windows user group "DM_ADMIN".

Procedure

1. Select entry "Webcenter" and then the "Configuration" entry on the DataMonitor start page.
2. Select menu item "Create Page".
   The page "Create Page" is displayed.
3. Select a Layout Template.
   In this example, Layout Template that you have created yourself is used, “MyLayout_1x2” with two areas. The file name is displayed in the "Layout file" field.

4. Enter a name in the "WebCenter page" field, for instance "Centerpage01".

5. Select the directory, in which the WebCenter page should be stored. Just click the corresponding entry in the directory structure, e.g. "Public". The selected directory is displayed in the field "Save WebCenter page as".

6. Click "Save".

Result

The web center page has been created.

You can open the newly created WebCenter page in the "Public" directory. As long as no web parts are contained in the WebCenter page, a blank WebCenter page is displayed.

3.5.8.4 Inserting web parts into the web center page

Introduction

WebCenter pages are created by combining so-called web parts in the "WebCenter".

You can only change or create WebCenter pages in directories, for which the respective user group has "Change" or "Create" rights.

WebCenter pages of a directory can only be viewed by the users of a user group that has at least the "Read" access rights to the directory.
In this example, web parts are inserted in the WebCenter page "Center page 01" in the "Public" directory. WebCenter pages can be read by all users in the "Public" directory.

Requirements

- For creating, changing and saving a WebCenter page in the "Public" directory, the logged-in user must be a member of the Windows user group "DM_Admin".

Procedure

1. Select the entry "Web center" and then the "Pages" entry on the DataMonitor start page.
2. Click on the entry for the desired page, in this case "Center page 01". As an alternative, select the desired page in the selection field.
   The blank page is displayed.
3. To add web parts, click on the symbol on the right side. The web parts that are available are listed. If you have exported web parts that have already been configured, they are listed under "Imported web parts". If necessary, insert these web parts into your WebCenter page.

4. Select a web part from the catalog, e.g. "Trend (process values" and activate the corresponding check box.

5. Select the area in the field "Add to" into which this web part should be inserted, into the top area "WPZ_01_01" for example. In this example, the areas "WPZ_01_01" and "WPZ_02_01" can be selected.

6. Click "Add" to insert the web part.

7. Select another web part from the catalog, e.g. "Hit list of the alarms" and activate the corresponding check box.

8. Select the lower area "WPZ_02_01", into which this web part should be inserted, in the "Add to" field.
9. Click "Add" to insert the web part. These two inserted web parts are now displayed.

10. Click "Exit" to complete the configuration of the web center page. The current summary of the web center page is displayed.

**Result**

Web parts to display data have been inserted into the web center page.
3.5.8.5 Displaying data with a web center page

Introduction

By means of the function "Web center", the displaying objects, the so-called web parts, can be assembled and saved in web center pages.

This subject describes the display of data with a web center page.

Requirements

- The logged-in user must be a member of the Windows user groups "DM_Admin" or "DM_User".
- The WinCC project must be activated.

Procedure

1. Select the entry "Web center" on the DataMonitor start page.
2. Open the directory, in which the page is created.
3. Click on the desired page entry. The page is opened.

4. If the web parts on a web center page have already been configured once, data will be displayed with an existing connection to the configured data source. If the web parts have not been configured yet, you must configure the two web parts. For this, open the configuration dialog of a web part, e.g. the left web part "Trend (process values)" with the respective symbol in the web part.
5. Configure the properties of the web part in the different areas. In the section "Trend (process values)", you can enter a different title in the field "Heading" and you can add a brief tip in the field "Tooltip".

6. In the section "Value selection", select one of the configured connections and the archive tags to be displayed. You can assign the color and the time and value axis to each archive tag.

7. In the area "Value axis editor", you can activate or deactivate the automatic scaling of the value axes.

8. In the section "Time frame", select the time span, from which the process values are to be displayed. You will be able to define a specific time frame for each time axis. With relative times, enter a negative value into the respective field. Via the button "Preview", the selected time span with date and time will be displayed in the column "Preview time frame".

9. In the section "Diagram settings", you can define the size of the display window and activate the display of a legend.

10. Click "OK" to display the selected values in the diagram. Additional information for the configuration of the web part "Trend (process values)" can be found under "Displaying process values in a diagram".

11. Conduct the configuration for the second web part "Hit list of the alarms". Additional information for the configuration of the web part "Hit list of the alarms" can be found under "Displaying hit list for messages".

12. The corresponding data is displayed in the web parts.

Result

Data is displayed with a web center page.
4 Resources

4.1 WinCC/DataMonitor - Documentation

Overview

All function levels of a company's WinCC process data can be made available via the Intranet/Internet with standard tools using the SIMATIC WinCC/DataMonitor.

Current process status and historical data are displayed and evaluated with power tools. This makes it possible to efficiently monitor and analyze production. Information in the form of web pages and reports can be created and prepared especially for the respective target groups. The DataMonitor client, e.g. an optional office PC, accesses the data of the DataMonitor server, which is installed on a WinCC server for instance.

WinCC DataMonitor includes the following functions and analysis tools that are used optionally, depending on the application:

- The function "Process Screens" is used exclusively for monitoring and navigating using WinCC process pictures with MS Internet Explorer as the so-called "View Only Client". On the server-side, the DataMonitor utilizes the same mechanisms as the WinCC Web Navigator, e.g. for the communication, user management and displaying of graphical data.

- The function "Webcenter" is used as a central information portal with user-specific views. The user can assemble and save the displayed objects of DataMonitor, the so-called web parts, as screen views. The user also administers the access to the DataMonitor and to the process data in the "WebCenter".

- The function "Trends and Alarms" is used for the display and analysis of historical data from the WinCC Runtime / central archive server or from WinCC long-term archive servers. The data is displayed in tables and diagrams in predefined web pages. The user only has to connect the tables and diagrams with the desired WinCC archive data now. The data created in this way can be exported in a CSV file for further processing.

- The function "Excel Workbooks" is a logging tool that integrates messages, archive data and current process values from WinCC in MS Excel, supporting online analyses. The created Excel workbooks can be published and made available to the Intranet/Internet. For the function "Reports", Excel workbooks can be published as templates for the creation of reports with WinCC data.

- Using the "Reports" function, the user can trigger reports with time control or event control. The reports can be created from WinCC print jobs or from published Excel Workbooks. This also allows for statistics and analyses of certain process data or historical data. The reports are created in PDF format and passed on as Email if necessary.
Quantity Structure

WinCC DataMonitor allows the simultaneous operation of up to 50 clients per server. When using the terminal services, up to 25 DataMonitor clients are released per terminal services server.

4.2 Configuring and Publishing

4.2.1 Overview

Introduction

Preparatory measures are required for the operation of the DataMonitor.

Requirements

A prerequisite for the following steps is:

• The DataMonitor server must be installed correctly.
  Since the DataMonitor builds on the WinCC Web Navigator, the entry "Web Navigator" will appear in the WinCC Explorer following the installation of the DataMonitor.

Overview

More information on the configuration of the DataMonitor server and the required settings in Internet Explorer can be found in the following chapters:

• Configuring the DataMonitor Server (Page 115)
• Configuring security settings in Internet Explorer (Page 118)

Depending on the function of the DataMonitor, users are necessary in Windows and in the WinCC project. Further information on the required access rights can be found in chapter "Access Rights (Page 119)".

For the function "Process Screens" from the DataMonitor, you have to publish the desired process pictures. Information on this procedure can be found in chapter "Publishing Process Pictures for "Process Screens" (Page 126)".

To display process picture graphics in WebCenter pages, you must publish these process pictures for the WebCenter. Information on this procedure can be found in chapter "Publishing Process Pictures for the WebCenter (Page 129)".

Information on other settings, displaying the "View Only Cursor" for example, can be found in chapter "Making Settings for Runtime (Page 131)".
4.2.2 Configuring the DataMonitor Server

Introduction

For the use of the WinCC DataMonitor, the data and process screens are made available on the DataMonitor server to be accessed and displayed on the DataMonitor client.

The following steps are required:

- Configuring the DataMonitor server
- Publishing data
- Executing Various Settings

This chapter describes how to configure the DataMonitor Server.

Procedure

1. Select the entry "Web Navigator" in the navigation window of the WinCC Explorer. Open the shortcut menu and select "Web Configurator".

   This starts the WinCC Web Configurator. If you use the file server then only the "Webcenter" and "Trend and Alarms" are installed. As an alternative, open the "Web Configurator" in the Windows Start menu via "SIMATIC > WinCC > Web Configurator".

2. In the "Welcome to the configuration of the internet information server" dialog, click "Next".

3. When starting the Web Configurator for the first time, the following dialog will be opened, giving you two choices. Select the option "Create a new standard web page (standalone)".
4. Click "Next".
   In the next dialog, field "Name of the Web page" is already filled out with the text "WebNavigator".

5. Choose the IP address of the DataMonitor server in the "IP address" box.

6. Select "DataMonitor.asp" as the standard web site.

7. Click "Next".
   If the button "Next" is deactivated, the Windows firewall is not active on the computer. If this is the case, click the "Finish" button. The Web Configurator executes different settings and shows the respective messages. Continue at step 13.

**Note**

If the Windows firewall is deactivated on this computer, you should contact your network administrator and check why this setting was selected and whether the safety guidelines are correct.
8. Click "Windows firewall" in the "Configuring the Windows firewall" dialog.

9. The "Windows Firewall" dialog will open.
   – Select "LAN connection" on the "Extended" tab.
   – Click "Settings".
   – Activate the "Webserver (HTTP)" entry in the list in the dialog "Advanced settings". With the first-time activation, the dialog "Service Settings" will open.
   – Check the settings and confirm them by clicking "OK".

10. Click "OK" to close the "Advanced Settings" dialog.
11. Close the "Windows Firewall" dialog by clicking "OK".
12. Click "Finish" in the "Configuring the Windows firewall" dialog.
    The Web Configurator executes different settings and shows the respective messages.
13. After completing this process, the message "Inetinfo parameters set". It is recommended to restart the computer" will be displayed. Confirm the entry by clicking "OK".
14. Close the WinCC Explorer and restart the computer.

Result

The configuration of the DataMonitor server will be completed.
4.2.3 Configuring security settings in Internet Explorer

Introduction

In order to have the full functionality available on the DataMonitor Client, you have to adapt the security settings in the Internet Explorer. The following versions of the Internet Explorer are released for using the DataMonitor:

• V6.0 SP1, V6.0 SP2
• V7.0

Procedure

1. Click "Tools" > "Internet Options" in the Internet Explorer.
2. Switch to the "Security" tab in the dialog "Internet Options".
3. Select the "Trusted Sites" icon and click the "Sites..." button. The "Trusted Sites" dialog opens.
4. Enter the address of the DataMonitor server in the "Add this Website to the zone" field. Possible formats and wildcards include "*://157.54.100 - 200", "ftp://157.54.23.41", or "http://*.microsoft.com".
5. Deactivate the "Require server verification (https:) for all sites in this zone" if necessary check box. Click "Add". Confirm the entry by clicking "OK".
6. Select the "Trusted Sites" icon.
7. Click the "Standard level" button and then the "Custom Level" button. The "Security settings" dialog box is opened.
   - Activate the "Activate" option under "Initialize and script ActiveX controls not marked as safe".
   - Confirm the entry by clicking "OK".
8. Close the "Internet Options" dialog by clicking "OK".

Result

This completes all necessary settings of the DataMonitor client in the Internet Explorer.
4.2.4 Access Rights

4.2.4.1 Access Rights

Introduction
When using DataMonitor, different authentifications are required. You need to set configure specific users and user rights for this.

- For the functions "Trends and Alarms", "Reports" and "Webcenter", a user in the Microsoft Windows operating system is required.
- For the functions "Process Screens" and "Excel Workbooks", a user is required in the WinCC project.

This section describes the configuration of the required user and user rights.

Note
Depending on the use of the functions of the DataMonitor, you might have to log in twice, for authentication purposes as a WinCC user as well as a DataMonitor user. The following alternatives are available for enabling one-time logon for a user:

1. The DataMonitor user and the WinCC user are identical in regard to their name and password. These users must be configured in Windows and WinCC.
2. SIMATIC logon allows the central administration of users. In order to use SIMATIC Logon in connection with DataMonitor, DataMonitor users must registered in the "SIMATIC HMI VIEWER" user group.

See also
WinCC/DataMonitor - Documentation (Page 113)

4.2.4.2 Access Rights in Windows

Introduction
When using DataMonitor, different authentications are required. Therefore, the users with certain user rights must be defined.

- For the functions "Process Screens" and "Excel Workbooks", a user is required in the WinCC project.
- For the functions "Trends and Alarms", "Reports" and "Webcenter", a user in the Microsoft Windows operating system is required.

This chapter describes the configuration of the user and certain user rights in Windows.
User groups that are set up as defaults for using DataMonitor

The following user groups are created automatically in Windows when the DataMonitor server is installed:

- **"DM_ADMIN"**
  - The membership in the user group "DM_ADMIN" is required for extended rights, especially for configuration purposes. You must create at least one user and assign the user group "DM_ADMIN".
  - Therefore, the connection configuration and the creation of templates for web center pages are possible in the function "Webcenter"; as well as the creation and configuration of public and private web center pages.
  - In the function "Reports", reports can be configured on the basis of print jobs or Excel workbooks.

- **"DM_USER"**

Individual user groups for the use of DataMonitor

The membership in the user group "DM_USER" or in your own user group is required for the functions "Webcenter", "Trends and Alarms" and "Reports".

- In the function "Webcenter", the setting and configuration of private web center pages are possible. The WebCenter pages can be created in different directories.
- Public pages can only be opened.
- In the function "Reports", reports can be opened on the basis of print jobs or Excel workbooks.

User administration for the WebCenter

You can set up access for the members of the user groups according to the respective requirements. You store the contents in directories within the WebCenter. Members of the user group "DM_ADMIN" create the directories and assign the desired access rights to these directories for the individual Windows user groups.

In function "Trends and Alarms", pages can be configured for the respective users.

The following picture shows the basic user administration for the WebCenter.
Windows User Administration

The installation routine of DataMonitor defines Windows user groups:
- DM_ADMIN: DataMonitor Admin
- DM_USER: DataMonitor User
- Planning: All members of Planning
- Service: All members of Service

Individual user groups

DataMonitor Administration

FOLDER ADMINISTRATION

Connection administration

Folder administration

List of existing directories:
- Directory list
  - Public (default)
  - Personal (DM_user)
  - NewFolder
  - ProcessPlans
  - ServiceGroup
  - Water

Windows user groups receive different access rights on DataMonitor directories.

Individual access of the Windows user groups to WebCenter pages

WINCC / DATAMONITOR - WEBCENTER

Start page
- Reports
- Process Screens
- Webcenter
Note

Depending on the use of the functions of the DataMonitor, you might have to log in twice, for authentication purposes as a WinCC user as well as a DataMonitor user. Two alternatives exist for allowing a one-time login for a user:

1. The DataMonitor user and the WinCC user are identical regarding their name and password. This user must be configured in Windows and in WinCC.
2. SIMATIC logon allows the central administration of users. In order to use SIMATIC logon in connection with DataMonitor, DataMonitor users must added to the user group "SIMATIC HMI VIEWER".

4.2.4.3 Defining Users and Access Rights in Windows

Introduction

When using DataMonitor, different authentications are required. Therefore, the users with certain user rights must be defined.

This chapter describes how you configure the user groups and users in Windows.

Procedure - Creating user groups using Windows XP as an example

1. From the Windows start menu, select the "Settings" > "Control Panel" menu command. The "Control Panel" dialog opens.
2. Double-click the "Administration" entry.
3. Double-click the entry "Computer Management" in the "Administration" dialog. The "Computer Management" dialog is opened.
4. Navigate to the directory "System > Local Users and Groups / Users" in the navigation directory.
5. Open the shortcut menu and select the "New Group..." command.
6. Enter a name such as DM_Group in the dialog "New Group" in the "Group Name" field.
7. Enter a description such as "User Group for DataMonitor" in the "Description" field.
8. Create the user group with "Create".
9. Close the dialog.
10. Close the dialog "Computer Management" via the menu command "File > Exit".
11. Close the dialog "Management" via the menu command "File > Exit".

Result

A new user group e. g. "DM_Group" is created.

The following procedures describe how to create a new user and to assign a user group using the user group "DM_ADMIN" as an example.
Procedure - Creating users and assigning the user group "DM_ADMIN" using Windows XP as an example

1. From the Windows start menu, select the "Settings" > "Control Panel" menu command. The "Control Panel" dialog opens.

2. Double-click the "Administration" entry.

3. Double-click the entry "Computer Management" in the "Administration" dialog. The "Computer Management" dialog is opened.

4. Navigate to the directory "System > Local Users and Groups / Groups" in the navigation directory. Open the shortcut menu and select the "New User..." command.

5. Enter a name such as "DM_demo_windows" in the dialog "New User" in the "User Name" field. Enter a description such as "User for DataMonitor" in the "Complete Name" field. Type the desired password into the "Password" field and then repeat it in the "Repeat Password" field. Create the user with "Create". Close the "New user" dialog.

6. Click "Groups" in the navigation directory. You must assign the new user to the group "DM_ADMIN" so that the configurations are possible in the function "Webcenter".

7. In the right part of the table window, click on the group "DM_ADMIN". Open the shortcut menu and select the "Add Member..." command. Click the "Add..." button in the dialog "Properties of the DM_ADMIN".

8. Check the entry in the "Search Path" field in the next dialog. If the computer name, where the new user was created, is not listed there, click on "Paths..." and select the correct computer.

9. In the field "Enter the object name to be used", enter the name of the new user, such as "DM_demo_windows". Close the dialog by clicking "OK".

10. The new user will be displayed in the list in the dialog "Properties of DM_ADMIN". Close the dialog by clicking "OK".

11. Close the dialog "Computer Management" via the menu command "File > Exit".

12. Close the dialog "Management" via the menu command "File > Exit".

Result

A user, such as "DM_demo_windows" with a membership in the user group "DM_ADMIN" has been set up.
### 4.2.4.4 Defining user and access rights in the WinCC Project

**Introduction**

When using DataMonitor, different authentications are required. Therefore, the users with certain user rights must be defined.

- For the functions "Trends and Alarms", "Reports" and "Webcenter", a user in the Microsoft Windows operating system is required.
- For the functions "Process Screens" and "Excel Workbooks", a user is required in the WinCC project.

This chapter describes the configuration of the users in the WinCC project.

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**Note**

Depending on the use of the functions of the DataMonitor, you might have to log in twice, for authentication purposes as a WinCC user as well as a DataMonitor user. Two alternatives exist for allowing a one-time login for a user:

1. The DataMonitor user and the WinCC user are identical regarding their name and password. This user must be configured in Windows and in WinCC.
2. SIMATIC logon allows the central administration of users. In order to use SIMATIC logon in connection with DataMonitor, DataMonitor users must added to the user group "SIMATIC HMI VIEWER".
Procedure

1. Select the "User Administrator" entry in WinCC Explorer in the navigation window. Open the shortcut menu and select "Open". The editor "User Administrator" is opened.

2. In the navigation window, select a group.


4. Enter a name, such as "Client_01" into the "Login" field. Type a password consisting of at least six characters into the "Password" field and then confirm this entry in the "Repeat" field. Confirm your entries with "OK".

5. Highlight the newly created user in the navigation window of the User Administrator. Select the "Web Navigator" check box in the table window. The "Web Options" area is displayed.

6. Click the "..." button to the right of the "Startup Picture" field. The selection dialog for pictures will open. Select the startup picture, such as "start.Pd_" and click "OK".
7. Check the selected language in the "Language" field and change this setting if desired via the "..." button. Only languages that have been installed in WinCC are available for selection.

8. The user needs at least the authorization "1002 - Web-Access - observe only!". Assign this authorization by double-clicking the column "Release" in the table window in the line of this authorization. A red dot indicates the activated authorization.

9. Close the "User Administrator" by selecting "File > Exit".

Result

A user, e.g. "DM_Demo", is set up in the WinCC Project.

4.2.5 Publishing Process Pictures for "Process Screens"

Introduction

For the use of the WinCC DataMonitor, the data and process screens are made available on the DataMonitor server to be accessed and displayed on the DataMonitor client.

The following steps are required:

- Configuring the DataMonitor server
- Executing Various Settings
- Publishing Data

This chapter describes how to publish the following for the function "Process Screens" with the Web View Publisher.

- Process images
- Referenced Graphics
- C Project Functions

Procedure

1. Select the entry "Web Navigator" in the navigation window of the WinCC Explorer.
2. Open the shortcut menu and select "Web View Publisher".

WinCC is started. Web View Publisher

3. In the "Welcome to the Web Publishing Assistant" dialog, click "Next". The "Select files and folders" dialog is displayed.
4. Check the displayed path to the WinCC project and the folder for the web access. The path to your WinCC project will be displayed as "<Project path> \ <Project name>". The folder for the web access will be displayed as "<Project path> \ <Project name> \ WebNavigator". If required, you can change the path with the "..." button.

5. Click "Next".
6. Select all files by clicking on the button ">>" in dialog "Select pictures".

7. Click "Next".
The "Select functions" dialog is displayed.

8. Via ">"., select the C Project Functions that are to be published.
9. Click "Next".
The "Referenced graphics" dialog is displayed.

10. Select the graphics referenced in the process screens (*.PDL) that you would like to publish (e.g. bitmaps).

11. Click "Next".

12. In order to publish the pictures, click on "Finish" in the Dialog "Exit". After the process is completed, an appropriate message is displayed.

13. Confirm the entry by clicking "OK".

14. To exit the Web View Publisher, click "Finish".

Result
The process screens are now published.

4.2.6 Publishing Process Pictures for the WebCenter

Introduction
The web part "Show Process Screen" shows the process pictures. The DataMonitor server creates graphics from the process pictures in a definable cycle and provides them to the client. Only process pictures of the DataMonitor server can be displayed in a web part.

The process pictures cannot be operated.
The "Cycle" setting applies for all process pictures:

**Note**
Select this cycle as large as possible. A cycle that is too small leads to performance problems.

In order to display a process picture within the web part "Show Process Screen", the desired process pictures must be published.

Publishing the process pictures requires that the process picture graphics have already been created with the Web View Publisher. For additional information on this topic, please refer to "Publishing Process Pictures for "Process Screens" (Page 126).

This chapter describes how you publish process pictures for the WebCenter.

**Procedure**

1. Select the entry "Web Navigator" in the navigation window of the WinCC Explorer. Open the shortcut menu and select "Web Settings".
2. Switch to tab "WebCenter".
3. Select a process picture in the "Name" field.
4. Select the desired language.
5. To display only a portion of the process picture, enter the following in pixels in the "Zoom area" area:
   – Start positions in x direction
   – Start positions in y direction
   – Width
   – Height

6. To add the process picture for the publishing procedure, click on the "Add" button.

7. In order to output a time, at which the graphic for the process picture has been created by the server, activate "Time stamp".

8. In order to change the update cycle, enter the desired value in "Update time interval".

9. Start the publishing process with "OK".

**Result**

The process pictures are published for the WebCenter.

### 4.2.7 Making Settings for Runtime

**Introduction**

Certain settings have to be made for using the WinCC DataMonitor:

- **WinCC Design**
  You define whether the process picture will be displayed in the "Process Screens" function either in WinCC Classic Design or in the defined Global Design. This is independent of the settings in the project properties.

- **View Only Cursor**
  Process-relevant operations are possible in the "Process Screens" function. The "View Only Cursor" shows that no process-relevant operations are possible. Certain operations, such as opening the Properties dialog of an online trend control, are still possible. By default, the cursor is used in the form of the "View Only Cursor" in the "Process Screens" function. You can use another cursor instead of the default "View Only Cursor".

- **Maximum number of simultaneous connections**
• Maximum number of tabs in the Browser

  **Note**

  **Number of connections and tabs**

  Note that the DataMonitor client leads to a respective load on the DataMonitor server. For example, 10 simultaneous connections, each with 2 tabs corresponds with 20 clients.

  If you open a new tab and call up the start page of the DataMonitor, a license is occupied on the server. A sufficient number of licenses must exist for the clients on the DataMonitor server.

  Dimension the maximum amount of simultaneous connections and the tabs respectively.

• Start and Stop message

  A system message is created on the WebNavigator server or the DataMonitor server as soon as a user starts or ends "Process Screens". The message contains the following information:

  – User name
  – Client computer name
  – Log-in time or log-off time

**Procedure**

1. Select the entry "Web Navigator" in the navigation window of the WinCC Explorer.
2. Open the shortcut menu and select "Web Settings".
3. Switch to tab "Runtime".

![WinCC Web Settings](image)
4. To use the "WinCC classic" design, activate "Use WinCC Classic Design".

5. To use a different cursor as the "View Only Cursor", enter the path and filename of the cursor in area "Cursor - Observe only". As an alternative, navigate to the file of the desired cursor with button "...".

6. In order to change the maximum number of simultaneous connections, enter the desired value in "Maximum number of simultaneous connections".

7. In order to change the maximum number of opened tabs in the Browser, enter the desired value in "Maximum number of tabs per browser".

8. In order to activate the creation of a system message, activate "Activate session start/stop message".

Result

The settings for runtime have now been made.

4.3 Starting and Operating the DataMonitor on the DataMonitor Client

4.3.1 Starting the DataMonitor startup page on the DataMonitor client

Introduction

The start page of the DataMonitor summarizes the functions of the DataMonitor.

- "Process Screens to display process pictures.
- "Webcenter" to configure connections and create WebCenter pages for the display of archived data.
- "Trends and Alarms" for the display of messages and process values from archives in tables and diagrams.
- "Reports" for the creation and display of reports.
- "Excel Workbooks" to display process and archive values in Excel workbooks.

You start the DataMonitor client on a standalone computer or on a DataMonitor server.

Requirements

- Before starting the DataMonitor, you must set up a user in the Windows user group "DM_ADMIN" and in other user groups if required. For administrative changes within the DataMonitor, it is mandatory that you have a user in user group "DM_ADMIN".
- The WinCC project on the DataMonitor server has been configured, published and activated for DataMonitor access.
Procedure

1. Open the MS Internet Explorer on the DataMonitor client.
2. Enter the name of the DataMonitor server in the format "http://<servername>" in the URL. Confirm the entry with "Enter".
3. The log-in dialog is opened. Enter the name of a Windows user in the "User name" field. Enter the respective password and confirm with "OK". The start page with the DataMonitor functions will be displayed.

Result

The start page with the DataMonitor functions will be displayed on the DataMonitor client and the functions can be used depending on the access rights of the user.

4.3.2 General Operations of the DataMonitor Client

Introduction

All DataMonitor pages have the same structure.

- Header:
  - The GUI language can be changed if necessary in the header.
  - A symbol for hiding the header is contained in the header.
- Navigation control
  - The current user is shown via the navigation bar.
  - The link for logging off is shown under the user name.
- Contents
Procedure - Changing the GUI Language

- Choose the desired language from the selection field in the header.
The GUI language is changed.

Procedure - Hide and show the header

1. To hide the header line, click on the symbol ．
   This provides more room for displaying the content.
2. To show the header line again, click on the symbol ．

Procedure for logging off

1. In order to log off from the DataMonitor server, click on the "Log off" link.
2. Close the Browser.
   Only if you close the browser will the used license be released immediately.

4.4 DataMonitor Process Screens

4.4.1 Overview of the function "Process Screens"

Overview

The function "Process Screens" of DataMonitor serves exclusively to monitor and navigate via the WinCC process screens with the MS Internet Explorer and is therefore a so-called "View Only Client".

Only the process screen published using Web View Publisher of WinCC Web Navigator are displayed.

The cursor is a "View Only Cursor" indicating that process-related operations are not allowed. Certain operations, such as opening the Properties dialog of an online trend control, are still possible. If necessary, you can use your own cursor as a "View Only Cursor". For additional information on this topic, please refer to "Making Settings for Runtime (Page 131)".

Note

As a system feature, some operations that are actually disabled, are still possible on the DataMonitor client in the function "Process Screens", e.g. the entry into an I/O field. However, process-related access to the WinCC project is safely blocked by the DataMonitor server.
Display process screens directly via URL

You can directly call published pictures in the Internet Explorer via the following URL: Use the following call:

- http://WEBNAVIGATORSERVER/webclient.asp?PictureName=BILDNAME.pdl

In your call, replace "WEBNAVIGATORSERVER" through the name of the WebNavigator Server or the DataMonitor Server where the image is located. Replace the "PICTURENAME" with the name of the picture that has been made public.

4.4.2 First starting process screens

Introduction

The function "Process Screens" of DataMonitor serves exclusively to monitor and navigate using the WinCC process screens with the MS Internet Explorer and is therefore a so-called "View Only Client". The DataMonitor client is used to display process screens.

This section describes the installation of the Web DataMonitor client on a client computer during the first start of Process Screens.

Requirements

- A "WinCC DataMonitor" license is installed on the DataMonitor server.
- The WinCC project on the DataMonitor server has been configured, published and activated for DataMonitor access.

Procedure

2. In the "User name" field, enter the name of a user that is listed in the WinCC User Administrator, e.g. "DM_demo". The user must be assigned the system authorization 1002 - "Web Access - monitoring only!". Enter the respective password and confirm with "OK". The dialog for the installation of the DataMonitor client is displayed with the first start of "Process Screens".
3. Click the text "Click here to install" to start the installation. The query to execute the saving of the setup file is displayed.
4. Click the "Save" button. In the next dialog, select the directory in which the setup files are to be saved.
5. Leave the Internet Explorer open and open Windows Explorer. Navigate to the folder in which the Setup file was saved and start the setup by double clicking on the file. The file is now decompressed and the setup of the DataMonitor client starts.
6. Click "Next >" in the next dialog.
7. Activate the option "I accept the terms of license agreement" in the dialog "License Agreement". Click "Next".
8. Enter the user name and organization in the "Customer information" dialog. Click "Next".
9. Select the "Complete" option in the "Setup type" dialog to install the components of the DataMonitor client. Click "Next".
10. Click the "Install" button in the next dialog.
11. Click the "Finish" button in the "InstallShield Wizard completed" dialog.
12. When the installation is completed successfully, the DataMonitor client connects to the activated WinCC project. The dialog "Download/Installation - DataMonitor Client Components" is displayed and shows the installed components with their version.
13. Click the "Process Screens" link. The published process screens to monitor and navigate are displayed.

**Result**

On the client computer, the DataMonitor client is installed and the process screens of the published WinCC project are displayed.

**Note**

As an option, you can install the DataMonitor client in the Download area. To do this, go to the Download area, start the installation and perform steps 4 to 11. The call the "Process Screens" function of the DataMonitor.

The cursor is a "View Only Cursor" indicating that process-related operations are not allowed. Certain operations, such as opening the properties dialog of an online trend control, are still possible.

**Note**

As a system feature, some operations that are actually disabled can still be performed on the DataMonitor client in the "Process Screens" function, for example you can still enter information in an I/O field. However, process-related access to the WinCC project is safely blocked by the DataMonitor server.

### 4.4.3 Display process screens

**Introduction**

The function "Process Screens" of DataMonitor serves exclusively to monitor and navigate via the WinCC process screens with the MS Internet Explorer and is therefore a so-called "View Only Client".

In order to display the process screens on the DataMonitor client, the WinCC/Web Navigator client is used. The Web Navigator Client is installed during the initial start of "Process Screens".
Further information on this can be found in the section "First starting process screens (Page 136)".

This chapter describes the display of the process screens via "Process Screens" on a client computer.

Requirements

- A "WinCC DataMonitor" license is required on the DataMonitor server.
- The WinCC project must be configured, published and activated on the DataMonitor server for the DataMonitor access.

Procedure

1. Select the entry "Process Screens" on the DataMonitor start page.
2. If a user has already been logged into the DataMonitor client, no log-in dialog is displayed. Continue at step 4.
3. If no user has been logged into the DataMonitor client, the log-in dialog is displayed. In the field "User name", enter the name of a user that exists in the WinCC User Administrator, e.g. "DM_demo". The user must be assigned Authorization No. 1002 - "Web Access - monitoring only!". Enter the respective password and confirm with "OK".
4. The DataMonitor client connects to the activated WinCC project and the published process screens to monitor and navigate will be displayed.

Result

The published process screens are displayed.

The cursor is a "View Only Cursor" indicating that process-related operations are not allowed. Certain operations, such as opening the Properties dialog of an online trend control, are still possible. If necessary, you can use your own cursor as a "View Only Cursor". For additional information on this topic, please refer to "Making Settings for Runtime (Page 131)".

Note

As a system feature, some operations that are actually disabled, are still possible on the DataMonitor client in the function "Process Screens", e.g. the entry into an I/O field. However, process-related access to the WinCC project is safely blocked by the DataMonitor server.

See also

Overview of the function "Process Screens" (Page 135)
4.5 DataMonitor Webcenter

4.5.1 DataMonitor WebCenter

Overview

The "WebCenter" of the DataMonitor has the following functions:

- Central information portal for access to WinCC data
- Central for the creation and management of WebCenter pages
- Administering the user rights for DataMonitor
  The user administration is based on the Windows user administration.
- Settings such as the connection configuration
- Connecting and Disconnecting Archives

The user can assemble and save the displayed objects of DataMonitor, the web parts, as screen views. This allows parallel display of process data and data of the message archives for any periods.

Configuration of web parts can be exported as XML file.

To transfer the entire configuration data to another computer, you need to copy the corresponding project folder:

- \Siemens\WinCC\WebNavigator\DataMonitorServer\WebCenter

Web parts

The WebCenter pages are constructed from various web parts. Within the WebCenter pages, the parameter definitions are stored for the respective web parts and can be called up again at any time. A multiple use of the same web part is also possible with different parameter definitions. The WebCenter pages that have been created in this way can be opened by different users with the same parameter definitions depending on the assignment of rights.

The following web parts are also used in the "Trends and Alarms" function:

- Process value table
- Trend (process values)
- Alarm table
- Alarm hit list
- Statistic Functions of the Process Values

Within function "Trends & Alarms", every user can only run one parameter definition for each web part and this parameter definition is stored for this user. Other users cannot access the parameter definition for this web part.
4.5.2 Overview of web center pages

Overview

The WebCenter pages are stored in directories. Members of the user group "DM_ADMIN" can create and delete directories. The following users can log in on the WebCenter:

- Members of user groups that have at least the "Read" access right for the "Public" directory.

Members of user group "DM_ADMIN" can assign the individual user groups with various rights to the individual directories.

WebCenter:

With function "WebCenter", you can assemble and save the displaying objects of the DataMonitor, the web parts, in WebCenter pages.

There are three access types with WebCenter pages:

- "Public"
  For the creation, configuration, modification and saving of the WebCenter page, the logged-in user must be a member of the Windows user group "DM_ADMIN". Public WebCenter pages can be opened by all users that have reading rights to the "Public" directory.

- "Private"
  Every user that has access to the WebCenter has their own "Private" directory. Private WebCenter pages can only be opened by the owner of that directory.

- "User Group-Specific"
  A user of the user group "DM_ADMIN" can create other directories and assign the other user groups various access rights to these directories. This permits user group-specific access. For additional information on this topic, please refer to "User Groups and Directories (Page 143)".

Layout Templates

For the creation of the web center pages, there are several template files following the installation of DataMonitor, the so-called layout templates. A user, who is a member of the Windows user group "DM_ADMIN" can create new layout templates.

Required Steps for Creating WebCenter Pages

- Creating Layout Templates for WebCenter Pages (Page 156)
- Creating web center pages (Page 161)
- Inserting web parts into the web center page (Page 164)
4.5.3 Administration

4.5.3.1 Create connection and set up language

Introduction

For the DataMonitor client to access the data, a connection to the data source, which is supposed to be accessed, must be configured in "Webcenter".

A connection has to be created for each data source, e.g. the WinCC server, CAS or swapped archives. The configured connection is required for example for the function "Trends and Alarms" and the WebCenter page.

Prerequisite

To configure a connection in the "Webcenter", the user that is logged in must be a member of the Windows user group "DM_ADMIN".

Procedure

1. Select the entry "Webcenter" on the DataMonitor start page.
   The "Webcenter" is displayed.
2. Select the entry "Administration".
   The "Connection Administration" page is displayed.
3. Choose the language that corresponds with the linguistic region of the server or archive to be linked in "Configured Language".
If you do not select the language that corresponds with the respective linguistic region, it can lead to characters being displayed incorrectly on the page.

4. Select the option "New connection" in the view "Connection management".
After the new installation, no selection is possible in the "Connection" field, as no connections have been configured yet.

5. Enter a name into the field "Connection name", e.g. "Con01_WinCCRuntime_Archives".
The name can be selected freely; however, it should contain a hint to the selected connection type. Do not use spaces and special characters in the connection name.

6. Choose the desired option in the "Connection type" area.
   - If you select "WinCC Runtime + Swapped archive" for instance, "CC_ExternalBrowsing" is automatically entered in the "Database" line.
   - If you select the connection type "WinCC Runtime" or "CAS", you must indicate the Runtime database of the activated WinCC project.

The "Find" and "Show database" buttons are shown beside the fields "Computer name" and "Database". These buttons are used for selecting the computer and the database. As an alternative, you can determine the name of the database via the SIMATIC Shell on the WinCC server.

6. For this, select the computer name of the WinCC server or CAS to be connected. Click the entry of the opened WinCC project in the right field. In the "DSN" field, the database name will be displayed.
   Supplement this database name with the character "R" at the end. Enter this name in the line "Database" in the format: "CC_<project name>_R".

7. Enter the computer name, whose data you would like to access, in the "Computer name" field. As an alternative, select the name of the computer using the "Find" button.

8. Enter the desired database in the "Database" field. As an alternative, select the database with the button that appears.

9. Click the "Create" button. The connection will now be created and the status of the procedure can be seen at the progress display in the status line.

10. After completion of the process, the new connection will be displayed or can be selected in the field "Connection".

Result

A connection is configured to the data source that is being accessed.
The linguistic region is defined for the connection.
4.5.3.2 User Groups and Directories

User Groups and Directories

Overview

WebCenter pages and reports are stored in directories on the DataMonitor server. Its standard complement of directories is as follows:

- "Public"
- "Private"

Every user has a "Private" directory. Only the respective user has access rights to this directory.

More information on setting up directories can be found in chapter "Creating Directories (Page 145)".

Windows User Groups

User groups "DM_ADMIN" and "DM_USER" are created as default user groups. You can create more user groups. More information on setting up user groups and users can be found in chapter "Defining Users and Access Rights in Windows (Page 122)".

To access the DataMonitor, you can assign all members of a user group with the same access rights to the directory of the DataMonitor server.

The following access authorization is possible:

- Read
- "Change"
- "Create"

A user, as a member of a user group, only has access to a directory if the respective user group has access rights to that directory. This permits user group-specific access. More information on assigning access authorization can be found in chapter "Assigning Access Rights (Page 146)".

The following picture shows the basic user administration for the WebCenter.
Creating Directories

Introduction

You store WebCenter pages in directories. The following directories exist as defaults:

- "Public"
- "Private"
  Every Windows user has their own "Private" directory.

You can create other directories as a member of user group "DM_ADMIN". The directories are created in a layer.

Prerequisite

- The logged in user is a member of the Windows user group "DM_ADMIN".

Procedure

1. Select the entry "Webcenter" on the DataMonitor start page.
   The Webcenter is opened.
2. Select the entry "Administration".
3. Select the menu item "Directory administration".
   The "Directory Administration" page is displayed.
4. In order to create a new directory, enter the name of the new directory in the "New Directory" box.
5. Click the "Create" button.
Result

A new directory has been created.

Assigning Access Rights

Introduction

Directories, in which WebCenter pages are stored for instance, are created in the WebCenter. You can assign different access rights for the individual directories to Windows user groups.

The following access authorization is possible:

- Read
- "Change"
- "Create"

Prerequisite

- The logged in user is a member of the Windows user group "DM_ADMIN".

Procedure

1. Select the entry "Webcenter" on the DataMonitor start page. The Webcenter is opened.
2. Select the entry "Administration".
3. Select the menu item "User Administration". The "User Administration" page is displayed.
4. Select the desired directory from the "Current Directory" selection box. All existing Windows user groups are listed.

5. Click on "Change" in the "Settings" column in the line for the desired Windows user group. The options "Read", "Change" and "Create" can now be selected. The links "Accept" and "Cancel" are shown in the "Settings" column.

6. Activate the desired access rights for the user group.

7. In order to accept the setting, click on "Accept".

Result

The access right for members of the Windows user groups has been changed for the directory.

See also

User Groups and Directories (Page 143)

Example: User Groups and Directories

Overview

User groups "Service" and "Planning" have been created in the following example. Directories "ServiceGroup", "Water" and "ProcessPlans" are created in the WebCenter.

The following table shows which access authorization that the members of user groups "Service" and "Planning" have for the following directories:

- ServiceGroup
- Water
- ProcessPlans

<table>
<thead>
<tr>
<th>Directory</th>
<th>User group &quot;Service&quot;</th>
<th>User group &quot;Planning&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>• Read</td>
<td>• Read</td>
</tr>
<tr>
<td>Private</td>
<td>• Read</td>
<td>• Read</td>
</tr>
<tr>
<td></td>
<td>• &quot;Change&quot;</td>
<td>• &quot;Change&quot;</td>
</tr>
<tr>
<td></td>
<td>• &quot;Create&quot;</td>
<td>• &quot;Create&quot;</td>
</tr>
<tr>
<td>ServiceGroup</td>
<td>• Read</td>
<td>• Read</td>
</tr>
<tr>
<td></td>
<td>• &quot;Change&quot;</td>
<td>• &quot;Change&quot;</td>
</tr>
<tr>
<td></td>
<td>• &quot;Create&quot;</td>
<td>• &quot;Create&quot;</td>
</tr>
<tr>
<td>Water</td>
<td>• Read</td>
<td>No access authorization</td>
</tr>
<tr>
<td></td>
<td>• &quot;Change&quot;</td>
<td></td>
</tr>
<tr>
<td>ProcessPlans</td>
<td>No access authorization</td>
<td>• Read</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• &quot;Change&quot;</td>
</tr>
</tbody>
</table>
All directories for which the user group "Service" has at least read access are shown in the navigation bar, as soon as a member of this user group has logged in and opened "Pages" in the WebCenter.

The user "Service_014", member of user group "Service", has the following view of the pages of the WebCenter:

The user "Plan_012", member of user group "Planning", has the following view of the pages of the WebCenter:

---

4.5.3.3 Connecting and Disconnecting Archives in the WebCenter

Introduction

In order to enable DataMonitor client access to swapped archives, these archives must be connected to an SQL server again. The DataMonitor client can then access this data.

WinCC Runtime archives cannot be connected or disconnected, since their connection with the SQL server is managed by the WinCC Basic system.

You are provided with the following ways of connecting and disconnecting archives:

- Within the Web Center
- With the Archive Connector
This section describes the procedures within the WebCenter.

Note
You have no access to the connected archives with the following objects:
- WinCC Alarm Control
- WinCC Online Trend Control
- WinCC Online Table Control
- WinCC Online Function Trend Control

Functions

You can carry out the following functions:

Manual Connection  Local databases are selected and connected to the local SQL Server.
Manual Disconnection Connected databases can be selected and disconnected from the SQL Server.
Automatic Connection Local directories can be selected in which WinCC archives have been exported. Archives added to the selected directories after activating the change monitoring are automatically linked to the SQL server.

Note
Note the following points when accessing swapped archives, which are on changeable media such as tape or tape drives or MOD drives:
Before changing the media in the drive you need to disconnect the archives on this medium. After changing the medium, check whether the archives are connected on the new medium.

Write protection

Swapped WinCC archives are write-protected. Create a backup copy of the archive before connecting and remove the write-protection of the copied archive.

Note
Archives created with SQL Server 2000 can only be connected if you remove the write protection of the archive.
In order to connect swapped out archives on CD or DVD, copy the archives to a media where you will be able to remove the write protection.

If you connect signed archives, which have been changed after the swap, a message is output.
Requirements

- The logged in user must be a member of the Windows user group "DM_ADMIN".

Note

Directory sharing

If you want to assign archives, you need to set the share properties as follows:

- The directories, in which the archives are stored, must first be set for sharing in the Windows Explorer.
- The user group "SIMATIC HMI VIEWER" must have authorization "Full access" to the directories.
  - Use the shortcut menu to open the "Properties" dialog for the respective directory.
  - Open to the "Security" tab.
  - Use the "Add..." button to add the "SIMATIC HMI VIEWER" user group.
  - Activate the "Full access" option.
  - Click "Apply".
  - Close the dialog.

Then you can select the shared directory, assign a symbolic name and assign the included archives. Previously connected directories are automatically displayed in the "Symbolic name of the directory" selection box.

The directory must be set for sharing in the Windows Explorer before you start the DataMonitor server. If you set directories for sharing at a later point in time, these directories will not be recognized or at least they will not be recognized for a long period of time.

Possible remedy:
- Restart computer with DataMonitor server

Note

Removing a directory

If you want to remove a directory containing archives from the list of symbolic names, all archives contained therein must be disconnected. You can check the status of the archives in the "List of existing archives" in the "Connect ?" column.

Procedure

1. Select the entry "Webcenter" on the DataMonitor start page.
   The Webcenter opens.
2. Select the entry "Administration".
3. Select the menu command "Connect/disconnect archives".
   The "Connect/disconnect archives" page is shown.
   In this tab, you display and manage the archiving directories for which a Web access or
   access via the WinCC OLE DB provider is to be possible.

4. Enter a meaningful symbolic name for each archiving directory in the "Symbolic Name" field
   in the "Add symbolic directory" area.
   The name should only contain the characters permitted in the SQL syntax. You use the
   symbolic name for access via the DataMonitor client.
   You can thus maintain and link swapped data of multiple computers or projects.

5. Choose the directory in which the WinCC archives are found in the "Directory" selection
   box in the "Add symbolic directory" area.
   The directory must be set for sharing.
6. In order to connect all existing archives of the directory, activate the "Automatically connect all archives in this directory".

7. In order to limit the display list, activate or deactivate the display for the following archive types:
   - Alarm archives
   - Tag archive compressed (fast)
   - Tag archive not compressed (slow)

8. In order to limit the time for the connected archives, enter the desired time period and activate "Only archive in the following time period".

9. Click the "Refresh display" to update the display.

10. In order to connect a single archive, click the "Connect" button in the "List of existing archives" area.

11. In order to disconnect a single archive, click the "Disconnect" button in the "List of existing archives" area.

### 4.5.3.4 Connect Archive using WinCC Archive Connector

#### Introduction

The WinCC Archive Connector is used for configuration of the archive database access and is an integral part of the WinCC DataMonitor or WinCC Connectivity Pack. With the Archive Connector, already swapped out WinCC archives can be reconnected to an SQL Server. DataMonitor Client and WinCC OLE DB Provider can then access this data.

WinCC Runtime archives cannot be connected or disconnected with the Archive Connector, since their connection to the SQL server is managed by the WinCC Basic system.

You are provided with the following ways of connecting and disconnecting archives:

- within the WebCenter
- with the Archive Connector

This chapter describes the procedure using the Archive Connector.

If you connect signed archives, which have been changed after the swap, a message is output.

#### Note

The following objects do not give any access to the linked archives using Archive Connector:

- WinCC Alarm Control
- WinCC Online Trend Control
- WinCC Online Table Control
- WinCC Online Function Trend Control
Functions of the Archive Connector

WinCC Archive Connector allows the following functions:

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Connection</td>
<td>Local databases are selected and connected to the local SQL Server.</td>
</tr>
<tr>
<td>Manual Disconnection</td>
<td>Connected databases can be selected and disconnected from the SQL Server.</td>
</tr>
<tr>
<td>Automatic Connection</td>
<td>Local directories can be selected in which WinCC archives have been exported. Archives added to the selected directories after activating the change monitoring are automatically linked to the SQL server.</td>
</tr>
</tbody>
</table>

Note

Note the following points when accessing swapped archives, which are on changeable media such as tape or tape drives or MOD drives:

Before changing the media in the drive you need to disconnect the archives on this medium using the Archive Connector.

After changing the medium, check in Archive Connector whether the archives are linked on the new medium.

Configuration Instructions

The Archive Connector can only be operated on a local SQL server and an authorization for WinCC DataMonitor or WinCC Connectivity Pack.

After finishing the configuration or the operation, the Archive Connector can be closed.

Write protection

Swapped WinCC archives are write-protected. Create a backup copy of the archive before connecting and remove the write-protection of the copied archive.

Note

Archives created with SQL Server 2000 can only be connected if you remove the write protection of the archive. Archives that are once linked can no longer be linked using the Archive Connector of DataMonitor versions V6.0 and V6.1 under SQL Server 2000.

In order to connect swapped out archives on CD or DVD, copy the archives to a media where you will be able to remove the write protection.

Swapping path

The path of the swapped WinCC archives is configured in WinCC with the Archive Configurator of, for example, Tag Logging and not with the Archive Connector.
Access security
The operation of the WinCC Archive Connector should only be enabled for a limited group of persons. Therefore, access to the Tool should be protected using Windows user authorization "Administrators" or other Windows protective measures, such as storage in a protected directory.

Configuration
Define the configuration in the “Archive Connector” dialog in the “Configuration” tab.

In this tab, the archiving folders are displayed and managed for which a Web access or access via the WinCC OLE DB Provider is to be possible.

You can add or remove archiving folders using the respective buttons.

If you activate the checkbox for a folder in the "Monitored" column, then all archives that are added to the folder from the time of activation are automatically linked to the SQL server.

Symbolic folder names
Assign a unique symbolic name for each archiving folder at the time of configuration. The name should only contain the characters permitted in the SQL syntax.
Use the symbolic name for access via DataMonitor client or WinCC OLE DB Provider. You can thus maintain and link swapped data of multiple computers or projects.

**Connecting and Disconnecting Archives**

All archives in the archiving folders are listed in the 'Archive Connector' dialog in the "Connect/disconnect Archives" tab.

The connection status of each archive is displayed. "From" and "To" columns contain the archiving period denoted in the local time zone.

You can enable or disable the connection to the archives using the "Connect" or "Disconnect" buttons.

**Archive Type**

The "Type" field contains the details for archive type:

- "A" - Alarm Logging
- "TF" - Tag Logging (Fast)
- "TS" - Tag Logging (Slow)
4.5 DataMonitor Webcenter

Note
If the function "Connect/Disconnect Archives" is supposed to be used to assign archives located in a directory outside a WinCC project directory, this directory must first be enabled in Windows Explorer. Subsequently, using the function "Assign/Disconnect Archives", the enabled directory may be selected, a symbolic name may be specified and archives contained therein may be assigned. Previously connected directories through Archive Connector are automatically displayed in the "Symbolic Folder Name" selection field.

If the function "Assign/Disconnect Archives" is supposed to be used to remove a directory containing archives from the list of symbolic names, all archives contained therein must be disconnected. The status of the archives can be verified in the "Assign/Disconnect Archives" in the "Link" column.

4.5.4 Creating Layout Templates and WebCenter Pages

4.5.4.1 Creating Layout Templates for WebCenter Pages

Introduction

Combine the web parts to create the WebCenter pages and store them in the "Webcenter".

You require a Layout Template to create a WebCenter page. Many prefabricated Layouts have been installed during the installation. Additionally, you can create your own Layout Templates.

This chapter describes how you create a Layout Template.
Requirements

- For the creation and saving of a layout template, the logged-in user must be a member of the Windows user group "DM_ADMIN".

Procedure

1. Select the entry "Web center" and then the "Configuration" entry on the DataMonitor start page.
2. Select menu item "Create Layout". The page "Create Layout" will open and step 1 of the process will be displayed.
3. Select the number of columns, e.g. "2".
4. Select the number of lines, e.g. "3".
5. Enter the name in the "Name of the layout file" box, "MyLayout_2x3" for instance.
6. Click "Next". Step 2 will be displayed.

7. In step 2, you summarize the requirements of the table fields. For this, click the desired arrow symbol, such as "Arrow left", in the desired field, for example line 2 / column 2. The modified view will be displayed.

8. If necessary, you can restore the original table form via the button "Reset configuration", to create a different constellation.
9. Click "Next". Step 3 will be displayed. In step 3 of the template creation, you define the order of the web parts in the table fields.

10. If necessary, activate the corresponding symbol in a table field to place the web parts vertically or horizontally.

11. Click "Save".

**Result**

The Layout Template is created. You can use the layout template as a template for creating a WebCenter page.

4.5.4.2 Deleting Pages and Layout Templates

**Introduction**

You can delete layout templates and pages that are no longer required.
Prerequisites - Deleting Layout Templates

- For deleting a layout, the logged-in user must be a member of Windows user group "DM_ADMIN".

Procedure - Deleting Layout Templates

1. Select the entry "Web center" and then the "Configuration" entry on the DataMonitor start page.

2. Select menu item "Delete Layout". The page "Delete Layout" is displayed.

3. In order to delete multiple layout files at the same time, activate the respective check box and click on the lower "Delete" button.

4. In order to delete individual layout files, click on the respective "Delete" button in the "Action" column.

Result

The selected layout templates are deleted.
Prerequisites - Delete Pages

The following must be completed for deleting a WebCenter page:

- The logged in user must have "Create" access rights for the directory, in which the page to be deleted is stored.

Procedure - Delete Pages

1. Select the entry "Web center" and then the "Configuration" entry on the DataMonitor start page.
2. Select menu item "Delete Pages".
   The page "Delete Pages" is displayed.
3. Activate the respective check box to mark the pages to be deleted.
4. Click on the "Delete" button.

Result

The selected pages are deleted.

4.5.4.3 Creating web center pages

Introduction

Combine the web parts to create the WebCenter pages and store them in the "WebCenter". WebCenter pages are stored in directories.

You can only change or create WebCenter pages in directories, for which the user group has the "Change" or "Create" access rights.

WebCenter pages of a directory can only be viewed by the users of a user group that has at least the "Read" access rights to the directory.

In this example, the WebCenter page is saved in directory "Public". Public web center pages can be read by all users.
Requirements

- For creating and saving a WebCenter page in the "Public" directory, the logged-in user must be a member of the Windows user group "DM_ADMIN".

Procedure

1. Select entry "Webcenter" and then the "Configuration" entry on the DataMonitor start page.
2. Select menu item "Create Page". The page "Create Page" is displayed.
3. Select a Layout Template.
   In this example, Layout Template that you have created yourself is used, "MyLayout_1x2"
   with two areas. The file name is displayed in the "Layout file" field.

4. Enter a name in the "WebCenter page" field, for instance "Centerpage01".

5. Select the directory, in which the WebCenter page should be stored. Just click the
   corresponding entry in the directory structure, e.g. "Public". The selected directory is
   displayed in the field "Save WebCenter page as".

6. Click "Save".

Result

The web center page has been created.

You can open the newly created WebCenter page in the "Public" directory. As long as no web
parts are contained in the WebCenter page, a blank WebCenter page is displayed.

4.5.5 Configuring and changing WebCenter pages

4.5.5.1 Overview of Web Parts

Overview

WebCenter pages are created by combining web parts in the "WebCenter".

The following web parts are available:
• Process value table
The available process values are displayed for the defined time period.
For further information, see the chapter "Displaying process values in a table (Page 171)".

• Process Values in the Table (Timestep)
With the web part "Process values in table (time step)", the complete archive name and the
tag name are displayed as a tool tip in the column header.
The process values are combined beginning with the starting time in the defined time
interval. Depending on the defined aggregate type, the interval result is shown for the
interval. For example: a process value was archived every 30 seconds. You select an
interval of 60 seconds and the aggregate type "Average value". It determines the average
value of two archive values each, which is then displayed in the table with the first time
stamp of the averaging interval. If you select an aggregate type without interpolation, and
if no value is present in the interval, no interval result will be displayed. If you select an
aggregate type with interpolation, an interval result is displayed for every interval. Linear
interpolation is used.
For further information, see the chapter "Displaying process values in a diagram
(Page 176)".

• Statistics functions for process values
All available process values are optimized in the defined time period, to calculate and
display the average value, for example.
For further information, see the chapter "Displaying statistics function for process values
(Page 192)".

• Trend Process Values
• Trend (Timestep)
• Bar Chart (Aggregates)
• Pie Chart (Aggregates)
• Alarm hit list
For further information, see the chapter "Displaying the hit list of messages (Page 182)".

• Alarm table
For further information, see the chapter "Displaying messages in the alarm table
(Page 187)".

• Connection to WebCenter Pages
• Links (external)
• Displaying information
• Display Process Screen
• Display Graphic
• The Last Reports

4.5.5.2 Inserting web parts into the web center page

Introduction
WebCenter pages are created by combining web parts in the "WebCenter".
An overview of the possible web parts is found in chapter "Overview of Web Parts (Page 163)". You can only change or create WebCenter pages in directories, for which the user group has the "Change" or "Create" access rights.

WebCenter pages of a directory can only be viewed by the users of a user group that has at least the "Read" access rights to the directory.

In this example, web parts are inserted in the WebCenter page "Centerpage01" in the "Public" directory. WebCenter pages can be read by all users in the "Public" directory.

Requirements

- For creating, changing and saving a WebCenter page in the "Public" directory, the logged-in user must be a member of the Windows user group "DM_ADMIN".

Procedure

1. Select the entry "Web center" and then the "Pages" entry on the DataMonitor start page.
2. Click on the entry for the desired page, in this case "Center page 01". As an alternative, select the desired page in the selection field.
   The blank page is displayed.
3. To add web parts, click on the symbol on the right side.
   The web parts that are available are listed.
   If you have exported web parts that have already been configured, they are listed under "Imported web parts". If necessary, insert these web parts into your WebCenter page.

4. Select a web part from the catalog, for example "Trend (process values" and activate the corresponding check box.

5. Select the area in the field "Add" into which this web part should be inserted, into the top area "WPZ_01_01" for example. In this example, the areas "WPZ_01_01" and "WPZ_02_01" can be selected.

6. Click "Add" to insert the web part.

7. Select another web part from the catalog, for example "Hit list of the alarms" and activate the corresponding check box.

8. Select the lower area "WPZ_02_01", into which this web part should be inserted, in the "Add to" field.
9. Click "Add" to insert the web part. These two inserted web parts are now displayed.

10. Click "Close" to complete the configuration of the web center page. The current summary of the web center page is displayed.

Result

Web parts to display data have been inserted into the web center page.
4.5.5.3 Configuring Web Parts Within Web Pages

Introduction
WebCenter pages are created by combining web parts in the "WebCenter". In order to display the desired data from a WinCC runtime system or an archive, you must configure the web parts.

Requirements
- The user that is logged in must be a member of a Windows user group, which has "Change" access rights to the directory that contains the WebCenter page to be configured. See chapter "User Groups and Directories (Page 143)" for more information. In this example, the WebCenter page "Center page 01" is created in directory "Public".
- The WinCC project must be activated.
Procedure

1. Open the WebCenter page that you want to configure. This requires that you select the "Pages" entry in the WebCenter. Open the directory, in which the page is created.

2. Click on the desired page entry.
   The page is opened.
3. If the web parts of a web center page have already been configured, the data will be displayed with an existing connection to the configured data source. If the web parts have not yet been configured or the configuration should be changed, you must configure the web parts. This requires that you open the configuration dialog for a web part with the symbol in the web part.

4. Configure the web part.
Exemplary detailed information on the configuration of a web part in chapters:
- Displaying process values in a table (Page 171)
- Displaying process values in a diagram (Page 176)
- Displaying the hit list of messages (Page 182)
- Displaying messages in the alarm table (Page 187)
- Displaying statistics function for process values (Page 192)

5. To change the position of the web part, move the web part to the desired position with the mouse.

Result
Data is displayed with the WebCenter page.

More Operational Capabilities
The following operating functions are available to you:
- To delete the web part, click on the symbol 
- To minimize the web part, click on the symbol 
- To show the entire web part again, click on the symbol 
- To export the web part, click on the symbol 
- To export the configuration of the web part as an XML file, click on symbol 

4.6 DataMonitor Trends and Alarms

4.6.1 Overview of the function "Trends and Alarms"

Overview
"Trends & Alarms" are preconfigured Internet pages and offer the following functions for process values and messages:
- Displaying a process value in a table.
- Displaying a maximum of three process values in a diagram.
• Statistics functions for process values.
• Hit list for messages.
• Displaying messages in a table.

Web parts

The functions of "Trends & Alarms" are configured with web parts. The same parts are used here as are used in the WebCenter pages.

Within "Trends & Alarms", every user can only run one parameter definition for each web part and this parameter definition is stored for this user. Other users cannot access the parameter definition for this web part directly.

The WebCenter pages are constructed of one or more different web parts. Within the WebCenter pages, the parameter definitions are stored for the respective web parts and can be called up again at any time. A multiple use of the same web part is also possible with different parameter definitions. The WebCenter pages that have been created in this way can be opened by different users with the same parameter definitions depending on the assignment of rights.

4.6.2 Displaying process values in a table

Introduction

With the function "Trends & Alarms", display and analysis functions for archived process values and messages are possible.

This section describes the display of process values in a table.

Requirements

A link must have been configured in DataMonitor WebCenter to use the "Trends and Alarms" functions.
Procedure

1. Select the entry "Trends & Alarms" on the DataMonitor start page.
2. Click the entry "Process value table" in the menu bar.
   The Web part "Process Value Table" is displayed.
3. Click 

The configuration dialog of the Web part opens.
### PROCESS VALUE TABLE

<table>
<thead>
<tr>
<th>Process value table</th>
<th>Trend (process values)</th>
<th>Alarm table</th>
<th>Hit list of alarms</th>
<th>Statistics functions for process data</th>
</tr>
</thead>
</table>

#### Value selection

- **Link**: `Con01.WinCCRuntime`
- **Archive selection**: `ProcessValueArchive`
- **Tags filter**: `trend`
- **Select tags**

#### Selecting a tag

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ProcessValueArchive</td>
</tr>
<tr>
<td>ProcessValueArchive</td>
</tr>
<tr>
<td>ProcessValueArchive</td>
</tr>
</tbody>
</table>

**Current selection:** `ProcessValueArchive|Trend_0`

#### Time frame

<table>
<thead>
<tr>
<th>Relative period</th>
<th>Absolute period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years</td>
<td>Months</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Display of decimal places**

- **Decimal places**: 2

#### Table size

<table>
<thead>
<tr>
<th>Height in Pixel</th>
<th>Width in Pixel</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>300</td>
</tr>
</tbody>
</table>

---

**Link to Webcenter pages**

- [Private/Private-Alarms](#)
- [Private/Private-Balken](#)
4. In the section "Process value table", you can enter a different title in the field "Heading" and you can add a brief tip in the field "Tooltip".

5. Select one of the configured connections, such as "Con01_WinCCRuntime" in the section "Value selection" in the field "Connection". The archive tags available via this connection will be displayed. You can limit the number of tags displayed using the "Archive selection" and "Tag filter" fields. Select a value, such as "TREND_0".

6. In the section "Time frame", select the time span from which the process values are to be displayed. With relative times, enter a negative value into the respective field. So, for example, to display the values of the past 10 seconds, you would activate the option in the column "Seconds" and in the line "Relative time frame". Enter the value "-10" into the column "Seconds" in the row "From". Click the "Preview" button. In the column "Preview time frame", the selected time span with date and time will be displayed.

7. In the "Displaying decimal places" section, you can select the number of decimal places when displaying numerical values such as "2".

8. In the "Table size" area, define the size of the display window. For example, enter a height of "200" and a width of "400". If the value "0" is entered into both fields, the size will be determined automatically.

9. The names of the WebCenter pages that are available are shown in the "Links to WebCenter Pages" area.
   - Enable the checkbox in front of the Web Center page name to display in the lower edge of the Web part a link to this Web Center page during data output. Multiple selection is also possible. You can thus quickly switch to one of these WebCenter pages.
10. Click "OK" to display the available values in the table.

With the arrow keys under the table, you can skip to the other pages with multi-page tables.
You can export the displayed table in CSV format using the icon.

11. In order to change the settings, go back to step 3 and repeat the respective settings.

**Result**

The process values are displayed in a table.

**4.6.3 Displaying process values in a diagram**

**Introduction**

With the function "Trends & Alarms", display and analysis functions for archived process values and messages are possible.
This section describes the display of the trends with a maximum of three value axes and three time axes in a diagram, the so-called trend display.

Requirements

A link must have been configured in DataMonitor WebCenter to use the "Trends and Alarms" functions.

Procedure

1. Select the entry "Trends & Alarms" on the DataMonitor start page.
2. Click the entry "Trend (process values)" in the menu bar.
   The Web part "Trend (process values)" is displayed.
3. Click [F].

The configuration dialog of the Web part opens.
4. In the section "Trend (process values)", you can enter a different title in the field "Heading" and you can add a brief tip in the field "Tooltip".

5. Select one of the configured connections, such as "Con01_WinCCRuntime" in the section "Value selection" in the field "Connection". The archive tags available via this connection will be displayed. You can limit the number of tags displayed using the "Archive selection" and "Tag filter" fields.
   - Select the three values, "TREND_1", "TREND_2", "TREND_3" for instance, by clicking on "Add" for each.
   - Define the color for each trend to the right of the process value name in the "Current selection" area. To do this, click the colored field and select the desired color in the opening selection dialog. Besides the names, you can also assign the time and value axes, and the form of the trend display.

6. In the section "Value axis editor", you can activate the automatic scaling for the different value axes or you can assign a minimum and a maximum value to each axis.

7. In the section "Time frame", select the time span from which the process values are to be displayed.
   You will be able to define a specific time frame for each time axis. With relative times, enter a negative value into the respective field. So, for example, to display the values of the past 10 seconds, you would activate the option in the column "Seconds" and in the line "Relative time frame". Enter the value "-10" into the column "Seconds" in the row "From". Click the "Preview" button. In the column "Preview time frame", the selected time span with date and time will be displayed.

8. In the section "Diagram settings", you can define the size of the display window. The fields have been preassigned certain values. If needed, you can edit these values respectively.
   Activate the option "Show legend".

9. The names of the WebCenter pages that are available are shown in the "Links to WebCenter Pages" area. Enable the checkbox in front of the Web Center page name to display in the lower edge of the Web part a link to this Web Center page during data output. Multiple selection is also possible. You can thus quickly switch to one of these WebCenter pages.
10. Click "OK" to display the selected values in the diagram.

11. In order to change the settings, go back to step 3 and repeat the respective settings.

Result

The selected process values are displayed as trends in a diagram.
4.6.4 Displaying the hit list of messages

Introduction
With the function "Trends & Alarms", different analysis functions for archived process values and messages are possible.
This chapter describes the analysis of messages in a hit list.

Requirements
A link must have been configured in DataMonitor WebCenter to use all the functions of "Trends and Alarms".

Procedure
1. Select the entry "Trends & Alarms" on the DataMonitor start page.
2. Click the entry "Hit list of alarms" in the menu bar.
The web part "Hit list of the alarms" is displayed.
3. Click ➔.
   The configuration dialog of the web part is opened. Only a part of the dialog is shown to conserve space.
4. In the section "Hit list of the alarms", you can enter a different title in the field "Heading" and you can add a brief tip in the field "Tooltip".

5. Select one of the configured connections, such as "Con01_WinCCRuntime" in the section "Connection selection" in the field "Connection".

6. In the section "Time frame", select the time span, from which the messages are to be displayed.
   With relative times, enter a negative value into the respective field. So, for example, to display the messages of the past 10 seconds, you would activate the option in the column "Seconds" and in the line "Relative time frame".
   - Enter the value "-10" into the column "Seconds" in the row "From".
   - Click the "Preview" button.
     In the column "Preview time frame", the selected time span with date and time will be displayed.

7. In the section "Language of the alarm texts", select the language, in which the messages are to be displayed.

8. You can select a corresponding WinCC server in the "Selection of the WinCC Server" area. In this example, only the server that is configured in the connection, is displayed.

9. In the section "Filter selection", you may limit the expected search results by means of filter conditions in SQL syntax. Here, filter conditions for individual columns can be specified or in the field "Expanded filter", a filter condition for all columns. In this example, you will not set any filter conditions.

10. In the section "Sorting conditions", you can define the sorting of the output data (if needed) in the field "Sorting order".

11. In the section "Visible columns", click on "Select all" to display all possible analysis values for the messages.

12. In the "Displaying decimal places" section, you can define the number of decimal places when displaying numerical values such as "2".

13. In the section "Table size", you can define the size of the display window. The fields have been preassigned certain values. If needed, you can edit these values respectively.

14. The names of the WebCenter pages that are available are shown in the "Links to WebCenter Pages" area.
   - Enable the checkbox in front of the web center page name to display in the lower edge of the web part a link to this web center page during data output. Multiple selection is also possible. You can thus quickly switch to one of these WebCenter pages.
15. Click "OK" to display the messages in the selected time range and the defined conditions.

The table contains configured data, e.g. "InfoText" and statistical values, e.g. frequency of message, cumulated duration for "Message came in" to "Message went out". You will receive explanations for the columns as a tool tip when pointing the mouse to the respective column header.

With the arrow keys you can skip to the other pages with multi-page tables.

With the icon , the values of the displayed analysis values of the messages can be exported into the CSV format.

16. In order to change the settings, go back to step 3 and repeat the respective settings.

**Result**

The analysis values for the messages are displayed in a hit list.

**Note**

The display of messages in the hit list may take some time and may place a strong load on the CPU. A note is displayed in "Trends and Alarms" if the data volume is too high. You may then confirm the message and continue without any changes, or you may cancel the process to modify the filter criteria and thus reduce the expected amount of data.
4.6.5 Displaying messages in the alarm table

Introduction

With the function "Trends & Alarms", different analysis functions for archived process values and messages are possible.

This chapter describes the display of messages in an alarm table.

Requirements

A link must have been configured in DataMonitor WebCenter to use the "Trends and Alarms" functions.

Procedure

1. Select the entry “Trends & Alarms” on the DataMonitor start page.
2. Click the entry "Alarm table" in the menu bar.
   The web part "Alarm Table" is displayed.
3. Click [Enter].
   The configuration dialog of the web part is opened.

4. In the section "Alarm table", you can enter a different title in the field "Heading" and you can add a brief tip in the field "Tooltip".

5. Select one of the configured connections, such as "Con01_WinCCRuntime" in the section "Connection selection" in the field "Connection".

6. You can select a corresponding WinCC server in the section "Selection of the WinCC Server".

7. In the section "Time frame", select the time span, from which the messages are to be displayed.
   With relative times, enter a negative value into the respective field. So, for example, to display the messages of the past 30 seconds, you would activate the option in the column "Seconds" and in the line "Relative time frame".
   - Enter the value "-30" into the column "Seconds" in the row "From".
   - Click the "Preview" button.
     In the column "Preview time frame", the selected time span with date and time will be displayed.

8. In the section "Language of the alarm texts", select the language, in which the messages are to be displayed.
9. In the section "Filter selection", you may limit the expected search results by means of filter conditions in SQL syntax. Here, filter conditions for individual columns can be specified or in the field "Expanded filter", a filter condition for all columns.

10. In the section "Sorting conditions", you can define the sorting of the output data (if needed) in the field "Sorting order".

11. In the section "Visible columns", different columns have already been selected. Change the selection if necessary and add for example "Process text 1".

12. In the "Displaying decimal places" section, you can define the number of decimal places when displaying numerical values such as "2".

13. In the section "Table size", you can define the size of the display window. For example, enter a height of "200" and a width of "400". If the value "0" is entered into both fields, the size will be determined automatically.

14. The names of the WebCenter pages that are available are shown in the "Links to WebCenter Pages" area. Enable the checkbox in front of the web center page name to display in the lower edge of the web part a link to this web center page during data output. Multiple selection is also possible. You can thus quickly switch to one of these WebCenter pages.
15. Click "OK" to display the available values in the table.

With the arrow keys under the table, you can skip to the other pages with multi-page tables. Via the icon the displayed table can be exported into the CSV format.

16. In order to change the settings, go back to step 3 and repeat the respective settings.

**Result**

The messages are output in a table.
### 4.6.6 Alarm Log Column Names

#### Introduction

You can select the alarm log columns while displaying alarms in "Trends and Alarms".

#### Overview of column names

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Type</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MsgNo</td>
<td>Integer 4 Bytes</td>
<td>Message number</td>
</tr>
<tr>
<td>2</td>
<td>State</td>
<td>Small Integer 2 Bytes</td>
<td>Alarm Log Status</td>
</tr>
<tr>
<td>3</td>
<td>DateTime</td>
<td>DateTime 8 Bytes</td>
<td>Time stamp of message (Date/time without milliseconds)</td>
</tr>
<tr>
<td>4</td>
<td>Ms</td>
<td>Small Integer 2 Bytes</td>
<td>Time stamp of message (milliseconds)</td>
</tr>
<tr>
<td>5</td>
<td>Instance</td>
<td>VarChar (255)</td>
<td>Instance Name of the Alarm Log</td>
</tr>
<tr>
<td>6</td>
<td>Flags1</td>
<td>Integer 4 Bytes</td>
<td>(only for internal use)</td>
</tr>
<tr>
<td>7</td>
<td>PValueUsed</td>
<td>Integer 4 Bytes</td>
<td>Process Values used</td>
</tr>
<tr>
<td>8 to 17</td>
<td>PValue1 to PValue10</td>
<td>Real 8 Bytes</td>
<td>Numerical Process Value 1 to 10</td>
</tr>
<tr>
<td>18 to 27</td>
<td>PText1 to PText10</td>
<td>VarChar (255)</td>
<td>Process Value Text 1 to 10</td>
</tr>
<tr>
<td>28</td>
<td>ComputerName</td>
<td>VarChar (255)</td>
<td>Computer Name</td>
</tr>
<tr>
<td>29</td>
<td>Application</td>
<td>VarChar (255)</td>
<td>Application Name</td>
</tr>
<tr>
<td>30</td>
<td>Comment</td>
<td>VarChar (255)</td>
<td>Comments</td>
</tr>
<tr>
<td>31</td>
<td>UserName</td>
<td>VarChar (255)</td>
<td>User Name</td>
</tr>
<tr>
<td>32</td>
<td>Counter</td>
<td>Integer 4 Bytes</td>
<td>Running Alarm Message Counter</td>
</tr>
<tr>
<td>33</td>
<td>TimeDiff</td>
<td>Integer 4 Bytes</td>
<td>Time difference to &quot;Came in&quot; status</td>
</tr>
<tr>
<td>34</td>
<td>ClassName</td>
<td>VarChar (255)</td>
<td>Name of the message class.</td>
</tr>
<tr>
<td>35</td>
<td>Type name</td>
<td>VarChar (255)</td>
<td>Name of the message type.</td>
</tr>
<tr>
<td>36</td>
<td>Class</td>
<td>Small Integer 2 Bytes</td>
<td>Message class ID</td>
</tr>
<tr>
<td>37</td>
<td>Type</td>
<td>Small Integer 2 Bytes</td>
<td>Message type ID</td>
</tr>
<tr>
<td>38 to 47</td>
<td>Text1 to Text10</td>
<td>VarChar (255)</td>
<td>Message Text 1 to 10</td>
</tr>
<tr>
<td>48</td>
<td>AG_NR</td>
<td>Small Integer 2 Bytes</td>
<td>Number of the PLC</td>
</tr>
<tr>
<td>49</td>
<td>CPU_NR</td>
<td>Small Integer 2 Bytes</td>
<td>Number of the CPU</td>
</tr>
<tr>
<td>50</td>
<td>CrComeFore</td>
<td>Integer 4 Bytes</td>
<td>Foreground Color for the &quot;Came in&quot; Status</td>
</tr>
<tr>
<td>51</td>
<td>CrComeBack</td>
<td>Integer 4 Bytes</td>
<td>Background Color for the &quot;Came in&quot; Status</td>
</tr>
<tr>
<td>52</td>
<td>CrGoFore</td>
<td>Integer 4 Bytes</td>
<td>Foreground Color for the &quot;Went out&quot; Status</td>
</tr>
<tr>
<td>53</td>
<td>CrGoBack</td>
<td>Integer 4 Bytes</td>
<td>Background Color for the &quot;Went out&quot; Status</td>
</tr>
<tr>
<td>54</td>
<td>CrAckFore</td>
<td>Integer 4 Bytes</td>
<td>Foreground Color for the &quot;Acknowledged&quot; Status</td>
</tr>
<tr>
<td>55</td>
<td>CrAckBack</td>
<td>Integer 4 Bytes</td>
<td>Background Color for the &quot;Acknowledged&quot; Status</td>
</tr>
<tr>
<td>56</td>
<td>LocalID</td>
<td>Integer 4 Bytes</td>
<td>Location of the Alarm</td>
</tr>
<tr>
<td>57</td>
<td>Priority</td>
<td>Integer 4 Bytes</td>
<td>Priority</td>
</tr>
<tr>
<td>58</td>
<td>AP_type</td>
<td>Integer 4 Bytes</td>
<td>Loop-in alarm</td>
</tr>
<tr>
<td>59</td>
<td>AP_name</td>
<td>VarChar (255)</td>
<td>Loop-in-Alarm Function Name</td>
</tr>
<tr>
<td>60</td>
<td>AP_PAR</td>
<td>VarChar (255)</td>
<td>Loop-in-Alarm Screen</td>
</tr>
</tbody>
</table>
4.6.7 Displaying statistics function for process values

Introduction

With the function "Trends & Alarms", different analysis functions for archived process values and messages are possible. This section describes the use of statistics functions for process values.

Requirements

A link must have been configured in DataMonitor WebCenter to use all the functions of "Trends and alarms".

Procedure

1. Select the entry "Trends & Alarms" on the DataMonitor start page.
2. Click the entry "Statistics functions for process values" in the menu bar. The Web part "Statistics functions for process values" is displayed.
3. Click ₹.
   The configuration dialog of the Web part opens.
### STATISTICS FUNCTIONS FOR PROCESS VALUES

#### Process value table | Trend (process values) | Alarm table | Hit list of alarms | Statistics functions for process values

**Statistics functions for process values**
- **Heading**: Statistics functions for
- **Tooltip**:

**Value selection**
- **Link**: Con01 WinCCRuntime
- **Archive selection**: ProcessValueArchive
- **Tags filter**: trend

**Selecting a tag**
- **Add**: ProcessValueArchive\_Trend\_3

**Current selection**:
- **Remove**: ProcessValueArchive\_Trend\_0
- **Remove**: ProcessValueArchive\_Trend\_2
- **Remove**: ProcessValueArchive\_Trend\_1

**Time frame**
- **Relative period**
  - Years: 0
  - Months: 0
  - days: 0
  - Hours: 0
  - Minutes: 20
  - Seconds: 0
- **Absolute period**
  - From: 0 0 0 0 0
  - To: 0 0 0 0 0
- **Preview time range**: 10/10/2008 7:31:35 AM

**Display of decimal places**
- **Decimal places**: 3

**Aggregate selection**
- Average value
- Standard deviation
- Minimum value
- Double standard deviation
- Maximum value
- Three times the standard deviation
- Variance
- Number
4. In the section “Statistics functions for process values”, you can enter a different title in the field "Heading" and you can add a brief tip in the field "Tooltip".

5. Select one of the configured connections, such as "Con01_WinCCRuntime" in the section "Value selection" in the field "Connection". The process values available via this connection will be displayed. You can limit the number of tags displayed using the "Archive selection" and "Tag filter" fields. Select several values, such as "TREND_1", "TREND_2", "TREND_3".

6. In the section "Time frame", select the time span from which the process values are to be displayed. With relative times, enter a negative value into the respective field. So, for example, to display the values of the past 10 seconds, you would activate the option in the column "Seconds" and in the line "Relative time frame". Enter the value "-10" into the column "Seconds" in the row "From". Click the "Preview" button. In the column "Preview time frame", the selected time span with date and time will be displayed.

7. In the "Displaying decimal places" section, you can select the number of decimal places when displaying numerical values such as "2".

8. In the section "Aggregate selection", select the analysis function, which is to be applied to the process values.

9. In the "Table size" area, define the size of the display window. For example, enter a height of "200" and a width of "400". If the value "0" is entered into both fields, the size will be determined automatically.

10. The names of the WebCenter pages that are available are shown in the "Links to WebCenter Pages" area. Enable the checkbox in front of the Web Center page name to display in the lower edge of the Web part a link to this Web Center page during data output. Multiple selection is also possible. You can thus quickly switch to one of these WebCenter pages.
11. Click "OK" to display the available values in the table.

You can export the displayed table in CSV format using the icon.

12. In order to change the settings, go back to step 3 and repeat the respective settings.

Result

Statistics functions for the selected process values were executed and output in the table.

Web part "Statistics functions for process values".

The Web part displays the complete archive name and the tag name as a tool tip in the column header.

4.7 DataMonitor Excel Workbooks

4.7.1 Overview of the function "Excel Workbooks"

Overview

With "Excel Workbooks" of the WinCC DataMonitor, it is possible to display messages and values of process or archive tags of a WinCC project in an Excel table. In addition to the current values, additional information, such as the time stamp or quality code of the tag, can be displayed. The WinCC data can then be further processed in Excel or be graphically prepared
(e.g. mean value computation, diagram display) and summarized in a report. The access to
the data is also possible via the Internet.

With the Excel Workbook Wizard, Excel-based reports for WinCC data can be published and
made available to the Intranet/Internet.
The created Excel workbooks can also be configured as templates for the function "Published
Reports".

---

Note

You need the DataMonitor client to use the "Excel Workbooks" function. You can find the
installation file for the DataMonitor client in the Download area.

---

**Configuring with XML file or online**

Simultaneous online access to process data of different WinCC servers is possible using the
Excel Workbook. This requires that you either take the data from an XML file or from a local
WinCC project during the configuration in the Excel Workbook Wizard .

**Separation between process and analysis by configuring with XML file**

By using the XML file for the project-relevant data, a separation between the process and the
analysis is possible.

You create the XML file on a DataMonitor server. Afterwards, transfer the XML file to a
computer with Microsoft Excel, located in operation management for instance. There, you can
configure the process data display in the sheet.

Afterwards, transfer the workbook to a DataMonitor client where the process data is to be
displayed online.

**Configuration steps**

The configuration of this function is carried out with the following steps:

- You have to create the XML file in order to configure with the data of an XML file. Use the
  "Export Configuration Data" function to create an XML file with the relevant data of the
  opened WinCC project on the DataMonitor server. This procedure is used, if a separation
  between the process and the analysis is desired.

- In order to configure using the online data, configure directly on the WinCC server or on a
  WinCC client with an online connection to the respective WinCC server.

- Use the Excel add-in "Excel Workbook Wizard" to import project-relevant data to an Excel
  workbook and configure the display of process data such as messages and tag values.

- The process data is displayed in the Excel workbook, online, on a DataMonitor client via
  the Excel Add-In "Excel Workbook". The values can also be further processed in Excel.

---

Note

If you rename a table in an Excel workbook, the configuration data of the table will be lost.
4.7.2 Online Process Data Access

Online Access to Process Data on Various WinCC Servers
The following examples provide separate illustrations of online access to one or more WinCC Servers.

Configuring via an XML File
The configuration of the Excel table sheet can be done using XML files.

- Example 1:
The packages of the subordinate WinCC servers 1 and 2 are loaded into the WinCC computer 3 project. You only have to create the XML file of WinCC computer 3. The XML file of WinCC computer 3 also contains the configuration data of WinCC servers 1 and 2.

- Example 2:
The XML files must be created individually for each WinCC server.

Example 1: Access via a Dedicated Web Server
As illustrated in the previous section, the Excel Workbook can access data on WinCC servers 1 and 2, whereby only WinCC computer 3 has web access. The WinCC project on WinCC computer 3 concerns a WinCC client with its own project. The DataMonitor Server installed becomes a dedicated Web Server.

The packages of the subordinate WinCC Servers 1 and 2 are loaded in the WinCC computer 3 project.

Example 1: Access to process data
In order to access process data on the subordinate WinCC Servers 1 and 2, the name of the computer whose process data is to be displayed is specified as the "Server prefix". The name of WinCC computer 3 is specified as "Web Server" because the Web connection to WinCC Server 1 or 2 is established through it.
Example 2: Access to several WinCC Servers (multi-server access)

Example 2 illustrates how access can be made to several WinCC servers in an Excel sheet. In this example, the WinCC Servers 1 to 3 are also the active DataMonitor Servers with Web access.

Example 2: Access to process data

During configuration with the XML file, no "Server prefix" and no "Web server" are specified for access to process data on WinCC servers 1 to 3.

When establishing the online connection from Excel Workbook to the WinCC Servers, it is possible to select whether the data from one or all servers should be displayed or updated.
4.7.3 Alarm Attributes

Introduction

While displaying messages in Excel Workbook, you can select the attributes to be displayed in the Excel sheet in the Excel Workbook Wizard.
4.7.4 Configuring the display of process data in Excel

Introduction

With "Excel Workbooks", it is possible to display process data such as messages and values of process or archive tags in an Excel table on the DataMonitor client. Data of archive tags of swapped out archives is not displayed.

You configure the Excel Workbook for displaying the process data using the Excel-Add-In "Excel Workbook Wizard". The online display of the process data is performed via the Excel Add-In "Excel Workbook".

This chapter describes the example of the configuration of the display of the values of an online tag and an archive tag as well as a message window.

In the Excel workbook, each table cell configured for displaying a tag value or message window is assigned a short text and a comment. In the case of tag values, the short text is "AV" for archive tags and "OV" online tags.
In the comments, the source of the displayed values is shown in the format "WDWx_<nummer>_<variablenname>". The values for x mean:
- A = Archive value
- O = Online value

With alarms, the short text "AL" and the comment are shown in the format "WDWL_<nummer>_<feldbezeichnung>".

You require the WinCC configuration data for the configuration. This requires that you either configure online or offline based on an XML file with the configuration data.

**Prerequisite**

One of the following Excel versions must be installed on the configuration computer:
- Office 2003 SP3
- Office 2007

The Excel Add-In "Excel Workbook Wizard" must be installed on the computer.

**Prerequisite - Configuring via an XML File**

You must create the XML file with the project data of the WinCC project.
1. In the navigation window of the WinCC Explorer, select the entry "Web Navigator" and open the pop-up menu.
2. Select the "Export Engineering Data" menu command.
   The function creates an XML file and stores it in subdirectory "Web Navigator\Reports" of the current project. The file name is automatically generated using the format "<projectname>.XML".
3. If no Excel installation exists on the WinCC computer, transfer the XML file to another computer, on which MS Excel and the Excel Workbook Wizard are installed.

**Procedure - Configuration**

1. Open MS Excel and start the "Excel Workbook Wizard" via the symbol in the toolbar.
2. In the dialog box, select an existing Excel workbook or select the option "New workbook".
3. If you want to transfer data from an XML file:
   - Activate the option "Load configuration data from file".
   - Click on "Next >".
     A dialog field is opened by navigating to the desired XML file.
   - Click on "Next >".
     The XML file is also shown in the following dialogs.
4. If you do not want to transfer data from an XML file:
   - Deactivate the option "Load configuration data from file".
   - Activate the option "Establish connection with WinCC server".
     The "WinCC Server" field is shown.
   - Enter the desired server and click on "Connect".
     The login dialog is displayed. Enter the name and password of a WinCC user.
   - Click on "Next >".
     The "WinCC Server" field is also shown in the next selection dialogs. The current tags are made available via the online connection.

5. Click "Continue >".
   The dialog "Add / delete tags" will open.

6. Check the option for the inserting sequence of tag groups and change these as needed, e.g. to "Insert groups in vertical sequence" in the section "Add tags".

7. In the "Tag tree" area, click the directory icon.
   The selection dialog for tags will open.
8. Navigate in the directory structure and select the desired tag, e.g. "Trend_1". Drag this tag to a cell in the Excel table. Close the selection dialog by clicking "OK". The assigned tag will be displayed in the window "Tag list".

9. In the window "Tag list", highlight the tag and select the menu command "Properties" from its pop-up menu. The dialog "Tag properties" will be opened. Define further properties for the display of these tags in the table, e.g. the sorting of headers, time stamp, quality code. If you activate the option "Save as default", the defined update is accepted for the following tags. Settings in the areas "Display in sheet" and "Additional Data" for time stamp and quality code are not saved however.

10. You can change the server name and configure the login via the pop-up menu "Server Settings".

You can set the login and the password via the pop-up menu in the "Server" column. A login will no longer be necessary if you check the option "Activate automatic login" when displaying process data online. This option makes sense for Reports via Excel Workbooks.

11. After that, close the dialog. If needed, the previous steps can be repeated to display further online tags. Multiple selection of tags is also possible in the "Tag list" window.
12. Click "Continue >". The dialog "Add/delete archive tags" will open.

13. Click on the button "Archive tree". The selection dialog for archive tags will open. Navigate in the directory structure and select the desired tag, e.g. the tag "T01" in the directory "Archive". Drag this tag to a cell in the Excel table. Close the selection dialog by clicking "OK". The assigned archive tag will be displayed in the window "Archive tag list".

14. In the window "Archive tag list", highlight the tag and select the menu command "Properties" from its pop-up menu. The dialog "Archive tag properties" will be opened. Define further properties for the display of these tags in the table, e.g. the insert sequence, data resolution, display time window. Activation of check box "Save as default" will save the settings. Settings in the area "Advanced display and position" for time stamp and quality code are not saved, though.

**Note**
Note for the "Data resolution" property with the setting "user-defined resolution" and the enabled option "Number of data":
You have to enter an even value in the input field to ensure proper trend display.
15. After that, close the dialog. If needed, the previous steps can be repeated to display further archive tags. Multiple selection of tags is also possible in the "Archive tag list" window.

16. Click "Continue >". The dialog "Add/remove alarms" will open.

17. Select the required cell in the Excel table. Click on the "Add alarm" button. The dialog "Alarm - properties" will be opened. Define the properties for this Alarm View in the Excel table, such as headings and insertion sequence of attributes. Enter a filter condition in the "Filter string" field or use the selection dialog to define specific alarms to be displayed, for example. Use the "Maximum number of alarms" option to limit the number of most recent alarms displayed. You can display maximum 1,000 messages. Select the attributes to be displayed from the list. Activation of check box "Save as default" will save the settings.

18. Close the "Alarm - properties" dialog box. If needed, the previous steps can be repeated to display further alarm displays. Multiple selection of alarm views is also possible using the "Alarm list" window.

19. Click "Continue >". The "Description" dialog box will open. You can enter a comment if needed. This comment will be displayed when selecting files provided for download by the DataMonitor server.
20. Only if the DataMonitor server is installed on the computer:
   – Use the "Publish" button to prepare the Excel workbook on the DataMonitor server to
     be downloaded by the clients
   – Use the "Template" button to provide the Excel Workbook for function "Published
     Reports".

21. Close the Wizard by clicking on "Finish".

22. Save the workbook. Once you have created a new workbook, assign a name such as
    "My_workbook_1.xls".

23. Close MS Excel.

**Result**

The display of the values of an online tag, an archive tag as well as a message window in the
Excel table sheet is configured.

**Note**

After deleting/moving cells filled with configuration data or deleting/inserting new lines/
columns in the Excel worksheet, the Excel Workbook Wizard must be executed again. The
configuration data is checked and automatically adapted as a result. Confirm the data
displayed simply by using the "Next >" button. Save the workbook and close Excel.

4.7.5 Displaying process data in an Excel Workbook online

**Introduction**

With Excel Workbooks, you display process data such as messages and values from process
or archive tags in an Excel table on the DataMonitor client. You configure the Excel Workbook
for displaying process data via the Excel Workbook Wizard. The online display of the process
data is performed via the Excel Add-In "Excel Workbook".

The Excel workbook can be prepared on the DataMonitor Server and downloaded to the
DataMonitor clients or opened directly in Internet Explorer, as necessary.

This chapter describes the display of the values of an online tag, an archive tag as well as a
message window in the Excel table sheet.

**Requirements**

- The Excel workbook with the configuration of the process value display must be available
  on the computer.
- One of the following Excel versions is necessary for online display in the Excel Workbook:
  - Office 2003 SP3
  - Office 2007
The WinCC Excel Workbook has to be installed to be available as an Excel Add-In.

On the WinCC computer, the DataMonitor Server must be installed and configured.

The WinCC project, whose process data is to be displayed in an Excel workbook, must be activated.

Procedure

1. Select the entry "Reports" on the DataMonitor start page.
2. Select the menu item "Report tools". The Excel workbooks that were published in the Excel Workbook Wizard, are shown in an overview.
3. Select a workbook. Click on the respective icon of the Excel workbook in the column "Open in browser" to download the file to the DataMonitor client. When the start page of DataMonitor is opened in the Internet Explorer on the DataMonitor server, the column "Open/save" will be displayed in the table. Via this icon, the file can be opened, edited and saved on the DataMonitor server in Excel.
4. The dialog to open or save the file is displayed. Click "Open". The Excel workbook is displayed in the Internet Explorer. Start the Excel Workbook from the toolbar. The "Excel Workbook" dialog will open.
5. The name of one of the servers, whose tags are configured in the Excel table, is displayed in the "WinCC Server" field. In case of access from outside the network domain, the domain will have to be indicated along with the name of the WinCC server. Via the button in the field, the server name can be changed. If DataMonitor has been configured as a separate Web page on the desired WinCC server, only the server name is required in the field "WinCC Server". However, if the DataMonitor has been configured as a virtual folder, the name of the virtual folder needs to be specified after the server name, e.g. "/webnavigator".
6. Activate the "All servers" check box when the tags from several servers are configured in an Excel sheet and the tag values of all the servers should be updated in the Online display.

**Note**
If connections to all the servers should be established, the check box must be activated before pressing the "Connect" button to establish the connection.

7. Activate the connection to the WinCC project via the button "Connect". After a successful connection, the log-in dialog will be opened. In the log-in dialog, enter the user name configured in the WinCC User Administrator, e.g. "DM_demo" and the respective password. Confirm the entry by clicking "OK". When several servers are used and the "All servers" check box is activated, the logon dialogs of the servers concerned open one after the other. If no connection could be created, a corresponding message is displayed. Clicking on the dialog will display further information about the error (if available).

**Note**
The dialog of ExcelWorkbook must not be closed as long as the login dialog for connection establishment to the server persists.

8. The connection status will be displayed in the dialog. Click the buttons "Read tags", "Read archive tags" and "Read alarms" buttons to update the respective values or displays.

If necessary, activate the check box "Read cyclically" to update the tag values in cycles.

9. Close the dialog "Excel Workbook" after ending your calculations in Excel.

10. Save the results in the workbook and close Excel.

**Result**
The values of an online tag, an archive tag as well as a message window are displayed in the Excel table.
4.7.6 VBA Functions of the Excel Workbook

Excel workbooks: VBA functions of the Excel workbook

The following functions are available to you in an Excel workbook if you have generated an instance of the Excel workbook object using the "Application.COMAddIns.Item("ExcelWorkbook.Connect").Object".

- **ShowDialog(0):** Opens the "Excel Workbook" dialog with a normal size.
- **ShowDialog(1):** Opens the "Excel Workbook" dialog with a minimized size.
- **ShowDialog(2):** Opens the "Excel Workbook" dialog hidden.
- **CloseDialog:** Closes the "Excel Workbook" dialog.
- **GetServerID(server name):** Gets the ID of the WinCC server with a specified name, for example: "http://Local_PC".
- **Connect(ServerID):** Connects the specified WinCC server to the Excel workbooks. You can get the "ServerID" using the "GetServerID(server name)" function. The "Excel Workbook" dialog must be opened before establishing a connection.
- **ConnectAll:** Connects all WinCC servers to Excel workbooks. The "Excel Workbook" dialog must be opened before establishing a connection.
- **Disconnect(ServerID):** Disconnects the Excel workbook from the specified WinCC server.
- **DisconnectAll:** Disconnects the Excel workbook from all WinCC servers.
- **ReadTags(ServerID):** Reads the tags from WinCC server with "ServerID". The connection must be established before tags can be read.
- **ReadArchives(ServerID):** Reads the archives from WinCC server with "ServerID". The connection must be established before archives can be read.
- **ReadAlarms(ServerID):** Reads the alarms from WinCC server with "ServerID". The connection must be established before alarms can be read.

As soon as a connection is established or closed, the event "ServerConnected(ServerID)" or "ServerDisconnected(ServerID)" is output by the "ExcelWorkbook.Connect" object. These events can be integrated, for example, using "WithEvents" (VB standard).

4.8 DataMonitor Reports

4.8.1 DataMonitor Reports

Introduction

With function "Reports" of the DataMonitor, you use print jobs from WinCC and published Excel workbooks to output analysis results and process data.

Data is output as PDF or XLS file.
Requirements

For Output as PDF-file:
- You require a PDF reader to open the PDF file. The PDF reader can be obtained from www.adobe.com for example.

For Output as XLS-file (Excel workbook):
- The templates are published on the DataMonitor server as templates.
  You publish the templates as described in chapter "Preparing an Excel Workbook as a Template (Page 212)".
  You can also configure the display on the client using the configuration data based on an XML file. For additional information, please refer to "Configuring the display of process data in Excel (Page 201)".

Excel must be installed on the DataMonitor server for the automated creation by Excel Workbooks.

Use of DataMonitor Reports

Data that was so far available in a print job or Excel Workbook can now be called from anywhere using "Reports".

You configure the report and the creation time. Possible creation times for the report:
- Immediately through manual call
- Time-controlled
- Event-controlled

The created reports are centrally saved on the DataMonitor server:
- In a directory that can be selected
  The individual users can have different access rights for this directory.
- in an area accessible to all users (public)
- in a "private" area only for the corresponding user

You can also send a report as a mail attachment.

Note

The creation time and the periods are always displayed on a DataMonitor client in the local timezone of the server.
4.8.2 Preparing an Excel Workbook as a Template

Introduction

You can provide Excel workbooks as a template for the function "Published Reports". Options available:

- On the WinCC server with the Excel add-in "Excel Workbook Wizard"
- On a DataMonitor client

The section describes how you publish a template from Excel on a DataMonitor client.

Requirement

- The Excel workbook is created.
- The start page of the DataMonitor is open.

Procedure

1. Click the "Reports" entry.
2. Select the menu command "Upload templates".

![WinCC/DataMonitor Upload Templates](image)
3. Select a directory, in which the template will be stored in the "Target directory" field. Only the directories, for which the user that is logged in has "Create" access rights, can be selected. More information on user rights can be found in the section "User Groups and Directories (Page 143) ".

4. Navigate to the desired file with the "Browse" button in the "Selected template" field.

5. Click the "Upload" button.

Result

The template is prepared for the function "Published Reports".

4.8.3 Making an Excel workbook available as a report tool

Introduction

The section describes how to make an Excel workbook available as a report tool from a DataMonitor client.

Requirement

- The Excel workbook is created.
- The start page of the DataMonitor is open.
Procedure

1. Click the "Reports" entry.
2. Select the menu command "Upload templates".

3. Navigate to the desired Excel workbook with the "Browse" button in the "Excel Workbook" field.
4. Click the "Upload" button.

Result

The Excel workbook is ready in the "Report tools" section.

4.8.4 Making Settings for Reports

Introduction

Different settings are required for using the function "Reports" from DataMonitor.
Requirements

- PDF Reader is installed.
- The WinCC project is activated on the DataMonitor server.
- The option "Report Runtime" is activated in the WinCC project on the DataMonitor server.
Procedure

1. Select the entry "Reports" on the DataMonitor start page.
2. Select the menu command "Settings".
   The "Settings" page is displayed.

3. Check the entries in the section "General project settings".
   - In order to enable the output to a PDF file, activate option "Activate API print"
4. Enter the data for sending mail in the "Mail" area:
   - Server
     Outgoing mail server (SMTP)
   - User name
     Name for the sender
   - Password
   - Sender
     Email account, through which you send your Email
5. Click the disk icon in the section "General project settings" to save your settings.
6. In the "Circular buffer" area, you can define how many reports can be stored for the selected destination directory. The field has a pre-assigned value of 20.
7. Click the disk icon in this section to save your settings.

Result

The settings for "Reports" have now been made.

In the menu, you can switch directly to the overview of "Prints jobs" or "Excel Workbooks" with the command "Reports". Alternatively, you can go back to the overview page in the menu with the command "Published Reports".

4.8.5 Displaying a report with an Excel Workbook

Introduction

You can create reports using Excel Workbooks and print jobs in PDF format using function "Reports".

A report can be triggered in different ways.

- Immediately
- Time-controlled
- Event-controlled

This chapter describes the creation of a report with an Excel workbook.

Requirements

- The option "Report Runtime" is activated in the WinCC project on the DataMonitor server.
- The WinCC project is activated on the DataMonitor server.
Procedure

1. Select the entry "Reports" on the DataMonitor start page.
2. Select the entry "Excel Workbooks" on the DataMonitor start page.
   The dialog for the time-controlled or event-controlled triggering of reports is displayed.

3. Select the desired Excel workbooks, e.g. "My_workbook_1.xls" in the "Existing Excel Workbooks" field.
   This field only shows Excel Workbooks that meet the following conditions:
   - Workbooks that are published as templates in the Excel Workbook Wizard
   - Workbooks in directories for which the current user has the "Read" access right.
   Via the icon , you can create the report immediately.

4. Select the directory, in which the reports will be stored in the "Target directory" field.
   Only the directories, for which the user that is logged in has "Create" access rights, can be selected.
5. An Email address can be entered into the field "Email recipient". The report is e-mailed to this address.

6. If you cannot create the report immediately, as described in step 3, you can configure a time-controlled or event-controlled triggering in the following steps.

7. If you would like to configure a time-controlled triggering, you can enter the desired date in the section "Time-controlled Excel Workbooks" in the field "Date". Alternatively, you can open a calendar for selection via the icon "Display calendar". Define the triggering time in the "Time" field. Define the repetition rate, e.g. "Once" or "Weekly" in the "Repetition" field.
   To trigger this time-controlled report with an Excel workbook, click the "Add" button in the section "Time-controlled Excel workbooks". The report is displayed in the "List of time-controlled Excel workbooks".

8. If you would like to configure an event-controlled triggering, you can select the triggering tag in the section "Event-controlled Excel Workbooks". Click on the icon 📅 to open a selection dialog and select the tag there.
   You will define the triggering event in the field "Define event control". Depending on the setting in the field "Define event control", you must enter a value into the fields "Low limit" and "High limit".
   To trigger this event-controlled report, click on the "Add" button in the section "Event-controlled Excel Workbooks". The report is displayed in the "List of event-controlled Excel workbooks".

**Result**

A time-controlled or event-controlled report has been triggered with an Excel workbook.

The report is displayed in one of the lists "List of time-controlled Excel workbooks" and "List of event-controlled Excel workbooks". The report can be changed or deleted in the list.

**Note**

An event-controlled print job will not be initiated if the time, in which the time changes, is less than one minute.

Please consider that a frequent triggering of the event-controlled print job over a long time period will use a lot of memory and resources, such as the frequent signal change of a tag.

---

### 4.8.6 Creating a report with a print job

**Introduction**

By means of the function "Reports", reports can be created using Excel workbooks and print jobs in the PDF format.

A report can be triggered in different ways.
This chapter describes the creation of a report with print jobs in PDF format.

Requirements

- The option "Report Runtime" is activated in the WinCC project on the DataMonitor server.
- The WinCC project is activated on the DataMonitor server.

Procedure

1. Select the entry "Reports" on the DataMonitor start page.
2. Select "Print jobs" from the menu.
   The dialog for the time-controlled or event-controlled triggering of reports with print jobs in PDF format is displayed.

The icons in front of the lists "List of time-controlled print jobs" and "List of event-controlled print jobs" are deactivated and show that currently no reports are triggered.
3. Select the desired print job, such as Report OnlineTableControl-CP in the "Existing print jobs" field. Via the icon , you can create the report immediately.

4. In "Target directory: ", select the directory in which the reports are created. Only the directories, for which the user that is logged in has "Create" access rights, can be selected.

5. An Email address can be entered into the field "Email recipient". The report is e-mailed to this address.

6. If you cannot create the report immediately, as described in step 3, you can configure a time-controlled or event-controlled triggering in the following steps.

7. If you would like to configure a time-controlled triggering, you can enter the desired date in the section "Time-controlled print jobs" in the field "Date". Alternatively, you can open a calendar for selection via the icon "Display calendar". Define the triggering time in the "Time" field. Define the repetition rate, e.g. "Once" or "Weekly" in the "Repetition" field. To trigger this time-controlled report, click on the "Add" button in the section "Time-controlled print jobs". The report is displayed in the "List of time-controlled print jobs".

8. If you would like to configure an event-controlled triggering, you can select the triggering tag in the section "Event-controlled print jobs". Click on the icon to open a selection dialog and select the tag there. You will define the triggering event in the field "Define event control". Depending on the setting in the field "Define event control", you must enter a value into the fields "Low limit" and "High limit".

   To trigger this event-controlled report, click on the "Add" button in the section "Event-controlled print jobs". The report is displayed in the "List of event-controlled print jobs".

Result

A time-controlled or event-controlled report with print job in PDF format has been triggered. The report is displayed in one of the lists "List of time-controlled print jobs" and "List of event-controlled print jobs". The report can be changed or deleted in the list.

Note

An event-controlled print job will not be initiated if the time, in which the time changes, is less than one minute.

Please consider that a frequent triggering of the event-controlled print job over a long time period will use a lot of memory and resources, such as the frequent signal change of a tag.
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