

# **SIMATIC**

## **PCS 7/APACS+ OS Option Software 8.0 SP1**

### **Notes on Installation and Usage**

These notes should be considered more up-to-date than the information in other documents. They contain important information on installing and using the PCS 7/APACS+ OS Option 8.0 SP1

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# Part I: Notes on Installation

## 1 Hardware Requirements

PCS 7/APACS+ OS Option software is an option package of the PCS 7 software and can therefore only be operated on devices that satisfy the hardware requirements of the PCS 7 software.

These are described in the readme file of the PCS 7 software.

However, there is an additional ES memory requirement for large APACS OS projects. For projects that will contain more than 7500 Process Objects, the ES computer is required to have 4GB of memory, with at least 4GB of virtual memory page size configured.

Please review the PCS7-readme file found on the PCS 7 V8.0 SP1 DVD for additional details regarding system requirements and software installation.

## 2 Software/Operating System Requirements

The PCS 7/APACS+ OS Option software is a option package of the PCS 7 software and can therefore only be operated on devices system requirements that satisfy the software requirements of the PCS 7 software.

These are described in the readme file of the PCS 7 software.

### 2.1 Operating Environment

In order to use PCS 7/APACS+ OS Option V8.0 SP1 you must have

- PCS 7 V8.0 SP1 and
- WinCC V7.2 Upd2
- and one of the following operating systems installed on your computer:
  - ES, OS Single Station, and OS Client
    - Microsoft Windows 7 Ultimate with Service Pack 1 (32 Bit and 64 Bit).
    - Microsoft Windows XP Professional with Service Pack 3.
  - OS Server
    - Microsoft Windows Server 2008 with Service Pack 1 (64 Bit).
    - Microsoft Windows Server 2008 with Service Pack 2 (32 Bit).
    - Microsoft Windows Server 2003 with Service Pack 2.

## 2.2 PCS 7/APACS+ OS Software Requirements

Before you can start working with the APACS OS Option Software you must transfer the license key from the license key disk to the computer. There are two ways of doing this:

- While you are installing the Setup program displays a message if there is no suitable license key installed on your computer. You can then decide whether you want the license key to be installed by the Setup program or whether you want to install the license key manually at a later time using the Automation License Manager.
- If the license key cannot be installed during setup, continue the Setup program without installing the license key. You can install the license key later using the taskbar command **Start > Simatic > License Management > Automation License Manager**
- Engineering nodes require *Automation* V4.56 installed. This software is not required for server or single-system runtime nodes.
- For systems that require software from the APACS+ *Control* CD V7.0 SP1, install PCS 7/APACS+ OS software after installing software from the APACS+ *Control* CD V7.0 SP1.

## 3 Installation

The installation program autoruns when the installation CD is inserted in a running system. If autorun has been disabled on your system, from Windows Explorer, list the contents of the installation CD and run *Setup.exe*.

### Opening Window

A full screen PCS 7 splash screen is initially displayed. The response of Windows to systems equipped with dual monitors is unpredictable. If the opening screen on these system is not readily replaced with the Welcome screen, try clicking the title bar of the displayed windows. Follow the on-screen installation instructions. Refer to the "PCS7/APACS+ OS Setup Guide" for details.

**IMPORTANT** : Once the installation is complete, install **WinCC V7.2 Update 2**, located on the DVD (see folder WinCC\_V72\_Upd2). This is a required update that is necessary for proper operation of PCS 7/APACS+ OS.

# Part II: Operational Considerations

## A - Installation

- Consult the "PCS7/APACS+ OS Setup Guide" manual in the "Documentation" folder of the installation CD for additional details on the installation and setup of a PCS7/APACS+ OS system.
- The PCS 7/APACS+ OS Option V8.0 SP1 product has been validated with PCS 7 V78.0 SP1 and WinCC V7.2 Update 2. Please contact customer support before installing future Service Packs or Updates for WinCC or any other component of PCS 7 V8.0 SP1.
- After uninstalling PCS 7/APACS + OS engineering software, it is necessary to delete the file \Program Files\Siemens\DBA\DBAConfig.xml before proceeding to re-install.
- PCS 7/APACS+ OS V8.0 SP1 has not been validated for redundant single station architectures in which one of the single station nodes is configured as both an OS and ES.
- If PCS 7 is reinstalled, or upgraded to a new ServicePack, the PCS 7/APACS+ OS Option V8.0 SP1 product must be reinstalled.
- When upgrading a running redundant server system from PCS 7/APACS+ OS V7.x to PCS 7/APACS+ OS V8.0 SP1, if there are any active acknowledged or locked alarms, additional manual steps are required once both redundant servers have been upgraded to V8.0 SP1.
  - In the case of acknowledged alarms, it is necessary to invoke each graphic display that contains alarms and re-acknowledge all alarms on the page, using the acknowledge icon in the bottom tool bar.
  - In the case of process object with locked alarms, it is necessary to re-lock the alarms. Therefore, take note of any process objects that have locked alarms prior to starting the upgrade steps.

## B- Engineering

- If any of the global scripts require modification, first do the following: Open the Global Script Editor from WinCC Explorer. Under the **Tools** menu, select **Regenerate Header**. After this, all global scripts can be modified and recompiled. This step must also be performed before performing a **Web View Publisher** operation for the PCS 7 Web Navigator.
- The DBA utility will not remove existing \*.PDL files, even if those \*.PDL files are not part of the current DBA configuration. This is because a \*.PDL file may contain items added by hand by the user using Graphics Designer. If desired, the user can remove obsolete \*.PDL files by hand.
- The maximum recommended number of APACS+ Process Objects that can be assigned to an OS in a single DBA Project is 7500. DBA Compilation failures may result if this number is exceeded. If your project requires more than 7500 Process Objects, you should organize your project as a Multi-Project. Refer to the PCS 7/APACS+ OS DBA User Guide for details concerning the use of Multi-Projects.

- After performing a "full" compile of a large projects (greater than 7500 APACS+ OS Process Objects), it is recommended that DBA be exited and restarted. Otherwise, subsequent compilations (full or "changes only") may fail until DBA is restarted. Such failures can be avoided by organizing larger projects into Multi-Projects.
- Trend-windows in standard faceplates are configured by default to be real-time trends. Data points prior to the time the trend view is invoked are not by default displayed. A trend display can be reconfigured to show archive trends. See PCS 7 documentation for details.
- When using the Plant View Synchronization feature of DBA, special care should be taken when renaming folders or pictures. Renaming folders and pictures should be done manually in both Simatic Manager and DBA.
- When compiling a DBA project, if you see an error that states "Error Creating a Single Message ", this could be due to an incorrect or insufficient license. Please check that you have installed a license with a suitable process count for your application.
- When using MultiLine CSV files, the field PATH is no longer applicable. This field has been replaced with the field FolderAssign, which serves the same purpose previously provided by the Path field.
- If you delete a process object and later re-add it with the same name, a full download to the OS Server is required in order for the re-added object to be fully functional.
- If you change the type of a process object, a full download to the OS Server may be required in order for the object to be fully functional.
- The **Abort** button in the toolbar of the DBA application may not respond immediately, and may cause display of a message: *An action cannot be completed because a component is not responding. Click Switch To to activate the component and correct the problem.* Click the **Switch To** button and retry the **Abort** button.
- When operating DBA, if you see an error message saying "Error Accessing 4mation (Error Code=Method ~ of object ~ failed)", do the following:
  - Exit DBA.
  - Exit 4-mation.
  - Use task manager to end the task "4matnet.exe".

## C- Runtime

- Previous versions of PCS 7/APACS+ OS allowed for the manual creation of a CSV file that could be used to identify any WinCC tags that for synchronization with a partner OS at runtime, and/or persistence over a restart of the OS Server. This feature is no longer supported as settings for synchronization and persistence can be done directly in the Tag Properties editor of WinCC Explorer.
- Note that the APACS+ Control Simulator does not support acknowledgement of resource-status alarms. Use of these control platforms results in failed tag reads and corresponding diagnostic log messages in the channel diagnostic log file.
- The PCS 7/APACS+ OS product is not supported when WinCC Runtime is configured to run as a Windows Service.

- Alarms that are active in the controller for a short duration (for example, a single controller scan) may result in inconsistent alarm state display in the OS. The alarm group display may indicate an unacknowledged alarm, even though no alarm is listed in the alarm view of the corresponding faceplate or in the banner. If this continues to occur, the DELAY\_OUT softlist parameter of the corresponding ALARM function block can be adjusted to keep the alarm active for a longer duration so that the OS detects the active alarm (set DELAY\_OUT to at least 2 seconds).
- When restarting WinCC Runtime on an OS server in a redundant OS server configuration, WinCC must remain deactivated for at least 2 minutes in order to properly synchronize alarm status and message status.
- In some rare cases, when clicking the "acknowledge all" button from the incoming alarm list rapidly many time in succession, it is possible that some alarm acknowledgement operations may be reported twice in the Operations List.
- In some rare cases when new Process Objects are downloaded (either "Full Download" or "Load Online Changes") and one or more of the alarms for the object have been disabled using 4-Mation, the Disabled Alarm message(s) for the object will not be shown in the Disabled Alarm list, although the alarm enable checkbox on the faceplate for the object is shown correctly. Therefore when adding new process objects to the system, it is recommended that the alarms for the object be enabled at the time of download. If you do choose to download new objects with one or more alarms disabled, and find that the disabled alarms are not shown in the Disabled Alarm list, this can be corrected by temporarily re-enabling the alarm from the object's faceplate and then disabling again.
- In some rare cases where "Load Online Changes" is used to download new Process Objects and one or more of the alarms for the object have been disabled using 4-Mation, the Disabled Alarm message(s) for the object will not be shown in the Disabled Alarm list, although the alarm enable checkbox on the faceplate for the object is shown correctly. Therefore, when using "Load Online Changes" to add new process objects to the system, it is recommended that the alarms for the object be enabled at the time of download. If you do choose to download new objects with one or more alarms disabled, and find that the disabled alarms are not shown in the Disabled Alarm list, this can be corrected by temporarily re-enabling the alarm from the object's faceplate and then disabling again.
- In some rare cases, where "Load Online Changes" is used to download new Discrete process objects, the following error may be reported in the Process Alarm List :  
TLGRT: NoDE048: Error during archiving of measured values. This error can be safely ignored
- When an OS Server is restarted, the Alarm Journal will record all active alarms at the time of restart, showing the time that the alarm was active. If an alarm is active over multiple server restarts, it might be possible, therefore, that duplicate alarm entries are shown in the journal.
- When you lock an alarm that is active and unacknowledged, if the condition is still active at the time the alarm is unlocked, the alarm will appear with a timestamp that is the time that the unlock operation was performed. If the condition is no longer active at the time that the alarm is unlocked, the alarm will be automatically acknowledged by the system and therefore an indication of the alarm will no longer be present.
- When locking alarms, the journal list will show an ACK and gone status. Unlocking the alarm will create a new alarm message with the date and time that the alarm was unlocked.

- During startup of WinCC runtime, the displayed timestamp is the time when the alarm condition was recognized by the system, not the time when the alarm condition actually occurred. This situation is usually associated with alarm conditions that were triggered before the PCS 7 OS server was in runtime. In a redundant OS server architecture, where one server was not in runtime at the time of the event, this may result in different timestamps between servers for the same event.
- In redundant server configurations, if one server is taken out of runtime, it is recommended that WinCC Explorer also be closed on that server. If this is not done, the server that is still in runtime can experience memory leaks that over time could lead to a server shutdown.
- To avoid any loss of data, in cases where both servers of a redundant server pair are being taken offline, it is recommended that the configured backup OS server be taken offline first, and when bringing the servers back online again, to bring the configured master OS server online first.
- In the event that the Plant Bus becomes disconnected from an OS Server, to completely restore synchronization with the remaining Master OS Server, WinCC Runtime may need to be stopped and restarted on the Standby OS Server after the connection is restored.
- In order for a standby OS Server to enter runtime, it is necessary that it have a connection to the terminal bus so that it can be properly synchronized. If you attempt to bring a standby OS server into runtime and a dialog box appears suggesting that the computer be rebooted, check the security of the terminal bus connection and reboot the server. If a connection to the terminal bus is lost by one server of a redundant OS server pair, once the terminal bus connection is restored it is necessary to reboot the server that has the connection restored so that the server can be properly synchronized. Therefore, in any case where you see the following alarm, reconnect the terminal bus and reboot the OS Server that is mentioned as the source of the alarm (OSNAME):

OSNAME Terminal adapter <mac address> disconnected

## D- Batch

- When PCS 7/APAC+ OS batch components have been installed, by default, the system is configured to interface with Process Suite Batch Function Blocks. To interface with Direktor Batch Function Blocks, it is necessary to register the file *C:\Program Files\SIEMENS\WINCC\bin\BatchEngine\_Direktor.reg*. (To switch back to the default settings, run the registry file *C:\Program Files\SIEMENS\WINCC\bin\BatchEngine\_InBatch.reg*)
- When engineering a batch project in DBA, ensure that the name of the DBA Project is the same as the name of the corresponding Simatic Manager Project. In addition, the name of the OS application's Symbolic Computer Name in Simatic Manager must be constructed as a concatenation of the Simatic Project name and OS Application name, with an underscore in between. For example, if the Simatic project name is APXSB1 and the OS Application name is OS(1), then the Symbolic Computer Name of the OS must be APXSB1\_OS(1).
- If in the APACS controller configuration any batch phase communication block input is linked to a local variable that gets a value from other blocks, advanced registration settings are required. Please contact Siemens Technical Support for details.
- If the Batch Server is powered down, the recipe procedure continues to completion as programmed by the APACS controller.

- In previous versions, it was necessary to configure an "Offline MCP File" for each Standby OS in the PC Stations View of DBA. This is no longer required, as in PCS 7 V8.0 SP1, no offline MCP file exists for a Standby OS. When configuring the Standby OS in the PC Stations View of DBA, set the Offline MCP File attribute to blank.
- In this version of PCS 7/APACS+ OS, an icon is no longer shown in the Batch Control Center indicating that a phase is interlocked. If necessary, information about interlocked phases can be configured on a WinCC picture of faceplate. Bit 22 of the BA\_STATE tag for a phase is set whenever the phase is interlocked.
- PCS 7/APACS+ OS V8.0 SP1 does not support batch in Single Station configurations.
- If a user attempts to stop a phase during a redundant OS Server switchover, the final status displays "Aborted" instead of "Stopped".

The reason for this behavior is as follows:

The primary OS server has a status value of STOPPING when the failover occurs.

In the APACS controller, the status value of a phase is the same for STOPPED and ABORTED.

The SIMATIC BATCH on APACS runtime component determines whether it is STOPPED or ABORTED based on its previous state of STOPPING or ABORTING.

The STOPPING and ABORTING status is maintained in the runtime component.

Each OS Server in a redundant OS Server pair has its own runtime component.

At a given point in time, only one OS Server is active and therefore only its runtime component is updated.

During an OS Server switchover, SIMATIC BATCH request a status update from the controller through the runtime component of the newly active OS Server. Since the Stopped and Aborted states has the same value in the controller, the runtime component will interpret the status as being aborted instead of stopped and will return an incorrect status of aborted to SIMATIC BATCH.

## Part III: Security Information

Siemens provides automation and drive products with industrial security functions that support the secure operation of plants or machines. They are an important component in a holistic industrial security concept. With this in mind, our products undergo continuous development. We therefore recommend that you keep yourself informed with respect to our product updates. Please find further information and newsletters on this subject at:  
<http://support.automation.siemens.com>.

To ensure the secure operation of a plant or machine it is also necessary to take suitable preventive action (e.g. cell protection concept) and to integrate the automation and drive components into a state-of-the-art holistic industrial security concept for the entire plant or machine. Any third-party products that may be in use must also be taken into account. Please find further information at:  
<http://www.siemens.com/industrialsecurity>

## Part IV: Updated Documentation

The current version of all user documentation is available at the following web site:

**[www.pcs7.com](http://www.pcs7.com)**

Select the "Technical Documentation" link, and browse to the appropriate document.