# Planning Your Installation

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1 Planning Your Installation

Before you install or upgrade, ensure your system meets all requirements.

1.1 Obtaining a License

Before installing your product, choose a SySAM license model, determine license server information, and obtain license files.

Context

SAP® Event Stream Processor (ESP) is licensed through SySAM and supports both served and unserved licenses as well as sub-capacity licensing. Sub-capacity licensing is useful in virtualized environments or to license a subset of the processors available in a multiprocessor machine.

Table 1: SySAM Virtualization Sub-capacity Compatibility

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Product</th>
<th>Platform Support</th>
<th>Virtualization Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel, AMD</td>
<td>VMWare ESX Server* Guest OS: Windows</td>
<td>VMWare ESX 3.5, ESX 4.0 and ESX 4.1, Guest OS: Windows 2008 R2, Windows 7</td>
<td>Virtual machine</td>
</tr>
<tr>
<td>Intel, AMD</td>
<td>VMWare ESXi Server* Guest OS: Windows</td>
<td>VMWare ESXi 4.1 and 5.0, Guest OS: Windows 2008, Windows 7</td>
<td>Virtual machine</td>
</tr>
<tr>
<td>Intel, AMD</td>
<td>Xen,** DomainU: Windows</td>
<td>Windows 2008 R2, Windows 7</td>
<td>Virtual machine</td>
</tr>
<tr>
<td>Microsoft</td>
<td>Hyper-V: Windows</td>
<td>Windows 2008, Windows 7</td>
<td>Virtual machine</td>
</tr>
</tbody>
</table>

* VMWare ESX Server and ESXi Server support excludes VMWare Workstation, and VMWare Server.
** Xen excludes Solaris x64.

These steps summarize the actions required to install a SySAM license. Refer to the SySAM Users Guide for details.

Procedure

1. Choose a SySAM license model.
License model | Description
---|---
Unserved license model | Licenses are obtained directly from a license file. If you are using an unserved license, save the license file to the machine on which you install the product.
Served license model | A license server manages the allocation of licenses among multiple machines.

2. For the served license model, decide whether to use an existing or new license server.

The license server and your product installation do not need to share the same machine, operating system, or architecture.

3. If you chose the served license model, do one of the following:
   - Install the new license server on a machine that does not have an existing license server.
   - To install on a machine that is running a SySAM 1 license server, follow migration instructions in the *SySAM User’s Guide* to migrate to SySAM 2.

4. Before installing your product:
   - If you ordered your product under an SAP® contract and were directed to download from SAP Support Portal, you can use the SAP Support Portal at [https://support.sap.com/licensekey](https://support.sap.com/licensekey) to generate license keys for SAP products that use SySAM 2-based licenses.
   - If you purchased your product from Sybase or an authorized Sybase reseller, go to the secure Sybase Product Download Center (SPDC) at [https://sybase.subscribenet.com](https://sybase.subscribenet.com) and log in to generate license keys. The license generation process may vary slightly, depending on whether you ordered directly from Sybase or from a Sybase reseller.

**Note**
If your license is incorrectly generated or copied to an incorrect location, Event Stream Processor automatically enters a 30-day grace period. License errors or warnings, or both, appear in the stdstreams.log file, which resides in the project runtime directory, `STREAMING_HOME \ESP-5_1\cluster\projects\<cluster>\<workspace>.<project>.<project instance id>`. For example, ESP-5_1\cluster\projects\esp1\myworkspace.myproject.0. When the 30-day grace period ends, Event Stream Processor cannot run until a suitable license is provided. For production environments, SAP strongly recommends that you configure e-mail alerts during installation so you receive messages regarding license errors or warnings before the grace period ends.

**Next Steps**
1.1.1 Available Licenses

SAP Event Stream Processor runs on various licenses that apply to its components and most adapters. Some adapters require separate licenses.

Table 2: Available Server License Types

<table>
<thead>
<tr>
<th>License</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP</td>
<td>CPU license; used in production environments</td>
</tr>
<tr>
<td>SF</td>
<td>Standby</td>
</tr>
<tr>
<td>DT</td>
<td>Develop and Test</td>
</tr>
<tr>
<td>AC</td>
<td>OEM Production</td>
</tr>
<tr>
<td>BC</td>
<td>OEM Standby</td>
</tr>
<tr>
<td>EV</td>
<td>Evaluation</td>
</tr>
<tr>
<td>Unknown</td>
<td>Select if you are unsure of the license type needed</td>
</tr>
</tbody>
</table>

Some licensable adapters support the standard SySAM 30-day grace period while others do not. If an adapter supports the grace period, you can use it unlicensed for a 30 day period. When the grace period expires, the adapter stops functioning unless you provide a valid license key.

Licensable adapters include:

Table 3:

<table>
<thead>
<tr>
<th>Adapter</th>
<th>License Key</th>
<th>Grace Period?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open</td>
<td>SY_ESP_OPEN</td>
<td>Yes</td>
</tr>
<tr>
<td>NYSE Technologies</td>
<td>SY_ESP_WMB</td>
<td>No</td>
</tr>
<tr>
<td>FIX</td>
<td>SY_ESP_FIX</td>
<td>Yes</td>
</tr>
</tbody>
</table>

1.1.1.1 Licensing and Distributing the ESP SDK

The ESP SDK does not require a license. You can embed the ESP SDK in other applications, as well as distribute those applications without restrictions.
1.2 Updating Your License

SAP Event Stream Processor requires a valid license. If your evaluation license expires, update your license.

Context

When you install Event Stream Processor, you are prompted to provide a license type. The installer, based on your selection, copies the license file to the appropriate location and generates an esp_license.prop file under %STREAMING_HOME\sysam.

If you installed using an evaluation license, or have since purchased a different license type, perform the following procedure to update your license:

Procedure

1. Populate the <Install_Dir>/SYSAM-2_0/licenses directory.
   a. For an unserved license, copy the unserved .lic file to <Install_Dir>/SYSAM-2_0/licenses.
   b. For a served license, create a token .lic file and add it to the <Install_Dir>/SYSAM-2_0/licenses directory to link to the license server. If, for example, the license server is called my_license_server, create the text file <Install_Dir>/SYSAM-2_0/licenses/my_license_server.lic and add the following content:
      
      SERVER my_license_server ANY
      USE_SERVER

2. Edit the licence type (LT) parameter for the esp_license.prop file:
   a. Navigate to %STREAMING_HOME\sysam and open esp_license.prop with a text editor.
   b. Change the LT parameter to reflect the value present in your SySAM license file or server. Available license types are:

      | Option | Description                              |
      |--------|-----------------------------------------|
      | CP     | CPU license; used in production environments |
      | SF     | Standby                                 |
      | DT     | Develop and Test                        |
      | AC     | OEM Production                          |
      | BC     | OEM Standby                             |
      | EV     | Evaluation                              |
      | Unknown| Select if you are unsure of the license type needed |

3. Save and close the file to finish updating your license.
1.3 Supported Operating Systems

SAP Event Stream Processor runs on specific platforms and operating systems.

Table 4:

<table>
<thead>
<tr>
<th>Platform</th>
<th>Supported OS</th>
<th>Compiler</th>
<th>JDK Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows (64-bit)</td>
<td>Windows 2008 Server R2 (64-bit), SP1, Windows 7 (64-bit), SP1</td>
<td>C SDK: MS Visual C++ 2010 Java SDK: JDK 1.6, 1.7 and SAP JVM7 .NET SDK: MSDEV 2010 SP1 (.NET 4.0), MSDEV 2005 (.NET 3.5 SP1)</td>
<td>SAP JVM 7.1.015</td>
</tr>
</tbody>
</table>

**Note**

To support legacy applications and legacy third-party libraries that are 32-bit, the installer includes 32-bit versions of the C/C++ and .NET 3.5 and 4.0 SDKs.

While SAP Event Stream Processor is likely to work with more recent SPs for these platforms, there is no claim of support for anything other than the versions listed here.

Prior to running the installer, download and install the following Microsoft Visual C++ 2010 Service Pack 1 redistributable package MFC Security Update (10.0.40219.325) or later:


When you have installed the redistributable package, run Microsoft Update to apply the latest security patches to Microsoft Visual C++ 2010 Runtime. If you are planning to run the ESP Add-In for Microsoft Excel, also install the update for x86. If you are using the .NET 3.5 SDKs, the following version of the Visual C++ 2005 Service Pack 1 redistributable package (or newer) should be installed:


**Libraries Required for SDKs**

APIs for creating custom adapters support C/C++, Java 1.7, .NET 3.5 and .NET 4.0.

The C/C++ SDK requires the following .dll files:

Table 5: C++ SDK Files

<table>
<thead>
<tr>
<th>64-bit</th>
<th>32-bit</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>&lt;install dir&gt;\ESP-5_1\bin\streamingclient_lib.dll</code></td>
<td><code>&lt;install dir&gt;\ESP-5_1\bin\86x\streamingclient_lib.dll</code></td>
</tr>
</tbody>
</table>
### The .NET 4.0 SDK requires the following .dll files:

**Table 6: .NET 4.0 SDK Files**

<table>
<thead>
<tr>
<th>64-bit</th>
<th>32-bit</th>
</tr>
</thead>
</table>
| `<install dir>`
| \ESP-5_1\bin \streamingsystem\lib.dll         | `<install dir>`
| \streamingsystem\lib.dll                       | \ESP-5_1\bin\86x \streamingsystem\lib.dll     |
| `<install dir>`
| \ESP-5_1\bin\icudt44.dll                       | `<install dir>`
| \ESP-5_1\bin\icudt44.dll                       | \ESP-5_1\bin\86x\icudt44.dll                   |
| `<install dir>`
| \ESP-5_1\bin\icuin44.dll                       | `<install dir>`
| \ESP-5_1\bin\icuin44.dll                       | \ESP-5_1\bin\86x\icuin44.dll                   |
| `<install dir>`
| \ESP-5_1\bin\icuuc44.dll                       | `<install dir>`
| \ESP-5_1\bin\icuuc44.dll                       | \ESP-5_1\bin\86x\icuuc44.dll                   |
| `<install dir>`
| \ESP-5_1\bin\msvcp100.dll                      | `<install dir>`
| \ESP-5_1\bin\msvcp100.dll                      | \ESP-5_1\bin\86x\xerces-c_2_6.dll              |
| `<install dir>`
| \ESP-5_1\bin\msvcr100.dll                      | `<install dir>`
| \ESP-5_1\bin\msvcr100.dll                      | \ESP-5_1\bin\86x\xerces-c_2_6.dll              |
| `<install dir>`
| \ESP-5_1\bin\xerces-c_2_6.dll                  | `<install dir>`
| \ESP-5_1\bin\xerces-c_2_6.dll                  | \ESP-5_1\bin\86x\xerces-c_2_6.dll              |
| `<install dir>`
| \ESP-5_1\bin\libeay32.dll                      | `<install dir>`
| \ESP-5_1\bin\ssleay32.dll                      | \ESP-5_1\bin\86x\libeay32.dll                  |
| `<install dir>`
| \ESP-5_1\bin\ssleay32.dll                      | `<install dir>`
| \ESP-5_1\bin\ssleay32.dll                      | \ESP-5_1\bin\86x\ssleay32.dll                  |

### The .NET 3.5 SDK requires the following .dll files:

**Table 7: .NET 3.5 SDK Files**

<table>
<thead>
<tr>
<th>64-bit</th>
<th>32-bit</th>
</tr>
</thead>
</table>
| `<install dir>`
| \ESP-5_1\net\interfaces\sdk \streamingnetsdk\lib.dll | `<install dir>`
| \streamingnetsdk\lib.dll                        | \ESP-5_1\net\interfaces\sdk \x86\streamingnetsdk\lib.dll |
| `<install dir>`
| \ESP-5_1\net\interfaces\sdk \streamingsystem\lib.dll | `<install dir>`
| \streamingsystem\lib.dll                        | \ESP-5_1\net\interfaces\sdk \x86\streamingsystem\lib.dll |
| `<install dir>`
| \ESP-5_1\net\interfaces\sdk \icudt44.dll       | `<install dir>`
| \ESP-5_1\net\interfaces\sdk \icudt44.dll       | \ESP-5_1\net\interfaces\sdk \x86\icudt44.dll |
| `<install dir>`
| \ESP-5_1\net\interfaces\sdk \icuin44.dll       | `<install dir>`
| \ESP-5_1\net\interfaces\sdk \icuin44.dll       | \ESP-5_1\net\interfaces\sdk \x86\icuin44.dll |
| `<install dir>`
| \ESP-5_1\net\interfaces\sdk \icuuc44.dll       | `<install dir>`
| \ESP-5_1\net\interfaces\sdk \icuuc44.dll       | \ESP-5_1\net\interfaces\sdk \x86\icuuc44.dll |
| `<install dir>`
| \ESP-5_1\net\interfaces\sdk \xerces-c_2_6.dll  | `<install dir>`
| \ESP-5_1\net\interfaces\sdk \xerces-c_2_6.dll  | \ESP-5_1\net\interfaces\sdk \x86\xerces-c_2_6.dll |
| `<install dir>`
| \ESP-5_1\net\interfaces\sdk \libeay32.dll      | `<install dir>`
| \ESP-5_1\net\interfaces\sdk \ssleay32.dll      | \ESP-5_1\net\interfaces\sdk \x86\ssleay32.dll |
| `<install dir>`
| \ESP-5_1\net\interfaces\sdk \ssleay32.dll      | `<install dir>`
<p>| \ESP-5_1\net\interfaces\sdk \ssleay32.dll      | \ESP-5_1\net\interfaces\sdk \x86\ssleay32.dll |</p>
<table>
<thead>
<tr>
<th>64-Bit</th>
<th>32-Bit</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\net\interfaces\sdk</td>
<td>&lt;install dir&gt;\ESP-5_1\net\interfaces\sdk</td>
</tr>
<tr>
<td>\net35\streamingsystem_lib.dll</td>
<td>\net35\x86\streamingsystem_lib.dll</td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\net\interfaces\sdk</td>
<td>&lt;install dir&gt;\ESP-5_1\net\interfaces\sdk</td>
</tr>
<tr>
<td>\net35\icudt44.dll</td>
<td>\net35\x86\icudt44.dll</td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\net\interfaces\sdk</td>
<td>&lt;install dir&gt;\ESP-5_1\net\interfaces\sdk</td>
</tr>
<tr>
<td>\net35\icuin44.dll</td>
<td>\net35\x86\icuin44.dll</td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\net\interfaces\sdk</td>
<td>&lt;install dir&gt;\ESP-5_1\net\interfaces\sdk</td>
</tr>
<tr>
<td>\net35\icuuc44.dll</td>
<td>\net35\x86\icuuc44.dll</td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\net\interfaces\sdk</td>
<td>&lt;install dir&gt;\ESP-5_1\net\interfaces\sdk</td>
</tr>
<tr>
<td>\net35\xerces-c_2_6.dll</td>
<td>\net35\x86\xerces-c_2_6.dll</td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\net\interfaces\sdk</td>
<td>&lt;install dir&gt;\ESP-5_1\net\interfaces\sdk</td>
</tr>
<tr>
<td>\net35\libeay32.dll</td>
<td></td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\net\interfaces\sdk</td>
<td>&lt;install dir&gt;\ESP-5_1\net\interfaces\sdk</td>
</tr>
<tr>
<td>\net35\ssleay32.dll</td>
<td></td>
</tr>
<tr>
<td>The Java SDK requires the following .jar files:</td>
<td></td>
</tr>
<tr>
<td>Table 8: Java SDK Files</td>
<td></td>
</tr>
<tr>
<td><strong>JDK 1.6, 1.7, 1.8 and SAP JVM7 (64-bit only)</strong></td>
<td></td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\libj\streaming-client.jar</td>
<td></td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\libj\streaming-system.jar</td>
<td></td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\libj\xmlrpc-common-3.1.3.jar</td>
<td></td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\libj\xmlrpc-client-3.1.3.jar</td>
<td></td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\libj\ws-commons-util-1.0.2.jar</td>
<td></td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\libj\commons-logging-1.1.jar</td>
<td></td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\libj\commons-codec-1.3.jar</td>
<td></td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\libj\commons-collections-3.2.1.jar</td>
<td></td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\libj\commons-configuration-1.6.jar</td>
<td></td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\libj\commons-lang-2.6.jar</td>
<td></td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\libj\postgresql.jar</td>
<td></td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\libj\sylapi.jar</td>
<td></td>
</tr>
<tr>
<td>&lt;install dir&gt;\ESP-5_1\libj\log4j-1.2.16.jar</td>
<td></td>
</tr>
</tbody>
</table>
1.4 Supported Compilers

For creating clients that communicate with Event Stream Processor servers using the SDK, these compilers are supported.

Table 9: Supported C SDK Compilers

<table>
<thead>
<tr>
<th>Platform</th>
<th>Compiler Versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows (32-bit)</td>
<td>MS Visual C++ 2010</td>
</tr>
<tr>
<td>Windows (64-bit)</td>
<td>MS Visual C++ 2010</td>
</tr>
</tbody>
</table>

Table 10: Supported Java SDK Compilers

<table>
<thead>
<tr>
<th>Platform</th>
<th>Compiler Versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows (32-bit)</td>
<td>JDK 1.6 or 1.7</td>
</tr>
<tr>
<td>Windows (64-bit)</td>
<td>JDK 1.6 or 1.7</td>
</tr>
</tbody>
</table>

Table 11: Supported .NET SDK Compilers

<table>
<thead>
<tr>
<th>Platform</th>
<th>.NET Version</th>
<th>Compiler Versions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows (32-bit)</td>
<td>.NET 4.0</td>
<td>MSDEV 2010 SP1</td>
</tr>
<tr>
<td>Windows (32-bit)</td>
<td>.NET 3.5 SP1</td>
<td>MSDEV 2005 SP1 or higher</td>
</tr>
<tr>
<td>Windows (64-bit)</td>
<td>.NET 4.0</td>
<td>MSDEV 2010 SP1</td>
</tr>
<tr>
<td>Windows (64-bit)</td>
<td>.NET 3.5 SP1</td>
<td>MSDEV 2005 SP1 or higher</td>
</tr>
</tbody>
</table>

1.5 Virtual Machines

SAP recommends using VMware ESX Server version 3.5 or later to run ESP on virtual machines.

When running an application that involves multiple machines, you want to ensure that timekeeping is synchronized across all of them. For physical hardware, one machine is typically set up to synchronize its system clock with a Network Time Protocol (NTP) server, and the other machines are set up to synchronize their clocks with that machine.

Similarly, when running on multiple virtual machines, using VMware ESX Server version 3.5 or later, you can set the ESX server to synchronize with a time provider such as an NTP server. The ESX Server then synchronizes the time on each vCPU. This timekeeping mechanism minimizes the time difference between different projects. But, it is possible that there will be a slightly larger deviation from true time on VM guests.

Intel and AMD x64 CPU hardware use a time stamp counter (TSC), which runs off the CPU clock oscillator, for timekeeping. For virtual guest systems, each vCPU has its own TSC, and the ESX host synchronizes all of the vCPUs to the same time.

Because the VM host synchronizes all vCPUs to the same time, the time difference between different projects is insignificant unless it is under too heavy a load. When running ESP on virtual machines, it is important to have sufficient resources.
Table 12: Supported Operating Systems

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Version</th>
<th>Additional Kernel Parameters Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Hat Enterprise Linux</td>
<td>5.4</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>4.2 - 5.3</td>
<td>Yes</td>
</tr>
<tr>
<td>SUSE Linux</td>
<td>10 SP2</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>9 with kernel version 2.6.5-7.312 and above</td>
<td>Yes</td>
</tr>
<tr>
<td>Windows</td>
<td>2000</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>2003</td>
<td>No</td>
</tr>
</tbody>
</table>

Refer to Timekeeping best practices for Linux guests (1006427) for details about which parameters and values are recommended for those versions of Linux that require them.

1.6 Disk Space and Memory Requirements

To ensure optimal performance, install Event Stream Processor on a server machine that meets or exceeds the minimum disk space and memory requirements.

Disk Space Requirements

The Event Stream Processor installer relies on temporary files it copies to your machine. Ensure you have enough disk space to accommodate these temporary files as well as the installed program files.

The following table lists approximate, minimum disk space requirements for Event Stream Processor, taking into account both the temporary files and the installed program files.

Table 13: Windows (64-Bit) Memory Requirements

<table>
<thead>
<tr>
<th>ESP Server Only</th>
<th>ESP Server and Studio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 GB</td>
<td>2.1 GB</td>
</tr>
</tbody>
</table>

**Note**

The installer requires 500MB of temporary disk space as part of the installation process. This applies to all platforms and is included in the values shown above.

These disk requirements do not take into account the sizes of your Event Stream Processor project-related files.

If you are upgrading from ESP 5.1 SP04 or earlier to ESP 5.1 SP08 or later, allow additional disk space to back up any log stores and metadata stores. See Preparing for the Log Store Format Change [page 62] for details.
Memory Requirements

Memory requirements vary, depending on the size, number, and complexity of projects you run. In general, SAP recommends that you allocate at least 1GB of free memory for Event Stream Processor-related activities.

1.7 Installed Directory Structure

The installer creates a number of directories containing important files. These files and directories exist in the install directory you selected or created during installation.

Table 14:

<table>
<thead>
<tr>
<th>Directory or File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>charsets</td>
<td>Contains subdirectories with collating sequence files for each supported character set including ASCII, Unicode, and UTF8. This directory is installed when you install ESP Server.</td>
</tr>
<tr>
<td>collate</td>
<td>Contains additional supporting files for Unicode. This directory is installed when you install ESP Server.</td>
</tr>
<tr>
<td>Directory or File</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------</td>
</tr>
</tbody>
</table>
| ESP-5_1          | Contains the folders:  
|                  | • adapters – holds files that relate to the configuration of adapters, examples, and batch files.  
|                  | • backup – holds files and directories backed up by the installer or uninstaller.  
|                  | • bin – holds the executable files that make up Event Stream Processor (with the exception of Studio), including the command line tools. Also contains the .dll files used by ESP. The x86 subdirectory contains the files needed by the 32-bit C SDK.  
|                  | • cluster – holds cluster configuration XML examples, node information, and the encryption key for the cluster.  
|                  | • doc – holds a PDF version of the terms and conditions file, as well as folders containing API documentation for the ESP SDKs, Web Services Provider, and Adapter Toolkit.  
|                  | • etc – holds .xsd files and the FIX data dictionary.  
|                  | • examples – holds CCL examples, as well as examples for the C, Java, and .NET SDKs.  
|                  | • include – holds header files for the C SDK.  
|                  | • lib – holds adapter .cnxml and library files, as well as JRE used by ESP Server.  
|                  | • libj – holds JAR files.  
|                  | • net – holds files pertaining to the .NET SDK. The net\interfaces\sdk directory contains the files for the 64-bit .NET 4.0 SDK, while net \interfaces\sdk\x86 contains the files for the 32-bit .NET 4.0 SDK. The net\interfaces\sdk\net35 directory contains the files for the 64-bit .NET 3.5 SDK, while net\interfaces\sdk\net35\x86 contains the files for the 32-bit .NET 3.5 SDK. There are also dependencies on files in the bin directory. For the full list, see Supported Operating Systems.  
|                  | • odbc – holds the .dll files for ODBC.  
|                  | • security – holds keystore files and XML files for all security options (Kerberos, LDAP, RSA, SAP BI, SAP HANA, and Native OS).  
|                  | • sqla – holds SQL Anywhere relational database management system (RDBMS) files.  
|                  | • Studio – holds files and folders relating to Studio, including the samples provided in the Welcome page.  
|                  | • sysam – holds SySAM licensing information.  
|                  | • wsp – holds Web Services Provider files.  
| ini               | Contains certificates for Certificate Authority from third-party certificate vendors.  
|                  | This directory is installed when you install ESP Server.  
| jre32             | Contains the JRE used by the installer and uninstaller for a 32-bit version of Windows.  
<p>| jre64             | Contains the JRE used by the installer and uninstaller for a 64-bit version of Windows. |</p>
<table>
<thead>
<tr>
<th>Directory or File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>locales</td>
<td>Contains files that Event Stream Processor uses to load localization informa-</td>
</tr>
<tr>
<td></td>
<td>tion. By default, US-English only.</td>
</tr>
<tr>
<td></td>
<td>This directory is installed when you install ESP Server.</td>
</tr>
<tr>
<td>log</td>
<td>Contains the installer log files.</td>
</tr>
<tr>
<td>OCS-15_0</td>
<td>Contains supporting files for Open Client Server, including the Open Client</td>
</tr>
<tr>
<td></td>
<td>library which the Event Stream Processor uses to communicate with the SAP ASE</td>
</tr>
<tr>
<td></td>
<td>database.</td>
</tr>
<tr>
<td>COCKPIT-4</td>
<td>Contains supporting files for SAP ESP Cockpit (ESP Cockpit). This is installed</td>
</tr>
<tr>
<td></td>
<td>when ESP Cockpit is installed, or when the ESP Server is installed with the</td>
</tr>
<tr>
<td></td>
<td>ESP Cockpit Agent.</td>
</tr>
<tr>
<td>Shared</td>
<td>Contains files shared by other SAP products installed to the same root directory.</td>
</tr>
<tr>
<td>Sybase_Install_Registry</td>
<td>Contains the install registry.</td>
</tr>
<tr>
<td>sybuninstall</td>
<td>Contains the folders:</td>
</tr>
<tr>
<td></td>
<td>• comp – holds the executable files for uninstalling specific components of</td>
</tr>
<tr>
<td></td>
<td>the product.</td>
</tr>
<tr>
<td></td>
<td>• ESP – holds the executable file for performing a complete uninstall of the</td>
</tr>
<tr>
<td></td>
<td>product.</td>
</tr>
<tr>
<td>SYSAM-2_0</td>
<td>Contains SySAM licensing tools and a license file.</td>
</tr>
<tr>
<td>STREAMING.bat</td>
<td>Used to set environment variables that are required for ESP (such as STREAM-</td>
</tr>
<tr>
<td></td>
<td>ING_HOME).</td>
</tr>
</tbody>
</table>

An additional directory is created when installing the SAP Event Stream Processor Studio. You can specify the location for this directory during installation.

If you don’t specify a location, the default is C:\Users\<user_name>\Documents\SybaseESP\5.1\workspace.

The workspace directory contains the working files for the SAP Event Stream Processor Studio. Initially it includes a directory with the files for each of the example projects. For each project you create, a directory containing the files for that project is added. It also contains the following directories and files.

<table>
<thead>
<tr>
<th>Directory</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>adapters</td>
<td>Contains deployment and runtime information for cluster-managed adapters you have used.</td>
</tr>
<tr>
<td>projects</td>
<td>Contains deployment and runtime information for applications you have run. For example, if you run a project named test in Studio, it will create a directory named default.test.0 containing the .ccx, .ccr, and .log files for that project in this directory.</td>
</tr>
<tr>
<td>discovery</td>
<td>Working directory to hold temporary files created during the cluster discovery process.</td>
</tr>
<tr>
<td>Directory</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>esp_connections.xml</td>
<td>An XML file containing information about connecting to each server. This file is maintained by ESP and should not be edited manually.</td>
</tr>
<tr>
<td>esp_studio_runners</td>
<td>A binary file containing internal data for Studio. This file is maintained by ESP and should not be edited manually.</td>
</tr>
<tr>
<td>exampledata</td>
<td>Contains .csv and .xml files with data for input to the example projects.</td>
</tr>
</tbody>
</table>

If you also install the PowerDesigner® extensions, the installer adds the following directories and files to the root directory of the PowerDesigner installation:

Table 16:

<table>
<thead>
<tr>
<th>Directory or File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examples\Streaming</td>
<td>Contains sample models for the PowerDesigner extensions for Event Stream Processor.</td>
</tr>
</tbody>
</table>
| \Resource Files \StreamingCompiler | Contains these sub-directories:  
  • bin - contains streamingcompiler.exe and all the .dll files from %STREAMING_HOME%\bin  
  • bin\i18n - contains entire contents of %STREAMING_HOME%\bin\i18n  
  • lib - contains all files from %STREAMING_HOME%\lib  
  • etc - contains all files from %STREAMING_HOME%\etc |

### 1.8 Before You Reinstall

This information pertains to reinstalling the current version of Event Stream Processor, 5.1 SP09, over the same version (5.1 SP09). There are various things to be aware of before reinstalling, such as backing up important information to prevent it from being overwritten or deleted.

For information on updating from a previous version, see [Updating from a Previous Version of Event Stream Processor](page 61).

During the install, upgrade, and uninstall processes, ESP automatically creates backups of critical files and directories, including security settings, cluster configuration, and adapter configuration. To see a full list of these files and directories, refer to Planning Your Installation > Automatic Backups.

Since the automatic backup only includes files in the STREAMING_HOME and COCKPIT_HOME directories, manually back up the following before reinstalling in the same folder as an existing installation:

- All project (.ccl) files
- All project configuration (.ccr) files

To ensure examples run cleanly in the new installation, remove any examples you have previously loaded into a workspace.

To remove a project from a workspace, within SAP Event Stream Processor Studio, right-click the project name in the Project Explorer and select Remove from workspace.
If the chosen security type is either Kerberos or LDAP for both your previous and new installations, the option to input Kerberos or LDAP configuration does not appear, as the installer adheres to the installer.properties file created by your previous installation. To input Kerberos or LDAP configuration information during the new installation, select a different security type, then select Kerberos or LDAP, and the input options will appear.

**Note**

When you are re-installing Event Stream Processor 5.1 on top of an existing 5.1 installation, and files from that installation are in use, the installer reboots the system at the end of the installation without warning.

When you have completed the reinstallation, copy the manually backed-up files back into their original locations in the installed directory structure to restore system data and customizations from your previous installation.

### 1.9 Automatic Backups

During the install, upgrade, and uninstall processes, ESP automatically creates backups of critical files and directories.

ESP saves the backups at %STREAMING_HOME%\backup. When you have completed the install, upgrade, or uninstall process, restore all backed up files and directories to their previous locations. Note that restoring cluster configuration, database service connections, and cluster persistence requires that you migrate this information to the cluster database. For information on the migration procedure, see Migrating Configuration and Persistence Information [page 65].

**Note**

The backup process changes the date stamps of the files and directories from their original date stamps.

- %STREAMING_HOME%\adapters\framework\config\  
- %STREAMING_HOME%\adapters\framework\instances\  
- %STREAMING_HOME%\adapters\adapter.key  
- %STREAMING_HOME%\bin\service.xml  
- %STREAMING_HOME%\cluster\adapters\  
- %STREAMING_HOME%\cluster\config\  
- %STREAMING_HOME%\cluster\discovery\  
- %STREAMING_HOME%\cluster\keys\  
- %STREAMING_HOME%\cluster\projects\  
- %STREAMING_HOME%\lib\adapters\  
- %STREAMING_HOME%\security\  
- %STREAMING_HOME%\studio\streamingstudio.ini  
- %STREAMING_HOME%\studio\clustercfg\  
- %STREAMING_HOME%\studio\templates\config_template.ccr  
- %STREAMING_HOME%\wsp\wsp.xml  
- %STREAMING_HOME%\wsp\keystore_rsa.jks  
- %STREAMING_HOME%\wsp\webapps\axis2\WEB-INF\conf\axis2.xml
- `%STREAMING_HOME%\wsp\wsp.key`
- `<install dir>\COCKPIT-4\plugins\ESPMAP\ProductModule.xml`
- `<install dir>\COCKPIT-4\plugins\ESPMAP\tustore.xml`
- `<install dir>\COCKPIT-4\services\Repository\db`
- `<install dir>\COCKPIT-4\conf`
2 Installation Scenarios

SAP Event Stream Processor offers typical, custom, and single component installations. A custom installation lets you select which components you install, including the PowerDesigner Extensions for PowerDesigner 16.5. A typical installation includes the most commonly-used components. A single component installation lets you install SAP ESP Cockpit for SAP Event Stream Processor.

The single-component installation process for SAP ESP Cockpit for SAP Event Stream Processor is the same as when you install this component as part of a custom installation. For details on the information you need to provide when installing this component, see Performing a Custom Installation in GUI Mode [page 28].

**Note**

Installing SAP ESP Cockpit for SAP Event Stream Processor lets you monitor and administer SAP Event Stream Processor. If you want to use ESP Cockpit to start and stop ESP nodes and retrieve ESP log files, also install the ESP Cockpit agent with ESP Server. The agent is installed automatically with a typical installation, but you can also select it when performing a custom installation. The agent is not installed with the single-component installation of SAP ESP Cockpit for SAP Event Stream Processor.

SAP Event Stream Processor includes:

- **Server** – performs the core analytics and processing of stream data.
- **Base adapters** – the base Event Stream Processor license includes both internal and external adapters. Internal adapters run inside server processes, while external adapters access server processes through external APIs such as the Java SDK. Both types of adapters either read data from external sources and convert them to Event Stream Processor format, or convert data from Event Stream Processor format and write it to external sources. Internal adapters automatically install with the server. You can choose to install external adapters with the server, or on another machine entirely.
- **The SAP ESP Add-in for Microsoft Excel** is a real-time data add-in for Microsoft Excel that lets you view and retrieve records from one or more running Event Stream Processor projects, as well as publish records to them. Although it is included with your basic license, it is not installed automatically with the other base adapters. To install this add-in, use the custom installation process, and explicitly select it as a component to install.
- **Studio** – provides a graphic view of an Event Stream Processor project, allowing you to create, modify, and monitor projects without programming knowledge.

A typical installation installs ESP Server, ESP Studio, SAP ESP Cockpit for SAP Event Stream Processor, the ESP Web Services provider, and adapters on a single machine. A typical installation uses default values for many settings. You can distribute your installation by installing Event Stream Processor components on several machines, then using an ESP server cluster to run projects from the remote machines.

A custom installation provides you with the opportunity to install additional components or not install some of the components included in a typical installation. For example, on a system where you have SAP HANA installed, you can add the **SAP Event Stream Processor Plug-in for SAP HANA Studio** to incorporate the ESP Studio into the SAP HANA Studio. Or, on a production server that is dedicated to running existing projects, not developing new ones, you can remove the SAP Studio component from the installation.
Adapters

In addition to base adapters, you can purchase separately licensed enterprise adapters.

- Open adapter
- NYSE Technologies adapter
- FIX adapter

The NYSE Technologies enterprise adapter is provided with its own installation media when you purchase a license for it. The Open and FIX adapters are provided on the installation media for Event Stream Processor (accessed through the Custom install option), but require an additional license to run. You can install enterprise adapters on any machine that has network access to the machine hosting the server.

The Cluster and Cluster Nodes

When you perform a typical installation, the installer configures a single node cluster and sets up the Native OS authentication method for the node. When you perform a custom installation, you can configure a cluster node for a new or existing cluster and assign it the name and authentication method you choose. Adding nodes to a cluster improves performance when running multiple projects simultaneously (in the cluster), provides failover, and lets you configure centralized security for your system. Your network infrastructure, geographic setup, and overall event processing needs will determine the cluster configuration that is best for you.

During any type of installation, ESP randomly generates an encryption key for the default cluster, a separate encryption key for the Web Services Provider (WSP), and a third for ESP Studio. Using these keys, the installer encrypts Secure Sockets Layer (SSL) files, passwords in cluster node configuration, the keystore password in the WSP configuration file, and Studio passwords. The key files are only accessible by the user that runs the installer. After installation, you can use these keys to encrypt or re-encrypt values and files using the `streamingencrypt` tool.

If the encryption keys for an installation of ESP are ever lost or deleted, generate new keys and re-encrypt values in the cluster node and WSP configuration files using the `streamingencrypt` tool.

You can use either the GUI installer or the console (command line) installer for both typical and custom installations.

You can also use the silent installer to install multiple instances of the ESP Server and Studio using the same installation parameters.
2.1 Role of the Installer in Cluster Configuration

ESP uses a database-based cluster configuration, rather than a file-based cluster configuration. This database hosts configuration information for the cluster and is known as the cluster database. Several necessary components for the database-based configuration are installed during installation.

Cluster Database

- When the ESP Server is installed, the installer creates the cluster database.
- The installer also deploys an initial cluster configuration consisting of a single node.

Passwords

- The installer prompts you for the cluster database user name and password. The credentials you define here do not have to belong to an actual user, but they are required for administrative-level access to this database.
- The installer prompts you for the cluster password – this is also used as the password for the SYS_STREAMING user which is used when logging into ESP Cockpit immediately after installing ESP.

File and Script Updates

- The installer updates settings in the cluster bootstrap file (cluster.cfg).
- The installer updates the script used to start the cluster database.
- The installer updates the script used to start the initial node.

2.2 Performing a Typical Installation

In a typical installation, install the base adapters, ESP Server, ESP Studio, and SAP ESP Cockpit (including the ESP Cockpit agent) on a single machine. This type of installation is generally used during development.

Context

SAP recommends a typical installation only for evaluating Event Stream Processor or testing your implementation.

The SAP ESP Add-in for Microsoft Excel is a real-time data add-in for Microsoft Excel that lets you view and retrieve records from one or more running Event Stream Processor projects, as well as publish records to them.
Although it is included with your basic license, it is not installed automatically with the other base adapters. To install this add-in, use the custom installation process, and explicitly select it as a component to install.

To install enterprise adapters in a typical installation, run the standalone installer for your adapters or, in the case of the FIX or Open adapters, re-run the Event Stream Processor installer in custom mode to access the adapter-only installation process.

**Note**

If your license is incorrectly generated or copied to an incorrect location, Event Stream Processor automatically enters a 30-day grace period. License errors or warnings, or both, appear in the stdstreams.log file, which resides in the project runtime directory, `STREAMING_HOME\ESP-5_1\cluster\projects\<cluster>\<workspace>.<project>.<project instance id>`. For example, `ESP-5_1\cluster\projects\espl\myworkspace.myproject.0`. When the 30-day grace period ends, Event Stream Processor cannot run until a suitable license is provided. For production environments, SAP strongly recommends that you configure e-mail alerts during installation so you receive messages regarding license errors or warnings before the grace period ends.

### 2.2.1 Performing a Typical Installation in GUI Mode

Install the Event Stream Processor base adapters, the Server, the Studio, and SAP ESP Cockpit (including the ESP Cockpit agent) in a single process on a single machine.

**Prerequisites**

Ensure that you have administrator privileges. Then, run the installer for ESP as administrator.

If you are installing on Windows 7 and using a sub-capacity license, set the `<SYBASE_SAM_CAPACITY>` environment variable in `Control Panel ▶️ System ▶️ Advanced ▶️ Environment Variable ▶️`. Click *New* for System Variables and enter `SYBASE_SAM_CAPACITY` as the variable name and `PARTITION` as the environment value.

Ensure that port 19110 is available during installation; if this port is unavailable, the installer fails to create the cluster database.

**Procedure**

1. Run the installer file, `setup.exe`. On the Introduction screen, click *Next*.
2. Select an installation folder. Change the default folder by typing the filepath to the desired folder or by clicking *Choose* and selecting a folder. When finished, click *Next*.
   
   If the selected folder does not exist, click *Yes* when prompted to create the folder. If the folder already exists, you see a warning that any software in the folder will be replaced. Click *Next* to proceed with the installation in the existing folder.
3. Choose the **Typical** install set, which installs the Event Stream Processor Server, the Event Stream Processor Studio, the base adapters, the SAP ESP Cockpit Server, and the SAP ESP Cockpit Agent. Click **Next**.

4. Select to install either a licensed copy or an evaluation version.

**i Note**

Ensure that the filepath to the installation folder (including the folder name itself) does not contain periods.

3. Choose the **Typical** install set, which installs the Event Stream Processor Server, the Event Stream Processor Studio, the base adapters, the SAP ESP Cockpit Server, and the SAP ESP Cockpit Agent. Click **Next**.

4. Select to install either a licensed copy or an evaluation version.

**i Note**

If you install the evaluation version, the software will be active for a 30-day grace period, after which you are prompted for a valid license key. During this grace period, there is no restriction on the number of cores ESP can use.

Proceed to step 7 [page 23].

5. If you selected to install a licensed version, select one of these options:

**Specify License Keys,** **Use Previously Deployed License Server,** or **Continue Installation Without a License Key.**

<table>
<thead>
<tr>
<th>License Type</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Specify License Keys</strong></td>
<td>○ Enter the license key manually or browse for and load a license key.</td>
</tr>
<tr>
<td></td>
<td>○ Click <strong>Next.</strong></td>
</tr>
<tr>
<td></td>
<td>If you are using a served license and receive an error that the installer detects a SySAM server already running on your machine, click <strong>Previous</strong> to return to the SySAM License Entry panel and select the Previously Deployed License Server option.</td>
</tr>
<tr>
<td></td>
<td>If you enter an invalid license key, you receive a warning message but can continue with the installation. The software is active for a 30-day grace period, after which you are prompted to enter a valid key.</td>
</tr>
<tr>
<td><strong>Previously Deployed License Server</strong></td>
<td>Enter the host name and port number or IP address.</td>
</tr>
<tr>
<td></td>
<td>If the license server file is not found, you receive a warning message indicating that the installer cannot verify a license server running on the selected host. Reenter the host name and port number. If the installer cannot verify the license server, select a different licensing option to continue with the installation.</td>
</tr>
<tr>
<td><strong>Continue Without a License Key</strong></td>
<td>If you continue without a license, the software will be active for a 30-day grace period, after which you are prompted for a valid license key. During this grace period, there is no restriction on the number of cores ESP can use.</td>
</tr>
</tbody>
</table>

6. From the drop-down list, select the type of product license you want to configure and click **Next**.

7. Select **Yes** or **No** to indicate whether to configure e-mail alerts about SySAM events that may require an administrator’s attention.

If you select **Yes**, enter the SMTP server host name, SMTP server port number, sender e-mail address, recipient e-mail address, and message severity, or accept the defaults. Click **Next**.

**i Note**

To change the SySAM alert settings after installation, edit these lines in the `STREAMING_HOME/sysam/esp_license.prop` file:

- `email.smtp.host=smtp`
- `email.smtp.port=25`
Setting email.severity to NONE disables e-mail alerts, causing all other lines to be ignored. To enable e-mail alerts, set email.severity with ERROR, WARNING, or INFORMATIONAL. Replace SMTP with your SMTP host name, <25> with the port number of your SMTP mail server, <sender@domain.com> with your e-mail address, and <user@domain.com> with e-mail recipients. Separate multiple e-mail recipients with a comma (,).

8. Use the drop-down list to select your geographic location and view the corresponding End-User License Agreement. Accept the terms and conditions to continue. Click Next.

9. Enter and confirm a password for the default cluster created by the installer. The password must be at least six characters long. This password is also used as the password for the system-created user SYS_STREAMING, which you use to log in to ESP Cockpit to assign roles and privileges for your users. Click Next to continue.

10. Provide a username and password for the cluster database administrator. Your password must be at least six characters long.

   The installer creates the cluster database, which stores configuration information for your cluster. Without this database, you cannot run projects in a cluster or log in to ESP Cockpit. The credentials you define here do not have to belong to an actual user, but they are required for administrative-level access to this database.

11. Select a workspace folder where Studio will store projects. Change the default folder by typing the filepath to the desired folder or by clicking Choose and selecting a folder. When finished, click Next.

   **Note**

   If you are upgrading from a previous version of Event Stream Processor and want your old projects to remain in the active workspace, enter the path to your existing Studio workspace.

12. Review installation information before continuing. Click Previous to go back and make changes. Click Install to proceed with the installation.

13. If you are installing the ESP Cockpit agent, enter and confirm a password for the ESP Cockpit agent administrator.

14. A message indicates Event Stream Processor was successfully installed into the location of your choice, and to restart the system to complete the installation. Click Done to quit the installer.

**Next Steps**

To view a summary of installation results, open <install-dir>/log/esp_suite.log.
### 2.2.2 Performing a Typical Installation in Console Mode

Install the Event Stream Processor base adapters, the Server, the SAP Event Stream Processor Studio, and SAP ESP Cockpit (including the ESP Cockpit agent) in a single process on a single machine.

**Prerequisites**

Ensure that you have administrator privileges. Then, run the installer for ESP as administrator.

If you are installing on Windows 7 and using a sub-capacity license, set the `<SYBASE_SAM_CAPACITY>` environment variable in Control Panel > System > Advanced > Environment Variable. Click New for System Variables and enter `SYBASE_SAM_CAPACITY` as the variable name and `PARTITION` as the environment value.

Ensure that port 19110 is available during installation; if this port is unavailable, the installer fails to create the cluster database.

**Procedure**

1. From the command line, navigate to the directory where the installation file (`setupConsole.exe`) resides.
2. Type `setupConsole.exe -i console` and press Enter.
3. When prompted, press Enter to continue.
4. Select the installation location. To accept the default location, press Enter. To specify a custom location:
   a. Enter an absolute path to the location. Select a file path that does not contain any spaces or periods.
   b. Press Enter.
   c. Type Y or N to indicate whether the location is correct.

   **Note**

   The console accepts both Y and Yes as affirmative, and everything else as a negative response.

   d. If the directory you specified does not exist, the installer asks if you want to create it. Press Y. If the directory already exists, the installer warns you that any software in the folder will be replaced. In either case, press Enter to continue.

5. Enter 1 to select a typical installation, which installs the base adapters, Event Stream Processor Server, the Event Stream Processor Studio, the SAP ESP Cockpit Server, and the SAP ESP Cockpit Agent. Press Enter.

   If you have a previous version installed in the selected location, you can either uninstall the previous version, or overwrite it. Enter your selection and press Enter.

6. Indicate whether to install a licensed version or an evaluation version and press Enter.

   **Note**

   If you install the evaluation version, the software will be active for a 30-day grace period, after which you are prompted for a valid license key. During this grace period, there is no restriction on the number of cores ESP can use.
Proceed to step 9 [page 26].

7. If you are installing a licensed version, indicate the licensing model you want to use:

<table>
<thead>
<tr>
<th>License Type</th>
<th>Process</th>
</tr>
</thead>
</table>
| Specify License Keys                | ○ Type 1 and press Enter.  
○ Specify the absolute path to the license file and press Enter, or press Enter to accept the default.  
If you are using a served license and receive an error that the installer detects a SySAM server already running on your machine, click Previous to return to the SySAM License Entry panel and select the Previously Deployed License Server option.  
If you enter an invalid key, you are prompted by a warning message. You cannot proceed until you enter a valid key or select a different licensing option. |
| Previously Deployed License Server  | ○ Type 2 and press Enter.  
○ Press Enter to accept the default host name, or enter the Host Name and Port Number.  
If the license server file is not found, you receive a warning message indicating that the installer cannot verify a license server running on the selected host. When prompted, enter Y to reenter the license server or N to select a different licensing option. |
| Continue Without a License Key     | Type 3 and press Enter. At the prompt asking if you want to continue, press Enter.  
If you continue without a license, the software will be active for a 30-day grace period, after which you are prompted for a valid license key. During this grace period, there is no restriction on the number of cores ESP can use. |

8. Enter the number corresponding to the license type you want to configure. Press Enter.

9. Indicate whether to configure alerts about SySAM events that may require an administrator’s attention. To configure alerts:
   a. Enter Y to indicate that you want to configure alerts.
   b. Enter the SMTP server host that handles your e-mail messages.
   c. Enter the SMTP server port.
   d. Enter the default e-mail address of the person or group from which e-mail messages are sent.
   e. Enter the e-mail addresses of the default recipients.
   f. Enter the default severity level (informational, warning, or error) for e-mail messages.

Note

To change the SySAM alert settings after installation, edit the lines in the STREAMING_HOME/sysam/esp_license.prop file:
   ○ email.smtp.host=smtp
   ○ email.smtp.port=25
   ○ email.sender=sender@domain.com
   ○ email.recipients=user@domain.com
   ○ email.severity=INFORMATIONAL

Setting email.severity to NONE disables e-mail alerts, causing all other lines to be ignored. To enable e-mail alerts, set email.severity with ERROR, WARNING, or INFORMATIONAL. Replace <smtp> with your SMTP host name, <25> with the port number of your SMTP mail server, <sender@domain.com> with your...
e-mail address, and <user@domain.com> with e-mail recipients. Separate multiple e-mail recipients with a comma.

10. Enter the number corresponding to your geographic location and press Enter.
11. Read through the license agreement. Press Enter as necessary to move through the text. Stop reading the text at any point by typing back and pressing Enter.
12. Indicate that you agree to the license terms and press Enter.
13. Enter and confirm a password for the default cluster created by the installer. The password must be at least six characters long. This password is also used as the password for the system-created user SYS_STREAMING, which you use to log in to ESP Cockpit to assign roles and privileges for your users. Press Enter to continue.
14. Provide a username and password for the cluster database administrator. Your password must be at least six characters long. Press Enter to continue.
   The installer creates the cluster database, which stores configuration information for your cluster. Without this database, you cannot run projects in a cluster or log in to ESP Cockpit. The credentials you define here do not have to belong to an actual user, but they are required for administrative-level access to this database.
15. Enter an absolute path to the workspace location for SAP Event Stream Processor Studio projects, or press Enter to accept the default location.

   i Note

   If you are upgrading from a previous version of Event Stream Processor and want your old projects to remain in the active workspace, enter the path to your existing Studio workspace.

16. At the preinstallation summary, confirm that you have enough disk space for the installation. Press Enter to continue.
17. Press Enter to install the files.
18. Enter a password for the ESP Cockpit agent administrator and press Enter. Minimum length is six characters.
19. Confirm the ESP Cockpit agent administrator password and press Enter.
20. When installation is complete, press Enter.

Next Steps

To view a summary of installation results, open <install-dir>/log/esp_suite.log.

2.3 Performing a Custom Installation

Use a custom installation to install certain features of Event Stream Processor, or to install Event Stream Processor components to different machines. You can install ESP Server only, Studio only, or any combination of external and enterprise adapters with or without ESP Server or Studio. Use a custom installation when setting up a production environment.
Context

### Note
Always install the SySAM License Utilities unless they have already been installed on the target machine. For example, if the machine hosts other SAP products, you may have already installed the SySAM License Utilities.

Internal adapters are always installed with the ESP Server, whereas external and enterprise adapters can reside on any machine that has network access to an instance of the Event Stream Processor Server.

SAP recommends custom installations for production environments. The architecture of your installation—the number and location of Studio and ESP Server instances, the number of enterprise adapters, and so on—depends on your specific needs.

The steps involved in a custom installation are largely the same as those in a typical installation. However, in a custom installation, you select only the components you want to install.

### Note
If your license is incorrectly generated or copied to an incorrect location, Event Stream Processor automatically enters a 30-day grace period. License errors or warnings, or both, appear in the stdstreams.log file, which resides in the project runtime directory, STREAMING_HOME\ESP-5_1\cluster\projects\<cluster>\<workspace>\.<project>.<project instance id>. For example, ESP-5_1\cluster\projects\esp1\myworkspace.myproject.0. When the 30-day grace period ends, Event Stream Processor cannot run until a suitable license is provided. For production environments, SAP strongly recommends that you configure e-mail alerts during installation so you receive messages regarding license errors or warnings before the grace period ends.

In a custom installation, you may also select additional components that are not included in a typical installation.

- **FIX Adapter for SAP Event Stream Processor**
- **Open Adapter for SAP Event Stream Processor**
- **SAP Event Stream Processor Add-in for Microsoft Excel**
- **PowerDesigner Extensions for SAP Event Stream Processor**
- **SAP Event Stream Processor Plug-in for SAP HANA Studio**

### 2.3.1 Performing a Custom Installation in GUI Mode

Install the SAP ESP Server, SAP ESP Studio, SAP ESP Cockpit, PowerDesigner Extensions, and any combination of external and enterprise adapters on various machines within your network.

### Prerequisites

Ensure that you have administrator privileges. Then, run the installer for ESP as administrator.
If you are installing on Windows 7 and using a sub-capacity license, set the `<SYBASE_SAM_CAPACITY>` environment variable in Control Panel > System > Advanced > Environment Variable. Click New for System Variables and enter `SYBASE_SAM_CAPACITY` as the variable name and `PARTITION` as the environment value.

To install the SAP Event Stream Processor Plugin for SAP HANA Studio, you must have installed SAP HANA Studio for SPS 08, which uses Eclipse version 4.4.

If you are installing the ESP Add-In for Microsoft Excel, ensure you have installed Microsoft .NET Framework version 4.0 or higher.

Ensure that port 19110 is available during installation if you are installing SAP Event Stream Processor Server; if this port is unavailable, the installer fails to create the cluster database.

**Context**

The following instructions provide a basic workflow based on selecting most of the available options, including the ESP Server. Therefore, some of the steps outlined here may not be applicable to your custom installation.

**Procedure**

2. Select an installation folder. Change the default folder by typing the filepath to the desired folder or by clicking Choose and selecting a folder. When finished, click Next.
   
   If the selected folder does not exist, click Yes when prompted to create the folder. If the folder already exists, you receive a warning that any software in the folder will be replaced. Click Next to proceed with the installation in the existing folder.

   **Note**

   Ensure that the filepath to the installation folder (including the folder name itself) does not contain periods.

3. Choose the Custom install set. Click Next.
   
   The installer displays a list of components, with the check boxes for components that are included in a typical installation checked.

4. Select any additional components you want to install.

   For example, if you have SAP HANA installed on your system and want to use the ESP Studio from the SAP HANA Studio, check the box next to **SAP Event Stream Processor Plug-in for SAP HANA Studio**.

5. Clear the check boxes for any components you do not want to install.

   For example, if the target installation machine hosts other SAP products, you may have already installed the SySAM License Utilities.

6. Click Next.

   If you previously selected external adapters only (no enterprise adapters, ESP Studio, or ESP Server), the installer summarizes your installation preferences and prompts you to install. Click Install to complete the installation. Otherwise, continue.
7. Select to install either a licensed copy or an evaluation version.

**Note**

If you install the evaluation version, the software will be active for a 30-day grace period, after which you are prompted for a valid license key. During this grace period, there is no restriction on the number of cores ESP can use.

Proceed to step 11 [page 31].

8. If you are installing a licensed version, select one of these options:

**Specify License Keys, Use Previously Deployed License Server, or Continue Installation Without a License Key.**

<table>
<thead>
<tr>
<th>License Type</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Specify License Keys</strong></td>
<td>○ Enter the license key manually or browse for and load a license key.</td>
</tr>
<tr>
<td></td>
<td>○ Click Next.</td>
</tr>
<tr>
<td></td>
<td>If you are using a served license and receive an error that the installer detects a SySAM server already running on your machine, click Previous to return to the SySAM License Entry panel and select the Previously Deployed License Server option.</td>
</tr>
<tr>
<td></td>
<td>If the license server file is not found, you receive a warning message indicating that the installer cannot verify a license server running on the selected host, and prompting you to reenter the host name and port number you provided. If the installer cannot verify the license server, select a different licensing option to continue with the installation.</td>
</tr>
<tr>
<td><strong>Previously Deployed License Server</strong></td>
<td>Enter the host name and port number or IP address.</td>
</tr>
<tr>
<td></td>
<td>If the license server file is not found, you receive a warning message indicating that the installer cannot verify a license server running on the selected host. Reenter the host name and port number. If the installer cannot verify the license server, select a different licensing option to continue with the installation.</td>
</tr>
<tr>
<td><strong>Continue Without a License Key</strong></td>
<td>If you continue without a license, the software will be active for a 30-day grace period, after which you are prompted for a valid license key. During this grace period, there is no restriction on the number of cores ESP can use.</td>
</tr>
</tbody>
</table>

9. From the drop-down list, select the type of product license you want to configure and click Next.

10. Select Yes or No to indicate whether you want to configure e-mail alerts about SySAM events that may require an administrator’s attention.

If you select Yes, enter the SMTP server host name, SMTP server port number, sender e-mail address, recipient e-mail address, and message severity, or accept the defaults. Click Next.

**Note**

To change the SySAM alert settings after installation, edit these lines in the STREAMING_HOME/sysam/esp_license.prop file:

- email.smtp.host=smtp
- email.smtp.port=25
- email.sender=sender@domain.com
- email.recipients=user@domain.com
- email.severity=INFORMATIONAL
Setting `email.severity` to NONE disables e-mail alerts, causing all other lines to be ignored. To enable e-mail alerts, set `email.severity` with ERROR, WARNING, or INFORMATIONAL. Replace `<smtp>` with your SMTP host name, `<25>` with the port number of your SMTP mail server, `<sender@domain.com>` with your e-mail address, and `<user@domain.com>` with e-mail recipients. Separate multiple e-mail recipients with a comma (,).

11. Use the drop-down list to select your geographic location and to view the corresponding End-User License Agreement. Accept the terms and conditions to continue. Click Next.

   **Note**
   If you are installing enterprise adapters only, repeat steps 7 [page 30] through 11 [page 31] for each enterprise adapter you are installing. Then proceed to step 18 [page 33].

12. Configure cluster information:

   **Note**
   The installer uses cluster settings from steps 12 [page 31] through 14 [page 31] to configure the web services providers as well.

   a. Create a name for your new cluster, or enter the name of an existing cluster.
   b. Create a name for the new node. If the node will be part of an existing multi-node cluster, all nodes names in the cluster must be unique. Node names should only consist of letters, numbers, and underscores.
   c. Enter the cache port for the node. The cluster cache is an internal cache for sharing cluster state and configuration information. It is for internal use only.
   d. By default, the installer sets the actual host name of the machine hosting this cluster node. If it cannot determine the actual host name, it sets "localhost" as the default value. Use the default "localhost" name only if this is a single node cluster that will only be accessed from within the machine you are installing on.
   e. Enter the RPC port for the cluster node. The Studio, SDKs, and various other product tools, use this port to access the cluster.
   f. (Optional) If you want to specify a separate admin port, change the port number from the default. Doing so allows you to distinguish between administrative and non-administrative users, and limit network access to specific administrative actions, which may be advantageous when you have firewalls in place.
   g. Indicate whether the RPC port supports connections through Secure Sockets Layer (SSL). When you enable SSL, connections to the cluster use HTTPS rather than HTTP. If you are creating a new cluster, you can decide whether you want to use SSL or not. If you are connecting to an existing cluster, ensure this selection matches the configuration of the existing cluster.
   h. Click Next.

   **Note**
   After installation, you can modify your Event Stream Processor environment to add nodes, clusters, and so on. For information, see the *SAP Event Stream Processor: Configuration and Administration Guide*. To change authentication types post-installation, see the *SAP Event Stream Processor: Cockpit Guide*.

13. Enter and confirm a password for the cluster. All nodes within a cluster have the same cluster password. Your password must be at least six characters long. If you are connecting to an existing cluster, use the password defined for that cluster.

14. Configure security for the cluster, then click Next. If you are connecting to an existing cluster, select the security type the existing cluster uses, and provide credentials for that cluster:
<table>
<thead>
<tr>
<th>Authentication Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native OS</td>
<td>Provides authentication based on your operating system. Choose this authentication type if you wish to use the same credentials that you use to log in to your machine.</td>
</tr>
<tr>
<td>SAP BI</td>
<td>Provides SAP BI authentication. Choose this authentication type if you wish your SAP BI instance to handle authentication.</td>
</tr>
</tbody>
</table>
| LDAP                | Provides LDAP authentication. Enter the following information as indicated by your LDAP implementation:  
  - Server type  
  - Provider URL  
  - Default search base  
  - Authentication scope |
| Kerberos            | Provides Kerberos authentication. Enter the following information as indicated by your Kerberos implementation:  
  - Realm  
  - KDC  
  - Service Principal Name  
  - Keytab Location |
| RSA                 | Provides RSA authentication. |
| SAP HANA            | Provides SAP HANA authentication. Enter the following information as indicated by your SAP HANA index-server:  
  - Host  
  - Port |

**Note**: The default port is 30015. If your SAP HANA instance number is not 00, update the port number appropriately. For example, if your instance number is 03, then use 30315.

| (Optional) Database |

15. Set the keystore properties for the cluster. These keys encrypt/decrypt data within Event Stream Processor, such as passwords required to read or write to databases. If you are connecting to an existing cluster, use the keystore properties already defined for that cluster:
   a. Indicate the location of the keystore file. Event Stream Processor needs access to the keystore for encryption/decryption.
   b. Enter and confirm the password for the keystore. Your password must be at least six characters long.
   c. Click **Next**.

16. If you are installing the Web Services adapter, select **Yes** or **No** to indicate whether you want to enable the ESP Web Services Provider. If you select **Yes**, configure the ESP Web Services Provider:
   a. Specify a value for the SOAP port of the SOAP server to which the provider connects, or accept the default value.
   b. Specify a value for the REST port of the REST server to which the provider connects, or accept the default value.
   c. Specify a value for the WebSocket port to which the provider connects, or accept the default value.
   d. Specify values for the HTTP and HTTPS ports, or accept the default values. Click **Next**.

   If you select **No**, the default values are accepted and the ESP Web Services Provider server does not start.

17. Provide a username and password for the cluster database administrator. Your password must be at least six characters long.
The installer creates the cluster database, which stores configuration information for your cluster. Without this database, you cannot run projects in a cluster or log in to ESP Cockpit. The credentials you define here do not have to belong to an actual user, but they are required for administrative-level access to this database.

18. Select a workspace folder to store projects. Change the default folder by typing the filepath to the desired folder or by clicking Choose and selecting a folder. When finished, click Next.

If you are installing enterprise adapters, repeat steps 7 [page 30] through 11 [page 31] for each adapter.

19. If you are installing the SAP Event Stream Processor Plug-in for SAP HANA Studio, specify the parent folder of the SAP HANA Studio directory (hdbstudio). For example, if your installation path is C:\Program Files \SAP\hdbstudio, specify C:\Program Files\SAP. Click Next.

20. If you are installing PowerDesigner extensions, specify the folder where the PowerDesigner installation is located. Click Next.

This location is validated.

21. Review installation information before continuing. Click Previous to go back and make changes. Click Install to proceed with the installation.

22. If you are installing SAP ESP Cockpit:
   a. If you did not install the ESP Server during this installation, specify the authentication type ESP is using. If you did install the server with this installation, you have already provided this information and the installer does not prompt you to provide it again.
   b. Specify values for the HTTP and HTTPS ports for SAP ESP Cockpit that do not conflict with ports used by other applications and services on the system, or accept the default values.
   c. Specify a value for the RMI port for the RMI service that is not used by other applications and services on the system, or accept the default value.
   d. If installing the ESP Cockpit agent, enter and confirm a password for the ESP Cockpit agent administrator.
   e. Select Yes or No to indicate whether you want to set up SAP ESP Cockpit as a Windows service.
   f. Select Yes or No to indicate whether you want to start the SAP ESP Cockpit service.

23. A message indicates Event Stream Processor was successfully installed into the location of your choice, and to restart the system to complete the installation. Click Done to quit the installer.

Next Steps

To view a summary of installation results, open <install-dir>\log\esp_suite.log.
2.3.2 Performing a Custom Installation in Console Mode

Install the SAP ESP Server, SAP ESP Studio, SAP ESP Cockpit, PowerDesigner Extensions, and any combination of external and enterprise adapters on various machines within your network.

Prerequisites

Ensure that you have administrator privileges. Then, run the installer for ESP as administrator.

If you are installing on Windows 7 and using a sub-capacity license, set the `<SYBASE_SAM_CAPACITY>` environment variable in Control Panel > System > Advanced > Environment Variable. Click New for System Variables and enter `SYBASE_SAM_CAPACITY` as the variable name and `PARTITION` as the environment value.

To install the SAP Event Stream Processor Plugin for SAP HANA Studio, you must have installed SAP HANA Studio for SPS 08, which uses Eclipse version 4.4.

If you are installing the ESP Add-In for Microsoft Excel, ensure you have installed Microsoft .NET Framework version 4.0 or higher.

Ensure that port 19110 is available during installation if you are installing SAP Event Stream Processor Server; if this port is unavailable, the installer fails to create the cluster database.

Context

The following instructions provide a basic work flow based on selecting most of the available options, including the ESP Server. Therefore, some of the steps outlined here may not be applicable to your custom installation.

Procedure

1. From the command line, navigate to the directory where the installation file (setupConsole.exe) resides.
2. Type `setupConsole.exe -i console` and press Enter.
3. When prompted, press Enter to continue.
4. Select the installation location. To accept the default location, press Enter. To specify a custom location:
   a. Enter an absolute path to the location. Select a file path that does not contain any spaces or periods.
   b. Press Enter.
   c. Type Y or N to indicate whether the location is correct.

   **Note**
   The console accepts both Y and Yes as affirmative, and everything else as a negative response.

d. If the directory you specified does not exist, the installer asks if you want to create it. Press Y. If the directory already exists, the installer warns you that any software in the folder will be replaced.
In either case, press Enter to continue.

5. Enter 3 to select the Custom install set. Press Enter.

6. Enter the numbers corresponding to the features you want to select or deselect for installation, separated by a comma with no space.

   The installer selects specific components by default. Selected components are indicated by an X, deselected components are indicated by a blank. Enter the number of a component to toggle the current selection. When finished, press Enter.

   **Note**

   If the target installation machine hosts other SAP products, you may have already installed the SySAM License Utilities. You need not install them again.

7. If, in step 6, you selected external adapters only (no enterprise adapters, ESP Studio, or ESP Server), the installer summarizes your installation preferences and prompts you to install. Click Enter to continue, then Enter again to complete the installation. Otherwise, continue to step 8.

8. If you have a previous version installed to the selected location, a message indicates that you can uninstall the previous version, or overwrite it. Enter your selection and press Enter.

9. Indicate whether you want to install a licensed version or an evaluation version and press Enter.

   **Note**

   If you install the evaluation version, the software will be active for a 30-day grace period, after which you are prompted for a valid license key. During this grace period, there is no restriction on the number of cores ESP can use.

   Proceed to step 13.

10. If you are installing a licensed version, select one of these options:

<table>
<thead>
<tr>
<th>License Type</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specify License Keys</td>
<td>○ Type 1 and press Enter.</td>
</tr>
<tr>
<td></td>
<td>○ Enter the license key.</td>
</tr>
<tr>
<td></td>
<td>○ Press Enter.</td>
</tr>
<tr>
<td></td>
<td>○ Once your license key is validated successfully, press Enter to continue installation.</td>
</tr>
</tbody>
</table>

   If you are using a served license and receive an error that the installer detects a SySAM server already running on your machine, click Previous to return to the SySAM License Entry panel and select the Previously Deployed License Server option.

   If you enter an invalid key, you are prompted by a warning message. You cannot proceed until you provide a valid key or select a different licensing option.

<table>
<thead>
<tr>
<th>Previously Deployed License Server</th>
<th>○ Type 2 and press Enter.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○ Press Enter to accept the default host name, or enter the Host Name and Port Number.</td>
</tr>
</tbody>
</table>

   If the license server file is not found, you receive a warning message indicating that the installer cannot verify a license server running on the selected host. When prompted, enter Y to reenter the license server or N to select a different licensing option.

<table>
<thead>
<tr>
<th>Continue Without a License Key</th>
<th>Type 3 and press Enter.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>At the prompt asking if you want to continue, press Enter.</td>
</tr>
</tbody>
</table>
If you continue without a license, the software will be active for a 30-day grace period, after which you are prompted for a valid license key. During this grace period, there is no restriction on the number of cores ESP can use.

11. Indicate the product license type you want to configure and press Enter.

12. Indicate whether you want to configure SySAM e-mail alerts. To configure alerts:
   a. Enter the SMTP server host that handles your e-mail.
   b. Enter the SMTP server port.
   c. Enter the e-mail address of the person or group from which e-mail messages are sent.
   d. Enter the e-mail addresses of the default recipients.
   e. Enter the default severity level (informational, warning, or error) for e-mail messages.

   **Note**
   To change the SySAM alert settings after installation, edit the lines in the STREAMING_HOME/sysam/esp_license.prop file:
   - email.smtp.host=smtp
   - email.smtp.port=25
   - email.sender=sender@domain.com
   - email.recipients=user@domain.com
   - email.severity=INFORMATIONAL

   Setting email.severity to NONE disables e-mail alerts, causing all other lines to be ignored. To enable e-mail alerts, set email.severity with ERROR, WARNING, or INFORMATIONAL. Replace <smtp> with your SMTP host name, <25> with the port number of your SMTP mail server, <sender@domain.com> with your e-mail address, and <user@domain.com> with e-mail recipients. Separate multiple e-mail recipients with a comma (,).

13. Enter the number corresponding to your geographic location and press Enter.

14. Read through the license agreement. Press Enter as necessary to move through the text. Stop reading the text at any point by typing back and pressing Enter.

15. Indicate that you agree to the license terms and press Enter.

   **Note**
   If you are installing enterprise adapters only, repeat steps 9 [page 35] through 15 [page 36] for each enterprise adapter you are installing. Then proceed to step 21 [page 38].

16. Configure cluster information:

   **Note**
   The installer uses cluster settings from this step to configure the web services providers as well.

   a. Create a name for the new node. If the node will be part of an existing multi-node cluster, all nodes names in the cluster must be unique. Node names should only consist of letters, numbers, and underscores.
b. By default, the installer sets the actual host name of the machine hosting this cluster node. If it cannot determine the actual host name, it sets "localhost" as the default value. Use the default "localhost" name only if this is a single node cluster that will only be accessed from within the machine you are installing on.

c. Enter the RPC port for the cluster node. The Studio, SDKs, and various other product tools, use this port to access the cluster.

d. Indicate whether the RPC port supports connections through Secure Sockets Layer (SSL) or not. When you enable SSL, connections to the cluster use HTTPS rather than HTTP. If you are creating a new cluster, you can decide whether you want to use SSL or not. If you are connecting to an existing cluster, ensure this selection matches the configuration of the existing cluster.

e. Enter the cache port for the node. The cluster cache is an internal cache for sharing cluster state and configuration information. It is for internal use only.

f. Create a name for your new cluster, or enter the name of an existing cluster.

g. (Optional) If you want to specify a separate Admin port, change the port number from the default. Doing so allows you to distinguish between administrative and non-administrative users, and limit network access to specific administrative actions, which may be advantageous when you have firewalls in place.

h. Enter and confirm a password for the cluster. Your password must be at least six characters long. All nodes within the cluster use the same password. If you are connecting to an existing cluster, use the password defined for that cluster.

i. Enter the number corresponding to the security type to apply to your cluster. If you are connecting to an existing cluster, select the security type the existing cluster uses, and provide credentials for that cluster:

<table>
<thead>
<tr>
<th>Authentication Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native OS</td>
<td>Provides authentication based on your operating system. Choose this authentication type if you wish to use the same credentials that you use to log in to your machine.</td>
</tr>
<tr>
<td>SAP BI</td>
<td>Provides SAP BI authentication. Choose this authentication type if you wish your SAP BI instance to handle authentication.</td>
</tr>
</tbody>
</table>
| LDAP                | Provides LDAP authentication. Enter the following information as indicated by your LDAP implementation:  
  ○ Server type  
  ○ Provider URL  
  ○ Default search base  
  ○ Authentication scope |
| Kerberos            | Provides Kerberos authentication. Enter the following information as indicated by your Kerberos implementation:  
  ○ Realm  
  ○ KDC  
  ○ Service Principal Name  
  ○ Keytab Location |
| RSA                 | Provides RSA authentication. |
| SAP HANA            | Provides SAP HANA authentication. Enter the following information as indicated by your SAP HANA index-server:  
  ○ Host  
  ○ Port |

<table>
<thead>
<tr>
<th>Note</th>
</tr>
</thead>
</table>
| The default port is 30015. If your SAP HANA instance number is not 00, update the port number appropriately. For example, if your instance number is 03, then use 30315.  
  ○ (Optional) Database |
After installation, you can modify your Event Stream Processor environment to add nodes, clusters, and so on. For information, see the SAP Event Stream Processor: Configuration and Administration Guide. To change authentication types post-installation, see the SAP Event Stream Processor: Cockpit Guide.

17. Indicate the location of the keystore file or press Enter to accept the default.
   These keys encrypt/decrypt data within Event Stream Processor, such as passwords required to read or write to databases. By default, the keystore type is set to JKS and the algorithm is RSA.

18. Enter and confirm a password for the keystore. The password must be at least six characters long. If you are connecting to an existing cluster, use the keystore password already defined for that cluster.

19. If you are installing the Web Services adapter, select Yes or No to indicate whether you want to enable the ESP Web Services Provider. If you select Yes, configure the ESP Web Services Provider:
   a. Specify a value for the SOAP Port of the SOAP server to which the provider connects, or press Enter to accept the default value.
   b. Specify a value for the REST Port of the REST server to which the provider connects, or press Enter to accept the default value.
   c. Specify a value for the WebSocket port to which the provider connects, or press Enter to accept the default value.
   d. Specify values for the HTTP Port and HTTPS Port, or press Enter to accept the default values and to continue.
      If you select No, the default values are accepted and the ESP Web Services Provider server does not start.

20. Provide a username and password for the cluster database administrator. Your password must be at least six characters long.
   The installer creates the cluster database, which stores configuration information for your cluster. Without this database, you cannot run projects in a cluster or log in to ESP Cockpit. The credentials you define here do not have to belong to an actual user, but they are required for administrative-level access to this database.

21. Enter an absolute path to the workspace location for Studio projects, or press Enter to accept the default location.

22. If you are installing the SAP Event Stream Processor Plug-in for SAP HANA Studio, specify the parent folder of the SAP HANA Studio directory (hdbstudio). For example, if your installation path is C:\Program Files \SAP\hdbstudio, specify C:\Program Files\SAP. Click Next.

23. If you are installing PowerDesigner Extensions, enter an absolute path to the location of your PowerDesigner installation or press Enter to accept the suggested location.

24. If you are installing enterprise adapters, repeat steps 9 [page 35] through 15 [page 36] for each adapter. Otherwise, continue to step 25 [page 38].

25. At the pre-installation summary, confirm that you have enough disk space for the installation. Press Enter to continue.

26. Press Enter to install the files.

27. If you are installing SAP ESP Cockpit:
   a. If you did not install the ESP Server during this installation, specify the number for the authentication type ESP is using and press Enter. If you did install the server with this installation, you have already provided this information and the console does not prompt you to provide it again.
   b. Specify a value for the HTTP Port for SAP ESP Cockpit that does not conflict with ports used by other applications and services on the system, or press Enter to accept the default values.
c. Specify a value for the HTTPS Port for SAP ESP Cockpit that does not conflict with ports used by other applications and services on the system, or press Enter to accept the default values.
d. Specify a value for the RMI Port for the RMI Service that is not used by other applications and services on the system, or press Enter to accept the default value.
e. Enter and confirm a password for the ESP Cockpit administrator. Minimum length is six characters. This password is encrypted and written to the ESP Cockpit csi.properties file.
f. Enter and confirm a password for the ESP Cockpit agent administrator.
g. Select Yes or No to indicate whether you want to set up SAP ESP Cockpit as a Windows service.
h. Select Yes or No to indicate whether you want to start the SAP ESP Cockpit service.

28. When prompted, press Enter to finish the installation process.

Next Steps

To view a summary of installation results, open <install-dir>/log/esp_suite.log.

2.4 Running a Silent Installation

A silent installation installs SAP Event Stream Processor Studio and SAP ESP Server without the conventional prompts used in a standard installation.

SAP recommends a silent installation for installing multiple identical or near-identical copies of ESP Server and Studio. You can silently install components individually or together. For example:

- ESP Server, internal adapters, and ESP Studio
- ESP Server and internal adapters only
- One or more external or enterprise adapters (either by themselves or with any server installation)

Once you have created a silent installation response file, you can run it as many times as necessary to install multiple copies of the software.

2.4.1 Creating a Response File

Generate a response file by running a GUI mode custom installation, using all the settings that you want to use in your silent installation. Then use the response file to reproduce your installation preferences when installing on other machines.

Context

When creating a response file, save it in the same directory as the installer, and name it installer.properties. For multiple different installations, name each response file
installer_<name>.properties where <name> is a user-defined identifier that distinguishes different installation settings.

You can input your installation preferences directly into the response file or you can run the GUI custom installer:

```
1. From a command line, navigate to the directory where the installation file (setup.exe) resides.
2. At the command line, run: setup.exe -r <response file> where <response file> is the name of the response file. The specified file name should be an absolute path.
   This command launches the GUI custom installer and creates a response file. All of the selections that you make while installing with the GUI custom installer are saved to the response file and used to complete your silent installations.
3. (Optional) Modify the response file to correct any errors made during installation.
```

i Note
For security reasons, passwords, such as the cluster and keystore passwords, are not saved to the response file. To run a silent installation with user-defined cluster, cluster database, and keystore passwords, manually add the passwords to the file, or specify them in the command line.

Procedure

1. From a command line, navigate to the directory where the installation file (setup.exe) resides.
2. At the command line, run: setup.exe -r <response file> where <response file> is the name of the response file. The specified file name should be an absolute path.
   This command launches the GUI custom installer and creates a response file. All of the selections that you make while installing with the GUI custom installer are saved to the response file and used to complete your silent installations.
3. (Optional) Modify the response file to correct any errors made during installation.

i Note
For security reasons, passwords, such as the cluster and keystore passwords, are not saved to the response file. To run a silent installation with user-defined cluster, cluster database, and keystore passwords, manually add the passwords to the file, or specify them in the command line.

Use the following response file sample as a reference for manually modifying or creating your own response file. This file was created using a custom installation with the following options selected:

- ESP Server
- SAP Cockpit Agent
- ESP Studio
- SySAM License Utilities
- RFC Adapter
- Web Services Adapter
- ODBC Driver
- SAP Cockpit

Installation was then completed for an evaluation copy (that is, unlicensed) and accepting all proposed default values, with the exceptions of setting up ESP Cockpit as a service and running the service.
#Choose Install Folder
USER_INSTALL_DIR=C:\SAP_SP08CR3
#Choose Install Set
CHOSEN_FEATURE_LIST=fserver,fespap,fstudio,fsysam_util,frfc,fws,fodbc,fsc
CHOSEN_INSTALL_FEATURE_LIST=fserver,fespap,fstudio,fsysam_util,frfc,fws,fodbc,fsc
CHOSEN_INSTALL_SET=Custom
#Choose Product License Type
SYBASE_PRODUCT_LICENSE_TYPE=evaluate
#Cluster Configuration
CACHE_NAME=esp1
NODE_NAME=node1
CACHE_PORT=19011
HOST_NAME=MYHOST
RPC_PORT=19011
ADMIN_PORT=0
USE_SSL=1
#Cluster Password
CACHE_PASSWORD=
CACHE_PASSWORD_CONFIRM=
#Security Options
IS_NATIVEOS=1
IS_LDAP=0
SERVER_TYPE=
PROVIDER_URL=
DEFAULT_SEARCH_BASE=
AUTH_SCOPE=
ROLE_SCOPE=
IS_KERBEROS=0
REALM=
KDC=
SERVICE_PRINCIPAL=
KEYTAB_LOCATION=
IS_RSA=0
IS_SAP=0
SAP_HOST=
SAP_PORT=
#Keystore Properties
FILE=C:\SAP_SP08CR3\ESP-5_1\security\keystore_rsa.jks
PASSWORD=
PASSWORD_CONFIRM=
#Web Services Provider
DISABLE_WSP=0
ENABLE_WSP=1
WSP_SOAPPORT=9090
WSP_RESTPORT=9091
WSP_HTTPPORT=9092
WSP_HTTPSPORT=8080
WSP_HTTPSPORT=8443
#Cluster Configuration Database Credentials
DB_USERNAME=
DB_PASSWORD=
DB_PASSWORD_CONFIRM=
#Choose workspace  folder
CHOSEN_WORKSPACE_FOLDER=C:\Users\My Username\My Documents\SybaseESP\5.1\workspace
#Install

2.4.2 Using a Response File

Use the silent installation response file to install SAP Event Stream Processor on multiple computers.

Context

If you do not specify a response file, the installer uses the installer.properties file located in the same directory as the installation file. If an installer.properties file does not reside within this directory, the installer does not launch properly.

Run a response file as often as necessary to install the SAP Event Stream Processor on the required number of machines.

Procedure

On the target machine, for each installation, enter the following command at the command line:

```
setupConsole.exe -i silent -f <response file> -DRUN_SILENT=<true> -DAGREE_TO_SYBASE_LICENSE=<true>
```

where `<response file>` is the input response file. The specified file name must be an absolute path.

For security reasons, passwords and the user name for the database administrative user are not saved to the response file. To run a silent installation with the DBA user name and user-defined passwords, manually add these parameters to the response file or at the command line.
Response file parameters are:

- **CACHE_PASSWORD** is for the cluster password
- **PASSWORD** is for the keystore password
- **DB_USERNAME** is the user name used to create the database administrative user
- **DB_PASSWORD** is the password for the DBA user
- **CONFIG_SCC_CSI_UAFADMIN_PWD** is for the ESP Cockpit agent password

To set the password parameters from the command line, use:

```
setupConsole.exe -i silent -f <response file> -DRUN_SILENT=<true> -DAGREE_TO_SYBASE_LICENSE=<true> -DCACHE_PASSWORD=<cluster password> -DPASSWORD=<keystore password> -DDB_USERNAME=<DBA Username> -DDB_PASSWORD=<DBA Password> -DCONFIG_SCC_CSI_UAFADMIN_PWD=<ESP Cockpit agent password>
```

For security reasons, SAP recommends that you either delete the response file, or delete the password parameters from the response file after the silent installation is complete.

### Results

**Tip**

If Studio does not start, try manually deleting the .metadata folder within the workspace directory.

## 2.5 Install the SAP ESP Studio Plugin for SAP HANA Studio

The ESP Studio plugin allows you to use all of the tools included in ESP Studio from within SAP HANA Studio.

To install the ESP Studio plugin into SAP HANA studio, you must have installed SAP HANA studio, with a minimum of Eclipse version 4.4. When installing ESP, select the **Custom** installation option, then indicate that you want to install the *SAP Event Stream Processor Plug-in for SAP HANA studio*. When prompted, provide the location of your SAP HANA studio installation. The ESP installer automatically installs the ESP Studio plugin as part of the installation process.
3 Post Installation

When you have successfully installed SAP Event Stream Processor, complete post-installation tasks as necessary for the components you want to use.

The post-installation tasks provided here are not mandatory to run ESP itself, but they do influence whether specific features are available in your implementation or not.

3.1 Installing the ODBC Driver for SAP HANA Smart Data Access

Using SAP HANA Smart Data Access, you can access the contents of ESP windows using simple SQL SELECT queries.

Prerequisites

Download the unix ODBC 2.3.0 driver manager from [http://www.unixodbc.org/download.html](http://www.unixodbc.org/download.html) and install it to your SAP HANA machines.

Context

ESP provides a Linux ODBC driver that provides access to the contents of ESP windows through the ODBC interface. From within SAP HANA, you can connect to ESP projects and perform a SELECT statement on the contents of ESP windows to capture their contents. For detailed information on establishing a connection between SAP HANA and ESP, see the topics related to ESP in [SAP HANA Administration Guide > Administration of SAP HANA Data Provisioning Technologies > SAP HANA Data Provisioning Technologies > About SAP HANA Smart Data Access](http://www.sap.com). To use SAP HANA Smart Data Access with ESP, install the ESP ODBC driver on your SAP HANA machines:

Procedure

1. Launch the ESP installer.
2. When prompted for an installation location, select a writeable location on the machine hosting SAP HANA.
3. When prompted for an installation type, select Custom.
4. From the list of options, select only the ODBC driver for Event Stream Processor.
5. When you are finished installing the driver, stop the SAP HANA instance you will be using with ESP.
6. On the machine hosting SAP HANA, open the `hdbenv.sh` file in the `DIR_INSTANCE` location.
7. Append the path to the ODBC driver to `LD_LIBRARY_PATH`.
8. Restart the SAP HANA instance.

Related Information

SAP HANA Administration Guide

3.2 Register an ODBC Driver to Connect to Event Stream Processor on Windows

If you install the ESP client on Windows, you need to run one of the scripts that are included with ESP in order to register an ODBC driver.

Prerequisites

Determine which script you need to run, depending on the edition of Windows on your system.

- Use only `streaming_odbc_win64.reg` on 64-bit editions of Windows. This will install both the 32-bit and 64-bit ODBC drivers.
- Use only `streaming_odbc_win32.reg` on 32-bit editions of Windows. This will install the 32-bit ODBC driver.

Running the wrong script will prevent the driver from working.

Context

Any Windows application that will connect to smart data streaming through ODBC needs to run on a machine where this ODBC driver is installed.

Procedure

1. Change the paths for the Driver and Setup registry values by replacing `C:\SAP\Streaming` with the absolute path of the local directory where you extracted the ESP client package.
2. Identify the script to be run.
   ○ If your system uses a 64-bit edition of Windows, use `streaming_odbc_win64.reg`.
   ○ If your system uses a 32-bit edition of Windows, use `streaming_odbc_win32.reg`.

3. Run the script by double clicking it, or by typing `start` and the script name from the command line.
4. If you are prompted, allow the Registry Editor to make changes.
5. At the warning dialog, click OK.
6. After the script is run, view the streaming ODBC driver in `Control Panel > ODBC Data Sources`.

### Note

On 64-bit editions of Windows, if you launch the ODBC Data Source Administrator from `Control Panel > Administrative Tools` This defaults to the 32-bit version of `odbcad32.exe` located in `%windir%\System32` which can only be used to manage data sources for 32-bit ODBC drivers. To manage data sources for 64-bit ODBC drivers, run the `odbcad32.exe` located in `%windir%\SysWOW64`.

### 3.3 Updating Environment Variables

The Event Stream Processor installation updates the PATH environment variable on your system. Run `STREAMING.bat` to set additional environment variables required to run ESP.

The installer updates the PATH environment variable:

On 64-bit Windows:

- PATH=`<Install_Dir>\OCS-15_0\lib3p64;<Install_Dir>\OCS-15_0\lib3p;<Install_Dir>\OCS-15_0\dll;<Install_Dir>\OCS-15_0\bin;`

On 32-bit Windows:

- PATH=`<Install_Dir>\OCS-15_0\lib3p;<Install_Dir>\OCS-15_0\dll;<Install_Dir>\OCS-15_0\bin`

In addition, set the following environment variables by running `STREAMING.bat`, located in the main directory into which you installed ESP:

On 64-bit Windows only:

- SAP_JRE7_64=`<Install_Dir>\Shared\SAPJRE-7_1_011_64BIT`
- COCKPIT_JAVA_HOME=`<Install_Dir>\Shared\SAPJRE-7_1_011_64BIT`

On 32-bit Windows only:

- COCKPIT_JAVA_HOME=`<Install_Dir>\Shared\SAPJRE-7_1_011_32BIT`

On both 64-bit and 32-bit Windows:

- SAP_JRE7_32=`<Install_Dir>\Shared\SAPJRE-7_1_011_32BIT`
- SYBASE=`<Install_Dir>`
- SYBASE_OCS=OCS-15_0
The environment variable STREAMING_HOME represents the directory where you installed Event Stream Processor. Specifically, the value of STREAMING_HOME is:

%install_location%\ESP-5_1

Use this environment variable when referencing file paths relative to the Event Stream Processor installation directory.

For both internal and external adapters, the environment variable JAVA_HOME must be set to the JRE version 1.7.0_01, or later.

### 3.4 Enabling SAP BI Authentication

If you wish to enable SAP BI as the authentication provider for Event Stream Processor, you need to copy some files from SBOP PI 4.1 to ESP.

#### Prerequisites

You must be authorized to download software from the SAP Support Portal.

#### Procedure

1. Navigate to %STREAMING_HOME%\libj and create a boe subdirectory.
2. If you do not have SBOP BI 4.1 SP1 installed already, download it.
   a. Point your browser to [https://support.sap.com/swdc](https://support.sap.com/swdc). The system displays the SAP Software Download Center window.
   b. In the right pane, click on Search for Software. The system displays the Search for Software Downloads window.
   c. Enter SBOP BI 4.1 in the Search Term field and click the Search button.
   d. Scroll down and click on SBOP BI Platform 4.1 SP1 Client Tools Windows (32B).
   e. Select or create a folder, and extract the contents of the zip file to that folder.
3. Go to the folder where you have SBOP PI 4.1 SP1 installed, navigate to java\lib, and copy all of the contents of that directory, including the external subdirectory to %STREAMING_HOME%\libj\boe.
4. Because the DocumentBuilder class included with BusinessObjects is of an earlier version than that used with ESP, delete all instances of xercesImpl.jar from the %STREAMING_HOME%\libj\boe\* directories.
5. Start the ESP Cluster Manager using `start_node.bat node1`.

3.5 Installing the SDK on Other Machines

Set up an external machine so that you can link and compile clients that will use the SDK to communicate with a server running ESP.

Prerequisites

You must have a supported compiler for the SDK you plan to use. See Supported Compilers [page 11].

Context

You can construct clients on different machines that communicate with an ESP server using the C/C++, Java, or .NET SDK. These clients can communicate with servers running different operating systems: for example, a client on a Windows system can communicate with a Linux server. In order to compile these SDK clients you must put the necessary libraries in place on the remote machine.

Procedure

1. Select or create a directory to hold the libraries on the remote machine and make sure that directory is in the search path your compiler will use.
2. Determine the libraries you will need to link to, based on which SDK you want to use and which operating system your remote machine is running.

   Note

   All file paths are relative to the `STREAMING_HOME` directory.
<table>
<thead>
<tr>
<th>SDK</th>
<th>OS</th>
<th>FILES</th>
</tr>
</thead>
</table>
| C   | Linux, Solaris | - lib/libstreamingclient_lib.so  
|     |              | - lib/libstreamingsystem_lib.so  
|     |              | - lib/libgcc_s.so.1  
|     |              | - lib/libicui18n.so.44  
|     |              | - lib/libicuuc.so.44  
|     |              | - lib/libicudata.so.44  
|     |              | - lib/libtasl2.so.2  
|     |              | - lib/libstdc++.so.6  
| C   | Windows     | - bin/streamingclient_lib.dll  
|     |              | - bin/streamingsystem_lib.dll  
|     |              | - bin/icudt44.dll  
|     |              | - bin/icuin44.dll  
|     |              | - bin/icuuc44.dll  
|     |              | - bin/libeay32.dll  
|     |              | - bin/msvcp100.dll  
|     |              | - bin/msvcr100.dll  
|     |              | - bin/ssleay32.dll  
|     |              | - bin/xerces-c_2_6.dll  
|     |              | - bin\x86\streamingclient_lib.dll  
|     |              | - bin\x86\streamingsystem_lib.dll  
|     |              | - bin\x86\icudt44.dll  
|     |              | - bin\x86\icuin44.dll  
|     |              | - bin\x86\xerces-c_2_6.dll  
| Java | Windows   | - libj\streaming-client.jar  
|      |            | - libj\streaming-system.jar  
|      |            | - libj\xmlrpc-common-3.1.3.jar  
|      |            | - libj\xmlrpc-client-3.1.3.jar  
|      |            | - libj\ws-commons-util-1.0.2.jar  
|      |            | - libj\commons-logging-1.1.jar  
|      |            | - libj\commons-codec-1.3.jar  
|      |            | - libj\commons-collections-3.2.1.jar  
|      |            | - libj\commons-configuration-1.6.jar  
|      |            | - libj\commons-lang-2.6.jar  
|      |            | - libj\postgresql.jar  
|      |            | - libj\sylapi.jar  
|      |            | - libj\log4j-1.2.16.jar  

For 32bit SDK support:
- bin\x86\streamingclient_lib.dll  
- bin\x86\streamingsystem_lib.dll  
- bin\x86\icudt44.dll  
- bin\x86\icuin44.dll  
- bin\x86\xerces-c_2_6.dll
<table>
<thead>
<tr>
<th>SDK</th>
<th>OS</th>
<th>FILES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Java</td>
<td>Linux, Solaris</td>
<td>- libj/streaming-client.jar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- libj/streaming-system.jar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- libj/xmlrpc-common-3.1.3.jar</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- libj/xmlrpc-client-3.1.3.jar</td>
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<td>- libj/ws-commons-util=1.0.2.jar</td>
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<td>- libj/commons-loggging-1.1.jar</td>
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<td>- libj/commons-codec-1.3.jar</td>
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<td>- libj/commons-collections-3.2.1.jar</td>
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<td>- libj/commons-configuration-1.6.jar</td>
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<td>- libj/commons-lang=2.6.jar</td>
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<td>- libj/postgresql.jar</td>
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<td>- libj/sylapi.jar</td>
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<tr>
<td></td>
<td></td>
<td>- libj/log4j=1.2.16.jar</td>
</tr>
<tr>
<td>.NET 3.5</td>
<td>Windows</td>
<td>- net\interfaces\sdk\net35\streamingnetsdk_lib.dll</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- net\interfaces\sdk\net35\streamingsystem_lib.dll</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- net\interfaces\sdk\net35\icudt44.dll</td>
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<tr>
<td></td>
<td></td>
<td>- net\interfaces\sdk\net35\icuin44.dll</td>
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<td>- net\interfaces\sdk\net35\icuuc44.dll</td>
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<tr>
<td></td>
<td></td>
<td>- net\interfaces\sdk\net35\xerces-c_2_6.dll</td>
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<td></td>
<td></td>
<td>- net\interfaces\sdk\net35\libeay32.dll</td>
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<td></td>
<td></td>
<td>- net\interfaces\sdk\net35\ssleay32.dll</td>
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<tr>
<td></td>
<td></td>
<td>For 32bit SDK support:</td>
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<tr>
<td></td>
<td></td>
<td>- net\interfaces\sdk\net35\x86\streamingnetsdk_lib.dll</td>
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<td>- net\interfaces\sdk\net35\x86\streamingsystem_lib.dll</td>
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<td>- net\interfaces\sdk\net35\x86\icudt44.dll</td>
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<td>- net\interfaces\sdk\net35\x86\icuuc44.dll</td>
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<tr>
<td></td>
<td></td>
<td>- net\interfaces\sdk\net35\x86\xerces-c_2_6.dll</td>
</tr>
<tr>
<td>SDK</td>
<td>OS</td>
<td>FILES</td>
</tr>
<tr>
<td>-----------</td>
<td>----------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>.NET 4.0</td>
<td>Windows</td>
<td>- net\interfaces\sdk\streamingnetsdk_lib.dll</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- net\interfaces\sdk\streamingsystem_lib.dll</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- net\interfaces\sdk\icudt44.dll</td>
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<tr>
<td></td>
<td></td>
<td>- net\interfaces\sdk\icuin44.dll</td>
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<tr>
<td></td>
<td></td>
<td>- net\interfaces\sdk\icuuc44.dll</td>
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<tr>
<td></td>
<td></td>
<td>- net\interfaces\sdk\xerces-c_2_6.dll</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- net\interfaces\sdk\libeay32.dll</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- net\interfaces\sdk\ssleay32.dll</td>
</tr>
</tbody>
</table>

For 32bit SDK Support:

- net\interfaces\sdk\x86\streamingnetsdk_lib.dll
- net\interfaces\sdk\x86\streamingsystem_lib.dll
- net\interfaces\sdk\x86\icudt44.dll
- net\interfaces\sdk\x86\icuin44.dll
- net\interfaces\sdk\x86\icuuc44.dll
- net\interfaces\sdk\x86\xerces-c_2_6.dll

**Note**

To support legacy applications and legacy third-party libraries that are 32-bit, the Windows installer includes 32-bit versions of the C/C++ and .NET 3.5 and 4.0 SDKs.

3. Copy those files from the server where you installed SAP Event Stream Processor to the remote machine on which you want to compile SDK clients.

### 3.6 Installing the Adapter Toolkit on Other Machines

SAP Event Stream Processor provides an adapter toolkit you can use to build custom adapters. You can install the adapter toolkit to other machines where you can develop and test your custom adapters.

**Prerequisites**

Install SAP Event Stream Processor with any of the following components:

- ESP Server
- Web Services adapter
- RFC adapter
Context

The adapter toolkit runs on all standard platforms for Event Stream Processor, and requires JRE 1.6 or higher. The toolkit is installed automatically with the ESP Server, the Web Services adapter, and the RFC adapter and is therefore available to copy to other machines only when you have installed at least one of these components.

Procedure

1. Copy the contents of %STREAMING_HOME%\adapters\framework from the ESP machine to the external machine.
2. (Optional) Copy the API documentation in %STREAMING_HOME%\doc\adaptertoolkit from the ESP machine to the external machine.

When you have finished copying the toolkit to the external machine, it is ready to use. You can build, test, and run custom adapters from the external machine. Adapters running on a machine external to ESP can only run in unmanaged mode, meaning they start and stop independently of the ESP Server and ESP projects. For information on managed and unmanaged adapters, and on building custom adapters in general, see the SAP Event Stream Processor: Building Custom Adapters.

3.7 Deploying and Starting a Cluster

Event Stream Processor uses a database-based cluster configuration, so you start a cluster by starting the cluster database and a manager node. Starting a cluster is a prerequisite for running projects and logging into ESP Cockpit, but is an optional post installation step.

Prerequisites

Ensure that port 19111 is available to the cluster database. To use a different port, change the value in the following locations:

- In %STREAMING_HOME%\cluster\config\<cluster-name>\cluster.cfg, edit the value in <jdbc-url> using the format jdbc:sybase:Tds:<hostname>:<port-number>.
- In %STREAMING_HOME%\cluster\config\<cluster-name>\start_db.bat, edit the <ESP_CLUSTER_DB_PORT> value.

Context

During installation, the installer creates a cluster database and a single node cluster. This procedure is for starting that default, single-node cluster. If you performed a typical installation, accepting the defaults, this cluster is
named esp1 with one node, named node1. If you specified different names during a custom installation, substitute them for esp1 node1 in the commands shown. Node names should only contain letters, numbers, and underscores.

**Note**

If you have not already configured the cluster using the ESP Cockpit or streamingclusteradmin utility, there are additional configuration tasks you must perform before the cluster is usable. For details on configuring the cluster, see the ESP Cockpit help. If you have not yet accessed ESP Cockpit, see Setting up SAP ESP Cockpit for First Time Use [page 55].

In a test system, where you are running projects only on the Studio local cluster, you do not have to manually start a cluster.

To start a custom cluster or cluster database, see Starting a Cluster Database in the SAP Event Stream Processor: Configuration and Administration Guide.

**Procedure**

1. Set the ESP environment variables.
   At the command prompt, enter
   ```
   STREAMING.bat
   ```

2. Start the cluster database.
   At the command prompt, enter
   ```
   %STREAMING_HOME%\cluster\config\start_db.bat
   ```

3. Start the initial node.
   At the command prompt, enter
   ```
   %STREAMING_HOME%\cluster\config\esp1\start_node.bat node1
   ```
   or, to start the node in the background, enter
   ```
   start /b %STREAMING_HOME%\cluster\config\esp1\start_node.bat node1
   ```

   **Note**
   The command shell must remain open for the program to continue running.

   If you have already configured the cluster, it is ready to use. If you have not, use the streamingclusteradmin command, or continue the sequence under Setting up SAP ESP Cockpit for First Time Use [page 55] at the second sub-procedure, Granting Permissions [page 55].
3.8 Changing Studio Local Cluster Credentials for External Access

Before connecting to the SAP® Event Stream Processor Studio local cluster with a component from outside of Studio (such as command line tools, external adapters, or custom applications), you will first have to change the system-generated local cluster password.

Procedure

1. In Studio, open the SAP ESP Run-Test perspective.
2. In the Server View, stop any projects running in the local cluster.
3. Right-click the local cluster, and select Disconnect and Stop Local Server.
4. Right-click the local cluster, and select Change Password.
5. Enter the new values for the local cluster password.
   Ensure that you make note of the new values as you will be prompted to enter them every time you connect to the local cluster with a component from outside of Studio.
6. Right-click the local cluster, and select Connect Server.
4 Setting up SAP ESP Cockpit for First Time Use

SAP® ESP Cockpit is a Web-based tool for managing and monitoring ESP cluster nodes, projects, adapters, and other components in the Event Stream Processor environment. Perform several tasks to set up SAP ESP Cockpit for first time use.

Perform the tasks listed in this section in sequential order.

Note

If you wish to edit ESP Cockpit settings or the cluster configuration before you have granted admin or all permissions to users or roles, you can log on to ESP Cockpit using the SYS_STREAMING credentials.

Once you have completed these tasks, see the Get Started with SAP ESP Cockpit and Configure SAP ESP Cockpit sections in the SAP Event Stream Processor: Cockpit Guide here for additional information on configuring SAP ESP Cockpit.

4.1 Starting the Cluster Database and an ESP Node

Use a script to start the cluster database and a node. Do this before performing any tasks in Event Stream Processor.

Procedure

1. Run STREAMING.bat. Do this once for each command window you open.
2. Start the cluster database STREAMING_HOME/cluster/config/<cluster-name>/start_db.bat or STREAMING_HOME/cluster/config/<cluster-name>/start_db.sh.
3. Start the node STREAMING_HOME/cluster/config/<cluster-name>/start_node.bat <node name> or STREAMING_HOME/cluster/config/<cluster name>/start_node.sh <node name>.

4.2 Granting Permissions

Use the streamingclusteradmin utility to create roles and grant permissions to roles or users. To monitor Event Stream Processor, grant users/roles view permission. To administer Event Stream Processor, grant users/roles view and admin (or all) permissions. To edit SAP ESP Cockpit settings and configure alerts, grant users/roles admin (or all) permission on the ESP Cockpit system.
Prerequisites

Start the SAP HANA database and the smart data streaming node.

Procedure

1. Log in to the cluster using the `streamingclusteradmin` utility and use the credentials for the SYS_STREAMING to log on:

   ```
   $STREAMING_HOME/bin/streamingclusteradmin --uri=<uri> --username=SYS_STREAMING --password=<password>
   ```

   where `<password>` is the cluster password you specified during installation, and `<uri>` is in the form `esps://<host>:3xx26` such that `xx` is the 2-digit HANA instance number.

2. Grant view permissions to users who need to monitor Event Stream Processor. Either:
   - Create a new role, grant it view permissions, and assign users to it. For example, if the role was called `projectmonitor`:
     ```
     add role projectmonitorrole
     grant perm view on all to role projectmonitorrole
     grant role projectmonitorrole to user <user>
     ```
   - Grant view permission directly to a user:
     ```
     grant perm view on all to user <user>
     ```

   **Note**

   When granting permissions to a Windows user, you must append a domain to the user name omitting top-level domain extensions such as `.com` or `.net`—for example, `fred@sap`, not `fred@sap.com`. When no domain is appended to the user name, an @null domain is generated by default. For example, `fred@null`. If using the @null default domain, permissions must be granted to `username@null`.

3. Grant view and admin permissions to users who need to administer Event Stream Processor. Either:
   - Create a new role, grant it view and admin permissions, and assign users to it. For example, if the role was called `projectadminrole`:
     ```
     add role projectadminrole
     grant perm view on all to role projectadminrole
     grant perm admin on all to role projectadminrole
     grant role projectadminrole to user <user>
     ```
   - Grant view and admin permissions directly to a user:
     ```
     grant perm view on all to user <user>
     grant perm admin on all to user <user>
     ```
4. Grant permission to users who need to edit ESP cluster configuration.

   grant perm write on all to user <user>
   grant perm read on all to user <user>

5. Grant permissions directly to users who need to start, stop, add, or remove ESP projects or adapters.

   grant perm start on all to user <user>
   grant perm stop on all to user <user>
   grant perm add on all to user <user>
   grant perm remove on all to user <user>

6. Grant admin or all permissions to users or roles who need to edit SAP ESP Cockpit settings and configure alerts. Either:
   
   ○ Grant admin or all permissions to a role:

   grant perm admin on system cockpit to role <role>
   
   or

   grant perm all on system cockpit to role <role>
   
   ○ Grant admin or all permissions directly to a user:

   grant perm admin on system cockpit to user <user>
   grant perm all on system cockpit to user <user>

4.3 Starting SAP ESP Cockpit

Use a script to start SAP ESP Cockpit.

Prerequisites

To manage Event Stream Processor, ensure at least one ESP node is running.

- Start the SAP HANA database and the ESP node.

Context

For instructions on how to change which ports ESP Cockpit services run on, see Configuring Ports in the SAP Event Stream Processor: Cockpit Guide.

When starting the ESP Cockpit server in Windows 2008 and Windows 7, use the Run as administrator setting to launch ESP Cockpit even if you already have administrative privileges.
Procedure

1. (Perform this step only if you are starting ESP Cockpit for the first time) From the command prompt, navigate to your Event Stream Processor base installation directory and run `STREAMING.bat` or `STREAMING.sh`. This sets the necessary environment variables.

2. Start SAP ESP Cockpit:
   - Windows: `%SYBASE%\cockpit-4\bin\cockpit.bat`
   - UNIX: Do one of:

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the foreground</td>
<td>Execute: <code>$SYBASE/cockpit-4/bin/cockpit.sh</code></td>
</tr>
<tr>
<td>In the background</td>
<td>Execute a command similar to the sample below that matches your shell. The sample command directs output to the file <code>cockpit-console.out</code>. If the output file already exists, you might need to use additional shell operators to append to or truncate the file. Bourne shell (sh) or Bash: <code>nohup ./cockpit.sh 2&gt;&amp;1 &gt; cockpit-console.out &amp;</code> C shell: <code>nohup ./cockpit.sh &gt;&amp; cockpit-console.out &amp;</code></td>
</tr>
</tbody>
</table>

4.4 Logging in to SAP ESP Cockpit

Connect to the SAP ESP Cockpit console using a Web browser.

Prerequisites

- Install Adobe Flash Player in the browser you are using for SAP ESP Cockpit.
- Start SAP ESP Cockpit.

Procedure

2. Log on to SAP ESP Cockpit:
At the login prompt, select the system to manage and enter a user name and password for Event Stream Processor valid for that system.

**Note**

Ensure that the login credentials you specify have been granted read or read and admin permissions depending on the type of tasks you need to perform.

If you use a Windows account to log in to SAP ESP Cockpit, enter your user name in the format username@domain. Omit top-level domain extensions such as .com or .net—for example, enter fred@sap, not fred@sap.com. If you do not include the domain, the defaultDomain option must be specified in the authenticator section of cluster configuration. If you use a Windows account to log in, you must also grant permissions to the user name in the format username@domain.

**Note**

(If you are using RSA/Kerberos authentication) At the login prompt, select the system to manage and enter the SYS_STREAMING username and password.

Upon logging in, SAP ESP Cockpit automatically detects and registers the ESP nodes that are present on your machine. If you add additional ESP nodes while you are logged on, you do not need to log off and restart the SAP ESP Cockpit as it automatically detects newly added nodes.

### 4.5 Creating Authenticators Using SAP ESP Cockpit

(Perform this task only if you are using RSA or Kerberos authentication for your ESP environment) SAP ESP Cockpit only supports authenticating through username-password credentials, therefore if you use RSA or Kerberos authentication for ESP, create a username and password authenticator for your ESP Cockpit users.

**Prerequisites**

- Start the ESP cluster database and node. See Deploying and Starting a Cluster [page 52].
- Start SAP ESP Cockpit. See Starting SAP ESP Cockpit [page 57].
- Log into SAP ESP Cockpit using SYS_STREAMING credentials (the password is the cluster password specified during installation). See Logging in to SAP ESP Cockpit [page 58].

**Procedure**

1. Select the **EXPLORE** tab, then select Actions > **Configure Cluster**.
2. Expand the **Security** folder and then the **Authenticators** folder.

3. To add a new authenticator:
   a. Click **Add Authenticator...**
   b. Select an authenticator type and click **Done**.
   c. Select the new username/password authenticator and enter the credentials provided by the authentication mechanism you are adding. Use the `encode <clear-text>` from the `streamingclusteradmin` utility to encrypt the password.
5 Updating from a Previous Version of Event Stream Processor

Although the procedure for updating from an older version of SAP Event Stream Processor differs depending on whether you are updating from 5.0 or from a previous 5.1 release, there are also tasks common to both update scenarios.

5.1 Updating from Version 5.0 to 5.1

Performing a proper update and migration helps to maintain backwards compatibility with previous versions so you can continue using older projects in your new environment.

Performing a proper update requires both updating your installation and migrating critical information including cluster configuration, database service connections, and cluster persistence data to the cluster database introduced in version 5.1 SP08.

For information on updating your installation, see the remaining steps in this section, namely:

- Preparing for the Log Store Format Change [page 62]
- Installation Location [page 63]
- Clearing the PATH Variable [page 63]

Also see, Updating Your License [page 7]

For information on migrating your cluster configuration, database service definitions, and cluster persistence data, see Migrating Configuration and Persistence Information [page 65].

When you have successfully updated and migrated your installation:

- Projects written for the previous version will run on the current version and produce the same results without having to be recompiled. Use the SAP Event Stream Processor Studio interface to open or import existing projects.
- With the following exceptions, adapters and client programs written with the previous SDK are compatible with the current release without having to be recompiled with the latest SDK:
  - Java client code compiled against the 5.0 Java SDK must run using JRE 7 under Event Stream Processor version 5.1.
  - In the .NET SDK, the signature for the set_binary method within the NetEspRelativeRowWriter class has changed. Therefore, update existing applications that use the 5.0 version of the .NET SDK and call on NetEspRelativeRowWriter.set_binary to use the new method signature. See the API reference documentation for more information. Access this documentation in your installation directory under ESP-5_1\doc\sdk\net.
  - For the Custom Adapter Framework, the return type for the following functions has changed from int to int64_t: getNumberOfGoodRows, getNumberOfBadRows, getTotalRowsProcessed. If your application written in 5.0 uses any of these functions, rewrite the application for 5.1.
For security reasons, Event Stream Processor no longer supports the no authentication option. Kerberos authentication is now ticket-based. Update existing adapters and clients to use Kerberos ticket-based authentication and setter methods.

- Deployment scripts work the same way in the current version as they did in the previous version without any changes.
- During the upgrade process, ESP automatically creates backups of most critical files and directories, including security settings, cluster configuration files, and adapter configuration files. To see a full list of these files and directories, refer to Planning Your Installation > Automatic Backups.

### 5.1.1 Preparing for the Log Store Format Change

If you use log stores or metadata stores, ensure you save backup copies in a safe location before installing SAP Event Stream Processor version 5.1 SP08 or more recent.

#### Context

As of ESP version 5.1 SP08, the format of log store and metadata store files were changed. When you start ESP version 5.1 SP08 or more recent, the log stores and metadata stores are automatically converted to the new format.

You cannot use log stores with the old format after the upgrade. If the upgrade produces unexpected results, you must revert to the earlier version (ESP 5.1 SP04 or earlier) to use the backups.

#### Procedure

1. Determine the size and location of each log store used by projects in your cluster.
   You can find a log store’s location in the properties compartment of the store shape in Studio.

2. Determine the size and location of each metadata store used by projects in your cluster.
   You can find a metadata store’s location in the Project Deployment Details under Meta Store Directory. In the CCR Project configuration editor, select the Advanced tab and a project deployment node. The default location is ESP_HOME/cluster/projects/<cluster-name>/<workspace-name>.<project-name>.<instance-number>/esp_metadata.

3. Ensure that you have enough disk space to create the backups. You need free space equal to the combined sizes of all your existing log stores and metadata stores.
   For example, if you have a 10- MB log store, a 100- MB log store, and a 64- MB meta store, add 174MB to the free disk space you are allowing for installation of the new version of ESP.

4. Make backup copies of the log stores and metadata stores for all the projects in your cluster.
Next Steps

Complete the installation and test the new version. Once you ensure that the reformatted log stores and metadata stores are working properly, you can delete the backups.

5.1.2 Installation Location

When installing the current version of Event Stream Processor, you can either install to an entirely new directory, or you can install to the same directory as your previous version (or to the same directory as any installed SAP product).

The installation process creates a version-based sub-directory under the base installation directory. If, for example, you are installing version 5.1 to a base installation directory called `Sybase`, the installer creates a sub-directory called `ESP-5_1`. This naming scheme allows more than one version of Event Stream Processor to coexist in the same base installation directory. Note, however, that the installer updates the `STREAMING_HOME` environment variable to point to the current version. Therefore, to run the previous version of Event Stream Processor after updating to the current version, manually modify the `STREAMING_HOME` environment variable to point to the previous installation sub-directory.

If you install the current version to a new base installation directory, you do not have to manually modify the `STREAMING_HOME` variable to run the previous version. However, each time you want to switch between versions, prior to starting Event Stream Processor, run the `STREAMING.bat` file from the base installation directory of the version you want to run. This ensures all environment variables point to the correct installation.

5.1.3 Clearing the PATH Variable

When you update your installation, ensure that the previous setting for the PATH system variable is cleaned up. After installing your update, check your system PATH variable. If this variable includes `<install location>\ESP\lib\jre\bin`, remove it prior to running version 5.1. To subsequently run version 5.0, add it back.

5.2 Updating from 5.1 Versions SP04 and Prior

To update from the initial ESP 5.1 version, or from 5.1 Support Package 04 and earlier, install version 5.1 SP09 on top of your current version. To preserve existing configuration settings and projects, perform a backup on critical files before installing.

Prerequisites

Before installing the new 5.1 Support Package, shut down all ESP processes for your current version.
Context

During the install, upgrade, and uninstall processes, ESP automatically creates backups of critical files and directories, including security settings, cluster configuration, and adapter configuration. To see a list of these files and directories, see Automatic Backups [page 17].

In addition to backing up your files and installing version 5.1 SP09, also migrate your cluster configuration, database service connections, and cluster persistence runtime data. See Migrating Configuration and Persistence Information [page 65] for detailed instructions.

Procedure

1. Prepare for the log store format change:
   a. Determine the size and location of each log store used by projects in your cluster.
      You can find a log store’s location in the properties compartment of the store shape in Studio.
   b. Determine the size and location of each metadata store used by projects in your cluster.
      You can find a metadata store’s location in the Project Deployment Details under Meta Store Directory. In the CCR Project configuration editor, select the Advanced tab and a project deployment node. The default location is STREAMING_HOME/cluster/projects/<cluster-name>/<workspace-name>/<project-name>.<instance-number>/esp_metadata.
   c. Ensure that you have enough disk space to create the backups. You need free space equal to the combined sizes of all your existing log stores and metadata stores.
      For example, if you have a 10-MB log store, a 100-MB log store, and a 64-MB meta store, add 174MB to the free disk space you are allowing for installation of the new version of ESP.
   d. Make backup copies of the log stores and metadata stores for all the projects in your cluster and save them to a known location.
      Although the automated backup process makes backups of your project files including log stores and metadata stores, when you start the new version of ESP, it automatically converts the log stores and metadata stores to the new format. Therefore, you cannot fall back to the old log stores after the upgrade. If the upgrade produces unexpected results, fall back to the earlier version (ESP 5.1 SP04 or earlier) to use the backups. When you are confident that the reformatted log stores and metadata stores are working properly, you can delete the backups.

2. Since the automatic backup only includes files in the STREAMING_HOME and COCKPIT_HOME (or SCC_HOME) directories, manually back up the following before reinstalling in the same folder as an existing installation:
   a. Your active Studio workspace directory.
   b. Configuration files and cluster persistence data from versions of ESP 5.1 prior to SP08, including:
      i. STREAMING_HOME/cluster/nodes/<node-name>/<node-name>.xml
      ii. STREAMING_STORAGE/cache/<node-name>
      As of version 5.1 SP08, ESP no longer uses file-based cluster configuration, so the uninstaller does not back up configuration files from older versions of ESP. To preserve your settings, migrate old configuration files into the new cluster configuration database after installing SP09.
   c. If you have any custom adapters, back up their respective .cnxml files. This is not recommended for other adapters, since new properties could have been added to a given adapter.
3. Ensure that the license file or license server settings for your current installation are available.

4. Run the installer for version 5.1 SP09:
   a. Choose the same installation location as your current version (that is, the version you are replacing).
   b. When prompted, specify the license file or license server properties for your current version.
   c. For the cluster and security options, it does not matter which values you enter: you will overwrite them when you restore your backed up files.
   d. If installing Studio, select the same workspace directory location as your current installation.

5. Once the installation is complete, restore the files and directories backed up in step 1 to their original locations, as well as the files and directories backed up by the automated backup process. See Automatic Backups [page 17] for a list of files and directories backed up automatically.

6. Restart the system.

Next Steps

- As of version 5.1 SP08, ESP has changed from file-based cluster configuration to database-based cluster configuration. Therefore, after installing your copy of version 5.1 SP09, use the streamingclusterutil command-line utility to import your cluster configuration, database service connections, and cluster persistence runtime data into the cluster configuration database. See Migrating Configuration and Persistence Information [page 65] for more information.
- If your installation prior to 5.1 SP09 used authorization roles and policies (defined in the policy.xml file referred to in the cluster configuration file), use the streamingclusteradmin utility to recreate your policies; there is no utility to migrate authorization policies automatically. See the SAP Event Stream Processor: Configuration and Administration Guide for information about creating authorization policies.
- As of version 5.1 SP09, ESP date/time datatypes date and timestamp have been renamed seconddate and msdate respectively. All CCL project files that use these datatypes must be therefore updated in order to run any projects developed previous to SP09. From the command-line, run the new streamingmigratedatetype utility to update your existing and previous CCL project files to their SP09 format. This tool applies to any CCL files created in any version prior to SP09, and is required for your continuing projects to run properly in their new environment. See streamingmigratedatetype in the SAP Event Stream Processor: Utilities Guide for more information on this tool and datatype changes.
- If you have custom adapters developed before SP09 that use DateFormat and TimestampFormat parameters, you must manually edit the adapter configuration XML file to rename them SecondDateFormat and MsDateFormat respectively. Make this change before running any new or migrated projects that use these previously developed adapters. Not updating the XML files will result in a runtime error.
- As of version 5.1 SP09, ESP the utility for starting nodes is now streamingclusternode. All scripts have been updated. However if you have your own existing scripts which call the binary name esp_server, change to the streamingclusternode Syntax. See the SAP Event Stream Processor: Utilities Guide for information.

5.2.1 Migrating Configuration and Persistence Information

As of ESP 5.1 SP08, ESP uses a cluster database to store cluster configuration data, and no longer supports file-based configuration for the cluster. To ensure that projects developed prior to 5.1 SP08 remain functional, migrate cluster configuration files (node.xml), database service connections (service.xml), and cluster
runtime persistence data into the cluster configuration database using the `streamingclusterutil` command line utility.

**Prerequisites**

1. Stop all running processes from the original installation.
2. Backup your original installation; there is no downgrade utility.
3. Ensure that you have installed ESP SP08 over your previous installation.

**Context**

Migrating an existing cluster requires the usage of the original cluster’s cipher key and keystore. The installer backs up these files in the following locations:

- `%STREAMING_HOMEE%\backup\ESP-5_1\security\keystore_rsa.jks`
- `%STREAMING_HOMEE%\backup\ESP-5_1\cluster\keys\test-name-1\cluster.key`

**Note**

If you had defined authorization roles and policies in the `policy.xml` file referred to in your original cluster configuration file, use the `streamingclusteradmin` utility to recreate your policies; there is no utility to migrate authorization policies automatically. For information about creating authorization policies, see the *SAP Event Stream Processor: Configuration and Administration Guide*.

**Procedure**

1. Restore the keystore and cipher key from your previous installation:
   a. Copy `%STREAMING_HOME%\backup\ESP-5_1\security\keystore_rsa.jks` to `%STREAMING_HOME%\security\keystore_rsa.jks`.
   b. Create a subdirectory, `new_cluster`, under `%STREAMING_HOME%\cluster\keys`.
   c. Copy all files in `%STREAMING_HOME%\backup\ESP-5_1\cluster\keys\test-name-1\cluster.key` to `%STREAMING_HOME%\cluster\keys\new_cluster`.
2. Create a new cluster configuration directory called `new_cluster` by recursively copying all the files from `%STREAMING_HOME%\cluster\config\esp1` to `%STREAMING_HOME%\cluster\config\new_cluster`.
3. In the new directory, `%STREAMING_HOME%\cluster\config\new_cluster`, remove unnecessary files, or files that need to be recreated during the migration:
   a. Remove all `auth*.xml` files. These are artifacts leftover from the installer and are not required.
   b. Remove the `cluster.xml` file. The migration procedure creates a new one.
   c. Remove `esp_cluster.*` files to remove the cluster database created by the installer. During the migration process, you will create a new one.
4. The encrypted passwords in the new `cluster.cfg` file were generated with a different cipher key than the one used to encrypt passwords in the old cluster configuration file (`node1.xml`). Configure encryption for passwords in the new `cluster.cfg` file as necessary:
   - If you do not require password encryption in the bootstrap `cluster.cfg` file, set the following parameters to false and use plain text passwords for their associated parameters in the `cluster.cfg` file:
     - `jdbc-password-is-encrypted=false`
     - `cluster-password-is-encrypted=false`
   - Otherwise, regenerate the encrypted passwords in the `cluster.cfg` file using the cipher key from your previous installation, which you copied into your 5.1 SP08 installation in step 1. Only one cipher key can be used during the migration at a time for the encrypted passwords in the files `cluster.cfg` and `node1.xml`. Perform this procedure for both the cluster database administrator password and the cluster password:
     1. Encrypt the password using the following command:
        ```
        streamingencrypt --encrypt %STREAMING_HOME%\cluster\keys\test-name-1\cluster.key --text <password>, where <password> is the password you want to encrypt.
        ```
     2. Copy the encrypted password value and paste it into the bootstrap file (`cluster.cfg`) for either the `jdbc-password` (cluster database administrator) or `cluster-password` (cluster) parameter.

   **Note**
   The username-password combination you specify here for the `jdbc-username` and `jdbc-password` will be the same combination you use when creating the cluster database in step 6b.

5. In the new `cluster.cfg` file, change the `cluster-name` parameter to the desired cluster name and the cipher-key parameter to the cipher-key you restored in step 1c. For example:
   ```
   cluster-name=new_cluster
   cipher-name=C:\SAP_Installs\ESP\ESP-5_1\cluster\keys\new_cluster
   ```

6. Start the cluster database:
   a. Source the SQL Anywhere environment script:
      ```
      %STREAMING_HOME%\sqla\bin64\sa_config.bat
      ```
   b. Navigate to the `%STREAMING_HOME%\cluster\config\new_cluster` directory, then create a new empty cluster database. This example creates a database called `esp_cluster`, with `espdbadm`, `Password1` as the credentials for the default database user:
      ```
      dbinit -dba espdbadm,Password1 esp_cluster.db -t esp_cluster.log
      chmod -w esp_cluster.*
      ```
   c. When the database has been successfully created (the console outputs `Database "esp_cluster.db" created successfully`), update the following parameters in the database start script, `start_db.bat`, according to your configuration. For example:
      ```
      ESP_CLUSTER_NAME=new_cluster
      ESP_CLUSTER_DB_PORT=19111
      ESP_CLUSTER_DB_NAME=esp_cluster_new_cluster_hostname
      ```
i Note
The ESP_CLUSTER_DB_NAME value must be unique.

d. Start the database:

```
cd %STREAMING_HOME%\cluster\config\new_cluster
start_db.exe
```

e. Create the ESP system tables in the new database by executing the following script using values appropriate for your configuration. For example:

```
dbisp -c
"UID=espdbadm;PWD=Password1;ENG=esp_cluster_new_cluster_archer;DBN=esp_cluster"
-nogui %STREAMING_HOME%\cluster\sql\sqla.sql
```

7. In a temporary directory, make three copies of the `%STREAMING_HOME%\cluster\config\new_cluster\cluster.cfg` file, naming the copies as follows:

- services-migration.cfg
- persist-migration.cfg
- cluster-migration.cfg

These three files will be used one time to migrate the cluster.

8. Migrate the old cluster’s persisted data:

a. Add the following additional properties to the `persist-migration.cfg` bootstrap file:

```
persistence-directory=<path to backup location for previous cluster> for example, persistence-directory=C:\SAP_Installs\ESP\ESP-5_1\storage\cache\test-name-1
```

Recall that the bootstrap file only does not support environment variables, so specify the fully qualified absolute path. To find the path of the persistence directory:

1. In the `node.xml` file from your previous cluster, find the macro setting for `ESP_STORAGE`. For example,

```
<Macro name="ESP_STORAGE">${ESP_SHARED}/storage</Macro>
```

2. In the `<Cache>` section, find the `<Name>` setting. For example,

```
<Name>test-name-1</Name>
```

3. Combine these elements to put together the path: `<full path value of ESP_STORAGE>\cache \<Cluster name>` which in this example is `C:\SAP_Installs\ESP\ESP-5_1\storage\cache \test-name-1`.

b. Execute the following command:

```
streamingclusterutil -p --config persist-migration.cfg
```

Unless you receive an error message, the persisted objects such as workspaces and projects are loaded into the cluster database.

9. Migrate the old cluster’s configuration file:

a. Add the following properties to the `cluster-migration.cfg` bootstrap file:

- config-file=<path to original cluster configuration file> for example, config-file=C:\SAP_Installs\ESP\ESP-5_1\cluster\nodes\node1\node1.xml
- target-file=<path to new cluster configuration file> for example, config-file=C:\SAP_Installs\ESP\ESP-5_1\cluster\config\new_cluster\new_node1.xml
The target-file parameter specifies the location and file name of the new configuration file that will be generated when you execute the command in step 9e.

b. In the original cluster configuration file (for example node1.xml) change the location of the csi_native_nt.xml file from:

   <File>%{ESP_SHARED}\security\csi_native_nt.xml</File>

to:

   <file>%{ESP_SHARED}\backup\ESP-5_1\security\csi_native_nt.xml</file>

c. In the original cluster configuration file (for example node1.xml) change the security cipher file value so that it points to the cluster.key file of your new cluster. Change:

   <File>%{STREAMING_HOME}\cluster\keys\test-name-1\cluster.key</File>

to:

   <File>%{STREAMING_HOME}\cluster\keys\<new_cluster>\cluster.key</File>, where <new_cluster> is the cluster name you provided in step 1c.

d. (Optional) The new esp1 cluster example (%STREAMING_HOME\cluster\config\esp1) enables authorizations by default. The old node1.xml example does not enable authorizations, meaning every authenticated user has access to do anything (run projects, create workspaces, and so on). If you want to enable authorizations in the node you are migrating, uncomment the following line in your original cluster configuration file (node1.xml, for example) and change it from:

   <!--Policy>%{ESP_SHARED}\security\policy.xml</Policy-->

to:

   <Policy>%{ESP_SHARED}\backup\ESP-5_1\security\policy.xml</Policy>

   Note

   This will not replicate the roles that were defined in the policy.xml file, but it will enable authorizations in the new node. You will need to manually recreate the roles and authorization policies in the new node after it has been started. For information, see the SAP Event Stream Processor: Configuration and Administration Guide.

e. Execute the following command:

   streamingclusterutil -c --config cluster-migration.cfg

   When the command finishes executing, a line similar to the following indicates that the cluster configuration file has been generated:

   Config file C:\SAP_Installs\ESP\ESP-5_1\cluster\config\new_cluster\new_node1.xml generated

   10. Deploy the migrated node to the cluster database:

   cd %STREAMING_HOME%\cluster\config\new_cluster
   streamingclusternode --config cluster.cfg --deploy --config-type file --file new_node1.xml
11. When the command has completed successfully, start the migrated node.

```
streamingclusternode -pcluster.log.properties -fnew_node1.log --config
cluster.cfg --node-name node1 &
```

The preceding sample uses the name `node1` for the new node. This name is specified in the `new_node1.xml` file as follows:

```
<Node enabled="true" name="node1">
```

12. Migrate the original cluster’s `service.xml` file:

a. Add the following properties to the `services-migration.cfg` file:

- `service-file=<path to backed up version of the service.xml file>`, for example, `C:\SAP_Installs\ESP\ESP-5_1\backup\STREAMING_HOME\bin\service.xml`
- `key-store-file=<path to the keystore file>`, for example, `C:\work\SAP_Installs\ESP\ESP-5_1\security\keystore_rsa.jks`
- `key-store-password=<password>`
- `key-password=<password>`
- `output-file=<name of new service.xml file>` for example, `new_service.xml`

b. Execute the following command to convert the old services file to the new format:

```
streamingclusterutil -s --config services-migration.cfg
```

Unless you receive an error message, a new services file is created and you can proceed to the next step.

c. Load the new data services:

```
streamingclusteradmin --uri=esps://<host>:<port> --username=<valid ESP cluster
user> --password=<valid ESP cluster password> --load_dataservices --
dataservices-file=<new service file>, for example: streamingclusteradmin --
uri=esps://localhost:19011 --username=espuser1 --password=Password1 --
load_dataservices --dataservices-file=new_service.xml
```

Note

If you enabled authorizations as in step 9c, grant permission to the user loading the database services prior to loading the new data services:

```
streamingclusteradmin --uri=esps://<hostname>:<port> --username=SYS_STREAMING
--password=<password>
```
13. If you had defined authorizations or roles in your old cluster, manually recreate them using the `streamingclusteradmin` command. For information about creating authorization policies, see the SAP Event Stream Processor: Configuration and Administration Guide.

You can now restart your projects. To start projects in ESP 5.1 SP08, you must first start the cluster database, then the cluster. For information, see Deploying and Starting a Cluster [page 52].

### 5.2.2 Migrating from Sybase Control Center to SAP ESP Cockpit

If you are updating from a previous version of ESP in which you used Sybase Control Center (SCC) to manage and monitor your nodes and servers, migrate to SAP ESP Cockpit by installing it on each host that you want to monitor and administer.

Before migrating to ESP Cockpit, shut down all existing SCC servers and agents on each host that you wish to migrate to SAP ESP Cockpit and SAP Cockpit agents. Also, ensure that Adobe Flash Player is installed in the browser you wish to use for SAP ESP Cockpit.

Install SAP ESP Cockpit on each host that has a manager node. Also, install an SAP Cockpit agent on each host that has a manager node, controller node, or both. The ESP installer gives you the option to install just the SAP ESP Server and an SAP Cockpit agent.

**i Note**

Do not install SAP ESP Cockpit or an SAP Cockpit agent on a machine that does not have an ESP node installed. SAP ESP Cockpit only manages ESP servers that are running on the machine on which ESP Cockpit is installed.

Migrating to SAP ESP Cockpit is essentially the same process as setting up SAP ESP Cockpit for first time use. Once you have installed SAP ESP Cockpit, follow the tasks outlined in the Setting up SAP ESP Cockpit for First Time Use [page 55] section.

**i Note**

Existing alerts from Sybase Control Center do not migrate over to SAP ESP Cockpit. New alerts run by default and are created automatically during system registration using pre-defined thresholds. To configure alerts, you need admin permissions on the ESP Cockpit system. For details on configuring alerts, see Alerts in SAP ESP Cockpit in the SAP Event Stream Processor Cockpit guide on the SAP Help Portal.
5.3 Updating from Version 5.1 SP08

Update and migrate your existing project CCL files before attempting to run them in the new SP09 environment.

Context

In order to use SSL on the ESP server, the Java Development Kit (JDK) needs to be version 8 or higher.

Two primary datatypes, `Date` and `Timestamp`, have been renamed to `SecondDate` and `MsDate` respectively. Furthermore, all CCL language components, commands, and adapter properties which use these datatypes have been updated to use the new names. Projects developed in and prior to SP08 to must have their `.ccl` files updated to use these names accordingly. Not updating your command projects will result in a runtime error.

To migrate your project files to their proper SP09 format, run the new command-line utility, `streamingmigratedatetype`, against each of your project `.ccl` files. This utility automatically updates all instances and variations of `Date` and `Timestamp` to their new names.

i Note

With SAP Event Stream Processor 5.1 SP09, the system user for user authentication changed from `espsysusr` to `SYS_STREAMING`.

Procedure

1. Install SAP Event Stream Processor 5.1 SP09. During the install, upgrade, and uninstall processes, ESP automatically creates backups of critical files and directories.

2. Before starting ESP, run `streamingmigratedatetype` on each of your CCL project files.
   a. From the command-line, run:

```
STREAMING_HOME/bin/streamingmigratedatetypes -i oldproject.ccl -o newproject.ccl
```

   b. For `-i`, specify the old `.ccl` file to be migrated.
   c. For `-o`, specify an updated name for the migrated `.ccl` file.

3. Carefully inspect your newly migrated `.ccl` files and verify the date/time name changes are correct. The utility may or may not update variables or fields which use the same names, so be thorough in your inspection.

4. For any custom adapters you have developed using the adapter toolkit which use the `DateFormat` and `TimestampFormat` tags, manually edit your adapter configuration `.xml` file and rename these tags to `SecondDateFormat` and `MsDateFormat` respectively. Make this change before running any new or migrated projects that use these custom adapters. Not updating the `.xml` files will result in a runtime error.

5. You can now run your migrated projects in SAP Event Stream Processor 5.1 SP09. Consult the `Migration Executables` section in the `SAP Event Stream Processor: Utilities Guide` for complete details on this utility and data migration.
**Next Steps**

For your reference, the following tables provide a comprehensive list of datatype name changes:

**Table 19: Datatypes**

<table>
<thead>
<tr>
<th>Previous Name</th>
<th>New Name as of 5.1 SP09</th>
</tr>
</thead>
<tbody>
<tr>
<td>date</td>
<td>seconddate</td>
</tr>
<tr>
<td>timestamp</td>
<td>msdate</td>
</tr>
</tbody>
</table>

**Table 20: CCL Functions**

<table>
<thead>
<tr>
<th>Previous Name</th>
<th>New Name as of 5.1 SP09</th>
</tr>
</thead>
<tbody>
<tr>
<td>dateint</td>
<td>seconddateint</td>
</tr>
<tr>
<td>dateInt</td>
<td>seconndateInt</td>
</tr>
<tr>
<td>intdate</td>
<td>intseconddate</td>
</tr>
<tr>
<td>intDate</td>
<td>intSeconddate</td>
</tr>
<tr>
<td>sysdate</td>
<td>sysseconddate</td>
</tr>
<tr>
<td>to_date</td>
<td>to_seconddate</td>
</tr>
<tr>
<td>undate</td>
<td>unseconddate</td>
</tr>
<tr>
<td>getdatecolumnbyindex</td>
<td>getseconddatecolumnbyindex</td>
</tr>
<tr>
<td>getdatecolumnbyname</td>
<td>getseconddatecolumnbyname</td>
</tr>
<tr>
<td>systimestamp</td>
<td>sysmsdate</td>
</tr>
<tr>
<td>to_timestamp</td>
<td>to_msdate</td>
</tr>
<tr>
<td>untimestamp</td>
<td>unmsdate</td>
</tr>
<tr>
<td>gettimestampcolumnbyindex</td>
<td>getmsdatecolumnbyindex</td>
</tr>
<tr>
<td>gettimestampcolumnbyname</td>
<td>getmsdatecolumnbyname</td>
</tr>
</tbody>
</table>

**Table 21: Adapter Properties**

<table>
<thead>
<tr>
<th>Previous Name</th>
<th>New Name as of 5.1 SP09</th>
</tr>
</thead>
<tbody>
<tr>
<td>csvDateFormat</td>
<td>csvSecondDateFormat</td>
</tr>
<tr>
<td>csvTimestampFormat</td>
<td>csvMsDateFormat</td>
</tr>
<tr>
<td>jsonDateFormat</td>
<td>jsonSecondDateFormat</td>
</tr>
<tr>
<td>jsonTimestamp</td>
<td>jsonMsDateFormat</td>
</tr>
<tr>
<td>mapDateFormat</td>
<td>mapSecondDateFormat</td>
</tr>
<tr>
<td>mapTimestampFormat</td>
<td>mapMsDateFormat</td>
</tr>
<tr>
<td>objectlistDateFormat</td>
<td>objectlistSecondDateFormat</td>
</tr>
<tr>
<td>objectlistTimestampFormat</td>
<td>objectlistMsDateFormat</td>
</tr>
<tr>
<td>xmllistDateFormat</td>
<td>xmllistSecondDateFormat</td>
</tr>
<tr>
<td>xmllistTimestampFormat</td>
<td>xmllistMsDateFormat</td>
</tr>
<tr>
<td>Previous Name</td>
<td>New Name as of 5.1 SP09</td>
</tr>
<tr>
<td>----------------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>xmldocDateFormat</td>
<td>xmldocSecondDateFormat</td>
</tr>
<tr>
<td>xmldocTimestampFormat</td>
<td>xmldocMsDateFormat</td>
</tr>
<tr>
<td>DateColumnFormat</td>
<td>SecondDateColumnFormat</td>
</tr>
<tr>
<td>dateFormat</td>
<td>seconddateFormat</td>
</tr>
<tr>
<td>DateFormat</td>
<td>SecondDateFormat</td>
</tr>
<tr>
<td>TimestampColumnFormat</td>
<td>MsDateColumnFormat</td>
</tr>
<tr>
<td>timestampColumnName</td>
<td>msdateColumnName</td>
</tr>
<tr>
<td>timestampFormat</td>
<td>msdateFormat</td>
</tr>
<tr>
<td>TimestampFormat</td>
<td>MsDateFormat</td>
</tr>
<tr>
<td>timestampSequenceColumn</td>
<td>msdateSequenceColumn</td>
</tr>
<tr>
<td>timestampSequenceInitValue</td>
<td>msdateSequenceInitValue</td>
</tr>
</tbody>
</table>
Uninstalling using the Graphic Uninstaller

Uninstall Event Stream Processor from a test or production environment to ensure all components are fully removed.

Prerequisites

During the install, upgrade, and uninstall processes, ESP automatically creates backups of critical files and directories, including security settings, cluster configuration, and adapter configuration. To see a full list of these files and directories, refer to Planning Your Installation > Automatic Backups.

Since the automatic backup only includes files in the \STREAMING_HOME and \COCKPIT_HOME directories, manually back up the following:

- Log store files in \<base-directory>\<workspace-name>.<project-name>.<instance-number>
- Your Studio workspace.

Procedure

1. Navigate to \install dir\sybuninstall\ESP\main and run uninstall.exe to start the uninstaller.
2. To start uninstalling, click Next.
3. Choose either:

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Uninstall</td>
<td>Removes all installed features and components of SAP Event Stream Processor.</td>
</tr>
<tr>
<td>Uninstall Specific Features</td>
<td>Select specific features of SAP Event Stream Processor to uninstall.</td>
</tr>
</tbody>
</table>

4. If you are uninstalling specific features, select the features to remove and click Next.

   i Note
   If you are performing a complete uninstallation, proceed to step 5.

5. A summary screen lists the components selected for uninstallation. To uninstall the files, click Next.

6. (Optional) During a complete uninstall, a Delete User File screen lists all user files and folders created within the \STREAMING_HOME directory since installation. To uninstall these files, select Delete all of these files. Click Next.

7. Click Done.

   i Note
   If you reinstall SAP Event Stream Processor, copy all backup files into your new installation location.
8. (Optional) If your installation of Event Stream Processor included SAP ESP Cockpit (ESP Cockpit), some ESP Cockpit components may not uninstall. If this occurs, run the uninstaller under `<install dir>\sybuninstall\comp\<COCKPIT comp>`, where `<COCKPIT comp>` is:
   ○ COCKPIT-4.ESPCMAP
   ○ COCKPIT-4.CFW
   ○ SAPJRE71

Next Steps

Manually delete all files, folders, and subdirectories that remain after uninstalling if you no longer need them. When deleting files, ensure that they are not needed by another SAP product installed on your machine.
7 Uninstalling using the Console

Uninstall Event Stream Processor from a test or production environment to ensure all components are fully removed.

Prerequisites

During the install, upgrade, and uninstall processes, ESP automatically creates backups of critical files and directories, including security settings, cluster configuration, and adapter configuration. To see a full list of these files and directories, refer to Planning Your Installation > Automatic Backups.

Since the automatic backup only includes files in the STREAMING_HOME and COCKPIT_HOME directories, manually back up the following:

- Log store files in <base-directory>/<workspace-name>.<project-name>.<instance-number>.
- Your Studio workspace.

Procedure

1. From the command-line, navigate to <install dir>\sybninstall\ESP\main.
2. Type uninstall.exe -i console and press Enter.
3. A new window opens. Press Enter to continue.
4. Select an uninstall option by entering 1 (complete uninstall) or 2 (custom uninstall). Press Enter.
   If you select a complete uninstall, the uninstaller summarizes the components to be removed. To revert to a custom uninstall, type back and press Enter to make your selection again.

   i Note
   If you select a complete uninstall, proceed to step 6.

5. If you select a custom uninstall, enter the number of the component you want to select or deselect for uninstallation. Selected components are indicated by an X; unselected components are indicated by a blank. Enter the number of the component to toggle its status as selected or unselected. When you have made your selections, press Enter.
6. Review the pre-uninstall summary. To uninstall the files, press Enter.
7. After un installing all files created by the installer, a prompt appears to delete remaining user files that were created outside of the installer. Select Y or N. Press Enter to complete the uninstallation.

   i Note
   If you reinstall SAP Event Stream Processor, copy all backup files into your new installation location.
8. (Optional) If your installation of Event Stream Processor included SAP ESP Cockpit (ESP Cockpit), some ESP Cockpit components may not uninstall. If this occurs, run the uninstaller under `<install dir>\sylbuninstall\comp\<COCKPIT comp>`, where `<COCKPIT comp>` is:

- COCKPIT-4.ESPCMAP
- COCKPIT-4.CFW
- SAPJRE71

**Next Steps**

Manually delete all files, folders, and subdirectories that remain after uninstalling if you no longer need them. When deleting files, ensure that they are not needed by another SAP product installed on your machine.
8 Troubleshooting

Common techniques for troubleshooting issues you may encounter.

8.1 SySAM Logging

By default, when you are using a served license, all license server status and error messages are written to the SYBASE.log debug log file in the log directory.

Context

SYBASE.log is used to diagnose issues with the license server. For information on messages written to this log file, see The Debug Log File in the FLEXnet Licensing End User Guide provided with your SySAM documentation.

Over time, the debug log can become large and the value of older messages decreases. SAP recommends that you periodically truncate the debug log file:

Procedure

1. On the license server machine, enter:

   ```
   lmutil lmswitch -c license_directory_location SYBASE tmp.log
   ```

2. Delete or archive SYBASE.log.

3. To return to using SYBASE.log, enter:

   ```
   lmutil lmswitch -c license_directory_location SYBASE SYBASE.log
   ```

4. Delete the temporary file tmp.log.

   For more information on SySAM logging, see Troubleshooting SySAM Errors in the SySAM Users Guide.
8.2 Application Startup Issues

Troubleshooting guidance for sorting out startup issues.

Context

**Issue:** When starting the application, you see either of these messages:

- The application has failed to start because its side-by-side configuration is incorrect. Please see the application event log for more detail.
- The application failed to initialize properly (0xc0150002). Click OK to terminate the application.

**Solution:** Download and install the Microsoft Visual C++ 2005 Service Pack1 Redistributable Package for MFC Security Update (8.0.50727.6195) or later at:


Install the update for the platform that you are installing ESP on – either x86 (32-bit) or x64 (64-bit). If you are planning to run the ESP Add-In for Microsoft Excel on Windows 64-bit, install the update for both x86 and x64.

When you have installed the redistributable package, run Microsoft Update to apply the latest security patches to Microsoft Visual C++ 2005 Runtime.

8.3 Microsoft Excel Add-in

The SAP Event Stream Processor Add-in for Microsoft Excel is missing.

Context

**Issue:** The add-in for Microsoft Excel is not installed during typical installations.

**Solution:** You must re-run the installer using the custom install process and select the add-in for Microsoft Excel during the installation process.
8.4 Installer Issues

If your installer hangs, there are a few possible solutions.

Context

Issue: The installer hangs and installation does not progress.

Solutions:

- Ensure your machine meets disk space and temporary memory requirements.
- Remove all temporary files related to previous install processes.
- Ensure that you have administrator privileges, and run the installer or command prompt as an administrator. For example, in Windows 7, right-click on the command prompt and select **Run as administrator**.
- After starting the installer, hold down the **Ctrl** key for a few seconds to enable debug output. In console mode, debug output appears in the console running the installer. In GUI mode, debug output appears in a separate console.

8.5 Cannot Start Cluster Node

After installation, the default cluster database installed with ESP fails to initialize, and as a result, the cluster node cannot start.

Context

Issue: After installation, the default cluster database does not contain the necessary cluster configuration tables and is unusable. The **init_cluster_db.log** contains the following errors:

```
Access is denied.
com.sybase.esp.cluster.config.ConfigException:
com.sybase.esp.cluster.impl.DatabaseException:
com.sybase.esp.cluster.config.ConfigException: Cannot get size for column SEGMENT in table ESP_CLUSTER_CONFIG_ENTRY
  at com.sybase.esp.cluster.impl.ConfigDatabaseManager.store(Unknown Source)
  at com.sybase.esp.cluster.FactoryNode.deploy(Unknown Source)
  at com.sybase.esp.cluster.FactoryNode.main2(Unknown Source)
Caused by: com.sybase.esp.cluster.impl.DatabaseException:
  com.sybase.esp.cluster.config.ConfigException: Cannot get size for column SEGMENT in table ESP_CLUSTER_CONFIG_ENTRY
  at com.sybase.esp.cluster.impl.ConfigDatabaseAccessor
  $Factory.newInstance(Unknown Source)
  $Factory.newInstance(Unknown Source)
  $Factory.newInstance(Unknown Source)
  $Factory.newInstance(Unknown Source)
  at com.sybase.esp.cluster.impl.DatabasePool.newInstance(Unknown Source)
  at com.sybase.esp.cluster.impl.DatabasePool.acquire(Unknown Source)
... 3 more
```
Caused by: com.sybase.esp.cluster.config.ConfigException: Cannot get size for column SEGMENT in table ESP_CLUSTER_CONFIG_ENTRY
 at com.sybase.esp.cluster.impl.ConfigDatabaseAccessor._getColumnSize(Unknown Source)
at com.sybase.esp.cluster.impl.ConfigDatabaseAccessor.reset(Unknown Source)
at com.sybase.esp.cluster.impl.ConfigDatabaseAccessor.<init>(Unknown Source)
at com.sybase.esp.cluster.impl.ConfigDatabaseAccessor.<init>(Unknown Source)
... 7 more

**Solution:** This may be a result of installing SAP ESP on the same machine where SAP IQ 16.0 (any support package) is already installed. Run through the steps below to fix this issue.

**Procedure**

1. **Edit the C:\Users\Public\Documents\DBISQL 16.0.0\dbisql_64.rep file to add the following line at the beginning:**

   ```
   [GenericODBC] classLoaderName=sa16
   mainclass=com.sybase.saisqlplugin.GenericODBCPlugin
   classpath=saip16.jar;jodbc4.jar;ngdbc.jar;
   ```

2. Save the file.

3. **Set up the environment for the cluster database:**
   - For 64-bit Windows machines, add `%STREAMING_HOME%\sqla\Bin64` to the PATH
   - For 32-bit Windows machines, add `%STREAMING_HOME%\sqla\Bin32` to the PATH

4. **From a command line window, navigate to `%STREAMING_HOME%\cluster\config\<cluster name>.**

5. **Run start_db.bat to start the cluster database.**

6. **Execute the following script using the username and password you specified for the database administrator during installation, and the default database name, esp_cluster. For example:**

   ```
   dbisql.exe -c "UID=espdbadm;PWD=Password1;DBN=esp_cluster" -nogui %STREAMING_HOME%\cluster\sql\sqla.sql
   ```

   where esp_cluster is the same value as the environment variable ESP_CLUSTER_DB_NAME defined in the `%STREAMING_HOME%\cluster\<cluster name>\start_db.bat` file.

7. **Load the default cluster node into the cluster database tables using the following command:**

   ```
   %STREAMING_HOME%\bin\esp_cluster_node --config %STREAMING_HOME%\cluster\<cluster name>\cluster.cfg --deploy --config-type file --file cluster.xml
   ```

You can now start the cluster node.
8.6 DNS Resolution

Troubleshooting guidance for DNS resolution.

Context

**Issue:** DNS resolution does not work.

**Solution:**
Locate all adapter configuration files in the installation directory, and access cluster configuration from the ESP Cockpit. Manually insert an IP address in place of the host name in each location.

- **Adapter configuration files:** %STREAMING_HOME%\adapters\framework\instances\<adapter>\adapter_config.xml
- **Cluster node configuration:** Open SAP ESP Cockpit. Select the EXPLORE tab, then select Configure Cluster

8.7 Troubleshooting Log Files

ESP logs installation results, errors, and warnings from various components in different log files. Review these logs to help troubleshoot issues. If you require technical support, your representative may request that you send information from one or more of these logs.

When troubleshooting your ESP installation, start by looking at the esp_suite.log file under <install_dir>\log to determine which component produced an error. This file contains a summary of the ESP installation results.

The following log files are located at <install-dir>\log:

Table 22:

<table>
<thead>
<tr>
<th>Filename</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>esp_suite.log</td>
<td>SAP Event Stream Processor; includes a summary of installation results</td>
</tr>
<tr>
<td>conn_lang.log</td>
<td>Open Client connectivity language modules</td>
</tr>
<tr>
<td>dbilib.log</td>
<td>Open Client DB-Library</td>
</tr>
<tr>
<td>esp_excel_install.log</td>
<td>SAP Event Stream Processor Add-In for Microsoft Excel</td>
</tr>
<tr>
<td>esp_framework_install.log</td>
<td>Adapter Toolkit</td>
</tr>
<tr>
<td>esp_http_install.log</td>
<td>HTTP Output Adapter</td>
</tr>
<tr>
<td>esp_logfile_input_install.log</td>
<td>Logfile Input Adapter</td>
</tr>
<tr>
<td>Filename</td>
<td>Component</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>esp_odbc_install.log</td>
<td>ODBC Driver</td>
</tr>
<tr>
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