



Installation Guide

SAP Sybase Event Stream Processor 5.1 SP03

Linux

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Planning Your Installation

Before you install or upgrade, prepare your environment.

- Identify the components and options to install or upgrade.
- Obtain a license.
- Ensure your system meets all requirements for your installation scenario and planned use.

Obtaining a License

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

SAP® Sybase® 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.

These steps summarize the actions required to install a Sybase Software Asset Management (SySAM) license. Refer to the *Sybase Software Asset Management Users Guide* for details.

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 *Sybase Software Asset Management User's Guide* to migrate to SySAM 2.

4. Before installing your product:

- 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> 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.
- If you ordered your product under an SAP® contract and were directed to download from SAP Service Marketplace (SMP), you can use SMP at <http://service.sap.com/licensekeys> to generate license keys for SAP products that use SySAM 2-based licenses.

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 only in the cluster log (not in the server log). 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

For more information on SySAM licensing, see the *Sybase Software Asset Management Users Guide* on the Sybase Product Manuals Web site at <http://www.sybase.com/support/manuals>.

Available Licenses

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

Table 1. Available Server License Types

License	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

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:

Adapter	License Key	Grace Period?
Reuters Marketfeed	SY_ESP_TR_MF	No
Reuters OMM	SY_ESP_TR_OMM	No
Open	SY_ESP_OPEN	Yes
NYSE Technologies	SY_ESP_WMB	No
FIX	SY_ESP_FIX	Yes

Supported Operating Systems

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

Platform	Supported OS	Compiler	JDK Version
Linux-64 (AMD/Intel)	RHEL 5.5+ RHEL 6 SUSE 11 (with term-cap-2.0.8-892.2 or higher installed) Latest SP	gcc 4.4.x, 4.5.x, 4.6.x	1.7

Libraries Required for SDKs

APIs for creating custom adapters support C/C++ and Java 1.7.

The SDKs require the following `.so` files:

- `<install dir>/ESP-5_1/lib/libesp_sdk_lib.so`
- `<install dir>/ESP-5_1/lib/libesp_system_lib.so`
- `<install dir>/ESP-5_1/lib/libicudata.so.44`
- `<install dir>/ESP-5_1/lib/libicui18n.so.44`
- `<install dir>/ESP-5_1/lib/libicuuc.so.44`

Supported Compilers

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

Table 2. Supported C SDK Compilers

Platform	Compiler Versions
Linux-64 (AMD/Intel)	gcc 4.6.x, 4.5.x, 4.4.x

Table 3. Supported Java SDK Compilers

Platform	Compiler Versions
Linux-64 (AMD/Intel)	JDK 1.6 or 1.7

Virtual Machines

A virtual machine (VM) does not keep time exactly the same way that a physical machine does. When running low latency, high throughput applications like ESP, these differences can cause timekeeping inaccuracies and other problems.

There are configuration options that can mitigate these problems: such as configuring the VM to a particular set of CPUs, using locked memory (no sharing between VMs). But they involve trade-offs with the reasons, such as better resource utilization, for using VMs in the first place.

For a detailed discussion of timekeeping in VMware virtual machines, refer to <http://www.vmware.com/files/pdf/Timekeeping-In-VirtualMachines.pdf>.

If you want to run ESP on a VM, we highly recommend that you engage the vendor for help in configuring the VM for use with ESP.

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.

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.

	ESP Server Only	ESP Server and Studio
Linux-64 (AMD/ Intel)	700 MB	1.1GB

Note: The installer requires 500MB of temporary disk space as part of the installation process. This applies to all platforms.

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

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

Temporary Installation Files

The installer relies on temporary files it copies to your machine. Ensure you have enough space allocated to accommodate these temporary files.

The temporary files require approximately 220 MB of free space. By default, the installer copies the files to your `/tmp` directory.

You can install the files to a different location by setting the environment variable *IATEMPDIR* to point to a different directory.

Whether you use the default `/tmp` directory or an alternate directory, you can safely delete files remaining after installation to free up disk space.

Installed Directory Structure

An explanation of files and folders created by the installer.

A number of directories are created after installation and contain important files. These files and directories exist in the install directory you selected or created during installation.

Directory or File	Description
charsets	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.
collate	Contains additional supporting files for unicode. This directory is installed when you install ESP Server.

Directory or File	Description
ESP-5_1	<p>Contains the folders:</p> <ul style="list-style-type: none"> • <code>adapters</code> – holds files that relate to the configuration of adapters, examples, and batch files. • <code>bin</code> – holds the executable files that make up Event Stream Processor (with the exception of SAP Sybase Event Stream Processor Studio), including the command line tools. • <code>cluster</code> – holds cluster configuration XML examples and node information. • <code>doc</code> – holds a PDF version of the terms and conditions file. • <code>etc</code> – holds <code>.xsd</code> files and the FIX data dictionary. • <code>examples</code> – holds CCL examples, as well as examples for the C and Java SDKs. • <code>include</code> – holds header files for C SDK. • <code>lib</code> – holds adapter <code>.cnxml</code> and library files, as well as JRE used by ESP Server. Also holds the <code>.so</code> files used by ESP. • <code>libj</code> – holds JAR files. • <code>security</code> – holds XML files for all security options (Kerberos, LDAP, RSA, SAP BI, and Native OS). • <code>studio</code> – holds files and folders relating to Studio, including the samples provided in the Welcome page.. • <code>sysam</code> – holds SYSAM licensing information. • <code>wsp</code> – holds Web Services Provider files
jre64	Contains the JRE used by the installer and uninstaller.
locales	<p>Contains files that Event Stream Processor uses to load localization information. By default, US-English only.</p> <p>This directory is installed when you install ESP Server.</p>
log	Contains the installer log files.
OCS-15_0	Contains supporting files for Open Client Server, including the Open Client library which the Event Stream Processor uses to communicate with the Adaptive Server Enterprise database.
SCC-3_2	Contains supporting files for Sybase Control Center (SCC). This is installed when SCC for Event Stream Processor is installed, or when the ESP Server is installed with the SCC Agent for Event Stream Processor.
shared	Contains files shared by other SAP products installed to the same root directory.

Directory or File	Description
Sybase_Install_Reg- istry	Contains the install registry.
sybuninstall	Contains the folders: <ul style="list-style-type: none"> • comp – holds the executable files for uninstalling specific components of the product. • ESP - holds the executable file for performing a complete uninstall of the product.
SYSAM-2_0	Contains SYSAM licensing tools and a license file.
SYBASE.sh, SYB- ASE.csh, and SYB- ASE.env	Used to set environment variables that are required for ESP (such as ESP_HOME).

Before You Reinstall

This information pertains to reinstalling the current version of Event Stream Processor over the same version. 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* on page 45.

Before reinstalling in the same folder as an existing installation, ensure that the backups include:

- All custom library .so files
- All customer-created or customized .cnxml files
- All service configuration (services.xml) files
- 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 Sybase 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.

Planning Your Installation

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

Installation Scenarios

SAP Sybase Event Stream Processor offers typical, custom, and single component installations. A custom installation lets you select which components you install. A typical installation includes the most commonly-used components. A single component installation lets you install Sybase Control Center for SAP Sybase Event Stream Processor.

The single-component installation process for Sybase Control Center for SAP Sybase 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* on page 16.

You can install the ESP Web Services Provider only by also installing the Web Services adapter. To do this, you can perform either a typical installation, or a custom installation and select to install the Web Services adapter.

SAP Sybase 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.
- Studio – provides a graphic view of an Event Stream Processor project, allowing you to create, modify, and monitor projects without programming knowledge. Can only be installed with the ESP Server.

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

- Reuters Marketfeed adapter
- Reuters OMM adapter
- Open adapter
- NYSE Technologies adapter
- FIX adapter

The NYSE Technologies enterprise adapter, Reuters Marketfeed adapter, and Reuters OMM adapter are provided with their own installation media when you purchase licenses for them. 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.

A typical installation installs the Server, Studio, Sybase Control Center for SAP Sybase Event Stream Processor, 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.

When you perform a typical installation, the installer configures a single node cluster and assigns it the Native OS authentication method. 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. Configuring a cluster node lets you run 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 type of installation that is best for you.

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

You can also use the silent installer to install multiple instances of the Server and Studio.

Performing a Typical Installation

In a typical installation, install the base adapters, ESP Server, ESP Studio, and Sybase Control Center for Event Stream Processor on a single machine.

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

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 only in the cluster log (not in the server log). 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.

Performing a Typical Installation in GUI Mode

Install the Event Stream Processor base adapters, the Server, the Studio, and Sybase Control Center for SAP Sybase Event Stream Processor in a single process on a single machine.

1. Run the installer file, `setup.bin`. 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 Sybase Control Center Server for SAP Sybase Event Stream Processor, and the Sybase Control Center Agent for SAP Sybase Event Stream Processor. Click **Next**.
4. Select to either install 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 8.

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.

License Type	Process
Specify License Keys	<ul style="list-style-type: none"> Enter the license key manually or browse for and load a license key. Click Next. <p>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.</p> <p>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.</p>
Previously Deployed License Server	<p>Enter the host name and port number or IP address.</p> <p>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.</p>
Continue Without a License Key	<p>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.</p>

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**.

Note: To change the SySAM alert settings after installation, edit these lines in the `ESP_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 (,).

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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. 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.

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10. Review installation information before continuing. Click **Previous** to go back and make changes. Click **Install** to proceed with the installation.
 11. To install Sybase Control Center for Event Stream Processor:
 - a) Enter and confirm a password for the SCC administrator. Minimum length is six characters.
This password is encrypted and written to the SCC `csi.properties` file.
 - b) Enter and confirm a password for the SCC agent administrator.
 12. 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.

Performing a Typical Installation in Console Mode

Install the Event Stream Processor base adapters, the Server, the SAP Sybase Event Stream Processor Studio, and Sybase Control Center for Event Stream Processor in a single process on a single machine.

1. From the command line, navigate to the directory where the installation file (setup.bin) resides.
2. Type `./setup.bin -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.
 - 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 Sybase Control Center Server for SAP Sybase Event Stream Processor, and the Sybase Control Center Agent for SAP Sybase Event Stream Processor. 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 10.

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

License Type	Process
Specify License Keys	<ul style="list-style-type: none"> Type 1 and press Enter. Specify the absolute path to the license file and press Enter, or press Enter to accept the default. <p>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.</p> <p>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.</p>
Previously Deployed License Server	<ul style="list-style-type: none"> Type 2 and press Enter. Press Enter to accept the default host name, or enter the Host Name and Port Number. <p>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.</p>
Continue Without a License Key	<p>Type 3 and press Enter. At the prompt asking if you want to continue, press Enter.</p> <p>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.</p>

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 `ESP_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 an absolute path to the workspace location for SAP Sybase Event Stream Processor Studio projects, or press **Enter** to accept the default location.
-

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.

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

Performing a Custom Installation

Use a custom installation to install certain features of Event Stream Processor. You can also use a custom installation to install Event Stream Processor components to different machines. You can install the Server and Studio only; the Server and Studio with any combination of external and enterprise adapters; or any combination of external and enterprise adapters without the Server and Studio.

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 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 Server and Studio 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 only in the cluster log (not in the server log). 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.

Performing a Custom Installation in GUI Mode

Install the ESP Server, SAP Sybase Event Stream Processor Studio, Sybase Control Center for SAP Sybase Event Stream Processor, and any combination of external and enterprise adapters on various machines within your network.

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.

1. Run the installer file, `setup.bin`. 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 **Custom** install set. Click **Next**.
4. Select the options you want to install and clear the options you do not.

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.

5. Click **Next**.

If, in step 4, you selected external adapters only (no enterprise adapters, Studio, or Server), the installer summarizes your installation preferences and prompts you to install. Click **Install** to complete the installation. Otherwise, continue to step 6.

6. 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 10.

7. 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.

License Type	Process
Specify License Keys	<ul style="list-style-type: none"> Enter the license key manually or browse for and load a license key. Click Next. <p>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.</p> <p>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.</p>
Previously Deployed License Server	<p>Enter the host name and port number or IP address.</p> <p>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.</p>
Continue Without a License Key	<p>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.</p>

8. From the drop-down list, select the type of product license you want to configure and click **Next**.
9. 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 `ESP_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.** 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 6 through 10 for each enterprise adapter you are installing. Then proceed to step 16.

- 11.** Configure cluster information:

- 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.
- 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) 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.
- g) Click **Next**.

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

12. Indicate whether you want to specify a password for the cluster now or when you start the cluster. All nodes within a cluster have the same cluster password. To set a password now, select **Yes**, then enter the 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.
13. 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:

Authentication Type	Description
Native OS	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.
SAP BI	Provides SAP BI authentication. Choose this authentication type if you wish your SAP BI instance to handle authentication.
LDAP	Provides LDAP authentication. Enter the following information as indicated by your LDAP implementation: <ul style="list-style-type: none"> • Server type • Provider URL • Default search base • Authentication scope
Kerberos	Provides Kerberos authentication. Enter the following information as indicated by your Kerberos implementation: <ul style="list-style-type: none"> • Realm • KDC • Service Principal Name • Keytab Location <p>Note: If you do not set these values during installation, you can set them post-installation. See <i>Configuration and Administration Guide > Get Started with a Cluster > Configuring Security > Authentication > Configuring Kerberos Authentication</i>.</p>
RSA	Provides RSA authentication.

14. 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) Select **Yes** or **No** to indicate whether you want to enter a password to access the keystore file and key. If you select **No**, you are prompted for the password at startup.
- c) (Optional) Enter and confirm the password for the keystore. Your password must be at least six characters long.
- d) Click **Next**.

15. If you are installing the Web Services (SOAP) 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 values for the HTTP Port and HTTPS Port, 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.

16. 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 6 through 10 for each adapter.

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

18. If you are installing Sybase Control Center for Event Stream Processor:

- 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 Port and the HTTPS Port for Sybase Control Center 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) Enter and confirm a password for the SCC administrator. Minimum length is six characters.

This password is encrypted and written to the SCC `csi.properties` file.

- e) Enter and confirm a password for the SCC agent administrator.
- f) Select **Yes** or **No** to indicate whether you want to start the Sybase Control Center service.

19. 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.

Performing a Custom Installation in Console Mode

Install the ESP Server and SAP Sybase Event Stream Processor Studio with Sybase Control Center for SAP Sybase Event Stream Processor, and any combination of external and enterprise adapters on various machines within your network.

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.

1. From the command line, navigate to the directory where the installation file (`setup.bin`) resides.
2. Type `./setup.bin -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.
 - 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. If you select the SAP Sybase Event Stream Processor Studio for installation, also select the Server.

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, Studio, or 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:

License Type	Process
Specify License Keys	<ul style="list-style-type: none"> Type 1 and press Enter. Enter the license key. Press Enter. Once your license key is validated successfully, press Enter to continue installation. <p>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.</p> <p>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.</p>
Previously Deployed License Server	<ul style="list-style-type: none"> Type 2 and press Enter. Press Enter to accept the default host name, or enter the Host Name and Port Number. <p>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.</p>
Continue Without a License Key	<p>Type 3 and press Enter. At the prompt asking if you want to continue, press Enter.</p> <p>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.</p>

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 `ESP_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 through 15 for each enterprise adapter you are installing. Then proceed to step 20.

16. Configure cluster information:
 - 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.
 - 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) Indicate whether you want to provide a password for accessing the cluster now. All nodes within the cluster use the same password. If you select **No**, you are prompted to provide a password when you start the cluster node.
If you select **Yes**, enter a password for the cluster and press **Enter**. Your password must be at least six characters long. If you are connecting to an existing cluster, use the password defined for that cluster.
- h) 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:

Authentication Type	Description
Native OS	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.
SAP BI	Provides SAP BI authentication. Choose this authentication type if you wish your SAP BI instance to handle authentication.
LDAP	Provides LDAP authentication. Enter the following information as indicated by your LDAP implementation: <ul style="list-style-type: none"> • Server type • Provider URL • Default search base • Authentication scope
Kerberos	Provides Kerberos authentication. Enter the following information as indicated by your Kerberos implementation: <ul style="list-style-type: none"> • Realm • KDC • Service Principal Name • Keytab Location <p>Note: If you do not set these values during installation, you can set them post-installation. See <i>Configuration and Administration Guide > Get Started with a Cluster > Configuring Security > Authentication > Configuring Kerberos Authentication</i>.</p>

Authentication Type	Description
RSA	Provides RSA authentication.

Note: After installation, you can modify your Event Stream Processor environment to add nodes and clusters, change authentication types, and so on. For information, see the *Configuration and Administration 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. Indicate whether you want to provide a password to access the keystore file and key. If you select **No**, you are prompted for one at startup. If you select **Yes**, enter 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 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. Enter an absolute path to the workspace location for SAP Sybase Event Stream Processor Studio projects, or press **Enter** to accept the default location.
21. If you are installing enterprise adapters, repeat steps 9 through 15 for each adapter. Otherwise, continue to step 22.
22. At the pre-installation summary, confirm that you have enough disk space for the installation. Press **Enter** to continue.
23. Press **Enter** to install the files.
24. If you are installing Sybase Control Center for Event Stream Processor:
 - 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 Sybase Control Center 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 Sybase Control Center 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 SCC administrator. Minimum length is six characters.

This password is encrypted and written to the SCC `csi.properties` file.

- f) Enter and confirm a password for the SCC agent administrator.
- g) Select **Yes** or **No** to indicate whether you want to start the Sybase Control Center service.

25. When prompted, press **Enter** to finish the installation process.

Running a Silent Installation

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

SAP recommends a silent installation for installing multiple identical or near-identical copies of the Server and the SAP Sybase Event Stream Processor Studio. You can install these components silently:

- The Server, internal adapters, and the Studio
- The 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.

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.

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:

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 and keystore passwords, manually add the passwords to the file, or specify them in the command line.

1. From a command line, navigate to the directory where the installation file (`setup.bin`) resides.
 2. At the command line, run: `./setup.bin -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 into a response file and used to complete your silent installations.
 3. (Optional) Modify the response file to correct any errors made during installation.
-

Note: If you add password parameters to the response file, SAP recommends that you either delete the response file, or delete the password parameters from the response file after the silent installation is complete.

Use the following response file sample as a reference for manually modifying or creating your own response file:

```
# Tue Aug 07 20:48:22 CST 2012
# Replay feature output
# -----
# This file was built by the Replay feature of InstallAnywhere.
# It contains variables that were set by Panels, Consoles or
# Custom Code.

#Validate Response File
#-----
RUN_SILENT=true

#Choose Install Folder
#-----
USER_INSTALL_DIR=/opt/sybase

#Choose Install Set
#-----
CHOSEN_FEATURE_LIST=fserver,fespap,fstudio,fsysam_util,ffix,ftibco_rv,fflex,fhttp,fopen,flogfile_input,frepserver,frtview,fsc
CHOSEN_INSTALL_FEATURE_LIST=fserver,fespap,fstudio,fsysam_util,ffix,ftibco_rv,fflex,fhttp,fopen,flogfile_input,frepserver,frtview,fsc
CHOSEN_INSTALL_SET=Custom

#Choose Product License Type
#-----
SYBASE_PRODUCT_LICENSE_TYPE=evaluate

#Choose Sybase Software Asset Management License
#-----
SYSAM_EXISTING_LICENSE_SERVER_HOSTNAME=hostname

#Cluster Configuration
```

Installation Scenarios

```
#-----
CACHE_NAME=test-name-1
NODE_NAME=node1
CACHE_PORT=19001
HOST_NAME=hostname
RPC_PORT=19011
USE_SSL=1

#Cluster Password
#-----
PROMPT=0
ENTER_NOW=1
CACHE_PASSWORD=MyClusterPassword
#Minimum length of password is six characters

#Security Options
#-----
IS_NATIVEOS=1
IS_LDAP=0
IS_KERBEROS=0
IS_RSA=0

#Keystore Properties
#-----
FILE=/opt/sybase/ESP-5_1/security/keystore_rsa.jks
PROMPT_KEY_PASSWORD=0
ENTER_KEY_PASSWORD=1
PASSWORD=MyKeystorePassword
#Minimum length of password is six characters

#Choose workspace folder
#-----
CHOSEN_WORKSPACE_FOLDER=/usr/user/SybaseESP/5.1/workspace

#Install
#-----
-fileOverwrite /opt/sybase/sybuninstall/ESP/main/
uninstall.lax=Yes

#Sybase Control Center Service
#-----
CONFIG_SCC_HTTP_PORT=8282
CONFIG_SCC_HTTPS_PORT=8283

#Sybase Control Center - Configure RMI Port
#-----
SCC_RMI_PORT_NUMBER=9999

#Sybase Control Center - Security Login Modules
#-----
CONFIG_SCC_CSI_SCCADMIN_PWD=MySCC_AdminPassword
CONFIG_SCC_CSI_UAFADMIN_PWD=MySCCAgent_AdminPassword

#Start Sybase Control Center
#-----
```



```
START_SCC_SERVER=No
```

Using a Response File

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

If you do not specify a response file, the `installer.properties` file located in the same directory as the installation file is used. 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 Sybase Event Stream Processor on the required number of machines.

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

```
setup.bin -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 are not saved to the response file. To run a silent installation with user-defined passwords, manually add the password parameters to the response file or at the command line.

Response file parameters for passwords are:

- **CACHE_PASSWORD** is for the cluster password
- **PASSWORD** is for the keystore password
- **CONFIG_SCC_CSI_SCCADMIN_PWD** is for the SCC administrator password
- **CONFIG_SCC_CSI_UAFADMIN_PWD** is for the SCC agent password

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

```
setup.bin -i silent -f <response_file> -DRUN_SILENT=true -
DAGREE_TO_SYBASE_LICENSE=true -DCACHE_PASSWORD=<cluster
password> -DPASSWORD=<keystore password> -
DCONFIG_SCC_CSI_SCCADMIN_PWD=<SCC admin password> -
DCONFIG_SCC_CSI_UAFADMIN_PWD=<SCC 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.

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

Post Installation

When you have successfully installed SAP Sybase 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.

Linking to Your ODBC Driver Manager Library

To successfully use an ODBC driver manager library on UNIX systems, link to your ODBC driver manager library and include this link in `LD_LIBRARY_PATH` for the ESP Server.

On UNIX systems, Event Stream Processor expects your ODBC driver manager library to be called `libodbc.so.1`.

1. Ensure that your driver manager library has this name or create a symbolic link from `libodbc.so.1` to your ODBC driver manager library.
2. Include the symbolic link in your `LD_LIBRARY_PATH` for the ESP Server.

Configuring a Pluggable Authentication Module (PAM)

If you selected the Native OS authentication option during installation, perform additional configuration to allow login using accounts on the host system.

1. Using a login account with root privileges, configure the pluggable authentication module for your platform:

Platform	Action
Linux	<p>If you are installing on RHEL 6, copy the <code><Install-dir>/ESP-5_1/security/pam/rhel6/sybase-csi</code> file (provided with Event Stream Processor) to the <code>/etc/pam.d</code> directory on your Linux platform.</p> <p>For previous versions of RHEL, copy the <code><Install-dir>/ESP-5_1/security/pam/sybase-csi</code> file (provided with Event Stream Processor) to the <code>/etc/pam.d</code> directory on your Linux platform.</p> <hr/> <p>Note: The <code>sybase-csi</code> file provided with Event Stream Processor is not compatible with the most recent SUSE Linux versions. For SUSE 11 and later, see the example at the end of this topic.</p>

Note: In the table above, the portion of the path that indicates the operating system might differ slightly from what is shown.

2. If the host UNIX system is not using a directory lookup for authentication (yp or NIS, for example) and authentication is carried out against the local `/etc/passwd` file, any user account that executes Event Stream Processor requires read access to `/etc/shadow`. To provide this access, use the **usermod** command to add the applicable user accounts to the shadow group. For example, for user account `User_123` use: **usermod -G shadow User_123**

Example: PAM for SUSE Linux 11 and later

For SUSE 11 and later, do not use the `sybase-csi` file provided with Event Stream Processor. Instead, in your `/etc/pam.d` directory, create a `sybase-csi` file that contains:

```
# sybase-csi PAM Configuration (SUSE style)
auth        include      common-auth
account     include      common-account
password    include      common-password
session     include      common-session
```

Updating Environment Variables

Create and update environment variables by running the `SYBASE.csh` or `SYBASE.sh` file.

Run `SYBASE.csh` or `SYBASE.sh` to update or create the following environment variables:

- `ESP_HOME=<Install_Dir>/ESP-5_1`
- `SYBASE_JRE7=<Install_Dir>/shared/JRE-7_0_1`
- `SYBASE_JRE7_32=<Install_Dir>/shared/JRE-7_0_1`
- `SYBASE_JRE7_64=<Install_Dir>/shared/JRE-7_0_1`
- `SCC_JAVA_HOME=<Install_Dir>/shared/JRE-7_0_1`
- `SYBASE=<Install_Dir>`
- `SYBASE_OCS=OCS-15_0`
- `INCLUDE=<Install_Dir>/OCS-15_0/include:$INCLUDE`
- `LIB=<Install_Dir>/OCS-15_0/lib:$LIB`
- `PATH=<Install_Dir>/OCS-15_0/bin:$PATH`
- `LD_LIBRARY_PATH=<Install_Dir>/OCS-15_0/lib:<Install_Dir>/OCS-15_0/lib3p64:<Install_Dir>/OCS-15_0/lib3p:$LD_LIBRARY_PATH`

The environment variable `ESP_HOME` represents the directory where you installed Event Stream Processor. Specifically, the value of `ESP_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.

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 Service Marketplace (SMP).

Task

1. Navigate to `$ESP_HOME/libj` and create a `boe` subdirectory.
2. If you do not have SBOP BI 4.1 installed already, download it.
 - a) Point your browser to <https://websmp107.sap-ag.de/installations>
The system displays the **Installations and Upgrades** window.
 - b) In the left pane, click on **Search for Software Downloads**.
The system displays the **Search for Software Downloads** window.
 - c) Enter `SBOP BI 4.1` in the **Search Term** field and click the **Search** button.
 - d) Scroll down and click on **SBOP BI Platform 4.1 Client Tools - Win 32B**.
 - e) Select or create a folder, and extract the contents of the zip file to that folder.
3. Go to the folder where you have SBOP PI 4.1 installed, navigate to `java/lib`, and copy all of the contents of that directory, including the `external` subdirectory to `$ESP_HOME/libj/boe`.

Installing the SAP Sybase Event Stream Processor Plugin to SAP HANA Studio

To use SAP Sybase Event Stream Processor features within SAP HANA Studio, install ESP onto the same machine as SAP HANA Studio. Then, install the ESP plugin into SAP HANA Studio. This allows you to open and run ESP projects from within SAP HANA Studio. If you intend to use ESP as a standalone product, this installation is unnecessary.

Prerequisites

- Install ESP 5.1 SP03 or higher
- Install SAP HANA Studio 1.0 SPS06 or higher

Task

1. Copy the following configuration settings from the ESP Studio configuration file `$ESP_HOME/studio/esp_studio.ini` to the SAP HANA Studio configuration file `hdbstudio.ini` (installed to the directory you chose when installing SAP HANA Studio):
 - `-Djava.net.preferIPv4Stack=true`
 - `-Desp.compilerPath=[ESP-5_1 Path]/bin/esp_parse.exe`
 - `-Desp.adapterPath=[ESP-5_1 Path]/lib/adapters`
 - `-Desp.aml2cclPath=[ESP-5_1 Path]/bin/esp_aml2ccl`
 - `-Desp.home=[ESP-5_1 Path]`
 - `-Desp.examples=[ESP-5_1 Path]/studio/learning`
 - `-Desp.i18n=[ESP-5_1 Path]/studio/i18n`
 - `-Desp.localCluster=[ESP-5_1 Path]/studio/clustercfg`
 - `-Djava.library.path=[ESP-5_1 Path]/adapters/rfc/bin`
 - `-Dhelp.lucene.tokenizer=standard`
2. Ensure you have set the `ESP_HOME` environment variable for the environment or command shell used to launch SAP HANA Studio: `$ESP_HOME <ESP install dir>/ESP-5_1`
3. Launch the SAP HANA Studio, then select **Help** and then **Install New Software** to open the **Install Dialog**.
4. From the **Install Dialog**:
 - a) Click **Add**.
 - b) From the **Add Repository Dialog**, click **Archive**.
 - c) Navigate to the `$ESP_HOME/studio/esp_feature` directory and select `esp_feature.jar`, then click **Open**.
 - d) From the **Add Repository Dialog**, click **OK**.
 - e) In the **Install Dialog** box, uncheck the checkbox **Group Items by Category**.
The top list of the **Install Dialog** displays **SAP Sybase Event Stream Processor**.
 - f) Select **SAP Sybase Event Stream Processor** and click **Next** for installation details.
 - g) For **Review Licenses**, select **I accept the terms of the license agreement** and click **Finish**.
 - h) If a **Security Warning Dialog** appears, click **OK**.
 - i) When prompted, click **Yes** to restart the SAP HANA Studio.

You now have access to ESP features in the SAP HANA Studio.
5. Set up the SAP HANA Studio Welcome page to include ESP Studio content.
 - a) Within the SAP HANA Studio, select **Help > Welcome** to display the Welcome page.
 - b) Click **Customize Page**.

- c) In the **Customize Dialog**, click the **Home** tab.
- d) At the bottom of the dialog, the Root Pages list displays additional Welcome page items. Select the checkboxes for **Tutorials**, **Samples**, **What's New**, and **Web Resources**, as desired, to display related ESP content.
- e) Click **OK** to save.

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. Refer to the *Supported Compilers* topic.

Task

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.

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 what libraries you will need to link to, based on which SDK you want to use and what operating system your remote machine is running.

Table 4.

SDK	OS	FILES
C	Linux, Solaris	All of the header files in <code>include/sdk</code> and <ul style="list-style-type: none"> • <code>lib/libesp_sdk_lib.so</code> • <code>lib/libesp_system_lib.so</code> • <code>lib/libgcc_s.so.1</code> • <code>lib/libicu18n.so.44</code> • <code>lib/libicuuc.so.44</code> • <code>lib/libicudata.so.44</code> • <code>lib/libsas12.so.2</code> • <code>lib/libstdc++.so.6</code>

SDK	OS	FILES
C	Windows	All of the header files in <code>include/sdk</code> and <ul style="list-style-type: none"> • <code>bin/esp_sdk_lib.dll</code> • <code>bin/esp_system_lib.dll</code> • <code>bin/icudt44.dll</code> • <code>bin/icuin44.dll</code> • <code>bin/icuuc44.dll</code> • <code>bin/libeay32.dll</code> • <code>bin/msvcpl100.dll</code> • <code>bin/msvcr100.dll</code> • <code>bin/ssleay32.dll</code> • <code>bin/xerces-c_2_6.dll</code> • <code>lib/static/esp_sdk_lib.lib</code>
Java	Linux, Solaris, Windows	<ul style="list-style-type: none"> • <code>libj/esp_sdk.jar</code> • <code>libj/xmlrpc-common-3.1.3.jar</code> • <code>libj/xmlrpc-client-3.1.3.jar</code> • <code>libj/ws-commons-util-1.0.2.jar</code> • <code>libj/postgresql.jar</code>
.NET	Windows	For .NET 4.0, all of the files listed for the Windows C SDK plus <code>net\interfaces\sdk\esp_net_sdk_lib.dll</code> For .NET 3.5, the entire contents of the <code>net\interfaces\sdk\net35</code> directory.

Note: All file paths are relative to the `ESP_HOME` directory.

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

Installing the Adapter Toolkit on Other Machines

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

- ESP Server
- Web Services adapter

- RFC adapter

Task

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.

1. Copy the contents of `$ESP_HOME/adapters/framework` from the ESP machine to the external machine.
2. (Optional) Copy the API documentation in `$ESP_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 *Building Custom Adapters Guide*.

Starting a Node or Cluster

Start a cluster by starting its nodes. This step is optional for post-installation.

Prerequisites

Add nodes to your cluster and configure them.

Task

If you are performing a basic installation for evaluation, or if you have not yet configured your clusters, you can skip this post installation task. This information pertains to users ready to start clusters in their production environment. This may consist solely of the single-node cluster provided out of the box, but will most likely involve multiple clusters on different machines. For information on configuring clusters, see the *Configuration and Administration Guide*.

A cluster must be running before you can deploy projects to it. To start a cluster, start manager nodes first, then controller-only nodes. Follow these steps for each node in the cluster, where `<node-name>` represents the name of a node in the cluster.

Note: The directory from which a node is started becomes the working directory for the node. The node looks for the `cluster.log.properties` file in the working directory. SAP recommends that you start each node from a separate working directory.

1. To start a node:

- Execute this to start the node in the foreground:

```
cd $ESP_HOME/cluster/nodes/<node-name>  
$ESP_HOME/bin/esp_server --cluster-node <node-name>.xml
```

- Execute this to start the node in the background:

```
cd $ESP_HOME/cluster/nodes/<node-name>  
nohup $ESP_HOME/bin/esp_server --cluster-node <node-name>.xml  
2>&1 > esp-node-console.out &
```

where `esp-node-console.out` is a file that collects console output. Specifying a console output file is optional because most console output, which is minimal for Event Stream Processor, is also recorded in `cluster.log`. (You can configure logging in `cluster.log.properties`.) Some users prefer to direct console output to `/dev/null` when running a node in the background.

2. (Optional) Use the cluster administration tool to start and manage projects. Execute a command of this form to enter the tool's interactive mode:

```
esp_cluster_admin --uri=esp[s]://<host>:<port> --  
username=<user> [--password=<pass>]
```

Provide the cluster URI and your credentials to complete the command and begin working with cluster administration commands. Use the URI protocol `esp[s]` when the cluster is SSL-enabled. For clusters that are not SSL-enabled, use the protocol `esp`.

Note: If you omit the password parameter when you call the **esp_cluster_admin** tool, Event Stream Processor prompts you for the password and hides it as you type, which improves security.

Starting Sybase Control Center

Sybase Control Center (SCC) is a Web-based tool for managing and monitoring SAP servers, including SAP Sybase Event Stream Processor servers. SCC includes a server component with management UI and an SCC agent.

Prerequisites

If you installed the SCC server on a separate machine, navigate to that install and start the server. To enable you to manage Event Stream Processor, both the SCC agent installed with ESP and the SCC server must be running

Task

To monitor Event Stream Processor, you typically need to install only one SCC server in your enterprise. To manage Event Stream Processor, install an SCC agent on the same host with each ESP Server. If you install the SCC server and SCC agent together by selecting both options in the installer, you start and stop them with the same commands.

Start the SCC server to allow users to connect to it from their Web browsers. Once connected to SCC, users can access the online help for detailed instructions on managing and monitoring Event Stream Processor.

In addition to starting the SCC server, configure the SSL certificate, disable default login accounts, and enable incremental backups. These procedures ensure SCC is ready for user access.

1. (Perform this step only if you are starting SCC for the first time) From a command prompt, navigate to your Event Stream Processor base installation directory and run `SYBASE.sh` or `SYBASE.csh`.

This sets the necessary environment variables.

2. From the command-prompt, navigate to `<Install_Dir>/SCC-3_2/bin` and run `scc.sh` to start the SCC server, SCC agent, or both.

This command starts either the SCC server, the SCC agent, or both if you chose to install both in the same directory. Once the SCC server starts, it begins accepting connections.

Note: If you encounter errors, view the error log in the `<Install_Dir>/SCC-3_2/log` directory.

3. Connect to the Sybase Control Center server. In your Web browser, enter:

- If SSL is enabled: `https://<scc-hostname>:<port>/scc` where `<scc-hostname>` is the name of the machine running SCC. The default port is 8283.
- If SSL is disabled: `http://<scc-hostname>:<port>/scc` where `<scc-hostname>` is the name of the machine running SCC. The default port is 8282.

4. Log in.

When logging in to a newly installed Sybase Control Center for which secure authentication has not been configured, use the **sccadmin** account and the password you specified during installation.

If you use SCC with Event Stream Processor, leave the SCC server running whenever ESP is running. The easiest way to do this is to run the SCC server as a service that restarts automatically.

Configuring the SSL Certificate

Ensure the security of encrypted SSL communication between Sybase Control Center and browser clients by installing an X.509 certificate.

When you start Sybase Control Center for the first time, it generates a self-signed X.509 Secure Sockets Layer (SSL) certificate for the host that it is running on. Because self-signed certificates are not issued by a trusted certificate authority, most browsers show an error when they try to connect to Sybase Control Center using the self-signed certificate.

To eliminate certificate errors, install a permanent SSL certificate from a certificate authority. Sybase recommends that you install a certificate signed by a certificate authority before using

Sybase Control Center in your production network. Obtain a certificate for each machine on which a Sybase Control Center server is installed.

The following is an overview of purchasing and installing an SSL certificate from a certificate authority. For full details, see <http://docs.codehaus.org/display/JETTY/How+to+configure+SSL>.

1. To obtain an SSL certificate from a known certificate authority (such as VeriSign, Inc. or Thawte, Inc.), generate a certificate signing request (CSR) and send it to the certificate authority. Use one of these commands to generate the CSR:

Windows:

```
keytool -certreq -alias jetty -keystore  
%SYBASE%\SCC-3_2\services\EmbeddedWebContainer\keystore  
-file scc_jetty.csr
```

UNIX:

```
keytool -certreq -alias jetty -keystore  
$SYBASE/SCC-3_2/services/EmbeddedWebContainer/keystore  
-file scc_jetty.csr
```

Note: The **keytool** utility resides in the Sybase JRE installation directory:

Windows: %SYBASE_JRE7%\bin\keytool

UNIX: \$SYBASE_JRE7/bin/keytool

2. Follow the instructions provided by the certificate authority to import the signed certificate into the Sybase Control Center keystore and, if necessary, to install the certificate authority's trusted certificate in the "truststore," cacerts. Typically, the command to import the signed certificate is:

Windows:

```
keytool -keystore %SYBASE%\SCC-3_2\services  
\EmbeddedWebContainer\keystore  
-import -alias jetty -file scc_jetty.crt -trustcacerts
```

UNIX:

```
keytool -keystore $SYBASE/SCC-3_2/services/  
EmbeddedWebContainer/keystore  
-import -alias jetty -file scc_jetty.crt -trustcacerts
```

The initial keystore password is changeit.

Setting Passwords or Disabling Default Login Accounts

Set new passwords for default user accounts if you plan to use them. If you do not plan to use the accounts, disable them. The default user accounts are sccadmin (Sybase Control Center) and uafadmin (SCC agent).

Prerequisites

Before disabling the sccadmin or uafadmin accounts:

- Configure Sybase Control Center (or the SCC agent, if you are disabling its uafadmin account) to authenticate users through LDAP or the operating system. See *Get Started > Setting Up Security* in the Sybase Control Center online help.
- Grant Sybase Control Center (or SCC agent) administration privileges to at least one user account in LDAP or the operating system. See *Get Started > User Authorization* in the online help.

Task

1. In a text editor, open the `csi_config.xml` file:

Windows: %SYBASE%\SCC-3_2\conf\csi_config.xml

UNIX: \$SYBASE/SCC-3_2/conf/csi_config.xml

2. Search for the account name:

- Sybase Control Center: sccadmin
- SCC agent: uafadmin

The block containing the account name should look similar to this:

```
<!-- Default SCC admin account: sccadmin -->
<authenticationProvider controlFlag="sufficient"

name="com.sybase.security.core.PreConfiguredUserLoginModule">
  <options name="username" value="sccadmin"/>
  <options name="password"
value="{SHA-256:QZT6pRIx6l8=}sENxwVBfp65aaTjd/
vAZFQAQOmkrk4Zl7iXLOFyJqCM="/>
  <options name="roles" value="SCC Administrator"/>
</authenticationProvider>
```

or

```
<!-- Default SCC agent admin account: uafadmin -->
<authenticationProvider controlFlag="sufficient"

name="com.sybase.security.core.PreConfiguredUserLoginModule">
  <options name="username" value="uafadmin"/>
  <options name="password"
value="{SHA-256:WNATpqw76zA=}GYeAKdTRiIh1VcqmwV1k/
A2pcXSHfLUBr9boP03ArKE=" />
```

```
<options name="roles" value="SCC Agent Administrator"/>
</authenticationProvider>
```

3. (Optional) To disable an account, comment out the sccadmin or uafadmin block of the file by moving the --> characters from the end of the first line to the end of the last line, so the last line looks like this:

```
</authenticationProvider> -->
```

Then skip to step 6.

4. Encrypt and copy a password for the sccadmin or uafadmin account. (See *Encrypting a Password* on page 42.)
5. Paste the encrypted password into the value field of the password line. It looks similar to this—be sure to paste inside the double quotes:

```
<options name="password"
value="{SHA-256:WNATpqw76zA=}GYeAKdTRiIh1VcqmwV1k/
A2pcXSHfLUBr9boP03ArKE=" />
```
6. Save the file and exit.
7. To make the new or disabled passwords take effect, restart the Sybase Control Center server or agent on which the changes were made.

Encrypting a Password

Use the **passencrypt** utility to encrypt passwords and other values that must be kept secure while stored in text files.

You can safely store an encrypted password in a configuration file. Enter the password in clear text (unencrypted) when you execute **passencrypt** and when you use the password to log in.

passencrypt, which is located in the Sybase Control Center `bin` directory, uses the SHA-256 hash algorithm for passwords used in the `PreConfiguredLoginModule` in `csi_config.xml`.

1. Open a command window and change to the `bin` directory:

```
Windows: cd <SCC-install-directory>\bin
```

```
UNIX: cd <SCC-install-directory>/bin
```

2. To encrypt a password, enter **passencrypt -csi**. Enter your new password at the resulting prompt.
passencrypt encrypts the password you enter (which does not appear on the screen) and displays the password in encrypted form.
3. Copy the encrypted password.
4. Paste the encrypted password where needed.

Enabling Incremental Backups

(Optional) Enable the Sybase Control Center repository to generate incremental backups.

You can perform these steps at any time. You may not be able to restore the repository from incremental backups taken before this change.

1. Shut down SCC.

2. Open this file in a text editor:

```
SCC-3_2/services/ScsSADatasever/service-config.xml
```

3. Delete this line:

```
<set-property property="com.sybase.asa.database.options"  
value="-m" />
```

4. Save the changes and start SCC.

Next

To configure backups, see *Manage and Monitor > Manage Sybase Control Center > Repository > Scheduling Backups of the Repository* in the online help.

Updating from a Previous Version of Event Stream Processor

Information on how to upgrade from version 5.0 to 5.1, or from versions 5.1, 5.1 SP01, or 5.1 SP02 to 5.1 SP03 of Event Stream Processor.

Updating from Version 5.0 to 5.1

SAP Sybase Event Stream Processor maintains backwards compatibility with previous versions. If desired, you can continue running the previous version after you have installed your update.

When you update Event Stream Processor:

- 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 Sybase 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.
 - 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.

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

Updating from a Previous Version of Event Stream Processor

more than one version of Event Stream Processor to coexist in the same base installation directory. Note, however, that the installer updates the `ESP_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 `ESP_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 `ESP_HOME` variable to run the previous version. However, each time you want to switch between versions, prior to starting Event Stream Processor, run the `SYBASE.sh` or `SYBASE.csh` file from the base installation directory of the version you want to run. This ensures all environment variables point to the correct installation.

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.

Updating your License

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

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 `$ESP_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:

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 `$ESP_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:

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.

Updating from Previous 5.1 Versions

To update from the initial 5.1 version, or from an earlier 5.1 Support Package (such as SP01), install SP03 on top of your current version. To preserve existing configuration settings and projects, perform a backup on critical files before installing SP03.

1. Prior to installing SP03, backup the following files and directories:
 - a) `$ESP_HOME/cluster`
 - b) `$ESP_HOME/security`
 - c) `$ESP_HOME/bin/service.xml`
 - d) `$ESP_HOME/studio/clustercfg`
 - e) `<install dir>/SCC-3_2/plugins/ESPMAP/ProductModule.xml`
 - f) `<install dir>/SCC-3_2/services/Repository/scc_repository.db`
 - g) `<install dir>/SCC-3_2/services/Repository/scc_repository.log`
 - h) `<install dir>/SCC-3_2/conf/csi_config.xml`
 - i) Your active Studio workspace directory.
 - j) If you have any custom adapters, backup their respective `.cnxml` files. This is not recommended for other adapters, since new properties could have been added to a given adapter.
 - k) If any of your projects are using log stores, backup the log store files in `<base-directory>/<workspace-name>.<project-name>.<instance-number>.`

Updating from a Previous Version of Event Stream Processor

2. Ensure that the 5.1 license file or license server settings are available.
3. Run the installer for SP03:
 - a) Choose the same installation location as 5.1.
 - b) When prompted, specify the 5.1 license file or license server properties.
 - c) For the cluster and security options, it does not matter what values you enter: they will be overridden when you restore the files you backed up in Step 1.
 - d) If installing Studio, select the same workspace directory location as version 5.1.
4. Once the installation is complete, restore the files and directories backed up in step 1 to their original locations.

Uninstalling using the Graphic Uninstaller

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

Prerequisites

Backup any important project, cluster, and service configuration files. Specifically, create a back up of:

- \$ESP/security folder
- \$ESP_HOME/bin/service.xml
- the cluster configuration file (for example, node1.xml)

Task

To use the graphic uninstaller:

1. Navigate to <install_directory>/sybuninstall/ESP/main and run `uninstall.bin` to start the uninstaller.
2. To start uninstalling, click **Next**.
3. Choose either:

Type	Description
Complete Uninstall	Removes all installed features and components of SAP Sybase Event Stream Processor.
Uninstall Specific Features	Select specific features of SAP Sybase Event Stream Processor to uninstall.

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

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 `ESP_HOME` directory since installation. To uninstall these files, select **Delete all of these files**. Click **Next**.
7. Click **Done**.

Note: If you reinstall SAP Sybase Event Stream Processor, copy all backup files into your new installation location.

Uninstalling using the Graphic Uninstaller

8. (Optional) If your installation of Event Stream Processor included Sybase Control Center (SCC), some SCC components may not uninstall. If this occurs, run the uninstaller under `<install dir>/sybuninstall/comp/<SCC comp>` where `<SCC comp>` is:
 - `SCC-3_2.ESPMAP`
 - `SCC-3_2.SCCServer`
 - `JRE7`

Next

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.

Uninstalling using the Console

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

Prerequisites

Backup any important project, cluster, and service configuration files. Specifically, create a back up of:

- \$ESP/security folder
- \$ESP_HOME/bin/service.xml
- the cluster configuration file (for example, `node1.xml`)

Task

To uninstall using the console:

1. From the command-line, navigate to `<install_directory>/sybuninstall/ESP/main`.
2. Type `/uninstall -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 unintsall, the uninstaller summarizes the components to be removed. To revert to a custom uninstall, type `back` and press **Enter** to make your selection again.

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 uninstalling 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.

Note: If you reinstall SAP Sybase Event Stream Processor, copy all backup files into your new installation location.

Uninstalling using the Console

8. (Optional) If your installation of Event Stream Processor included Sybase Control Center (SCC), some SCC components may not uninstall. If this occurs, run the uninstaller under `<install dir>/sybuninstall/comp/<SCC comp>` where `<SCC comp>` is:
 - `SCC-3_2.ESPMAP`
 - `SCC-3_2.SCCServer`
 - `JRE7`

Next

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.

Troubleshooting

Common techniques for troubleshooting issues you may encounter.

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.

`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:

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*.

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