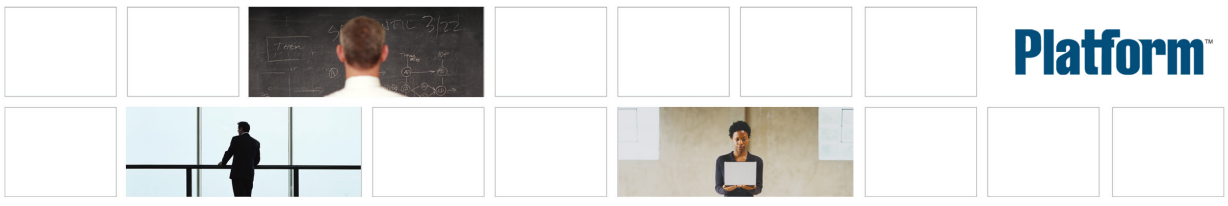
Installing Symphony Developer Edition

Platform Symphony Developer Edition
Version 4.1
November 2008



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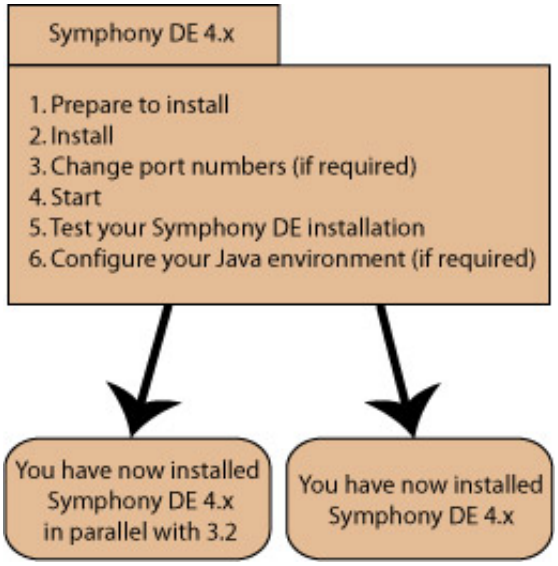
Installation Overview

Platform Symphony Developer Edition (Symphony DE) software enables you to develop client and service applications suitable for deployment to a Platform Symphony production cluster.



New installation

This guide describes installation of the software on a single host.

If you have Symphony DE 4.0 or earlier

You cannot directly upgrade to Symphony DE 4.1 from an earlier version of Symphony DE, but you can install multiple versions of the software on the same host. This guide describes installation of multiple versions (4.1 and previous) and how to use them.

It is possible to operate Symphony DE 4.1 and an older version of Symphony DE independently from the same host. If you are installing Symphony DE 4.1 on the same host as the older version, make a note of the following:

- Default port numbers are the same for both 4.1 and older versions, but this causes a conflict and only one version of Symphony DE can start up. If you need to run both versions in parallel, change the port numbers manually (change either the older or newer version of Symphony DE).
- If you choose to do the custom installation, make sure you specify a different installation directory.
- The Windows global environment is set to the Symphony DE 4.1 environment after you install 4.1. This means that your existing applications will use DE 4.1 environment to submit workload instead of the older version. Symphony DE 4.1and the older version of Symphony DE have separate command prompts to help you point to the corresponding environment. You can also set your global environment to point to any Symphony DE version, see *Setting Your Global Environment* on page 22 for more details.

Prerequisites

.NET prerequisites (Windows only)

If you are planning on developing in .NET, ensure your development host has the following:

- Microsoft Visual Studio 2003/2005
- .NET Framework 1.1 or 2.0
- For Windows 2000 Server hosts, ensure KERNEL32.DLL version is 5.0.2195.7006 or higher.

Java prerequisites

If you are planning on developing in Java, ensure your development host has the following:

- Java version (required): 1.4.2 or higher. Note that Java must be installed before Symphony DE is started.
- Ant version (recommended): 1.6.5.

Prepare to install Symphony DE

Windows

1. Download an appropriate Symphony DE Windows package from `my.platform.com`.
2. Windows 2003 system policies require that you have local administrator permissions to install software. For more information, see the Symphony FAQs.
3. Check communication ports.

   By default, Symphony DE uses ports 8000, 15050, 15051, 15052 and the Platform Management Console (PMC) uses 18080, 18005, 18009.

   From a Windows command prompt, enter:

   netstat -a

   If any of the ports are in use, install Symphony DE, then change the port numbers in conflict as explained in *Change port numbers* on page 12.
4. If you are using .NET or COM API, make sure you have local administrator privileges to register .NET or COM API assembly.

Linux/UNIX

1. If you have Linux, determine which installation file you need.

   - To find out the Linux version, enter

     uname -a
   - To find out the glibc version, enter

     rpm -q glibc
2. Determine the installation package and download.

   For Solaris, it is a `tar.gz` package.

   For Linux, the installation method and file you need depends on your user account permissions. You can use either the `rpm` or `tar.gz` package to install Symphony DE. The rpm package installation sets the `$SOAM_HOME` environment variable automatically but for the `tar.gz` package, you need to set the `$SOAM_HOME` manually.

   Note:

   Root users can install using either the tar.gz or .rpm installation files. The `rpm` package can only be installed as root.
3. Check communication ports.

   By default, Symphony DE uses ports 8000, 15050, 15051, and 15052 and the Platform Management Console (PMC) uses 18080, 18005, 18009

   For example, to find out if port 8000 is in use, enter

   netstat -a|grep 8000

   - If the port is not used, this command does not return any port information.

- If the port is in use, this command returns with information for the port. Install Symphony DE and then change the port numbers in conflict as explained in *Change port numbers* on page 12.

Install Symphony DE on one host

Windows

1. Double-click the MSI installer and follow the installation prompts.

   Note:

   The default installation directory is: `C:\SymphonyDE\DE41`. If you are installing Symphony DE 4.1 on the same host as an older version of Symphony DE is installed, specify a different installation directory from your older installation.

2. When you click finish after accepting the default setting in the Installation Completed window, Getting Started: Developer Overview and Launch DE Platform Management Console (PMC) displays on your screen, and Symphony DE starts automatically.
3. Log out and log in to the host to apply environment variable changes made during installation.

   During installation, the installer sets the `Path` and `SOAM_HOME` environment variables.

Instructions for .NET API users

Perform the following steps only if you are using .NET APIs:

Note:

Make sure you have local administrator privileges to register the .NET assembly. After you install Symphony DE, log on as a local administrator.

1. Open Administrative Tools > Microsoft .NET Framework *version* Configuration.
2. Click Manage the Assembly Cache.
3. Search for `Platform.Symphony.Soam.Net.dll` at the following location `%SOAM_HOME%\4.1\win32-vc7\lib` or `%SOAM_HOME%\4.1\w2k3_x64-vc7-psdk\lib` and open the .dll file to add it to the Assembly Cache.
4. Click Add an Assembly to the Assembly Cache in the Assembly Cache window.

Instructions for COM API users

Perform the following steps only if you are using COM APIs:

Note:

Make sure you have local administrator privileges to register the .NET assembly. After you install Symphony DE, log on as a local administrator.

1. If you did not install with administrator privileges, register `Platform.Symphony.Soam.COM.dll`, which is at the location `%SOAM_HOME%\4.1\win32-vc7\lib\COM` or `%SOAM_HOME%\4.1\w2k3_x64-vc7-psdk\lib\COM` with regsvr32:

   ```
   regsvr32 Platform.Symphony.Soam.COM.dll
   ```

2. In the SoamExcelSample.xls spreadsheet, click Tools>Macro>Visual Basic Editor or press **Alt+F11**.
3. In the Visual Basic window, click Tools>References and select Platform.Symphony.Soam.COM 1.0 Type Library.
4. Click Browse and open `Platform.Symphony.Soam.COM.dll` from the location `%SOAM_HOME%\4.1\win32-vc7\lib\COM` or `%SOAM_HOME%\4.1\w2k3_x64-vc7-psdk\lib\COM`.

Linux/UNIX (using the tar.gz file)

1. Install Symphony DE by using the `tar.gz` file.
   - On Linux, enter

     tar xzvf *install_file***.tar.gz**

     For example, to install Symphony DE to `./symphonyDE` on Red Hat Enterprise Linux 4 and SuSE Linux Enterprise Server 9, enter on one line

     tar xzvf symphonyDE-linux2.6-glibc2.3-x86-4.1.0-*build_number*.tar.gz
   - On Solaris, enter

     gunzip *install_file***.tar.gz**

     tar xvf *install_file***.tar.gz**
2. Configure `SOAM_HOME` in `cshrc.soam` or `profile.soam`.
   a) Go to the `conf` directory in the directory in which Symphony DE was installed.

      For example, if you installed Symphony DE in `/opt/symphonyDE/DE41`, go to `/opt/symphonyDE/DE41/conf`.
   b) Set the `SOAM_HOME` environment variable to the directory in which you have installed Symphony DE.
      - For csh, edit `cshrc.soam` and `cshrc.symclient`; change the following line to the directory in which you installed Symphony DE from this line:

        setenv SOAM_HOME $SOAM_HOME

        to:

        setenv SOAM_HOME /opt/symphonyDE/DE41
      - For bash, edit `profile.soam` and `profile.symclient`; change the following line to the directory in which you installed Symphony DE from this line:

        SOAM_HOME=$SOAM_HOME

        to:

        SOAM_HOME=/opt/symphonyDE/DE41
   c) Save the file you just edited.

Linux (using the RPM file)

If you have root permissions, you can install using the default settings. To install the RPM file, follow these steps:

1. Set the environment variable CLUSTERADMIN to your user account to be able to run Symphony DE without root permissions after installation.
   - For example, for csh, enter the following command, where user1 is your operating system user name

     setenv CLUSTERADMIN user1
   - For example, for bash, enter the following command, where user1 is your operating system user name

     export CLUSTERADMIN=user1
2. Install the package:
   a) Default installation:

      The default installation directory is `/opt/symphonyDE/DE41`.

      For example, to install Symphony DE on Red Hat Enterprise Linux 4 and SuSE Linux Enterprise Server 9, enter on one line

      rpm -ivh symphonyDE-linux2.6-glibc2.3-x86-4.1.0-*build_number*.rpm

   a) Custom installation:

      RPM syntax is

      rpm -ivh --dbpath *dbpath_dir* --prefix *install_dir install_file*.rpm

      Note:

      `--dbpath and --prefix` are both optional parameters. Their parameters must be absolute paths. If you install without the --prefix option, Symphony DE is installed in its default directory `/opt/symphonyDE/DE41`.

Change port numbers

If any of the default port numbers are already in use, choose a different port number. If you are installing Symphony DE 4.1 on the same host as an earlier version of Symphony DE, change all the port numbers.

Note:

For Linux/UNIX use the forward slash (/) to separate directory names and use $SOAM_HOME instead of %SOAM_HOME% in a path.

1. Open *%SOAM_HOME%*\conf\vem_resource.conf, where SOAM_HOME is the location where you installed Symphony DE 4.1.
2. Change the port numbers in *%SOAM_HOME%*\conf\vem_resource.conf.

   The port number is the second value in the string.

```
AGENT: 8000:localhost:5:5:NTX86:1
...
SD_SDK:15051:localhost:sd
SD_ADMIN:15050:localhost:sd
...
RS_DEPLOY:15052:localhost:rs
```

3. Save your changes.

Change GUI port numbers

If any of the default GUI port numbers are already in use, choose a different port number.

Note:

For Solaris, ignore this task, the Symphony DE Platform Management Console is not supported.

Note:

For Linux, use the forward slash (/) to separate directory names and use $SOAM_HOME instead of %SOAM_HOME% in a path.

1. Open *%SOAM_HOME%*\conf\vem_resource.conf, where SOAM_HOME is the location where you installed Symphony DE 4.1. Change the GUI port, which is the second value in the string: WEBGUI: 18080:localhost:startguiservice
2. Change the port numbers in *%SOAM_HOME%*\gui\conf\server.xml.

```
<Connector port="18080" maxHttpHeaderSize="8192"
...
<Server port="18005" shutdown="SHUTDOWN"
...
<Connector port="18009" enableLookups="false"
```

3. Save your changes.

Start Symphony DE

Windows

The Windows global environment is already set to the Symphony DE environment.

On Windows, you have the option to start Symphony DE automatically from the installer.

If you installed with Windows administrator permissions, Symphony DE always starts automatically when the host is restarted.

If you installed without Windows administrator permissions, Symphony DE and workload will stop as soon as you log off.

To start Symphony DE manually, perform the following steps.

1. Right-click on the Symphony DE icon in the system tray and start the cluster. The icon turns green after Symphony DE is started.

   You can also start cluster using the Windows command prompt by entering:

   soamstartup

   You should see the following message:

   ```
   Successfully started Symphony Developer Edition processes on the local host...
   ```

   If you do not see the startup message above, use the troubleshooting information to resolve the problem.

   Note:

   If you installed Symphony DE with a local administrator account, you can start or stop Symphony DE processes on the local host. Right-click on the Symphony DE icon that looks like a series of monitors in the system tray to display menu. A green color indicates that the Symphony DE processes are running locally on the host. A blue color indicates that the Symphony DE processes are not started on the host.

2. To ensure Symphony DE has started, use the `soamview app` command.

   soamview app

   You should be able to see that the application called `symping4.1` is enabled.

3. Right-click the Symphony DE icon in the system tray and select Platform Management Console to view or control the Symphony DE workload. Alternatively, you can run the following command to get the URL for the Platform Management Console:

   start_agent -u

Linux/UNIX

On Linux/UNIX, you must start Symphony DE manually after installation and every time the host restarts.

1. Go to the conf directory under the directory in which you have installed Symphony DE.

   For example, if you installed Symphony DE in `/opt/symphonyDE/DE41`, go to `/opt/symphonyDE/DE41/conf`.

2. Set the environment
   - For `csh`, enter

     source cshrc.soam
   - For `bash`, enter

     . profile.soam
3. To start Symphony DE, use the `soamstartup` command.

   For example:

   soamstartup &

   You should see the following message:

   ```
   Successfully started Symphony Developer Edition processes on the local host...
   ```

   If you do not see the startup message above, use the troubleshooting information to resolve the problem.
4. To ensure Symphony DE has started, use the `soamview app` command.

   soamview app

   You should be able to see that the application called `symping4.1` is enabled.
5. Check that the Symphony processes `sd, rs,` and `start_agent` are running.

   ps -ef|grep sd

   ps -ef|grep rs

   ps -ef|grep start_agent

   If you do not see the Symphony DE processes, use the troubleshooting information to resolve the problem.
6. On Linux, navigate to the Platform Management Console to view or control the Symphony DE workload. The location is http:/*host_name*:18080/platform. To get the URL for the WEBGUI service, run:

   start_agent -u

Testing your Symphony DE installation

Once you have installed and started Symphony DE, the next step is to run `symping`, the Symphony diagnostic application. `symping` sends workload to a cluster to test and verify that the Symphony components are working and responsive.

1. Run `symping` to ensure your system is working properly:

   From a command prompt, enter:

   symping

   If you see tasks sent and output received, and all tasks have run successfully, everything is working properly in your system.

About symping

- Consumer—`/SymTesting/Symping41`
- Application name—`symping4.1`
- Client application binary name—`symping`
- Service binary name:
  - For Windows—`sympingservice.exe`
  - For Linux/UNIX—`sympingservice`
- Application profile—`symping4.1.xml`
- Application binary location:
  - For example (Windows 32bit): *`%SOAM_HOME%`*`\4.1\win32-vc7\bin`
  - For example (Linux kernel2.6 with glibc2.3): *`$SOAM_HOME`*`/4.1/linux2.6-glibc2.3-x86/bin`

If you plan on using Java, configure your environment for Java

Set your JAVA_HOME and bin

1. Set your `JAVA_HOME` to point to the directory in which the JDK is located.

   For example (Windows), if your JDK is installed to `c:\java\j2sdk1.4.2`, set your `JAVA_HOME` to this path.

   For example (Linux/UNIX), if your JDK is installed to `/opt/java/j2sdk1.4.2`, set your `JAVA_HOME` to this path.
2. Ensure your Java `bin` directory is included in your Path environment variable.

Set your ANT_HOME and bin

If you are planning on using Ant to build the samples, set your ANT_HOME.

1. Set your `ANT_HOME` to point to the directory in which you have installed Ant.
2. Ensure your Ant `bin` directory is included in your Path environment variable.

Change application profiles in your application to point to your Java installation

In cases where you cannot guarantee that the PATH environment variable on a compute host:

- Includes a Java `bin` directory
- Has the path to the Java `bin` directory for the Java version you want to use

You can configure your System PATH to point to the correct Java version, or set the path to the correct version of Java in the application profile.

Note:

If you set the Java bin path in your application profile, all compute hosts must have Java installed in the same location. If Java is not installed at that location, the system uses the next Java location in the Path, if any.

- For example, on Windows:
  a) Open the application profile for sample app: %SOAM_HOME%\4.1\samples\Java\SampleApp \SampleAppJava.xml.
  b) In the `Service`, `osTypes`, `osType` section, change the PATH environment variable to point to the correct Java version.

```
 <Service description="The Sample Service" name="sampleService" packageName="SampleServiceJava">
    <osTypes>
      <osType name="all" startCmd="cmd.exe /c cmd.exe /c ${SOAM_DEPLOY_DIR}/
Runcom.platform.symphony.samples.SampleApp.service.MyService.bat" workDir="${SOAM_HOME}/work">
     <env name="PATH">c:\Program Files\jdk1.5.0_04_x86\bin</env>
     </osType>
```

```
    </osTypes>
</Service>
```

c) Save the file.

d) Register the application:

```
soamreg SampleAppJava.xml
```

Change your current working environment

When you open the Symphony DE command prompt, the environment is automatically set to DE in the window.

On Linux/UNIX, you can change the environment to connect to a Symphony cluster from Symphony DE using the symclient profile. Afterwards, you can use the soam profile to change the environment back so that you can connect to a

Symphony DE cluster.

Set the environment using the following commands:

(for csh): `source cshrc.soam`

(for bash): `.profile.soam`

(for csh): `source cshrc.symclient`

(for bash): `.profile.symclient`

On Windows, you can run `symclientenv.bat` to change the environment to connect to a Symphony cluster from Symphony DE. Afterwards, you can run `symdeenv.bat` to change the environment back so that you can connect to a Symphony DE cluster.

If you want to change your current working environment to connect to a Symphony DE cluster or a Symphony Cluster, run the appropriate batch file from the Start>Programs>Platform Computing>Symphony Developer Edition 4.1.0 command prompt:

- **symclientenv.bat**—resets your current command prompt session to connect to the Symphony cluster.
- **symdeenv.bat**—resets your current command prompt session to connect to the Symphony DE cluster.

Troubleshooting

If Symphony DE does not start up correctly, take a look at this section for troubleshooting.

Non-administrative user cannot install

The following error message may indicate that the system administrator has set policies to prevent the installation of software by non-administrative users.

```
The system administrator has set policies to prevent this installation
```

- Ask your Windows local administrator to set group policy to allow users to install software.

Cannot access Platform Management Console

The Symphony DE Platform Management Console is not supported on Solaris.

When you launch Symphony on Linux, you see a message that the page cannot be displayed.

- To check for port conflicts, see `%SOAM_HOME%\gui\logs\catalina.out` (Windows) or `$SOAM_HOME/gui/logs/catalina.out` (Linux/UNIX).

  Important:

  Symphony DE must be restarted if port numbers are changed.

- To change port numbers that are in conflict, refer to *Change port numbers* on page 12.

Port conflicts during soamstartup

The following error message may indicate there are port conflicts.

```
Failed to start the Symphony process on the local host, please check logs ...
```

- To see which port numbers have conflicts, check the files in `%SOAM_HOME%\logs` on Windows or `$SOAM_HOME/logs` on Linux/UNIX.

  Important:

  Symphony DE must be restarted if port numbers are changed.

- To change port numbers that are in conflict, refer to *Change port numbers* on page 12.

Environment variables

You cannot start up Symphony DE or run commands if your environment variables are not set correctly.

Windows

- Ensure the `SOAM_HOME` environment variable is set to your Symphony DE installation directory. From the command prompt, enter:

`echo` *%SOAM_HOME%*

- From the command prompt, enter `echo %Path%` and ensure the following is in your `Path` environment variable: *`%SOAM_HOME%`*`\4.1\win32-vc7\bin;`*`%SOAM_HOME%`*`\4.1\win32-vc7\etc;`*`%SOAM_HOME%`*`\4.1\win32-vc7\lib\`

Note:

System settings change when you install Symphony DE 4.1 on the same host as the previous version of Symphony DE.

Linux/UNIX

From the command shell if you enter `env`, the following environment variables are set to your current environment.

For example, on Linux:

- LD_LIBRARY_PATH=*$SOAM_HOME*/4.1/linux2.*x*-glibc2.*x*-x86/lib
- LIBPATH=*$SOAM_HOME*/4.1/linux2.*x*-glibc2.*x*-x86/lib
- PATH=*$SOAM_HOME*/4.1/linux2.*x*-glibc2.*x*-x86/bin: *$SOAM_HOME*/4.1/linux2.*x*-glibc2.*x*-x86/etc
- SOAM_BINDIR=*$SOAM_HOME*/4.1/linux2.*x*-glibc2.*x*-x86/bin
- SOAM_HOME=*$SOAM_HOME*
- SOAM_SERVERDIR=*$SOAM_HOME*/4.1/linux2.*x*-glibc2.*x*-x86/etc

MD5 checksum failure

Under some circumstances, RPM cannot verify the MD5 checksum. In these cases RPM fails because it cannot unpack the Symphony DE archive. Re-enter the command with the `--nomd5` option. For example

rpm -ivh --dbpath /usr/soam/db --prefix /usr/soam symphonyDE-linux2.6-glibc2.3-x86-4.1.0-*`build_number`***.rpm --nomd5**

RPM versions 4.2 and 4.1

RPM database directory must exist and the --prefix option does not work

The RPM database directory, as --dbpath specifies, must exist on the local disk before installing. Also, these RPM versions do not support the rpm `--prefix` option. RPM uses the RPM_INSTALL_PREFIX to determine the installation directory. To install in a different directory, set RPM_INSTALL_PREFIX so that RPM can install Symphony DE to the specified destination directory.

For example, to install Symphony DE to `/opt/symphonyDE/DE41`:

mkdir /opt/symphonyDE/DE41/db
setenv RPM_INSTALL_PREFIX /opt/symphonyDE/DE41
rpm -ivh --dbpath /usr/share/soam/db symphonyDE-linux2.6-glibc2.3-x86-4.1.0-*`build_number`***.rpm**

RPM blocks during installation

For RPM 4.2, log on as root and delete all files in `/var/lib/rpm` prefixed with `_db.00`.

Cannot get shared lock

RPM 4.1.1 cannot install on a Quadrics Resource Management System (RMS) kernel. RPM cannot get a shared lock in this environment, so it cannot update the RMS data base directory.

Restart your system under a different kernel to install Symphony DE. After installing, you can restart the RMS kernel.

RPM version 3.0.6

The RPM database directory you specify with the `--dbpath` option must exist on the local disk before installing. You must also specify the `--nodeps` option

For example, to install Symphony DE on SuSE Linux Enterprise Server 9

```
mkdir /opt/symphonyDE/DE41/db
setenv RPM_INSTALL_PREFIX /opt/symphonyDE/DE41
ln -s ./opt/symphonyDE/DE41 /soam
rpm -iv --dbpath /opt/symphonyDE/DE41/db --prefix /soam symphonyDE-linux2.6-glibc2.3-x86-4.1.0-build_number.rpm --nodeps
```

If you install Symphony DE using the customized dbpath, then when you uninstall DE ensure that you use the same dbpath.

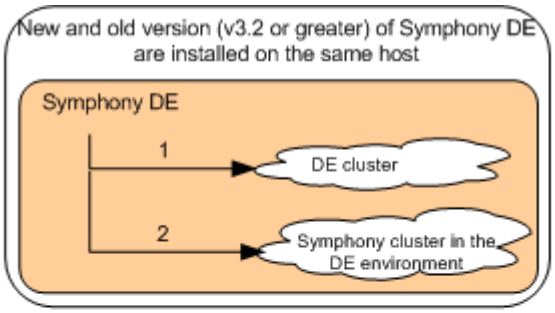
Setting Your Global Environment

After you install Symphony DE 4.1, the global system environment is set to Symphony DE 4.1. You can use `soamswitch` to change the Windows global system environment settings.

Remember:

If you want to set your global environment, use `soamswitch`. Note that you must have local administrator privileges on the host to set the global environment.

If you want to change your environment settings for your current working command prompt, then use batch files. For more details about changing your current environment, see *Change your current working environment* on page 18.



Command Prompt	To set your environment to	Issue this command
Symphony DE	Scenario 1	`soamswitch symde SymphonyDE_dir`
	Scenario 2	`soamswitch sym SymphonyDE_dir`

1. Set your environment to Symphony DE:

   For example, if you are using Symphony DE 4.1, open the Symphony DE 4.1 command prompt:

   Start > Programs > Platform Computing > Symphony Developer Edition 4.1 > Symphony DE 4.1 Command Prompt
2. Reset your environment to connect from the Symphony DE environment to the:
   - DE cluster

     soamswitch symde *SymphonyDE_dir*

     For example, **soamswitch symde *C:\SymphonyDE\DE41***
   - Symphony cluster

     soamswitch sym *SymphonyDE_dir*

     For example, **soamswitch sym C:\SymphonyDE\DE41**

     Ensure that `ego.conf` is configured properly in `%EGO_CONFDIR%`, which is the `%SOAM_HOME%\conf` directory. Specify the master candidate host list and the EGO `vemkd` daemon port number.

3. Open a new Windows command prompt and check your global system environment:

   soamswitch info

   Note:

   `soamswitch` does NOT change the environment settings of the command prompt window from which you run `soamswitch`. The new environment settings will only take effect when you open a new Windows command prompt window.

   You can now run **symping** to ensure that your system is working properly.

Additional notes for running Java applications

You will need to change your CLASSPATH to point to the correct version of Symphony.

For example, if you have a client start shell, ensure that it points to Symphony 4.1:

```
java -classpath c:\symphonyDE\DE41\4.1\win32-vc7\lib
\JavaSoamApi.jar:myApp
```

You can use environment substitution in your application for your Java service `startcmd`.

For example, `java -classpath` *`${SOAM_HOME}/${VERSION_NUM}/${EGO_MACHINE_TYPE}`*`/lib/JavaSoamApi.jar:myService`