Service Gateway 5.2

Installation Instructions

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Contents

Introduction

This guide describes the installation procedure for installing the Service Gateway 5.2 application. Before installing Service Gateway, please ensure that all the pre-installation requirements have been met on the host systems.

The following configurations are currently supported by Service Gateway 5.2.0.0.

Application Server	Database Server	Operation System
WebLogic 12c	Oracle 10g/11g/12c	Oracle Solaris 10, 11 (Sparc, x86)
JBoss EAP 7.0	Oracle 10g/11g/12c	Oracle Solaris 10, 11 (Sparc)
JBoss EAP 7.0	Oracle 10g/11g/12c	RedHat Enterprise Linux 6.2
JBoss EAP 7.0	Oracle 10g/11g/12c	Windows 2008 R2 SP1

Planning and Analysis for the Service Gateway Deployment

To ensure a successful deployment of Service Gateway in the service provider's network, a planning and analysis phase must be performed in advance of the installation. This includes an assessment of the service provider's needs (what will Service Gateway be used for?) and an analysis of the service provider's network and operating environment (which resources will be required by Service Gateway?).

The high-performance nature of Service Gateway requires that the service provider's network and hardware configurations, and the configuration of Service Gateway outlined below, conform to the results of the planning and analysis phase.

Tokens Used In This Document

Because installation locations and names may vary from server to server, the table below contains a list of tokens and their implied meaning in the following documentation. Please note that the installer does not permit any spaces in directory names.

Token	Description
<INSTANCE>	The name of the instance supplied in the UI for installation purposes
<BEA_DIR>	The location WebLogic was installed in. Note that this path must contain the wlserver (or equivalent) directory created by the WebLogic installer
<JBOSS_DIR>	The directory the JBoss zipfile was expanded into
<TOMCAT_DIR>	The directory the Tomcat zipfile was expanded into. Note that on Windows the installer does not permit the use of the Tomcat EXE distribution, only the zipped 32 bit version
<INSTANCE_DIR>	Windows - c:\sprt\<INSTANCE> Solaris or Linux - /usr/local/sprt/<INSTANCE>
<INSTALLATION_DIR>	Location the Service Gateway installer was unpacked
<DB_USERNAME>	Oracle schema username
<DB_PASSWORD>	Oracle schema password
<SID>	Oracle SID

Installation Parameters

The following is a list of input fields which may appear on the screen while performing an installation. The fields shown are dependent on component, database, and application server selection.

Parameter	Description
Instance Name	The name of the instance being installed. This is used in the directory structure of the installed application. **Ensure there are NO spaces in the instance name.**
Database Host Address	The address of the database host system. This can either be the IP address or name of the database host system (as long as the name can be resolved on the system being used.)
Database Port	The port that the database host system is using. (Oracle default = 1521)
Database Username	The username used to access the database.
Database Password	The password used to access the database.
Database Identifier	The Oracle SID used to access the database.
WebLogic Directory	The Oracle WebLogic installation directory. **Note:** This path must contain the wlserver (or equivalent) directory created by the WebLogic installer
JBoss Directory	The JBoss EAP 7.0 installation directory.
Java 8 Directory	The Java 8 installation directory.
Tomcat 7.0 Directory	The Tomcat 7 installation directory
Name of Service Gateway Server	The name of for the Service Gateway server which will appear in the UI
WebLogic Admin Server Address	The WebLogic Administration Server IP address.
WebLogic Admin Server Port	The WebLogic Administration Server port
WebLogic Multicast Port	The port used by WebLogic cluster members to discover each other
JBoss Admin Server Address	The JBoss Administration Server IP address.
JBoss Admin Server Port	The JBoss Administration Server port.
JBoss Console Port	The port the JBoss console listens on
JBoss Managed Server Address	The host of the JBoss managed server currently being installed
JBoss Managed Server Port	The port of the JBoss managed server currently being installed
Managed Application Servers	This parameter contains two fields. One for the IP address and one for the port number of each managed server in a clustered configuration. **Note:** All managed servers in the cluster must be entered here. In order for the IP and port to be entered the user must click on the plus button to the right of the fields. This must be done for each managed server in the cluster. **IT IS REQUIRED THAT THE ORDER OF THE MANAGED SERVERS IS THE SAME ON EACH MANAGED SERVER INSTALLED. THIS DETERMINES THE NAME OF THE MANAGED SERVER AND MUST BE DONE IN THE SAME ORDER.**
WebLogic/JBoss Managed Server Number	The number of the managed server currently being installed that corresponds to the location in the list of the Managed servers given.

	For example, if list of managed servers is: • 1.1.1.1:7070 • 2.2.2.2:8080 • 3.3.3.3:9090 and the current install is being done on 2.2.2.2, the managed server number would be 2.
Application Server Console Username	The username that will be created to access the application server console. **Note:** Console username must be a minimum of 8 characters for WebLogic.
Application Server Console Password	The password that will be created to access the application server console. **Note:** Console password must be a minimum of 8 characters for WebLogic, and also have at least one number present.
WebLogic Initial Memory	Amount of memory (In MB) for WebLogic to use at startup.
WebLogic Max Memory	Maximum amount of memory (In MB) for WebLogic to use.
JBoss Initial Memory	Amount of memory (In MB) for JBoss to use at startup.
JBoss Max Memory	Maximum amount of memory (In MB) for JBoss to use.
File Server URL	The URL of the file server being used. **Note:** Devices will need access to this URL to be able to perform dynamic configuration uploads and downloads.
ACS Name	The name given to the ACS that will appear in the UI.
ACS Server Address	The IP address of the ACS server.
ACS Port	The port that the ACS will listen on.
API Port	The port that the ACS API will listen on.
ACS Authentication Type	Specifies the HTTP authentication mode the ACS is to use for authenticating CPEs. Valid values are: • **None** - for no HTTP authentication • **Basic** - for HTTP Basic authentication • **Digest** - for HTTP Digest authentication The default authentication mode is **None**.
Automatically provision Auth for CPEs	When enabled, the ACS will generate and provision a randomized password for CPE authentication. Valid values are **Enabled** and **Disabled**
Automatically provision Connection Request credentials	When enabled, the ACS will generate and provision a randomized password for ACS authentication. Valid values are **Enabled** and **Disabled**
Automatically provision STUN parameters	When Enabled, the ACS will generate and provisioning credentials for STUN as well as configure the STUN hostname and port on applicable devices. Valid values are **Enabled** and **Disabled**
ACS Initial Memory	Amount of memory (In MB) for Tomcat to use at startup.
ACS Max Memory	Maximum amount of memory (In MB) for Tomcat to use.
System Keys	The value of this parameter is a list of pairs of fields. One for the name of key (the name of the database column in the sprt_ec_device table) and one for the display name (for display purposes in the application's user interface.)

	In order for the name of the key and display name to be entered the user must click on the plus (+) button to the right of the fields. This must be done for each system key entered. See below for more detail on system keys.
Service Gateway Timer Initial Memory	The amount of memory (in MB) that the Timer will be initialized with.
Service Gateway Timer Maximum Memory	The maximum amount of memory (in MB) that the Timer will have available.
STUN Server Name	A unique name given to the STUN Server that will appear in the UI.
STUN Server Address	The hostname or IP Address that the devices will be configured with to contact the STUN Server.
STUN Server Port	The UDP port number that the devices will be configured with to contact the STUN Server.
STUN Initial Memory (MB)	The amount of memory (in MB) that the STUN Server will be initialized with.
STUN Maximum Memory (MB)	The maximum amount of memory (in MB) that the STUN Server will have available.
Install Startup Scripts	Select this check box if the startup scripts for a Solaris or Linux system should be installed.
Ehcache Port	The UDP port Ehcache will listen on for caching objects.

Pre-Installation Requirements

Before installing Service Gateway (or any component of Service Gateway), the following requirements must be met:

- The Service Gateway installer MUST be run on an Operating System that was installed with English as the primary language. In the case of Windows Server 2008 R2 SP1, the English ISO must be used
- For Solaris or Linux, the install is typically performed as user 'root', but a non-privileged user may be used if the account has been granted the proper write and execute permissions to all appropriate directories listed in this document. Once the installation is complete, the installer logs lines stating that additional scripts must be run in order for Service Gateway and its services to restart on a server reboot. A line will be logged for all components except database initialization.
- For Windows, the install requires the use of an account with Administrator privileges. It is not sufficient that the user has Administrator rights on a domain, but rather needs to be on the server itself
- No spaces are permitted in directory names in any of the paths used by the installer

Application Server Host System

The following are the requirements for the application server on which WebLogic or JBoss resides, and the Service Gateway application is installed.

- Connectivity to the database host system using the database ID, the database server address, and the database server port number
- Connectivity to an SMTP server if using the E-Mail Plugin

Oracle JDBC Drivers

Service Gateway requires the use of the Java 7 JDBC driver (ojdbc7.jar). This driver may be used to connect to either a 10g, an 11g, or a 12c database. Downloading the driver requires a valid Oracle Support account and may be found at http://download.oracle.com/otn/utilities_drivers/jdbc/121010/ojdbc7.jar

Solaris (WebLogic or JBoss)

- Solaris 10
- J2SE Solaris 10 recommended patch cluster and the Solaris 10 recommended patch cluster
- Solaris NTP client, using the same NTP server as the other Service Gateway host systems
- /usr/ucb/ps (process utility)
- /usr/local/sprt directory must be created. If not using root, proper permissions must be assigned to the installer user
- A hostname must be configured. The execution of the hostname command on Solaris must have matching entries in /etc/hosts and /etc/hostname.<interface> (eg: /etc/hostname.eth0)
- Oracle JDBC thin driver
- JDK 1.8.0_121 - It is time saving and useful to symlink /usr/local/java to the installed JDK directory
- Perl 5.8.0 (must be contained in the path /usr/bin and must be compiled with gcc)
- GNU tar (any version, this must also be contained in the PATH before the standard Solaris tar)

In addition, one of the two application servers must be installed:

- WebLogic 12c
- JBoss EAP 7.0

Once the JDBC driver has been downloaded, it must be installed into the proper locations:
- WebLogic: <BEA_DIR>/server/lib/
- Installer: <INSTALL_DIR>

Linux (JBoss only)

- RedHat Enterprise Linux 6.2
- Linux NTP client, using the same NTP server as the other Service Gateway host systems
- /usr/local/sprt directory must be created. If not using root, proper permissions must be assigned to the installer user
- Oracle JDBC thin driver
- JDK 1.8.0_121 - It is time saving and useful to symlink /usr/local/java to the installed JDK directory
- Perl 5.8.0 (must be contained in the path /usr/bin and must be compiled with gcc)
- JBoss EAP 7.0

Once the JDBC driver has been downloaded, it must be installed into the proper locations:
- Installer: <INSTALL_DIR>

Windows (JBoss only)

- Windows Server 2008 R2 SP1
- Recommended operating system patches
- NTP client, using the same NTP server as the other Service Gateway host systems
- c:\sprt must be created
- Access to an administrative account
- Oracle JDBC thin driver version
- JDK 1.8.0_121
- ActivePerl 5.8.7 or later
- JBoss EAP 7.0

Once the JDBC driver has been downloaded, it must be installed into the proper locations:
- Installer: <INSTALL_DIR>

ACS Host System

Solaris

- Solaris 10
- J2SE Solaris 10 recommended patch cluster and the Solaris 10 recommended patch cluster, depending on the host system
- Solaris NTP client, using the same NTP server as the other Service Gateway host systems
- /usr/ucb/ps (process utility)
- /usr/local/sprt directory must be created. If not using root, proper permissions must be assigned to the installer user.
- JDK 1.8.0_121 - It is time saving and useful to symlink /usr/local/java to the installed JDK directory

- Perl 5.8.0 (must be contained in the path /usr/bin and must be compiled with gcc)
- GNU tar (any version, this must also be contained in the PATH before the standard Solaris tar)
- SSH server that supports the SSH2 protocol
- Tomcat 7.0.27

Linux

- RedHat Enterprise Linux 6.2
- /usr/local/sprt directory must be created. If not using root, proper permissions must be assigned to the installer user.
- JDK 1.8.0_121 - It is time saving and useful to symlink /usr/local/java to the installed JDK directory
- Perl 5.8.0 (must be contained in the path /usr/bin and must be compiled with gcc)
- SSH server that supports the SSH2 protocol
- Tomcat 7.0.27

Windows

- Windows Server 2008 R2 SP1
- Recommended operating system patches
- NTP client, using the same NTP server as the other Service Gateway host systems
- c:\sprt must be created
- Access to an administrative account
- JDK 1.8.0_121
- ActivePerl 5.8.7 or later
- SSH server that supports the SSH2 protocol (SSH2 Server 3.8.1 pack1 is recommended)
- Tomcat 7.0.27

STUN Server

Solaris

- Solaris 10
- J2SE Solaris 10 recommended patch cluster and the Solaris 10 recommended patch cluster, depending on the host system
- Solaris NTP client, using the same NTP server as the other Service Gateway host systems
- /usr/ucb/ps (process utility)
- /usr/local/sprt directory must be created. If not using root, proper permissions must be assigned to the installer user.
- JDK 1.8.0_121 - It is time saving and useful to symlink /usr/local/java to the installed JDK directory
- Perl 5.8.0 (must be contained in the path /usr/bin and must be compiled with gcc)
- GNU tar (any version, this must also be contained in the PATH before the standard Solaris tar)
- Connectivity to the application host system

Linux

- RedHat Enterprise Linux 6.2
- /usr/local/sprt directory must be created. If not using root, proper permissions must be assigned to the installer user.

- JDK 1.8.0_121 - It is time saving and useful to symlink /usr/local/java to the installed JDK directory
- Perl 5.8.0 (must be contained in the path /usr/bin and must be compiled with gcc)
- Connectivity to the application host system

Windows

- Windows Server 2008 R2 SP1
- Recommended operating system patches
- NTP client, using the same NTP server as the other Service Gateway host systems
- Access to an administrative account
- JDK 1.8.0_121
- ActivePerl 5.8.7 or later
- Connectivity to the application host system

Database Host System

Oracle

- Oracle 10g/11g/12c (10.2.0.2, 10.2.0.4, 11.2.0.1, or 12.1.0.2) database instance configured with the following initialization parameters:
  - The character set parameter (NLS_CHARACTERSET) is WE8ISO8859P1 (see notes below)
  - The nation character set parameter (NLS_NCHAR_CHARACTERSET) is UTF8
  - The collating sequence parameter (NLS_SORT) is BINARY
  - The query rewrite enabled parameter (QUERY_REWRITE_ENABLED) is TRUE
  - The query rewrite integrity parameter (QUERY_REWRITE_INTEGRITY) is TRUSTED
  - The aggregate PGA target parameter (PGA_AGGREGATE_TARGET) is set as high as can be afforded

Note: For an Oracle installation, the recommended character set (WE81SO8859P1) does not work with bidirectional languages. The character set that is required for bidirectional language support is AL32UTF8.

Note: Oracle version 10.2.0.3 is not recommended due to a significant bug introduced in that version of Oracle. See Oracle Bug 5648872 and Oracle Note 418531.1 for details of this problem and potential solutions. The patches and workarounds available are not entirely effective and thus using this version of Oracle is not recommended.

Create the Oracle user account for use by the Service Gateway application. This is normally done using an Oracle DBA user account. The <DB_USERNAME>, <DB_PASSWORD>, and <SID> tokens should be replaced by the appropriate values for the installation.

```
SQL> create user <DB_USERNAME> profile default identified by
 <DB_PASSWORD>;
SQL> grant connect to <DB_USERNAME>;
SQL> grant resource to <DB_USERNAME>;
SQL> grant query rewrite to <DB_USERNAME>;
SQL> grant execute on dbms_lock to <DB_USERNAME>;
SQL> commit;
```


Note, the dbms_lock package is normally restricted, and only the sysdba user can grant execute permission to other users.

Test connectivity to the database host system from a separate machine, using the Oracle user account. This can be done from a machine that has SQL*Plus already installed or by using a third-party tool such as Toad.

Here's an example using SQL*Plus:

```
sqlplus <DB_USERNAME>/<DB_PASSWORD>@<SID>
```

Service Gateway's high-performance nature requires database statistics (including index statistics) be collected to allow Oracle to optimize the Service Gateway database queries. This is normally handled by the organization's DBA using Oracle's DBMS_STATS package.

Installation

Overview of the Service Gateway Distribution

The Service Gateway distribution contains all the software and configuration files necessary to create and initialize the database and to install the Service Gateway application (with Service Gateway Timer), the TR-069 Auto-Configuration Server (ACS), and the STUN server.

The web-based installer provides the ability to install some or all of the Service Gateway components, which include:

- Creation and initialization of the database tables needed by Service Gateway. This must be done before installing Service Gateway
- Service Gateway application (with Service Gateway Timer)
- ACS
- STUN Server

Installation Planning

The Service Gateway application (and components) must be installed in the proper order. If all the components are selected from the installation GUI, the installer will ensure the components are installed in the correct order.

The order in which components must be installed for a standalone configuration:

1. Create and initialize the database tables.
2. Install Service Gateway (see instructions below)
3. Install ACS(s)
4. Install STUN Server(s)

The order in which the components must be installed for a clustered configuration:

1. Create and initialize the database tables.
2. Install Service Gateway
    a. For WebLogic
        i. Install Admin Server
        ii. Install Service Gateway on ALL managed servers (see instructions below)
    b. For JBoss
        i. Install Admin Server
        i. Install Service Gateway on ALL managed servers (see instructions below)
3. Install ACS(s)
4. Install STUN Server(s)

Note: The WebLogic or JBoss Admin server cannot be installed under the same instance as a Managed server if both instances are to be installed on the same machine. As such the admin and managed must be performed as two separate installations.

Starting the Installer

Solaris/Linux

1. Using a compression utility (such as tar), explode the Service Gateway tarball into <INSTALLATION_DIR>

2. Edit the **run.sh** script found under the <INSTALLATION_DIR>/bin directory and ensure the value given to **JAVA_HOME** is the home directory of java installed on the server

Example: If java is installed under **/usr/local/java**, then the line in the **run.sh** script will look like:

```
JAVA_HOME=/usr/local/java
```

3. Edit the permissions to the **run.sh** script so it is executable. Example:

```
chmod 755 <INSTALLATION_DIR>/bin/run.sh
```

4. If this is the instance used to initialize Oracle, copy the Oracle drivers that were downloaded during the pre-installation process of this guide into the <INSTALLATION_DIR> directory.

5. Execute the **run.sh** script. The script MUST be executed from within the <INSTALLATION_DIR>/bin directory

6. If another copy of the installer is already running, or another process is currently bound to port 8888, the following message will appear:

```
IOException creating UserInterfaceListener thread: Address already in use
```

7. Using a browser access the Installation GUI with the following URL:

```
http://<IP_ADDRESS>:8888
```

Note: The <IP_ADDRESS> is the IP of the Solaris or Linux system that installation was started on. (I.e. the system that Service Gateway and/or components will be installed on.)

8. Click **Launch Installer**

Windows Server 2008

1. Using a compression utility, explode the Service Gateway tarball into <INSTALLATION_DIR>

2. Ensure that the java executable is in your path:

```
set PATH=C:\jdk1.8.0_121\bin;%PATH%
```


3. If this is the instance used to initialize Oracle, copy the Oracle drivers that were downloaded during the pre-installation process of this guide into the <INSTALLATION_DIR> directory

4. Execute the batch file **run.bat** found under the <INSTALLATION_DIR>\bin directory. The batch file MUST be executed from within the <INSTALLATION_DIR>\bin directory

5. If another copy of the installer is already running, or another process is currently bound to port 8888, the following message will appear:

```
IOException creating UserInterfaceListener thread: Address already in use
```

6. A browser window should now be opened to the installer start screen. If this is not the case, open a browser to the following URL: http://<IP_ADDRESS>:8888

Note: The <IP_ADDRESS> is the IP of the Windows system that the installation was started on. (I.e. the system that Service Gateway and/or components will be installed on.)

7. Click **Launch Installer**

Using the Installer

Follow the instructions below to install the Service Gateway application and/or a component of the Service Gateway application

1. Select the radio button for **Install a new instance**, click **Next**

2. Thoroughly read and accept the license agreement and click **Next**

3. Select the appropriate Application Server and Database platform, click **Next**

4. Select the components to be installed and click **Next**

5. Enter all the input information according to the Installation Parameters table at the beginning of this document. Click **Next**

6. Ensure that all the pre-requisites are successful. If they weren't, the text box at the bottom of the display will show details of what failed. Click **Back**, fix what is necessary, and start the pre-requisite check again. Once all the pre-requisites are successful click **Next** to continue with the installation

7. Wait for all the components being installed to return successfully and then click **Finish**

Custom System Keys

System keys are identifiers that can be used to search for devices. By default, Service Gateway uses several built-in fields to assist in identifying a device, such as unique identifier, serial number, MAC address and IP address. However, many service providers have existing and established identification

schemes that may not fit into one of these fields. Through the use of custom system keys, Service Gateway's database schema can be extended to incorporate these existing identifiers.

The decision of whether to incorporate custom system keys into a Service Gateway deployment should be made when Service Gateway is being installed. The Service Gateway installation will prompt for system keys, and they must be specified at that time. It is important to determine what, if any, system keys will be required for a Service Gateway installation.

If the service provider is planning to use their own identifiers in the future, they should be added to the system as part of the installation process. They can be disabled through the Service Gateway application until such time they are required.

Appendix A - Log Files

Log files are important tools for diagnosing issues with the initial installation and the ongoing system administration. This appendix lists the Service Gateway log files that may contain useful information when diagnosing such issues.

Log files for the installation

Installer on Solaris or Linux:

```
/usr/local/sprt/installer.log
```

Installer on Windows:

```
C:\sprt\installer.log
```

Log files for the Service Gateway application

WebLogic Admin Server log files:

```
/usr/local/sprt/<INSTANCE_NAME>/servicegateway/weblogic-domain/servers/
sprtAdminServer/logs/sprtAdminServer.log
/usr/local/sprt/<INSTANCE_NAME>/servicegateway/weblogic-domain/servers/
sprtAdminServer/logs/access.log
/usr/local/sprt/<INSTANCE_NAME>/servicegateway/weblogic-domain/servers/
sprtAdminServer/logs/weblogic-domain.log
/usr/local/sprt/<INSTANCE_NAME>/servicegateway/weblogic-domain/servers/
sprtAdminServer/data/ldap/log/EmbeddedLDAP.log
/usr/local/sprt/<INSTANCE_NAME>/servicegateway/weblogic-domain/servers/
sprtAdminServer/data/ldap/log/EmbeddedLDAPAccess.log
```

WebLogic Managed Server log files:

```
/usr/local/sprt/<INSTANCE_NAME>/servicegateway/weblogic-domain/servers/
sprtManaged<N>/logs/sprtManaged<N>.log
/usr/local/sprt/<INSTANCE_NAME>/servicegateway/weblogic-domain/servers/
sprtManaged<N>/logs/access.log
/usr/local/sprt/<INSTANCE_NAME>/servicegateway/weblogic-domain/servers/
sprtManaged<N>/logs/jmsServers/sprtJmsServer1/jms.messages.log
/usr/local/sprt/<INSTANCE_NAME>/servicegateway/weblogic-domain/servers/
sprtManaged<N>/data/ldap/log/EmbeddedLDAP.log
/usr/local/sprt/<INSTANCE_NAME>/servicegateway/weblogic-domain/servers/
sprtManaged<N>/data/ldap/log/EmbeddedLDAPAccess.log
/usr/local/sprt/<INSTANCE_NAME>/servicegateway/weblogic-domain/Encore.log
```

Note: The <N> in the directory and log file name above is to denote the # of the server. i.e. managed server 1, managed server 2, etc.

JBoss log files on Solaris or Linux:


```
/usr/local/sprt/<INSTANCE_NAME/servicegateway/domain/log/host-
controller.log
/usr/local/sprt/<INSTANCE_NAME/servicegateway/domain/log/process-
controller.log
/usr/local/sprt/<INSTANCE_NAME/servicegateway/domain/log/
service.<DATE>.log
/usr/local/sprt/<INSTANCE_NAME/servicegateway/domain/log/sgadmin-
stderr.<DATE>.log
/usr/local/sprt/<INSTANCE_NAME/servicegateway/domain/log/sgadmin-
stdout.<DATE>.log<JBOSS_DIR>/Encore.log
```

JBoss log files on Windows:

```
c:\sprt\<INSTANCE_NAME\servicegateway\domain\log\host-controller.log
c:\sprt\<INSTANCE_NAME\servicegateway\domain\log\process-controller.log
c:\sprt\<INSTANCE_NAME\servicegateway\domain\log\service.<DATE>.log
c:\sprt\<INSTANCE_NAME\servicegateway\domain\log\sgadmin-
stderr.<DATE>.log
c:\sprt\<INSTANCE_NAME\servicegateway\domain\log\sgadmin-
stdout.<DATE>.log<JBOSS_DIR>/Encore.log
```

Log files for the enCore Timer

Timer on Solaris or Linux:

```
/usr/local/sprt/<INSTANCE_NAME>/servicegateway/logs/
serviceGatewayTimer.stdout.log
/usr/local/sprt/<INSTANCE_NAME>/servicegateway/logs/
serviceGatewayTimer.stderr.log
```

Timer on Windows:

```
C:\sprt\<INSTANCE_NAME>\servicegateway\logs\serviceGatewayTimer.stdout.log
C:\sprt\<INSTANCE_NAME>\servicegateway\logs\serviceGatewayTimer.stderr.log
```

Log files for the ACS

ACS on Solaris or Linux:

```
<TOMCAT_DIR>/logs/ACS-server.log
<TOMCAT_DIR>/logs/ACS-api.log
```

ACS on Windows:

```
<TOMCAT_DIR>\logs\ACS-server.log
<TOMCAT_DIR>\logs\ACS-api.log
```

Log files for the STUN Server

STUN Server on Solaris or Linux:


```
/usr/local/sprt/<INSTANCE_NAME>/servicegateway/logs/stun.log
```

STUN Server on Windows:

```
C:\sprt\<INSTANCE_NAME>\servicegateway\logs\stun.log
C:\sprt\<INSTANCE_NAME>\servicegateway\logs\stun-wrapper.log
```

