



Infor Supply Chain Execution Installation and Deployment Guide

Version 10.2

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About this guide

This guide provides installation instructions for Infor Supply Chain Execution (Infor SCE) in combination with the supported technologies listed in the *Platform Certification* document.

This guide includes general instructions and installation steps for supported Windows, and UNIX environments. Unless otherwise noted, the instructions apply to all installation types.

Each Installation panel contains a help button which provides information about the screen and content. When a command, step series, or section applies uniquely to one platform, it is indicated by the platform name. Any screen sample entries should be replaced with specific values for the environment.

Intended audience

This manual assists the Administrator with the installation of Infor SCE.

Related documents

You can find the documents in the product documentation section of the Infor Xtreme Support portal, as described in "Contacting Infor" on page 7.

- *Infor SCE Release 10.2 Notes*
- *Infor SCE Administrator's Guide*
- *Infor SCE Platform Support Matrix*
- *Infor SCE Administration Console Guide*

Contacting Infor

If you have questions about Infor products, go to the Infor Xtreme Support portal at www.infor.com/inforxtreme.

If we update this document after the product release, we will post the new version on this Web site. We recommend that you check this Web site periodically for updated documentation.

If you have comments about Infor documentation, contact documentation@infor.com.

This chapter is intended to introduce the user to the installation terminology and architectural topography

Infor SCE Architecture

Before beginning the installation process it is important to understand the basic fundamentals of constructing an application environment that suit the needs of the business operations. In this chapter, you will be familiarized with the following topics:

- Terminology
- Installation options
- Deployment Configurations
- Installation Properties
- Application Components

Note: Supported configurations and software version information are defined in a separate document; see the *Platform Support Matrix* for more information.

Terminology

This section provides definitions of the key terms used in the application installer. This helps you to understand the installation choices and application deployment strategies.

- Instance
An instance name describes a deployment which consists of the application and archive databases along with all the required application services and user interface components. This term encompasses a complete, single application installation of Infor SCE.
Instance is used for naming and organizing application components that share a common hardware platform with other Infor SCE instances. Therefore, it must be unique among that particular group of Infor SCE instances which are installed upon a shared server or group of servers.

- **Component**

An instance of Infor SCE is comprised of many processes or components that allow the application user community to interact with the instance to execute business logic. This includes:

- Application data services
- User interfaces for different user types
- Dedicated application servers that execute specific business logic
- Reporting services
- Data and messaging integration services

- **Component Groups**

The installation process is greatly simplified by bundling together Infor SCE applications into two component groups. By consolidating into two component groups, the installer provides you logical options for splitting the installation of component groups across separate servers. This allows more hardware sizing flexibility and use of smaller servers.

These component groups are divided into these areas:

- The backend application services or the Application Server
- The frontend or UI.

- **Node**

The node entity of Infor SCE is defined as matched pair of back-end and front-end component groups. The component groups within a node can only service each other and are not deployed allowing horizontal clustering of the application services across nodes. An Infor SCE instance is comprised of at least one node.

Nodes can be added for enterprise scaling needs when user volume exceeds the capacity of a single node. Nodes can also be added when High Availability (HA) redundancy is required. Below are some points to be aware of when designing a multi-node installation.

- The UI component for all nodes must have the same installation root path. A multi-node deployment will require at least one server per node.
- When employing multiple nodes, a network load-balancer is required to distribute user load equally across each node.
- You must complete the installation of a node before beginning the installation of a subsequent node.

- **Administration Console**

The Administration Console is a utility used by the Infor SCE application administrator to manage an instance. It is comprised of back-end and front-end components which are installed on each server in an application instance. The back-end component is used to manage the locally installed application components. The front-end component is a flexible user interface that can be redirected to connect with any backend.

The administration console can be upgraded independently of the application instance.

Installation Options

The installer presents you with several options for performing an installation:

- **New Instance**

This is step 1 for every new installation. By default, this option creates the application database. You may complete a single server installation by selecting to install both component groups from the component selection panel.
- **Add Component**

This is step 2 when installing on multiple servers. Use this option to install one or more component groups on a server. In order to use this option, you must have already executed the New Instance step to create the application database. This step requires a connection to the application database. When installing component groups, the application server component group must be installed prior to the UI component group.
- **Add node**

This is an optional step used to scale the application layer by adding additional nodes. You must complete the installation of both component groups of the previous node before attempting to use this option.

To install both component groups on a single server, this step works similar to the add component option. It provides the ability to install one or both components groups on a server.

When creating additional nodes in a three tier format, use this option to initiate the installation of node 2 and select the application server component group. Install the UI component group by using the add component option on the third server to complete the node.
- **Install Administration Console**

Use this installation option to deploy the Administration Console application server and Administration Console User Interface on a server that is hosting the Transportation Management third party software components. You can use the Administration Console to deploy one or more of the Transportation Management interfaces for these products.

Deployment Configurations

These are the most typical deployment configurations:

- **Single Server**

The simplest and fastest deployment option is to deploy the database and application component groups onto a single server. This is a sufficient method of deployment for many smaller implementations when the user count is small.
- **Multiple Servers**

This is the process of deploying an Infor SCE instance across more than one server. These are typical configurations:

 - **Two Tier**
 - **Database Server**

- Application Server with both component groups deployed together on a second server.
- Three Tier
 - Database Server
 - Application Server component group server
 - UI component group server
- Multiple Nodes

The user can scale an application instance by using the add node install option. A node can be added in either two or three tier deployment configurations. These are typical configurations:

 - Two Tier Multi-node
 - Database Server
 - Node 1: Application Server with both component groups deployed together on a second server.
 - Node 2: Application Server with both component groups deployed together on a third server.
 - Three Tier Multi-node
 - Database Server
 - Node 1 Application Server component group server
 - Node 1 UI component group server
 - Node 2 Application Server component group server
 - Node 2 UI component group server
- Multiple Instances

The installer supports the deployment of multiple Infor SCE instances when installing on a common server or group of servers. You must utilize the built-in Master database feature to enable this option. When installing multiple instances on the same hardware, the first installed instance becomes the master instance.

Installation Properties

Install Properties is a term used to describe specific data regarding the Infor SCE installation. At install time, the installation process stores specific information about the environment within the application database. Initially, this information is used to simplify the installation process by retrieving it directly from the database rather than requiring redundant user input.

The install properties must be retained for the lifetime of the environment. This data is shared between the installer and the Infor SCE Administration console, which both rely on consistent and accurate information regarding the environment.

The install properties are used by the Administration Console to maintain the environment providing a user interface capable of performing tasks ranging from simple configuration changes to complex cumulative updates that are used to install the latest patch bundles.

Application Components

The Infor SCE is comprised of these primary application components:

- **Infor SCE Databases**

The data services component consists of multiple databases used for application and archive data storage.
- **Infor SCE Application Servers**

The application server components are the core of the Infor SCE solution. A broad range of business functionality is provided in the application modules to service various supply chain needs such as Warehousing and Transportation. Users can connect to these application engines using a Web-based UI client or portable RF device using a socket-based terminal interface.
- **Infor SCE User Interface**

The User Interface (UI) is a browser-based interface that serves as the primary tool for utilizing the full spectrum of Infor SCE functionality. It includes administration and configuration, user management, reporting, and additional supply chain execution management tasks.
- **Infor SCE Reporting Service**

An integrated reporting utility is installed to further support a rich functional experience. This service can be used for easily viewing data on a wide range of tasks. This service is coupled with the UI to simplify reporting needs.
- **Infor SCE Excel Plugin**

The Excel plug-in installation provides data import and export functions from within the UI client interface.
- **Infor SCE RF**

This component installs the Infor SCE RF emulator application for Warehouse Management. The Infor SCE application is accessed by users carrying wireless devices using a telnet client. It allows mobile use of the Infor SCE WM application throughout an entire facility. It facilitates operator tasks by utilizing a lightweight and simple user interface.
- **Infor SCE Administration Console**

The administration console is comprised of two modules. The application server or back-end module is deployed on each server within the application instance. The primary administration console module is deployed on the database server. A second component, the SCE Administration User Interface (UI), is also installed on every server in the environment. It can be run by the user from any server and directly links to the primary backend module residing on the database server.

Infor SCE assumes the proper installation and configuration of the operating system, network, database, and the wireless network. Review this section for information applicable to your installation.

Microsoft Windows installations

Microsoft Windows installations require that you have operating system administrator privileges. The administrator should have unrestricted access to the system. User Access Controls (UAC) should be disabled during the installation to prevent interference with the installation processes.

Additionally, the database portion of the installation requires:

- SQL Server - The user executing the installation must have sysadmin capabilities or the user must be able to provide a login/password for an account possessing sysadmin capabilities.
- Oracle - The user executing the installation must be a member of the **ora_dba** or equivalent group.

To avoid unnecessary installation errors due to user privileges:

- Create the **\infor\sce** folder structure and grant full control to your user.
- Install all third party applications into the **\infor folder**. Grant full control of the folders to your user. For example:
 - `\infor\java6`
 - `\infor\apache`
- Install Infor SCE in the **\infor\sce** folder and at the completion of that installation grant full control to your user.

Single Server UNIX/Linux installations

- For UNIX/Linux installations, a single user account must perform the full installation when deploying all components onto a single server. These are the mandatory steps required when a single user performs a complete installation:

- Create a user called **sceadmin**.
- Create a group called **sceadmin**.
- Add the user **sceadmin** to the **sceadmin** group as the primary group. Also, to the dba group or your defined Oracle dba group.
- **sceadmin** must have write access to the `httpd.conf` file.
- **sceadmin** must have write access to the oracle datafile location and permissions to create new sub-directories.
- **sceadmin** must have write access to the oracle admin folder and permissions to create new sub-directories.
- **sceadmin** must have write access and permissions to create new sub-directories in the temporary directory specified by the **IATEMPDIR** environment variable, if specified. The same access to the system `/tmp` directory is required.
- **sceadmin** must have write access to the `JAVA_HOME/jre/bin` to copy the `tools.policy` file into the bin directory.
- **sceadmin** must have write access to the `ORACLE_HOME/dbs` directory to link the `init<ORACLE_SID>.ora` file.
- **sceadmin** must be able to read and copy the `ORACLE_HOME/jdbc/lib` drivers.
- Create the install directory. For example, `mkdir /opt/Infor; mkdir /opt/Infor/sce; chown sceadmin:sceadmin /opt/Infor; chmod 774 /opt/Infor; chown sceadmin:sceadmin /opt/Infor/sce; chmod 774 /opt/Infor/sce.`
- Change permissions on the directory containing the install image and the `setup.bin` executable. The write permissions on the install image directory is required to write the `installer.properties` file. If this is not written then the install summary log is not created.

```
chmod 774  
<install_image>
```

```
chmod 774 <install-image>/setup.bin
```

To launch the installer: Login as **sceadmin**

```
cd <install-image>  
./setup.bin LAX_VM /opt/jdk1.6.0_xx/bin/java
```

If two users perform different aspects of the installation on a single server, the Infor SCE Administration Console feature will encounter permissions issues when attempting to perform various actions that require dual access.

Best practices

- Firewalls must not restrict access to required application and RDBMS ports.
- Disable automatic java update checks to prevent unintentional updates which could lead to an incompatible version of java being installed.

- Anti-virus activities should not interfere with application functions such as the blocking of communications between ports and sending of email using Java Mail.
- Use only alphanumeric characters in hostnames. Avoid special characters, such as an underscore (_) or hyphen (-). If it is impractical to rename a host that includes special characters, create an alias on the DNS server to return an alias hostname or create an alias in the local hosts file.
- Paths provided to the installer must not contain any periods ".".
- The minimum free space requirement for the installer is:
Approximately 2MB for installer logs:
 - `c:\ drive (Windows)`
 - `/tmp for unix / linux`
- Approximately 4GB free space for the installer to extract the installation files.
 - user profile home directory in Windows
 - `/tmp` directory for UNIX installations
- You may override the default unpack directory by setting the `IATEMPDIR` environment variable prior to running the installation.
 - (Windows) `set IATEMPDIR=d:\tmp`
 - (UNIX) `IATEMPDIR=/work/bigspace`
 - `export IATEMPDIR`
- The minimum suggested disk space allotment for any installation is:
 - Approximately 6 GB for the application instance directory structure and logging space.
 - Approximately 10 GB for SQL Server and 20 GB for Oracle based upon the default five warehouse selections.

Note: Because data growth can quickly consume this minimum allotment, it is recommended that you plan for your projected database size after six months of activity, including space for archiving historical data.

Domain Names

A domain name is an identification of a unique computer system. A proper domain name consists of one or more sub-domain names and one top-level domain name separated by periods (.). For example, a complete domain name is **servername.infor.com**.

SQL Server

The SQL Server instance is installed and configured to be accessible using the SQL Server configuration utilities.

- TCP/IP protocol is enabled on the SQL Server instance for remote access.
- Mixed-mode authentication is required.
- A case-insensitive, ascending sort order collation is required.
- If opting to install the Infor SCE database using your windows account rather than the SQL Server **sa** user, the installation requires that your account must possess sysadmin privileges for the target SQL Server instance.
- The BCP utility is required for the TM Catalog Upload Service. This service is deployed on the database server by default to facilitate bulk data uploads.
- When using a Named SQL Server instance, you must change the port assignment from dynamic to a fixed port value. This must be configured prior to the Infor SCE installation. A dynamic port assignment could cause startup issues in SCE applications if the database is initialized using a port different than the one Infor SCE configured data sources.

Oracle

The install user must be a member of the dba group (ora_dba for windows installations) to perform this installation. The database installation will fail without this privilege.

Oracle installations require the use of the **SQLLDR** utility for the TM Catalog Upload Service .This service is deployed on the database server by default to facilitate bulk data uploads.

The Oracle JDBC driver for Java 1.6 is required by the installer.

The Oracle RAC feature is supported by this installer; however, prior to beginning the Infor SCE installation, you must:

- Have Oracle RAC installed and fully configured across all nodes.
- Create the databases for use by the SCE installer prior to the installation.
- Have one ASM disk group created.

The Infor SCE installation only supports the use of ASM. Only one ASM disk group may be provided to the installer; however, you may migrate to other devices after the installation of a complete Infor SCE environment has been completed.

See *Installing into Oracle RAC Environments* for more information.

WebSphere

The Infor SCE install requires that WebSphere (WAS) Network Deployment, along with the required java, plugin and IBM HTTP server, have all been installed and configured for your system. A network deployment manager and managed node must be running when attempting to install Infor SCE.

You will be required to provide the location of the WAS profile to be used by this installation.

If WAS security is enabled, you will be prompted for a user/password combination for deploying into that environment.

JBoss

JBoss is provided with the Infor SCE installer and therefore no further action is required from the user.

Prior versions

The provided installer:

- Is used to create new instances and cannot perform upgrade installations.
- Dynamically assigns port and other values whenever possible to simplify the installation process. As a result, these values might conflict with previously-deployed instances if you do not make the required changes to those instances in advance of this installation.

You can re-install this release by removing the databases and folders that were created during the previous installation.

During the installation, you may enable additional features. If the required features for your environment are not known at installation time, you may enable or configure them later using the Administration Console.

Background Printing

To utilize the background printing feature, you must pre-install the GhostScript software components. For Windows installations, you must pre-install Ghostscript with GSview. The Infor SCE installer prompts you for the location of the `gsprint.exe` application.

UNIX deployments require a pre-requisite installation of GhostScript. The `gs` utility should be added to the `PATH` variable of the install and runtime user environments prior to beginning the installation.

Small Parcel Shipping

Integration to an existing SPS environment can be configured during the installation. To configure this option, you must provide the server name, RDBMS type, user, and password information. The installer assumes the default SPS database names are `SORDB` and `IDATA`.

Enabling Integration with Infor ION

Integration to Infor ION can be enabled using the Administration Console. For details on how to enable please refer to the *Infor SCE Administration Guide*.

Secure Socket Layer (SSL)

You can configure SSL for the HTTP server at install time. Your HTTP server installation must have support for SSL prior to attempting to enable this feature. On a Windows platform, this requires using a version of Apache HTTP Server that supports openssl. The Windows version of Apache HTTP Server that supports openssl can be found on the installation media.

Post-installation you may use the administration console for configuring HTTP for SSL, creating the certificate request and importing the certificate received from the certificate authority for your server.

If planning to use Active Directory with SAML token SSO authentication, you must enable SSL for that option to be available later when selecting your method of user authentication..

When choosing to enable SSL, you will be prompted to provide a port that will be used for SSL communications as well as a password for the temporary keystore.

The installer completes the base install using self-signed certificates for all:

- HTTP traffic from the web server to the user's browser- (See the note below)
- Internally from the HTTP server to the various application processes.

Note: For production environments, you should obtain a certificate from a certificate authority for all traffic between the HTTP server and the user browser.

You may use the administration console for configuring HTTP for SSL, creating the certificate request and importing the certificate received from the certificate authority for your server.

Transportation Management Third Party Software Integration

Transportation Management (TM) may utilize various third party services for providing specific information. The third party integrations are solely dependent upon which features will be utilized within the TM module.

The integration between TM and the third party services can take place between a local installation of that product or a cloud-based web service solution. Typically, third party products when installed locally will reside on a dedicated server purposed for hosting that service.

The Infor SCE installer provides dual options where available for integrating with these services. The integration of TM with any of the available third party software products will consist of cloud-based services or locally installed services.

- Cloud-based web services:
The TM server side is configured for integrating with a cloud-based web service.
- Locally installed services:
The TM server side is configured for the name of the server hosting the third party software. Installing a TM interface on the server where the third party software is installed, is a post-installation step that can only be executed via the administration console.

Third party services used by Transportation management include the following:

- Mileage query engines such as PC*Miler or MileMaker - Windows installations only
- *Less Than Truckload* (LTL) rating provided by SMC3's RateWare XL Web Services
- Bing Maps Web Services

If you select to configure these services at install time, you will be prompted for the hostname of the server where the third party software is installed. When opting to configure a cloud-based web service solution, you will be prompted for such information as the license and URL information.

If you are unsure of what is required, you may proceed with the Infor SCE installation by skipping this step. If you opt to defer this configuration until later the SCE Administration Console can be utilized to complete this process.

32-Bit Requirements

The third party products used with Transportation Rating and Routing (RnR) require that you enable 32-bit platform support in Windows Server 2008 R2. WoW64 is an emulation layer that enables 32-bit Windows-based applications to run seamlessly on 64-bit Windows See [http://technet.microsoft.com/en-us/library/cc726001\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/cc726001(WS.10).aspx).

See the FAQ *Can I run 32-bit applications on Windows Server 2008 R2?* <http://www.microsoft.com/windowsserver2008/en/us/faq.aspx>

Additionally, the Transportation Module may require the execution of a post installation configuration process. See the *Infor SCE Transportation Management Module Supplementary Installation Guide* for more information.

This chapter describes the organization of the application CD. It identifies all of the files and folders included on the provided media.

CD root folder

File/Folder	Includes
Installer	The installer executable for each supported platform
ADMIN	Infor SCE application end-user admin tools and utilities
DOCUMENTATION	Infor SCE application documentation
License	License files for certain of all 3rd party open source products that are used by Infor Supply Chain Execution.

Installer folder

The Installer folder is for the application installer. The SupportingSoftware folder contains software that is used by the installer to support the Infor SCE deployment.

ADMIN folder

File/Folder	Includes
LABELS	Loftware Label files for application labels
INTEGRATION	Contains all the variants of eventcfg.ini for integrations with other Infor Products

File/Folder	Includes
TOOLS	Tools used by administrators to collect information and monitor the install environment
UTILITIES	Various application utilities

Utilities folder

File/Folder	Includes
WM	WM Specific Utilities
TESTSCRIPTS	System test scripts for Supply Chain Execution
TM	TM Specific Utilities
BILLING	Billing Specific Utilities
RNR	Rating and Routing Specific Utilities

WM

File/Folder	Includes
HEALTHSCRIPTS	SQL scripts for validating inventory and data
ARCHIVINGSCRIPTS	Archiving scripts that can be run by a DBA to purge and archive the production database

TM

File/Folder	Includes
PURGESCRIPTS	Scripts that can be run by a DBA to purge historical data from the production database

BILLING

File/Folder	Includes
UPGRADESCRIPTS	DB scripts that upgrade a variety of versions
ARCHIVINGSCRIPTS	Archiving scripts that can be run by a DBA to purge and archive the production database

RNR

File/Folder	Includes
TransProIntegration	All install related artifacts for Transportation Integration

Documentation folder

File/Folder	Includes
INSTALLGUIDES	Product installation guide and the administrator's guide
USERGUIDES	Product user guides
INDEX.htm	Index of the documents. To view the complete list of documents, click index.htm.

This chapter contains the prerequisite information you need prior to installing Infor SCE Supply Chain Execution.

Pre-Installation

The Infor SCE installer is designed to provide you with these options when you install application components. You can:

- Use a command line (console mode for UNIX/LINUX)
- Launch the panel-driven (GUI) installer

The Infor SCE installer is made up of a master and multiple component modules. The master module retrieves and stores pertinent environment information and user input for use by the component modules. The component modules each inherit standard and common information about the installation environment to obtain consistent results when you install different component modules across one or more servers.

Each installer module includes default responses where appropriate. This simplifies the overall process when only a typical installation is required. We recommend that you use the default values furnished by the installer whenever possible. You may opt for different responses when something other than the default response is required.

An instance name parameter facilitates a multi-instance deployment scheme by placing an identifier as a prefix before various Infor SCE components. This associates a component with a particular Infor SCE instance.

- The instance name is limited to five characters.
- The instance name is used for the Infor SCE database name.
- All components specific to an instance of the Infor SCE application are installed within the instance name sub-directory.

Always ensure that any response you provide, such as a directory path, is valid. Also consider whether any installer default value or user input could conflict with existing entities, such as databases, to avoid failed or aborted installations.

Installation tasks

You must follow the instructions carefully and perform the installation in this order:

- 1 Infor SCE Database(s)
- 2 Infor SCE Application Server Components
- 3 Infor SCE UI Server Components
- 4 Post Installation steps for Transportation Rating and Routing Integration Services

To review and test the installation, refer to the *Testing the installation* topic.

Prerequisite software

Before you begin the installation, you must ensure that the proper prerequisite software is installed. See the *Infor SCE Platform Matrix* for the supported versions and platforms.

The prerequisite software is:

- RDBMS software w/BCP (SQL Server) or SQLLDR (Oracle)
- *Java development kit
- Public JRE needs to be installed on all windows clients that will be used to access the Facility Viewer feature. The version of the JRE should match the version of the browser being used. For example if you are using Internet Explorer 32-bit version, then install the 32-bit JRE on the Windows client PC and if using the 64-bit version of Internet Explorer then install the 64-bit version of the JRE.
- * Apache Web server
- **Loftware Print Server (Label printing)
- Pragma Telnet Server (Windows only)
- GhostGum (optional for background printing feature)
- GhostScript (optional for background printing feature)
- IBM WebSphere (optional)
- Oracle JDBC driver for Java 1.6- ojdbc6.jar (Oracle installations only)
- **Mileage Query Engine PC*Miler with PC*Miler|Connect or MileMaker Guide (Only required for TM Module if mileage based rating is a business need.)

* Refer to the **installer\SupportingSoftware** folder on the installation media to obtain the provided prerequisite software for the windows platform.

** It is recommended that these applications be installed on separate servers.

Prerequisite software deployment by server

Single Server

Install the following software:

- RDBMS software
 - SQL Server installations must have BCP installed for Rating and Routing catalog bulk data uploads.
 - Oracle Installations must have SQLLDR installed for Rating and Routing catalog bulk data uploads.
- Java development kit
- Apache Web server
- GhostGum (optional for background printing feature)
- GhostScript (optional for background printing feature)
- IBM WebSphere (optional). If not installed the application components will install to a JBOSS Server.
- Oracle JDBC driver for java 1.6- ojdbc6.jar (Oracle installations only)
- Enable WoW64 for 32-bit support (Windows installations only requiring the use of transportation management)

Two servers

This required prerequisite software assumes an installation across two servers:

- Java development kit
- Database server (Server 1)
- RDBMS software
 - SQL Server installations must have BCP installed for Rating and Routing catalog bulk data uploads.
 - Oracle installations must have SQLLDR installed for Rating and Routing catalog bulk data uploads.
- Infor SCE Application server (Server 2)
- Java development kit
- Apache Web server
- GhostGum (optional for background printing feature)
- GhostScript (optional for background printing feature)
- IBM WebSphere (optional)
- Oracle JDBC driver for Java 1.6- ojdbc6.jar (Oracle installations only)

- Enable WoW64 for 32-bit support (Windows Installations only requiring the use of transportation management)

Three servers

This required prerequisite software assumes an installation across three servers:

- Database server (Server 1)
 - Java development kit
 - RDBMS software
 - SQL Server installations must have BCP installed for Rating and Routing catalog bulk data uploads.
 - Oracle installations must have SQLLDR installed for Rating and Routing catalog bulk data uploads.
- Infor SCE Application server (Server 2)
 - Java development kit
 - GhostGum (optional for background printing feature)
 - IBM WebSphere (optional)
 - Oracle JDBC driver for java 1.6- ojdbc6.jar (Oracle installations only)
 - Enable WoW64 for 32-bit support (Windows installations only requiring the use of transportation management)
- Infor SCE UI server (Server 3)
 - Java development kit
 - Apache Web server
 - GhostGum (optional for background printing feature)
 - GhostScript (optional for background printing feature)
 - IBM WebSphere (optional)
 - Oracle JDBC driver for java 1.6- ojdbc6.jar (Oracle installations only)

Reporting Services

The Infor SCE installer offers the user a choice between two reporting solutions:

- A wholly integrated reporting engine (BIRT).
Business Intelligence and Reporting Tools (BIRT) is a built-in basic reporting service that requires no additional installation effort.
- Infor Reporting interface with base reports package
Infor Reporting may be used to provide reporting services to Infor SCE. Base reports are provided by the installer but must be manually installed into the Infor Reporting server.

Authentication options

User authentication capabilities

Infor SCE offers these methods for user authentication:

- Database Authentication

An internal, proprietary authentication service that does not rely on any external authentication services such as LDAP or Windows Active Directory Server (ADS) to validate user access or privileges. All users, roles, and groups are stored and managed locally within the Infor SCE database.

- Active Directory Authentication

Infor SCE provides integration with Windows Active Directory Server (ADS) for user management. If you opt to use AD authentication, the installer will prompt for information regarding your AD environment.

In addition, when choosing Active Directory, you have the following methods of authenticating application users:

- Users are challenged to provide a username and password when accessing the application URL.

Single Sign-on (SSO) provides a single sign-on experience whereby a user authenticates with the corporate environment and will not be challenged to provide credentials when accessing the application URL. There are two options of SSO available:

- Integrated Windows Authentication using SPNEGO
- Active Directory Federation Services (AD FS) using *SAML token

*Note: SAML token SSO is only available when Secure Socket Layer (SSL) has been enabled.

Database Authentication

This option is a self-contained authentication in which all users, roles and permissions are created and maintained within Infor SCE. Users will always be challenged for credentials when accessing the application URL. When this option is selected, the installer will prompt you to input user/password credentials which will be used to create the administrative user account for the application instance. You will use this account to create and manage application users.

Active Directory (ADS)

When installing Infor SCE utilizing Active Directory as the authentication mechanism, there are several specific Active Directory elements that the Infor SCE installer will prompt for. These values are critical to the success of the installation as application start-up, login or role mapping errors will result- if incorrect values are provided.

Check with your IT administrator for this information:

- AD Server name and port

The installer will prompt for the hostname and port of an Active Directory server that will be used by Infor SCE to make authentication requests. The default port is 389. It is advisable to provide a virtual hostname that is load balanced across two or more servers to avoid a single point of failure.

- User Base DN

This value represents the base level within Active Directory that will be used as the starting point by Infor SCE to search/lookup application users. This value must be provided as a **distinguished name (dn)**.

Example:

```
ou=sceusers,dc=infor,dc=com
```

With this setup if a user **jdjoe1** tries to access the Infor SCE application, the user `jdjoe1`'s credentials will be searched for within `ou=sceusers,dc=infor,dc=com` only.

If `jdjoe1` is within the structure `ou=administrators,ou=sceusers,dc=infor,dc=com` he would still be found correctly in a lookup search by Infor SCE.

However, if `jdjoe1` was not in `sceusers` organizational unit, but in another organizational unit such as `ou=administrators,dc=infor,dc=com` then the user search would not result in a successful lookup. Therefore the user would not be properly authenticated and would result in a *user not found* error. In this case the user resides outside the search realm of what has been specified to Infor SCE `ou=sceusers,dc=infor,dc=com`.

- Group Base DN

This value represents the base level within Active Directory that will be used as the starting point by Infor SCE to search/lookup application groups. This value must be provided as a **distinguished name (dn)**.

Groups in Active Directory are mapped to application roles within Infor SCE to establish privileges.

Example:

```
ou=scegroups,dc=infor,dc=com
```

With this setup if a role mapping is performed for `group:cn=warehouse,supervisor,ou=scegroups,dc=infor,dc=com`,

This application role would be successfully mapped since the starting point for the lookup search is `ou=scegroups,dc=infor,dc=com`. All users who are members of this Active Directory group will automatically get the privileges / authorizations of the application role mapped to it.

With this setup if a role mapping is attempted for the group:

```
cn=warehouse supervisor,ou=someothergroups,dc=infor,dc=com,
```

The application role would not be successfully mapped since it is outside the search realm of `ou=scegroups,dc=infor,dc=com-` which does not include the `ou=someothergroup`.

- Connect-As or Lookup User

The Infor SCE UI requires user credentials in which to connect with the Active Directory server for performing authentication requests. This user is known as the *lookup* or *search* user. The credentials for this user are used during the UI service boot process to validate that the lookup user can access your Active Directory server successfully.

- This user must have the ability to browse the Active Directory structure.
- This user must also be present under the User Base DN.
- This user's credentials must be supplied as the user's distinguished name (**dn**).

- Bootstrap User

The bootstrap user information is required by the Infor SCE application. It is the only user with access to the application environment upon completion of the installation. It is provided as the initial user whose purpose is to setup subsequent users/groups.

It is the only Infor SCE application user whose credentials are saved within the application database when using Active Directory authentication services. Therefore, it is important to avoid updating this user's configuration in Active Directory to avoid credential failures. Upon completion of the application installation and successful startup, you are required to sign into SCE using these credentials to begin configuring SCE for other users and groups.

During the installation you must specify the bootstrap user in a distinguished name (**dn**) format as shown below:

For example- If the distinguished name of the bootstrap user is:

```
cn=admin,ou=administrators,ou=sceusers,dc=infor,dc=com
```

During installation the value that needs to be input as follows to the installer:

```
cn=admin,ou=administrators,ou=sceusers,dc=infor,dc=com
```

When accessing or logging into the application, you need to only specify the user's id: **admin** and not the full distinguished name (**dn**).

- Starting the Infor SCE WebUI

When the Infor SCE UI service is started, it uses the AD server:port and and "connect as" user credentials to access the AD server. If any of the configuration values provided are incorrect, the UI service will fail to start successfully.

- Role Mapping

For performing Infor SCE application role assignments to external groups defined in Active Directory, access the security pages available under Enterprise level in Infor SCE UI. You can use the bootstrap user credentials if this is the first time accessing the page post-installation.

Refer to the *Infor SCE Administrator's Guide* for more information on role mapping. Check the details for *Reload Meta* in the *Administrator's Guide*. This step is important otherwise the mapped values are not visible to the SCE application unless you restart the UI service.

- **Creating Users**

When Infor SCE is installed for Active Directory authentication, unlike the proprietary Database authentication mode, users are not created within SCE. The users are actually created by the IT administrator in Active Directory. Any Infor SCE application user created in Active Directory must satisfy the User Base DN value as previously detailed.

Users are still registered in Infor SCE. This registration process occurs the first time a user accesses the Infor SCE UI application. The registration process for a user only happens if the group that he belongs to in Active Directory has been correctly mapped to a role in Infor SCE during the Role Mapping process.

See the *Infor SCE Administrator's Guide* for further information on mapping Infor SCE application roles to roles within Active Directory structure.

Single Sign-on (SSO)

Configuring SSO provides the ability to bypass the application user authentication login page. For the installer to properly configure SSO you will be prompted for this information:

- Integrated Windows Authentication using SPNEGO
 - Domain Controller Server Name
 - Service Principle User Name and Password
- Active Directory Federation Services using SAML Token
 - Infor Federation Server (IFS) Fully Qualified Host Name
 - Infor Federation Server (IFS) Port

This is the HTTP (not HTTPS) port that the IFS server listens for communications.

SAML Token authentication requires that you have configured HTTPS as your web server protocol.

The installer requires that if you opt to enable SSO for your environment, you must provide the name of the domain controller to be used to send the Kerberos ticket information for validation. The installer updates the `krb5.conf` file with this information.

Note: In cases where the startup of the UI service is not successful due to a clock skew issue, it will be necessary to configure the Administration Console service running on that server to utilize a windows domain account rather than the windows local system account. In deployments where the entire application is installed onto a single server and therefore under the control of one administration console server, add the SQL Server `sysadmin` or `oracle dba` role to this user account. This prevents errors when the administration console server attempts actions on the database.

Language Support

Language support is divided into these three areas. Language packs are released separately after the English Release of the product. Please contact Infor Support for availability of Language Packs.

Installer Language Support

The Infor SCE installer provides built-in support for seven different languages. You may choose your preferred language from the drop-down menu of the **Introduction** panel. All subsequent information will be displayed in that language format. The default language is English.

Administration Console Language Support

The Infor SCE Administration Console provides built-in support for seven different languages based upon the user's locale setting. The default language is English.

Application Instance Language Support

The Infor SCE Application instance is installed by default with English only. You may opt to customize your language support by obtaining the Infor SCE Language Pack. This language pack is deployed via the Infor SCE Administration Console. Please see the *Infor SCE Administration Console Guide* for more details on installing languages into your environment.

This chapter describes the install options and how they are used.

New Instance

The New Instance is the required first step in deploying an application instance. This step forms the basis for all subsequent install actions. This step creates an application database and provides the option to deploy one or more additional application component groups on the current server. You can use this step to deploy the Infor SCE database and to deploy all components onto a single server without any further action.

- Installs SCE Database
 - Optionally installs application server component group
 - Optionally installs UI component group

Add Component

The Add Component action can be used to install one or more application component groups once a new instance has been created. Use this feature to build an interconnected multi-server application environment. The Add Component action requires that you provide a connection to the database created in the New Instance step. It uses this connection to read stored installation information to simplify the installation by reducing redundant questions.

- Optionally installs the application server component group. This must be installed prior to the UI installation.
- Optionally installs the UI component group

Add Node

The Add Node option is used to scale the application across additional servers. This option creates an additional node comprised of the application and the UI component groups. Use this feature to add more capacity or limited application redundancy to your application environment.

The Add Node option is used to initialize the new node within the instance, To distribute the component groups in subsequent nodes across individual servers, use the add component option to complete the node.

Always ensure your hardware resources- including the database server have sufficient capacity to support the creation of additional nodes. Subsequent nodes are not completely application redundant. When adding a node you should follow this process:

- Always complete the installation of the initial node prior to adding nodes.
- Launch the installer on the server which will be hosting the new node #2.
- Select the add node option.
- Provide the requested database connection information to your application database.
- Select one or both component groups to install on this server.
 - If you only need to install the application server component group for this node on this server, use the add component option to install the UI component group on the next server.
 - The UI component group must#2 components which will be installed using the same install PATH for each node on that server.

Install Administration Console

This option is used to install standalone SCE Administration Console components. You should use this to accomplish these tasks:

- Transportation Management requires the deployment of specific interface services when using third party applications such as mileage servers. This must be done after the initial SCE deployment has been completed. Install the complete Administration Console on the server hosting your third party products and use it to deploy the required TM integration services.
- Install the SCE Administration Console UI on a local machine that can be used to manage the application instance.

See the *Infor SCE Administration Console Guide* for more information on using the Administration Console.

Prerequisite software

Ensure that all prerequisite software has been installed.

- Java
- Apache
- *Ghostscript- required only if you select to configure the background printing feature.

Launching and Navigating the Installer

This section describes the steps required to launch and begin the Infor SCE installation. See *Authentication options* for the required user privileges for completing this installation.

Installation tips for all platforms

Before you begin any Infor SCE installation:

- Ensure the **JAVA_HOME** environment variable is set to the `${JDK_INSTALL_LOCATION}` and that the **PATH** environment variable is set to include the `JAVA_HOME\bin` directory.
- For best results, when you specify a root installation **PATH** such as `c:\infor\sce`, reuse this same root path for all subsequent installations on the server. The Infor SCE `instance_name` sub-folder is created and all of the selected components are installed into this location.

Installation tips for Windows only

Before you begin any Infor SCE installation, User Access Controls (UAC) should be disabled during the installation. Additionally, these steps help eliminate unnecessary installation errors due to inadequate user privileges.

- 5 Create the `\infor\sce` folder structure and grant full control to your user.
- 6 Install all third party applications to the `\infor` folder. Grant full control of those folders to your user. For example:
 - `\infor\java6`
 - `\infor\apache`
- 7 Install Infor SCE to the `\infor\sce` folder and at the completion of that installation grant full control to your user.
- 8 Once the installation has completed, ensure the appropriate user and group permissions are applied to the `${INSTALL_DIR}\${SCE_INSTANCE}\rf` and sub-directories in order that non-administrative users and groups have the proper execution privileges.

Installation tips for Oracle installations only

For Oracle deployments, ensure that Oracle Listener is running.

The SCE installer sets most Oracle configuration parameters for a minimal type instance. For the best performance, review and adjust the Oracle database configuration settings where appropriate. Particular attention should be used when sizing the **SGA_TARGET** value for your implementation.

In addition, you must ensure that the required Oracle JDBC client driver `ojdbc6.jar`- oracle 11 is installed and is accessible on all servers hosting Java applications.

Installation tip for Linux only

Prior to launching the installer, set the permissions to the directory containing the installer executable to **777**.

When executing the installer, it is necessary to add the following argument to the start-up command:

```
LAX_VM $JAVA_HOME/jre/bin/java
```

For example:

```
./setup.bin LAX_VM /opt/ JDK6/jdk1.6.0_xx/jre/bin/java
```

Installation tips for UNIX/Linux only

Prior to launching the installer, set the permissions to the directory containing the installer executable to **777**.

See the previous section *Single Server Unix/Linux Installations* if required to install an entire instance on a single server.

Add the necessary Oracle environment variables to the shell session to provide access the Oracle client utilities required to run this installation and for normal operation.

Before you begin the installation, set these variables in the current session:

- `ORACLE_HOME`
- `PATH=$ORACLE_HOME/bin`
- `LIBPATH=$ORACLE_HOME/lib`

Or, you set the variables:

- `LD_LIBRARY_PATH=$ORACLE_HOME/lib *`
- `SHLIB_PATH=$ORACLE_HOME/lib *`

* Operating System dependent

9 To launch the Windows installer, click `setup.exe` in the `\installer` folder of the Infor SCE media.

For UNIX installations, run the `setup.bin` as follows:

```
./setup.bin
```

- 10 The installer program immediately begins to extract the necessary files to start the installation process.
- 11 The Introduction screen is displayed. Review the instructions on the panel and click **Next**.
- 12 Follow the instructions on each panel to complete the remainder of the installation. Each panel has a Help button that provides information about the current panel. Review the help content on each panel for further information.
- 13 After completion of the installation, read the post install notes and complete any post-installation tasks. Unix installations include an `application_url.txt` file in the `${install-dir}/${instance}` directory.
- 14 Click **Enter** to exit the installation.
- 15 After the installation is complete, setup a pair of users for trident (RF emulator) access. Create two users based upon the RF device profile of *handheld* and *truckmount*.

- In the handheld user profile, add this line:

```
./opt/infor/sce/scprd/rf/handheld/trident
```

Note: Add these lines for Solaris installations only:

```
LD_LIBRARY_PATH=./opt/infor/sce/scprd/rf/handheld
export LD_LIBRARY_PATH
```

- In the truckmount user profile, add this line:

```
./opt/infor/sce/scrprd/rf/truckmount
```

Note: Add these lines for Solaris installations only:

```
LD_LIBRARY_PATH=./opt/infor/sce/scprd/rf/handheld
export LD_LIBRARY_PATH
```

These are the default values. Specify your actual `${INSTALL_DIR}/${SCE_INSTANCE}` path values where appropriate.

This user will be configured to automatically log on the host server by the RF controller and run the trident executable in `${INSTALL_DIR}/${SCE_INSTANCE}/rf/handheld/trident` for display upon the RF device.

Setup RF Client Environment for Trident

Trident curses uses the *UTF8* and *WIDE* text mode on Windows, and the *UTF8 locale* on all UNIX operating systems as of the 10.2 release.

These notes are helpful when using a multi-byte (non-ASCII) language with Trident (RF), such as Chinese.

- On UNIX and Windows you need to use a terminal client that is capable of displaying Unicode (wide characters) as UTF8 encoded text.
- On Windows, it is not going to be possible to successfully use Trident at the simple command prompt for a language such as Chinese. The fonts used by the Windows command prompt alone are not capable of displaying all languages simultaneously.
- Windows fonts are generally limited to a specific locale or locale group, even if you use the new (as of Windows 2008 and Windows Vista) UTF8 code page.
- To offset this Unicode/UTF8 limitation native to Windows, you should use the Pragma telnet server, configured for the UTF8 character set, to host telnet sessions instead of the native Windows terminal server. For client telnet connections from Windows, use PuTTY clients configured for UTF8 remote character set to properly display UTF8-encoded Unicode characters.
- Trident on Windows displays wide characters encoded as UTF8 text using the wide character version of a curses API. On Windows and UNIX, trident is not limited by a single locale installed in the operating system; instead trident is capable of displaying all wide characters (Unicode) encoded via Pragma/PuTTY as UTF8 text much like a web browser handles UTF8 text.

NOTE: Additionally, trident now reads and writes files as UTF8 text. It is important that the language specific **RFlanguage.ini** file be stored on disk as a UTF8 text file, not as an ASCII text file. This is a breaking change in backward compatibility from previous trident and Infor SCE versions.

Regarding PuTTY Configuration

When using PuTTY (Windows telnet client), there are important configurations changes required after installation of PuTTY to change some default PuTTY settings. After making these changes, save them as a new configuration so your configuration can be loaded again. You should setup Windows shortcut(s) so that PuTTY is launched using your saved configuration. The PuTTY installer will use the current Windows operating system locale to determine how to initially configure many defaults. Regardless of your locale, these settings must be changed for proper PuTTY configuration with trident.

Backspace Key:

- For Windows, the <BACKSPACE> key must be configured as **<Ctrl-H> in PuTTY**.
- The PuTTY default configuration for the <BACKSPACE> key is <Ctrl-?> which is suitable for most UNIX and Linux platforms, but not when using the Pragma telnet service on a Windows server hosting `trident.exe`, where it must be configure as <Ctrl-H>.

Remote Character Set:

- For both Windows and UNIX, regardless of which system locale or language the Windows OS or its user is using, Trident has been modified to use the universal UTF8 character set. PuTTY needs to use the same character set. PuTTY has a configuration screen for changing the remote character set to UTF8.
- For Windows the PDCurses library (`pd curses.dll`) used by `trident.exe` is built with UTF8 and WIDE macros. On Windows, this means that `trident.exe` now calls UTF8 wide (`tchar_t *`) character PDCurses API functions instead of ASCII (`char *`) character API functions.

Regarding the Trident User Environment on UNIX

On all UNIX platforms it is necessary to set the LANG environment variable for use with UTF8. This environment variable controls the runtime locale that is used by trident. Do not use the root account. Many OS and GNU libraries will have security problems when executed or utilized by a root-owned shell. You should create and use a user shell account with a shell login script, for example, `.profile` or `.bashrc`, to introduce the proper operating system environment parameters on your UNIX platform for Trident.

Linux platform

Using the GNU Bourne-Again Shell (`.bashrc` login script file); add this line:

```
export LANG=en_US.UTF-8
```

AIX 7.1 platform

Using the KornShell (`.profile` login script file); add these lines:

- `export LANG=EN_US.UTF-8`
- `export LC_ALL=EN_US.UTF-8`

This chapter describes the steps required for a successful Oracle RAC installation. Unlike the typical installation where the installer creates and populates the database for the user, an Oracle RAC installation requires that the user pre-create the database prior to running the installer. The installer prompts for the specific information needed to complete this type of installation.

Note: Oracle RAC deployments are supported only for JBoss installations on either AIX or Linux in the current release.

Staging Oracle RAC

Before you can begin the installation of Infor SCE, you must complete these prerequisites steps:

- Install the Oracle Clusterware and Oracle server software.
- Create a two RAC databases during the installation or with DBCA. This is the SCPRD and SCPRDARC databases: SCPRD1/SCPRDARC1 on Node1 and SCPRD2/SCPRDARC2 on Node2. Repeat this step for each node in the cluster. Limit the base database name to five characters as provided in the SCPRD example.
- The Infor SCE installer requires that the archive database is created with the **`\${instance_name}ARC** suffix; for example, **SCPRDARC**.
- Create the listener and `tnsnames.ora` using the Network Configuration Assistant.
- Start the listener.

To stage Oracle RAC:

- 1 Create a service SCPRDSRV using the **Oracle Enterprise Manager** for Infor SCE RAC Usage.

This is the service that the Infor SCE application uses to connect to the RAC database. The SCPRDSRV service will load balance across two or more nodes using Net Services load balancing.

Repeat the same process for the production archive database by adding the **ARC** suffix to your SCE ``${instance_name}`; for example, **SCPRDARC**. The service name would be SCPRDARCSRV.

Note: Infor uses Net Services which does not support automatic/transparent fail-over. TAF/FAN is not configured.

2 Specify this information:

Field	Value
SCPRDSRV	Example Service Name to be used within the jdbc driver connection string
SCPRD1	Preferred
SCPRD2	Preferred
TAF Policy	None
Enable Distributed Transaction Processing	Off
Connection Load Balancing	Long
Enable Load Balancing Advisory	Off
Enable FAN for OCI and ODP.Net Apps	Off
Consumer Group Mapping	None
Job Scheduler Mapping	None

3 Modify the `tnsnames.ora` file on the database server. See *Sample tnsnames.ora file for the database servers* topic.

4 Ensure that all of the `tnsnames` values are resolvable from DNS or from the `/etc/hosts` file by testing with the `tnsping` utility. The `tnsnames.ora` file is used by utilities such as `sqlplus`, `sqlloader`, `tnsping`, and the installer.

This is an example of a `tnsnames.ora` file after modifications were made for the RAC environment. The SCPRD service that was created during the `dbca/netca` installation is not used going forward. Infor SCE uses the service that you created in the Enterprise Manager named **SCPRDSRV**.

In these steps substitute your database server node names for `DBSERVER[1,2]`.

The `tnsnames.ora` entries are used in tandem with a `sqlnet.ora` with these values:

```
NAMES.DIRECTORY_PATH= (TNSNAMES, EZCONNECT)

##NAMES.DEFAULT_DOMAIN = infor.com
```

Sample tnsnames.ora file for the database server

```
# tnsnames.ora Network Configuration File:
/u01/app/oracle/product/11.1.0/db_1/network/admin/tnsnames.ora

# Generated by Oracle configuration tools.
```

```
# tnsnames.ora Network Configuration File:
/u01/app/oracle/product/11.1.0/db_1/network/admin/tnsnames.ora

# Generated by Oracle configuration tools.

LISTENER_DBSERVER2 =
  (ADDRESS_LIST =
    (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver2-vip)(PORT = 1521))
  )

LISTENER_DBSERVER1 =
  (ADDRESS_LIST =
    (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver1-vip)(PORT = 1521))
  )

SCPRDARC2 =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver2-vip)(PORT = 1521))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = SCPRDARC.infor.com)
      (INSTANCE_NAME = SCPRDARC2)
    )
  )

SCPRDARC1 =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver1-vip)(PORT = 1521))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = SCPRDARC.infor.com)
      (INSTANCE_NAME = SCPRDARC1)
```

```
)  
)
```

SCPRDSRV =

```
(DESCRIPTION =  
  (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver1-vip)(PORT = 1521))  
  (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver2-vip)(PORT = 1521))  
  (LOAD_BALANCE = yes)  
  (CONNECT_DATA =  
    (SERVER = DEDICATED)  
    (SERVICE_NAME = SCPRDSRV.infor.com)  
  )  
)
```

SCPRDARCSRV =

```
(DESCRIPTION =  
  (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver1-vip)(PORT = 1521))  
  (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver2-vip)(PORT = 1521))  
  (LOAD_BALANCE = yes)  
  (CONNECT_DATA =  
    (SERVER = DEDICATED)  
    (SERVICE_NAME = SCPRDARCSRV.infor.com)  
  )  
)
```

LISTENERS_SCPDARC =

```
(ADDRESS_LIST =  
  (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver1-vip)(PORT = 1521))  
  (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver2-vip)(PORT = 1521))  
)
```

```
SCPRD =  
  (DESCRIPTION =  
    (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver1-vip)(PORT = 1521))  
    (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver2-vip)(PORT = 1521))  
    (LOAD_BALANCE = yes)  
    (CONNECT_DATA =  
      (SERVER = DEDICATED)  
      (SERVICE_NAME = SCPRD.infor.com)  
    )  
  )
```

```
SCPRDARC =  
  (DESCRIPTION =  
    (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver1-vip)(PORT = 1521))  
    (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver2-vip)(PORT = 1521))  
    (LOAD_BALANCE = yes)  
    (CONNECT_DATA =  
      (SERVER = DEDICATED)  
      (SERVICE_NAME = SCPRDARC.infor.com)  
    )  
  )
```

```
SCPRD2 =  
  (DESCRIPTION =  
    (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver2-vip)(PORT = 1521))  
    (CONNECT_DATA =  
      (SERVER = DEDICATED)  
      (SERVICE_NAME = SCPRD.infor.com)  
      (INSTANCE_NAME = SCPRD2)  
    )  
  )
```

```
SCPRD1 =
  (DESCRIPTION =
    (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver1-vip)(PORT = 1521))
    (CONNECT_DATA =
      (SERVER = DEDICATED)
      (SERVICE_NAME = SCPRD.infor.com)
      (INSTANCE_NAME = SCPRD1)
    )
  )
```

```
LISTENERS_SCPRD =
  (ADDRESS_LIST =
    (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver1-vip)(PORT = 1521))
    (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver2-vip)(PORT = 1521))
  )
```

```
EXTPROC_CONNECTION_DATA =
  (DESCRIPTION =
    (ADDRESS_LIST =
      (ADDRESS = (PROTOCOL = IPC)(KEY = EXTPROC1))
    )
    (CONNECT_DATA =
      (SID = PLSExtProc)
      (PRESENTATION = RO)
    )
  )
```

The two local listeners are added to the `tnsnames.ora` file:

- `LISTENER_DBSERVER1`
- `LISTENER_DBSERVER2`

You must add these listeners before you set the **local_listener** parameter value for each instance in the SPFILEs. The above server names must be consistent in the `tnsnames.ora`, SPFILEs, and the `listener.ora`.

- 1 Modify the SPFILES for each node instances SCPRD1 and SCPRD2 `tnsnames.ora` file on the database server and application servers.

For the RAC setup you must specify the **local_listener** values for each instance.

- 2 Add the listener entries to the SPFILES for each node instance. These values are unique to your environment. They should correspond with your `listener.ora` values and the values you specified in `tnsnames.ora`.

- `SCPRD1.local_listener='LISTENER_DBSERVER1'`
- `SCPRD2.local_listener='LISTENER_DBSERVER2'`

For example, you can use the commands from `sqlplus` or use the Oracle Enterprise Manager. These listener entries must already exist in the `tnsnames.ora` file or they will not resolve. You will have to make these changes since `dbca` does not configure these parameters automatically.

Set a value for instance SCPRD1:

```
ALTER SYSTEM SET local_listener = "LISTENER_DBSERVER1" SCOPE=BOTH
SID='SCPRD1'
```

Set a value for instance SCPRD2:

```
ALTER SYSTEM SET local_listener = "LISTENER_DBSERVER2" SCOPE=BOTH
SID='SCPRD2'
```

The parameters that begin with the SID name are unique to that instance. The parameters that begin with "*" are global. However, they may be overridden by a SID/instance specific setting.

This is an example SPFILE that Infor SCE uses with the RAC testing. Also, an output of the RAC parameters on SCPRD1 is provided in the `rac_parms.out` file for review.

SPFILE output:

```
SCPRD2.__db_cache_size=570425344
SCPRD1.__db_cache_size=419430400
SCPRD2.__java_pool_size=16777216
SCPRD1.__java_pool_size=16777216
SCPRD2.__large_pool_size=16777216
SCPRD1.__large_pool_size=16777216
SCPRD1.__oracle_base='/u01/app/oracle'#ORACLE_BASE set from environment
SCPRD2.__oracle_base='/u01/app/oracle'#ORACLE_BASE set from environment
SCPRD2.__pga_aggregate_target=5217714176
SCPRD1.__pga_aggregate_target=5217714176
SCPRD2.__sga_target=1610612736
SCPRD1.__sga_target=1610612736
SCPRD2.__shared_io_pool_size=0
```

```
SCPRD1.__shared_io_pool_size=0
SCPRD2.__shared_pool_size=570425344
SCPRD1.__shared_pool_size=721420288
SCPRD2.__streams_pool_size=0
SCPRD1.__streams_pool_size=0
*._b_tree_bitmap_plans=FALSE
*.audit_file_dest='/u01/app/oracle/admin/SCPRD/adump'
*.audit_trail='db'
*.cluster_database_instances=2
*.cluster_database=true
*.compatible='11.2.0.0.0'
*.control_files='+SCPRD_DATA/SCPRD/control01.ctl','+SCPRD_DATA/SCPRD/control0
2.ctl','+SCPRD_DATA/SCPRD/control03.ctl'
*.db_2k_cache_size=419430400
*.db_block_size=8192
*.db_domain='infor.com'
*.db_name='SCPRD'
*.diagnostic_dest='/u01/app/oracle'
*.dispatchers='(PROTOCOL=TCP) (SERVICE=SCPRDXDB)'
*.global_names=TRUE
SCPRD2.instance_number=2
SCPRD1.instance_number=1
SCPRD1.local_listener='LISTENER_DBSERVER1'
SCPRD2.local_listener='LISTENER_DBSERVER2'
*.log_archive_dest_1='LOCATION=+SCPRD_DATA MANDATORY REOPEN=300'
*.log_buffer=1048576
*.log_checkpoint_interval=10000000
*.log_checkpoint_timeout=43200
*.max_dump_file_size='10240'
*.nls_date_format='mm/dd/yyyy hh24:mi:ss' (Adjust for production usage)
*.open_cursors=5000 (Adjust for production usage)
*.optimizer_mode='CHOOSE'
```

```
*.parallel_max_servers=0
*.pga_aggregate_target=5207228416
*.processes=1000
*.query_rewrite_integrity='TRUSTED'
*.remote_listener='LISTENERS_WMPRD'
*.remote_login_passwordfile='EXCLUSIVE'
*.session_cached_cursors=1500
*.sga_target=1610612736    (Adjust for production usage)
*.sort_area_size=256000
SCPRD2.thread=2
SCPRD1.thread=1
*.undo_retention=10800
SCPRD1.undo_tablespace='UNDOTBS1'
SCPRD2.undo_tablespace='UNDOTBS2'
*.utl_file_dir='/u01/app/oracle/admin/SCPRD/udump'
```

Sample tnsnames.ora file for the Infor SCE Application Servers

```
SCPRDSRV.INFOR.COM =
(DESCRIPTION =
  (ADDRESS_LIST =
    (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver1-vip)(PORT = 1521))
    (ADDRESS = (PROTOCOL = TCP)(HOST = dbserver2-vip)(PORT = 1521))
  )
  (LOAD_BALANCE = yes)
  (CONNECT_DATA =
    (SERVER = DEDICATED)
    (SERVICE_NAME = SCPRDSRV.infor.com)
  )
)

SCPRDARCSRV.INFOR.COM =
(DESCRIPTION =
```

```
(ADDRESS_LIST =
(ADDRESS = (PROTOCOL = TCP)(HOST = dbserver1-vip)(PORT = 1521))
(ADDRESS = (PROTOCOL = TCP)(HOST = dbserver2-vip)(PORT = 1521))
(LOAD_BALANCE = yes)
(CONNECT_DATA =
      (SERVER = DEDICATED)
(SERVICE_NAME = SCPRDSRVARC.infor.com)
)
)
```

Installing into Oracle RAC Environments

To install into Oracle RAC Environments:

- 3 Run the Infor SCE Installation program on one of the RAC nodes.
- 4 Select **New Instance**.
- 5 Specify the installation folder that is the root folder of this installation.
- 6 When prompted, select whether to install additional components with this installation. Leave the option blank to install only the database.
- 7 Select **Oracle RAC** when prompted for the database type.
- 8 Specify the hostname of the local server.
- 9 When prompted for the instance name, specify the name used for the RAC database. It must be five characters or less.
- 10 Specify the number of warehouses required for this installation. Create as many as are needed for the life of the instance.
- 11 Select a date format that matches the format used for the NLS_DATE_FORMAT.
- 12 Specify the Oracle system user password.
- 13 Specify the RAC Service name such as **SCPRDSRV.infor.com**.
- 14 Specify the ASM Disk group name to be used for this installation. For example, **+SCE_DATA** if that is the name you chose earlier when creating the diskgroup. All tablespaces are created in this location. For optimal performance, you may migrate objects to other disk groups after the install has completed.
- 15 Specify the total number of RAC nodes for this installation.
- 16 Specify whether to create the archive database. This should always be done unless it is intended to be a test or development environment where archiving of data is not necessary.

- 17** Specify the VIP information for each node. For example, specify this two-node cluster where the nodes are called dbnode1 and dbnode2:

```
dbnode1-vip:1521,dbnode2-vip:1521
```

It should contain each node name and port combination separating each node's information with a comma (,).

- 18** Specify the ORACLE_HOME information.
- 19** After you complete this installation, run the installer on the other host machines to complete the installation. When selecting the RDBMS type on subsequent installations, always select Oracle RAC and provide the Oracle Service Name, node name, and port when prompted.

This chapter contains post-installation information.

Post-installation

The Apache Web Server requires a restart after the installation is complete.

Use *Infor SCE Transportation Management Supplementary Installation Guide* for details for setting up and configuring these optional features:

- Optimization provided by the Infor TM module.
- SMC3's CZAR LTL Rating engine,
- PC*Miler, a mileage calculation engine sold by ALK Technologies
- MileMaker, a mileage calculation engine sold by RandMcNally

All of these components are optional. Install these applications depending on your business needs. Contact your Infor sales representative if you have questions about these optional applications or need to know more about how they can benefit your business through decreased transportation costs. RateWare, PC*Miler, and MileMaker are North America only applications.

Starting the Infor SCE Administration console

Configure the optional applications after the installation using the Infor SCE Administration console.

Starting the console on Windows

To start the Infor SCE Administration Console on Windows:

- 1 Select **Control Panel > Services**.

- 2 Ensure that the **Infor SCE Administration Server** `${instance-name}${Node#}` service has been started.
- 3 Open the **Windows Explorer** > `InstallDir\InstanceName\bin` folder.
- 4 Double click `run-${instance-name}-sceadmin-ui` to display the Infor SCE Administration Console.
- 5 Log on with the **wmsadmin** user password.

Starting the console on Unix or Linux

To start the Infor SCE Administration Console on Unix or Linux:

- 1 Log onto the server with the appropriate user profile.
- 2 Ensure the **JAVA_HOME** environment variable has been set.
- 3 Change directories to the `$INSTALL_DIR/$SCE_INSTANCE/bin` directory.
- 4 Run this command to start the administration console application server:

```
nohup ./run-scprd-sceadmin1.sh.&
```
- 5 Verify that the Infor SCE Administration Server is running. You must verify this process is running on every server that makes up the Infor SCE environment.
- 6 Export the display to a host running an X windows emulator software.
- 7 Run the `xhost` command.
- 8 Run the Infor SCE Administration UI script:

```
nohup ./run-scwprd-sceadmin-ui.sh &
```

Use the Infor SCE Administration Console to configure and manage the SCE application instance. See *the Infor SCE Administration Console Guide* and the online help on the Administration Console to use these features.

Implementations that allow carriers to access the Carrier View screen to accept or reject must expose the main application URL to the Internet. Access by screen and options on the screen are controlled by Infor SCE security layer.

Configure TNSNAMES

For Infor Supply Chain Execution Oracle Installations, ensure that a TNSNAMES entry is created for the database to facilitate bulk data loading using SQLLDR for the TM Catalog Upload Service.

License Activation

After successful completion of the installation, the product is licensed for a period of 30 days. To obtain and activate a permanent license follow these steps:

- 1 Launch the Infor SCE Administration Console using the above steps.
- 2 Select **Manage > Activate License**.
- 3 Send the generated serial number using www.inforxtreme.com with specific request for obtaining a permanent license for Infor Supply Chain Execution.
- 4 Specify the key and click **Next**. This activates the license or temporary key, and displays the expiration date of the license

Verifying Installations

The installation alerts you to any possible installation errors that are encountered. All installation logs are written to the `\Install-Directory\Instance\logs\install` directory.

Reporting Install Issues

If any errors are reported, follow the instructions found in the *Contacting Infor* topic within this guide. Attach the `install_logs.zip` found under `install_dir\instance_name\logs` folder to your correspondence.

After the completion of the installation, restart the Apache Web server service and start the registered Windows service:

Infor SCE Administration Server (Instance Name) `sceadmin (node#)`

Use the **Services** tab of the Administration Console UI to:

- Start/Stop the application services
- Configure the preferred default startup setting of either automatic or manual
- Monitor the application status to validate whether it is running or not.
- See the host name of the server running the application process

Note: The installer does not start this service upon completion; however, it does configure it to start automatically upon the next reboot with the exception of:

- Application URL

`http://machine_name.cn.com|net/$SCE_INSTANCE/sce/sceapp.ctrl`

- Security URL

`http://machine_name.cn.com|net/$SCE_INSTANCE/sc/admin.ctrl`

URL Notes:

- The `$SCE_INSTANCE` represents the instance value you selected in the Infor SCE instance parameters section.
- `cn.com|net` represents the common name|domain name, such as **infor.com**
- Initial database sizing

The databases created in this installation are of a minimal size. They are pre-configured to expand automatically to avoid errors should all allocated space be expended. Infor strongly recommends that you give careful consideration to proactively managing future data file growth by monitoring data growth patterns.

To optimize database performance, follow the best practices suggested by your RDBMS vendor. You should plan for data growth by pre-allocating data space rather than allowing the database to expand.

WebSphere Post-Install Validation

In some WebSphere deployments, it is possible port numbers may not register for some application engines, such as the Scheduler, RnR, and Facility Viewer application servers. Some links on the user interface may not be displayed correctly.

To test for a successful installation:

- 5 Open the user interface and log on using this URL populated with the properly values:
`http://<servername>\<instance_name>\sce\sceapp.ctrl`
- 6 Click **Enterprise** and select **Transportation Workbench > Rating & Routing > Administration > User**.
- 7 If an error is displayed instead of the appropriate page, you must complete the steps in *Post-installation configuration*.
- 8 To complete another test from the main application page, select **Scheduler Workbench**. If a connection error is displayed, you must complete the steps in *Post-installation configuration*.

Post-installation configuration

Complete these steps to resolve the port registration issue.

- 1 Open the Integrated Solutions Console (WebSphere Administration Console).
- 2 Select **Servers > Server Types > WebSphere application servers**.
- 3 Click the **Configuration** tab of the selected server.
- 4 Expand the Ports table in the **Communications** section.
- 5 Locate the port number corresponding to **WC_defaulthost**.
- 6 Select **Servers > Server Types > WebSphere application servers**.
- 7 Click the **Configuration** tab of the selected server.
- 8 Select **Container Settings > Web Container Settings** and select **Web Container**
- 9 In the General Properties section, locate the Default virtual host. The default value is **default_host**.
- 10 Select **Environment > Virtual hosts**.
- 11 From the list of virtual hosts, select your virtual host.
- 12 Select **Additional Properties and** click **Host Aliases**.
- 13 If the port number for the service issue is not present, specify the port number by selecting **New**.
- 14 Specify the port number in the **Port** field. Accept the default value in the **Host Name** field
- 15 Click **Apply**.

Generate the plug-cfg.xml

- 1 Run the `GenPluginCfg.sh` in the `/bin` directory of the profile used for this installation. For example:

```
/usr/IBM70/WebSphere/AppServer/profiles/AppSrv01/bin/GenPluginCfg.sh
```

- 2 Copy the plugin file to the IBM HTTP Server. For example, copy from `/usr/IBM70/WebSphere/AppServer/profiles/AppSrv01/config/cells/plugin-cfg.xml`

```
to /usr/IBM70/HTTPServer/Plugins/config/webserver1/plugin-cfg.xml
```

- 3 Restart the process by selecting **Servers > Server Types > WebSphere application servers**.
- 4 From the list view, select the check box next to the server such as Scheduler, RnR, or Facility Viewer, and click **Restart**.
- 5 Restart IBM HTTP Server.

