



Sun Java™ System RFID Software 3.0 Installation Guide

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Before You Begin

This installation guide for the beta version of Sun Java™ System RFID Software 3.0 (RFID software) provides instructions for installing and starting the various components that comprise the RFID software.

Screen shots vary slightly from one platform to another. Although almost all procedures use the interface of the RFID software components, occasionally you might be instructed to enter a command at the command line.

Before You Read This Book

You should be familiar with RFID concepts and with the following topics:

- Jini™ network technology concepts
- Java™ programming and concepts)
- Java™ DataBase Connectivity (JDBC™) technology concepts and usage
- Java™ 2 Platform, Enterprise Edition (J2EE™) technology and usage
- Client-server programming model
- Familiarity in managing large enterprise systems
- Administration of one of the supported application servers
- Administration of one of the supported databases

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Documentation Formatting Conventions

This section describes the types of conventions used throughout this guide:

- General Conventions
- Conventions Referring to Directories

General Conventions

The following general conventions are used in this guide:

- File and directory paths are given in UNIX® format (with forward slashes separating directory names).
- URLs are given in the format:
`http://server.domain/path/file.html` where *server* is the server name where applications are run; *domain* is your Internet domain name; *path* is the server's directory structure; and *file* is an individual filename.
- UNIX-specific descriptions throughout this manual apply to the Linux operating system as well, except where Linux is specifically mentioned.
- RFID Installation root directories are indicated by the variable *rfid-install-dir* in this document. See [Appendix C](#) for more details.

Typographic Conventions

Typeface	Meaning	Examples
AaBbCc123	The names of commands, files, and directories; on-screen computer output	Edit your <code>.cvspass</code> file. Use <code>DIR</code> to list all files. <code>Search is complete.</code>
AaBbCc123	What you type, when contrasted with on-screen computer output	login :
<i>AaBbCc123</i>	Book titles, new words or terms, words to be emphasized	Read Chapter 6 in the <i>User's Guide</i> . These are called <i>class</i> options. You <i>must</i> save your changes.
<code>AaBbCc123</code>	Command-line variable; replace with a real name or value	To delete a file, type DEL <i>filename</i> .

Related Documentation

The following table lists the tasks and concepts that are described in the Sun Java™ System RFID Software manuals and Release Notes.

Topic	For Information
Late-breaking information about the software and the documentation, including the supported platforms and associated software	<i>Sun Java System RFID Software 3.0 Release Notes</i>
Installing Sun Java™ System RFID Software	<i>Sun Java System RFID Software 3.0 Installation Guide</i>

Topic	For Information
<p>The following topics:</p> <ul style="list-style-type: none"> • RFID Software overview • Configuring the RFID Event Manager using the RFID Configuration Manger • Distributed RFID Event Manager environment • Configuring communication with the SAP Auto-ID Infrastructure software • Managing the RFID system using the RFID Management Console • Sending tag events from the RFID Event Manager to the RFID Information Server • RFID Information Server configuration • RFID device adapter reference • RFID Event Manager component reference • RFID Event Manager configuration file reference 	<p><i>Sun Java System RFID Software 3.0 Administration Guide</i></p>
<p>Sun Java™ System RFID Software developer information, including the following:</p> <ul style="list-style-type: none"> • RFID Event Manager architecture overview • Execution Agents and configuration objects • Creating custom filters and connectors, including setting up the NetBeans 4.1 environment and installing the Sun Java System RFID Software Toolkit • Using RFID device client API • Using web services for device access • ALE web services API • Using RFID Information Server client API • PML Utilities 	<p><i>Sun Java System RFID Software 3.0 Developer's Guide</i></p>

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Introduction to the Sun Java System RFID Software

This chapter provides an overview of the Sun Java™ System RFID Software 3.0 (RFID Software). This chapter includes the following topics:

- [Introduction to RFID Technology](#)
- [RFID System Architecture](#)

Introduction to RFID Technology

RFID technology has emerged in response to the need for a next generation bar code and is a fundamental element of the EPCglobal Network. RFID stands for Radio Frequency Identification. The EPC or Electronic Product Code functions similarly to a Universal Product Code or UPC as found in common bar code technology. It is an identification scheme for universally identifying physical objects via RFID tags and other means. The EPC encoded on an RFID tag can identify the manufacturer, product, version and serial number, and also provides an extra set of digits to identify unique items.

The EPCglobal Network is a set of technologies that enable immediate, automatic identification and sharing of information for items in the supply chain. RFID technology involves placing RFID tags on objects, reading the tags, ideally without human intervention, and then passing the information to a dedicated IT infrastructure. With such an infrastructure to automatically identify objects, computers can track, monitor, and trigger relevant events.

The RFID Software consists of two RFID software modules, an event manager and an information server. The RFID Event Manager is designed to process the streams of tag or sensor data coming from the network of reader devices. This middleware performs filtering, aggregation, counting of tag data (event data) and connectivity to back-end IT systems.

The RFID Information Server is a Java™ 2 Platform, Enterprise Edition (J2EE™) application that serves as an interface for capture and query of EPC-related data. This EPC data includes tag observation data from the RFID Event Manager as well as information that maps EPCs to higher-level business data. The RFID Information Server functions to translate a set of low-level observations into higher-level business functions.

RFID tags and readers are part of an enabling technology in this emerging Electronic Product Code (EPC) network. Promoted by the EPCglobal standards organization in cooperation with the Uniform Code Council, RFID tags and compliant readers are designed to uniquely identify an object, without line-of-sight access or human intervention. When a tagged object is scanned by a reader, the information is processed by the RFID Event Manager.

The RFID Event Manager can be distributed over multiple computer nodes so that there is no single point of failure. Fully utilized, EPC data can be formatted to automatically identify objects, monitor location and movement, and trigger events. A near real-time view throughout the supply chain can enable significant gains in operational efficiencies, such as tighter inventory control, increasing throughput, and lowering costs.

RFID Information Server is a J2EE application that serves as a front-end to a database of EPC-related information and is typically deployed on a different machine than the RFID Event Manager. The RFID Information Server runs on both Sun Java System Application Server Platform Edition 8.1 2005Q2 UR2 (Application Server Platform Edition) and Sun Java System Application Server Enterprise Edition 8.1 2005Q1 (Application Server Enterprise Edition). You can also deploy the RFID Information Server to BEA WebLogic Server 8.1 SP4. The RFID Information Server supports HTTP and Java Message Service (JMS) message transports, with external applications using the XML protocol for message exchange. A Java™ DataBase Connectivity (JDBC™) database provides the means to store and manage tagged data and the related mappings to product codes and product information.

RFID System Architecture

The software is built on an infrastructure that includes the following Sun products and open source technologies:

- Jini™ 2.0
- Rio 3.1
- Sun Java System Application Server 8.1

The RFID Software consists of the RFID Event Manager module, the RFID Management Console module, and the RFID Information Server module. The RFID Event Manager and the RFID Information Server play key roles in the EPC Network

as defined by EPCglobal, the standards organization chartered with the standardization of RFID for use in business. The EPC Network architecture can be found at <http://www.epcglobalinc.com/index.html>.

The RFID Software follows the identification scheme from *EPC Tag Data Standards Version 1.1 Rev.1.26*. For more information about the EPC data format and the related concepts, see *Sun Java System RFID Software 3.0 Administration Guide*. The RFID Event Manager also supports non-EPC tags.

This section includes the following topics:

- “Infrastructure Technologies” on page 13
- “RFID Software Description” on page 14
- “RFID Event Manager” on page 15
- “RFID Information Server” on page 17

Infrastructure Technologies

This section provides a brief overview of the underlying technologies used by the RFID Software.

The RFID Software relies on a J2EE 1.4-compliant EJB™ container. The J2EE container hosts the RFID Information Server and RFID Management Console. The RFID Information Server communicates with a database through JDBC. The database can handle all additions, deletions, and insertions of rows for every EPC tag identified.

Jini Network Technology 2.0

The Java-based Jini network technology was developed by Sun Microsystems and open sourced a number of years ago. A Jini system is a distributed system based on the idea of federating groups of users and the resources required by those users. The overall goal is to turn the network into a flexible, easily administered tool with which resources can be found by human and computational clients. Resources can be implemented as either hardware devices, software programs, or a combination of the two. The focus of the system is to make the network a more dynamic entity that better reflects the dynamic nature of the workgroup by enabling the ability to add and delete services flexibly.

Additional details about the Jini network technology can be found at <http://www.jini.org>.

Project Rio 3.1

Project Rio provides a dynamic adaptive network architecture built using Jini technology mechanisms. Rio enables the dynamic provisioning of services using quality of service attributes. Quality of service, is the notion that a compute resource supports capabilities, such as CPU speed or perhaps a specific network interface like 802.11b. At the same time, services require certain compute capabilities, for example, response time to meet service level agreements or certain physical assets like sound or video cards. Rio deploys services to the most suitable compute resources that can assure the Level of Service requirements of those services as determined when the service is deployed. Rio details can be found at <http://rio.jini.org>.

Supported Databases

The RFID Information Server and the RFID Management Console use a relational database to maintain all the product information reported back to the customer, as well as the RFID system monitoring information. See *Sun Java System RFID Software 3.0 Release Notes* for a list of the supported databases.

Java Dynamic Management Kit 5. 1

Java Dynamic Management Kit 5. 1 (Java DMK 5.1) is used to manage the objects exposed by the RFID Event Manager. It is also used to interface with SNMP base control station managers using a Sun defined MIB.

RFID Software Description

The RFID Software consists of the RFID Event Manager, the RFID Management Console and the RFID Information Server modules. The RFID Event Manager gathers information from RFID readers, filters the information, and provides the processed information to the RFID Information Server module or to a third-party ERP system.

The following illustration shows how the RFID Software modules connect RFID devices and generic sensors with business applications. The integration layer is optional as business applications can obtain RFID sensor events through an integration layer or directly through dedicated connectors.

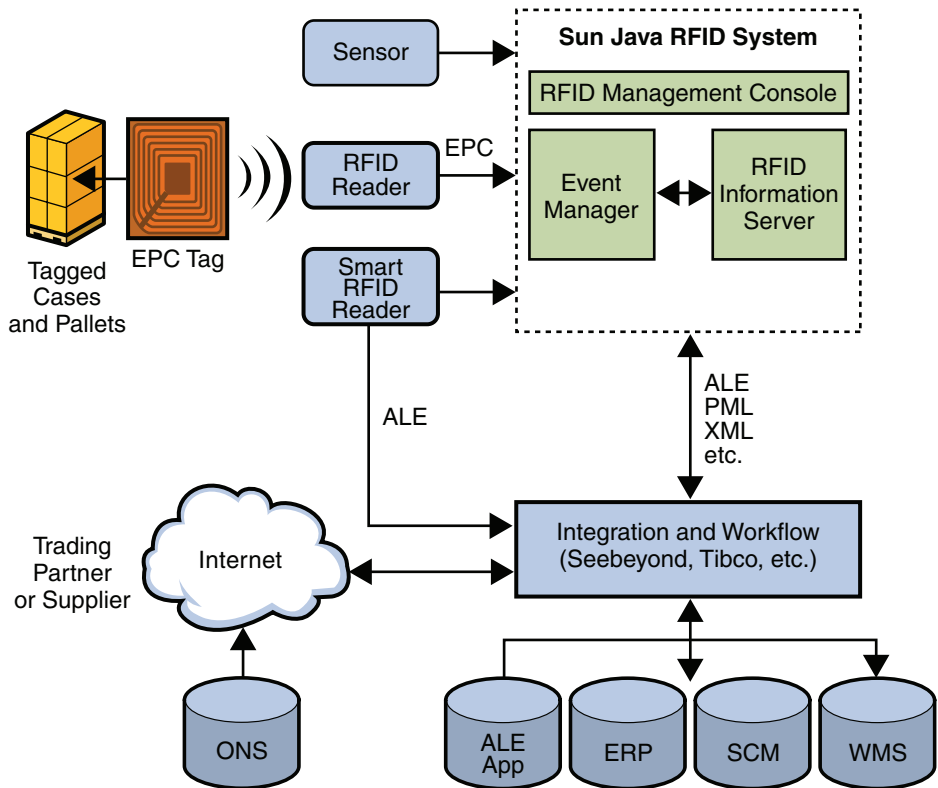


FIGURE 1-1 Sun RFID Software Function in the EPC Network

RFID Event Manager

The RFID Event Manager is a Jini technology-based event management system. The RFID Event Manager facilitates the capture, filtering and eventual storage of Electronic Product Code (EPC) events generated by RFID readers connected to the network. The main function of the RFID Event Manager is to interface with RFID readers, gather EPC events, filter redundant information, and feed relevant events to the RFID Information Server or other ERP software for further processing. The RFID Event Manager Jini services are managed through Rio, an open source container of Jini Service Beans.

The RFID Event Manager consists of a Control Station and one or more Execution Agents. The Execution Agents perform the actual gathering and filtering of RFID information. A computer system typically runs one Execution Agent, which can carry out one or more workloads. Each Execution Agent registers at startup with the Control Station, which in turn assigns a workload to the Execution Agent. Agents

can run on any machine that is reachable from the Station. The Control Station provisions the software components to the Execution Agents depending on how the RFID Event Manager is configured.

The Control Station keeps a registry of available execution agents, monitors their status, assigns workloads, and provides them the necessary Java classes to carry out the workload. It is possible to specify that a workload is to be executed by an Execution Agent with a given level of resources and a given set of capabilities. For example, it can be specified that the workload be carried out by a host with 25 percent or lower CPU utilization, and an 802.11b network connection. This is called a Service Level Agreement (SLA). The Control Station monitors the state of each of the Execution Agents, assigns new workloads to those that meet the required SLA, and is capable of migrating workloads from one Execution Agent to another when the SLA is no longer met. This release of the product does not make use of the workload migration capabilities.

The Control Station consists of seven components:

- **Control Station Registry.** A Jini Lookup Server that serves as the Execution Agent registry.
- **Control Station Code Provisioner.** The Project Rio Webster (a class web server) serves the Java JAR files necessary to execute the workloads.
- **Control Station Workload Monitor.** The Project Rio Provisioner/Monitor monitors the state of the Execution Agents and assigns the workloads.
- **Configuration Service.** The permanent and central repository of device and component configuration information.
- **Management Service.** The central point of contact for all RFID Event Manager administration providing access points for both SNMP and Java Management Extensions (JMX[™]) management tools.
- **Web Service for ALE.** Sun's Remote Method Invocation (RMI) binding implementation of the EPCglobal Application Level Events (ALE) Specification.
- **Plug-in for SAP Auto-ID Infrastructure (SAP AII).** This plug-in enables integration with the SAP Auto-ID Infrastructure by using the SAP AII-DC 1.0 protocol.

You use the RFID Configuration Manger to configure the RFID readers and business processing rules for the RFID Event Manager's Execution Agents. You can install and use the RFID Management Console to monitor the status of the active RFID system and update the properties of the running components. The components are described in more detail in the *Sun Java System RFID Software 3.0 Administration Guide*.

RFID Software ALE Web Service

The ALE web service is the RFID Software implementation of the EPCglobal Application Level Events (ALE) specification. The role of the ALE interface within the EPCglobal Network architecture is to provide independence between the infrastructure devices that acquire the raw EPC data, the programmatic elements that filter and count that data, and the applications that use the data. Providing this independence enables the devices and elements to change without requiring changes in the applications.

ALE is a web service specification, using the Web Services Description Language (WSDL), to define, configure, and request reports about real-time EPC data. There is also an XML schema for requesting reports and for the reports themselves. Refer to *Application Level Events (ALE) Specification, Version 1.0* before installing or using this component. The specification can be found at the EPCglobal Network, Inc. web site <http://www.epcglobalinc.com>.

The implementation of ALE in the RFID Event Manager is based on a new Project Rio service named ALE. This service implements the WSDL methods as described in the specification, but not as WSDL rather as RMI. Report request and report messages are implemented as POJO (Plain old Java objects) in the package `com.sun.autoid.ale.spec`.

For more details on the Sun implementation of ALE, see *Sun Java System RFID Software 3.0 Developer's Guide*.

To install the ALE web service, see [“To Install the RFID Event Manager Using the Custom Installation Option” on page 33](#).

RFID Information Server

Other applications interface with the RFID Information Server through XML message exchange. The RFID Information Server supports HTTP and JMS message transports and persists all data in a relational database.

See *Sun Java System RFID Software 3.0 Release Notes* for a complete list of the supported application servers and database servers.

Preparing for Installation of the RFID Software

This chapter contains information you should review before you install any of the modules of the Sun Java™ System RFID Software 3.0. Three separate installer wizards are used to install the RFID Software. Use of the wizards is described in other chapters.

The following sections are included in this chapter:

- [Overview of the Installation Process](#)
- [Verifying Installation Readiness](#)
- [Getting the RFID Software and the RFID Documentation](#)
- [Deciding Which RFID Software Modules to Install](#)
- [RFID Software Installation Scenarios](#)

Overview of the Installation Process

Installing the RFID Software involves the following tasks:

1. Getting the product CDs or downloading the software from the product web site. See [“Getting the RFID Software and the RFID Documentation”](#) on page 23.
2. Installing the RFID Event Manager. See [Chapter 3](#) for UNIX systems. See [Chapter 6](#) for Microsoft Windows systems.
3. (Optional) Installing the RFID Management Console. See [Chapter 4](#) for UNIX systems. See [Chapter 6](#) for Microsoft Windows systems.
4. (Optional) Installing the RFID Information Server. See [Chapter 5](#) for UNIX systems. See [Chapter 6](#) for Microsoft Windows systems.
5. Verifying the installation of the software by starting the RFID software modules. See the chapter for the specific module and platform as indicated in [Step 1](#) through [Step 4](#) above.

Verifying Installation Readiness

The RFID Software is supported on several operating system (OS) platforms, application servers and databases. See the *Sun Java System RFID Software 3.0 Release Notes* for the latest information.



Caution – The version 3.0 RFID Information Server, also known as the EPCIS, has a new database schema that is *not* compatible with the database schema used by previous versions. A data migration tool is included with version 3.0 to aid in migrating from the version 2.0 database schema to the version 3.0 database schema.

To properly prepare for installation, review the following prerequisites.

- **Supported platforms.** Verify that your machine is using a supported platform. This release of the RFID Software is supported on the following platforms:
 - Solaris 9 OS and Solaris 10 OS on SPARC and x86 platforms
 - Red Hat Enterprise Linux ES, Version 3
 - Microsoft Windows 2003 Advanced Server
- **Java Platform, Standard Edition (J2SE).** The minimum version is Java 2 Platform, Standard Edition (J2SE™), version 1.4.2.
- **RFID modules.** Decide which RFID modules you are going to install. See [“Deciding Which RFID Software Modules to Install” on page 24.](#)
- **Previous RFID Software versions.** Uninstall previously installed versions of the RFID software.
 - Use the *Sun Java System 1.0 RFID Software Installation Guide* for information about uninstalling the version 1.0 software.
 - Use the *Sun Java System RFID Software 2.0 Installation Guide* for information about uninstalling the version 2.0 software.

Note – You must uninstall previous versions of this software before installing version 3.0.

- **Application servers.** Verify that you are using a supported application server.
 - If you are installing the RFID Information Server, you must have Sun Java System Application Server Enterprise Edition 8.1 2005Q1, Sun Java System Application Server Platform Edition 8.1 2005Q2 UR2, or BEA WebLogic Server 8.1 SP4 installed and running.

- If you are installing the web services for ALE and device access, the plug-in for SAP Auto-ID Infrastructure integration, or the RFID Management Console, you must have Sun Java System Application Server Enterprise Edition 8.1 2005Q1 or Sun Java System Application Server Platform Edition 8.1 2005Q2 UR2 installed and running.

Note – Because of a bug that affects the use of the ALE web services in the RFID Software, to use the Application Server Enterprise Edition, you must have a patched version. The application server patches are as follows – For package-based, patch numbers are: 119166-06, 119167-06 and 119168-05. For file-based, the patch numbers are: 119169-01, 119170-01 and 119171-01. These patches are for Solaris OS, Solaris x86 OS and Linux respectively. The bug is listed as fixed in 8.1^{eeur2_b01}. The download file is `sjsas_ee-8_1_02_2005Q2-p05-solaris-sparc.bin`. This download file comprises a full installation of the application server.

- **Database software.** Verify that you have a supported Oracle or PostgreSQL database installed. If you are installing the RFID Management Console, or the RFID Information Server you need a database. This release supports the installation of the RFID Management Console and the RFID Information Server using the following databases.
 - Oracle 9i Database
 - Oracle 10g Database
 - PostgreSQL 8.0.4

Note – If you have RFID Software version 2.0 modules installed that are using a database, you must migrate your database tables to the new database schema. See [“Migrating the Database Tables From Version 2.0 to Version 3.0 Database Schema” on page 22](#).

- **Firewalls and port conflicts.** The RFID Software uses the Jini network technology and an application server. These software components use a variety of ports. If you have a local firewall installed and enabled, you might experience various port conflicts that are not obvious. If you encounter otherwise unexplained communication issues trying to use the RFID Software, try disabling your local firewall. Ports used by various components of the RFID Software are the following:
 - Jini – Default port is 4160.
 - IMQ – Default port is 7676.
 - Webster – Default port is 52493.
 - Application server – The default admin and HTTP ports vary depending on the specific version and platform. Use the Admin Console to determine which ports are in use.
 - Oracle – Default port is 1521.
 - PostgreSQL – Default port is 5432.

Migrating the Database Tables From Version 2.0 to Version 3.0 Database Schema

If you have version 2.0 of the RFID Software installed, you need to migrate your database schema to the version 3.0 database schema. This guide does not provide step-by-step instructions for using or backing up your database software. This procedure provides a recommended process to use the data migration scripts that are provided as part of the RFID Software 3.0 release.

Note – Data migration scripts are not provided for the Microsoft Windows platform. Previous releases of the RFID Software did not support the Microsoft Windows platform.

▼ To Migrate the Database Schema From Version 2.0 to Version 3.0

1. **Backup your current database tables using the utilities and procedures provided with your database software.**

Contact your database administrator if you are not familiar with the database backup process.

2. **Locate the database migration scripts for your platform and for the appropriate RFID Software module.**

The scripts are in the zip download file for each UNIX platform. When you unzip the download file to your *rfid-download-dir*, you can find the migration scripts as shown in the following table.

TABLE 2-1 Location of RFID Software Database Migration Scripts

RFID Module	Location of Database Migration Scripts
RFID Information Server	<i>rfid-download-dir</i> /rfidis/files/scripts/migration/r2-r3
RFID Management Console	<i>rfid-download-dir</i> /rfidmc/files/scripts/migration/r2-r3

3. Copy the RFID Software database migration scripts to the machine where your database is installed.

Use the scripts for your specific database as follows:

TABLE 2-2 Database Migration Scripts

RFID Module	Script for Oracle Database	Script for PostgreSQL Database
RFID Information Server	oracle_rfidis_migration	postgres_rfidis_migration
RFID Management Console	oracle_rfidmc_migration	postgres_rfidmc_migration

4. Run the database migration script from the command line.
5. (Optional) Connect to the database and query for known data.

Getting the RFID Software and the RFID Documentation

You can view and download additional Sun Java System RFID Software documentation at <http://docs.sun.com/coll/434.2>.

▼ To Download the RFID Software

1. Download the RFID Software from <http://www.sun.com/software/products/rfid/>.
2. Unzip the software to your *rfid-download-dir*.

Be sure you get the correct download file for your platform.

- **Solaris OS on SPARC** – RFID_SystemSoftware_SPARC.zip
- **Solaris OS on x86** – RFID_SystemSoftware_X86.zip
- **Linux** – RFID_SystemSoftware_LINUX.zip
- **Microsoft Windows** – RFID_SystemSoftware_Windows.zip

Deciding Which RFID Software Modules to Install

The RFID Software consists of several modules and additional components. Before beginning your installation, decide what you need for your RFID network.

- Install the RFID Event Manager to gather, filter, and route the RFID reader information.
- Install the ALE web service to get tag event reports.
- Install the RFID Software plug-in for SAP Auto-ID Infrastructure to interface with the SAP Auto-ID Infrastructure module.
- Install the RFID Management Console to manage your readers and RFID Event Manager from a web browser.
- Install the RFID Information Server to capture and store the tag observation data gathered by the RFID Event Manager.

RFID Software Installation Scenarios

Installing the various components of the RFID Software requires an understanding of the related software requirements. This section gives an overview of those requirements. The detailed procedures can be found in the following chapters of this book.

TABLE 2-3 RFID Event Manager Installation Scenarios

Scenario	Installation Type	What You Get	What You Need	What To do
You select Typical installation to install basic RFID Event Manager on one system.	Typical	Control Station Execution Agent Common Files	Supported OS machine	(UNIX systems) See “Using the Typical Installation Option” on page 29 . (Microsoft Windows systems) See “To Install the RFID Event Manager Using the Typical Installation Option (Microsoft Windows)” on page 76 .

TABLE 2-3 RFID Event Manager Installation Scenarios (Continued)

Scenario	Installation Type	What You Get	What You Need	What To do
You select and install Control Station on local system, and one or more Execution Agents on remote systems	Custom	RFID Event Manager for distributed system.	Supported OS machines in distributed configuration	See “Creating a Distributed RFID Software Installation” on page 30.
You select and install basic components (same as Typical) and web services for ALE and device access	Custom	RFID Event Manager with web services for ALE and device access	Supported OS machine plus Sun Java System Application Server 8.1 (installed and running locally)	(UNIX systems) See “Using the Custom Installation Option” on page 30. (Microsoft Windows systems) See “To Install the RFID Event Manager Using the Custom Installation Option (Microsoft Windows)” on page 77.
You select and install basic components (same as typical) and plug-in for SAP AII	Custom	RFID Event Manager with Plug-in for SAP AII.	Supported OS machine plus Sun Java System Application Server 8.1 (installed and running)	(UNIX systems) See “To Install the RFID Event Manager Using the Custom Installation Option” on page 33. (Microsoft Windows systems) See “To Install the RFID Event Manager Using the Custom Installation Option (Microsoft Windows)” on page 77.

TABLE 2-4 RFID Management Console Installation Scenarios

Scenario	Installation Type	What You Get	What You Need	What To Do
Install RFID Management Console	Typical	RFID Management Console	<ul style="list-style-type: none"> • Supported OS machine • Sun Java System Application Server 8.1 (installed and running locally) • Supported database (can be remote) • Supported web browser • JDBC drivers added to the correct application server directory 	(UNIX systems) See Chapter 4 . (Microsoft Windows systems) See “Installing the RFID Management Console (Microsoft Windows)” on page 79.

TABLE 2-5 RFID Information Server Installation Scenarios

Scenario	Installation Type	What You Get	What You Need	What To Do
Install the RFID Information Server	Typical	RFID Information Server	<ul style="list-style-type: none"> • Supported OS machine • Supported application server (installed and running locally) • Supported database (can be remote) • JDBC drivers added to the correct application server directory 	(UNIX systems) See Chapter 5 . (Microsoft Windows systems) See “Installing the RFID Information Server (Microsoft Windows)” on page 86.

Installing the RFID Event Manager (UNIX)

This chapter describes how to install the Sun Java System RFID Event Manager (RFID Event Manager) on the Solaris™ Operating System (Solaris OS) and Linux platforms. To install this software on the Microsoft Windows platform, see [Chapter 6](#). The following sections are included in this chapter:

- [Selecting the Installation Type](#)
- [Installing the RFID Event Manager \(UNIX\)](#)
- [Troubleshooting During RFID Event Manager Installation](#)

Selecting the Installation Type

Before beginning your installation of the RFID Event Manager, decide whether you are using the Typical Installation or Custom Installation option.

Using the Typical Installation Option

Use the Typical Installation option to install the minimum required event manager components to run the RFID Event Manager.

This option installs all RFID Event Manager components on one machine. Therefore, do not use this option when you need to install the Execution Agent and Control Station components in a distributed system. To create a distributed installation, see [“Creating a Distributed RFID Software Installation”](#) on page 30.

You do not need to have an application server installed to perform this type of installation.

The typical installation option installs the following basic components:

- **RFID Control Station components.** The control station contains components necessary to run the code provisioner, the Jini Lookup Server, and the workload monitor.
- RFID Execution Agent
- RFID Common Files

Using the Custom Installation Option

Use the custom installation option in the following scenarios:

- To install the web services for ALE and device access.
- To install the SAP plug-in for integration with the SAP Auto-ID Infrastructure.
- To create a distributed RFID installation. See [“Creating a Distributed RFID Software Installation” on page 30.](#)

To install the SAP plug-in or the web services components, you need the following:

- An application server installed on the local system

The custom installation option installs one or more (as you choose) of the following components:

- RFID Control Station
- RFID Execution Agent
- RFID common files
- Web services for ALE and device access
- SAP Plug-in for SAP Auto-ID Infrastructure

Creating a Distributed RFID Software Installation

An alternative configuration to a typical installation of the RFID Event Manager is to deploy the RFID Event Manager’s Control Station on a different host in the subnet from that used for the Execution Agent. An RFID Event Manager can be distributed over multiple computer nodes so that there is no single point of failure.

The RFID Event Manager is designed to process streams of tag or sensor data (event data) coming from one or more reader devices. To localize reader traffic, an enterprise may have numerous instances of the RFID Event Manager’s Execution Agent at each geographically remote site, such as a store, distribution center, or warehouse. A typical store or warehouse is likely to have many readers. Given the amount of network traffic from readers, it is important to localize data by enabling the RFID Event Manager’s Execution Agents to filter the tag data at each site, instead of sending the data over the Internet. See [“To Install the RFID Event Manager Components for a Distributed Environment” on page 38.](#)

Installing the RFID Event Manager (UNIX)

Use the installation wizard, to install the components of the RFID Event Manager.

▼ To Install RFID Event Manager Using Typical Installation

This procedure does not walk through each wizard panel. It does cover panels that need additional explanation.

Note – You do *not* need to have an application server to do a typical installation of the RFID Event Manger.

1. Get the software.

See “[Getting the RFID Software and the RFID Documentation](#)” on page 23.

- For web download, locate your unzipped software and change to the directory containing the unzipped download file.
- For CD installation, insert the Sun Java System RFID Software 3.0 CD.

2. Enable access to the X server.

```
% xhost + machine-name
```

3. Become superuser (root).

```
% su root
```

4. Set the DISPLAY environment variable to display to your machine name.

For example, using the csh shell, you would type:

```
% setenv DISPLAY [machine-name]:0.0
```

5. Start the installation.

a. Change to the appropriate directory.

- For web download, change to the directory containing the unzipped download file, then change to the `rfidem` directory.
- For CD installation, change to the `rfidem` directory for your platform.
For example, `/linux/rfidem/setup`.

b. Start the installer.

```
#./setup
```

The Welcome page displays.

6. From the Welcome panel, click Next and follow the instructions on the panels to perform the installation.

7. When specifying the location of your Java 2 Standard Edition, version 1.4.2 installation, be sure to select only the top level of the installation path.

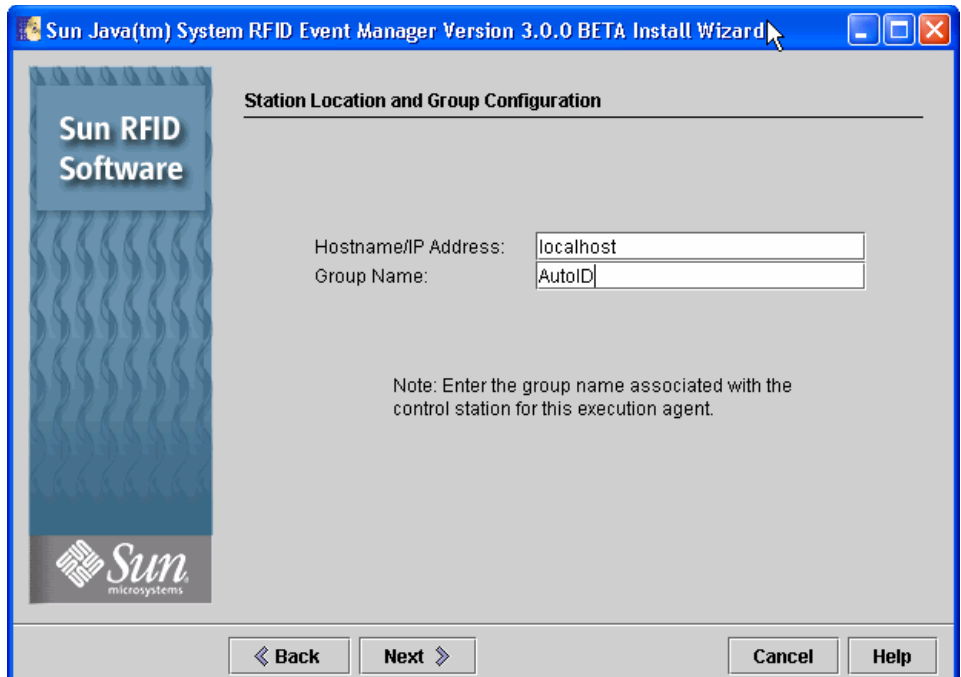
For example, if your J2SE version is located in `/usr/j2se`, `JAVA_HOME` should be `/usr/j2se`. If your J2SE version is located in `/usr/jdk1.4.2/bin/java`, `JAVA_HOME` should be `/usr/jdk1.4.2`.

8. On the Station Location and Group Configuration panel, complete the required fields.

- **Host Name/IP Address** - You need to know the host name of the system you are installing.
- **Group Name** - This field is the Jini group name for the Control Station. The group name must be unique for every Control Station you set up. The group name gives the Control Station its identity over the network. The software comes with a default group name of `AutoID`.

Note – When installing multiple Control Stations in the same subnet, verify that the Jini Group Name is consistent among files and is unique for your deployment.

The following screen capture shows this panel of the installer wizard.



9. When the installation is complete, click Close to dismiss the wizard.

10. (Optional) Start the RFID Event Manager.

See [“To Start the RFID Event Manager”](#) on page 38.

▼ To Install the RFID Event Manager Using the Custom Installation Option

Prerequisite – If you choose to install the ALE web service or the plug-in for SAP AII, you must have either Sun Java System Application Server Enterprise Edition 8.1 2005Q1 (Application Server Enterprise Edition) or Sun Java System Application Server Platform Edition 8.1 2005Q2 UR2 (Application Server Platform Edition) installed and running before you start the RFID Event Manager installer.

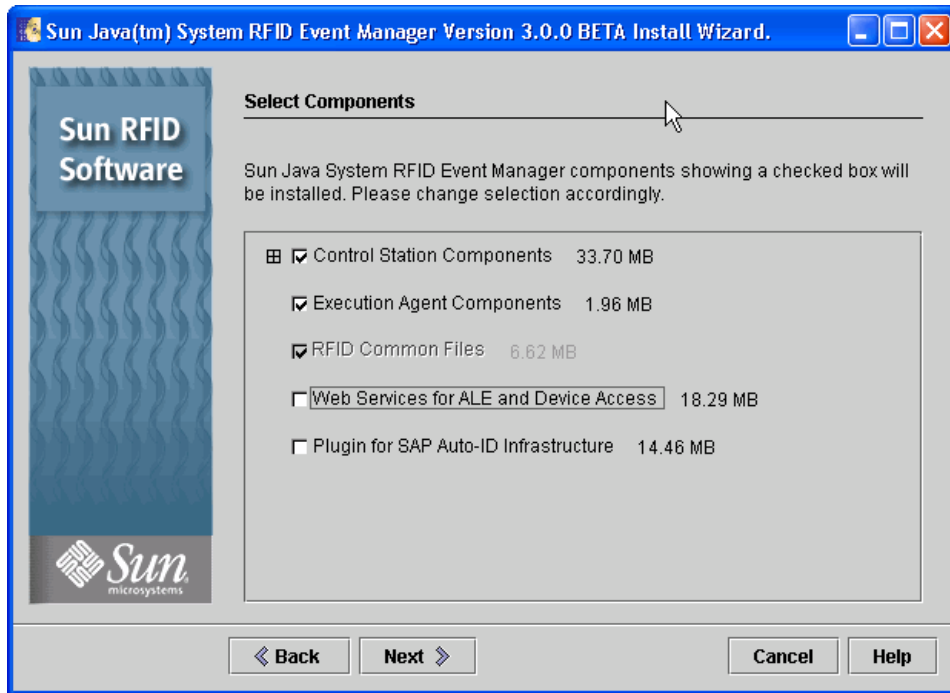
1. Verify that your Application Server is running.

2. Begin the installation as described for performing a typical installation.

See [“To Install RFID Event Manager Using Typical Installation”](#) on page 31.

3. On the **Select Type of Installation** panel, select **Custom Installation**, and click **Next**.

The **Select Components** panel appears.



4. **Select the components to install and click Next.**

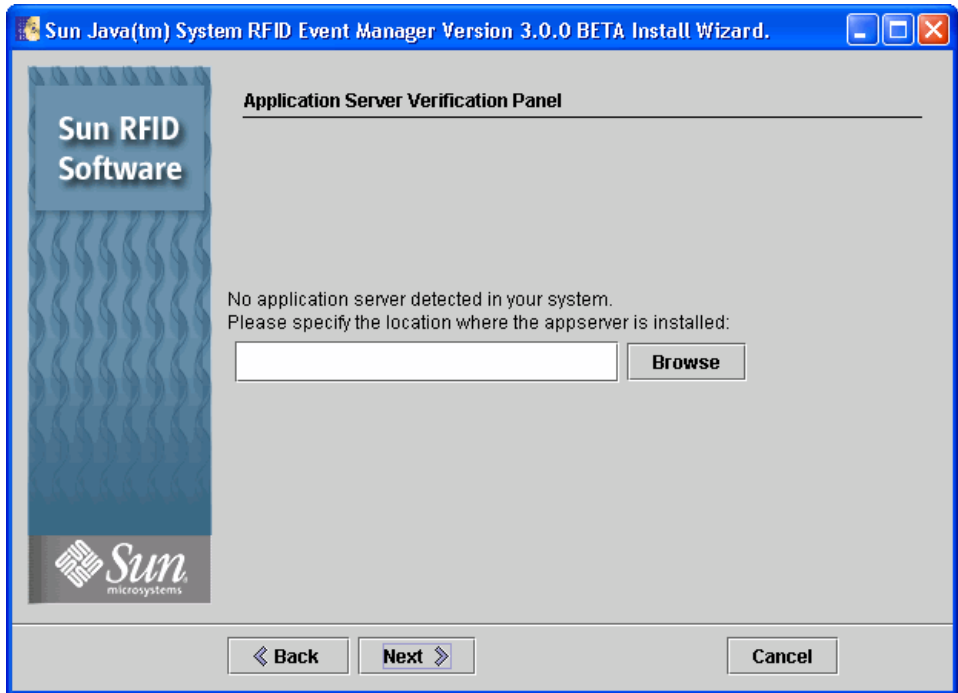
When you select the web services for ALE and device access or the plug-in for SAP Auto-ID Infrastructure, the **Application Server Selection Panel** appears during the installation.

5. **When prompted, specify the location of your installation of Java 2 Standard Edition, version 1.4.2.**

6. **When the Application Server Verification panel appears, select the application server that you are using and click next.**

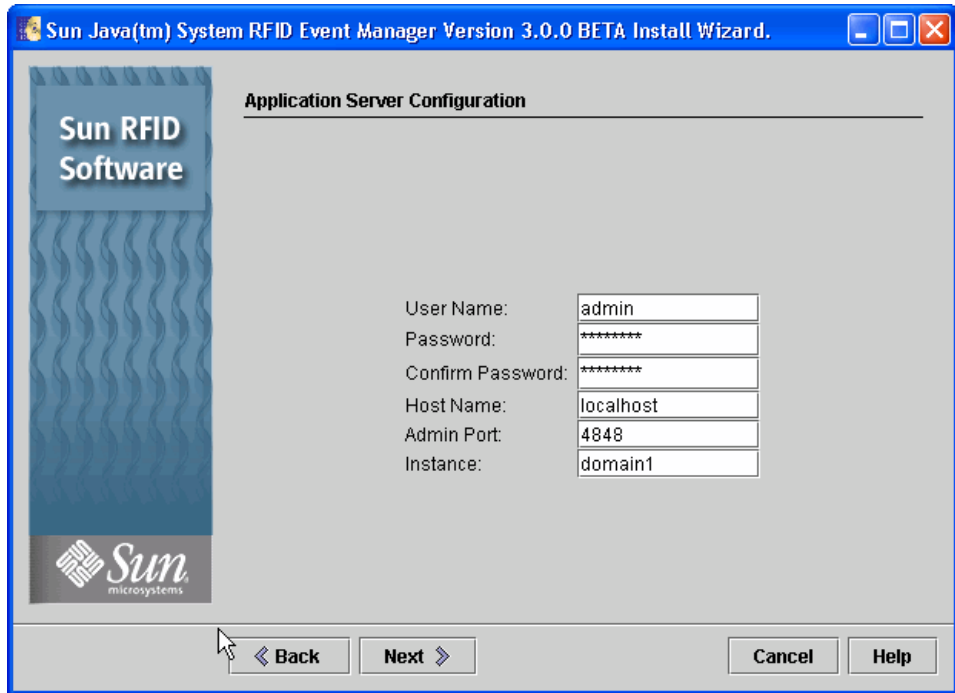
If the installer cannot detect your application server, use the **Browse** button to find and specify your application server location.

The **Application Server Configuration** panel appears as shown in the following screen capture.



7. Type the parameters specific to your application server and click Next.

The following screen capture shows sample values for Application Server Platform Edition.



For Sun Java System Application Server 8.1, the parameters and *default* values are as follows:

User Name	admin
Password	admin password
Host name	name of the machine where Application Server is installed

■ For the Enterprise Edition

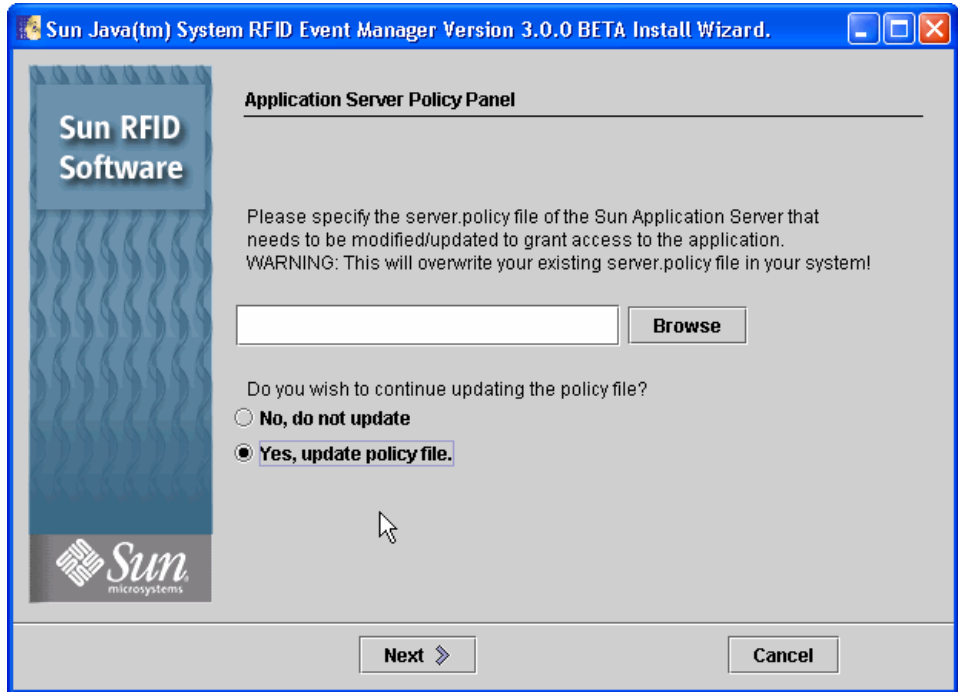
Admin Port	4849
Instance	domain1

■ For the Platform Edition

Admin Port	4848
Instance	domain1

8. On the Application Server Policy panel, indicate if the installer should update the `server.policy` file during installation.

Selecting this option causes the installer to overwrite the existing application server's `server.policy` file.



9. Click Next to continue.

When the installer has completed the installation, you can review the log message by clicking Details.

10. When installation is complete, click Close to dismiss the installer.
11. (Optional) Verify that the web services were deployed to the application server. See [“To Verify the Deployment of RFID Event Manager Services”](#) on page 40.
12. (Plug-in for SAP AII only) To complete the setup of the plug-in for SAP AII, you must configure the RFID Event Manager and the SAP AII system in order to establish the proper communication between these systems.

Follow the procedures in Chapter 4 of the *Sun Java System RFID Software 3.0 Administration Guide*.

▼ To Install the RFID Event Manager Components for a Distributed Environment

In configuring a distributed installation, you need at least one Control Station on one machine, and multiple Execution Agents installed on one or more different machines.

Note – When installing multiple Control Stations in the same subnet you should verify that the Jini Group is consistent amongst files and unique for your deployment.

1. **To create a distributed installation of the RFID Event Manager, begin the installation as described for performing a Typical Installation.**

See “[To Install RFID Event Manager Using Typical Installation](#)” on page 31. Perform [Step 1](#) through [Step 6](#) as needed.

2. **Select Custom Installation and install only the Control Station on one machine, machine A.**
3. **On machine B, use the custom installation option to install only the Execution Agent.**

When prompted, specify the IP address and the host name for machine A where you have installed the Control Station.

4. **When you have finished installing the distributed components, you can start each component on its respective machine.**

See [Appendix A](#) for the location of the start scripts and their descriptions.

Note – During installation, the installer reports the IP address on which the installer is running. Be sure to specify the specific remote host location for each component when you are performing a distributed installation.

▼ To Start the RFID Event Manager

Also see [Appendix A](#) for the location and description of the start and stop scripts related to the RFID Event Manager and its related components, such as the Tag Viewer and PML Reader utilities. For additional information on using the Tag Viewer, see the *Sun Java System RFID Software 3.0 Administration Guide*.

1. After you install the RFID Event Manager, change to the installation directory that contains the start script.

```
cd rfid-install-dir/bin
```

2. (Linux) Enable the multicast option.

The Execution Agent and the Control Station cannot start properly unless the multicast option is enabled. For Linux systems, this option needs to be enabled before starting the RFID Event Manager. Use a command similar to the following where `eth0` is the network device of the system. This can be `eth0`, `eth1`, or some other value and depends on the specifications of your machine.

```
%ip route add multicast 224.0.0.0 dev eth0
```

3. Execute the script to start all the components of the RFID Event Manager.

```
./startall
```

4. (Optional) To verify proper installation, start the `pmlreader`.

```
./pmlreader
```

You see output similar to the following:

```
pmlreader: Using property file: /  
/etc/opt/SUNWrfid/system/Simulators.properties  
pmlreader: Creating new Reader (port=9011, readerepc=  
urn:epc:tag:gid-96:1.255.1, epc=urn:epc:tag:gid-96:1.1.100,  
tagSetSize=10, generator=  
com.sun.autoid.simulator.StaticEPCGenerator, minCycleTime=9000,  
maxCycleTime=11000)  
pmlreader: Waiting for readers to complete
```

5. (Optional) To display the Tag Viewer, execute the script to start the viewer.

```
./tagviewer -p PMLReader
```

You see the generated tags appearing in the Tag Viewer.

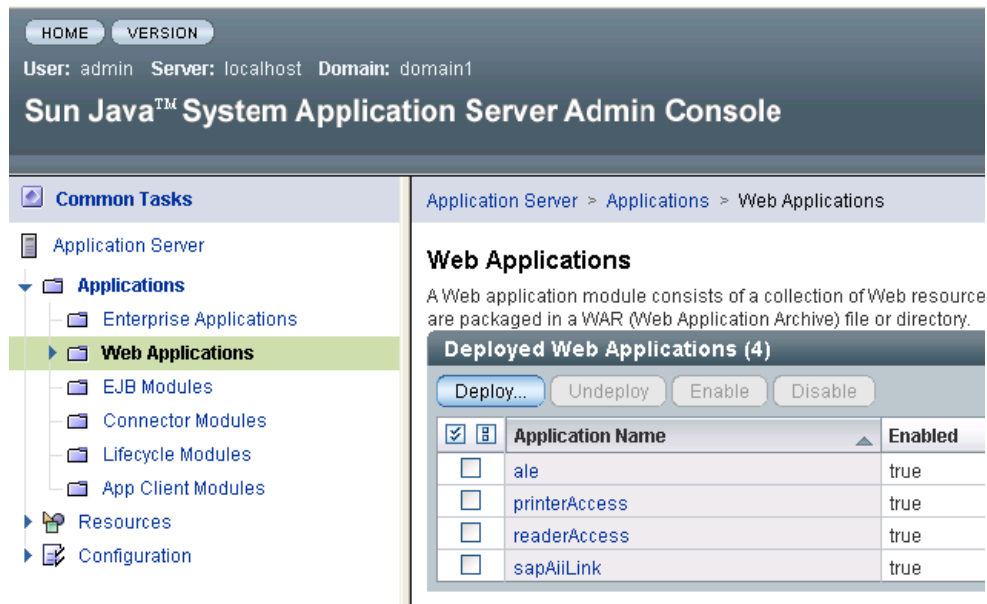
Note – On Linux, if a version of Sun Java System Message Queue prior to version 3.6 is detected on the system, you are prompted to upgrade to the latest version of Message Queue (recommended). If you choose not to upgrade your system, you might encounter unsupported Message Queue interfaces.

▼ To Verify the Deployment of RFID Event Manager Services

1. If it is not already started, start your application server.
2. Access the application server's Admin Console.
3. Expand the Applications node, then expand the Web Applications node.

Web application entries corresponding to the components you selected for installation are displayed. The following list and screen capture show those entries. The screen capture represents an installation of all RFID Event Manager components deployed to Application Server Platform Edition.

- Web services for ALE – ale
- Web services for device access – printerAccess and readerAccess
- Plug-in for SAP Auto-ID Infrastructure – sapAiiLink



HOME VERSION

User: admin Server: localhost Domain: domain1

Sun Java™ System Application Server Admin Console

Application Server > Applications > Web Applications

Web Applications

A Web application module consists of a collection of Web resource are packaged in a WAR (Web Application Archive) file or directory.

Deployed Web Applications (4)

Deploy... Undeploy Enable Disable

<input checked="" type="checkbox"/>	<input type="checkbox"/>	Application Name	Enabled
<input type="checkbox"/>	<input type="checkbox"/>	ale	true
<input type="checkbox"/>	<input type="checkbox"/>	printerAccess	true
<input type="checkbox"/>	<input type="checkbox"/>	readerAccess	true
<input type="checkbox"/>	<input type="checkbox"/>	sapAiiLink	true

Troubleshooting During RFID Event Manager Installation

- After installing the RFID Event Manager, if you start your RFID software and attached readers, and observe that the readers you have defined don't seem to be responding, an RFID Event Manager with the same group name might be running.

Reason: The Jini group name must be unique.

Solution: Specify a unique group name. See *Sun Java System RFID Software 3.0 Administration Guide* for details on how to correct this situation.

Installing the RFID Management Console (UNIX)

The Sun Java System RFID Management Console is a graphical user interface (GUI) for managing the readers and components of the RFID Event Manager. This chapter describes how to install the RFID Management Console.

The RFID Management Console is a web based application that can be accessed via a browser to both monitor and modify the various components of the RFID Event Manager. The console provides a view of the operational state of the readers and components and can be used to quickly assess the status of the RFID Event Manager system.

The RFID Management Console is also used to modify various read and write attributes of the RFID Event Manager components as the system is running. See *Sun Java System RFID Software 3.0 Administration Guide* for more details on using the RFID Management Console.

The following sections are included in this chapter:

- [Requirements for Installing the RFID Management Console](#)
- [Installing the RFID Management Console \(UNIX\)](#)
- [Configuring Your Application Server for Use With the RFID Management Console](#)
- [Setting Up the Database for the RFID Management Console \(UNIX\)](#)
- [Starting the RFID Management Console \(UNIX\)](#)

Requirements for Installing the RFID Management Console

Installing the RFID Management Console has the following prerequisites:

- **Application server.** A supported application server must be running on the system on which you are installing the RFID Management Console. The RFID Management Console is supported using the following application servers.
 - Sun Java System Application Server Platform Edition 8.1 2005Q2 UR2
 - Sun Java System Application Server Enterprise Edition 8.1 2005Q1
- **Server policy file.** You must update your application server's policy file with the RFID `server.policy` file.

You can select the installer option to have the installer update the policy file during installation or you can perform this step manually after installing the RFID Management Console. See ["To Update the Sun Java System Application Server 8.1 Policy File" on page 47](#) to perform this step manually.

- **Database.** A supported database must be available. You need to know the configuration information for your database to proceed with installation of the RFID Management Console. This release supports the installation of the RFID Management Console using the following databases.
 - Oracle 9i Database
 - Oracle 10g Database
 - PostgreSQL 8.0.4
- **Data Migration.** If you have version 2.0 of the RFID Software installed, you need to migrate your database schema to the version 3.0 database schema. See ["Migrating the Database Tables From Version 2.0 to Version 3.0 Database Schema" on page 22](#).
- **JDBC driver.** Copy the appropriate JDBC driver for your database to the correct application server directory. The JDBC drivers are necessary to establish communication between the database and the application server. See ["To Install the JDBC Driver for Use With the RFID Software \(UNIX\)" on page 55](#).

You can do this step either before or after you install the RFID Management Console. If you do it after installing the RFID Management Console, you will need to restart the application server before you can start the RFID Management Console.

- **Web browser.** A supported web browser must be available because the RFID Management Console uses a web browser-based GUI. The following web browsers are supported.
 - Netscape 7.1
 - Mozilla 4.1
 - Internet Explorer 5.0

Note – You cannot use BEA WebLogic Server as your application server for installing the RFID Management Console.

Installing the RFID Management Console (UNIX)

In a typical installation, the RFID Management Console is usually installed on the same machine as the RFID Event Manager. However it is not a requirement to install them on the same machine. The RFID Management Console can be installed on any machine as long as a supported application server is installed on that machine.

▼ To Install the RFID Management Console

1. Review and confirm the requirements for installation of the RFID Management Console. See [“Requirements for Installing the RFID Management Console” on page 44.](#)
2. If you have not already done so, get the software. See [“Getting the RFID Software and the RFID Documentation” on page 23.](#)
3. Enable access to the X server.

```
% xhost + machine-name
```

4. Become superuser (root).

```
% su root
```

5. Set the `DISPLAY` environment variable to display to your machine name. For example, using the `csh` shell, you would type:

```
% setenv DISPLAY [machine-name:]0.0
```

6. Start the installation.

a. Change to the appropriate directory.

- **For web download**, change to the directory that contains the unzipped download file, *rfid-download-dir/rfidmc*.
- **For CD installation**, change to the *rfidmc* directory for your platform. For example, */linux/rfidmc/*.

b. Start the RFID Management Console installer.

```
#./setup
```

The Welcome panel appears.

7. From the Welcome panel, click Next and follow the instructions on the installer wizard panels.

Note – When the installer prompts you to specify the path to your installation of J2SE, specify the same path that is being used by your application server.

8. When installation is complete, perform the following postinstallation steps by using the appropriate procedures for your platform, application server, and database.

a. Configure your application server.

See [“Configuring Your Application Server for Use With the RFID Management Console”](#) on page 47.

If you selected the option to have the installer update the server policy file during installation, you do not need to perform this procedure manually.

b. Set up the database.

See [“Setting Up the Database for the RFID Management Console \(UNIX\)”](#) on page 48.

If you selected the option to have the installer setup the database tables during installation, you do not need to perform this procedure manually.

9. Start the RFID Management Console.

See [“To Start the RFID Management Console”](#) on page 50.

Configuring Your Application Server for Use With the RFID Management Console

To configure your application server for use with the RFID Management Console, you must update the application server policy file and install the correct JDBC driver for your database.

Enabling Database Communication With Your Application Server

You must copy the JDBC drivers to the appropriate directory of the application server installation to establish communication between your selected database and your application server. This can be done before or after installing the RFID Management Console. If you do it after installing the RFID Management Console, you must restart the application server to enable the changes.

See [“To Install the JDBC Driver for Use With the RFID Software \(UNIX\)”](#) on page 55.

Updating the Application Server Policy File

You only need to update the application server policy file once. If you have already updated the policy file during the installation of either the RFID Event Manager or the RFID Information Server, you do not need to do it again.

If you did not update the policy file during installation, see [“To Update the Sun Java System Application Server 8.1 Policy File”](#) on page 47.

▼ To Update the Sun Java System Application Server 8.1 Policy File

Note – The RFID Management Console installer has an option to perform this task. If you selected the option to have the installer update the `server.policy` file, you do not need to perform this procedure.

1. In a terminal window, change to the directory containing the RFID Software policy file and find the file named `server.policy`.

This file needs to replace the file of the same name that is located in the application server's configuration directory. The RFID policy file can be found in the following default locations.

- Solaris OS - `/opt/SUNWrfidmc/policy`
- Linux - `/opt/sun/rfidmc/policy`

2. Copy the `server.policy` file to your application server's configuration directory.

The path to this directory depends on your application server installation. The location might vary depending on your platform and the version of application server that you are using. The *default* location of the policy file for the supported application servers is

`/opt/SUNWappserver/domains/domain1/config/server.policy`.

3. (Optional) If you are performing this procedure manually after installing the RFID Management Console, you must restart the application server for the change to take effect.

Setting Up the Database for the RFID Management Console (UNIX)

Previous version installed. If you have version 2.0 of the RFID Software installed, you need to migrate your database schema to the version 3.0 database schema. See [“Migrating the Database Tables From Version 2.0 to Version 3.0 Database Schema”](#) on page 22.

New installation. If this is the first time that you are installing the RFID Management Console, you need to set up the necessary database tables. You can perform the database setup as an option during the RFID Management Console installation if your database resides on the same system on which your installing the RFID Management Console. If you do not select this option as part of your installation or your database resides on a remote system, use these procedures to manually set up the database tables.



Caution – If you have an existing RFID system that uses a database, you must backup your data before running any of these scripts. These scripts drop and recreate the tables using the new database schema. These scripts do *not* migrate your data.

▼ To Set Up Oracle Database Tables for the RFID Management Console

The Oracle SQL scripts to set up database tables and populate them are located in the following directories:

- Solaris OS - /opt/SUNWrfidmc/lib/sql
- Linux OS - /opt/sun/rfidmc/lib/sql

1. Copy the following files to a directory of your choice on the machine where the database server is running:

- oracle_rfidmc_setup
- oracle_create_mcschema.sql
- oracle_create_mcuser.sql
- oracle_drop_mcschema.sql
- oracle_populatemc.sql

2. Change to the directory where you copied the scripts.

3. In a terminal window, log in as superuser (root).

4. Log in as user oracle.

```
# su - oracle
```

5. Run the script:

```
# ./oracle_rfidmc_setup
```

▼ To Set Up PostgreSQL Database Tables for the RFID Management Console

The PostgreSQL scripts to set up database tables and populate them are located in the following directories:

- Solaris OS - /opt/SUNWrfidmc/lib/sql
- Linux OS - /opt/sun/rfidmc/lib/sql

1. Copy the following files to a directory of your choice on the machine where the database server is running.

- postgres_rfidmc_setup
- postgres_create_mcschema.sql

2. Change to the directory where you copied the scripts.
3. In a terminal window, log in as superuser (root).
4. Log in as user `postgres`:

```
# su - postgres
```

5. In a terminal window, run the script:

```
#./postgres_rfidmc_setup
```

6. Confirm that your PostgreSQL server is configured to enable incoming TCP/IP connections. This is not the default setting.

This is necessary even when the database server is running on the same host as your application server. See the PostgreSQL server administration documentation for further information.

Starting the RFID Management Console (UNIX)

If the RFID Event Manager is not running, you cannot access many of the RFID Management Console screens. The RFID Management Console needs to connect to the Jini Lookup Server (part of the RFID Event Manager) in order to access information about the RFID readers.

▼ To Start the RFID Management Console

1. Start the RFID Event Manager.
See [“To Start the RFID Event Manager”](#) on page 38.
2. Confirm that your application server is running.

3. (Optional) If you want to see a running reader, you also need to start the `pmlreader` utility or an actual RFID reader (with tags in view) on your RFID network.

- In a command window, change to the default `rfid-install-dir/bin` and type:

```
./pmlreader
```

4. Open a supported web browser and enter the RFID Management Console URL.

The URL is of the following format: `http://hostname:port-number/sdai`.

- **Host name.** The variable, *hostname*, is the name of the system where the management console software is deployed. You can also use the IP address to specify the host.
- **Port number.** The variable, *port-number*, is the HTTP port number of your application server. An example is `http://myhost:8080/sdai`.

The RFID Management Console login screen appears.

5. Log in to the RFID Management Console by typing the default admin user name and password.

The default user name is `admin`. The default admin password is `admin`.

6. (Optional) See the *Sun Java System RFID Software 3.0 Administration Guide* for details on using the RFID Management Console and setting up additional users.

Installing and Configuring the RFID Information Server (UNIX)

The RFID Information Server can be installed after your selected application server has been successfully installed and is running on the host machine. You also need an properly installed and licensed installation of a supported database.

The following sections are included in this chapter:

- [Requirements for Installing the RFID Information Server \(UNIX\)](#)
- [Configuring Your Application Server for RFID Information Server \(UNIX\)](#)
- [Setting Up Database Tables for RFID Information Server \(UNIX\)](#)
- [Verifying the RFID Information Server Installation](#)

Requirements for Installing the RFID Information Server (UNIX)

Installing the RFID Information Server has the following prerequisites:

- **Application server.** A supported application server must be running on the system on which you are installing the RFID Information Server. The RFID Information Server is supported using the following application servers.
 - Sun Java System Application Server Platform Edition 8.1 2005Q2 UR2 (Application Server Platform Edition)
 - Sun Java System Application Server Enterprise Edition 8.1 2005Q1 (Application Server Enterprise Edition)
 - BEA WebLogic Server 8.1 SP4

- **Server policy file.** You must update your application server's policy file with the `RFID server.policy` file.

You can select the installer option to have the installer update the policy file during installation or you can perform this step manually after installing the RFID Information Server. See ["To Update the Application Server Policy File for the RFID Information Server \(UNIX\)" on page 64](#) to perform this step manually.

- **Database.** A supported database must be available. You need to know the configuration information for your database to proceed with installation of the RFID Information Server. This release supports the installation of the RFID Information Server using the following databases.
 - Oracle 9i Database
 - Oracle 10g Database
 - PostgreSQL 8.0.4
- **Data Migration.** If you have version 2.0 of the RFID Software installed, you need to migrate your database schema to the version 3.0 database schema. See ["Migrating the Database Tables From Version 2.0 to Version 3.0 Database Schema" on page 22](#).
- **JDBC driver.** Copy the appropriate JDBC driver for your database to the correct application server directory. The JDBC drivers are necessary to establish communication between the database and the application server. See ["Installing the JDBC Drivers" on page 54](#).

You can do this step either before or after you install the RFID Information Server. If you do it after installing the RFID Information Server, you will need to restart the application server before you can start the RFID Information Server.

Note – If you are using the Oracle 9i or 10g Database with the BEA WebLogic Server 8.1 SP4, you do not need to install the JDBC drivers manually. Typically, the necessary JDBC drivers are part of the BEA WebLogic Server 8.1 SP4 installation.

Installing the JDBC Drivers

The RFID Information Server is deployed to the selected application server. The application server communicates with the database through JDBC to handle additions, deletions and insertions of rows for the EPC tags identified. You need to install the necessary JDBC driver for your database and application server combination.

▼ To Install the JDBC Driver for Use With the RFID Software (UNIX)

You must perform this procedure to use either the RFID Management Console or the RFID Information Server. You can perform this procedure either before or after installing either of those RFID modules. If you update the JDBC drivers after installing the RFID modules, you must restart the application server before starting either the RFID Information Server or the RFID Management Console.

1. Get the proper JDBC driver for your database.

Sun does not ship JDBC drivers as part of this release. These drivers can be obtained in the following ways:

- **For an Oracle database.** The Oracle 9i Database and the Oracle 10g Database usually include the JDBC driver with the software. The JDBC driver is located in the same place for both versions: `$ORACLE_HOME/jdbc/lib/ojdbc14.jar`.

For example, on UNIX systems, the default path for Oracle 10g might be `/opt/oracle/product/10g/jdbc/lib/ojdbc14.jar`

If you cannot find the JDBC driver in your Oracle installation, you can find it at http://www.oracle.com/technology/software/tech/java/sqlj_jdbc/index.html.

- **For a PostgreSQL database.** Download the appropriate JAR file as described at: <http://jdbc.postgresql.org>

2. Copy the JDBC driver to the designated directory in the application server installation path as follows:

■ Solaris OS

- Application Server Enterprise Edition and Application Server Platform Edition
`/opt/SUNWappserver/domains/domain1/lib/ext`

- BEA WebLogic Server 8.1 SP4

Typically, the Oracle JDBC driver is already included in the BEA WebLogic Server 8.1 SP4 installation.

For PostgreSQL, copy the JDBC driver to the following directory, *BEA-install-dir/server/lib*.

■ Linux

- Application Server Enterprise Edition and Application Server Platform Edition
`/opt/SUNWappserver/domains/domain1/lib/ext`

- BEA WebLogic Server 8.1 SP4

Typically, the Oracle JDBC driver is already included in the WebLogic installation.

For PostgreSQL, copy the JDBC driver to the following directory, *BEA-install-dir/server/lib*.

3. (For BEA WebLogic Server 8.1 SP4 using a PostgreSQL database): Add the location of the JDBC driver to the class path.

Copying the JDBC driver JAR file to the proper directory is not sufficient by itself. You must add the JAR file to your class path variable, which is set inside the WebLogic startup script. The name and location of this script file varies. Your database administrator will know this information.

For example, the script could be named *startWebLogic.sh*. Modify the class path declaration from: `CLASSPATH = ${EXISTING_CLASSPATH}` to `CLASSPATH =BEA-install-dir/server/lib/postgres-jdbc.jar:${EXISTING_CLASSPATH}` where the variable, *BEA-install-dir*, represents your BEA WebLogic Server 8.1 SP4 installation directory and the variable, *postgres-jdbc.jar*, represents the proper JDBC JAR file.

4. Restart your application server.

Installing the RFID Information Server (UNIX)

Use the following procedure to install the RFID Information Server on a supported Solaris OS or Linux platform.

▼ To Install the RFID Information Server (UNIX)

1. Review and confirm the requirements for installation of the RFID Information Server.

See [“Requirements for Installing the RFID Information Server \(UNIX\)”](#) on page 53.

Note – Confirm that your application server is running.

2. If you have not already done so, get the software.

See [“Getting the RFID Software and the RFID Documentation”](#) on page 23.

3. Enable access to the X server.

```
% xhost + machine-name
```


4. Become superuser (root).

```
%su root
```

5. Set the `DISPLAY` environment variable to display to your machine name. For example, using the `csh` shell, you would type:

```
% setenv DISPLAY [machine-name:]0.0
```

6. Start the RFID Information Server installation.

a. Change to the appropriate directory.

- For web download, change to the directory `rfid-download-dir/rfidis`.
- For CD installation, change to the `rfidis` directory for your platform. For example, `/linux/rfidis/`.

b. Start the installer.

```
#./setup
```

The Welcome panel appears.

7. From the Welcome panel, click Next and follow the instructions on the installer wizard panels.

Use the Typical installation option. There is no useful difference between typical and custom installation when installing the RFID Information Server.

8. On the Application Server Configuration panel, enter the configuration information for your application server installation.

It is important that this information be entered correctly, as the RFID Information Server cannot function correctly unless it is properly deployed to your application server.

The following screen captures show examples of the application server configuration fields for the Application Server Platform Edition and the BEA WebLogic Server 8.1 SP4.

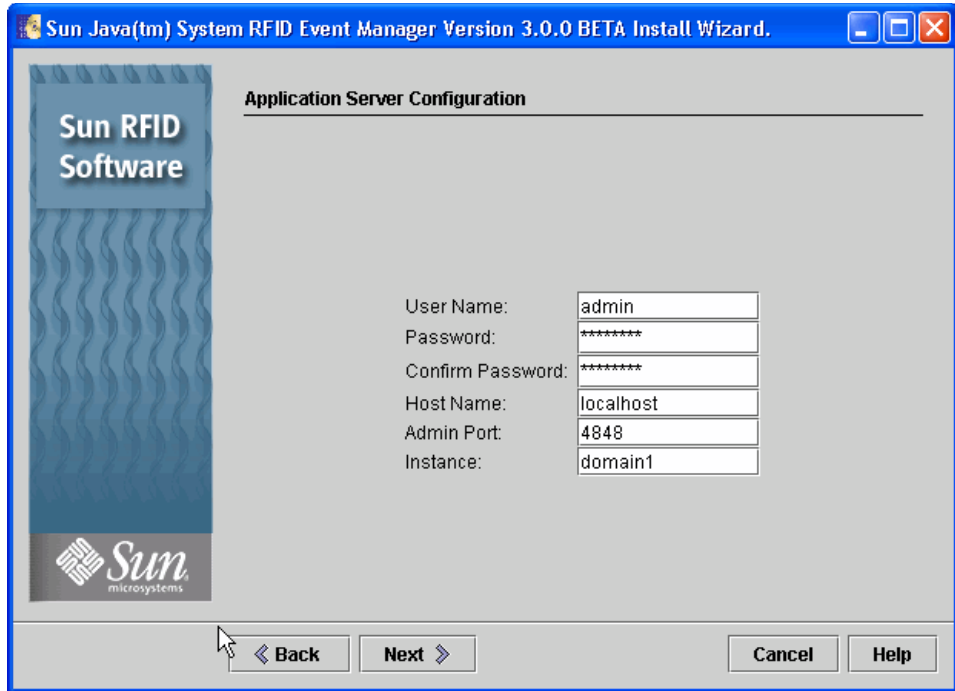


FIGURE 5-1 Configuration Panel for Application Server Platform Edition

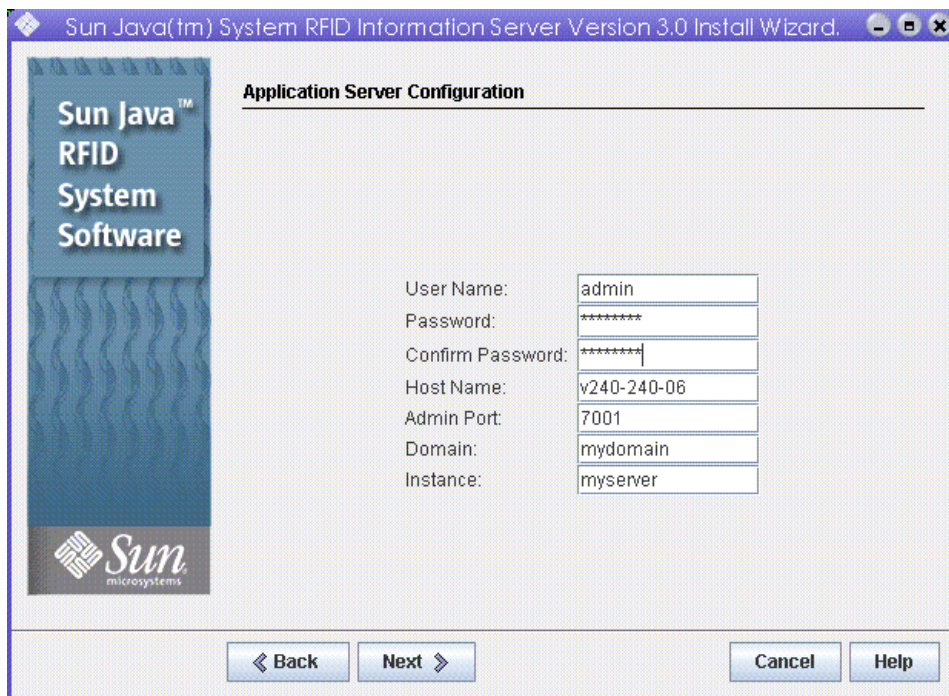
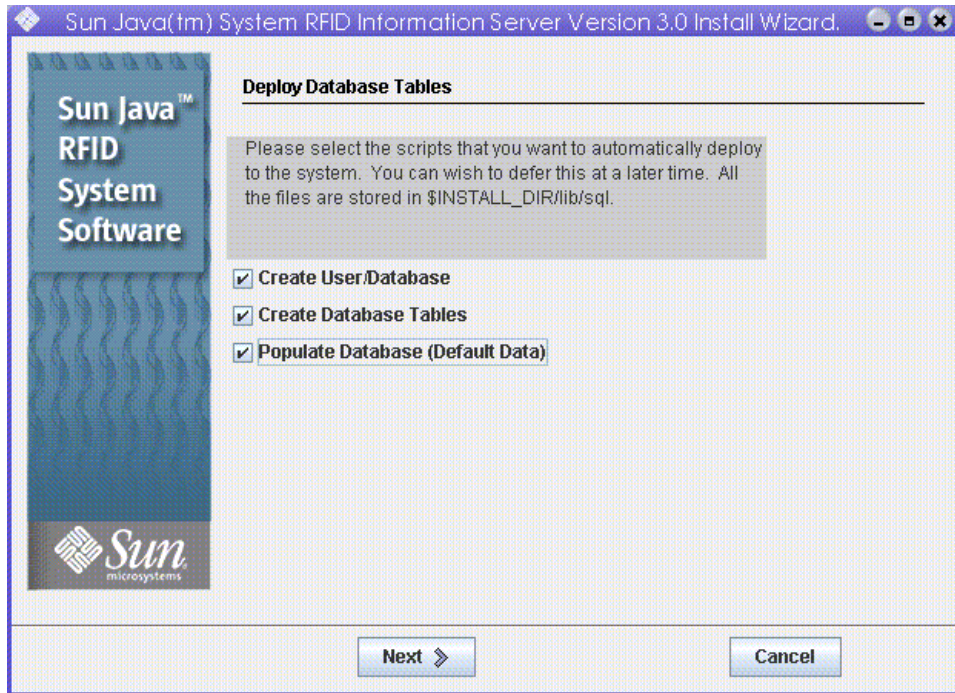


FIGURE 5-2 Configuration Panel for BEA WebLogic Server 8.1 SP4

9. On the **Deploy Database Tables** panel, indicate whether you want the installer wizard to deploy the RFID database schema for you.

This option requires a locally installed database.



Caution – Data could be lost. When the installer performs this step for you, any previous RFID tables are dropped and all previous data is lost. Do not select this option of the installer unless you have backed up the existing database or you are deploying the database schema for the first time.

10. On the Database Selection panel, select your database and enter the configuration information when prompted.

The following screen capture shows a sample Database Configuration Panel for deploying sample data using an Oracle database.

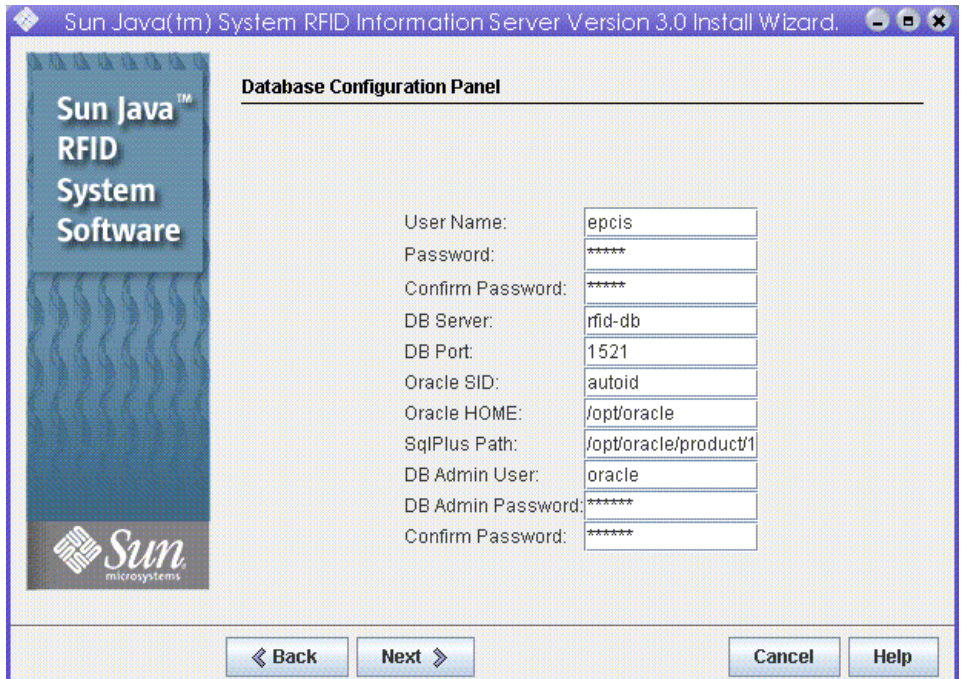


TABLE 5-1 Database Configuration Parameters

Database	Configuration Parameters ¹	Value or Description
Oracle	User Name Password (and confirm Password)	This is the user that is used to create the Oracle database tables. For example, <code>epcis</code> . Password for the user - <code>epcis</code>
	DB Server	The name or IP address where the database is installed. Confirm this value as the installer defaults this value to the name of the machine where the installer is running.
	DB Port - database port number	Port number where you connect to the database. This defaults to 1521.
	Oracle SID	
	Additional fields appear if you are deploying the sample data.	Contact your database administrator for information if you do not know the values of these fields.
	Oracle HOME*	The path to the location of your oracle database, <code>oradata</code> . For example: <code>/opt/oracle</code>
	SQLPlus Path*	The path to the executable <code>sqlplus</code> . For example, <code>/opt/oracle/product/10g/bin</code>
PostgreSQL	User Name Password (and confirm Password)	This is the user name that is used to create the database tables.
	DB Server DB Port DB Name	Location of the database installation.
	PSQL Path*	The location of the executable <code>psql</code> .
	DB Admin User*	The user with administrator rights to the database.

¹ In this table, an asterisk indicates parameters that are required only when you are deploying the database schema during installation.

11. When installation is complete, click Close.

You might need to perform additional steps before your RFID Information Server is ready to use. If you did not select the option to update your application server policy file during installation, you need to update the file manually.

See [“To Update the Application Server Policy File for the RFID Information Server \(UNIX\)” on page 64](#) or [“To Update the BEA WebLogic Server 8.1 SP4 Policy File” on page 65](#) as applicable for the application server that you are using.

12. (Sun Java System Application Server 8.1) Verify communication between your application server and your database installation.

See [“To Verify Database Communication Between the RFID Information Server and Sun Java System Application Server 8.1” on page 63](#).

13. Define the valid users for your RFID Information Server.

See [“Defining Valid Users for RFID Information Server” on page 65](#).

14. (Optional) Validate your RFID Information Server installation by viewing the EPCIS Index page in your browser window.

See [“To Validate the RFID Information Server Installation” on page 71](#).

▼ To Verify Database Communication Between the RFID Information Server and Sun Java System Application Server 8.1

1. Log in to the application server’s Admin Console as the `admin` user.

The Admin Console URL is as follows:

- Application Server Platform Edition:

`http://hostname:4848`

- Application Server Enterprise Edition:

`https://hostname:4849`

2. Check the JDBC connection pool by choosing Resources → JDBC → Connection Pools → `jdbc-sun-pool`.

On this page you see three buttons, Save, Load Defaults, Ping.

3. Click Ping.

The message “Ping succeeded” indicates that your database communication is working correctly. If you see an error, confirm that you have installed the JDBC driver correctly. See [“To Install the JDBC Driver for Use With the RFID Software \(UNIX\)” on page 55](#).

Configuring Your Application Server for RFID Information Server (UNIX)

To use the RFID Information Server, you must customize your application server. Review the following sections and perform the required procedures for your installation.

- [“To Update the Application Server Policy File for the RFID Information Server \(UNIX\)” on page 64](#)
- [“Defining Valid Users for RFID Information Server” on page 65](#)
- [“Setting Up Database Tables for RFID Information Server \(UNIX\)” on page 69](#)

▼ To Update the Application Server Policy File for the RFID Information Server (UNIX)

An option to perform this task has been added to the RFID Information Server installer. If you selected the option to have the installer update the `server.policy` file, you do not need to perform this procedure. If you did not select this installer option, follow this procedure using the file locations appropriate for your OS platform.

- 1. In a terminal window, change to the directory containing the RFID policy file and find the file named `server.policy`.**

This file needs to replace the file of the same name that is located in the application server’s configuration directory. The RFID policy file can be found in the following default locations.

- Solaris OS - `/opt/SUNWrfidis/policy`
- Linux - `/opt/sun/rfidis/policy`

- 2. Copy the `server.policy` file to your application server’s configuration directory.**

The path to this directory depends on your application server installation and the location might vary depending on the specific platform and version of the application server that you are using.

- 3. If you are performing this procedure after installing the RFID Information Server, restart your application server.**

▼ To Update the BEA WebLogic Server 8.1 SP4 Policy File

1. In a terminal window, change to the directory containing the RFID policy file and find the file named `server.policy`.

The default location of this file is as follows:

- Solaris – `/opt/SUNWrfidmc/policy/`
- Linux – `/opt/sun/rfidmc/policy/`

This file needs to replace the file `weblogic.policy` that is located in the BEA WebLogic Server 8.1 SP4 configuration directory.

2. Copy `server.policy` to the BEA WebLogic Server 8.1 SP4 configuration directory to a file named `weblogic.policy`.

The path to the configuration directory depends on your server installation and the location may vary depending on the specific platform and version that you are using.

The full *default* path to the policy file is:

`/usr/local/bean/weblogic81/server/lib/weblogic.policy`.

3. (Optional) If you are performing this procedure manually after installing the RFID Management Console, you must restart the application server for the change to take effect.

Defining Valid Users for RFID Information Server

Authentication and authorization are central concepts of Sun Java Application Server security. RFID Information Server uses Application Server's built in security. Application Server enforces its authentication and authorization policies upon the following entities: Users, Groups, Roles and Realms.

Understanding Users, Groups, Roles, and Realms

Users – A user is an individual identity that has been defined in the Application Server. A user can be associated with a group. The RFID Information Server defines two users, `guest` and `tester`, in the deployment descriptor. The `guest` user is in the `viewer` group and the `tester` user is in the `modifier` group.

Groups – A group is a category of users classified by common traits, such as read/write access to the information of RFID Information Server. Categorizing users into groups makes it easier to control access by large numbers of users. The RFID Information Server defines two groups, *viewer* and *modifier*, in the deployment descriptor. The *viewer* group has the *readonly* role and the *modifier* group has the *readwrite* role.

Roles – A role defines which applications and what parts of each application users can access and what they can do. In other words, roles determine a user's authorization level. To control the access permission of information, the RFID Information Server defines two security roles, *readonly* and *readwrite*, in the deployment descriptor. The *readonly* role has read-only permission and the *readwrite* role has read/write permission.

Realms – A realm, also called a security policy domain or security domain, is a scope over which the server defines and enforces a common security policy. In practical terms, a realm is a repository where the server stores user and group information. The Application Server is preconfigured with three realms: *file* (the initial default realm), *certificate*, and *admin-realm*. The RFID Information Server uses the *file* realm as the security domain.

Authenticating Users

Authentication is the way the RFID Information Server determines that an RFID Information Server user is valid. A user must provide security credentials (user name and password) to authenticate his/her identity to the RFID Information Server.

Typically, authentication means a user logging in to RFID Information Server using a web browser or a programmatic mechanism with a user name and password. If RFID Information Server verifies those credentials, the user is authenticated.

The user is associated with this authenticated security identity for the remainder of the session.

Authorizing Users

Once a user is authenticated, the level of authorization determines which operations the user can perform. A user's authorization level is based on their role. For instance, RFID Information Server defines the *readonly* and the *readwrite* roles.

▼ To Define Users for the RFID Information Server Using Application Server 8.1

You can define a valid user for the RFID Information Server in two ways. You can either use the default user, `tester`, or define your own user names. Follow these steps and use the appropriate values as indicated by the examples in [Step 6](#).

1. If necessary, review the background information in the section, “[Defining Valid Users for RFID Information Server](#)” on page 65.
2. Log in to your Application Server’s Admin Console.
3. To configure users:
 - For Platform Edition: Choose → Configuration → Security → Realms → file.
 - For Enterprise Edition: Choose → Configurations → default-config → Security → Realms → file.
4. Click **Manage Users ...**
5. Click **New ...**

The Create File Realm User dialog box appears.

Configurations > default-config > Security > Realms > file

Create File Realm User

Creates new user accounts for the currently selected security realm.

* Indicates required field

* User ID:
Name of a user to be granted access to this realm

* Password:

* Confirm Password:

Group List:
Separate multiple groups with commas

OK Cancel

6. Type the values corresponding to the user that you are defining.

- To use the default user, `tester`, use the following values:

Field	Example Values for Default User - <code>tester</code>
User ID	<code>tester</code>
Password	<code>password</code> (or your choice)
Confirm Password	<code>password</code>
(Optional) Group List	<code>blank</code>

- To define your own user name, use the following values:

Field	Example Values for Your User
User ID	<code>myuser</code>
Password	<code>mypassword</code> (or your choice)
Confirm Password	<code>mypassword</code>
Group List	<code>modifier</code> (must use modifier group)

7. Click OK, then click Close.

8. Restart your application server to enable the changes.

▼ To Define Users for the RFID Information Server Using BEA WebLogic Server 8.1 SP4

You can define a valid user for the RFID Information Server in two ways. You can either use the default user, `tester`, or define your own user names. Follow these steps and use the appropriate values as indicated by the examples in [Step 6](#) in the previous procedure, [“To Define Users for the RFID Information Server Using Application Server 8.1”](#) on page 67.

1. If necessary, review the background information in the section, [“Defining Valid Users for RFID Information Server”](#) on page 65.
2. Log in to your BEA WebLogic Server 8.1 SP4 Admin Console.
For example, in your web browser type `http://machinename:7001/console`.
3. Choose `mydomain` → `Security` → `Realms` → `myrealm` → `Users`.

4. Click Configure a New User.

The Create User page appears.

5. Create the necessary users.

See the BEA WebLogic Server 8.1 SP4 documentation for more details.

6. Restart your application server to enable the changes.

Setting Up Database Tables for RFID Information Server (UNIX)

The database scripts can be used if you do not use the Deploy Database option of the installer and you want to set up the databases manually.

Two sets of scripts are provided: `sql` scripts to be used with the database SQL client and shell scripts that can be executed from the command line. It is outside the scope of this document to provide detailed database command-level procedures.

The database scripts are located in the directory `/rfid-install-dir/lib/sql`. For a default installation, the locations are the following:

- Solaris OS – `/opt/SUNWrfidis/lib/sql`
- Linux – `/opt/sun/rfidis/lib/sql`

The following table lists the Oracle scripts.

TABLE 5-2 Oracle-Related Scripts

Shell Script (UNIX systems)	Description
<code>oracle_create_table</code>	Executes the <code>oracle_create_table.sql</code> script to drop and create the tables
<code>oracle_populate_table</code>	Executes the <code>oracle_populate.sql</code> script to populate the database tables with sample data
<code>oracle_create_user</code>	Executes the example <code>sql</code> script, <code>oracle_create_user.sql</code> , to set up an Oracle user account and tablespace
<code>oracle_rfidis_setup</code>	Executes all <code>.sql</code> scripts

The scripts listed in [TABLE 5-3](#) are provided for use with the supported PostgreSQL database.

TABLE 5-3 PostgreSQL-Related Scripts

Shell Script (UNIX systems)	Description
<code>postgres_create_table</code>	Executes the <code>postgres_create_table.sql</code> script to drop and create the tables
<code>postgres_populate_table</code>	Executes the <code>postgres_populate.sql</code> script to populate the database tables with sample data
<code>postgres_create_user</code>	Executes the <code>postgres_create_user.sql</code> example script for setting up a PostgreSQL user account and tablespace
<code>postgres_rfidis_setup</code>	Executes all <code>.sql</code> scripts

▼ To Set Up the RFID Oracle Database Tables for the RFID Information Server

1. **Copy the scripts to the directory on the machine where the database server is running.**
2. **Change to the directory where you copied the scripts.**
3. **Run the scripts that you need.**

Refer to [TABLE 5-2](#). You must run these scripts at the database admin user. If you want to create the tables and deploy sample data, use `oracle_rfidis_setup`.

Note – The SQL scripts use the database configuration information provided at installation time. The scripts populate the tables with sample data.

▼ To Create the RFID PostgreSQL Database Tables

The PostgreSQL database must be installed to perform this procedure. The RFID software installer does not install the database software.

1. **Copy the scripts to a directory on the machine where the database server is running.**
2. **Change to the directory where you copied the scripts.**

3. Run the scripts that you need.

Refer to [TABLE 5-3](#). You must run these scripts at the database admin user. If you want to create the tables and deploy sample data, use the `postgres_rfidis_setup` script.

Note – The SQL scripts use the database configuration information provided at installation time. The scripts populate the tables with sample data.

4. Confirm that your PostgreSQL server is configured to enable incoming TCP/IP connections. This is not the default setting.

This is necessary even when the database server is running on the same host as your application server. See the PostgreSQL server administration documentation for further information.

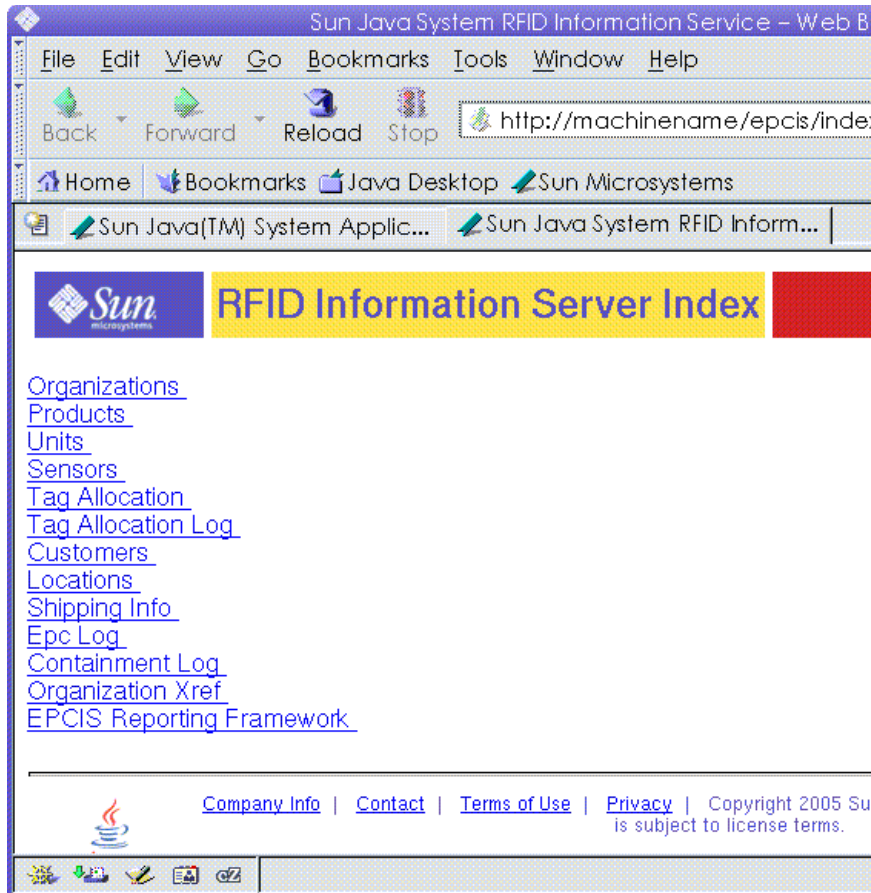
Verifying the RFID Information Server Installation

When the RFID Information Server installation has been successfully completed, you can validate the installation by viewing the EPCIS Index page in your browser window.

▼ To Validate the RFID Information Server Installation

1. **Navigate to the following URL:** `http://hostname:port/epcis`. For example, <http://myhost:8080/epcis>.

The variable, *hostname*, specifies your application server's location. The variable, *port*, is the port number of the Application Server HTTP port that was configured during Application Server installation. The RFID Information Server Index page appears in your browser window as shown in the following screen capture.



2. When prompted, enter your RFID Information Server user name and password.

See [“To Define Users for the RFID Information Server Using Application Server 8.1”](#) on page 67 or [“To Define Users for the RFID Information Server Using BEA WebLogic Server 8.1 SP4”](#) on page 68 for more information on setting up RFID Information Server users.

Tip – To view the EPCIS Reporting Framework on headless systems. If your RFID Information Server is installed on a server that is headless and not running a local X-display, you need to set the jvm option, `-Djava.awt.headless=true`. Use one of the following procedures as applicable to your application server.

▼ To Set the JVM Options for Sun Java System Application Server 8.1 Enterprise Edition

1. From your Application Server Enterprise Edition Admin Console, choose **Configurations → server-config → JVM settings**.

The JVM Settings page appears.

2. Choose **JVM Options → Add JVM Option**.
3. Type **-Djava.awt.headless=true** and save the new option.
4. Restart your Application Server Enterprise Edition instance.

▼ To Set the JVM Options for Sun Java System Application Server 8.1 Platform Edition

1. From your Application Server Enterprise Edition Admin Console, select **Application Server** in the left pane.

A page appears showing several tabs across the top.

2. Select the **JVM Settings** tab.

The JVM Settings page appears.

3. Click **JVM Options**.

The JVM Options page appears.

4. Click **Add JVM Option**.

5. In the **Value** field, type the option **-Djava.awt.headless=true**.

6. Click **Save**.

7. Restart your Application Server Platform Edition instance.

▼ To View the EPCIS Reporting Framework Using BEA WebLogic Server 8.1 SP4

1. You need to modify `startWLS.sh` and include the following line for the JVM parameters:

```
"${JAVA_HOME}/bin/java" ${JAVA_VM} ${MEM_ARGS} ${JAVA_OPTIONS} -  
classpath "${CLASSPATH}" -Dweblogic.Name=${SERVER_NAME} -  
Dweblogic.management.username=${WLS_USER} -  
Dweblogic.management.password=${WLS_PW} -  
Dweblogic.management.server=${ADMIN_URL} -  
Dweblogic.ProductionModeEnabled=${PRODUCTION_MODE} -  
Djava.awt.headless=true -Djava.security.policy="BEA-install-  
dir/server/lib/weblogic.policy" weblogic.Server
```

2. Restart the application server to pick-up these changes.

Installing the RFID Software (Microsoft Windows)

This chapter describes how to install the Sun Java™ System RFID Software 3.0 (RFID Software) modules on a Microsoft Windows system. The installation tasks are the same as for UNIX systems, except that the command format and the directories are different. The following sections are included in this chapter:

- [Installing the RFID Event Manager \(Microsoft Windows\)](#)
- [Installing the RFID Management Console \(Microsoft Windows\)](#)
- [Installing the RFID Information Server \(Microsoft Windows\)](#)

Installing the RFID Event Manager (Microsoft Windows)

Use the installation wizard to install the RFID Event Manager. Review [“Selecting the Installation Type” on page 29](#) before deciding whether to use a typical or a custom installation.

Requirements for RFID Event Manager Installation (Microsoft Windows)

- You need administrative privileges to install all RFID Software modules.
- In a DHCP environment, specify `localhost` for the IP address of the Control Station.
- The user environment variable `%TEMP%` must be set to a valid location on your local system to enable the installer to create the installation log files.

▼ To Install the RFID Event Manager Using the Typical Installation Option (Microsoft Windows)

Note – You do *not* need to have an application server installed to perform a typical installation of the RFID Event Manger.

1. If you have not already done so, get the software.
See [“Getting the RFID Software and the RFID Documentation”](#) on page 23.
 2. Start the installation by following these steps:
 - a. Change to the directory containing the unzipped download file.
 - b. Change to the `rfidem` directory.
 - c. Double-click `setup.bat` to start the RFID Event Manager installer.
The Welcome panel appears.
 3. From the Welcome panel, click Next and follow the instructions on the panels to perform the installation.
 4. On the Select Type of Installation panel, confirm that the Typical installation option is selected and click Next.
 5. On the Select Java Home Location panel, confirm that the top level of the path to your J2SE installation is selected.
For example, if J2SE version, 1.4.2_10 is installed in the default location, the J2SE SDK Path field should contain `C:\j2sdk1.4.2_10`.
 6. On the Station Location and Group Configuration panel, type the name or IP address of the host system and the unique Jini group name.
The group name must be unique for every control station you set up. The group name gives the control station its identity over the network. The installer defaults the group name to `AutoID-hostname`.
-
- Note** – If you are performing this installation in a DHCP environment (such as a laptop), type `localhost` for the IP address.
-

7. When installation is complete, click Close.
8. (Optional) Validate the RFID Event Manager installation by starting the `pmlreader` and `tagviewer` utilities. See [“To Start RFID Event Manager”](#) on page 78.

▼ To Install the RFID Event Manager Using the Custom Installation Option (Microsoft Windows)

Note – If you choose to install the ALE web service or the plug-in for SAP AII , you must have your application server running before you start the RFID Event Manager installer.

1. **If you have not already done so, get the software.** See [“Getting the RFID Software and the RFID Documentation” on page 23.](#)

2. **Verify that your application server is running.**

You can use either Sun Java System Application Server Enterprise Edition 8.1 2005Q1 (Application Server Enterprise Edition) or Sun Java System Application Server Platform Edition 8.1 2005Q2 UR2 (Application Server Platform Edition) as your application server.

3. **Begin the installation for performing a Typical Installation.**

See [“To Install the RFID Event Manager Using the Typical Installation Option \(Microsoft Windows\)” on page 76.](#)

4. **On the Select Type of Installation panel, select Custom Installation, and select the components to install.**

When you select the ALE web service or the plug-in for SAP AII, the Application Server Selection Panel appears during the installation.

5. **On the Application Server Configuration panel, type the parameters appropriate to your application server.**

For Sun Java System Application Server 8.1, the *default* values are as follows:

User Name	admin
Password	admin password
Host name	application server machine name

■ For the Enterprise Edition

Admin Port	4849
Instance	domain1

- For the Platform Edition

Admin Port	4848
Instance	domain1

6. When installation is complete, click Close.
7. (Optional) Verify that the web services were deployed to the application server.
See [“To Verify the Deployment of RFID Event Manager Services”](#) on page 40.
8. (Plug-in for SAP AII only) To complete the setup of the plug-in for SAP AII, you must configure the RFID Event Manager and the SAP AII system in order to establish the proper communication between these systems.
Follow the procedures in Chapter 4 of the *Sun Java System RFID Software 3.0 Administration Guide*.
9. (Optional) Validate the RFID Event Manager installation by starting the `pmlreader` and `tagviewer` utilities.
See [“To Start RFID Event Manager”](#) on page 78.

▼ To Start RFID Event Manager

You can use the Start Menu to start most of the components of the RFID Event Manager

1. Choose **Start** → **Programs** → **Sun Microsystems** → **Sun Java System RFID Software** → **Start Station**.
The RFID Control Station starts.
2. Choose **Start** → **Programs** → **Sun Microsystems** → **Sun Java System RFID Software** → **Start Agent**.
The RFID Execution Agent starts.
3. (Optional) Choose **Start** → **Programs** → **Sun Microsystems** → **Sun Java System RFID Software** → **Start PML Reader**.
The RFID PML Reader utility starts.

4. (Optional) Starting the RFID Tag Viewer requires a command line option.

For this example, change to the *rfid-install-dir*\bin and start the RFID Tag Viewer. Specify the start options for viewing the tags that are generated by the PML Reader utility.

```
C:\Program Files\Sun\RFID Software\rfidem\bin tagviewer -p  
PMLReader
```

The RFID Tag Viewer utility starts.

5. (Optional) Use the appropriate Start Menu entry for any other RFID utility that you need to start, such as the RFID Configuration Manager.

▼ To Stop RFID Event Manager Components

1. Choose Start → Programs → Sun Microsystems → Sun Java System RFID Software → Stop Agent.

The RFID Execution Agent stops.

2. Choose Start → Programs → Sun Microsystems → Sun Java System RFID Software → Stop Station.

The RFID Control Station stops.

3. (Optional) To stop the PML Reader, use Ctrl+C .

4. (Optional) To stop the Tag Viewer, close the window.

Installing the RFID Management Console (Microsoft Windows)

In a standard installation, the RFID Management Console is installed on the same machine as the RFID Event Manager. However it is not a requirement to install them on the same machine. The RFID Management Console can be installed on any machine as long as a supported application server is installed on that machine.

Requirements for Installing the RFID Management Console

Installing the RFID Management Console has the following prerequisites:

- **Application server.** A properly installed and licensed supported application server must be running on the system on which you are installing the RFID Management Console. The RFID Management Console is supported using the following application servers.
 - Application Server Platform Edition
 - Application Server Enterprise Edition
- **Server policy file.** You must update your application server's policy file with the RFID `server.policy` file.

You can select the installer option to update the policy file during installation or you can perform this step manually after installing the RFID Management Console. See [“To Update the Application Server Policy File for RFID Management Console \(Microsoft Windows\)” on page 82](#) to perform this step manually.

- **Database.** A supported database must be available. You need to know the configuration information for your database to proceed with installation of the RFID Management Console. This release supports the installation of the RFID Management Console using the following databases.
 - Oracle 9i Database
 - Oracle 10g Database
 - PostgreSQL 8.0.4
- **JDBC driver** – Copy the appropriate JDBC JAR file for your database to the application server directory: `C:\Sun\AppServer\domains\domain1\lib\ext`. For information on where to find the JDBC driver for your database, see [“Installing the JDBC Drivers” on page 54](#).
- **Web browser.** A supported web browser must be available because the RFID Management Console uses a web browser-based GUI. The following web browsers are supported.
 - Netscape 7.1
 - Mozilla 4.1
 - Internet Explorer 5.0

Note – You cannot use BEA WebLogic Server as your application server for installing the RFID Management Console.

▼ To Install RFID Management Console (Microsoft Windows)

1. **Get the software.** See [“Getting the RFID Software and the RFID Documentation” on page 23](#).
2. **Change to the directory** `rfid-download-dir\rfidmc`.
3. **Double-click** `setup.bat`.
The Welcome panel appears.
4. **Click Next, and follow the instructions on the installer wizard panels.**

Note – When the installer prompts you to specify the path to your installation of J2SE, specify the same path that is being used by your application server.

5. **When installation is complete, you might need to perform the following postinstallation steps.**
Using the appropriate procedures for your application server and database.
 - a. **Complete the configuration of your application server.**
See [“To Update the Application Server Policy File for RFID Management Console \(Microsoft Windows\)” on page 82](#).
 - b. **If you did not select the option to deploy the database tables during installation, perform the database setup procedure for your installed database.**
 - [To Set Up the Oracle Database Tables For RFID Management Console \(Microsoft Windows\)](#).
 - [To Create the RFID PostgreSQL Database Tables For RFID Management Console \(Microsoft Windows\)](#).
6. **When installation and setup are complete, start the RFID Management Console.**
Use the procedure [“To Start the RFID Management Console \(Microsoft Windows\)” on page 85](#).

▼ To Update the Application Server Policy File for RFID Management Console (Microsoft Windows)

Note – The RFID Management Console installer has an option to perform this task. If you selected the option to have the installer update the `server.policy` file, you do not need to perform this procedure.

You only need to update the application server policy file once. If you have already updated the policy file during the installation of either the RFID Event Manager or the RFID Information Server, you do not need to do it again.

1. (Required if not done by installer) Update the `server.policy` file, by following these steps:

a. In a terminal window, change to the directory containing the RFID policy file.

Default location: `%system-drive%:Program Files\Sun\RFID Software\rfidmc\policy\server.policy`

b. Find the file named `server.policy`.

This file needs to replace the file of the same name that is located in the application server's configuration directory.

c. Copy `server.policy` to your application server's configuration directory.

The path to this directory depends on your application server installation.

■ For Application Server Enterprise Edition and Application Server Platform Edition, the default location is:

■ `C:\Sun\AppServer\domains\domain1\config\server.policy`

2. (Optional) If you are performing this procedure after installing the RFID Management Console, restart your application server.

Setting Up the Database for the RFID Management Console (Microsoft Windows)

Prerequisite – To use the RFID Management Console, you must set up your database with the necessary tables. The RFID Software provides the necessary database scripts. to set up the tables and populate the tables with sample data.

Installation option – You can perform the database setup as an option during the RFID Management Console installation if your database resides on the same system on which you are installing the RFID Management Console. If you did not select this option as part of your installation or your database resides on a remote system, use these procedures to manually set up the database tables.

▼ To Set Up the Oracle Database Tables For RFID Management Console (Microsoft Windows)

1. **Copy the necessary files to a directory on the machine where the Oracle database server is running.**

The scripts for the Oracle database tables are located in the directory – C:\Program Files\Sun\RFID Software\rfidmc\lib\sql. Copy the following files:

- oracle_setup.bat
- oracle_create_mcschema.sql
- oracle_create_mcuser.sql
- oracle_drop_mcschema.sql
- oracle_populatemc.sql

2. **Change to the directory where you copied the scripts.**
3. **Verify that oracle_create_mcuser.sql points to the correct datafile.**
4. **Set the following environment variables:**

- DB_ADMIN – The administrative user that is used to create the Oracle database tables.
- DB_ADMIN_PASSWORD – The password for user specified in DB_ADMIN
- SQLPLUSPATH – The path to the executable sqlplus.

5. **In a command prompt window, run the script.**

You must run the setup script as the database user with administrator privileges. To execute the setup script to perform all the setup tasks, use the option all as follows:

```
oracle_setup.bat all
```

6. **(Optional) You can also run the setup script with the following options:**

- Oracle_setup.bat [createruser] – executes oracle_create_user.sql.
- Oracle_setup.bat [createtable] – executes oracle_create_table.sql.
- Oracle_setup.bat [populate] – executes oracle_populate_table.sql.

▼ To Create the RFID PostgreSQL Database Tables For RFID Management Console (Microsoft Windows)

1. **Copy the necessary files to a directory on the machine where the database server is running.**

The scripts for the PostgreSQL database tables are located in the directory – C:\Program Files\Sun\RFID Software\rfidmc\lib\sql. Copy the following files:

- postgres_setup.bat
- postgres_create_mcschema.sql
- postgres_create_table.sql
- postgres_create_user.sql
- postgres_drop_table.sql
- postgres_populate_table.sql

2. **Change to the directory where you copied the scripts.**

3. **Set the following environment variables:**

- DB_ADMIN – A user with administrator rights to the database.
- DB_ADMIN_PASSWORD – The password for user specified in DB_ADMIN.
- PSQL_PATH – The location of the executable psql.

4. **In a command window, run the setup script.**

You must run the setup script as the database admin user. To execute the setup script to perform all the setup tasks, use the option all as follows:

```
C:\postgres_setup.bat all
```

5. **(Optional) You can also run the setup script with the following options:**

- postgres_setup.bat [createuser] – executes postgres_create_user.sql.
- postgres_setup.bat [createtable] – executes postgres_create_table.sql.
- postgres_setup.bat [populate] – executes postgres_populate.sql.

▼ To Start the RFID Management Console (Microsoft Windows)

1. (Optional) Start the RFID Event Manager.

The RFID Management Console needs to connect to the Jini lookup server (part of the RFID Event Manager) in order to access information about the RFID readers. If the RFID Event Manager is not running, you will not be able to access many of the RFID Management Console screens. Use these steps.

a. Choose Start → Programs → Sun Microsystems → Sun Java System RFID Software → Start Station.

The RFID Control Station starts.

b. Choose Start → Programs → Sun Microsystems → Sun Java System RFID Software → Start Agent.

The RFID Execution Agent starts.

2. (Optional) If you want to see a running reader, you also need to start the `pmlreader` utility.

3. Choose Start → Programs → Sun Microsystems → Sun Java System RFID Software → Start PML Reader.

The RFID `pmlreader` utility starts.

4. Open a web browser and enter the RFID Management Console URL.

The URL is of the following format: `http://hostname:port-number/sdui`.

- **Host name.** The variable, *hostname*, is the name of the machine where the management console software is deployed.

- **Port number.** The variable, *port-number*, is the HTTP port number of your application server. An example is `http://myhost:8080/sdui`.

The RFID Management Console login screen appears.

5. Log in to the RFID Management Console by typing the default admin user name and password.

The default user name is `admin`. The default admin password is `admin`.

6. (Optional) See the *Sun Java System RFID Software 3.0 Administration Guide* for details on using the RFID Management Console and setting up additional users.

Installing the RFID Information Server (Microsoft Windows)

Complete the following procedures to install the RFID Information Server:

1. Review the [“Requirements for Installing the RFID Information Server \(Microsoft Windows\)”](#) on page 86.
2. [“To Verify Communication Between the Database and the Sun Java System Application Server 8.1”](#) on page 87.
3. [“To Install RFID Information Server \(Microsoft Windows\)”](#) on page 87.

Requirements for Installing the RFID Information Server (Microsoft Windows)

Installing the RFID Information Server has the following prerequisites:

- **Application server.** A supported application server must be running on the system on which you are installing the RFID Information Server. The RFID Information Server is supported using the following application servers.
 - Application Server Platform Edition
 - Application Server Enterprise Edition
 - BEA WebLogic Server 8.1 SP4 8.1 SP4
- **Server policy file.** You must update your application server’s policy file with the RFID `server.policy` file.

You can select the installer option to have the installer update the policy file during installation or you can perform this step manually after installing the RFID Information Server. See [“To Update the Application Server Policy File for the RFID Information Server \(Microsoft Windows\)”](#) on page 91 to perform this step manually.

- **Database.** A supported database must be available. You need to know the configuration information for your database to proceed with installation of the RFID Information Server. This release supports the installation of the RFID Information Server using the following databases.
 - Oracle 9i Database
 - Oracle 10g Database
 - PostgreSQL 8.0.4

- **JDBC driver.** The JDBC drivers are necessary to establish communication between the database and the application server. For information on where to find the JDBC driver for your database, see [“Installing the JDBC Drivers” on page 54](#).

Copy the appropriate JDBC JAR file for your database to the application server directory: C:\Sun\AppServer\domains\domain1\lib\ext.

You can do this step either before or after you install the RFID Information Server. If you do it after installing the RFID Information Server, you will need to restart the application server before you can start the RFID Information Server.

Note – If you are using the Oracle 9i or 10g Database with the BEA WebLogic Server 8.1 SP4, you do not need to install the JDBC drivers manually. Typically, the necessary JDBC drivers are part of the BEA WebLogic Server 8.1 SP4 installation.

▼ To Verify Communication Between the Database and the Sun Java System Application Server 8.1

Confirm communication between your Application Server and database using the procedure, [“To Verify Database Communication Between the RFID Information Server and Sun Java System Application Server 8.1” on page 63](#).

▼ To Install RFID Information Server (Microsoft Windows)

1. **If you have not already done so, get the software.**

See [“Getting the RFID Software and the RFID Documentation” on page 23](#) Change to the directory containing the unzipped download file.

2. **Start the RFID Information Server installation.**

- a. **Change to the appropriate directory.**

- **For web download**, change to the directory `rfid-download-dir\rfidis`.
- **For CD installation**, change to the `windows\rfidis` directory.

- b. **Start the installer by double-clicking the `setup.bat` file.**

The Welcome panel displays.

3. **From the Welcome panel, click Next and follow the instructions on the installer wizard panels.**

4. On the Deploy Database Schema panel, indicate if you want the installer wizard to deploy the RFID database schema for you.



Caution – Data could be lost. When the installer performs this step for you, the previous RFID tables are dropped and all previous data is lost. Do not select this option of the installer unless you have backed up the existing database or you are deploying the database schema for the first time.

5. On the Database Selection panel, select your database and enter the configuration information when prompted.

The parameters are described in [TABLE 6-1](#). The following screen captures show the Database Configuration panel.

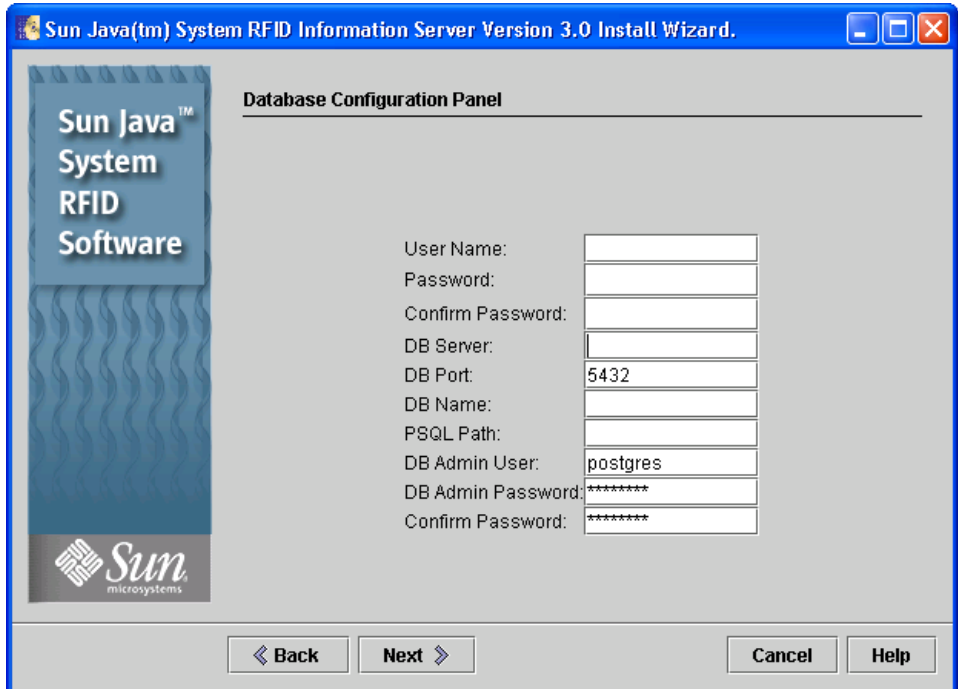
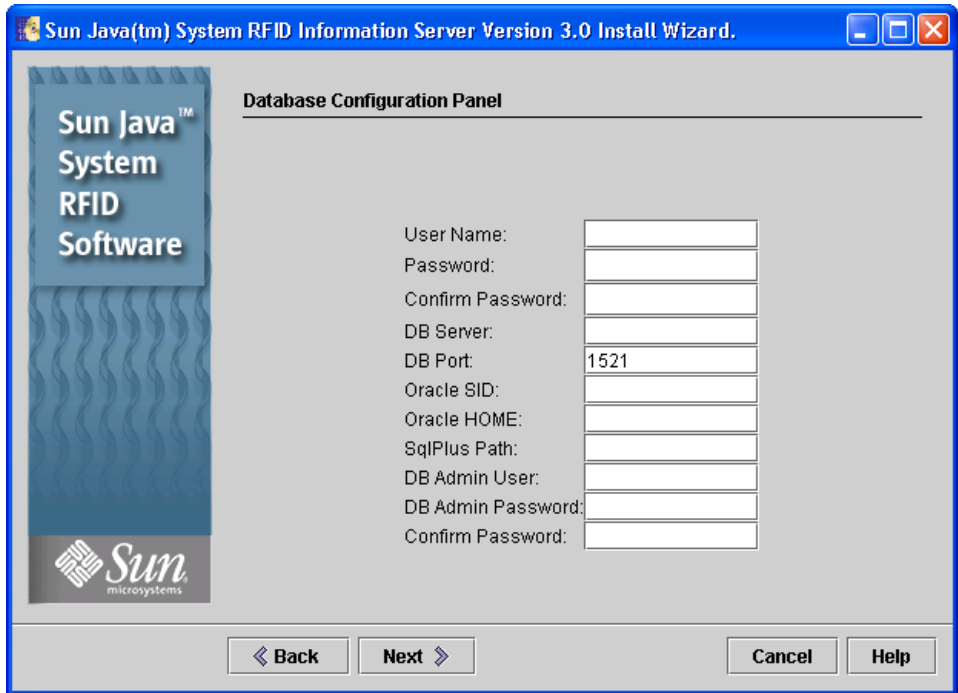


TABLE 6-1 Database Configuration Parameters

Database	Configuration Parameters	Value or Description
Oracle	User Name Password (and confirm Password)	This is the user that is used to create the Oracle database tables. For example, <code>epcis</code> . Password for the user - <code>epcis</code>
	DB Server	The name or IP address where the database is installed. Confirm this value as the installer defaults this value to the name of the machine where the installer is running.
	DB Port - database port number	Port number where you connect to the database. This defaults to 1521.
	Oracle SID	
	Additional fields appear if you are deploying the sample data.	Contact your database administrator for information if you do not know the values of these fields.
	Oracle HOME*	The path to the location of your oracle database, <code>oradata</code> . For example: <code>/opt/oracle</code>
	SQLPlus Path*	The path to the executable <code>sqlplus</code> . For example, <code>/opt/oracle/product/10g/bin</code>
PostgreSQL	User Name Password (and confirm Password)	This is the user name that is used to create the database tables.
	DB Server DB Port DB Name	Location of the database installation.
	PSQL Path*	The location of the executable <code>psql</code> .
	DB Admin User*	The user with administrator rights to the database.

6. When installation is complete, click Close.

You might need to perform additional steps before your RFID Information Server is ready to use.

Note – If you did not deploy the database tables during installation, you need to deploy the tables manually. See [“Setting Up the Database for the RFID Information Server \(Microsoft Windows\)”](#) on page 92

7. Define the valid users for your RFID Information Server.

See [“Defining Valid Users for RFID Information Server”](#) on page 65.

8. (Optional) Validate your RFID Information Server installation by viewing the EPCIS Index page in your browser window.

See [“Verifying the RFID Information Server Installation”](#) on page 71.

▼ To Update the Application Server Policy File for the RFID Information Server (Microsoft Windows)

Note – The RFID Information Server installer has an option to perform this task. If you selected the option to have the installer update the `server.policy` file, you do not need to perform this procedure.

You only need to update the application server policy file once. If you have already updated the policy file during the installation of either the RFID Event Manager or the RFID Management Console, you do not need to do it again.

1. In a terminal window, change to the directory containing the RFID policy file and find the file named `server.policy`.

This file needs to replace the file of the same name that is located in the application server’s configuration directory.

The RFID Information Server policy file can be found at `C:\Program Files\Sun\RFID Software\rfidis\policy`

2. Copy the `server.policy` file to your application server's configuration directory.

The path to this directory depends on your application server installation and the location varies depending on the specific platform and version of the application server that you are using. Refer to the following table for the default location of the application server configuration directory.

TABLE 6-2 Default Location of Application Server Configuration Directory (Microsoft Windows)

Application Server	Location of Configuration Directory
Sun Java System Application Server 8.1 Enterprise Edition and Sun Java System Application Server 8.1 Platform Edition	C:\Sun\AppServer\domains\domain1\config
BEA WebLogic Server 8.1 SP4	<i>BEA-install-dir</i> \server\lib\weblogic.policy. Replace the variable <i>BEA-install-dir</i> with the location of your server.

3. If you are performing this procedure *after* installing the RFID Information Server, restart your application server.

Setting Up the Database for the RFID Information Server (Microsoft Windows)

To use the RFID Management Console, you must set up your selected database with the necessary tables. Scripts to do this are provided with the RFID software. If you did not deploy the database tables during installation, you need to deploy the tables manually using the following procedures.

▼ To Set Up the Oracle Database Tables For RFID Information Server (Microsoft Windows)

1. Copy the necessary files to a directory on the machine where the Oracle database server is running.

The scripts for the Oracle database tables are located in the following directory – C:\Program Files\Sun\RFID Software\rfidis\lib\sql. Copy the following files:

- `oracle_setup.bat`
- `oracle_create_table.sql`
- `oracle_create_user.sql`

- oracle_drop_table.sql
- oracle_populate.sql

2. Change to the directory where you copied the scripts.
3. Verify that oracle_create_user.sql points to the correct datafile.
4. Set the following environment variables:

- DB_ADMIN – The administrative user that is used to create the Oracle database tables.
- DB_ADMIN_PASSWORD – The password for user specified in DB_ADMIN
- SQLPLUSPATH – The path to the executable sqlplus.

5. In a command prompt window, run the script.

You must run the setup script as the database admin user. To execute the setup script to perform all the setup tasks, use the option all as follows:

```
oracle_setup.bat all
```

6. (Optional) You can also run the setup script with the following options:

- oracle_setup.bat [createruser] – executes oracle_create_use.sql
- oracle_setup.bat [createtable] – executes oracle_create_table.sql
- oracle_setup.bat [populate] – executes oracle_populate_table.sql

▼ To Create the RFID PostgreSQL Database Tables For RFID Information Server (Microsoft Windows)

1. Copy the necessary files to a directory on the machine where the PostgreSQL database server is running.

The scripts for the PostgreSQL database tables are located in the directory – C:\Program Files\Sun\RFID Software\rfidis\lib\sql. Copy the following files:

- postgres_setup.bat
- postgres_create_table.sql
- postgres_create_user.sql
- postgres_drop_table.sql
- postgres_populate.sql

2. Change to the directory where you copied the scripts.
3. Verify that postgres_create_user.sql points to the correct datafile.

4. Set the following environment variables:

- DB_ADMIN – A user with administrator rights to the database.
- DB_ADMIN_PASSWORD – The password for user specified in DB_ADMIN.
- PSQL_PATH – The location of the executable psql.

5. In a command window, run the script.

You must run the setup script as the database admin user. To execute the setup script to perform all the setup tasks, use the option `all` as follows:

```
postgres_setup.bat all
```

6. (Optional) You can also run the setup script with the following options:

- `postgres_setup.bat [createuser]` – executes `postgres_create_user.sql`.
- `postgres_setup.bat [createtable]` – executes `postgres_create_table.sql`.
- `postgres_setup.bat [populate]` – executes `postgres_populate.sql`.

Uninstalling RFID Software

This section describes the procedures required for uninstalling the Sun Java System RFID Software. The following topics are included here:

- [Uninstalling RFID Event Manager \(UNIX\)](#)
- [Uninstalling RFID Information Server \(UNIX\)](#)
- [Uninstalling RFID Management Console \(UNIX\)](#)
- [Uninstalling RFID Software Modules \(Microsoft Windows\)](#)

Uninstalling RFID Event Manager (UNIX)

To uninstall the RFID Event Manager, use the provided uninstaller wizard. A full uninstall removes all the components installed on the system (Control Station, Execution Agent, common files, web services for ALE and device access, plug-in for SAP AII, and documentation). If you select a partial uninstall, you should retain the Common Files item, which is shared by Control Station and Execution Agent.

▼ To Uninstall RFID Event Manager

1. **(Optional) If you are uninstalling any of the web applications that can be installed with the RFID Event Manager, you need to have your application server running to uninstall them completely.**

If your application server is not running, the web applications cannot be undeployed by the uninstaller.

On the Sun Java System Application Server 8.1 Platform Edition Admin console, the RFID Event Manager web applications appear under the Web Applications node as follows:

TABLE 7-1 RFID Event Manager Web Applications

RFID Event Manager Component	Corresponding Web Application
Web services for ALE and device access	<ul style="list-style-type: none">• DeviceAccess• ale• printerAccess
Plug-in for SAP AII	<ul style="list-style-type: none">• sapAiiLink

2. **Enable access to the X server.**

```
% xhost + machine-name
```

3. **Become superuser (root).**

```
% su root
```

4. **Set the DISPLAY environment variable to display to your machine name. For example, using the csh shell:**

```
#setenv DISPLAY [machine-name:]0.0
```

5. **Change to the directory containing the uninstall script.**

```
#cd /opt/SUNWrfid
```


6. Start the uninstaller.

```
#./uninstall
```

The Welcome panel appears.

7. Click next and follow the instructions to uninstall RFID Event Manager.

If you perform a partial uninstall, you should retain the Common Files item, which is shared by Control Station and Execution Agent.

8. When uninstallation is complete, click Close.

9. Disable client access and exit from root privileges.

Uninstalling RFID Information Server (UNIX)

1. Verify that the application server to which Information Server is deployed is running before starting to uninstall.

The uninstall wizard performs administrative functions to undeploy the RFID Information Server from the application server. If the application server is not running during the uninstall process, you must do this step manually.

2. Enable access to the X server.

```
% xhost + machine-name
```

3. Become superuser (root).

```
% su root
```

4. Set the DISPLAY environment variable to display to your machine name. For example, using the csh:

```
#setenv DISPLAY [machine-name]:0.0
```

5. Change to the directory containing the uninstall script.

```
#cd /opt/SUNWrfidis
```

6. Start the uninstaller.

```
#./uninstall
```

The Welcome panel appears.

7. Click Next and follow the instructions to uninstall RFID Information Server.
8. When uninstallation is complete, click Close.
9. Disable client access and exit from root privileges.

Uninstalling RFID Management Console (UNIX)

1. Verify that the application server to which RFID Management Console is deployed is running.

The uninstall wizard performs administrative functions to undeploy the RFID Management Console from the application server.

2. Enable access to the X server.

```
%xhost + machine-name
```

3. Become superuser (root).

```
%su root
```

4. Set the DISPLAY environment variable to display to your machine name. For example, using the csh:

```
#setenv DISPLAY [machine-name]:0.0
```

5. Change to the directory containing the uninstall script.

```
#cd /opt/SUNWrfidmc
```

6. Start the uninstaller.

```
#./uninstall
```

The Welcome panel appears.

7. Click **Next** and follow the instructions to uninstall **RFID Management Console**.
8. When uninstallation is complete, click **Close**.
9. Disable client access and exit from root privileges.

Uninstalling RFID Software Modules (Microsoft Windows)

Use the following entries, found in the Microsoft Windows Add/Remove Programs utility, to uninstall the RFID Software modules.

- Sun Java System RFID Event Manager
- Sun Java System RFID Management Console
- Sun Java System RFID Information Server



Caution – To uninstall the RFID Information Server or the web applications related to the RFID Event Manager (see [TABLE 7-1](#)), you must have your application server running.

RFID Software Scripts (UNIX)

This appendix describes the scripts installed by the RFID Software installer. These script files are designed to run or stop various software components. These scripts are described in the following tables.

Note – The installation directory is represented by the variable, *rfid-install-dir*. The default value of *rfid-install-dir* for the RFID Event Manager on a Solaris OS system is */opt/SUNWrfid*. The default value for the RFID Event Manager on a Linux OS system is */opt/sun/rfidem*.

Refer to [Appendix C](#) for the default installation directories for the RFID components on both Solaris OS and Linux OS platforms.

TABLE A-1 RFID Event Manager Scripts for UNIX Platforms

Script	Description	Location
agent	Starts the Execution Agent. Options: start, stop, status	<i>rfid-install-dir</i> /bin
pmlreader	Starts the <i>pmlreader</i> , a software program that simulates RFID tag read events. Use this tool to verify proper installation of the RFID Event Manager and for debugging.	<i>rfid-install-dir</i> /bin
rfidconfig	Starts the Configuration Manager interface. See <i>Sun Java System RFID Software 3.0 Administration Guide</i> for details.	<i>rfid-install-dir</i> /bin
startall	Starts both the Control Station and the Execution Agent. Use when both components are installed on the same machine. This script initializes both control station and execution agent but does not start the EPC viewer display. Use the script <i>tagviewer</i> to see the EPC viewer display.	<i>rfid-install-dir</i> /bin

TABLE A-1 RFID Event Manager Scripts for UNIX Platforms (*Continued*)

Script	Description	Location
station	Starts the Control Station. Options: start, stop, status, version	<i>rfid-install-dir/bin</i>
stopall	Stops both the Control Station and the Execution Agent. Use when both components are installed on the same machine.	<i>rfid-install-dir/bin</i>
tagviewer	Displays the EPC viewer. Get the command line syntax for using the tagviewer utility as follows: <ul style="list-style-type: none"> • <code>./tagviewer help</code> or • <code>./tagviewer -help</code> The syntax for the tagviewer utility using the optional options is: Usage: [-i eventId][-l logical][-p physical] <ul style="list-style-type: none"> • <code>eventId</code> = The EventId from the Remote Event Producer to which you want to connect • <code>logical</code> = The logical reader name <code>physical</code> = The physical reader name. The default physical reader is the PMLReader, if no other options are set.	<i>rfid-install-dir/bin</i>
uninstall	Uninstalls RFID Event Manager	<i>rfid-install-dir</i>
viewer	Displays the distribution of the components.	<i>rfid-install-dir/lib</i>

TABLE A-2 Information Server Scripts for UNIX Platforms

Script	Description	Location
uninstall	Uninstalls RFID Information Server	<i>rfid-install-dir</i>
oracle_create_table.sql	Drops and creates the Oracle RFID Information Server tables	<i>rfid-install-dir/lib/sql</i>
oracle_populate_sql	Populates sample data	<i>rfid-install-dir/lib/sql</i>
oracle_create_user.sql	Example script for setting up an Oracle user account and tablespace	<i>rfid-install-dir/lib/sql</i>
oracle_rfidis_setup	runs all Oracle scripts	<i>rfid-install-dir/lib/sql</i>

TABLE A-2 Information Server Scripts for UNIX Platforms (*Continued*)

Script	Description	Location
postgres_create_table.sql	Drops and creates the PostgreSQL RFID Information Server tables	<i>rfid-install-dir/lib/sql</i>
postgres_populate.sql	Sample data	<i>rfid-install-dir/lib/sql</i>
postgres_create_user.sql	Example script for setting up a PostgreSQL user account and tablespace	<i>rfid-install-dir/lib/sql</i>

TABLE A-3 Management Console Scripts for UNIX Platforms

Script	Description	Location
uninstall	Uninstalls RFID Management Console	<i>rfid-install-dir</i>
deploymc	Deploys RFID Management Console during installation	<i>rfid-install-dir/lib</i>
undeploymc	Removes RFID Management Console during uninstallation	<i>rfid-install-dir/lib</i>
oracle_rfidmc_setup	Sets up the Oracle database	<i>rfid-install-dir/lib/sql</i>
oracle_create_mcschema.sql	Creates the Oracle schema	<i>rfid-install-dir/lib/sql</i>
oracle_create_mcuser.sql	Example script for setting up a Oracle user account and tablespace	<i>rfid-install-dir/lib/sql</i>
oracle_drop_mcschema.sql	Drops the Oracle schema	<i>rfid-install-dir/lib/sql</i>
oracle_populatemc.sql	Populates the sample Oracle data	<i>rfid-install-dir/lib/sql</i>
postgres_rfidmc_setup	Sets up the PostgresSql database	<i>rfid-install-dir/lib/sql</i>
postgres_create_mcschema.sql	Creates the PostgreSQL schema	<i>rfid-install-dir/lib/sql</i>

RFID Software Logs

This appendix describes the log files used by the RFID Software.

The Control Station and Execution Agent log files are located in the following directories:

- Solaris OS - `/var/opt/SUNWrfid/logs`
- Linux OS - `/var/opt/sun/rfidem/logs`

Adjusting Log Levels

You can change the log settings to more granular levels for debugging purposes by changing the `LogLevel` property of specific components. See the *Sun Java System RFID Software 3.0 Administration Guide* for information on how to do this. Refer to the section on using the RFID Configuration Manger.

Setting the `LogLevel` property of a component to a more granular level should only be done for debugging because it significantly increases the amount of information logged and the size of the log files.

The files that control various logging levels are the following:

- `logging-station.properties` - defines how the Control Station log files are generated
- `logging-agent.properties` file - defines how the Execution Agent log files are generated
- `RfidConfig.xml` - Logging values in `RfidConfig.xml` apply to the individual Adapter logging levels. You can specify different log level values for each Adapter using the RFID Configuration Manger. See *Sun Java System RFID Software 3.0 Administration Guide* for more details.

The `logging-station.properties` and `logging-agent.properties` files have the lowest precedence order. Values in these files are over ridden by any values of finer logging levels set in `RfidConfig.xml`.

If no log levels are set in `RfidConfig.xml`, then the values in the `logging-station.properties` and `logging-agent.properties` files are used.

An example of the `logging-station.properties` file is shown in [CODE EXAMPLE B-1](#).

CODE EXAMPLE B-1 Sample `logging-station.properties` file

```
#####
#           Default Logging Configuration File
#
# You can use a different file by specifying a filename
# with the java.util.logging.config.file system property.
# For example java -Djava.util.logging.config.file=myfile
#####
#####
#           Global properties
#####
# "handlers" specifies a comma separated list of log Handler
# classes. These handlers will be installed during VM startup.
# Note that these classes must be on the system class path.
# By default we only configure a ConsoleHandler, which will only
# show messages at the CONFIG and above levels.
# To also add the FileHandler, use the following line instead.
handlers= java.util.logging.FileHandler,
java.util.logging.ConsoleHandler
# Default global logging level.
# This specifies which kinds of events are logged across
# all loggers. For any given facility this global level
# can be overridden by a facility specific level
# Note that the ConsoleHandler also has a separate level
# setting to limit messages printed to the console.

.level= CONFIG

# This line tells the logging mechanism to log all configuration
logs to the file.
#####
# Handler specific properties.
# Describes specific configuration info for Handlers.
#####
# default file output is in user's home directory.

java.util.logging.FileHandler.pattern =
/var/opt/sun/rfidem/logs/station_%g.log
java.util.logging.FileHandler.limit = 51200000
java.util.logging.FileHandler.count = 10
```

CODE EXAMPLE B-1 Sample logging-station.properties file (Continued)

```
# This specifies the location of the log file, the size of each
file (50MB) and the number of log files it generates before it
cycles it again. In this example, it is 10.

java.util.logging.FileHandler.formatter =
java.util.logging.SimpleFormatter

# This line specifies the format for the log information; either
simple or xml. In this case, simple is specified.

# Limit the messages that are printed on the console to OFF
java.util.logging.ConsoleHandler.level = OFF
java.util.logging.ConsoleHandler.formatter =
java.util.logging.SimpleFormatter

#####
# Facility specific properties.
# Provides extra control for each logger.
#####

# For example, set the com.xyz.foo logger to only log SEVERE
# messages:
# fix for meaningless Java DMK messages
com.sun.jdmk.misc.level = OFF
com.sun.rio.tools.webster.level = CONFIG
com.sun.rio.opstring.level = SEVERE
com.sun.rio.event.level = SEVERE
com.sun.rio.cybernode.level = CONFIG
com.sun.rio.monitor.level = CONFIG
com.sun.rio.boot.level=CONFIG
com.sun.jini.start.service.starter.level = CONFIG

# The above information specifies the level of logging for each of
these components of the event manager.
```

Adjusting Rio Logging

If you have started the RFID Event Manager but your services do not appear to be running and there is no indication as to why in the log files, please turn up the logging level of the Rio Monitor and Rio Cybernode as follows:

Modify the following files:

- **Linux:** /etc/opt/sun/rfidem/system/logging-station.properties
- **Linux:** /etc/opt/sun/rfidem/system/logging-agent.properties
- **Solaris:** /etc/opt/SUNWrfid/system/logging-station.properties
- **Solaris:** /etc/opt/SUNWrfid/system/logging-agent.properties

Change the following two lines in both files to be:

```
org.jini.rio.cybernode.level = FINEST
org.jini.rio.monitor.level = FINEST
```

RFID Software Installation Directory Structure

This appendix describes the default installation directory structure.

- Refer to [TABLE C-1](#) for RFID software directories for Solaris OS systems.
- Refer to [TABLE C-2](#) for RFID software directories for Linux systems.
- Refer to [TABLE C-3](#) for RFID software directories for Microsoft Windows systems.

TABLE C-1 RFID Software Directories for Solaris OS

RFID Component	Default Directory	Description
RFID Event Manager	/opt/SUNWrfid	Default installation directory
	/etc/opt/SUNWrfid	Configuration files
	/var/opt/SUNWrfid/logs	Log files and Rio item
RFID Information Server	/opt/SUNWrfidis	Default installation directory
	/etc/opt/SUNWrfidis	Configuration files
	/var/opt/SUNWrfidis/logs	Log files
	/opt/SUNWrfidis/lib/sql	Database scripts
RFID Management Console	/opt/SUNWrfidmc	Default installation directory
	/etc/opt/SUNWrfidmc	Configuration files
	/var/opt/SUNWrfidmc/logs	Log files
	/opt/SUNWrfidmc/lib/sql/	Database scripts

TABLE C-2 RFID Software Directories for Linux OS

RFID Component	Default Directory	Description
RFID Event Manager	/opt/sun/rfidem	Default installation directory for RFID Event Manager
	/etc/opt/sun/rfidem	Configuration files
	/var/opt/sun/rfidem	Log files and Rio items
RFID Information Server	/opt/sun/rfidis	Default installation directory for RFID Information Server
	/etc/opt/sun/rfidis	Configuration files
	/var/opt/sun/rfidis	Log files
	/opt/sun/rfidis/lib/sql/	Database scripts
RFID Management Console	/opt/sun/rfidmc	Default installation directory for RFID Management Console
	/etc/opt/sun/rfidmc	Configuration files
	/var/opt/sun/rfidmc	Log files
	/opt/sun/rfidmc/lib/sql/	Database scripts

TABLE C-3 RFID Software Directories for Microsoft Windows

RFID Component	Default Directory	Description
RFID Installers	C:\Documents and Settings\Administrator\Local Settings\Temp	The actual location is controlled by the value of the user environment variable %TEMP%.
RFID Event Manager	C:\Program Files\Sun\RFID Software\rfidem\	Default installation directory
	C:\Program Files\Sun\RFID Software\rfidem\config	Configuration files
	C:\Program Files\Sun\RFID Software\rfidem\logs	EM log files and Rio item
RFID Information Server	C:\Program Files\Sun\RFID Software\rfidis\	Default installation directory

TABLE C-3 RFID Software Directories for Microsoft Windows *(Continued)*

RFID Component	Default Directory	Description
	C:\Program Files\Sun\RFID Software\rfidis\	Configuration files
	C:\Program Files\Sun\RFID Software\rfidis\logs	IS log files
	C:\Program Files\Sun\RFID Software\rfidis\lib\sql	Database scripts
RFID Management Console	C:\Program Files\Sun\RFID Software\rfidmc\	Default installation directory
	C:\Program Files\Sun\RFID Software\rfidmc\config	Configuration files
	C:\Program Files\Sun\RFID Software\rfidmc\logs	MC log files
	C:\Program Files\Sun\RFID Software\rfidmc\lib\sql	Database scripts

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