



# RFID Anywhere™ Enterprise Manager Guide

September 2008

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# About this book

## **Subject**

This book describes RFID Anywhere Enterprise Manager, a standalone management tool providing dynamic, standards-based management for distributed RFID Anywhere networks.

## **Audience**

This book is for administrators of RFID Anywhere.

## **Before you begin**

This book assumes a familiarity with RFID Anywhere and its associated management tasks, such as provisioning and configuring RFID Anywhere components.

## RFID Anywhere documentation

This book is part of the RFID Anywhere documentation set. This section describes the materials in the documentation set and how you can use them.

### The RFID Anywhere documentation set

The RFID Anywhere documentation set consists of the following components:

- **RFID Anywhere Getting Started Guide** This book describes RFID Anywhere, a platform for building RFID solutions. It provides instructions on installing and configuring RFID Anywhere, as well as tutorials that demonstrate how you can use RFID Anywhere to administer and test your RFID network.
- **RFID Anywhere Developer's Guide** This book introduces common development tasks often undertaken when working with RFID Anywhere. It describes the RFID Anywhere Visual Studio Extension for creating custom business modules, introduces commonly-used interfaces for hardware and component interaction, and outlines how to write Data Protocol Processors (DPPs).
- **RFID Anywhere Enterprise Manager Guide** This book describes RFID Anywhere Enterprise Manager, a standalone management tool providing dynamic, standards-based management for distributed RFID Anywhere networks.
- **RFID Anywhere Mobile Support Guide** This manual outlines RFID Anywhere's mobile device support and development model.
- **RFID Anywhere Location Information System Guide** This book describes RFID Anywhere's Location Information System (LIS). Using RFID Anywhere and LIS, businesses can not only track assets from a range of data collection points [such as passive RFID, active RFID, real-time location systems (RTLS), barcode, global positioning systems (GPS) and environmental sensors], but can dramatically enhance the value of this data by associating environmental inputs (e.g., temperature) along with the location data. In addition, the RFID Anywhere Location Information System exposes its complete feature set via a rich service oriented architecture (SOA) web services layer allowing organizations to easily transform static business information into business-aware intelligence.
- **RFID Anywhere Label Designer Guide** This book describes RFID Anywhere's printing capabilities and its Label Designer, a graphical tool used to design the layout of RFID and barcode labels.

Visit [http://www.ianywhere.com/developer/product\\_manuals/rfid\\_anywhere/index.html](http://www.ianywhere.com/developer/product_manuals/rfid_anywhere/index.html) to obtain the latest version of the RFID Anywhere documentation.

## Finding out more and providing feedback

### Finding out more

Additional information and resources, including the RFID Anywhere Developer Community, are available at <http://www.sybase.com/products/rfidsoftware/rfidanywhere>.

### Feedback

We would like to receive your opinions, suggestions, and feedback on this documentation.

You can email comments and suggestions to the RFID Anywhere documentation team at [iasdoc@ianywhere.com](mailto:iasdoc@ianywhere.com). Although we do not reply to emails sent to this address, we read all suggestions with interest.

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# **Part I. Getting Started with Enterprise Manager**

This part provides an introduction to Enterprise Manager and its usage.



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CHAPTER 1

# Getting Started with Enterprise Manager

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## Enterprise Manager overview

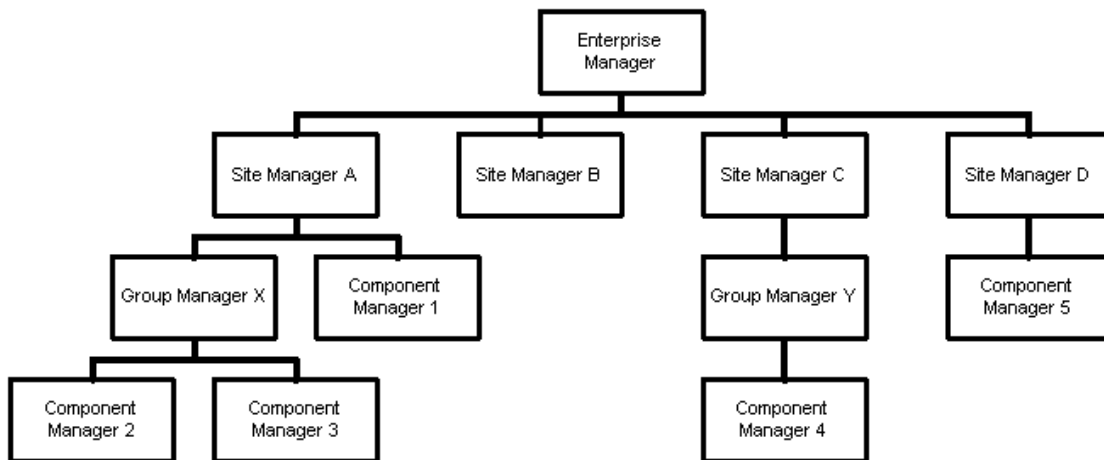
RFID Anywhere includes a web-based administrator console that runs on each RFID Anywhere node, exposing management capabilities for each individual site. Enterprise Manager, however, enables the management of multiple RFID Anywhere nodes from a central location, which is imperative in multi-site, distributed RFID networks.

Enterprise Manager is a rich, standalone console that provides a single view of the entire RFID network. The Enterprise Manager service is installed on dedicated computer, and its console is downloaded and accessed by a web browser from any computer.

To facilitate this distributed management, Enterprise Manager communicates with one RFID Anywhere Site Manager using secure web services over HTTP, thus requiring only one integration point, and leveraging secure communication standards for the delivery of management commands and catalogs, which summarize the components on each RFID Anywhere node.

During the first communication between a Site Manager and Enterprise Manager, certificates are exchanged. From then on, all messages between Enterprise Manager and a Site Manager are signed, with certain messages also being encrypted.

After Enterprise Manager sends commands to a Site Manager, the Site Manager then provides communication and management message routing into other RFID Anywhere nodes in the network, if required.



Site Managers also send **heartbeat** messages to Enterprise Manager to indicate the status of the Site Manager and any nodes underneath it. Enterprise Manager requests updated catalogs from the Site Manager when needed, so the catalogs are not sent on every heartbeat. For example, Enterprise Manager may request the latest catalog from a Site Manager if it noticed that a Component Manager was down, or if a service on another node was restarted.

In a distributed RFID network, management is simplified through profiles and groups, enabling repeatable configurations and providing the ability to manage multiple, similar nodes or components together, instead of one-at-a-time. From Enterprise Manager, administrators can define configuration groups and profiles,

and apply settings to group members. Here, a group is a set of RFID Anywhere nodes that have something in common, whether it be location, or components that are installed on them. This group-based management enables the enforcement of policies and repeatable configurations. Administrators can also define different views for different administrators, showing each administrator only what he or she needs to see. For example, a business manager may only be presented with configuration of business modules and not hardware connectors.

For more information about the features and benefits of the entire RFID Anywhere technology, see the online resources at <http://www.sybase.com/RFID>.

## Architecture for flexibility, security, and performance

Enterprise Manager is a *dynamic* management tool that *discovers* what needs to be managed and what properties those items have. This is a vastly different architecture from standard management tools that are static, requiring configuration and updating to be told what to manage. The dynamic nature of Enterprise Manager allows new RFID Anywhere nodes to come online, and automatically be managed and configured with no extra configuration steps in Enterprise Manager. When a Site Manager sends updated catalogs indicating the status and configuration of each node in a site, Enterprise Manager can consume them and expose all of the services and properties for management, including properties of custom business modules.

Enterprise Manager is one of the first implementations of Web Services - Management (WS-M), implementing a number of the standards to facilitate Enterprise Manager's dynamic management capabilities, asynchronous communication with distributed networks, and data transfer.

The communication between Enterprise Manager and a Site Manager is secure and asynchronous, and accomplishes the following:

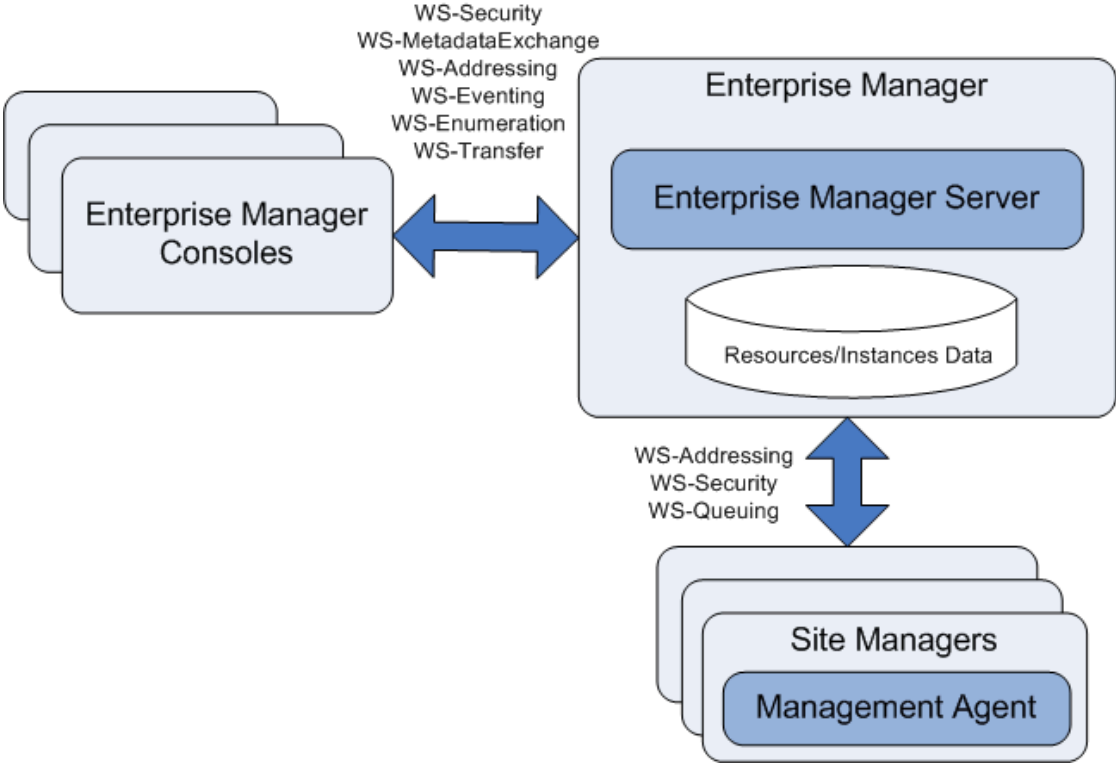
- **DISCOVER** the presence of resources to be managed
- **GET, PUT, CREATE, and DELETE** individual resources to be managed
- **ENUMERATE** the properties of resources to be managed
- **SUBSCRIBE** to events emitted by resources to be managed, such as heartbeat messages
- **EXECUTE** specific management commands with strongly typed parameters

The following WS-M standards are used to facilitate the above management tasks:

- WS-Addressing
- WS-Security
- WS-Queuing

The communication between the Enterprise Manager Console running on a PC and the Enterprise Manager server uses the following WS-M standards:

- WS-Security
- WS-MetadataExchange
- WS-Addressing
- WS-Eventing
- WS-Enumeration
- WS-Transfer



# **Part II. Installing Enterprise Manager**

This part provides installation instructions for Enterprise Manager and the Enterprise Manager Console.



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# Installing Enterprise Manager

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## Installing Enterprise Manager support into RFID Anywhere

The following steps are required to install and run Enterprise Manager on a computer running RFID Anywhere:

1. Install RFID Anywhere 3.5.1. See [“Installing RFID Anywhere” \[RFID Anywhere Getting Started Guide\]](#).
2. From the **Provisioning** page of RFID Anywhere, check to see if the package Enterprise Manager Support version 3.1.0.25 is listed with a status of **Installed** in the packages list.

If this package is not installed on your system, proceed to step 3.

If this package is already installed on your system, proceed to [“Verifying security certificate permissions” on page 14](#).

3. From the **Provisioning** page of RFID Anywhere, deploy the Enterprise Manager support files (*SetupEMSupport.3.1.0.25.msi*), which can be found in the *EnterpriseManager* directory of the RFID Anywhere download package.

### Note

This step must be performed on the Site Manager computer that communicates with Enterprise Manager. It must also be installed on Group Manager and Component Manager nodes to be managed by Enterprise Manager through a Site Manager.

## Prerequisites for installing Enterprise Manager

This section explains how to install Enterprise Manager's prerequisites.

### Note

If you are installing Enterprise Manager on a computer already running RFID Anywhere successfully, these prerequisites should already be correctly installed.

## System requirements

You need the following to install Enterprise Manager:

- 512 MB RAM
- 2 GHz processor
- Windows XP Professional SP2 or Windows Server 2003 SP1
- Microsoft Internet Information Services
- Microsoft .NET Framework 1.1 SP1, Microsoft .NET Framework 2.0, including ASP.NET.

- Microsoft Web Services Extensions 2.0 SP3

## Installing IIS

RFID Anywhere uses IIS to host the ASP.NET pages for the Administrator Console and to expose web services to other applications.

### To determine if IIS is already installed on your computer

1. From the **Start** menu, choose **Settings » Control Panel**.

The Control Panel appears.

2. Double-click **Add Or Remove Programs**.

The **Add Or Remove Programs** window appears.

3. On the left side of the **Add Or Remove Programs** window, click **Add/Remove Windows Components**.

The **Windows Components Wizard** opens.

4. Select **Internet Information Services (IIS)**, and then click **Details**.

5. If the **Common Files, Documentation, Internet Information Services Snap-in, and World Wide Web Service** components are selected, then the necessary IIS components are already installed on your computer. Follow the instructions below to verify that IIS is functioning correctly. If the above components are not selected, follow the instructions below to install IIS on your computer.

### To install IIS on your computer

1. From the **Start** menu, choose **Settings » Control Panel**.

The Control Panel opens.

2. Double-click **Add Or Remove Programs**.

The **Add Or Remove Programs** window appears.

3. On the left side of the **Add Or Remove Programs** window, click **Add/Remove Windows Components**.

The **Windows Components Wizard** opens.

4. Select **Internet Information Services (IIS)**, and then click **Details**.

5. Ensure the **Common Files, Documentation, Internet Information Services Snap-in, and World Wide Web Service** components are selected to be installed, and then click **OK**.

6. Follow the instructions in the wizard, insert your Windows CD if prompted, and click **Finish** when the wizard completes.

### To determine that IIS is functioning correctly

1. Open the Control Panel by choosing **Start » Settings » Control Panel**.

2. Double-click **Administrative Tools**.

3. Double-click **Services**.
4. Ensure that the following services have a **Status** of **Started**, and that their **Startup Type** is set to **Automatic**:
  - IIS Admin
  - World Wide Web Publishing
5. From a web browser, navigate to <http://localhost>. An Under Construction page or custom web site should appear.

For more information about troubleshooting IIS issues, see the online resources at <http://www.microsoft.com>.

## Installing the .NET Framework

The Microsoft .NET Framework 1.1 SP1 and 2.0 is used to enable the ASP.NET pages of the Administrator Console and to provide additional tools and libraries for RFID Anywhere and custom business logic.

### Note

If the Administrator Console does not display or function correctly after installation, often with code being displayed instead of typical HTML forms, it may indicate that this step did not complete successfully. If this occurs, follow these steps again, ensuring that previous versions are removed and all steps are followed.

### Uninstall existing versions of the .NET Framework from your computer

- Open the Control Panel, then click **Add Or Remove Programs** and uninstall any previous versions of the Microsoft .NET Framework from your computer, including version 1.1.

### To install the .NET Framework 1.1 SP1 on your computer

1. Download and execute the Microsoft .NET Framework version 1.1.4322 Redistributable Package from <http://www.microsoft.com/downloads/details.aspx?FamilyID=262d25e3-f589-4842-8157-034d1e7cf3a3&displaylang=en>.
2. Run the following command from `C:\WINDOWS\Microsoft.NET\Framework\v1.1.4322\` to ensure that ASP.NET for IIS is enabled:

```
aspnet_regiis.exe -I
```
3. Download and execute the Microsoft .NET Framework 1.1 Service Pack 1 package (KB867460) from <http://www.microsoft.com/downloads/details.aspx?FamilyID=a8f5654f-088e-40b2-bbdb-a83353618b38&displaylang=en>. Restart your computer if you are prompted.
4. Verify the user permissions of the automatically-created ASP.NET Machine Account:
  - a. Navigate to your Windows folder, typically `C:\Windows`. This account needs full permission to the `Windows Temp` folder.
  - b. Right-click the `Temp` folder and choose **Properties**.
  - c. On the **Security** tab, highlight the ASP.NET Machine Account user.

- d. If the user is not in the list, add the account by clicking **Add**.
- e. In the **Locations** field, select your computer name, and then enter ASPNET in the object names field and click **Check Names** before clicking **Add**.
- f. With the ASPNET user selected, select the **Full Control** checkbox under **Allow**, and then click **OK**.

#### To install the .NET Framework 2.0 on your computer

- Download and execute the Microsoft .NET Framework 2.0 redistributable package from <http://www.microsoft.com/downloads/details.aspx?FamilyID=0856eacb-4362-4b0d-8edd-aab15c5e04f5&displaylang=en>. Restart your computer if you are prompted.

## Installing WSE 2.0 SP3

Microsoft Web Services Extensions (WSE) 2.0 SP3 for Microsoft .NET is used to enable web services from RFID Anywhere.

#### To determine if WSE 2.0 SP3 is installed on your computer

1. From the **Start** menu, choose **Settings » Control Panel**.  
The Control Panel opens.
2. Double-click **Add Or Remove Programs**.  
The **Add Or Remove Programs** window opens.
3. Verify that Microsoft WSE 2.0 SP3 is in the list of currently installed programs. If it is, WSE 2.0 SP3 is installed on your computer. If it is not, follow the instructions below to install WSE 2.0 SP3 on your computer.

#### To install WSE 2.0 SP3 on your computer

1. Download and execute the Microsoft Web Services Extensions 2.0 SP3 for Microsoft .NET package from <http://www.microsoft.com/downloads/details.aspx?familyid=1ba1f631-c3e7-420a-bc1e-ef18bab66122&displaylang=en>.
2. Click **Next** to proceed.
3. Read and accept the terms in the license agreement, and then click **Next**.
4. Select **Administrator** to install the runtime files and standalone tools, and then click **Next**.
5. Click **Install** to proceed with the installation.
6. Click **Finish** once the installation completes. Close any windows that appear.

## Installing Enterprise Manager

This section explains how to install Enterprise Manager's server component.

### To install Enterprise Manager's server component

1. Download the RFID Anywhere installation package.
2. Extract the ZIP file you downloaded to your desktop or a temporary location.
3. In the directory where you extracted the RFID Anywhere installation, open the *EnterpriseManager* folder.
4. Double-click *RAEM-version.msi*.

The **RFID Anywhere Enterprise Manager Setup Wizard** opens. Click **Next**.

5. Select the country where you are installing the software. Click **Next**.
6. Choose whether you agree to the License Agreement.

You must agree to the RFID Anywhere License Agreement before you can proceed with the installation.

7. Enter the **Order Number**, **Feature Name**, and **Authorization Code** from your RFID Anywhere license, and then click **Next**.
8. Enter your name and organization in the respective fields on the **Customer Information** window, and choose to install RFID Anywhere for all users of the computer, or only for yourself.
9. Select **Complete** to install all components of RFID Anywhere Enterprise Manager in the default directory of *C:\Program Files\Sybase\RFID Anywhere Enterprise Manager*. To change the installation directory, select **Custom**. Click **Next**.
10. If you selected **Custom**, specify the installation directory for RFID Anywhere. Click **Next**.
11. Click **Install** to begin the installation.
12. Click **Close** when the installation completes.

RFID Anywhere Enterprise Manager is now installed on your computer.

## Verifying security certificate permissions

Both RFID Anywhere and RFID Anywhere Enterprise Manager generate X.509 certificates to enable secure communication. If you plan on accessing Enterprise Manager as a user other than the user you install RFID Anywhere and Enterprise Manager as (for example, a local Administrator user), ensure that account has permissions on the certificates.

### To verify that the correct security certificate permissions are in place

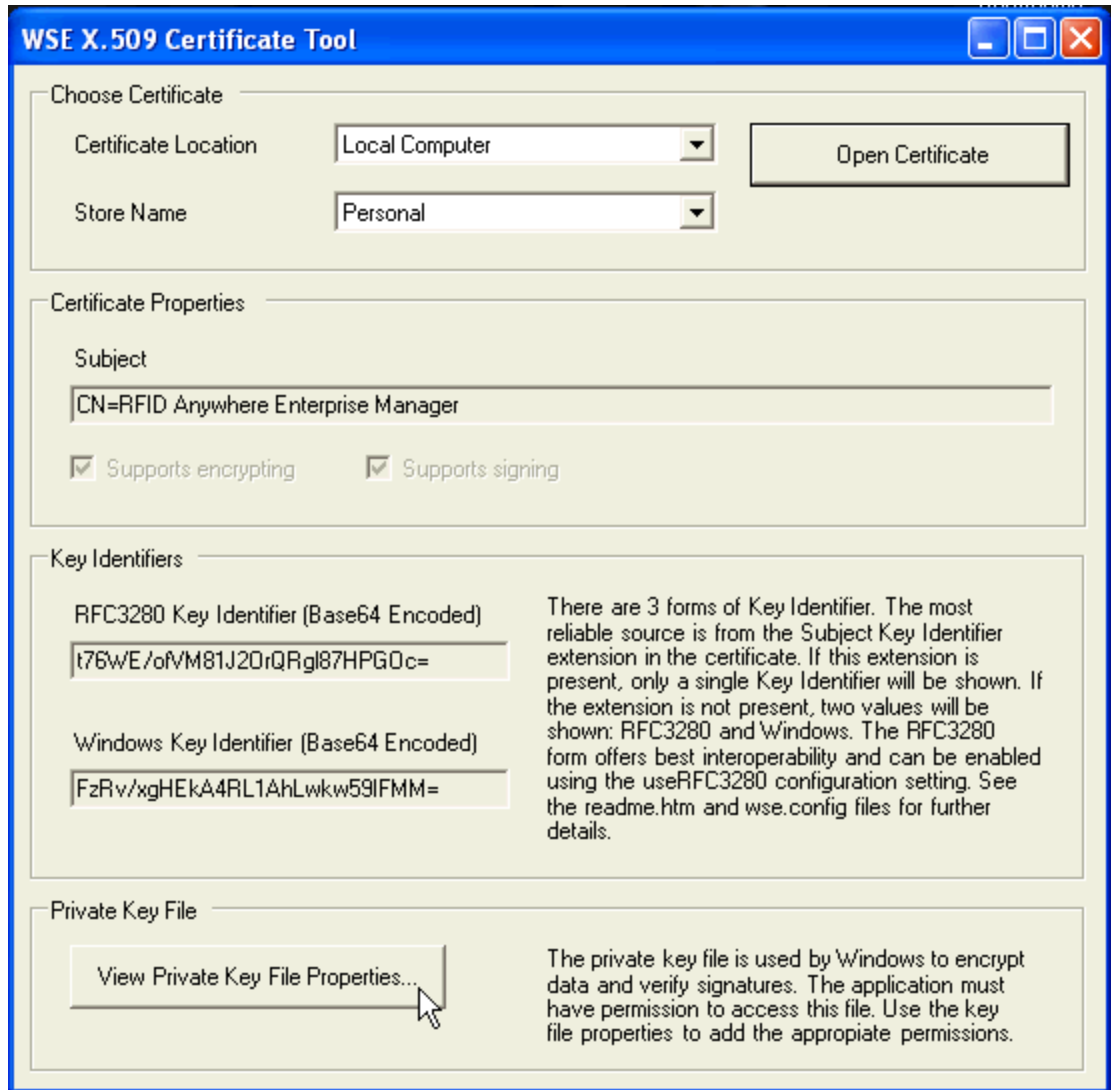
1. If you correctly selected Administrator when installing Microsoft WSE 2.0 SP3, the X509 Certificate Tool is installed on your system.

#### Note

If you only installed the Runtime version of WSE 2.0 SP3, click the **Change** button underneath Microsoft WSE 2.0 SP3 from **Add/Remove Programs** and choose to install the Tools components.

2. Choose **Start » Programs » Microsoft WSE 2.0 » X509 Certificate Tool**.

3. In the **Certificate Location** field, select **Local Computer**. In the **Store Name** field, select **Personal**. Click **Open Certificate**.
4. Select the certificate in the list named RFID Anywhere Enterprise Manager, then click **OK**.



5. The **Certificate Properties** and **Key Identifiers** sections of the WSE X.509 Certificate tool are populated. Click the **View Private Key File Properties** button.
6. On the **Security** tab, click **Add**. Ensure that the **From This Location** field is correct (it should be your computer name for a local Administrator account), enter the username, and click **OK**.
7. Follow the steps above to ensure the correct permissions for the certificate named RFID Anywhere.

## Upgrading and backing up Enterprise Manager

This section explains how to upgrade a previous version of Enterprise Manager to version 3.5, which involves using a tool to back up and restore Enterprise Manager configuration information. It also discusses how to back up an Enterprise Manager server.

### To upgrade Enterprise Manager

1. Upgrade all sites that are managed by Enterprise Manager to RFID Anywhere 3.5, including the 3.5 version of the EMSupport package.
2. Installed the EM Backup tool by double-clicking *SetupEMBackup.msi* from the EnterpriseManager folder of your installation package.
3. Launch the EMBBackup tool from **Start » Programs » iAnywhere.RfidNet.EMBackup** and back up your Enterprise Manager configuration.
4. Uninstall the previous version of Enterprise Manager.
5. Install the 3.5 version of Enterprise Manager.
6. Relaunch the EMBBackup tool and restore the previously-saved Enterprise Manager configuration. Click **Yes** to upgrade database. A confirmation message appears.
7. Log in to Enterprise Manager and confirm that all the settings were updated correctly.

### To back up Enterprise Manager

- Use the EMBBackup tool to create a backup your current Enterprise Manager configuration..

## Connecting an RFID Anywhere Site Manager to Enterprise Manager

This section explains how to connect an RFID Anywhere Site Manager to Enterprise Manager.

### To connect an RFID Anywhere Site Manager to Enterprise Manager

1. From the RFID Anywhere Site Manager's Administrator Console Configuration tab, click the **Server** tab and specify the **Network Connection** to use from the **System** pane on the left side of the **Server Configuration** page.

#### Note

If you do not correctly indicate which network connection RFID Anywhere is using, you get a `No network connection specified` error in the **Enterprise Manager** pane, and the **Register** button is greyed-out. After setting this, you have to refresh your browser window to enable the **Register** button.

2. From the RFID Anywhere Site Manager's Administrator Console **Configuration » Server** page, enter username and password credentials and click **Register** to set up a connection between Enterprise Manager and the Site Manager.

**Notes**

Credentials for an account in the Administrators group on the Enterprise Manager computer is recommended for the initial communication. An alternate Managers group can be specified from Enterprise Manager afterwards.

If Enterprise Manager is installed on the same computer as the RFID Anywhere Site Manager, the Site Manager is only able to connect to the local Enterprise Manager, as the host information on the Server Configuration page is pre-populated.

3. Clicking **Register** displays a prompt asking you to verify that you want to register this Site Manager with Enterprise Manager. Click **OK**.

**Note**

When a Site Manager has delegated its administration to an Enterprise Manager, the Local Services list from the Site Manager's Administrator Console becomes *read-only*. You can view the properties of a service, but cannot add/remove services, start/stop services or modify service properties, as all management must be done from Enterprise Manager.

## Unregistering a Site Manager

After successfully registering a Site Manager to Enterprise Manager, the **Console Configuration** page displays the connection details and the **Unregister** button. To sever connector and unregister, you have to provide credentials.

### To unregister a Site Manager from Enterprise Manager

- From the RFID Anywhere Site Manager's Administrator **Console Configuration** page, enter username and password credentials and click **Unregister** to sever the connection between Enterprise Manager and the Site Manager.

## Installation instructions for the Enterprise Manager Console (UI)

This section outlines how to install the Enterprise Manager Console, or User Interface (UI), on a computer that is to access Enterprise Manager to manage an RFID network.

### Installing the Enterprise Manager Console

#### To install the Enterprise Manager Console

1. To install the Enterprise Manager Console in the same computer as Enterprise Manager, browse to <http://localhost/RFIDAnywhereEnterpriseManager/>.

If this is your first time accessing the Enterprise Manager Console from the computer, you must click the **Install Enterprise Manager Prerequisites** link to download and install a trust application called *RAEMUITrust.msi*. Accept the installation. This needs to be done on any computer that accesses the Enterprise Manager Console, but it only needs to be done once per computer.

2. Once the trust application is installed, browse to <http://localhost/RFIDAnywhereEnterpriseManager/> and click the **Enterprise Manager** link.
3. Log in to the Enterprise Manager Console with credentials for a local administrator account on the Enterprise Manager computer.

## Uninstalling Enterprise Manager

To uninstall Enterprise Manager, and to uninstall the Enterprise Manager console from any computer where it has been installed, use the Control Panel.

### **To uninstall Enterprise Manager**

1. Choose **Start » Programs » RFID Anywhere Enterprise Manager » Stop Service**.
2. Once the Enterprise Manager service stops, go to **Control Panel » Add or Remove Programs**.
3. Select **RFID Anywhere Enterprise Manager** and click **Remove**.

The Enterprise Manager is uninstalled and removed.

### **To uninstall the Enterprise Manager Console from any computer where it has been installed**

1. Open the Control Panel and choose **Add Or Remove Programs**.
2. Select **RFID Anywhere Enterprise Manager UI Trust** and click **Remove**.

The Enterprise Manager Console is uninstalled and removed.

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## **Part III. Using Enterprise Manager**

This part contains detailed instructions for using Enterprise Manager to manage your RFID Anywhere network.



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CHAPTER 3

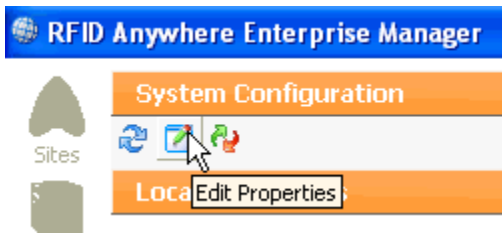
# Using Enterprise Manager

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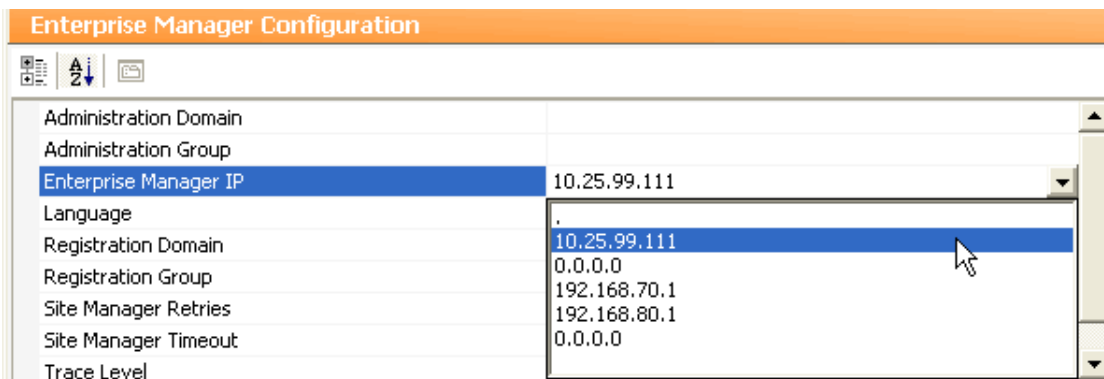
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## Using Enterprise Manager

The first time Enterprise Manager is accessed with Administrator privileges, you are redirected to the **Enterprise Manager Configuration** page. Click the **Edit Properties** icon in the **System Configuration** section to edit the properties.



Click the . beside the **Enterprise Manager IP** property. Use the dropdown list to select the IP address that Enterprise Manager should use. All available IP addresses are listed. After selecting the desired IP address, click **Save**.

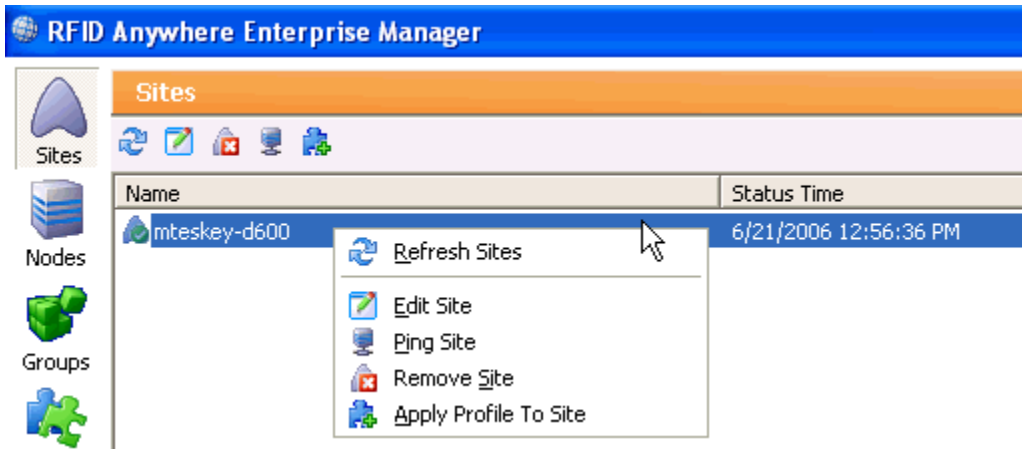


## The Sites view

The **Sites** view of the Enterprise Manager Console lists all RFID Anywhere sites that have set up their connection to this Enterprise Manager. Recall that a site is a collection of RFID Anywhere nodes, all managed by Enterprise Manager through a single Site Manager. The nodes in a site include the Site Manager node, and any Group or Component Manager nodes *under* that Site Manager.

Right-click an RFID Anywhere site to perform common tasks:

- **Refresh Sites** to update the Last Communication column
- **Edit Site** to configure the sites available schedule for processing tasks if the site is not always available
- **Ping Site** to instruct the Site Manager to send an updated catalog
- **Remove Site** to stop managing the site
- **Apply Profile To Site** to launch the process of assigning a specific profile to the nodes of the site

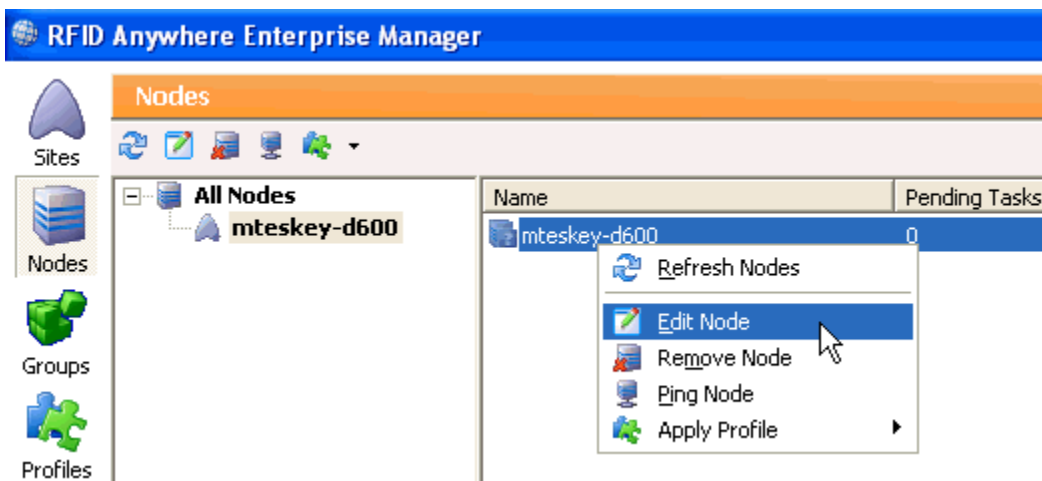


## The Nodes view

The **Nodes** view shows a tree structure of all nodes (Site Managers, Group Managers, and Component Managers) that are controlled by Enterprise Manager.

Right-click an RFID Anywhere node to perform common tasks:

- **Refresh Nodes** to update the Last Communication column
- **Edit Node** to configure the local services running on the node and to manage users in the nodes RfidManagers or RfidWebServiceUsers groups
- **Remove Node** to delete the Node from the network
- **Ping Node** to instruct the node to send an updated catalog via its Site Manager
- **Apply Profile** to apply a profile to the node or to a service on the node



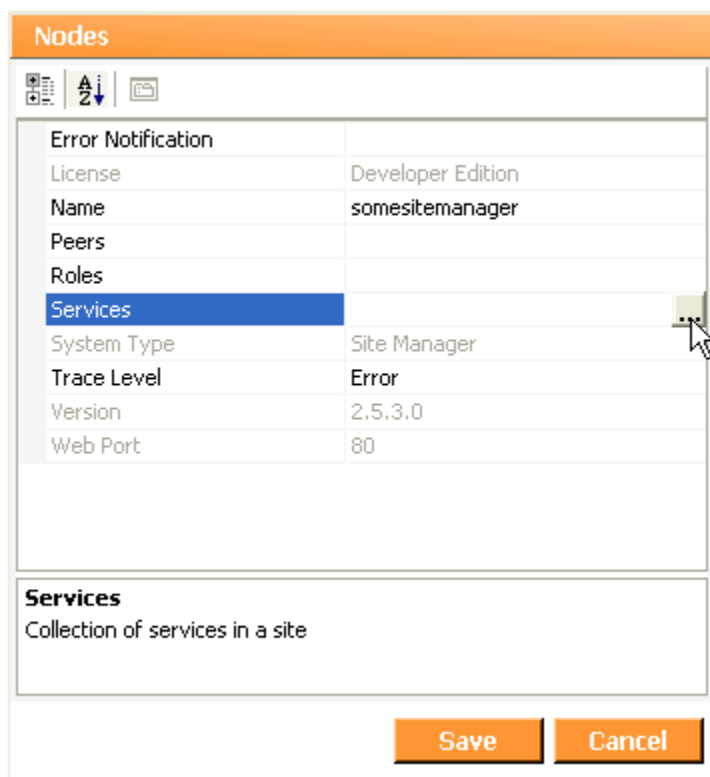
## Editing a node

### To edit services of a node

1. Right-click a node from the **Nodes** view and choose **Edit Node**.

A window opens showing the properties of the node.

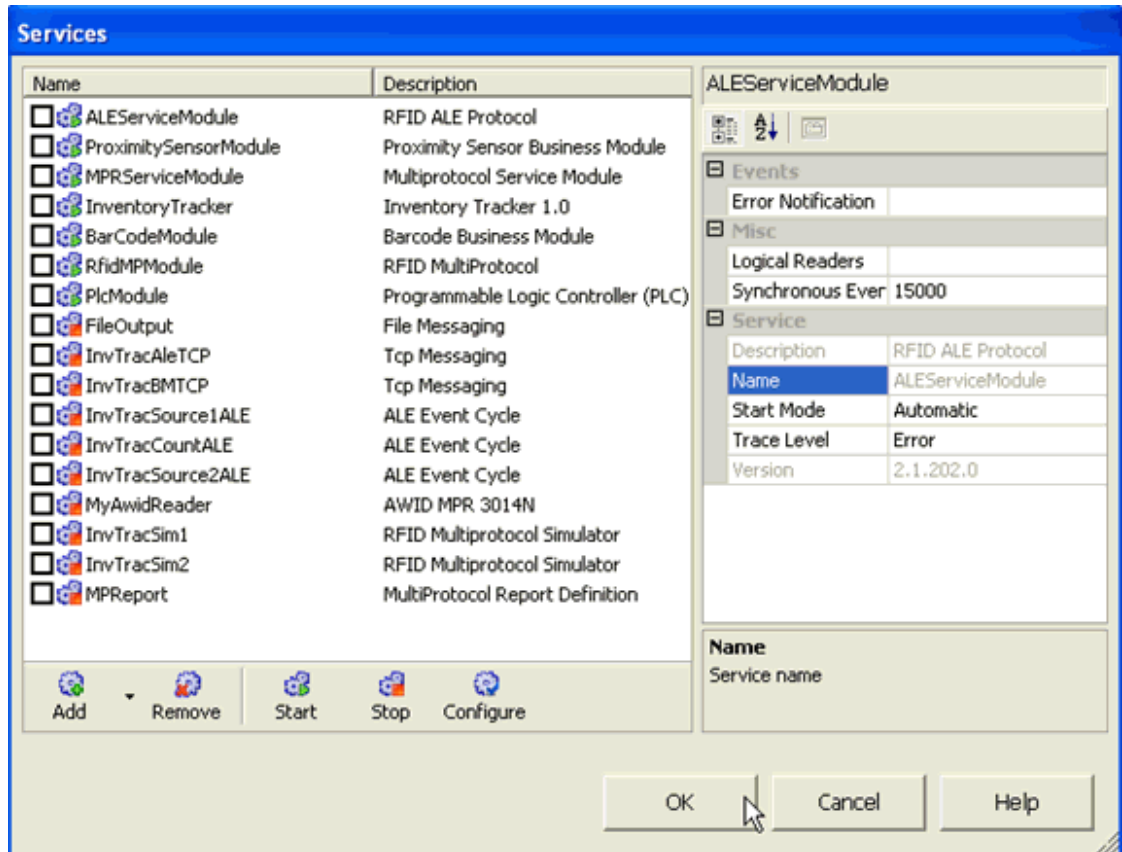
2. Click **Services**, then the ellipsis (...) to bring up the **Services** view.



#### Note

If a warning message appears indicating that the node information for the node you selected is not available, click the green checkmark to acknowledge the message, then right-click the node and choose **Ping Node** to force the node to send its information to Enterprise Manager.

3. The **Services** window shows the local services installed on the node. Icons indicate if a service is running or not. You can do the following common tasks from the **Services** list of a node:
  - Use the **Add**>*package name* button to create a new instance of a service (package must already be deployed to node)
  - Use the **Remove** button to remove a service
  - Click a service and click **Start** or **Stop** to start or stop the service
  - Click a service and update properties in the right pane to modify a service



- Once all modifications are complete, click **OK**, then click **Save** to save the changes and push them down to the Site Manager (if the Site Manager is connected) or queue them up to be delivered the next time the Site Manager connects.

### To manage users on a node

- Right-click a node from the **Nodes** view and choose **Edit Node**.  
A window opens showing the properties of the node.
- Click **Roles**, then the ellipsis (...) to bring up the **Roles\Users** view.

#### Note

If a warning message appears indicating that the node information for the node you selected is not available, click the green checkmark to acknowledge the message, then right-click the node and choose **Ping Node** to force the node to send its information to Enterprise Manager.

- The **Roles\Users** list shows the two RFID Anywhere-specific groups of users for an RFID Anywhere node. RfidManagers and RfidWebServiceUsers. You can do the following tasks from the **Roles\Users** list of a node:

- Right-click a group and choose **Add User** to bring up properties for a new user, which are created on the system after user properties are entered.
- Right-click a user in a group and choose **Remove User From Group** to remove the user from the group, but keep the user account on the node with any other group memberships it had.
- Right-click a user in a group and choose **Delete** user to delete the user account from the node.

## The Groups view

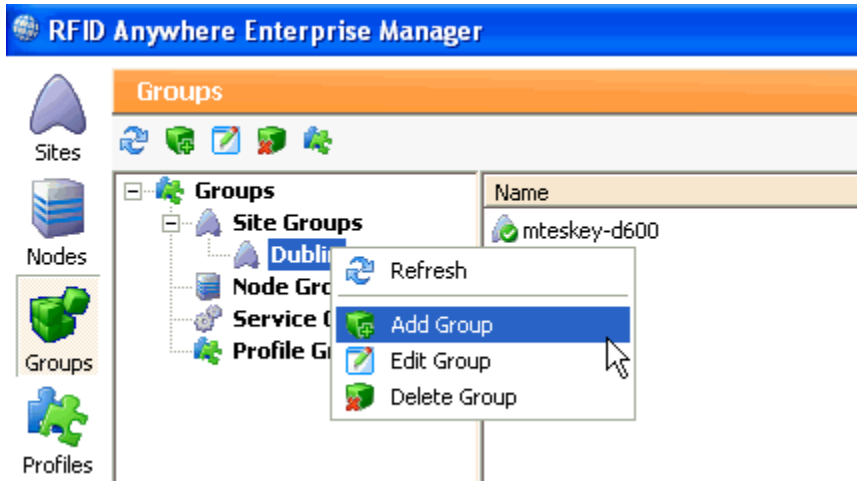
The **Groups** view allows administrators to manually create groups of sites, groups of nodes, groups of services, and groups of profiles to simplify the updates of multiple components on different sites. Specifically, the **Provisioning** view allows you to deploy updates by group.

### To create a new group in one of the group categories (Site, Node, Service, Profile)

- Right-click the group category and choose **Add Group**.

Right-clicking a previously created group exposes the following options:

- **Refresh** to update the group display
- **Add Group** to add a new group of the same type
- **Edit Group** to update the group membership and properties
- **Delete Group** to delete the configured group



## The Profiles view

The **Profiles** view allows an administrator to define property values for a service type that can be applied to an enforced on services running on other nodes.

### To add a new profile

1. Right-click **All Profiles** and choose **Add Profile**.

The **Create Profile** screen appears.

2. On the **Create Profile** screen, give the new profile a name and description, and then select the type of service this profile is for. The **Type** dropdown list is populated with all services installed on one or more nodes.
3. After the **Name**, **Description**, and **Type** fields are filled, the **Available Properties** window is populated with the properties used to configure services of that type. An administrator can choose to enforce values of any number of the properties. Properties to be managed are moved to the right side of the **Create Profile** window using the arrow icons, and the property values can then be set.
4. Click **Save** to save the new profile.

**Create Profile**

**Name:** SetVerboseOnREportEngineMP

**Description:** Set Verbose logging on Report Engine MP connectors

**Type:** MultiProtocol Report Definition (2.5.2.0)

**Available Properties**

- Logical readers
- Name
- Queries
- Report if empty
- Return Table Layout
- Start Mode
- Start Operation
- Start Time
- Start/Stop by trigger
- Stop Time
- Subscribers
- XML report encoding

**Trace Level**

Verbose

Limits the amount of tracing information to errors, warnings, informational messages, verbose ...

**Save** **Cancel**

5. Once a profile is created, it can be applied to the services of a node from the **Site** or **Node** view.

By right-clicking a site from the **Site** view and choosing **Apply Profile To Site**, and then selecting a profile, that profile is applied to all services of that type running on all nodes under that site. By right-clicking a node from the **Node** view and choosing **Apply Profile » Apply to Node**, and then selecting a profile, that profile is applied to all services of that type running on the node. By choosing **Apply**

**Profile » Apply to Service** from the **Node** view, an administrator can target a specific service instance with the profile.

## The Tasks view

The **Tasks** view outlines the changes you made from the **Node** view and summarizes the pending tasks.

## The Provisioning view

The **Provisioning** view allows an administrator to view, install and uninstall packages to RFID Anywhere nodes. A package is an *.msi* file that contains an RFID Anywhere component to be deployed. These are the same packages, most often hardware connectors, that are installed by the RFID Anywhere Administrator Console's Provisioning page.

The **Package View** tab in the **Provisioning** view shows a list of all packages installed on RFID Anywhere nodes. Clicking a package shows you what versions are installed on what nodes.

The **Package View** tab in the **Provisioning** view shows a list of all RFID Anywhere packages installed on one or more nodes. Clicking a package displays all of the nodes that have that specific package installed.

The **Node View** tab in the **Provisioning** view shows a list of all RFID Anywhere nodes. Clicking a node displays the packages, including version, installed on the node. This is similar to the **Provisioning** page of the Site Manager.

## Installing new packages

The **New Package** icon allows you to deploy a new package to a site (or to nodes, or groups of nodes).

### To install a new package

1. Click the **New Package** icon on the **Provisioning** page.
2. Use the **Filter** dropdown list to narrow the list of targets to **Sites** (which automatically deploys the package to all nodes managed by that site), **Nodes** (to deploy packages to individual nodes), or **Groups** (to deploy to a previously-defined group of sites or nodes).
3. Specify the **Deployment Schedule**.
4. Browse to the package to be deployed, and click **Deploy**.

After deploying a package, go to the **Tasks** view to see pending tasks and to see the status of completed tasks.

## Deploying files

Enterprise Manager can allow an administrator to deploy files from the Enterprise Manager console to RFID Anywhere sites or nodes using the **Deploy Files** icon from the **Provisioning** page. These files could be data files used by a business module, or a firmware upgrade for a hardware connector.

### To deploy a file

1. Click the **Deploy File** icon on the **Provisioning** page.
2. Use the **Filter** dropdown list to narrow the list of targets to **Sites** (which automatically deploys the package to all nodes managed by that site), **Nodes** (to deploy packages to individual nodes), or **Groups** (to deploy to a previously-defined group of sites or nodes).
3. Specify the **Deployment Schedule**.
4. Browse to the file to be deployed.
5. Select the type of service you are deploying the file to. This pre-populates the install path for you.
6. If you want to specify a different directory, update the install path field.

#### Note

Note that all deployed files are placed somewhere under the Data\Files folder of the node's RFID Anywhere installation directory, usually organized by component GUID.

7. Click **Deploy**.

After deploying a file, go to the **Tasks** view to see pending tasks and to see the status of completed tasks.

## The Configuration view

The **Configuration** view allows an administrator to update the properties of the Enterprise Manager.

The following properties can be managed from the **Configuration** view:

- **Administration Domain** Specifies the domain that administrators are authenticated against.
- **Administration Group** Users must be part of this group in the Administration Domain to have administrator privileges in Enterprise Manager.
- **Enterprise Manager IP** The IP address (and associated network card) Enterprise Manager uses.
- **Language** The Language the Enterprise Manager Console displays. English is the only language currently supported.
- **Registration Domain** Specifies the domain that registration credentials from Site Managers are authenticated against.
- **Registration Group** Users must be part of this group in the Registration Domain to register a Site Manager to this Enterprise Manager.
- **Site Manager Retries** The number of times Enterprise Manager should attempt to connect to a Site Manager.
- **Site Manager Timeout** The time, in minutes, to wait between Site Manager retries.

## The Monitoring view

The **Monitoring** view shows all Enterprise Manager status messages. The verbosity of the messages is controlled from the **Trace Level** property on the **Configuration** view.

## The Admin view

The **Admin** view allows an administrator to set role permissions for other administrators, including the ability to view, create, edit, or delete RFID Anywhere components such as business modules or connectors. Specific roles can also be defined so that certain administrators only have permission to manage certain sites.

## Logging out

Click the **Logout** icon to log out of the Enterprise Manager Console.

---

## Troubleshooting

This section outlines potential errors or issues you may encounter when using Enterprise Manager to manage your RFID Anywhere network, and how to resolve them.

### Firewall issues

RFID Anywhere and Enterprise Manager communicate over HTTP, so firewall issues are rare. To troubleshoot issues communicating from Enterprise Manager to a Site Manager, ensure that you can access the Site Manager's RFID Anywhere Administrator Console (<http://SiteManagerIP/rfidanywhere>) from a web browser on the Enterprise Manager computer.

Similarly, ensure that you can access Enterprise Manager's main page (<http://EnterpriseManagerIP/rfidanywhereenterprisemanager>) from a web browser on the Site Manager computer, and from a web browser on any machine where the Enterprise Manager console is used.

### Authentication Failed errors

If you see Authentication Failed errors in the Enterprise Manager Monitoring page, ensure that the RFID Anywhere node contains both X.509 certificates and that the permissions are set correctly. See [“Verifying security certificate permissions”](#) on page 14.

### 404 - File not found errors

If you see `AsynchronousOperationException` error messages whose details indicate a 404 (File not found) error when attempting to access `RFIDSite.ashx` on the Site Manager computer, ensure that the following line is included in the `<httpHandlers>` section of the `install-dir/Web.config` file:

```
<add verb="*" path="RFIDSite.ashx"
type="iAnywhere.RfidNet.Management.MngWSEService,
iAnywhere.RfidNet.Management.WSE" />
```

For these errors, also ensure that the `Temp` folder in your `Windows` directory exists, and that the local user named ASPNET, used by the .NET Framework, has both read and write privileges on the folder.

### 403 - Access denied errors

If you see 403 - access denied errors when communicating with Enterprise Manager from the Enterprise Manager console, or from Enterprise Manager to a Site Manager, restart the Windows service named IIS Admin to restart IIS and the `aspnet_wp` process. This error may occur when too many users are connected to IIS.

## Building a network

To build the distributed RFID Anywhere network required by a solution, administrators, developers, and integrators must first design the network, including what nodes run hardware connectors, how business logic is distributed, and where enterprise integration occurs. Once the design is complete, RFID Anywhere nodes can be installed and their relationships set up to create the distributed network.

To ensure that each node can be managed by Enterprise Manager, the Enterprise Manager support package must first be installed, and each Group Manager and Component Manager node must use their Configuration page to specify which Site Manager they are connected to. By establishing the connection with a Site Manager, the Site Manager communicates with Enterprise Manager on the node's behalf.

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