



Sun Role Manager 4.1 Installation Guide

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Preface

This guide provides detailed information and instructions for installing the SRM solution on various application servers

Sun Role Manager Overview

Sun Role Manager is a comprehensive Identity Management and Compliance solution that enables companies to proactively enforce internal security control policies and automate critical identity management processes.

Sun Role Manager is J2EE based, utilizing a 3-tiered model. Requirements of the 3-tier architecture are a web server, an application server and a database server. The Sun Role Manager application comes bundled with Apache Tomcat 5.5.16 which serves as both – a web server and an application server. Other Java based application servers such as WebSphere, JBoss, WebLogic etc. are also supported by Sun Role Manager. Supported database servers include Microsoft SQL Server, Oracle, IBM DB2. Sun Role Manager can be easily integrated on Windows, UNIX or UNIX – like platforms. Refer to *Sun Role Manager 4.0 Compatibility Matrix* for information of supported applications.

This guide is designed to provide administrators and technical staff with a comprehensive set of instructions to install Sun Role Manager. For information on upgrading the product, please refer to *Sun Role Manager 4.0 Upgrade Guide*.

Who Should Use This Guide

Sun Role Manager Install Guide is designed for deployers and system administrators who are responsible for installing/upgrading Sun Role Manager on the target systems.

Document Conventions

The following conventions are used in this guide –

Information in ...	Indicates ...
<i><Italics></i>	A variable whose value is name of the directory
BOLD TEXT	Information that you must type exactly as shown
TEXT	File name

Chapter 1 Before Install

This chapter discusses the procedures to prepare for the installation of Sun Role Manager:

- Required Privileges
- Architecture Overview
- Memory Requirements
- Database Connectivity
- DB2 Prerequisites
- MySQL Prerequisites
- Overview of Task Flow

Required Privileges

Operating System administrative privileges are required to install components such as the out-of-box Tomcat 5.5 Application Server, Java Run-Time Environment, Java Web Start etc.

Architecture Overview

Sun Role Manager is a J2EE application that resides on an Application Server. A Database Server is required to store the Sun Role Manager database which is the central repository of application data. The following is a list of supported software environments:

Operating Systems

- Microsoft Windows Server 2000(SP3)
- Microsoft Windows Server 2003
- Solaris 8,9,10
- Red Hat Linux 4, 5
- Novel SuSE Linux Enterprise 9, 10

Application Servers

- Apache Tomcat 5.5.15+
- IBM WebSphere 6.1
- Weblogic 10
- Sun Java Application Server

Database Servers

- Microsoft SQL Server 2000(SP4)/2005
- IBM DB2 8.2, 9.x
- Oracle 9i, 10g, 11.x
- MySQL 5

Memory Requirements

You should determine your memory needs and set values in your application server's JVM. Do this by setting Java Maximum and Minimum Heap Size through the command line.

You can specify these values in Tomcat by setting the JAVA_OPTS environment variable as follows:

- On Windows:

```
set JAVA_OPTS="-Xmx512m -Xms512m"
```

- On UNIX:

```
export JAVA_OPTS="-Xmx512m -Xms512m"
```

NOTE:

- Depending on your specific implementation, you may need to increase these recommended values if you face performance issues with the Web-interface
- Keeping a low minimum value minimizes garbage collection, whereas keeping a higher value decreases response time in the Web-interface

Database Connectivity

A third-party relational database is required to store system data. Based on the type of database implemented, corresponding JDBC drivers have to be downloaded and setup on target system prior to installation.

The **.jar** files necessary for establishing a JDBC connection are available on Sun's website. The files can be downloaded from

http://dlc.sun.com/rolemanager/Database_Drivers/

The following table shows information about on or more **.jar** files needed to be copied for your database type.

Database Type	File Name
Microsoft SQL Server	jtids-1.2.jar
Oracle	ojdbc14.jar
IBM DB2	db2jcc.jar, db2jcc_license_cu.jar
MySQL	mysql-connector-java-5.1.5-bin.jar

Depending on the Operating System of the target machine, the downloaded files have to be downloaded prior to any installation process. The following locations are recommended

- On Windows

Copy the downloaded files to **C:\SRM_Drivers**

- On UNIX

Copy the downloaded files to **/usr/local/SRM_Drivers**

DB2 Prerequisites

If DB2 is selected as the Database Server, a blank database named as '*rbacx*' and a user named '*rbacxsvc*' needs to be created prior to running Sun Role Manager installer. The following lines will guide you to create the required database on Windows and UNIX environments

One of the following authorization is required to create the database

- sysadm
- sysctrl

It is assumed that a DB2 Database Server exists on the target platform and has been started.

Creating DB2 Sun Role Manager database on Windows

As *Windows system administrator*, execute the following step to create '*rbacsvc*' user

```
C:\> net user rbacsvc rbacservice /add
```

As *DB2 administrator*, enter the following to create a database named '*rbacx*'

```
C:\> db2cmd db2 CREATE DATABASE rbacx
```

Creating DB2 Sun Role Manager database on Linux and UNIX systems

As *root* or *super user*, execute the following in a terminal session to create '*rbacsvc*' user

```
$ useradd rbacsvc
```

```
$ passwd rbacsvc
```

```
<Enter password as rbacservice when prompted>
```

As *DB2 administrator*, Enter the following in a terminal session to create a database named '*rbacx*'

```
$ db2 CREATE DATABASE rbacx
```

MySQL Prerequisites

Selecting MySQL as the Database Server requires creation of a blank *'rbacx'* database and a user *'rbacxservice'*.

Database administrative rights are required to execute SQL script required to create the blank database and the associated user.

The Sun Role Manager installer directory is referred to as `$INSTALLER_HOME`. The SQL database creation script named as ***'rbacx-4.1-mysql-preinstall.sql'***, can be found under **`$INSTALLER_HOME/db_scripts`**

It is assumed that a MySQL Database Server exists on the target platform and has been started.

Creating MySQL Sun Role Manager database and user

Execute the following on *command prompt* for Windows environment or *terminal* for UNIX environments

```
mysql -user={account} --password={password} < rbacx-4.1-mysql-preinstall.sql'
```

Overview of Task Flow

Exact order of steps to be performed, depends on the choice of application server and database server. In general, you will:

- Perform prerequisite tasks: Install a Java compiler and JVM, and set up an index database
- Install and configure an application server
- Install and configure the Sun Role Manager solution

Installing Sun Role Manager on Tomcat

Use the following information and procedure to install Sun Role Manager for use with the Apache Tomcat Application Server version 5.5.x. This Chapter contains the following topics

- Before You Begin
- Installation Steps

Before You Begin

For installation, you will need to know

- The Login and Password for system administrator account on Database

Installation Steps

Follow these installation and configuration steps

- Installing Sun Role Manager
- Launching Sun Role Manager
- Verification of Sun Role Manager Installation

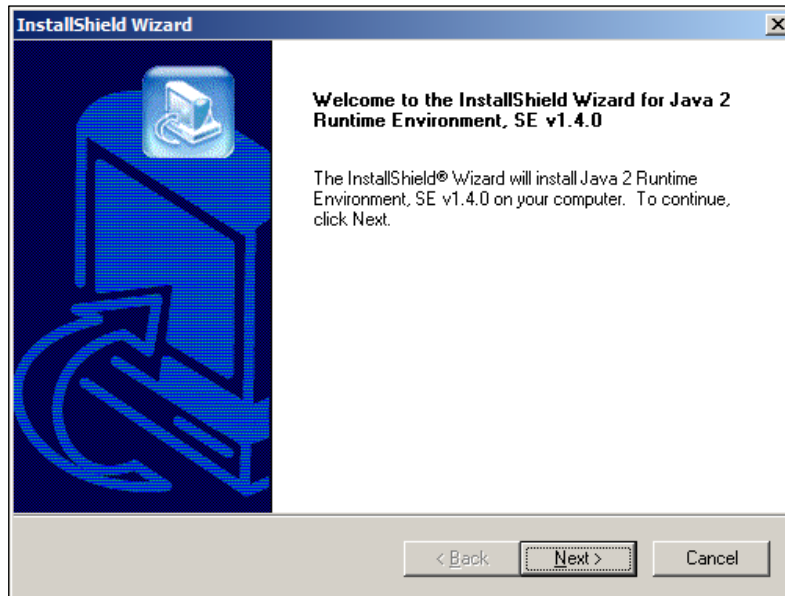
Installing Sun Role Manager

For the installation, we have assumed that Apache Tomcat has not yet been installed on the machine.

Installing on Windows

For the installation, we have assumed that there should be a database server installed either on a network machine or local machine.

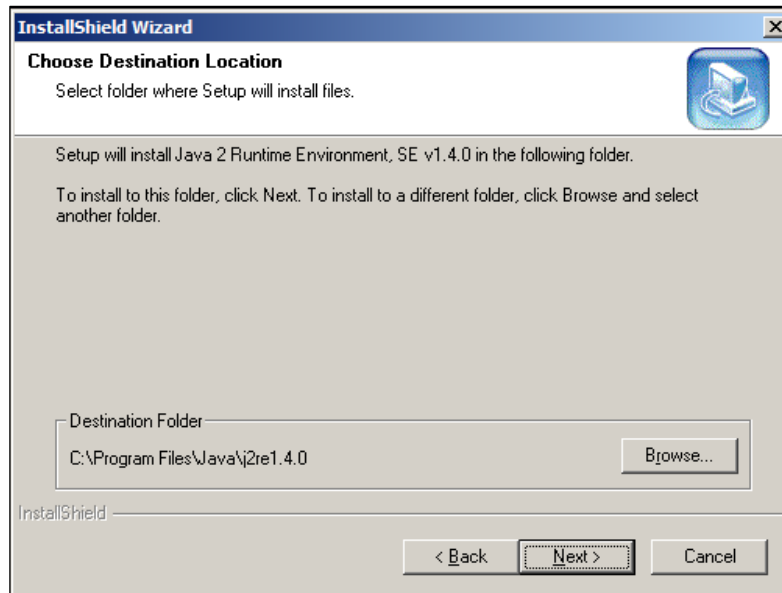
1. Run **install.bat** to launch the installer
2. If JRE is not installed on the system, the installer will launch the installation of JRE
 - a. Click **[Next]** on the Welcome Screen as the installer launches



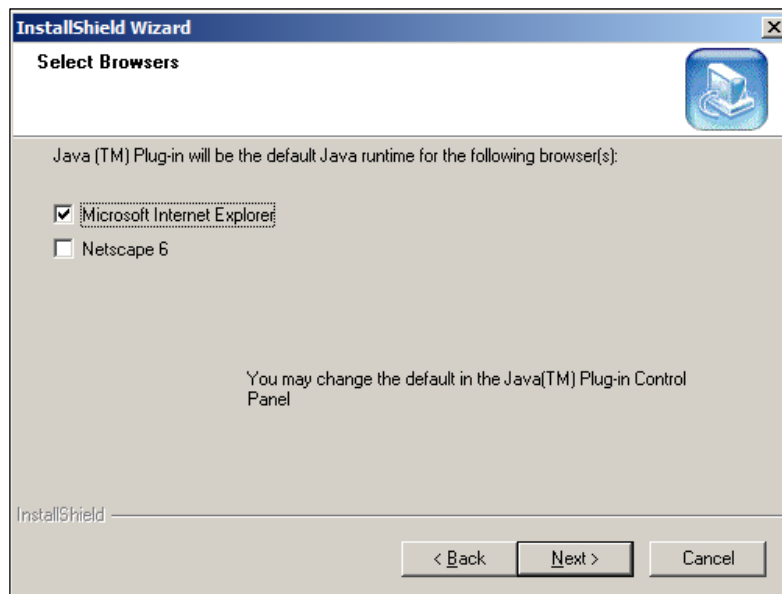
- b. Click **[Yes]** to accept license agreement



- c. Select the destination folder where JRE is to be installed. Click **[Next]**

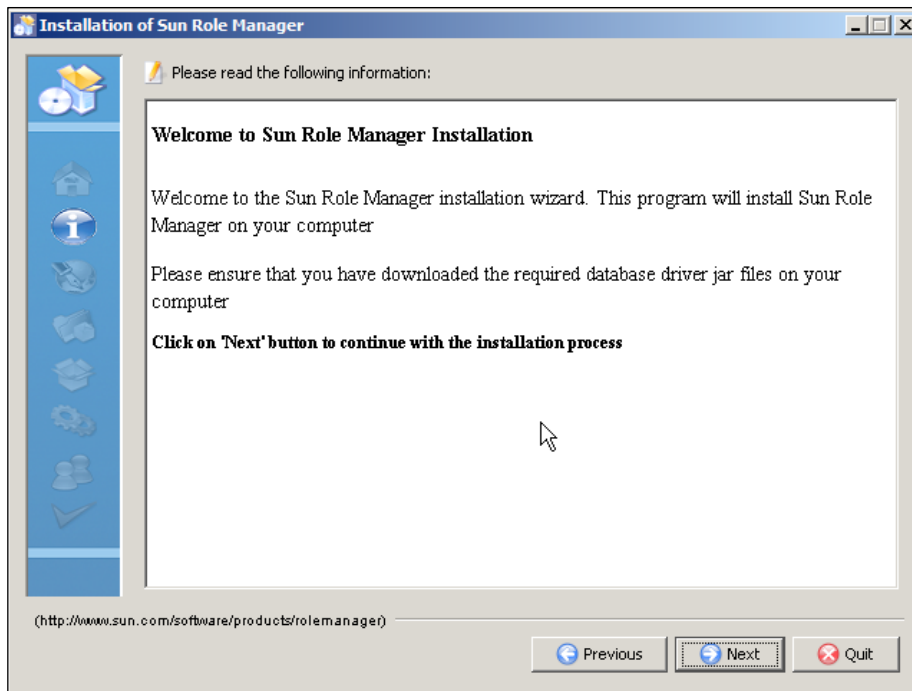
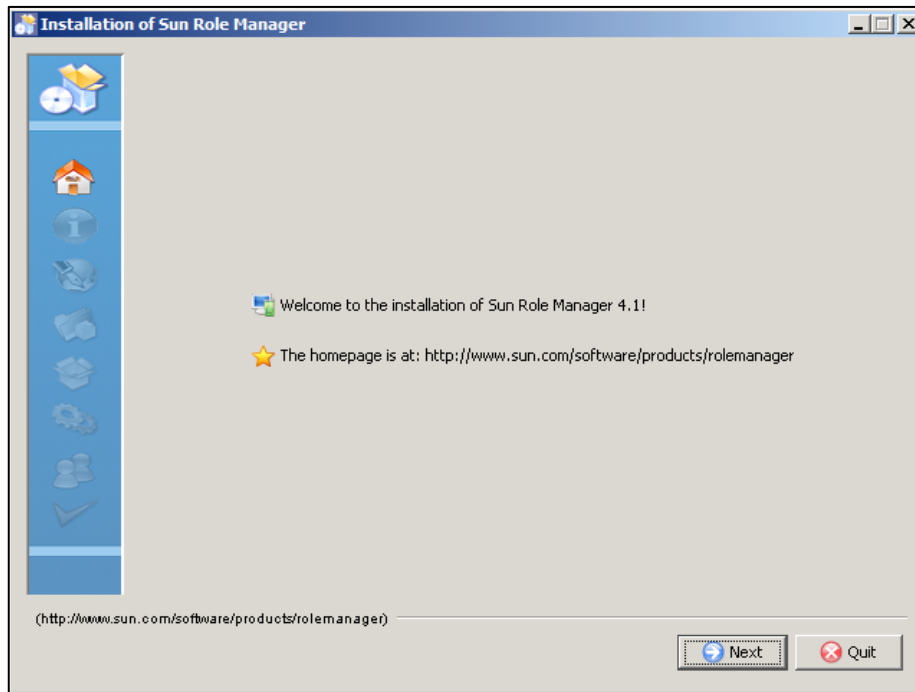


- d. The next screen will be for browser registration. Choose appropriate browser and click **[Next]** to start the Installation

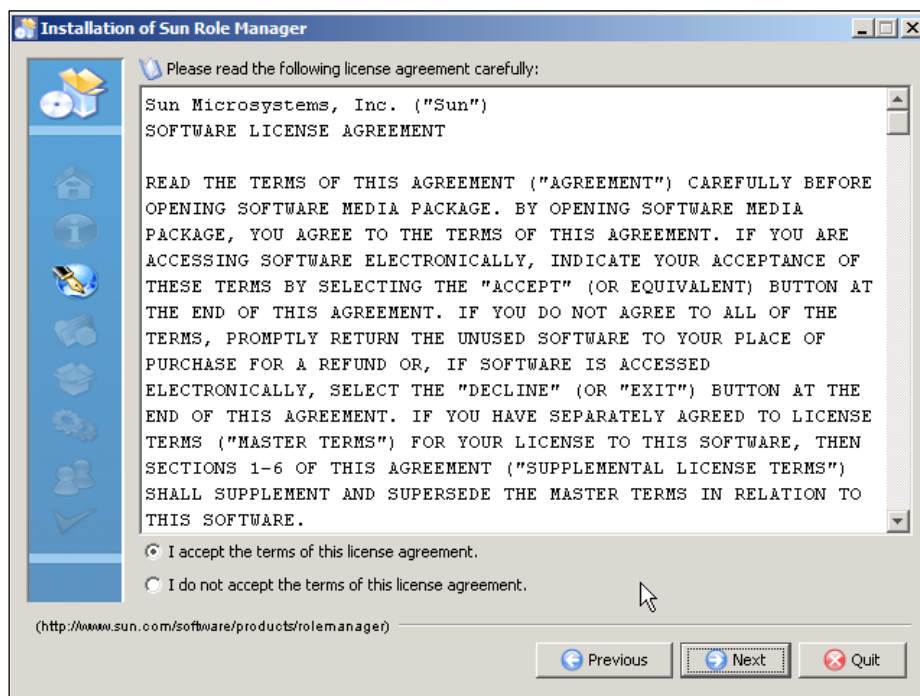


- e. The installer will quit after JRE has been successfully installed

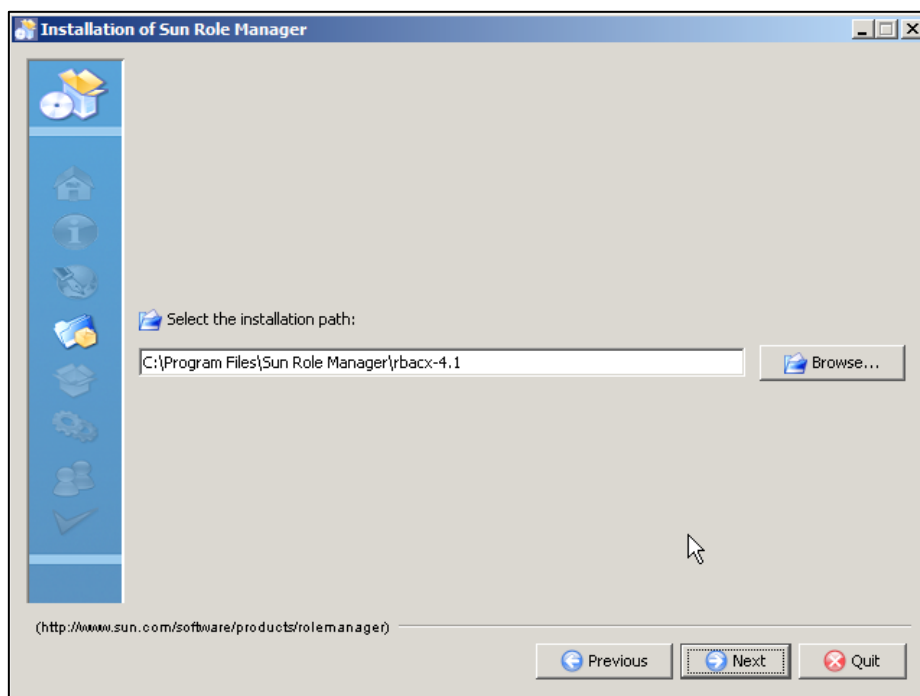
3. Sun Role Manager Installer will launch and displays the Welcome Screen. Click **[Next]**



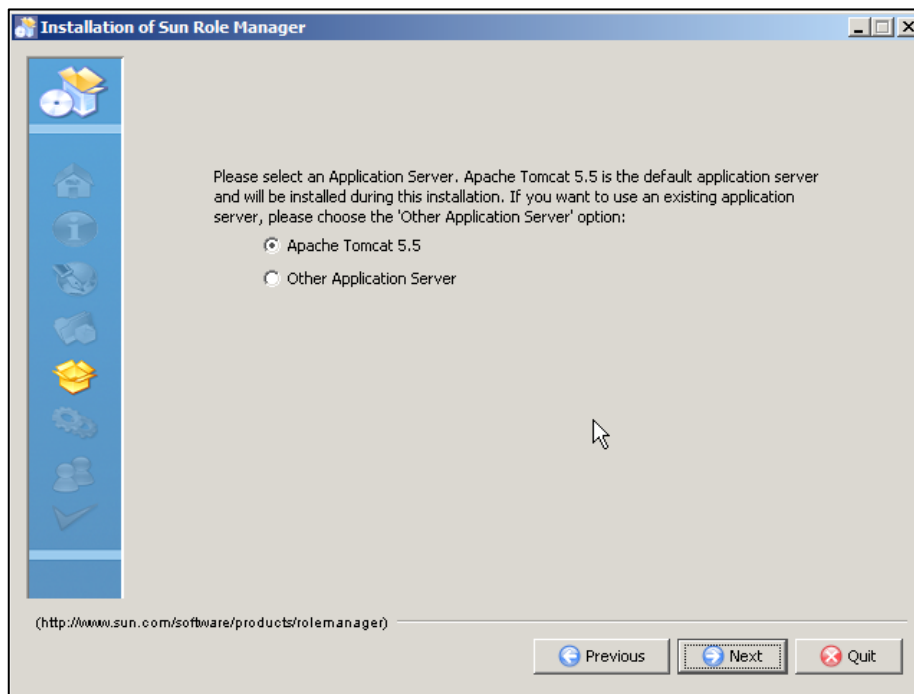
4. Read the License Agreement and to continue with installation select **"I accept the terms of this license Agreement"** and click **[Next]**



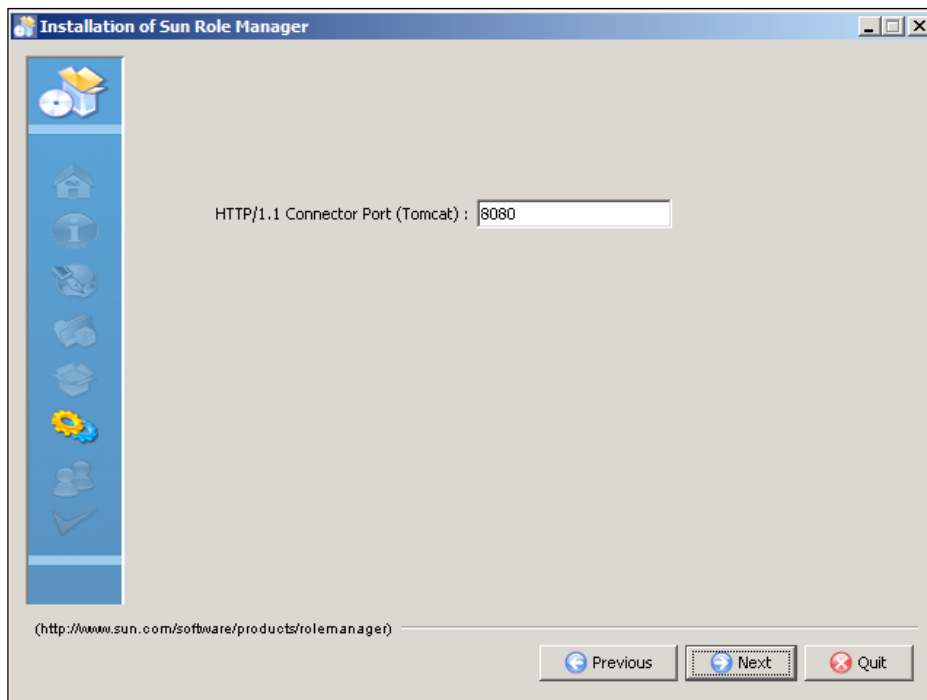
5. Replace the displayed installation path with the location where you want Sun Role Manager to be installed and click **[Next]**. The installation path will be referred as **\$RBACX_HOME**



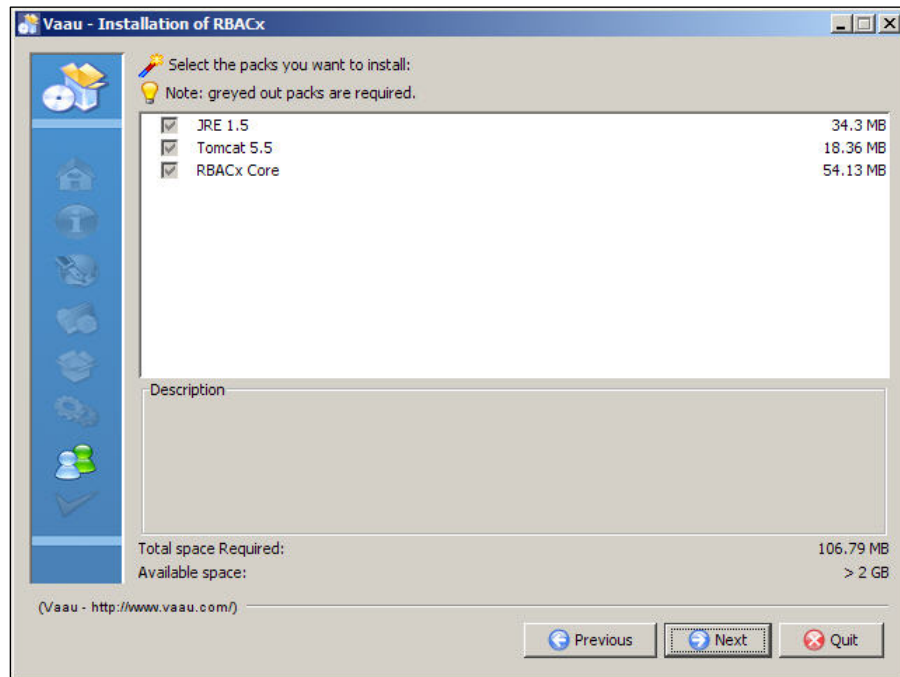
6. Select **"Apache Tomcat 5.5"** as the application server and click **[Next]**



7. Change the connection port if you want it other than **8080**(default) .Click **[Next]**



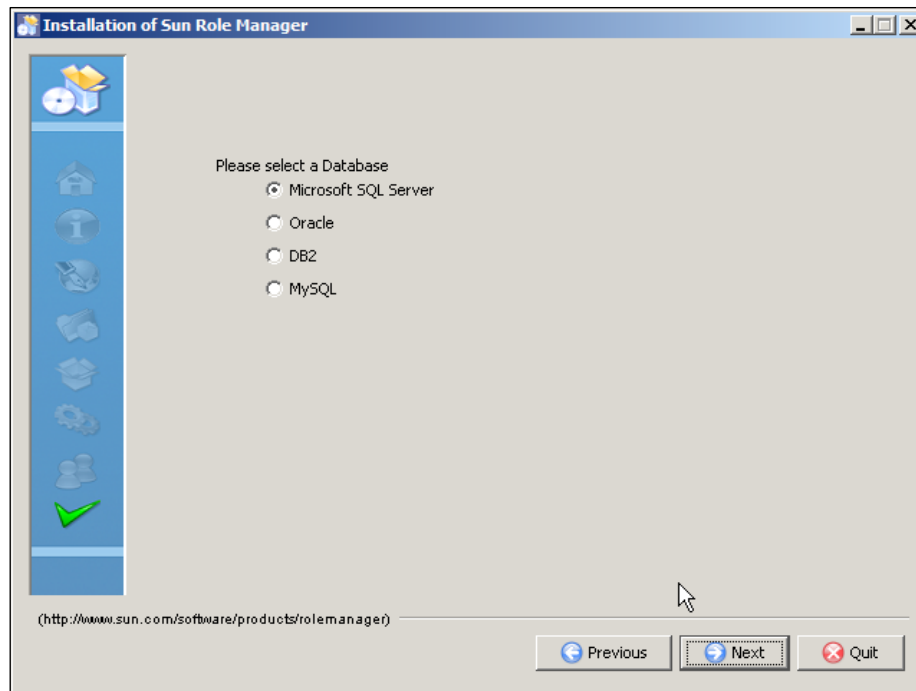
8. Next you'll see the components that the Installer will install on the machine. Click **[Next]**



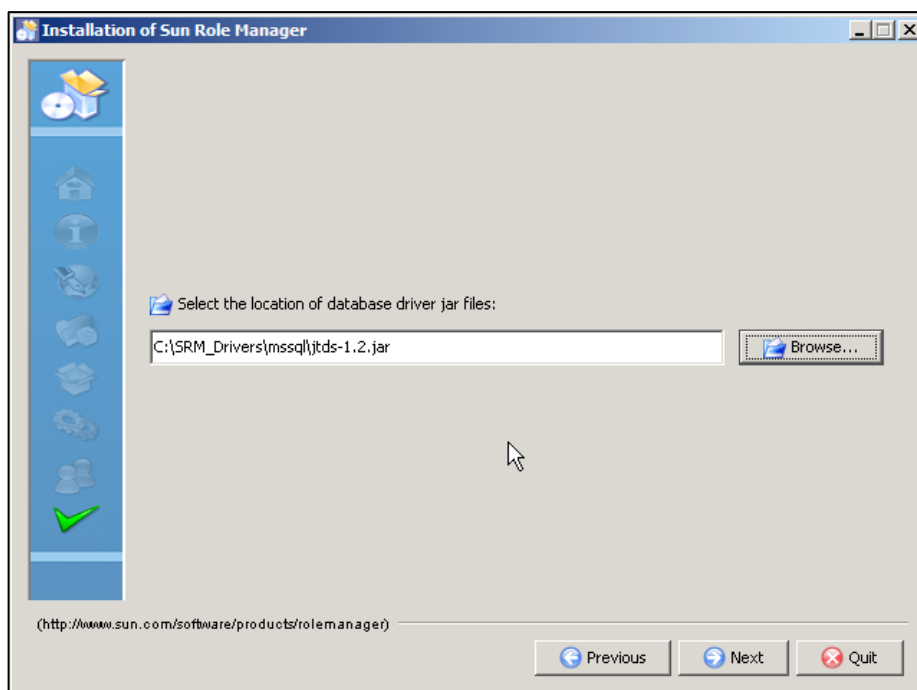
9. Select an Index Database
- Microsoft SQL Server
 - Oracle
 - IBM DB2
 - MySQL

Microsoft SQL Server

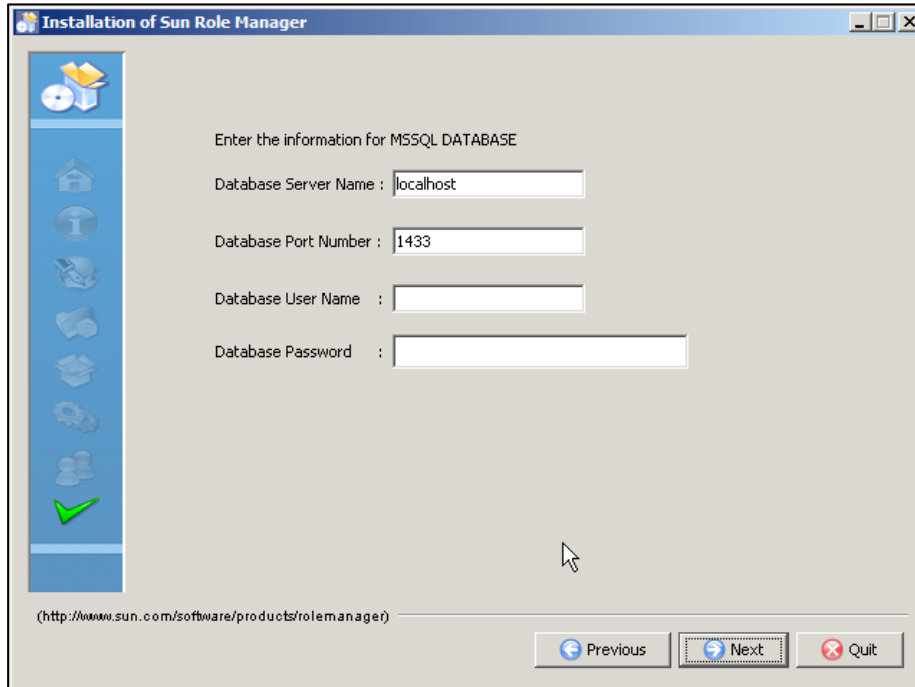
Select 'Microsoft SQL Server' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password to connect to the database. Click **[Next]**



Installation of Sun Role Manager

Enter the information for MSSQL DATABASE

Database Server Name :

Database Port Number :

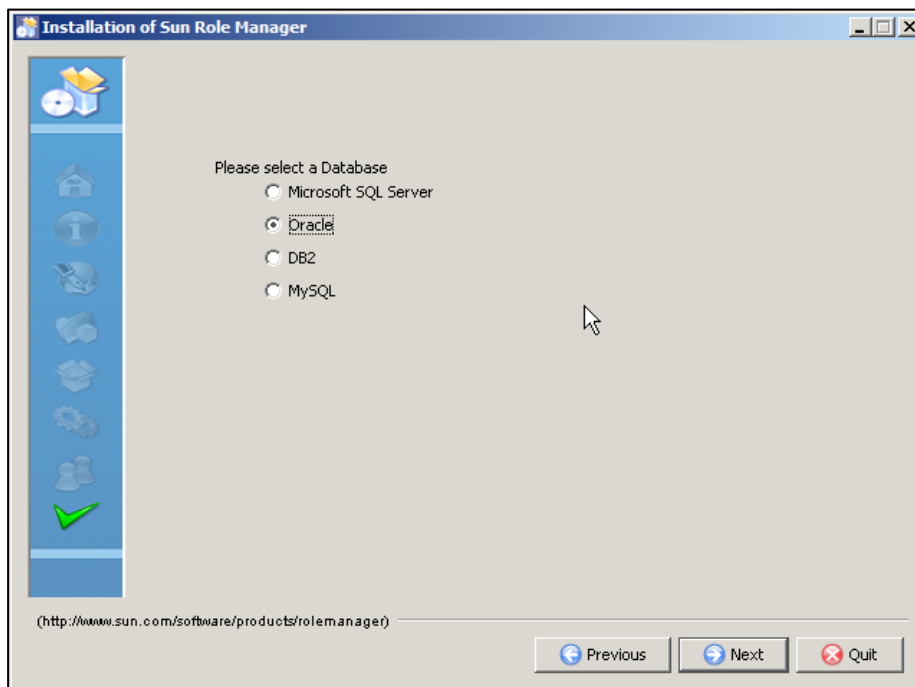
Database User Name :

Database Password :

(<http://www.sun.com/software/products/rolemanager>)

Oracle

Select 'Oracle' and click **[Next]**



Installation of Sun Role Manager

Please select a Database

☐ Microsoft SQL Server

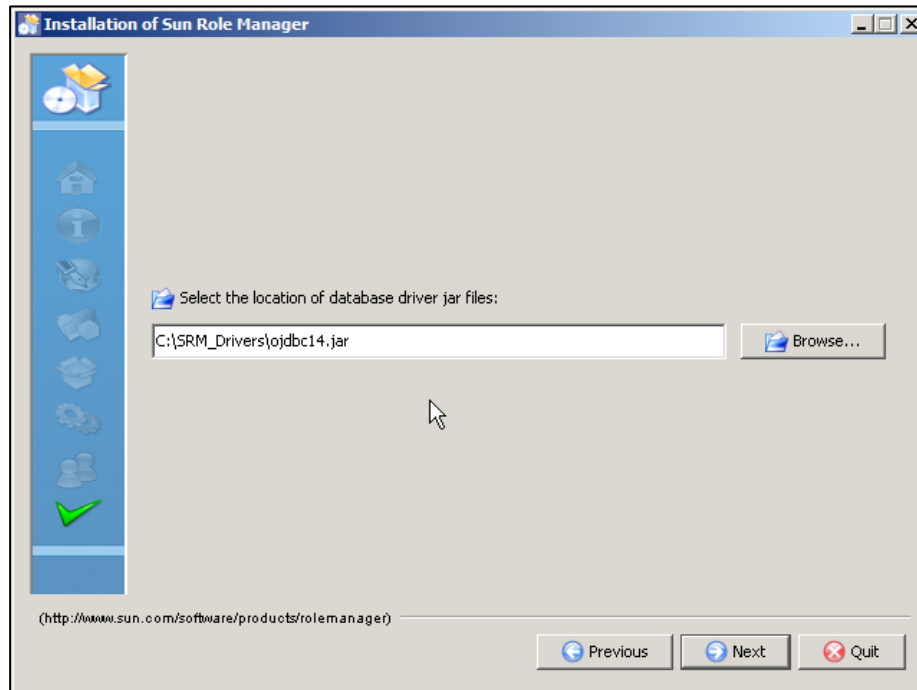
☒ Oracle

☐ DB2

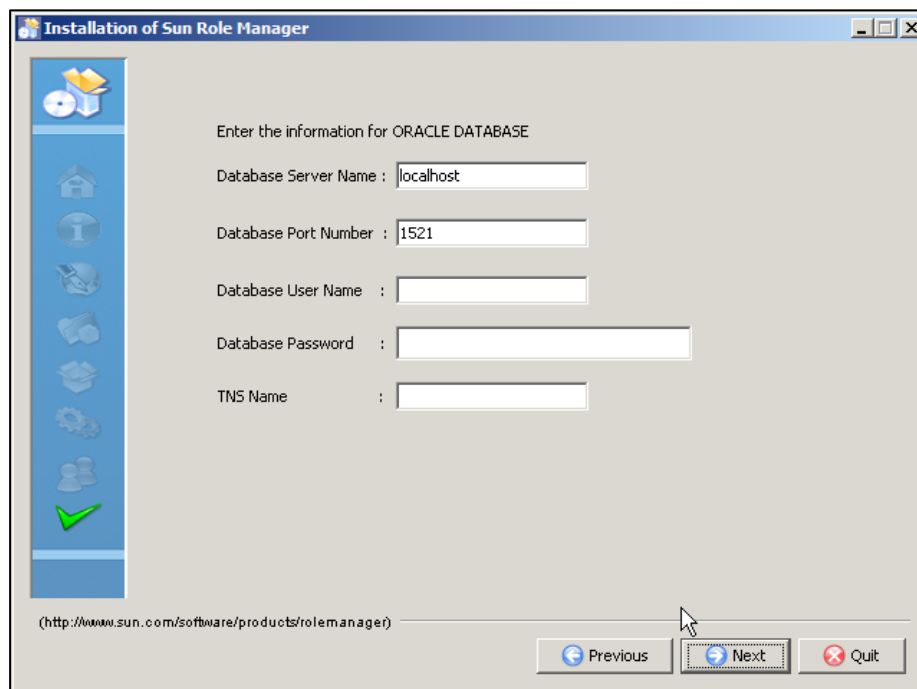
☐ MySQL

(<http://www.sun.com/software/products/rolemanager>)

Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.

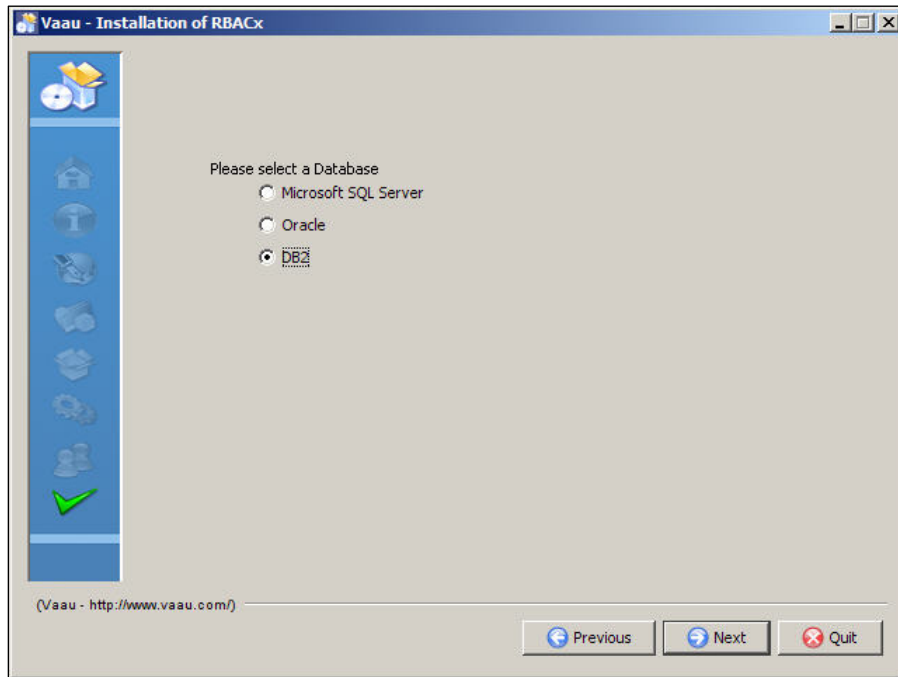


Enter Database Username/Password and TNS Name to connect to the database. Click **[Next]**

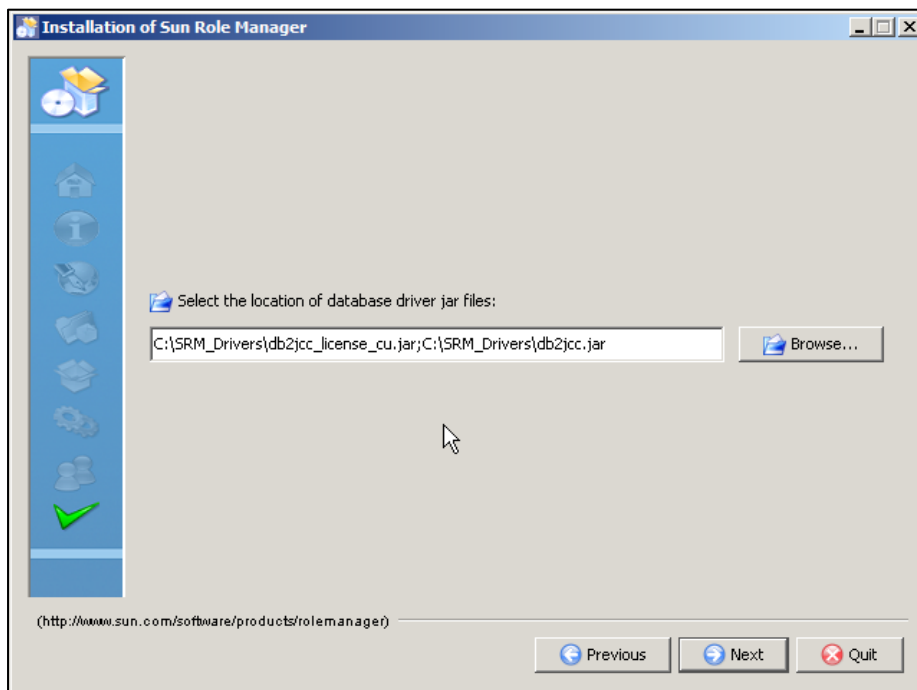


IBM DB2

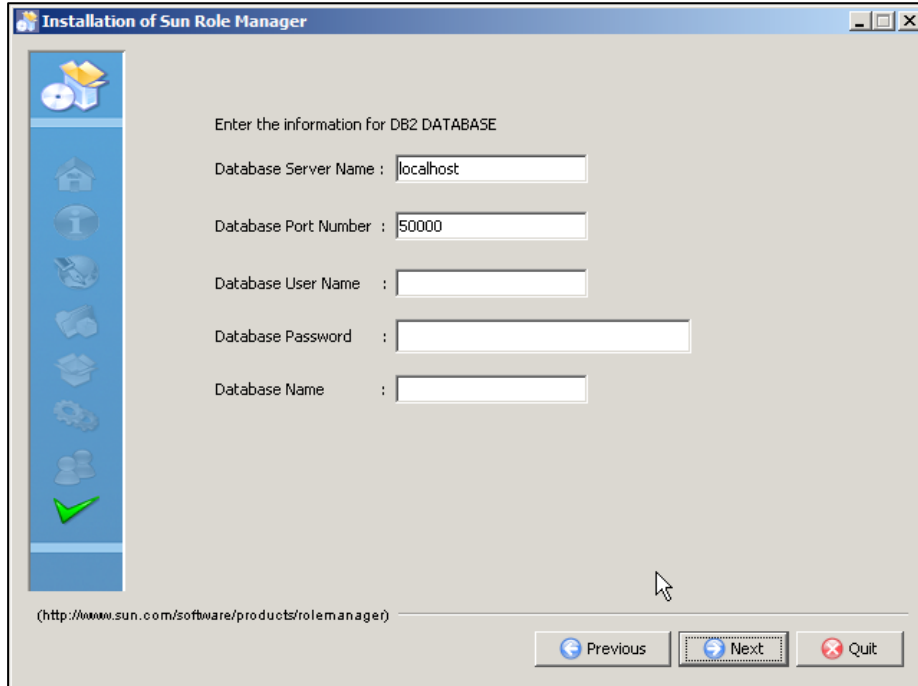
Select 'DB2' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



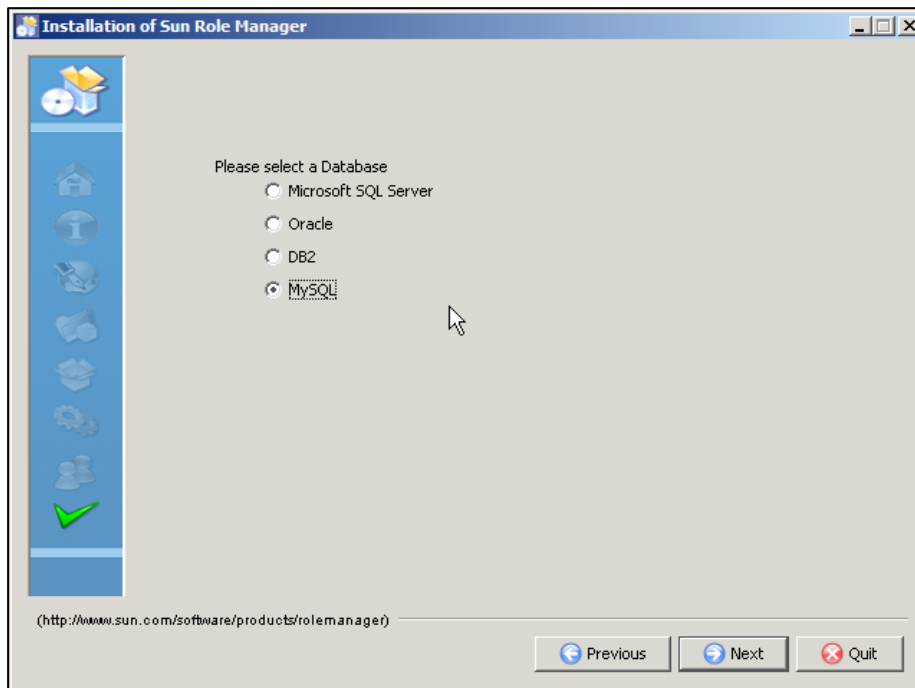
Enter Database Username/Password and Database Name to connect to the database.
Click **[Next]**



The screenshot shows the 'Installation of Sun Role Manager' window. On the left is a vertical navigation bar with icons for various steps, with a green checkmark at the bottom. The main area is titled 'Enter the information for DB2 DATABASE'. It contains five input fields: 'Database Server Name' (with 'localhost' entered), 'Database Port Number' (with '50000' entered), 'Database User Name', 'Database Password', and 'Database Name'. At the bottom right are three buttons: 'Previous', 'Next' (highlighted with a dashed border), and 'Quit'. A URL '(http://www.sun.com/software/products/rolemanager)' is visible at the bottom left.

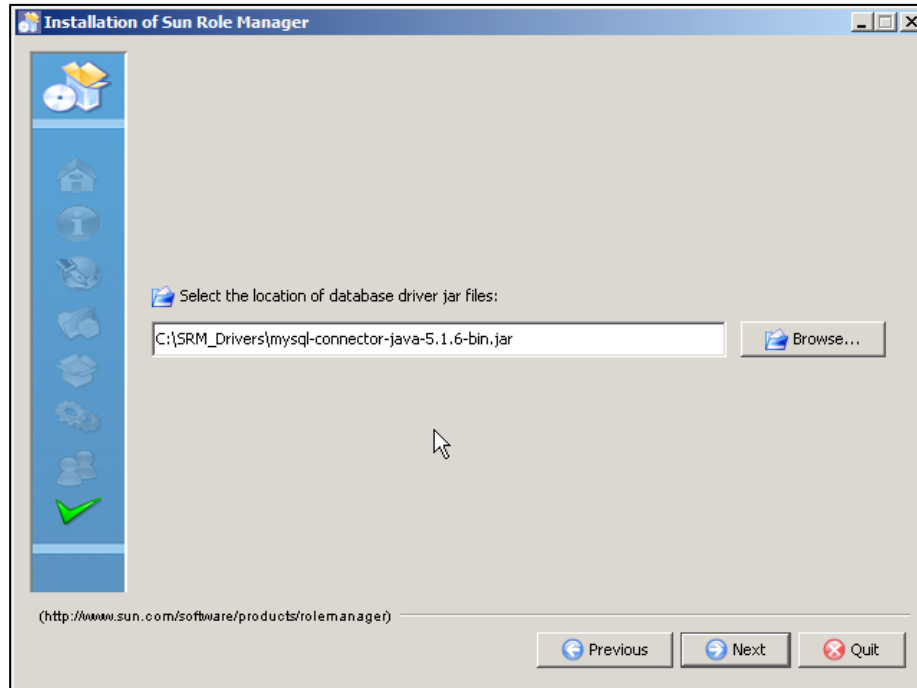
MySQL

Select 'MySQL' and click **[Next]**

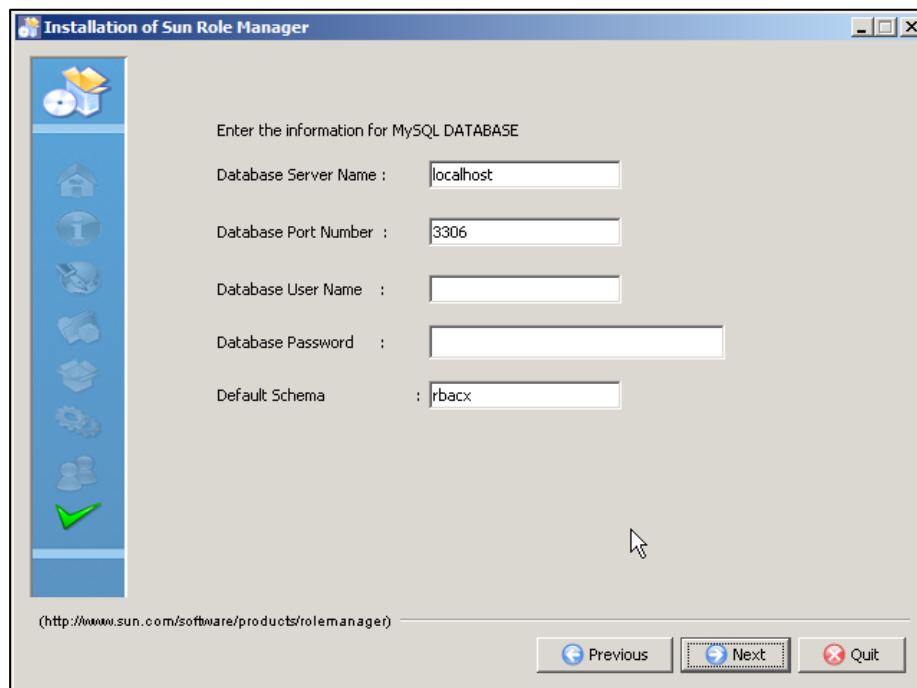


The screenshot shows the 'Installation of Sun Role Manager' window. On the left is a vertical navigation bar with icons for various steps, with a green checkmark at the bottom. The main area is titled 'Please select a Database'. It contains four radio button options: 'Microsoft SQL Server', 'Oracle', 'DB2', and 'MySQL'. The 'MySQL' option is selected, indicated by a filled radio button. At the bottom right are three buttons: 'Previous', 'Next' (highlighted with a dashed border), and 'Quit'. A URL '(http://www.sun.com/software/products/rolemanager)' is visible at the bottom left.

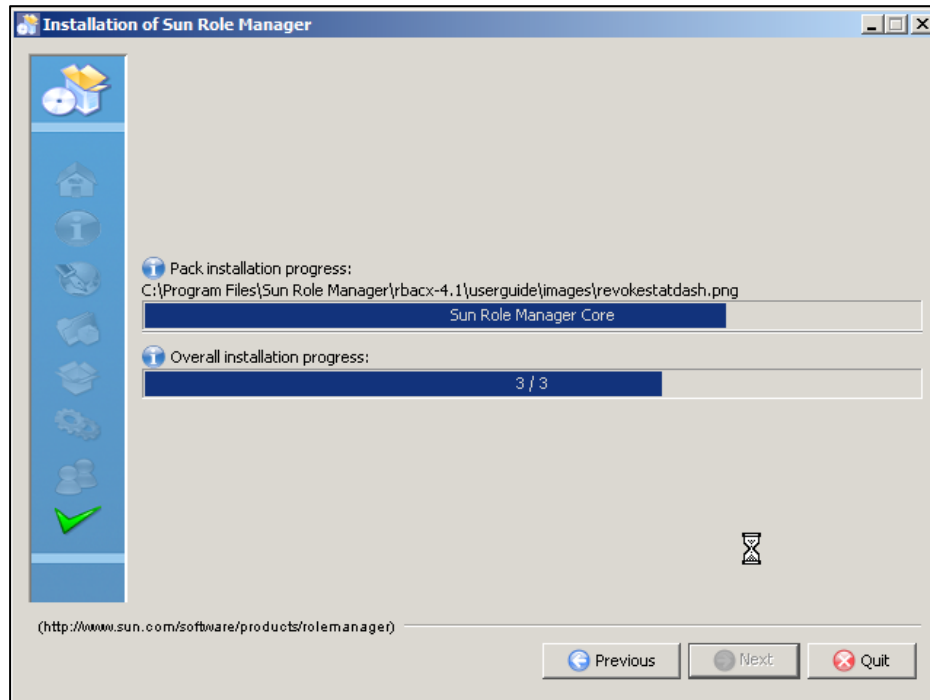
Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password and Database Name to connect to the database. Click **[Next]**

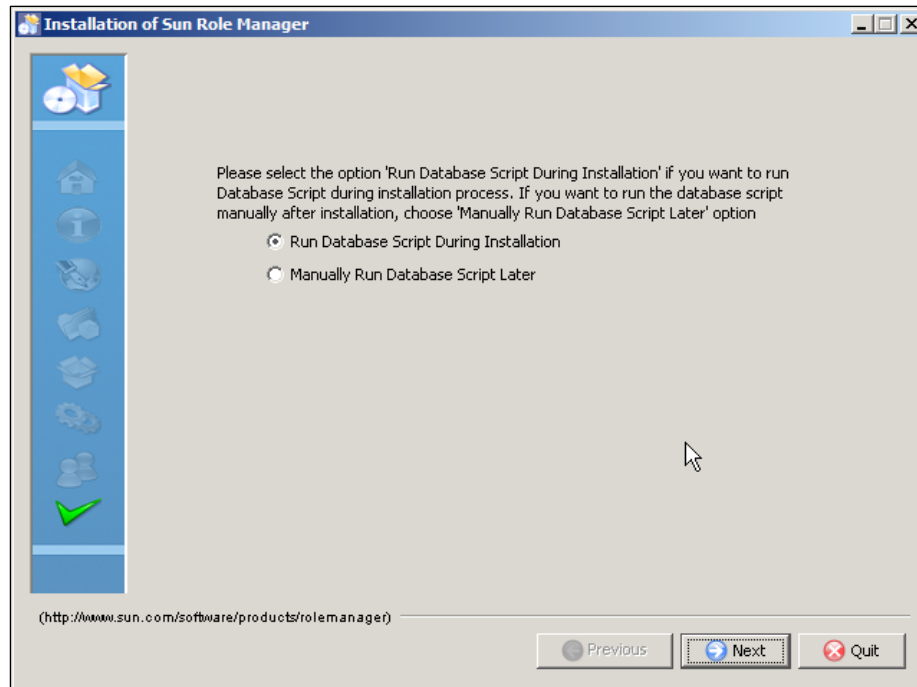


10. Now the installation of JRE 1.5, Tomcat 5.5 and Sun Role Manager core begins. Once you see “Finished” in package installation progress bar. Click **[Next]**



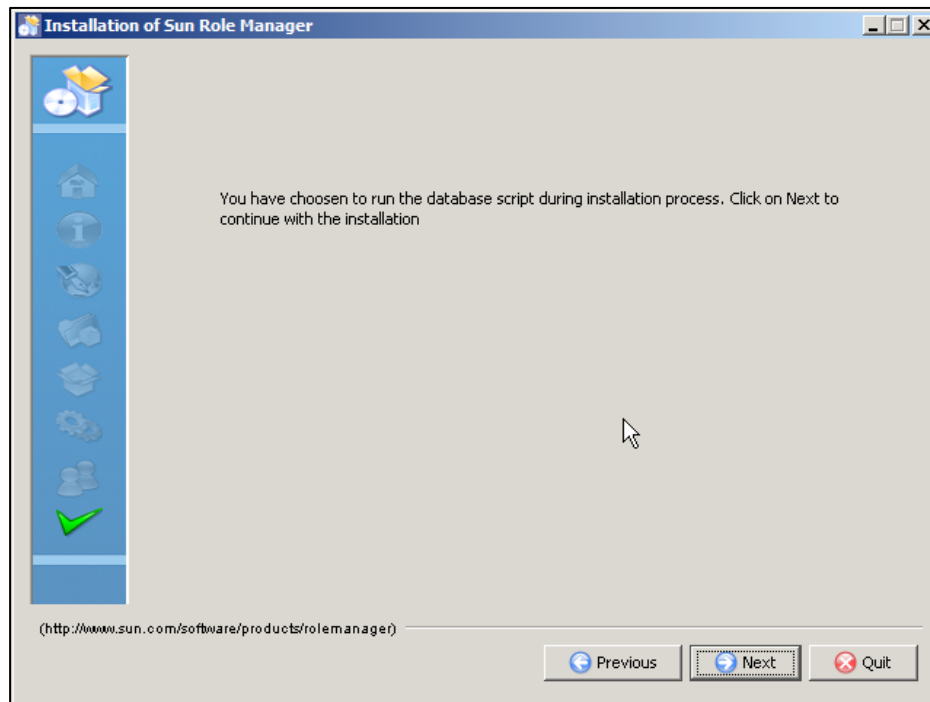
11. Select if the database script is to be executed by the installer or manually after the installer quits
 - a. Run Database Script During Installation
 - b. Manually Run Database Script Later

Run Database Script During Installation

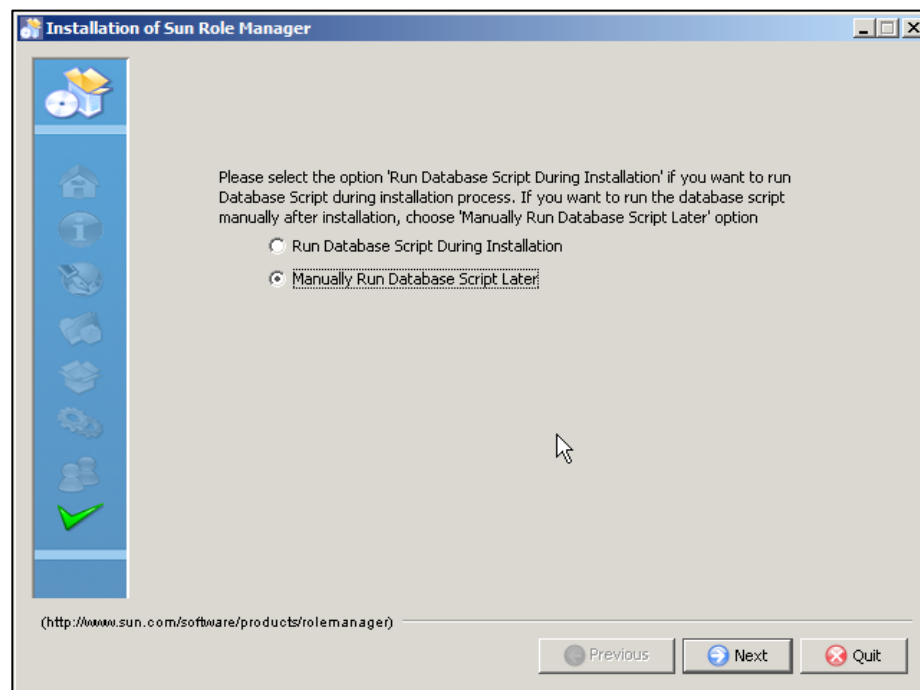


Click **[Next]**

Confirm that database scripts are to be executed by the installer, and click **[Next]**

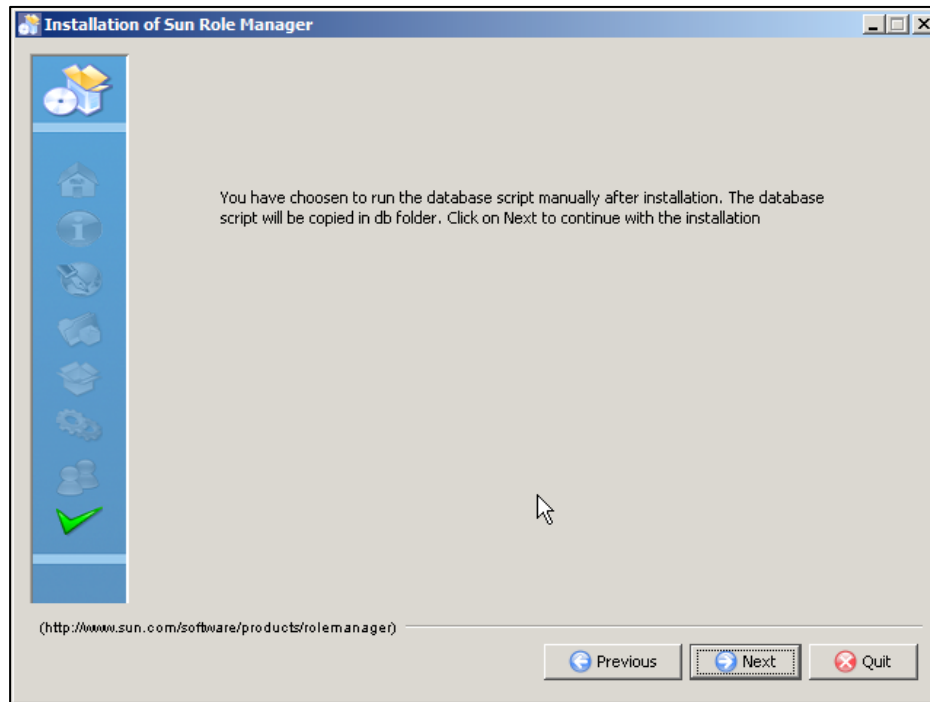


Manually Run Database Script Later



Click **[Next]**

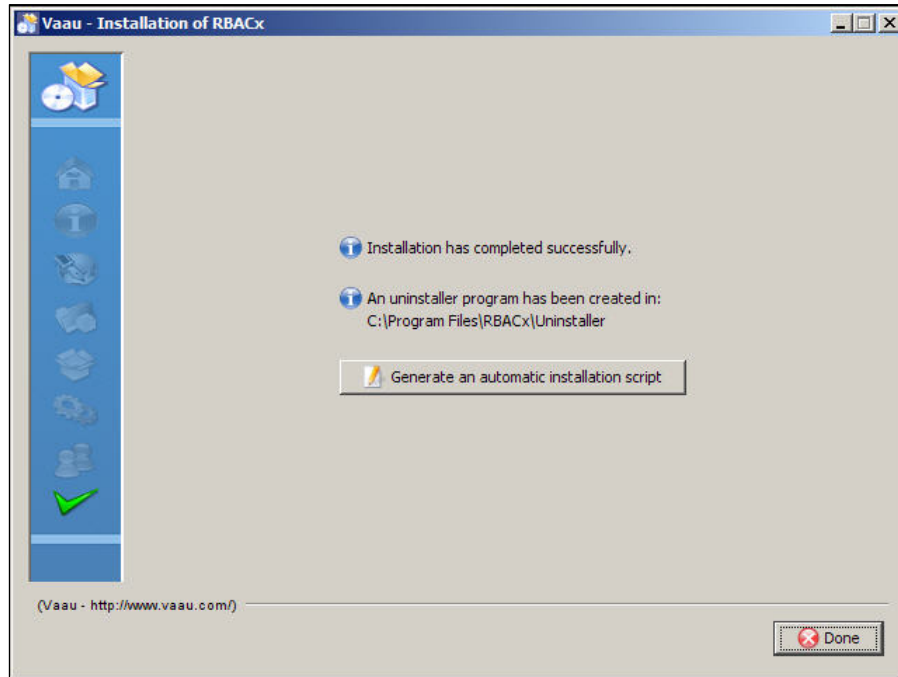
Confirm that database scripts are to be manually executed later, and click **[Next]**



Database scripts required to create Sun Role Manager schema are copied to **\$RBACX_HOME/db** folder. The Sun Role Manager schema creation scripts can be manually executed by a user with Database Administration privileges.

NOTE: Sun Role Manager schema has to be created prior to launching Sun Role Manager application

12. Click **[Generate an automatic installation script]** (if you want to generate a script) and save it as a file with a '.xml' extension on your machine and click **[Done]**



13. Navigate to **\$RBACX_HOME\tomcat55\webapps** via the command-line
14. Enter the following commands to create a *staging* directory and extract the war file into it

NOTE: It is assumed that a version of Java JDK exists on the system. Java JDK can be downloaded from <http://java.sun.com/javase/downloads/index.jsp>. Installation instructions for Java 6 can be found at <http://java.sun.com/javase/6/webnotes/install/index.html>

```
C:\> mkdir rbacx_staging
```

```
C:\> cd rbacx_staging
```

```
C:\> jar -xvf ../rbacx.war
```

15. Navigate to **lib** folder located inside the *rbacx_staging/WEB-INF* folder. For example - **\$RBACX_HOME\tomcat55\webapps\rbacx_staging\WEB-INF\lib**
16. Copy the JDBC connectivity jar file to **lib** folder. For example, to establish connectivity with Oracle Database Server, copy *ojdbc14.jar* to the **lib** folder

17. Download *weka.jar* file from
http://dlc.sun.com/rolemanager/Data_Mining/weka/for_rbacx-4.1.x
This file is required to carry out any role-mining related functionality of Sun Role Manager
18. Copy *weka.jar* to **lib** folder
19. The following steps are to be executed via the command-line. The commands repack an updated war file and delete the *staging* folder. It is assumed that the current directory is *\$RBACX_HOME/tomcat55/webapps/rbacx_staging*
S
C:\> **jar -cvfM ../rbacx.war .**

C:\> **cd..**

C:\> **rmdir rbacx_staging /s /q**

rbacx.war located at *\$RBACX_HOME/tomcat55/webapps/* is now updated and ready for deployment
20. Sun Role Manager installation is complete

Installing on Linux

For Linux environment, it is assumed that a remote database server is being utilized or if database is available locally, for example Oracle 10g, necessary environment variables such as \$ORACLE_HOME have been mapped to Oracle Installation Directory.

NOTE: 'rbacxservice' user should not be associated to any other application either as an OS user or Database user prior to installation

1. The installer is distributed as a Tarball with **.tar.gz** extension. Extract the installer using the command

```
$ tar -xvzf Installer.tar.gz
```

A directory named 'Installer' is created. Navigate to that directory

```
$ cd Installer
```

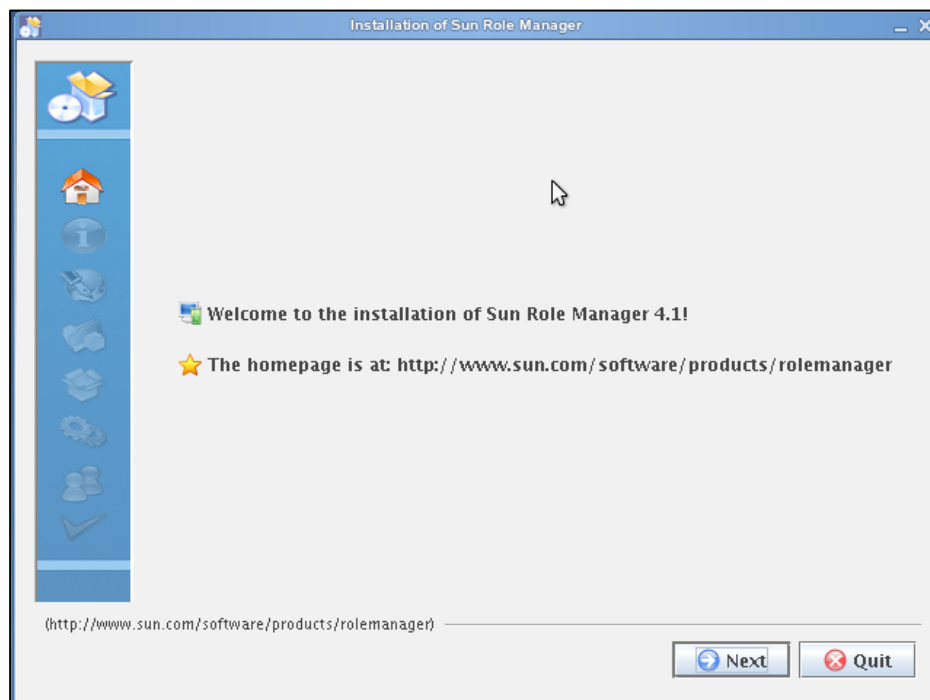
2. In order to launch the installer, run the installer script, 'install.sh', using the following command

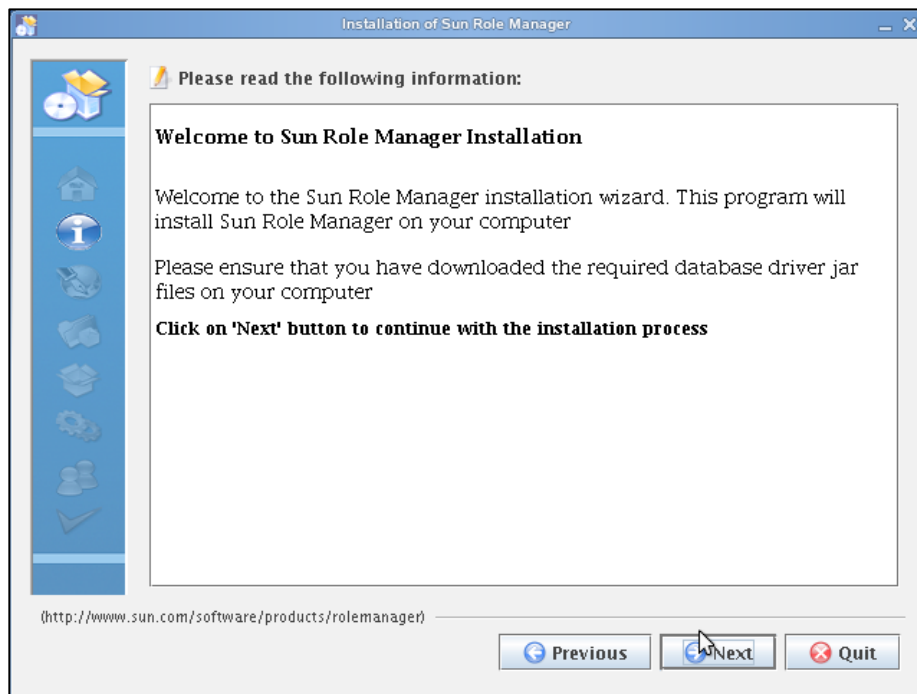
```
$ ./install.sh
```

NOTE: If 'install.sh' does not have execute permission, the following command grants 'install.sh' execute rights

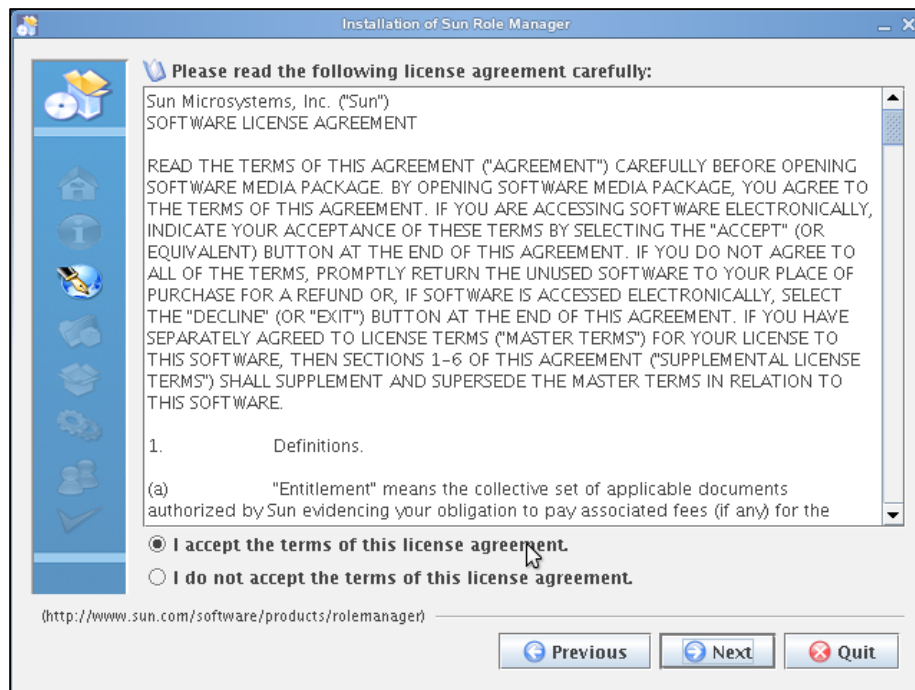
```
$ chmod g+x install.sh
```

3. The Installer first checks if JRE exists on the system. If not found, the installer first installs JRE. If JRE already exists the installer will launch the Sun Role Manager Installation Welcome Screen. Click **[Next]**

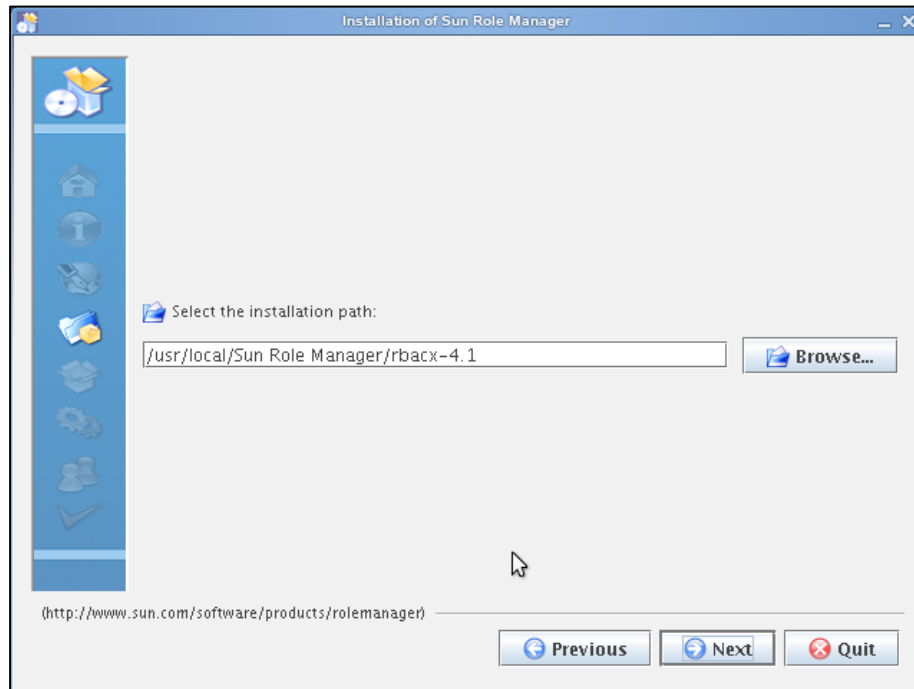




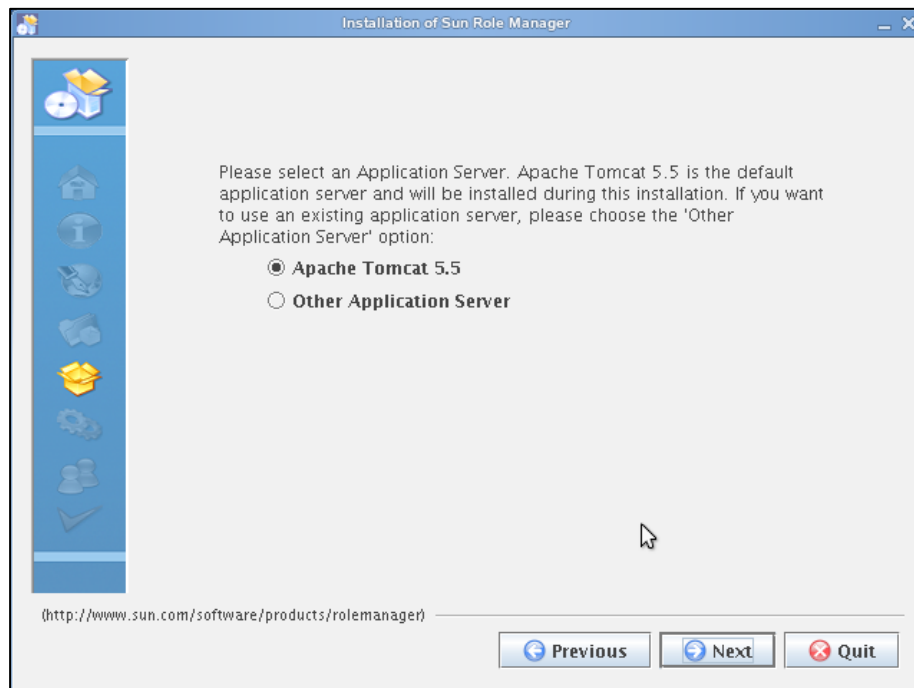
4. Read the License Agreement and to continue with installation select **"I accept the terms of this license Agreement"** and click [Next]



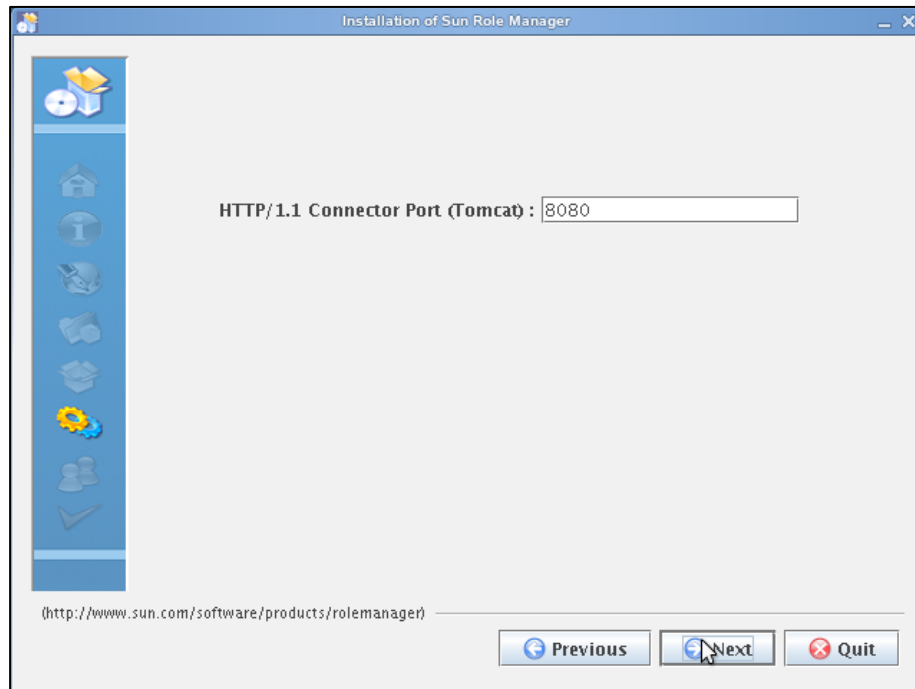
5. Select path where Sun Role Manager to be installed and click **[Next]**



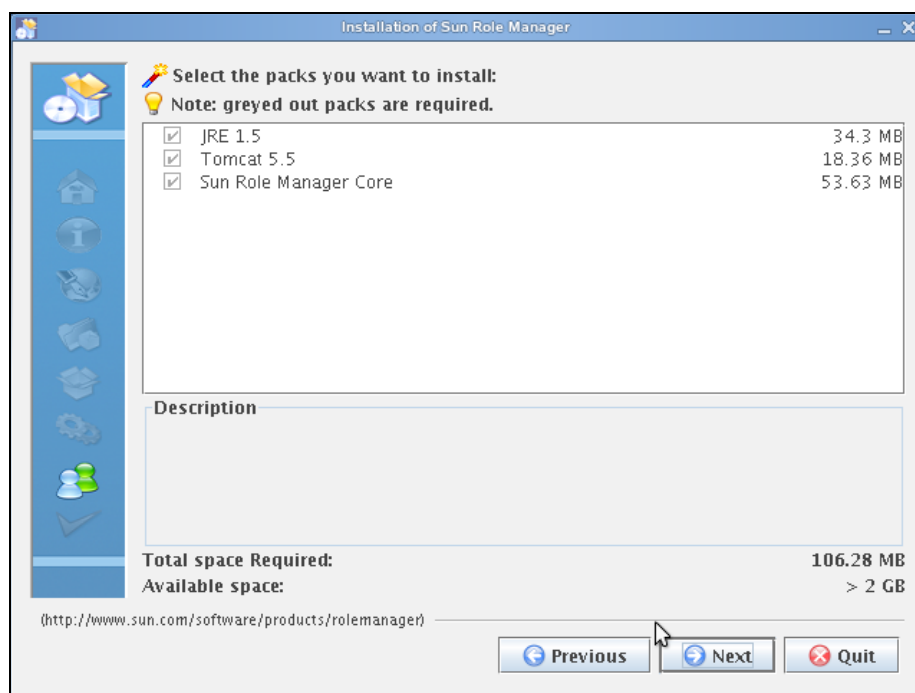
6. Select **"Apache Tomcat 5.5"** as the application server and click **[Next]**.



7. Change the connection port if you want it other than **8080**(default) and Click **[Next]**

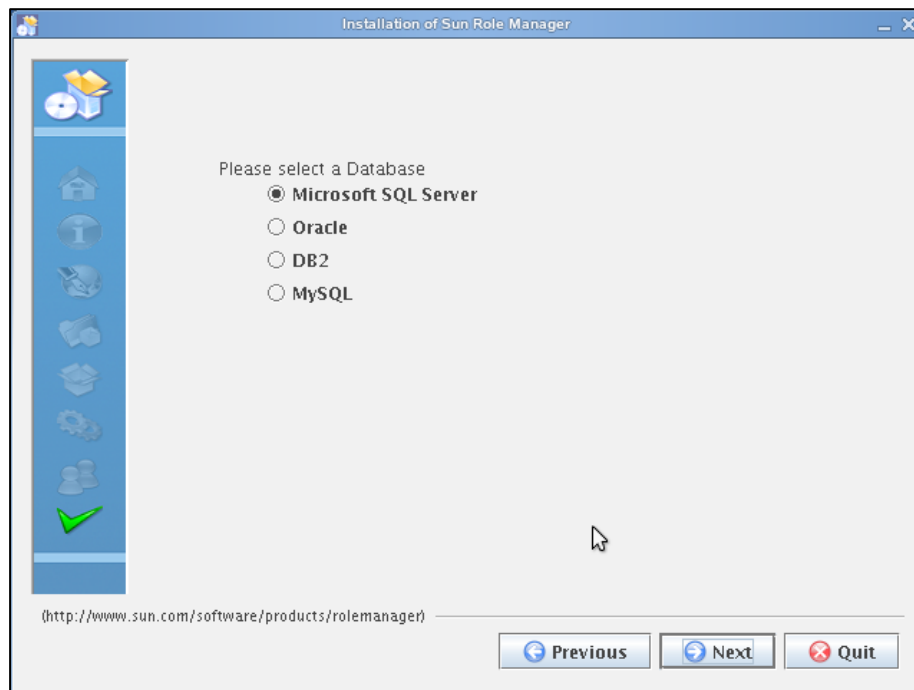


8. Next you'll see the components that the Installer will install on your machine. Click **[Next]**



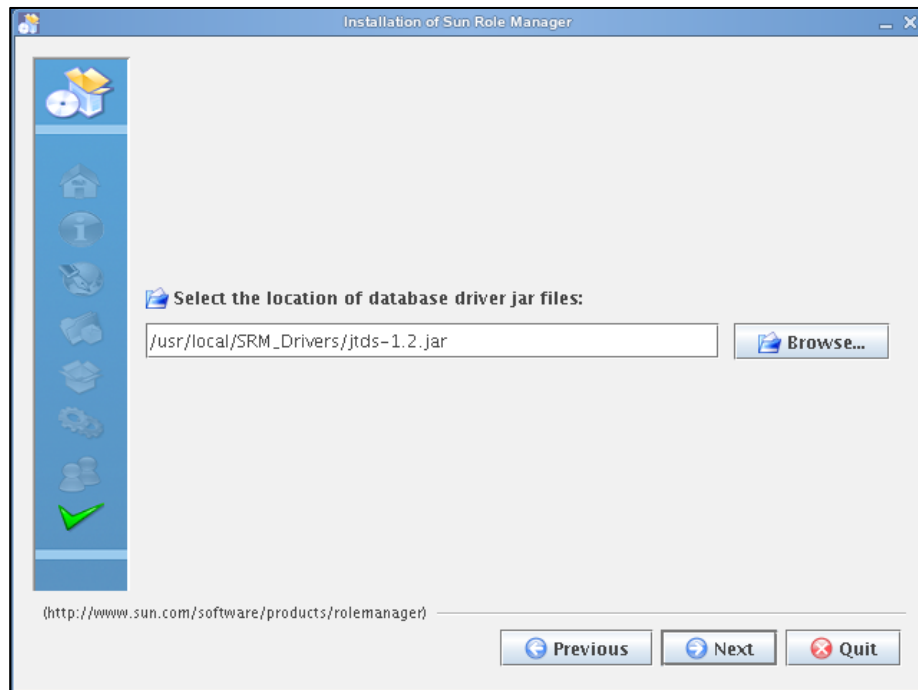
9. Select an Index Database
 - a. Microsoft SQL Server
 - b. Oracle
 - c. IBM DB2
 - d. MySQL

Microsoft SQL Server

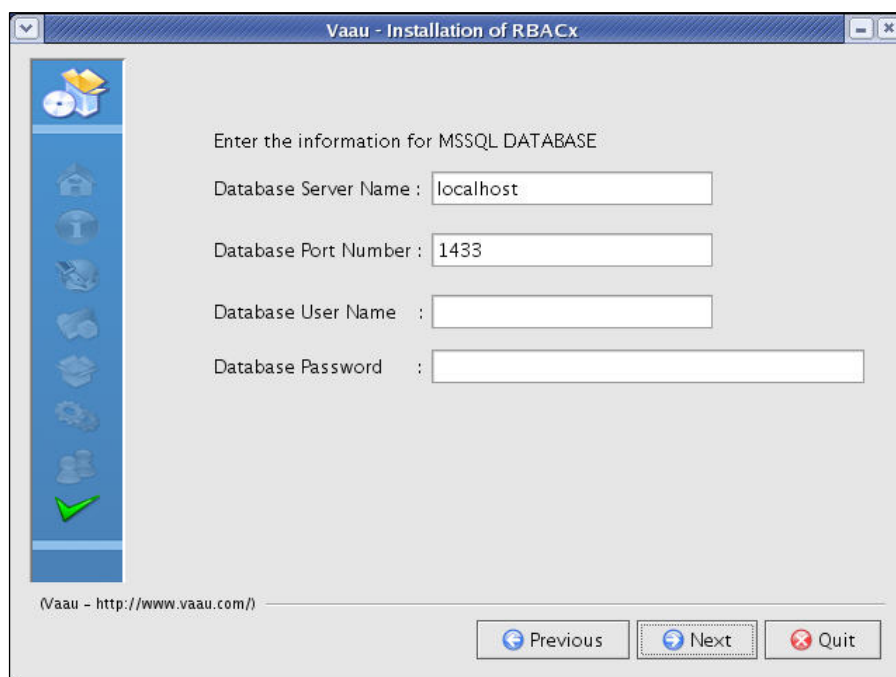


Select 'Microsoft SQL Server' and click **[Next]**

Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.

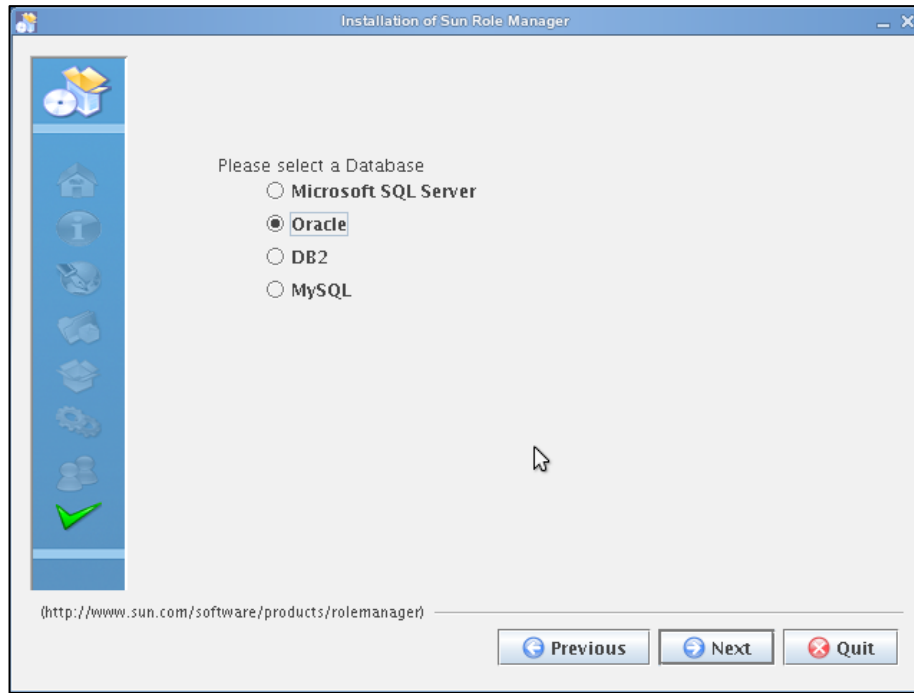


Enter Database Username/Password to connect to the database. Click **[Next]**

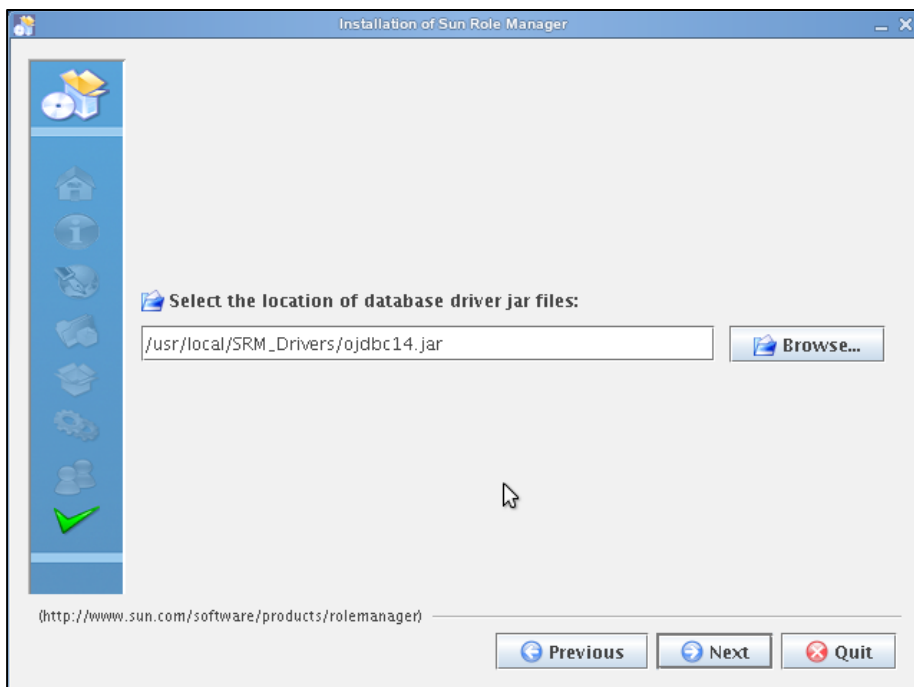


Oracle

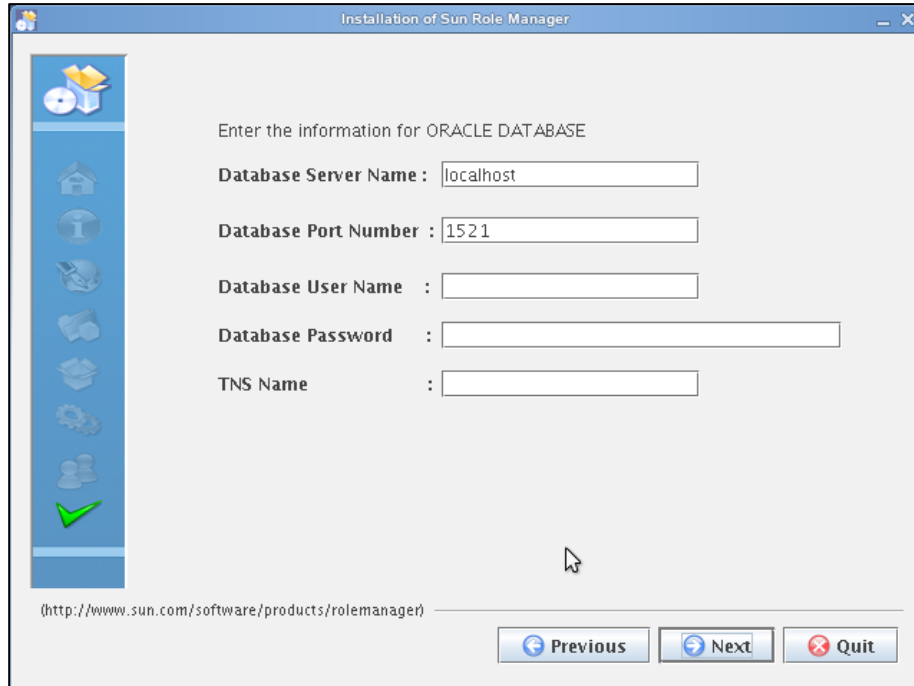
Select 'Oracle' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password and TNS Name to connect to the database. Click **[Next]**



Installation of Sun Role Manager

Enter the information for ORACLE DATABASE

Database Server Name : localhost

Database Port Number : 1521

Database User Name :

Database Password :

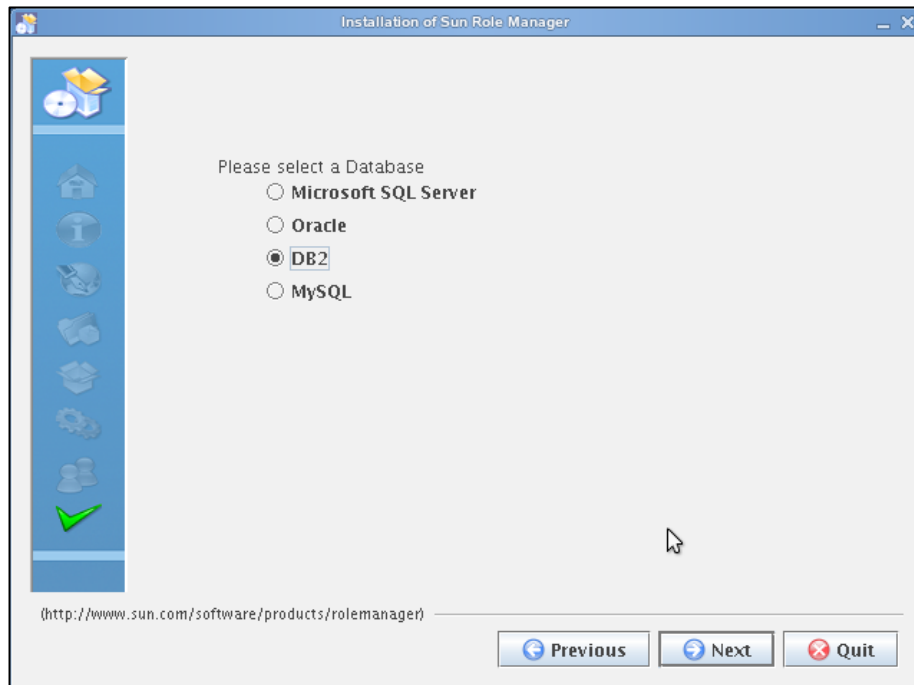
TNS Name :

(<http://www.sun.com/software/products/rolemanager/>)

Previous Next Quit

IBM DB2

Select 'DB2' and click **[Next]**



Installation of Sun Role Manager

Please select a Database

☐ Microsoft SQL Server

☐ Oracle

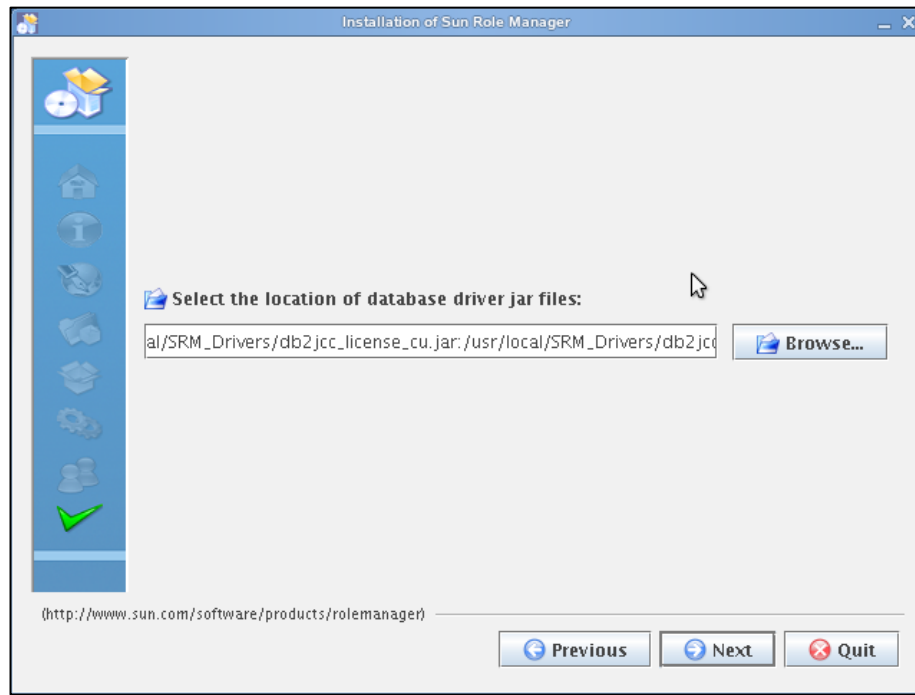
☒ DB2

☐ MySQL

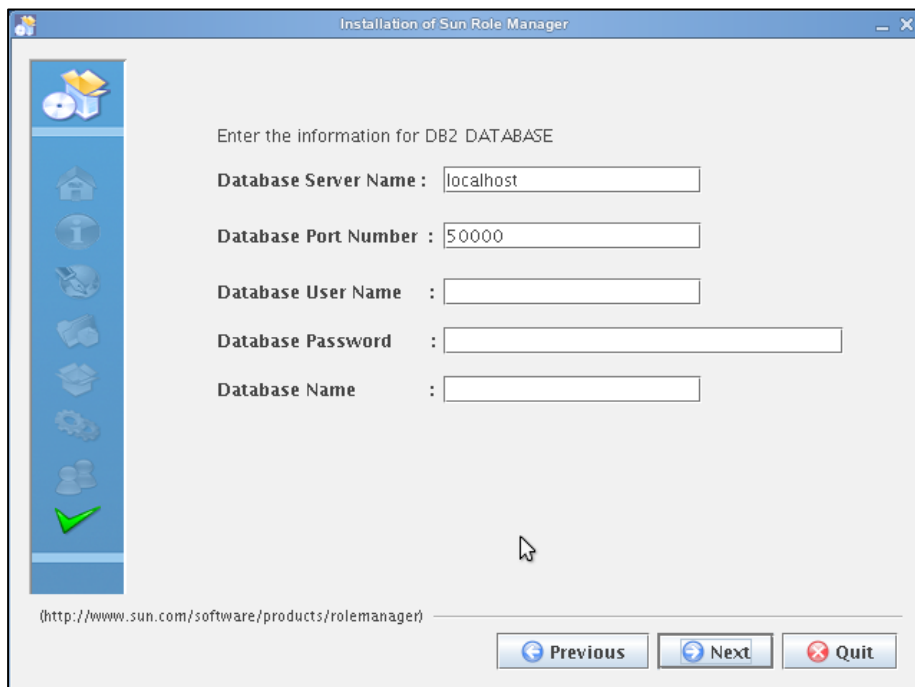
(<http://www.sun.com/software/products/rolemanager/>)

Previous Next Quit

Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.

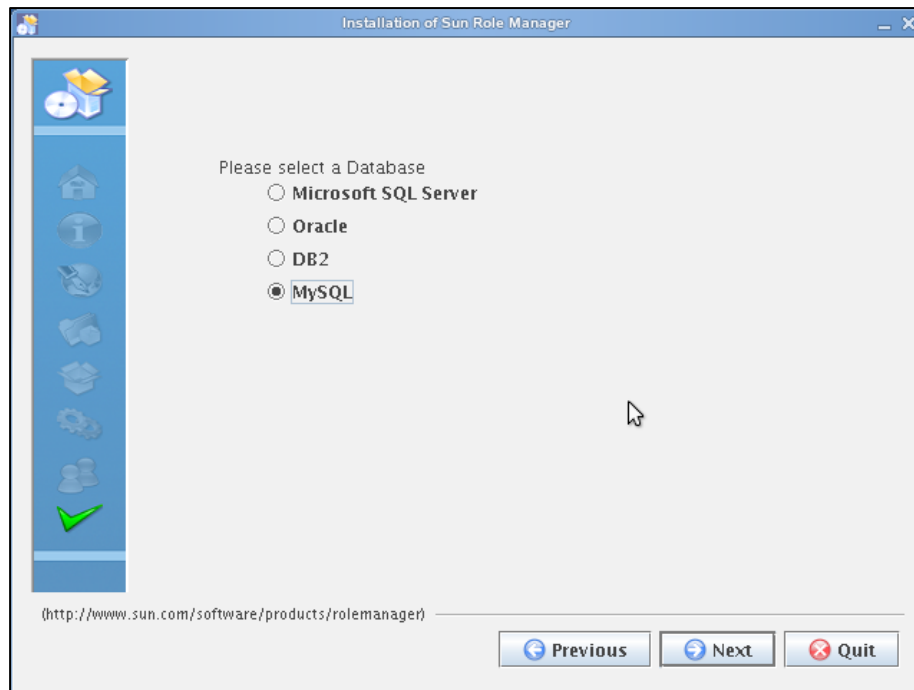


Enter Database Username/Password and Database Name to connect to the database. Click **[Next]**

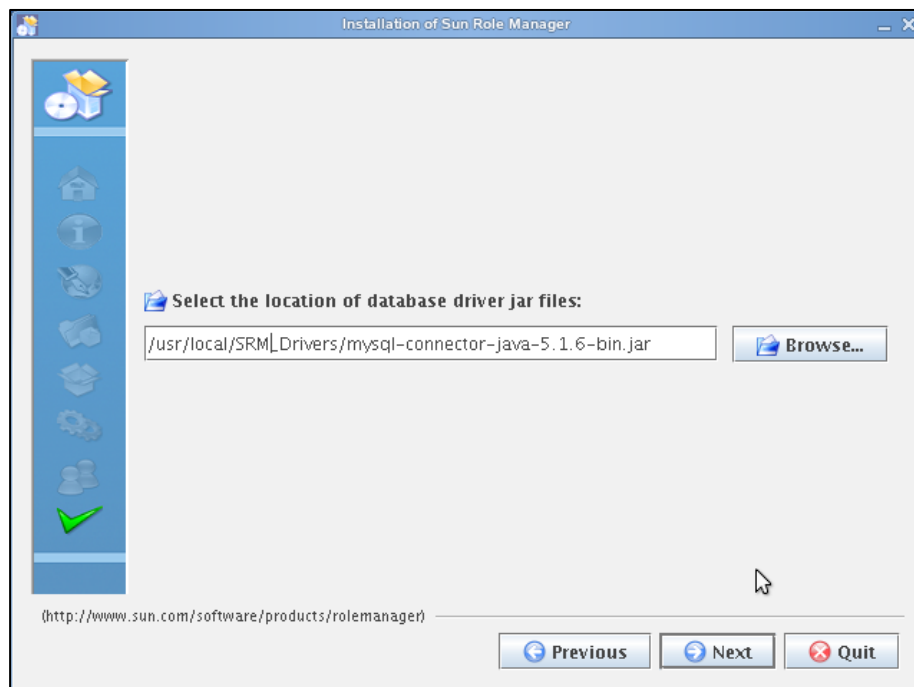


MySQL

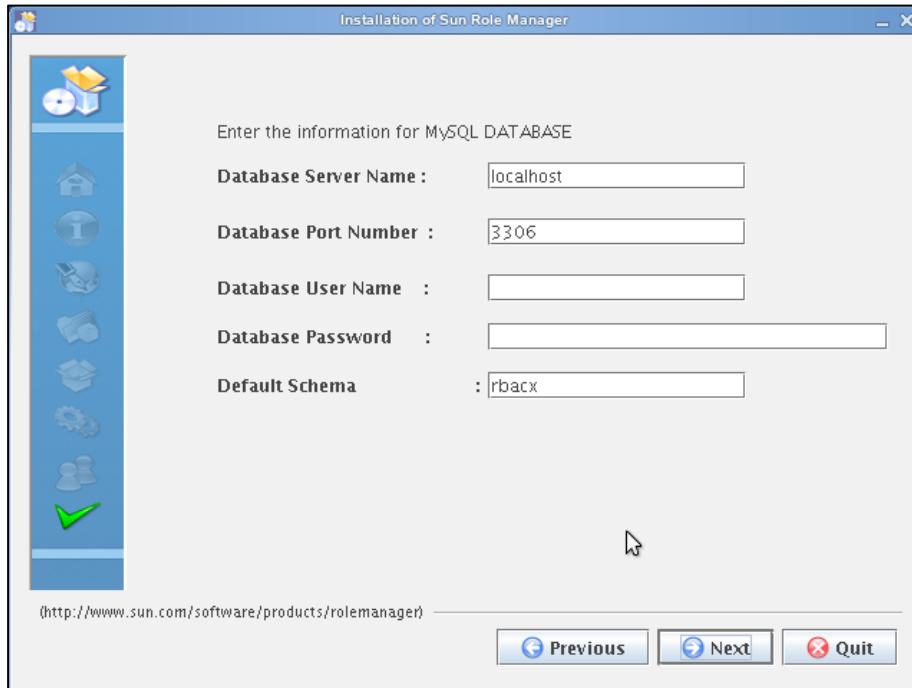
Select 'MySQL' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password and Database Name to connect to the database.
Click **[Next]**

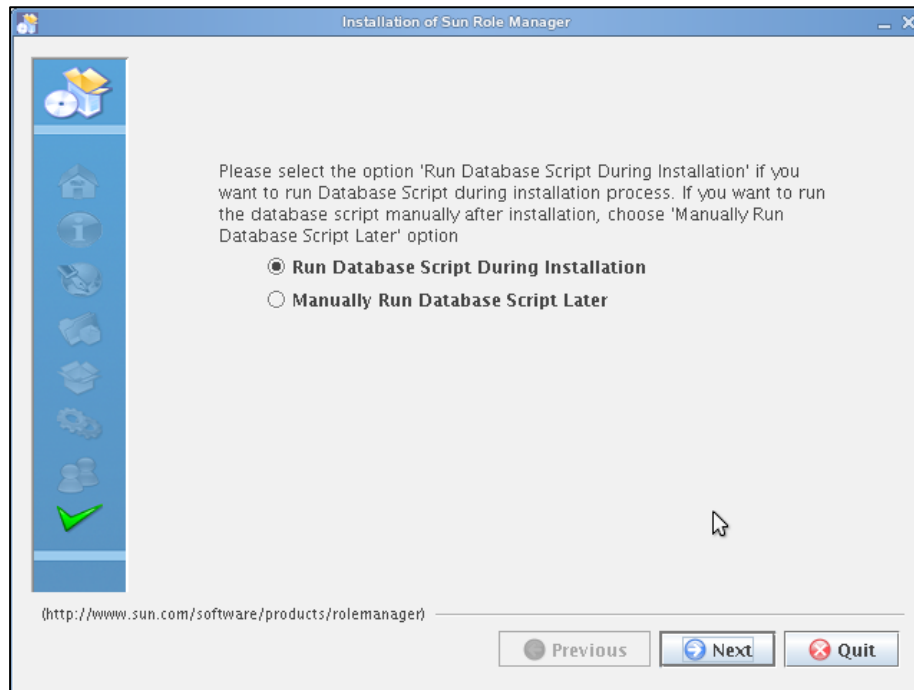


The image shows a Windows-style dialog box titled "Installation of Sun Role Manager". On the left is a vertical sidebar with icons for various installation steps; the bottom icon, representing a checkmark, is highlighted in blue. The main area of the dialog contains the text "Enter the information for MySQL DATABASE" followed by five labeled input fields: "Database Server Name" (containing "localhost"), "Database Port Number" (containing "3306"), "Database User Name" (empty), "Database Password" (empty), and "Default Schema" (containing "rbacx"). At the bottom of the dialog, there is a URL "(http://www.sun.com/software/products/rolemanager)" and three buttons: "Previous" (disabled), "Next" (active/highlighted), and "Quit" (disabled).

10. Now the installation of JRE 1.5, Tomcat 5.5 and Sun Role Manager core begins. Once you see "Finished" in package installation progress bar. Click **[Next]**

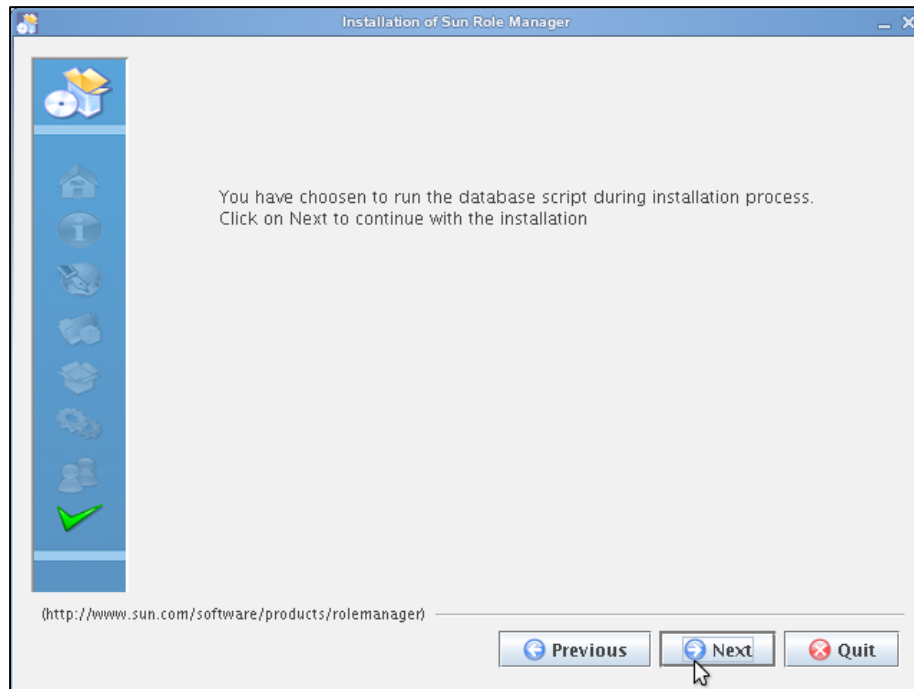
11. Select if the database script is to be executed by the installer or manually after the installer quits
 - a. Run Database Script During Installation
 - b. Manually Run Database Script Later

Run Database Script During Installation

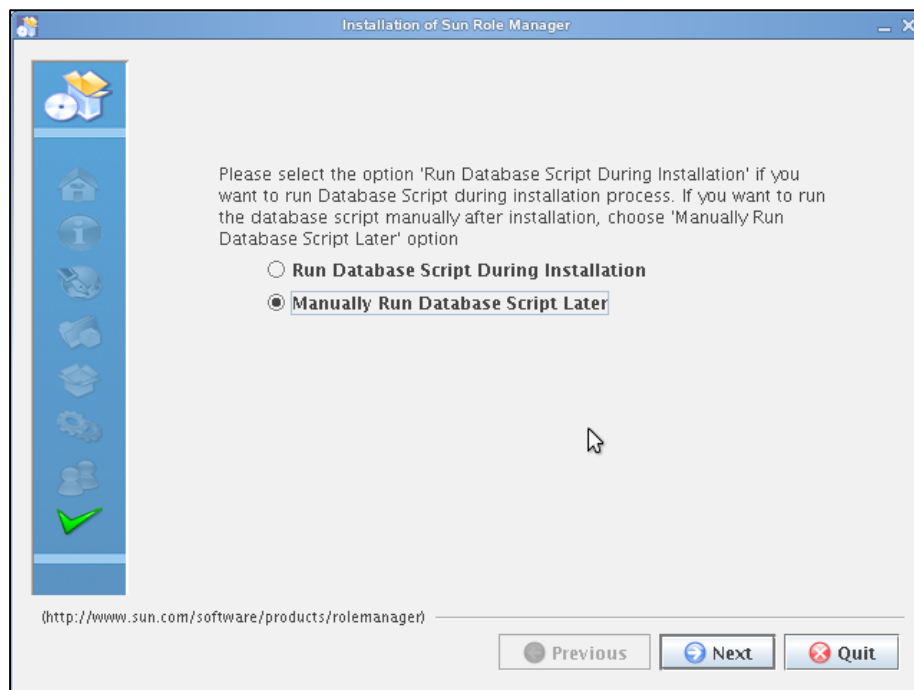


Click **[Next]**

Confirm that database scripts are to be executed by the installer, and click **[Next]**

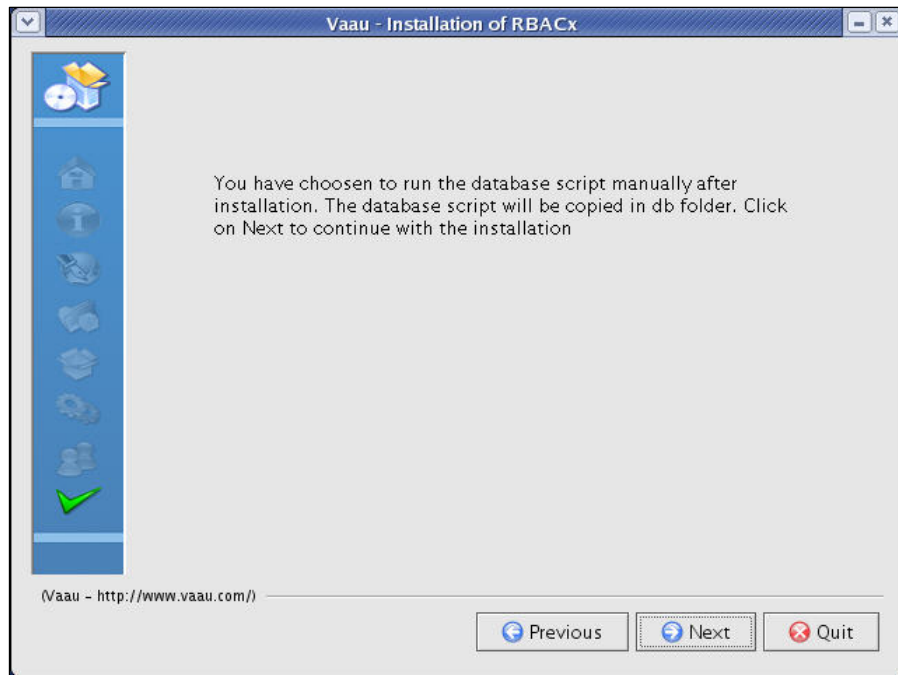


Manually Run Database Script Later



Click **[Next]**

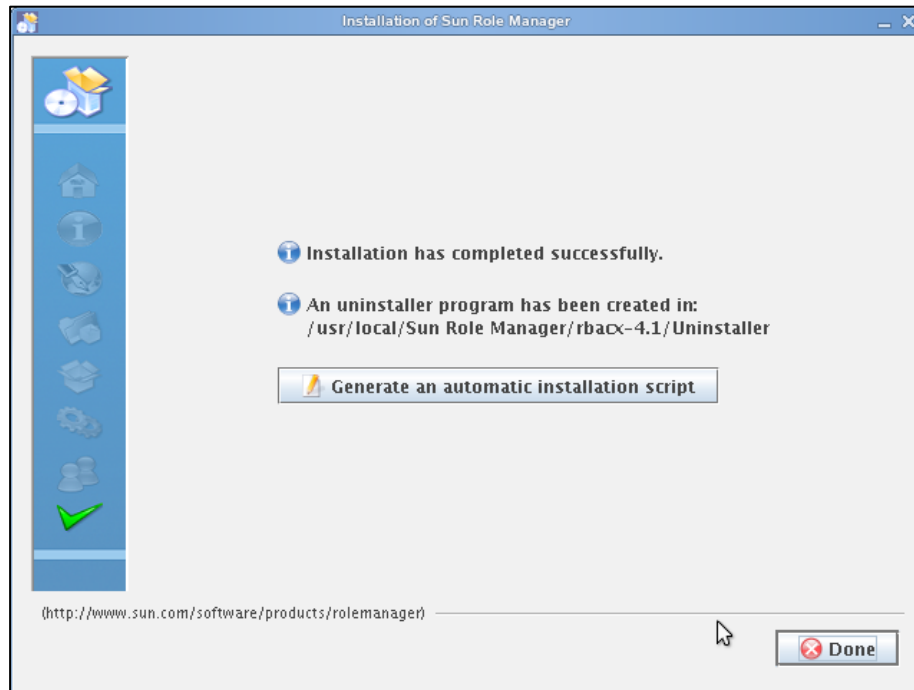
Confirm that database scripts are to be manually executed later, and click **[Next]**



Database scripts required to create Sun Role Manager schema are copied to **\$RBACX_HOME/db** folder. The Sun Role Manager schema creation scripts can be manually executed by a user with Database Administration privileges.

NOTE: Sun Role Manager schema has to be created prior to launching Sun Role Manager application

- Click **[Generate an automatic installation script]** (if you want to generate a script) and save it as a file with a '.xml' extension on your machine and click **[Done]**



- Navigate to **\$RBACX_HOME/tomcat55/webapps** via the command-line
- Enter the following commands to create a *staging* directory and extract the war file into it

NOTE: It is assumed that a version of Java JDK exists on the system. Java JDK can be downloaded from <http://java.sun.com/javase/downloads/index.jsp>. Installation instructions for Java 6 can be found at <http://java.sun.com/javase/6/webnotes/install/index.html>

```
$ mkdir rbacx_staging
```

```
$ cd rbacx_staging
```

```
$ jar -xvf ../rbacx.war
```

- Navigate to **lib** folder located inside the *rbacx_staging/WEB-INF* folder. For example - **\$RBACX_HOME/tomcat55/webapps/rbacx_staging/WEB-INF/lib**
- Copy the JDBC connectivity jar file to **lib** folder. For example, to establish connectivity with Oracle Database Server, copy *ojdbc14.jar* to the **lib** folder

Download *weka.jar* file from

http://dlc.sun.com/rolemanager/Data_Mining/weka/for_rbacx-4.1.x

This file is required to carry out any role-mining related functionality of Sun Role Manager

17. Copy *weka.jar* to **lib** folder
18. The following steps are to be executed via the command-line. The commands repack an updated war file and delete the *staging* folder. It is assumed that the current directory is *\$RBACX_HOME/tomcat55/webapps/rbacx_staging*

```
$ jar -cvfM ../rbacx.war .
```

```
$ cd ..
```

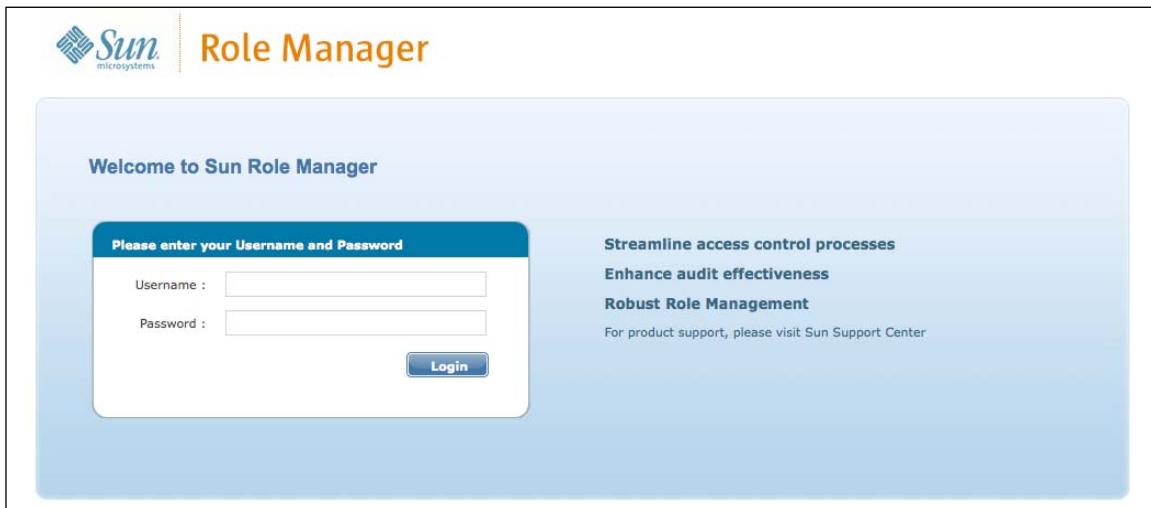
```
$ rm -r rbacx_staging
```

rbacx.war located at *\$RBACX_HOME/tomcat55/webapps/* is now updated and ready for deployment

19. Sun Role Manager installation is complete

Verification of Sun Role Manager Installation

1. Browse to Application Server logs and verify that '**rbacx.log**' file is created when Sun Role Manager application is deployed
2. Open this file using a text editor and check logs indicating a successful startup of Sun Role Manager application
3. Using a web browser, open the following URL
`http://<server ip>:<port number>/rbacx`



The screenshot shows the Sun Role Manager web interface. At the top left is the Sun Microsystems logo, and to its right is the text 'Role Manager' in orange. Below this is a light blue header area with the text 'Welcome to Sun Role Manager'. In the center, there is a white login box with a blue header that says 'Please enter your Username and Password'. Inside this box are two input fields: 'Username :' and 'Password :', each followed by a text input field. Below these fields is a blue 'Login' button. To the right of the login box, there is a list of features: 'Streamline access control processes', 'Enhance audit effectiveness', and 'Robust Role Management'. At the bottom of this section, it says 'For product support, please visit Sun Support Center'.

4. Enter the required credentials to log into the client. Click on **[OK]**

User Name : **"rbacxadmin"**
Password : **"password"**

Installing Sun Role Manager on WebSphere 6.1

Use the following information and procedure to install Sun Role Manager for use with the WebSphere Application Server 6.1. This Chapter contains the following topics

- Before You Begin
- Installation Steps

Before You Begin

For installation, you will need to know

- The Login and Password for system administrator account on Database
- WebSphere Administration Login and Password

Installation Steps

Follow these installation and configuration steps

- Installing Sun Role Manager
- Launching Sun Role Manager
- Verification of Sun Role Manager Installation

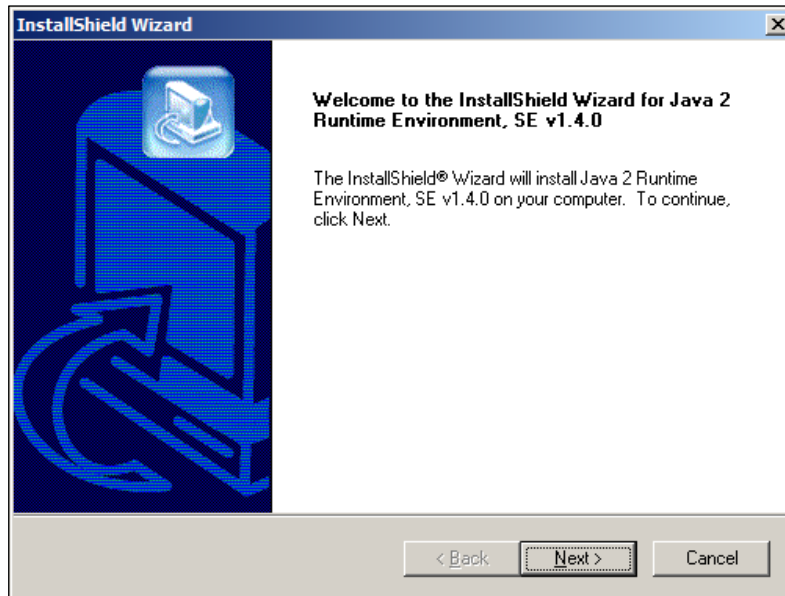
Installing Sun Role Manager

For the installation, it's assumed that WebSphere Application Server 6.1 has been installed on the target system.

Installing on Windows

For the installation, we have assumed that there should be a database server installed either on a network machine or local machine.

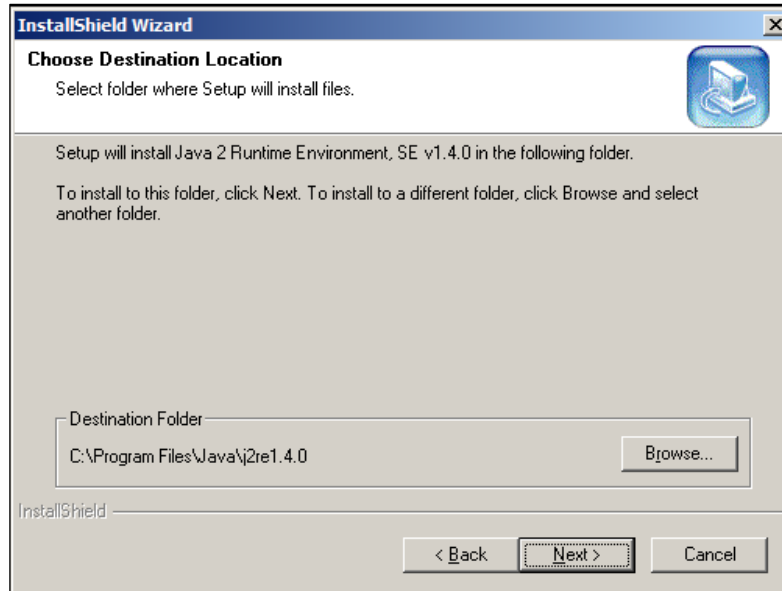
1. Run **install.bat** to launch the installer
2. If JRE is not installed on the system, the installer will launch the installation of JRE
 - a. Click **[Next]** on the Welcome Screen as the installer launches



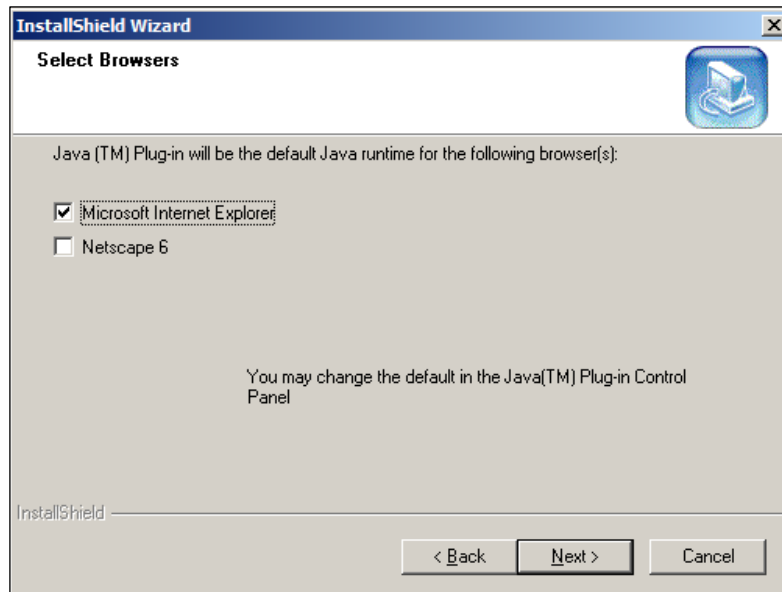
- b. Click **[Yes]** to accept license agreement



- c. Select the destination folder where JRE is to be installed. Click **[Next]**

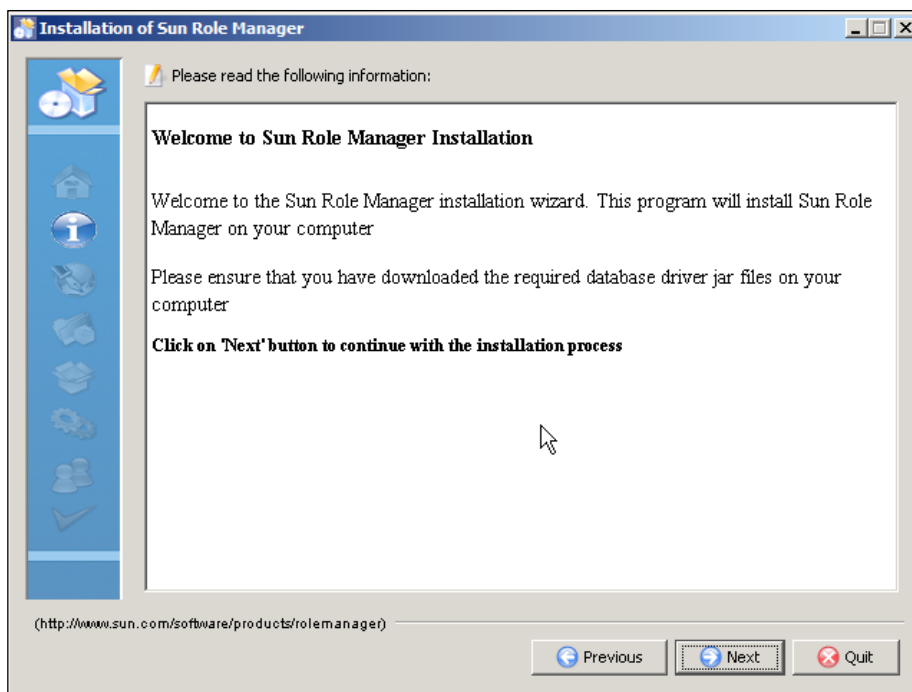
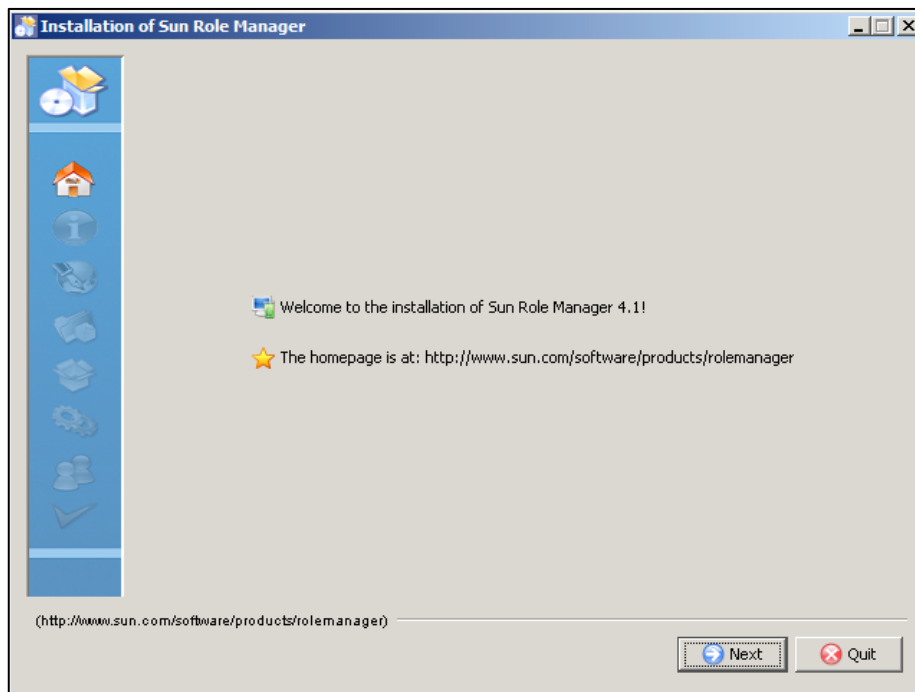


- d. The next screen will be for browser registration. Choose appropriate browser and click **[Next]** to start the Installation

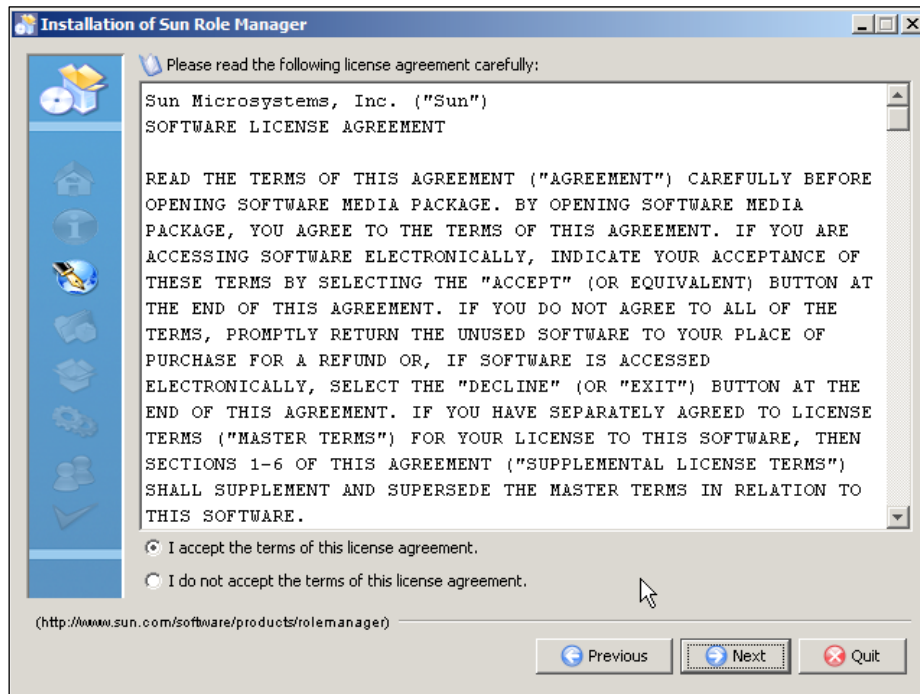


- e. The installer will quit after JRE has been successfully installed

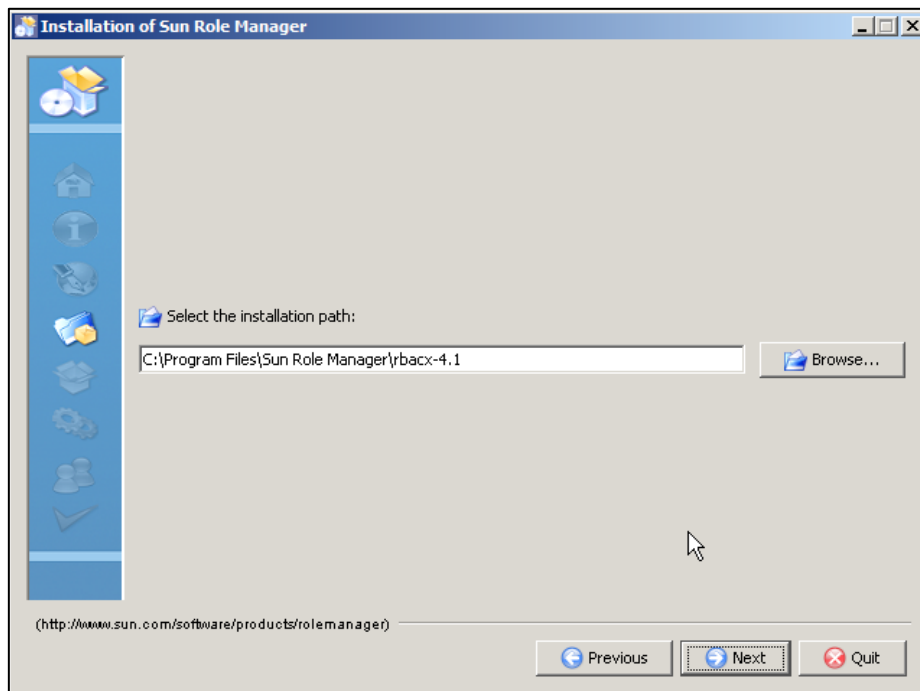
3. Sun Role Manager Installer will launch and displays the Welcome Screen. Click **[Next]**



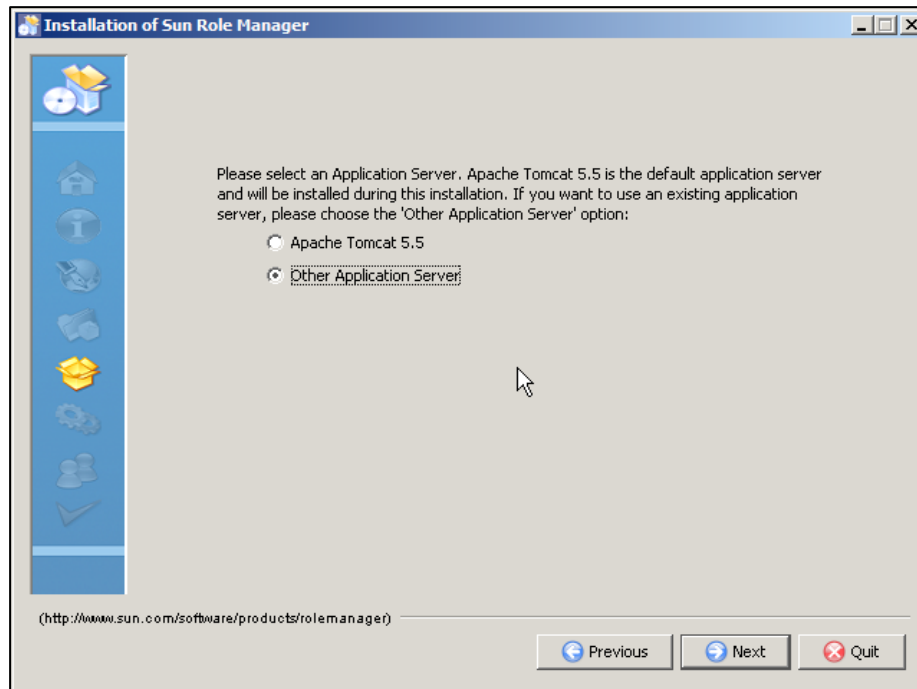
4. Read the License Agreement and to continue with installation select **"I accept the terms of this license Agreement"** and click **[Next]**



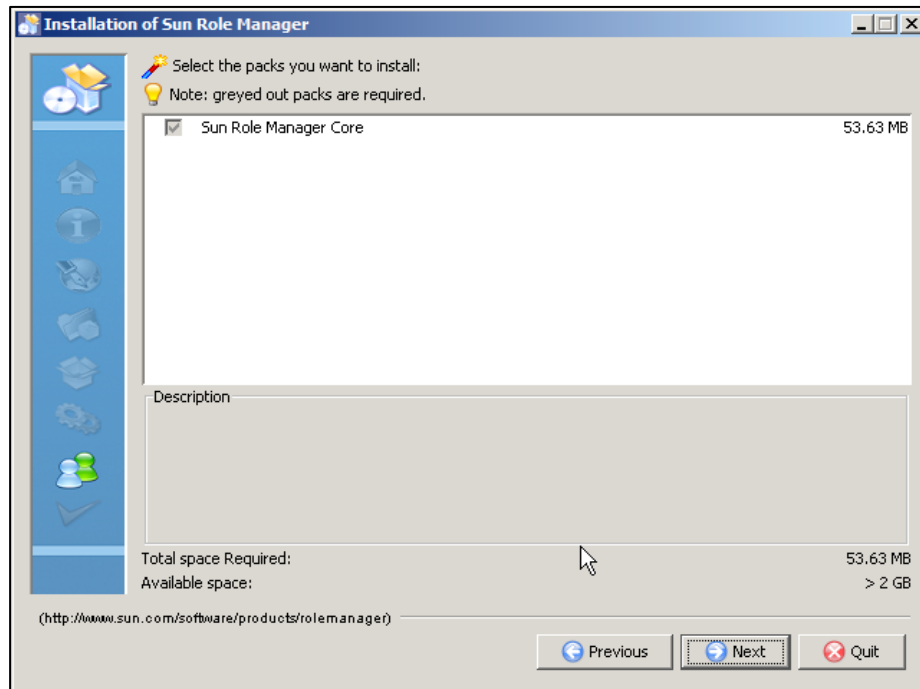
5. Replace the displayed installation path with the location where you want Sun Role Manager to be installed and click **[Next]**. The installation path will be referred as **\$RBACX_HOME**



6. Select **"Other Application Server"** to install Sun Role Manager on WebSphere Application Server. Click **[Next]**.



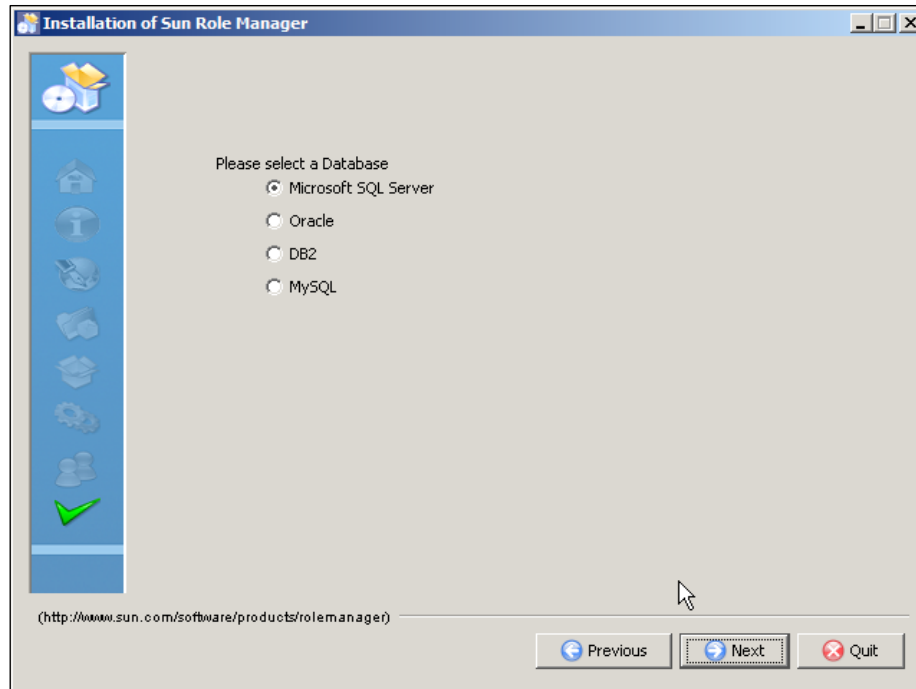
7. Next you'll see the component(s) that the Installer will install on the machine. Click **[Next]**



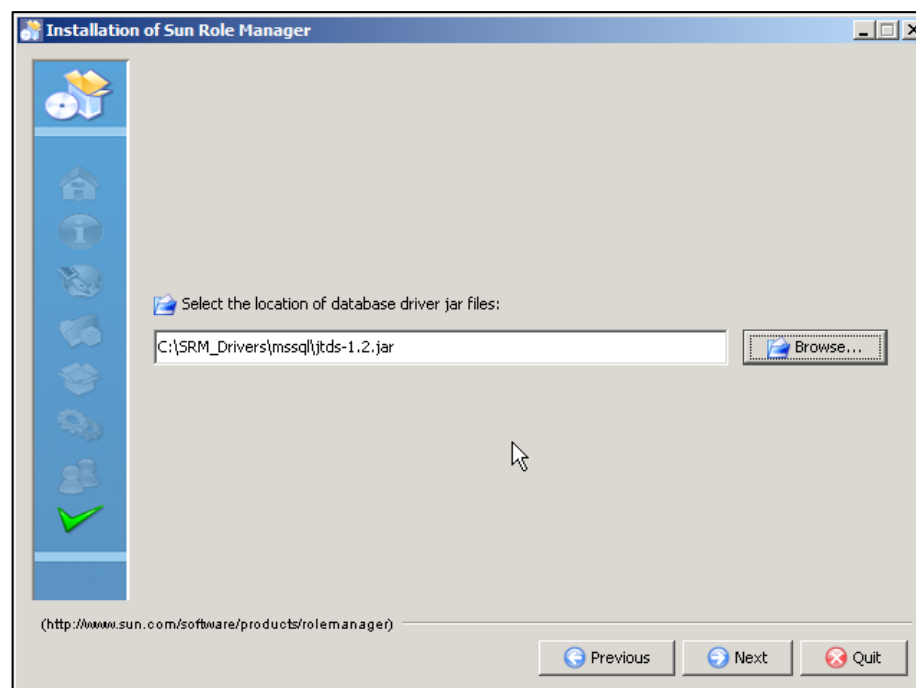
8. Select an Index Database
- a. Microsoft SQL Server
 - b. Oracle
 - c. IBM DB2
 - d. MySQL

Microsoft SQL Server

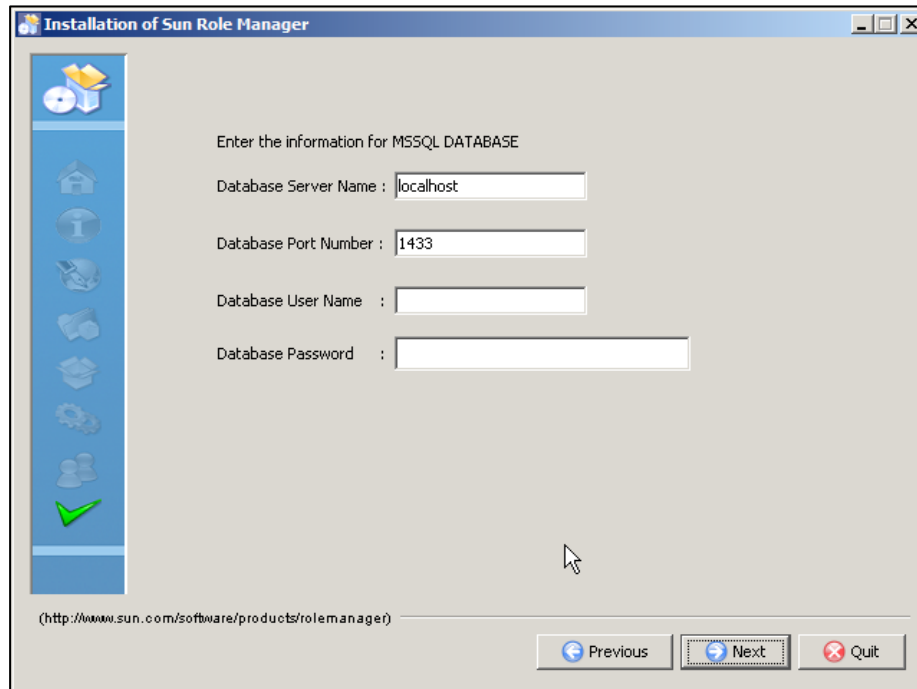
Select 'Microsoft SQL Server' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



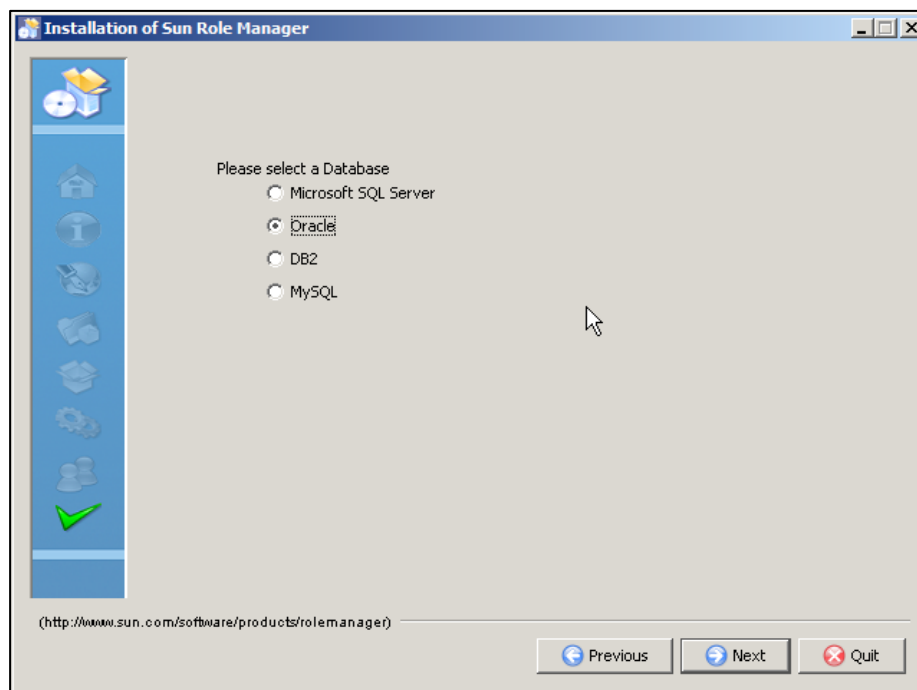
Enter Database Username/Password to connect to the database. Click **[Next]**



The screenshot shows the 'Installation of Sun Role Manager' window. On the left is a vertical toolbar with icons for installation, home, back, forward, cancel, and a green checkmark. The main area is titled 'Enter the information for MSSQL DATABASE'. It contains four input fields: 'Database Server Name' with 'localhost', 'Database Port Number' with '1433', 'Database User Name' (empty), and 'Database Password' (empty). At the bottom, there is a URL '(http://www.sun.com/software/products/rolemanager)' and three buttons: 'Previous', 'Next' (highlighted with a dashed border), and 'Quit'.

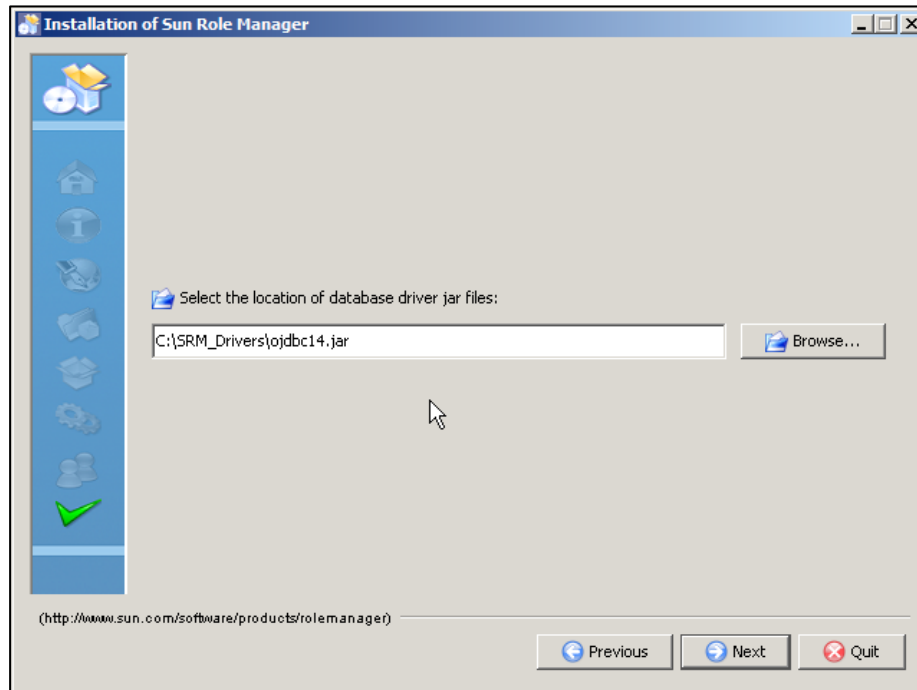
Oracle

Select 'Oracle' and click **[Next]**

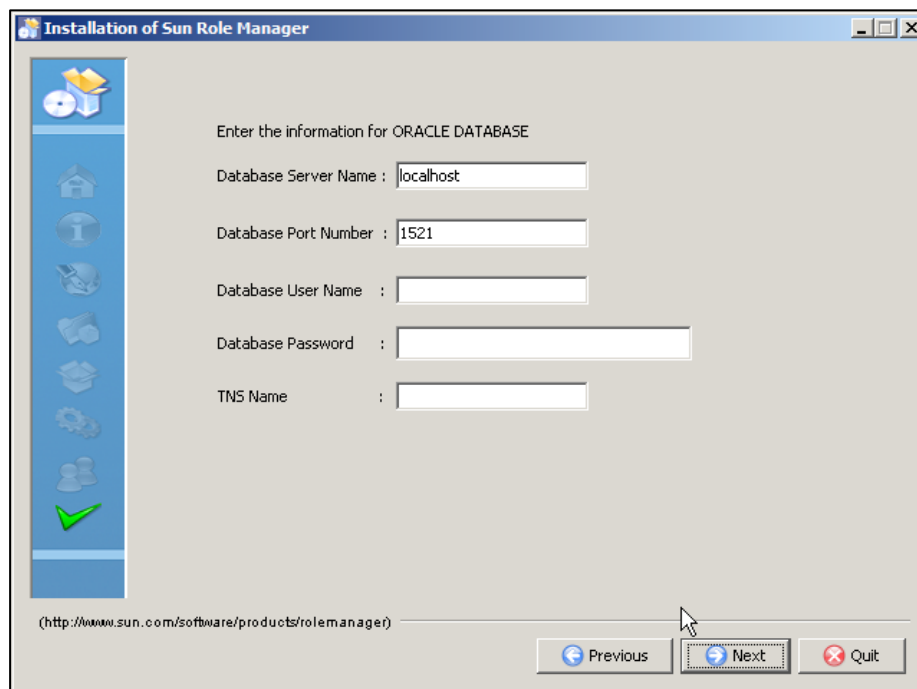


The screenshot shows the 'Installation of Sun Role Manager' window. The main area is titled 'Please select a Database'. It contains four radio button options: 'Microsoft SQL Server', 'Oracle' (selected), 'DB2', and 'MySQL'. The 'Oracle' option is highlighted with a dashed border. At the bottom, there is a URL '(http://www.sun.com/software/products/rolemanager)' and three buttons: 'Previous', 'Next' (highlighted with a dashed border), and 'Quit'.

Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.

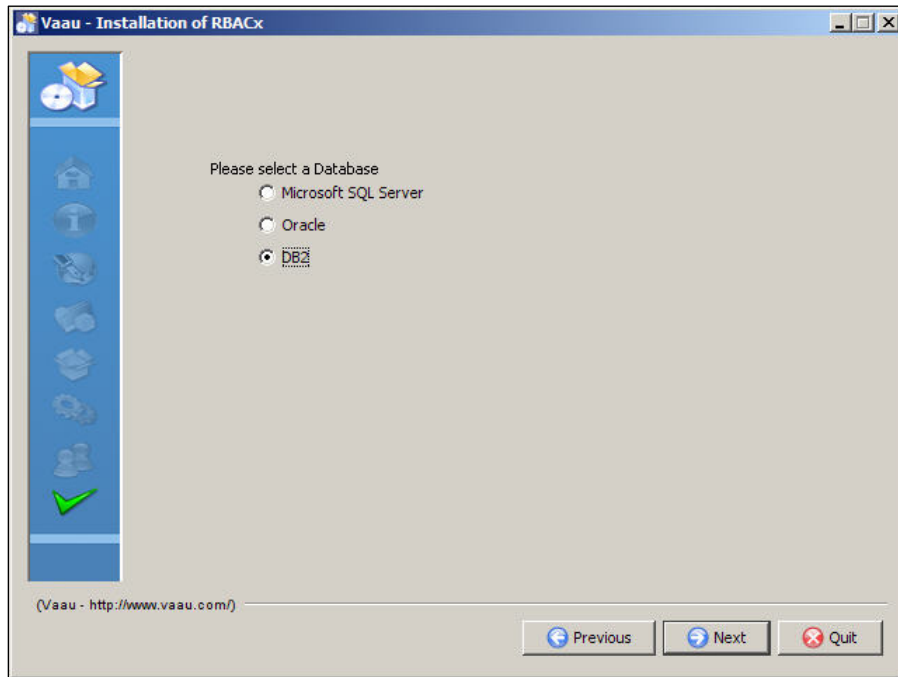


Enter Database Username/Password and TNS Name to connect to the database. Click **[Next]**

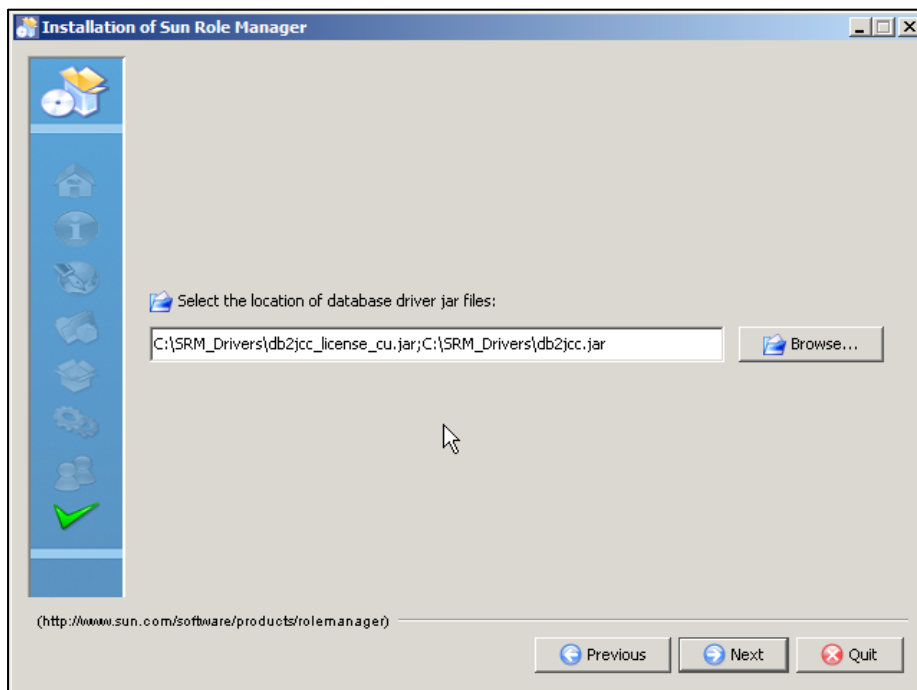


IBM DB2

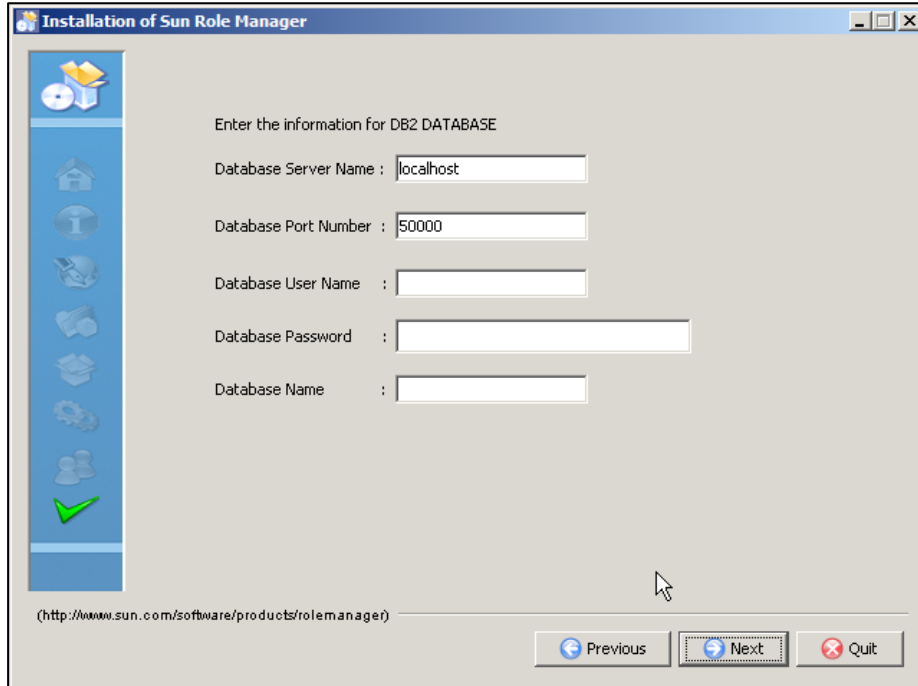
Select 'DB2' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



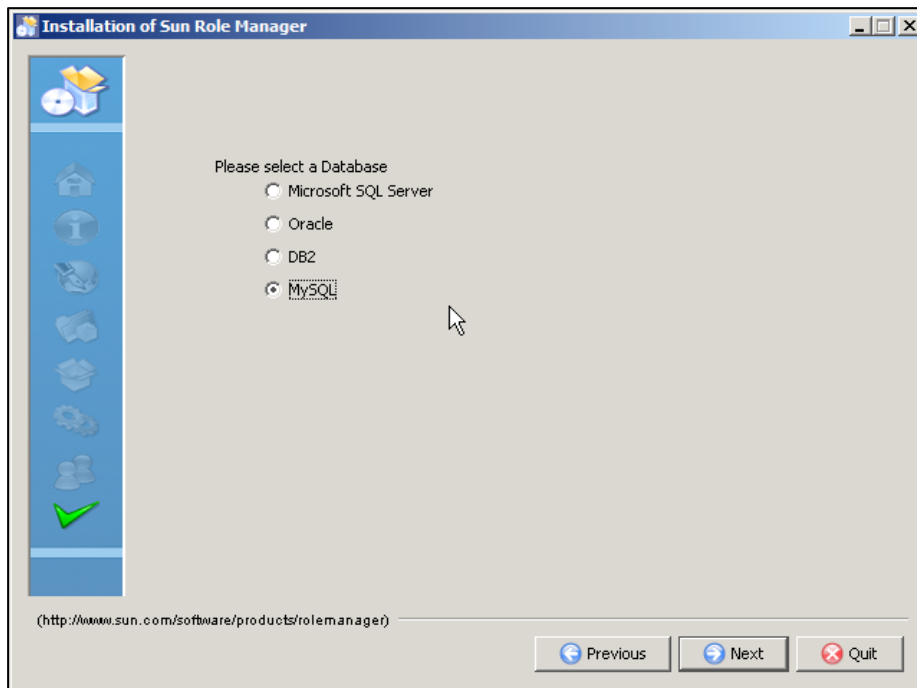
Enter Database Username/Password and Database Name to connect to the database.
Click **[Next]**



The screenshot shows the 'Installation of Sun Role Manager' window. On the left is a vertical navigation bar with icons for various steps, with a green checkmark at the bottom. The main area is titled 'Enter the information for DB2 DATABASE'. It contains five input fields: 'Database Server Name' (with 'localhost' entered), 'Database Port Number' (with '50000' entered), 'Database User Name', 'Database Password', and 'Database Name'. At the bottom right are three buttons: 'Previous', 'Next' (highlighted with a dashed border), and 'Quit'. A URL '(http://www.sun.com/software/products/rolemanager)' is visible at the bottom left.

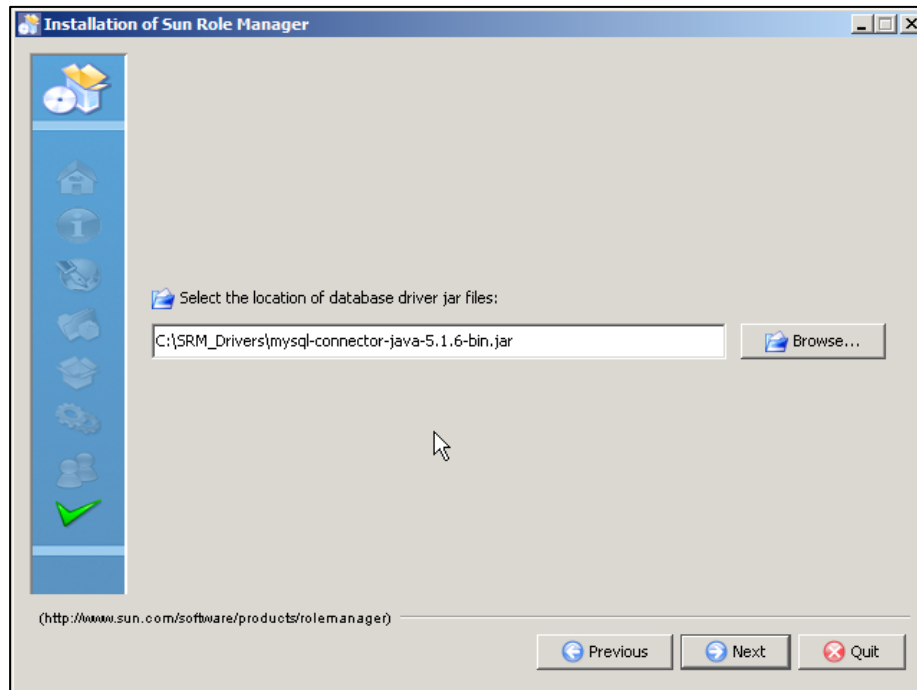
MySQL

Select 'MySQL' and click **[Next]**

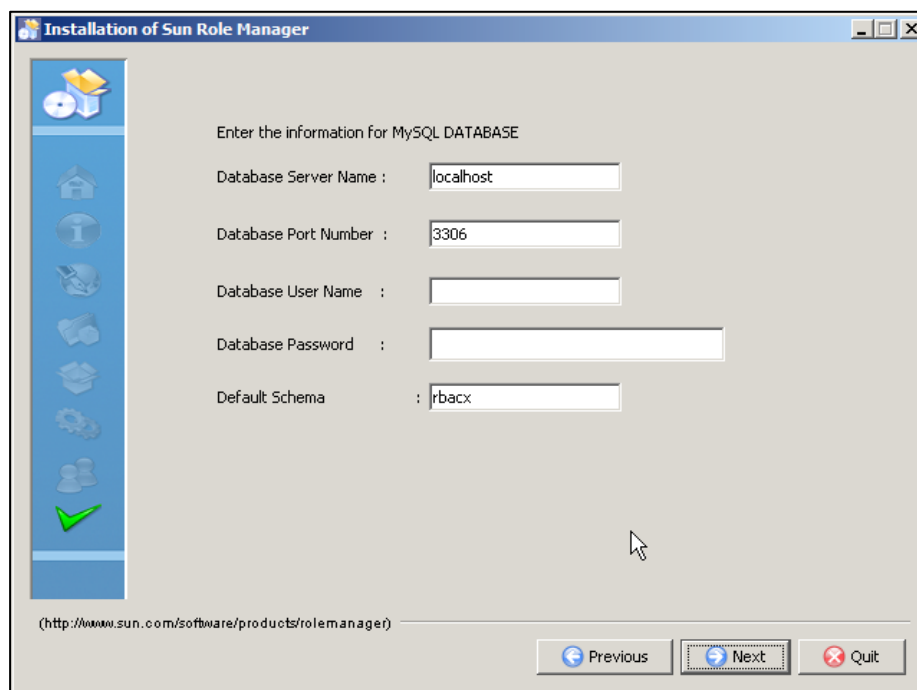


The screenshot shows the 'Installation of Sun Role Manager' window. On the left is a vertical navigation bar with icons for various steps, with a green checkmark at the bottom. The main area is titled 'Please select a Database'. It contains four radio button options: 'Microsoft SQL Server', 'Oracle', 'DB2', and 'MySQL'. The 'MySQL' option is selected, indicated by a filled radio button. At the bottom right are three buttons: 'Previous', 'Next' (highlighted with a dashed border), and 'Quit'. A URL '(http://www.sun.com/software/products/rolemanager)' is visible at the bottom left.

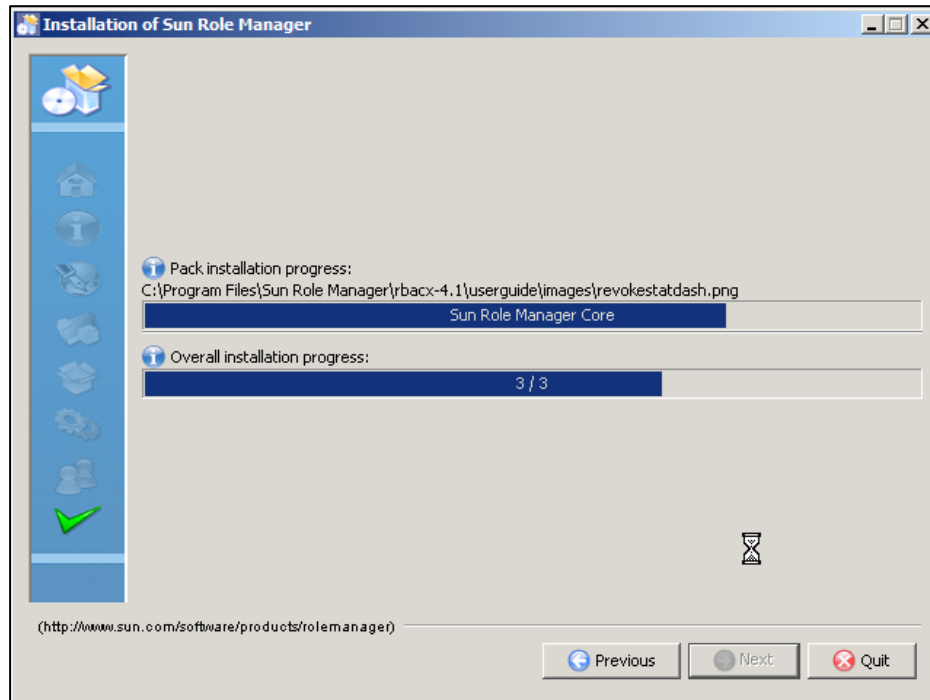
Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password and Database Name to connect to the database. Click **[Next]**

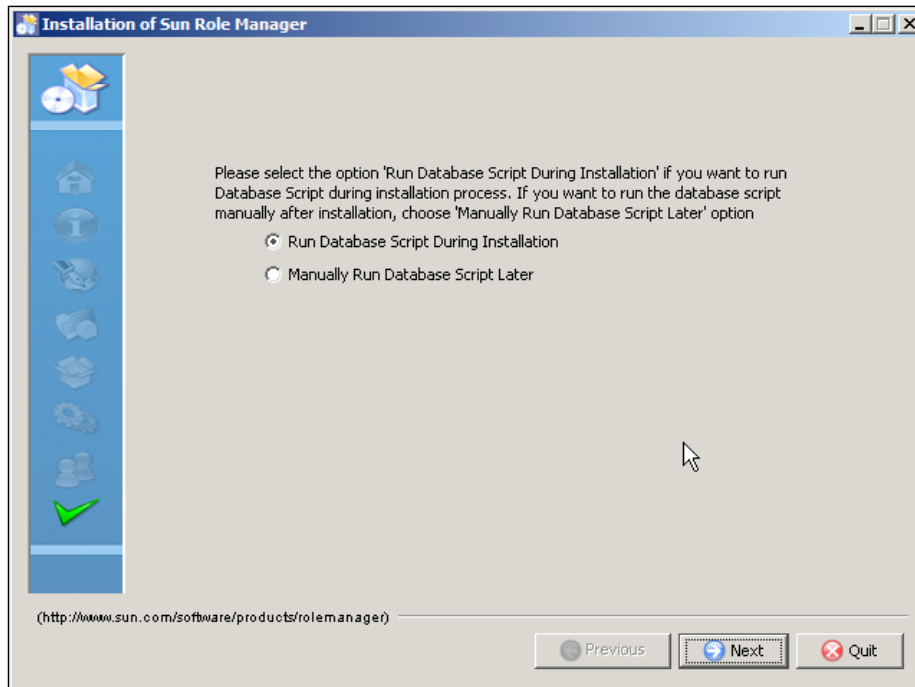


9. Now the installation of JRE 1.5, Tomcat 5.5 and Sun Role Manager core begins. Once you see “Finished” in package installation progress bar. Click **[Next]**



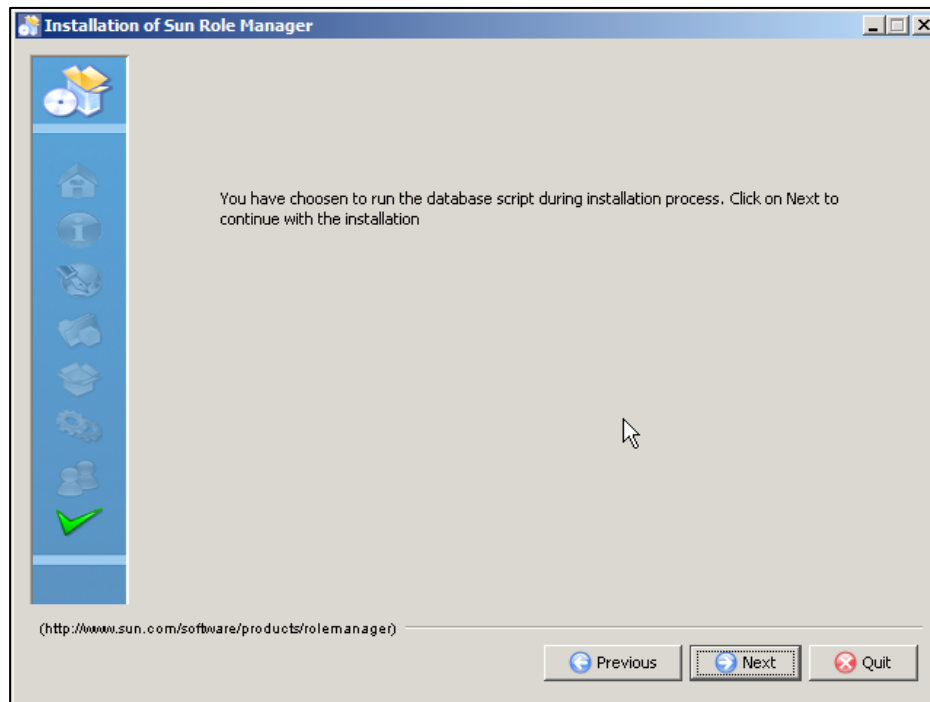
10. Select if the database script is to be executed by the installer or manually after the installer quits
 - a. Run Database Script During Installation
 - b. Manually Run Database Script Later

Run Database Script During Installation

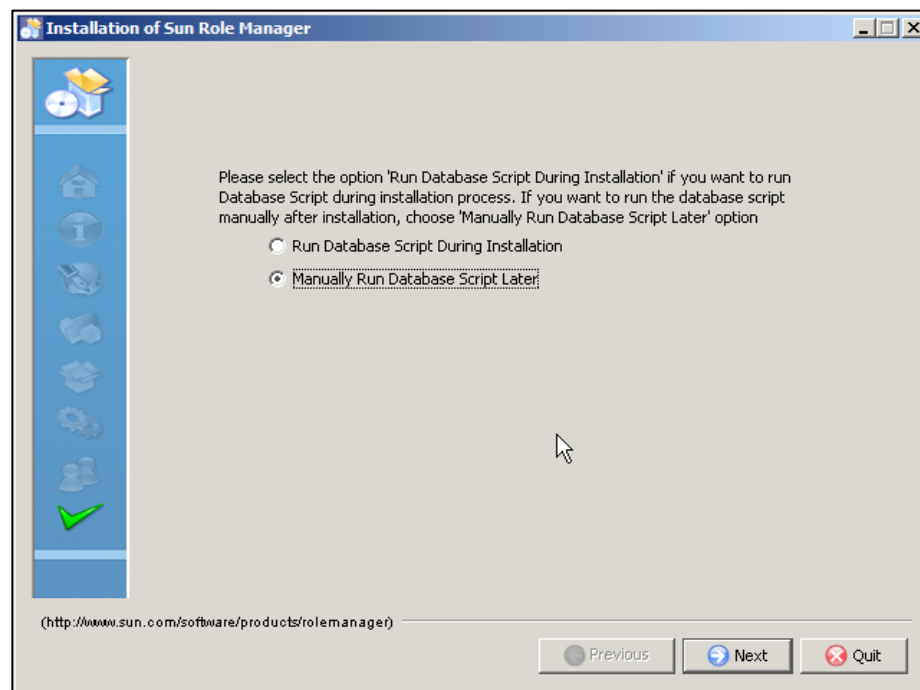


Click **[Next]**

Confirm that database scripts are to be executed by the installer, and click **[Next]**

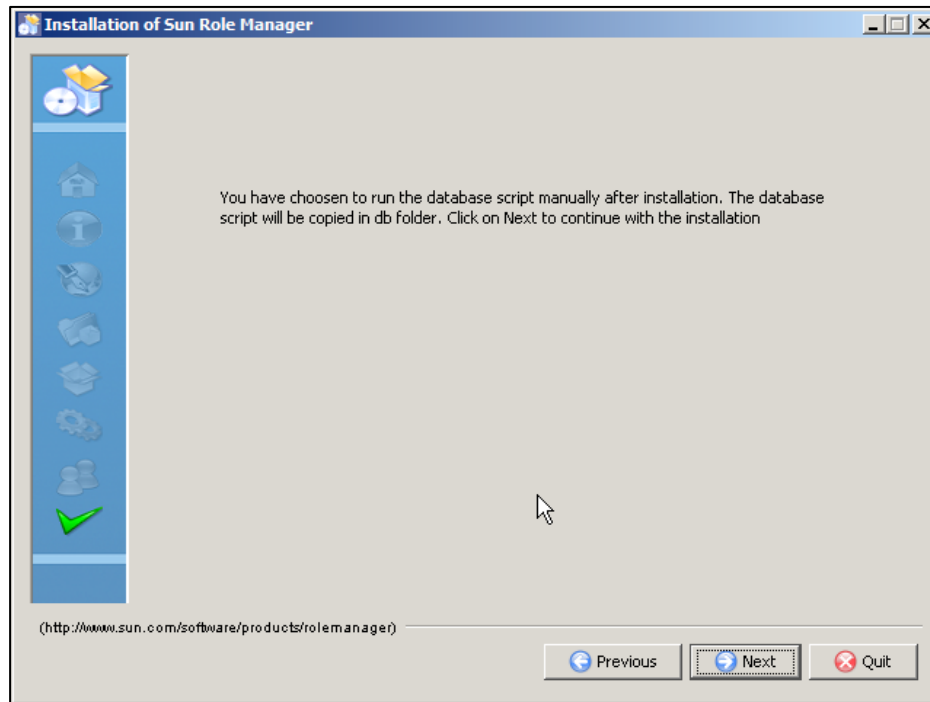


Manually Run Database Script Later



Click **[Next]**

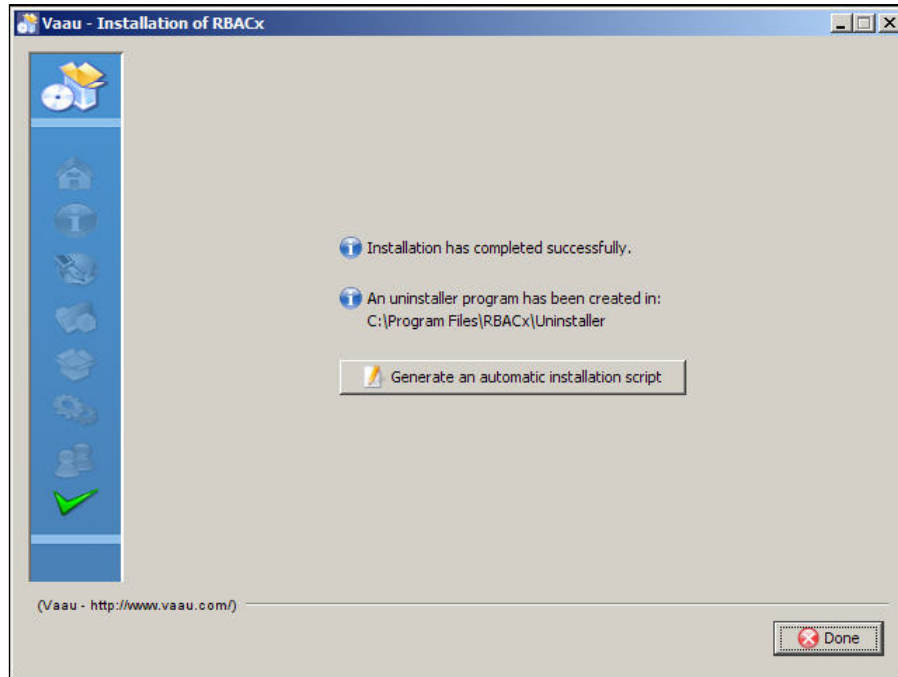
Confirm that database scripts are to be manually executed later, and click **[Next]**



Database scripts required to create Sun Role Manager schema are copied to **\$RBACX_HOME/db** folder. The Sun Role Manager schema creation scripts can be manually executed by a user with Database Administration privileges.

NOTE: Sun Role Manager schema has to be created prior to launching Sun Role Manager application

11. Click **[Generate an automatic installation script]** (if you want to generate a script) and save it as a file with a '.xml' extension on your machine and click **[Done]**



12. Navigate to **\$RBACX_HOME\tomcat55\webapps** via the command-line
13. Enter the following commands to create a *staging* directory and extract the war file into it

NOTE: It is assumed that a version of Java JDK exists on the system. Java JDK can be downloaded from <http://java.sun.com/javase/downloads/index.jsp>. Installation instructions for Java 6 can be found at <http://java.sun.com/javase/6/webnotes/install/index.html>

```
C:\> mkdir rbacx_staging
```

```
C:\> cd rbacx_staging
```

```
C:\> jar -xvf ../rbacx.war
```

14. Navigate to **lib** folder located inside the *rbacx_staging/WEB-INF* folder. For example - **\$RBACX_HOME\tomcat55\webapps\rbacx_staging\WEB-INF\lib**
15. Copy the JDBC connectivity jar file to **lib** folder. For example, to establish connectivity with Oracle Database Server, copy *ojdbc14.jar* to the **lib** folder

16. Download *weka.jar* file from
http://dlc.sun.com/rolemanager/Data_Mining/weka/for_rbacx-4.1.x
This file is required to carry out any role-mining related functionality of Sun Role Manager
17. Copy *weka.jar* to **lib** folder
18. The following steps are to be executed via the command-line. The commands repack an updated war file and delete the *staging* folder. It is assumed that the current directory is *\$RBACX_HOME/tomcat55/webapps/rbacx_staging*
S
C:\> **jar -cvfM ../rbacx.war .**

C:\> **cd..**

C:\> **rmdir rbacx_staging /s /q**

rbacx.war located at *\$RBACX_HOME/tomcat55/webapps/* is now updated and ready for deployment
19. Sun Role Manager installation is complete

Installing on Linux

For Linux environment, it is assumed that a remote database server is being utilized or if database is available locally, for example Oracle 10g, necessary environment variables such as \$ORACLE_HOME have been mapped to Oracle Installation Directory.

NOTE: 'rbacxservice' user should not be associated to any other application either as an OS user or Database user prior to installation

1. The installer is distributed as a Tarball with **.tar.gz** extension. Extract the installer using the command

```
$ tar -xvzf Installer.tar.gz
```

A directory named 'Installer' is created. Navigate to that directory

```
$ cd Installer
```

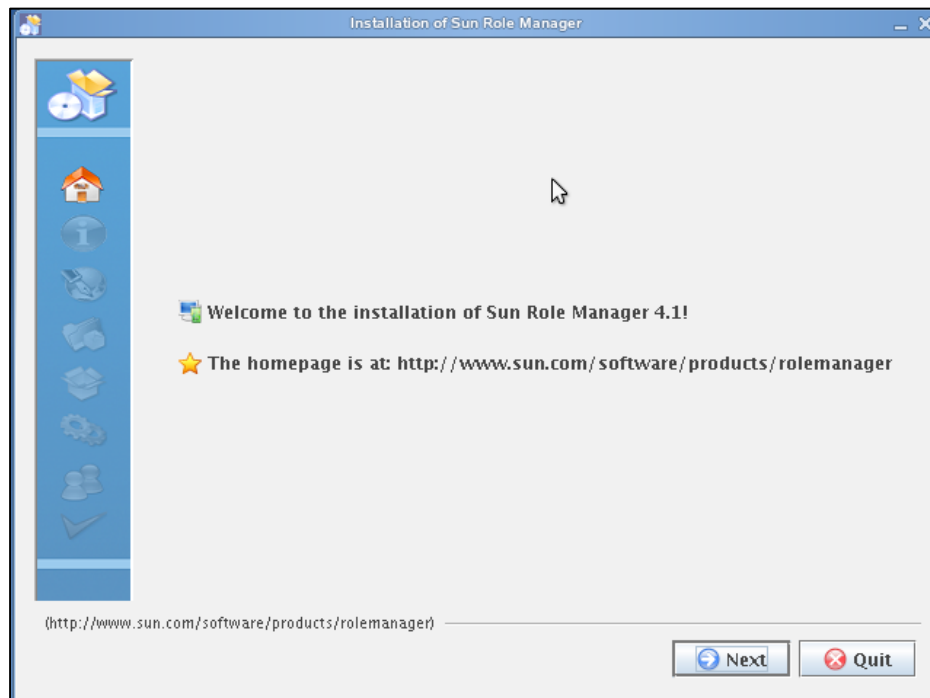
2. In order to launch the installer, run the installer script, 'install.sh', using the following command

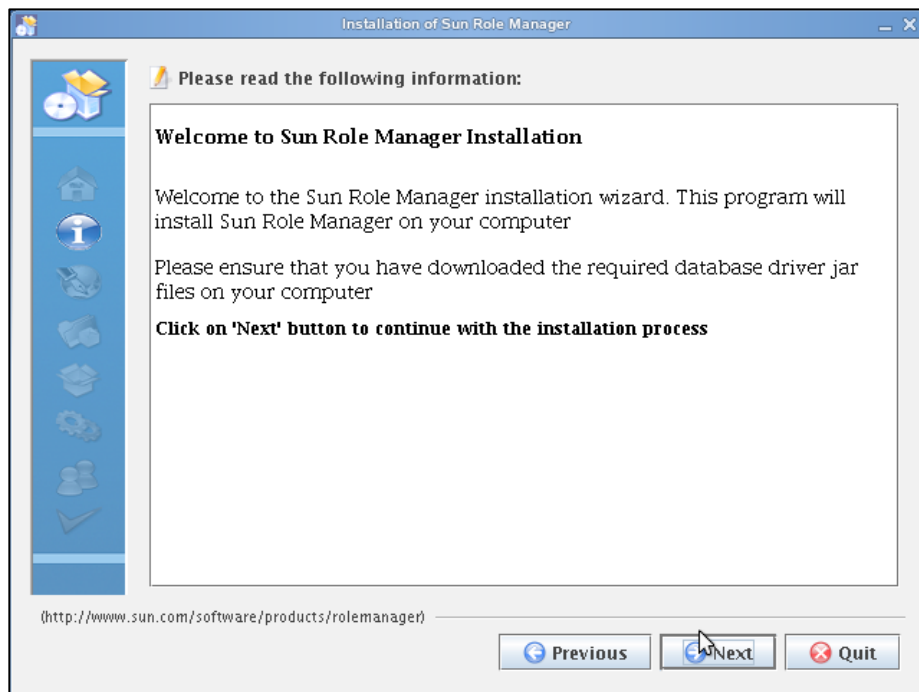
```
$ ./install.sh
```

NOTE: If 'install.sh' does not have execute permission, the following command grants 'install.sh' execute rights

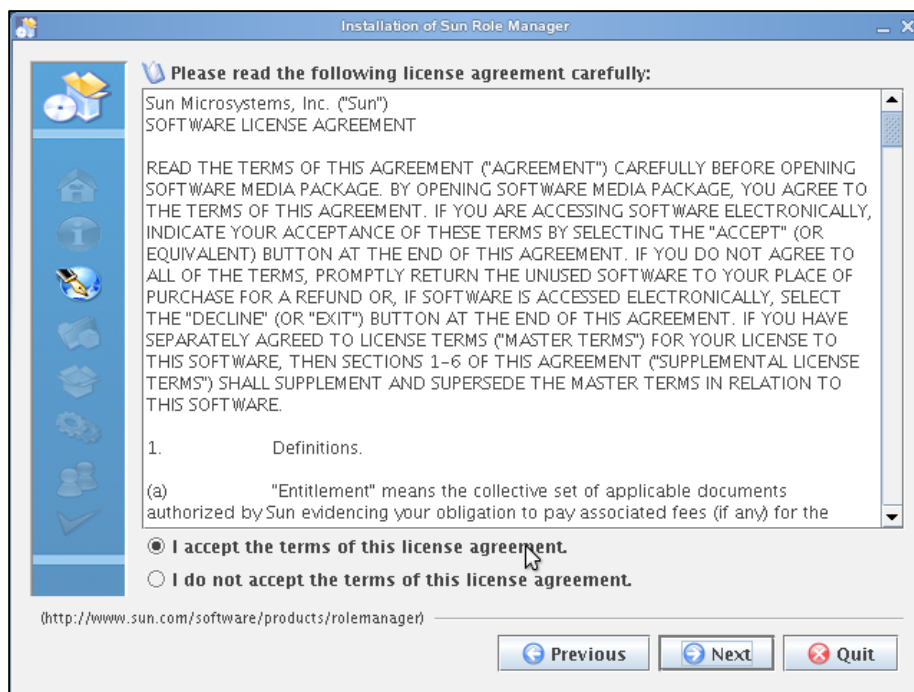
```
$ chmod g+x install.sh
```

3. The Installer first checks if JRE exists on the system. If not found, the installer first installs JRE. If JRE already exists the installer will launch the Sun Role Manager Installation Welcome Screen. Click **[Next]**

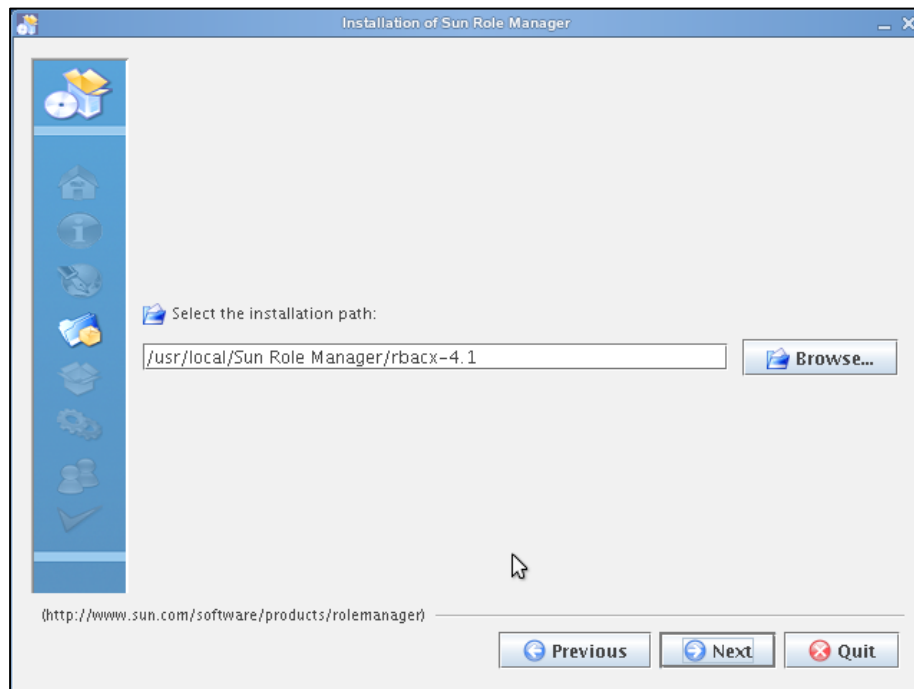




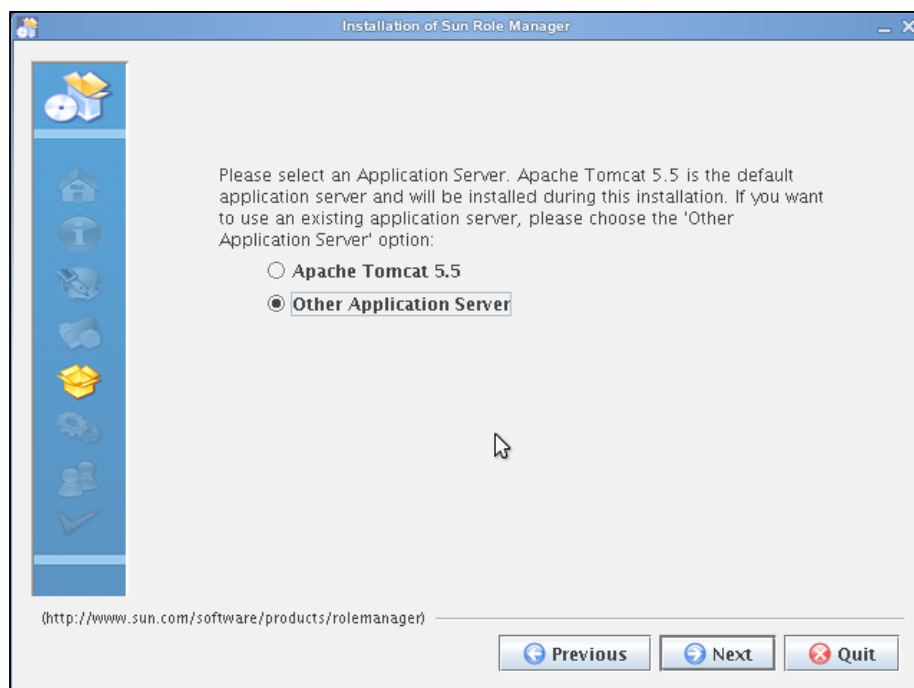
4. Read the License Agreement and to continue with installation select **"I accept the terms of this license Agreement"** and click [Next]



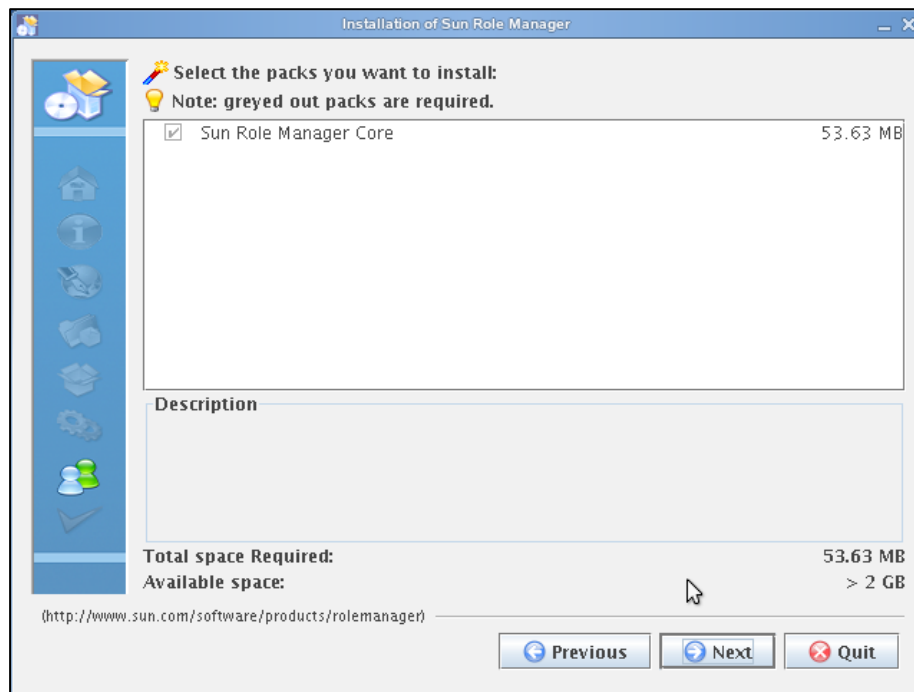
5. Select path where Sun Role Manager to be installed and click **[Next]**



6. Select **"Other Application Server"** to install on WebSphere Application Server. Click **[Next]**

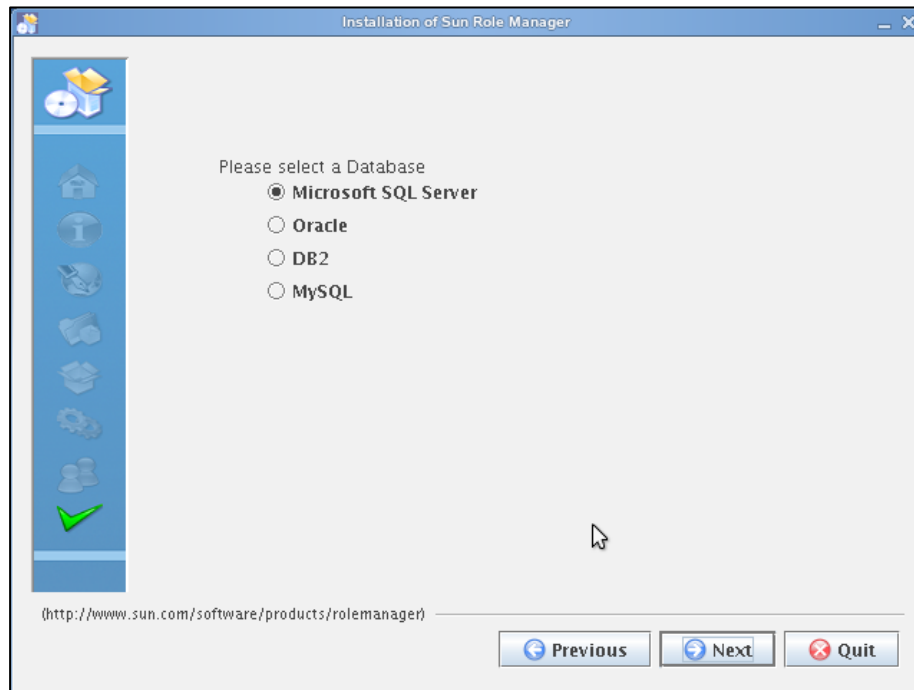


7. Next you'll see the components that the Installer will install on your machine. Click **[Next]**



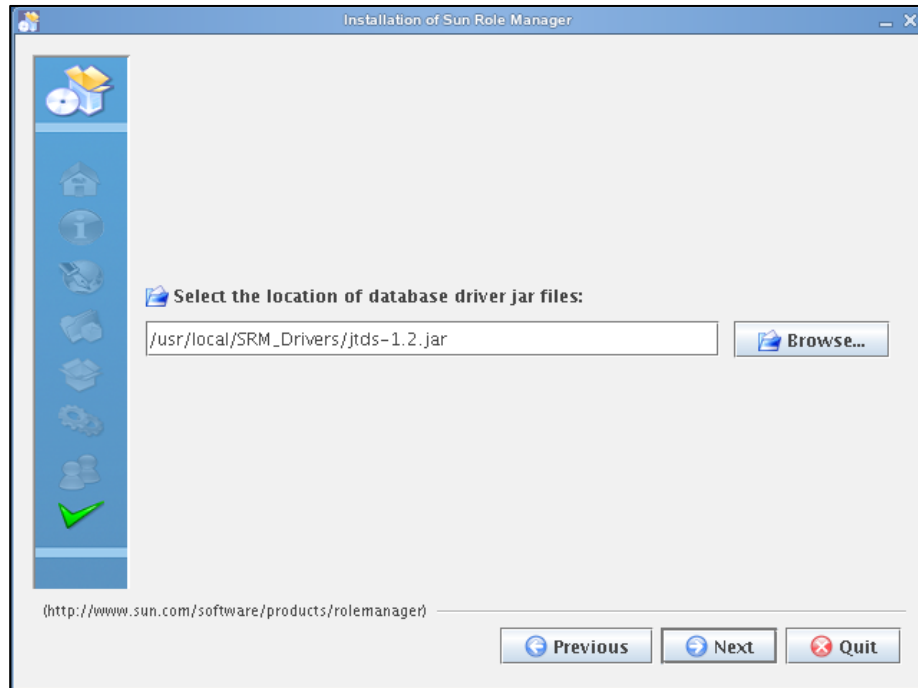
8. Select an Index Database
 - a. Microsoft SQL Server
 - b. Oracle
 - c. IBM DB2
 - d. MySQL

Microsoft SQL Server

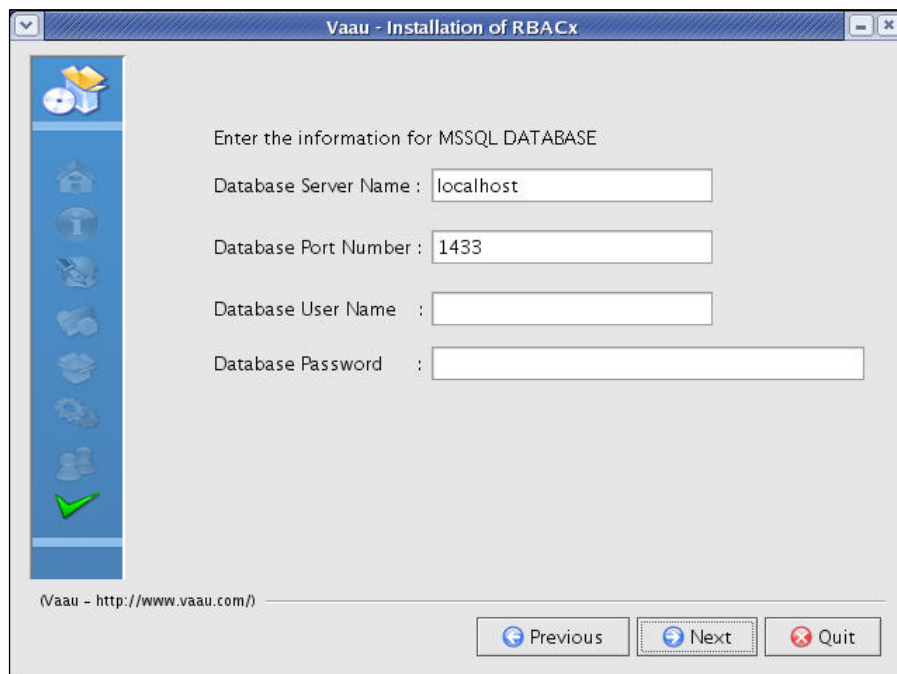


Select 'Microsoft SQL Server' and click **[Next]**

Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.

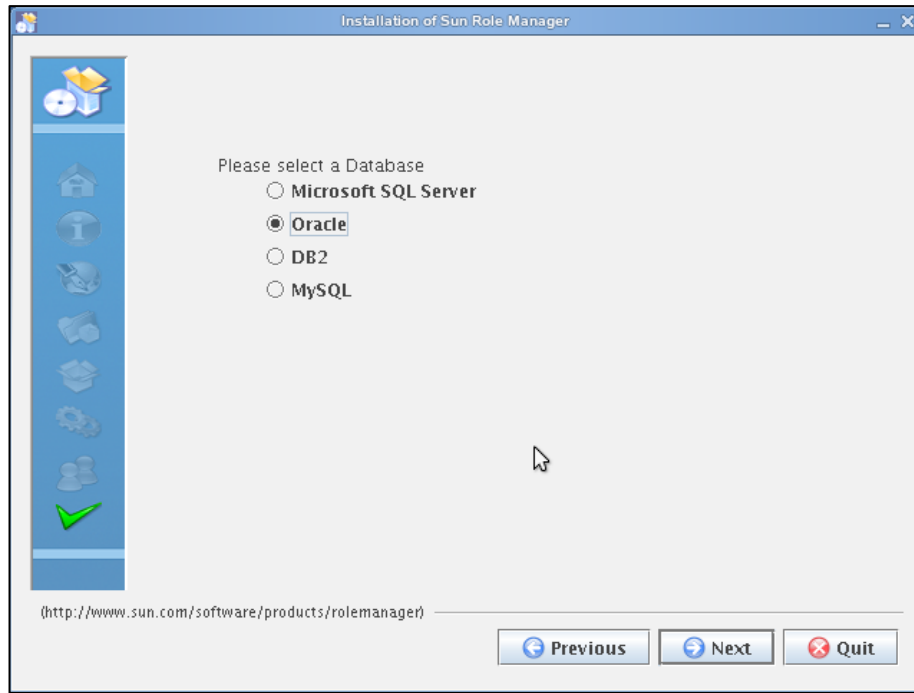


Enter Database Username/Password to connect to the database. Click **[Next]**

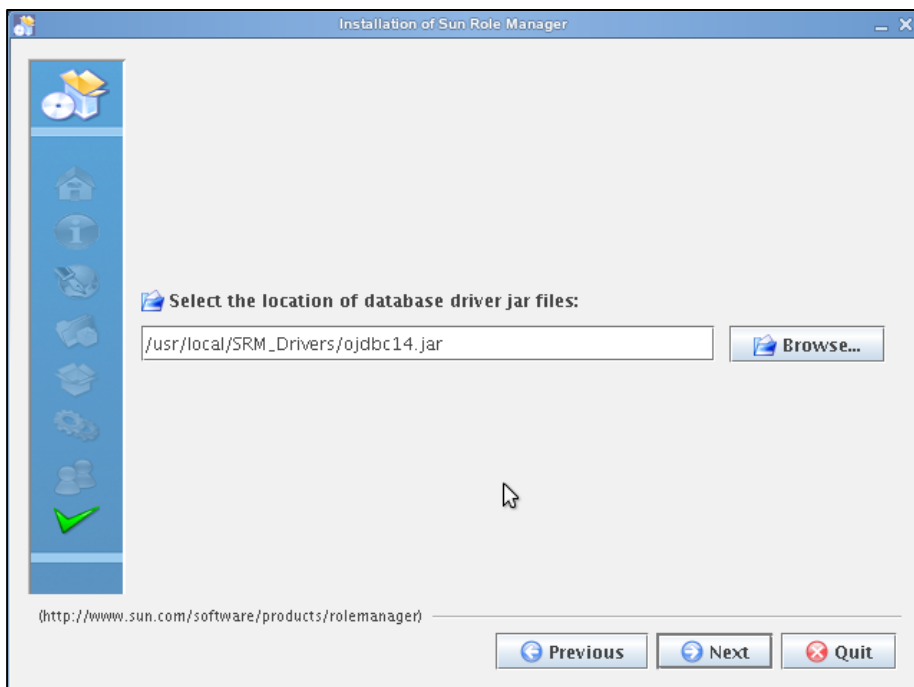


Oracle

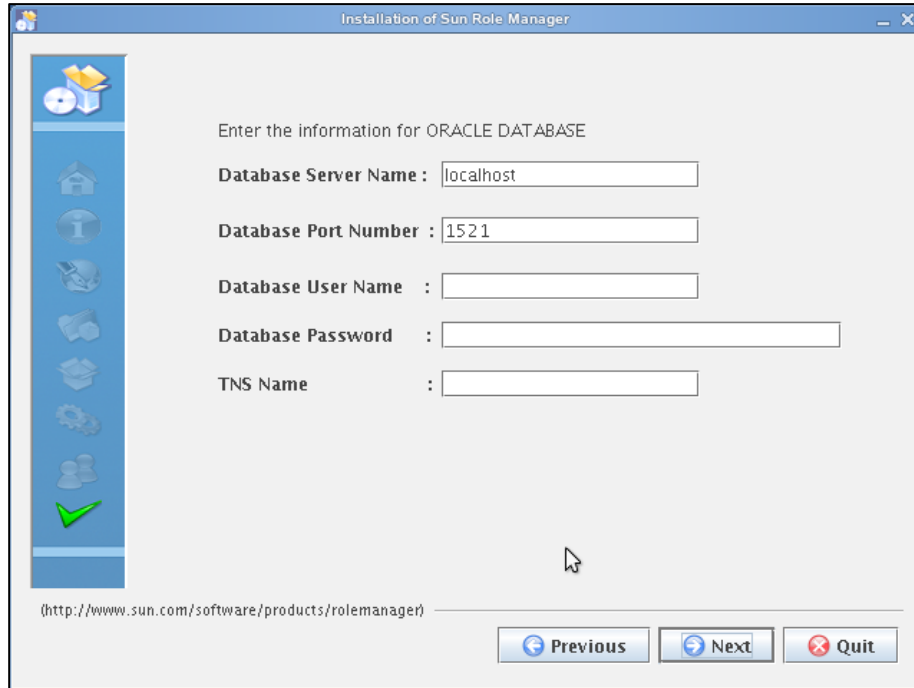
Select 'Oracle' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password and TNS Name to connect to the database. Click **[Next]**



Installation of Sun Role Manager

Enter the information for ORACLE DATABASE

Database Server Name : localhost

Database Port Number : 1521

Database User Name :

Database Password :

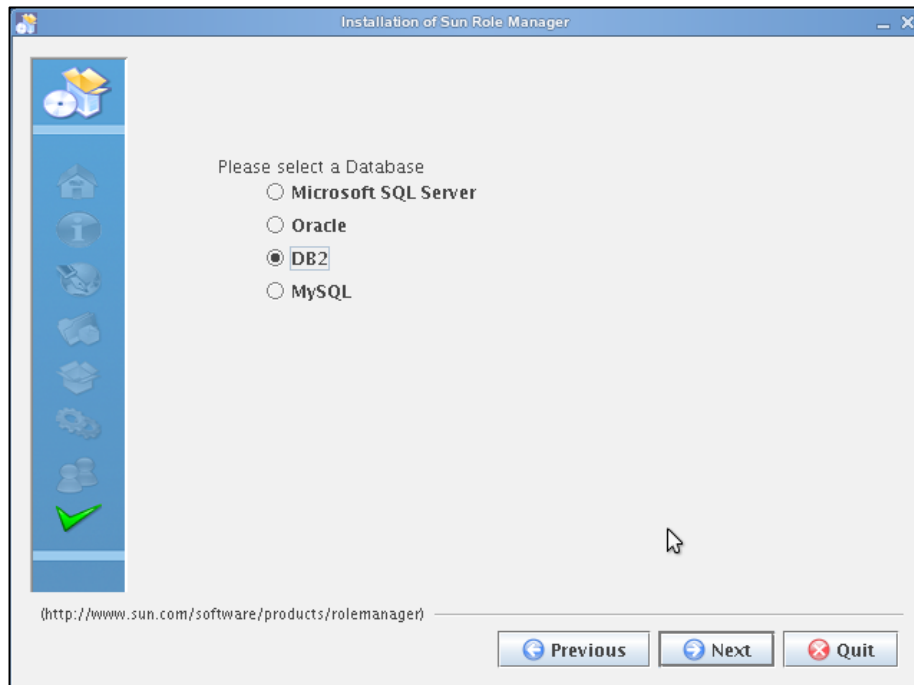
TNS Name :

(<http://www.sun.com/software/products/rolemanager/>)

Previous Next Quit

IBM DB2

Select 'DB2' and click **[Next]**



Installation of Sun Role Manager

Please select a Database

☐ Microsoft SQL Server

☐ Oracle

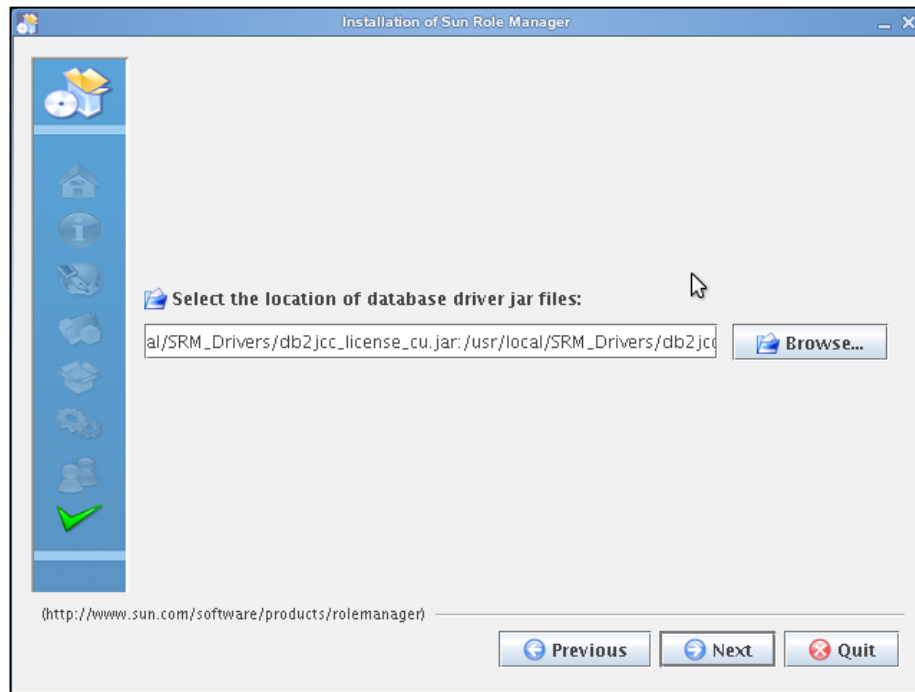
☒ DB2

☐ MySQL

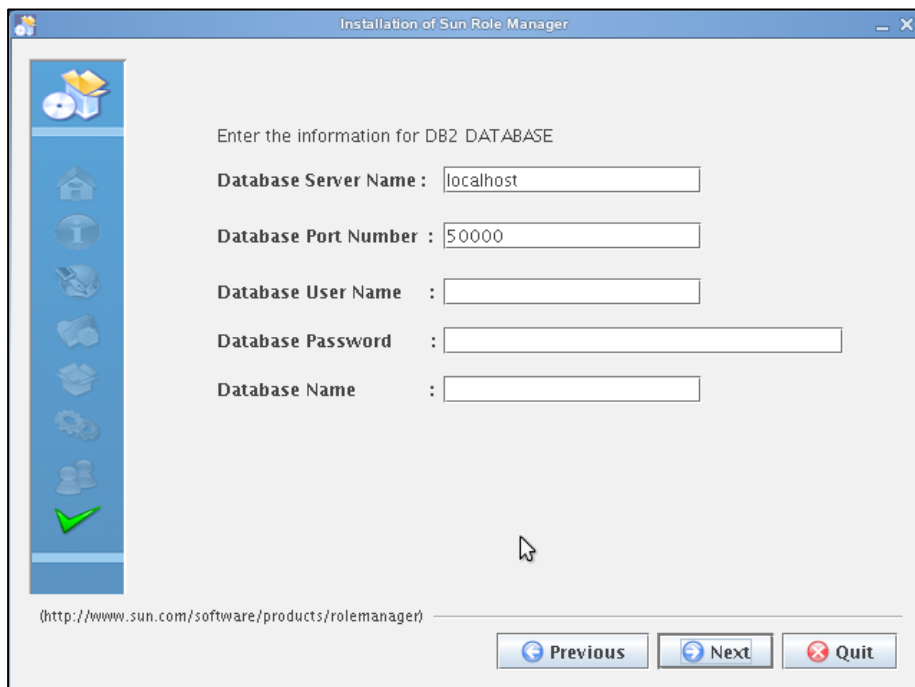
(<http://www.sun.com/software/products/rolemanager/>)

Previous Next Quit

Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.

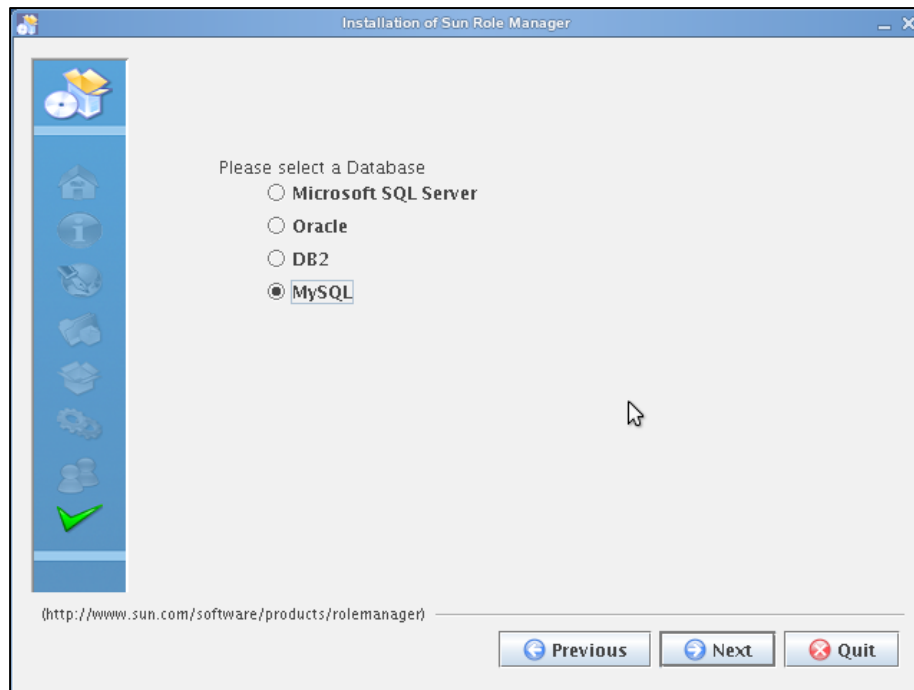


Enter Database Username/Password and Database Name to connect to the database. Click **[Next]**

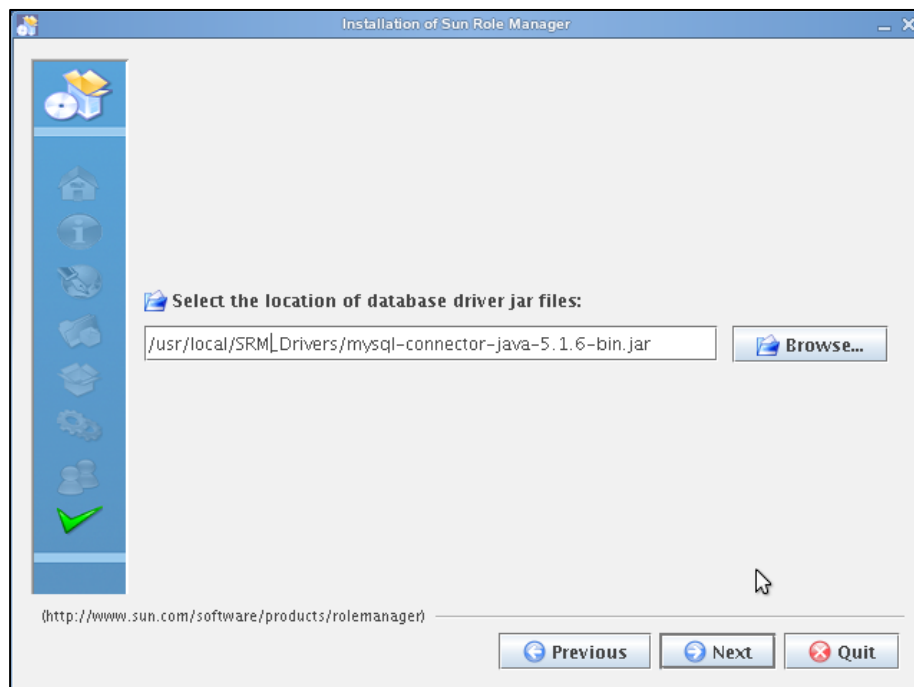


MySQL

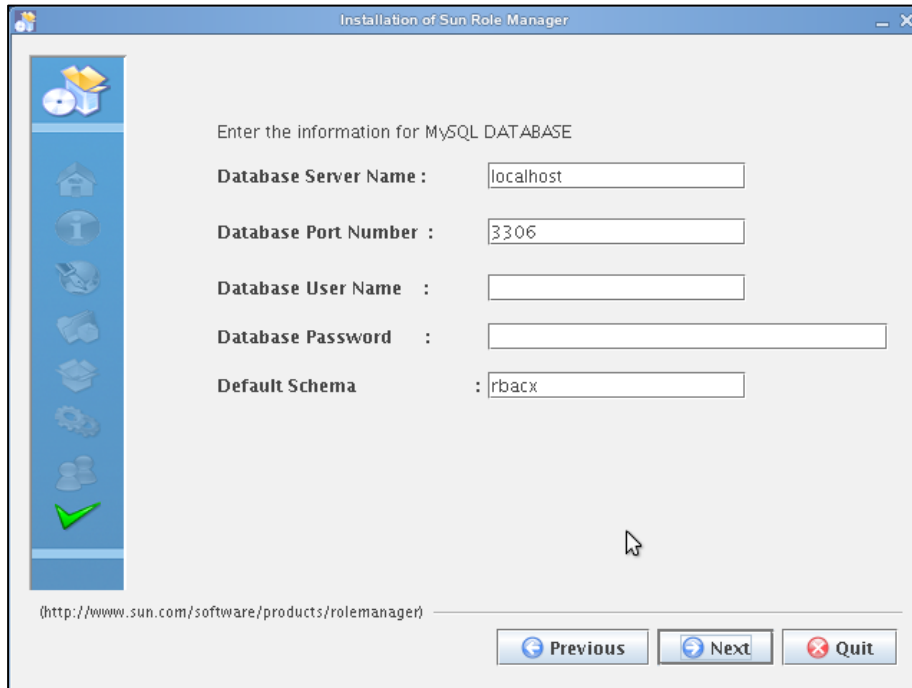
Select 'MySQL' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password and Database Name to connect to the database.
Click **[Next]**

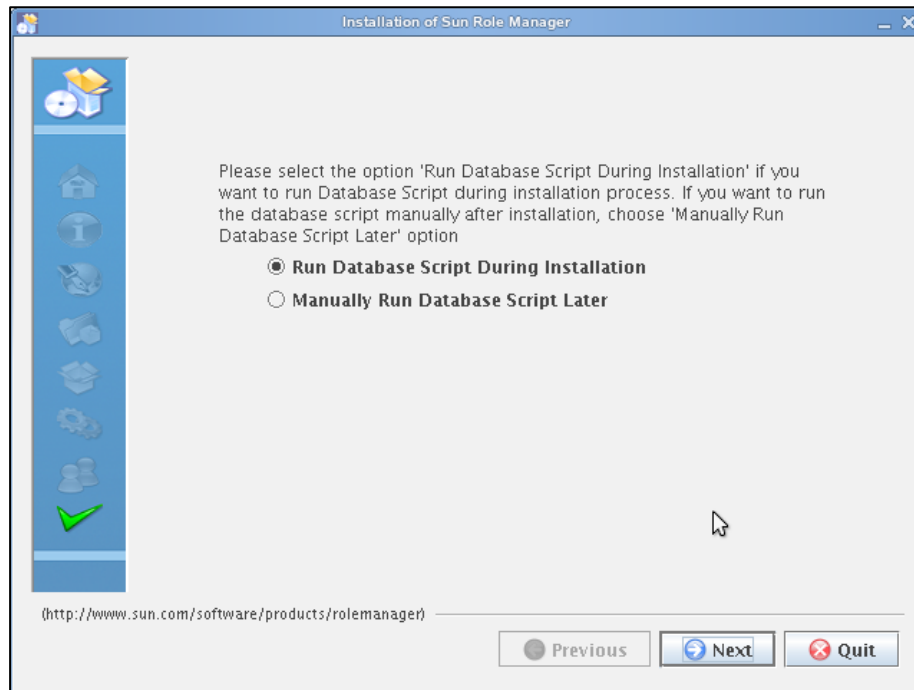


The image shows a Windows-style dialog box titled "Installation of Sun Role Manager". On the left is a vertical sidebar with icons for various installation steps; the bottom icon, representing a checkmark, is highlighted in green. The main area of the dialog is titled "Enter the information for MySQL DATABASE" and contains five labeled text input fields: "Database Server Name" (containing "localhost"), "Database Port Number" (containing "3306"), "Database User Name" (empty), "Database Password" (empty), and "Default Schema" (containing "rbacx"). At the bottom of the dialog, there is a URL "(http://www.sun.com/software/products/rolemanager)" and three buttons: "Previous" (disabled), "Next" (active), and "Quit" (disabled).

9. Now the installation of JRE 1.5, Tomcat 5.5 and Sun Role Manager core begins. Once you see "Finished" in package installation progress bar. Click **[Next]**

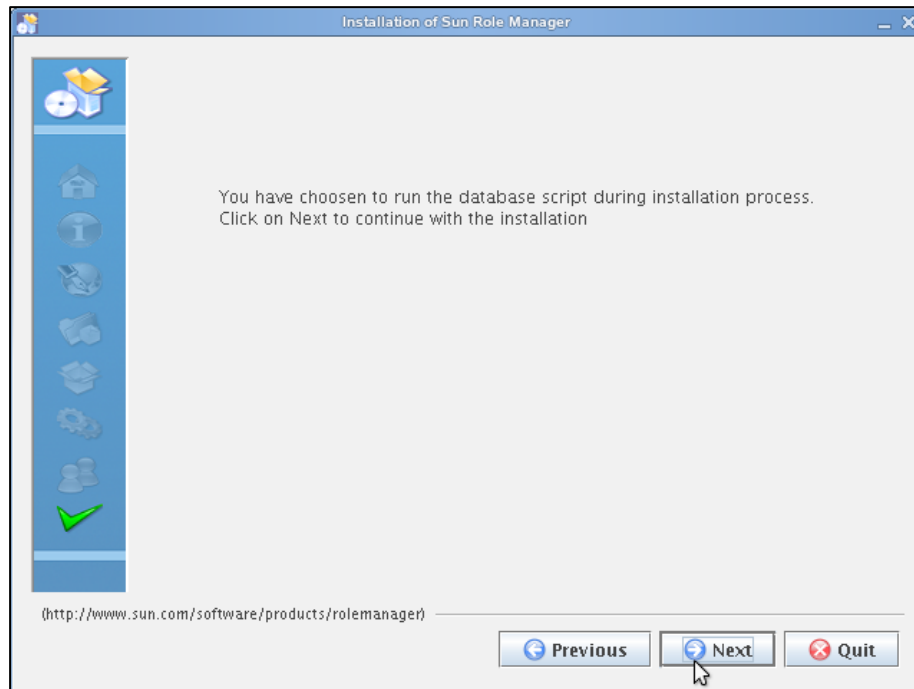
10. Select if the database script is to be executed by the installer or manually after the installer quits
 - a. Run Database Script During Installation
 - b. Manually Run Database Script Later

Run Database Script During Installation

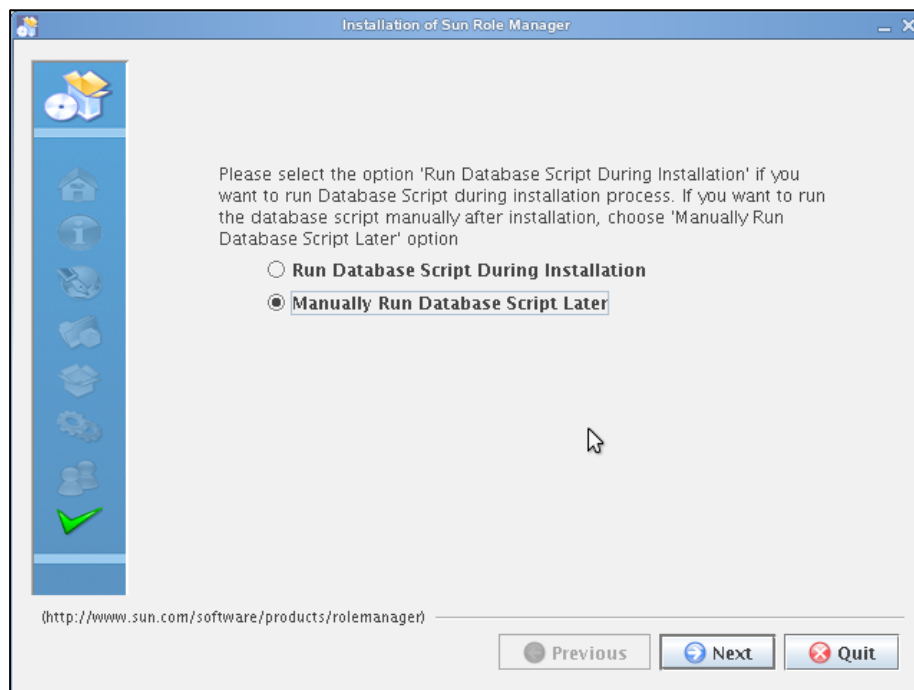


Click **[Next]**

Confirm that database scripts are to be executed by the installer, and click **[Next]**

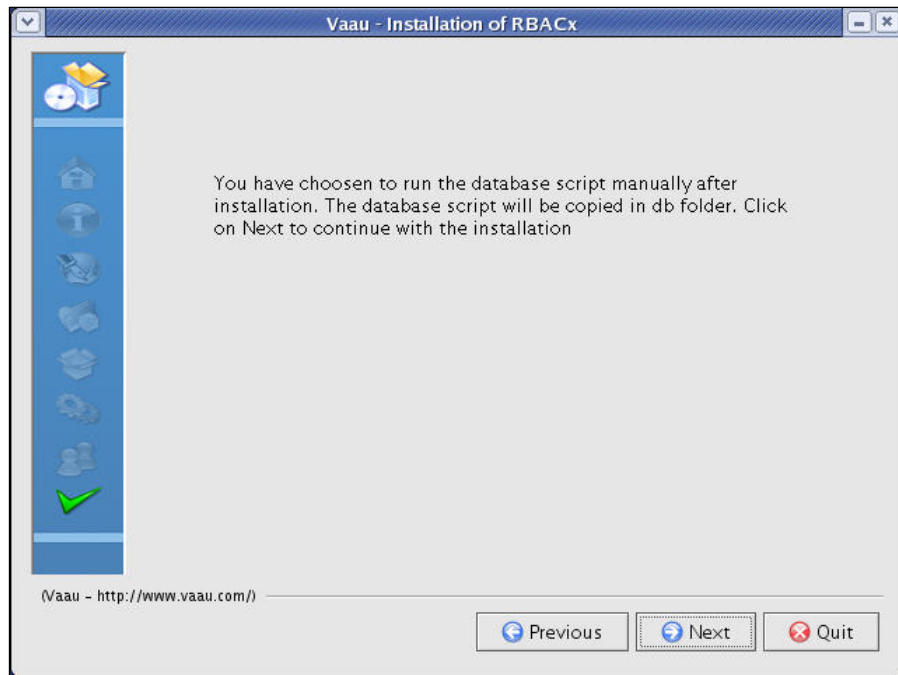


Manually Run Database Script Later



Click **[Next]**

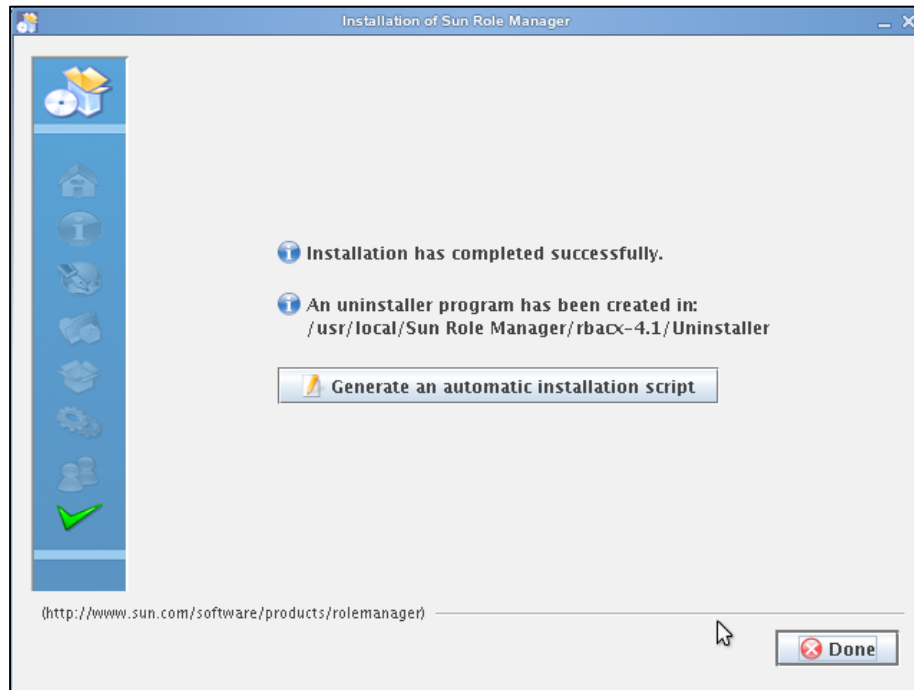
Confirm that database scripts are to be manually executed later, and click **[Next]**



Database scripts required to create Sun Role Manager schema are copied to **\$RBACX_HOME/db** folder. The Sun Role Manager schema creation scripts can be manually executed by a user with Database Administration privileges.

NOTE: Sun Role Manager schema has to be created prior to launching Sun Role Manager application

11. Click **[Generate an automatic installation script]** (if you want to generate a script) and save it as a file with a '.xml' extension on your machine and click **[Done]**



12. Navigate to **\$RBACX_HOME/tomcat55/webapps** via the command-line
13. Enter the following commands to create a *staging* directory and extract the war file into it

NOTE: It is assumed that a version of Java JDK exists on the system. Java JDK can be downloaded from <http://java.sun.com/javase/downloads/index.jsp>. Installation instructions for Java 6 can be found at <http://java.sun.com/javase/6/webnotes/install/index.html>

```
$ mkdir rbacx_staging
```

```
$ cd rbacx_staging
```

```
$ jar -xvf ../rbacx.war
```

14. Navigate to **lib** folder located inside the *rbacx_staging/WEB-INF* folder. For example - **\$RBACX_HOME/tomcat55/webapps/rbacx_staging/WEB-INF/lib**
15. Copy the JDBC connectivity jar file to **lib** folder. For example, to establish connectivity with Oracle Database Server, copy *ojdbc14.jar* to the **lib** folder

Download *weka.jar* file from

http://dlc.sun.com/rolemanager/Data_Mining/weka/for_rbacx-4.1.x

This file is required to carry out any role-mining related functionality of Sun Role Manager

16. Copy *weka.jar* to **lib** folder
17. The following steps are to be executed via the command-line. The commands repack an updated war file and delete the *staging* folder. It is assumed that the current directory is *\$RBACX_HOME/tomcat55/webapps/rbacx_staging*

```
$ jar -cvfM ../rbacx.war .
```

```
$ cd ..
```

```
$ rm -r rbacx_staging
```

rbacx.war located at *\$RBACX_HOME/tomcat55/webapps/* is now updated and ready for deployment

18. Sun Role Manager installation is complete

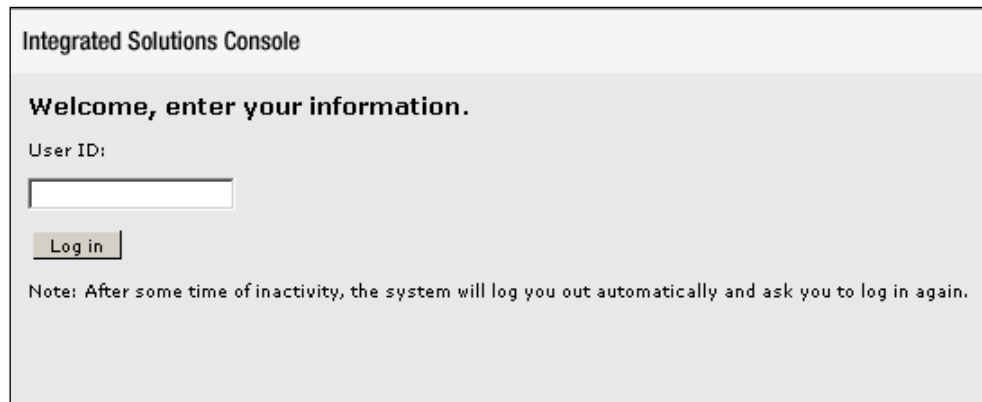
Deploying Sun Role Manager on WebSphere

Follow the steps below to deploy Sun Role Manager application on WebSphere –

1. Log into Websphere Administrative Console –
Open Internet Browser window and enter following link:

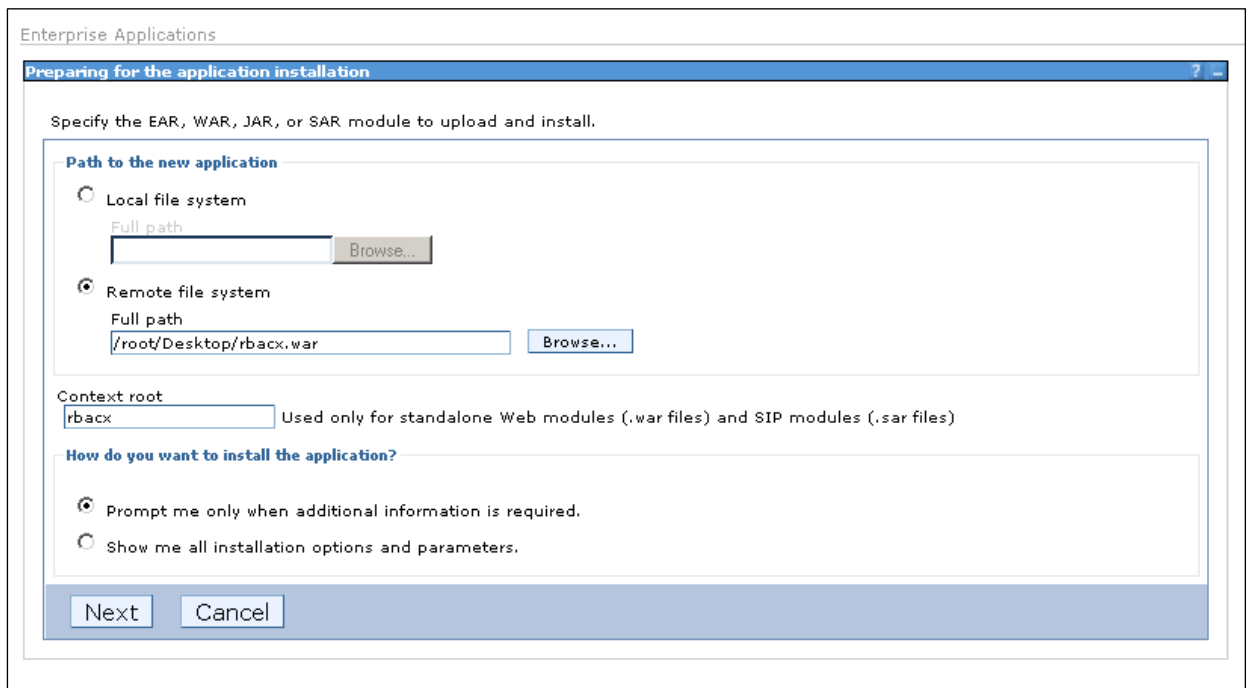
“http ://<server ip> :< port number>/ibm/console/”

2. Enter credentials to login



The screenshot shows the 'Integrated Solutions Console' login page. It has a header 'Integrated Solutions Console' and a sub-header 'Welcome, enter your information.' Below this is a 'User ID:' label followed by a text input field. A 'Log in' button is positioned below the input field. At the bottom, there is a note: 'Note: After some time of inactivity, the system will log you out automatically and ask you to log in again.'

3. Select **Application > Install New Application** from the left panel



The screenshot shows the 'Enterprise Applications' window with the 'Preparing for the application installation' tab selected. The main instruction is 'Specify the EAR, WAR, JAR, or SAR module to upload and install.' There are two sections for 'Path to the new application': 'Local file system' (with a 'Full path' input field and a 'Browse...' button) and 'Remote file system' (with a 'Full path' input field containing '/root/Desktop/rbacx.war' and a 'Browse...' button). Below this is the 'Context root' section with an input field containing 'rbacx' and a note: 'Used only for standalone Web modules (.war files) and SIP modules (.sar files)'. The 'How do you want to install the application?' section has two radio buttons: 'Prompt me only when additional information is required.' (which is selected) and 'Show me all installation options and parameters.' At the bottom are 'Next' and 'Cancel' buttons.

- a. If the `rbacx.war` file is located on the system enter its complete path under **Local File System** else if the file is present on a remote machine specify the path for Remote File system
 - b. Enter “**rbacx**” as context root
 - c. Click **[Next]**
4. Configure the “*Step1: Provide options to perform the installation*” page following the steps outlined below
 - a. If you want to install the application to a different location other than the default location, enter the path to install the application in the **Directory to Install Application** field. For example:

`/opt/IBM/WebSphere/AppServer/installedApps/Hostname`
 - b. Ensure the following options are selected
 - *Distribute application*
 - *Use binary configuration*
 - *Enable class reloading*
 - c. Enter the name of the application in **Application Name** field. Default application name is set to ‘*rbacx*’
 - d. Click **[Next]**

Install New Application

?

-

Specify options for installing enterprise applications and modules.

→ Step 1: Select installation options

[Step 2: Map modules to servers](#)

[Step 3: Summary](#)

Select installation options

Specify the various options that are available to prepare and install your application.

☐ Precompile JavaServer Pages files

Directory to install application

☒ Distribute application

☒ Use Binary Configuration

☐ Deploy enterprise beans

Application name

☐ Create MBeans for resources

☒ Enable class reloading

Reload interval in seconds

☐ Deploy Web services

Validate Input off/warn/fail

☐ Process embedded configuration

File Permission

Allow all files to be read but not written to

Allow executables to execute

Allow HTML and image files to be read by everyone

Application Build ID

☐ Allow dispatching includes to remote resources

☐ Allow servicing includes from remote resources

Next

Cancel

- Verify in “*Step 2: Map modules to servers*” is mapping Sun Role Manager application to appropriate virtual host. Click **[Next]**

Install New Application

Install New Application

Specify options for installing enterprise applications and modules.

Step 1 Select installation options
→ **Step 2: Map modules to servers**
Step 3 Summary

Map modules to servers

Specify targets such as application servers or clusters of application servers where you want to install the modules that are contained in your application. Modules can be installed on the same application server or dispersed among several application servers. Also, specify the Web servers as targets that serve as routers for requests to this application. The plug-in configuration file (plugin-cfg.xml) for each Web server is generated, based on the applications that are routed through.

Clusters and Servers:
WebSphere:cell=RHEL4-vmNode01Cell,node=RHEL4-vmNode01,server=server1

Select	Module	URI	Server
<input type="checkbox"/>	Vaau RBACx	rbacx.war,WEB-INF/web.xml	WebSphere:cell=RHEL4-vmNode01Cell,node=RHEL4-vmNode01,server=server1

- Review the summary and click **[Finish]**

Install New Application

Install New Application

Specify options for installing enterprise applications and modules.

Step 1 Select installation options
Step 2 Map modules to servers
→ **Step 3: Summary**

Summary

Summary of installation options

Options	Values
Precompile JavaServer Pages files	No
Directory to install application	
Distribute application	Yes
Use Binary Configuration	Yes
Deploy enterprise beans	No
Application name	rbacx
Create MBeans for resources	No
Enable class reloading	Yes
Reload interval in seconds	
Deploy Web services	No
Validate Input off/warn/fail	warn
Process embedded configuration	No
File Permission	.*\.,dll=755#.*\.,so=755#.*\.,a=755#.*\.,s =755
Application Build ID	Unknown
Allow dispatching includes to remote resources	No
Allow servicing includes from remote resources	No

- After WebSphere has completed installing Sun Role Manager, click **[Save to Master Configuration]** to save the configuration. Click **[Save]**, and then wait for the page to clear.

Installing...

If there are enterprise beans in the application, the EJB deployment process can take several minutes. Please do not save the configuration until the process completes.

Check the SystemOut.log on the Deployment Manager or server where the application is deployed for specific information about the EJB deployment process as it occurs.

ADMA5016I: Installation of rbacx started.

ADMA5067I: Resource validation for application rbacx completed successfully.

ADMA5058I: Application and module versions are validated with versions of deployment targets.

ADMA5005I: The application rbacx is configured in the WebSphere Application Server repository.

ADMA5053I: The library references for the installed optional package are created.

ADMA5005I: The application rbacx is configured in the WebSphere Application Server repository.

ADMA5001I: The application binaries are saved in /opt/IBM/WebSphere/AppServer/profiles/AppSrv01/tmp/92668751/workspace/cells/RHEL4-vmNode01 Cell/applications/rbacx.ear/rbacx.ear

ADMA5005I: The application rbacx is configured in the WebSphere Application Server repository.

SECJ0400I: Successfully updated the application rbacx with the appContextIDForSecurity information.

ADMA5011I: The cleanup of the temp directory for application rbacx is complete.

ADMA5013I: Application rbacx installed successfully.

Application rbacx installed successfully.

To start the application, first save changes to the master configuration.

Changes have been made to your local configuration. You can:

- [Save](#) directly to the master configuration.
- [Review](#) changes before saving or discarding.

To work with installed applications, click the "Manage Applications" button.

[Manage Applications](#)

- Select rbacx from the *Enterprise Applications* window and start services by clicking **[Start]**





Enterprise Applications

Enterprise Applications

Use this page to manage installed applications. A single application can be deployed onto multiple servers.

Preferences

Start Stop Install Uninstall Update Rollout Update Remove File Export Export DDL

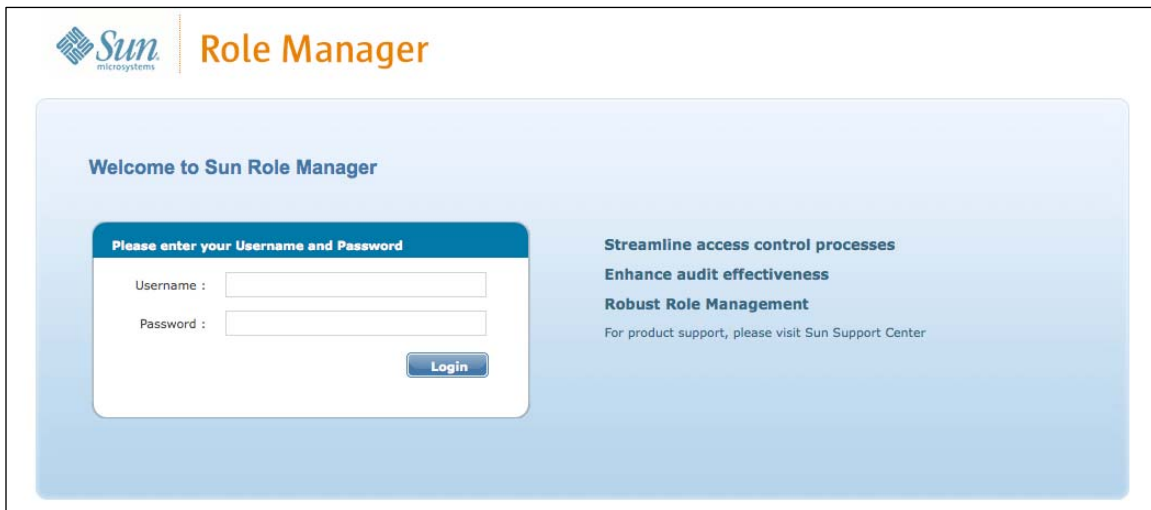
Select	Name	Application Status
<input type="checkbox"/>	DefaultApplication	
<input type="checkbox"/>	ivtApp	
<input type="checkbox"/>	query	
<input type="checkbox"/>	rbacx	

Total 4

9. Sun Role Manager deployment on WebSphere is complete

Verification of Sun Role Manager Installation

1. Browse to Application Server logs and verify that '**rbacx.log**' file is created when Sun Role Manager application is deployed
2. Open this file using a text editor and check logs indicating a successful startup of Sun Role Manager application
3. Using a web browser, open the following URL
http://<server ip>:<port number>/rbacx



The screenshot shows the Sun Role Manager login interface. At the top left is the Sun Microsystems logo, and at the top right is the text 'Role Manager'. Below the logo, it says 'Welcome to Sun Role Manager'. In the center, there is a login box with the heading 'Please enter your Username and Password'. Inside this box, there are two input fields: 'Username :' and 'Password :', each followed by a text input field. Below these fields is a 'Login' button. To the right of the login box, there is a list of features: 'Streamline access control processes', 'Enhance audit effectiveness', and 'Robust Role Management'. At the bottom of this list, it says 'For product support, please visit Sun Support Center'.

4. Enter the required credentials to log into the client. Click on **[OK]**

User Name : **"rbacxadmin"**
Password : **"password"**

Installing Sun Role Manager on WebLogic 10

Use the following information and procedure to install Sun Role Manager for use with the WebLogic 10. This Chapter contains the following topics

- Before You Begin
- Installation Steps

Before You Begin

For installation, you will need to know

- The Login and Password for system administrator account on Database
- WebLogic Administration Login and Password

Installation Steps

Follow these installation and configuration steps

- Installing Sun Role Manager
- Launching Sun Role Manager
- Verification of Sun Role Manager Installation

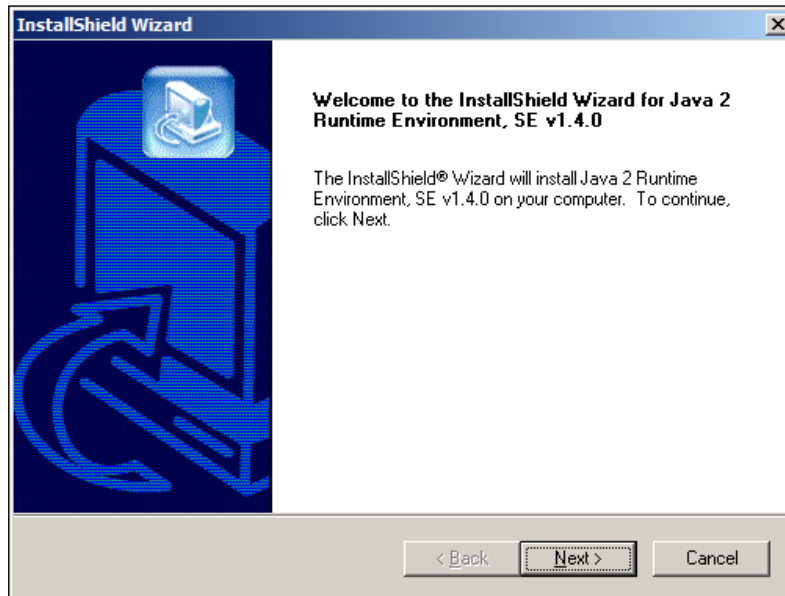
Installing Sun Role Manager

For the installation, it's assumed that BEA WebLogic application server has been installed on the target system with a user-defined domain defined. The user-defined domain assumed in this guide is called *app_domain*.

Installing on Windows

For the installation, we have assumed that there should be a database server installed either on a network machine or local machine.

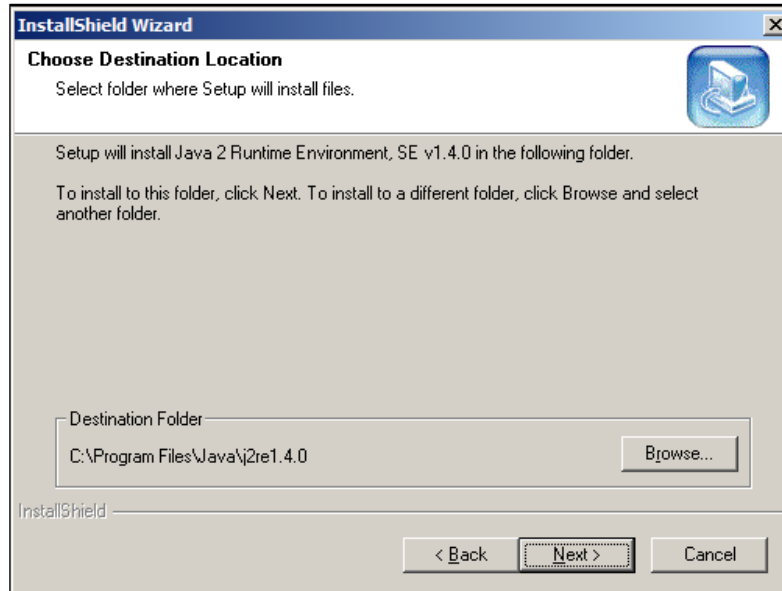
1. Run **install.bat** to launch the installer
2. If JRE is not installed on the system, the installer will launch the installation of JRE
 - a. Click **[Next]** on the Welcome Screen as the installer launches



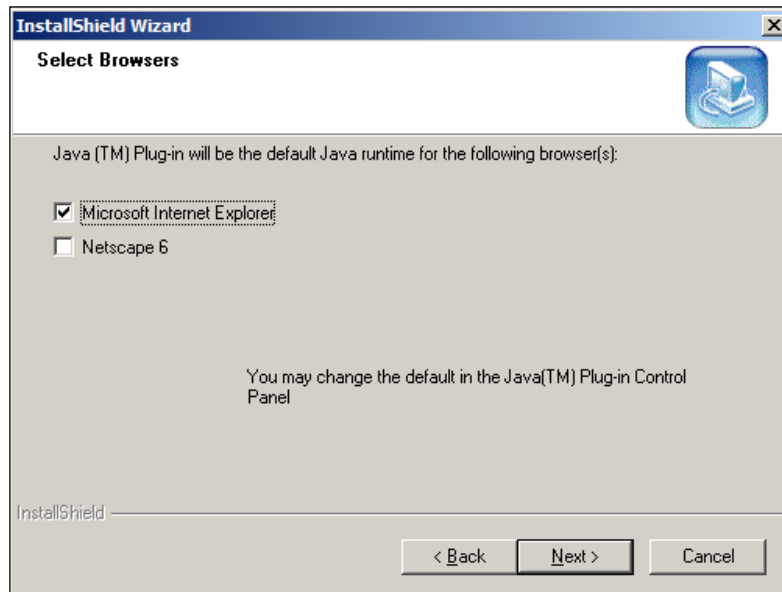
- b. Click **[Yes]** to accept license agreement



- c. Select the destination folder where JRE is to be installed. Click **[Next]**

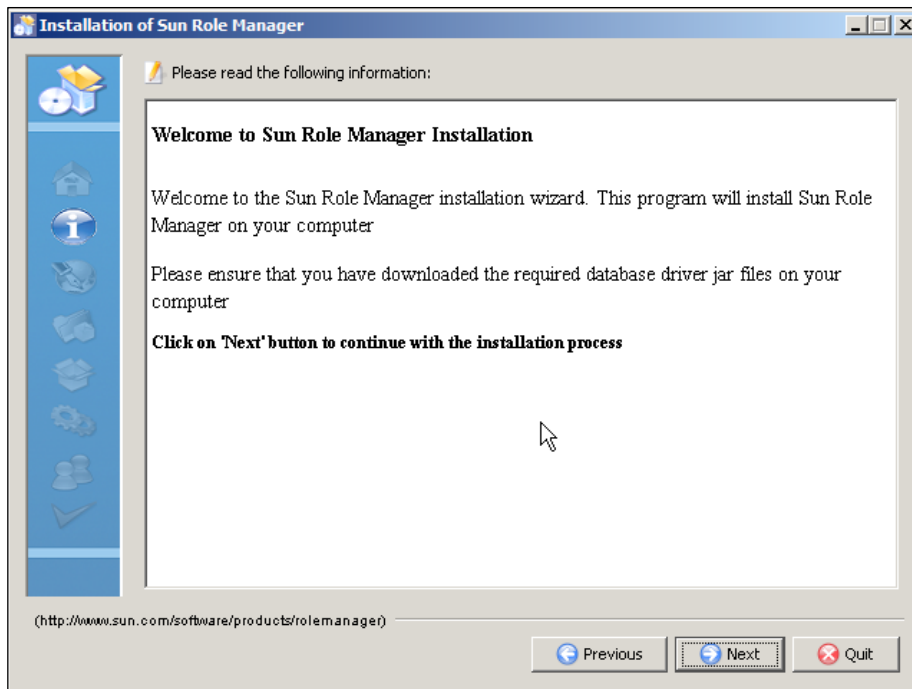
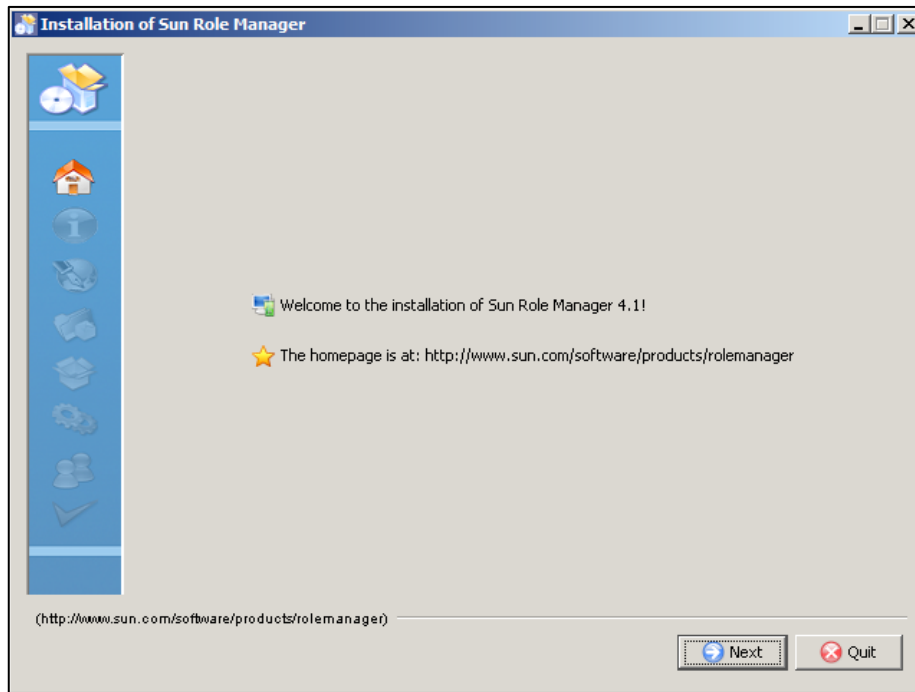


- d. The next screen will be for browser registration. Choose appropriate browser and click **[Next]** to start the Installation

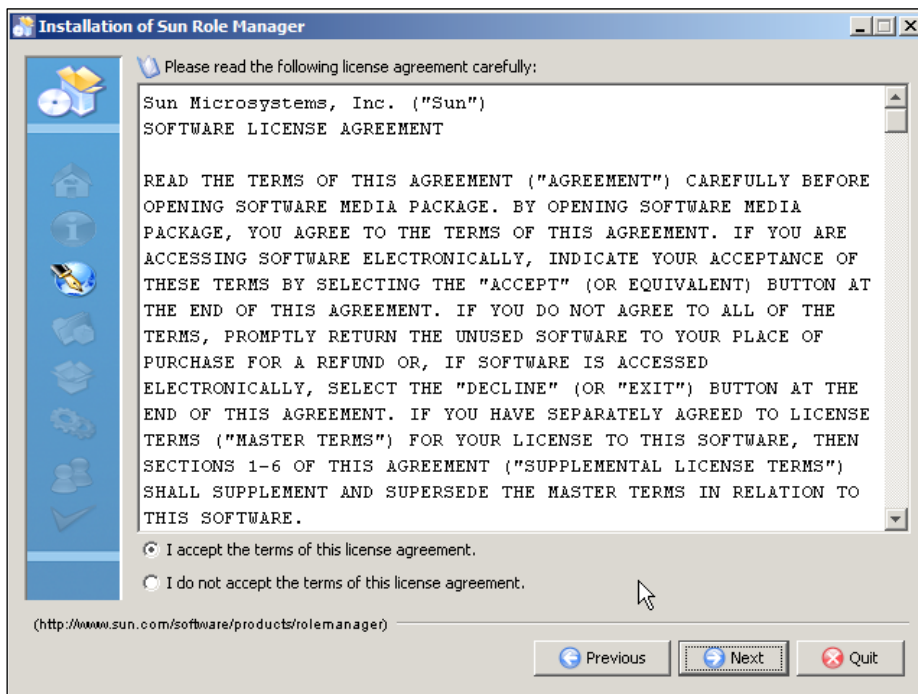


- e. The installer will quit after JRE has been successfully installed

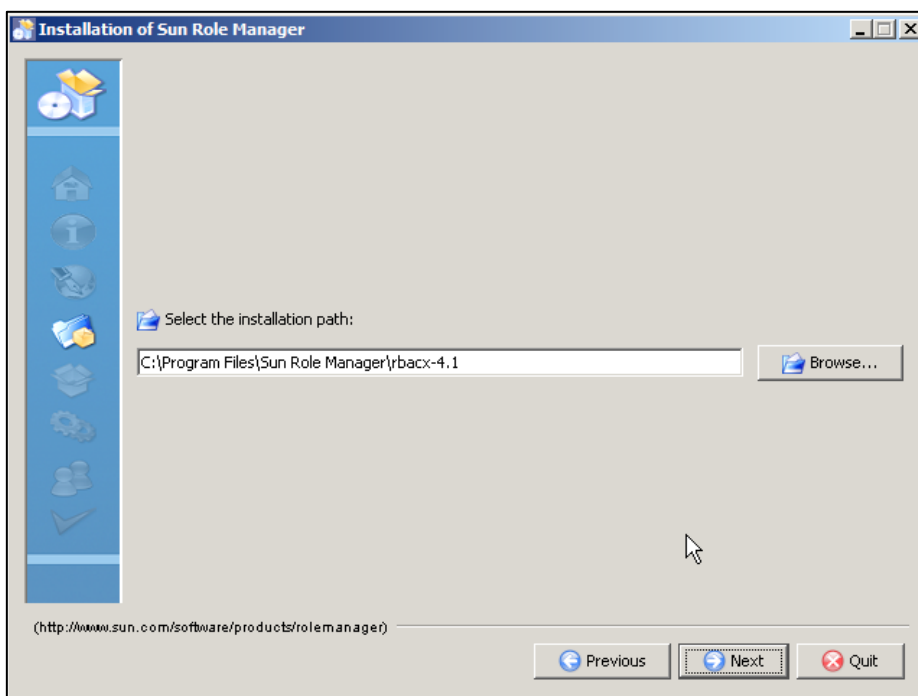
3. Sun Role Manager Installer will launch and displays the Welcome Screen. Click **[Next]**



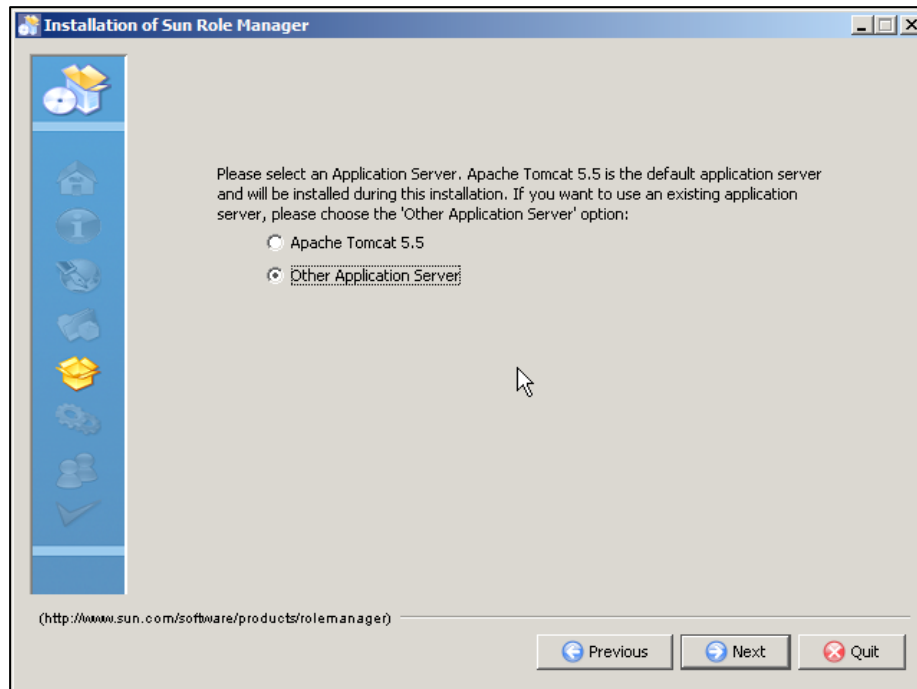
4. Read the License Agreement and to continue with installation select **"I accept the terms of this license Agreement"** and click **[Next]**



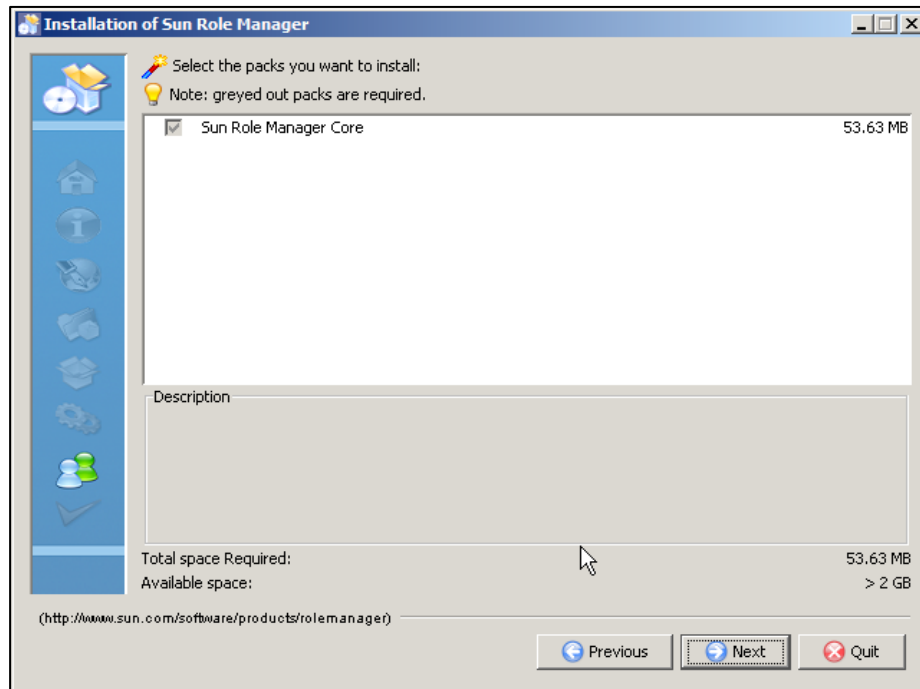
5. Replace the displayed installation path with the location where you want Sun Role Manager to be installed and click **[Next]**. The installation path will be referred as **\$RBACX_HOME**



6. Select **"Other Application Server"** to install Sun Role Manager on WebSphere Application Server. Click **[Next]**.



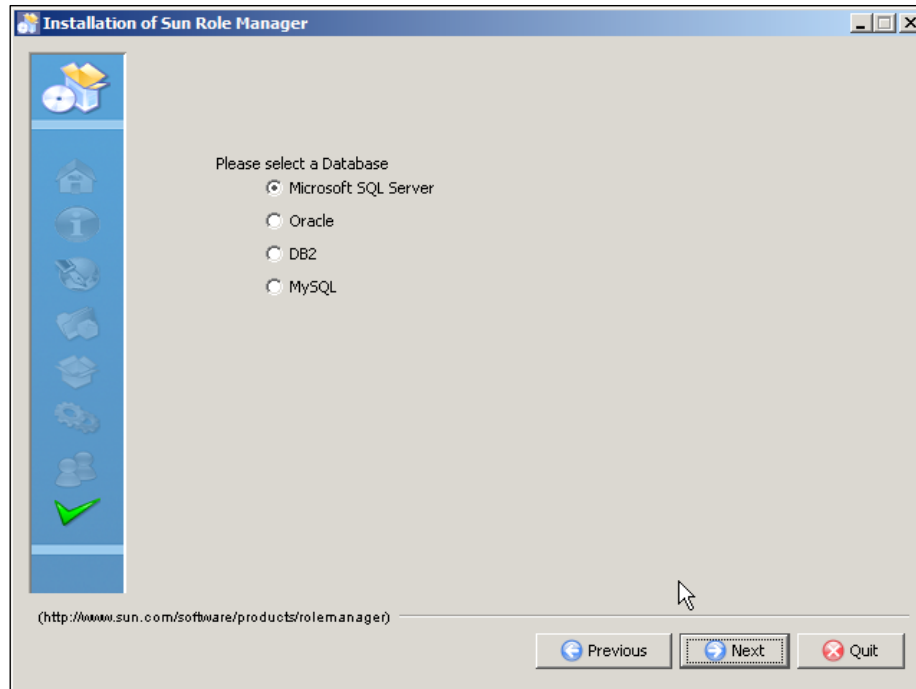
7. Next you'll see the component(s) that the Installer will install on the machine. Click **[Next]**



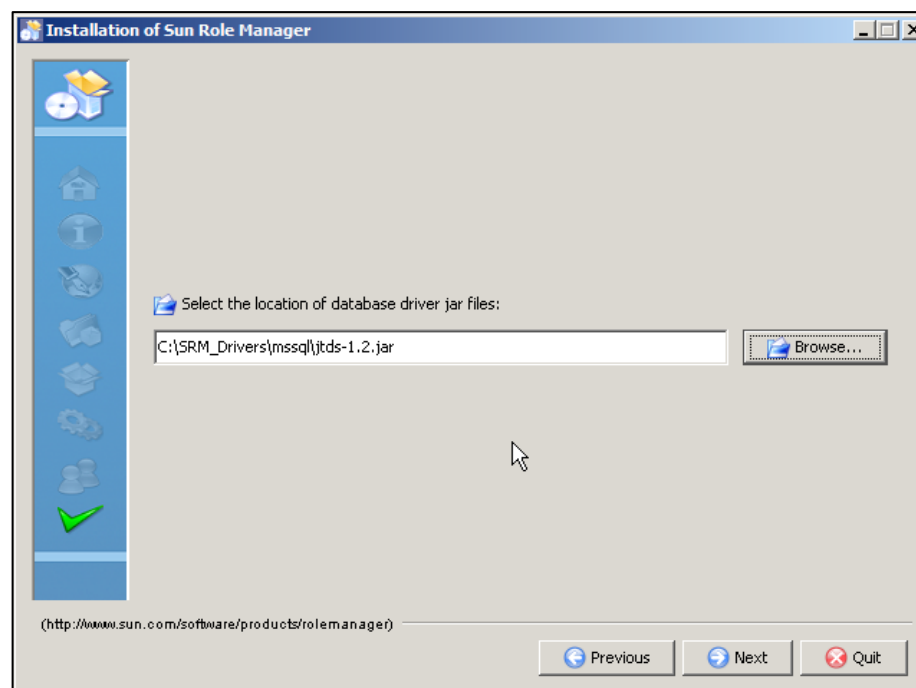
8. Select an Index Database
- Microsoft SQL Server
 - Oracle
 - IBM DB2
 - MySQL

Microsoft SQL Server

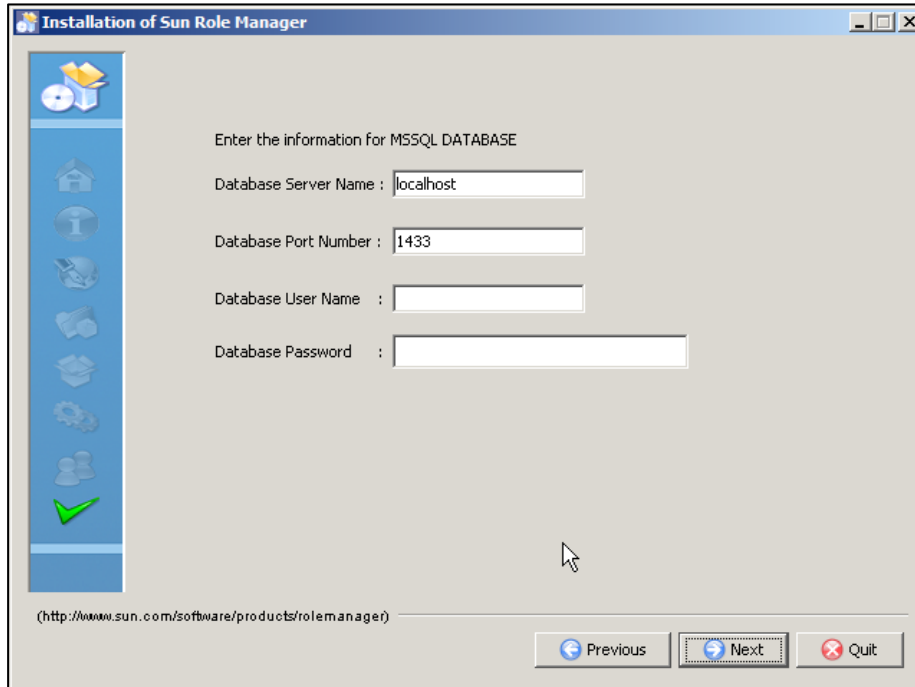
Select 'Microsoft SQL Server' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password to connect to the database. Click **[Next]**



Installation of Sun Role Manager

Enter the information for MSSQL DATABASE

Database Server Name : localhost

Database Port Number : 1433

Database User Name :

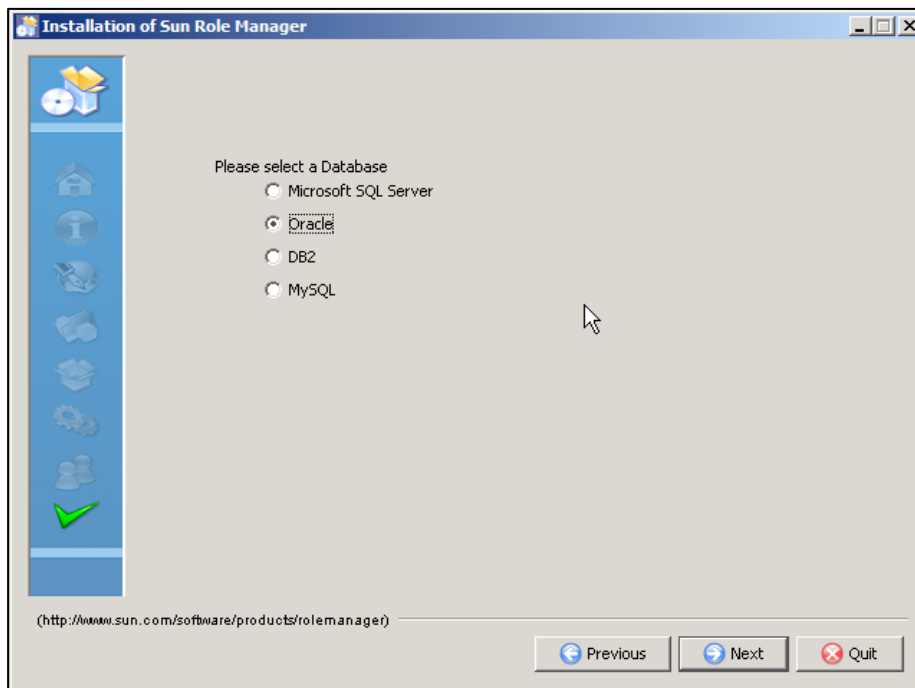
Database Password :

(<http://www.sun.com/software/products/rolemanager/>)

Previous Next Quit

Oracle

Select 'Oracle' and click **[Next]**



Installation of Sun Role Manager

Please select a Database

☐ Microsoft SQL Server

☒ Oracle

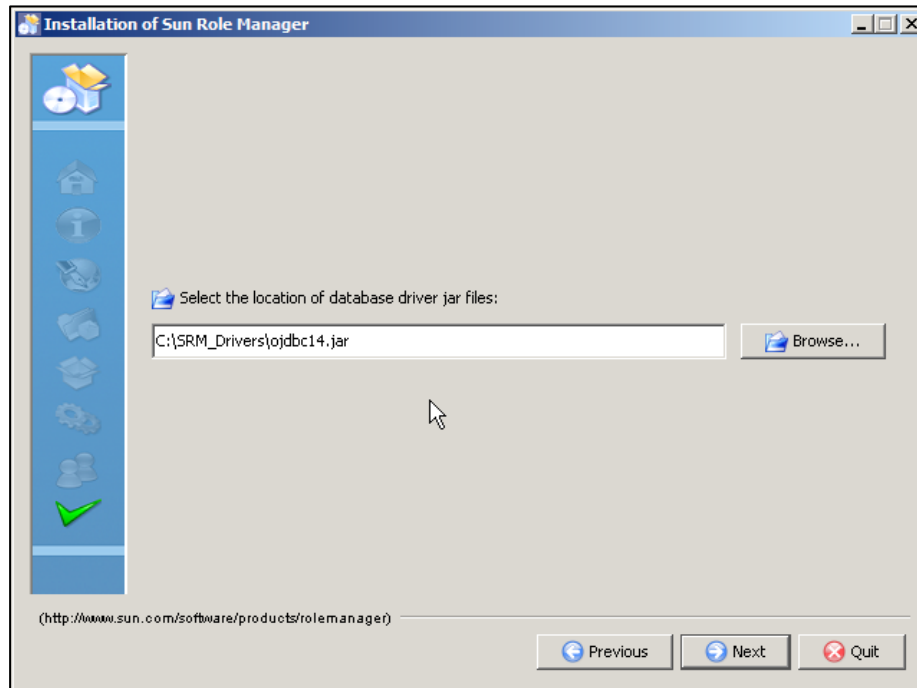
☐ DB2

☐ MySQL

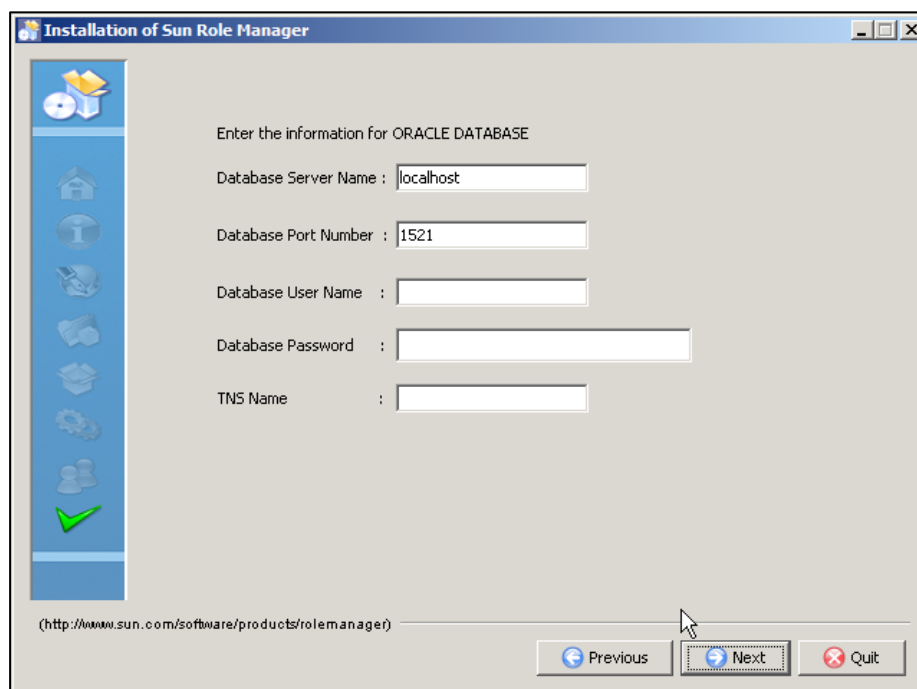
(<http://www.sun.com/software/products/rolemanager/>)

Previous Next Quit

Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.

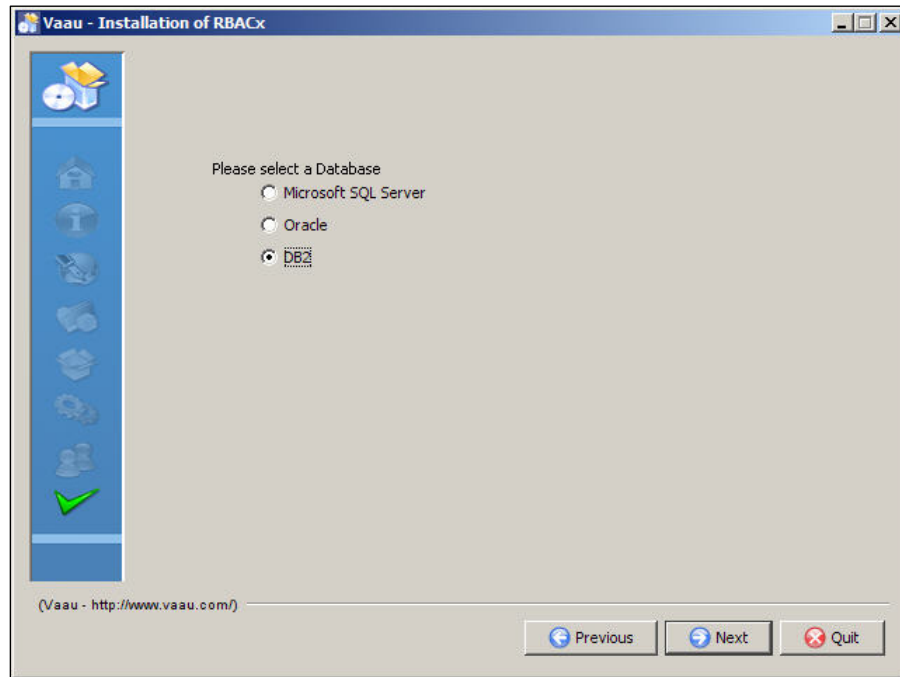


Enter Database Username/Password and TNS Name to connect to the database. Click **[Next]**

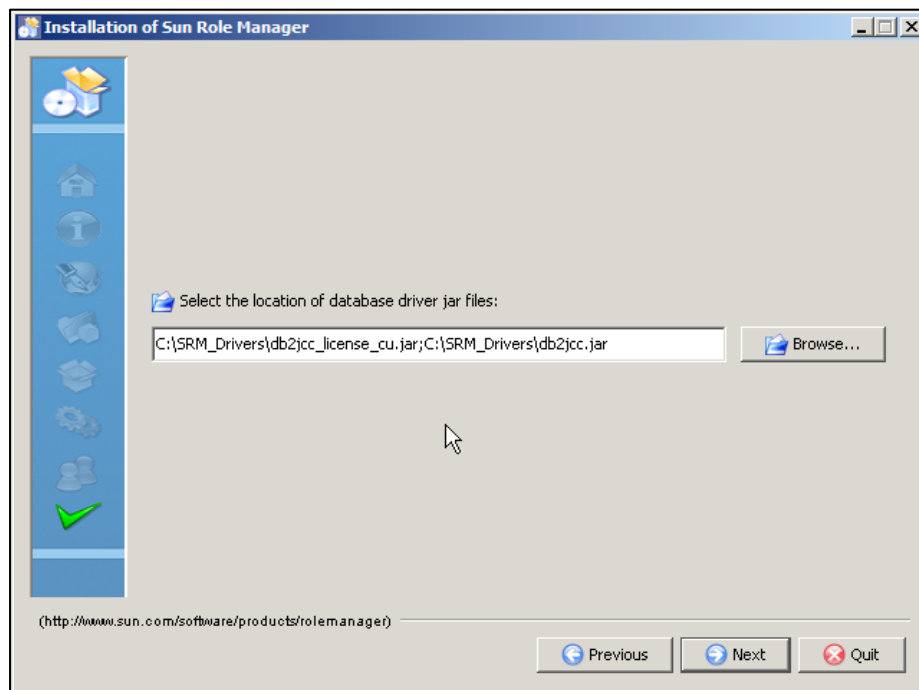


IBM DB2

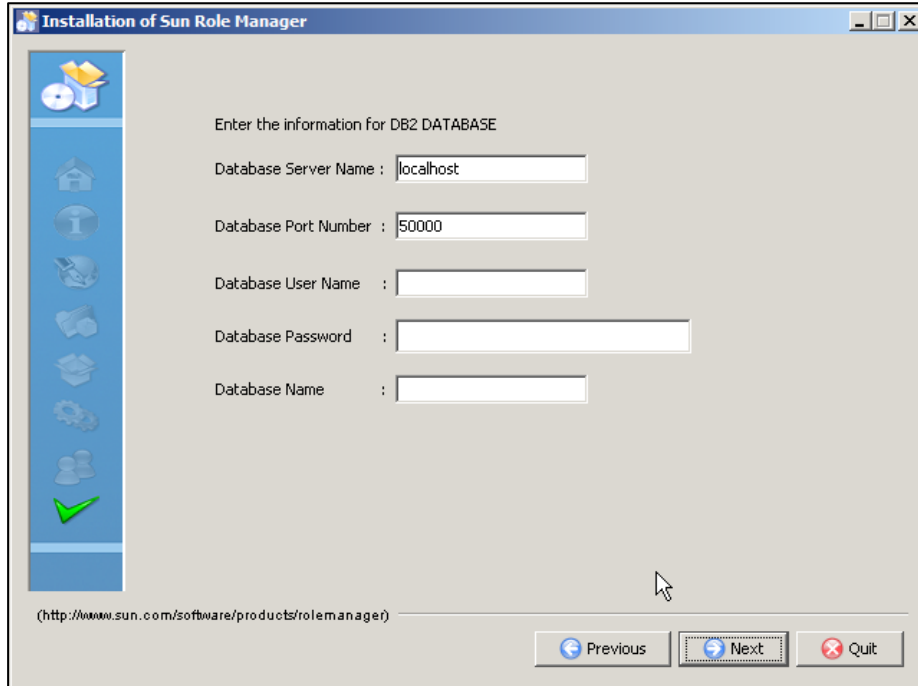
Select 'DB2' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



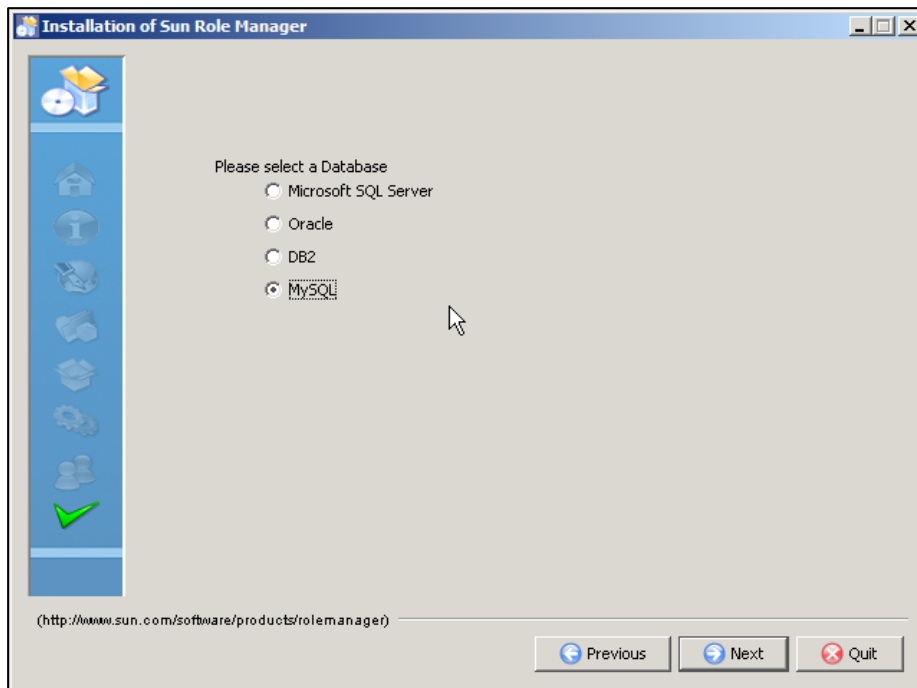
Enter Database Username/Password and Database Name to connect to the database.
Click **[Next]**



The screenshot shows the 'Installation of Sun Role Manager' window. On the left is a vertical navigation bar with icons for installation, home, database, user, and roles. The main area is titled 'Enter the information for DB2 DATABASE'. It contains five input fields: 'Database Server Name' (with 'localhost' entered), 'Database Port Number' (with '50000' entered), 'Database User Name', 'Database Password', and 'Database Name'. At the bottom right are three buttons: 'Previous', 'Next' (highlighted with a dashed border), and 'Quit'. A URL '(http://www.sun.com/software/products/rolemanager)' is at the bottom left.

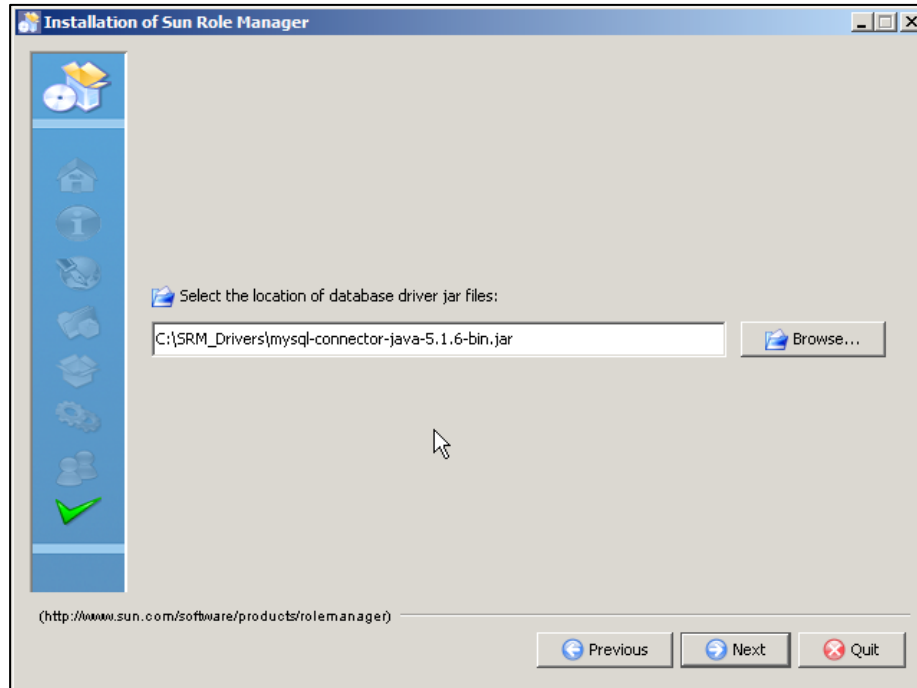
MySQL

Select 'MySQL' and click **[Next]**

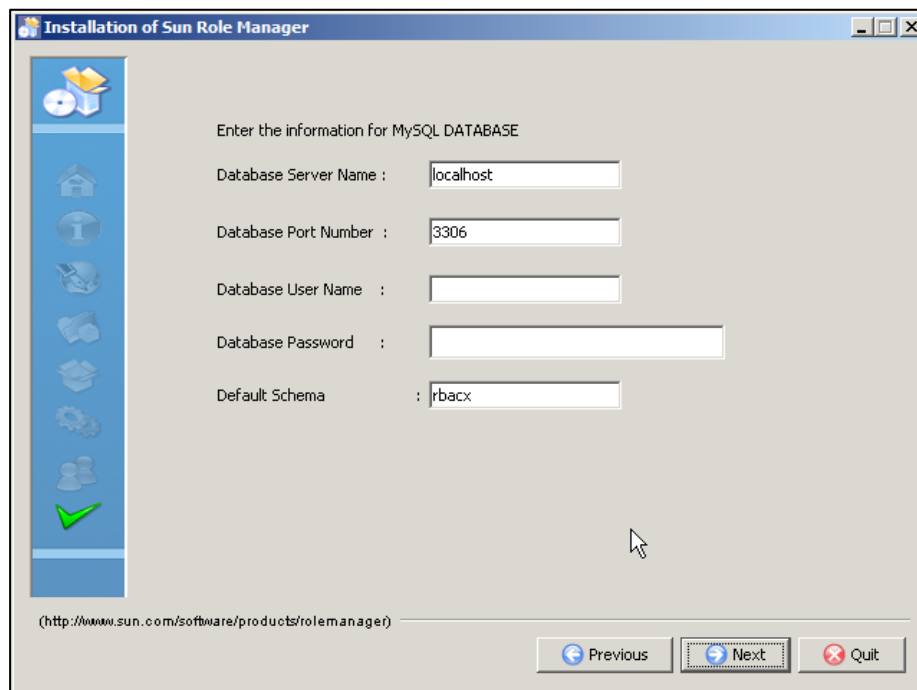


The screenshot shows the 'Installation of Sun Role Manager' window. The main area is titled 'Please select a Database'. It contains four radio button options: 'Microsoft SQL Server', 'Oracle', 'DB2', and 'MySQL'. The 'MySQL' option is selected, indicated by a filled radio button and a dashed border around the text. At the bottom right are three buttons: 'Previous', 'Next' (highlighted with a dashed border), and 'Quit'. A URL '(http://www.sun.com/software/products/rolemanager)' is at the bottom left.

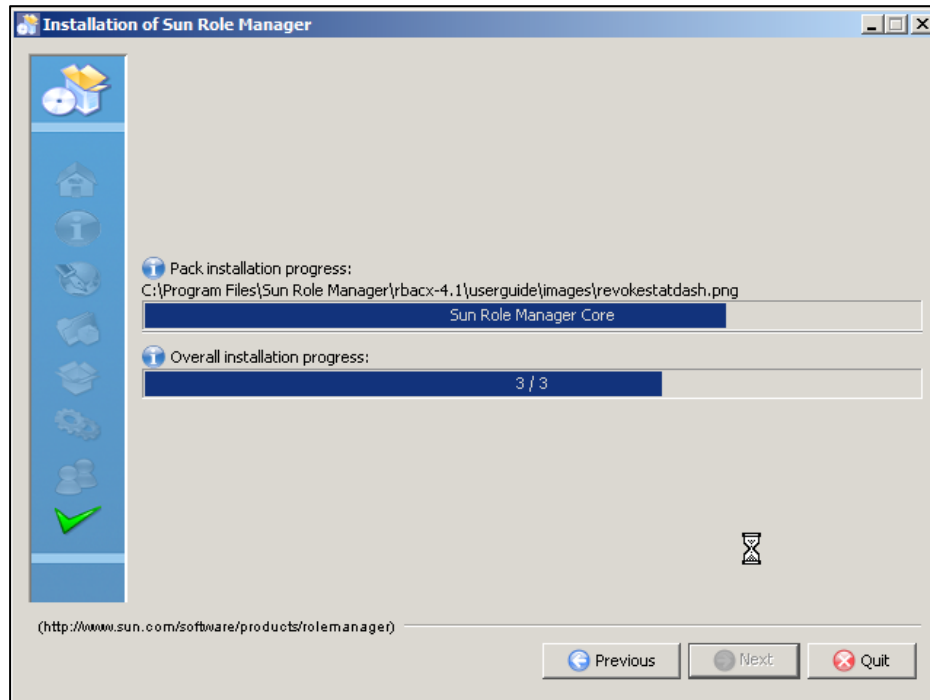
Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password and Database Name to connect to the database. Click **[Next]**

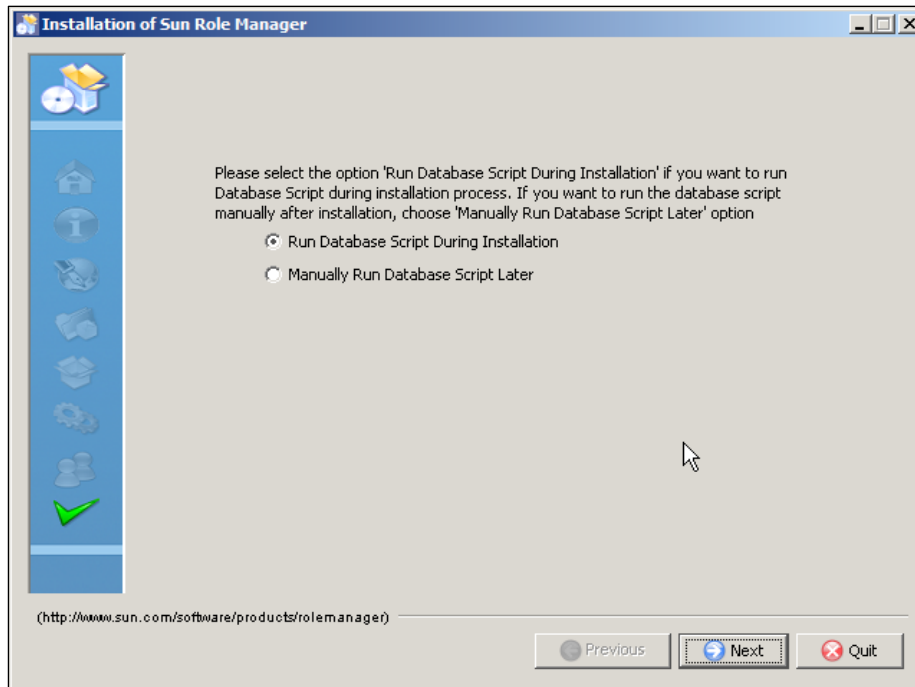


9. Now the installation of JRE 1.5, Tomcat 5.5 and Sun Role Manager core begins. Once you see “Finished” in package installation progress bar. Click **[Next]**



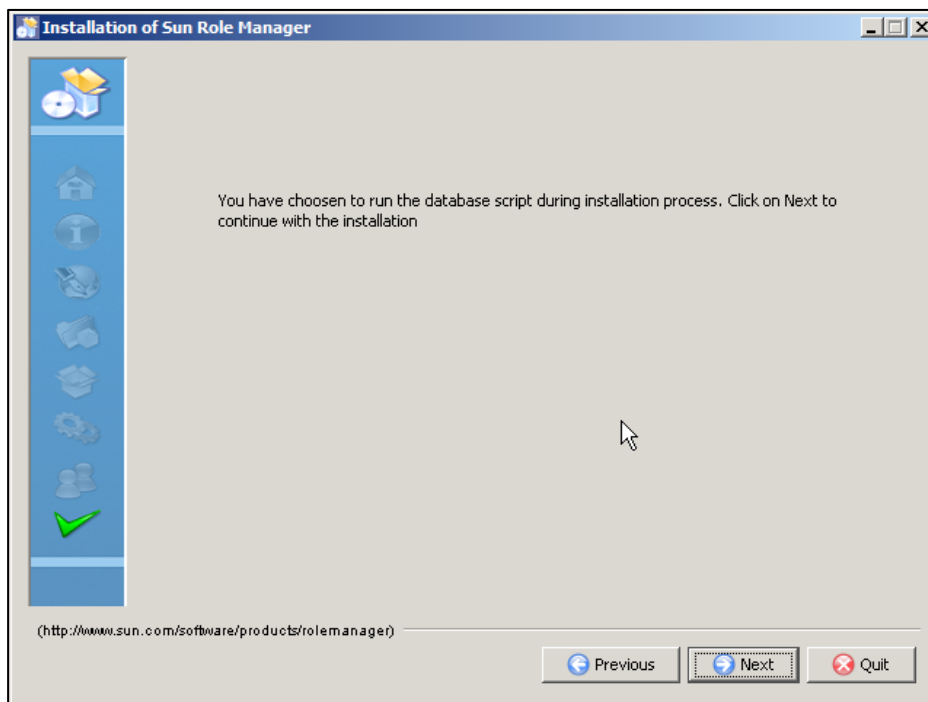
10. Select if the database script is to be executed by the installer or manually after the installer quits
 - a. Run Database Script During Installation
 - b. Manually Run Database Script Later

Run Database Script During Installation

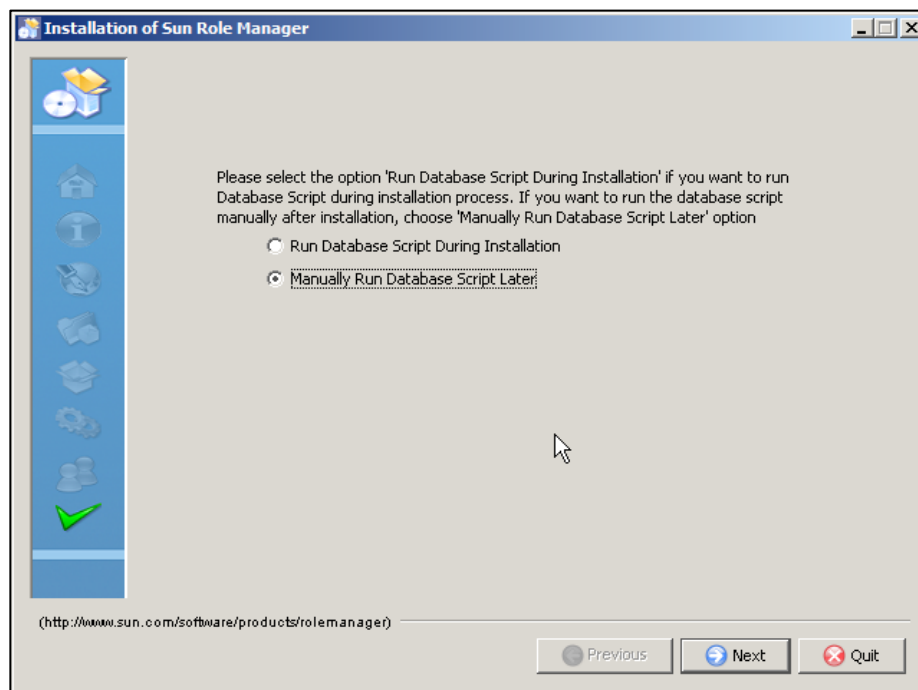


Click **[Next]**

Confirm that database scripts are to be executed by the installer, and click **[Next]**

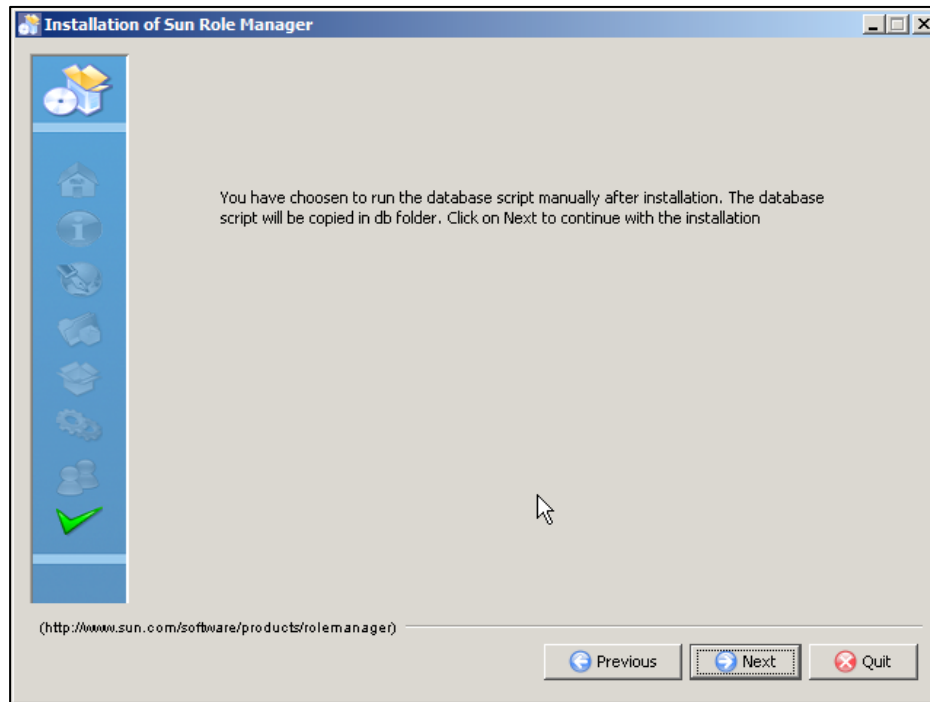


Manually Run Database Script Later



Click **[Next]**

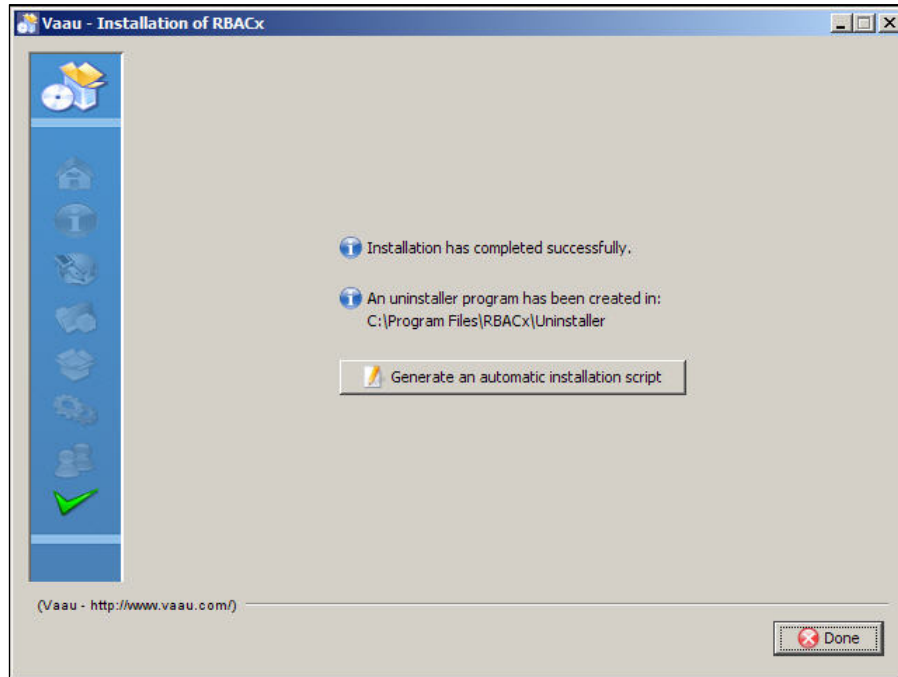
Confirm that database scripts are to be manually executed later, and click **[Next]**



Database scripts required to create Sun Role Manager schema are copied to **\$RBACX_HOME/db** folder. The Sun Role Manager schema creation scripts can be manually executed by a user with Database Administration privileges.

NOTE: Sun Role Manager schema has to be created prior to launching Sun Role Manager application

11. Click **[Generate an automatic installation script]** (if you want to generate a script) and save it as a file with a '.xml' extension on your machine and click **[Done]**



12. Navigate to **\$RBACX_HOME\tomcat55\webapps** via the command-line
13. Enter the following commands to create a *staging* directory and extract the war file into it

NOTE: It is assumed that a version of Java JDK exists on the system. Java JDK can be downloaded from <http://java.sun.com/javase/downloads/index.jsp>. Installation instructions for Java 6 can be found at <http://java.sun.com/javase/6/webnotes/install/index.html>

```
C:\> mkdir rbacx_staging
```

```
C:\> cd rbacx_staging
```

```
C:\> jar -xvf ../rbacx.war
```

14. Navigate to **lib** folder located inside the *rbacx_staging/WEB-INF* folder. For example - **\$RBACX_HOME\tomcat55\webapps\rbacx_staging\WEB-INF\lib**
15. Copy the JDBC connectivity jar file to **lib** folder. For example, to establish connectivity with Oracle Database Server, copy *ojdbc14.jar* to the **lib** folder

16. Download *weka.jar* file from
http://dlc.sun.com/rolemanager/Data_Mining/weka/for_rbacx-4.1.x
This file is required to carry out any role-mining related functionality of Sun Role Manager
17. Copy *weka.jar* to **lib** folder
18. The following steps are to be executed via the command-line. The commands repack an updated war file and delete the *staging* folder. It is assumed that the current directory is *\$RBACX_HOME/tomcat55/webapps/rbacx_staging*
S
C:\> **jar -cvfM ../rbacx.war .**

C:\> **cd..**

C:\> **rmdir rbacx_staging /s /q**

rbacx.war located at *\$RBACX_HOME/tomcat55/webapps/* is now updated and ready for deployment
19. Sun Role Manager installation is complete

Installing on Linux

For Linux environment, it is assumed that a remote database server is being utilized or if database is available locally, for example Oracle 10g, necessary environment variables such as \$ORACLE_HOME have been mapped to Oracle Installation Directory.

NOTE: 'rbacxservice' user should not be associated to any other application either as an OS user or Database user prior to installation

1. The installer is distributed as a Tarball with **.tar.gz** extension. Extract the installer using the command

```
$ tar -xvzf Installer.tar.gz
```

A directory named 'Installer' is created. Navigate to that directory

```
$ cd Installer
```

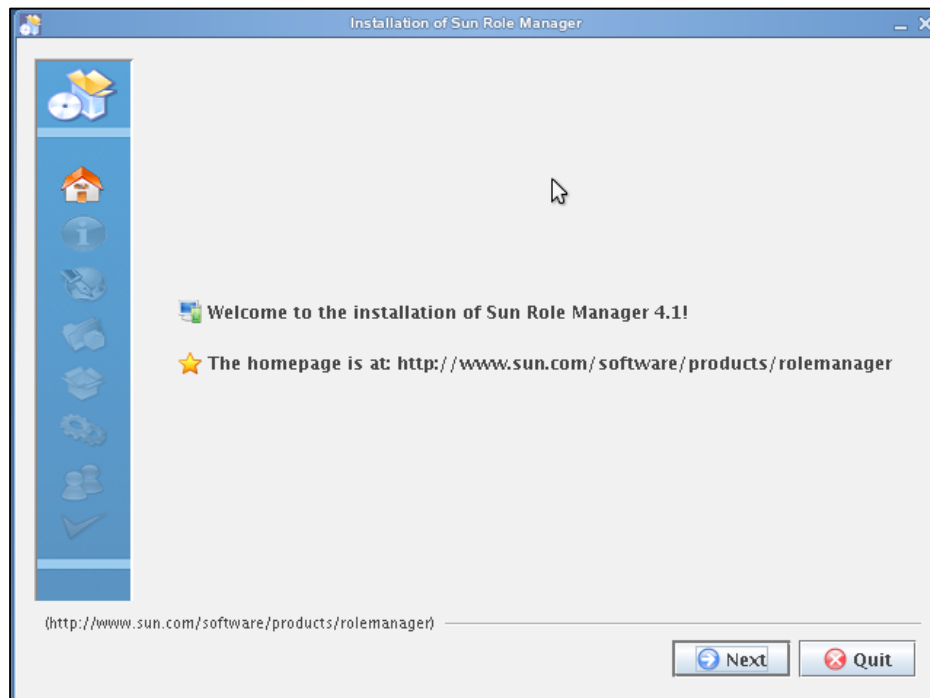
2. In order to launch the installer, run the installer script, 'install.sh', using the following command

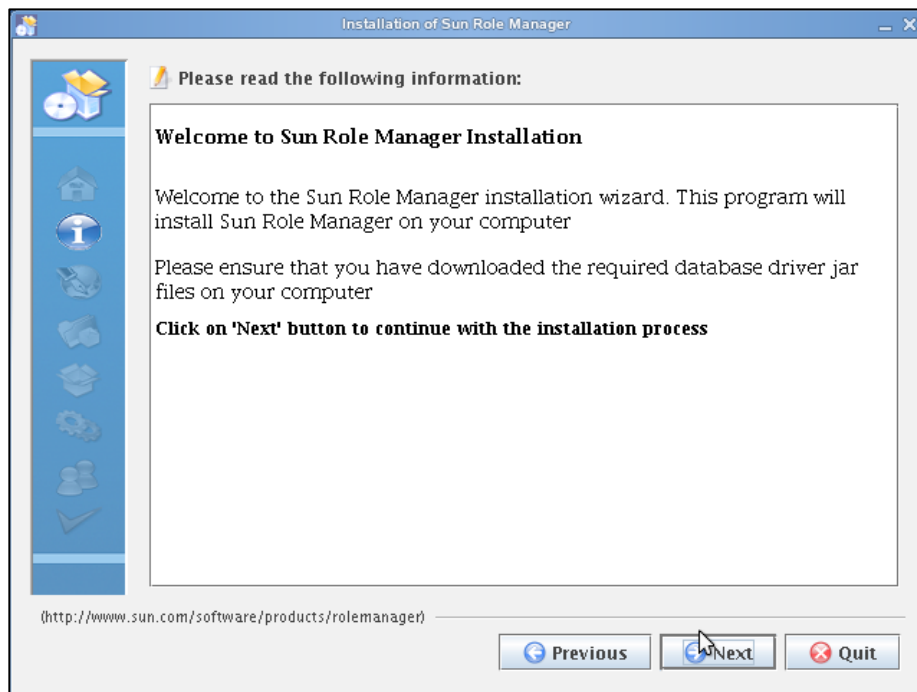
```
$ ./install.sh
```

NOTE: If 'install.sh' does not have execute permission, the following command grants 'install.sh' execute rights

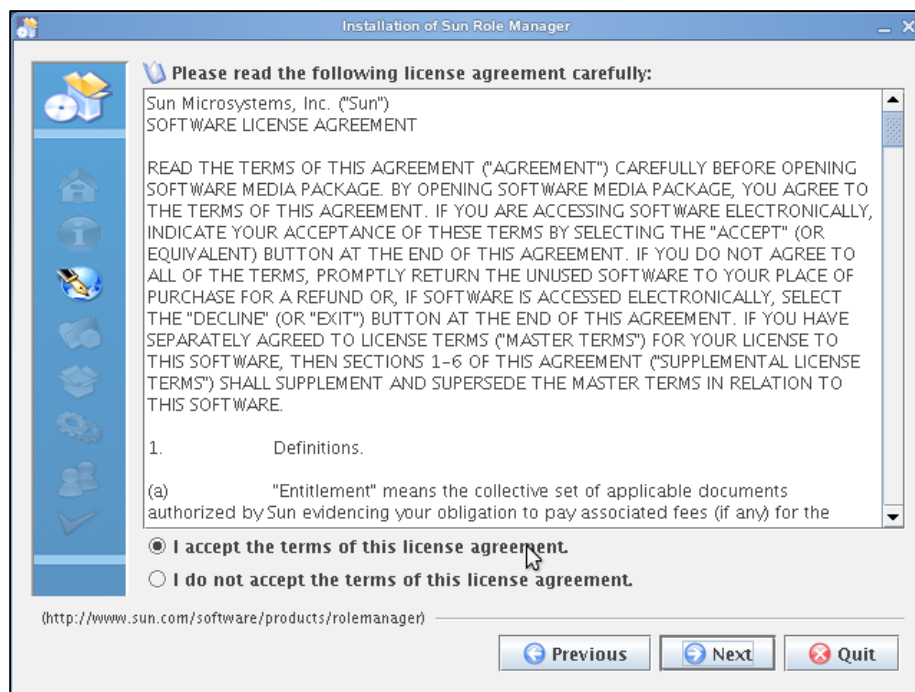
```
$ chmod g+x install.sh
```

3. The Installer first checks if JRE exists on the system. If not found, the installer first installs JRE. If JRE already exists the installer will launch the Sun Role Manager Installation Welcome Screen. Click **[Next]**

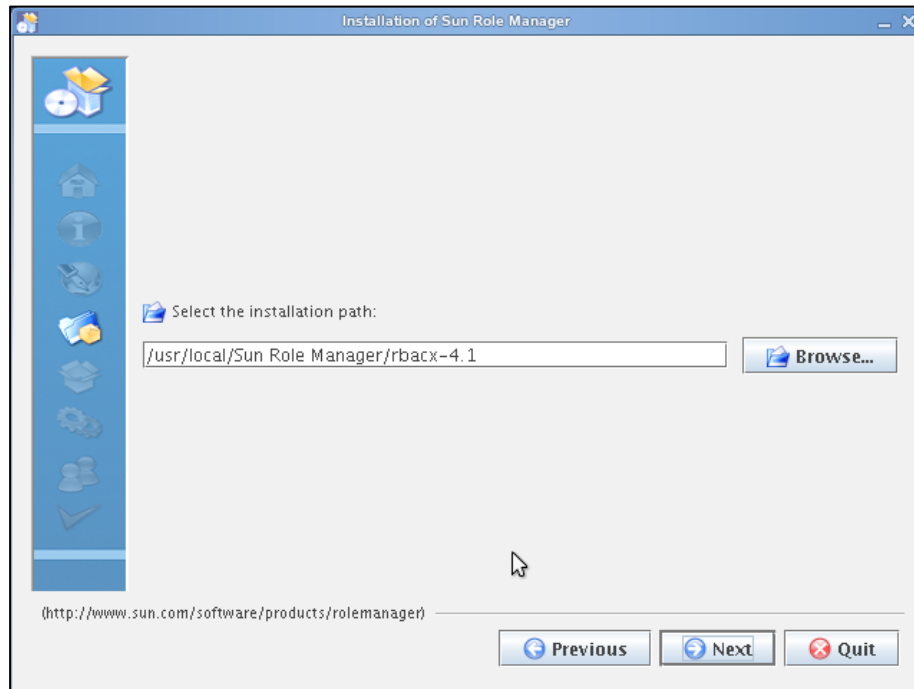




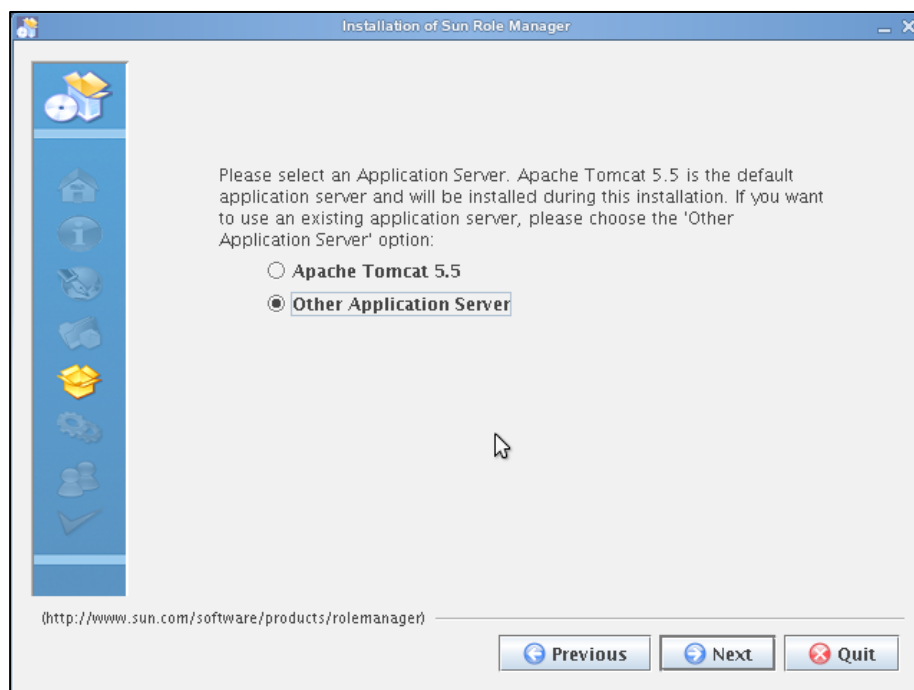
4. Read the License Agreement and to continue with installation select **"I accept the terms of this license Agreement"** and click [Next]



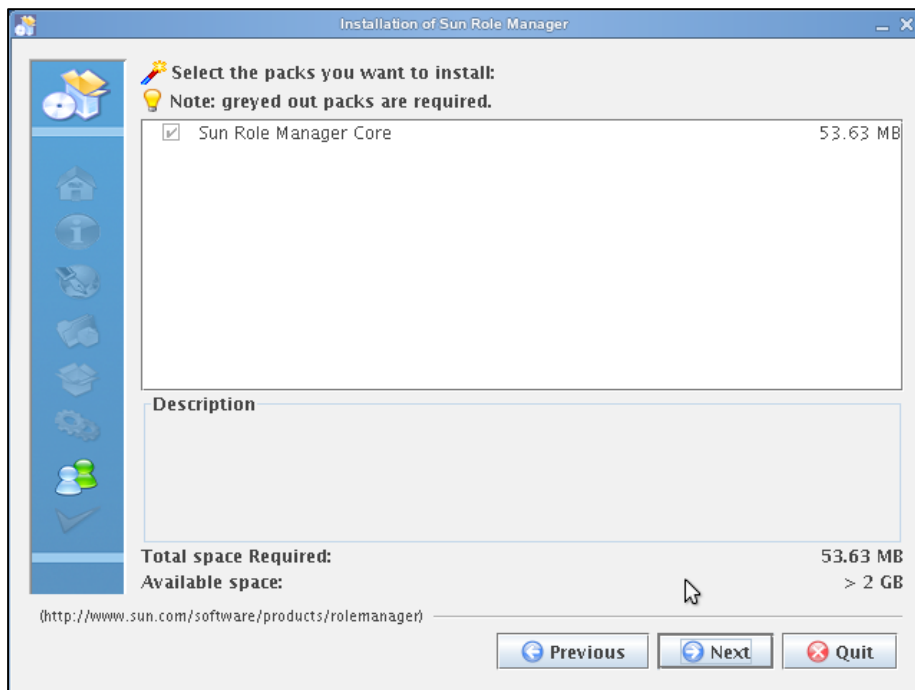
5. Select path where Sun Role Manager to be installed and click **[Next]**



6. Select **"Other Application Server"** to install on WebSphere Application Server. Click **[Next]**

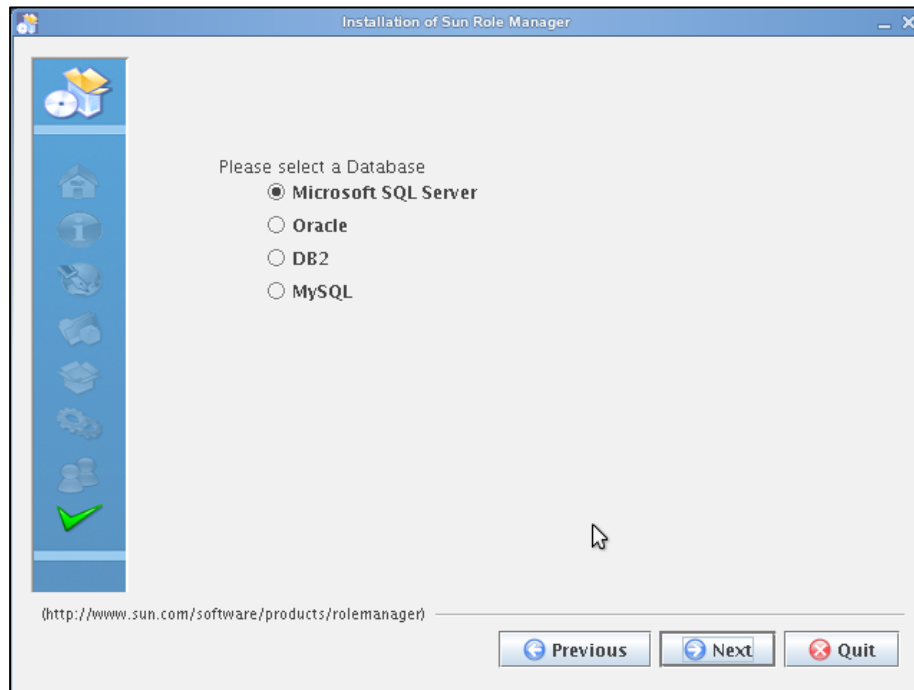


7. Next you'll see the components that the Installer will install on your machine. Click **[Next]**



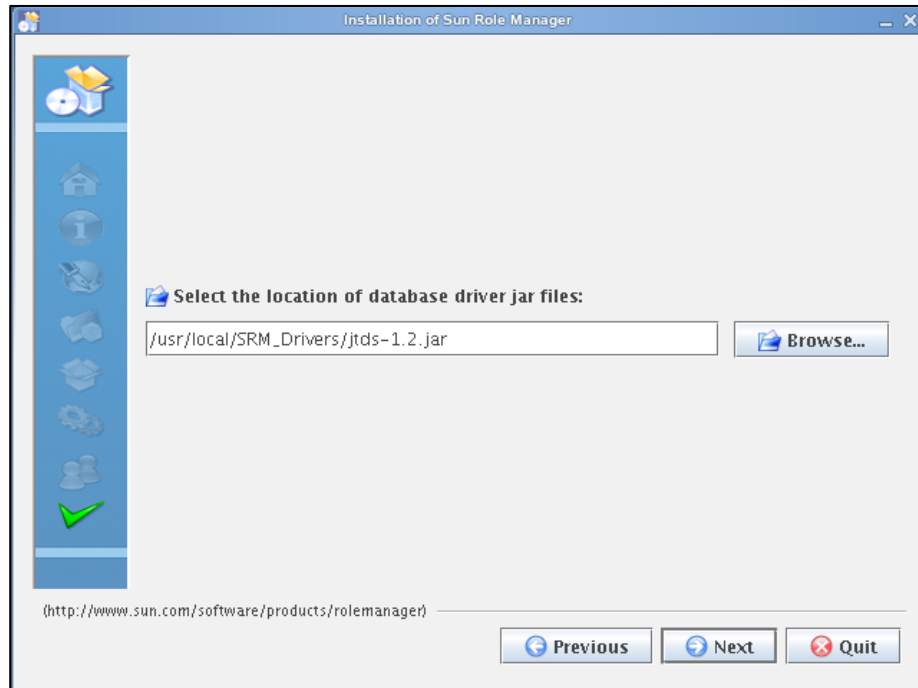
8. Select an Index Database
 - a. Microsoft SQL Server
 - b. Oracle
 - c. IBM DB2
 - d. MySQL

Microsoft SQL Server

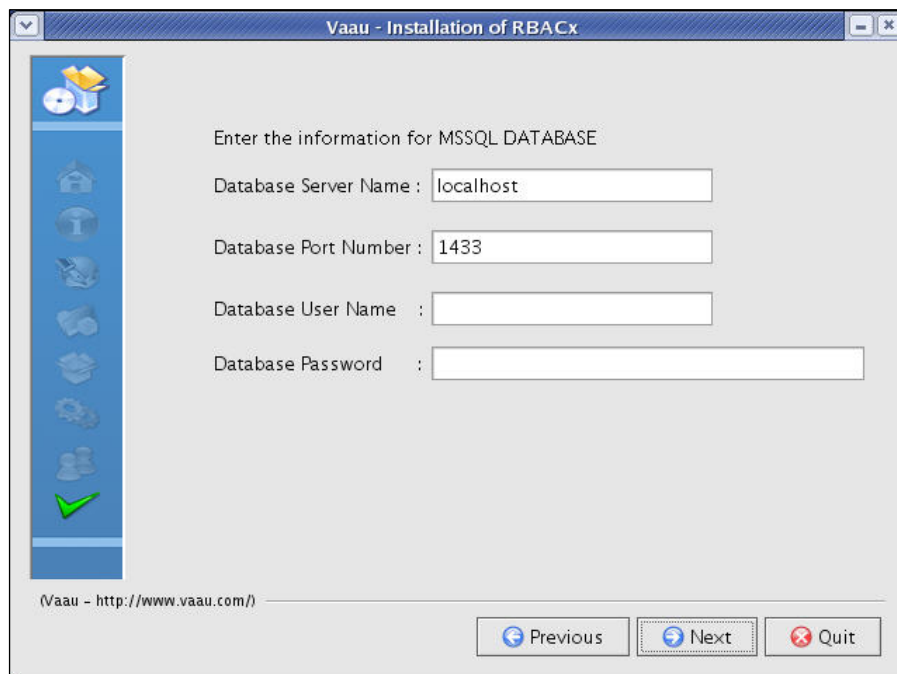


Select 'Microsoft SQL Server' and click **[Next]**

Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.

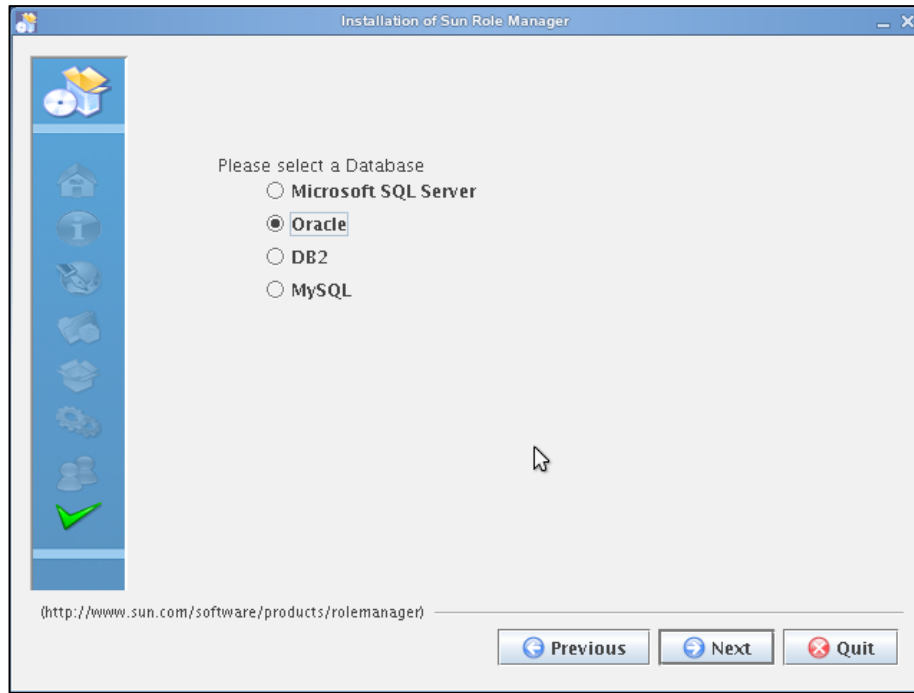


Enter Database Username/Password to connect to the database. Click **[Next]**

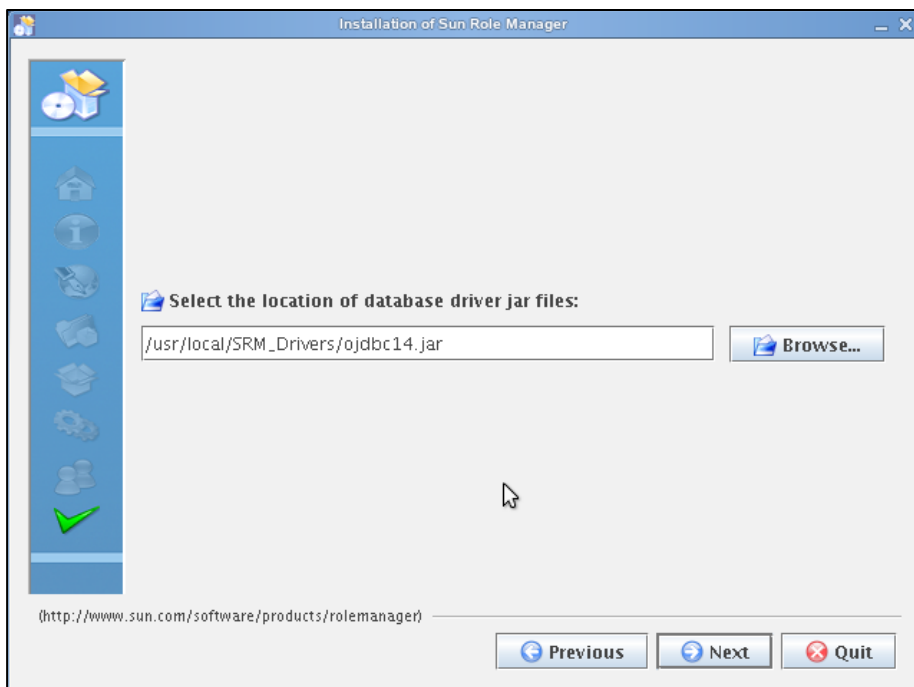


Oracle

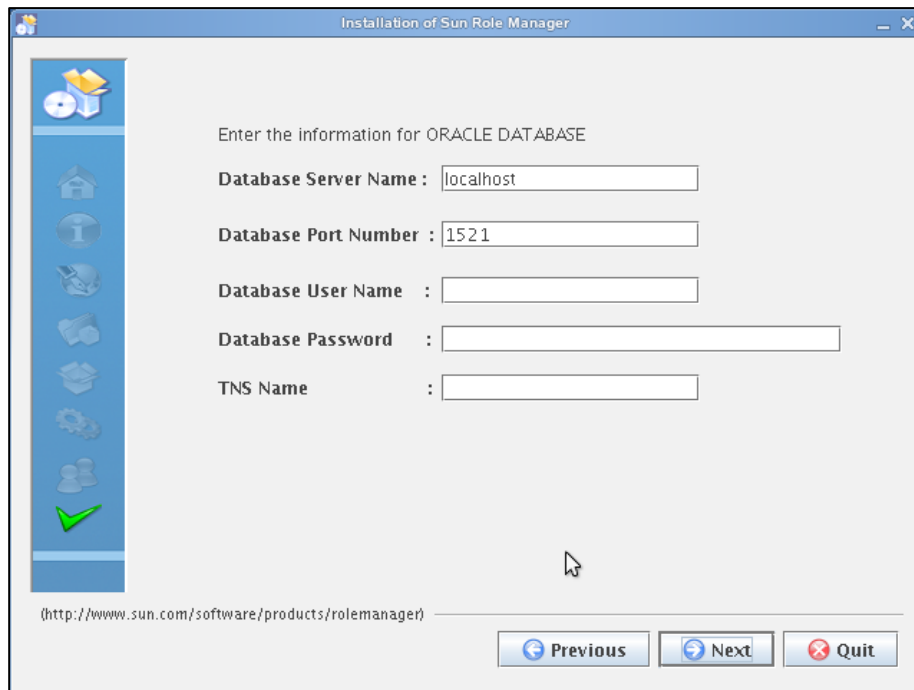
Select 'Oracle' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password and TNS Name to connect to the database. Click **[Next]**



Installation of Sun Role Manager

Enter the information for ORACLE DATABASE

Database Server Name : localhost

Database Port Number : 1521

Database User Name :

Database Password :

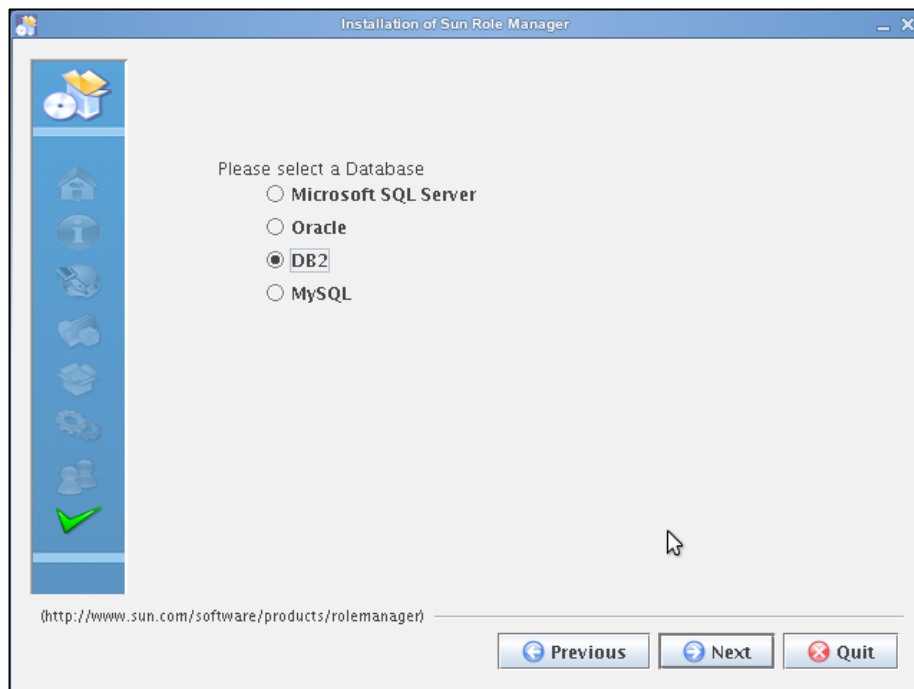
TNS Name :

(<http://www.sun.com/software/products/rolemanager/>)

Previous Next Quit

IBM DB2

Select 'DB2' and click **[Next]**



Installation of Sun Role Manager

Please select a Database

☐ Microsoft SQL Server

☐ Oracle

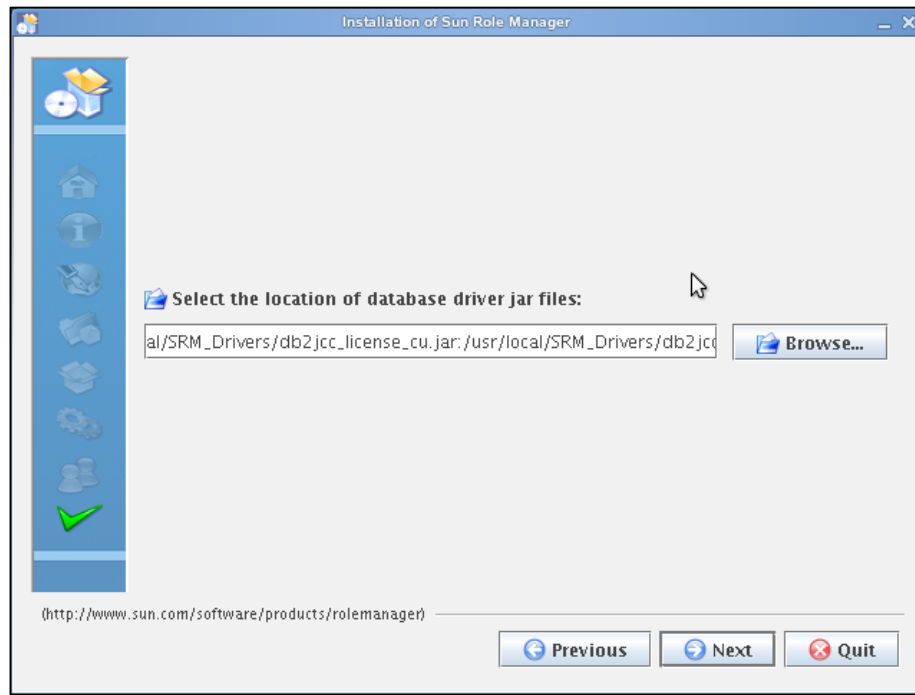
☒ DB2

☐ MySQL

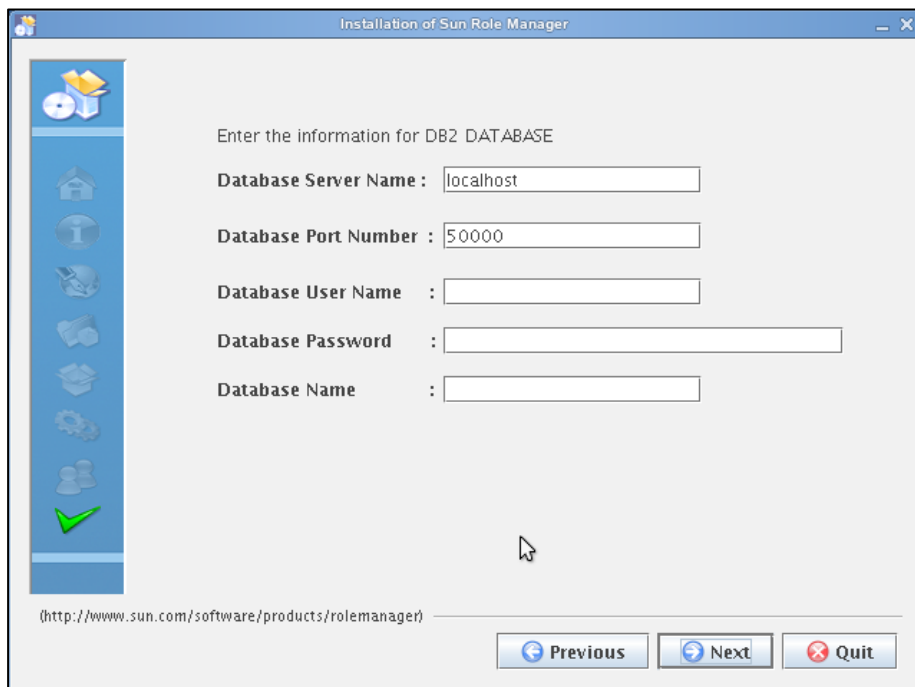
(<http://www.sun.com/software/products/rolemanager/>)

Previous Next Quit

Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.

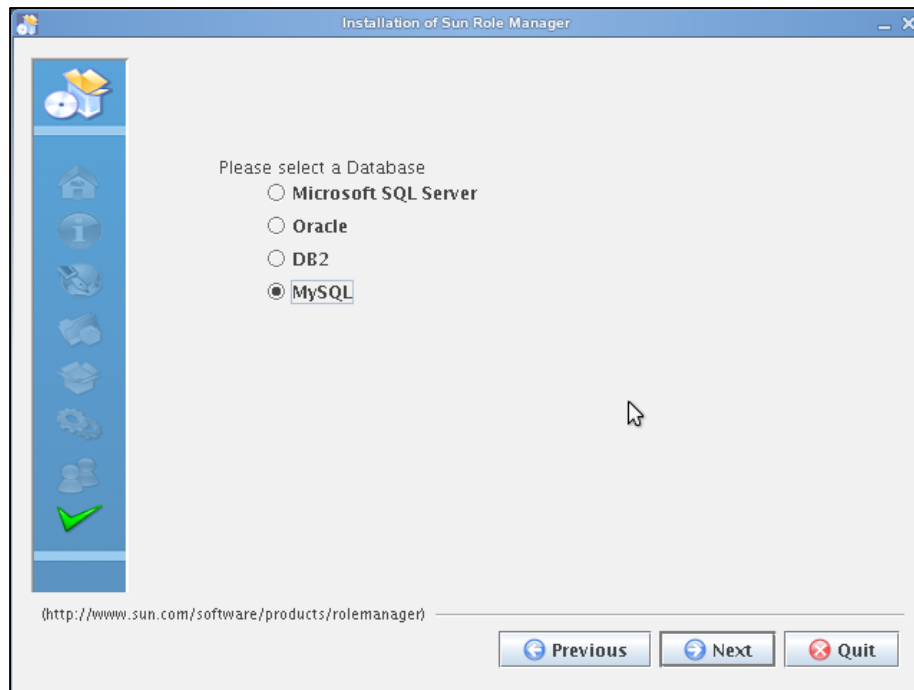


Enter Database Username/Password and Database Name to connect to the database. Click **[Next]**

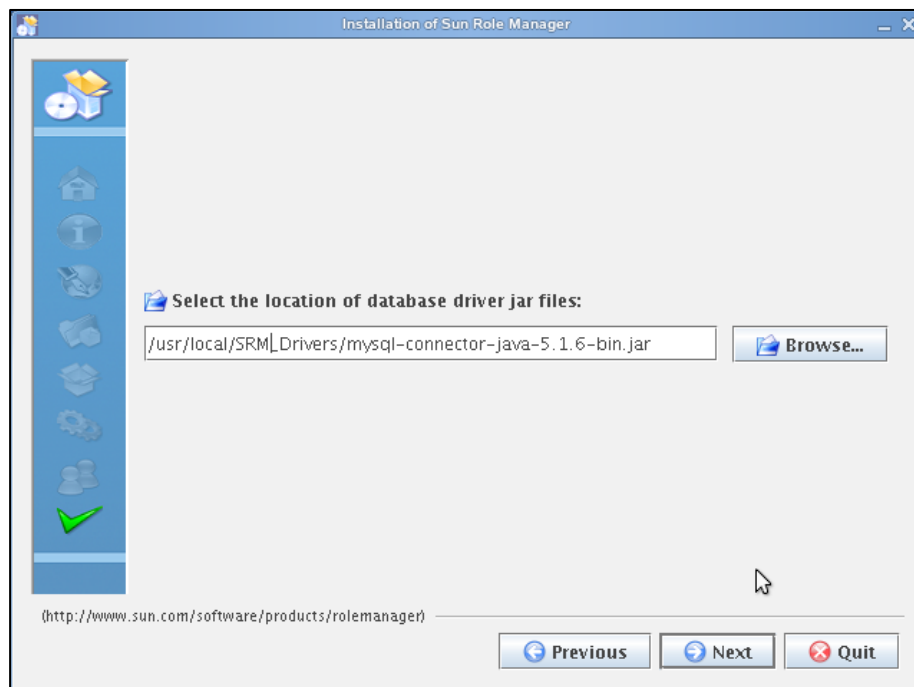


MySQL

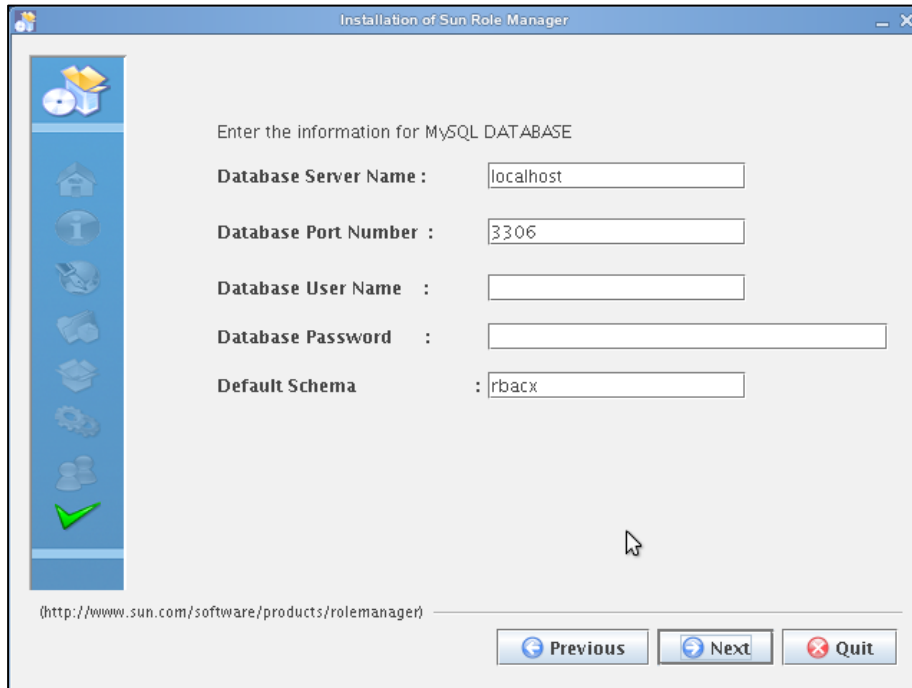
Select 'MySQL' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password and Database Name to connect to the database.
Click **[Next]**



The image shows a Windows-style dialog box titled "Installation of Sun Role Manager". On the left is a vertical sidebar with icons representing different installation steps: a folder, a home icon, a person, a document, a folder, a folder, a gear, and a group of people. The bottom icon, representing a green checkmark, is highlighted. The main area of the dialog box contains the text "Enter the information for MySQL DATABASE" followed by five labeled input fields: "Database Server Name" (containing "localhost"), "Database Port Number" (containing "3306"), "Database User Name" (empty), "Database Password" (empty), and "Default Schema" (containing "rbacx"). At the bottom of the dialog box, there is a URL "(http://www.sun.com/software/products/rolemanager)" and three buttons: "Previous" (disabled), "Next" (active), and "Quit" (disabled).

Installation of Sun Role Manager

Enter the information for MySQL DATABASE

Database Server Name : localhost

Database Port Number : 3306

Database User Name :

Database Password :

Default Schema : rbacx

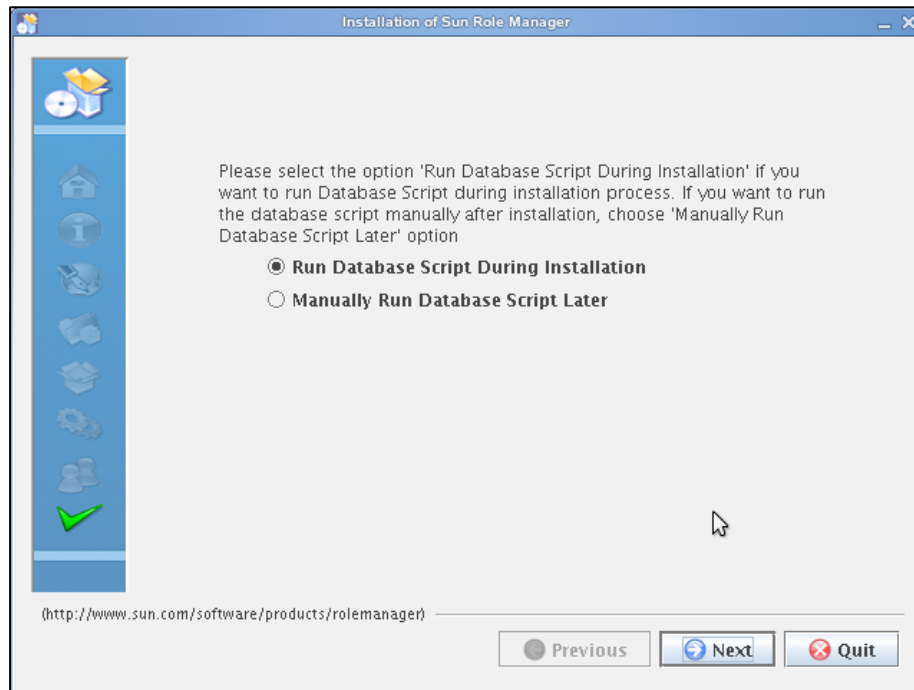
(http://www.sun.com/software/products/rolemanager)

Previous Next Quit

9. Now the installation of JRE 1.5, Tomcat 5.5 and Sun Role Manager core begins. Once you see "Finished" in package installation progress bar. Click **[Next]**

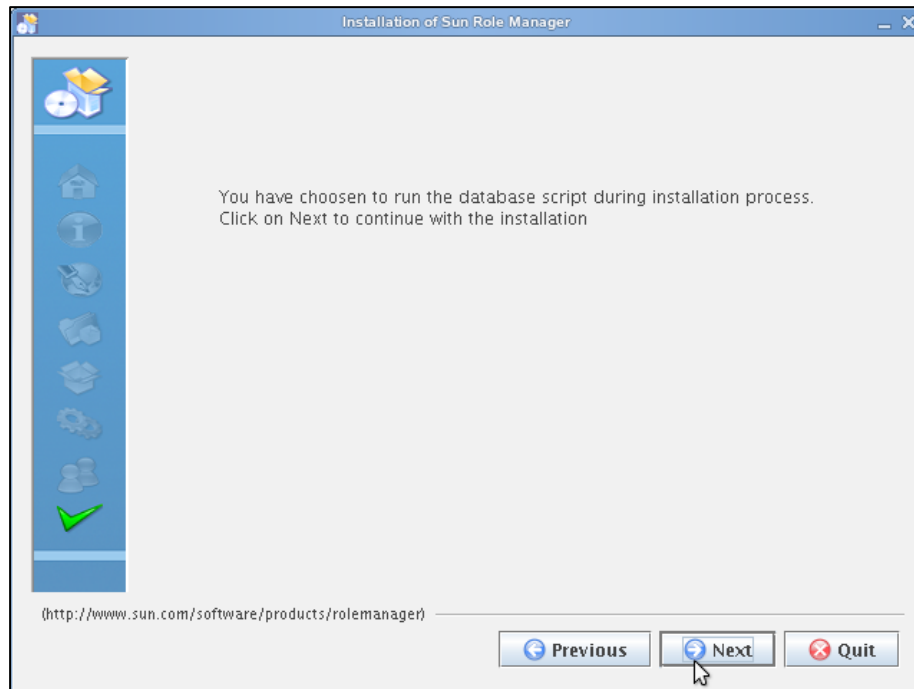
10. Select if the database script is to be executed by the installer or manually after the installer quits
- Run Database Script During Installation
 - Manually Run Database Script Later

Run Database Script During Installation

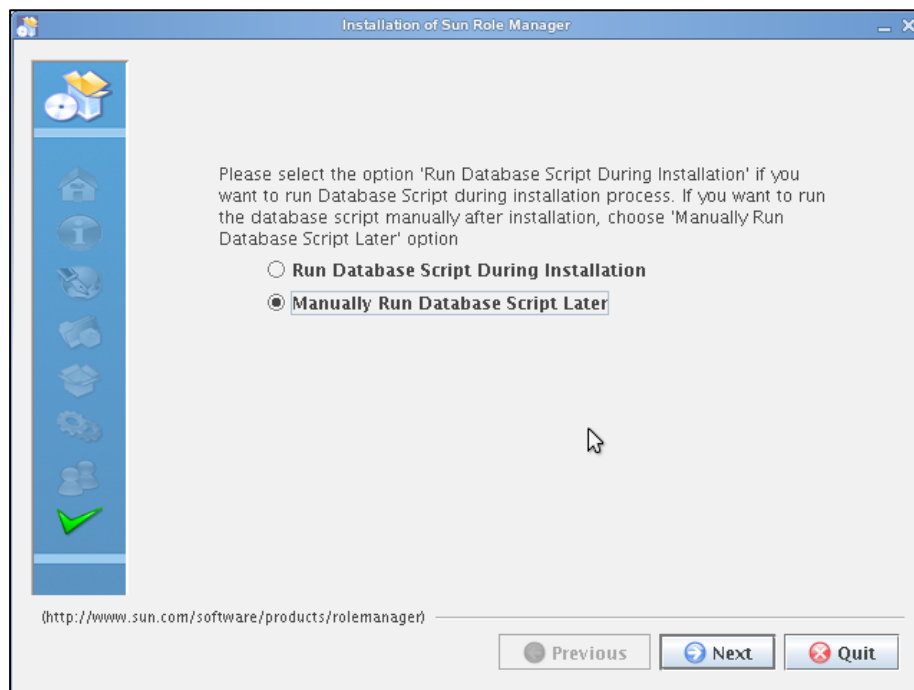


Click **[Next]**

Confirm that database scripts are to be executed by the installer, and click **[Next]**

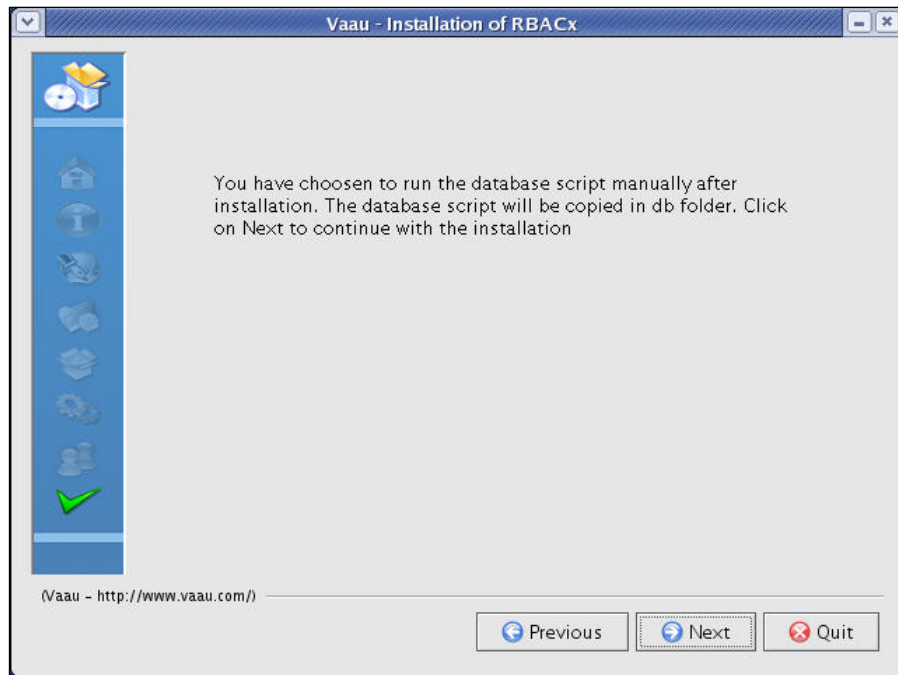


Manually Run Database Script Later



Click **[Next]**

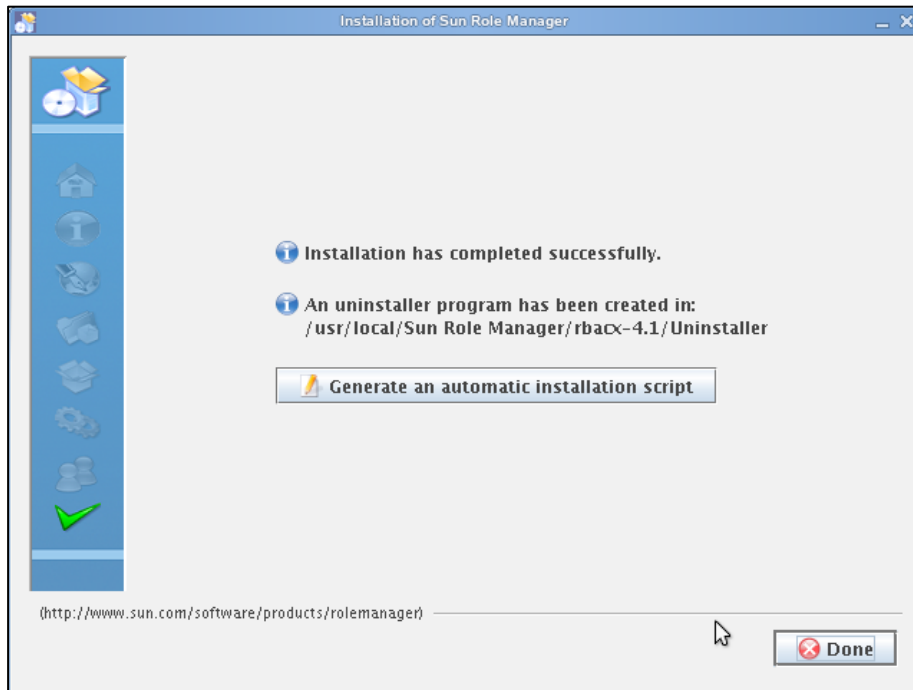
Confirm that database scripts are to be manually executed later, and click **[Next]**



Database scripts required to create Sun Role Manager schema are copied to **\$RBACX_HOME/db** folder. The Sun Role Manager schema creation scripts can be manually executed by a user with Database Administration privileges.

NOTE: Sun Role Manager schema has to be created prior to launching Sun Role Manager application

11. Click **[Generate an automatic installation script]** (if you want to generate a script) and save it as a file with a '.xml' extension on your machine and click **[Done]**



12. Navigate to **\$RBACX_HOME/tomcat55/webapps** via the command-line
13. Enter the following commands to create a *staging* directory and extract the war file into it

NOTE: It is assumed that a version of Java JDK exists on the system. Java JDK can be downloaded from <http://java.sun.com/javase/downloads/index.jsp>. Installation instructions for Java 6 can be found at <http://java.sun.com/javase/6/webnotes/install/index.html>

```
$ mkdir rbacx_staging
```

```
$ cd rbacx_staging
```

```
$ jar -xvf ../rbacx.war
```

14. Navigate to **lib** folder located inside the *rbacx_staging/WEB-INF* folder. For example - **\$RBACX_HOME/tomcat55/webapps/rbacx_staging/WEB-INF/lib**
15. Copy the JDBC connectivity jar file to **lib** folder. For example, to establish connectivity with Oracle Database Server, copy *ojdbc14.jar* to the **lib** folder

Download *weka.jar* file from

http://dlc.sun.com/rolemanager/Data_Mining/weka/for_rbacx-4.1.x

This file is required to carry out any role-mining related functionality of Sun Role Manager

16. Copy *weka.jar* to **lib** folder

17. The following steps are to be executed via the command-line. The commands repack an updated war file and delete the *staging* folder. It is assumed that the current directory is *\$RBACX_HOME/tomcat55/webapps/rbacx_staging*

```
$ jar -cvfM ../rbacx.war .
```

```
$ cd ..
```

```
$ rm -r rbacx_staging
```

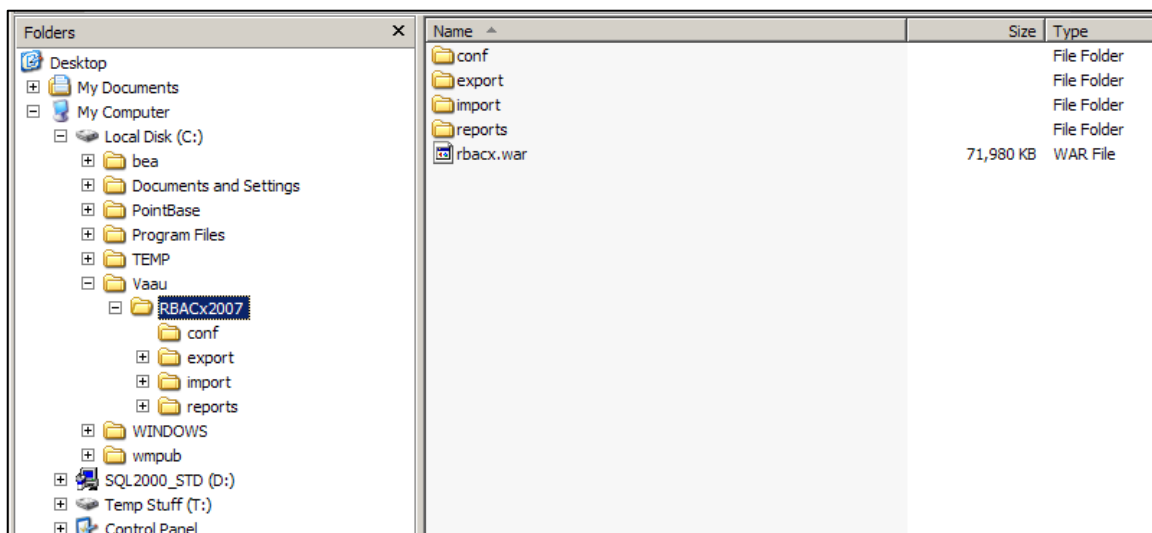
rbacx.war located at *\$RBACX_HOME/tomcat55/webapps/* is now updated and ready for deployment

18. Sun Role Manager installation is complete

Deploying Sun Role Manager on WebLogic 10

Follow the steps below to deploy Sun Role Manager application on BEA WebLogic application server –

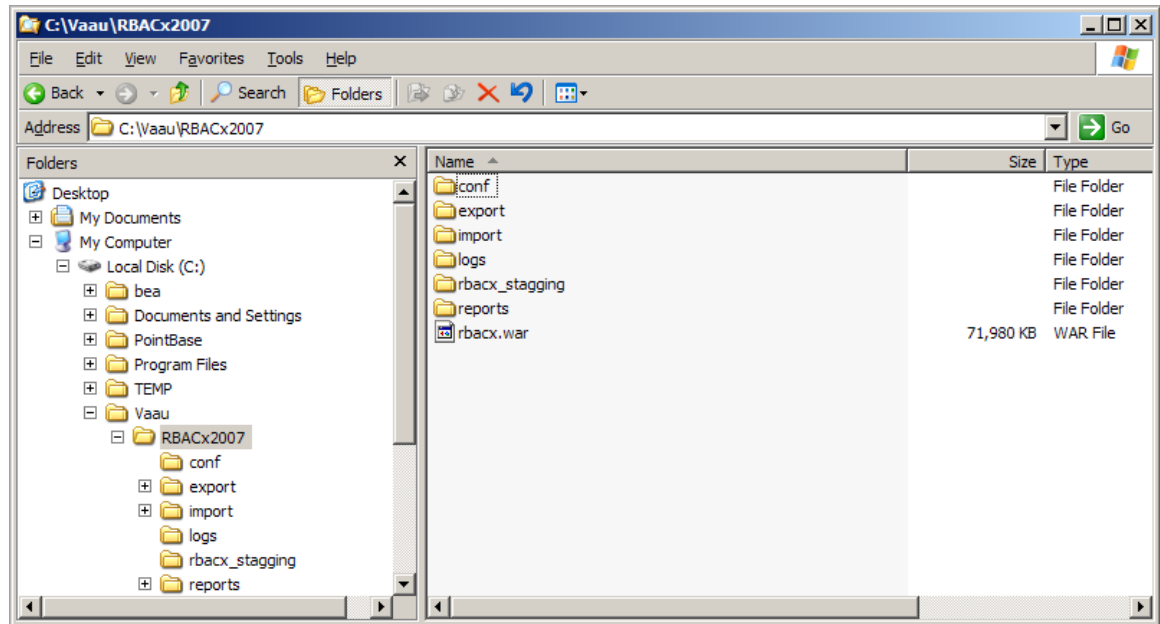
1. Verify the folder structure and location of *rbacx.war* file after the installer quits



2. Go to *Start > Run* and enter "**cmd**", press **[OK]**. This brings up the command prompt
3. At the command prompt, navigate to **Sun Role Manager2007** folder, and create **logs** and **rbacx_stagging** folder

```
C:\> cd C:\Vaau\Sun Role Manager2007
C:\> mkdir logs
C:\> mkdir rbacx_stagging
```

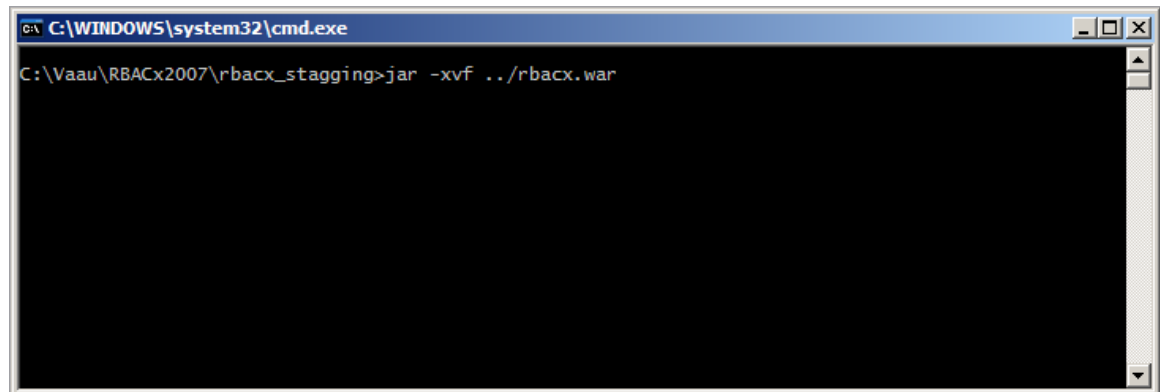
The Sun Role Manager application log file, **rbacx.log**, would be created in **logs** folder. The new folder structure would appear similar to file-structure of the figure on next page



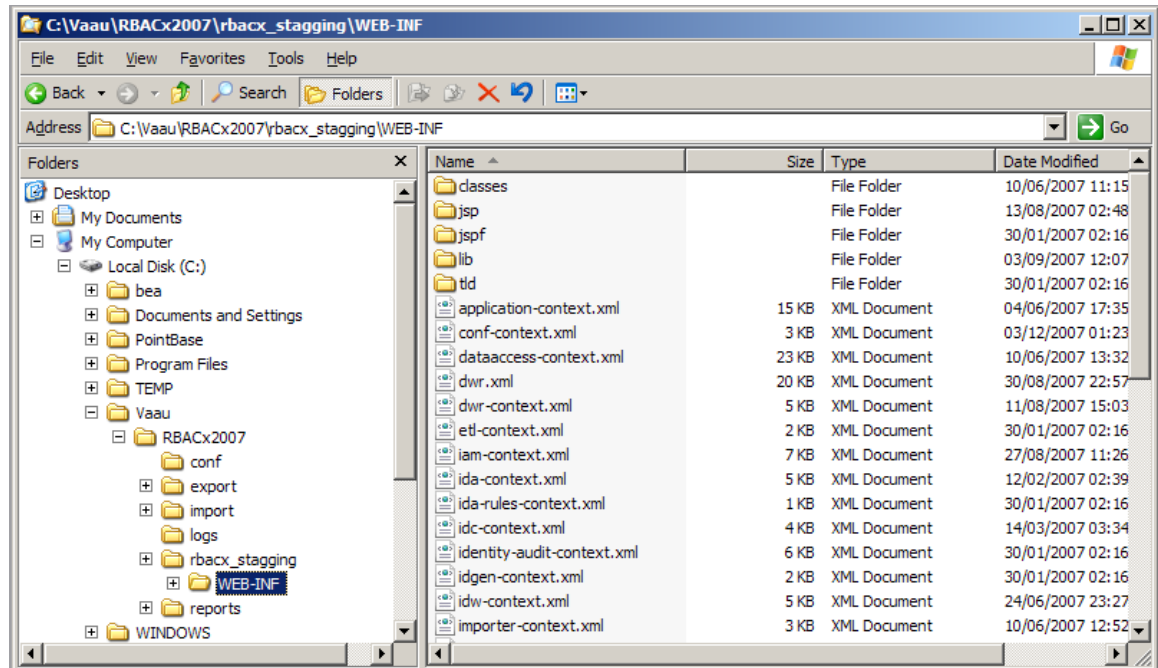
4. At command prompt, navigate to the newly created **rbacx_stagging** folder, and enter the following commands

```
C:\> cd rbacx_stagging
C:\> jar -xvf ../rbacx.war
```

This will extract rbacx.war file into **rbacx_stagging** folder



- Using Windows Explorer, navigate to **WEB-INF** folder created by expanding the war file. According to the examples, the path to this folder would be **C:\Vaau\Sun Role Manager2007\rbacx_stagging\WEB-INF**



- log4j.properties** file requires editing to enable Sun Role Manager's logging capabilities. Using a text editor, open **log4j.properties** under WEB-INF folder of the expanded war file.

Edit the following line under **# File Appender** with the full-path of the location where the log file is to be generated

log4j.appender.file.file=logs/rbacx.log

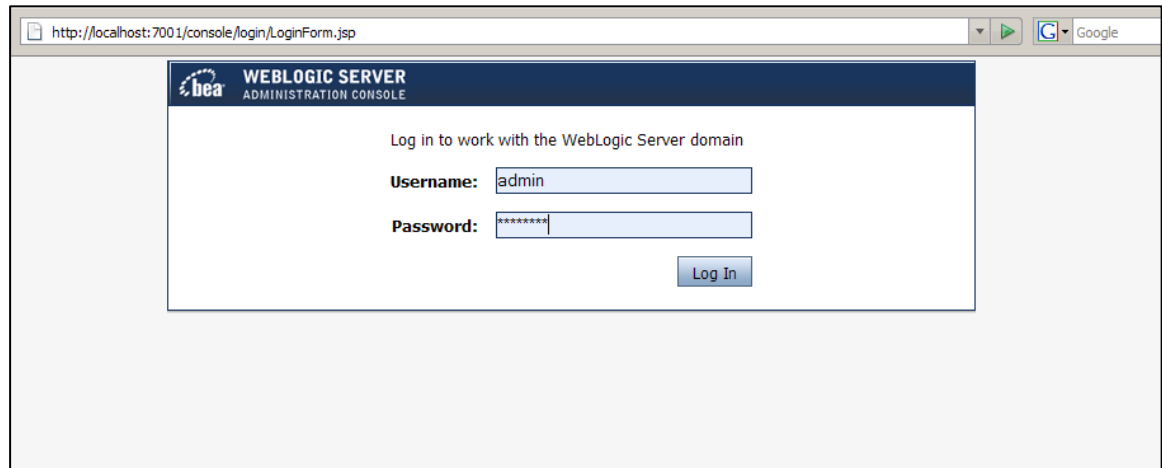
As a result, according to the examples, the line would be modified to

log4j.appender.file.file=C:\Vaau\Sun Role Manager2007\logs\rbacx.log

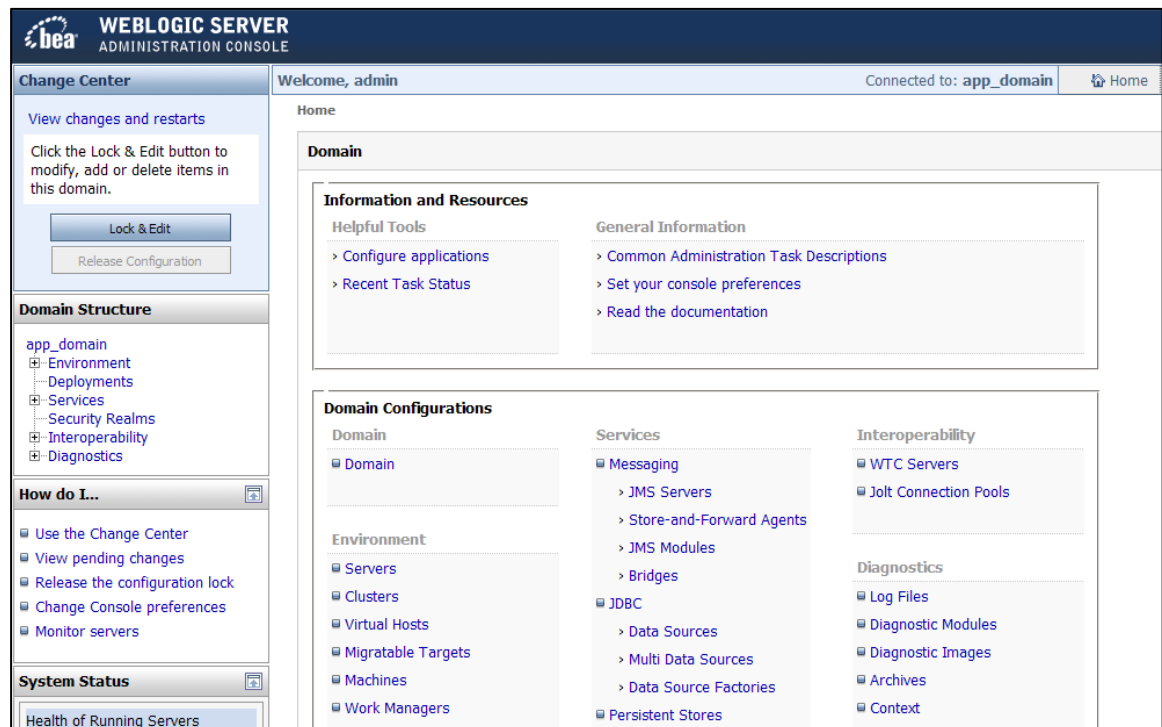
- Copy **rbacx_stagging** folder to WebLogic's **autodeploy** folder listed under the user-defined domain structure. According to the assumptions, the path of this folder would be **C:\bea\user_projects\domains\app_domain\autodeploy**
- After file-copying is complete, rename **rbacx_stagging** folder under the **autodeploy** folder to **rbacx**, such that the directory path according to the example would be modified to **C:\bea\usr_projects\domains\app_domain\autodeploy\rbacx**
- Open WebLogic's administration console by executing the following URL in a web-browser

`http://<server name>:<port number>/console/login/LoginForm.jsp`

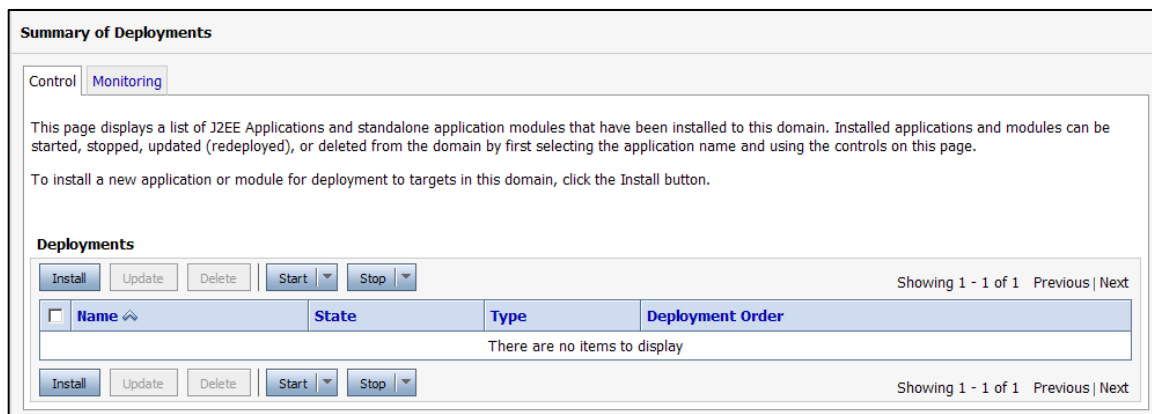
10. Enter the administration Login and Password



11. In the administration console, on the left pane, click **[Lock & Edit]** under 'Change Center' section. Then click on **[Deployments]** under 'Domain Structure' on the left pane



12. Click on **[Install]** under 'Deployments'



Summary of Deployments

Control **Monitoring**

This page displays a list of J2EE Applications and standalone application modules that have been installed to this domain. Installed applications and modules can be started, stopped, updated (redeployed), or deleted from the domain by first selecting the application name and using the controls on this page.

To install a new application or module for deployment to targets in this domain, click the Install button.

Deployments

Install Update Delete Start Stop

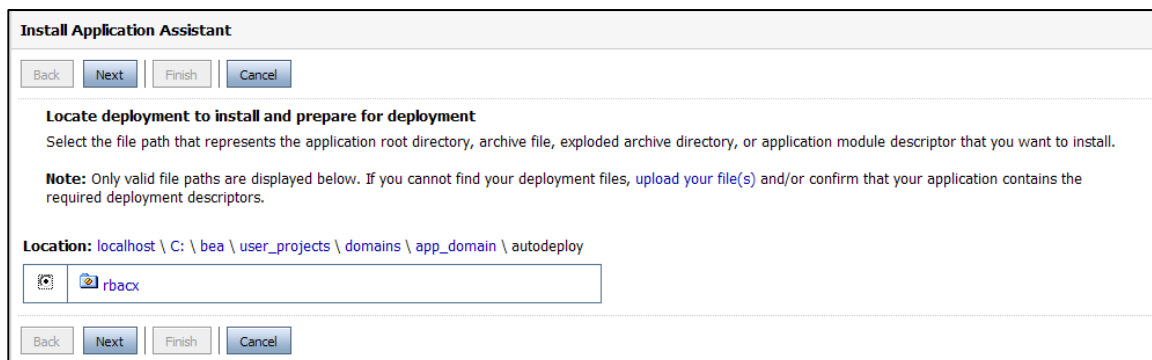
Showing 1 - 1 of 1 Previous | Next

<input type="checkbox"/>	Name	State	Type	Deployment Order
There are no items to display				

Install Update Delete Start Stop

Showing 1 - 1 of 1 Previous | Next

13. Navigate to **rbacx** folder under **autodeployment** directory



Install Application Assistant

Back Next Finish Cancel

Locate deployment to install and prepare for deployment

Select the file path that represents the application root directory, archive file, exploded archive directory, or application module descriptor that you want to install.

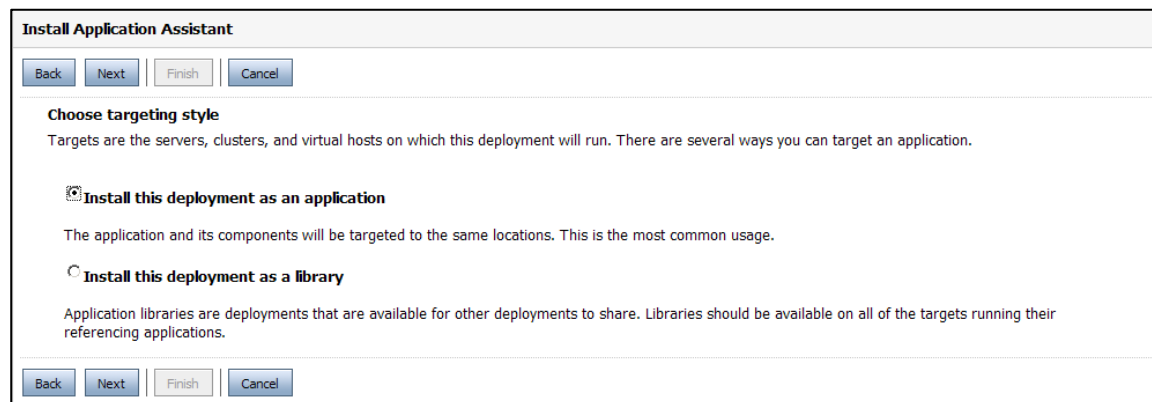
Note: Only valid file paths are displayed below. If you cannot find your deployment files, [upload your file\(s\)](#) and/or confirm that your application contains the required deployment descriptors.

Location: localhost \ C: \ bea \ user_projects \ domains \ app_domain \ autodeploy

Back Next Finish Cancel

14. Highlight **rbacx** and click **[Next]**

15. Select the option "Install this deployment as an application" and click **[Next]**



Install Application Assistant

Back Next Finish Cancel

Choose targeting style

Targets are the servers, clusters, and virtual hosts on which this deployment will run. There are several ways you can target an application.

☒ **Install this deployment as an application**

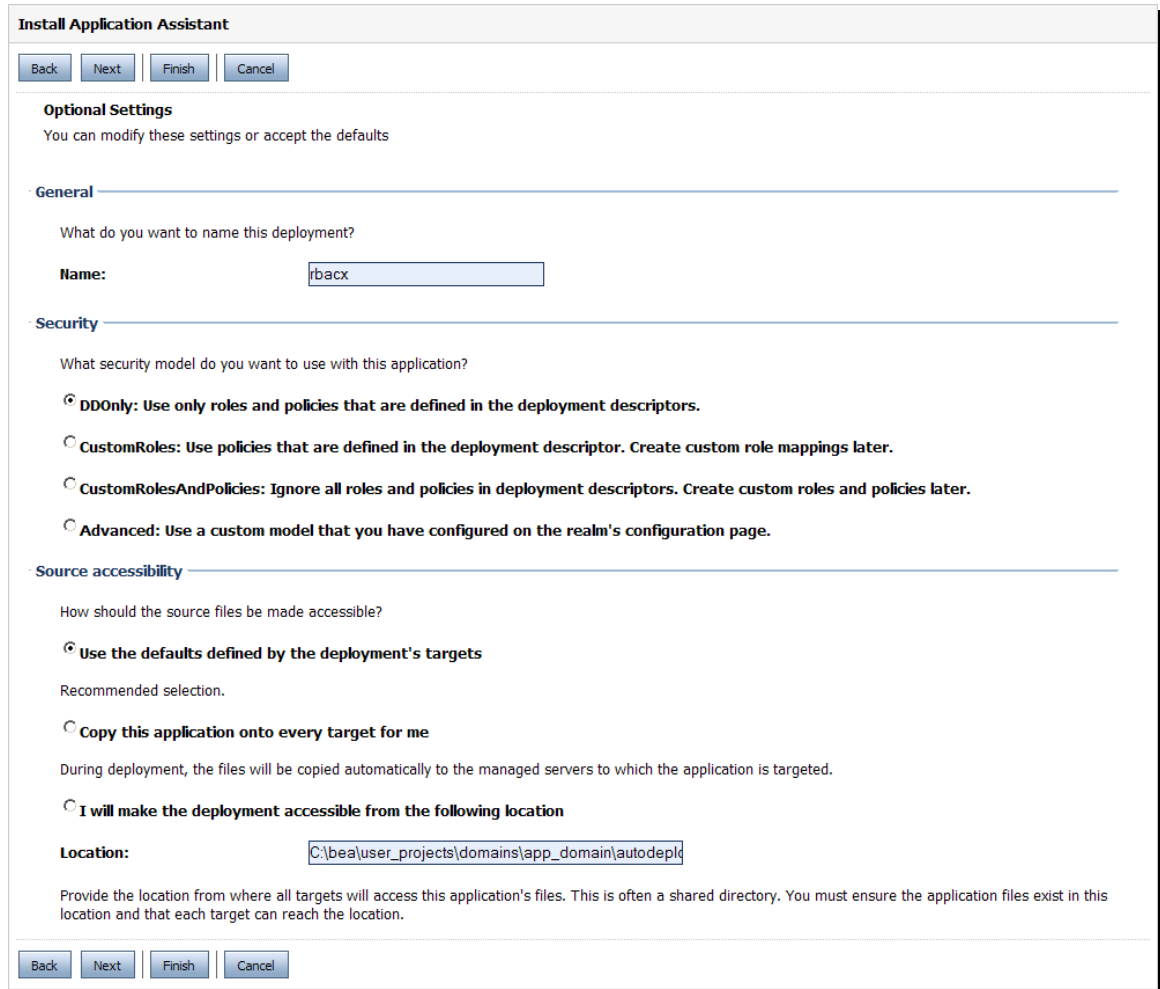
The application and its components will be targeted to the same locations. This is the most common usage.

☐ **Install this deployment as a library**

Application libraries are deployments that are available for other deployments to share. Libraries should be available on all of the targets running their referencing applications.

Back Next Finish Cancel

16. Ensure the deployment is named as **rbacx**
17. Select **“DDOnly: Use only roles and policies that are defined in this deployment descriptors.”** Under *Security*
18. Select **“Use the defaults defined by the deployment’s targets”** under *Source accessibility* and click **[Next]**



Install Application Assistant

Back Next Finish Cancel

Optional Settings
You can modify these settings or accept the defaults

General

What do you want to name this deployment?

Name:

Security

What security model do you want to use with this application?

☒ **DDOnly: Use only roles and policies that are defined in the deployment descriptors.**

☐ CustomRoles: Use policies that are defined in the deployment descriptor. Create custom role mappings later.

☐ CustomRolesAndPolicies: Ignore all roles and policies in deployment descriptors. Create custom roles and policies later.

☐ Advanced: Use a custom model that you have configured on the realm's configuration page.

Source accessibility

How should the source files be made accessible?

☒ **Use the defaults defined by the deployment's targets**

Recommended selection.

☐ Copy this application onto every target for me

During deployment, the files will be copied automatically to the managed servers to which the application is targeted.

☐ I will make the deployment accessible from the following location

Location:

Provide the location from where all targets will access this application's files. This is often a shared directory. You must ensure the application files exist in this location and that each target can reach the location.

Back Next Finish Cancel

19. Select **“Yes, take me to the deployments configuration screen.”** Under *Additional configuration* section

Install Application Assistant

Back Next Finish Cancel

Review your choices and click Finish

Click Finish to complete the deployment. This may take a few moments to complete.

Additional configuration

In order to work successfully, this application may require additional configuration. Do you want to review this application's configuration after completing this assistant?

☒ **Yes, take me to the deployment's configuration screen.**

☐ No, I will review the configuration later.

20. Review the settings for the deployment on *“Settings for rbackx”* window and click **[Next]**

Settings for rbackx

Overview Control Testing Monitoring

Save

Use this page to view the general configuration of an Enterprise application, such as its name, the physical path to the application files, the associated deployment plan, and so on. The table at the end of the page lists the modules (such as Web applications and EJBs) that are contained in the Enterprise application. Click on the name of the module to view and update its configuration.

Name:	rbackx (autodeployed)	The name of this Enterprise Application. More Info...
Path:	C:\bea\user_projects\domains\app_domain\autodeploy\rbackx	The path to the source of the deployable unit on the Administration Server. More Info...
Staging Mode:	(not specified)	The mode that specifies whether a deployment's files are copied from a source on the Administration Server to the Managed Server's staging area during application preparation. More Info...

Save

21. Click **[Deployments]** on the left pane. Sun Role Manager application would be listed under Summary of Deployments section

Summary of Deployments

Control

Monitoring

This page displays a list of J2EE Applications and standalone application modules that have been installed to this domain. Installed applications and modules can be started, stopped, updated (redeployed), or deleted from the domain by first selecting the application name and using the controls on this page.

To install a new application or module for deployment to targets in this domain, click the Install button.

Deployments

Install

Update

Delete

Start

Stop

Showing 1 - 1 of 1 Previous | Next

<input type="checkbox"/>	Name	State	Type	Deployment Order
<input type="checkbox"/>	rbacx(autodeployed)	Prepared	Web Application	100

Install

Update

Delete

Start

Stop

Showing 1 - 1 of 1 Previous | Next

22. Select deployed **rbacx** application and click on **[Start]** with “**Servicing all requests**” highlighted

Summary of Deployments

Control

Monitoring

This page displays a list of J2EE Applications and standalone application modules that have been installed to this domain. Installed applications and modules can be started, stopped, updated (redeployed), or deleted from the domain by first selecting the application name and using the controls on this page.

To install a new application or module for deployment to targets in this domain, click the Install button.

Deployments

Install

Update

Delete

Start

Stop

Showing 1 - 1 of 1 Previous | Next

<input checked="" type="checkbox"/>	Name	State	Type	Deployment Order
<input checked="" type="checkbox"/>	rbacx(autodeployed)	Prepared	Web Application	100

Install

Update

Delete

Start

Stop

Showing 1 - 1 of 1 Previous | Next

Servicing all requests

Servicing only administration requests

23. Select **[Yes]** to start the deployment

Start Application Assistant

Yes

No

Start Deployments

You have selected the following deployments to be started. Click 'Yes' to continue, or 'No' to cancel.

☒

rbacx

Yes

No

24. *Start running* status indicates that Sun Role Manager deployment is successful

Messages

Start requests have been sent to the selected Deployments.

Summary of Deployments

Control

Monitoring

This page displays a list of J2EE Applications and standalone application modules that have been installed to this domain. Installed applications and modules can be started, stopped, updated (redeployed), or deleted from the domain by first selecting the application name and using the controls on this page.

To install a new application or module for deployment to targets in this domain, click the Install button.

Deployments

Install

Update

Delete

Start

Stop

Showing 1 - 1 of 1 Previous | Next

<input type="checkbox"/>	Name	State	Type	Deployment Order
<input type="checkbox"/>	rbacx(autodeployed)	start Running	Web Application	100

Install

Update

Delete

Start

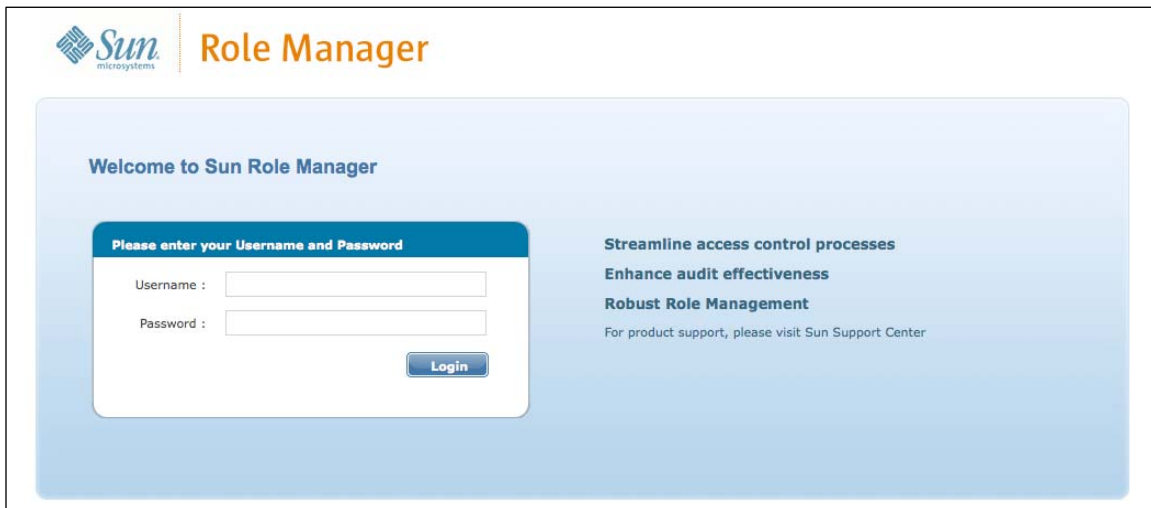
Stop

Showing 1 - 1 of 1 Previous | Next

25. Sun Role Manager deployment on WebLogic is complete

Verification of Sun Role Manager Installation

1. Browse to Application Server logs and verify that '**rbacx.log**' file is created when Sun Role Manager application is deployed
2. Open this file using a text editor and check logs indicating a successful startup of Sun Role Manager application
3. Using a web browser, open the following URL
`http://<server ip>:<port number>/rbacx`



4. Enter the required credentials to log into the client. Click on **[OK]**

User Name : **"rbacxadmin"**
Password : **"password"**

Installing Sun Role Manager on Sun Application Server 9.1

Use the following information and procedure to install Sun Role Manager for use with the Sun App. Server. This Chapter contains the following topics

- Before You Begin
- Installation Steps

Before You Begin

For installation, you will need to know

- The Login and Password for system administrator account on Database
- Sun Application Server Administration Login and Password

Installation Steps

Follow these installation and configuration steps

- Installing Sun Role Manager
- Launching Sun Role Manager
- Verification of Sun Role Manager Installation

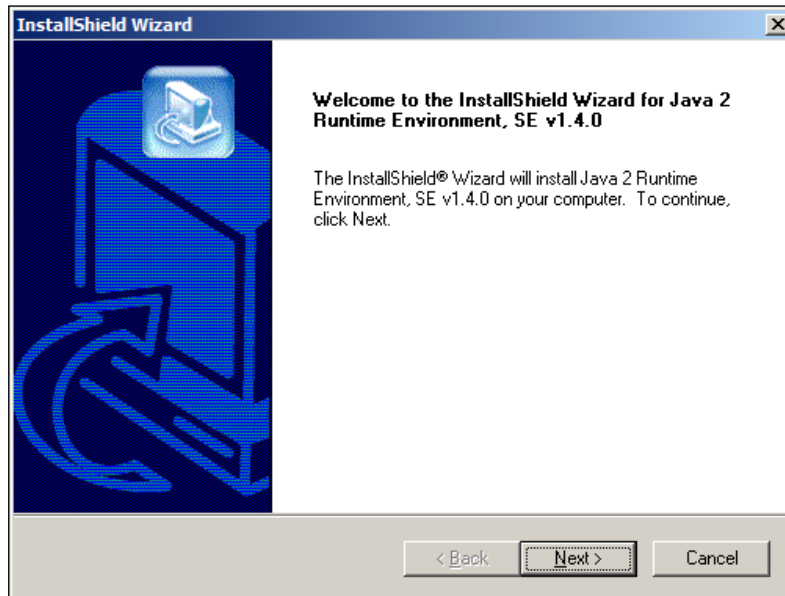
Installing Sun Role Manager

For the installation, it's assumed that Sun Java System Application Server 9.1 is pre-installed with a user-defined domain defined. The user-defined domain assumed in this guide is called *domain1*.

Installing on Windows

For the installation, we have assumed that there should be a database server installed either on a network machine or local machine.

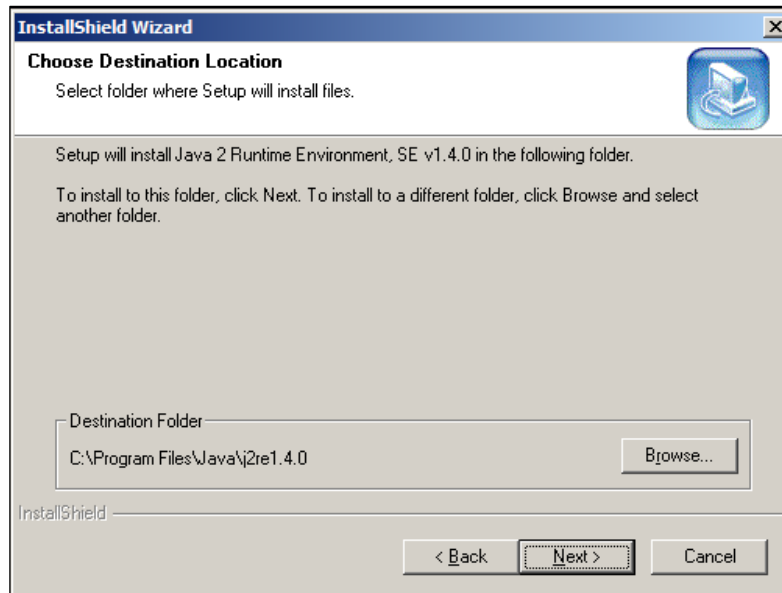
1. Run **install.bat** to launch the installer
2. If JRE is not installed on the system, the installer will launch the installation of JRE
 - a. Click **[Next]** on the Welcome Screen as the installer launches



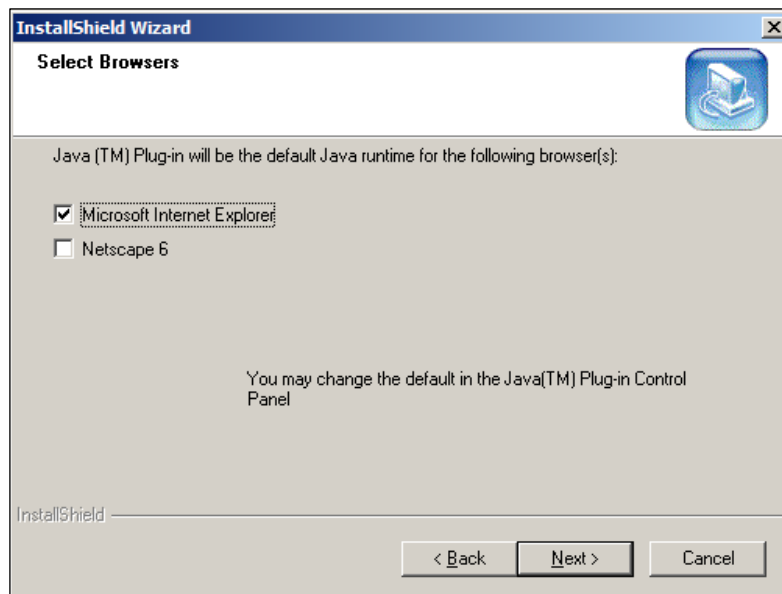
- b. Click **[Yes]** to accept license agreement



- c. Select the destination folder where JRE is to be installed. Click **[Next]**

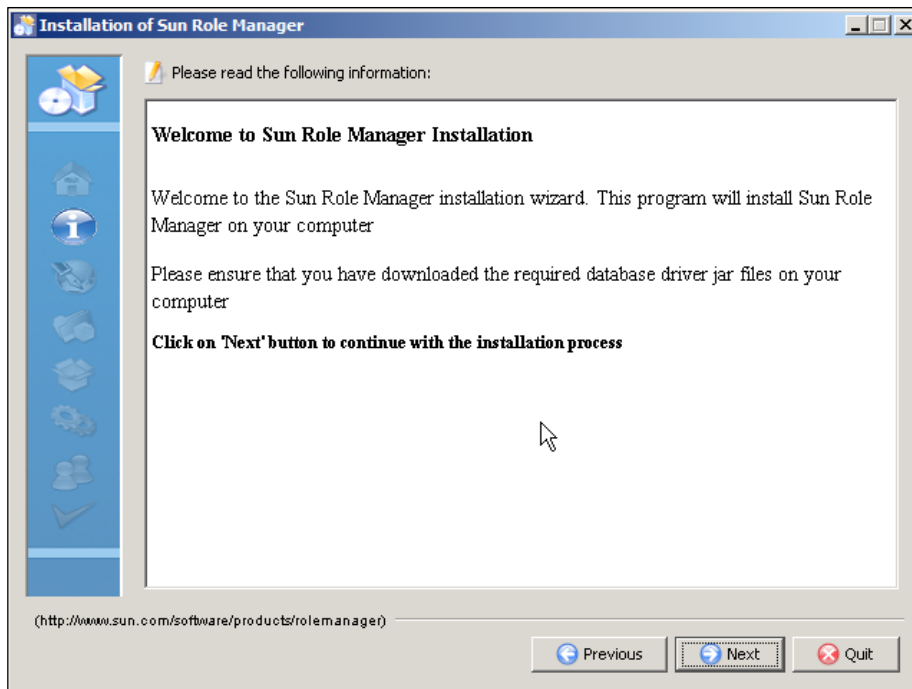
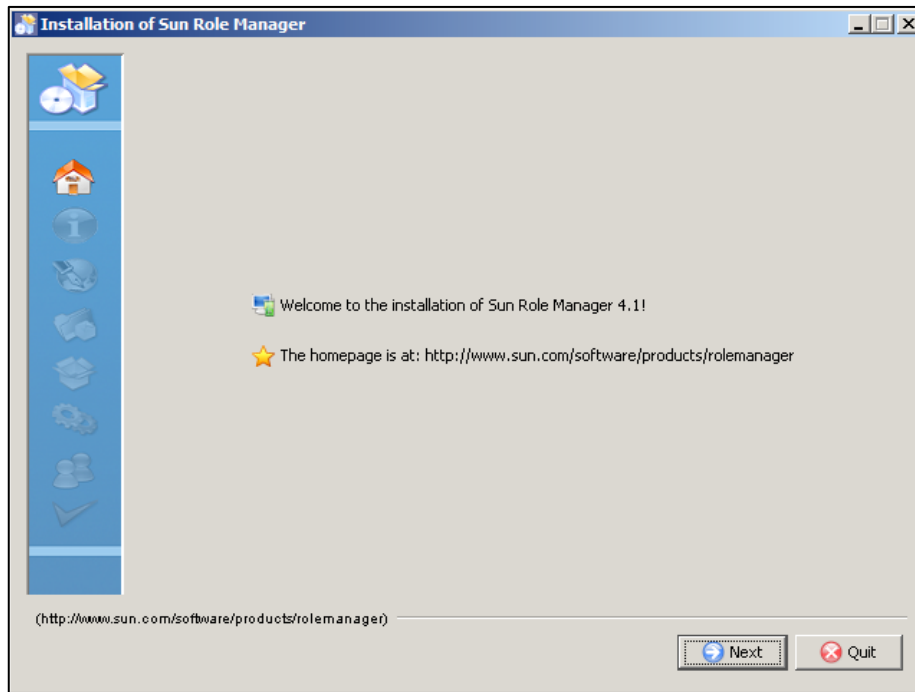


- d. The next screen will be for browser registration. Choose appropriate browser and click **[Next]** to start the Installation

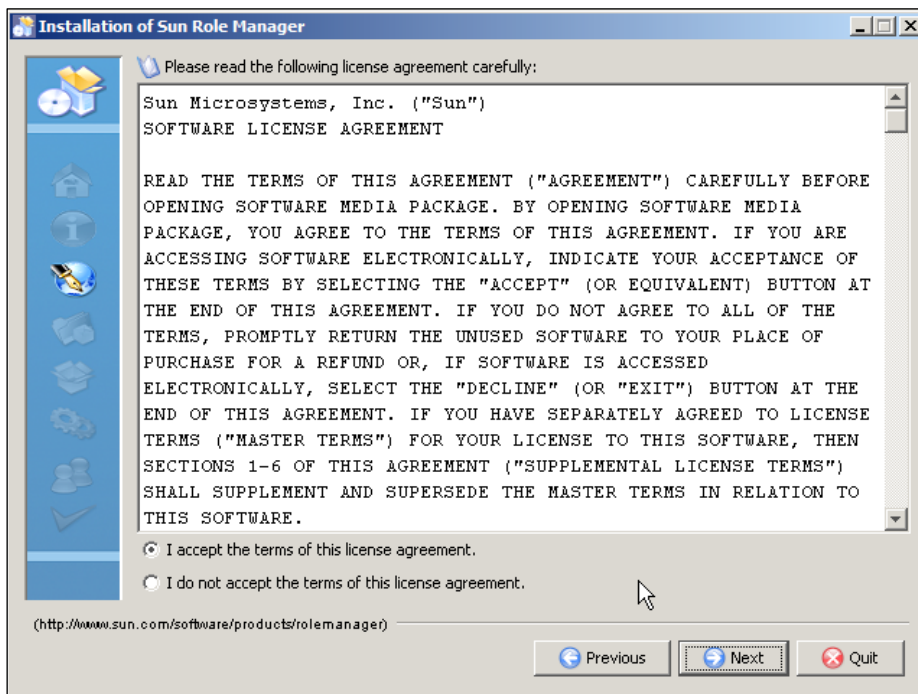


- e. The installer will quit after JRE has been successfully installed

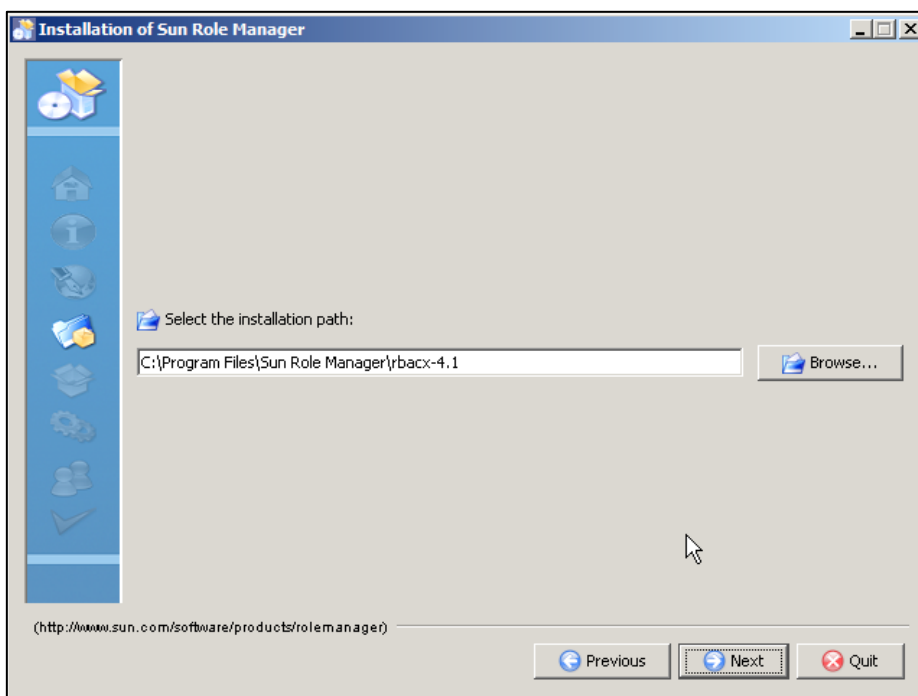
3. Sun Role Manager Installer will launch and displays the Welcome Screen. Click **[Next]**



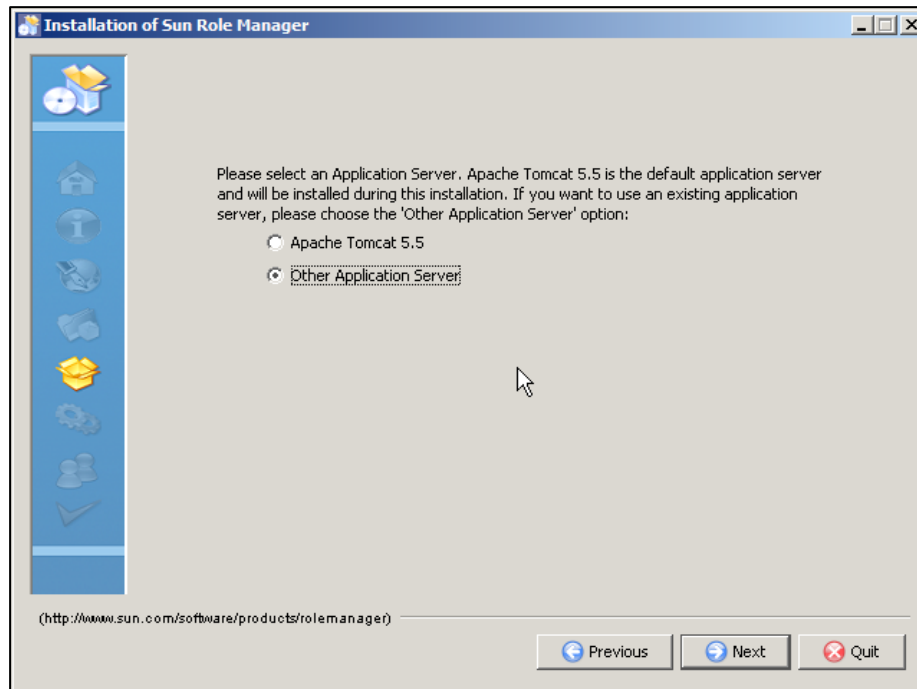
4. Read the License Agreement and to continue with installation select **"I accept the terms of this license Agreement"** and click **[Next]**



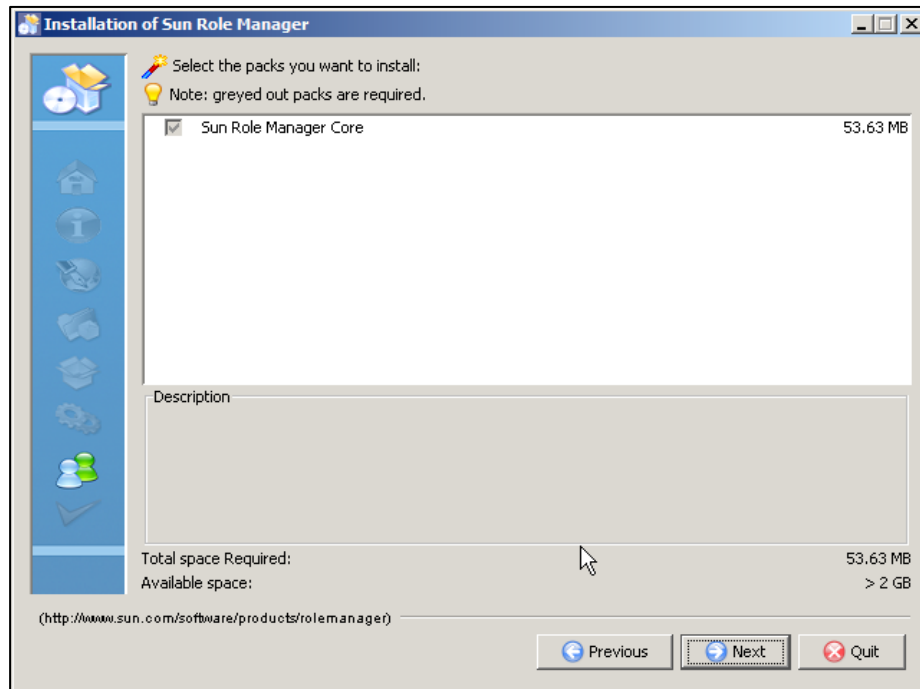
5. Replace the displayed installation path with the location where you want Sun Role Manager to be installed and click **[Next]**. The installation path will be referred as **\$RBACX_HOME**



6. Select **"Other Application Server"** to install Sun Role Manager on WebSphere Application Server. Click **[Next]**.



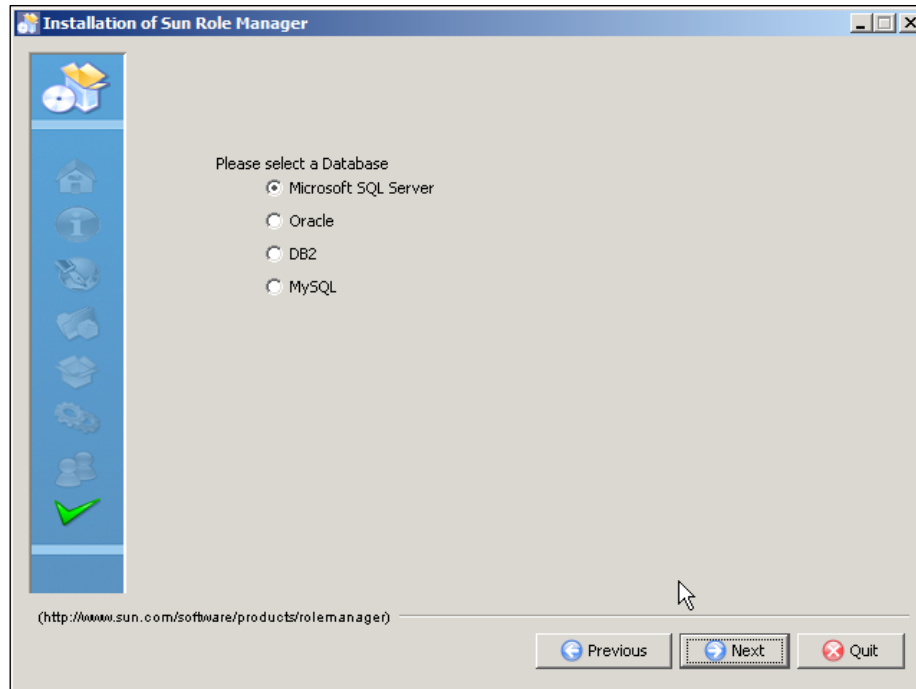
7. Next you'll see the component(s) that the Installer will install on the machine. Click **[Next]**



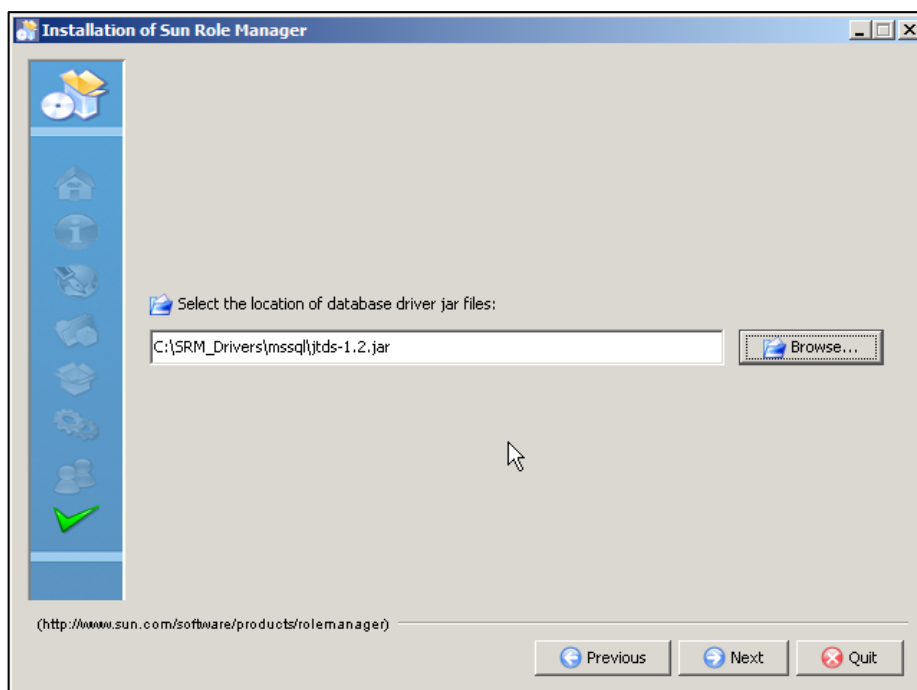
8. Select an Index Database
- a. Microsoft SQL Server
 - b. Oracle
 - c. IBM DB2
 - d. MySQL

Microsoft SQL Server

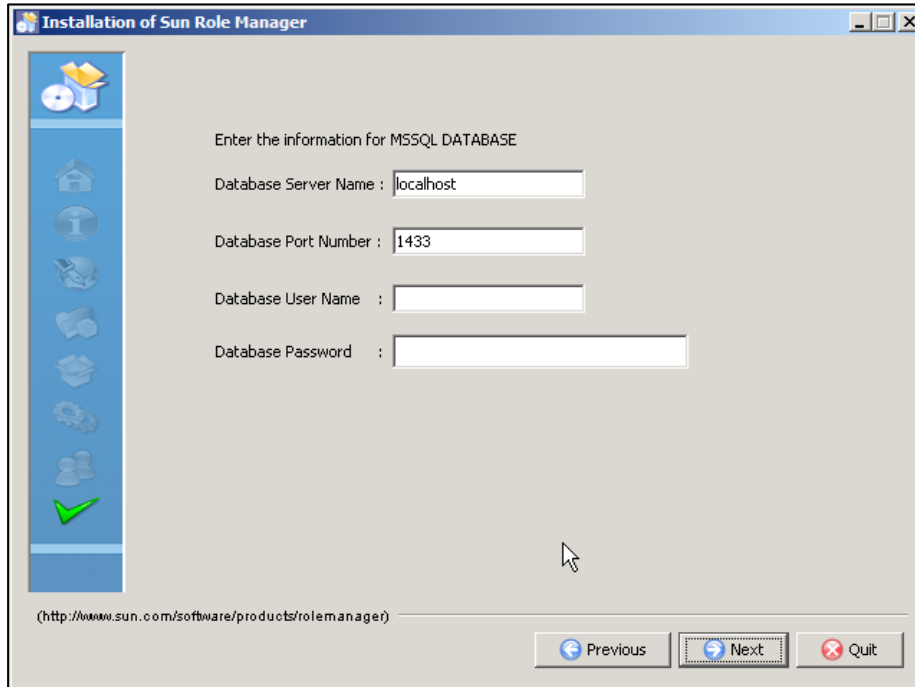
Select 'Microsoft SQL Server' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password to connect to the database. Click **[Next]**



Installation of Sun Role Manager

Enter the information for MSSQL DATABASE

Database Server Name :

Database Port Number :

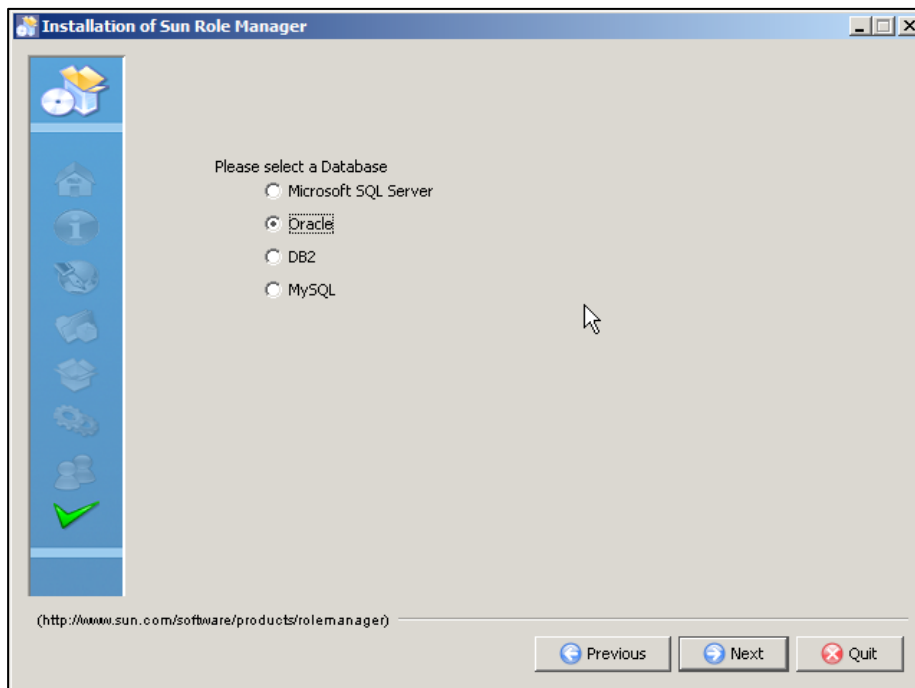
Database User Name :

Database Password :

(<http://www.sun.com/software/products/rolemanager/>)

Oracle

Select 'Oracle' and click **[Next]**



Installation of Sun Role Manager

Please select a Database

☐ Microsoft SQL Server

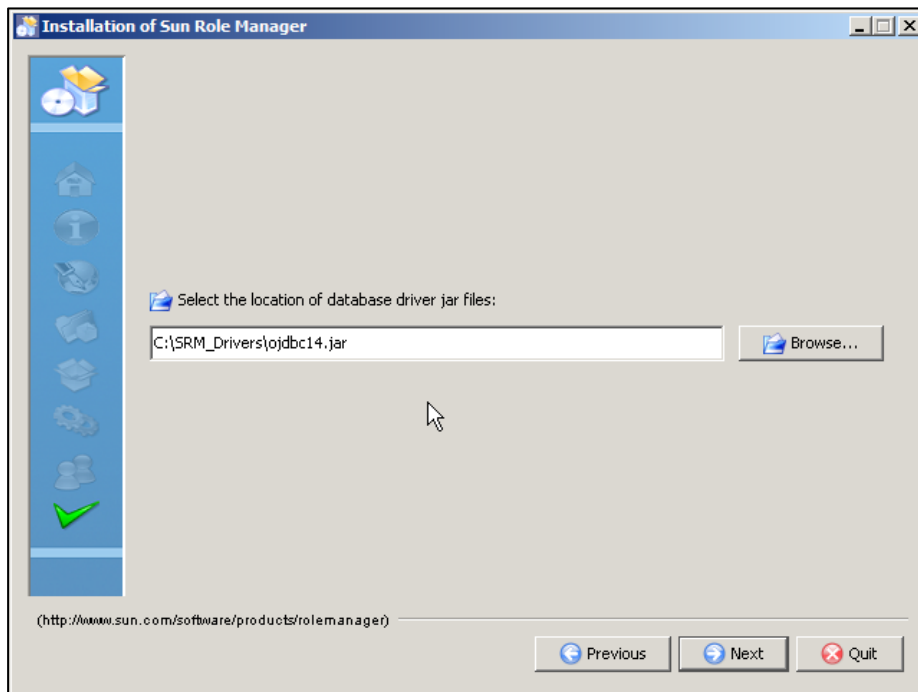
☒ Oracle

☐ DB2

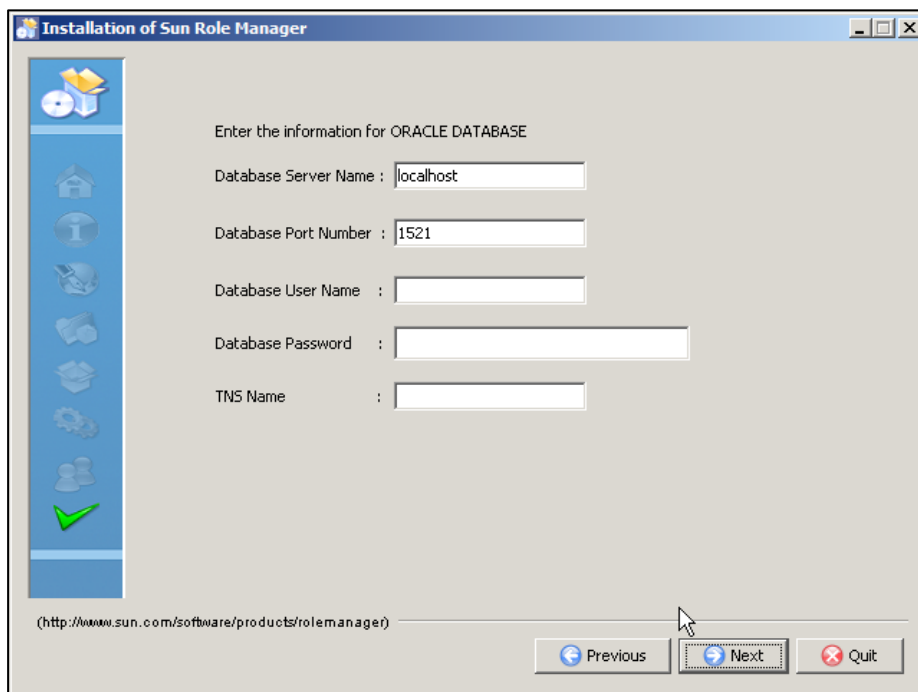
☐ MySQL

(<http://www.sun.com/software/products/rolemanager/>)

Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.

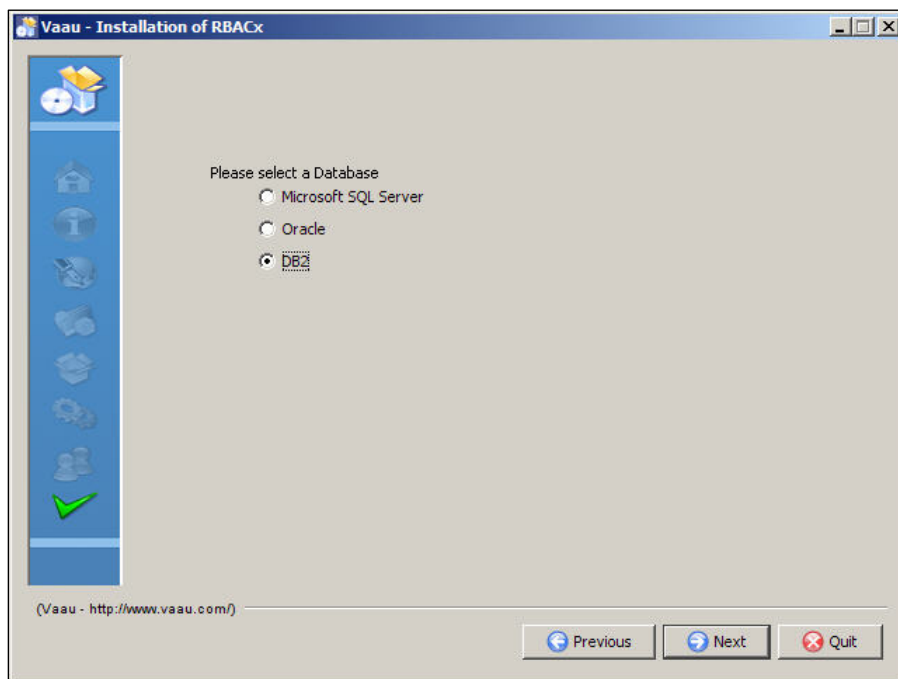


Enter Database Username/Password and TNS Name to connect to the database. Click **[Next]**

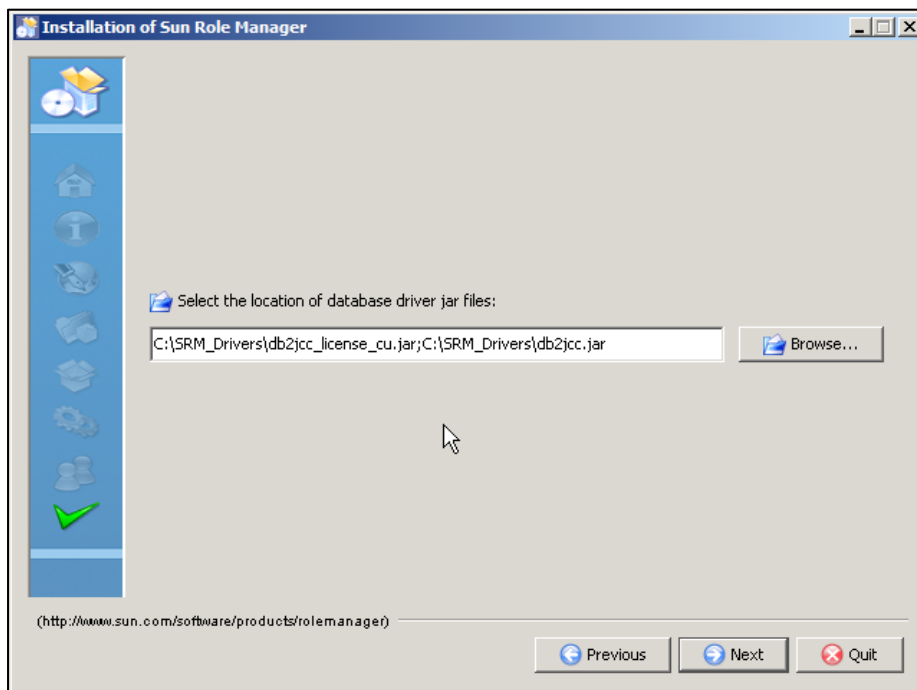


IBM DB2

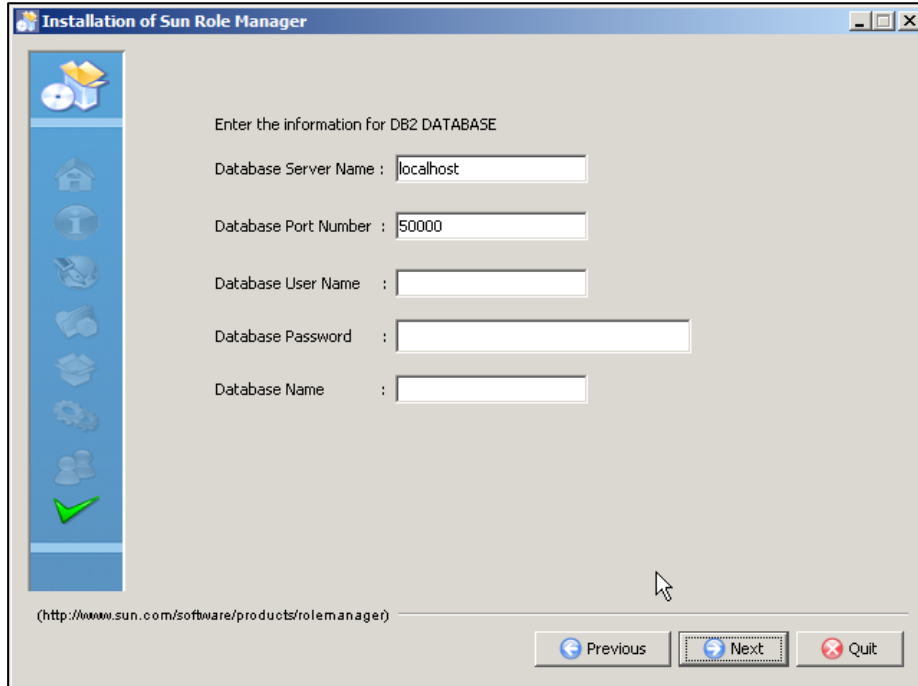
Select 'DB2' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



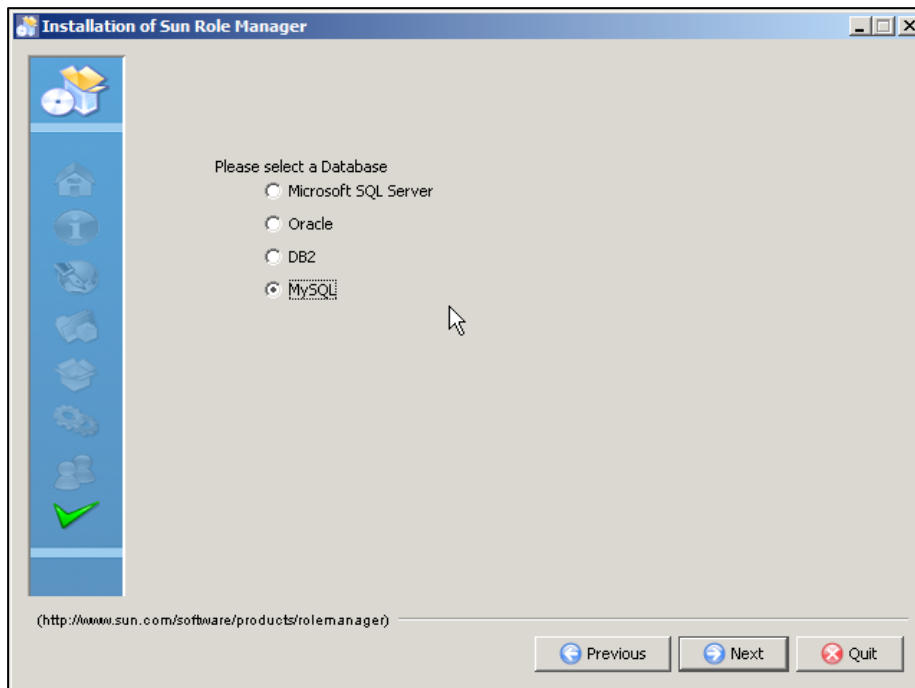
Enter Database Username/Password and Database Name to connect to the database.
Click **[Next]**



The screenshot shows the 'Installation of Sun Role Manager' window. On the left is a vertical navigation bar with icons for various steps, with a green checkmark at the bottom. The main area is titled 'Enter the information for DB2 DATABASE'. It contains five input fields: 'Database Server Name' (with 'localhost' entered), 'Database Port Number' (with '50000' entered), 'Database User Name', 'Database Password', and 'Database Name'. At the bottom right are three buttons: 'Previous', 'Next' (highlighted with a dashed border), and 'Quit'. A URL '(http://www.sun.com/software/products/rolemanager)' is visible at the bottom left.

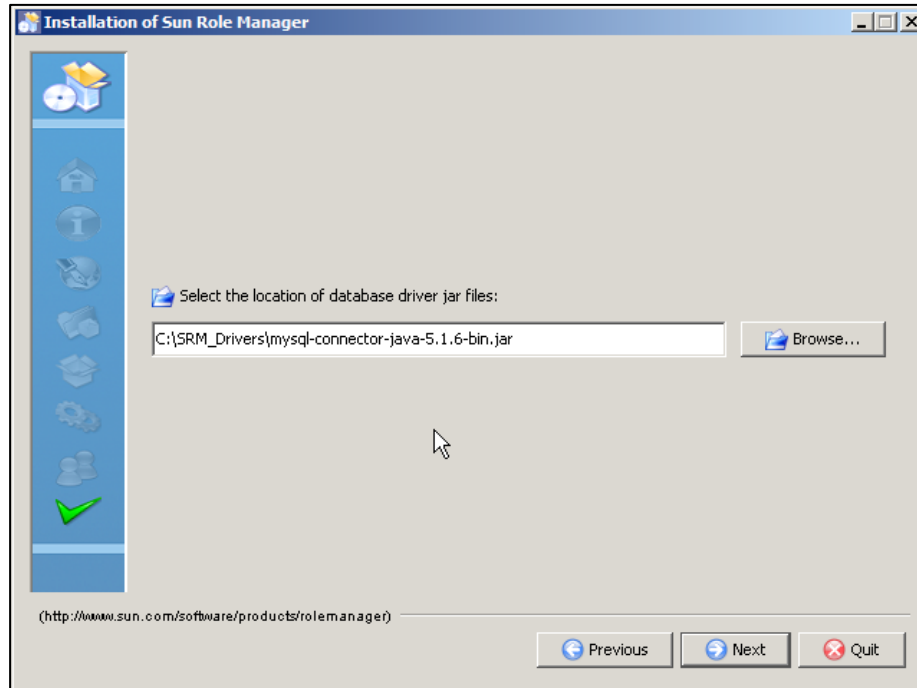
MySQL

Select 'MySQL' and click **[Next]**

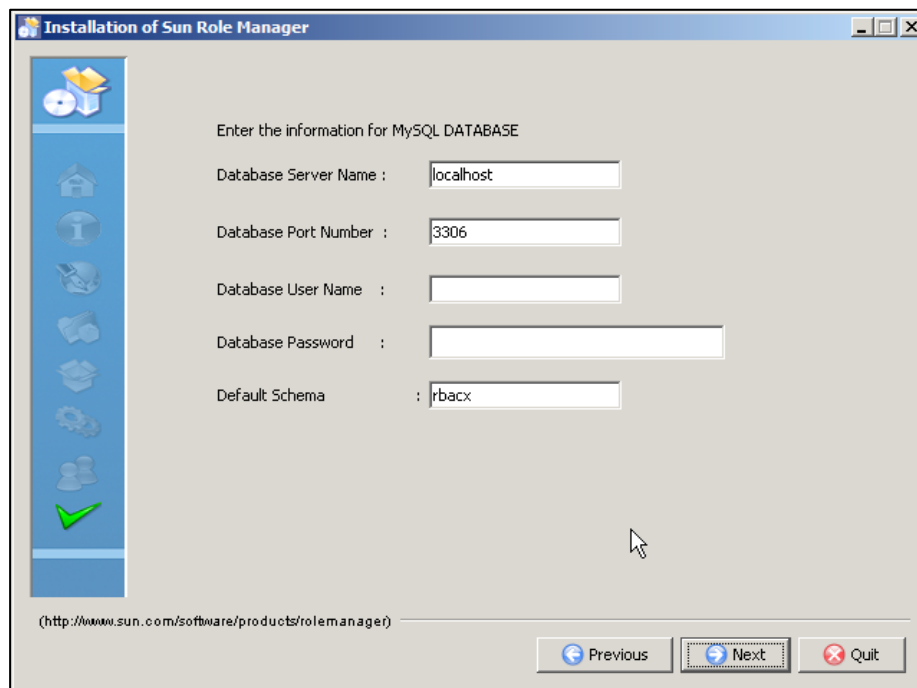


The screenshot shows the 'Installation of Sun Role Manager' window. On the left is a vertical navigation bar with icons for various steps, with a green checkmark at the bottom. The main area is titled 'Please select a Database'. It contains four radio button options: 'Microsoft SQL Server', 'Oracle', 'DB2', and 'MySQL'. The 'MySQL' option is selected. At the bottom right are three buttons: 'Previous', 'Next' (highlighted with a dashed border), and 'Quit'. A URL '(http://www.sun.com/software/products/rolemanager)' is visible at the bottom left.

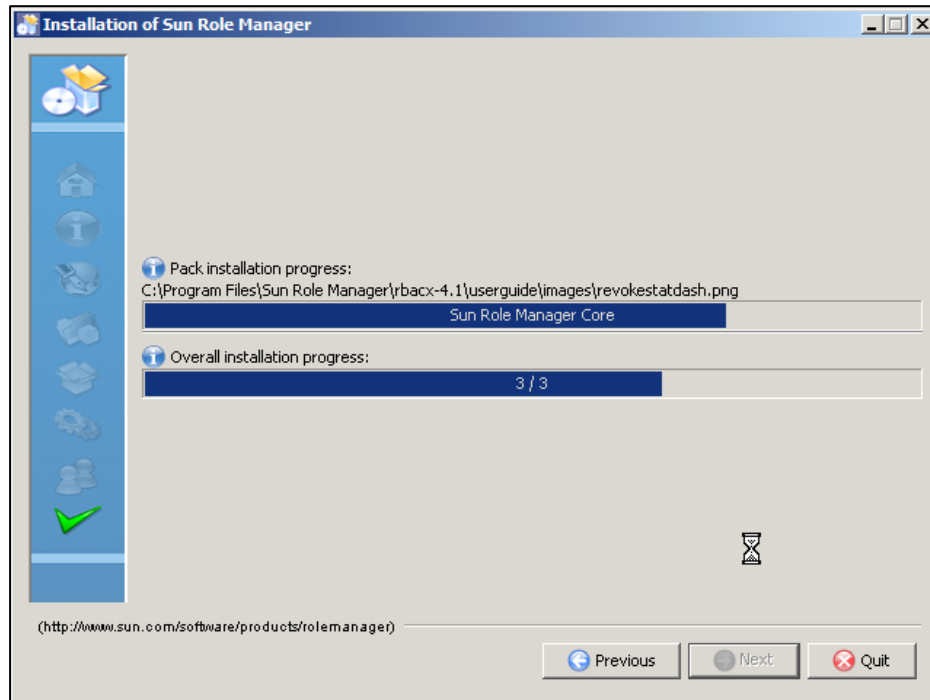
Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password and Database Name to connect to the database. Click **[Next]**

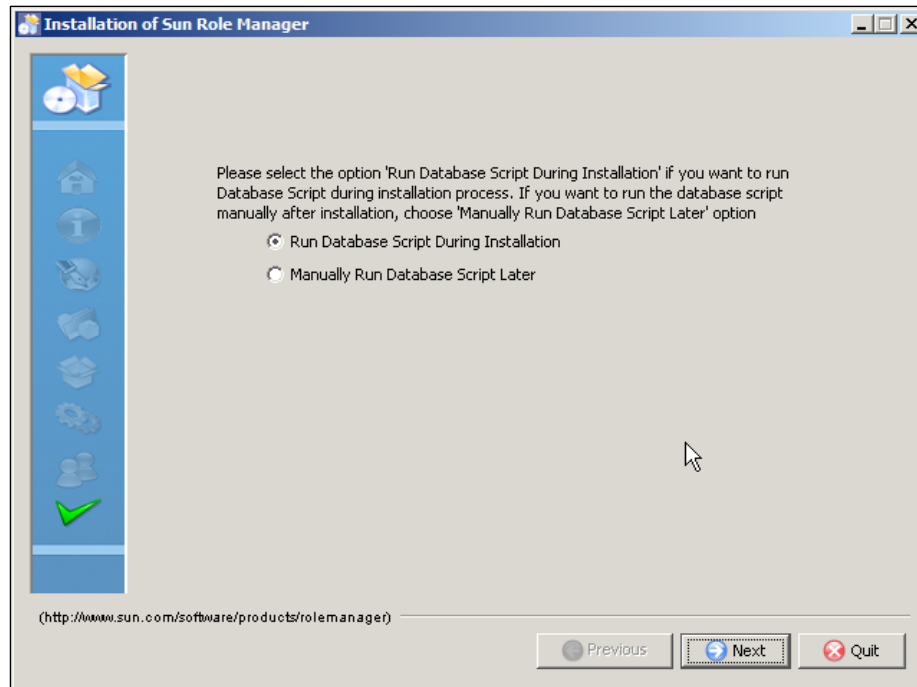


9. Now the installation of JRE 1.5, Tomcat 5.5 and Sun Role Manager core begins. Once you see “Finished” in package installation progress bar. Click **[Next]**



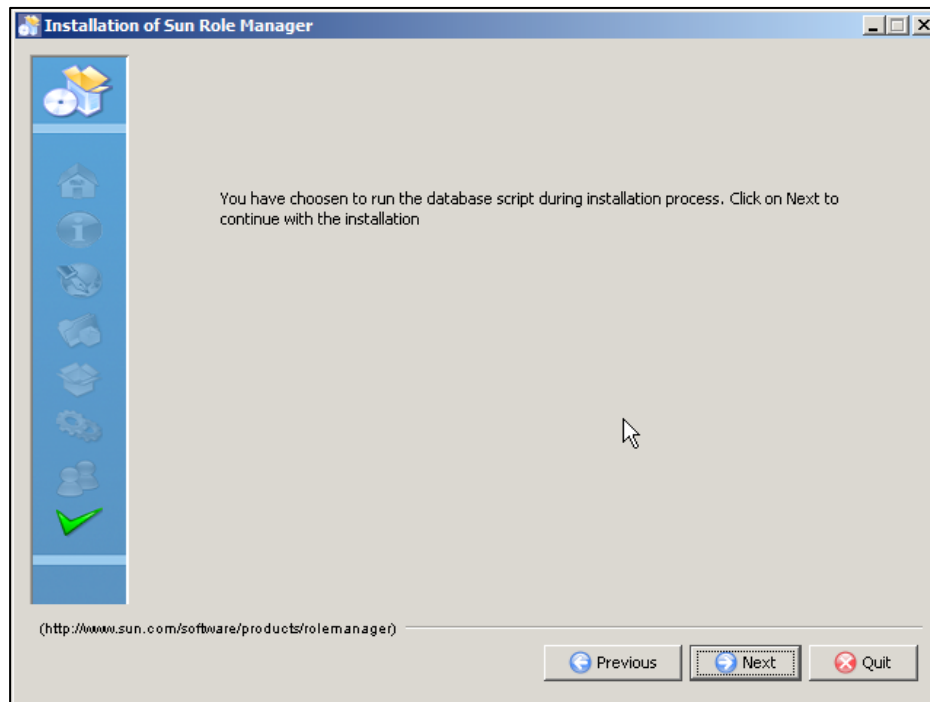
10. Select if the database script is to be executed by the installer or manually after the installer quits
 - a. Run Database Script During Installation
 - b. Manually Run Database Script Later

Run Database Script During Installation

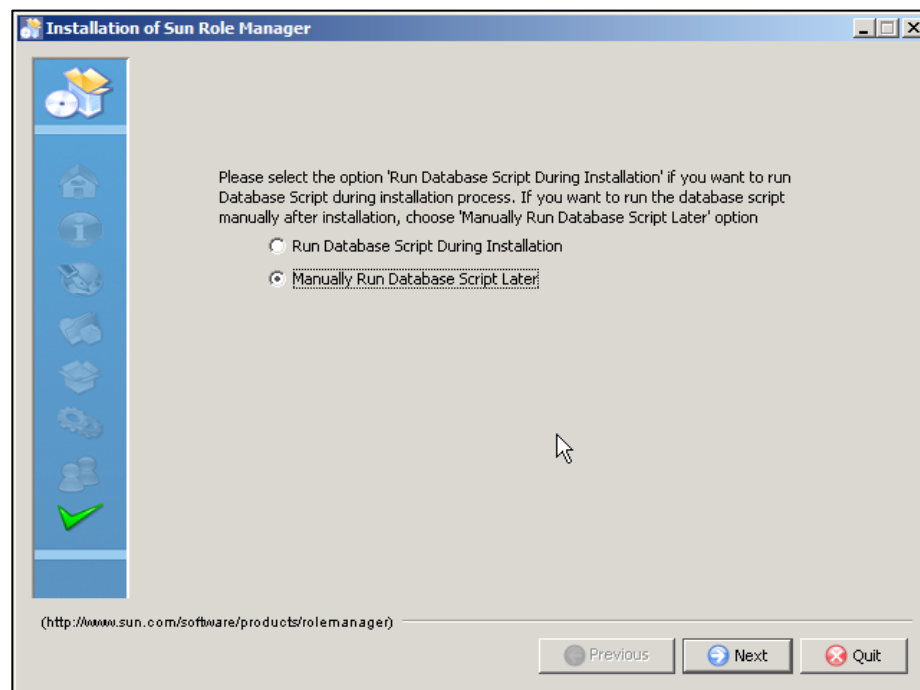


Click **[Next]**

Confirm that database scripts are to be executed by the installer, and click **[Next]**

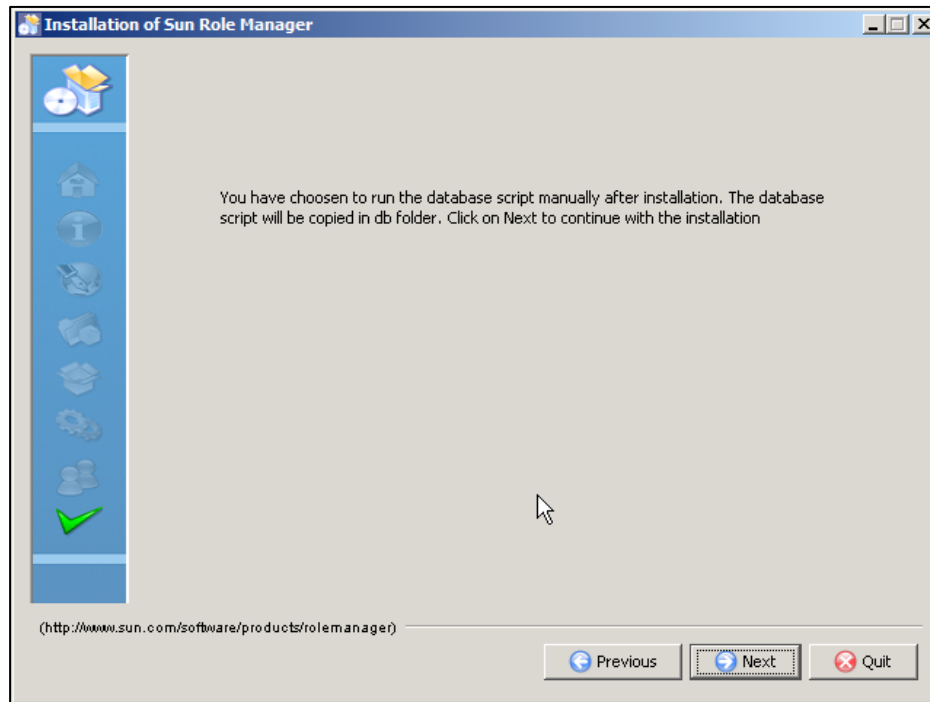


Manually Run Database Script Later



Click **[Next]**

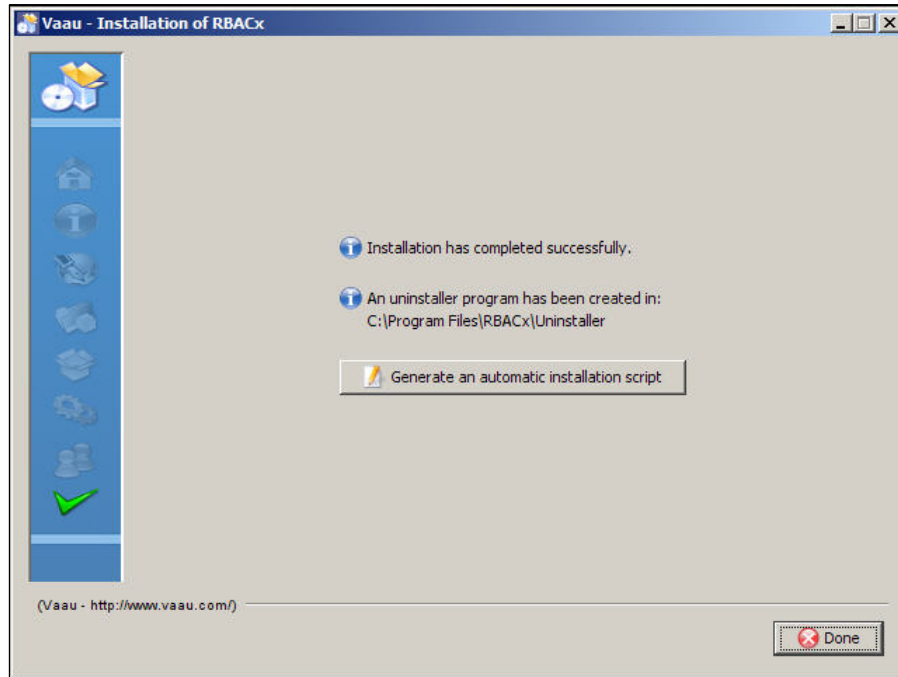
Confirm that database scripts are to be manually executed later, and click **[Next]**



Database scripts required to create Sun Role Manager schema are copied to **\$RBACX_HOME/db** folder. The Sun Role Manager schema creation scripts can be manually executed by a user with Database Administration privileges.

NOTE: Sun Role Manager schema has to be created prior to launching Sun Role Manager application

11. Click **[Generate an automatic installation script]** (if you want to generate a script) and save it as a file with a '.xml' extension on your machine and click **[Done]**



12. Navigate to **\$RBACX_HOME\tomcat55\webapps** via the command-line
13. Enter the following commands to create a *staging* directory and extract the war file into it

NOTE: It is assumed that a version of Java JDK exists on the system. Java JDK can be downloaded from <http://java.sun.com/javase/downloads/index.jsp>. Installation instructions for Java 6 can be found at <http://java.sun.com/javase/6/webnotes/install/index.html>

```
C:\> mkdir rbacx_staging
```

```
C:\> cd rbacx_staging
```

```
C:\> jar -xvf ../rbacx.war
```

14. Navigate to **lib** folder located inside the *rbacx_staging/WEB-INF* folder. For example - **\$RBACX_HOME\tomcat55\webapps\rbacx_staging\WEB-INF\lib**
15. Copy the JDBC connectivity jar file to **lib** folder. For example, to establish connectivity with Oracle Database Server, copy *ojdbc14.jar* to the **lib** folder

16. Download *weka.jar* file from
http://dlc.sun.com/rolemanager/Data_Mining/weka/for_rbacx-4.1.x
This file is required to carry out any role-mining related functionality of Sun Role Manager

17. Copy *weka.jar* to **lib** folder

18. The following steps are to be executed via the command-line. The commands repack an updated war file and delete the *staging* folder. It is assumed that the current directory is *\$RBACX_HOME/tomcat55/webapps/rbacx_staging*

```
C:\> jar -cvfM ../rbacx.war .
```

```
C:\> cd..
```

```
C:\> rmdir rbacx_staging /s /q
```

rbacx.war located at *\$RBACX_HOME/tomcat55/webapps/* is now updated and ready for deployment

19. Sun Role Manager installation is complete

Installing on Linux

For Linux environment, it is assumed that a remote database server is being utilized or if database is available locally, for example Oracle 10g, necessary environment variables such as \$ORACLE_HOME have been mapped to Oracle Installation Directory.

NOTE: 'rbacxservice' user should not be associated to any other application either as an OS user or Database user prior to installation

1. The installer is distributed as a Tarball with **.tar.gz** extension. Extract the installer using the command

```
$ tar -xvzf Installer.tar.gz
```

A directory named 'Installer' is created. Navigate to that directory

```
$ cd Installer
```

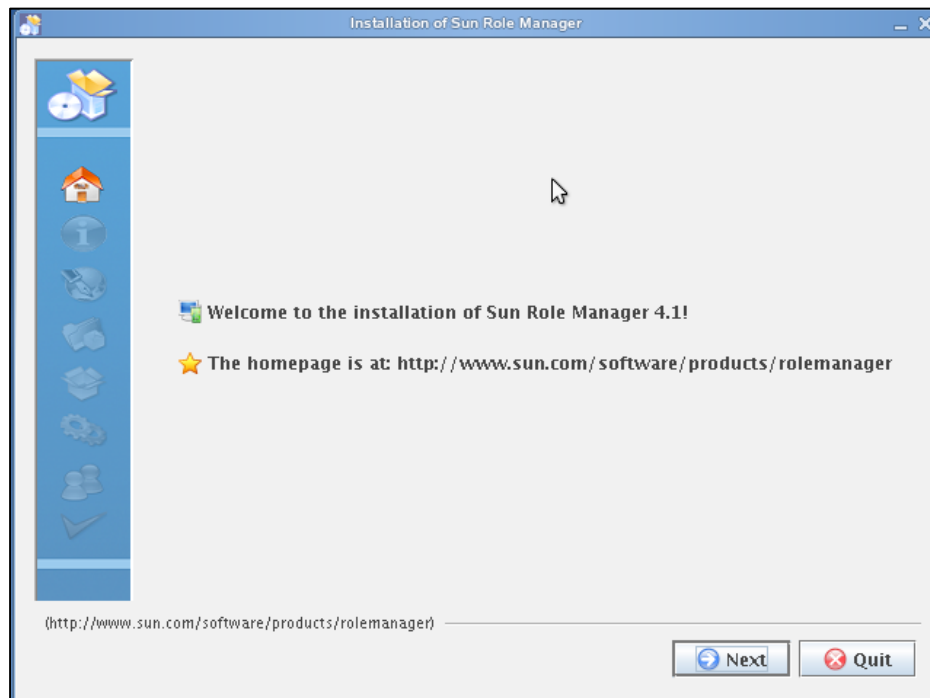
2. In order to launch the installer, run the installer script, 'install.sh', using the following command

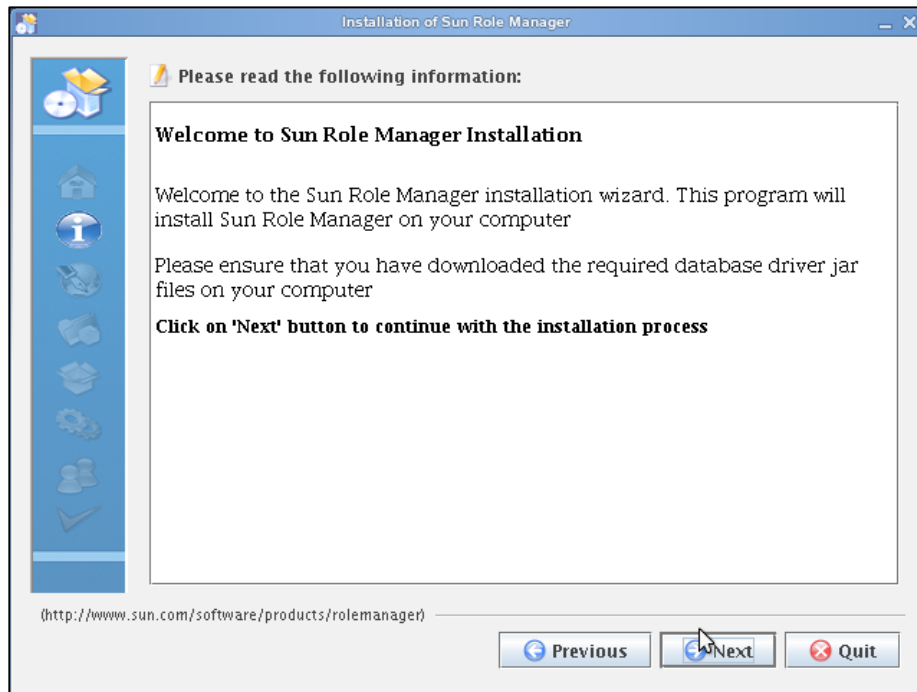
```
$ ./install.sh
```

NOTE: If 'install.sh' does not have execute permission, the following command grants 'install.sh' execute rights

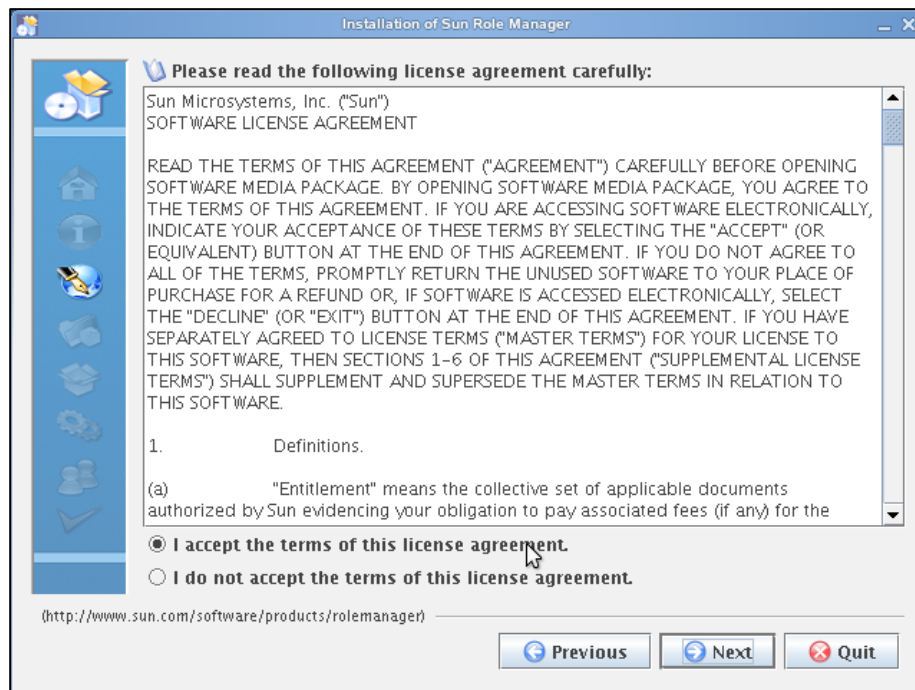
```
$ chmod g+x install.sh
```

3. The Installer first checks if JRE exists on the system. If not found, the installer first installs JRE. If JRE already exists the installer will launch the Sun Role Manager Installation Welcome Screen. Click **[Next]**

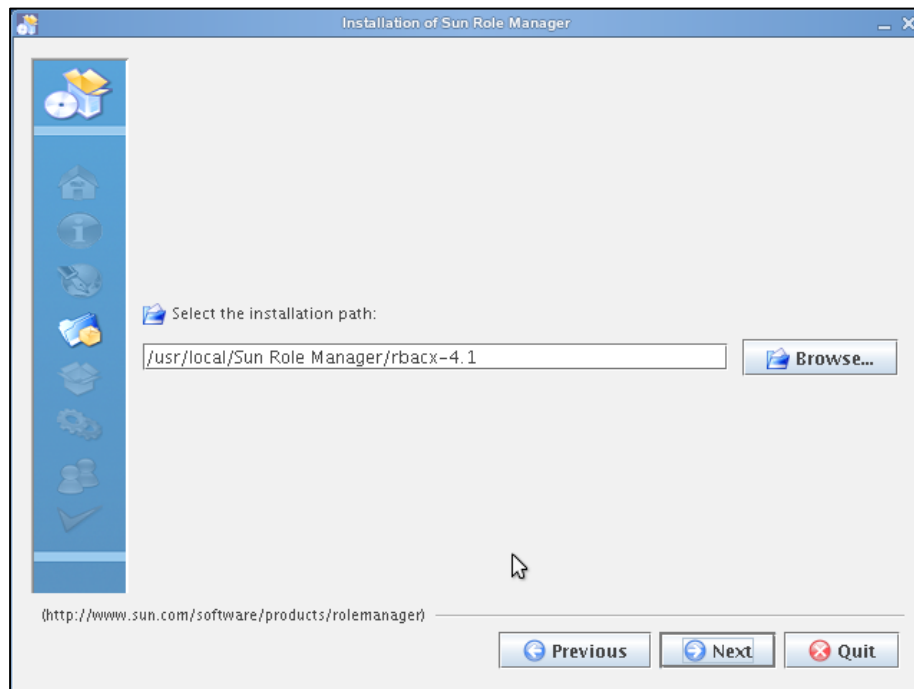




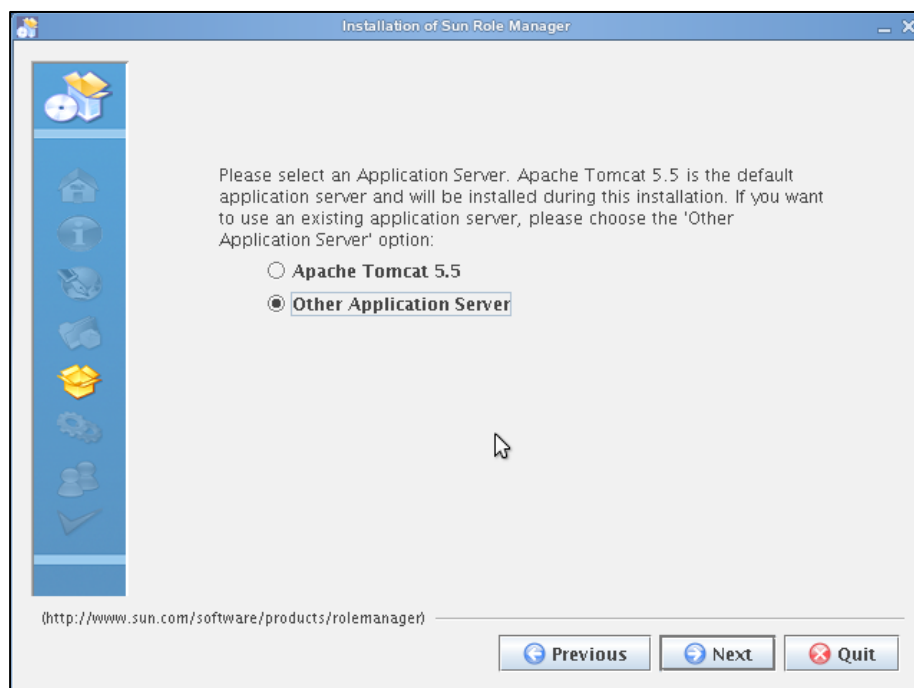
4. Read the License Agreement and to continue with installation select **"I accept the terms of this license Agreement"** and click [Next]



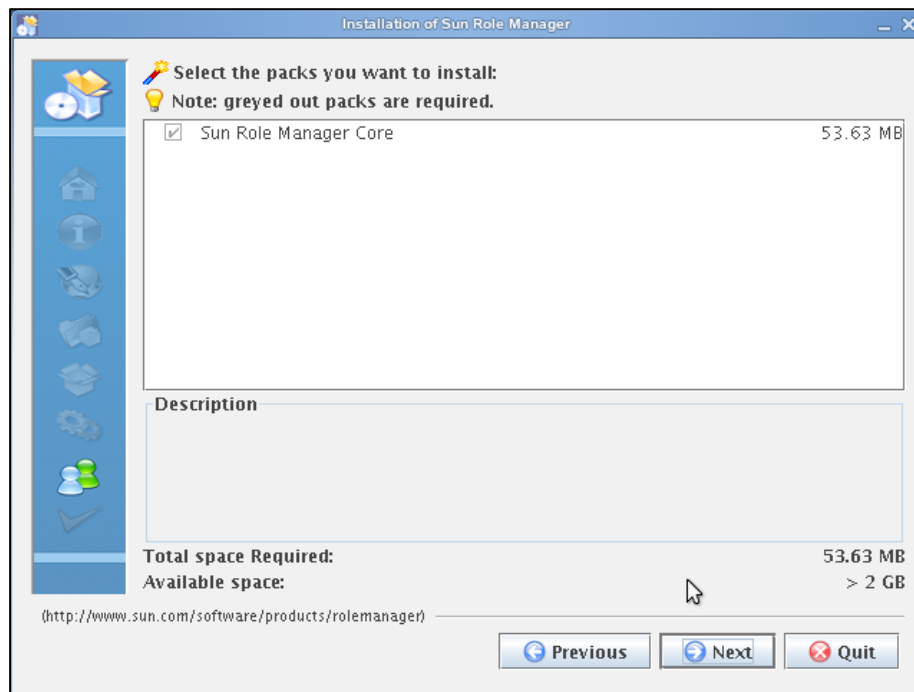
5. Select path where Sun Role Manager to be installed and click **[Next]**



6. Select **"Other Application Server"** to install on WebSphere Application Server. Click **[Next]**

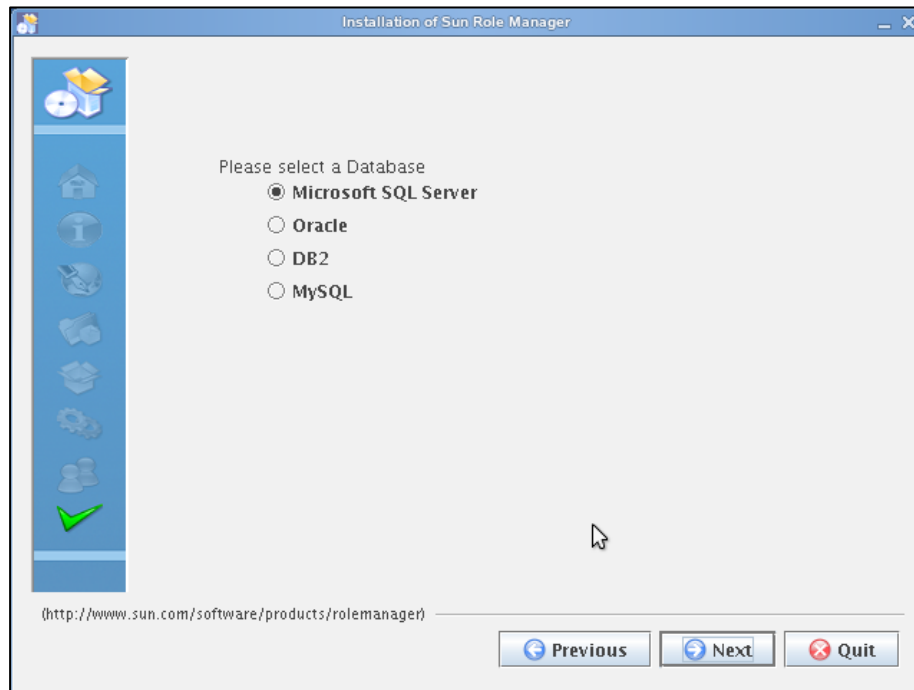


7. Next you'll see the components that the Installer will install on your machine. Click **[Next]**



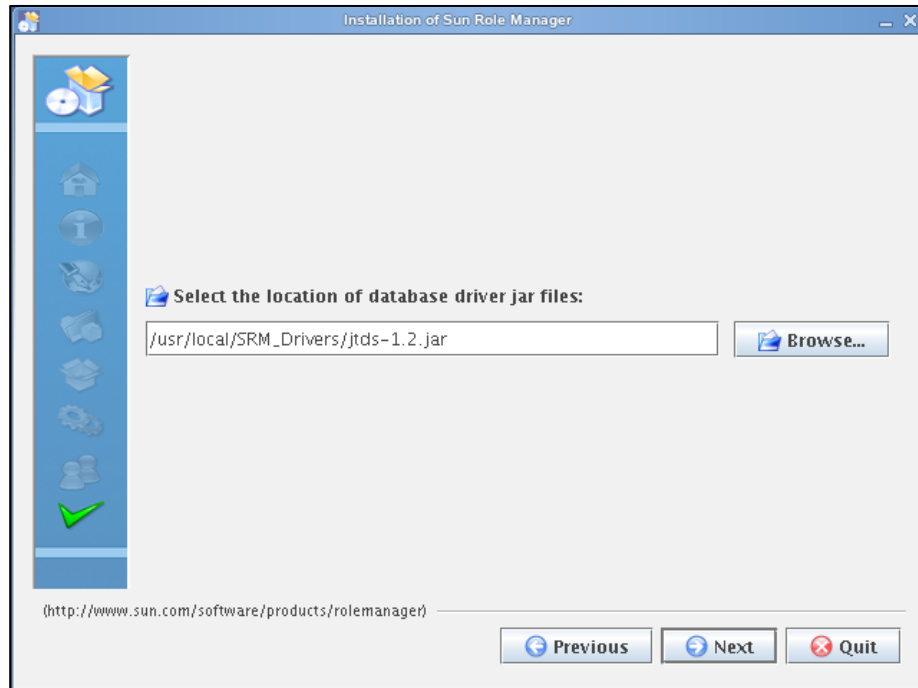
8. Select an Index Database
 - a. Microsoft SQL Server
 - b. Oracle
 - c. IBM DB2
 - d. MySQL

Microsoft SQL Server

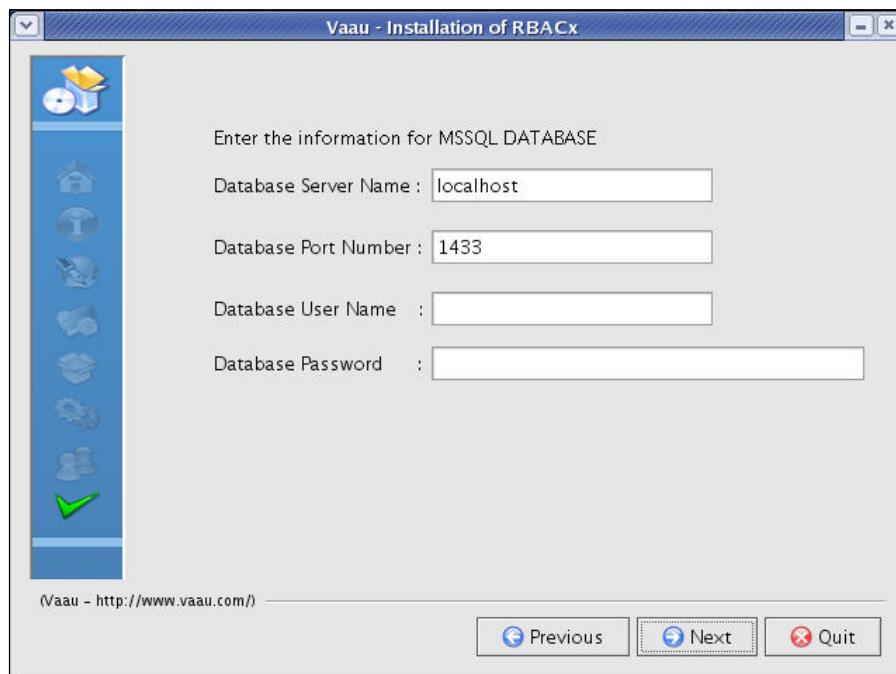


Select 'Microsoft SQL Server' and click **[Next]**

Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.

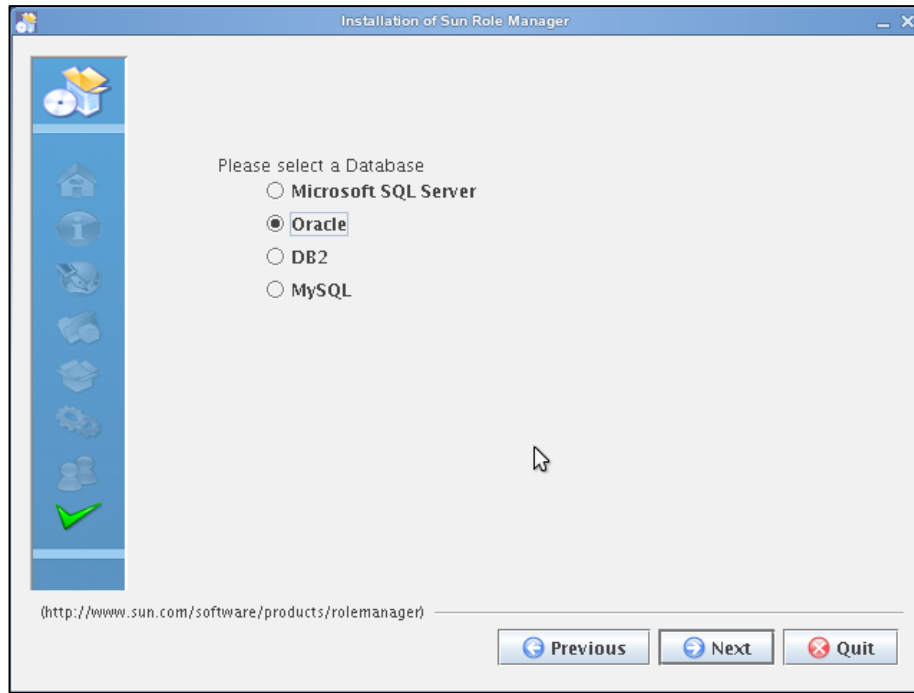


Enter Database Username/Password to connect to the database. Click **[Next]**

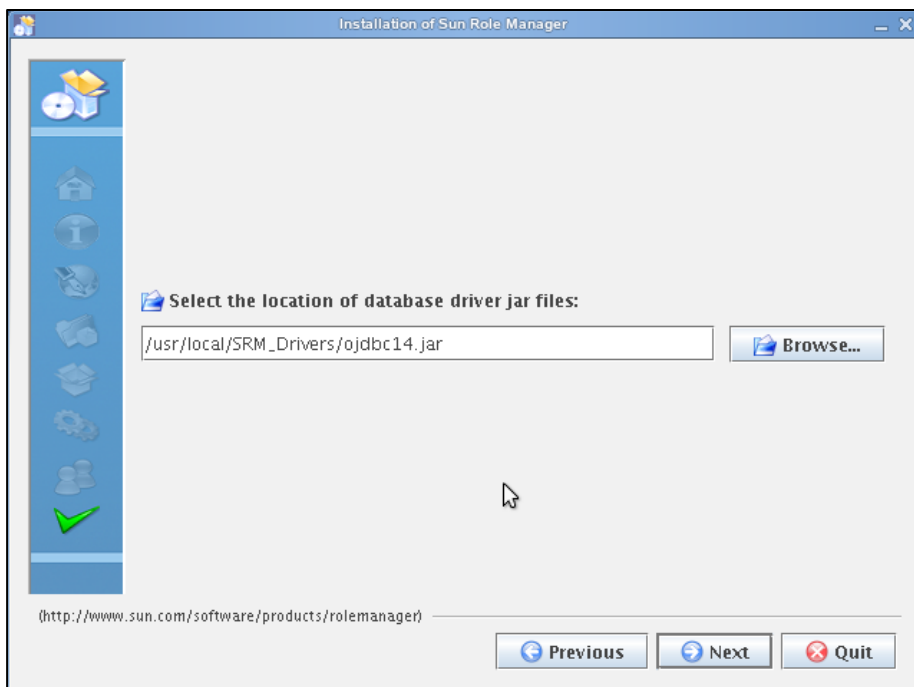


Oracle

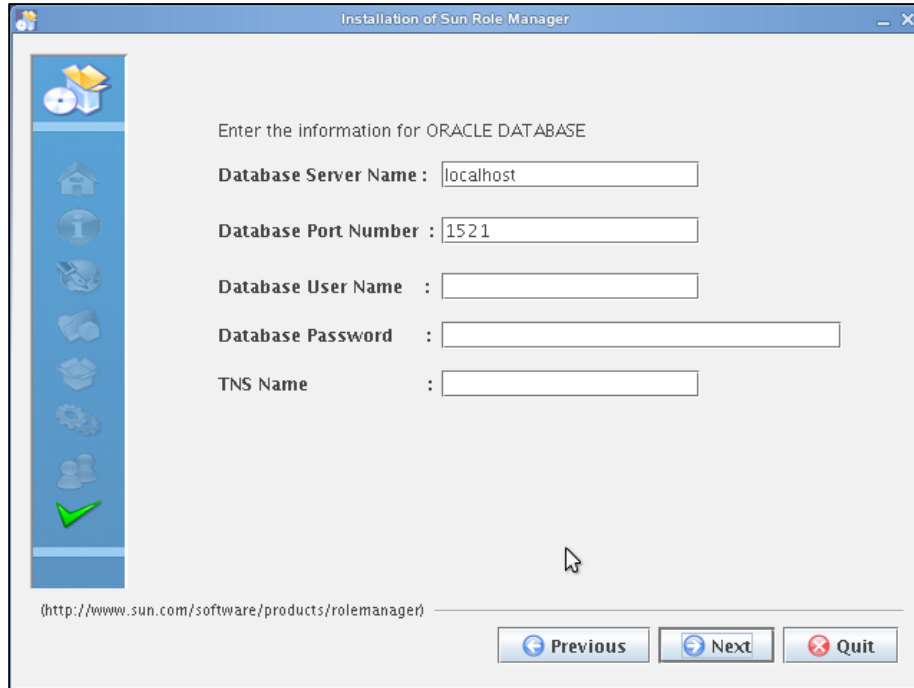
Select 'Oracle' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password and TNS Name to connect to the database. Click **[Next]**



Installation of Sun Role Manager

Enter the information for ORACLE DATABASE

Database Server Name : localhost

Database Port Number : 1521

Database User Name :

Database Password :

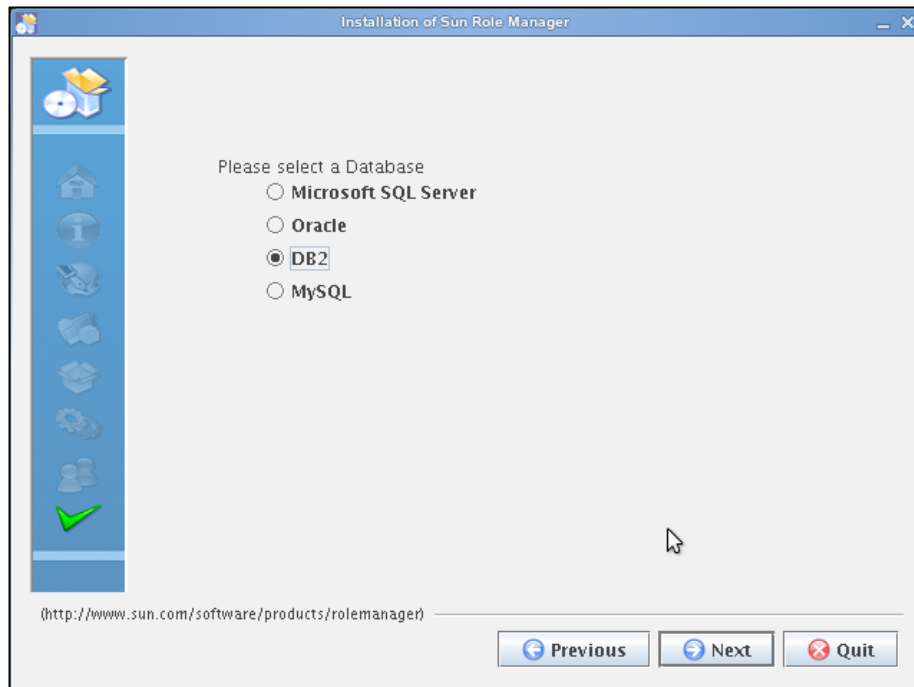
TNS Name :

(<http://www.sun.com/software/products/rolemanager/>)

Previous Next Quit

IBM DB2

Select 'DB2' and click **[Next]**



Installation of Sun Role Manager

Please select a Database

☐ Microsoft SQL Server

☐ Oracle

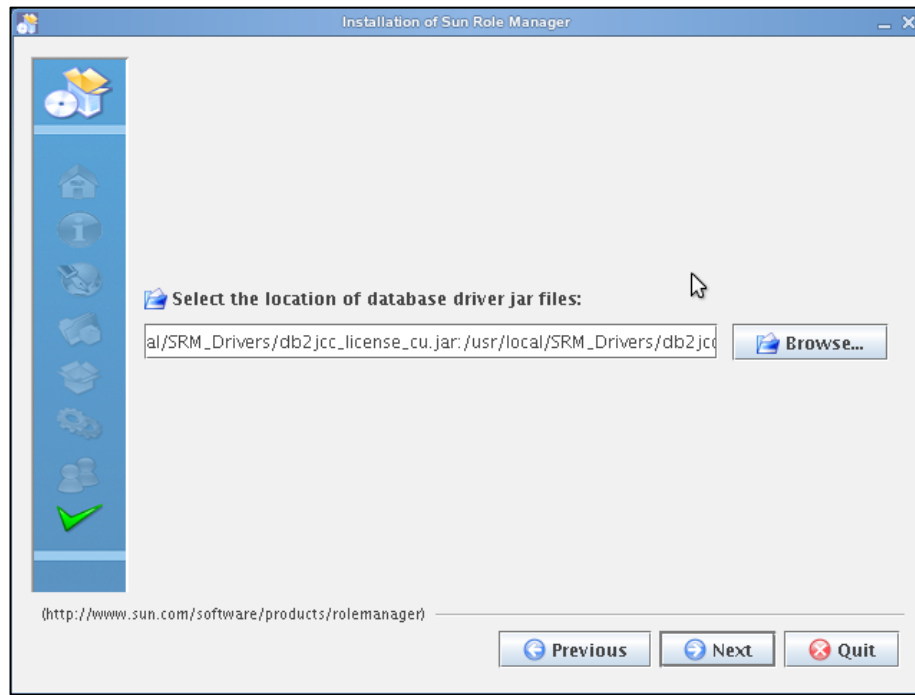
☒ DB2

☐ MySQL

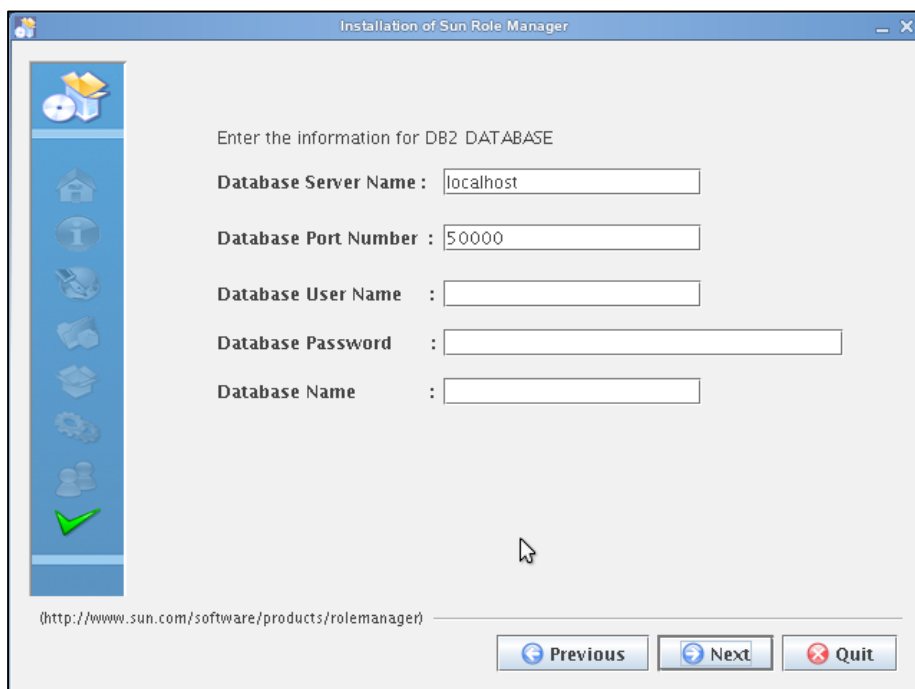
(<http://www.sun.com/software/products/rolemanager/>)

Previous Next Quit

Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.

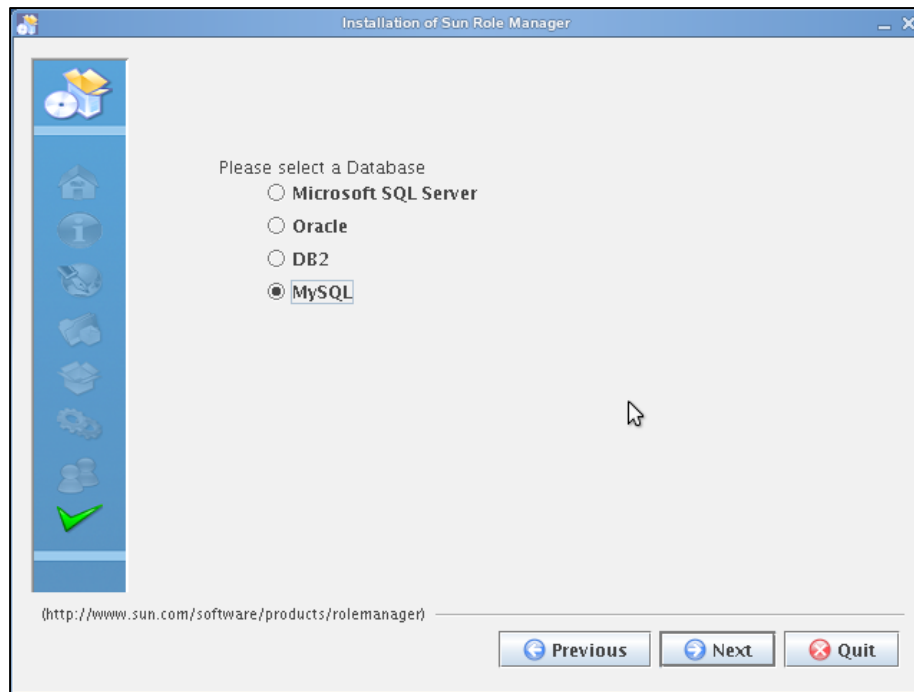


Enter Database Username/Password and Database Name to connect to the database. Click **[Next]**



MySQL

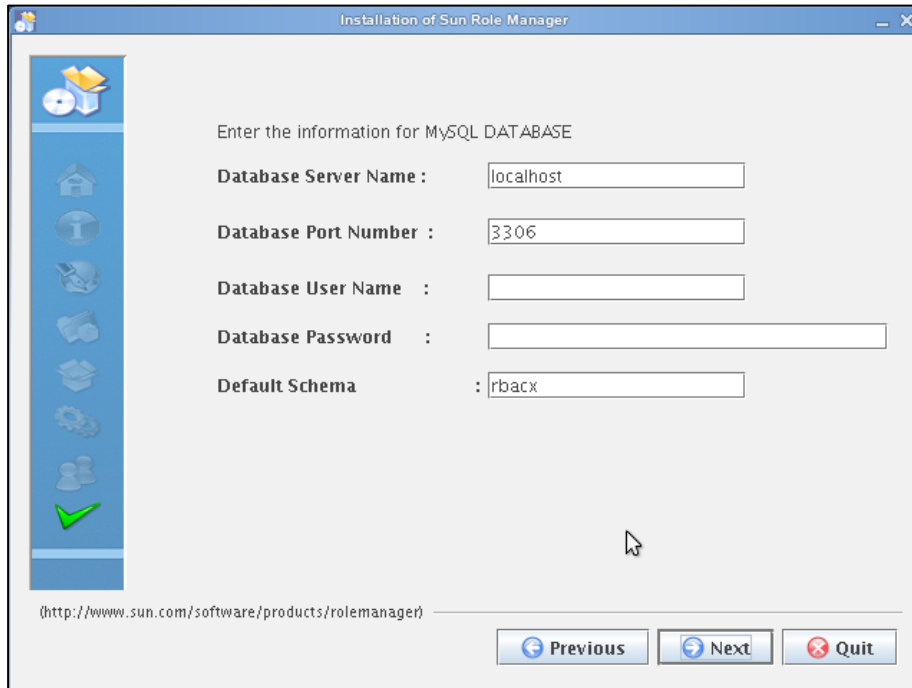
Select 'MySQL' and click **[Next]**



Enter or browse to the location where JDBC connectivity drivers have been downloaded. Click **[Browse]** and navigate to the folder where JDBC connectivity jar file resides. For further information on the type of driver to be downloaded, refer to page 4.



Enter Database Username/Password and Database Name to connect to the database.
Click **[Next]**

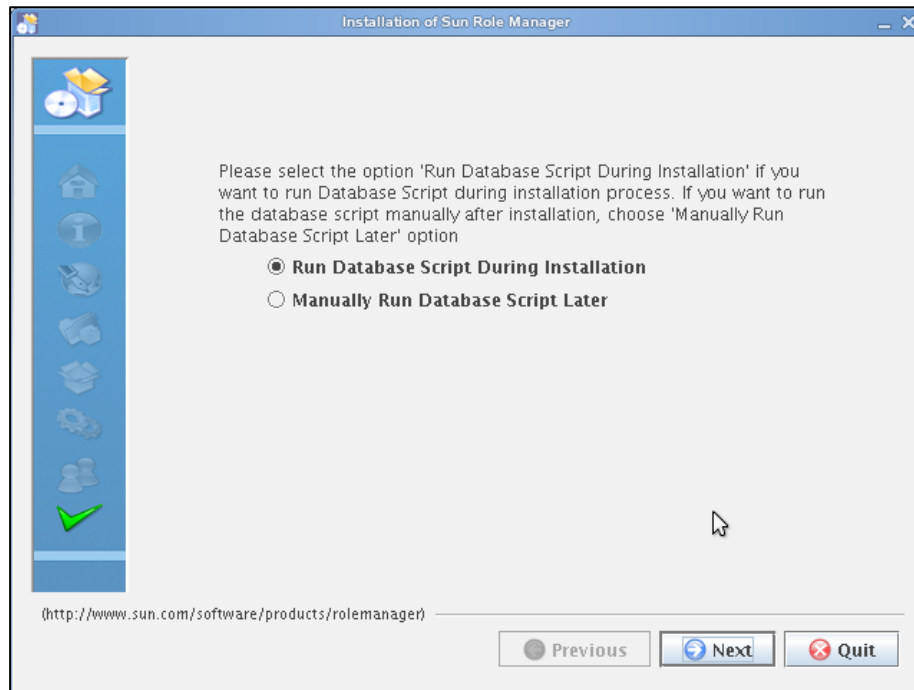


The image shows a Windows-style dialog box titled "Installation of Sun Role Manager". On the left is a vertical sidebar with icons for various installation steps; the bottom icon, representing a green checkmark, is highlighted. The main area of the dialog contains the text "Enter the information for MySQL DATABASE" followed by five labeled input fields: "Database Server Name" (containing "localhost"), "Database Port Number" (containing "3306"), "Database User Name" (empty), "Database Password" (empty), and "Default Schema" (containing "rbacx"). At the bottom of the dialog, there is a URL "(http://www.sun.com/software/products/rolemanager)" and three buttons: "Previous" (disabled), "Next" (active), and "Quit" (disabled).

9. Now the installation of JRE 1.5, Tomcat 5.5 and Sun Role Manager core begins. Once you see "Finished" in package installation progress bar. Click **[Next]**

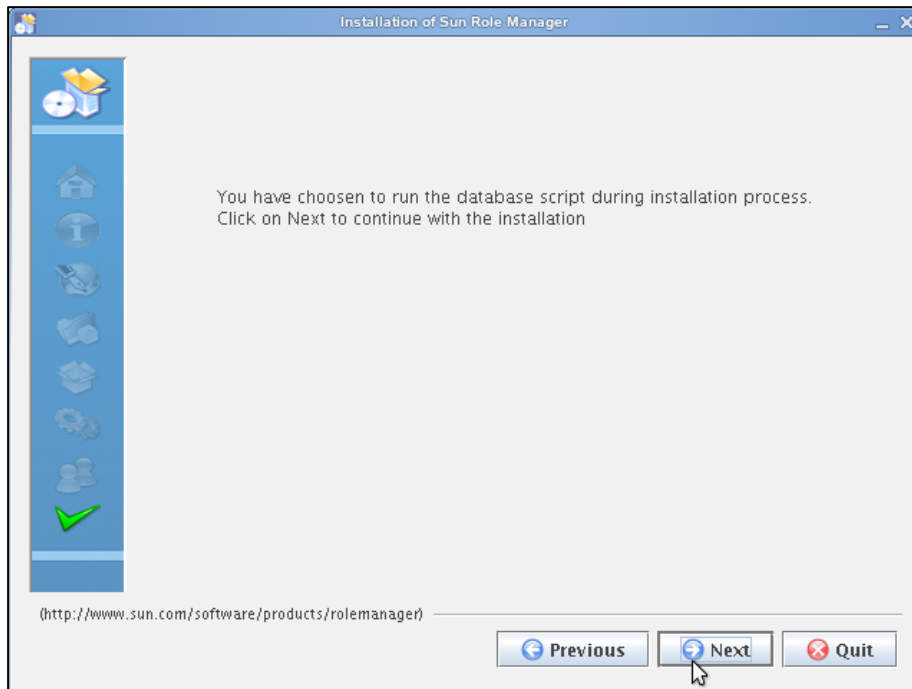
10. Select if the database script is to be executed by the installer or manually after the installer quits
 - a. Run Database Script During Installation
 - b. Manually Run Database Script Later

Run Database Script During Installation

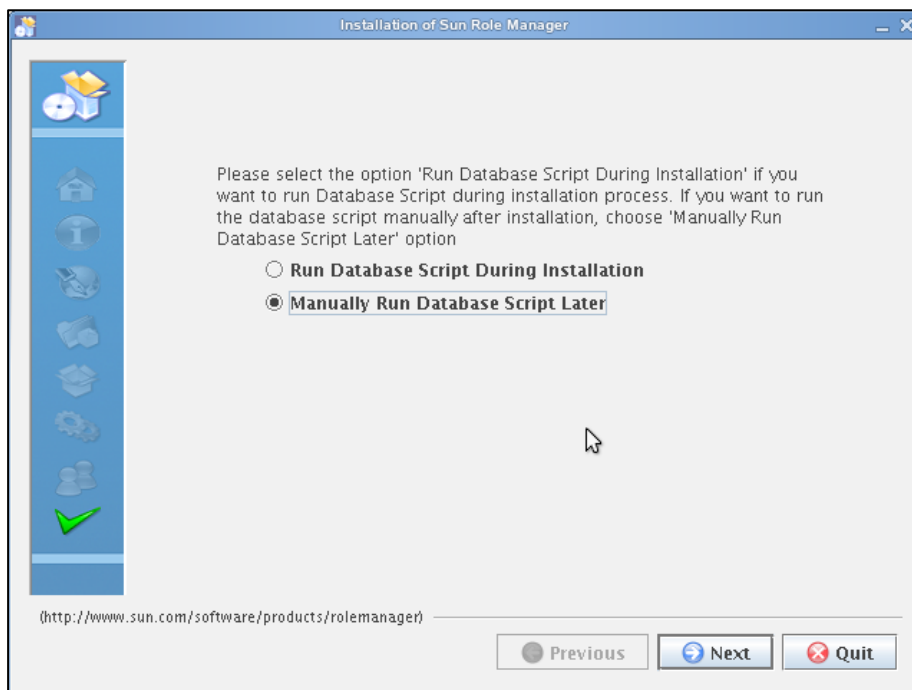


Click **[Next]**

Confirm that database scripts are to be executed by the installer, and click **[Next]**

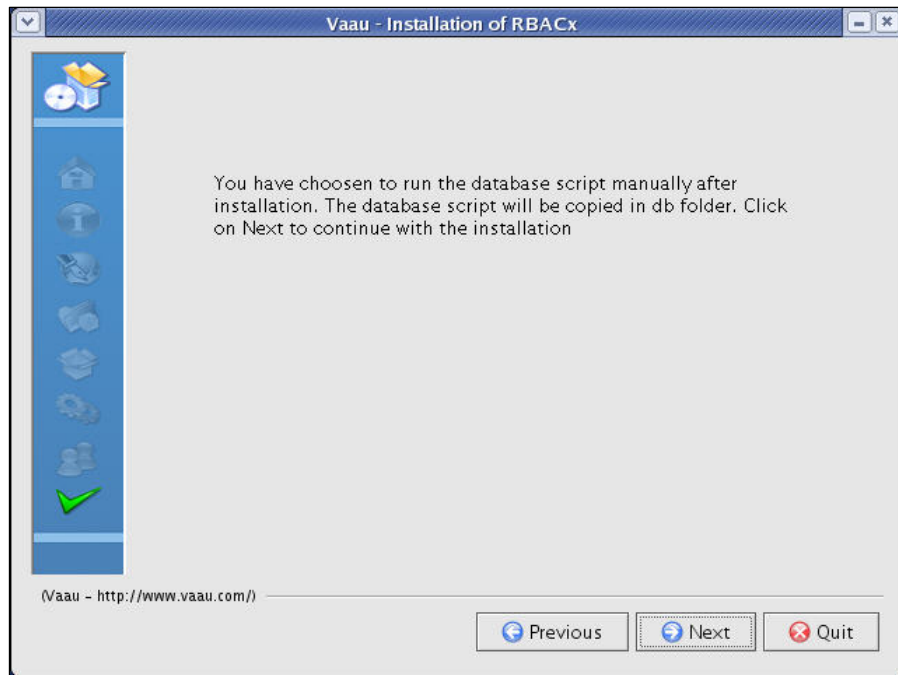


Manually Run Database Script Later



Click **[Next]**

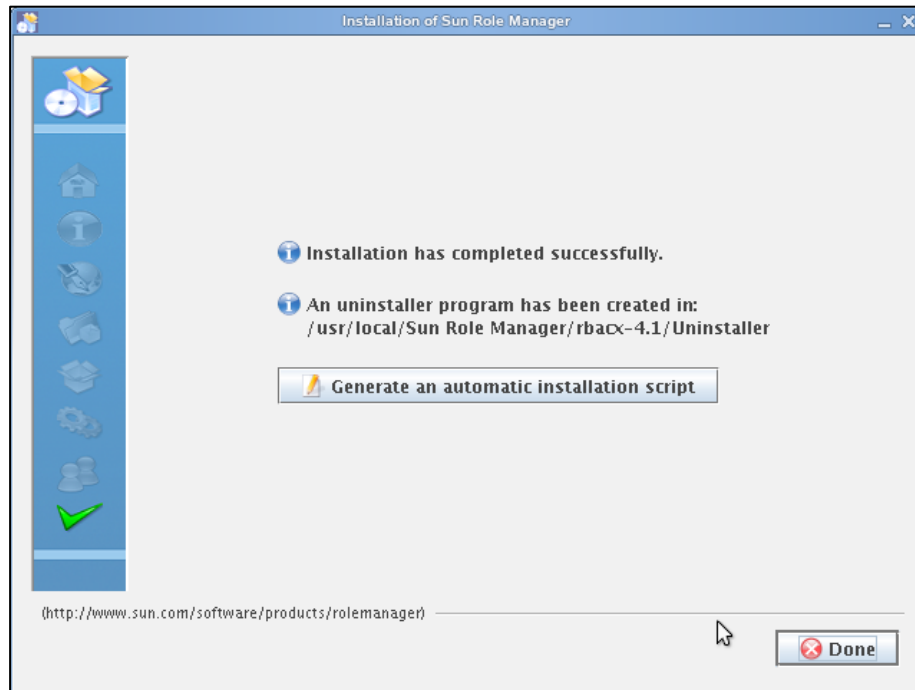
Confirm that database scripts are to be manually executed later, and click **[Next]**



Database scripts required to create Sun Role Manager schema are copied to **\$RBACX_HOME/db** folder. The Sun Role Manager schema creation scripts can be manually executed by a user with Database Administration privileges.

NOTE: Sun Role Manager schema has to be created prior to launching Sun Role Manager application

11. Click **[Generate an automatic installation script]** (if you want to generate a script) and save it as a file with a '.xml' extension on your machine and click **[Done]**



12. Navigate to **\$RBACX_HOME/tomcat55/webapps** via the command-line
13. Enter the following commands to create a *staging* directory and extract the war file into it

NOTE: It is assumed that a version of Java JDK exists on the system. Java JDK can be downloaded from <http://java.sun.com/javase/downloads/index.jsp>. Installation instructions for Java 6 can be found at <http://java.sun.com/javase/6/webnotes/install/index.html>

```
$ mkdir rbacx_staging
```

```
$ cd rbacx_staging
```

```
$ jar -xvf ../rbacx.war
```

14. Navigate to **lib** folder located inside the *rbacx_staging/WEB-INF* folder. For example - **\$RBACX_HOME/tomcat55/webapps/rbacx_staging/WEB-INF/lib**
15. Copy the JDBC connectivity jar file to **lib** folder. For example, to establish connectivity with Oracle Database Server, copy *ojdbc14.jar* to the **lib** folder

Download *weka.jar* file from

http://dlc.sun.com/rolemanager/Data_Mining/weka/for_rbacx-4.1.x

This file is required to carry out any role-mining related functionality of Sun Role Manager

16. Copy *weka.jar* to **lib** folder

17. The following steps are to be executed via the command-line. The commands repack an updated war file and delete the *staging* folder. It is assumed that the current directory is *\$RBACX_HOME/tomcat55/webapps/rbacx_staging*

```
$ jar -cvfM ../rbacx.war .
```

```
$ cd ..
```

```
$ rm -r rbacx_staging
```

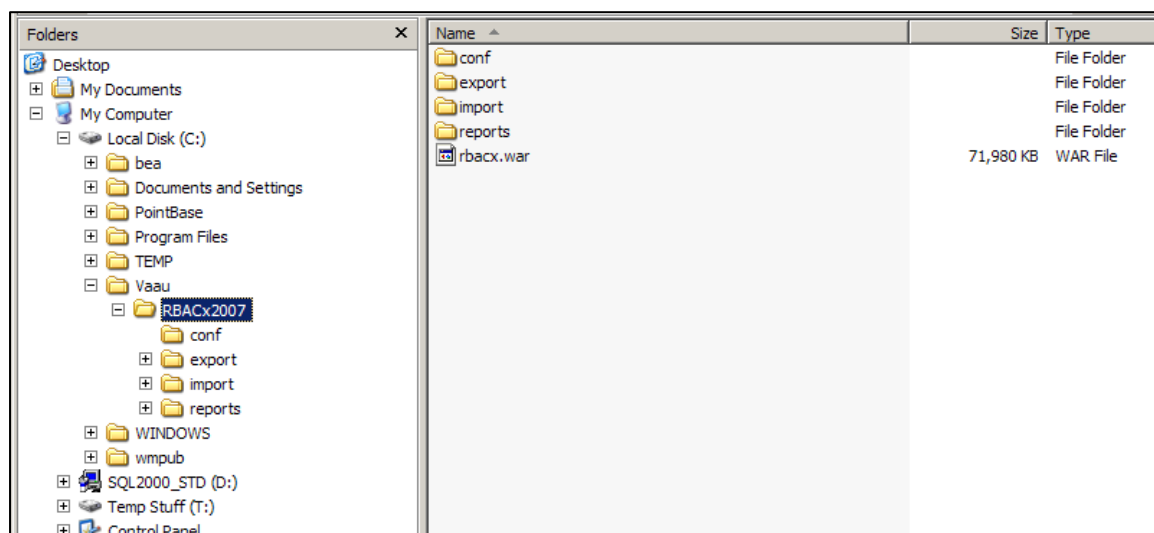
rbacx.war located at *\$RBACX_HOME/tomcat55/webapps/* is now updated and ready for deployment

18. Sun Role Manager installation is complete

Deploying Sun Role Manager on Sun Java Application Server 9.1

Follow the steps below to deploy Sun Role Manager application on Sun Java Application Server –

1. Verify the folder structure and location of rbackx.war file after the installer quits



NOTE: Steps 2 – 7 are optional. The following steps are to be followed if Sun Role Manager log file is required to be created in any directory other than the default log folder as defined by Sun Application Server.

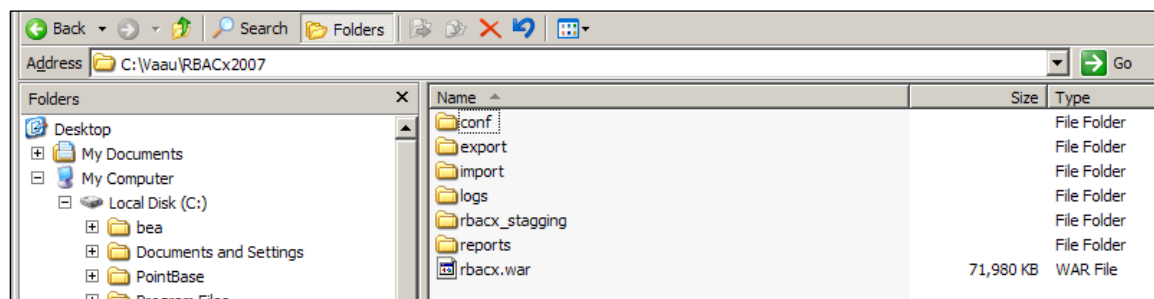
2. Go to **Start > Run** and enter “cmd”, press [OK]. This brings up the command prompt
3. At the command prompt, navigate to Sun Role Manager2007 folder, and create **logs** and **rbackx_stagging** folder

```
C:\> cd C:\Vaau\Sun Role Manager2007
```

```
C:\> mkdir logs
```

```
C:\> mkdir rbackx_stagging
```

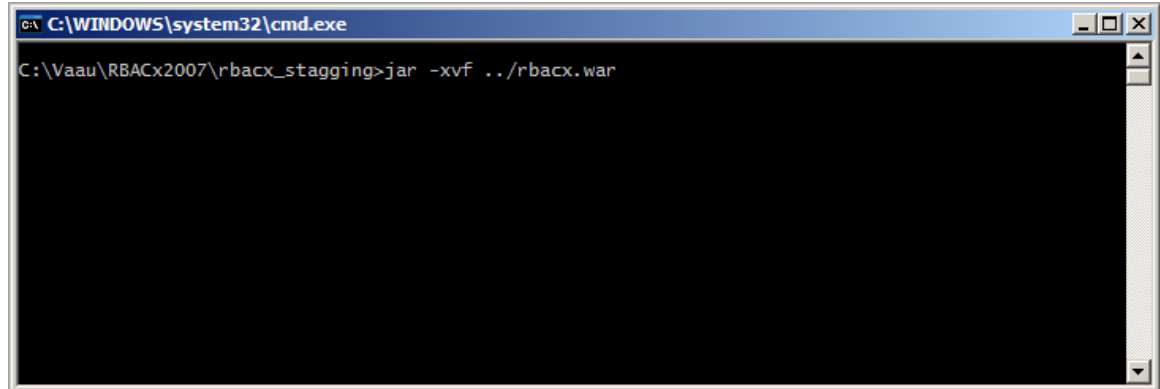
The Sun Role Manager application log file, **rbackx.log**, would be created in logs folder. The new folder structure would appear similar to file-structure of the figure on next page



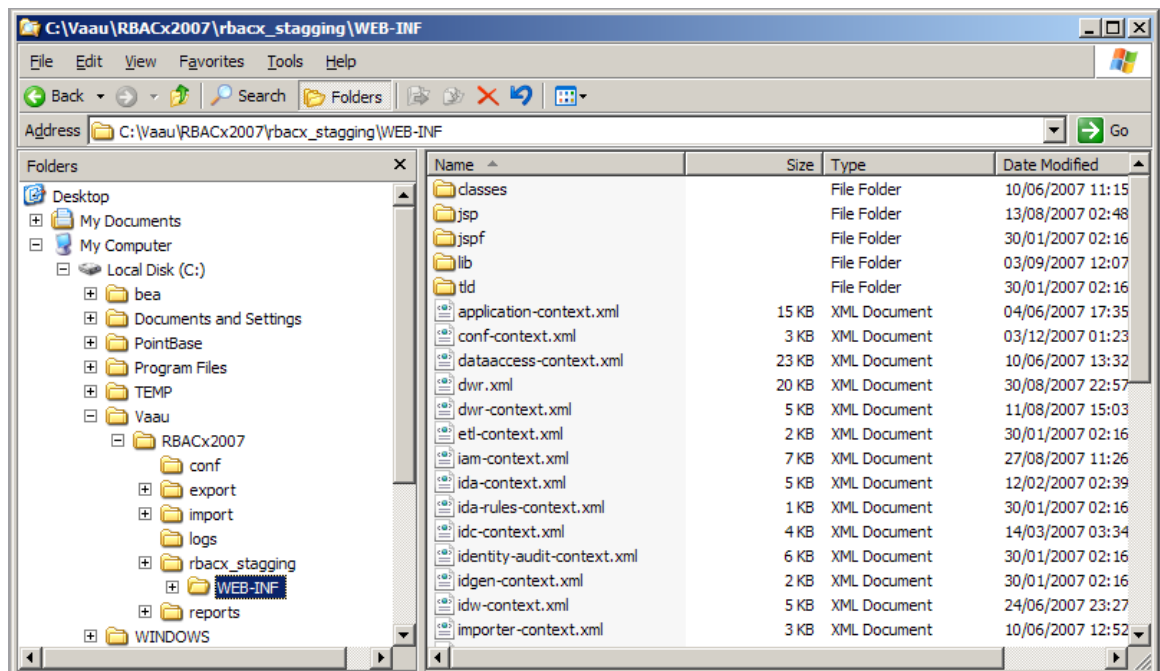
- At command prompt, navigate to the newly created **rbacx_stagging** folder, and enter the following commands

```
C:\> cd rbacx_stagging
C:\> jar -xvf ../rbacx.war
```

This will extract *rbacx.war* file into **rbacx_stagging** folder



- Using Windows Explorer, navigate to **WEB-INF** folder created by expanding the war file. According to the examples, the path to this folder would be *C:\Vaau\Sun Role Manager2007\rbacx_stagging\WEB-INF* as shown on the next page



6. **log4j.properties** file requires editing to enable Sun Role Manager's logging capabilities. Using a text editor, open **log4j.properties** under **WEB-INF** folder of the expanded war file.

Edit the following line under **# File Appender** with the full-path of the location where the log file is to be generated

log4j.appender.file.file=logs/rbacx.log

As a result, according to the examples, the line would be modified to

log4j.appender.file.file=C:/Vaau/Sun Role Manager2007/logs/rbacx.log

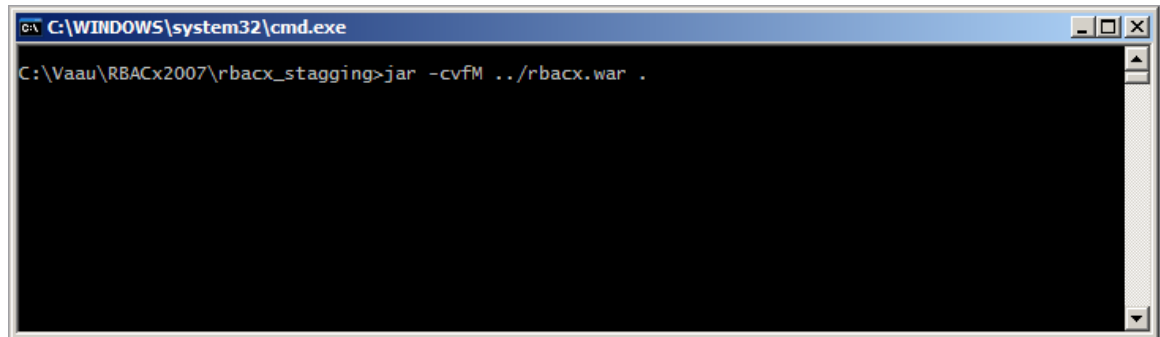
7. Navigate to **rbacx_stagging** folder at command prompt, and enter the following commands

NOTE: Please make a backup of the existing .war file before executing the following steps.

C:\> cd rbacx_stagging

C:\> jar -cvfM ../rbacx.war .

This will repackage the expanded folder structure to a .war file required for deployment on the Application Server.

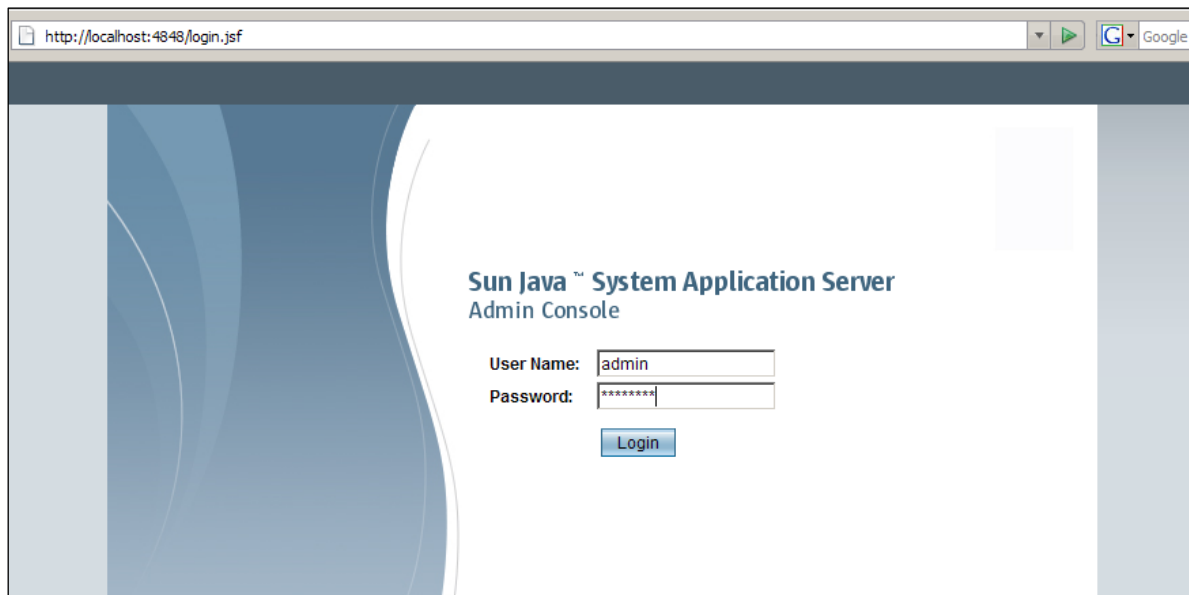


8. Open Sun Application Server's administration console by executing the following URL in a web browser

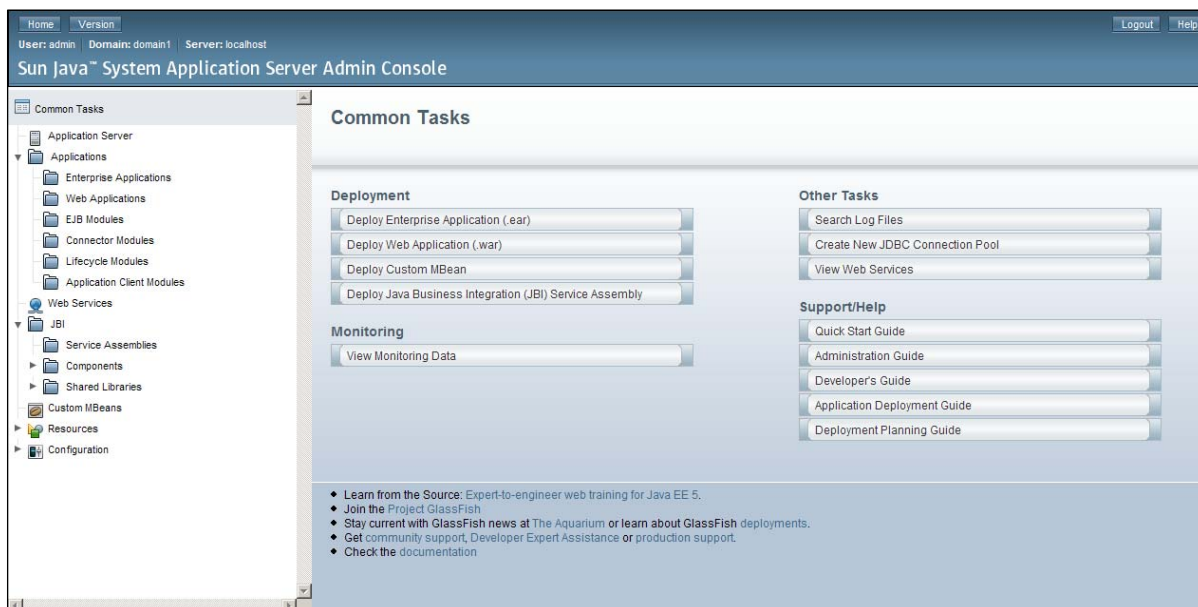
http://<server name>:<port number>/login.jsf

The default port number for admin console is 4848. The admin console can also be accessed via the Start Menu in Microsoft Windows environment.

9. Enter administration Login and Password



10. Navigate to **Common Tasks > Applications > Web Applications** under the admin console



11. Click **[Deploy]** under **Web Applications**

Applications > Web Applications

Web Applications

A Web application module consists of a collection of Web resources such as JavaServer Pages (JSPs), servlets, and HTML pages that are packaged in a WAR (Web Application Archive) file or directory.

Deployed Web Applications (0)

Deploy... Undeploy Enable Disable

Name	Enabled	Context Root	Action
No items found.			

12. Select **Location** and navigate to the rbacx.war file on the Local System under **Deploy Enterprise Applications/Modules**

13. Enter **Application Name** as **rbacx**

14. Enter **Context Root** as **rbacx**

15. Ensure **Status** is checked and **Run Verifier**, **Precompile JSPs** are unchecked

16. Click **[OK]**

Applications > Web Applications

Deploy Enterprise Applications/Modules

Specify the location of an application to deploy. Applications can be in packaged files such .war, .ear, .jar, and .rar.

Type: Web Application (.war)

Location: ☒ Packaged file to be uploaded to the server
 C:\Vaau\RBACx2007\rbacx.war

☐ Local packaged file or directory that is accessible from the Application Server

General

Application Name: * rbacx

Context Root: rbacx
 Path relative to server's base URL

Virtual Servers:

Associates an internet domain name with a physical server

Status: ☒ Enabled

Run Verifier: ☐ Enabled

Precompile JSPs: ☐ Enabled

17. Sun Role Manager application would be listed under **Web Applications** on successful deployment

Applications > Web Applications

Web Applications

A Web application module consists of a collection of Web resources such as JavaServer Pages (JSPs), servlets, and HTML pages that are packaged in a WAR (Web Application Archive) file or directory.

Deployed Web Applications (1)

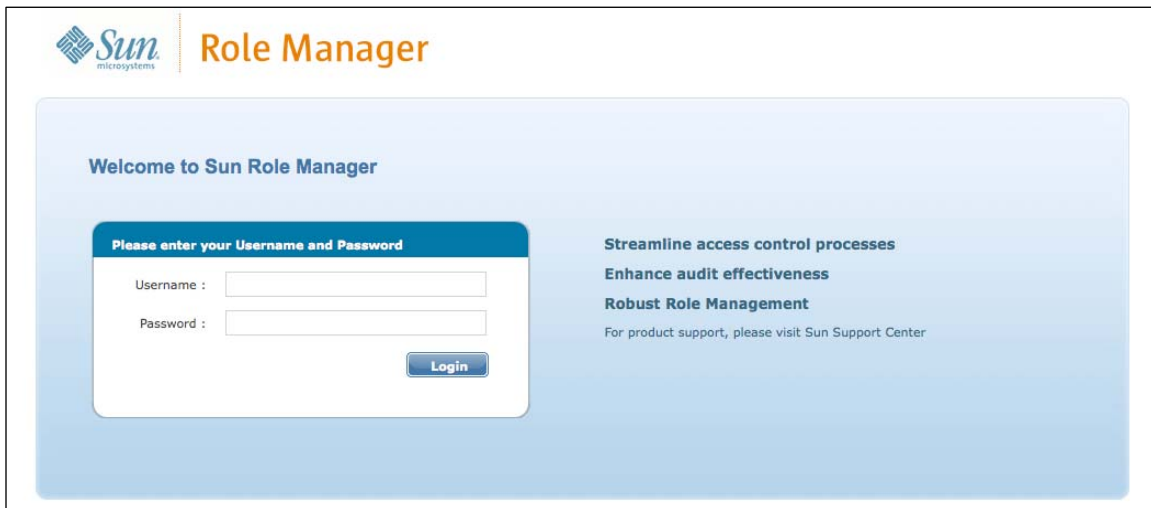
☒ ☐ | [Deploy...](#) [Undeploy](#) [Enable](#) [Disable](#)

	Name	Enabled	Context Root	Action
<input type="checkbox"/>	rbacx	true	rbacx	Launch Redeploy

18. Sun Role Manager deployment on Sun Java Application Server is complete

Verification of Sun Role Manager Installation

1. Browse to Application Server logs and verify that '**rbacx.log**' file is created when Sun Role Manager application is deployed
2. Open this file using a text editor and check logs indicating a successful startup of Sun Role Manager application
3. Using a web browser, open the following URL
`http://<server ip>:<port number>/rbacx`



4. Enter the required credentials to log into the client. Click on **[OK]**

User Name : **"rbacxadmin"**
Password : **"password"**