

# HP Continuous Delivery Automation

Software Version 1.00

---

## Installation and Configuration Guide

Document Release Date: June 2012

Software Release Date: June 2012



## Legal Notices

### Warranty

The only warranties for HP products and services are set forth in the express warranty statements accompanying such products and services. Nothing herein should be construed as constituting an additional warranty. HP shall not be liable for technical or editorial errors or omissions contained herein. The information contained herein is subject to change without notice.

### Restricted Rights Legend

Confidential computer software. Valid license from HP required for possession, use or copying. Consistent with FAR 12.211 and 12.212, Commercial Computer Software, Computer Software Documentation, and Technical Data for Commercial Items are licensed to the U.S. Government under vendor's standard commercial license.

### Copyright Notice

© Copyright 2012 Hewlett-Packard Development Company, L.P.

### Trademark Notices

Adobe® is a trademark of Adobe Systems Incorporated.

Microsoft® and Windows® are U.S. registered trademarks of Microsoft Corporation.

Oracle and Java are registered trademarks of Oracle and/or its affiliates.

UNIX® is a registered trademark of The Open Group.

RED HAT READY™ Logo and RED HAT CERTIFIED PARTNER™ Logo are trademarks of Red Hat, Inc.

## Documentation Updates

The title page of this document contains the following identifying information:

- Software Version number, which indicates the software version.
- Document Release Date, which changes each time the document is updated.
- Software Release Date, which indicates the release date of this version of the software.

To check for recent updates or to verify that you are using the most recent edition of a document, go to:

<http://h20230.www2.hp.com/selfsolve/manuals>

This site requires that you register for an HP Passport and sign in. To register for an HP Passport ID, go to:

<http://h20229.www2.hp.com/passport-registration.html>

Or click the **New users - please register** link on the HP Passport login page. You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HP sales representative for details.

## Support

Visit the HP Software Support Online web site at: [www.hp.com/go/hpsoftwaresupport](http://www.hp.com/go/hpsoftwaresupport). This web site provides contact information and details about the products, services, and support that HP Software offers.

HP Software online support provides customer self-solve capabilities. It provides a fast and efficient way to access interactive technical support tools needed to manage your business. As a valued support customer, you can benefit by using the support web site to:

Search for knowledge documents of interest

Submit and track support cases and enhancement requests

Download software patches

Manage support contracts

Look up HP support contacts

Review information about available services

Enter into discussions with other software customers

Research and register for software training

Most of the support areas require that you register as an HP Passport user and sign in. Many also require a support contract. To register for an HP Passport user ID, go to: <http://h20229.www2.hp.com/passport-registration.html> to find more information about access levels, go to: [http://h20230.www2.hp.com/new\\_access\\_levels.jsp](http://h20230.www2.hp.com/new_access_levels.jsp)

# Contents

About this Guide .....	6
<b>1 Installation and Configuration Overview .....</b>	<b>7</b>
HP CDA System Requirements .....	7
HP CDA System Requirements - Production Environments .....	7
HP CDA System Requirements – Development or Evaluation Environments .....	7
Platform Software Requirements .....	7
Example Configuration .....	7
HP CDA Database .....	8
User Authentication and Management .....	8
Service Providers .....	9
Infrastructure Providers .....	9
Deployment Providers .....	9
Monitoring Providers .....	9
Continuous Integration (CI) Servers .....	9
HP CDA Installation and Configuration at a Glance .....	10
<b>2 HP CDA Service Providers .....</b>	<b>13</b>
HP Matrix OE Infrastructure Orchestration (IO) .....	13
Jenkins .....	14
Opscode Chef .....	14
HP Server Automation (HP SA) .....	15
HP Database and Middleware Automation (HP DMA) .....	16
HP Operations Orchestration (HP OO) .....	16
HP Matrix OE Infrastructure Orchestration load balancer .....	16
<b>3 Installing and Configuring HP CDA .....</b>	<b>17</b>
Configure DNS .....	17
Configure NTP .....	17
Install the JDK .....	18
Install the Database Drivers .....	18
ojdbc and orai18n drivers (Oracle Database Only) .....	18
sqljdbc driver (Microsoft SQL Database Only) .....	19
Enable distributed transactions (Microsoft SQL Database Only) .....	19
Prepare the HP CDA database .....	19
Oracle database – important information .....	19
Microsoft SQL database – important information .....	22

Configure LWSSO (advanced configuration) .....	26
Place the license key file on the HP CDA machine .....	27
Install HP CDA .....	27
Start the HP CDA installer wizard .....	27
Begin entering installation parameters.....	27
Enter database parameters .....	28
Enter endpoint properties.....	30
Enter user authentication parameters.....	31
Enter administrator, system email, and SMTP server configuration parameters .....	33
Enter software use license details.....	33
Finish installing HP CDA.....	34
Grant JBoss JTA recovery module access to database tables.....	34
Start the HP CDA application.....	34
Log in to the HP CDA User Interface .....	35
Configure HP CDA to run as a service .....	35
Integrate the HP CDA service providers.....	36
HP Matrix OE Infrastructure Orchestration (IO).....	36
Jenkins .....	38
Opscode Chef .....	39
HP Server Automation .....	41
HP Database and Middleware Automation.....	42
HP Operations Orchestration .....	42
HP Matrix OE Infrastructure Orchestration load balancer .....	44
<b>A Configuring HP CDA to Run as a Service .....</b>	<b>46</b>
Configuring HP CDA to Run as a Windows Service.....	46
Uninstalling the HP CDA Windows Service.....	49
Configuring HP CDA to Run as a Linux Service .....	49
<b>B Opscode Chef Best Practices .....</b>	<b>50</b>
Chef Installation .....	50
Setting up the Chef server.....	50
Installing a particular version of the Chef server .....	50
Support for Microsoft Windows clients.....	51
Working with Microsoft Windows targets .....	51
SSH .....	51
Powershell cookbook .....	51
Editing the bootstrap script used for Microsoft Windows clients to install a particular version of Opscode chef client.....	51
Pre-configuring virtual machines with Chef client-specific files for error-free bootstrapping.....	51

Modifying the VM templates .....	52
Modifying the bootstrapping script templates .....	52
Tips.....	53
<b>C For More Information.....</b>	<b>54</b>

# About this Guide

This guide explains how to install and configure the HP Continuous Delivery Automation (HP CDA) software. HP recommends that each chapter be read and all procedures be performed in the order presented in this guide. This guide contains the following chapters:

- Chapter 1: This chapter provides information that is important in order to successfully install and configure HP CDA. It also provides an “at a glance” overview of the HP CDA installation and configuration procedure.
- Chapter 2: This chapter contains important information pertaining to the providers that can be integrated with HP CDA.
- Chapter 3: This chapter contains the procedures that must be followed in the order presented to install and configure HP CDA.

This guide also contains these additional sections:

- Appendix A: This appendix explains how to configure HP CDA to run as a service.
- Appendix B: This appendix provides some best practices for using Opscode Chef Server as a deployer with HP CDA.
- Appendix C: This appendix lists other HP publications that are available for the HP CDA product.

# 1 Installation and Configuration Overview

This chapter contains information that is necessary to note before beginning the HP CDA installation and configuration process. Make sure that all system requirements are satisfied before beginning installation and configuration.

This chapter contains the following sections:

- HP CDA System Requirements
- HP CDA Database
- User Authentication and Management
- Service Providers
- HP CDA Installation and Configuration at a Glance

## HP CDA System Requirements

This section lists the system requirements for HP CDA.

### HP CDA System Requirements - Production Environments

- 1 Dual Core or Quad Core 64-bit processor
- 6 GB RAM
- 3 GB or more hard disk space
- Network bandwidth of 1 Gb/sec or higher

### HP CDA System Requirements – Development or Evaluation Environments

- 1 Dual Core or Quad Core 64-bit processor
- 2 GB RAM
- 3 GB free disk space
- Network bandwidth of 100Mb/sec or higher

### Platform Software Requirements

In addition to the system requirements, the Java SE Development Kit (JDK) must be installed on the HP CDA platform *before starting the installation process*. Refer to the HP CDA *Support Matrix* for information about supported versions of the JDK.

### Example Configuration

For a production environment with 500 concurrent users, the following minimum example configuration is recommended on a physical hardware platform running HP CDA:

- HP ProLiant BL280c G6 E5506 2G (1P)
- Intel® Xeon® E5506 (4 core, 2.13 GHz, 4 MB L3, 80W)

- 6GB RAM – assuming 64-bit OS and JDK
- HP 60GB 1.5G SATA 5.4K SFF HDD - 379306-B21
- 1GbE NC362i 2 Ports

## HP CDA Database

HP CDA requires a database to be used as a datastore for information such as artifacts that are stored in the definitive software library (DSL). The following databases are supported for use with HP CDA. The installation and configuration procedures in this document provide information for installing and configuring these databases:

- Oracle Database 11g
- Microsoft SQL Server 2008 R2

## User Authentication and Management

By default, HP CDA utilizes the database user store for storage of user information and user authentication. HP recommends that HP CDA be set up to use external authentication and authorization. HP CDA can also optionally use Single Sign-On (SSO) technology for convenient single point user authentication to all associated providers. The following optional external user authentication and management technologies are supported for use with HP CDA:

- LDAP
- HP Lightweight SSO



## Service Providers

HP CDA integrates with several mandatory and optional service providers that provide various services, such as infrastructure provisioning, application deployment, and platform monitoring services. The following lists the various service providers that are supported for integration and use with HP CDA.

**Note:** Chapter 2, “HP CDA Service Providers” provides important installation and configuration information for each service provider as they relate to HP CDA.

### Infrastructure Providers

- HP Cloud Services
- VMware vCenter
- Microsoft Hyper-V
- Amazon EC2
- Physical Hardware

### Deployment Providers

- Opscode Chef
- HP Database and Middleware Automation (HP DMA)
- HP Operations Orchestration (HP OO)
- HP Server Automation (HP SA)

### Monitoring Providers

- HP SiteScope
- HP Diagnostics
- Nagios (Nagios Enterprises)

### Continuous Integration (CI) Servers

- Jenkins

# HP CDA Installation and Configuration at a Glance

This section explains the general procedure that is required to set up the HP CDA environment, install the HP CDA application, and integrate HP CDA with the necessary service providers. When all of the steps in this section have been completed, HP CDA will be ready for use.

Each of the following steps references sections and sub-procedures that are necessary to successfully install HP CDA and prepare it for use. Refer back to this section frequently as you carry out the HP CDA installation and configuration process.

## 1. Make sure that the HP CDA environment is properly planned.

A HP CDA environment consists of the HP CDA server itself, service providers that integrate with HP CDA, and other support components, such as DNS servers. Proper environment planning is essential to ensure a successful HP CDA installation. Use the following information when planning the HP CDA environment:

- The service providers that comprise the HP CDA environment can be existing installations or new installations. If you plan to incorporate existing service provider installations into the environment, you must check the versions against the *HP CDA Solution and Software Support Matrix* to make sure that those versions are supported.
- HP Matrix OE Infrastructure Orchestration (IO) is a required service provider for HP CDA, so it must exist in the HP CDA environment. The section entitled "[HP Matrix OE Infrastructure Orchestration \(IO\)](#)" in this document provides more important information regarding IO.
- At least one service provider must exist in the HP CDA environment for platform software and application deployment. The section entitled "[Deployment Providers](#)" lists the deployers that are available, and Chapter 2 "[HP CDA Service Providers](#)" provides important information regarding each of the deployers.
- Monitoring is optional in the environment. The section entitled "[Monitoring Providers](#)" lists the monitoring providers that are available, and Chapter 2 "[HP CDA Service Providers](#)" provides important information regarding each of the monitoring providers.
- The infrastructure on which the various components of the HP CDA environment are deployed can be physical, virtual, or a combination of both. Regardless of the nature of the HP CDA environment components, they should be able to communicate with each other with the least amount of latency as is possible, for best performance.

## 2. Install the servers that will host the HP CDA database, DNS server, and HP CDA.

At a minimum, the machine or machines on which the HP CDA database, HP CDA application, DNS server, and NTP client (if necessary) need to be installed and set up at this point. If you will be using existing products, such as an existing database instance, you need to check the version of those products against the *HP CDA Support Matrix*.

## 3. Install the servers that will host the other HP CDA service providers.

While not absolutely necessary at this point, you can finish installing and setting up the infrastructure for the remainder of the HP CDA environment at this time. If you do not complete HP CDA environment installation and set-up now, you must complete it later and install service provider software before those service providers are integrated with HP CDA. Those steps take place in Step 11 of this procedure. You should also refer to Chapter 2 "[HP CDA Service Providers](#)" for important information about each service provider.

#### 4. Begin configuration of the HP CDA environment.

At this point, the minimum requirements for the HP CDA environment have been satisfied. In this step, you will begin to configure the HP CDA environment. Refer to the following sections in this document for the information necessary to complete this step:

- [Configure DNS](#)
- [Configure NTP](#)
- [Install the JDK](#)

#### 5. Prepare the HP CDA database.

The HP CDA installer has the capability to set up the database when it runs. In certain situations where, for example, different groups within an organization manage different types of applications, or a high level of security is required within the organization, a HP CDA database might need to be prepared outside of the HP CDA installer.

If the HP CDA database needs to be prepared outside of the HP CDA installer, then refer to the following sections in this document for the information necessary to complete this step:

- [Install the Database Drivers](#)
- [Enable distributed transactions \(Microsoft SQL Database Only\)](#)
- [Prepare the HP CDA database](#)

#### 6. Configure advanced Lightweight Single Sign-on, if necessary.

HP Lightweight SSO (LWSSO), HP's implementation of single sign-on technology, can optionally be used for access control to component products in the HP CDA environment.

Basic LWSSO configuration is done when the HP CDA installer is run and does not need to be done now. For advanced LWSSO configuration, which allows more LWSSO parameters to be configured, refer to the following section in this document:

- [Configure LWSSO \(advanced configuration\)](#)

#### 7. Place the license key file on the HP CDA machine.

Refer to the following section in this document for the information necessary to complete this step:

- [Place the license key file on the HP CDA machine](#)

#### 8. Run the HP CDA installer to install the HP CDA application.

Installation of the HP CDA application on its designated platform consists of copying the HP CDA installation wizard, known as the HP CDA installer, to the platform and running it. The installer then guides you through the installation process. Refer to the following section for details and procedures necessary to successfully complete the installation of the HP CDA application:

- [Install HP CDA](#)

## 9. Grant the JBoss JTA recovery module access to database tables.

The JBoss JTA recovery module needs to be granted access to some system database tables in order to search for pending transactions. This should be done now that the database tables have been created by the HP CDA installer.

Refer to the following section in this document for the information necessary to complete this step:

- [Grant JBoss JTA recovery module access to database tables](#)

## 10. Start the HP CDA application and log in to the HP CDA user interface.

This is the final step in the basic HP CDA application installation and configuration process. It verifies that HP CDA has been successfully installed and configured. Refer to the following sections in this document for the information and procedures necessary to complete this step:

- [Start the HP CDA application](#)
- [Log in to the HP CDA User Interface](#)

## 11. Integrate the HP CDA service providers.

This step integrates the HP CDA service providers so that they can communicate and function with HP CDA. At the completion of this step, the entire HP CDA environment will be ready for use.

Refer to Chapter 2 “[HP CDA Service Providers](#)” for important information about each service provider, and refer to the following section in this document for the integration procedures:

- [Integrate the HP CDA service providers](#)

## 12. Configure HP CDA to run as a service.

This optional but recommended step configures HP CDA to run as a service so that the software will continue to run should the administrator log off of the HP CDA server machine. Running HP CDA as a service will also make sure that HP CDA restarts if the machine reboots. To configure HP CDA to run as a service, perform one of the following procedures in Appendix A of this document, depending on the OS of the server on which HP CDA is installed:

- [Configuring HP CDA to Run as a Windows Service](#)
- [Configuring HP CDA to Run as a Linux Service](#)

## 2 HP CDA Service Providers

HP CDA integrates with several mandatory and optional service providers that provide various services, such as infrastructure provisioning, application deployment, and platform monitoring services. Where these service providers are installed depends on the design of your HP CDA environment. Refer to the *HP CDA Support Matrix* for detailed information about supported versions of the service providers, and consult the service provider documentation for system requirements and other important configuration information related to each service provider. This chapter provides important installation and configuration information for each service provider as they relate to HP CDA.

This chapter contains the following sections:

- HP Matrix OE Infrastructure Orchestration (IO)
- Jenkins
- Opscode Chef
- HP Server Automation (HP SA)
- HP Database and Middleware Automation (HP DMA)
- HP Operations Orchestration (HP OO)
- HP Matrix OE Infrastructure Orchestration load balancer

### HP Matrix OE Infrastructure Orchestration (IO)

IO is a required service provider for HP CDA, providing infrastructure design and provisioning services. See the *HP CDA Support Matrix* for detailed information about supported versions of HP Matrix OE IO.

**Note:** IO is a component of the HP Matrix Operating Environment (Matrix OE) product.

**Note:** You can integrate a new installation of IO with HP CDA, or you can integrate an existing IO installation. If you use a new installation of IO, you do not need to install it at this point in this procedure, but you must install and configure it before you perform the IO integration steps.

If you will be performing a new installation of IO for use with HP CDA, install it according to HP recommendations. You can download the HP Matrix OE version 7.1 installation executable, which includes IO, from the following link:

<http://www.hp.com/go/matrixoe>

The page at that link contains a pointer to the download page called "Download Matrix Operating Environment for ProLiant and HP-UX software."

Refer to the document entitled *HP Matrix Operating Environment 7.1 Installation and Configuration Guide for Provisioning with Virtual Resources* for installation and configuration of HP Matrix OE 7.1. You can download the document from: <http://www.hp.com/go/matrixoe/docs>.

Regardless of whether a new installation of IO is used or an existing installation is used, note the following parameters since you will need them later when integrating IO with HP CDA:

- **IO administrator username**
- **IO administrator password**

- **IO URL**

The following information is also essential to note in order to successfully integrate IO into the HP CDA environment:

- If LDAP or HP Lightweight SSO (HP LWSSO) is to be used within the HP CDA environment, IO must also be configured accordingly to function with those products and technologies.
- HP CDA supports the following providers for infrastructure provisioning services through IO - VMware vCenter, Microsoft Hyper-V, Amazon EC2, and HP Cloud Services. HP CDA also supports provisioning of physical hardware resources. IO must be configured accordingly to function with any such infrastructure providers that will be used. More information can be found in the HP Matrix OE documentation. Go to the HP Software Product Manuals website at <http://support.openview.hp.com/selfsolve/manual> to access the documentation. An HP Passport sign-in is required to access that site.

## Jenkins

Jenkins is server-based continuous integration (CI) software that might be used by application software development to manage the source code integration and software build processes. A Jenkins server can be integrated with HP CDA so that CDA can access application artifacts from the Jenkins build repository during application deployment. See the *HP CDA Support Matrix* for detailed information about supported versions of Jenkins.

**Note:** A new installation of Jenkins can be integrated with HP CDA, or an existing Jenkins installation can be integrated. If a new installation of Jenkins is to be used, it does not need to be installed at this point in this procedure, but it must be installed and configured before the Jenkins server integration steps are performed.

If a new installation of Jenkins is to be used with HP CDA, install it according to manufacturer recommendations. Regardless of whether a new installation of Jenkins is used or an existing installation is used, note the following parameters, since you will need them later when integrating Jenkins with HP CDA:

- **Jenkins server URL**
- **Jenkins server Login username (if security is enabled on Jenkins server)**
- **Jenkins server Login password (if security is enabled on Jenkins server)**

The following information is also essential to note in order to successfully integrate Jenkins into the HP CDA environment:

- If LDAP or HP Lightweight SSO (HP LWSSO) is to be used within the HP CDA environment, Jenkins must also be configured accordingly to function with those products and technologies.

## Opscode Chef

Opscode Chef can be used to provide deployment services to HP CDA at the platform and application levels. See the *HP CDA Support Matrix* for detailed information about supported versions of Opscode Chef.

**Note:** See also Appendix B “[Opscode Chef Best Practices](#)” for additional important information regarding using Chef Server with HP CDA.

**Note:** A new installation of Chef can be integrated with HP CDA, or an existing Chef installation can be integrated. If a new installation of Chef is to be used, it does not need to be installed at this point in this procedure, but it must be installed and configured before the Chef integration steps are performed.

If a new installation of Chef is to be used with HP CDA, install it according to manufacturer recommendations. Regardless of whether a new installation of Chef is used or an existing installation is used, note the following parameters, since you will need them later when integrating Chef with HP CDA:

- **FQDN of Chef server**
- **Chef administrator username**
- **Chef administrator password**
- **Chef server SSH port**
- **Cookbooks directory on Chef server**
- **Chef server key files directory**

The following information is also essential to note in order to successfully integrate Chef into the HP CDA environment:

- If Chef will be the deployer for public cloud-based resources, then the Chef server must be set up so that it is also located in the public cloud. If HP CDA is to deploy to “private cloud-based” (internal) resources as well as public cloud-based resources, then a separate Chef server must be set up for each. The Chef server that is located in the public cloud cannot deploy to the private cloud, and vice-versa.
- If LDAP or HP Lightweight SSO (HP LWSSO) is to be used within the HP CDA environment, Chef must also be configured accordingly to function with those products and technologies.
- Chef must be configured for the types of infrastructure machines (for example, Windows or Linux server groups) on which it will deploy applications.

## HP Server Automation (HP SA)

HP SA can be used to provide deployment services to HP CDA at the platform and application levels. See the *HP CDA Support Matrix* for detailed information about supported versions of HP SA.

**Note:** A new installation of HP SA can be integrated with HP CDA, or an existing HP SA installation can be integrated. If a new installation of HP SA is to be used, it does not need to be installed at this point in this procedure, but it must be installed and configured before the HP SA integration steps are performed.

If a new installation of HP SA is to be used with HP CDA, install it according to HP recommendations. Regardless of whether a new installation of HP SA is used or an existing installation is used, note the following parameters, since you will need them later when integrating HP SA with HP CDA:

- **FQDN of HP SA server**
- **HP SA administrator username**
- **HP SA administrator password**

The following information is also essential to note in order to successfully integrate HP SA into the HP CDA environment:

- If LDAP or HP Lightweight SSO (HP LWSSO) is to be used within the HP CDA environment, HP SA must also be configured accordingly to function with those products and technologies.

## HP Database and Middleware Automation (HP DMA)

HP DMA shares a common infrastructure with HP Server Automation. HP DMA can be used to provide application deployment services to HP CDA. In order to use HP DMA with HP CDA, HP SA must be integrated into the HP CDA environment.

Although HP DMA shares a common infrastructure with HP SA, it is integrated into HP CDA as a separate provider.

**Note:** You will use the same parameters that were noted for HP SA when integrating HP DMA with HP CDA.

## HP Operations Orchestration (HP OO)

HP OO can be used to provide application deployment services to HP CDA. See the *HP CDA Support Matrix* for detailed information about supported versions of HP OO.

**Note:** A new installation of HP OO can be integrated with HP CDA, or an existing HP OO installation can be integrated. If a new installation of HP OO is to be used, it does not need to be installed at this point in this procedure, but it must be installed and configured before the HP OO integration steps are performed.

If a new installation of HP OO is to be used with HP CDA, install it according to HP recommendations. Regardless of whether a new installation of HP OO is used or an existing installation is used, note the following parameters, since you will need them later when integrating HP OO with HP CDA:

- **FQDN of HP OO host**
- **HP OO SSH port**
- **Protocol used for web communications (HTTP/HTTPS)**
- **Auto-trust public certificates (Yes/No)**
- **User used for authenticating with the HP OO server**
- **The password for the user**

The following information is also essential to note in order to successfully integrate HP OO into the HP CDA environment:

- If LDAP or HP Lightweight SSO (HP LWSSO) is to be used within the HP CDA environment, HP OO must also be configured accordingly to function with those products and technologies.

## HP Matrix OE Infrastructure Orchestration load balancer

IO contains a software-based load balancer feature that enables compute resources specified in an IO template to participate in load balancing.

Although the load balancer is a feature of IO, it is integrated into HP CDA as a separate provider.

**Note:** You will use the same parameters that were noted for IO when integrating the load balancer with HP CDA.



# 3 Installing and Configuring HP CDA

This chapter contains the information and procedures that are needed to install and configure HP CDA. To successfully install and configure HP CDA, read and perform the procedures in the following sections in the order presented, unless otherwise noted.

**Note:** Do not begin installation and configuration until you have read the information presented in Chapter 1 “Installation and Configuration Overview”.

This chapter contains the following sections:

- Configure DNS
- Configure NTP
- Install the JDK
- Install the Database Drivers
- Enable distributed transactions (Microsoft SQL Database Only)
- Prepare the HP CDA database
- Configure LWSSO (advanced configuration)
- Place the license key file on the HP CDA machine
- Install HP CDA
- Grant JBoss JTA recovery module access to database tables
- Start the HP CDA application
- Log in to the HP CDA User Interface
- Configure HP CDA to run as a service
- Integrate the HP CDA service providers

## Configure DNS

Each of the HP CDA solution products is required to communicate using DNS name and address resolution. HP recommends using statically assigned IP addresses or static DHCP leases for the HP CDA solution products.

## Configure NTP

All HP CDA core machines should be configured to synchronize with a Network Time Protocol (NTP) source that is continuously available, or otherwise obtain time derived from an accurate time source. In addition, the time zone configuration and daylight savings rules should be configured consistently on all platforms.

All Microsoft Windows domain machines automatically sync with an Active Directory server and therefore do not need to be explicitly configured for NTP. For Linux machines, NTP needs to be configured. For general technical information on NTP, see the following web site:

<http://www.ntp.org/>

Virtual Machine templates should also include a reference to an NTP source in their configuration.

## Install the JDK

HP CDA is a Java Enterprise Edition (Java EE) application that must be deployed to a J2EE application server. See the *HP CDA Support Matrix* for detailed information about supported versions of the JDK.

The application server requires that the Java SE Development Kit (JDK) be installed on the platform on which HP CDA will be deployed. The following instructions explain how to install the JDK:

1. Download a supported version of the JDK from <http://www.oracle.com/technetwork/java/javase/downloads/index.html>.
2. Install the JDK.
3. Create a new environment variable called JAVA\_HOME with a value corresponding to the full path where the JDK installed. For example:
  - o *Windows:* \Program Files\Java\jdk1.6.0\_26
  - o *Linux:* /usr/java/jdk1.6.0\_26
4. Edit the path variable by appending the following:
  - o *Windows:* ;%JAVA\_HOME%\jre\bin
  - o *Linux:* :\$JAVA\_HOME/jre/bin
5. At the command prompt, enter the following command and make sure that the command output lists the JDK directory:
  - o *Windows:* echo %JAVA\_HOME%
  - o *Linux:* echo \$JAVA\_HOME
6. Enter the following command at the command prompt, and make sure that the path includes the jre\bin (or jre/bin) directory:
  - o *Windows:* path
  - o *Linux:* echo \$path
7. Change directories to the directory in which the JDK is installed and execute the `java -version` command to verify that the installed version of Java is the correct version.

## Install the Database Drivers

In order for HP CDA to interact with its associated database, a Java Database Connectivity (JDBC) driver must be available on the HP CDA platform. This section provides JDBC driver information for the Oracle and Microsoft SQL database.

### [ojdbc and orai18n drivers \(Oracle Database Only\)](#)

The ojdbc driver must be downloaded to the HP CDA platform in order for the HP CDA application to interact with an associated Oracle database, and the orai18n driver also needs to be downloaded for international language support. See the *HP CDA Support Matrix* for detailed information about supported versions of the database drivers.

Download the supported versions of the database driver .jar files from <http://www.oracle.com/technetwork/database/features/jdbc/index-091264.html> and save them to a location on the platform on which HP CDA will be installed. The actual location (directory) where the ojdbc .jar

file is saved is not important. Do not execute the ojdbc.jar file. Note the full path where the ojdbc driver .jar file has been saved, as well as the driver file name; you will need them during HP CDA installation.

- **OJDBC driver .jar file full path**
- **OJDBC driver .jar file name**

### sqljdbc driver (Microsoft SQL Database Only)

A sqljdbc driver must be installed on the HP CDA platform in order for the HP CDA application to interact with an associated Microsoft SQL database. See the *HP CDA Support Matrix* for detailed information about the supported version of the sqljdbc driver.

The following instructions explain how to install the SQL Server JDBC driver.

1. Download the Microsoft SQL Server JDBC Driver 3.0 package from <http://www.microsoft.com/download/en/details.aspx?id=21599> and save it to a temporary directory on the platform on which the Microsoft SQL database will be created.

2. Extract the SQL Server JDBC Driver 3.0 package.

**Note:** HP recommends that the driver be extracted to the following directory:

- *Windows:* %ProgramFiles%\Microsoft SQL Server JDBC Driver 3.0
- *Linux:* \$ProgramFiles/Microsoft SQL Server JDBC Driver 3.0

3. After extraction, copy the sqljdbc4.jar file that is included in the package to the HP CDA platform, and note the path where the file has been saved, since you will need it during HP CDA installation.

- **Sqljdbc4 driver full path**

## Enable distributed transactions (Microsoft SQL Database Only)

Enable XA transactions on the Microsoft SQL database platform. Instructions for performing that operation can be found in the SQL Server JDBC Driver 3.0 help. Configuration instructions are included in the help topic entitled "Understanding XA Transactions."

## Prepare the HP CDA database

This section provides information that is important to know in order to set up the database for HP CDA.

### Oracle database – important information

If the Oracle Database software needs to be installed for HP CDA, install it now according to the manufacturer's documentation. See the *HP CDA Support Matrix* for detailed information about supported versions of Oracle Database.

Database installation and configuration is typically done in partnership with a database administrator. Consider the following points during and after the Oracle installation:

- HP strongly recommends creating a database that uses the Unicode for Database Character Set (NLS\_CHARACTERSET=AL32UTF8).
- HP recommends setting the `cursor_sharing` parameter to `FORCE` to improve performance and economize shared pool usage.

**Note:** If the exception 'ORA-01425: Escape character must be string of length 1' occurs, set `cursor_sharing=EXACT` or request a patch from Oracle for defect #9689594.

- To use HP CDA full text search, include the **Oracle Text** extension when installing the Oracle server. The **Oracle Text** extension is applied to Oracle by default.
- After the database has been installed, Oracle indexing must be enabled if full text search is to be used. For details, see the sub-section entitled "Enabling Oracle database full text search."

An Oracle database needs to be available to HP CDA before the CDA installer is run. If an Oracle database does not exist for HP CDA, create it now.

Note the following information, since you will need it later during HP CDA installation:

- **Oracle Database server address**
- **Oracle Database server port**
- **Oracle database name**

During HP CDA installation, either of the following two database setup scenarios will be available:

- Create Tablespace – In this scenario, a tablespace and schema are created in the existing database.

If this scenario is chosen, an account with proper credentials will be automatically set up by the HP CDA installer and the tablespace and schema will be automatically created. The installer will need the name and password of the database administrator (DBA). If you plan to use the Create Tablespace scenario, note the following information, since you will need it later during HP CDA installation:

- **Database administrator name**
  - **Database administrator password**
  - **Name of tablespace to be created**
  - **Path to store the tablespace file**
  - **Name of user account to be created**
  - **Password for the user account to be created**
- Create Schema - In this scenario, a schema is created in an existing tablespace.

If this scenario is chosen, you must create a new tablespace and datafile, and create a power user with the new tablespace as its default tablespace that can create schema items. The power user account must be able to connect to the database and create tables, indexes, and sequences.

**Note:** To use the HP CDA full text search feature on the database, grant the power user account the privilege to execute "CTXSYS"."CTX\_DDL". See "[Enabling Oracle database full text search](#)" for more information.

If you plan to use the Create Schema scenario, note the following information, since you will need it later during HP CDA installation:

- **Existing database name**
- **Power username**
- **Power user password**

**Note:** The JBoss JTA recovery module of embedded JBoss 7.1 will need to be granted access to some system database tables in order to search for pending transactions. To grant those privileges, run the following commands from the Oracle sqlplus console:

```
GRANT SELECT ON sys.dba_pending_transactions TO <db_user>;
GRANT SELECT ON sys.pending_trans$ TO <db_user>;
GRANT SELECT ON sys.dba_2pc_pending TO <db_user>;
GRANT EXECUTE ON sys.dbms_system TO <db_user>;
```

### *Enabling Oracle database full text search*

To enable full text search, you must create indexes and schedule their update. Connect to the database using the same credentials used during installation, and then using the Oracle sqlplus console, execute the following commands. The commands also show how to synchronize indexes every midnight.

**Note:** The database user does not have permission to create FTS indexes by default and must be given that permission.

```
sqlplus system/password@connect_identifier
-- add permission to create indexes
GRANT EXECUTE ON "CTXSYS"."CTX_DDL" TO user;
-- add "create job" permission to <user>
GRANT CREATE JOB TO user;
exit;

sqlplus user/password@connect_identifier
CREATE INDEX idx_ry_resource_meta ON ry_resource(m_extensions)
INDEXTYPE IS CTXSYS.CONTEXT PARAMETERS
('FILTER CTXSYS.NULL_FILTER SECTION
GROUP CTXSYS.NULL_SECTION_GROUP
SYNC (EVERY "TRUNC(SYSDATE)+1") TRANSACTIONAL');

CREATE INDEX idx_ry_resource_data ON ry_resource(data)
INDEXTYPE IS CTXSYS.CONTEXT PARAMETERS
('FILTER CTXSYS.NULL_FILTER SECTION
GROUP CTXSYS.NULL_SECTION_GROUP
SYNC (EVERY "TRUNC(SYSDATE)+1") TRANSACTIONAL');
```

To enable full text search of pdf, doc, and other document types, use AUTO\_FILTER in the definition of the idx\_ry\_resource\_data index:

```
CREATE INDEX idx_ry_resource_data ON ry_resource(data)
INDEXTYPE IS CTXSYS.CONTEXT PARAMETERS
('FILTER CTXSYS.AUTO_FILTER');
```

**Warning:** Do not implement index synchronization ON COMMIT. It can cause Oracle thread termination, returning this error message: ORA-error stack (07445[ACCESS\_VIOLATION]) logged in filename.log. (Tested on Oracle 10gR2 - 10.2.0.1). Use regular synchronization together with the TRANSACTIONAL parameter.

**Note:** Not all document types can be indexed correctly. For details, see [http://download.oracle.com/docs/cd/B19306\\_01/text.102/b14218/afilsupt.htm#i634493](http://download.oracle.com/docs/cd/B19306_01/text.102/b14218/afilsupt.htm#i634493).

### **Synchronizing Indexes**

The following example shows how to execute index synchronization manually:

```

sqlplus user/password@connect_identifier
CALL CTX_DDL.SYNC_INDEX('idx_ry_resource_meta', '2M');
CALL CTX_DDL.SYNC_INDEX('idx_ry_resource_data', '2M');

```

## Creating an Indexing Stoplist

You can optionally manage a stoplist by removing words that could frequently appear in documents. By default, the Oracle index stoplist includes words such as "to". Full-text searches including these words return a false empty result. Alternatively, the database administrator should provide HP CDA users with the stoplist and a warning not to use these terms in full-text searches. An example of commands to set up a stoplist on Oracle is shown in the following example:

```

call CTX_DDL.CREATE_STOPLIST('MyStoplist');
call CTX_DDL.ADD_STOPWORD('MyStoplist', 'a');
Add a word that should not be indexed. Repeat the command for each word to be
excluded.
-- Include the DROP INDEX commands only if an index already exists.
DROP INDEX idx_ry_resource_meta;
DROP INDEX idx_ry_resource_data;
CREATE INDEX idx_ry_resource_meta on ry_resource(m_extensions)
indextype is ctxsys.context parameters
('filter ctxsys.null_filter section group CTXSYS.NULL_SECTION_GROUP
STOPLIST MyStoplist
SYNC (EVERY "TRUNC(SYSDATE)+1") TRANSACTIONAL') ;
CREATE INDEX idx_ry_resource_data on ry_resource(data) indextype is
ctxsys.context parameters
('filter ctxsys.null_filter section group CTXSYS.NULL_SECTION_GROUP
STOPLIST MyStoplist
SYNC (EVERY "TRUNC(SYSDATE)+1") TRANSACTIONAL');

```

## Microsoft SQL database – important information

If the MSSQL Database software needs to be installed for HP CDA, install it now according to the manufacturer's documentation. See the *HP CDA Support Matrix* for detailed information about supported versions of MSSQL Database software.

Database installation and configuration is typically done in partnership with a database administrator. Consider the following points during and after the MSSQL installation:

- If you intend to use user accounts in HP CDA that will contain non-Latin characters, you must set the default collation on the database to cover all such non-Latin characters.
- HP CDA requires case-sensitive collation. Use a server with case-sensitive collation or manage database collation manually using the "Create Schema" option.
- To prevent some possible deadlocks, HP recommends executing the following statement:  
ALTER DATABASE [database\_name] SET READ\_COMMITTED\_SNAPSHOT ON;
- If you want to use the full-text search feature in HP CDA, make sure that the full-text search engine is installed together with the database engine during the installation of MSSQL Server.

- After installation, if you require HP CDA Full Text Search to be enabled, set up indexes on MSSQL. For details, see the sub-section entitled “[Enabling MSSQL database full text search.](#)”
- After installing MSSQL Server, use the SQL Server Configuration Manager to enable the TCP/IP protocol and set a static incoming connection listening port (for example, 1433).

Note the following information, since you will need it later during HP CDA installation:

- **SQL database server address**
- **SQL database server port**

The HP CDA installer also requires the following:

- A login to hold tables in the HP CDA database. This login must have the database creator role and must be able to access the master database for XA-related stored procedures.
- A user in the master database for the HP CDA database login that has the SqlJDBCXAUser role assigned to it.
- A common user for the HP CDA database login.

Go to the procedure entitled “[Create a common HP CDA user login in the server and a user in the HP CDA database](#)” to create the HP CDA database common user, and then note the following information, since you will need it later during HP CDA installation:

- **HP CDA database common username**
- **HP CDA database common user password**

During HP CDA installation, either of the following two database setup scenarios will be available:

- Create Database – In this scenario, a database and schema are created.  
If this scenario is chosen, the HP CDA database login is used by the installer to arrange the database that is created. The database that is created inherits collation from the MSSQL server default collation. HP CDA requires case-sensitive collation, so use a server with case-sensitive collation.
- Create Schema - In this scenario, a schema is created in an existing database.  
If this scenario is chosen, you must use the HP CDA database login to pre-create a database with case-sensitive collation.

**Note:** If you wish to create the database on behalf of an existing account rather than the created login, or use an existing account with an existing database, you must grant “create table” privileges to the existing account.

Create the database now and note the database name, since you will need it later during HP CDA installation:

- **HP CDA database name**

### *Create a common HP CDA user login in the server and a user in the HP CDA database*

1. Open Microsoft SQL Server Management Studio.
2. Click the **New Query** button, enter the following query into the pane that appears in the right pane, and then click the **Execute** button to create a common user and login for the HP CDA database.

For example: Considering these parameters; Common HP CDA user=*cda\_user*; HP CDA database=*database name you noted earlier*; Password=*p@ssW0rd*; execute the following query:

```
USE [master]
GO
CREATE LOGIN [cda_user] WITH PASSWORD=N'p@ssW0rd',
DEFAULT_DATABASE=[master], CHECK_EXPIRATION=OFF, CHECK_POLICY=OFF
GO
USE [cdadb]
GO
CREATE USER [cda_user] FOR LOGIN [cda_user]
GO
```

3. Execute the following query to grant the common HP CDA user database read, write, and DDL administrator privileges to the HP CDA database tables:

```
USE [cdadb]
GO
EXEC sp_addrolemember N'db_datawriter', N'cda_user'
GO
USE [cdadb]
GO
EXEC sp_addrolemember N'db_datareader', N'cda_user'
GO
USE [cdadb]
GO
EXEC sp_addrolemember N'db_ddladmin', N'cda_user'
GO
```

4. Execute the following query to create the common HP CDA user in the master database and add that user to the SqlJDBCXAUser role:

```
USE [master]
GO
CREATE USER [cda_user] FOR LOGIN [cda_user]
GO
USE [master]
GO
EXEC sp_addrolemember N'SqlJDBCXAUser', N'cda_user'
GO
```



5. Execute the following query to grant CONTROL permissions for the database (**HP CDA database name**) to the database common user (**HP CDA database common username**):

```
USE [<db_name>];  
GRANT CONTROL TO [<db_username>];  
GO
```

### *Enabling MSSQL database full text search*

To enable full text search you must enable the service and create a full text catalog and indexes. Use MSSQL Server Management Studio or the sqlcmd command line tool. Connect to the database using the same parameters used during HP CDA installation.

1. Make sure that the SQL Server Fulltext Search service is running and that the database is fulltext enabled.

By default, new databases are full-text enabled unless you create them with MSSQL Server Management Studio. In this case, select the database in the Object Explorer window and select Properties→Files, and then select Use full-text indexing.

2. To create a full-text catalog, execute the following command:

```
sqlcmd -U <user> -P <password> -d <database>  
CREATE FULLTEXT CATALOG ry_resource_ftsc  
go
```

**Note:** You must have CREATE FULLTEXT CATALOG permission.

It is possible to reuse an existing full-text catalog, but HP recommends creating a new one for independent management purposes. For more details, see <http://msdn2.microsoft.com/en-us/library/ms189520.aspx>.

3. Do one of the following:

- To create a full-text index that is synchronized immediately after any data changes, execute the following command:

```
sqlcmd -U <user> -P <password> -d <database>  
CREATE FULLTEXT INDEX ON ry_resource(m_extensions TYPE COLUMN  
m_extensions_fe LANGUAGE 0x0, data TYPE COLUMN data_fe LANGUAGE 0x0)  
KEY INDEX pk_resource ON ry_resource_ftsc WITH CHANGE_TRACKING AUTO  
go
```

- To create a full-text index that is synchronized manually, execute the following command:

```
sqlcmd -U <user> -P <password> -d <database>  
CREATE FULLTEXT INDEX ON ry_resource(m_extensions TYPE COLUMN  
m_extensions_fe LANGUAGE 0x0, data TYPE COLUMN data_fe LANGUAGE 0x0)  
KEY INDEX pk_resource ON ry_resource_ftsc WITH CHANGE_TRACKING OFF, NO  
POPULATION  
go
```

For more details, see <http://msdn2.microsoft.com/en-us/library/ms187317.aspx>.

To synchronize the index manually, execute the following command:

```
sqlcmd -U <user> -P <password> -d <database>
ALTER FULLTEXT INDEX ON ry_resource START FULL POPULATION
go
```

The statement executes asynchronously, so population may take some time. To verify the population status, execute the command:

```
SELECT FULLTEXTCATALOGPROPERTY('ry_resource_ftsc', 'PopulateStatus')
go
```

Index population is complete when the population status is 0.

## Searching Uploaded Documents with MSSQL

MSSQL supports only a limited set of document types after installation. Typically, it does support Microsoft ".doc" files, but does not support ".docx", ".xlsx" and ".pdf" files. The list of all supported document types can be obtained by the following SQL command:

```
SELECT * FROM sys.fulltext_document_types
```

If the list does not contain a document type that you need to include in the full text search, ask your DBA to obtain and install an iFilter for the missing document type.

- Foxit provides a high performance PDF iFilter for 32-bit and x64 systems. For details, go to <http://www.foxitsoftware.com/pdf/ifilter>.
- Adobe provides a PDF iFilter for 32-bit and x64 systems. For details, go to <http://www.adobe.com/support/downloads/detail.jsp?ftplD=4025&promoid=GYUNB>.
- Microsoft provides iFilters for MS-Office 2007/2010 document types including docx and xlsx. For details, go to <http://support.microsoft.com/default.aspx?scid=kb;en-us;945934>.

## Configure LWSSO (advanced configuration)

HP Lightweight SSO is HP's implementation of single sign-on (SSO) technology. It optionally can be used for access control to component products in the HP CDA environment. If LWSSO is to be used, basic and advanced LWSSO configuration options are available when HP CDA is installed.

Basic LWSSO configuration requires that the SSO domain and pass-phrase be entered during HP CDA installation. A default LWSSO keystore file is provided for use with basic configuration.

Advanced LWSSO configuration allows more LWSSO parameters, such as cipherType, engineName, paddingModeName, keySize and encodingMode, to be configured, but requires in-depth knowledge of these parameters and how to modify them in an XML configuration file. Advanced configuration also allows a keystore file other than the default file to be used.

A required XML configuration file template called `LWSSO-template.xml` is available in the `<cda_home_directory>/conf/` directory. If advanced LWSSO configuration is required, either the LWSSO administrator can copy, rename, and modify the template file, or use an existing LWSSO configuration file that is imported to the HP CDA machine. The LWSSO administrator can also import a keystore file to the HP CDA machine, or use the default file.

**Note:** No instructions on how to configure the template file are provided, as it is assumed that the administrator performing the advanced configuration already has the knowledge to do so.

If advanced LWSSO is to be used, it should be performed now. The following information should also be noted, as it will be needed later during HP CDA installation:

- **LWSSO configuration file directory and file name**
- **LWSSO keystore file directory and file name**

## Place the license key file on the HP CDA machine

If you have received an HP CDA license key file from your HP sales representative, store it in a directory on the HP CDA machine, and then note the directory, since you will need it later during HP CDA installation:

- **HP CDA license key file directory**

**Note:** If the version of HP CDA that you are installing has been purchased by your organization for business use, a license key was supplied to the organization by your HP sales representative. If the version of HP CDA that you are installing is for evaluation purposes, a license key file will not be required and you can skip this step.

## Install HP CDA

To install HP CDA, complete the sub-procedures in this section in the order presented.

### Start the HP CDA installer wizard

1. Do one of the following to start the HP CDA installer:
  - *Windows:* Execute the HP CDA installer .jar file located on the installation CD or in your distribution directory by double-clicking on it.
  - *Windows or Linux:* Change directories to the directory in which the HP CDA .jar file is located, and then execute the following command:

```
java -jar <cda_jar_filename>.jar
```
2. Click **OK** in the warning box that reads "This application needs to be launched with JDK," if it appears.

### Begin entering installation parameters

1. Click **Next** on the welcome screen.
2. After reading and accepting the terms of the end user license agreement, select the **I accept the terms of the license agreement** radio button, and then click **Next**.
3. Click **Next** to accept the default installation folder, or select a different installation folder and then click **Next**.
4. Use the **Add...** or **Remove...** buttons to specify any updates that need to be applied to the installation and then click **Next**.
5. Select the **Enable** radio button, enter an encryption passphrase into the **Master Passphrase** and **Confirm Passphrase** fields, and then click **Next**.

Note the master passphrase since passwords stored in the HP CDA file system and database will be unreadable without it, and some supplied HP CDA command line tools require it. Selecting the **Disable** radio button is not recommended.

## Enter database parameters

1. Select the radio button for the database that will be used as the datastore for HP CDA and then click **Next**.
2. If you chose the Oracle database, select one of the following options, and then click **Next**:
  - **Create tablespace**: Select this radio button to create a new tablespace, user and schema. An existing database and database administrator (DBA) credentials are required.
  - **Create schema**: Select this radio button to create a schema in an existing database that has been created by the database administrator. A power-user account must be present in an existing database with an empty schema (recommended) and have privileges to create tables and indexes.
3. If you chose the Microsoft SQL database, select one of the following options and then click **Next**:
  - **Create database**: Select this radio button to create a new database and schema. An existing user with the database creator role is required.
  - **Create schema**: Select this radio button to create a schema in an existing database that has been created by the database administrator (DBA). An account must exist in an existing database with an empty schema (recommended) and have privileges to create tables and indexes.

### Oracle database – Create Tablespace option

1. Specify the database connection properties:
  - If you are specifying database connection properties by components, select the **By Components** radio button and then fill in the information as described:
    - **Database Server Address**: The FQDN (recommended) or IP address where the database is installed. Enter the FQDN or IP address you noted earlier in this procedure. Make sure that the database server can be reached using the addressing scheme you enter in this field.
    - **Database Server Port**: The connection port for the database. Enter the Oracle Database server port you noted earlier in this procedure.
    - **Existing Database Name**: The name of the database. Enter the Oracle database name you noted earlier in this procedure.
  - If you are specifying database connection properties using a connection string, select the **Full Connection String** radio button and enter the connection string in the adjacent text box in the following format:  
`jdbc:oracle:thin:@<addr>:<port>/<db_name>`
2. Enter the new tablespace information as described and then click **Next**:
  - **Database Administrator Name**: The name of the database administrator (DBA). Enter the database administrator name you noted earlier in this procedure.
  - **Database Administrator Password**: The password of the database administrator. Enter the database administrator password you noted earlier in this procedure.
  - **New Database Tablespace**: The name of the tablespace that will be created when the HP CDA installer runs.
  - **Tablespace Datafile**: The full path and file name of the tablespace datafile that will be associated with the tablespace.

- **New Database User Name:** The name of the database user that will be created when the HP CDA installer runs.
- **Database User Password:** The password to be assigned to the database user.
- **Confirm Password:** The password to be assigned to the database user, entered again.

### *Oracle Database – Create Schema option*

1. Specify the database connection properties:
  - If you are specifying database connection properties by components, select the **By Components** radio button and fill in the information as described:
    - **Database Server Address:** The FQDN (recommended) or IP address where the database is installed. Enter the FQDN or IP address you noted in this procedure. Make sure that the database server can be reached using the addressing scheme you enter in this field.
    - **Database Server Port:** The connection port for the database. Enter the Oracle Database server port you noted earlier in this procedure.
    - **Existing Database Name:** The name of the database. Enter the Oracle database name you noted earlier in this procedure.
  - If you are specifying database connection properties using a connection string, select the **Full Connection String** radio button and then enter the connection string in the adjacent text box in the following format:
 

```
jdbc:oracle:thin:@<addr>:<port>/<db_name>
```

2. Enter the existing database information as described and then click **Next**:
  - **Existing Database User Name:** The name of the existing database user who has credentials to create the schema. Enter the name of the power user you noted earlier in this procedure.
  - **Database User Password:** The password of the power user you noted earlier in this procedure.

### *Microsoft SQL database – Create Database option*

1. Enter the database information as described and then click **Next**:
  - **Database Server Address:** The FQDN (recommended) or IP address where the database is installed. Enter the FQDN or IP address you noted earlier in this procedure. Make sure that the database server can be reached using the addressing scheme you enter in this field.
  - **Database Server Port:** The incoming connection listening port used by the MSSQL server. This is 1433 by default.
  - **New Database Name:** The name of the database to be created.
  - **Existing Database User Name:** The database user to be used by HP CDA for database creation. Enter the HP CDA database username you noted earlier in this procedure.
  - **Database User Password:** The password of the HP CDA database user. Enter the HP CDA database user password you noted earlier in this procedure.

### *Microsoft SQL database – Create Schema option*

1. Enter the database information as described, and then click **Next**:

- **Database Server Address:** The FQDN (recommended) or IP address where the database is installed. Enter the FQDN or IP address you noted earlier in this procedure. Make sure that the database server can be reached using the addressing scheme you enter in this field.
- **Database Server Port:** The incoming connection listening port used by the MSSQL server. This is 1433 by default.
- **Existing Database Name:** The name of the database in which the schema is to be created. Enter the HP CDA database name you noted earlier in this procedure.
- **Existing Database User Name:** The database user to be used by HP CDA for database access and schema creation. Enter the HP CDA database username you noted earlier in this procedure.
- **Database User Password:** The password of the HP CDA database user. Enter the HP CDA database user password you noted earlier in this procedure.

### Either database

1. Enter or select the full path and file name for the JDBC driver that you noted earlier in this procedure into the **JDBC Drivers....** field and then click **Next**.

*Note:* If more than one JDBC driver might be specified, separate the entries with commas.

*Note:* If a warning message appears stating that the i18n.jar file is missing and your installation scenario does not require that file, dismiss the warning by clicking the **OK** button.

2. Browse to and select a different data file folder, or leave the default data file folder specified.

When binary files that are larger than a preset amount of bytes are saved in HP CDA, they are stored to the data file folder.

3. Choose one of the following radio buttons to select the data that will be imported to the HP CDA database and then click **Next**.

- **Initial Import:** Select this radio button if a new database or schema is being created as part of the HP CDA installation process. If chosen, only the initial bootstrap image will be installed.
- **Custom Import:** Select this radio button to import the custom data image in the **Custom Image Path** field. Custom images are created using the export tool.

### Enter endpoint properties

1. Enter the endpoint properties as described and then click **Next**.

- **Hostname:** The FQDN (recommended) or IP address of the server where the HP CDA web-site will be visible to the user. Make sure that the server can be reached using the addressing scheme you enter in this field.
- **Port Numbers**
  - **HTTP:** If necessary, select the checkbox and enter the port number on which the application server will listen for incoming HTTP connections. For example, JBoss listens for incoming HTTP connections on port 8080 by default.
  - **HTTPS:** If necessary, select the checkbox and enter the port number on which the application server will listen for incoming HTTP secure (HTTPS) connections. For example, JBoss listens for incoming HTTPS connections on port 8443 by default.
- **Enforce HTTPS:** Select the checkbox, if necessary, to enforce secured URLs.

- **Verify Certificates:** Select the checkbox, if necessary, to validate HTTPS communications against SSL certificates.
  - **Web Context:** This entry, along with the hostname and port, will constitute the Web browser URL for the HP CDA login screen; for example:  
`https://server1.dept.company.com:8443/cda`, where `cda` is the web context. The Web context cannot contain spaces.
2. If you changed the Web Context from the default (`cda`), click **OK** in the warning box that follows to dismiss it.

## Enter user authentication parameters

Select the relevant checkboxes for the authentication options that will be used with internal (“Built-in”) HP CDA user authentication and management and then click **Next**.

- **HP Lightweight SSO Integration:** Select this checkbox if single sign-on (SSO) technology will be used for access control to component products in the HP CDA environment. If this checkbox is selected, you will need to configure LWSSO. “[HP Lightweight SSO integration](#)” explains the screens presented and the instructions necessary to configure LWSSO.
- **Multi-tenant:** Select this checkbox to have HP CDA set up as a multi-tenancy application during installation.
- **LDAP Integration:** Select this checkbox if HP CDA will use LDAP for user management. If this checkbox is selected, you will need to configure LDAP. “[LDAP integration](#)” explains the screens presented and the instructions necessary to configure LDAP.

### HP Lightweight SSO integration

1. Choose one of the following radio buttons to select the type of HP Lightweight SSO configuration to be used and then click **Next**.
  - **Basic:** Select this radio button if basic HP Lightweight SSO configuration information is to be used.
  - **Advanced:** Select this radio button if advanced HP Lightweight SSO configuration information is to be used.
2. If you chose the **Basic** radio button, enter the basic LWSSO configuration information as described, and then click **Next**:
  - **Domain:** The internet domain that includes the systems participating in SSO. `localhost` or a domain name including an IP address cannot be used.
  - **Pass -phrase:** The pass-phrase being used by all HP products using LWSSO. A pass-phrase can be one or more UTF-8 characters, but HP recommends that standard password best practices be implemented when choosing a pass-phrase. The pass-phrase is case-sensitive.
  - **Confirm Pass -phrase:** The LWSSO pass-phrase, entered again.
3. If you chose the **Advanced** radio button, enter the advanced LWSSO configuration information as described, and then click **Next**:
  - **Lightweight SSO Configuration File:** Browse to and select the lightweight SSO configuration file. You noted the directory and name of this file earlier in this procedure.
  - **Keystore with Lightweight SSO Keys:** Browse to and select the keystore file containing the lightweight SSO keys. You noted the directory and name of this file earlier in this procedure.

## LDAP integration

**Note:** LDAP integration is typically performed by the LDAP administrator. Much of the information entered into the LDAP integration screens can be determined from the LDAP store to be used in the CDA environment.

1. Enter the following LDAP service information and then click **Next**:

- **Naming Provider URL:** The URL of the LDAP service. The format is `ldap://<ldap.example.com>:<prt>` where `<ldap.example.com>` is the fully qualified LDAP server domain name, and `<prt>` is the LDAP server listening port, typically 389.
- **Initial Naming Factory:** The fully qualified class name of the factory class that creates the initial context for the LDAP service provider. HP recommends that this field not be modified (leave the default value as-is).
- **Security Principal:** The username of the account that has privileges to connect to the LDAP server.
- **Password:** The password of the security principal.
- **Security Protocol:** The name of the security protocol. The security protocol is `simple` by default. The LDAP administrator should know the security protocol to use based on the environment and platform.
- **Case Sensitivity:** Select the "Case sensitive user names" checkbox if you want login names to be case sensitive. This checkbox should remain unselected for Active Directory or Sun ONE Directory Server. For other directory service implementations, contact your LDAP administrator.

2. Enter the following LDAP user search rule and then click **Next**:

- **Search Filter:** The object class specifying the type of information to include in the search. For the LDAP user search rule screen, the information type is user-related. For example, "objectClass=User" might be specified in the case of Active Directory.
- **Search Base:** The root location in the LDAP directory service where user information to be searched is located. For example, "cn=Users,dc=ldapsrv1,dc=acme,dc=com" in the case of Active Directory.
- **Search Scope:** Select the **Subtree scope** radio button to search all subordinate entries of the location specified by the **Search Base** parameter, or select the **One level scope** radio button to search only entries that are immediate subordinates of the location specified by the **Search Base** parameter.

**Note:** If users are all located in the Search Base, HP recommends that you select the **One level scope** radio button.

- **Results Limit:** The maximum number of objects for which the LDAP server will return data.

3. Use the **Add...** or **Remove...** buttons to specify mappings between application platform user properties and LDAP attributes and then click **Next**.

4. Enter the following LDAP group search rule information and then click **Next**:

- **Search Filter** The object class specifying the type of information to include in the search. For the LDAP group search rule screen, the information type is group-related. For example, "objectClass=group" might be specified in the case of Active Directory.



- **Search Base:** The root location in the LDAP directory service where group information to be searched is located. For example, "ou=Groups,dc=ldapsrv1,dc=acme,dc=com" in the case of Active Directory.
  - **Search Scope:** Select the **Subtree scope** radio button to search all subordinate entries of the location specified by the **Search Base** parameter, or select the **One level scope** radio button to search only entries that are immediate subordinates of the location specified by the **Search Base** parameter.
  - **Results Limit:** The maximum number of objects for which the LDAP server will return data.
5. Use the **Add...** or **Remove...** buttons to specify mappings between application platform group properties and LDAP attributes, and then click **Next**.

### Enter administrator, system email, and SMTP server configuration parameters

1. Enter the following HP CDA administrator account information.
  - If LDAP integration was not performed:
    - **Administrator Username:** The username that the HP CDA administrator will use to log in to HP CDA. The administrator username is `admin` by default.
    - **Administrator Password:** The password that the HP CDA administrator will use to log in to HP CDA. The administrator password is `changeit` by default.
    - **Confirm Password:** The password that was entered into the **Administrator Password** field, if it was changed.
    - **Administrator Email:** The email address of the HP CDA administrator.
  - If LDAP integration was performed:
    - **Administrator Username:** The username that the HP CDA administrator will use to log in to HP CDA. The administrator username is `admin` by default.
2. Enter into the **System Email** field the email address that HP CDA will use as the sender address for email notifications that it generates, and then click **Next**.
3. Enter the SMTP server authentication information described, and then click **Next**:
  - **Server:** The hostname of the SMTP server that will act as the outgoing mail server for HP CDA.
  - **Authenticate:** Select this checkbox if the connection between HP CDA and the SMTP server will be secured using SSL.
  - **Username:** The username to be used by HP CDA for SSL authentication, if the **Authenticate** checkbox is selected.
  - **Password:** The password to be used by HP CDA for SSL authentication, if the **Authenticate** checkbox is selected.

### Enter software use license details

Select the **Enter license key file** radio button, browse to and select the license key file that has been stored on the HP CDA server machine, and then click **Next**:

**Note:** The HP CDA license key was provided to you by your HP sales representative.

**Note:** Choose the **evaluation version** radio button only if HP CDA is being installed for evaluation purposes.

## Finish installing HP CDA

1. Click **Next** in the following screen to start the HP CDA installation. The **Installation Progress** bar on the next screen indicates the progress of the installation. When installation finishes successfully, the progress bar shows 100% complete, the message Done. Click **Next** to continue appears in the **Progress Output** box, and the **Next** button on the screen becomes active.

**Note:** The installation log file, which includes messages that have been sent to the **Progress Output** box, can be viewed post-installation in the following directory on the HP CDA machine:

*Windows:* \Program Files\Hewlett-Packard\CDA\1.00\log\

*Linux:* /opt/hp/cda/1.00/log

The name of the installation log file is `install`.

2. When the installation completes as described, click **Next**.
3. After reading the important post-installation information on the screen, click **Finish** to close the HP CDA installer.

## Grant JBoss JTA recovery module access to database tables

**Note:** Skip this section if the Oracle database “Create Tablespace” option was *not* used during HP CDA installation.

The JBoss JTA recovery module of embedded JBoss 7.1 will need to be granted access to some system database tables in order to search for pending transactions. Now that the HP CDA installer has run and the database tables and user have been created, run the following commands from the Oracle sqlplus console to grant those privileges:

```
GRANT SELECT ON sys.dba_pending_transactions TO <db_user>;
```

```
GRANT SELECT ON sys.pending_trans$ TO <db_user>;
```

```
GRANT SELECT ON sys.dba_2pc_pending TO <db_user>;
```

```
GRANT EXECUTE ON sys.dbms_system TO <db_user>;
```

## Start the HP CDA application

1. Log in to the machine on which HP CDA is installed and change directories to the following directory:
  - *Windows:* <cda\_installation\_folder>\bin
  - *Linux:* <cda\_installation\_folder>/bin
2. Execute the following command to start the HP CDA server:
  - *Windows:* `serverstart.bat`
  - *Linux:* `./serverstart.sh`

Various messages will scroll in the display as the server starts. When the message “JBoss AS 7.1.0.Final “Thunder” started in xxxxxms” appears and messages stop scrolling, the server has started.

## Log in to the HP CDA User Interface

1. Open a Web browser on a client machine, such as a laptop in the HP CDA network domain, and enter one of the following as the URL to browse:

**For Standard HTTP:**

`http://<hostname>:<http_port>/<web_context>`

**For HTTP Secure:**

`https://<hostname>:<https_port>/<web_context>`

Where the *hostname*, *port*, and *web context* are as they were entered for the endpoint properties during HP CDA installation.

**Note:** See the *HP CDA Support Matrix* for detailed information about the Web browsers that are supported.

2. At the CDA login page that appears, enter the administrator credentials that you configured earlier during CDA installation in the section entitled “[Enter administrator, system email, and SMTP server configuration parameters](#),” and then click the **Login** button.

**Note:** The default administrator credentials are: User Name: admin; Password: changeit for non-LDAP-integrated installations.

## Configure HP CDA to run as a service

If required, HP CDA can be configured to run as a service on the server on which it is installed. The procedures in Appendix A explain how to configure HP CDA to run as a service on Windows or Linux servers.

To configure HP CDA to run as a service, perform one of the following procedures in Appendix A, depending on the OS of the server on which HP CDA is installed:

- If HP CDA is installed on a Windows server, perform the procedure “[Configuring HP CDA to Run as a Windows Service](#).”
- If HP CDA is installed on a Linux server, perform the procedure “[Configuring HP CDA to Run as a Linux Service](#).”

## Integrate the HP CDA service providers

Now that the HP CDA software has been installed, started, and you have logged into the HP CDA user interface, you can integrate the various service providers with HP CDA. This section explains how to integrate each service provider with HP CDA. During integration, you will be entering the information that you noted in Chapter 2, “HP CDA Service Providers.”

### HP Matrix OE Infrastructure Orchestration (IO)

1. Log in to HP CDA as described in the procedure entitled “Log in to the HP CDA User Interface,” if necessary.
2. Click the **Administration** tab in the HP CDA user interface, and then click the **Servers** link that is in the left side navigation pane of the interface.
3. Click the **Add infrastructure orchestration Server** link to open the “Add infrastructure orchestration Server” screen.
4. Enter the following parameters into the screen, as described. Parameters that are mandatory are followed by a red asterisk (\*) in the screen:
  - **Name:** Enter a name for this IO system integration. This is the name that will appear in user interface elements such as drop-down lists when multiple IO systems can be chosen for a given operation.
  - **Description:** Enter a description for the IO system being integrated, if desired, or leave blank.
  - **Publish Location:** Enter the location in the definitive software library (DSL) where artifacts imported from the IO server will be placed (for example, infrastructure templates imported into HP CDA from IO).
  - **MOE User name:** Enter the IO administrator username.
  - **Password:** Enter the IO administrator password.
  - **MOE Server URL:** Enter the URL to the IO Web interface (for example, `https://<hostname>:<port>/hpio`)  
*Note:* The fully qualified domain name of the IO server should be used in the URL. Do not include the trailing forward slash in the URL.
  - **Connection Timeout:** Enter the time, in seconds, that the Apache CXF web client will attempt to establish a connection to IO before it times out. A zero (0) indicates that the web client will attempt to establish a connection indefinitely. The default connection timeout is 30 seconds.
  - **Receive Timeout:** Enter the time, in seconds, that the Apache CXF web client will wait for a response before it times out. A zero (0) indicates that the web client will wait indefinitely for a response. The default receive timeout is 60 seconds.
5. After entering all of the necessary parameters into the screen, click the **Test Connection** button.  
After clicking the button, a status message will appear above the screen header. While the test is running, the message “Testing Connection to server, Please wait...” will be displayed. After the test completes, one of the following messages will be displayed:
  - “Test Connection failed: <details>”
  - “Test Connection successful”
6. Perform one of the following actions, as appropriate:

- If the connection is successful, click the **Save** button to save the IO server integration parameters. Integration of the IO server is now complete.

**Note:** When **Save** is clicked, a new screen appears which includes not only the connection parameter information that was entered, but create, scale, and delete parameters and a **Key** tab as well. Editing the parameters is beyond the scope of this procedure, however, if you will be provisioning infrastructure to the public cloud (HP Cloud Services or EC2), then you will need to store a key file that is provided by the cloud service provider to HP CDA. The section entitled “[Saving the cloud service provider key file to HP CDA](#)” explains how to do this.

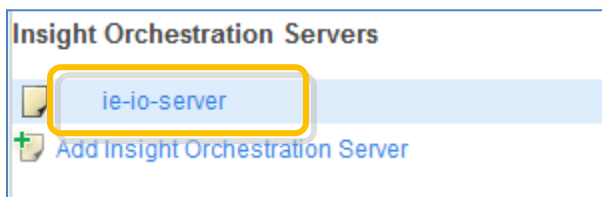
- If the connection fails, make sure that all parameters have been entered correctly, the network is functional, and the IO server is not experiencing any problems that might cause the failure. You can click the “Technical Details” link that appears below the status message to open a window containing JBOSS server log messages from the time the connection failed. The full JBOSS server log can also be viewed on the HP CDA server machine at the following location:
  - *Windows:* \Program Files\Hewlett-Packard\CDA\1.00\jb710\standalone\log\server
  - *Linux:* /opt/hp/cda/1.00/jb710/standalone/log

### [Saving the cloud service provider key file to HP CDA](#)

When provisioning infrastructure or deploying software and applications to the public cloud, key files are used for authentication rather than username/password combinations. Key files are provided by the cloud service provider (HP Cloud Services or EC2), and several key files might be provided by the cloud service provider. The following procedure explains how to save a key file to the HP CDA server so that it is accessible by HP CDA. Perform this procedure for each key file provided.

1. Save the key file to a directory on the local machine that you are using to access the HP CDA interface. The key file will be uploaded to the HP CDA server later in this procedure. Key files have a .pem extension.
 

**Note:** If the key file is at a location that is accessible through a URL, skip Step 1.
2. If you have not done so already, click the **Administration** tab in the HP CDA user interface, and then click the **Servers** link that is in the left side navigation pane of the interface.
3. Click the link for the Insight Orchestration Server that you want to associate with the key file. This is the IO server on which the cloud resource capacity pools are defined. See the following figure for an example of such a link.



4. In the “Insight Orchestration Server” screen that appears, click the **Keys** tab.
5. Click the **+ Upload Key** button.

An “Upload Private Key” dialog box like the following will appear:

6. Modify or fill in the following fields in the dialog box:
  - **Capacity Pool Identifier:** Cloud resources are provisioned from capacity pools that are defined in the IO server. Each capacity pool requires its own key file. Choose the capacity pool that you want to associate with the key file using this drop-down field.
  - **Source:** Select the appropriate radio button (**File** or **URL**) depending on the location at which the key file is stored.
  - **File:** If the **File** radio button was selected in the “Source” field, this field will be called “File.” Click the adjacent **Browse...** button, browse to the directory in which you saved the key file in Step 1, and select the key file name.
  - **URL:** If the **URL** radio button was selected in the “Source” field, this field will be called “URL.” Enter the URL of the location at which the key file is stored, including the file name, into this field.
  - **Server Folder:** – Leave this field set to its default value.
7. Click the **Upload** button to upload the key file to the HP CDA server. The location to which the key file will be saved is shown in the “Location after Upload” field.

## Jenkins

1. Log in to HP CDA as described in the procedure entitled “Log in to the HP CDA User Interface,” if necessary.
2. Click the **Administration** tab in the CDA user interface, and then click the **Servers** link that is in the left side navigation pane of the interface.
3. Click the **Add Jenkins Server** link to open the “Add Jenkins Server” screen.
4. Enter the following parameters into the screen, as described. Parameters that are mandatory are followed by a red asterisk (\*) in the screen:
  - **Name:** Enter a name for this Jenkins server integration. This is the name that will appear in user interface elements such as drop-down lists when multiple Jenkins servers can be chosen for a given operation.
  - **Description:** Enter a description for the Jenkins server being integrated, if desired, or leave blank.
  - **userName:** Enter the Login username of an account having the “admin” role. The field can typically be left blank if Jenkins is being used in a trusted environment and security is not enabled on the Jenkins server.
  - **password:** Enter the password for the user account, if it is specified.
  - **serverUrl:** Enter the URL to the Jenkins Web interface.

5. After entering all of the necessary parameters into the screen, click the **Test Connection** button.

After clicking the button, a status message will appear above the screen header. While the test is running, the message “Testing Connection to server, Please wait...” will be displayed. After the test completes, one of the following messages will be displayed:

- “Test Connection failed: <details>”
- “Test Connection successful”

6. Perform one of the following actions, as appropriate:

- If the connection is successful, click the **Save** button to save the Jenkins server integration parameters. Integration of the Jenkins server is now complete.
- If the connection fails, make sure that all parameters have been entered correctly, the network is functional, and the Jenkins server is not experiencing any problems that might cause the failure. You can click the “Technical Details” link that appears below the status message to open a window containing JBOSS server log messages from the time the connection failed. The full JBOSS server log can also be viewed on the HP CDA server machine at the following location:
  - *Windows:* \Program Files\Hewlett-Packard\CDA\1.00\jb710\standalone\log\server
  - *Linux:* /opt/hp/cda/1.00/jb710/standalone/log

## Opscode Chef

**Note:** If Chef will be the deployer for public cloud-based resources, then the Chef server must be set up so that it is also located in the public cloud. If HP CDA is to deploy to “private cloud-based” (internal) resources as well as public cloud-based resources, then a separate Chef server must be set up for each. The Chef server that is located in the public cloud cannot deploy to the private cloud, and vice-versa.

**Note:** See also Appendix B “Opscode Chef Best Practices” for important information regarding using Chef Server with HP CDA.

1. Log in to HP CDA as described in the procedure entitled “Log in to the HP CDA User Interface,” if necessary.
2. Click the **Administration** tab in the CDA user interface, and then click the **Plugins** link that is in the left side navigation pane of the interface.
3. If necessary, click the “Update” icon that is in the “Chef Deployer Plugin” row in the Plugins screen, and follow the instructions provided by your HP support representative to update the plugin.

**Note:** Contact your HP support representative to determine if an update is available for the plugin.

4. Click the “Add configuration” icon that is in the “Chef Deployer Plugin” row in the Plugins screen to invoke the Create Provider screen for the Chef deployer.
5. Enter the following parameters into the screen, as described. Parameters that are mandatory are followed by a red asterisk (\*) in the screen:
  - **Name:** Enter a name for this Chef deployer integration. This is the name that will appear in user interface elements such as drop-down lists when different deployers can be chosen for a given operation.
  - **Description:** Enter a description for the Chef deployer being integrated, if desired, or leave blank.
  - **Chef Server hostname:** Enter the fully qualified domain name of the Chef server machine.
  - **Chef Server user:** Enter the username of a user having administrative privileges on the Chef server.

- **Chef Server password:** Enter the password of the user.
  - **Chef Server SSH port:** Enter the Chef server SSH port number. The default SSH port is 22.
  - **Chef Server SSH timeout (seconds):** The period of time, in seconds, that HP CDA will wait for a response after initiating a SSH connection to the Chef server. A zero (0) indicates that the SSH timeout is indefinite. The default SSH timeout is 0.
  - **Chef Server cookbooks directory:** Enter the directory on the Chef server in which Chef cookbooks are stored.
  - **Chef Server bootstrap script:** The path to and name of a specific bootstrap script to be used for installing Chef on the target system.
  - **Chef Server bootstrap retries number:** Enter the number of times that Chef will attempt, using the "Bootstrap" command, to bootstrap the provisioned target machine after an unsuccessful attempt before giving up and failing the operation. The default bootstrap retry number is 5.
  - **Chef Server bootstrap retries wait (seconds):** Enter the number of seconds that Chef will wait before attempting to bootstrap the provisioned target machine again after an unsuccessful attempt using the "Bootstrap" command. The default bootstrap retry wait time is 60 seconds.
  - **Chef Server Knife retries number:** Enter the number of times that Chef will attempt the "knife" commands used during application\software deployment on the provisioned target machine after an unsuccessful attempt before giving up and failing the operation. The default Knife retry number is 5.
  - **Chef Server Knife retries wait (seconds):** Enter the number of seconds that Chef will wait before attempting to execute "Knife" commands on the provisioned target machine again after an unsuccessful attempt. The default Knife retry wait time is 60 seconds.
  - **Chef Server SSH key directory:** Enter the SSH validation key path on the Chef server. The default SSH key path is /root/.ssh.
6. After entering all of the necessary parameters into the screen, click the **Test Connection** button.
- After clicking the button, a status message will appear above the screen header. While the test is running, the message "Testing Connection to server, Please wait..." will be displayed. After the test completes, one of the following messages will be displayed:
- "Test Connection failed: <details>"
  - "Test Connection successful"
7. Perform one of the following actions, as appropriate:
- If the connection is successful, click the **Save** button to save the Chef deployer integration parameters. Integration of the Chef deployer is now complete.
  - If the connection fails, make sure that all parameters have been entered correctly, the network is functional, and the Chef server is not experiencing any problems that might cause the failure. You can click the "Technical Details" link that appears below the status message to open a window containing JBOSS server log messages from the time the connection failed. The full JBOSS server log can also be viewed on the HP CDA server machine at the following location:
    - *Windows:* \Program Files\Hewlett-Packard\CDA\1.00\jb710\standalone\log\server
    - *Linux:* /opt/hp/cda/1.00/jb710/standalone/log



## HP Server Automation

1. Log in to HP CDA as described in the procedure entitled “Log in to the HP CDA User Interface,” if necessary.
2. Click the **Administration** tab in the CDA user interface, and then click the **Plugins** link that is in the left side navigation pane of the interface.
3. If necessary, click the “Update” icon that is in the “SA Deployer Plugin” row in the Plugins screen, and follow the instructions provided by your HP support representative to update the plugin.

**Note:** Contact your HP support representative to determine if an update is available for the plugin.

4. Click the “Add configuration” icon that is in the “SA Deployer Plugin” row in the Plugins screen to invoke the Create Provider screen for the SA deployer.
5. Enter the following parameters into the screen, as described. Parameters that are mandatory are followed by a red asterisk (\*) in the screen:
  - **Name:** Enter a name for this SA deployer integration. This is the name that will appear in user interface elements such as drop-down lists when different deployers can be chosen for a given operation.
  - **Description:** Enter a description for the SA deployer being integrated, if desired, or leave blank.
  - **SA Host:** Enter the fully qualified domain name of the SA deployer machine.
  - **SA User:** Enter the username of a user that has SA User credentials.
  - **SA Password:** Enter the password of the SA User.
  - **SA Registration retry number:** Enter the number of times that HP CDA will wait for a virtual machine with a pre-installed self-registering SA agent to show up as registered with SA. The default retry number is 5.
  - **SA Registration wait between retries (in seconds):** Enter the number of seconds that HP CDA will wait between SA registration retries. The default retry time is 60 seconds.

6. After entering all of the necessary parameters into the screen, click the **Test Connection** button.

After clicking the button, a status message will appear above the screen header. While the test is running, the message “Testing Connection to server, Please wait...” will be displayed. After the test completes, one of the following messages will be displayed:

- “Test Connection failed: <details>”
- “Test Connection successful”

7. Perform one of the following actions, as appropriate:
  - If the connection is successful, click the **Save** button to save the SA deployer integration parameters. Integration of the SA deployer is now complete.
  - If the connection fails, make sure that all parameters have been entered correctly, the network is functional, and the SA deployer is not experiencing any problems that might cause the failure. You can click the “Technical Details” link that appears below the status message to open a window containing JBOSS server log messages from the time the connection failed. The full JBOSS server log can also be viewed on the HP CDA server machine at the following location:
    - *Windows:* \Program Files\Hewlett-Packard\CDA\1.00\jb710\standalone\log\server
    - *Linux:* /opt/hp/cda/1.00/jb710/standalone/log

## HP Database and Middleware Automation

1. Log in to HP CDA as described in the procedure entitled “Log in to the HP CDA User Interface,” if necessary.
2. Click the **Administration** tab in the CDA user interface, and then click the **Plugins** link that is in the left side navigation pane of the interface.
3. If necessary, click the “Update” icon that is in the “DMA Deployer Plugin” row in the Plugins screen, and follow the instructions provided by your HP support representative to update the plugin.

**Note:** Contact your HP support representative to determine if an update is available for the plugin.

4. Click the “Add configuration” icon that is in the “DMA Deployer Plugin” row in the Plugins screen to invoke the Create Provider screen for the DMA deployer.
5. Enter the following parameters into the screen, as described. Parameters that are mandatory are followed by a red asterisk (\*) in the screen:

- **Name:** Enter a name for this DMA deployer integration. This is the name that will appear in user interface elements such as drop-down lists when different deployers can be chosen for a given operation.
- **Description:** Enter a description for the DMA deployer being integrated, if desired, or leave blank.

**Note:** Since HP DMA shares a common infrastructure with HP Server Automation, the parameter entries that you entered for HP SA will be used for the following three similar parameters:

- **DMA Server Host:** Enter the fully qualified domain name of the SA deployer machine.
- **DMA User Name:** Enter the username of a user that has SA User credentials.
- **DMA Password:** Enter the password of the SA User.

6. After entering all of the necessary parameters into the screen, click the **Test Connection** button.

After clicking the button, a status message will appear above the screen header. While the test is running, the message “Testing Connection to server, Please wait...” will be displayed. After the test completes, one of the following messages will be displayed:

- “Test Connection failed: <details>”
- “Test Connection successful”

7. Perform one of the following actions, as appropriate:
  - If the connection is successful, click the **Save** button to save the DMA deployer integration parameters. Integration of the DMA deployer is now complete.
  - If the connection fails, make sure that all parameters have been entered correctly, the network is functional, and the DMA deployer is not experiencing any problems that might cause the failure. You can click the “Technical Details” link that appears below the status message to open a window containing JBOSS server log messages from the time the connection failed. The full JBOSS server log can also be viewed on the HP CDA server machine at the following location:
    - *Windows:* \Program Files\Hewlett-Packard\CDA\1.00\jb710\standalone\log\server
    - *Linux:* /opt/hp/cda/1.00/jb710/standalone/log

## HP Operations Orchestration

1. Log in to HP CDA as described in the procedure entitled “Log in to the HP CDA User Interface,” if necessary.

2. Click the **Administration** tab in the CDA user interface, and then click the **Plugins** link that is in the left side navigation pane of the interface.
3. If necessary, click the "Update" icon that is in the "OO Deployer Plugin" row in the Plugins screen, and follow the instructions provided by your HP support representative to update the plugin.

**Note:** Contact your HP support representative to determine if an update is available for the plugin.

4. Click the "Add configuration" icon that is in the "OO Deployer Plugin" row in the Plugins screen to invoke the Create Provider screen for the OO deployer.
5. Enter the following parameters into the screen, as described. Parameters that are mandatory are followed by a red asterisk (\*) in the screen:

- **Name:** Enter a name for this HP OO deployer integration. This is the name that will appear in user interface elements such as drop-down lists when different deployers can be chosen for a given operation.
- **Description:** Enter a description for the DMA deployer being integrated, if desired, or leave blank.
- **OO Host:** Enter the fully qualified domain name of the HP OO server machine.
- **OO Port:** Enter the HP OO SSH port number. The default SSH port number is 8443.
- **OO Protocol:** Enter either http or https to denote the protocol used for communications between the web clients and servers for HP CDA and HP OO. The default protocol is https.
- **OO Central Certificate Autotrust:** Choose **yes** to automatically trust a certificate that cannot be tracked back to one of the Certificate Authorities.
- **OO Basic Auth User Name:** Enter the username of a user that will be used for authenticating with the HP OO server.
- **OO Basic Auth Password:** Enter the password of the user.

6. After entering all of the necessary parameters into the screen, click the **Test Connection** button.

After clicking the button, a status message will appear above the screen header. While the test is running, the message "Testing connection to server, Please wait..." will be displayed. After the test completes, one of the following messages will be displayed:

- "Test Connection failed: <details>"
- "Test Connection successful"

7. Perform one of the following actions, as appropriate:

- If the connection is successful, click the **Save** button to save the OO deployer integration parameters. Integration of the OO deployer is now complete.
- If the connection fails, make sure that all parameters have been entered correctly, the network is functional, and the HP OO server is not experiencing any problems that might cause the failure. You can click the "Technical Details" link that appears below the status message to open a window containing JBOSS server log messages from the time the connection failed. The full JBOSS server log can also be viewed on the HP CDA server machine at the following location:
  - *Windows:* \Program Files\Hewlett-Packard\CDA\1.00\jb710\standalone\log\server
  - *Linux:* /opt/hp/cda/1.00/jb710/standalone/log

## HP Matrix OE Infrastructure Orchestration load balancer

1. Log in to HP CDA as described in the procedure entitled “Log in to the HP CDA User Interface,” if necessary.
2. Click the **Administration** tab in the CDA user interface, and then click the **Plugins** link that is in the left side navigation pane of the interface.
3. If necessary, click the “Update” icon that is in the “HPIO Load Balancer Plugin” row in the Plugins screen, and follow the instructions provided by your HP support representative to update the plugin.

**Note:** Contact your HP support representative to determine if an update is available for the plugin.

4. Click the “Add configuration” icon that is in the “HPIO Load Balancer Plugin” row in the Plugins screen to invoke the Create Provider screen for the load balancer.
5. Enter the following parameters into the screen, as described. Parameters that are mandatory are followed by a red asterisk (\*) in the screen:

- **Name:** Enter a name for this load balancer integration.
- **Description:** Enter a description for the load balancer being integrated, if desired, or leave blank.

**Note:** The parameter entries that you entered for IO will be used for the following five similar parameters:

- **MOE User Name:** Enter the IO administrator username.
- **Password:** Enter the IO administrator password.
- **MOE Server:** Enter the URL to the IO Web interface.

**Note:** The fully qualified domain name of the IO server should be used in the URL. Do not include the trailing forward slash in the URL.

- **Connection Timeout:** Enter the time, in seconds, that the Apache CXF web client will attempt to establish a connection to IO before it times out. A zero (0) indicates that the web client will attempt to establish a connection indefinitely. The default connection timeout is 30 seconds.
- **Receive Timeout:** Enter the time, in seconds, that the Apache CXF web client will wait for a response before it times out. A zero (0) indicates that the web client will wait indefinitely for a response. The default receive timeout is 60 seconds.

6. After entering all of the necessary parameters into the screen, click the **Test Connection** button.

After clicking the button, a status message will appear above the screen header. While the test is running, the message “Testing Connection to server, Please wait...” will be displayed. After the test completes, one of the following messages will be displayed:

- “Test Connection failed: <details>”
- “Test Connection successful”

7. Perform one of the following actions, as appropriate:

- If the connection is successful, click the **Save** button to save the load balancer integration parameters. Integration of the load balancer is now complete.
- If the connection fails, make sure that all parameters have been entered correctly, the network is functional, and IO is not experiencing any problems that might cause the failure. You can click the “Technical Details” link that appears below the status message to open a window containing JBOSS server log messages from the time the connection failed. The full JBOSS server log can also be viewed on the HP CDA server machine at the following location:

- *Windows:* \Program Files\Hewlett-Packard\CDA\1.00\jb710\standalone\log\server
- *Linux:* /opt/hp/cda/1.00/jb710/standalone/log

# A Configuring HP CDA to Run as a Service

The procedures in this appendix explain how to configure HP CDA to run as a service so that it will continue to run should the administrator log off and then back onto the HP CDA server machine, or will restart if the machine reboots.

This appendix contains the following sections:

- Configuring HP CDA to Run as a Windows Service
- Uninstalling the HP CDA Windows Service
- Configuring HP CDA to Run as a Linux Service

## Configuring HP CDA to Run as a Windows Service

The following procedure requires the use of the “Yet Another Java Service Wrapper” (YAJSW) tool. The YAJSW tool is an open-source application that allows an arbitrary Windows application to start as a Windows service. The license is LGPL.

1. Download latest version of the YAJSW tool from the following URL:

<http://sourceforge.net/projects/yajsw/files/yajsw/>

2. Install the tool according to description at the URL <http://yajsw.sourceforge.net/#mozTocId527639>. In brief, the steps are as follows:

- a. Unpack the downloaded zip file into a directory placed anywhere on the server on which HP CDA is installed.
- b. Make sure that java 1.6 or higher is installed on the system and properly set in the JAVA\_HOME and PATH environment variables.

*Note:* JBoss 7 fails to start under YAJSW using java 1.6 from revision 17 and higher, but runs fine on java 1.7 or earlier releases of java 1.6. Refer to <http://sourceforge.net/projects/yajsw/forums/forum/810311/topic/4767821> for more information.

3. Create the wrapper.conf file:

- a. Start the HP CDA application normally using the “startserver.bat” script and determine the resulting java process PID number (for example, using the standard Windows Task Manager that has the PID column displayed).
- b. Start the Windows command prompt window as the local administrator (for example, right-click the **Command Prompt** shortcut or executable and select **Run as administrator**).

*Note:* All YAJSW tool .bat scripts must be run with local administrator privileges.

- c. Navigate to the <installation\_directory>/yajsw/bat directory and execute the genConfig.bat <CDA application pid> script.

If the genConfig.bat script executed properly, file <installation\_directory>/yajsw/conf/wrapper.conf will be generated.

- d. Stop the HP CDA application using the “stopserver.bat” script.

4. Edit the wrapper.conf file:

- a. Open the newly generated file <installation\_directory>/yajsw/conf/wrapper.conf in a text editor.
- b. Revise the options in the wrapper.conf file that are prefixed with wrapper.ntservice. To set the service display name, description, etc. Those options should appear as follows after they have been edited:

```
# Name of the service
wrapper.ntservice.name=HPCDA

# Display name of the service
wrapper.ntservice.displayname=HP Continuous Delivery Automation

# Description of the service
wrapper.ntservice.description=Provides mechanism to manage HP CDA
application
```

- c. If HP CDA is installed at a path containing space characters, the tool might incorrectly determine command line parameters that are necessary to run HP CDA as a service. In this case, application paths, that are identified by the tool and use the wrapper.conf file via the wrapper.app.parameter.<number> and wrapper.java.additional.<number> parameters, must be carefully revised. If incorrect parameter recognition occurs, the file paths will be improperly separated into two distinct parameters.

For example, command line parameter "-Djboss.home.dir=C:\Program Files\CDA" might appear in the configuration as follows:

```
...
wrapper.app.parameter.6 = -Djboss.home.dir=C:\\Program
wrapper.app.parameter.7 = Files\\CDA
wrapper.app.parameter.8 = -Djboss.bind.address=0.0.0.0
...
```

It will then be necessary to manually correct this configuration (including renumbering of subsequent parameters) as follows:

```
...
wrapper.app.parameter.6 = -Djboss.home.dir=C:\\Program Files\\CDA
wrapper.app.parameter.7 = -Djboss.bind.address=0.0.0.0
...
```

**Note:** File paths expressed in 8.3 notation don't seem to cause any problems.

- d. Save the wrapper.conf configuration file.

5. Validate the wrapper.conf file:

- a. From a command prompt that has been started under the local administrator, execute the <installation\_directory>/yajsw/bat/runConsole.bat script to make sure that HP CDA initializes properly with the edited configuration file.

**Note:** JBoss 7 fails to start under YAJSW using java 1.6 from revision 17 and higher, but runs fine on java 1.7 or earlier releases of java 1.6. Refer to

<http://sourceforge.net/projects/yajsw/forums/forum/810311/topic/4767821> for more information.

- b. Log in to HP CDA, and make sure that the Home page on the **Applications** tab appears.  
If HP CDA fails to start or you cannot log in to HP CDA, return to Step 4 and re-check the generated settings (application paths, user account/password) in the wrapper.conf file. If HP CDA starts and you can log in to it and access the Home page, continue with the next step.
6. Stop HP CDA and then run the script  
<installation\_directory>/yajsw/bat/installService.bat as the local administrator to register the HPCDA service.
7. Manage the HPCDA service:
  - a. Run the Windows services.msc management tool.
  - b. In the Services management window, navigate to the HPCDA service.
  - c. Do one of the following, as necessary:
    - If there is a requirement to start the HPCDA service automatically during OS startup and the "Startup Type" option is not set to "Automatic," right-click the service's name, choose **Properties**, set the Startup type to **Automatic (delayed start)** and click **OK**.
    - If there is a requirement to start the HP CDA service manually and the "Startup Type" option is not set to "Manual," right-click the service's name, choose **Properties**, set the Startup type to **Manual** and click **OK**.
  - d. On the **Log On** tab of the "HP Continuous Delivery Automation Properties" dialog box, enter the name and password of the administrator account into the appropriate fields, and click **OK**.
  - e. Right-click the service's name and select **Start** to start the service.  
*Note:* The service status will be indicated as "started" immediately after it is executed, before the HP CDA application becomes initialized and is in full operation. The time when the HPCDA service finishes initialization can only be determined from the application log.
8. Make sure the HPCDA service is running properly using the Sysinternal Process Monitor:
  - a. Download the Sysinternal Process Monitor tool from <http://technet.microsoft.com/en-us/sysinternals/bb896645>.
  - b. Unpack the contents of the downloaded zip archive into a directory and run the '**rocmon.exe**' binary.
  - c. Click **Tools>Process Tree...** to display the tree of all currently running processes.
  - d. Check the option **Only show processes still running at end of current trace** at the top left, and if the HPCDA service is running, the following process hierarchy will be present in the tree:  
**wininit.exe>services.exe>java.exe>java.exe**  
Where the last java runtime is executed with command line attributes corresponding to the HP CDA application.  
*Note:* If the HP CDA service had stopped subsequently, un-checking and re-checking the **Only show processes still running at end of current trace** checkbox will force an update of the process tree and the **ssm.exe>cmd.exe>java.exe** hierarchy should not be active.



## Uninstalling the HP CDA Windows Service

1. Run the Windows `services.msc` management tool, and stop the HP CDA service.
2. Start the Windows command prompt window as the local administrator.
3. Run the `<installation_directory>/yajsw/bat/uninstallService.bat` script.
4. Refresh the `services.msc` management tool and verify that the HP CDA service no longer appears in the service list and the `HKLM\System\CurrentControlSet\Services\<servicename>` registry key has been deleted from the registry.

## Configuring HP CDA to Run as a Linux Service

1. Log in to the Linux server on which HP CDA is installed.
2. Open a terminal session on the server.
3. Change directories to the `/etc` directory by executing the following command:

```
cd /etc
```

4. Switch users to the root user by executing the following command and entering the root user password when prompted:

```
su
```

5. Open the file `rc.local` and add the following line to the end of the file:

```
<cda_installation_folder>/bin/serverstart.sh
```

6. Save the `rc.local` file

7. Execute the `rc.local` file:

```
./rc.local
```

**Note:** The file should be run from the `/etc` directory.

8. Execute the following command to see if the `java` process has started:

```
ps -ef | grep java
```

If the command output returns “`java`,” the `java` process has started. If “`java`” is not returned or any error messages are returned, solve the related problems (for example, `JAVA_HOME` is not set for root).

9. If HP CDA has started, end it, and then reboot the Linux server and check to see if HP CDA has restarted.

# B Opscode Chef Best Practices

This appendix includes best practices when using Opscode Chef as a deployer with HP CDA. It contains the following sections:

- Chef Installation
- Working with Microsoft Windows targets
- Pre-configuring virtual machines with Chef client-specific files for error-free bootstrapping

## Chef Installation

The following are some best practices when installing Chef Server.

**Note:** If Chef will be the deployer for public cloud-based resources, then the Chef server must be set up so that it is also located in the public cloud. If HP CDA is to deploy to “private cloud-based” (internal) resources as well as public cloud-based resources, then a separate Chef server must be set up for each. The Chef server that is located in the public cloud cannot deploy to the private cloud, and vice-versa.

### Setting up the Chef server

HP recommends configuring the Chef Server by following the steps described in the following Opscode Wiki page:

<http://wiki.opscode.com/display/chef/Installing+Chef+Server+using+Chef+Solo>

### Installing a particular version of the Chef server

The Opscode Wiki page noted provides details for installing and configuring the latest version of Chef Server. Refer to *HP CDA Support Matrix* for the Opscode Chef version that is supported for HP CDA and use the following two modifications when referring to that procedure in order to install the supported version of Chef Server.

1. When installing Chef-Client on the server (which will be used later to bootstrap install Chef Server), use the following command to configure version 0.10.6.

```
gem install chef -v <version> (for example, gem install chef -v 0.10.6)
```

2. When creating the chef.json file to specify which recipes to run, enter the following content as the content of the file:

**Note:** The following example shows the content to be entered into the chef.json file when installing Chef Server version 0.10.6.

```
{
  "chef_packages": {
    "chef": {
      "version": "0.10.6"
    }
  },
  "chef_server": {
    "server_url": "http://localhost:4000",
    "webui_enabled": true
  }
}
```

```
    },  
    "run_list": [ "recipe[chef-server::rubygems-install]" ]  
  }  
}
```

## Support for Microsoft Windows clients

In order for Chef-Server to support and manage Microsoft Windows clients, you need to install the Knife-Windows client on the chef-server using the following command:

```
gem install knife-windows
```

## Working with Microsoft Windows targets

### SSH

HP CDA supports bootstrapping a Microsoft Windows target using SSH, which means the target needs to have a SSH server running on it. One of the commercial SSH servers for Microsoft Windows is WinSSHD (<http://www.bitvise.com/winsshd>).

### Powershell cookbook

Chef Server requires Powershell cookbook for executing any HP CDA-based deployment steps. Download and update the latest Powershell cookbook on the Chef Server for managing Microsoft Windows clients.

Refer to Download Cookbook section at the following link:

<http://wiki.opscode.com/display/chef/Working+with+Git+and+Cookbooks>

The following link contains Powershell cookbook information:

<http://community.opscode.com/cookbooks/powershell>

## Editing the bootstrap script used for Microsoft Windows clients to install a particular version of Opscode chef client

The default bootstrap script for Microsoft Windows targets is present at the following location on Chef-server:

```
/usr/lib/ruby/gems/1.9.1/gems/knife-windows-  
0.5.8/lib/chef/knife/bootstrap/windows-chef-client-msi.erb
```

You can edit the script to force-install a particular version of Chef-client. For example, you can modify the download command in the script to work with version 0.10.6-1 as follows:

```
cscript /nologo C:\chef\wget.vbs /url:http://s3.amazonaws.com/opscode-full-  
stack/windows/chef-client-0.10.6-1.msi /path:%TEMP%\chef-client-0.10.6-1.msi
```

## Pre-configuring virtual machines with Chef client-specific files for error-free bootstrapping

The default behavior for bootstrapping new nodes in a Chef environment includes downloading files from the Internet at run-time. If this behavior does not satisfy your needs, you can modify the bootstrapping script templates and your Chef Node VM templates to better suit your requirements. There are many different ways the script templates and VM templates can be modified. One such modification is described in the following sections. The Chef Server will still need SSH access to each client.

## Modifying the VM templates

First, the VM templates used to provision new Chef nodes must be modified. Use one of the following procedures, depending on the OS of the client.

### LINUX CLIENTS

1. Use the vSphere client to deploy a virtual machine from your existing Linux Chef node VM template. On the Chef Server, open the terminal and execute the following command as a registered Knife API client (for example, the user specified in the Chef deployer plugin configuration) along with any other needed options:

```
knife bootstrap <node fqdn> -x <node root user> -P <node password>
```

**Note:** Use the command `knife bootstrap --help` to see a list of available command options.

2. Sanitize the node by removing the following files from the “chef” directory on the bootstrapped VM (on Ubuntu Desktop 10.04, for example, the “chef” directory is `/etc/chef`):
  - `client.pem`
  - `client.rb`
  - `first-boot.json`
  - `validation.pem`
3. Convert your modified VM back into a template. Use the `knife node delete` and `knife client delete` commands on the Chef Server to remove the VM from the node and client lists. Propagate the new VM template as needed: for example, by updating your IO templates and re-synchronizing those IO templates in HP CDA.

### MICROSOFT WINDOWS CLIENTS

1. Use the vSphere client to deploy a virtual machine from your existing Windows Chef node VM template. On the newly deployed VM, download the Chef Client MSI installer you wish to use for installing the Chef client. Place the file in a non-user directory (for example, `C:\`). Note the full path to the file, including the file name, as this information will be needed later.
2. Convert the modified VM back into a template. Propagate the new VM template as needed: for example, by updating your IO templates and re-synchronizing those IO templates in HP CDA.

## Modifying the bootstrapping script templates

Now that you have modified the VM templates, you need to modify the bootstrapping script templates to reflect the new behavior. Use one of the following procedures, depending on the OS of the client.

### LINUX BOOTSTRAPPING SCRIPT TEMPLATES

Locate the default Linux bootstrapping script template on the Chef Server. After installing Chef Server 0.10.6 on Ubuntu Desktop 10.04.3, the default Linux bootstrapping script template is the `ubuntu10.04-gems.erb` file in `/usr/lib/ruby/gems/1.9.1/gems/chef-0.10.6/lib/chef/knife/bootstrap`.

1. Open the script template for editing. Remove the logic that performs the download and installation of ruby, rubygems, the Chef gem, and the ohai gem. This logic may include calls to `apt-get` or another package management system, `wget`, and `gem`, as well as other commands.
2. Save the template.

### WINDOWS BOOTSTRAPPING SCRIPT TEMPLATES

Locate the default Windows bootstrapping script template on your Chef Server. After installing Knife Windows 0.5.8 on Ubuntu Desktop 10.04.3, the default Windows bootstrapping script template is the

windows-chef-client-msi.erb file in `/usr/lib/ruby/gems/1.9.1/gems/knife-windows-0.5.8/lib/chef/knife/bootstrap`.

1. Open the script template for editing. Remove the logic that performs the download of the MSI, which is a cscript call executing the wget.vbs script. Change the logic that runs the installer (for example, the call to msiexec) to reference the location on the Windows VM template where you placed the MSI.
2. Save the script template.

## Tips

If you need to determine which bootstrapping script template is the default, you can look in `bootstrap.rb` in the Chef Server code for Linux or `bootstrap_windows_base.rb` in the Knife Windows code for Windows. Look for `option :distro` and note that the `:default` variable is set to the name of the default bootstrapping script template, minus its `.erb` extension.

If you want to allow both the default bootstrapping process and the modified process described here in your environment, copy the template file to a new file; then modify the copy instead of the original. In the Chef Deployer plugin configuration, enter the full location (including the file name) of the modified template into the "Chef Server bootstrap script" field and select that plugin configuration as the deployer for server groups being provisioned from the VM template. If the Chef Server bootstrap script field in the Chef Deployer plugin configuration is not set, the default bootstrapping script template for the server group's OS type will be used.

## C For More Information

HP Continuous Delivery Automation (HP CDA) provides the following information resources available from the HP Software Product Manuals Web site at <http://support.openview.hp.com/selfsolve/manuals>:

- *HP CDA Information Resources List*: list of all HP CDA information resources and publication dates.
- *HP CDA Installation and Configuration Guide*: instructions about how to install and configure HP CDA.
- *HP CDA Release Notes*: list of release contents, installation notes, and any known problems and workarounds.
- *HP CDA Solution and Software Support Matrix*: information about platform support requirements for HP CDA core functions with links to requirements for component products.
- *HP CDA Concepts Guide*: high-level overview of the HP CDA solution.
- *HP CDA User Guide*: information about how to design, deploy, and monitor applications by using HP CDA, and how to administer HP CDA.
- *HP CDA Troubleshooting Guide*: troubleshooting information including basic triage of common problems and use of integration log files.

**Note:** To check for recent updates or to verify that you are using the most recent edition of a document, go to:

<http://h20230.www2.hp.com/selfsolve/manuals>

This site requires that you register for an HP Passport and sign in. To register for an HP Passport ID, go to:

<http://h20229.www2.hp.com/passport-registration.html>

You can also click the **New users - please register** link on the HP Passport login page. You will also receive updated or new editions if you subscribe to the appropriate product support service. Contact your HP sales representative for details.