

Installation Guide

Kablink® Teaming

2.1

February 19, 2010

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About This Guide

The *Kablink Teaming 2.1 Installation Guide* covers the installation and configuration of the Kablink® Teaming software. The guide is divided into the following sections:

- ◆ Part I, “Product Overview,” on page 13
- ◆ Part II, “Basic Installation,” on page 25
- ◆ Part III, “Advanced Installation and Reconfiguration,” on page 79
- ◆ Part IV, “Multi-Server Configurations and Clustering,” on page 95
- ◆ Part V, “Update,” on page 105
- ◆ Part VI, “Appendixes,” on page 137

Audience

This guide is intended for Kablink Teaming administrators.

Feedback

We want to hear your comments and suggestions about this manual and the other documentation included with this product. Please use the User Comments feature at the bottom of each page of the online documentation.

Documentation Updates

For the most recent version of the *Kablink Teaming 2.1 Installation Guide* and other documentation, visit the [Kablink Teaming 2.1 Documentation Web site \(http://www.novell.com/documentation/kablinkteaming21\)](http://www.novell.com/documentation/kablinkteaming21).

Additional Documentation

You can find more information in the Kablink Teaming documentation, which is accessible from links within Kablink Teaming:

- ◆ Kablink Teaming Help system
- ◆ *Kablink Teaming Quick Start*
- ◆ *Kablink Teaming User Guide*
- ◆ *Kablink Teaming Advanced User Guide*
- ◆ *Kablink Teaming Administration Guide*
- ◆ *Kablink Teaming Developer Guide*

To access the Kablink Teaming Help system, log in to the Teaming site, then click the *Help* icon (question mark), then click a yellow Help spot for context-sensitive help.

To access the Kablink Teaming guides from within Teaming, click the *Help* icon (question mark), then click *Teaming Manuals*.

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When a single pathname can be written with a backslash for some platforms or a forward slash for other platforms, the pathname is presented with a backslash. Users of platforms that require a forward slash, such as Linux* or UNIX* , should use forward slashes as required by your software.

Product Overview

- ♦ [Chapter 1, “What Is Kablink Teaming?”](#) on page 15
- ♦ [Chapter 2, “Teaming System Requirements,”](#) on page 19

What Is Kablink Teaming?

1

Kablink® Teaming is an enterprise collaboration tool designed to increase individual productivity, team effectiveness, and organizational success by providing the right set of tools to the right people.

- ♦ [Section 1.1, “Teaming Capabilities,” on page 15](#)
- ♦ [Section 1.2, “Teaming Components,” on page 16](#)
- ♦ [Section 1.3, “Teaming Configurations,” on page 17](#)

1.1 Teaming Capabilities

Kablink Teaming users fall into three basic groups:

- ♦ [Section 1.1.1, “Content Consumers,” on page 15](#)
- ♦ [Section 1.1.2, “Content Providers,” on page 15](#)
- ♦ [Section 1.1.3, “Administrators,” on page 16](#)

1.1.1 Content Consumers

Content consumers use Kablink Teaming to work with important information that pertains to them. Content consumers:

- ♦ Maintain their personal workspaces, including setting up a personal blog, calendar, file folder, guestbook, photo album, and task folder
- ♦ Participate in team workspaces set up for content providers, in order to better collaborate with colleagues and facilitate their work assignments
- ♦ Search the Teaming site for people, places, and other information that pertains to their personal work assignments
- ♦ Identify subject-matter experts to assist them in their personal work assignments

The typical tasks performed by content consumers are covered in the [Kablink Teaming 2.1 User Guide](#).

In many cases, content consumers quickly become content providers as well.

1.1.2 Content Providers

Content providers use Kablink Teaming to create and manage teams, customize the Teaming environment, and import data into the Teaming site for use by other Teaming users. Content providers:

- ♦ Create and manage team workspaces and folders
- ♦ Control user access to their team workspaces
- ♦ Establish unique branding for workspaces and folders to clearly differentiate them from other places on the Teaming site

- ♦ Create landing pages for workspaces that consolidate the most information workspace information into a single page
- ♦ Customize data entry forms for gathering information from users
- ♦ Create workflows to automate otherwise time-consuming manual processes

The typical tasks performed by content providers are covered in the [Kablink Teaming 2.1 Advanced User Guide](#).

1.1.3 Administrators

A Kablink Teaming administrator is responsible for installing the Teaming software and setting up the Teaming site. This [Kablink 2.1 Installation Guide](#) provides instructions for Teaming software installation. After installation, the Teaming site administrator can:

- ♦ Set up user access to the Teaming site
- ♦ Create initial workspaces and populate them with information that is of interest to Teaming users
- ♦ Control user access to workspaces and folders
- ♦ Configure e-mail integration, so that Teaming users can receive notifications of updated information on the Teaming site and post to the Teaming site using e-mail messages
- ♦ Set up mirrored folders to make large sets of data that are already available on disk more easily available through the Teaming site
- ♦ Set up software extensions (add-ons) that enhance the power and usefulness of the Teaming site
- ♦ Set up remote applications that deliver data from a remote location, such as a remote database, for easy access on your Teaming site
- ♦ Manage users, workspaces, and folders as the Teaming site grows and evolves
- ♦ Perform regular backups to safeguard the data stored in the Teaming site

The typical tasks performed by Teaming site administrators are covered in the [Kablink Teaming 2.1 Administration Guide](#).

1.2 Teaming Components

A Kablink Teaming site consists of four major components:

- ♦ [Section 1.2.1, “Teaming Software,” on page 16](#)
- ♦ [Section 1.2.2, “Teaming Database,” on page 17](#)
- ♦ [Section 1.2.3, “Teaming File Repository,” on page 17](#)
- ♦ [Section 1.2.4, “Lucene Index,” on page 17](#)

1.2.1 Teaming Software

The Kablink Teaming software is a customized version of Apache* Tomcat. This software provides all the Web-based functionality you use as you access the Teaming site through your Web browser.

1.2.2 Teaming Database

The Kablink Teaming database is used for storing information about the Teaming site and its users:

- ♦ Structural information about workspaces, folders, and entries (for example, their location in the workspace tree)
- ♦ Identification information about workspaces, folders, and entries (for example, titles, descriptions, dates of creation/modification, and users associated with creation/modification)
- ♦ User profile information (for example, full name, phone number, and e-mail address)

The Teaming database disk space requirements are relatively modest, because it is not used for storing files.

1.2.3 Teaming File Repository

The Kablink Teaming file repository holds all files that are imported into Teaming, information related to the imported files, such as thumbnails and HTML renderings, and the search engine index.

The Teaming file repository disk space requirements depend on the size of the Teaming site. For a large Teaming site, disk space requirements can be substantial.

1.2.4 Lucene Index

The Lucene* Index Server is a high-performance Java* search engine. The Lucene index contains pointers to the actual data stored in the Kablink Teaming file repository. The index enables the Lucene search engine to perform very fast searches through large quantities of Teaming data.

1.3 Teaming Configurations

You can configure Kablink Teaming to run on a single server or multiple servers, depending on the size and needs of your Teaming site.

Configuration	Description
Single Server	By default, the Kablink Teaming Installation program installs all Teaming components on the same server.
Remote Database Server	For better performance and scalability, you can install the Teaming database on a remote server
Remote Lucene Index Server	For better performance and scalability, you can install the Lucene index on a remote server This configuration is not available with Kablink Teaming.
Multiple Teaming Servers	By running Novell Teaming on multiple servers, you can achieve high availability functionality, including failover and load balancing, depending on how you configure your servers. IMPORTANT: This configuration is not available with Kablink Teaming.

Configuration	Description
Multiple Remote Lucene Servers	Your Novell Teaming site depends on the Lucene Index Server for full functionality. Running multiple Lucene Index Servers provides high availability functionality, so that if one Lucene Index Server goes down, Teaming users can still access the Teaming site because other Lucene Index Servers are still available.
	IMPORTANT: This configuration is not available with Kablink Teaming.
Multiple Remote Database Servers	The three databases supported by Teaming each have their own approach to clustering the database server. Information about clustering database servers is available on the Internet.

For more information, see [Part IV, “Multi-Server Configurations and Clustering,”](#) on page 95.

Teaming System Requirements

2

You, as a Kablink® Teaming site administrator, must ensure that your system meets Teaming system requirements, so that your Teaming site can be set up successfully. After your Teaming site is set up, you must ensure that users' browsers and office applications meet Teaming user requirements, so that users can access the Teaming site successfully.

- ♦ [Section 2.1, “Teaming Server Requirements,” on page 19](#)
- ♦ [Section 2.2, “Teaming User Requirements,” on page 21](#)
- ♦ [Section 2.3, “Mobile Device Requirements,” on page 21](#)
- ♦ [Section 2.4, “Supported Environments,” on page 22](#)
- ♦ [Section 2.5, “Recommended Hardware Configurations,” on page 23](#)

2.1 Teaming Server Requirements

- ♦ Hardware for the Kablink Teaming server:
 - ♦ 32-bit/x86 processor or 64-bit/x86 processor
 - ♦ Minimum 2 GHz processor
 - ♦ Multi-CPU systems preferred
 - ♦ Adequate server memory:
 - ♦ At least 3 GB RAM for a 32-bit processor
 - ♦ At least 4 GB RAM for a 64-bit processor
- ♦ Any of the following supported server operating systems for the Teaming server:
 - ♦ Novell® Open Enterprise Server (OES) 2 Linux, plus the latest Support Pack
 - ♦ SUSE® Linux Enterprise Server (SLES) 10 or SLES 11, plus the latest Support Pack

NOTE: The X Window System is required by the Teaming Installation program. It is not required when running Teaming after installation.

- ♦ Windows* Server* 2003 or Windows Server 2008, plus the latest Service Pack

Kablink Teaming can be run on additional Linux and Windows operating systems. For more information, see the [Kablink Open Collaboration Web site \(http://www.kablink.org\)](http://www.kablink.org).

- ♦ Database server:
 - ♦ Linux:
 - ♦ MySQL* 5.0.26 or later server and client, or MySQL 5.1 server and client

NOTE: MySQL 5.0.26 is included with SLES 10 SP1 and OES 2 Linux. MySQL 5.0.67 is included with SLES 11.

- ♦ Oracle* 10g or Oracle 11g

- ◆ Windows:
 - ◆ MySQL 5.0.26 or later server and tools, or MySQL 5.1 server and tools
 - ◆ Microsoft* SQL Server* 2005 or SQL Server 2008, plus the latest Service Pack
 - ◆ Oracle 10g or Oracle 11g

More information about MySQL is available in [MySQL Database Server](#) in [Appendix A, “Teaming System Requirements Assistance,”](#) on page 139.

- ◆ Tomcat 6.0.18

NOTE: Tomcat 6.0.18 is included with Teaming on Linux and Windows.

- ◆ Java Developer Kit (JDK*):

- ◆ Sun* JDK 5.0 or JDK 6.0
- ◆ IBM* JDK 5.0 or JDK 6.0

Java scripting must be enabled for proper Teaming site functionality.

More information about JDKs is available in [Java Development Kit](#) in [Appendix A, “Teaming System Requirements Assistance,”](#) on page 139.

- ◆ Directory service:

- ◆ Linux: Novell eDirectory™ 8.8 or later, plus the latest Support Pack

For information about eDirectory, see the [Novell eDirectory 8.8 Documentation Web site](http://www.novell.com/documentation/edir88) (<http://www.novell.com/documentation/edir88>).

- ◆ Windows: Microsoft Active Directory*, plus the latest Service Pack, or Novell eDirectory 8.8 or later, plus the latest Support Pack

For information about Active Directory, see [Windows Server 2003 Active Directory](http://www.microsoft.com/windowsserver2003/technologies/directory/activedirectory) (<http://www.microsoft.com/windowsserver2003/technologies/directory/activedirectory>) or [Windows Server 2008 Active Directory](http://www.microsoft.com/windowsserver2008/en/us/active-directory.aspx) (<http://www.microsoft.com/windowsserver2008/en/us/active-directory.aspx>).

- ◆ Adequate server disk space:

- ◆ Teaming software: Approximately 250 MB
- ◆ Database server software: Approximately 250 MB
- ◆ Teaming file repository: Depends on the anticipated size of the Teaming site
- ◆ Database content: Substantially less than the Teaming file repository

See [Section 3.5, “Planning the Teaming Database,”](#) on page 33 to plan for the disk space needs of your Teaming site.

For the latest system requirements details, see “Installation Issues” in the [Kablinc Teaming 2.1 Readme](#) (http://www.novell.com/documentation/kablinc-teaming21/team21_readme_kablinc211/data/team21_readme_kablinc211.html).

NOTE: Teaming 1.0 was integrated with the Liferay* portal, but the Teaming 2.x releases are not. If you are updating from Teaming 1.0 to Teaming 2.1, the Installation program backs up your existing Liferay data and reconfigures your Teaming site to run without integration with Liferay.

2.2 Teaming User Requirements

- ♦ Web browser:
 - ♦ Linux: Mozilla* Firefox*
 - ♦ Windows: Microsoft Internet Explorer* 6.0 or later; Mozilla Firefox
 - ♦ Mac: Safari* 3 or later; Mozilla Firefox
- ♦ Office applications:
 - ♦ Linux: OpenOffice.org* 3.1.1 or later
 - ♦ Windows: Microsoft Office 2007; OpenOffice.org 3.1.1 or later
 - ♦ Mac: OpenOffice.org 3.1.1 or later
- ♦ Collaboration clients:
 - ♦ Linux:
 - ♦ GroupWise® 8 with the latest Support Pack
 - ♦ Windows:
 - ♦ GroupWise 8 with the latest Support Pack
 - ♦ Outlook 2007 with iCal support enabled
 - ♦ Notes 7 with iCal support enabled

For the latest system requirements details, see “Installation Issues” in the [Kablink Teaming 2.1 Readme](http://www.novell.com/documentation/kablinkteaming21/team21_readme_kablink211/data/team21_readme_kablink211.html) (http://www.novell.com/documentation/kablinkteaming21/team21_readme_kablink211/data/team21_readme_kablink211.html).

2.3 Mobile Device Requirements

- ♦ [Section 2.3.1, “Supported Mobile Devices,” on page 21](#)
- ♦ [Section 2.3.2, “Device Browser Requirements,” on page 22](#)

2.3.1 Supported Mobile Devices

The Kablink Teaming mobile interface is supported on the following mobile devices:

- ♦ iPhone*
- ♦ BlackBerry*

NOTE: The BlackBerry Curve* has issues with JavaScript*, so it does not work with the Teaming mobile interface. For more information, see “[Your BlackBerry Curve Does Not Work with the Mobile Interface](#)” in “[Troubleshooting](#)” in the *Kablink Teaming 2.1 User Guide*.

- ♦ Any other mobile device that provides an HTTP/HTML-based interface

Ensure that your device’s browser meets the requirements that are discussed in [Section 2.3.2, “Device Browser Requirements,” on page 22](#).

2.3.2 Device Browser Requirements

To use Kablink Teaming from a mobile device, your device's browser must support:

- ♦ HTML 4
- ♦ JavaScript

2.4 Supported Environments

- ♦ [Section 2.4.1, “File Viewer Support,” on page 22](#)
- ♦ [Section 2.4.2, “IPV6 Support,” on page 22](#)
- ♦ [Section 2.4.3, “Clustering Support,” on page 22](#)
- ♦ [Section 2.4.4, “Xen Virtualization Support,” on page 23](#)
- ♦ [Section 2.4.5, “VMware Support,” on page 23](#)
- ♦ [Section 2.4.6, “Linux File System Support,” on page 23](#)

2.4.1 File Viewer Support

In Kablink Teaming, file viewing capabilities are provided by [OpenOffice.org \(http://www.openoffice.org\)](http://www.openoffice.org) viewer technology. For more information, see:

- ♦ [Section 4.1.5, “Configuring the Document Converter on Linux,” on page 55](#)
- ♦ [Section 4.2.3, “Configuring the Document Converter on Windows,” on page 60](#)

The file viewers also support data indexing by the Lucene Index Server.

2.4.2 IPV6 Support

Kablink Teaming supports the IPV6 protocol when it is available on the server. If it is available, Teaming detects it and supports IPV6 by default, along with IPV4.

2.4.3 Clustering Support

You can set up your Kablink Teaming site in any of the following clustering environments:

- ♦ Novell Cluster Services™ on Linux.

For information about Novell Cluster Services on Linux, see the Clustering (High Availability) section of the [Open Enterprise Server 2 SP1 Documentation Web site \(http://www.novell.com/documentation/oes2/cluster-services.html#cluster\)](http://www.novell.com/documentation/oes2/cluster-services.html#cluster).

- ♦ Microsoft Clustering Services in Windows

For more information, see [Windows 2003 Server Cluster \(http://www.microsoft.com/windowsserver2003/enterprise/clustering.mspx\)](http://www.microsoft.com/windowsserver2003/enterprise/clustering.mspx) or [Windows Server 2008 High Availability \(http://www.microsoft.com/windowsserver2008/en/us/high-availability.aspx\)](http://www.microsoft.com/windowsserver2008/en/us/high-availability.aspx).

In addition, you can install Teaming components on multiple servers to provide failover support, as described in [Part IV, “Multi-Server Configurations and Clustering,” on page 95](#).

2.4.4 Xen Virtualization Support

You can install Kablink Teaming in virtual environments where a software program enables one physical server to function as if it were two or more physical servers. Xen* virtualization technology in Novell Open Enterprise Server (Linux version) and SUSE Linux Enterprise Server is supported. For more information, see:

- ♦ [Open Enterprise Server 2 Virtualization Documentation Web site \(http://www.novell.com/documentation/oes2/virtualization.html#virtualization\)](http://www.novell.com/documentation/oes2/virtualization.html#virtualization)
- ♦ [SLES Virtualization Technology Documentation Web site \(http://www.novell.com/documentation/vmserver\)](http://www.novell.com/documentation/vmserver).

2.4.5 VMware Support

Kablink Teaming is supported on the following versions of VMware*:

- ♦ VMware Server (formally GSX Server), an enterprise-class virtual infrastructure for x86-based servers
- ♦ VMware ESX Server, a data-center-class virtual infrastructure for mission-critical environments

For more information, see the [VMWare Web site \(http://www.vmware.com\)](http://www.vmware.com).

2.4.6 Linux File System Support

For best Kablink Teaming performance on Linux, the `ext3` file system is recommended. If you are running OES Linux and need the feature-rich environment of the NSS file system, Teaming is also supported there. The `reiser3` file system is also supported.

2.5 Recommended Hardware Configurations

The hardware configuration that you set up for your Teaming site should be based on the number of active users that the Teaming site must support.

Active Users	Teaming Components	CPU	Memory	Java Heap
10	1 dedicated Teaming server with: <ul style="list-style-type: none">♦ Tomcat♦ Lucene♦ SQL	x86	2 GB	1 GB
50	1 dedicated Teaming server with: <ul style="list-style-type: none">♦ Tomcat♦ Lucene♦ SQL	x64 dual core	4 GB	2 GB

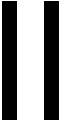
Active Users	Teaming Components	CPU	Memory	Java Heap
100	Multiple Teaming servers: <ul style="list-style-type: none"> ◆ 1 dedicated Tomcat server ◆ 1 or more dedicated SQL servers 	x64 dual core	4 GB	2 GB

Server machines can be physical or virtual.

You can perform a Basic Installation to set up a single-server configuration, as described in [Chapter 3, “Planning a Basic Teaming Installation,” on page 27](#) and [Chapter 4, “Setting Up a Basic Teaming Site,” on page 49](#).

You can perform a Basic Installation to set up a multiple-server configuration, but the remote database must be created manually and in advance of performing the installation, as described in [Part IV, “Multi-Server Configurations and Clustering,” on page 95](#).

Basic Installation



- ♦ Chapter 3, “Planning a Basic Teaming Installation,” on page 27
- ♦ Chapter 4, “Setting Up a Basic Teaming Site,” on page 49
- ♦ Chapter 5, “Adding Users to Your Teaming Site,” on page 65
- ♦ Chapter 6, “What’s Next,” on page 71
- ♦ Chapter 7, “Basic Teaming Installation Summary Sheet,” on page 73

Planning a Basic Teaming Installation

3

The Kablink® Teaming Installation program helps you install the Teaming software and file repository to the appropriate locations.

- ♦ [Section 3.1, “What Is a Basic Teaming Installation?” on page 27](#)
- ♦ [Section 3.2, “Selecting the Operating Environment for Your Teaming Server,” on page 28](#)
- ♦ [Section 3.3, “Selecting a Java Development Kit,” on page 30](#)
- ♦ [Section 3.4, “Gathering Network Information for Your Teaming Site,” on page 31](#)
- ♦ [Section 3.5, “Planning the Teaming Database,” on page 33](#)
- ♦ [Section 3.6, “Gathering Outbound E-Mail Information,” on page 36](#)
- ♦ [Section 3.7, “Enabling Inbound E-Mail,” on page 38](#)
- ♦ [Section 3.8, “Planning Site Security,” on page 40](#)
- ♦ [Section 3.9, “Gathering Directory Services Information,” on page 41](#)
- ♦ [Section 3.10, “Accommodating Multiple Languages,” on page 46](#)

3.1 What Is a Basic Teaming Installation?

The Kablink Teaming Installation program provides two installation types: Basic and Advanced. When you perform a Basic installation, the result is a fully functional Teaming site with all required options configured and with typical defaults in use for optional settings.

If you are new to Teaming, the easiest way to get started is to perform a Basic installation first, with all Teaming components installed on the same server, then add advanced configuration options to your Teaming site after the Basic installation has been successfully tested. However, experienced Teaming administrators can choose to perform an Advanced installation immediately, which includes all installation and configuration options, as described in [Part III, “Advanced Installation and Reconfiguration,” on page 79](#).

IMPORTANT: The following Teaming configurations require that you perform an Advanced installation as your initial installation of the Teaming software:

- ♦ Setting up the Teaming file repository so that some types of files are located outside the Teaming file repository root directory. See [Section 8.2, “Distributing Different Data Types to Different Locations,” on page 81](#) for Advanced installation instructions. You cannot move subdirectories within the Teaming file repository after they have been created.

If you want to implement an Advanced installation option, you should perform a Basic installation first, in a test environment, before performing the Advanced installation to set up your permanent Teaming site.

This section helps you make informed decisions about the required options for a Basic installation:

- ♦ Server platform (Linux or Windows)

- ◆ Server architecture (32-bit or 64-bit)
- ◆ Physical server memory requirements
- ◆ File locations (Teaming software and data)
- ◆ Java Development Kit (JDK) version (Sun or IBM)
- ◆ Database type (MySQL, Microsoft SQL Server, or Oracle)
- ◆ Database creation (during installation or before installation)
- ◆ Database authentication (username and password)
- ◆ Network information (Teaming server hostname or fully qualified domain name, and ports)
- ◆ Outbound e-mail configuration (SMTP vs. SMTPS, hostname, SMTP port, time zone, authentication)
- ◆ Inbound e-mail configuration (SMTP address, SMTP port, and TLS support)
- ◆ User and group for running the Teaming software (Linux only)

Before performing a Basic installation, make all system requirements are met, as listed in [Chapter 2, “Teaming System Requirements,”](#) on page 19.

3.2 Selecting the Operating Environment for Your Teaming Server

- ◆ [Section 3.2.1, “Teaming Server Platform,”](#) on page 28
- ◆ [Section 3.2.2, “Teaming Server Architecture,”](#) on page 28
- ◆ [Section 3.2.3, “Teaming Server Memory,”](#) on page 29
- ◆ [Section 3.2.4, “Teaming Installation Locations,”](#) on page 30

3.2.1 Teaming Server Platform

Kablink Teaming can run on the versions of Linux and Windows listed in [Section 2.1, “Teaming Server Requirements,”](#) on page 19.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Teaming Server Platform*, mark your operating system of choice.

3.2.2 Teaming Server Architecture

Kablink Teaming can run on 32-bit or 64-bit processors. A 64-bit processor is recommended for a large Teaming site where the processor load will be heavy and data storage will require a large amount of disk space.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Processor Architecture*, mark the processor capacity required for the size of Teaming site that you want to set up.

3.2.3 Teaming Server Memory

If a 32-bit processor is sufficient for your Kablink Teaming server, the server needs at least 3 GB of memory. If you plan to use a 64-bit processor in your Teaming server, the server needs more.

Teaming server memory usage is significantly affected by some factors and less affected by others:

- ♦ **Number of users logged in:** No significant effect.
- ♦ **Number of concurrent active sessions:** No significant effect.
- ♦ **Database server caches:** Significant memory usage.

When you follow the instructions for a Basic installation, the database is located on the same server as the Teaming software. After you have successfully tested your Basic installation, you can reconfigure Teaming to have its database on a remote server, so that the database uses separate memory resources, as described in [Chapter 12, “Creating the Teaming Database on a Remote Server,”](#) on page 97.

- ♦ **Teaming internal data caches:** Significant memory usage.

When you follow the instructions for a Basic installation, the Teaming internal data caches are subdirectories of the `teamingdata` directory, described in [Section 3.2.4, “Teaming Installation Locations,”](#) on page 30. The Teaming internal data caches are separate from any caching or memory usage by the database server itself.

- ♦ **Lucene index cache:** Significant memory usage.

The Lucene* Index Server is a high-performance Java search engine. Large file repositories (particularly with large files or a large number of files) can create a very large data index. When you perform a Basic installation, the Lucene index is created on the same server where the Teaming software is installed.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Memory Requirements*, specify the amount of physical memory you plan to have in your Teaming server.

When you perform a Basic installation, the amount of memory allocated to the Java Virtual Machine (JVM*) where the Teaming software runs defaults to 1 GB, which is adequate for a medium-sized Teaming site running on a 32-bit server. This memory allocation, called the Java “heap size,” does not include memory used by your database server or by the Lucene Index Server when these programs are running on the same server as the Teaming software.

A general rule is that no more than 75% of the available physical memory should be allocated to the JVM. Memory not allocated to the JVM must be sufficient to support the operating system, the database server, and the Lucene Index Server if they are also running on the Teaming server, and any other processes running on the Teaming server.

IMPORTANT: A JVM on a 32-bit server should not be configured to take more than 1.5 G of memory. However, large numbers of users and documents often need memory settings higher than 2 GB to provide adequate performance. Such a Teaming system should be set up on 64-bit hardware.

ADVANCED TEAMING INSTALLATION SUMMARY SHEET

Under *Java JDK Location*, specify the amount of memory to allocate to the JVM where Teaming runs.

Although it is possible to run Kablink Teaming with less than 1 GB of memory for the JVM, this applies only to very small test configurations, and is not suitable for production systems. In a test configuration, 512 MB is the minimum amount of memory required to produce a functioning Teaming installation.

3.2.4 Teaming Installation Locations

The default file location for the Kablink Teaming software varies by platform:

Linux: `/opt/novell/teaming`

Windows: `c:\Program Files\Novell\Teaming`

Included under the main Teaming software directory are subdirectories for Tomcat and file viewer software.

The default file location for the Kablink Teaming file repository also varies by platform:

Linux: `/var/opt/novell/teaming`

Windows: `c:\Novell\Teaming`

IMPORTANT: On Windows, the Teaming Installation program displays the Windows pathname using forward slashes (/) rather than the traditional back slashes (\). This syntax is necessary in the Installation program.

The Teaming file repository holds all files that are imported into Teaming, information related to the imported files, such as HTML renderings, and the search engine index.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *File Locations*, specify the directories where you want to install the Teaming software and data if you prefer not to use the default locations.

A Basic installation allows you to change the root directory for the Teaming software and the Teaming file repository.

IMPORTANT: If you want to organize the Teaming file repository so that some file types are not under the Teaming file repository root directory, you must perform an Advanced installation as your initial Teaming installation. You cannot move directories out of the Teaming file repository root directory after the initial installation has been performed. To perform an Advanced installation in order to organize the Teaming file repository to meet your needs, complete the planning steps for a Basic installation and complete the [Basic Teaming Installation Summary Sheet](#), then follow the additional instructions in [Distributing Different Data Types to Different Locations](#).

3.3 Selecting a Java Development Kit

As listed in [Section 2.1, “Teaming Server Requirements,” on page 19](#), you need to install a Java Development Kit (JDK) before you install Kablink Teaming. You can use either the Sun JDK or the IBM JDK for the platform where you are installing Teaming (Linux or Windows).

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Java Development Kit*, mark the JDK that you want to use with Teaming.

You must install the JDK on the Teaming server before you install the Teaming software. If you are not familiar with installing a JDK, see [Java Development Kit](#) in [Appendix A, “Teaming System Requirements Assistance,”](#) on page 139 for instructions.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Java Development Kit*, specify the directory where you install the JDK.

The Teaming Installation program uses this path as if you had set the `JAVA_HOME` environment variable. The path is stored for future reference in the `installer.xml` file so that you have to specify the path to the JDK only once.

3.4 Gathering Network Information for Your Teaming Site

When you perform a Basic installation, the Kablink Teaming Installation program needs hostname and HTTP port information about the server where you are installing Teaming.

- ♦ [Section 3.4.1, “Host Identification,”](#) on page 31
- ♦ [Section 3.4.2, “Port Numbers,”](#) on page 31

3.4.1 Host Identification

When you install Kablink Teaming, the Teaming installation program needs to know the name of the server where you are installing the Teaming software. The default is `localhost`. Do not use the default.

For internal use, you can use the DNS hostname of the Teaming server. However, if you want your Teaming site to be accessible from the Internet, you must specify the fully qualified domain name for the Teaming server in order to allow external access.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Network Information*, specify the hostname or fully qualified domain name to use for the Teaming server.

3.4.2 Port Numbers

When you install Kablink Teaming, Tomcat is installed along with the Teaming software. Teaming uses Tomcat as a standalone Web server for delivering data to Teaming users in their Web browsers. For more information about Tomcat, see the [Apache Tomcat Web site \(http://tomcat.apache.org\)](http://tomcat.apache.org).

IMPORTANT: If the server where you want to install Teaming already has a Web server running on it, shut it down while you install and test Teaming. The instructions for a Basic Teaming installation assume that no other Web server is running on the Teaming server. If you want to maintain another Web server on the Teaming server, you are responsible to resolve any port conflicts that might arise.

On the command line, use the `netstat` command to see what ports are currently in use on the server where you plan to install Teaming:

Linux: `netstat -tan`

Windows: `netstat -a -n -p tcp`

Make sure that the port numbers that you specify during Teaming installation do not conflict with ports that are already in use on the server.

- ♦ [“HTTP/HTTPS Ports” on page 32](#)
- ♦ [“Shutdown Port” on page 33](#)
- ♦ [“AJP Port” on page 33](#)

HTTP/HTTPS Ports

By default, standard Web servers such as Apache and Microsoft Internet Information Server (IIS) use port 80 for non-secure HTTP (Hypertext Transfer Protocol) connections and port 443 for secure HTTPS connections. HTTPS connections use SSL (Secure Sockets Layer) for added security. As a result, Web browsers default to port 80 when no port is specified in a non-secure HTTP URL and to port 443 when no port is specified in a secure HTTPS URL.

Tomcat defaults to port 8080 for non-secure HTTP connections and to port 8443 for secure HTTPS connections, so that it does not conflict with the standard Web server port numbers. If you configure Kablink Teaming with the Tomcat default port numbers, users must include the appropriate port number when providing the Teaming site URL. Typically, users prefer not to do this.

Unfortunately, the situation is not as simple as just configuring Teaming to use the default port numbers of 80 and 443. On Linux, non-`root` processes are not allowed access to port numbers lower than 1024 and you are counseled against running Teaming as `root` in [Section 3.8.2, “Linux User ID for Teaming,” on page 40](#). Also on Linux and Windows, the default Tomcat installation expects ports 8080 and 8443.

For a Basic installation, you can use the default port numbers as presented by the Teaming Installation program:

HTTP port: 80

Secure HTTP port: 443

Listen port: 8080

Secure listen port: 8443

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Network Information*, the default port numbers have been provided for you. You only need to specify different port numbers if you anticipate port conflicts with other software on the Teaming server. Resolving port conflicts is beyond the scope of this Teaming documentation.

After you install Teaming on Linux, you need to complete the steps in “[Setting Up Port Forwarding](#)” on page 53 so that users are not required to include the port number in the Teaming URL.

If you want to use secure HTTPS connections for your Teaming site, you must obtain signed certificate files as described in “[Preparing for Secure HTTP Connections](#)” in “[Site Security](#)” in the *Kablink Teaming 2.1 Administration Guide* either before or after you install Teaming.

Shutdown Port

By default, Kablink Teaming uses 8005 as its shutdown port. For an explanation of the shutdown port, see *Tomcat - Shutdown Port* (http://www.wellho.net/mouth/837_Tomcat-Shutdown-port.html).

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Network Information*, specify the port you want Teaming to use as its shutdown port if the default of 8005 is already in use on the Teaming server.

AJP Port

By default, Kablink Teaming uses 8009 as its AJP port. For an explanation of the Apache JServ Protocol port, see *The AJP Connector* (<http://tomcat.apache.org/tomcat-6.0-doc/config/ajp.html>).

IMPORTANT: If you are installing Teaming on Novell Open Enterprise Server 2, port 8009 is already in use, so you need to select a different port (for example 8010).

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Network Information*, specify the port you want Teaming to use as its AJP port if the default of 8009 is already in use on the Teaming server.

3.5 Planning the Teaming Database

Kablink Teaming database disk space requirements are relatively modest. Files that are imported into Teaming are saved in the Teaming file repository, as described in [Section 3.2.4, “Teaming Installation Locations,”](#) on page 30.

The Teaming database is primarily used for storing:

- ♦ Structural information about workspaces, folders, and entries (for example, their location in the workspace tree)
- ♦ Identification information about workspaces, folders, and entries (for example, titles, descriptions, dates of creation/modification, and users associated with creation/modification)
- ♦ User profile information (for example, full name, phone number, and e-mail address)

You or your database administrator must make the following decisions about the Teaming database:

- ♦ [Section 3.5.1, “Database Type,”](#) on page 34
- ♦ [Section 3.5.2, “Database Setup Method,”](#) on page 34
- ♦ [Section 3.5.3, “Database Location,”](#) on page 34

- ♦ [Section 3.5.4, “Database Credentials,” on page 35](#)
- ♦ [Section 3.5.5, “Database Encryption Algorithm,” on page 36](#)

3.5.1 Database Type

By default, Kablink Teaming uses open source MySQL as its database on Linux and on Windows. On Linux, Teaming also supports Oracle. On Windows, Teaming also supports Microsoft SQL Server and Oracle.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Database Type*, mark the type of database that you want to use with Teaming.

Make sure that a supported version of the database server, as listed in [Section 2.1, “Teaming Server Requirements,” on page 19](#), is installed and running before you install Teaming.

3.5.2 Database Setup Method

If you plan to use a MySQL database or a Microsoft SQL database, the Kablink Teaming Installation program can automatically set up the database for you. This is the easiest way to get started.

If you plan to use an Oracle database, you must have your database administrator set up the database for you. Instructions for your database administrator are provided in [Section 12.4, “Creating an Oracle Database,” on page 100](#).

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Database Setup Method*, mark whether you want the Teaming Installation program to automatically set up a MySQL or Microsoft SQL database, or you need your database administrator to manually set up an Oracle database before you install Teaming.

3.5.3 Database Location

When you have the Kablink Teaming Installation program create the database for you, the database is created on the same server where you install the Teaming software. This is the preferable location for your Basic installation. The default database name is `sitescape`, a reference to the company that previously developed the Teaming software.

Database Server	Default Linux Location	Default Windows Location
MySQL	<code>/var/lib/mysql</code>	<code>c:\Documents and Settings\All Users\Application Data\MySQL\MySQL Server <i>version</i>\Data</code>
Microsoft SQL	N/A	<code>c:\Program Files\Microsoft SQL Server\MSSQL\Data</code>
Oracle	N/A	N/A

You can have your database administrator create a database on a remote server later, after you have successfully tested your Basic installation. See [Chapter 12, “Creating the Teaming Database on a Remote Server,”](#) on page 97.

If you need to have your database administrator create an Oracle database, you must decide before installation whether you want the database on the Teaming server or on a remote server. See [Section 12.4, “Creating an Oracle Database,”](#) on page 100.

Teaming knows where to find its database from the JDBC* (Java Database Connectivity) URL that you provide during installation. For a database that is local to the Teaming software, the default JDBC URL that provides `localhost` as the hostname of the Teaming server is appropriate. If the database is on a remote server, the JDBC URL must provide the hostname of the remote database server.

The JDBC URL also includes the port number on which Teaming can communicate with the database server. The default port number depends on the database server you are using:

Database Server	Default Port Number
MySQL	3306
Microsoft SQL	1433
Oracle	1521

Use this port number unless it is already in use by another process on the database server.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *JDBC URL*, specify the appropriate hostname for the database server (`localhost` or the hostname of a remote server) and the port number it will use to communicate with Teaming.

3.5.4 Database Credentials

When you have the Kablink Teaming Installation program create the database for you, it defaults to the following administrator usernames for the database server:

Database	Default Administrative Username
MySQL	<code>root</code>
	IMPORTANT: The MySQL <code>root</code> username is not the same as the Linux <code>root</code> user on a Linux server.
Microsoft SQL	<code>sa</code> (system administrator)
Oracle	(no default)

For an Oracle database, your database administrator establishes the administrator username and password for the database server.

Check with your database administrator to see if the default administrator username is still in use for your database server, and obtain the administrator password for the database server before you run the Teaming Installation program.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Database Credentials*, specify the administrator username and password for the database server so that Teaming can access its database.

3.5.5 Database Encryption Algorithm

Different encryption algorithms provide differing encryption strength. The supported algorithms for encrypting the Kablink Teaming database password are listed below, in order from least strength to most strength.

- ♦ MD5
- ♦ SHA (default)
- ♦ SHA-256

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Database Encryption Algorithm*, mark the encryption algorithm you want to use for Teaming passwords.

3.6 Gathering Outbound E-Mail Information

Your Kablink Teaming site can be configured to send outbound e-mail through an existing e-mail system. E-mail from the Teaming site is useful for the following activities:

- ♦ Teaming users can subscribe to e-mail notifications, so that they automatically receive a message whenever a content of interest changes. For more information, see “[Subscribing to a Folder or Entry](#)” in “[Getting Informed](#)” in the *Kablink Teaming 2.1 User Guide*.
- ♦ From the Teaming site, users can send e-mail messages to individual users or to teams. For more information, see “[Sending E-Mail From within Teaming](#)” in “[Connecting With Your Co-Workers](#)” in the *Kablink Teaming 2.1 User Guide*.
- ♦ If your e-mail client is iCal-enabled, appointments created in a Teaming Calendar folder can be sent to your e-mail client for posting in your e-mail client Calendar.

In order for your Teaming site to communicate with your e-mail system, you need to gather the following information about your e-mail system.

- ♦ [Section 3.6.1, “Outbound E-Mail Protocol,” on page 37](#)
- ♦ [Section 3.6.2, “Outbound E-Mail Host,” on page 37](#)
- ♦ [Section 3.6.3, “Outbound E-Mail Authentication,” on page 37](#)
- ♦ [Section 3.6.4, “Outbound E-Mail Send Restriction,” on page 38](#)

After installation, outbound e-mail can be disabled and enabled again on the Teaming site, as described in “[Configuring E-Mail Integration](#)” in “[Site Setup](#)” in the *Kablink Teaming 2.1 Administration Guide*. However, you must configure outbound e-mail in the Teaming Installation program.

3.6.1 Outbound E-Mail Protocol

E-mail systems communicate using SMTP (Simple Mail Transfer Protocol). You need to determine whether the e-mail system that you want your Kablink Teaming site to communicate with is using SMTP or SMTPS (secure SMTP).

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Outbound E-Mail Protocol*, mark SMTP or SMTPS to match the e-mail system that you want Teaming to communicate with.

If the e-mail system requires SMTPS, see “[Securing E-Mail Transfer](#)” in “[Site Security](#)” in the *Kablink Teaming 2.1 Administration Guide*.

3.6.2 Outbound E-Mail Host

In order to send messages to your e-mail system, Kablink Teaming needs to know the hostname of your SMTP mail server.

The default SMTP port of 25 is typically appropriate, unless the SMTP mail server requires port 465 or 587 for SMTPS connections.

When the Teaming site sends e-mail notifications for scheduled events, the messages are time-stamped according to the time zone you specify here during installation. This setting allows you to use a time zone for e-mail notifications that is different from the time zone where the server is located. The time zone list is grouped first by continent or region, optionally by country or state, and lastly by city. Some common selections for United States time zones are:

Time Zone	Continent/City
Pacific Time	America/Los Angeles
Mountain Time	America/Denver
Central Time	America/Chicago
Eastern Time	America/New_York

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Outbound E-Mail Host*, specify the name of the mail host, the SMTP port number it uses, and the time zone for the time stamp you want on scheduled event notifications.

3.6.3 Outbound E-Mail Authentication

Many SMTP mail hosts require a valid e-mail address before they establish the SMTP connection. Some e-mail systems can construct a valid e-mail address if you specify only a valid username. Other e-mail systems require that you specify the full e-mail address for successful authentication.

Some e-mail systems also require a password. Some do not.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Outbound E-Mail Authentication*, indicate whether or not authentication is required for the Teaming site to communicate with your e-mail system, and if so, specify the username or e-mail address, and if necessary, the password for the e-mail account.

3.6.4 Outbound E-Mail Send Restriction

By default, the Kablink Teaming site allows Teaming users to send messages to all Teaming users using the All Users group on the Teaming site. On a very large Teaming site, this generates a very large number of e-mail messages. If desired, you can prevent messages from being sent to the All Users group.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Allow Sending E-Mail to All Users*, mark whether or not you want users to be able to send messages to the All Users group.

3.7 Enabling Inbound E-Mail

You can configure your Kablink Teaming site so that users can post comments by e-mailing them to the folder where they want to post the comment. In order to receive e-mail postings, folders must be properly configured, as described in “[Enabling Folders to Receive Entries through E-Mail](#)” in “[Managing Folders](#)” in the *Kablink Teaming 2.1 Advanced User Guide*. Also, users must know the e-mail address of the folder where they want to post their comment.

- ◆ [Section 3.7.1, “Internal Mail Host for Inbound E-Mail,” on page 38](#)
- ◆ [Section 3.7.2, “Inbound E-Mail Port Number,” on page 39](#)
- ◆ [Section 3.7.3, “Inbound E-Mail IP Address,” on page 39](#)
- ◆ [Section 3.7.4, “Inbound E-Mail Security,” on page 39](#)

After installation, inbound e-mail can be disabled and enabled again on the Teaming site, as described in “[Disabling/Enabling Inbound E-Mail Postings](#)” in “[Site Setup](#)” in the *Kablink Teaming 2.1 Administration Guide*. However, you must configure inbound e-mail in the Teaming Installation program.

3.7.1 Internal Mail Host for Inbound E-Mail

Inbound e-mail is disabled by default. When you enable it, the Kablink Teaming site starts an internal SMTP mail host to receive incoming messages and post them to the folders associated with the e-mail addresses to which the messages are addressed. By default, the internal SMTP mail host uses port 2525, so that it does not conflict with another mail host that might be running on the Teaming server.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Inbound E-Mail Configuration*, mark whether or not you want users to be able to post to the Teaming site from their e-mail clients.

3.7.2 Inbound E-Mail Port Number

Selecting the port number for the Kablink Teaming internal SMTP mail host presents the same issue that needs to be dealt with for the HTTP port numbers, as described in “[HTTP/HTTPS Ports](#)” on [page 32](#). You might want to configure the Teaming internal SMTP mail host to use the standard SMTP port of 25. How you handle the issue depends on whether you are installing on Linux or on Windows.

Linux: Keep the default port number (2525) in the Teaming Installation program, then complete the steps in [Section 4.1.4, “Setting Up Port Forwarding,”](#) on [page 53](#) so that requests incoming on port 25 are forwarded to port 2525.

Windows: Specify port 25 for incoming e-mail in the Teaming Installation program.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Inbound E-Mail Configuration*, specify the port number for the Teaming internal SMTP host to listen on.

3.7.3 Inbound E-Mail IP Address

If you want to install Kablink Teaming on a server where an SMTP mail host is already running, you can do so if the server has multiple IP addresses. The existing SMTP mail host can use port 25 on one IP address and Teaming can use port 25 on another IP address. During installation, you only need to specify an IP address if the server has multiple IP addresses and you want Teaming to bind to a specific IP address rather than all of them.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Inbound E-Mail Configuration*, specify the IP address for the Teaming internal SMTP host to listen on, if you are installing Teaming on a server with multiple IP addresses and you want Teaming to bind to just one of them.

3.7.4 Inbound E-Mail Security

You can choose whether the Kablink Teaming internal mail host uses TLS (Transport Layer Security) when it communicates with other SMTP mail hosts. In order for TLS to function properly, you must have a certificate on the Teaming server, as described in “[Securing E-Mail Transfer](#)” in “[Site Security](#)” in the *Kablink Teaming 2.1 Administration Guide*. When an SMTP mail host queries the Teaming mail host, the Teaming mail host communicates its ability or inability to handle TLS. The other SMTP mail host then communicates appropriately, taking into account how the Teaming internal mail host is configured. The default is to use TLS, because this provides more secure communication between mail hosts.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Inbound E-Mail Configuration*, mark whether or not you want the Teaming server to announce that it can use TLS.

You can install Teaming with *Announce TLS* selected, and then set up the certificate afterwards. However, if you select *Announce TLS*, inbound e-mail does not work until the certificate is available on the Teaming server.

3.8 Planning Site Security

- ♦ [Section 3.8.1, “Teaming Site Administrator Password,” on page 40](#)
- ♦ [Section 3.8.2, “Linux User ID for Teaming,” on page 40](#)

3.8.1 Teaming Site Administrator Password

When you first log in to the Kablink Teaming site, you use `admin` as the Teaming administrator username and `admin` as the password. You should immediately change the password to one of your own choosing.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Teaming Administrator Credentials*, specify the password that you want to use whenever you log in as the Teaming site administrator.

3.8.2 Linux User ID for Teaming

For optimum security, Kablink Teaming should not run as the Linux `root` user. For example, if an intruder manages to assume the identity of the Teaming program, the intruder gains all the privileges of the commandeered process. If the process is running with `root` user privileges, the intruder has `root` access to your system. If the process is running as a user with minimal privileges, the intruder has only restricted access to your system. Therefore, your system is more secure if the Teaming program does not run as `root`. For example, you might want to create a user named `teamingadmin` for the Teaming program to run as. Linux users require a full name and a password.

In addition to creating a Linux user for the Teaming program to run as, you can also create a Linux group for that user to belong to. This enables the Teaming program to create directories and files with consistent ownership and permissions. For example, you might want to create a group named `teamingadmin` for the `teamingadmin` user to belong to. Groups do not require passwords.

As an alternative to creating a custom Linux username and group for Teaming, you can use the existing `wwwrun` username and the `www` group. This account is typically used to start Web server processes.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Linux Username and Group*, specify the non-`root` Linux username and group name to use for running the Teaming program. If you are creating a new Linux user, specify its full name and password.

IMPORTANT: The non-`root` Linux username and group must exist before you start the Teaming Installation program. Instructions for creating the username and group are provided in [Section 4.1.1, “Performing Pre-Installation Tasks on Linux,” on page 49](#).

3.9 Gathering Directory Services Information

Unless you are planning a very small Kablink Teaming site, the most efficient way to create Teaming users is to synchronize initial user information from your network directory service (Novell eDirectory, Microsoft Active Directory, or other LDAP directory service) after you have installed the Teaming software. Over time, you can continue to synchronize user information from the LDAP directory to your Teaming site.

- ◆ [Section 3.9.1, “LDAP Directory Service,” on page 41](#)
- ◆ [Section 3.9.2, “LDAP Connections,” on page 41](#)
- ◆ [Section 3.9.3, “LDAP Synchronization Options,” on page 44](#)

IMPORTANT: Teaming performs one-way synchronization from the LDAP directory to your Teaming site. If you change user information on the Teaming site, the changes are not synchronized back to your LDAP directory.

3.9.1 LDAP Directory Service

You can synchronize initial Kablink Teaming user information from any LDAP directory. This guide provides instructions for synchronizing user information from eDirectory and Active Directory. If you are using another LDAP directory, the instructions provide guidelines for the tasks you need to perform.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *LDAP Directory Service*, mark the LDAP directory service from which you want to synchronize Teaming user information.

3.9.2 LDAP Connections

You can configure one or more LDAP connections. Each connection requires the following configuration information:

- ◆ [“LDAP Server” on page 41](#)
- ◆ [“User Attribute” on page 42](#)
- ◆ [“User and Group Object Locations” on page 43](#)

LDAP Server

In order to synchronize initial user information, Kablink Teaming needs to access an LDAP server where your directory service is running. You need to provide the hostname of the server using a URL of the following format:

```
ldap://hostname
```

If the LDAP server requires a secure SSL connection, use the following format:

```
ldaps://hostname
```

If the LDAP server is configured with a default port number (389 for non-secure connections or 636 for secure SSL connections), you do not need to include the port number in the URL. If the LDAP server uses a different port number, use the following format for the LDAP URL:

```
ldap://hostname:port_number  
ldaps://hostname:port_number
```

In addition, Teaming needs the username and password of a user on the LDAP server who has sufficient rights to access the user information stored there. You need to provide the username, along with its context in your LDAP directory tree, in the format expected by your directory service.

Directory Service	Format for Username
eDirectory	<code>cn=username,ou=organizational_unit,o=organization</code>
Active Directory	<code>cn=username,ou=organizational_unit,dc=domain_component</code>

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *LDAP Server*, specify the LDAP URL of the server, a fully qualified username with sufficient rights to read the user information, and the password for that user.

If the LDAP server requires a secure SSL connection, additional setup is required. You must complete the steps in “[Securing LDAP Synchronization](#)” in “[Site Security](#)” in the *Kablink Teaming 2.1 Administration Guide* to import the root certificate for your LDAP directory into the Java keystore on the Teaming server before you configure Teaming for LDAP synchronization.

User Attribute

LDAP directories differ in the LDAP attribute used to identify a User object. eDirectory and Active Directory both use the `cn` (common name) attribute. Other LDAP directories might use the `uid` (unique ID) attribute. Kablink Teaming needs to know which attribute to look for in order to find User objects.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *LDAP User Attribute*, mark `cn` or `uid`, based on the convention used by your LDAP directory service for User objects. Ensure that users have a value for the attribute that you mark.

Teaming calls the User object attribute `screenName`, so when you configure LDAP synchronization, you map `screenName` to either `cn` or `uid`.

As needed, other LDAP attributes can be used for logging in to the Teaming site, as long as the attribute is unique for each User object. For example, the `mail` LDAP attribute on User objects could be used to enable Teaming users to log in to the Teaming site using their e-mail addresses.

NOTE: Because the login name becomes part of the user’s workspace URL, the at sign (`@`) in the e-mail address is replaced with an underscore (`_`) in the workspace URL because the at sign is not a valid character in a URL.

User and Group Object Locations

Kablink Teaming can find and synchronize initial user information from User objects located in one or more containers in the LDAP directory tree. A container under which User objects are located is called a base DN (distinguished name). The format you use to specify a base DN depends on your directory service.

Directory Service	Format for the User Container
eDirectory	<code>ou=organizational_unit,o=organization</code>
Active Directory	<code>ou=organizational_unit,dc=domain_component</code>

To identify potential Teaming users, Teaming by default filters on the following LDAP directory object attributes:

- ◆ Person
- ◆ orgPerson
- ◆ inetOrgPerson

If you want to create Teaming groups based on information in your LDAP directory, Teaming filters on the following LDAP directory object attributes:

- ◆ group
- ◆ groupOfNames
- ◆ groupOfUniqueNames

You can add attributes to the user or group filter list if necessary. You can use the following operators in the filter:

- ◆ | OR (the default)
- ◆ & AND
- ◆ ! NOT

You can choose whether you want Teaming to search for users (and optionally, groups) in containers underneath the base DN (that is, in subtrees).

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *LDAP User Context*, specify a base DN, along with object attributes if any, and mark whether you want subtrees searched for Teaming users.

Under *LDAP Group Context*, specify a base DN, along with object attributes if any, and mark whether you want subtrees searched for Teaming groups.

You might find it convenient to create a group that consists of all the users that you want to set up in Teaming, regardless of where they are located in your LDAP directory. After you create the group, you can use the following filter to search for User objects that have the specified group membership attribute:

```
(groupMembership=cn=group_name,ou=organizational_unit,o=organization)
```

IMPORTANT: Be sure to include the parentheses in your filter.

3.9.3 LDAP Synchronization Options

The following synchronization options apply to all LDAP configurations within the same Kablink Teaming zone:

- ◆ “Synchronization Schedule” on page 44
- ◆ “User Synchronization Options” on page 44
- ◆ “Group Synchronization Options” on page 45

NOTE: Because the synchronization options apply to all LDAP configurations within the same zone, you cannot have customized synchronization settings for each LDAP configuration. A Novell Teaming site can have multiple zones. A Kablink Teaming site has one zone.

Synchronization Schedule

When you enable LDAP synchronization, you can set up a schedule for when it is convenient for synchronization to occur. In planning the schedule, take into account how often your LDAP directory user (and, optionally, group) information changes and the server resources required to perform the synchronization for the number of users (and, optionally, groups) that you have.

You can choose to have LDAP synchronization performed every day (for example, on Saturday), or you can select specific days of the week when you want it performed (for example, on Monday, Wednesday, and Friday). You can choose to have it performed once a day at a specified time (for example, at 2:00 a.m.), or you can set a time interval, so that it is performed multiple times each day (for example, every four hours). The smallest time interval you can set is .25 hours (every 15 minutes).

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Synchronization Schedule*, record the schedule for when you want LDAP synchronization to take place.

User Synchronization Options

The following options are available for enabling and configuring user synchronization from your LDAP directory to your Kablink Teaming site:

- ◆ **Synchronize User Profiles:** Select this option to synchronize the following user information whenever the LDAP directory information changes after initial Teaming site setup:
 - ◆ First name
 - ◆ Last name
 - ◆ Phone number
 - ◆ E-mail address
 - ◆ Description

- ♦ **Register LDAP User Profiles Automatically:** Select this option to automatically add LDAP users to the Teaming site. However, workspaces are not created until users log into the Teaming site for the first time.
- ♦ **Delete Users That Are Not in LDAP:** Select this option to delete users that exist on the Teaming site but do not exist in your LDAP directory. Use this option under the following conditions:
 - ♦ You have deleted users from your LDAP directory and you want the LDAP synchronization process to delete them from Teaming as well.
 - ♦ In addition to the users synchronized from LDAP, you create some Teaming users manually, as described in [Section 5.2, “Creating a User,” on page 66](#), and you want the LDAP synchronization process to delete the manually created users.
 - ♦ In addition to the users synchronized from LDAP, you allow Guest users to self-register, as described in [“Allowing Guest Access to Your Teaming Site” in “Site Setup” in the *Kablink Teaming 2.1 Administration Guide*](#), and you want the LDAP synchronization process to delete the self-registered users.
- ♦ **When Deleting Users, Delete Associated User Workspaces and Content:** Select this option to remove obsolete information along with the user accounts.
- ♦ **Time Zone for New Users** Select this option to set the time zone for user accounts that are synchronized from the LDAP directory into your Teaming site. The time zone list is grouped first by continent or region, optionally by country or state, and lastly by city. Some common selections for United States time zones are:

Time Zone	Continent/City
Pacific Time	America/Los Angeles
Mountain Time	America/Denver
Central Time	America/Chicago
Eastern Time	America/New_York

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *LDAP User Options*, mark the synchronization options you want to use.

Group Synchronization Options

The following options are available for enabling and configuring user and group synchronization from your LDAP directory to your Kablink Teaming site:

- ♦ **Synchronize Group Profiles:** Select this option to synchronize group information, such as the group description, to the Teaming site whenever this information changes in LDAP.
- ♦ **Register LDAP Group Profiles Automatically:** Select this option to automatically add LDAP groups to the Teaming site.
- ♦ **Synchronize Group Membership:** Select this option so that the Teaming group includes the same users (and possibly groups) as the group in your LDAP directory. If you do not select this option, when you make changes to group membership in the LDAP directory, the changes are not reflected on your Teaming site.

- ◆ **Delete Local Groups That Are Not in LDAP:** Select this option to delete groups that exist on the Teaming site but do not exist in your LDAP directory. Use this option under the following conditions:
 - ◆ You have deleted groups from your LDAP directory and you want the LDAP synchronization process to delete them from Teaming as well.
 - ◆ In addition to the groups synchronized from LDAP, you create some Teaming groups manually, as described in “[Creating Groups of Users](#)” in “[Site Setup](#)”, in the *Kablink Teaming 2.1 Administration Guide*, and you want the LDAP synchronization process to delete the manually created groups.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *LDAP Group Options*, mark the synchronization options you want to use.

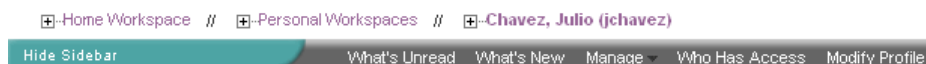
3.10 Accommodating Multiple Languages

The Kablink Teaming Installation program runs in English only. When you install the Teaming software, you can choose to have the primary language of the Teaming site to be any of the following languages:

- ◆ Chinese-Simplified
- ◆ Chinese Traditional
- ◆ Danish
- ◆ Dutch
- ◆ English
- ◆ French
- ◆ German
- ◆ Hungarian
- ◆ Italian
- ◆ Japanese
- ◆ Polish
- ◆ Portuguese
- ◆ Russian
- ◆ Spanish
- ◆ Swedish

Some languages have an additional distinction by locale (the country where the language is spoken).

The language you select during installation establishes the language of the global text that displays in locations where all Teaming users see it, such as in the workspace tree above the Workspace toolbar:



The language you select also establishes the default interface language and locale for creating new workspaces.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Default Locale*, mark the default language and specify the default country for your Teaming site.

Additional language customization can be done after installation, as described in “[Managing a Multiple-Language Teaming Site](#)” in “[Site Setup](#)” in the *Kablink Teaming 2.1 Administration Guide*

Setting Up a Basic Teaming Site

4

Follow the setup instructions for the platform where you are installing the Kablink® Teaming software:

- ♦ [Section 4.1, “Linux: Setting Up a Basic Teaming Site,” on page 49](#)
- ♦ [Section 4.2, “Windows: Setting Up a Basic Teaming Site,” on page 57](#)

4.1 Linux: Setting Up a Basic Teaming Site

You should already have reviewed [Chapter 3, “Planning a Basic Teaming Installation,” on page 27](#) and filled out the [Basic Teaming Installation Summary Sheet](#). The following sections step you through the process of installing and starting Kablink Teaming on Linux.

- ♦ [Section 4.1.1, “Performing Pre-Installation Tasks on Linux,” on page 49](#)
- ♦ [Section 4.1.2, “Running the Linux Teaming Installation Program,” on page 50](#)
- ♦ [Section 4.1.3, “Configuring Teaming to Start Automatically on Reboot,” on page 53](#)
- ♦ [Section 4.1.4, “Setting Up Port Forwarding,” on page 53](#)
- ♦ [Section 4.1.5, “Configuring the Document Converter on Linux,” on page 55](#)
- ♦ [Section 4.1.6, “Starting Teaming on Linux,” on page 56](#)
- ♦ [Section 4.1.7, “Checking the Status of the Teaming Server,” on page 56](#)
- ♦ [Section 4.1.8, “Restarting Teaming,” on page 57](#)
- ♦ [Section 4.1.9, “Stopping Teaming,” on page 57](#)
- ♦ [Section 4.1.10, “Uninstalling Teaming,” on page 57](#)

4.1.1 Performing Pre-Installation Tasks on Linux

- 1 Make sure that the Linux server where you plan to install Teaming meets the system requirements listed in [Section 2.1, “Teaming Server Requirements,” on page 19](#).
- 2 In a terminal window, become `root` by entering `su -` and the `root` password.
- 3 Set the Linux open file limit to meet the needs of the Teaming software:
 - 3a Open the `/etc/security/limits.conf` file in an ASCII text editor.
 - 3b Add the following lines to the bottom of the list, following the format of the example lines:

```
*      hard    nofile   65535
*      soft    nofile   4096
```
 - 3c Save the file, then exit the text editor.
- 4 Perform the following conditional tasks if needed:
 - ♦ [“Stopping and Disabling an Existing Web Server” on page 50](#)
 - ♦ [“Creating a Teaming User and Group” on page 50](#)

Stopping and Disabling an Existing Web Server

For example, to stop the Apache Web server and its associated instance of Tomcat:

- 1 Enter the following commands to stop Apache and Tomcat:

```
/etc/init.d/tomcat5 stop  
/etc/init.d/apache2 stop
```

- 2 Enter the following commands to make sure that Apache and Tomcat do not start again when you reboot the server:

```
chkconfig --del apache2  
chkconfig --del tomcat5
```

Creating a Teaming User and Group

If the user and group that you want to use for Teaming, as described in [Section 3.8.2, “Linux User ID for Teaming,” on page 40](#) do not exist yet, create them. It is easier if you create the group first.

- 1 Create the Linux group that you want to own the Teaming software and data store directories:

- 1a In YaST, click *Security and Users > User Management* to display the User and Group Administration page.

- 1b Click *Groups*, then click *Add*.

- 1c Specify the group name, then click *Accept* or *OK*.

The group does not need a password.

- 2 Create the Linux user that you want Teaming to run as:

- 2a Click *Users*, then click *Add*.

- 2b On the *User Data* tab, specify the user’s full name, username, and password, then select *Disable User Login*.

Like any Linux system user, the Teaming Linux user does not need to manually log in. The Teaming Linux user does not need a password, either, but YaST requires you to provide one.

- 2c Click the *Details* tab.

- 2d In the *Login Shell* drop-down list, select */bin/false*, because this user does not need to manually log in.

- 2e In the *Default Group* drop-down list, select the Linux group that you created in [Step 1](#).

- 2f In the *Groups* list, select the Linux group that you created in [Step 1](#).

- 2g Click *Accept* or *OK*.

- 3 Exit YaST.

4.1.2 Running the Linux Teaming Installation Program

When you run the Kablink Teaming Installation program for the first time, you typically want to use the GUI interface. However, if you are installing Teaming on a server where the X Window System* is not available, a text-based Installation program is also available. After you are familiar with the Teaming installation process, you can use a silent installation to automate the process.

- ♦ [“Using the GUI Installation Program” on page 51](#)

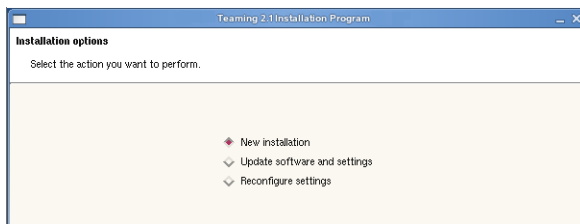
- ♦ [“Using the Text-Based Installation Program”](#) on page 52
- ♦ [“Performing a Silent Installation”](#) on page 52

Using the GUI Installation Program

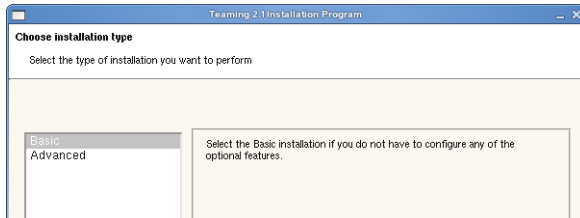
- 1 In a terminal window, enter `su -` to become the `root` user, then enter the `root` password.
You need `root` permissions in order to install the Teaming software, but you should not run the Teaming software as `root`.
- 2 Change to the directory where you downloaded and extracted the Teaming software.
- 3 Enter the following command to start the Teaming Installation program:

```
./installer-teaming.linux
```

- 4 Accept the License Agreement, then click *Next*.



- 5 Click *Next* to accept the default of *New installation*.



- 6 Click *Next* to accept the default of *Basic*.
- 7 Use the information that you have gathered on the [Basic Teaming Installation Summary Sheet](#) to provide the information that the Teaming Installation program prompts you for:

[Installation Locations](#)

[Default Locale for Kablink Teaming](#)

[User ID for Kablink Teaming](#)

[Network Information](#)

[Database Selection](#)

[Database Type](#)

[JDBC URL](#)

[Credentials](#)

[Setup](#)

[Encryption Algorithm](#)

[Java JDK Location](#)

[Outbound E-Mail Configuration](#)

[Protocol](#)

[Host, Port, and Time Zone](#)
[Username, Password, and Authentication](#)
[Allow Sending E-Mail to All Users](#)

[Inbound E-Mail Configuration](#)

The Installation program stores the information it gathers in the `installer.xml` file in the same directory where you started the Installation program.

- 8 After you have provided all the requested information, click *Install* to begin the Teaming installation.
- 9 When the installation is completed, click *Finish* to exit the Teaming Installation program.

Information about the installation process is written to the `installer.log` file in the same directory where you ran the Installation program. If a problem arises during the installation, the `installer.log` file provides information that can help you resolve the problem.

- 10 Continue with [Section 4.1.3, “Configuring Teaming to Start Automatically on Reboot,”](#) on page 53.

Using the Text-Based Installation Program

If you try to start the GUI Teaming Installation program in an environment where the X Windows System is not running, the text-based Teaming Installation program starts instead.

If you want to use the text-based Installation program in an environment where it is starting with a GUI by default, use the following command in the directory where the Installation program is located:

```
./installer-teaming.linux --text
```

The text-based Installation program gathers the same configuration information as the GUI Installation program does. This information is stored in the `installer.xml` file in the directory where you run the Installation program.

The Installation program does not write the information it gathers into the `installer.xml` file until you exit the Installation program, and you cannot back up when using the text-based Installation program. Therefore, when you use the text-based Installation program, you should plan your installation carefully in advance, using the [Basic Teaming Installation Summary Sheet](#) or the [Advanced Teaming Installation Summary Sheet](#). If you make a mistake during the installation, continue to the end of the installation process and exit the Installation program normally, so that all information is saved. Then run the text-based Installation program again. Your previous information is supplied as defaults and you can change the information as needed.

Performing a Silent Installation

If your Kablink Teaming system expands beyond one server, you might need to repeatedly install the same Teaming components. A silent installation makes this an easy process. Edit an existing `installer.xml` file so that it has the hostname of the server where you want to perform the silent installation and copy it to that server. In the directory where the Installation program is located, use the appropriate command to run the Teaming installation program, depending on the action that you want the silent installation to perform:

```
./installer-teaming.linux --silent --install  
./installer-teaming.linux --silent --upgrade  
./installer-teaming.linux --silent --reconfigure
```

The Installation program obtains all the information it needs from the `installer.xml` file and completes the installation without user interaction.

4.1.3 Configuring Teaming to Start Automatically on Reboot

You can configure Kablink Teaming to start automatically each time you reboot the Linux server.

- 1 As the Linux `root` user, enter the following command:

```
chkconfig --add teaming
```

- 2 To verify that automatic startup is turned on, enter the following command:

```
chkconfig teaming
```

4.1.4 Setting Up Port Forwarding

In order to make Kablink Teaming available on the default HTTP/HTTPS ports of 80 and 443, you must set up port forwarding in order to forward the browser default ports (80 and 443) to the Teaming server ports (8080 and 8443). In addition, you must set up port forwarding if you want to forward the default SMTP mail host port (25) to the default Teaming internal mail host port (2525).

You can set up port forwarding in one of two ways, depending on whether or not you are using the Teaming server as a firewall.

- ♦ [“Using the SuSEfirewall2 File” on page 53](#)
- ♦ [“Using iptables Commands” on page 54](#)

Using the SuSEfirewall2 File

To enable port forwarding on a SUSE Linux server that leverages `SuSEfirewall12`:

- 1 As the Linux `root` user, open the following file:

```
/etc/sysconfig/SuSEfirewall12
```

- 2 Find the following line:

```
FW_REDIRECT=""
```

- 3 Between the quotation marks, copy and insert the following string:

```
0/0,ip_address,tcp,80,8080 0/0,ip_address,tcp,443,8443  
0/0,ip_address,tcp,25,2525
```

- 4 Replace `ip_address` with the IP address of the Teaming server.

- 5 Save the `SuSEfirewall12` file, then exit the text editor.

- 6 Use the following command to restart the firewall:

```
/sbin/SuSEfirewall12 start
```

- 7 Use the following command to verify that the default browser ports (80 and 443) have been forwarded to the Teaming server ports (8080 and 8443) and that the default SMTP mail host port (25) has been forwarded to the Teaming internal mail host:

```
iptables-save | grep REDIRECT
```

Now, users do not need to include a port number in the Teaming site URL.

Using iptables Commands

To leverage iptables commands to enable port forwarding on any type of Linux server:

- 1 As the Linux root user, change to the `/etc/init.d` directory.
- 2 In a text editor, create a new file for a set of iptables commands, for example:

```
gedit teaming-iptables
```

- 3 Copy and paste the following lines into the `teaming-iptables` file:

```
iptables -t nat -A OUTPUT -d localhost -p tcp --dport 80
                                           -j REDIRECT --to-ports 8080

iptables -t nat -A OUTPUT -d hostname -p tcp --dport 80
                                           -j REDIRECT --to-ports 8080

iptables -t nat -A PREROUTING -d hostname -p tcp --dport 80
                                           -j REDIRECT --to-ports 8080

iptables -t nat -A OUTPUT -d localhost -p tcp --dport 443
                                           -j REDIRECT --to-ports 8443

iptables -t nat -A OUTPUT -d hostname -p tcp --dport 443
                                           -j REDIRECT --to-ports 8443

iptables -t nat -A PREROUTING -d hostname -p tcp --dport 443
                                           -j REDIRECT --to-ports 8443

iptables -t nat -A OUTPUT -d localhost -p tcp --dport 25
                                           -j REDIRECT --to-ports 2525

iptables -t nat -A OUTPUT -d hostname -p tcp --dport 25
                                           -j REDIRECT --to-ports 2525

iptables -t nat -A PREROUTING -d hostname -p tcp --dport 25
                                           -j REDIRECT --to-ports 2525
```

In this example, the lines are wrapped for readability. When you paste them into the text editor, if the lines are still wrapped, remove the hard returns from the middle of the commands, so that you have six iptables commands, each on its own line.

- 4 Replace `hostname` with the hostname of the Teaming server.
- 5 Save the `teaming-iptables` file, then exit the text editor.
- 6 Use the following command to make the file executable:

```
chmod +x teaming-iptables
```
- 7 Restart the firewall to put the iptables commands into effect:
 - 7a Click *Security and Users > Firewall*.
 - 7b Click *Stop Firewall Now*, click *Start Firewall Now*, then click *Next > Accept*.
 - 7c Exit YaST, then return to the terminal window where you are logged in as root.
- 8 Use the following command to verify that the default browser ports (80 and 443) have been forwarded to the Teaming server ports (8080 and 8443) and that the default SMTP mail host port (25) has been forwarded to the Teaming internal mail host:

```
iptables-save | grep REDIRECT
```

Now, users do not need to include a port number in the Teaming site URL.

4.1.5 Configuring the Document Converter on Linux

Kablink Teaming uses OpenOffice.org converters to prepare documents for indexing by the Lucene Index Server. The OpenOffice.org converters are also used on the Teaming site for viewing documents (by converting them to HTML). OpenOffice.org must be continuously running as a daemon in order for it to perform its document conversion function.

- ♦ “Installing OpenOffice.org as the Document Converter for Teaming” on page 55
- ♦ “Running OpenOffice.org as the Document Converter for Teaming” on page 55

Installing OpenOffice.org as the Document Converter for Teaming

- 1 Download the OpenOffice.org software for Linux from [OpenOffice.org \(http://www.openoffice.org\)](http://www.openoffice.org) to a convenient temporary location on the Teaming server.
- 2 Extract the contents of the downloaded file, then change to the subdirectory into which the software files have been extracted.
- 3 Run the OpenOffice.org Installation program.

```
./setup
```
- 4 Click *Next* to begin the installation.
- 5 Select *Custom*, then click *Next*.
- 6 Click the blue down-arrow to select all optional components for installation, then click *Next*.
This includes the OpenOffice.org Java Runtime Environment (JRE*) and other components required for document conversion.
- 7 Click *Install Now*.
The OpenOffice.org software is installed to:

```
/opt/openoffice.org3
```
- 8 Click *Finish*.
- 9 Manually start OpenOffice.org as the user that you want to start it as a daemon.
This starts OpenOffice.org with its full user interface, including a wizard that gathers personal information.
- 10 Provide the requested personal information, then exit OpenOffice.org.
- 11 Continue with [Running OpenOffice.org as the Document Converter for Teaming](#).

Running OpenOffice.org as the Document Converter for Teaming

OpenOffice.org must be running as a daemon process on the Teaming server in order for indexing and viewing to take place for Teaming users.

- 1 Use the following command to start the OpenOffice.org converters:

```
soffice "-accept=socket,host=localhost,port=8100;urp;  
StarOffice.ServiceManager" -nologo -headless
```

IMPORTANT: Execute the command as the same Linux users that runs Teaming.

- 2 Use the following command to verify that OpenOffice.org is running as a daemon:

```
ps -eaf | grep soffice
```

- 3 Test HTML conversion on your Teaming site by viewing a document that has been added as a File Entry in your Teaming site.
- 4 Configure the Teaming server so that OpenOffice.org is always running as a daemon whenever Teaming is running.

4.1.6 Starting Teaming on Linux

The Kablink Teaming Installation program created a `teaming` startup script in the `/etc/init.d` directory.

- 1 In a terminal window, become `root` by entering `su -` and the `root` password.
- 2 Enter the following command to start Teaming:

```
/etc/init.d/teaming start
```

You must execute the `teaming` script as `root`, but the script runs Teaming as the user you selected in [Section 3.8.2, “Linux User ID for Teaming,”](#) on page 40 and specified during installation.

You should see output similar to the following example:

```
Using CATALINA_BASE:   /opt/teaming/apache-tomcat-6.0.18
Using CATALINA_HOME:   /opt/teaming/apache-tomcat-6.0.18
Using CATALINA_TMPDIR: /opt/teaming/apache-tomcat-6.0.1/temp
Using JRE_HOME:        /use/java/jdk1.5.0_17/jre
```

- 3 To make sure that Teaming is ready for work:

- 3a Change to the following directory:

```
/opt/novell/teaming/apache-tomcat-version/logs
```

where *version* is the version number of Tomcat that was installed along with Teaming (for example, 6.0.18)

- 3b Enter the following command to display the end of the Tomcat log:

```
tail --f catalina.out
```

At the end of the log file listing, you should see:

```
INFO: Server startup in nnnn ms
```

- 4 Press `Ctrl+C` when you are finished viewing the end of the `catalina.out` file.

4.1.7 Checking the Status of the Teaming Server

You can see if Kablink Teaming is running by checking for its process ID (PID).

- 1 In a terminal window, enter the following command:

```
ps -eaf | grep teaming
```

You should see the Teaming PID number, along with a listing of configuration settings.

4.1.8 Restarting Teaming

You need to restart Kablink Teaming whenever you use the Teaming Installation program to make configuration changes, as described in [Chapter 9, “Performing an Advanced Teaming Installation,”](#) on page 89.

- 1 As root in a terminal window, enter the following command:

```
/etc/init.d/teaming restart
```

You should see the same output as when you originally started Teaming.

4.1.9 Stopping Teaming

- 1 As root in a terminal window, enter the following command:

```
/etc/init.d/teaming stop
```

You should see the same output as when you started Teaming.

- 2 To verify that Teaming has stopped, check for its PID number:

```
ps -eaf | grep teaming
```

The Teaming PID number, along with a listing of configuration settings, should no longer be displayed.

4.1.10 Uninstalling Teaming

If you move the Kablink Teaming site to a different server, you can delete the Teaming files from the original server to reclaim disk space. The default Teaming file locations are:

Teaming Software	/opt/novell/teaming
Teaming File Repository and Lucene Index	/var/opt/novell/teaming
MySQL Database	/var/lib/mysql

For a complete list of your Teaming files, check the `installer.xml` file in the directory where you originally ran the Teaming Installation program.

4.2 Windows: Setting Up a Basic Teaming Site

You should already have reviewed [Chapter 3, “Planning a Basic Teaming Installation,”](#) on page 27 and filled out the [Basic Teaming Installation Summary Sheet](#). The following sections step you through the process of installing and starting Kablink Teaming on Windows.

- ♦ [Section 4.2.1, “Performing Pre-Installation Tasks on Windows,”](#) on page 58
- ♦ [Section 4.2.2, “Running the Windows Teaming Installation Program,”](#) on page 59
- ♦ [Section 4.2.3, “Configuring the Document Converter on Windows,”](#) on page 60
- ♦ [Section 4.2.4, “Running Teaming as a Windows Service,”](#) on page 61
- ♦ [Section 4.2.5, “Running Teaming as a Windows Application,”](#) on page 62
- ♦ [Section 4.2.6, “Uninstalling Teaming,”](#) on page 63

4.2.1 Performing Pre-Installation Tasks on Windows

- ♦ [“Verifying System Requirements” on page 58](#)
- ♦ [“Stopping an Existing Web Server” on page 58](#)
- ♦ [“Setting Environment Variables” on page 58](#)

Verifying System Requirements

Make sure that the Windows server where you plan to install Kablink Teaming meets the system requirements listed in [Section 2.1, “Teaming Server Requirements,” on page 19](#).

Stopping an Existing Web Server

If a Web server is currently running on the Teaming server, stop it, and preferably disable it.

For example, to stop and disable the Internet Information Services (IIS) Web server:

- 1 On the Windows desktop, click *Start > Administrative Tools > Services*.
- 2 Right-click *World Wide Web Publishing Service*, then click *Properties*.
- 3 In the *Startup type* drop-down list, select *Disabled*.
- 4 Click *Stop*, then click *OK*.

Setting Environment Variables

Make sure that the JAVA_HOME environment variable is set to the path where you installed the Java JDK and that the Windows PATH environment variable includes the path to your database server.

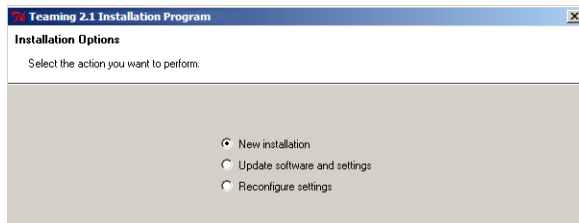
- 1 Right-click *My Computer*, then click *Properties*.
- 2 On the *Advanced* tab, click *Environment Variables*.
- 3 Set the JAVA_HOME environment variable:
 - 3a In the *System variables* box, click *New*.
 - 3b In the *Variable name* field, specify JAVA_HOME.
 - 3c In the *Variable value* field, specify the path where you installed the Java JDK.
 - 3d Click *OK* to add the JAVA_HOME environment variable to the list of system variables, then click *OK* again to save the setting and return to the *Advanced* tab.
- 4 Check the PATH environment variable:
 - 4a On the *Advanced* tab, click *Environment Variables*.
 - 4b In the *System variables* list, locate the PATH environment variable.
 - 4c If the path includes your database server software directory, click *Cancel*.

or

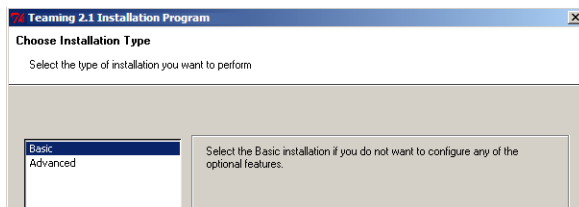
If the path does not include your database server software directory, add the directory, then click *OK*.

4.2.2 Running the Windows Teaming Installation Program

- 1 Log in to the Windows server as a user with Administrator rights.
- 2 In Windows Explorer, browse to the directory where you downloaded and extracted the Kablink Teaming software.
- 3 Double-click the `installer-teaming.exe` file to start the Teaming Installation program.
- 4 Accept the License Agreement, then click *Next*.



- 5 Click *Next* to accept the default of *New installation*.



- 6 Click *Next* to accept the default of *Basic*.
- 7 Use the information that you have gathered on the [Basic Teaming Installation Summary Sheet](#) to provide the information that the Teaming Installation program prompts you for:

[Installation Locations](#)

[Default Locale for Kablink Teaming](#)

[Network Information](#)

[Database Selection](#)

[Database Type](#)

[JDBC URL](#)

[Credentials](#)

[Setup](#)

[Encryption Algorithm](#)

[Java JDK Location](#)

[Outbound E-Mail Configuration](#)

[Protocol](#)

[Host, Port, and Time Zone](#)

[Username, Password, and Authentication](#)

[Allow Sending E-Mail to All Users](#)

[Inbound E-Mail Configuration](#)

The Installation program stores the information it gathers in the `installer.xml` file in the same directory where you started the Installation program.

- 8 After you have provided all the requested information, click *Install* to begin the Teaming installation.
- 9 When the installation is completed, click *Finish* to exit the Teaming Installation program.
Information about the installation process is written to the `installer.log` file in the same directory where you ran the Installation program. If a problem arises during the installation, the `installer.log` file provides information that can help you resolve the problem.
- 10 Continue with one of the following sections, depending on how you want to run the Teaming software:
 - ♦ [Section 4.2.4, “Running Teaming as a Windows Service,” on page 61](#)
 - ♦ [Section 4.2.5, “Running Teaming as a Windows Application,” on page 62](#)

4.2.3 Configuring the Document Converter on Windows

Kablink Teaming uses OpenOffice.org converters to prepare documents for indexing by the Lucene Index Server. The OpenOffice.org converters are also used on the Teaming site for viewing documents (by converting them to HTML).

- ♦ [“Installing OpenOffice.org as the Document Converter for Teaming” on page 60](#)
- ♦ [“Configuring OpenOffice.org for Proper HTML Conversion” on page 60](#)
- ♦ [“Running OpenOffice.org as the Document Converter for Teaming” on page 61](#)

Installing OpenOffice.org as the Document Converter for Teaming

- 1 Download the OpenOffice.org software for Windows from [OpenOffice.org \(http://www.openoffice.org\)](http://www.openoffice.org) to a convenient temporary location on the Teaming server.
- 2 Run the downloaded executable, then click *Next* to unpack the OpenOffice.org software.
- 3 Browse to or select the destination directory for the unpacked files, then click *Unpack*.
This starts the OpenOffice.org Installation program.
- 4 Click *Next* to begin the installation.
- 5 Provide your customer information, then click *Next*.
- 6 Select *Custom*, then click *Next*.
- 7 In the *Optional Components* drop-down list, select *This feature, and all subfeatures, will be installed on local hard drive*, then click *Next*.
This includes the OpenOffice.org Java Runtime Environment (JRE) and other components required for document conversion.
- 8 Click *Install*.
The OpenOffice.org software is installed to:
`c:\Program Files\OpenOffice.org 3`
- 9 Click *Finish*.
- 10 Continue with [Configuring OpenOffice.org for Proper HTML Conversion](#).

Configuring OpenOffice.org for Proper HTML Conversion

- 1 Start OpenOffice.org from the desktop.

- 2 Proceed through the Welcome pages.
- 3 Click *Tools > Options*.
- 4 Expand *Load/Save*, then click *HTML Compatibility*.
- 5 In the *Character Set* field, select *Unicode (UTF-8)*.
- 6 Click *OK* to save the character set setting, then exit OpenOffice.org.
- 7 Continue with [Running OpenOffice.org as the Document Converter for Teaming](#)

Running OpenOffice.org as the Document Converter for Teaming

OpenOffice.org must be running as a background process on the Teaming server in order for indexing and viewing to take place for Teaming users.

- 1 Edit the properties of the OpenOffice.org desktop icon so that the *Target* field includes the following additional options:

```
"C:\Program Files\OpenOffice.org 3\program\soffice.exe"
    "-accept=socket,host=localhost,port=8100;urp;
    StarOffice.ServiceManager"
    -nologo -headless
```

- 2 Double-click the OpenOffice.org desktop icon to start OpenOffice.org as a background process.

IMPORTANT: Run OpenOffice.org as a user that has full rights to the Teaming file repository.

- 3 Use Windows Task Manager to observe that the `soffice.exe` and `soffice.bin` processes are running.
- 4 Test HTML conversion on your Teaming site by viewing a document that has been added as a File Entry in your Teaming site.
- 5 Configure the Teaming server so that OpenOffice.org is always running as a background process whenever Teaming is running.

4.2.4 Running Teaming as a Windows Service

- ♦ [“Configuring Teaming as a Windows Service” on page 61](#)
- ♦ [“Starting Teaming as a Windows Service” on page 62](#)
- ♦ [“Configuring the Teaming Service to Start Automatically on Reboot” on page 62](#)
- ♦ [“Restarting the Teaming Service” on page 62](#)
- ♦ [“Stopping the Teaming Service” on page 62](#)

Configuring Teaming as a Windows Service

The Kablink Teaming Installation program created a `service.bat` file for configuring Teaming to run as a Windows service.

- 1 In a Command Prompt window, change to the following directory:

```
c:\Program Files\Novell\Teaming\apache-tomcat-version\bin
```

where *version* is the version number of Tomcat that was installed along with Teaming (for example, 6.0.18).

- 2 Use the following command to configure Teaming as a Windows service:

```
service.bat install Teaming
```

This creates a service named Apache Tomcat Teaming.

Starting Teaming as a Windows Service

- 1 On the Windows desktop, click *Start > Administrative Tools > Services*.
- 2 Right-click *Apache Tomcat Teaming*, then click *Start*.

Configuring the Teaming Service to Start Automatically on Reboot

When you run Kablink Teaming as a Windows service, you can configure Teaming to start automatically each time you reboot the Windows server.

- 1 On the Windows desktop, click *Start > Administrative Tools > Services*.
- 2 Right-click *Apache Tomcat Teaming*, then click *Properties*.
- 3 In the *Startup type* drop-down list, select *Automatic*, then click *OK*.

Restarting the Teaming Service

You need to restart Kablink Teaming whenever you use the Teaming Installation program to make configuration changes, as described in [Chapter 9, “Performing an Advanced Teaming Installation,”](#) on page 89.

- 1 On the Windows desktop, click *Start > Administrative Tools > Services*.
- 2 Right-click *Apache Tomcat Teaming*, then click *Restart*.
- 3 Close the Services window.

Stopping the Teaming Service

- 1 On the Windows desktop, click *Start > Administrative Tools > Services*.
- 2 Right-click *Apache Tomcat Teaming*, then click *Stop*.
- 3 Close the Services window.

4.2.5 Running Teaming as a Windows Application

- ♦ “Starting Teaming as an Application” on page 62
- ♦ “Stopping Teaming as an Application” on page 63

Starting Teaming as an Application

The Kablink Teaming Installation program created a `startup.bat` file for starting Teaming.

- 1 In a Command Prompt window, change to the following directory:

```
c:\Program Files\Novell\Teaming\apache-tomcat-version\bin
```

where *version* is the version number of Tomcat that was installed along with Teaming (for example, 6.0.18).

- 2 Run the `startup.bat` file to start Teaming as an application.

Stopping Teaming as an Application

- 1 In a Command Prompt window, change to the following directory:

```
c:\Program Files\Novell\Teaming\apache-tomcat-version\bin
```

where *version* is the version number of Tomcat that was installed along with Teaming (for example, 6.0.18).

- 2 Run the `shutdown.bat` file to stop the Teaming application.

4.2.6 Uninstalling Teaming

If you move the Kablink Teaming site to a different server, you can delete the Teaming files from the original server to reclaim disk space. The default Teaming file locations are:

Teaming Software c:\Program Files\Novell\Teaming

Teaming File Repository
and Lucene Index c:\Novell\Teaming

MS SQL Database c:\Program Files\Microsoft SQL Server\MSSQL\Data

For a complete list of your Teaming files, check the `installer.xml` file in the directory where you originally ran the Teaming Installation program.

Adding Users to Your Teaming Site

5

After you have installed the Kablink® Teaming software and made sure that Teaming starts successfully, you are ready to access your Teaming site from your Web browser and add users.

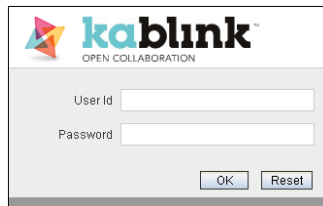
- ♦ [Section 5.1, “Accessing Your Basic Teaming Site as the Site Administrator,” on page 65](#)
- ♦ [Section 5.2, “Creating a User,” on page 66](#)
- ♦ [Section 5.3, “Adding Teaming Users from Your LDAP Directory,” on page 67](#)

5.1 Accessing Your Basic Teaming Site as the Site Administrator

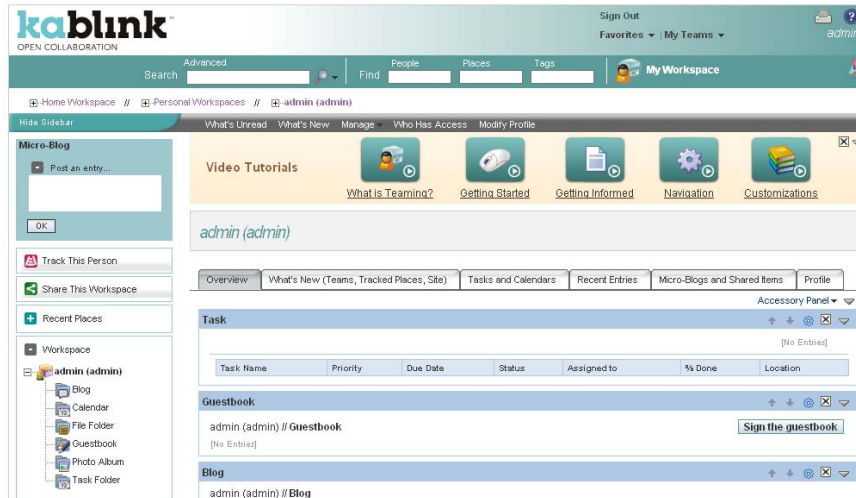
- 1 In your Web browser, specify one of the following URLs, depending on whether or not you are using a secure SSL connection:

```
http://teaming_server  
https://teaming_server
```

where *teaming_server* is the DNS hostname or fully qualified domain name of the Teaming server. If you have configured the HTTP ports correctly, you do not need to include the port number in the Teaming URL.



- 2 Log in using `admin` as the login name and `admin` as the password.
The Teaming administrator’s personal workspace displays.



- 3 Change the default administrator password to a secure password.
 - 3a On the Workspace toolbar, click *Modify Profile*.
 - 3b Specify your own password for the Teaming administrator in the *New Password* and *Confirm New Password* fields.
 - 3c (Optional) Provide useful information in the additional fields of the Teaming administrator's profile.
 - 3d Click *OK* to return to the administrator's workspace.

5.2 Creating a User

For testing purposes or for a very small Kablink Teaming site, you can create each Teaming user manually.

- 1 Log in as the Teaming administrator, then click *Manage* on the Workspace toolbar.
- 2 Click *Site Administration*, then click *Add User*.

User

Login Name

New Password

Confirm New Password

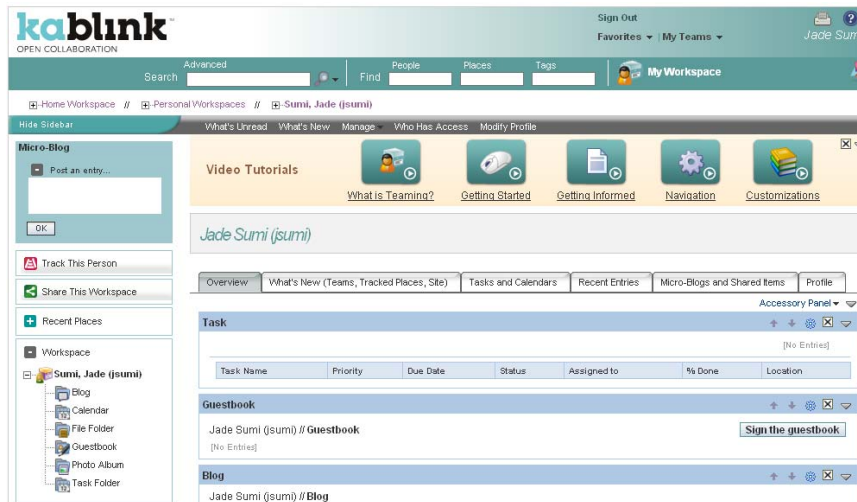
First Name **Middle Name** **Last Name**

E-Mail Address **Mobile E-Mail Address** **Text Messaging E-Mail Address**

- 3 Specify at least the login name, password, first name, and last name.
- 4 (Optional) Provide useful information in the additional fields for the new user.
- 5 Click *OK*, then click *Close* to return to the administrator's workspace.

If you expand *Personal Workspaces* in the Workspace tree above the Workspace toolbar, you see that the workspace for the user you just created does not exist yet. Workspaces are not created for users until the users log in for the first time.

- 6 Click *Sign Out* to log out as the Teaming administrator.
- 7 On the Sign In page, provide the username and password for the Teaming user you just created, then click *OK* to see the workspace for the new user.



As each new user logs into the Teaming site, a personal workspace is created.

- 8 Click *Sign Out* to leave the new user's personal workspace.

5.3 Adding Teaming Users from Your LDAP Directory

Unless you have a very small Kablink Teaming site, you create Teaming users by synchronizing their user information from an LDAP directory service such as Novell eDirectory™ or Microsoft Active Directory.

IMPORTANT: For a large Teaming site with thousands of users, the synchronization process can consume substantial server resources and can take some time to complete. Perform the initial import from the LDAP directory at a time when this processing does not conflict with other activities on the server.

- 1 If the LDAP server requires a secure SSL connection in order to access the directory service, create a public-key certificate for the Teaming server.
For instructions, see “[Securing LDAP Synchronization](#)” in “[Site Security](#)” in the *Kablink Teaming 2.1 Administration Guide*.
- 2 In a Web browser, log in to the Teaming site as the Teaming administrator, then click *Manage* on the Workspace toolbar.
- 3 Click *Site Administration > Configure LDAP*, then click *Add a New LDAP Connection*.
- 4 Fill in the following fields based on the information you gathered on the [Basic Teaming Installation Summary Sheet](#):

Configure LDAP Synchronization

New LDAP connection

Configuration for: New LDAP connection

[Delete This Configuration](#)

URL

Principal

Credentials

Users

LDAP Attribute That Identifies the User

In the box below, map the internal identifiers to the LDAP attribute names of the user record. Use the following syntax: internalID=ldapAttributeName

```
emailAddress=mail
firstName=sn
firstName=givenName
lastName=sn
lastName=surname
phone=telephoneNumber
description=description
```

Base

DN

Filter

Search Subtree

[Delete](#)

[Add](#)

Groups

[Add](#)

LDAP Server URL

User DN

Password

LDAP User Attribute

Base DN

- 5 Set the following synchronization options based on the information you gathered on the [Basic Teaming Installation Summary Sheet](#):

Enable Schedule

Run Immediately

▼ Schedule

Every Day

Weekly (on the days selected below)

Sun Mon Tue Wed Thu Fri Sat

At Time 12:15 America Denver

Repeat Every 0.25 Hours

Users

Synchronize User Profiles

Register LDAP User Profiles Automatically

Delete Users That are not in LDAP

When Deleting Users, Delete Associated User Workspaces and Content

Use the following time zone when creating new users.

OMT

Groups

Register LDAP Group Profiles Automatically

Synchronize Group Membership

Delete Local Groups That Are Not in LDAP

Local user accounts

Allow Login for Local User Accounts, (i.e., user accounts not in LDAP)

[Apply](#) [Close](#)

Enable Schedule

Synchronize User Profiles

Register LDAP User Profiles Automatically

- 6 Click *Apply* to save the information and settings.
- 7 Select *Run Immediately*, then click *Apply* to test LDAP synchronization.

A status box displays the users and groups that have been added, modified, or deleted on the Teaming site.

IMPORTANT: If you used an LDAP user attribute of `uid` and some users were not synchronized from the LDAP directory to Teaming, repeat the procedure using `cn` instead of `uid`.

The usernames `admin` and `guest` are reserved for use by Teaming. If your LDAP directory includes users with these names, LDAP information for these reserved usernames is not imported into the Teaming site.

-
- 8 Click *Close* to close the status box, then click *Close* to close the Configure LDAP Synchronization page.

Teaming performs one-way synchronization from the LDAP directory to your Teaming site. If you change user information on the Teaming site, the changes are not synchronized back to your LDAP directory.

IMPORTANT: At this point, users could log into the Teaming site by using their eDirectory or Active Directory usernames and passwords. However, you should not invite users to visit the Teaming site until after you have finished setting up the Teaming site, as described in “[Site Setup](#)” in the [Kablank Teaming 2.1 Administration Guide](#).

What's Next

6

After you have installed and started the Teaming software, there are still administrative tasks to perform before your Teaming site is ready for users to log in and use Teaming efficiently. Refer to sections of the [Kablank Teaming 2.1 Administration Guide](#) as you finish setting up your Teaming site.

- ◆ “Setting Up Initial Workspaces”
- ◆ “Planning and Controlling User Access to Workspaces and Folders”
- ◆ “Setting Up User Access to the Teaming Site”
- ◆ “Configuring E-Mail Integration”
- ◆ “Configuring Real-Time Communication Tools”
- ◆ “Adding Software Extensions to Your Teaming Site”
- ◆ “Using Remote Applications on Your Teaming Site”
- ◆ “Customizing Your Teaming Site by Editing Teaming Configuration Files”
- ◆ “Managing a Multiple-Language Teaming Site”

Basic Teaming Installation Summary Sheet

7

Installation Program Field	Value for Your Teaming Site	Explanation
Teaming Server Platform:		See Section 3.2.1, "Teaming Server Platform," on page 28.
<ul style="list-style-type: none"> ◆ Windows ◆ Linux 		
Teaming Server Architecture:		See Section 3.2.2, "Teaming Server Architecture," on page 28.
<ul style="list-style-type: none"> ◆ 32-bit ◆ 64-bit 		
Teaming Server Memory:		See Section 3.2.3, "Teaming Server Memory," on page 29.
<ul style="list-style-type: none"> ◆ 4 GB ◆ 8 GB ◆ More 		
Java Development Kit (JDK):		See Section 3.3, "Selecting a Java Development Kit," on page 30.
<ul style="list-style-type: none"> ◆ Sun JDK ◆ IBM JDK 		
Teaming Installation Locations:		See Section 3.2.4, "Teaming Installation Locations," on page 30.
<ul style="list-style-type: none"> ◆ Software <p>Linux default:</p> <pre>/opt/novell/teaming</pre> <p>Windows default:</p> <pre>c:\Program Files\Novell\Teaming</pre>		
<ul style="list-style-type: none"> ◆ File repository <p>Linux default:</p> <pre>/var/opt/novell/ teaming</pre> <p>Windows default:</p> <pre>c:\Novell\Teaming</pre>		

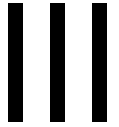
Installation Program Field	Value for Your Teaming Site	Explanation
Teaming Site Locale:		
Language:		See Section 3.10, "Accommodating Multiple Languages," on page 46
<ul style="list-style-type: none"> ◆ Chinese-Simplified ◆ Chinese Traditional ◆ Danish ◆ Dutch ◆ English ◆ French ◆ German ◆ Hungarian ◆ Japanese ◆ Polish ◆ Portuguese ◆ Russian ◆ Spanish ◆ Swedish 		
Country:		
User ID for Kablink Teaming (Linux only):		
<ul style="list-style-type: none"> ◆ User ID: <ul style="list-style-type: none"> Full name: Password: ◆ Group ID: 		See Section 3.8.2, "Linux User ID for Teaming," on page 40.
Network Information:		
<ul style="list-style-type: none"> ◆ Host: ◆ HTTP port: 80 ◆ Secure HTTP port: 443 ◆ Listen port: 8080 ◆ Secure listen port: 8443 ◆ Shutdown port: ◆ AJP port: 		Section 3.4, "Gathering Network Information for Your Teaming Site," on page 31.
Database Type:		
<ul style="list-style-type: none"> ◆ MySQL ◆ Microsoft SQL ◆ Oracle 		See Section 3.5.1, "Database Type," on page 34.

Installation Program Field	Value for Your Teaming Site	Explanation
JDBC URL:		See Section 3.5.3, "Database Location," on page 34.
<ul style="list-style-type: none"> ◆ Hostname: ◆ Port number: 		
Database Credentials:		See Section 3.5.4, "Database Credentials," on page 35.
<ul style="list-style-type: none"> ◆ Username: ◆ Password: 		
Database Setup Method:		See Section 3.5.2, "Database Setup Method," on page 34.
<ul style="list-style-type: none"> ◆ During installation (automatically by the Teaming Installation program) ◆ Before installation (manually by your database administrator) 		
Database Encryption Algorithm:		See Section 3.5.5, "Database Encryption Algorithm," on page 36.
<ul style="list-style-type: none"> ◆ SHA ◆ SHA-256 ◆ MD5 		
Java JDK Location:		See Section 3.3, "Selecting a Java Development Kit," on page 30.
<ul style="list-style-type: none"> ◆ Java home: ◆ JVM heap size: 		
Outbound E-Mail Protocol:		See Section 3.6.1, "Outbound E-Mail Protocol," on page 37.
<ul style="list-style-type: none"> ◆ SMTP ◆ SMTPS 		
Outbound E-Mail Host:		See Section 3.6.2, "Outbound E-Mail Host," on page 37.
<ul style="list-style-type: none"> ◆ Hostname: ◆ SMTP port: Default: 25 ◆ Time zone <ul style="list-style-type: none"> ◆ Continent/region: ◆ Country/state: ◆ City: 		

Installation Program Field	Value for Your Teaming Site	Explanation
Outbound E-Mail Authentication:		See Section 3.6.3, “Outbound E-Mail Authentication,” on page 37.
<ul style="list-style-type: none"> ◆ Username: ◆ Password: ◆ Authentication required? No / Yes 		
Allow Sending E-Mail to All Users		See Section 3.6.4, “Outbound E-Mail Send Restriction,” on page 38.
Yes / No		
Inbound E-Mail Configuration		See Section 3.7, “Enabling Inbound E-Mail,” on page 38.
<ul style="list-style-type: none"> ◆ Enable: No / Yes ◆ SMTP bind address: ◆ SMTP port: ◆ Announce TLS: Yes / No 		
Teaming Site Password:		See Section 3.8.1, “Teaming Site Administrator Password,” on page 40.
<ul style="list-style-type: none"> ◆ Administrator username: admin ◆ Default password: admin ◆ Your password: 		
LDAP Directory Service:		See Section 3.9, “Gathering Directory Services Information,” on page 41.
<ul style="list-style-type: none"> ◆ Novell eDirectory ◆ Microsoft Active Directory ◆ Other LDAP directory 		
LDAP Server:		See “LDAP Server” on page 41.
<ul style="list-style-type: none"> ◆ LDAP server URL: ◆ User DN: ◆ Password: 		
LDAP User Attribute:		See “User Attribute” on page 42.
<ul style="list-style-type: none"> ◆ cn screenName=cn ◆ uid screenName=uid 		
LDAP User Search Context:		See “User and Group Object Locations” on page 43.
<ul style="list-style-type: none"> ◆ Base DN: ◆ Additional filter attributes: ◆ Search subtree: Yes / No 		

Installation Program Field	Value for Your Teaming Site	Explanation
LDAP Group Search Context:		See “User and Group Object Locations” on page 43.
<ul style="list-style-type: none"> ◆ Base DNs: ◆ Additional filter attributes: ◆ Search Subtree: Yes / No 		
LDAP Synchronization Schedule:		See “Synchronization Schedule” on page 44.
<ul style="list-style-type: none"> ◆ Days <ul style="list-style-type: none"> ◆ Every day ◆ Weekly <p>Sun Mon Tue Wed Thu Fri Sat</p> ◆ Hours: <ul style="list-style-type: none"> ◆ At time: ◆ Repeat every <i>nn</i> hours 		
LDAP User Options:		See “User Synchronization Options” on page 44.
<ul style="list-style-type: none"> ◆ Synchronize user profiles ◆ Register LDAP user profiles automatically ◆ Delete users that are not in LDAP ◆ When deleting a user, delete associated user workspaces and content ◆ Time zone for new users 		
LDAP Group Options:		See “User Synchronization Options” on page 44.
<ul style="list-style-type: none"> ◆ Synchronize group profiles ◆ Register LDAP group profiles automatically ◆ Synchronize group membership ◆ Delete local groups that are not in LDAP 		

Advanced Installation and Reconfiguration



- ♦ [Chapter 8, “Planning an Advanced Teaming Installation,” on page 81](#)
- ♦ [Chapter 9, “Performing an Advanced Teaming Installation,” on page 89](#)
- ♦ [Chapter 10, “Setting Configuration Options after Installation,” on page 91](#)
- ♦ [Chapter 11, “Advanced Teaming Installation Summary Sheet,” on page 93](#)

Planning an Advanced Teaming Installation

8

- ◆ [Section 8.1, “What Is an Advanced Installation?” on page 81](#)
- ◆ [Section 8.2, “Distributing Different Data Types to Different Locations,” on page 81](#)
- ◆ [Section 8.3, “Using Advanced Network Information Settings,” on page 83](#)
- ◆ [Section 8.4, “Configuring Web Services,” on page 84](#)
- ◆ [Section 8.5, “Changing Your Lucene Index Server Configuration,” on page 84](#)
- ◆ [Section 8.6, “Managing RSS Feeds,” on page 85](#)
- ◆ [Section 8.7, “Configuring Presence,” on page 86](#)

8.1 What Is an Advanced Installation?

In addition to the Basic installation options described in [Section 3.1, “What Is a Basic Teaming Installation?” on page 27](#), the Kablink[®] Teaming Installation program provides several optional advanced installation and configuration alternatives. You can implement the advanced options after performing a Basic installation option, or you can opt to have the Installation program present all the options together.

Compared to a Basic installation, an Advanced installation offers the following additional options:

- ◆ Changing the session timeout
- ◆ Specifying a keystore file
- ◆ Specifying different directories for different types of data
- ◆ Disabling and enabling four different Web services
- ◆ Changing the configuration of the Lucene Index Server
- ◆ Configuring a remote Lucene Index Server or a group of high-availability Lucene nodes
- ◆ Reconfiguring how RSS feeds are retained or disabling them entirely
- ◆ Enabling presence in conjunction with Conferencing
- ◆ Installing Teaming in a clustered environment

8.2 Distributing Different Data Types to Different Locations

The default location for the Kablink Teaming file repository varies by platform:

Linux: `/var/opt/novell/teaming`

Windows: `c:\Novell\Teaming`

Under the main Teaming file repository root directory are subdirectories for various kinds of data files that are not stored in the Teaming database (MySQL, Microsoft SQL Server, or Oracle). Using an Advanced installation, you can store Teaming data files in various locations.

The data files not stored in the Teaming database are divided up into several functional areas:

- ♦ **Simple file repository:** A large consumer of disk space.
All attachment files are stored in the file repository. All versions of files are also stored here.
- ♦ **Jackrabbit repository:** (Optional) Takes only a fraction of the space consumed by the file repository.
By default, Teaming stores all data files individually on disk, in the file repository. If you prefer to store data files in the database itself, you can use Apache Jackrabbit* with Teaming. See the [Apache Jackrabbit Web site \(http://jackrabbit.apache.org\)](http://jackrabbit.apache.org) for setup instructions.
- ♦ **Extensions repository:** Depends on the number of extensions you add to your Teaming site.
An extension is a software program that you can incorporate into your Teaming site in order to enhance (extend) Teaming capabilities. Adblock Plus is an example of a browser extension for the Firefox Web browser that filters out advertisements. You or a Java developer can create custom extensions for your Teaming site. For more information about creating and using Teaming extensions, see the *Kablink Teaming 2.1 Developer Guide*.
- ♦ **Cache store:** Consumes less disk space than the file repository.
Information derived from the attachments, such as HTML renderings, scaled images, and word lists for indexing are stored in the cache store.
- ♦ **Lucene index:** Takes only a fraction of the space consumed by the file repository.
The Lucene index contains only pointers to the actual data stored in the file repository. The index enables the Lucene search engine to perform very fast searches through large quantities of data.

The directories for the various types of data can be on the Teaming server or on a remote server. Data access is fastest if the data is local, but depending on the size of your Teaming site and the types of data you store, the Teaming server might not be the best place to store all the Teaming data. If you want to store any of the data types on a remote server, you must ensure that the remote location of the data appears local to the Teaming server and that it is always available with read/write access.

Linux: Mount the file repository to the Teaming server.

Windows: Map a drive from the Teaming server to the file repository.

Linux and Windows: Place the file repository on a SAN (storage area network) with read/write access. This alternative provides the most reliable remote location for the Teaming file repository.

ADVANCED TEAMING INSTALLATION SUMMARY SHEET

Under *Data Locations*, specify the directories where you want to store the various types of Teaming data.

Complete the planning process for additional Advanced installation features as needed, then perform the Advanced installation as described in [Chapter 9, “Performing an Advanced Teaming Installation,”](#) on page 89.

8.3 Using Advanced Network Information Settings

- ♦ [Section 8.3.1, “Changing the Teaming Session Timeout,” on page 83](#)
- ♦ [Section 8.3.2, “Providing a Secure Keystore File,” on page 83](#)

8.3.1 Changing the Teaming Session Timeout

By default, if a user’s Kablink Teaming session is idle for four hours (240 minutes), Teaming logs the idle user out. For increased convenience to Teaming users, you can make the session timeout interval longer. For increased security for your Teaming site, you can make the session timeout shorter.

ADVANCED TEAMING INSTALLATION SUMMARY SHEET

Under *Network Information*, specify the session timeout interval (in minutes) for your Teaming site.

Complete the planning process for additional Advanced installation features as needed, then perform the Advanced installation as described in [Chapter 9, “Performing an Advanced Teaming Installation,” on page 89](#).

8.3.2 Providing a Secure Keystore File

For your convenience, the Kablink Teaming software includes a self-signed public certificate that enables you to specify secure HTTP and listen ports during installation. This certificate is stored in the `.keystore` file in the following directory:

Linux: `/opt/novell/teaming/apache-tomcat-version/conf`

Windows: `c:\Program Files\Novell\Teaming\apache-tomcat-version\conf`

To ensure secure SSL connections for your Teaming site, you should replace the self-signed public certificate with a public certificate issued by a valid Certificate Authority.

ADVANCED TEAMING INSTALLATION SUMMARY SHEET

Under *Network Information*, specify the name and location of the public certificate.

If you do not already have a permanent public certificate for your Teaming server, see “[Securing HTTP Browser Connections](#)” in “[Site Security](#)” in the *Kablink Teaming 2.1 Administration Guide*.

Complete the planning process for additional Advanced installation features as needed, then perform the Advanced installation as described in [Chapter 9, “Performing an Advanced Teaming Installation,” on page 89](#).

8.4 Configuring Web Services

When you install and set up your Kablink Teaming site, three Web services are enabled by default. A fourth is available for selection. These Web services enable programs to access information on your Teaming site just as users would. Allowing programmatic access to your Teaming site can be useful or can be viewed as a security risk.

- ♦ **WSS authentication:** Uses [OASIS Web Services Security \(WSS\)](http://www.oasis-open.org) (<http://www.oasis-open.org>).
- ♦ **HTTP Basic authentication:** Uses [HTTP Basic Access authentication](http://tools.ietf.org/html/rfc2617) (<http://tools.ietf.org/html/rfc2617>).
- ♦ **Token-based authentication:** Uses custom Teaming tokens to communicate with Teaming remote applications. For more information, see “[Using Remote Applications on Your Teaming Site](#)” in “[Site Setup](#)” in the *Kablink Teaming 2.1 Administration Guide*.
- ♦ **Anonymous access:** Allows access to your Teaming site without authentication. It is similar to the Guest access provided for users, as described in “[Allowing Guest Access to Your Teaming Site](#)” in “[Site Setup](#)” in the *Kablink Teaming 2.1 Administration Guide*.

ADVANCED TEAMING INSTALLATION SUMMARY SHEET

Under *Web Services*, mark which Web services you want enabled for your Teaming site. The first three are enabled by default. The fourth is disabled by default.

Complete the planning process for additional Advanced installation features as needed, then perform the Advanced installation as described in [Chapter 9, “Performing an Advanced Teaming Installation,”](#) on page 89.

8.5 Changing Your Lucene Index Server Configuration

The default Lucene Index Server configuration is appropriate for a medium-sized Kablink Teaming site. If you have a larger Teaming site, you can change its Lucene Index Server configuration.

- ♦ [Section 8.5.1, “Understanding Indexing,”](#) on page 84
- ♦ [Section 8.5.2, “Changing Lucene Configuration Settings,”](#) on page 85

After planning your Lucene configuration, complete the planning process for additional Advanced installation features as needed, then perform the Advanced installation as described in [Chapter 9, “Performing an Advanced Teaming Installation,”](#) on page 89.

8.5.1 Understanding Indexing

The Lucene Index Server is responsible for indexing all data on the Kablink Teaming site so that Teaming users can easily use the Find and Search features to retrieve the information that they need. Text posted in folder entries is easy to index, because the formatting is simple. However, text in attached files arrives in many different file formats, many of which require conversion before the text in the files can be indexed. Therefore, the Lucene Index Server is dependent on the available file conversion technology in order to perform its indexing function. For information about the file viewers that Teaming uses, see [Section 2.4.1, “File Viewer Support,”](#) on page 22.

The Lucene Index Server provides additional services on your Teaming site in addition to indexing. In fact, you cannot access your Teaming site if the Lucene Index Server is not running. For this reason, Novell Teaming provides multi-server Lucene configuration options that are not available in Kablink Teaming.

8.5.2 Changing Lucene Configuration Settings

If you have an extremely large Kablink Teaming site and you need to reindex the Teaming data, you might see improved performance by increasing these settings.

- ♦ **Flush threshold:** The default is 100. This means that after 100 documents have been cached in memory, they are flushed to disk. Increasing the setting allows additional documents to be cached in memory before a flush occurs.
- ♦ **Max booleans:** The default is 10000. This means that 10,000 Boolean clauses are allowed in a query. You would only need to increase this if your Teaming site includes more than 10,000 users, groups, or teams.
- ♦ **Max merge documents:** The default is 1000. This means that the Lucene Index Server starts a new index segment after the current index segment contains 1000 documents. Only a very large Teaming site would benefit from increasing this.
- ♦ **Merge factor:** The default is 10. This sets the number of index segments that are created on disk. When additional index segments are needed, existing segments are merged to keep the merge factor constant. Only a very large Teaming site would benefit from increasing this.

ADVANCED TEAMING INSTALLATION SUMMARY SHEET

Under *Lucene Configuration*, specify any Lucene configuration settings that you want to change.

8.6 Managing RSS Feeds

By default, Teaming users can set up RSS feeds in folders on the Teaming site, as described in “[Viewing Teaming Folders as RSS or ATOM Feeds](#)” in “[Getting Informed](#)” in the *Kablink Teaming 2.1 User Guide*.

- ♦ [Section 8.6.1, “Configuring RSS Feeds,” on page 85](#)
- ♦ [Section 8.6.2, “Disabling RSS Feeds,” on page 86](#)

After planning the RSS settings, complete the planning process for additional Advanced installation features as needed, then perform the Advanced installation as described in [Chapter 9, “Performing an Advanced Teaming Installation,” on page 89](#).

8.6.1 Configuring RSS Feeds

The following aspects of RSS functionality on your Kablink Teaming site are configurable:

- ♦ **Max elapsed days:** By default, items from RSS feeds are retained on the Teaming site for 31 days. You can decrease the number of days to reduce the amount of disk space occupied by the RSS files.
- ♦ **Max inactive days:** By default, if no one on the Teaming site accesses an RSS feed for 7 days, the feed is no longer updated. Increase or decrease the retention time for inactive feeds to meet the needs of Teaming users and disk space considerations.

ADVANCED TEAMING INSTALLATION SUMMARY SHEET

Under *RSS Configuration*, specify the number of days that meet the needs of your Teaming site.

8.6.2 Disabling RSS Feeds

Some administrators consider RSS feeds to be a security risk because the RSS feed URL includes username and password information. If you do not want Kablink Teaming site users to be able to subscribe to RSS feeds from the Teaming site, you can disable this feature.

ADVANCED TEAMING INSTALLATION SUMMARY SHEET

Under *RSS Configuration*, mark *No*.

8.7 Configuring Presence

If you are using Kablink Conferencing 1.0, you can configure Kablink Teaming to display a user's Conferencing presence icon anywhere on the Teaming site where that user's name displays. When you click the presence icon, contact options are presented. In addition, with Conferencing presence enabled, a link at the bottom of each workspace and folder page enables you to start an instant meeting with team members of a team workspace or with users who have created entries and comments in the folder.

In order to configure Conferencing presence in Teaming, you need the following information about the Conferencing system:

- ♦ **Jabber server:** Specify the IP address or DNS hostname of the Conferencing XML router. For more information, see “[Installing the Conferencing Server](#)” in the *Conferencing 1.0 Server Installation Guide*.
- ♦ **Broker admin ID:** The default admin ID is `admin`.
- ♦ **Broker admin password:** The default admin password is `admin`.
- ♦ **Jabber domain:** Specify the IP address or DNS hostname of the Conferencing XML router.
- ♦ **Default community ID:** Users in a Conferencing system are organized into groups called communities. When the Conferencing software is installed, a system community is created. For more information, see “[Conferencing Communities](#)” in the *Conferencing 1.0 Operations Guide*.

Specify the community ID where you want to obtain presence information.

- ♦ **Conferencing URL:** Specify the URL of the Conferencing server:

```
http://ip_address_or_dns_hostname:8000/imidio_api
```

ADVANCED TEAMING INSTALLATION SUMMARY SHEET

Under *Presence Configuration*, list the information that the Teaming site needs to know in order to communicate with the Conferencing system.

Complete the planning process for additional Advanced installation features as needed, then perform the Advanced installation as described in [Chapter 9, “Performing an Advanced Teaming Installation,”](#) on page 89.

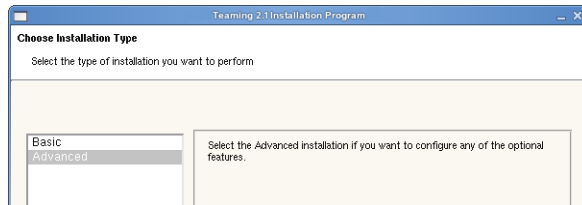
IMPORTANT: In order for Conferencing presence to display, the *Conferencing User Name* field of each user’s Teaming profile must contain the user’s Conferencing ID. Users can provide this information manually, or you can populate the *Conferencing User Name* field from your LDAP directory.

Performing an Advanced Teaming Installation

9

You should already have reviewed [Chapter 3, “Planning a Basic Teaming Installation,”](#) on page 27 and filled out the [Basic Teaming Installation Summary Sheet](#). You should also have reviewed [Chapter 8, “Planning an Advanced Teaming Installation,”](#) on page 81 and filled out the [Advanced Teaming Installation Summary Sheet](#) for those aspects of an Advanced installation that you want to implement for your Kablink® Teaming site.

- 1 Follow the Basic installation instructions provided in [Chapter 4, “Setting Up a Basic Teaming Site,”](#) on page 49 for the platform where you are installing Teaming.
- 2 In the Choose Installation Type page, select *Advanced*.



- 3 Use the information that you have gathered on the [Basic Teaming Installation Summary Sheet](#) and the [Advanced Teaming Installation Summary Sheet](#) to provide the information that the Teaming Installation program prompts you for:

Basic Installation Pages:

- [Installation Locations](#)
- [Default Locale for Kablink Teaming](#)
- [User ID for Kablink Teaming \(Linux only\)](#)
- [Network Information](#)
- [Database Selection](#)
- [Java JDK Location](#)
- [Outbound E-Mail Configuration](#)
- [Inbound E-Mail Configuration](#)

Some Basic installation pages have additional options available when you perform an Advanced installation.

Advanced Installation Pages:

- [Web Services](#)
- [Lucene Configuration](#)
- [RSS Configuration](#)
- [Presence Configuration](#)

The Installation program stores the information it gathers in the `installer.xml` file in the same directory where you started the Installation program.

- 4 After you have provided all the requested information, click *Install* to begin the Advanced installation.

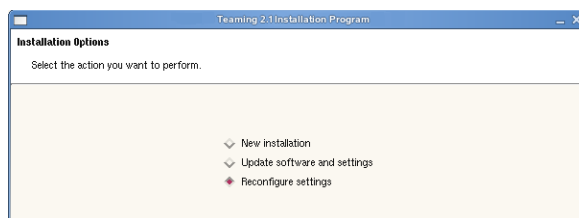
- 5** When the installation is completed, click *Finish* to exit the Teaming Installation program.
Information about the installation process is written to the `installer.log` file in the same directory where you ran the Installation program. If a problem arises during the installation, the `installer.log` file provides information that can help you resolve the problem.
- 6** After you complete the Advanced installation, continue setting up your Teaming site, as described in [Chapter 5, “Adding Users to Your Teaming Site,”](#) on page 65.

Setting Configuration Options after Installation

10

After you install Kablink® Teaming following the instructions in [Part II, “Basic Installation,” on page 25](#) or [Part III, “Advanced Installation and Reconfiguration,” on page 79](#), you can rerun the Teaming Installation program to change configuration options or add new functionality to your Teaming site.

- 1 Stop Teaming.
- 2 Start the Teaming Installation program.

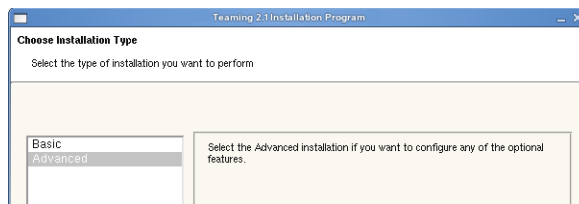


Because the Installation program finds an existing `installer.xml` file, it defaults to *Reconfigure settings*.

- 3 Click *Next*.

The Teaming Installation program asks you to verify that you have stopped Teaming.

- 4 Click *Yes*.



- 5 Select *Basic* or *Advanced*, depending on the configuration setting that you want to change, then click *Next*.
- 6 Click *Next* until you reach an installation page where you want to reconfigure settings.

Basic Installation Pages:

[Installation Locations](#)

[Default Locale for Kablink Teaming](#)

[User ID for Kablink Teaming \(Linux only\)](#)

[Network Information](#)

[Database Selection](#)

[Java JDK Location](#)

[Outbound E-Mail Configuration](#)

[Inbound E-Mail Configuration](#)

Advanced Installation Pages:

[Web Services](#)

[Lucene Configuration](#)

[RSS Configuration](#)

[Presence Configuration](#)

7 When you reach the Ready to Install page, click *Install* to implement the reconfigured settings.

8 Start Teaming.

Advanced Teaming Installation Summary Sheet

11

Installation Program Field	Value for Your Teaming Site	Explanation
Data Locations:		See Section 8.2, "Distributing Different Data Types to Different Locations," on page 81.
Linux default:	<code>/var/opt/novell/teaming</code>	
Windows default:	<code>c:\Novell\Teaming</code>	
	<ul style="list-style-type: none">◆ Simple file repository◆ Jackrabbit repository◆ Extensions repository◆ Cache store◆ Lucene index	
Network Information:		See Section 8.3, "Using Advanced Network Information Settings," on page 83.
	<ul style="list-style-type: none">◆ Enable Web services: No / Yes◆ Session timeout Default: 240 minutes◆ Enable Tomcat access log: No / Yes◆ Keystore file:	
Web Services:		See Section 8.4, "Configuring Web Services," on page 84.
	<ul style="list-style-type: none">◆ Enable WSS authentication◆ Enable Basic authentication◆ Enable token-based authentication◆ Enable anonymous access	

Installation Program Field	Value for Your Teaming Site	Explanation
Lucene Configuration:		See Section 8.5.2, "Changing Lucene Configuration Settings," on page 85.
Configuration type: all		
◆ Flush threshold:	Default: 100	
◆ Max booleans:	Default: 10000	
◆ Max merge documents:	Default: 1000	
◆ Merge factor:	10	
RSS Configuration:		See Section 8.6, "Managing RSS Feeds," on page 85.
Enable RSS: No / Yes		
◆ Max elapsed days:		
◆ Max inactive days:		
Presence Configuration:		See Section 8.7, "Configuring Presence," on page 86.
Enable presence: No / Yes		
◆ Jabber server:		
◆ Broker admin ID:		
◆ Broker admin password:		
◆ Jabber domain:		
◆ Default community ID:		
◆ Conferencing URL:		

Multi-Server Configurations and Clustering

IV

- ♦ [Chapter 12, “Creating the Teaming Database on a Remote Server,” on page 97](#)
- ♦ [Chapter 13, “Running Multiple Database Servers,” on page 103](#)

Creating the Teaming Database on a Remote Server

12

The default location for the Kablink[®] Teaming database is on the same server with the Teaming software, as described in [Section 3.5.3, “Database Location,” on page 34](#). However, for better performance and scalability, you can install the database server (MySQL, Microsoft SQL, or Oracle) on a remote server, then use the scripts that are included with the Teaming software to manually create the Teaming database in any location that you prefer.

- ♦ [Section 12.1, “Preparing to Manually Create a Database,” on page 97](#)
- ♦ [Section 12.2, “Creating a MySQL Database,” on page 98](#)
- ♦ [Section 12.3, “Creating a Microsoft SQL Database,” on page 99](#)
- ♦ [Section 12.4, “Creating an Oracle Database,” on page 100](#)
- ♦ [Section 12.5, “Installing Teaming with a Remote Database,” on page 101](#)

NOTE: This section assumes that you already have a Basic installation of Teaming up and running successfully. It is highly recommended to follow the instructions in [Part II, “Basic Installation,” on page 25](#) before attempting a more complex Teaming configuration.

12.1 Preparing to Manually Create a Database

Kablink Teaming includes scripts for creating the Teaming database on a remote server.

- 1** In the directory where the Teaming Installation program is located on the Teaming server, unzip the `teaming-2.1.n-sql.zip` file.

This creates two new subdirectories, the `create` subdirectory for database creation scripts and the `update-2.0.n-2.1.n` directory for database update scripts.

- 2** Change to the `create` subdirectory.
- 3** Copy all the scripts for your database type to a convenient temporary location on the server where you want to create the database, and make sure that your database management utility is on your path so that you can run it from that directory

Database	Database Script	Database Management Utility
MySQL:	<code>*mysql.sql</code>	<code>mysql</code>
Microsoft SQL:	<code>*sqlserver.sql</code>	<code>osql</code>
Oracle:	<code>*oracle.sql</code>	<code>sqlplus</code>

- 4** Continue with the instructions for the type of database that you want to create:
 - ♦ [Section 12.2, “Creating a MySQL Database,” on page 98](#)
 - ♦ [Section 12.3, “Creating a Microsoft SQL Database,” on page 99](#)
 - ♦ [Section 12.4, “Creating an Oracle Database,” on page 100](#)

12.2 Creating a MySQL Database

- 1 Review the MySQL requirements listed in [Section 2.1, “Teaming Server Requirements,”](#) on [page 19](#)
- 2 Make sure that the MySQL database server and client have been installed and configured, as described in [Section A.2, “MySQL Database Server,”](#) on [page 141](#).
- 3 Make sure that the MySQL database client is also installed on the Teaming server
The Teaming Installation program needs the MySQL client in order to communicate with the remote MySQL database server.
- 4 Make sure that you know the password for the MySQL `root` administrator user.
- 5 Make sure that `innodb` support is enabled.

It is enabled by default. To verify that `innodb` support is enabled:

- 5a Enter the following command to access the MySQL monitor:

```
mysql -u root -p
```

For information on how to set a password for your MySQL database if you have not already done so, see [“Configuring MySQL”](#) on [page 142](#).

- 5b Specify your password.

- 5c From the `mysql` prompt, enter the following command to display status information about the server’s storage engines:

```
SHOW ENGINES\G
```

- 5d Locate the InnoDB engine, and ensure that `innodb` support is enabled.

- 6 Update the MySQL configuration file.

- 6a Locate the MySQL configuration file and open it in a text editor.

```
Linux:    /etc/my.cnf
```

```
Windows: c:\Program Files\MySQL\MySQL Server version\my.ini
```

- 6b Under the `[client]` section, add the following line:

```
default_character_set = utf8
```

- 6c Under the `[mysqld]` section, add the following line:

```
character_set_server = utf8
```

Setting the character set to UTF-8 ensures that extended characters are handled correctly in the database.

- 6d (Conditional) On a system with multiple network interfaces, under the `[mysqld]` section, add the following line:

```
bind-address = mysql_server_address
```

where *mysql_server_address* is the IP address that you want MySQL to bind to and to listen on.

- 6e Save the updated configuration file, then exit the text editor.

- 7 In the directory where you copied the database scripts ([Step 3](#) in [Section 12.1, “Preparing to Manually Create a Database,”](#) on [page 97](#)), enter the following command to run the MySQL database creation script:

```
mysql -uuser -ppassword < create-database-mysql.sql
```

8 Configure MySQL to allow access from a remote server:

```
mysql -uuser -ppassword
mysql> grant all privileges on *.*
    -> to 'username'@'%'
    -> identified by 'password'
    -> with grant option
    -> ;
```

9 Be familiar with standard database maintenance procedures.

For more information about MySQL, see the following references:

- ♦ *MySQL 5.0 Reference Manual* (<http://dev.mysql.com/doc/refman/5.0/en>)
- ♦ *MySQL 5.1 Reference Manual* (<http://dev.mysql.com/doc/refman/5.1/en>)

The following database tools can be helpful:

- ♦ MySQL GUI Tools (<http://dev.mysql.com/downloads/gui-tools>)
- ♦ SQLyog (<http://www.webyog.com>)
- ♦ Squirrel SQL Client (<http://squirrel-sql.sourceforge.net>)

10 Skip to Section 12.5, “Installing Teaming with a Remote Database,” on page 101.

12.3 Creating a Microsoft SQL Database

1 Review the Microsoft SQL requirements listed in Section 2.1, “Teaming Server Requirements,” on page 19.

2 Make sure that the Microsoft SQL Server and Client have been installed and configured properly.

IMPORTANT: Make sure that TCP/IP is enabled for Microsoft SQL Server.

For more information, see [Microsoft SQL Server](http://msdn.microsoft.com/en-us/library/bb545450.aspx) (<http://msdn.microsoft.com/en-us/library/bb545450.aspx>).

3 Make sure that the Microsoft SQL database client is also installed on the Teaming server

The Teaming Installation program needs the Microsoft SQL client in order to communicate with the remote Microsoft SQL database server.

4 When you install Microsoft SQL Server, select *SQL Server and Windows* for authentication.

The default is *Windows Only*, which is not appropriate for Teaming

5 Immediately establish the database administrator username and password for the SQL database server.

6 Change to the directory where you copied the database scripts in Step 3 in Section 12.1, “Preparing to Manually Create a Database,” on page 97.

7 Enter the following command to run the Microsoft SQL database creation script:

```
osql -User -Ppassword -i create-database-sqlserver.sql
```

8 Be familiar with standard database maintenance procedures.

For more information about Microsoft SQL, see the following references:

- ♦ [Microsoft SQL Server 2008 Learning Resources \(http://www.microsoft.com/sqlserver/2008/en/us/learning.aspx\)](http://www.microsoft.com/sqlserver/2008/en/us/learning.aspx)
- ♦ [Microsoft SQL Server 2005 Learning Resources \(http://www.microsoft.com/sqlserver/2005/en/us/learning-resources.aspx\)](http://www.microsoft.com/sqlserver/2005/en/us/learning-resources.aspx)

The following database tool can be helpful:

- ♦ [Squirrel SQL Client \(http://squirrel-sql.sourceforge.net\)](http://squirrel-sql.sourceforge.net)

9 Skip to [Section 12.5, “Installing Teaming with a Remote Database,”](#) on page 101.

12.4 Creating an Oracle Database

When you use an Oracle database, your database administrator must create it for you. The Kablink Teaming Installation program cannot create an Oracle database.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Database Creation*, make sure you have marked that you want your database administrator to manually create the Oracle database before installation.

- 1 Review the Oracle database requirements listed in [Section 2.1, “Teaming Server Requirements,”](#) on page 19.
- 2 Make sure that the Oracle database server and client software has been installed and configured properly.
For more information, see [Oracle Database \(http://www.oracle.com/database\)](http://www.oracle.com/database).
- 3 Make sure that the Oracle database client is also installed on the Teaming server
The Teaming Installation program needs the Oracle client in order to communicate with the remote Oracle database server.
- 4 Make sure that you know the password for the Oracle database administrator user.
- 5 Set up the Oracle database character set to support Unicode character encodings.
Teaming requires either the UTF-8 or AL32UTF8 character set for proper operation. Oracle recommends the use of AL32UTF8, because it has increased support for certain Asian languages. For more information, see [Choosing a Character Set \(http://download.oracle.com/docs/cd/B19306_01/server.102/b14225/ch2charset.htm\)](http://download.oracle.com/docs/cd/B19306_01/server.102/b14225/ch2charset.htm) in the *Oracle Database Globalization Support Guide*.
- 6 Change to the directory where you copied the Oracle database scripts in [Step 3 in Section 12.1, “Preparing to Manually Create a Database,”](#) on page 97.
- 7 Edit the `create-database-oracle.sql` script with your Oracle database password.

Original:

```
drop user sitescape cascade;
create user sitescape identified by sitescape;
grant connect, resource to sitescape;
connect sitescape/sitescape;
```

NOTE: SiteScape® is the name of the company that previously owned the Teaming software.

Updated:

```
drop user sitescape cascade;
create user sitescape identified by your_oracle_password;
grant connect, resource to sitescape;
connect sitescape/your_oracle_password;
```

IMPORTANT: Unless you are very familiar with editing scripts, change only the password. Do not attempt to change the name of the database from the legacy default of `sitescape`.

- 8** Enter the following commands to run the database creation script:

```
sqlplus "/" as sysdba"
SQL> spool create-database-oracle.out;
SQL> @create-database-oracle;
SQL> quit
```

- 9** Check the resulting `create-database-oracle.out` file for errors and resolve them.

- 10** Be familiar with standard database maintenance procedures.

For more information about your Oracle database, see the following reference:

- ♦ [Oracle Product Documentation \(http://www.oracle.com/technology/documentation\)](http://www.oracle.com/technology/documentation)
- ♦ [Oracle SQL*Plus Documentation \(http://www.oracle.com/technology/docs/tech/sql_plus\)](http://www.oracle.com/technology/docs/tech/sql_plus)

The following database tool can be helpful:

- ♦ [Squirrel SQL Client \(http://squirrel-sql.sourceforge.net\)](http://squirrel-sql.sourceforge.net)

- 11** (Conditional) If you created the Oracle database on the Teaming server, skip to [Chapter 4, “Setting Up a Basic Teaming Site,”](#) on page 49 or [Chapter 9, “Performing an Advanced Teaming Installation,”](#) on page 89.

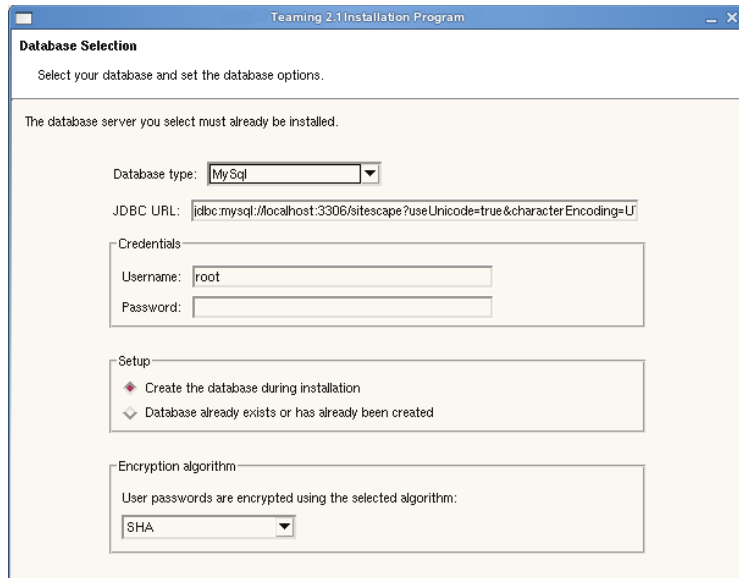
IMPORTANT: On the Database Selection page in the Installation program, be sure to select *Database already exists or has already been created*.

or

(Conditional) If you created the Oracle database on a remote server, continue with [Installing Teaming with a Remote Database](#).

12.5 Installing Teaming with a Remote Database

- 1** Run the Kablink Teaming Installation program, as described in [Chapter 4, “Setting Up a Basic Teaming Site,”](#) on page 49 or [Chapter 9, “Performing an Advanced Teaming Installation,”](#) on page 89.
- 2** When you get to the Database Selection page:



2a Fill in the fields:

Database type: Select the type of database that you just created.

JDBC URL: Replace `localhost` with the hostname of the server where you created the Teaming database.

Credentials: Specify the password for the database administrator user.

Setup: Select *Database already exists or has already been created* so that the Installation program does not create one for you.

Encryption algorithm: Set the encryption appropriate for the security needs of the Teaming site. For more information, see [Section 3.5.5, “Database Encryption Algorithm,” on page 36](#).

2b Click *Next*.

The Teaming Installation program tries to connect to the database. If it connects successfully, you can continue with the installation. If the Teaming Installation program cannot connect to the database, you must resolve the problem with the database before you can continue with the Teaming installation.

2c When the Teaming Installation program can successfully connect to the remote database, continue as usual with the installation.

Running Multiple Database Servers

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The three databases supported by Kablink[®] Teaming (MySQL, Microsoft SQL, and Oracle) each have their own approach to clustering the database server. Information about clustering database servers is available on the Internet, for example:

- ♦ [MySQL Cluster \(http://www.mysql.com/products/database/cluster\)](http://www.mysql.com/products/database/cluster)
- ♦ [SQL Server Clustering \(http://www.sql-server-performance.com/articles/clustering/clustering_intro_p1.aspx\)](http://www.sql-server-performance.com/articles/clustering/clustering_intro_p1.aspx)
- ♦ [Oracle Real Application Clusters \(http://www.oracle.com/technology/products/database/clustering\)](http://www.oracle.com/technology/products/database/clustering)

NOTE: It is highly recommended to follow the instructions in [Part II, “Basic Installation,”](#) on [page 25](#) before attempting a more complex Teaming configuration.

Update



- ♦ [Chapter 14, “What’s New in Kablink Teaming 2.x,” on page 107](#)
- ♦ [Chapter 15, “Updating from Kablink Teaming 2.0 to Kablink Teaming 2.1,” on page 109](#)
- ♦ [Chapter 16, “Updating from Kablink Teaming 1.0 to Kablink Teaming 2.1,” on page 115](#)
- ♦ [Chapter 17, “Updating from Kablink Teaming 1.0 to Novell Teaming 2.1,” on page 125](#)
- ♦ [Chapter 18, “Changing from Kablink Teaming 2.1 to Novell Teaming 2.1,” on page 127](#)
- ♦ [Chapter 19, “Migrating Existing Kablink Teaming Data into a New Teaming 2.1 System,” on page 129](#)

What's New in Kablink Teaming 2.x

14

- ♦ [Section 14.1, “Teaming 2.x User Enhancements,” on page 107](#)
- ♦ [Section 14.2, “Teaming 2.x Installation Enhancements,” on page 107](#)
- ♦ [Section 14.3, “Teaming 2.x Administration Enhancements,” on page 107](#)

14.1 Teaming 2.x User Enhancements

For a list of Kablink® Teaming enhancements and instructions for use, see:

- ♦ [“What's New in Teaming” in the *Kablink Teaming 2.1 User Guide*](#)
- ♦ [“What's New in Teaming” in the *Kablink Teaming 2.1 Advanced User Guide*](#)

14.2 Teaming 2.x Installation Enhancements

- ♦ **No Liferay dependency (v2.0):** Kablink Teaming 2.x is a standalone application with no dependency on Liferay.
- ♦ **Built-in mail server for incoming posts (v2.0):** Teaming 2.0 includes a build-in SMTP mail server for incoming e-mail. This allows Teaming users to easily post to folders in the Teaming site from their e-mail clients. For configuration instructions, see [Section 3.7, “Enabling Inbound E-Mail,” on page 38](#).

14.3 Teaming 2.x Administration Enhancements

- ♦ **User/Entry Data Quota (v2.1):** The Teaming administrator can set a maximum size limit for each Teaming user's accumulated attached files and versions in any single folder entry. Users receive a warning when they reach a “high-water mark” (a percentage of their data quota for the folder entry). When they finally reach the data quota for the folder entry, users cannot create additional file attachments or versions in that folder entry until they free up space by deleting file attachments and versions in that folder entry. Administrators can assign data quotas on an individual user basis, or use groups to easily assign the same data quota to multiple users. For usage instructions, see [“Managing User Disk Space Usage with User Data Quotas” in “Site Maintenance” in the *Kablink Teaming 2.1 Administration Guide*](#).
- ♦ **Administrative Purge for Workspaces and Folders (v2.1):** Because deleted items count against users' data quotas, the Teaming administrator can choose to purge deleted items from the Teaming site to free up storage space. For usage instructions, see [“Purging Deleted Files” in “Site Maintenance” in the *Kablink Teaming 2.1 Administration Guide*](#).
- ♦ **Workspace/Folder Export/Import (v2.1):** The Teaming administrator can export workspaces, folders, and folder entries, then import them into a different Teaming system. The export process includes all content associated with the exported workspace, folder, or folder entry, such as users, groups, team members, roles, custom forms, landing pages, workflows, custom JSPs, and simple URLs. The import process attempts to reconcile imported data with

data already existing in the target Teaming site. For usage instructions, see [“Exporting/Importing Workspaces, Folders, and Entries”](#) in [“Site Maintenance”](#) in the *Kablink Teaming 2.1 Administration Guide*.

- ◆ **Multiple LDAP queries (v2.0):** Kablink Teaming 2.x can search multiple LDAP containers for User objects so that Teaming user accounts can be set up for users distributed throughout your LDAP directory. For setup instructions, see [Section 5.3, “Adding Teaming Users from Your LDAP Directory,”](#) on page 67.
- ◆ **Software extensions (v2.0 / v2.1):** You can enhance the functionality of your Teaming site by implementing software extensions. In Teaming 2.1, you can deploy extensions to the Teaming software while logged in to the Teaming site, without manually editing the Teaming properties file (`ssf-ext.properties`). Existing Teaming software extensions can also be viewed and deleted from the new Manage Extensions page on the Teaming site. For usage instructions, see [“Adding Software Extensions to Your Teaming Site”](#) in [“Site Setup”](#) in the *Kablink Teaming 2.1 Administration Guide*.
- ◆ **Remote applications (v2.0):** You can also expand the functionality of your Teaming site by running remote applications from the Teaming site. For setup instructions, see [“Using Remote Applications on Your Teaming Site”](#) in [“Site Setup”](#) in the *Kablink Teaming 2.1 Administration Guide*.

Updating from Kablink Teaming 2.0 to Kablink Teaming 2.1

15

- ♦ [Section 15.1, “Understanding the Update Process from 2.0 to 2.1,” on page 109](#)
- ♦ [Section 15.2, “Updating a Single-Server Teaming System from 2.0 to 2.1,” on page 109](#)
- ♦ [Section 15.3, “Updating a Multiple-Server Teaming System from 2.0 to 2.1,” on page 111](#)
- ♦ [Section 15.4, “Performing Post-Update Tasks,” on page 113](#)

15.1 Understanding the Update Process from 2.0 to 2.1

During the update from Kablink[®] Teaming 2.0 to Teaming 2.1, the following aspects of your Teaming system are modified:

- ♦ The Teaming software is updated from version 2.0 to 2.1.
- ♦ The Teaming database is updated with a new database structure to support the new features in 2.1. All teams, groups, roles, workspaces, and folders are preserved throughout the update process.
- ♦ A backup copy of your existing Teaming installation is created in the following directory:
`/opt/novell/teaming/teaming-backup`

15.2 Updating a Single-Server Teaming System from 2.0 to 2.1

When you update a single-server Kablink Teaming installation from version 2.0 to version 2.1, the Teaming Installation program can perform the entire update in a single process, unless the Teaming system uses an Oracle database.

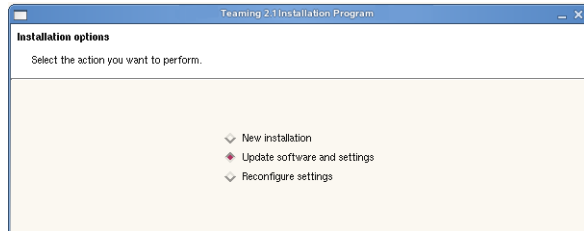
- 1** Make sure you have a current backup of your Teaming 2.0 system.
- 2** Stop Teaming.
- 3** (Conditional) If your Teaming system uses an Oracle database, update the database as described in [Section 15.2.1, “Updating an Oracle Database from 2.0 to 2.1,” on page 110](#) before running the Teaming Installation program.
- 4** Copy the `installer.xml` file and the `license-key.xml` file from the directory where the Teaming 2.0 Installation program is located to the directory where you have extracted the Teaming 2.1 software.

The `installer.xml` file provides default values when you run the Teaming 2.1 Installation program, and you can use the same license file for Teaming 2.1 as your used for Teaming 2.0.
- 5** Start the Teaming 2.1 Installation program.

If you need assistance with this task, see the detailed installation instructions for the platform where you are updating Teaming:

- ◆ [Section 4.1.2, “Running the Linux Teaming Installation Program,”](#) on page 50
- ◆ [Section 4.2.2, “Running the Windows Teaming Installation Program,”](#) on page 59

6 Accept the License Agreement, then click *Next*.



Because you provided your Teaming 2.0 `installer.xml` file in the directory with the Teaming 2.1 Installation program, the *Update software and settings* installation option is selected by default.

7 Click *Next* to continue.

8 Click *Yes* to let the Installation program know that you have stopped Teaming.

9 Select the check box to let the Installation program know that you have backed up all of your Teaming data, then click *Next*.

10 Select *Basic* or *Advanced*, depending on the type of Teaming installation you are updating, then click *Next*.

11 Continue through the installation process, retaining or changing configuration information depending on the needs of your Teaming 2.1 system.

12 Click *Install* when you are ready to perform the update.

The Installation program might seem to pause at this point. It needs to update tables and indexes in the Teaming database. If you have a large database, this process can be time-consuming.

13 Click *Finish* when the update is completed.

14 Start Teaming 2.1 in the same way that you have been starting Teaming 2.0

When you start Teaming for the first time after the update, it takes longer to start than usual because data in the Teaming database must be updated before the Teaming site is ready to use.

15.2.1 Updating an Oracle Database from 2.0 to 2.1

The Kablink 2.1 Teaming Installation program can update MySQL and Microsoft SQL databases as part of the Teaming software update, but it cannot update an Oracle database. Therefore, if you are using Oracle, you must manually run the Teaming 2.1 database update script after you have stopped Teaming.

1 Change to the directory where the Teaming 2.1 Installation program is located.

2 Unzip the `teaming-2.1.n-sql.zip` file to create the `update-2.0.0-2.1.n` directory

The `update-2.0.0-2.1.n` directory contains an update script for each type of database (MySQL, Microsoft SQL, and Oracle).

3 Run the `update-oracle.sql` script to update the database structure.

```
sqlplus "/ as sysdba"
SQL>spool update-oracle.out;
SQL>@update-oracle;
SQL>quit;
```

- 4 Return to [Step 4](#) in [Section 15.2](#), “[Updating a Single-Server Teaming System from 2.0 to 2.1](#),” on page 109.

15.3 Updating a Multiple-Server Teaming System from 2.0 to 2.1

If your Kablink Teaming 2.0 system is distributed across multiple servers, the Teaming 2.1 Installation program can update Teaming components on the Teaming server, but you must manually update any Teaming components that you have placed on remote servers.

- ♦ [Section 15.3.1](#), “[Manual Teaming Database Update](#),” on page 111
- ♦ [Section 15.3.2](#), “[Manual Lucene Index Server Update](#),” on page 112

15.3.1 Manual Teaming Database Update

In order to update the Kablink Teaming database when the Teaming Installation program cannot do it for you, you must run the Teaming 2.1 database update script.

- 1 Stop Teaming.
- 2 Change to the directory where the Teaming 2.1 Installation program is located.
- 3 Unzip the `teaming-2.1.n-sql.zip` file to create the `update-2.0.0-2.1.n` directory
The `update-2.0.0-2.1.n` directory contains an update script for each type of database (MySQL, Microsoft SQL, and Oracle).
- 4 Copy the script for your database type to the server where the Teaming database is located.
- 5 Use the database client utility for your database type to run the script:

```
MySQL:  mysql -uusername -ppassword < /path/update-mysql.sql
```

```
Microsoft SQL:  osql -Uusername -Ppassword -i update-sqlserver.sql
```

You can also use the script with the [SQL Server Express Utility \(http://www.microsoft.com/downloads/details.aspx?familyid=fa87e828-173f-472e-a85c-27ed01cf6b02&displaylang=en\)](http://www.microsoft.com/downloads/details.aspx?familyid=fa87e828-173f-472e-a85c-27ed01cf6b02&displaylang=en) to update the database.

```
Oracle:  sqlplus "/ as sysdba"
SQL>spool update-oracle.out;
SQL>@update-oracle
SQL>quit;
```

- 6 After you have updated the Teaming database:

(Conditional) If your Lucene Index Server is also on a remote server, continue with [Section 15.3.2, “Manual Lucene Index Server Update,”](#) on page 112.

or

(Conditional) If all remaining Teaming components that need to be updated are on the Teaming server, follow the instructions in [Section 15.2, “Updating a Single-Server Teaming System from 2.0 to 2.1,”](#) on page 109.

15.3.2 Manual Lucene Index Server Update

In order to update your Kablink Teaming index when the Teaming Installation program cannot do it for you, you need to run the Remote Lucene Server Installation program.

- 1 Stop Teaming.
- 2 Stop the Lucene Index Server.
- 3 Copy the Teaming 2.1 Remote Lucene Server Installation program from the directory where the Teaming 2.1 Installation program is located to a convenient directory on the server where the remote Lucene Index Server is located.

The name of the Remote Lucene Server Installation program varies by platform:

Linux: `lucene-installer.linux`

Windows: `lucene-installer.exe`

Because you are updating from Teaming 2.0, the existing license file (`license-key.xml`) on the remote Lucene server still works with the Teaming 2.1 Remote Lucene Server Installation program.

- 4 Start the Teaming 2.1 Remote Lucene Server Installation program.
- 5 Accept the License Agreement, then click *Next*.
- 6 Select *Update software and settings*.
- 7 Click *Next* to continue.
- 8 Click *Next* to accept the installation location.
- 9 Click *Next* to accept the Java JDK location.
- 10 In the *Host* field, specify the hostname where you are installing the remote Lucene Index Server.
- 11 Change Lucene configuration settings as needed, then click *Next*.
For information about Lucene configuration settings, see [Section 8.5.2, “Changing Lucene Configuration Settings,”](#) on page 85.
- 12 Click *Install* to install the updated Lucene Index Server software.
- 13 Click *Finish* when the update is completed.
- 14 Start the Lucene Index Server.
- 15 Now that all remote Teaming components have been updated, follow the instructions in [Section 15.2, “Updating a Single-Server Teaming System from 2.0 to 2.1,”](#) on page 109.

15.4 Performing Post-Update Tasks

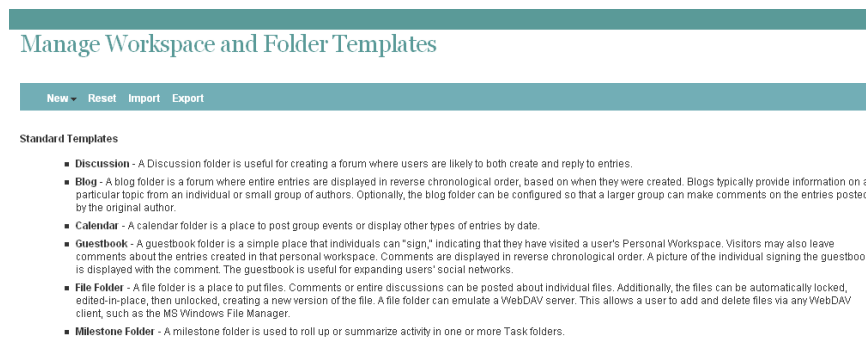
After you start Kablink Teaming 2.1, you can access your Teaming site as usual. However, you need to reset some aspects of the interface before you allow users to access the updated site. The interface reset affects only those definitions and templates that are included with the Teaming product. If you have created custom definitions and templates, they are unaffected by the interface reset.

IMPORTANT: If you have manually customized any definitions or templates that are included with the Teaming product, back up the files you have modified before performing the interface reset.

- 1 Log in to the Teaming site as the Teaming administrator.
- 2 Reset the public form and view definitions:
 - 2a Click *Manage > Site Administration > Form and View Designer*.



- 2b Click *Reset*.
 - 2c Click *Select All*, click *OK* to confirm, then click *Close*.
- 3 Reset the standard templates:
 - 3a On the Site Administration page, click *Manage Workspace and Folder Templates*.



- 3b Click *Reset*.
 - 3c Click *OK* to confirm, then click *Close*.

Your Teaming 2.1 site is now ready for use.

IMPORTANT: If Teaming users encounter problems displaying any pages on the Teaming site after the update, simply have them clear the browser cache.

Updating from Kablink Teaming 1.0 to Kablink Teaming 2.1

16

- ◆ Section 16.1, “Understanding the Update Process,” on page 115
- ◆ Section 16.2, “Preparing Your Teaming System for Updating from 1.0 to 2.1,” on page 115
- ◆ Section 16.3, “Updating a Single-Server Teaming System from 1.0 to 2.1,” on page 118
- ◆ Section 16.4, “Updating a Multiple-Server Teaming System from 1.0 to 2.1,” on page 120
- ◆ Section 16.5, “Performing Post-Update Tasks,” on page 123

16.1 Understanding the Update Process

The major change when you update from Kablink® Teaming 1.0 to Kablink Teaming 2.1 is that the Liferay portal is no longer used by your Teaming system. The Teaming 2.1 Installation program backs up your Teaming data and disconnects your Teaming system from the Liferay software that was installed as part of Teaming 1.0. No Teaming data is lost in this process.

During the update from Teaming 1.0 to Teaming 2.1, the following aspects of your Teaming system are modified:

- ◆ The Teaming software is updated from version 1.0 to 2.1.
- ◆ The Teaming database is updated with a new database structure to support the new features in 2.1. All teams, groups, roles, workspaces, and folders are preserved throughout the update process.
- ◆ The Lucene Index Server is updated for improved functionality.
- ◆ Teaming no longer uses an external e-mail system for inbound message delivery. Teaming 2.1 includes an internal SMTP mail host for incoming messages. This implementation allows for the easy creation of simple URLs to facilitate posting to the Teaming site from e-mail clients.
- ◆ The Liferay portal is eliminated from your Teaming installation. The Liferay data is backed up, so if you have made customizations to Liferay, they remain intact, but the Liferay portal is not left in a usable state after the Teaming files are removed from it. If you want to continue to use Liferay, you must set up a new, independent installation of Liferay and transfer any customizations that you have made to the Teaming version into the new, independent version. To obtain the latest version of Liferay, see [Liferay Portal \(http://www.liferay.com\)](http://www.liferay.com).
- ◆ A backup copy of your existing Teaming installation is created in the following directory:
`/opt/icecore/teaming-backup`

16.2 Preparing Your Teaming System for Updating from 1.0 to 2.1

- ◆ Section 16.2.1, “Updating Your Operating Environment,” on page 116
- ◆ Section 16.2.2, “Backing Up Your Teaming 1.0 Data,” on page 116
- ◆ Section 16.2.3, “Planning and Performing Your Update to Teaming 2.1,” on page 117
- ◆ Section 16.2.4, “Entry Type Repair for Imported Files in Your Teaming 2.1 Site,” on page 117

16.2.1 Updating Your Operating Environment

The following components of the Kablink Teaming operating environment were supported for Teaming 1.0 but are not supported for Teaming 2.1:

- ♦ Red Hat* Enterprise Linux 3 and 4
- ♦ Oracle 9g
- ♦ Microsoft SQL Server 2000

If the operating environment for your Teaming system includes any of these components, you must update the components before your update to Teaming 2.1. For currently supported versions, see [Chapter 2, “Teaming System Requirements,” on page 19](#).

For assistance with updating your operating system, see [Chapter 19, “Migrating Existing Kablink Teaming Data into a New Teaming 2.1 System,” on page 129](#).

16.2.2 Backing Up Your Teaming 1.0 Data

Kablink Teaming data is stored in the Teaming file repository and in the Teaming database. Make sure that you back up both kinds of Teaming data. In addition, you might want to back up your log files.

- ♦ [“Teaming File Repository” on page 116](#)
- ♦ [“Teaming Database” on page 116](#)
- ♦ [“Teaming and Tomcat Log Files” on page 117](#)

Teaming File Repository

The default file location for the Kablink Teaming 1.0 file repository varies by platform:

Linux: /home/icecoredata

Windows: c:\teaming

The default locations for Teaming 2.1 are different, as listed in [Section 3.2.4, “Teaming Installation Locations,” on page 30](#), but the Teaming 2.1 Installation program does not move the data as part of the update process. If you have performed an Advanced installation and have distributed different types of Teaming data to different locations, check the `installer.xml` file located in the same directory with the Teaming 1.0 Installation program to make sure that you have backed up all different types of Teaming data.

Teaming Database

The default database locations have remained the same from Kablink Teaming 1.0 to Kablink Teaming 2.1, as listed in [Section 3.5.3, “Database Location,” on page 34](#). However, if your database administrator created the Teaming database in a different location, either on the Teaming server or on a remote server, you need to know where it is and make sure that it is backed up before you perform the Teaming update. Check the `installer.xml` file for the location, if necessary.

Teaming and Tomcat Log Files

The update process eliminates all existing Teaming and Tomcat log files. If you want to retain these log files, copy them to a location outside of the Teaming software directory structure.

The Teaming 1.0 log file (`ssf.log`) is located here:

Linux: `/opt/icecore/liferay-portal-tomcat-version-jdk5-version/
webapps/ssf/WEB-INF/logs`

Windows: `c:\icecore\liferay-portal-tomcat-version-jdk5-version\
webapps\ssf\WEB-INF\logs`

The Tomcat log file (`catalina.out` on Linux and `stdout_*.log` on Windows) is located here:

Linux: `/opt/icecore/liferay-portal-tomcat-version-jdk5-version/logs`

Windows: `c:\icecore\liferay-portal-tomcat-version-jdk5-version\logs`

16.2.3 Planning and Performing Your Update to Teaming 2.1

After confirming that you have backed up your Kablink Teaming data, the Teaming 2.1 Installation program performs either a Basic installation or an Advanced installation of Teaming 2.1. As defaults, it uses the configuration information stored in the Teaming 1.0 `installer.xml` file.

In preparation for the update, review [Chapter 3, “Planning a Basic Teaming Installation,” on page 27](#) and fill out the [Basic Teaming Installation Summary Sheet](#). If you performed an Advanced installation for Teaming 1.0, review [Chapter 8, “Planning an Advanced Teaming Installation,” on page 81](#) and fill out the [Advanced Teaming Installation Summary Sheet](#).

To update your Teaming site, follow the instructions in [Chapter 4, “Setting Up a Basic Teaming Site,” on page 49](#) or [Chapter 9, “Performing an Advanced Teaming Installation,” on page 89](#).

16.2.4 Entry Type Repair for Imported Files in Your Teaming 2.1 Site

In Kablink Teaming 1.0, if you used the Add Files to Folder feature to drag and drop a directory full of files into a Teaming folder, the files were automatically given the Discussion entry type, even if the Teaming folder was not a Discussion folder. In addition, if the directory contained subdirectories of files, the subdirectories were created as Teaming Discussion folders.

If you want to change the entry type and folder type to match the top-level Teaming folder type in Teaming 2.1, you can enable the Recursive Apply feature on the Configure Default Settings page of the top-level Teaming folder by editing the Teaming `ssf-ext.properties` file.

- 1 On the Teaming server, change to the directory where the `ssf-ext.properties` file is located.

The default location of this file varies by platform:

Linux: `/opt/novell/teaming/apache-tomcat-version/webapps/
ssf/WEB-INF/classes/config`

Windows: c:\Program Files\Novell\Teaming\apache-tomcat-version\webapps\ssf\WEB-INF\classes\config

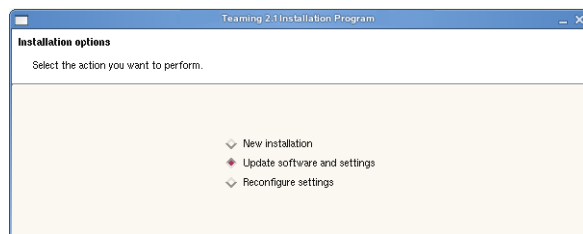
- 2 Make a backup copy of the `ssf-ext.properties` file.
- 3 Open the `ssf-ext.properties` file in a text editor, then scroll to the bottom of the file.
- 4 Add the following line:

```
ssf.allowFolderDefinitionFixups=true
```
- 5 Save the `ssf-ext.properties` file, then exit the text editor.
- 6 Restart Teaming to put the change into effect.
- 7 To change the entry types and folder types for imported files, follow the instructions in “[Recursively Applying Folder Entry Types](#)” in “[Managing Folders](#)” in the *Kablink Teaming 2.1 Advanced User Guide*.

16.3 Updating a Single-Server Teaming System from 1.0 to 2.1

When you update a single-server Kablink Teaming installation from version 1.0 to version 2.1, the Teaming 2.1 Installation program can perform the entire update in a single process, unless the Teaming system uses an Oracle database.

- 1 Stop Teaming.
- 2 (Conditional) If your Teaming system uses an Oracle database, update the database as described in [Section 16.3.1, “Updating an Oracle Database from 1.0 to 2.1,”](#) on page 119 before running the Teaming 2.1 Installation program.
- 3 Copy the `installer.xml` file from the directory where the Teaming 1.0 Installation program is located to the directory where you have extracted the Teaming 2.1 software.
- 4 Remove old license file from your Teaming 1.0 system and make sure that you have a `license-key.xml` file in the same directory with the Teaming 2.1 Installation program.
- 5 Start the Teaming 2.1 Installation program.
If you need assistance with this task, see the detailed installation instructions for the platform where you are updating Teaming:
 - ♦ [Section 4.1.2, “Running the Linux Teaming Installation Program,”](#) on page 50
 - ♦ [Section 4.2.2, “Running the Windows Teaming Installation Program,”](#) on page 59
- 6 Accept the License Agreement, then click *Next*.



Because you provided your Teaming 1.0 `installer.xml` file in the directory with the Teaming 2.1 Installation program, the *Update software and settings* installation option is selected by default.

- 7 Click *Next* to continue.
- 8 Click *Yes* to let the Installation program know that you have stopped Teaming.
- 9 Select the check box to let the Installation program know that you have backed up all of your Teaming data, then click *Next*.
- 10 Select *Basic* or *Advanced*, depending on the type of Teaming installation you are updating, then click *Next*.
- 11 Continue through the installation process, using the configuration information gathered on the *Teaming Installation Summary Sheet*.
- 12 Click *Install* when you are ready to perform the update.

The Installation program might seem to pause at this point. It needs to update tables and indexes in the Teaming database. If you have a large database, this process can be time-consuming.

- 13 Click *Finish* when the update is completed.
- 14 Start Teaming 2.1.

Linux: New command:

```
/etc/init.d/teaming start
```

For more information, see [Section 4.1.6, "Starting Teaming on Linux,"](#) on page 56.

Windows: Same command, different directory:

```
c:\Program Files\Novell\Teaming\apache-tomcat-version\
bin\startup.bat
```

NOTE: The default locations for Teaming 2.1 are different from 1.0, as listed in [Section 3.2.4, "Teaming Installation Locations,"](#) on page 30, but the Teaming Installation program does not move the Teaming installation as part of the update process.

For more information, see [Section 4.2.4, "Running Teaming as a Windows Service,"](#) on page 61 and [Section 4.2.5, "Running Teaming as a Windows Application,"](#) on page 62.

When you start Teaming 2.1 for the first time after the update, it takes longer to start than usual because data in the Teaming database must be updated before the Teaming site is ready to use.

16.3.1 Updating an Oracle Database from 1.0 to 2.1

The Kablink Teaming Installation program can update MySQL and Microsoft SQL databases as part of the Teaming software update, but it cannot update an Oracle database. Therefore, if you are using Oracle, you must manually run the Teaming 2.1 database update scripts after you have stopped Teaming.

- 1 Change to the directory where the Teaming 2.1 Installation program is located.
- 2 Unzip the `teaming-2.1.n-sql.zip` file to create the `update-1.0.0-2.0.n` directory and the `update-2.0.0-2.1.n` directory.
 These directories contains an update script for each type of database (MySQL, Microsoft SQL, and Oracle).
- 3 Change to the `update-1.0.0-2.0.n` directory.

- 4 Run the `update-oracle.sql` script to update the database structure from 1.0 to 2.0.

```
sqlplus "/ as sysdba"
SQL>spool update-oracle.out;
SQL>@update-oracle;
SQL>quit;
```

- 5 Change to the `update-2.0.0-2.1.n` directory.

- 6 Run the `update-oracle.sql` script to update the database structure from 2.0 to 2.1.

```
sqlplus "/ as sysdba"
SQL>spool update-oracle.out;
SQL>@update-oracle;
SQL>quit;
```

- 7 Return to [Section 16.3, “Updating a Single-Server Teaming System from 1.0 to 2.1,”](#) on page 118.

16.4 Updating a Multiple-Server Teaming System from 1.0 to 2.1

If your Kablink Teaming 1.0 system is distributed across multiple servers, the Teaming 2.1 Installation program can update Teaming components on the Teaming server, but you must manually update any Teaming components that you have placed on remote servers.

- ♦ [Section 16.4.1, “Manual Teaming Database Update,”](#) on page 120
- ♦ [Section 16.4.2, “Manual Lucene Index Server Update,”](#) on page 121

16.4.1 Manual Teaming Database Update

In order to update the Kablink Teaming 1.0 database when the Teaming Installation program cannot do it for you, you must run the Teaming 2.1 database update scripts on the database server.

- 1 Stop Teaming.
- 2 Change to the directory where the Teaming 2.1 Installation program is located.
- 3 Unzip the `teaming-2.1.n-sql.zip` file to create the `update-1.0.0-2.0.n` directory and the `update-2.0.0-2.1.n` directory.

These directories contain update scripts for each type of database (MySQL, Microsoft SQL, and Oracle).

- 4 Change to the `update-1.0.0-2.0.n` directory.
- 5 Copy the update script for your database type to the server where the Teaming database is located.
- 6 On the database server, use the database client utility for your database type to run the update script to convert the Teaming database structure from 1.0 to 2.0:

```
MySQL:  mysql -uusername -ppassword < /path/update-mysql.sql
```

```
Microsoft SQL:  osql -Uusername -Ppassword -i update-sqlserver.sql
```

You can also use the script with the [SQL Server Express Utility \(http://www.microsoft.com/downloads/details.aspx?familyid=fa87e828-173f-472e-a85c-27ed01cf6b02&displaylang=en\)](http://www.microsoft.com/downloads/details.aspx?familyid=fa87e828-173f-472e-a85c-27ed01cf6b02&displaylang=en) to update the database.


```
Oracle:  sqlplus "/ as sysdba"
        SQL>spool update-oracle.out;
        SQL>@update-oracle
        SQL>quit;
```

- 7 Return to directory where the Teaming 2.1 Installation program is located.
- 8 Change to the `update-2.0.0-2.1.n` directory.
- 9 Copy the update script for your database type to the server where the Teaming database is located.

The update script for converting the database from 2.0 to 2.1 has the same name as the update script for converting from 1.0 to 2.0, so you overwrite the first update script when you copy the second update script to your database server.

- 10 On the database server, use the client utility for your database type to run the update script to convert the Teaming database structure from 2.0 to 2.1.
- 11 After you have updated the Teaming database to 2.1:
(Conditional) If your Lucene Index Server is also on a remote server, continue with [Section 16.4.2, “Manual Lucene Index Server Update,”](#) on page 121.
or
(Conditional) If all Teaming components that need to be updated are on the Teaming server, follow the instructions in [Section 16.3, “Updating a Single-Server Teaming System from 1.0 to 2.1,”](#) on page 118.

16.4.2 Manual Lucene Index Server Update

In order to update your Kablink Teaming index when the Teaming Installation program cannot do it for you, you need to run the Teaming 2.1 Remote Lucene Server Installation program.

The default location for the Lucene Index Server software has change from Teaming 1.0 to Teaming 2.1:

```
Linux:  Teaming 1.0:  /opt/icecore/luceneserver
        Teaming 2.1:  /opt/novell/teaming/luceneserver
Windows: Teaming 1.0:  c:\icecore\luceneserver
        Teaming 2.1:  c:\Program Files\Novell\Teaming\luceneserver
```

You can update the Lucene Index Server software in its current Teaming 1.0 location or you can install to the new Teaming 2.1 default location.

The default location for the Lucene index has also changed from Teaming 1.0 to Teaming 2.1:

```
Linux:  Teaming 1.0:  /home/icecoredata/lucene
        Teaming 2.1:  /var/opt/novell/teaming/lucene
Windows: Teaming 1.0:  c:\home\icecoredata\lucene
        Teaming 2.1:  c:\Novell\Teaming\lucene
```

Because you need to reindex your Teaming site after performing the update, the Teaming 2.1 Lucene index is created in the new default location.

- 1 Stop Teaming.
- 2 Stop the Lucene Index Server by using the following command in the directory where the Lucene Index Server is currently installed:

Linux: `./indexserver-stop.sh`

Windows: `indexserver-stop.bat`

- 3 Copy the Teaming 2.1 Remote Lucene Server Installation program and the Teaming 2.1 license file (`license-key.xml`) from the directory where the Teaming 2.1 Installation program is located to a convenient directory on the server where the remote Lucene Index Server is located.

The name of the Remote Lucene Server Installation program varies by platform:

Linux: `lucene-installer.linux`

Windows: `lucene-installer.exe`

- 4 Start the Remote Lucene Server Installation program.
- 5 Accept the License Agreement, then click *Next*.
- 6 Select *Update software and settings* to install to the current Teaming 1.0 location.
or
Select *New installation* to install to the new Teaming 2.1 location.
- 7 Click *Next* to continue.
- 8 Click *Next* to accept the installation location.
- 9 Click *Next* to accept the Java JDK location.
- 10 In the *Host* field, specify the hostname where you are installing the remote Lucene Index Server.
- 11 Change Lucene configuration settings as needed, then click *Next*.
For information about Lucene configuration settings, see [Section 8.5.2, “Changing Lucene Configuration Settings,”](#) on page 85.
- 12 Click *Install* to install the updated Lucene Index Server software.
- 13 Click *Finish* when the update is completed.
- 14 Start the Lucene Index Server.

Linux: `./indexserver-startup.sh`

Windows: `indexserver-startup.bat`

- 15 Now that all remote Teaming components have been updated, follow the instructions in [Section 16.3, “Updating a Single-Server Teaming System from 1.0 to 2.1,”](#) on page 118.

16.5 Performing Post-Update Tasks

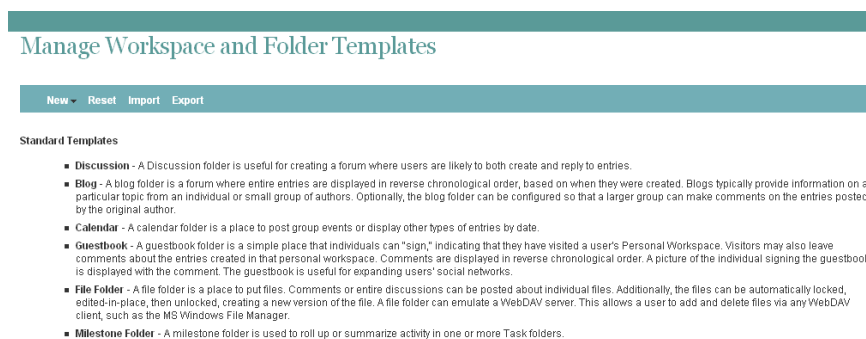
After you start Kablink Teaming 2.1, you can access your Teaming site as usual. However, you need to reindex the site and reset some aspects of the interface before you allow users to access the updated site. The reindexing process can consume a substantial amount of time for a large Teaming site. The interface reset affects only those definitions and templates that are included with the Teaming product. If you have created custom definitions and templates, they are unaffected by the interface reset.

IMPORTANT: If you have manually customized any definitions or templates that are included with the Teaming product, back up the files you have modified before performing the interface reset.

- 1 Log in to the Teaming site as the Teaming administrator.
- 2 Click *Manage > Site Administration > Form and View Designer*, click *Reset*, then click *Close*.



- 3 On the Site Administration page, click *Manage Workspace and Folder Templates*, click *Reset*, then click *Close*.



- 4 On the Site Administration page, click *Manage the Search Index*, select the *Home Workspace*, then click *OK*.

Manage the Search Index



5 When the indexing is completed, click *Close*.

6 Update the LDAP configuration for your Teaming site.

In Teaming 1.0, if you did not want Teaming to search the entire directory service for users, you specified the search context right after the URL for the LDAP server. In Teaming 2.1, you specify the search context in a separate field. The syntax that worked for Teaming 1.0 does not work for Teaming 2.1.

6a On the Site Administration page, click *Configure LDAP*.

ldap://edir.corporate.net

Configuration for: ldap://edir.corporate.net

Delete This Configuration

The LDAP server URL format is, ldap://host:port. For example: ldap://foalhost:389

LDAP server URL: ldap://edir.corporate.net

User DN: cn=admin,ou=users,o=corporate

Password:

Users

LDAP Attribute That Identifies the User: cn

In the box below, map the internal identifiers to the LDAP attribute names of the user record. Use the following syntax: internalID=ldapAttrName

- lastName=sn
- screenName=cn
- lastName=surname
- firstName=gn
- description=description
- emailAddress=email
- phone=telephoneNumber
- firstName=givenName

Base DN: ou=users,o=corporate

Filter: ((objectClass=Person)(objectClass=orgPerson)(objectClass=inetOrgPerson))

Search Subtree

Delete

Add

Groups

Add

6b If the *LDAP server URL* field includes an object context, move that object context down to the *Base DN* field.

7 Select *Run Immediately*, then click *Apply* to test your change.

8 If your revised LDAP connection is valid, click *Close*.

Your Teaming 2.1 site is now ready for use.

IMPORTANT: If Teaming users encounter problems displaying any pages on the Teaming site after the update, simply have them clear the browser cache.

Updating from Kablink Teaming 1.0 to Novell Teaming 2.1

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To update from Kablink[®] Teaming 1.0 to Novell[®] Teaming 2.1, you must first purchase Novell Teaming 2.1 in the [Novell Customer Center \(http://www.novell.com/customercenter\)](http://www.novell.com/customercenter). After you obtain the license and download the Novell Teaming 2.1 software, following the instructions in “Updating from Novell Teaming 1.0 to Novell Teaming 2.1” in the *Novell Teaming 2.1 Installation Guide* (http://www.novell.com/documentation/teaming21/team21_inst/data/bookinfo.html).

See also [Chapter 18, “Changing from Kablink Teaming 2.1 to Novell Teaming 2.1,”](#) on page 127.

Changing from Kablink Teaming 2.1 to Novell Teaming 2.1

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To change from Kablink[®] Teaming 2.1 to Novell[®] Teaming 2.1, you must first purchase Novell Teaming 2.1 in the [Novell Customer Center \(http://www.novell.com/customercenter\)](http://www.novell.com/customercenter).

After you obtain the license and download the Novell Teaming 2.1 software:

- 1** Stop Kablink Teaming.
- 2** In the directory where you downloaded the Novell Teaming 2.1 software, rename the license file that came with the software to the name `license-key.xml`.

The Novell Teaming Installation program does not start unless there is a `license-key.xml` file in the same directory with the Installation program.
- 3** Install Novell Teaming using the same options that you used to install Kablink Teaming, as described in:
 - ♦ [Chapter 3, “Planning a Basic Teaming Installation,” on page 27](#)
 - ♦ [Chapter 8, “Planning an Advanced Teaming Installation,” on page 81](#)
- 4** Start Novell Teaming, as described for the platform where you installed Teaming:
 - ♦ [Section 4.1.6, “Starting Teaming on Linux,” on page 56](#)
 - ♦ [Section 4.2.4, “Running Teaming as a Windows Service,” on page 61](#)
 - ♦ [Section 4.2.5, “Running Teaming as a Windows Application,” on page 62](#)
- 5** Verify that your Teaming license has been updated from Kablink to Novell:
 - 5a** Log in to the Teaming site as the Teaming administrator.
 - 5b** Click *Manage > Site Administration > Reports > Licensing*.
 - 5c** Verify that a Novell Teaming license is now listed.

Migrating Existing Kablink Teaming Data into a New Teaming 2.1 System

If your existing Kablink® Teaming system has outgrown the server where you originally set it up, or you want to move to a different operating system, you can install Teaming 2.1 on a new server, then migrate your existing Teaming data from a Teaming 1.0 or 2.0 system to your new Teaming 2.1 system.

- ♦ [Section 19.1, “Linux Migration with a MySQL Database,” on page 129](#)
- ♦ [Section 19.2, “Windows Migration with an MS SQL Database,” on page 133](#)

NOTE: In these instructions, “target server” refers to the server where you install the Teaming 2.1 software, and “source server” refers to your existing Teaming 1.0 or 2.0 server from which you are migrating Teaming data.

The instructions in this section are based on a single-server Teaming configuration. If you have a multi-server Teaming configuration, the single-server instructions can serve as a foundation to get you started with your more complex migration process.

This section does not include instructions for migrating an Oracle database. Use the instructions for your Teaming platform as a guideline for the tasks that are involved in migrating Teaming data, then apply these guidelines to your Oracle database migration.

19.1 Linux Migration with a MySQL Database

- ♦ [Section 19.1.1, “Preparing the Target Linux Server,” on page 129](#)
- ♦ [Section 19.1.2, “Preparing the Source Linux Server,” on page 130](#)
- ♦ [Section 19.1.3, “Transferring Data from the Source Server to the Target Server,” on page 130](#)
- ♦ [Section 19.1.4, “Importing the Teaming Database to the Target Server,” on page 131](#)
- ♦ [Section 19.1.5, “Updating the Teaming Database on the Target Server,” on page 131](#)
- ♦ [Section 19.1.6, “Updating the Zone Name from Teaming 1.0 to Teaming 2.1 \(Conditional\),” on page 132](#)
- ♦ [Section 19.1.7, “Finalizing Your New Teaming 2.1 Site,” on page 132](#)

19.1.1 Preparing the Target Linux Server

On the target server:

- 1 Install the Teaming 2.1 software on the target server, as described in [Part II, “Basic Installation,” on page 25](#), paying special attention to these important details:
 - ♦ Set up the same Linux user to run the Teaming software that has been used to run the Teaming software in the past.

- ♦ Select the same encryption algorithm for the Teaming database.

IMPORTANT: If the database encryption algorithms do not match between the source and target Teaming systems, you cannot log in to the new Teaming 2.1 site.

- 2 Start Teaming on the target server.
- 3 Verify that the new Teaming site is working as expected.
- 4 Stop Teaming on the target server.

19.1.2 Preparing the Source Linux Server

On the source server:

- 1 Stop Teaming.
- 2 Back up your existing database:

```
mysqldump -uusername -ppassword sitescape > sitescape.sql
```

This creates a file named `sitescape.sql` in the directory where you executed the `mysqldump` command.

- 3 Make sure that you have a recent backup of your entire Teaming system.

19.1.3 Transferring Data from the Source Server to the Target Server

On the source server:

- 1 Mount the target server to the source server so that data can be copied from one server to the other.
- 2 In a terminal window on the source server, become the Linux user that runs the Teaming software.
- 3 (Conditional) If you are migrating data from Teaming 1.0:
 - 3a Copy your existing Teaming file repository to the target server:

```
From: /home/icecoredata  
To: /var/opt/novell/teaming
```

IMPORTANT: Do not copy the `liferay` directory.

- 3b Copy the database backup of your existing Teaming database (`sitescape.sql` file) that you created in [Step 2](#) in [Section 19.1.2, “Preparing the Source Linux Server,”](#) on page 130 to a convenient temporary location on the target server.
- 3c Copy your existing Teaming Lucene index to the target server:

```
From: /home/icecoredata/lucene  
To: /var/opt/novell/teaming/lucene
```

In Teaming 2.1, the `lucene` directory now contains `kablink` and `liferay.com` directories.

- 3d** Delete the empty `kablink` directory.
- 3e** Rename the `liferay.com` directory where your existing Teaming database resides to `kablink`, which is the Teaming 2.1 zone name.
- 3f** Copy your existing software extensions to the target server:

```
From: /home/icecoredata/extensions
To: /var/opt/novell/teaming/extensions
```

In Teaming 2.1, the `extensions` directory now contains the `kablink` and `liferay.com` directories.

- 3g** Delete the empty `kablink` directory.
 - 3h** Rename the `liferay.com` directory where your existing software extensions reside to `kablink`, which is the Teaming 2.1 zone name.
- 4** (Conditional) If you are migrating data from Teaming 2.0:
- 4a** Copy your existing Teaming file repository from `/var/opt/novell/teaming` on the source server to the same location on the target server.
 - 4b** Copy the database backup of your existing Teaming database (`sitescape.sql` file) that you created in [Step 2](#) in [Section 19.1.2, “Preparing the Source Linux Server,”](#) on page 130 to a convenient temporary location on the target server.
 - 4c** Copy your existing Teaming database index from `/var/opt/novell/teaming/lucene` on the source server to the same location on the target server.
 - 4d** Copy your existing software extensions from `/var/opt/novell/teaming/extensions` on the source server to the same location on the target server.

19.1.4 Importing the Teaming Database to the Target Server

On the target server:

- 1** Remove the empty Teaming database that was created when you installed the Teaming 2.1 software:

```
mysql>drop sitescape;
```
- 2** Change to the directory where you copied the `sitescape.sql` file in [Step 3b](#) or [Step 4b](#) in [Section 19.1.3, “Transferring Data from the Source Server to the Target Server,”](#) on page 130.
- 3** Manually re-create the Teaming database with the data that you copied from the source server:

```
mysql -uusername -ppassword sitescape < sitescape.sql
```

19.1.5 Updating the Teaming Database on the Target Server

On the target server:

- 1** (Conditional) If your are updating from Teaming 1.0 to 2.1, unzip the `update-1.0.0-2.0.n.zip` file, change to the resulting `update-1.0.0-2.0.n` directory, then run the update script to update the Teaming database from Teaming 1.0 to 2.0:

```
mysql -uusername -ppassword < update-mysql.sql
```

For more complete database update instructions, refer to [Section 16.4.1, “Manual Teaming Database Update,”](#) on page 120.

- 2 To update from Teaming 2.0 to 2.1, unzip the `update-2.0.0-2.1.n.zip` file, change to the resulting `update-2.0.0-2.1.n` directory, then run the update script to update the Teaming database from Teaming 2.0 to 2.1:

```
mysql -uusername -ppassword < update-mysql.sql
```

For more complete database update instructions, refer to [Section 15.3.1, “Manual Teaming Database Update,”](#) on page 111.

19.1.6 Updating the Zone Name from Teaming 1.0 to Teaming 2.1 (Conditional)

In Teaming 1.0, the default zone name was `liferay.com`. Starting in Teaming 2.0, the default zone name is `kablink`. If your Teaming site originated as Teaming 2.0, rather than 1.0, skip to [Section 19.1.7, “Finalizing Your New Teaming 2.1 Site,”](#) on page 132.

If your Teaming site originated as Teaming 1.0, you must reset the default zone name.

On the target server:

- 1 Change to the following directory:

```
/opt/novell/teaming/apache-tomcat-version/webapps/  
ssf/WEB-INF/classes/config
```

- 2 View the following files to ensure that the current zone name is set to `kablink`.

```
zone.cfg.xml  
zone-ext.cfg.xml
```

- 3 Use the following commands to update the Teaming database with the new default zone name:

```
mysql -uusername -ppassword  
mysql>use sitescape;  
mysql>update SS_ZoneInfo set zoneName='kablink'  
                                where zoneName='liferay.com';  
mysql>update SS_Forums set name='kablink' where name='liferay.com';
```

- 4 Find and rename any `liferay.com` subdirectories to `kablink`.

You might or might not find `liferay.com` subdirectories in the following locations, so you should check them all:

```
/var/opt/novell/teaming/filerepository  
/var/opt/novell/teaming/lucene  
/var/opt/novell/teaming/extensions  
/var/opt/novell/teaming/archivestore  
/var/opt/novell/teaming/cachefilestore
```

19.1.7 Finalizing Your New Teaming 2.1 Site

- 1 Start Teaming 2.1, as described in [Section 4.1.6, “Starting Teaming on Linux,”](#) on page 56.
- 2 Reindex the Teaming site, as described in “[Rebuilding the Lucene Index](#)” in “[Site Maintenance](#)” in the *Kablink Teaming 2.1 Administration Guide*.

Your Teaming site should now function just as it did on the original source server.

19.2 Windows Migration with an MS SQL Database

- ♦ Section 19.2.1, “Preparing the Target Windows Server,” on page 133
- ♦ Section 19.2.2, “Preparing the Source Windows Server,” on page 133
- ♦ Section 19.2.3, “Transferring Data from the Source Server to the Target Server,” on page 134
- ♦ Section 19.2.4, “Importing the Teaming Database to the Target Server,” on page 135
- ♦ Section 19.2.5, “Updating the Teaming Database on the Target Server,” on page 135
- ♦ Section 19.2.6, “Updating the Zone Name from Teaming 1.0 to Teaming 2.1 (Conditional),” on page 136
- ♦ Section 19.2.7, “Finalizing Your New Teaming 2.1 Site,” on page 136

19.2.1 Preparing the Target Windows Server

On the target server:

- 1 Install the Teaming 2.1 software, as described in [Part II, “Basic Installation,” on page 25](#).

IMPORTANT: Select the same encryption algorithm for the Teaming database. If the database encryption algorithms do not match between the source and target systems, you cannot log in to the new Teaming 2.1 site.

- 2 Start Teaming on the target server.
- 3 Verify that the new Teaming site is working as expected.
- 4 Stop Teaming on the target server.

19.2.2 Preparing the Source Windows Server

On the source server:

- 1 Stop Teaming.
- 2 Back up your existing Teaming database:
 - 2a In Microsoft SQL Server Management Studio, browse to and right-click the existing Teaming database (named `sitescape`), then click *Tasks > Back Up*.
 - 2b For *Backup type*, select *Full*.
 - 2c Set other backup options as desired, then click *OK*.

This creates a file named `sitescape.bak` in the following directory:

```
c:\Program Files\Microsoft SQL Server\MSSQL\Backup
```

- 3 Make sure that you have a recent backup of your entire Teaming system.

19.2.3 Transferring Data from the Source Server to the Target Server

On the source server:

- 1 Map a drive from the destination server to the source server so that data can be copied from one server to the other.
- 2 (Conditional) If you are migrating data from Teaming 1.0:
 - 2a Copy your existing Teaming file repository to the target server

From: c:\home\icecoredata

To: c:\novell\teaming

IMPORTANT: Do not copy the `liferay` directory.

- 2b Copy the database backup of your existing Teaming database (`sitescape.bak` file) from the source server to the same location on the target server.

You created this file [Step 2 in Section 19.2.2, “Preparing the Source Windows Server,” on page 133](#).

- 2c Copy your existing Teaming Lucene index to the target server:

From: c:\home\icecoredata\lucene

To: c:\novell\teaming\lucene

In Teaming 2.1, the `lucene` directory now contains the `kablink` and `liferay.com` directories.

- 2d Delete the empty `kablink` directory.
 - 2e Rename the `liferay.com` directory where your existing Teaming database resides to `kablink`.
- 3 Copy your existing software extensions to the target server:

From: c:\home\icecoredata\extensions

To: c:\novell\teaming\extensions

In Teaming 2.1, the `extensions` directory now contains `kablink` and `liferay.com` directories.

- 4 Delete the empty `kablink` directory.
- 5 Rename the `liferay.com` directory where your existing software extensions reside to `kablink`.
- 6 (Conditional) If you are migrating data from Teaming 2.0:
 - 6a Delete or rename the following directories to make room for the corresponding directories that you are copying from the source server:

```
c:\novell\teaming
c:\novell\teaming\lucene
c:\novell\teaming\extensions
```

- 6b** Copy your existing Teaming file repository from `c:\novell\teaming` on the source server to the same location on the target server.
- 6c** Copy your existing Teaming database index from `c:\novell\teaming\lucene` on the source server to the same location on the target server.
- 6d** Copy your existing software extensions from `c:\novell\teaming\extensions` on the source server to the same location on the target server.

19.2.4 Importing the Teaming Database to the Target Server

On the target server:

- 1** In Microsoft SQL Server Management Studio, browse to and right-click the existing Teaming database (named `sitescape`) that was created when you installed the Teaming 2.1 software, then click *Delete*.
- 2** To import the data from your source Teaming database, browse to and right-click *Databases*, then click *Tasks > Restore*.
- 3** In the *To database* field, specify `sitescape`.
- 4** In the *From device* field, browse to and select the `sitescape.bak` file that you transferred to the target server.
- 5** Set other restore options as desired, then click *OK*.

This creates the `sitescape` database in the following directory on the target server:

```
c:\Program Files\Microsoft SQL Server\MSSQL
```

Backed-up data from the source Teaming database is imported into the database for your new Teaming 2.1 system.

19.2.5 Updating the Teaming Database on the Target Server

On the target server:

- 1** (Conditional) If you are updating from Teaming 1.0 to 2.1, unzip the `update-1.0.0-2.0.n.zip` file, change to the resulting `update-1.0.0-2.0.n` directory, then run the update script to update the Teaming database from Teaming 1.0 to 2.0:

```
osql -Uusername -Ppassword -i update-sqlserver.sql
```

For more complete database update instructions, refer to [Section 16.4.1, “Manual Teaming Database Update,”](#) on page 120.

- 2** To update from Teaming 2.0 to 2.1, unzip the `update-2.0.0-2.1.n.zip` file, change to the resulting `update-2.0.0-2.1.n` directory, then run the update script to update the Teaming database from Teaming 2.0 to 2.1:

```
osql -Uusername -Ppassword -i update-sqlserver.sql
```

For more complete database update instructions, refer to [Section 15.3.1, “Manual Teaming Database Update,”](#) on page 111.

19.2.6 Updating the Zone Name from Teaming 1.0 to Teaming 2.1 (Conditional)

If you are migrating data from Teaming 2.0, rather than 1.0, skip to [Section 19.2.7, “Finalizing Your New Teaming 2.1 Site,”](#) on page 136.

In Teaming 1.0, the default zone name was `liferay.com`. Starting in Teaming 2.0, the default zone name is `kablink`. In order to migrate Teaming 1.0 data into a Teaming 2.1 system, you must reset the default zone name.

On the target server:

- 1 Change to the following directory:

```
c:\Program Files\Novell\Teaming\apache-tomcat-version\webapps\
                                                                    ssf\WEB-INF\classes\config
```

- 2 View the following files to ensure that the current zone name is set to `kablink`.

```
zone.cfg.xml
zone-ext.cfg.xml
```

- 3 Use the following commands to update the Teaming database with the new default zone name:

```
update SS_ZoneInfo set zoneName='kablink' where zoneName='liferay.com';
update SS_Forums set name='kablink' where name='liferay.com';
```

- 4 Find and rename any `liferay.com` subdirectories to `kablink`.

You might or might not find `liferay.com` subdirectories in the following locations, so you should check them all:

```
c:\Novell\Teaming\filerepository
c:\Novell\Teaming\lucene
c:\Novell\Teaming\extensions
c:\Novell\Teaming\archivestore
c:\Novell\Teaming\cachefilestore
```

19.2.7 Finalizing Your New Teaming 2.1 Site

- 1 Start Teaming 2.1, as described in [Section 4.1.6, “Starting Teaming on Linux,”](#) on page 56.
- 2 Reindex the Teaming site, as described in “[Rebuilding the Lucene Index](#)” in “[Site Maintenance](#)” in the *Kablink Teaming 2.1 Administration Guide*.

Your Teaming site should now function just as it did on the original source server.

Appendixes

VI

- ♦ [Appendix A, “Teaming System Requirements Assistance,” on page 139](#)
- ♦ [Appendix B, “Third-Party Materials,” on page 145](#)

Teaming System Requirements Assistance

A

The Kablink® Teaming system requirements include supporting components that might or might not already be installed on your Teaming server. This section helps you meet the Teaming system requirements if you are not already familiar with how to install these supporting components.

- ♦ [Section A.1, “Java Development Kit,” on page 139](#)
- ♦ [Section A.2, “MySQL Database Server,” on page 141](#)

A.1 Java Development Kit

The Kablink Teaming software runs inside a Java Virtual Machine (JVM). At present, Teaming requires a Java Development Kit (JDK) not a Java Runtime Environment (JRE*) in order to run properly. You can use either the Sun JDK or the IBM JDK. Follow the instructions in the section below for your operating system and JDK preference:

- ♦ [Section A.1.1, “Sun JDK on Linux,” on page 139](#)
- ♦ [Section A.1.2, “IBM JDK on Linux,” on page 140](#)
- ♦ [Section A.1.3, “Sun JDK on Windows,” on page 141](#)

A.1.1 Sun JDK on Linux

1 Go to the following URL:

[Java SE Downloads \(http://java.sun.com/javase/downloads/index.jsp\)](http://java.sun.com/javase/downloads/index.jsp)

The update you need is listed as “JDK 6 Update *nn*.”

2 Click *Download* next to this update.

3 In the *Platform* field, select *Linux* or *Linux x64* depending on the processor in your Teaming server.

4 Select *I agree...*, then click *Continue* to accept Sun’s License Agreement.

5 Click the `jdk-6unn-linux-version-rpm.bin` file., then save the file to an empty temporary directory on your Linux server.

6 As the `root` user, change to that temporary directory, then use the following command to make sure that the download arrived safely:

```
ls -l
```

You should see a file named `jdk-6unn-linux-version-rpm.bin`.

7 Change the permissions on the file to include execute permissions:

```
chmod +x jdk-6unn-linux-version-rpm.bin
```

8 Run the self-extracting file:

```
./jdk-6unn-linux-version-rpm.bin
```

9 Scroll through the License Agreement, then enter `y` to accept it.

This creates a file named `jdk-6unn-linux-version.rpm`, and a directory named `/usr/java/jdk.1.6.0_nn` with the Sun JDK software in it.

The Sun JDK is now installed on your Linux server.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Java JDK Location* on the [Basic Teaming Installation Summary Sheet](#), specify the directory where you install the JDK. The Teaming Installation program prompts you for this location.

A.1.2 IBM JDK on Linux

- ♦ “Installing the IBM JDK on SUSE Linux Enterprise Server 11” on page 140
- ♦ “Installing the IBM JDK on Open Enterprise Server 2 and SUSE Linux Enterprise Server 10” on page 140

Installing the IBM JDK on SUSE Linux Enterprise Server 11

The IBM JDK is not included with SUSE® Linux Enterprise Server (SLES) 11. It is available in the SLES 11 Software Development Kit at:

http://developer.novell.com/wiki/index.php/SLES_SDK#SUSE_Linux_Enterprise_11_SDK_Release

Installation instructions are provided as part of the download process.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Java JDK Location* on the [Basic Teaming Installation Summary Sheet](#), specify the directory where you install the JDK. The Teaming Installation program prompts you for this location.

Installing the IBM JDK on Open Enterprise Server 2 and SUSE Linux Enterprise Server 10

IBM JDK 5.0 is available with SUSE Linux Enterprise Server (SLES) 10, on which Open Enterprise Server (OES) 2 is based. You can install it using YaST.

- 1 In YaST, click *Software > Software Management*.
- 2 In the *Search* field, type `ibm`, then click *Search*.
- 3 Select *Java 5 SDK, Standard Edition (java-1_5_0-ibm-devel)*, then click *Accept*.
- 4 Click *Continue* to accept the suggested dependencies, then click *No* because you don't need any more packages.
- 5 Exit YaST.

This creates a directory named `/usr/lib/jvm/java-1_5_0-ibm-1.5.0_sr3` with the IBM JDK software in it.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Java JDK Location* on the [Basic Teaming Installation Summary Sheet](#), specify the directory where you install the JDK. The Teaming Installation program prompts you for this location.

A.1.3 Sun JDK on Windows

- 1 Go to the following URL:
[Java SE Downloads \(http://java.sun.com/javase/downloads/index.jsp\)](http://java.sun.com/javase/downloads/index.jsp)
The update you need is listed as “JDK 6 Update *nn*.”
- 2 Click *Download* next to this update.
- 3 In the *Platform* field, select *Windows* or *Windows x64* depending on the processor in your Teaming server.
- 4 Select *I agree...*, then click *Continue* to accept Sun’s License Agreement.
- 5 Click the `jdk-6unn-windows-version.exe` file., then save the file to an empty temporary directory on your Windows server.
- 6 Change to that temporary directory, then run the downloaded executable.
This creates a directory named `c:\Program Files\Java\jdk6unn` with the Sun JDK software in it.
The Sun JDK is now installed on your Windows server.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Java JDK Location* on the [Basic Teaming Installation Summary Sheet](#), specify the directory where you install the JDK. The Teaming Installation program prompts you for this location.

A.2 MySQL Database Server

- ♦ [Section A.2.1, “MySQL on Linux,” on page 141](#)
- ♦ [Section A.2.2, “MySQL on Windows,” on page 143](#)

A.2.1 MySQL on Linux

Depending on the options you select when installing Open Enterprise Server 2 and SUSE Linux Enterprise Server (SLES), the MySQL database server might be installed along with the operating system. Check for the following directory:

```
/usr/bin/mysql
```

If the `/usr/bin/mysql` directory does not exist, you need to install the MySQL database server. If MySQL is already installed, you still need to configure it for use with Teaming.

- ♦ [“Installing MySQL” on page 141](#)
- ♦ [“Configuring MySQL” on page 142](#)
- ♦ [“Learning More about MySQL” on page 142](#)

Installing MySQL

- 1 Make sure you have access to your operating system installation media.
- 2 In YaST, click *Software > Software Management*.
- 3 In the *Search* field, type `mysql`, then click *Search*.

- 4 Select *mysql*, then click *Accept*.
- 5 Click *Continue* to resolve dependencies.
- 6 Click *Continue* to acknowledge package support status.
MySQL is then installed from the SLES media.
- 7 Continue with “[Configuring MySQL](#)” on page 142.

Configuring MySQL

When MySQL is initially installed, it is not configured with an administrator password, nor is it configured to start automatically. Follow the steps below to set up the MySQL database server for use with Teaming:

- 1 In YaST, click *System > System Services*.
- 2 Scroll to and select the MySQL service, then click *Enable*.
- 3 Click *Continue* to install dependencies, then click *OK* to close the status box.
- 4 Click *OK > Yes* to finish the installation, then exit YaST.
- 5 In a terminal window, become the `root` user.
- 6 To verify that the MySQL database server has started, use the following command:

```
ps -eaf | grep mysql
```

You should see MySQL processes running.

- 7 Set the administrator password for the MySQL database server:

```
mysqladmin -u root password new_password
```

This command changes the password for the MySQL `root` user, which is the default administrator username for the MySQL database server. This command is part of the MySQL client package.

IMPORTANT: The MySQL `root` username is not the same as the Linux `root` user. The Linux `root` user has a password established for it when you install Linux. In a parallel fashion, the MySQL `root` user needs to have a password established for it when you install MySQL.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Database Credentials* on the [Basic Teaming Installation Summary Sheet](#), specify the MySQL administrator password. The Teaming Installation program prompts you for this information.

Learning More about MySQL

The following are some basic and useful MySQL commands:

Action	Command
Stop MySQL	<code>/etc/initd/mysql stop</code>
Start MySQL	<code>/etc/initd/mysql start</code>
Show MySQL status	<code>mysqladmin -u root -p extended-status</code>

If you want to administer MySQL using a GUI interface, you can download tools from:

MySQL GUI Tools Downloads (<http://dev.mysql.com/downloads/gui-tools/5.0.html>)

For more information about MySQL, see:

MySQL Documentation (<http://dev.mysql.com/doc>)

A.2.2 MySQL on Windows

- 1 In your Web browser, go to the following URL:
[MySQL 5.1 Downloads \(http://dev.mysql.com/downloads/mysql/5.1.html\)](http://dev.mysql.com/downloads/mysql/5.1.html)
- 2 Scroll down if necessary, then click the type of Windows operating system you are using (32-bit or 64-bit).
- 3 On the *Windows Essentials* line, click *Download*.
- 4 Click *Save File*, browse to and select a convenient temporary directory, then click *Save*.
- 5 In Windows Explorer, browse to the directory where you saved the MySQL .exe file.
- 6 Double-click the MySQL .exe file to start the MySQL Setup Wizard.
- 7 Follow the on-line instructions to install the MySQL software on the Windows server, then continue with configuring the server.
- 8 Unless you are already familiar with configuring MySQL on a Windows server, select *Standard Configuration*, then click *Next*.
- 9 Select *Include Bin Directory in Windows PATH*, then click *Next*.
- 10 Set the MySQL root user password, then click *Next*.

BASIC TEAMING INSTALLATION SUMMARY SHEET

Under *Database Credentials* on the [Basic Teaming Installation Summary Sheet](#), specify the MySQL administrator password. The Teaming Installation program prompts you for this information.

- 11 Click *Execute* to configure the MySQL database server, then click *Finish*.
Some messages report the status of your MySQL installation.
- 12 To monitor the MySQL database server, click *Start > All Programs*, then click *MySQL > MySQL Server 5.1 > MySQL Command Line Client*.

Third-Party Materials

B

- ♦ Section B.1, “ANTLR 3 License,” on page 145
- ♦ Section B.2, “Colt License Agreement,” on page 146
- ♦ Section B.3, “Dom4j License,” on page 146
- ♦ Section B.4, “iCal4j License,” on page 147
- ♦ Section B.5, “ICU4J license (ICU4J 1.3.1 and later),” on page 147
- ♦ Section B.6, “JAXEN License,” on page 148
- ♦ Section B.7, “Jung,” on page 149

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