Getting Started Guide

StarTeam®

Borland®
Excellence Endures™

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Contents

Chapter

1

Introduction

The StarTeam documentation set explains how to use the applications in the product suite. Not all of the applications described in the manuals may be on your system, as this depends on the products your company has licensed and installed.

- *StarTeam Installation Guide*

  Provides step-by-step instructions on installing the products and the system requirements for each product.

- *StarTeam Getting Started Guide*

  Presents an overview of the application and tutorials on configuration management. *Chapter 3* explains how to perform essential administrative functions, such as configuring a server and adding users and groups. *Chapter 4* explains the features most often used by team members in their daily work, such as checking files in and out, sending messages, etc.

- *StarTeam User's Guide*

  Supplies detailed information on using the application to track and manage changes to files, share files among team members, access prior versions of a file, and other functions. Also explains how to use change requests, requirements, topics, and tasks.

- *StarTeam Administrator's Guide*

  Describes the steps required to configure and maintain the Server; create and maintain objects, and manage user access. Includes information on the use of the Server with existing PVCS and Visual SourceSafe files.

- *StarTeam Extensions User's Guide*

  Explains how to design and manage Extensions, such as alternate property editors (APEs). Also covers Workflow Designer and Notification Agent.

- *StarTeamMPX Administrator's Guide*

  Supplies information on the basic operation and architecture of a StarTeamMPX system, including installation and configuration instructions.

- *StarDisk User's Guide*

  Explains the process of installing and using the StarDisk client, a virtual file system that enables you to access files managed by Server from Windows-based applications—such as Microsoft® Windows® Explorer or Netscape®.

Online Documentation

Installing the application also places online versions of the manuals in the Online Documentation folder of the client or the Server. The following table lists the online manuals and their file names. The online manuals you receive depend upon the products your company has licensed and the client you have installed.

Table 1.1 Online Documentation

File Name	StarTeam Manuals
install.pdf	*StarTeam Installation Guide*
start.pdf	*StarTeam Getting Started Guide*
user.pdf	*StarTeam User's Guide*
admin.pdf	*StarTeam Administrator's Guide*
workflow.pdf	*StarTeam Extensions User's Guide*
adminMPX.pdf	*StarTeamMPX Administrator's Guide*
stardisk.pdf	*StarDisk User's Guide* (Windows client only)

Important The online manuals are distributed in Adobe's portable document format. (.pdf) and require version 4.0 or higher of Adobe Acrobat Reader to display them. The installation program for Adobe Acrobat Reader is located in the \Docs folder of the Installation CD. The free reader is also available from the Adobe Web site at www.adobe.com.

Contacting Borland Support

Borland is committed to providing world-class services in the area of consulting and technical support. We have over 15 years of experience in supporting developers and enterprise customers. Our qualified technical support engineers are prepared to handle your support needs on a case-by-case basis or in an ongoing partnership. Borland provides support worldwide, delivering timely, reliable service to ensure every customer's business success.

For more information about Borland's support services, please see our Web site at http://support.borland.com.

From the Web site, you can also access many newsgroups where users exchange information, tips, and techniques. See http://info.borland.com/newsgroups/ for the latest list of free product newsgroups. Also available on the Internet is the Borland Developer Network site at http://community.borland.com. The Borland Community provides access to product specific information, articles, code examples, and news.

When contacting support, be prepared to provide complete information about your environment, the version of the product you are using, and a detailed description of the problem.

For support on third-party tools or documentation, contact the vendor of the tool.

Documentation Conventions

This Guide uses the following documentation conventions:

Select **File > Exit**	Indicates cascading menu commands. In this case, select **File** from the menu bar, then select **Exit** from the drop-down menu.
`Fixed-Space Font`	Identifies information that must be entered; also used for messages from the system.
italics	Indicates manual titles, names of dialogs, and information that should be replaced with the names of your files, child folders, etc.
Bold	Highlights menu names, options, buttons, or fields; also used for new terms or items requiring special attention.
[ ]	Surrounds optional syntax.
|	Separates mutually exclusive choices.

Note Identifies supplemental information.

Tip Identifies information on alternative procedures or other helpful but nonessential information.

Important Identifies information that is essential to the completion of a task.

Caution Identifies actions that may result in loss of data or procedures that must be followed to ensure that data is *not* lost.

Chapter

2

Application Overview

Borland® StarTeam® increases control of the development process by automating configuration and change management. Configuration management is most commonly used for software projects, which require version control, process management, build management, and support for parallel development.

But the capabilities of the application also make it useful for a wide range of other detail-oriented tasks, including technical writing, financial forecasting, legal cases — any work that involves multiple parts and frequent revisions.

In addition to its powerful version control features, the application delivers a flexible, integrated solution that allows you to:

- Track defects and suggested changes to a product or project.
- Create requirements or import them from Borland® CaliberRM®, assigning users to and linking files to specific requirements.
- Create and monitor progress on tasks assigned to team members. This feature can be integrated with Microsoft® Project, if desired.
- Store threaded discussions about decisions made in the project.

Components of the Application

To fully support the development process, the application provides five integrated components — File version control, Change Requests, Requirements, Tasks, Topics, and the Audit log. These components are discussed in the following section.

What Is Version Control?

Version control is simply the management and maintenance of multiple versions of the many items that comprise a project in a reliable, well organized archive that can be easily accessed by team members. Although the term usually refers to the management of files, the application also stores revisions of change requests, requirements, topics, and tasks.

Users can check out a file (usually the most recent revision, which is called the tip version), modify it, and check in a revised version without overwriting the former

version or someone else's work. Each file checked into the application is stored in a special proprietary format that enables multiple revisions to be labeled, maintained, and tracked. Any number of prior revisions of project files may be retained on the server.

The File component streamlines the process of managing project resources by offering:

- Point-and-click access to project working files.
- Version history.
- Easy check-in and check-out features.
- Local file status.
- File locking to prevent collisions between users.
- Revision comparison.
- Command-line access.
- Unlimited file types and numbers.
- Compatibility with many programming environments, such as JBuilder.

What Is a Change Request?

The Change Request component provides a defect tracking system that allows you to record defects in products, projects, or services and suggest possible enhancements.

Like other such systems, this application has search and reporting mechanisms that you can use to monitor the defects that you are assigned to fix or test. However, the Change Request component also enables you to:

- Place change requests in specific folders.
- Link change requests to files, requirements, topics, or other change requests.
- Mark defects as resolved at the same time that you check in files, performing one operation in one application.
- Automatically associate the next build label with the resolved defect, letting testers know exactly what build to test.
- Automatically receive e-mail messages regarding change requests that you may need to fix or verify.

What Is a Requirement?

By using a requirements-driven development processes, companies can prevent consuming, costly misunderstandings and shorten time to market. To accomplish this, you can use StarTeam's built-in Requirement component as your basic tool or import complex requirements from Borland CaliberRM.

Using requirements enables business analysts, managers, developers, QA staff, and others to:

- Organize business, user, and functional requirements in a hierarchical format.
- Indicate the dependencies among requirements.
- See all layers of requirements at all times.
- Prioritize requirements by importance.
- Identify the impact of changes to requirements.
- Use requirements to estimate work.

- Identify the person creating the requirement.
- Notify those who will be responsible for fulfilling the requirements.
- Track the requirement lifecycle from submitted to completed or rejected.
- Provide requirements with a context by linking them to files, change requests, and topics.

What Is a Task?

The Task component allows the creation of task lists and work assignments. It allows team members to indicate who should do what and when, see current task status, estimate hours required to complete a task, record hours spent completing the task, and compare estimated to actual times. Because the application contains both a version control system and a change request system, it also allows tasks to be linked to the files and product defects or suggestions with which they are associated.

The Task component can be used independently or interoperate with data from Microsoft Project. It can display tasks in a tree format, which clearly shows the relationship between tasks and subtasks, or in a list format, which allows tasks to be sorted, grouped, or queried, or specific fields to be selected for display. To improve efficiency, each task displays icons that identify its status, priority, milestone, and need for attention.

What Are Topics?

Topics are threaded conversations — that is, series of messages that indicate how the messages are related. Each series of messages forms a tree with the initial message at its root. The Topic component provides threaded conversations that you can place in specific project folders and link to specific project items. For example, you can link a topic to the change requests and files revisions that result from the topic discussion.

What Is the Audit Log?

A chronological record, the Audit log accumulates data about the actions performed on folders, files, requirements, change requests, tasks, and topics. Each log entry shows the user who carried out the action, the date and time the action was performed, the class name (type of item), the event (type of action), the view name, and the project name. By using filters or queries, you can locate all the entries for a particular item.

For most items, events may be added, branched, comment, created, deleted, modified, moved from, moved to, and shared. For files, events may also include converted, edited, item overwritten, locked, lock broken, and unlocked. Log entries themselves cannot be moved, shared, modified, or branched. If the **Audit** tab of the main window displays no entries, your administrator has probably disabled the Audit log function.

How to Use the *Getting Started Guide*

The *Getting Started Guide* provides brief overviews of this application's east-to-use tools. It also supplies sample exercises to enable administrators and users to learn the activities critical to their work.

- *For Administrators* illustrates how to create and configure a trial server configuration, create a project, create views and labels, add users to a project, and other such tasks.
- *For Users* describes how to perform basic operations, such as starting the application, opening an existing project, creating a folder, adding files, etc.

Borland offers Standard, Enterprise, and Enterprise Advantage tiers of the application, each of which has increased functionality. When your administrator installs the trial server configuration of the application, it will be in evaluation mode and will have all the functionality of the Enterprise Advantage tier. After your company registers the Server and clients, it will have the functionality allowed by your license.

Before the exercises can be completed, an administrator must install the Server (see the *StarTeam Installation Guide*). Then he or she must create a trial server configuration on the computer running the Server.

The trial server configuration contains the StarDraw sample project. Administrators who do not wish to use the StarDraw project can create a custom project designed specifically for their own company. Once a sample project exists, client users can start learning the application.

Note Alternate Properties Editors (APEs) are forms created to manage the workflow of items. Because this guide cannot know the custom APEs and forms your company uses, it teaches you about the application using a set of standard forms. *When you evaluate the application, the APE feature is turned off, by default, so that you can see the standard property dialog boxes for each component.*

For more information on APEs, see the *StarTeam Extensions Guide*.

Chapter

3

For Administrators

Administrators are responsible for setting up and configuring the Server, creating projects, adding users, granting access rights, etc. This chapter presents the basic administrative functions required to start using the Server and the application:

- Creating a server configuration.
- Modifying a server configuration.
- Starting and stopping a server configuration.
- Creating a project.
- Creating project views.
- Creating view labels.
- Using promotion states.
- Customizing item properties.
- Adding users to a project.
- Setting up access rights.
- Viewing the audit log.

Configuring the Server

Your first task as an administrator is to install, configure, and register the Server, as explained in the *StarTeam Installation Guide*.

Next, you must create an instance (known as a server configuration) on the computer on which the Server is installed. A server configuration must be running before you and your team members can access the application and complete the exercises in this *guide*.

A server configuration defines:

- The set of options, including endpoints and encryption levels, used for server access.
- Location of the database that stores project data, the database DSN, and other related information.

- Locations for the repository and repository-related folders.

Creating a Server Configuration

You can create a server configuration by using the Server Administration utility.

Before creating a server configuration, you need to decide upon a unique name for the configuration. This name is case insensitive and cannot contain colons (:), back slashes (\), or forward slashes (/), but can contain blanks or apostrophes (').

You must also set up the database to be used with the server configuration. StarTeam can work with a Microsoft SQL Server or MSDE database, a DB2 database, or an Oracle database. A database can contain only one server configuration; however, other applications can share a database with the application.

The Server places server log files in the location designated as the server configuration's repository path. When you first start a new server configuration, the Server creates the Attachments folder, HiveIndex, and other folders in the same location. These folders are maintained by the Server; do not delete them. Paths to some of these folders can be changed with the *Server Administration* dialog.

The initial hive used for storage of the server configuration's archive files is created along with the server configuration. You must supply an archive path and a cache path to this hive. The default paths are repository_path\DefaultHive\Archives and repository_path\DefaultHive\Cache. If desired, the location of these paths can be changed later by using the *Hive Manager* dialog.

A single server configuration can have several hives, each of which has its own archive and cache path. The hives use the Native-II vault format, an enhancement introduced with StarTeam 2005. This vault format permits larger file revisions, more locations to store archives, and faster, more efficient performance. For information about archive storage in StarTeam 2005 and later versions, see the *StarTeam Installation Guide* and *StarTeam Administrator's Guide*.

To create a server configuration:

1. On the computer that has the Server installed, select **Start > Programs > StarTeam > StarTeam Server x.x > StarTeam Server**. The *Server Administration* dialog appears.
2. Click the **New Server** icon on the toolbar or **Server > New Configuration** on the menu. This action displays the *Create a New Configuration* dialog, on which you define the new configuration.
3. Enter a unique name in the **Configuration name** text box. For example, you might enter `StarDraw`.
4. In the **Repository Path** text box, enter or browse for the location in which the Server will create the server configuration files.
5. Select a database type from the **Database Type** list box. The selections include **Microsoft SQL Server/MSDE, DB2,** and **Oracle**. The database type cannot be changed once the server configuration has been created.
6. Select or deselect the **Create new StarTeam database and ODBC data source**. The default is selected.
7. In the **Initial Hive Settings**, select the **Default** or **Custom** hive option.
8. If you select the **Default** hive, changing the repository path changes the default hive settings. Changing the repository path does not have this effect if you select a **Custom** hive.
9. If you are creating a **Custom** hive, you can override the default hive settings. You can change any of the following fields:
   - **Name:** Unique name for the hive. DefaultName is the default.

- **Archive path**: Path to the hive's Archives directory. The default is <repository_path\DefaultHive\Archives.
- **Cache path**: Path to the hive's Cache directory. The default is <repository_path\DefaultHive\Cache.
- **Maximum cache size**: Maximum number of megabytes of hard disk space that the Cache can use. The default is 20% of the available disk space at the time the option is set.
- **Cache cleanup interval**: Seconds between cache cleanup/refresh operations. The default value is 600. The range is 60 (1 minute) to 3153600 (1 year).
- **Storage limit threshold**: Percentage of total disk space allowed for hive. When this percentage has been reached, no more archives can be added to the hive. - The default is 95% of total disk space.

10 When the information is complete, click **Next**. This action displays the first screen in the *Create a [Database] Data Source* dialog. The information that must be entered varies according to the database selected. The ODBC data source cannot be changed after the server configuration has been created.

For example, a Microsoft SQL Server or MSDE database requires:

- **Host name**
- **Sys Admin (sa) password**
- **ODBC data source name**
- **New database name**
- **New database login name**
- **New database password**
- **Confirm database password**

11 When the information is complete, click **Next**.

a For the database that you have selected, the *Create a [Database] Data Source* dialog re-appears.

1 Review the dialog.

2 If you want to edit the size or location of the data and transaction files, deselect **Use default configuration** and make the changes. For example, Microsoft limits the size of a MSDE database, by license, to 2048 MB. If you require a larger database, you must purchase a license for Microsoft SQL Server.

3 When the information is correct, check **Finish**. A message displays to indicate that the server configuration has been created successfully.

Adding a Server Configuration

After the new server configuration has been created, you must add it to the list of servers in the upper left panel of the *Server Administration* dialog.

1 Click the **Add Server icon on the toolbar** or select **Server > Add Server from the menu.** The *Add Server* dialog appears.

2 Enter an easy-to-remember description (such as StarDraw) in the **Server description** text box. The **Server description** is case-insensitive and should be unique.

3 In the **Server address** text box, indicate where the Server is running by typing either the exact name of the computer on which the Server runs or the correct IP address.

4 If you need to browse for the exact name, click the **Browse** button.

5 Enter the appropriate information in the **TCP/IP Endpoint** text box. The endpoint is the port number.

6 (Optional) Select the **Compress transferred data** check box to compress data transferred between your computer and the server configuration.

7 (Optional) Select an **Encryption** type check box if you want to protect data transferred between your computer and the application Server from being read by unauthorized parties over unsecured network lines.

8 The encryption types are ordered (top to bottom) based on speed. Each encryption type is slower, but safer, than the type above it.

9 Click **OK**. This action redisplays the *System Administration* dialog, which now shows the name of the server.

Starting and Stopping a Server Configuration

The first time you start a new server configuration, the Server initializes the database and creates the default and folders. The initialization process may take a few minutes. When the Server finishes this activity, the **Status** column for the server configuration changes from **New** to **Running**.

To start a server configuration:

1 On the computer where the Server is installed, select **Start > Programs > StarTeam > StarTeam Server x.x > StarTeam Server**. The *Server Administration* dialog appears.

2 Select the server configuration to be started.

3 Click the **Start Local Server** icon or select **Actions > Start Server** from the menu.

4 Depending upon the server configuration selected, one of the following events will occur:

- If the server configuration was created in StarTeam 2005 or later versions or if its files have been fully converted to a Native-II format, the system continues the startup operation.
- If the server configuration has one or more hives defined, but contains files that are still in Native-I format and conversion is turned off, a message box states: "There are files in this server configuration that have not been converted to the Native-II format and conversion is turned off. Would you like conversion turned on?" If you see this message, click Yes or No. The system then continues its startup operation.
- If the server configuration has no associated hives (that is, it is totally in Native-I format), a message box states: "This server configuration has not been converted to the Native-II format. If you start the server now, a default hive will be created because all new files must be placed in a Native-II Vault hive. Click OK to start the server (and use a default hive) or Click Cancel to create your own hive using the Hive Manager." If you click OK, the system creates the hive and then continues its startup operation. If you select Cancel, you will exit to the *Server Administration* dialog, from which you can access the Hive Manager and create a new hive. You can then start the server configuration.

5 After the server configuration completes its startup procedure, the **Status** column changes to **Running**.

To stop a server configuration:

1 Do one of the following:

- From the computer where the Server is installed, select **Start > Programs** > **StarTeam > StarTeam Server x.x** > **StarTeam Server**.

- From the client, select **Start > Programs > StarTeam > StarTeam client_name > Server Administration.**

These actions display the *Server Administration* dialog.

2. Select the server configuration to be stopped.
3. Click the **Shut Down Local Server** icon or select **Actions > Shut Down** from the menu. The system asks you to confirm this decision.
4. Click **OK**.
5. When the **Status** column for the server configuration changes from **Running** to **Ready**, the server configuration is stopped.

Modifying a Server Configuration

When you first start a new server configuration, the Server automatically adds the server configuration options, with their default values, to the database. Be sure to review these options, as you may wish to change the default settings.

To modify a server configuration:

1. Do one of the following:
   - From the computer that has the Server installed, select **Start > Programs > StarTeam > StarTeam Server x.x > StarTeam Server.**
   - From the client, **Select Start > Programs > StarTeam > StarTeam client_name > Server Administration** (available with custom installations only).

   These actions display the *Server Administration* dialog.
2. Select the server configuration, which must be running. If you have not yet logged on, you will be asked to do so.
   a. In the **User name** field, enter `Administrator`.
   b. In the **Password** field, enter `Administrator` (passwords are case-sensitive).
   c. Click **OK**.

   If you are using the client, you can administer remote servers only.
3. On the Sever Administration dialog, do one of the following:
   - Click the **Configure Server** shortcut.
   - Select **Tools > Administration > Configure** server from the menu.

   The *StarTeam Server Configuration* dialog now appears. On this dialog, you can review, add, or change server configuration information. Table 3.1 page 14 describes the options found on each tab of this dialog.
4. When you finish reviewing and modifying the server configuration information, click **OK**.
5. Depending upon the options you modify, the Server may display the following message:

   ```
   Server configuration changed. The server must be restarted for the changes to take effect.
   ```
6. To restart the server configuration:
7. Click **Shut Down Server** icon on the toolbar or **Actions > Shut Down Server** on the menu.
8. Click **t**he **Start Server** icon on the toolbar or **Actions > Start Server** on the menu. (Note: this task cannot be performed from the client.)

Table 3.1 Server Configuration Options

Option	Default	Comments
General Tab		
Server startup log file	..\Repository Path\server.log	Read-only; path specified when creating a new server configuration.
Attachments path	..\Repository Path\ Attachments	Editable path; folder created by the Server.
Logon sequence timeout	60 seconds	Any logon not completed within this amount of time will fail.
Inactivity timeout __ minutes	Off	If option selected and timeout limit set, users who are inactive for a greater period of time will be automatically logged off.
Exclude named users	Disabled	If option selected, system does not log off named users, even if they exceed the specified inactivity timeout limit. Feature is available only when Inactivity Timeout is selected and a time limit set.
Reconnect timeout ___ minutes	30 minutes	Determines the amount of time the client has to reestablish a lost connection with the server.
Enable e-mail support	Off	Allows users to e-mail items to other users from within the application, even when the recipients are not running the application. This feature must be enabled to select the e-mail notifications option. When e-mail support is enabled, an e-mail address must be entered for each user.
SMTP server	Disabled	Required if e-mail enabled.
Port	Disabled	Default SMTP port is 25 if e-mail is enabled.
Audits Tab		
Enable audit generation	On	Audit log data is stored in the server configuration database; if data requires too much space, option can be disabled.
Purge audit entries older than __ days	Off	Automatically removes audit entries older than a specified number of days to minimize the amount of log space required. Default is 90 days, if option is enabled. Number of days can be edited.
Database Tab		
Database type	Disabled	Read only; database type can be set only when server configuration is created.
DSN	Disabled	Read only; item can be set only when server configuration is created.
Pooled connections	10	Increasing the number of pooled connections can improve database throughput. Borland recommends a setting of 20-25 with Microsoft SQL Server.

Table 3.1 Server Configuration Options (continued)

Option	Default	Comments
Native-I Vault Tab (Not available for Native-II Vaults)		
Vault path	..\Repository Path\Vault	Editable path; folder created by the Server.
Disk cache path	..\Repository Path\Vault\ Cache	Editable path; folder created by the Server.
Archive path	..\Repository Path\Vault\ Archive	Editable path; folder created by the Server.
Verify database at startup	Off	Borland recommends verifying the database *only* after restoring a backup or when experiencing database problems.
Attempt automatic recovery	Disabled/Off	Available when Verify database at startup option is selected; if enabled, the verification utility reconciles differences between the server configuration's database and the archive.
Stop server on errors	Disabled/Off	Option that causes the server to stop if the verification utility reports errors; available when Verify database at startup option is selected.
Maximum cache size	100 MB	Borland recommends starting with default size, then editing as required.
Vault file lock time limit	60 seconds	Borland recommends starting with default size, then editing as required.
Cache refresh interval	10 seconds	Borland recommends starting with default size, then editing as required.
Notifications Tab		
Enable e-mail notification	Off	Available when Enable e-mail support is selected, an SMTP server is enabled, and a Port for the SMTP server is specified. If enabled, users are notified when they are assigned the responsibility for a change request, when changes occur in a requirement or task for which they are responsible, and when changes occur in a topic for which they are recipients.
Protocol Tab		
TCP/IP endpoint	49201	Selected during creation of server configuration.
TCP/IP encryption levels	No encryption	Option used to set a minimum encryption level for data transferred via TCP/IP; use **Add**, **Remove**, and **Modify** buttons to add additional encryption levels.
Event Handlers Tab		
Event handler	None	Option allows entry or selection of event handler program.
Event handler description	On	Option allows description of selected event handler program.

Table 3.1 Server Configuration Options (continued)

Option	Default	Comments
Directory Service Tab		
Enable directory service support	Off	Uses existing directory service to validate user logon IDs and passwords. For each user to be validated against the directory server, the Validate with directory service option must be selected on the *New User Properties* or *User Properties* dialog and a Distinguished Name entered. The Server must also be on a trusted domain in relation to the directory server.
Host	None	Required field; alphanumeric value of up to 254 characters. For Active Directory, enter Host name, IP address, or domain name of the directory server. If a domain name is used, the Server contacts the first active copy of Active Directory in the domain that uses the specified port. For OpenLDAP, enter Host name or IP address of directory server.
Port	636 (secure port)	Port number used by the directory server. Default is the secure port 636, the encrypted port for the Active Directory.
Use a secure port	On	Indicates whether the port is secure (default) or non-secure
Diagnostics Tab		
Trace operations that take at least ___ milliseconds	0 milliseconds	Creates a .trc file that allows commands to be traced. Commands are traced if they have a duration time that equals or exceeds the specified number of milliseconds. If 0 (the default) is used, all commands will be traced.
Unexpected conditions	Off	Creates a diagnostic (.dmp) file for asserts (server log entries with code #8).
Errors	Off	Creates a diagnostic (.dmp) file for exceptions (server log entries with code #4).

Creating a Project

The remaining exercises can be done from your computer workstation after you have installed and registered the server and client. (See the *StarTeam Installation Guide* if you need instructions.

In these exercises, you will add access to the new server configuration in the client, create a project, add users and groups to the project, and learn more about specific application features.

What Is a Project?

Essentially, a project is a way to group and manage related items hierarchically in a set of folders. Creating a project allows you to put files under version control, set requirements, track change requests, manage tasks, audit user actions, and discuss the project. More than one project can be created on the same server configuration.

Each project has at least one view, called the initial or root view. For example, a project for a software product might include files on the product's functional specifications, marketing requirements, source code, and test suites, all stored in separate folders in the initial view. As the product progresses from one release to another, additional

views of these folders can be created. One view could represent the 1.0 version of the product, while a second view represents the 2.0 version, and so on.

Before Creating a Project

Usually projects are based on a folder hierarchy located on your computer or in your personal directory on a shared file server. However, the project does not have to exactly match your working folder and its child folders. For example, you may omit child folders in the working folder from a project or copy only specific child folders in an existing project to the working folder.

When you add or check in files, the application copies the files from the working folder into the repository. When you check files out, the application copies the files from the repository into the working folder.

Caution Before performing the following exercises, create a new folder hierarchy on your computer by copying and renaming a folder and some files within that folder. Carrying out this important step allows you to safely experiment with the features of the application.

Creating a Project

You can create a project on any server configuration if you have the rights required to create a project in that location. When creating a project, you must enter a project name and specify the location of the working folder. The initial view of the project and the root folder are both created in the application at the same time as the project. By default, they receive the same names as the project, but you can change the names later, if you wish.

In this exercise, you create a project by dragging folders from your computer to the application and using the *New Project* wizard. If the server configuration has not yet been added to your client, you can do so as part of this exercise.

To create a project:

1. Create a folder named DemoExercise on your computer, and place several files in it.
2. Select **Start** > **Programs** > **StarTeam** > **StarTeam client_name**.
3. Drag the DemoExercise folder from your computer to the main window. The *New Project Wizard* appears.
4. If you have previously added the server configuration to your computer workstation, go directly to Step 5.

   If you have not yet added the desired server configuration to your computer workstation, click **Add Server**. This action displays the *Add Server* dialog.

   On the dialog:

   a. Enter `StarDraw` in the **Server Description** text box. (The StarDraw server configuration contains the StarDraw sample project, which will be used in later exercises.) The server name must be unique. It is case insensitive and cannot contain colons (:), front slashes (/), or back slashes (\), but can contain blanks or apostrophes.

   b. In the **Server Address** text box, enter the exact machine name or IP address. If you need to browse for the exact name, click the **Browse** button.

   c. Enter the endpoint in the **TCP/IP Endpoint** text box. The endpoint is the port number.

   d. (Optional) Select the **Compress Transferred Data** check box to compress data transferred between your computer and the server configuration.

e (Optional) Select an **Encryption** type check box if you want to protect data transferred between your computer and the server configuration from being read by unauthorized parties over unsecured network lines.

The encryption types are ordered (top to bottom) based on speed. Each encryption type is slower, but safer, than the type above it.

f Click **OK**. The *New Project Wizard* reopens.

5 Select the server configuration from the server list box, and click **Next** to continue. The *Log On to [server: port]* dialog appears.

6 Enter `Administrator` as the **User Name** and `Administrator` as the **Password**. The *New Project Wizard: Project Name* dialog appears.

7 Enter a name in the **Project Name** text box. If you have used the drag-and-drop method to create the project, the project name defaults to the name of the folder that was dropped.

8 Enter a description in the **Project Description** text box.

9 Click **Next** to continue. The *New Project Wizard: Working Folder* dialog appears. The working folder name defaults to that of the folder you dropped into the application. Do not change it because you will be adding files from this location.

10 Click **Next**. The *New Project Wizard: Child Folders* dialog appears.

11 If the working folder has child folders, this dialog allows you to select them and click **Exclude** to omit them from the folder hierarchy. To re-list excluded folders, click **Reset**.

12 To complete the project, click **Finish**. The application will then display the initial view in a project window.

After Creating a Project

After you create a project, the title bar of the window shows, in order, the server, the project view, the root folder, and the working folder. The left pane of the application window displays the folder hierarchy visible in the initial view of the project.

In the window below, **DemoExercise** is the root folder.

At this point, the files in your project have the status **Not In View** because they have not yet been added to the application from your working folder.

If you select a specific file on the upper pane, the **Details** tab in the lower pane shows information about that file, such as its name, status, revision, time stamp, and size.

When you use the application in your daily work, you may want to use the file filter drop-down list (in the tool bar) to display particular groups of files, such as Files to Check Out, Files to Check In, etc.

Adding Files to a Project View

When you first display a project view, the files for the project have the status **Not In View**. **Not In View** means that the files reside in your working folder but have not yet been added to the application — that is, they are not under version control.

Files must be added to the project view so that all team members can access them and so that past revisions are available when needed.

Although you can add files to a project view one folder at a time, the following exercise shows how to add all of the files in the project folders in one action.

To add all files to a project:

1. Select the root folder from the folder hierarchy in the left pane. It is the folder at the top of the list.
2. Make sure the **File** tab is selected from the upper pane.
3. If the folder contains child folders, click **All Descendants** on the toolbar.
4. Click the button in front of the **Status: Not In View** grouping bar to display the files.
5. Choose **Select > Select All** from the File or context menu to highlight all the files.
6. Do one of the following:
   - Select **Add Files** from the File or context menu.
   - Click the **All Files** button on the toolbar.

   Either of these actions displays the *Add Files* dialog.
7. (Optional but recommended) Do one of the following:
   - Enter a generic description for all files in the **File description** text box.
   - Select the **Prompt for description for each file** check box to enter a separate description for each file.
8. From the **Lock status** group box, select an appropriate option button. Use **Exclusive** or **Non-exclusive** to lock the files in your name or select the **Unlocked** option button to leave the files unlocked at this time.

   Your lock choice lets other team members know whether you are working on the files. An exclusive lock means you intend to change the files.
9. **Delete working files** removes the associated files from your workstation, while clearing this box to retain these files in your working folder. In this exercise, do not delete the files.
10. If your company enforces a system of process rules, source code and content changes can be made only to meet clearly defined and approved objectives. All files that are added must be linked to specific process items (change requests, requirements, or tasks.

    To associate the new files with specific process items, select the **Link and pin process item** check box.

    a. If an active process item has been selected and appears in the **Item** box, this action accepts it.

    b. If no process item has been selected, or you wish to choose a different process item:

       1. Click the **Select** button to open the *Select Process Item* dialog.
       2. Select either the **List all permitted items** or **List all permitted items assigned to me** option button.
       3. Select the **Change Request**, **Requirement**, or **Task** tab.
       4. Select a specific item as the active process item.
       5. Click **OK** to return to the *Add Files* dialog.
11. If work on the active process item is now complete, select the **Mark selected process item as fixed/finished/complete** check box.
12. Select a label from the **Revision label** drop-down combo box or create a new revision label by entering its name. Adding or creating a label is useful if you plan to retrieve these files as a group later or if you will need this specific revision of the files.
13. If you are using the Windows client, click **OK** to add the files.

14 If you are using the Cross-Platform client, you have additional options that may be useful. To access these options:

   a Click **Advanced**. This action displays the *Advanced Options* dialog. Although none of the options on this dialog are required, they are useful in specific situations.

   b Select the **Perform EOL conversion (CR-LF)** check box to control the EOL character that is stored with the files. The default setting for this check box is based on the EOL setting on the **General Tab** of your Personal Options.

   c Select the appropriate **File Encoding** from the drop-down list box.

   d Click **OK** to return to the Add Files dialog.

   e Click **OK** to add the files.

Adding the files re-displays the project view window. The status of the files changes from **Not In View** to **Current**, which means that the files belong to the current project view, that they are under version control, and that the copies in the working folder are the same as the tip (latest) revisions in the repository.

Creating Additional Project Views

When you create a project, an initial view of that project is also created by default. The initial view has the same name as the project. So does its root folder — although you can change any of these names later. The initial view is always read/write. Additional views can be any of a variety of types.

You can use project views to limit the portion of the project that team members see. For example, developers might need to see only the project's source code folder and its child folders; marketing personnel might need to see only the marketing folder and its child folders; and so on. Each view can have a different folder as its root.

Views also support branching and parallel development. For example, you can branch the files and other data in a new view, then start on the 2.0 version of a product without hampering the creation of service packs for the 1.0 version.

Every time you open a project, you also select a view. The default view for a project typically contains the configuration that is used for primary development. Additional views can be based upon this view and can behave differently.

Views typically have names such as Baseline, 5 Maintenance, Special 5 for Australia, and 5.0 New Development. They represent configurations of items and support different development baselines of the same code base. If desired, views can be compared and merged. For example, you might want eventually to merge files from 5 Maintenance and 5.0 New Development into the Baseline view.

The application allows many different types of views to be created, including:

- Dynamic project views.

  These views immediately show all source code and document changes in your project. The initial project view belongs to this category.

- Reference views of a subset of items in the parent view.

  These views refer to some, but not all, of the items in the parent view, and the items they contain are writable. If an item in a view of this type changes, it also changes in the parent view from which it was derived. If an item in the parent view changes, the comparable item in the reference group will also change. These views often contain items of interest to only a portion of the project team, such as developers.

- Reference views based on a specific state of the parent view.

  Read-only reference views of all items in the parent view are created so that the revisions of items used in product releases can be easily located. For example, the

4.1 Release view might be used to rebuild 4.1 in the future or to allow a company that wants to purchase your source code to review the code.

- Branching views based on a specific state of the parent view.

  A branching view can be used to modify the items found in a specific view state without affecting the main development. Branching views are often created when establishing and maintaining a maintenance baseline.

- Branching views not derived from an existing view.

  A blank branching view starts with no files and no child folders. Even though a parent is selected for it, and it appears in the view hierarchy, it is not derived from an existing view. Folders and items are usually added to, moved to, or shared with this view.

Views can be reconfigured to show the items as they existed in the view at an earlier point in time or based on a view label or associated promotion state. You can rollback a view using the **Select Configuration** command on the View menu, but a rollback view is read-only. It shows a precise state of the items and does not permit changes to them.

Creating Branching Views

The following exercise creates a branching view. For more information on creating views, see "Using Views" in the *StarTeam Administrator's Guide*.

Branching views are derived from existing views. However, not every folder (or even every item in a folder) in a branching view must branch. Also, branching does not occur unless an item changes while it is set to branch on change.

You can use a branching view to:

- Create a branch of your baseline that meets different needs than your main line of development. For example, you might create a maintenance release or a custom version of your product.
- Start development on the next release of your product using some or all of the files from the previous release.
- Keep an area of your project private until it has been completed and tested. Then you can merge the changes into the main line of development.

To create a branching view:

1. In the DemoExercise project, select **View > Select View**. Then select the initial view (DemoExercise), which appears at the top of the list. This view will be the parent of your new view.
2. On the View or context menu, select **New**. The *New View Wizard* appears.
3. In the drop-down **View type** box, select **Branch all** so that all items in the new view are set to branch on change.
4. Enter `CustomRelease1` for the **View name** and `Branching view` in the **View description** text box.
5. Click **Next**. The *New View Wizard: Root Folder* dialog appears.
6. From the tree, select the root folder for this view. If you are branching the entire parent view, you must use the root folder for the parent view. Then click **Next**. The *New View Wizard: Working Folder* dialog appears.
7. When creating a branching view, Borland recommends that you select a different working folder from that of the parent view.

   If you do not change the working folder, a warning message asks you to confirm that decision before going on to the next dialog. If the folder name you enter does not yet exist, the application creates it for you.

In this example, enter `C:\DemoExercise\CustomRelease1` as your working folder. Then click **Next**. The *New View Wizard: Configuration* dialog appears.

8 Select the **Floating configuration** option button.

All the items in the new child view will be identical to the corresponding items in the parent view. Changes to an item in the parent view will be visible in the child view until that item branches. Likewise, changes to an item in the child view will be reflected in the parent view until the item branches.

9 Click **Finish**.

The new child view appears in a project view window in the application. If you have selected a new working folder, all the files will have the status **Missing** because they have not yet been checked out to the new working folder.

Creating View Labels

A view label is a snapshot of the entire contents of a view — that is, a specific configuration of the file revisions and other items in the view — at a given point in time. When you roll back the view to that label, you see the items in the view at that time (unless subsequent adjustments have been made to the label).

You can create a view label for the current configuration or for a time in the past. In either case, it is attached to the latest revision of every folder, file, change request, requirement, task, or topic that belongs to the view at the specified time.

A view label can also be created as a copy of an existing view label, including a label that is currently attached to a promotion state. In these cases, the new label is attached to exactly the same items and revisions as the original view label.

Unless a view label has been frozen, you can adjust it to reflect last-minute changes made to a product build. For example, a couple of files may not have been checked in before the creation of the label but need to be included in the build. To include or exclude folders and items from the view, you simply attach or detach the view label from them. You can also move a view label from one revision of a folder or item to another.

When you create a view label, all the files in the view will be associated with the specified label. Therefore, you can rollback the view to the label and see the files. You can also use view labels with promotion states to let testers know what build to test when verifying change requests. For more details, see “Using Labels,” in the *StarTeam User’s Guide*.

To create a new view label:

1 On the View or context menu, click **Labels**. In the *Labels* dialog, the **View** tab should already be selected.

2 Click **New** to create a new label and add its name to the list box. The *View Label* dialog appears.

3 Enter `Build 01` in the **Label name** text box and a description in the **Label description** text box.

The maximum label name length is 64 characters and the description length is 254 characters.

4 Select the **Current configuration** option button to attach the label to the most recent revision of every item in this view.

5 Select the **Use as build label** check box to update each change request that has **Next Build** as the setting for its **Addressed in build** property. If this option is not selected, change requests will still be attached to the Build 01 label, but will retain the Next Build setting of the **Addressed in build** property.

6 Ensure that the **Frozen** check box is cleared. (Selecting the **Frozen** check box prevents the revisions attached to a label from being changed.)

7 Click **OK** to return to the *Labels* dialog.

8 Repeat steps 2 through 7 to enter the label `Build 02`. `This` label will be used in a later exercise.

9 Click **Close**.

Note All the computers that run application clients and the Server should have their dates and times synchronized. For example, suppose that a computer running the client is ten minutes ahead of the computer running the Server. When you select the current time in the **Configuration** box on the client computer, the label will not show up in the view for ten minutes because, as far as the server configuration knows, the label is not yet visible.

Using Promotion States

In the application, promotion states are generally defined by view labels. View labels are assigned to a promotion state when the files associated with the label meet the criteria required by the state. When appropriate, a view label can be reassigned to another promotion state.

As an administrator, you can create promotion states that allow users to work on files and other items at a specific stages of the development cycle. For example, you can create Development, Test, and Release promotion states.

Promotion states are often defined to build project views for various team roles. For example, developers often need to work on the latest or tip revisions, so the Development promotion state can be created with the <current> view label assigned to it.

Note Usually, each view label assigned to a promotion state is also a build label so that the labels can be used as properties in change requests.

Before you create promotion states, you need to decide:

- The number of states you need.
- The names you want to assign to the states.
- The view labels you want to initially associate with the states.

For this exercise, you will create three promotion states: Development, Test, and Release, and assign them to the view labels created in the previous exercise or use **<current>** instead of a view label.

To create promotion states:

1 Select **View** > **Promotion**. The *Promotion* dialog appears.

Create the promotion states from last to first. For example, if the file goes through the Development state first, then Test, and then Release, the states should appear in the *Promotion* dialog in reverse order: **Release**, **Test**, and then **Development**.

If you create the states in the wrong order, rearrange them by using the **Move Up** and **Move Down** buttons.

2 Click **Add**. The *Promotion State* dialog appears.

3 Enter `Release` in the **Name** text box.

4 Enter a description of the state in the **Description** text box.

5 Select **<current>** from the **View Label** drop-down list box, assuming that nothing is ready for release as yet.

6 Click **OK** to return to the *Promotion* dialog.

7 Click **Add**. The *Promotion State* dialog appears again.

8 Enter `Test` in the **Name** text box.

9 Enter a description of the state in the **Description** text box.

10 Assuming that Build 01 of the product is to be tested, select **Build 01** from the **View Label** drop-down list box.

The existing view labels are listed in reverse chronological order, based on the time they were created. When appropriate, you can change this label by using this dialog or promote it to the next state.

11 Click **OK** to return to the *Promotion* dialog.

12 Click **Add**. The *Promotion State* dialog appears again.

13 Enter `Development` in the **Name** text box.

14 Enter a description of the state in the **Description** text box.

15 Select **<current>** from the **View Label** drop-down list box. This assumes that developers are always working on the very latest file revisions, the tip revisions. In this scenario, an existing view label would never be assigned to the Development state.

16 Click **OK** to return to the *Promotion* dialog.

17 If the promotion states are not listed from the last state to the first state, select the states one at a time and use the **Move Up** and **Move Down** buttons to correct the order.

18 Click **OK**.

Promoting a View Label to the Next State

You can promote a view label from one state to the next. For example, suppose Build 01, the view label assigned to the Test promotion state, is now ready for external release to a few selected users, and Build 02 is ready for testing. This exercise shows you how to promote Build 01 to the Release promotion state and assign the Build 02 view label to the Test promotion state.

To promote a view label from one state to the next:

1 Select **View** > **Promotion**. The *Promotion* dialog displays any states currently created for this view. The states are displayed from last to first (final state down to initial state).

2 Select **Test**, the state currently associated with the view label you want to promote.

3 Click **Promote**. The *Promote View Label* dialog indicates that the view label is now associated with the next state (the state immediately above it in the *Promotion* dialog).

4 Verify that the information is what you were expecting to see, then click **OK** to return to the *Promotion* dialog.

Notice that Build 01 is now the view label associated with both the Release and the Test promotion states.

Because the Development state is assigned to the **<current>** view in this scenario, you cannot simply promote **Test** to **Build 02**, but must first edit its properties.

5 Select **Test**, if it is not already selected.

6 Click **Edit**. The *Promotion State* dialog appears again.

7 Select **Build 02** from the **View Label** drop-down list box.

8 Verify that Test is now Build 02.

9 Click **OK** to return to the *Promotion* dialog.

10 Click **OK** to exit the *Promotion* dialog.

Customizing Item Properties

Enterprise and Enterprise Advantage customers can customize the repository by adding properties to files, change requests, requirements, topics, and tasks. For example, if your company tracks change requests from a number of sites, you might add a **User Site** field to indicate the site at which a particular defect was detected.

New property fields can be any of the following types: real, enumerated, integer, text, date/time, or user ID. See the *StarTeam Administrator's Guide* for more information.

Important When you customize the database, the Server should be brought up on another port and used only by the user who is creating the custom fields.

You can also change certain existing properties — for example, the **Priority** change request property. On the **Synopsis** tab of the *Change Request Properties* dialog, **Priority** has the values **Yes** and **No**, but it is implemented as an enumerated type. If your company would prefer to prioritize change requests on a scale from **1** (low) to **4** (high), you can edit the values for **Priority**.

New and changed properties can also be translated into languages besides the default language, for your company's use in other countries. These properties appear on the *File*, *Change Request*, *Requirement*, *Task*, or *Topic Properties* dialogs. New properties may also appear on the **Custom** tab.

Changing a Property Field

The following exercise illustrates how to alter the **Priority** change request field from **Yes/No** to levels **1**-**4** and how to include a level for **Not Prioritized**.

To modify the **Priority** change request property:

1 Select the **Change Request** tab from the upper pane.

2 Select **Change Request** > **Advanced** > **Customize** from the menu. The *Customize* dialog lists the fields that can be customized.

Depending upon the customized fields that have already been created for change requests, you may see some or all of the following icons.

- A field with a pencil in the center of the icon is an application field. It is always an enumerated type and is fully customizable. You can add, disable, rename, or reorder the enumerated type's values.
- A new field icon displays the head and shoulders of a person. It can be one of several types and is fully customizable.

  If the new field is disabled, the icon is greyed-out.
- An application field with an icon containing a small yellow lock in the lower left corner is a restricted enumerated type. For these fields, you can change only the names the application displays for the enumerated type values. The reason is that these fields usually have workflow characteristics that cannot be altered. For example, consider the change request field **Status**. The value of this field affects how the change request is processed and what its next value can be.

3 Select the **Priority** field from the list.

4 Click **Edit**. The *Modify Field* dialog appears.

5 Select the enumerated value **No**.

6 Click **Edit**. The *Edit Value* dialog appears.

7 Change the name from **No** to **Not Prioritized**.

8 Click **OK** to return to the *Modify Field* dialog.

9 Select the enumerated value named **Yes**.

10 Click **Edit**. The *Edit Value* dialog appears.

11 Change the name from **Yes** to **1**.

12 Click **OK** to return to the *Modify Field* dialog.

13 Click **Add**. The *Add Value* dialog appears. The application reserves the numeric codes from 0 to 100, so this dialog shows a default value of 101. For this exercise, do not change the default.

The **Code** field automatically increments the numeric code. The numeric code is used when you perform queries. In a query, the relational operators apply to enumerated types.

14 Enter **2** in the **Name** text box.

15 Click **OK** to return to the *Modify Field* dialog.

16 Repeat steps 12 through 14 to add names **3** and **4** to the list of enumerated values.

17 Make sure that **Not Prioritized** is the default by selecting it from the **Default value** list box.

18 Click **OK** to return to the *Customize* dialog.

19 Click **Close**. You can verify the customized properties by selecting **Change Request** > **New**. The **Priority** drop-down list box displays **1- 4** and **Not Prioritized**.

Translating a Custom Field

In the application, custom field display names and enumerated property display names can be translated.

To translate a customized property:

1 Click on a component tab.

2 From the component menu item, select **Advanced > Customize**. This displays the *Customize* dialog, which displays custom properties created for that component and existing properties of the component that can be customized.

3 From the *Customize* dialog, do one of the following:

a Click **Add**, and create a custom field. Then select **Translate** from the *Add Field* dialog.

b Select an existing custom field, and click **Edit** to display the *Modify Field* dialog. Then click **Translate**.

Either of these actions displays the *Translate* dialog. In this dialog, the **Language** group box shows the languages that are currently selected.

4 To choose additional languages, click **Add** in the **Language** group box. This action displays the *Add Language* dialog, which presents the complete list of languages from which you can select. The **User Defined** text box is not currently enabled.

5 After selecting one or more languages, click **OK**. This action redisplays the *Translate* dialog. The **Language** drop-down list box now includes the languages you have selected.

6 From the **Language** drop-down list box, select a specific language.

7. In the **Translated display name** text box, enter the translated name to be used for the custom field.
8. Next, double click one of the **Enumerated values** for that field, or select a value and click **Edit**. Either of these actions displays the *Translate Enumerated Value* dialog. This dialog shows the code and default (original) name for the enumerated value.
9. Enter the translated name of the value in the **Translated text** box.
10. Click **OK** to return to the *Translate* dialog.
11. Repeat steps 8-10 for each value of the custom field until all values have been translated.
12. To translate the field into a different language, select another language from the **Language** list box, and repeat steps 7-11.
13. Click **OK** when the translation process is complete.

Adding Groups

As an administrator, it is your responsibility to add groups of users and individual users to the system so that they may log onto the server configuration and use the project views that have been created.

Groups of users can be assigned a set of privileges (access rights) that apply to all the members of that group. In the following exercise, you add two groups to the application. However, at this time, you will not grant any privileges to these groups.

The following information is required to create groups:

- Your administrative name (**Administrator**) and case-sensitive password (**Administrator**).
- A name for each group (in this case, Technical Writers and Casual Users).

Groups can be created:

- From a computer on which the application is running, using the method described in this exercise.
- From the computer on which the Server is running, using the Server Administration utility.

To create a group:

1. Do one of the following:
   - From the computer that has the Server installed, select **Start > Programs > StarTeam > StarTeam Server x.x > StarTeam Server.**
   - From the client, **Select Start > Programs > StarTeam > StarTeam client_name > Server Administration** (available with custom installations only).

   These actions display the *Server Administration* dialog.
2. Select the server configuration, which must be running. If you have not yet logged on, you will be asked to do so. If you are using the client, you can administer remote servers only.
3. On the *Server Administration* dialog, do one of the following:
   - Click the **User Manager** shortcut.
   - Select **Tools > Accounts > User Manager** server from the menu.
4. Select the **All Users** group from the **Groups** tree to be the parent of the new group. Borland recommends that each new group be a child of the **All Users** group or one of its child groups.

5 Click **New Group**. The *New Group Properties* dialog appears.

6 Enter `Technical Writers` as a group name in the **Name** text box.

7 Enter a description of the group in the **Description** text box.

8 Click **OK**. The group you added appears in the Groups list located on the *User Manager* dialog.

9 Repeat steps 3 through 8 to create the Casual Users group.

Adding Users

You can add users at any time, as long as you have the required security access rights. Normally, a user is added to the **All Users** group and then moved to one or more additional groups, such as Developers or Testers.

Caution If you are the only person with administrative privileges and become locked out, you cannot unlock your own account. Therefore, except when you complete these exercises, you should always grant administrative privileges to more than one user. If you really are the only administrator, be sure to create more than one account for yourself.

Normally, you need the following information to add new users:

- Full names of the users.
- User e-mail addresses (if you want to use e-mail and e-mail notification in the application).
- User logon names and passwords, unless you start each user with a generic password.
- (Optional) Times at which each user will be allowed to access the server configuration.

For this exercise we will add only three users: Robert Frost, Abigail Adams, and Pablo Picasso.

To add users:

1 Do one of the following:

   - From the computer that has the Server installed, select **Start > Programs > StarTeam > StarTeam Server x.x > StarTeam Server.**
   - From the client, **Select Start > Programs > StarTeam > StarTeam client_name > Server Administration** (available with custom installations only).

   These actions display the *Server Administration* dialog.

2 Select the StarDraw server. If you have not yet logged on, you will be asked to do so. If you are using the client, you can administer remote servers only.

3 On the *Server Administration* dialog, do one of the following:

   - Click the **User Manager** shortcut.
   - Select **Tools > Accounts > User Manager** server from the menu.

4 Select the **All Users** group from the **Groups** tree. All users must be members of this group.

5 Click **New User**. The *New User Properties* dialog appears.

6 Enter `Robert Frost` in the **Full name** text box.

7 Enter your own e-mail address in the **E-mail** text box.

8 (Optional) Complete the remaining informational text boxes.

9. Select the **Logon** tab and enter `RFrost` as the **User name**.
10. To validate the user against the server:
    a. Select the Validate through **StarTeam Server** button.
    b. Type `password` in the **Password** text box and again in the **Confirm** text box. Asterisks appear instead of the password itself.
11. To validate the user against the directory server:
    a. Select the **Validate through directory service** button.
    b. Enter the **Distinguished Name** for the user. An alphanumeric value of up to 254 characters, this value is used to uniquely identify a directory services user.

       Note: No users can be validated against the directory server until the Enable directory service option has been selected on the **Directory Service** tab of the *Server configuration* dialog and the location and port number of the directory server entered. The Server must also be on a trusted domain in relation to the directory server.
12. Click **OK.** The user's name will then be added to the database and the *User Manager* dialog will re-display.
13. Repeat steps 4 through 11 for Abigail Adams (User name `AAdams`) and for Pablo Picasso (User name `PPicasso`).
14. Clear the **Show Users In All Descendant Groups** check box at the bottom of the *User Manager* dialog.
15. Use *Ctrl + drag* to add **Robert Frost** to the **Developers** group. (Windows client only) When the application displays the **Share Users?** message, click **Yes**.
16. Follow the procedure described in step 14 to add Abigail Adams to the **Testers** group and Pablo Picasso to the **Casual Users** group.
17. In the *User Manager* dialog, click the Developers, Testers, or Casual Members group to display the list of users. Each group will contain the names of the new users.

Setting Access Rights

By setting access rights in the application, administrators can control who can see and perform operations on projects, views, or folders and the items they contain. Access rights can also be set for the File, Change Request, Requirement, Task, and Topic components and the filters and queries used with these components.

Object ownership or group privileges can override access rights, depending upon the settings you select on the **Access Rights** tab of the **System Policy** button in the *Server Administration* dialog. For additional information on these security features, see the *StarTeam Administrator's Guide*.

The following exercise uses the StarDraw sample project to illustrate how to set project-level access rights for groups in the application. The Cross-Platform client has the same functionality, but a few differences in appearance.

Project-level access rights apply to all views, folders, and items within the project. In a limited number of situations, you will want to set access rights at the view or folder level to specify which users can access a specific view or folder and the items it contains (such as company personnel files). Access rights set at lower levels take precedence over those set at higher levels. For example, if you set folder-level access rights for files, those rights override any access rights set at the view or project level.

Important It is critically important to define a complete set of project-level access rights for all groups with view rights to a project. By default, groups with view rights have complete

access to categories that have no rights defined. Therefore, Borland recommends that you specify access rights across all project categories for all groups.

When you grant project-level access rights, the application automatically assigns them to the currently displayed project.

To grant project-level access rights to the StarDraw project:

1. Open the StarDraw sample project, if you have not already done so. To open it, select **Project > Open > StarDraw > StarDraw** and click **Finish**.
2. Select **Project** > **Access Rights** from the menu bar. The *Project (Project_Name) Access Rights* dialog appears. In the **Categories** panel at the left, the **Project** option is selected by default.

   The middle panel shows that no groups or users have been granted access rights to the project. The panel on the right shows a tree containing the access rights that can be assigned for projects. To see these rights in detail, click the plus buttons.
3. To add a user or group, click **Add. This action displays the** *Assign Access Rights to* dialog.
4. Select **Administrators** from the **Groups** list box.
5. Make sure the **Grant** option button is selected.
6. Click **OK** to return to the *Project (Project_Name) Access Rights* dialog.
7. Click **Select All** to grant the Administrators group complete access to this project.

   It is advisable to grant the Administrators group all access rights because the server configuration may be set to ignore group privileges.
8. Click **Apply** to assign these rights.
9. To add another user or group, click **Add. This action displays the Assign Access Rights to dialog**.
10. Select **Developers** from the **Groups** list box.
11. Make sure the **Grant** option button is selected.
12. Click **OK** to return to the *Project (Project_Name) Access Rights* dialog.
13. In the panel on the right, expand the **Generic access rights** tree. Developers need to see the project and modify its properties, but generally should not be allowed to delete the project or change its security settings. Select the correct check boxes for these rights.
14. Click **Apply** to assign these rights.
15. To add another user or group, click **Add**. This action displays the Assign Access Rights to dialog.
16. Following the procedure outlined in steps 9-13, grant the Testers group the right to **See project and its properties**. No other rights are required.

Next, you will establish access rights for views at the project level. These rights apply to all views that currently exist and to all views that will be created in the future for the project.

To set access rights for views at the project level:

1. If the *Project (Project_Name) Access Rights* dialog is not displayed, select **Project** > **Access Rights** from the menu bar.
2. In the **Categories** list at the left, select the **View** option. The panel on the right then displays a tree containing the access rights that can be assigned to views.To see these rights in detail, click the plus buttons.
3. To add a user or group, click **Add**. The **Assign Access Rights to** dialog box appears.

4. Select **Administrators** from the **Groups** list box.
5. Make sure the **Grant** option button is selected.
6. Click **OK** to return to the *Project (Project_Name) Access Rights* dialog.
7. In the right-hand panel, click **Select All** to grant the Administrators group complete access to views.
8. Click **Apply** to assign these rights.
9. To add another user or group, click **Add**. This action displays the *Assign Access Rights to* dialog.
10. Select **Developers** from the **Groups** list box.
11. Make sure the **Grant** option button is selected.
12. Click **OK** to return to the *Project (Project_Name) Access Rights* dialog.
13. In the panel on the right, expand **Generic Object Rights** and **View Specific Rights**.
14. Grant Developers the rights to see and modify view properties and perform operations on labels. They should not be permitted to create or delete views, change view access rights, delete revision labels, define the promotion model, etc.
15. Click **Apply** to assign these rights.
16. To add another user or group, click **Add**. This action displays the **Access Rights** dialog.
17. Following the procedure outlined in steps 10-15, grant the Testers group the same rights as the Developers group.

As these exercises show, granting access rights requires four basic steps:

1. Select the level on which you are setting the access rights.
   - For projects, select **Project > Access Rights** to display the *Project (Project_Name) Access Rights* dialog.
   - For views, select **View > Access Rights** to display the **View (View_Name) Access Rights** dialog.
   - For a specific folder, select the folder, then click **Folders > Advanced > Access Rights** to display the *Folder (Folder_Name) Access Rights* dialog.
2. Choose the **Category** item in the left pane for which you are establishing the rights. The **Categories** listed differ slightly, depending on whether you are setting project-, view-, or folder-level rights.
3. Select the user or group for whom you are setting rights.
4. Check the rights to be granted to the user or group.

Using this method and following the recommendations below, set rights to the remaining project-level **Categories** for the Administrators, Developers, and Testers groups.

For the **Promotion State** category:

- At most companies, these rights should be granted only to the group that generates the product builds. Grant these rights accordingly.

For the **Child Folders** category:

- Grant the Administrators group all available rights.
- Grant the Developers group all rights except for deleting folders, sharing or moving folders, changing folder behaviors or configurations, and changing folder access rights.
- Grant the Testers group the same rights to child folders as the Developers.

For the **File category:**

- Grant the Administrators group all rights.
- Grant the Developers group all rights except the right to change file security settings.
- If testers will be checking test plans in and out, grant them the same rights as the Developers group. (After the application has been implemented, you may prefer to set some access rights at the specific folder level, giving the Developers group all rights to source files, the Testers group all rights to test plans, and so on.)

  If the testers need only view access to files, grant them only those rights.

For the **Change Request category**:

- Grant the Administrators group all rights.
- Grant the Developers group all rights except the rights to change security settings, move and share change requests, and change their behaviors. This recommendation assumes that moving, sharing, and changing the behaviors of change requests is an administrative decision at your company. If this is not true, grant the Developers additional rights, as required.
- Grant the Testers group the same rights as the Developers group.

If you are not using the **Requirement**, **Topic**, or **Task** categories, you have finished granting access rights. If you are using those functions, access rights must be granted for them, as well.

General principle of access rights administration:

In the previous exercises, you granted project-level access rights to Administrators, Developers, and Testers for several categories of items in a specific project. In practice, however, you must define access rights for every category used by your company for every group that has access to the project.

If a group does not require any rights for a particular category, you should create a grant record for the group that contains no rights.

To create a grant record for a group that requires no Category rights:

1. Highlight an item in the **Categories** list.
2. Select the **Group** that will have no access to the selected item.
3. Make sure that **Grant** is selected.
4. Review the items in the **Rights** pane, but do *not* select any check boxes.
5. Click **Apply**. This action creates a no-rights grant record for the group.

Viewing the Audit Log

The Audit log is a record of actions performed on folders, files, change requests, topics, and tasks. It is kept by the Server but can be viewed on the client **Audit** tab at any time.

To view the Audit log:

1. From the project tree, select a folder.
2. Select the **Audit** tab. The log displays a chronological record of all actions performed on this folder and the items in it.

   With filtering, you can limit the kinds and quantity of entries shown in the audit log. Select a filter from the **Filter** drop-down list box above the Audit log. The display is also affected by the selection from the project tree and use of the **All Descendants** button.

The default filters are:

Show All	Displays all the entries.
By Class and Event	Displays entries sorted by class type (file, change request, requirement, task, or topic) and by event (added, modified, created, etc.)

You can create and customize filters. For example:

- To display only modified entries, use the **Event** field.
- To display only the entries about actions on change requests, use the **Class Name** field.
- To display only the entries created from a specified date to present, use the **Created Time** field.
- To display only the entries about actions performed by a specific user, use the **User** field.

Congratulations, you have successfully mastered the basic administrative functions! But the application offers many additional functions and advanced features — for example, changing server configuration properties, using server diagnostics, creating queries, and much more. Please refer to the *StarTeam Administrator's Guide* for complete instructions.

Chapter

4

For Users

Before beginning the exercises in this chapter, it is helpful to become acquainted with basic application terminology.

In the application, the project, the view, and the folder hierarchy (the root folder and its children) are all ways of organizing files and other data.

What is a project? A project is a way of organizing everything related to a particular undertaking. For example, your company might create a project for each product that it produces or a project for each component of that product.

It is the highest level container within a server.

What is a view? A view is a way to subdivide a project into more manageable units. For example, you can create a view that shows only the parts of a project that you need.

A view can also provide a way to subdivide a project over time as it takes divergent paths — for example, as a product moves from the 1.0 release to the 2.0 release. Each release may be stored in a different view.

What are application folders? Folders organize information within a project view stored on the Server. For example, the StarDraw sample project is divided into folders for Source Code, User Manuals, Marketing Materials, and other subjects.

What are working folders? Working folders are the locations on your computer or in your personal directory on a file server to which the application copies the files checked out from the server. From these locations, you can modify the files, make new revisions, and check them back into the application. You can also create new files in your working folders to add to the project view.

Learning to Use the Application

The exercises in this chapter assume that your company's administrator has installed the application, entered a server configuration, decided upon a sample application project, and started the server running.

The sample project may be StarDraw, which comes with the Server, or a sample project that more closely approximates the types of folders and files you use on the job.

To enable you and your team members to become familiar with basic operations, the exercises in this chapter illustrate how to:

- Start the application.
- Add access to a server.
- Log onto the application.
- Open an existing project.
- Manage folders.
- Add files to a project.
- Check revisions of files in and out.
- Review revision history.
- Create change requests, topics, and links.
- Create charts and reports.

Starting the Application

Before working with the application, you must verify that a client has been installed on your computer. If this is not the case, see the *StarTeam Installation Guide* or contact your system administrator.

To launch the client:

- Select **Start > Programs > StarTeam > StarTeam client_name**. An empty application window appears on your computer screen.

Adding a Server Configuration

The application stores all projects on the Server, which may contain numerous server configurations. To access an existing project, you must first add its server configuration to your system.

You will need the following information from your system administrator:

- Location of the Server (either an IP address or the name of the computer where the server configuration is running).
- TCP/IP endpoint (port) used by the server.
- User name and case-sensitive password that allows you to access the project.
- Name of the sample project. StarDraw is the standard sample project.
- Name of the view to use. For the StarDraw sample project, use the StarDraw initial or root view.

Important When you first create a project, its initial (root) view and its root folder will have the same name.

To add a new server configuration:

1. Do one of the following:
   - Click the **Open Project** icon on the toolbar.
   - Select **Project** > **Open** from the menu bar.

   These actions display the *Open Project Wizard*. Since it does not currently show the StarDraw server configuration, which stores the sample project, you must add the server to the application.
2. Click **Add Server**. The *Add Server* dialog appears.
   a. Enter an easy-to-remember description (such as StarDraw) in the **Server description** text box. The **Server description** is case-insensitive and should be unique.
   b. In the **Server address** text box, indicate where the Server is running by typing either the exact name of the computer on which the Server runs or the correct IP address.

      If you need to browse for the exact name, click the **Browse** button.
   c. Enter the appropriate information in the **TCP/IP Endpoint** text box. The endpoint is the port number.
   d. (Optional) Select the **Compress transferred data** check box to compress data transferred between your computer and the server configuration.
   e. (Optional) Select an **Encryption** type check box if you want to protect data transferred between your computer and the application Server from being read by unauthorized parties over unsecured network lines.

      The encryption types are ordered (top to bottom) based on speed. Each encryption type is slower, but safer, than the type above it.
   f. Click **OK**. This action redisplays the *Open Project Wizard*, which now shows the name of the server.
3. Double-click the name of the server. Since you have not previously logged into e, the *Log On to StarDraw* dialog appears.

Logging onto the Application

Before proceeding with your application session, you must enter the information requested in the *Log On to StarDraw [computer_name]* dialog.

To log on:

1. Enter a **User name** and **Password** in the appropriate text boxes, then click **OK**. Passwords are case-sensitive and may have length restrictions.

   For the StarDraw sample project, use the name *ALincoln* as your **User Name** and *password* as the **Password**. If you encounter any problems, see your system administrator.

   After you log on, the Toolbar icon appears in the system tray. You can click this icon to display the Toolbar, which shows a list of all currently configured servers. It allows you to access all servers with only one login and to add shortcuts to launch other products.

To open the Toolbar:

1. Double click the Toolbar icon in the system tray.
2. Select the Toolbar options that you would like to use.

3 As you can see, the Toolbar is automatically populated with shortcuts for the StarTeam and CaliberRM products installed on your system. To launch other programs from the Toolbar, you must add shortcuts to those programs. To create shortcuts, either

- Right-click any location on the Toolbar title bar and use the drop-down menu commands, or
- Right-click the Toolbar icon, which displays a drop-down menu. Then select **Open Tools Folder**, and work directly with the program shortcuts that appear in the Explorer window.

4 Click **Exit** to enable the Toolbar options you have selected.

Opening an Existing Project

After you log on, the *Open Project Wizard* displays the projects available on the selected the Server (in this case, StarDraw).

1 Double-click the sample project name (for example, StarDraw).

2 Next, select a view of the project. To see a complete list of project views, click **Next** on the *Open Project Wizard*. This action displays the *Open Project Wizard: Select View* dialog, which shows a view tree.

You do not have access to the view if the view icon is greyed-out.

In this exercise, you should use the initial view of the sample project. To select this view, verify that the project name is highlighted and click **Finish**. This action shows the initial view in a project view window., which has three panes.

The left pane contains a hierarchy of application folders. On the right side of the windows are two panes — called the upper pane and the lower pane.

The upper pane shows nothing at this time, as you have not selected a specific item. However, it can display lists of files, change requests, requirements, tasks, and topics, or the audit log. Tabs for each of the application components appear beneath the upper pane.

The lower pane provides additional information about the specific item selected on the upper pane.

To create a shortcut for a project view:

1 When the project view is open, select **Project** > **Save Shortcut As** from the menu bar. This action displays the *Save As* dialog box.

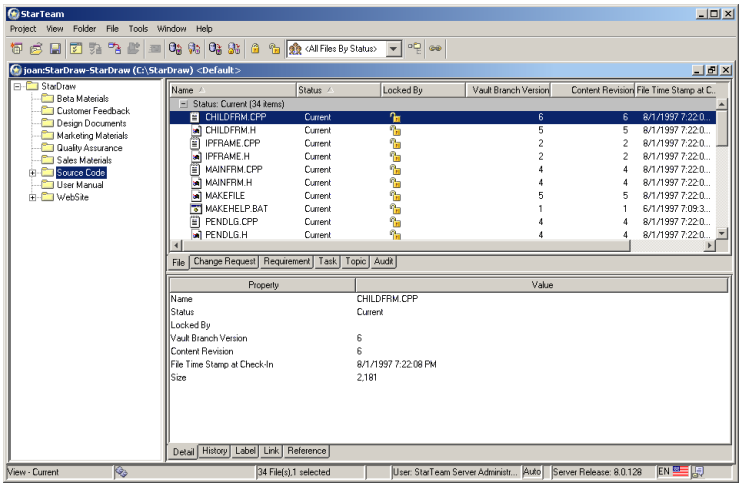
2 Accept the default location (the Desktop) for the shortcut.

3 Note that the **File Name** text box displays a suggested name for the shortcut. For the StarDraw view of the StarDraw project, the shortcut file name is *StarDraw-StarDraw.STX*. You can use this name or change it to one you prefer.

4 Click **Save** to return to the application. Your desktop should have a shortcut similar to the following:

Using the Project View Window

You can display information on only one view in the project view window. If you wish to see two views of the project at the same time, however, you can open another window.



The screen above shows a typical project view window:

- The left pane displays the folder hierarchy for the current view of the project. In this case, it shows the StarDraw (initial) view of the StarDraw project and the StarDraw root folder. The selected folder is Beta Materials.
- The upper pane displays the data associated with the Beta Materials folder. The type of data shown depends on the selected component (File, Change Request, Requirement, Task, Topic, or Audit).

  In this case, the upper pane displays the files in the Beta Materials folder because the **File** tab has been selected. Each row provides information about a separate file.
- The lower pane displays additional information on the item selected above. In this case, the selected item is the *Beta 2 Cover Letter.doc* file.

  The type of information shown depends on the selected tab. The tabs include:

  - **Detail** — Lists vertically the information shown in the upper pane for the selected item.
  - **History** — Lists the revisions of the item selected on the upper pane, from the most recent revision to the initial revision.
  - **Label** — Lists the revisions of the item selected on the upper pane, along with the labels attached to those revisions. The most recent revisions are displayed at the top.
  - **Link** — Lists any items or folders linked to the item selected on the upper pane. For example, a change request might be linked to the file that resolves the issue.
  - **Reference** — Lists all the places in the project that use the item selected on the upper pane. For example, if the selected file has been shared into two additional views, there are three references for that file.

Note Topics and tasks can be displayed in the upper pane in either a tree or list format. Files, change requests, and audit entries are always displayed in list format.

Understanding Application Folders

If you have been granted the appropriate access rights by your system administrator, you can create new folders in the application, delete existing folders, delete folders, and modify their properties. You will also be able to check out files to the working folders on your computer or in your personal directory on a file server.

The path you select for a working folder does not need to correlate to the path of the application folder. For example, the working folder for the StarDraw Source Code folder might be C:\Program Files\StarDraw \Source Code or | C:\samples\sd\sc.

Also, your working folders can be in different locations, as they do not need to be correlated to each other. For example, you could put the working folder for Marketing on drive C of your computer and the working folder for User Manuals on drive D.

Adding a Folder to the Hierarchy

To create a new working folder and files:

1. On your computer, create a new folder (for example, C:\Folder Test).
2. Copy a few files into the new folder and rename them. At least one of the files should be a text file.
3. Create at least one child folder within the new folder (for example, \webfiles).
4. Create four child folders named cab, help, modules, and share within the webfiles folder. It is not necessary to add any files to these folders.

Important Be sure to create a new folder and copy and rename the files used in these exercises so that you do not lose any data.

To create a folder:

1. Select **Folder > New** from the menu bar. The *New Folder Wizard* appears.
2. Select the root folder (for example, StarDraw) as the parent of the new folder. Any folder displayed can be the parent of the new folder.

   To see child folders, click the plus sign in front of a folder.
3. Click **Next**. The *New Folder Wizard: Folder Name* dialog appears.
4. Enter a name for the folder (for example, **Folder Test**) in the **Folder Name** text box, or accept the default name (**New Folder**).
5. In the **Working Folder** text box, enter or browse for the name of the **working folder** you created on your computer (C:\Folder Test).
6. In the **StarTeam folder** text box, enter a description of the folder.
7. Click **Next**. The *New Folder Wizard: Child Folders* dialog displays your new application folder. If the working folder has a child folder, the dialog also suggests that you add it as an application child folder.

   If you do not want to add the suggested child folder, click **Exclude**. If you want to create the folder but do not like the name, you can change the name later.
8. Click **Next**. The *New Folder Wizard: StarTeam Folders* dialog displays a complete list of application folders, including the folder you are adding.
9. If you do not wish to create the folder at this time, click **Cancel**.

   If you do want to create the folder, click **Finish**. The project view window displays your new folder alphabetically with the rest of the application folders.
10. Select the new folder.

11 In the upper pane, click the plus sign in front of the **Status: Not In View** to see the names of files in that folder.

Not In View means that the working folder for the new application folder contains files that have not yet been added to the application project folder. You will add one or more of these files in a later exercise.

Modifying Folder Properties

In your daily work, you may change a working folder from one drive to another or make other changes to folder properties. In this exercise, you change the name of a folder.

To change the name of a folder:

1 Select a folder in the left pane.

2 Select **Folder > Property** from the menu bar. The *Folder Properties* dialog appears.

3 Edit the name of the folder (for example, from Folder Test to Folder Modified).

4 Click **OK** to return to the project view window.

5 Verify that your folder has the new name.

Placing a File under Version Control

When you open an existing application project, it usually contains files placed there by the person who created the project or other members of the project team. However, sometimes you will need to add a new file to a project, which places it under version control.

After a file has been placed under version control, you must check it out to review or revise it. If you intend to change the file, you should exclusively lock it, to prevent other people from working on it. When you complete your revisions, you must check the file back in so that your changes are accessible to others.

The next few exercises explain how to put a file under version control, lock the file, check out a specific revision, check in a new revision, and so on. Because each exercise builds on the previous one, you should do all the exercises in this section in order and in the same session.

Adding Files

The new application folder, now named Folder Modified, contains files with the status **Not In View**. This status means that the files have not yet been added to the project and are not under version control. After they have added, members of your team can check the files in and out, if they have appropriate access rights.

To add files to a project view:

1 Select the new folder (Folder Modified) from the folder hierarchy.

2 Verify that the **File** tab is selected on the upper pane.

3 Click the plus sign in front of the **Status: Not In View** grouping bar in the upper pane.

4 Select one or more files. To select all files, select **File > Select > Select All** from the menu bar or context menu.

5 Select **File > Add Files** from the menu bar or context menu. The *Add Files* dialog appears.

6. (Optional but recommended) Enter information in the **File description** text box, or select **Prompt for description of each file** and describe the purpose or contents of each file as it is added.

   As this is only an exercise, it is recommended that you enter a comprehensive description, such as “These files will be under version control.”

7. From the **Lock status** group box, select an appropriate lock option.Use **Exclusive** or **Non-exclusive** to lock the files in your name, or select the **Unlocked** option button to leave the files unlocked at this time.

   Your lock choice lets other team members know whether you are working on the files. An exclusive lock indicates that you intend to change the files; it also prevents others from checking the files in.

8. (Optional) Select **Delete working files** to remove the associated files from your workstation. Clear this box to retain these files in your working folder.

9. (Required if process rules are enforced) If your company enforces a system of process rules, source code and content can be changed only to meet clearly defined and approved objectives. All files that are added must be linked to specific process items (change requests, requirements, or tasks).

   To associate the new files with specific process items, select the **Link and pin process item** check box.

   a. If an active process item has been selected and appears in the **Item** box, this action accepts it.

   b. If no process item has been selected, or you wish to choose a different process item:

      1. Click the **Select** button to open the *Select Process Item* dialog.
      2. Select either the **List all permitted items** or **List all permitted items assigned to me** option button.
      3. Select the **Change Request**, **Requirement**, or **Task** tab.
      4. Select a specific item as the active process item.
      5. Click **OK** to return to the *Add Files* dialog.

10. If work on the active process item is now complete, select the **Mark selected process item as fixed/finished/complete** check box.

11. Select a label from the **Revision label** drop-down combo box or create a new revision label by entering its name. Adding or creating a label is useful if you plan to retrieve these files as a group later or if you will need this specific revision of the files.

12. If you are using the Windows client, click **OK** to add the files.

13. If you are using the Cross-Platform client, you have additional options that may be useful.

    a. Click **Advanced.** This action displays the *Advanced Options* dialog. Although none of the options on this dialog are required, they are useful in specific situations. This action displays the *Advanced Options* dialog. .

    b. Select the **Perform EOL conversion (CR-LF)** check box to control the EOL character that is stored with the files. The default setting for this check box is based on the EOL setting in your Personal Options.

    c. Select the appropriate **File Encoding** from the drop-down list box.

    d. Click **OK** to return to the *Add Files* dialog.

    e. Click **OK** to add the files.

After the files have been added, the project view window re-displays.

1. Click the plus sign preceding **Status: Current**.
2. Notice that the status of each file you added has changed to **Current**. **Current** status means that:
   - The file is now under version control.
   - The most recent revision of the file (known as the tip revision) is in the appropriate working folder.

Modifying a File to Create a New Revision

To modify a file placed under version control and then release it to other team members, you must check out the file and lock it, edit it, and check it back in again, releasing the lock.

Why must you lock the file? Suppose that two team members check out the same text file and do not lock the file. When the first person checks in the revised file, the second person's copy becomes obsolete, and its status changes to **Merge**. To check the file back in, the second person can use Visual Merge, a utility provided by the application, to merge the text file changes. If he or she does not perform a merge, however, the first person's changes will be lost.

Step 1: Checking Out and Locking a File

When other people have made edits to a file, your local copy will have **Out Of Date** status. If this is the case, it will need to be checked out (that is, made **Current**) before you make changes to it.

If the file in your working folder is **Current**, however, it does not need to be checked out again, as you have an up-to-date copy. All you need to do is lock it by selecting **File > Lock/Unlock** on the menu bar.

To check out a file and exclusively lock it at the same time:

1. On the upper pane, select a text file, such as CHILDFRM.CPP.
2. Select **File > Check Out** from the menu bar or context menu. The *Check Out* dialog appears.
3. (Optional) Select **Force Check-out** to overwrite any file with the same name in your working folder, even if it is more recent.
4. Under **Reference by** box, select the **Current Revision** of the file you want to check out. Other possible options are:
   - **Label**, to check out a file revision with a specific label.
   - **Promotion State**, to check out a file with a particular promotion state.
   - **As of**, to check out the file that was the tip revision at a specified date and time.
5. Select a **Lock status** option:
   - **Unlocked**, to simply copy the file to your working folder.
   - **Exclusive**, to indicate that you intend to make changes to the file and to keep others from changing it.
   - **Non-Exclusive**, to indicate that you are working on the file and may possibly make changes.
   - **Keep current**, to retain the current lock status.
6. (Optional) Select the **Advanced** button. This action displays the *Advanced Options* dialog. Although none of the options on this dialog are required, they are useful in specific situations.

7 In **Checkout Location**, click **Other** if you want to check the file out to a folder other than your designated working folder. Then enter or browse for the folder name.

8 To change your current **EOL conversion** setting, click **None** or a another button for an alternate setting. For Windows, the EOL marker is **CR-LF** (carriage return/line feed); for UNIX, it is **LF** (line feed); for Macintosh operating systems, it is **CR** (carriage return). EOL settings on this dialog override the default setting you selected on the File tab of the Personal Options dialog.

9 (Cross-Platform client) To support keyword expansion for non-English code pages, make a selection from the **File encoding** drop-down list box.

10 Click **Close** to return to the *Check Out* dialog.

11 Click **OK** to check out the file.

12 Note that the status of the file remains **Current**. If you locked the file, your **User Name** appears in the **Locked By** column. Also, the icon with a small yellow key and the head and shoulders of a person indicates that the file is locked by you.

Note If you prefer, you can use the toolbar to quickly check out files:

- Select the **Check Out** button (black arrow) from the toolbar.
- Select the **Check Out and Lock** button (red arrow) from the toolbar.

Step 2: Modifying the Working File in an Editor

When you edit a file, you work on the copy of the file that is in your working folder. No other users can access your changes until you check the file back in.

To modify a file:

1 On the upper pane, select the text file that you just checked out (CHILDFRM.CPP).

2 Select **File > Edit** from the menu bar. The file appears in the text editor (generally, Notepad) specified as the default on your computer.

3 Edit the text of the file.

4 **Save** your changes.

5 **Exit** the editor, and return to the application.

6 Verify that the application window is active (that is, in focus), and press *Shift + F5* to refresh it. The file now has the status **Modified**.

Step 3: Checking in the New Revision

Next, you must check your edited file back into the application so that all team members can access the latest version of the file.

To check in the revision:

1 On the upper pane, select the file (CHILDFRM.CPP) again.

2 Select **File > Check In** from the menu bar or context menu. The *Check In* dialog appears.

3 In the **Comment** text box, describe the changes made to the file. (If you are checking in multiple files, you can also select the **Prompt for a comment (check-in reason) for each file** check box.)

4 (Optional) To compare the file being checked in with the tip revision of the file in the repository, click the **Compare** button. If differences exist, this action launches Visual Diff, a utility that shows file changes.

5 To release your lock on the file after check-in, select **Unlocked** from the **My Lock Status** group box. If you have locked the file and want to keep it locked, select **Keep Current**.

6. (Optional) Select **Force check-in** if you wish to check in a file that is older than the tip revision.
7. If desired, select the **Delete working files** check box to delete the files from the working folder on your workstation, storing them only in the repository. Clear this check box to retain these files in the working folder, as well as storing them in the repository.
8. (Required if process items are enforced) To link file revisions to a process item, select the **Link and pin process item** check box. If the use of process items is required, this check box is selected by default.
   a. If an active process item already appears in the **Item** box, this action accepts it.
   b. If no process item has been selected, or you wish to choose a different process item:
      1. Click the **Select** button to open the *Select Process Item* dialog.
      2. Select one of the following options: **List linked items**, **List all permitted items**, or **List all permitted items assigned to me**.
      3. Select the **Change Request**, **Requirement**, or **Task** tab.
      4. Select a specific item as the active process item.
      5. Click **OK** to return to the *Check In Files* dialog.
9. If work on the active process item is now complete, select the **Mark selected process item as fixed/finished/complete** check box.
10. (Optional) Select a label from the **Revision label** drop-down combo box or create a new revision label by entering its name. Existing labels are listed in reverse chronological order, based on the time at which they were created.

    Remember that the same label cannot be used for two revisions of the same file. Therefore, if the label you want to use is currently associated with a previous revision, you must also select the **Move the label if it's already assigned to a previous revision** check box.
11. If you are using the Windows client:
    a. If desired, click **Show Change Requests** to review the change requests linked to the files you are checking in.
    b. Click **OK** to check in the files
12. If you are using the Cross-Platform client , you have additional options that may be useful. To access these options:
    a. Click **Advanced**. This action displays the *Advanced Options* dialog.
    b. (Optional) Select the **Perform EOL conversion (CR-LF)** check box to control the EOL character that is stored with the files. The default setting for this check box is based on the EOL setting on the **General Tab** of your Personal Options.
    c. In the drop down list box, select the appropriate **File encoding**.
    d. If desired, click **Show Change Requests** to review the change requests linked to the files you are checking in.
    e. Click **OK** to return to the *Check In* dialog.
    f. Click **OK** to check in the files.

Verify that the application window is active, and press *Shift+F5* to refresh it. This action changes the file status to **Current**, indicating that the tip revision and your working file are exactly the same. Also, if you have released an exclusive lock on the file, the revised file is now available to other team members.

Note If you prefer, you can use the toolbar to quickly check files in:

- Select the **Check In** button (black arrow) from the toolbar.
- Select the **Check In and Unlock** button (green arrow) from the toolbar.

Reviewing Revision History

When you need to go back to an older revision of a file, you can review the file history to choose the revision you want.

To display the history list:

1. On the upper pane, select the text file you previously checked in.
2. Select the **History** tab in the lower pane. The history list in the lower pane shows the revisions stored in the application for the selected file, starting with the most recent or tip revision. It also displays information about each revision, such as its project view, its assigned revision number, the user who changed it, the date and time of the revision, and the check-in comment.

Comparing File Revisions

When you view the history for a text file, you often need to compare two different revisions to understand their differences. For this purpose, the application supplies Visual Diff, a utility that can compare two text (that is, non-binary) files or two revisions of the same text file and show the differences between them.

To compare two revisions of a file:

1. On the lower pane, select two revisions of the selected file.
2. Click the **Compare Contents** icon on the toolbar. Visual Diff displays the two revisions, indicating the differences with different colors. The colors used in Visual Diff are explained below.

   The default colors are as follows:

   - **Black**
     Matching blocks of text are displayed in black.
   - **Red**
     Deleted blocks of text appear in red and have the strikethrough font style. Only the file on the left shows deleted text because this file is used as the baseline for comparison.
   - **Green**
     Inserted blocks of text appear in green. Only the file on the right shows inserted text, because the file on the left is used as the baseline for comparison.
   - **Blue**
     Changed blocks of text appear in blue. Lines that are similar but not identical are considered to be changed.

   If there are no differences between the files, Visual Diff displays a message stating that the files are the same.
3. When you finish the comparison, select **File > Exit** from the Visual Diff menu bar to return to the application.

Checking Out a Prior Revision

After you identify the older revision you want, you can check it out. In this exercise, you will check out the first revision of the file.

To check out the first revision of a file:

1. On the lower pane, select revision 1 of the file (on the last line of the history list).
2. Select **File** > **Check Out,** or right-click to display the context menu and select **Check Out**.
3. When you select **Check Out**, the revision is copied to your computer and the file status changes to **Out Of Date**.

   Out Of Date means that you have a revision older than the tip revision in your working folder.

Note If the status does not change to **Out Of Date**, press *Shift + F5* to refresh the window.

To verify that you have the first revision of the file as your working file:

1. Select CHILDFRM.CPP from the file list.
2. Select **File > Edit** from the menu bar to look at the working file. The system displays the following message:

   ```
   File C:\Folder Test\CHILDFRM.CPP is out of date. Would you like to check out
   the latest version?
   ```

3. Click **No**. The first revision of the file opens. You can see that it does not have the latest set of changes.

Deleting a Folder from the Sample Project

To restore the sample project to its original state and make it easier for the next user to follow these exercises, you should delete the folder that you created and renamed (Folder Modified). This procedure also removes the files in that folder from version control.

To delete the folder:

1. From the left pane of the main window, select the folder.
2. Select **Folder > Delete** from the menu bar. A message asks you to confirm the deletion.
3. Click **OK** to confirm this decision.

Working with Change Requests

A change request may be a suggestion for a product enhancement or a request that a problem with the product be fixed.

Although change requests can be placed in any folder, some companies initially place them at the root of the project view. Later, the requests are reviewed and placed in the appropriate folders.

Creating a Change Request

In this exercise, you will create a change request for a missing Help file and place it in the root folder.

To submit a change request:

1. In the left pane of the main window, select the root folder of the application folder hierarchy.
2. Select the **Change Request** tab on the upper pane. The menu bar changes to include the Change Request menu.
3. Select **New** from the Change Request menu. The *New Change Request* dialog appears.

4. Use the default **New** in the **Status** drop-down list box.
5. Select *Yes* in the **Priority** drop-down list box.
6. Select **Defect** from the **Type** drop-down list box to indicate that the change request represents a defect rather than a suggestion.
7. Select **Medium** from the **Severity** drop-down list box to indicate the importance of the change request.
8. Select **All** in the **Platform** list box.
9. For **Last Build tested**, select **Build 3**.
10. Enter `Spiffy Utility` in the **Component** text box, which is used to classify change requests based on some general criteria. In this example, Spiffy Utility is one of four components in your product.
11. Enter `Help` in the **Category** text box, which is intended to group change requests by additional criteria. In this example, the online help for Spiffy Utility has been identified as the problem.
12. Enter a summary of the change request in the **Synopsis** text box (for example, *No Help file error appears when controls are right-clicked)*.
13. From the **Responsibility** drop-down list box, select *Abraham Lincoln* (the name you have been using in these exercises) as the person responsible for dealing with the change request. Normally, you would assign the change request to another team member, but in this exercise, you will handle it yourself.
14. Select the **Description** tab.
15. In the **Description** text box, enter a description of the change request and outline the steps required to reproduce the problem.

    For example, type:

    a. `Open Spiffy Utility.`
    b. `Right-click any check box.`
    c. `See error message.`
16. Click **OK**. The new change request should appear in the list of change requests in the upper pane.

Note Change requests have many additional features that increase their flexibility and value to users. For example, by using the **Attachments** tab, you can insert a picture of an error message.

Resolving a Change Request

In this exercise, you resolve the change request that has just been created.

To resolve a change request:

1. Double-click the change request in the upper pane. The *Change Request* dialog appears.
2. From the **Status** drop-down list box, select **Fixed** to indicate that the Help file problem has been corrected and change **Priority** to **No**.

   When a change request is classified as **Fixed**, the application automatically makes two other changes:

   - The **Responsibility** field changes to the name of the person who created the change request, as this person is probably best equipped to test and verify the fix. In this exercise, you both created and resolved the change request, so your name will still appear in the **Responsibility** field.

- The **Addressed in build** field shows the value **Next Build**. This value changes to the name of the next build after the label is created by your administrator. By looking at this field, testers know exactly what build they should check for the fix.

3 Click the **Solution** tab.

4 In the **Fix** text box, enter an appropriate comment (for example, *Help file now exists)*.

5 Click **OK** to resolve the change request.

Creating Topics and Responses

You can use the Topic component to add threaded conversations to folders in the application folder hierarchy. Topics and responses can be notes to yourself or discussions with others who use the project. They can raise general questions about the project or discuss specific issues, such as feature implementation.

The Topic component allows you to:

- Search for specific words or phrases in topics and responses.
- Sort topics and responses.
- Filter topics and responses.
- See relationships between a topic and its responses.
- Move and share topics (from the tree format).

You can attach a topic to any folder. Responses to a topic become children of the topic, forming a topic tree. Responses to responses become grandchildren of the topic and so on.

Topics are preceded by a callout icon and responses are preceded by an envelope icon. These topics and responses are in the root folder of the initial view of the StarDraw sample project. The topics and responses shown in bold have *not* been read. Closed envelopes on the icons also indicate unread topics or responses.

The next two exercises show you how to create a topic in the root folder and respond to it.

To create a topic:

1. In the left pane, select the root folder (StarDraw).
2. Select the **Topic** tab. The menu bar changes to the Topic menu and displays any topics already in the root folder.
3. Click **New Topic** on the toolbar. The *New Topic* dialog appears with the **Topic** tab selected.
4. Enter a topic title in the **Title** text box. The default is **New Issue**.
5. Enter your communication in the **Content** text box.
6. (Optional) Click on the **Options** tab to specify whether you want to notify specific team members about this topic, assign a priority to the topic, or indicate a topic status.
   a. To notify selected team members about a topic, click **Add** to display the *Select Topic Recipients* dialog. Choose a couple of team members from the list, then click **Add** again.
   b. To assign a **High** priority to the topic, select **High** from the **Priority** drop-down list box.
   c. To choose a topic status (**Active** or **Inactive**), select an option from the **Status** drop-down list box.
   d. To return to the *New Topic* dialog, click **OK**.

   Your new topic appears on the bottom line in the upper pane of the project view window.

Note Topics have many additional features that increase their flexibility and value to users. For example, by using the **Attachments** tab, you can send a picture or additional information along with your message.

To respond to a topic:

1. On the topic tree, highlight the topic you just created.
2. Select **Respond** from the Topic or context menu. The *New Topic* dialog appears.
3. Enter the title of your response in the **Title** text box.
4. Enter your response in the **Content** text box.
5. Click **OK**. The response appears as a child of the topic in the upper pane of the project view window.

Creating a Link

In the application, an item is a file, change request, requirement, task, or topic. A link is a connection between two folders, two items, or a folder and an item. Creating links can be quite useful. For example, linking a file to a change request allows you to mark it as fixed when you check in the edited file. By linking files to the requirements document that the files fulfill, you can easily refer to or update the document.

To view the links for a selected item, use the **Link** tab on the lower pane. To view the links for a selected folder, select **Folder > Properties**, then the **Link** tab.

The following exercise uses the topic you created and links it to a change request created in an earlier exercise.

To link one item to another:

1. On the **Topic** tab, select the topic you created.
2. Select the **Link** button from the toolbar. The button now looks as though it has been pushed down, and the mouse pointer looks like a knotted rope.

3 On the **Change Request** tab, select the change request you created.

4 Select the **Link** button from the toolbar. The toolbar button and the mouse pointer will return to normal.

5 To see the results, select one of the connected items, then look at the **Link** tab. Information about the link will appear in the lower pane.

If you want to link several items of the same type (for example, change requests) to a single item of a different type (for example, a file), you can create all the links at the same time. Simply select the change requests on the upper pane, then use the **Link** icon to connect them to the specific file.

Tips To use a folder as the beginning of a link, select **Folder > Links > Create Link**. To use it as the end of a link, select **Folder > Links > Complete Link**.

To cancel a link after you have started to create it, select **Links > Cancel Link** from any of the component menus or from one of their context menus. If you are using the **Link** button on the toolbar, press **Esc.**

Deleting Items from the Sample Project

To restore the sample project to its original state and enable the next user to follow the exercises, you should delete the change request, topic and response, and link that you have created.

To delete the link:

1 Select the **Links** tab.

2 On the lower pane, select the link you created and right click. A context menu opens.

3 Select **Delete** from the menu (or simply press the **Delete** key on the keyboard). A message asks you to confirm the deletion.

4 Click **OK**.

To delete the change request:

1 Select the **Change Request** tab.

2 On the upper pane, select the change request you created.

3 Select **Change Request > Delete** from the menu bar or context menu. A message asks you to confirm the deletion.

4 Click **OK**.

To delete the topic and response:

1 Select the **Topics** tab from the upper pane.

2 On the upper pane, select the topic you created.

3 Select **Topic > Delete** from the menu bar or context menu. A message asks you to confirm the deletion.

4 Click **OK**. The application deletes the tree created by your topic and response.

Creating a Chart

With the application, you can create charts for files, change requests, requirements, topics, tasks, and audit log entries. Charts are based on the data displayed in the upper pane. Therefore, before creating a chart, you must adjust the display in the upper pane to fit the chart's purpose, then select the items that you want to chart.

In this exercise, you will create a chart of file sizes.

To create a chart of file sizes:

1. Select the root folder from the folder hierarchy.
2. Select the **File** tab.
3. Select **All Descendents** from the drop-down menu or click **All Descendants** on the toolbar.
4. Select **Charts > Simple** from the File menu or context menu. The *Simple Chart* dialog appears.
5. Enter a name for your chart in the **Chart name** text box.
6. Select **Size** from the **Series** list box.
7. Choose **Select All** from the **Create chart for** group box.
8. Select **Landscape** from the **Printer page orientation** group box.
9. Select **OK** to display a chart of file sizes.

You can create a variety of charts with the application, including:

- Simple charts to create local size or content versions for all or selected items.
- Correlation charts to display X and Y coordinates for content version vs. local size.
- Time-series charts to display items for a specified date and time range using local time stamp information.
- Distribution charts to display items you have grouped and sorted in the file list.

Creating a Report

The application allows you to create reports on files, change requests, requirements, topics, tasks, and the audit log. It uses HTML templates to generate reports via your Web browser.

In this example, you will create a File Detail report, which lists files and their revision histories.

To create a report showing file details:

1. Select the root folder from the folder hierarchy.
2. Select the **File** tab.
3. Select **All Descendants** from the drop-down menu or click **All Descendants** on the toolbar.
4. Select a folder or several files on the upper pane.
5. Select **File > Reports**. The *Reports* dialog appears.
6. Select **Detail** from the **Available reports** group box.
7. Select **Current selection** from the **Create report for** group box.
8. In the **Output file name** text box, enter or browse for the location in which you want to store the report. Be sure to use .htm or .html as the extension.
9. Enter a name for the report in the **Report title** text box.
10. Do one of the following:
    - Click **Generate** to view the report. Your web browser will open and display your report.

- Click **Print** to print the report as it would appear in the browser. This command works only if your computer has a “print” action file association for the .htm extension.

Tip You can print a *Detail Report* by selecting **Print** from the File, Change Request, Requirement, Task, Topic, or Audit menu.

Congratulations! You have successfully completed the basic exercises for application users. However, this *guide* provides only a brief overview of the application’s flexible, customized solution. For complete instructions on additional functions and advanced features, consult the *StarTeam User’s Guide*.

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