



SERENA®

BUSINESS MANAGER

Moving to Serena Business Manager

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Chapter 1: Welcome to Serena® Business Manager

This document describes how to upgrade from TeamTrack 6.6.1 to Serena® Business Manager. For information on upgrading an existing SBM installation, refer to the readme that accompanies the new version you are installing.

Serena® Business Manager is a full-featured process app management tool that enables you to create process apps that pull and manage information and work-tracking items from different sources. Similarly, you can use SBM to manage orchestrations for your business processes, including access to other Web services and third-party applications. This means that SBM users have access to these multiple sources of information through the SBM User Workspace. This process app interface with its multiple sources of information empowers teams to improve communication and their processes across the enterprise.

Audience and Scope

This guide describes how to upgrade your existing TeamTrack installation to Serena® Business Manager. This guide is intended for administrators who will perform the upgrade to Serena® Business Manager.

For instructions on installing Serena® Business Manager on a new system, refer to *Serena® Business Manager Installation and Configuration Guide*.

Guide to SBM Documentation

The SBM documentation set includes the following manuals in PDF format. Most documents are installed with SBM; to obtain a document that is not installed with the product or to download the complete documentation set, visit <http://www.serena.com/support>.

Manual	Description
<i>Serena® Business Manager Installation and Configuration Guide</i>	Provides information on installing SBM and creating a database. Database and Web server configuration information is also provided.

Manual	Description
<i>SBM Composer Guide</i>	Provides details on using SBM Composer to create the tables, fields, workflows, orchestrations, and other design elements comprised in process apps. Information about saving, versioning, importing, and exporting process apps is also provided. This document is intended for individuals who want to design and maintain process apps.
<i>SBM Application Administrator Guide</i>	Provides information on using Application Administrator to deploy process apps to runtime environments and to promote configured applications from one environment to another.
<i>SBM System Administrator Guide</i>	Provides information on configuring and administering the SBM Application Engine. Instructions for managing projects, user accounts, system settings, and authentication are included.
<i>Serena® Business Manager User's Guide</i>	Provides information about the SBM User Workspace and is intended for end users. Instructions on using the SBM User Workspace, including the robust reporting feature in SBM, are included. To ease the process of providing a copy for every user in your system, the <i>Serena® Business Manager User's Guide</i> is provided in PDF and can be accessed from the Product Information tab of the About page in the SBM User Workspace.
<i>Serena® Business Manager Licensing Guide</i>	Explains how to manage licenses for Serena® Business Manager. License types are discussed, along with instructions for installing and using the Serena License Manager. This guide is intended for administrators who will install and implement Serena® Business Manager.
<i>Serena® Business Manager Web Services Developer's Guide</i>	Provides an overview of all SBM Web services, including descriptions for all calls, arguments, and responses. Installation instructions and information about the sample Web service programs are also provided.
<i>SBM AppScript Reference</i>	Provides information on customizing SBM using SBM AppScript, a programming language built around VBScript 4.0. This guide is intended for VBScript programmers who want to use SBM AppScript to implement custom features in an SBM system.

Manual	Description
<i>Moving to Serena[®] Business Manager</i>	Provides migration information for existing TeamTrack customers who are moving to SBM. It explains how to upgrade your existing system, and it explains the expanded SBM paradigm in relation to the TeamTrack paradigm.

Terminology Changes

With the release of Serena[®] Business Manager, some terminology and component names have changed. Other terms have slightly different meaning in the context of new functionality, such as groups with the introduction of roles.

The following table shows the new terminology alongside the old terms. Explanations are included to clarify some of the changes.

Old Term	New Term	Explanation
Administrator client	SBM System Administrator	The Administrator client is now known as SBM System Administrator. This client runs locally on Windows systems and is used to configure applications contained in your process apps.
Browser interface	SBM User Workspace	The end-user interface is now referred to as the SBM User Workspace.
Browser Administrator	Web Administrator	The TeamTrack Browser Administrator, which is launched from the SBM User Workspace, is now referred to as the Web Administrator.

Old Term	New Term	Explanation
Deploy	Promote and deploy	<p>Promote is the process by which an administrator can replicate a deployed process app and configured application entities from one environment to another. In previous versions of the software, this process was referred to as deployment.</p> <p>Deploy has a new meaning in the context of SBM. Deploy is the act of taking a process app created in SBM Composer, providing missing information like the target runtime server and any Web service endpoints that have not yet been defined, and making it available in a runtime environment. Deployment is no longer optional; all changes made to an application in SBM Composer must be deployed before they are available in the runtime environment.</p>
Deployment Tool	SBM Application Administrator	The Deployment Tool has been replaced by a Web-based component called Application Administrator. This tool is responsible for the deployment and promotion of process apps to runtime environments. Application Administrator also stores versions of process apps and their design elements as they are published or checked in using SBM Composer.

Old Term	New Term	Explanation
Solution	Application	<p>An application contains a collection of elements that solve a business need. The application has one primary table and contains elements such as workflows, fields, forms, roles, projects, reports, and notifications. In previous releases, this was known as a solution. In addition, a new entity has been added called a process app. A process app typically acts as a container for one or more applications, one or more auxiliary tables, and any related orchestrations.</p> <p>During the upgrade from TeamTrack, each solution is converted into an application and placed into its own process app, meaning that each process app contains one application after upgrade.</p>
TeamScript	SBM AppScript	The programming language built around VBScript 4.0 is now referred to as SBM AppScript.
TeamTrack	Serena [®] Business Manager, SBM, and SBM Application Engine	The product TeamTrack is now referred to as Serena [®] Business Manager, or SBM in its simplest form. The legacy component that executes state/transition workflows is referred to as the SBM Application Engine.
TeamTrack API	SBM API	TeamTrack C++ API is now referred to as the SBM API.
TeamTrack Broker Service	Serena Broker Service	The service that enables you to configure and manage the Notification Server and Mail Client is now referred to as the Serena Broker Service.
TeamTrack Web server	SBM Application Engine Web Server	The TeamTrack Web server is now called the SBM Application Engine Web Server. Informally, the Web server is also referred to as the runtime server.

Old Term	New Term	Explanation
Users and Groups	Users, Groups, and Roles	<p>In previous releases, privileges were assigned to specific users and groups. Now, there is an additional method using roles, which allows you to define privileges sets and assign them to users or groups. Roles are defined in SBM Composer, and application-related privileges are assigned to these roles. System-level privileges are assigned to users and groups in SBM System Administrator. You can continue to assign privileges to specific users or groups, but you may choose to ease privilege management by migrating to roles.</p>
Workflow	Application workflow and orchestration workflow	<p>An application workflow is a collection of states and transitions in an <i>application</i>. This was simply referred to as workflow in previous releases.</p> <p>In addition, there is a new type of workflow called an orchestration workflow, which is used in <i>orchestrations</i> to define the flow and decision branches.</p>

Chapter 2: Introduction to SBM

This section contains an overview of Serena® Business Manager. It explains the components in the suite and how they fit together. Note that existing TeamTrack users will want to read this section to understand how the new components will change their existing implementation on upgrade.

Overview of SBM

SBM enables you to create Web applications that allow teams of people to work together more productively by fostering collaboration, automating business processes across teams and systems, and ensuring visibility at all levels. SBM uses service-oriented and Web-oriented architectures to combine data provided by users with data from external systems and present them in a variety of formats using built-in reporting and auditing capabilities.

Serena® Business Manager features include:

- **Easy application creation** – Using SBM Composer, you can easily create applications to meet your specific business needs. You can create workflows that define the flow for your day-to-day use and needs, roles that control the actions that users are allowed and the information they can access, and custom forms that present "view" and "update" pages to your users.
- **Process app management and storage** – Your process apps are stored and managed using Application Administrator. Using Application Administrator, you can deploy and promote your process apps to your runtime environments. The SBM Application Repository retains previous versions of your process apps, giving you the ability to return a previous version.
- **Application configuration** - User accounts and projects, which store items tracked in your application, are managed through the Web Administrator, which is available to on-demand administrators using the SBM User Workspace. Full system configuration is available to on-premise customers through the SBM System Administrator, a Windows client.
- **Service-oriented architecture** – Its service-oriented architecture (SOA) allows you to create orchestration workflows, which interact and gather information through the SBM User Workspace, which enables users to share real-time information from a single interface.

About the SBM Components

The following table gives an overview of each SBM component:

Component	Description
SBM Composer	SBM Composer is the design client of SBM. In this client, application designers can design workflow, data tables and fields, roles, and forms. Designers create applications and orchestrations in SBM Composer, linking the different processes together within a process app. The completed process app is then published to the SBM Application Repository.
Application Administrator	Application Administrator enables designers and administrators to deploy and promote process apps to runtime environments. Application Administrator also hosts the SBM Application Repository, which provides versioning and labeling capabilities for design elements and process apps created in SBM Composer.
SBM System Administrator	This Windows client application enables administrators to configure applications by assigning roles to users and groups, creating projects to store tracking items, and defining field overrides. Administrators also use SBM System Administrator to create notifications and manage system settings.
Web Administrator	Available through the SBM User Workspace, Web Administrator the enables users with administrative privileges to perform basic configuration tasks.
SBM Application Engine	This is the running SBM instance to which process apps created in SBM Composer are deployed and implemented.

Component	Description
SBM User Workspace	Using the SBM User Workspace, SBM users access the process app created by SBM Composer. Users create and track items related to projects that are associated with workflows. Rich reporting and search features are also available.
SBM Orchestration Engine	This is the service orchestration environment to which Web service flows are deployed. Orchestration workflows designed in SBM Composer can specify a Web service flow to start in response to certain occurrences in SBM. Event Manager, a participant in the service orchestration environment, initiates the appropriate Web service in response to such occurrences.
Single Sign-On	Single Sign-On is an optional feature that enables users to log in to one SBM component and be recognized in the other components. More importantly, SSO also enables orchestrations using Web services to use security tokens for unattended execution. See the <i>Serena[®] Business Manager Installation and Configuration Guide</i> for details.

Understanding the Process App Design Process

Serena[®] Business Manager provides a robust process for creating and maintaining process apps and applications. Applications are synonymous with solutions in TeamTrack. Process apps are a bundle of one or more applications and orchestrations. (Orchestrations coordinate the interaction of external systems using Web service calls and Business Process Execution Language (BPEL) files.)

In previous versions of TeamTrack, you created and managed solutions in TeamTrack Administrator and all changes were immediately available in the Browser interface. TeamTrack did not store any previous versions of your solutions. If you wanted to undo changes that you made, you would have to manually undo the changes using the TeamTrack Administrator.

With SBM, all design changes to a solution, now referred to as an application, are manually deployed to your runtime server, which hosts the SBM User Workspace. This offers many benefits, including the ability to aggregate many changes and deploy them at once. Testing changes is also easier because you

can deploy your changes to a test environment before deploying changes into your production environment.

There are five main steps to the new process: design, publish, deploy, configure, and use. Each of these steps occurs in a specific SBM component.

The first step is **design**. All design tasks take place in SBM Composer. Application designers use SBM Composer to create and edit existing applications. All tables, workflows, fields, states, transitions, and scripts are added in SBM Composer. You can also add custom forms to your applications. Orchestrations that integrate with external systems or other applications can also be added to your process app during the design phase.

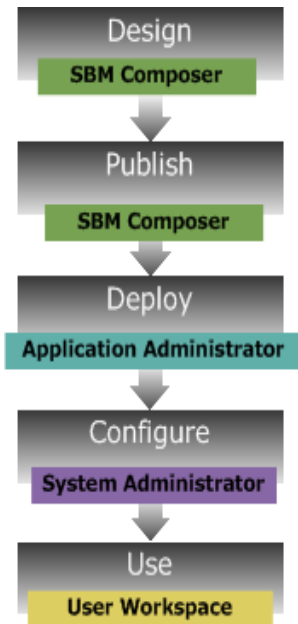
After designing your process app, you **publish** the process app. This step is performed from SBM Composer. Publishing takes the completed process apps, moves them into the SBM Application Repository, and makes the process app visible in Application Administrator. The published process app is versioned in the SBM Application Repository, meaning that the particular set of changes is saved as one version. Depending on their privileges, designers or administrators can decide which of these versions of a process app to deploy to the SBM Server. This additional versioning feature provides the ability to roll back to previous version in case a change has an undesired effect.

After a process app is published, you can **deploy** it to move the process app and its applications to SBM Server, also known as the runtime environment. Deployment activates the process app in the SBM User Workspace, pushing the changes made in SBM Composer to users. Depending on how you configure your environments, you can deploy directly from SBM Composer or from Application Administrator.

In the **configure** phase, you can use SBM System Administrator , formally known as the TeamTrack Administrator, to configure the deployed process app. Configurations include four main aspects: user and group management, project configuration, field overrides, and notification management. System administration, such as configuring system authentication and other system settings, is still performed in SBM System Administrator as well.

After the process app is configured on the server with the correct projects and permissions, the applications in the process app are ready for **use**. Users can access the process app through the SBM User Workspace.

The following diagram shows the process app workflow:



Using SBM Composer and SBM System Administrator

SBM has two clients, SBM Composer and SBM System Administrator, that you use to create and manage applications and orchestrations.

In general, these two components are used as follows:

- **SBM Composer** is used to design process apps, applications, and orchestrations. This includes designing states, transitions, forms, actions, and other elements. You also use SBM Composer to create roles and tie the roles to particular states or transitions.
- **SBM System Administrator** is used to change projects, including adding, removing, or modifying projects and project overrides. You also use SBM System Administrator to add user and group accounts, assign users to specific roles, and create notifications.

The following sections describe the tasks you perform in each component.

Project Management

The following table describes the project management tasks that are performed from each client:

Task	Tool
Creating and editing projects	SBM System Administrator Web Administrator

Workflow, State, and Transition Management

The following table describes which workflow, state, and transition management tasks are performed from each client:

Task	Tool
Creating a workflow (application or orchestration)	SBM Composer
Adding states to a workflow	SBM Composer
Adding transitions to a workflow	SBM Composer
Adding, deleting, or modifying actions for a state or transition (including scripts, triggers, events, Web services, and transitions)	SBM Composer
Restricting transitions by type	SBM Composer
Creating forms	SBM Composer
Associating privileges with a form (using roles)	SBM Composer

Table and Field Management

The following table describes which table and field management tasks are performed from each client:

Task	Tool
Adding a primary or auxiliary (non-system) table	SBM Composer
Adding system auxiliary tables (created when you create a database with Create Database wizard)	SBM System Administrator

Task	Tool
Adding fields to a table	SBM Composer
Modifying field properties	SBM Composer
Modifying field overrides in a workflow, state, or transition	SBM Composer
Setting default values for a field	SBM Composer
Setting general field overrides	SBM Composer
Setting field overrides for specific projects or user fields	SBM System Administrator
Adding roles to a user field	SBM Composer
Adding groups or users to a user field	SBM System Administrator
Allowing data import for primary or auxiliary tables	SBM System Administrator

User, Group, and Role Management

The following table describes which user, group, and role management tasks are performed from each client:

Task	Tool
Creating roles	SBM Composer
Creating users and groups	SBM System Administrator
Assigning permissions to roles	SBM Composer
Assigning privileges to users	SBM System Administrator
Assigning privileges to groups	SBM System Administrator
Assigning users to groups	SBM System Administrator

Task	Tool
Assigning users and groups to roles	SBM System Administrator
Modifying privileges for specific project or field	SBM System Administrator

Chapter 3: Understanding the Upgrade to SBM

This chapter contains an overview of the changes and considerations involved in the upgrade to Serena[®] Business Manager.

- [Understanding Changes in the New Release \[page 21\]](#)

Understanding Changes in the New Release

Before you start the upgrade, you must understand the substantial differences that exist between TeamTrack 6.6.1 and Serena[®] Business Manager. Understanding these differences will assist you in the upgrade process, allowing you to prepare for differences in the new implementation.

The differences can be broken down into the following categories:

- **Terminology Changes** - It is essential that you become familiar with the new SBM terminology. Understanding the changes in the terminology will ease your transition to SBM. For a detailed list, see [Terminology Changes \[page 9\]](#).
- **Changes to the Installation Process** - The installation process involves multiple installers in SBM. For more information on the different installers that are available, see [Changes to the Installation Process \[page 21\]](#).
- **Database Changes During the Upgrade** - When you upgrade your database, the upgrade process changes data in your database to make it compatible with the new release. This section contains a description of the changes that database administrators may want to be aware of. See [Database Changes During the Upgrade \[page 26\]](#) for details.
- **Other Database Considerations** - Beyond the physical changes that occur in your database during the upgrade, there are best practices and other considerations to keep in mind. See [Other Database Considerations \[page 31\]](#) for details.
- **Licensing Considerations for Upgraded Systems** - Licensing has changed in SBM. To understand how licensing works for each new component, see [Licensing Considerations for Upgraded Systems \[page 32\]](#) for more information.

Changes to the Installation Process

The product installation process has significantly changed in SBM. There are now two separate installers, as well as an option to perform a silent installation of the various components. This section describes the different installers that

are available. For more information on different installation scenarios, see the "Installation Considerations" section of the *Serena[®] Business Manager Installation and Configuration Guide*.

About the Suite Installer

The suite installer contains each of the SBM Server components. In addition to the SBM Server components, the rest of the SBM components are available from within the suite installer. You generally execute the suite installer on one or more servers.

To perform a server installation, download the SBM suite zip file, extract the contents, and open the resultant folder. From here, navigate to `\Suite` and launch the executable. You must launch the executable from within the `\Suite` folder in order to properly run the installer. Alternatively, you can open the `index.html` file instead of running the executable directly. The `index.html` page provides an easy-to-read Web page from which you can launch the various installers.



Important: If you copy the suite installer to a particular location and the path to that location includes certain characters, such as an exclamation point (!) or pound sign (#), the installer fails to install the suite components. Run the suite installer directly from the extracted folder instead.



Note: The suite installer does not enable you to add or remove components after you have completed your initial installation. If you want to add a component after the initial installation, you must uninstall SBM using the Windows **Add/Remove Programs** utility, and then run the suite installer again and select the desired components.

The Client Installer

The client installer contains the SBM client components: SBM Composer and SBM System Administrator. You will run the client installer on each client machine (for each SBM Composer or SBM System Administrator user).

To perform a client installation, launch the client executable. Unlike the suite installer, you can simply copy the client executable file to any client machine and run the installer—there is no need to run the `.exe` from within the original download folder.

About the SBM Configurator

The SBM Configurator provides a graphical interface in which you configure the settings and layout of your SBM installation (whether it is distributed across multiple servers or hosted on a single server). The SBM Configurator is launched automatically once you click **Configure** after the suite installer is finished. You can also run the SBM Configurator any time after installation to

re-configure your installation or import configuration settings from an exported configuration snapshot file.

You use the SBM Configurator to perform the following tasks:

- Configure the component distribution of your SBM system. For distributed installations, you use the SBM Configurator to define the layout of your server components.
- Configure data sources for each of the SBM components.
- Define the IIS Web site that hosts the SBM User Workspace and SBM Application Engine Web services.
- Manage the Serena License Manager settings for SBM.
- Enable or disable Single Sign-On (SSO).
- Configure mail server settings for the SBM Application Engine Notification Server and Mail Client, Application Administrator, and Event Manager.
- Configure advanced settings such as system performance, SSO configuration, and JBoss proxy server settings.
- Import and export configuration files that contain your system settings, configuration details, and SBM topology.
- Gather important log files for troubleshooting purposes. Click the **Collect Log Files** button to save the logs in a .zip file locally. The logs that are gathered can be used by Serena Customer Support for troubleshooting problems in SBM.

The SBM Configurator runs in two modes: **wizard mode** and **utility mode**.

- The SBM Configurator runs in **wizard mode** immediately after the suite installer is finished. Once you finish **wizard mode** on a given server, the SBM Configurator only runs in **utility mode** on that server.
- You run the SBM Configurator in **utility mode** to perform advanced configuration tasks or reconfigure settings you made during **wizard mode**.

In **wizard mode**, the SBM Configurator's **Welcome** dialog box lists the components that are currently installed on your local server. If you performed a **Custom** installation, but you did not install every component, the components that were not installed are listed separately. When the SBM Configurator detects this type of distributed installation, the **Welcome** dialog box displays an **Import** option that enables you to update your local server with configuration settings you might have configured on a previous server. If this is the first server you are configuring, skip the **Import** option and click **Next** to start configuring your **Component Servers**.

Running the SBM Configurator in Wizard Mode

The SBM Configurator runs in **wizard mode** automatically after the suite installer is finished. In **wizard mode**, the utility guides you through the process of setting up various server components and configuring the architecture of your SBM system. You progress through the wizard by clicking **Next** to proceed or **Back** to return to the previous dialog box.

Note the following when you run the SBM Configurator in **wizard mode**:

- For larger installations, it is recommended that you install the server components on separate servers. Prior to installing SBM, you should plan where you want to install the various server components. After you install the first server component, use the SBM Configurator to define the physical distribution of your remaining server components. Once you finish **wizard mode**, the SBM Configurator prompts you to export your current configuration to a configuration snapshot file that you can import on your remaining servers. Immediately after installing the next component on another server, use the **Import** option to update that installation with the configuration details you created on the first server.



Note: After the import is finished, continue to configure any remaining settings that are specific to the components that are installed on this server (which are not included in the configuration snapshot).

For example, if the snapshot contains only information about the SBM Application Engine and SSO, after the import finishes you still need to configure the rest of the settings that pertain to the other components you just installed. In this scenario, the import does not finish the configuration of your Mail Servers, so you must still configure them after the import is finished.

- Some of the dialog boxes in the wizard require that you provide information before you can continue. Once you complete all required fields in the current dialog box, the **Next** button becomes available.
- Certain dialog boxes may not appear in **wizard mode** depending on the components you selected to install in the suite installer. For example, if you choose not to install the SBM Application Engine, the **IIS Server** dialog box does not appear as you progress through the utility. Therefore, you must configure the IIS settings on the SBM Application Engine server after you install the SBM Application Engine on another server.
- If you click **Cancel** any time during the wizard, your current changes are discarded. To save your changes, click **Finish** at the end of the wizard. After you finish the wizard, launch the SBM Configurator from the Windows **Start** menu to continue configuring your installation at a later time.

-
- You can export system configuration details to a configuration snapshot file or import an existing file if you have already created one. During the import operation, configuration settings in the file are ignored if they do not apply to the components that are currently installed on the server.
 - Once you click **Finish** at the end of the wizard, the SBM Configurator is launched in **utility mode**, which enables you to configure advanced settings.

Running the SBM Configurator in Utility Mode

The SBM Configurator runs in **utility mode** once **wizard mode** is complete or any time thereafter when you open the SBM Configurator from the Windows **Start** menu. In **utility mode**, you can reconfigure settings that you have already entered, manage advanced SBM settings, control Windows services such as IIS or Serena Common JBoss, or view important system information.

Note the following when you run the SBM Configurator in **utility mode**:

- In **utility mode**, you select items to configure from the menus in the navigation pane on the left side of the tool. When you select a tab, the configuration details for that item appear in the main pane. Unlike **wizard mode**, you can select and configure any item at any time.
- In a distributed server installation (in which the SBM server components are installed on more than one server), keep in mind that configuration changes can apply to more than one server. For example, if you change the IIS port number on the SBM Application Engine server, you must update the configuration settings on the Application Administrator as well (to ensure Application Administrator can still communicate with the SBM Application Engine). You use the SBM Configurator on the Application Administrator server to update the SBM Application Engine port number or you can update the Application Administrator server by importing a configuration snapshot file that has been exported from the SBM Application Engine server (after you have changed the port number on the SBM Application Engine server).
- After you enter configuration information on a dialog box, click the **Apply** button to save your changes. When you click **Apply**, the IIS and JBoss services are stopped. This enables the SBM Configurator to save your changes to the various configuration files within the file system. These services are returned to their prior status once the SBM Configurator has finished saving the configuration changes.



Important: If you apply changes while the SBM Configurator runs in **utility mode**, browser users might not be able to access the system immediately while the services are restarting. Therefore, consider applying configuration changes at a time when users are not actively using the system.

- Some of the dialog boxes require that you provide information before you can apply your changes. To apply your changes, enter the required information in each field that displays a red warning icon next to it.
- If you click **Close**, your current changes are discarded. To save your changes, click **Apply** any time during the configuration. Launch the SBM Configurator from the Windows **Start** menu to continue configuring your installation at a later time.
- You can export system configuration details to a configuration snapshot file or import an existing snapshot file if you have previously created one. During the import operation, configuration settings in the file are ignored if they do not apply to the components that are currently installed on the server.

Database Changes During the Upgrade

When you upgrade your database, the upgrade changes data in your database to make it compatible with the new release.

The database changes include:

- Projects that contain transition overrides (enabled/disabled) are promoted to workflows. See [Transition Overrides in Projects \[page 28\]](#) for more information.
- Default values for User, Group and Relational fields set at the workflow are moved to the project level. See [Field Properties Promoted from Workflows to Projects \[page 28\]](#) for more information.
- The data for date and time fields will be updated to support an extended format. See [Database Changes for Extended Date Support \[page 27\]](#) for more information.
- Data stored in the database will be changed to Unicode. This change will occur only when your database data is currently not in Unicode. For more information, see [Running the Unicode Upgrade Utility \[page 57\]](#).
- Certain field types are converted to CLOBs for Oracle systems. For details, refer to [Field Types Converted to CLOBs for Oracle Systems \[page 28\]](#).
- Administrator privileges will be changed to include all new deployment permissions. See [Privilege Changes for Administrators \[page 29\]](#) for details.
- The database will increase in size due to the changes, especially the Unicode upgrade. Expect the database to increase in size up to a 100%, and the transaction logs to grow significantly.

-
- Each of the existing solutions will be converted into an application and placed into a process app. See [Re-establishing Relationships Between Upgraded Applications \[page 81\]](#) for more information.
 - Custom auxiliary tables that are related to an existing solution will be added to the new application created for that solution. You will edit the new application in SBM Composerto alter these custom auxiliary table(s).
 - The system auxiliary tables will be added to the Global Application Process App. You will edit this Global Application in SBM Composer to alter the auxiliary tables.

Database Changes for Extended Date Support

SBM now supports date/time ranges from Jan. 1, 1900 to Dec. 31, 9999.

To support this change, date/time fields that are set to either *Date/Time* or *Date Only* are changed as follows during the database upgrade:

- *Date/Time* values are converted from numeric integers to the DBMS native date data type.
- Time portion values for *Date Only* fields are set to zero.
- Values for *Date/Time* fields set to record time only or elapsed time are stored as integers.
- The system continues to interpret modified Julian dates in *Date/Time* fields that are not set as elapsed time fields. For example, if users enter 09092008 into a *Date* field, the date is saved as 04/16/1970. The date entered was interpreted as a modified Julian date, which is seconds since Jan. 1, 1970.
- Advanced SQL report conditions that use Date/Time Keywords with a date/time value of a number of seconds since 1970, such as "Submit Date/Time > (now - (86400*3)," must be modified after you upgrade your system before they will run without errors. The SQL conditions must conform to the DBMS date data type. For example, on Oracle systems, a valid condition would be Submit Date/Time' > now - 3. For SQL Server systems, a valid condition would be 'Submit Date/Time' < DATEADD(Day, -3, GETUTCDATE()).
- Support for this change was added to the SBM Application Engine Web Services API, SBM AppScript, SBM API, and all database utilities, such as the Archive Wizard and the Import Data Wizard.



Note: This change will require that you update your scripts to be compatible with the new date format. See [Upgrading Your Scripts \[page 71\]](#) for more information.

Field Types Converted to CLOBs for Oracle Systems

To accommodate full Unicode support, certain database columns are converted to CLOBs during the database upgrade for systems using Oracle.

The impacted field types are:

- Text/Memo fields that are not fixed length and that were not set as CLOBs in a previous TeamTrack version
- Multi-Selection fields
- Multi-Relational fields
- Multi-User fields
- Multi-Group fields

When you create new fields of these types, they are automatically created as CLOBs. The option to specify a Text/Memo field as a CLOB has been removed.

This change also impacts system tables with large text columns, such as TS_MEMO in the TS_USERS table.

Field Properties Promoted from Workflows to Projects

The following field properties are promoted to the parent project assigned to the workflow after the database upgrade:

- Default values for *Folder*, *Single Relational*, and *Multi-Relational* fields are promoted to the project level. Other field properties overrides for these fields, such as read only and required settings, are promoted to the project level as well.
- Field dependencies that use *User*, *Multi-User*, or *Multi-Group* fields as the dependent or independent field are promoted to the project as well. Future changes to these dependencies are made in SBM System Administrator.

Transition Overrides in Projects

Projects that contain transition overrides (enabled/disabled) are promoted to workflows. For example, workflows will be created during upgrade for projects that have transition overrides to the parent workflow.

If there is an image associated with a project that has been promoted, the image will be copied and renamed from *project##.png* to *workflow##.png*.

After upgrade, the ability to enable and disable transitions in SBM System Administrator when you edit a project will no longer be available.

This could cause a proliferation of workflows if your installation contains many projects with transition overrides. Changing the transition overrides before you perform the upgrade will prevent the additional workflows from being created. See [Analyzing Your Current Database \[page 46\]](#) for details on how to locate transition overrides in a project.

Privilege Changes for Administrators

The addition of Application Administrator changes the privileges available for workflows, projects, and process apps. Privileges, such as field privileges at the workflow level, have been removed, and other privileges have been added, such as the permissions to deploy process apps from Application Administrator into SBM Application Engine.

The upgrade process will add deployment permissions automatically to certain users, based on their existing privileges. Any user with **Remote Admin** privileges at the time of upgrade will be upgraded to a **Managed Administrator** and granted all deployment privileges.



Note: These permissions can be changed after upgrade.

In addition to the changes made to workflows on upgrade as described in [Field Properties Promoted from Workflows to Projects \[page 28\]](#), managed administrators will notice that the Workflow sub-tab under Fields is no longer available. It has been removed due to the changes in privileges. This means that managed administrators must now set permissions at the project level instead of the workflow level.

Changes to SBM User Workspace String Customizations



Note: The information in this section pertains only to customers who have modified SBM User Workspace strings or who use a translated version of a TeamTrack 6.6.1 or earlier system.

SBM User Workspace strings are now provided as root strings and as a result, are stored differently in the SBM database. Root string values are stored in the *String IDs* table but cannot be modified.

Modified or translated strings are stored in the *Strings* table, and are associated with a record in the *Languages* table. Each language is associated with a locale, which users select in their user profile to determine which strings they are presented in the SBM User Workspace.

Recommendations for Upgrading Customers

- If you have modified or translated strings in a version of TeamTrack 6.6.1 or earlier, you should use the Export XML feature to export your

languages and strings before you upgrade to SBM. Store these exported files in a safe location until you have verified your upgraded installation.

- String records associated with the default language that were implemented using the Import XML feature are deleted on upgrade. Customers who created or modified strings using XML Import in a previous version should export their strings prior to upgrade and contact Serena customer support.
- If you use a Serena-translated version of TeamTrack 6.6.1 or earlier, you must install the next translated version of Serena Business Manager before upgrading. Upgrading from a Japanese or French version to the English version may cause the translated version to be deleted.

Table-Specific Changes

The following upgrade changes apply to the *Languages* table:

- If your system contains active records in the *Languages* table for US English, German, French, Spanish, Japanese, Chinese and Korean, duplicates are found and set to inactive. All other languages are marked as inactive.
- All other language records are marked as inactive. You must set them as active and provide a value for the *Locale* field before these records can be used.
- All language associations are removed from each user's user profile. Users must select a preferred locale in their user profile to determine which strings they are presented in the SBM User Workspace.
- Language records that are not associated with records in the *Strings* table are removed.

The following upgrade changes apply to the *String Identifiers* table:

- String identifiers are retained if they are associated with a record in the *Strings* table for a non-default language or with a string that has been modified from the SBM User Workspace in a previous version.
- Retained string identifiers have a "root value" updated from the TeamTrackResources.xml file.
- New string identifiers are added from the TeamTrackResources.xml file.

The following upgrade changes apply to the *Strings* table:

- String records are retained if they are not associated with a default language or they have been modified from the SBM User Workspace in a previous version .

-
- Remaining string records containing format parameters are updated to use new format rules.

Other Database Considerations

This section describes some additional factors involving your database that you should consider prior to upgrading.

Using a Single Database or Multiple Databases

In TeamTrack, all the user data and system architecture elements were stored in a single database. The various design elements that comprised your solutions were stored in the same repository as your user data. In SBM, you can still store all of your data in a single database, or you can create separate databases for the server components (SBM Application Engine, Application Administrator, and SBM Orchestration Engine). All the components can share a single database; however, creating at least two separate databases for the SBM Application Engine and the components powered by Serena Common JBoss provides the following benefits:

- The data entered by SBM User Workspace users is kept separate from the data used to build and describe process apps and other design artifacts.
- Storing data in separate databases allows more resources to be dedicated to each database or schema.

Using Backup and Restore Procedures

It is recommended that whenever you need to copy your SBM database, you use the backup and restore tools that are native to your DBMS. If you use the Copy Database Wizard in the SBM System Administrator, only the SBM Application Engine tables are copied. If you happen to have your Application Administrator repository in this same database, those tables will not be copied. By creating a .dmp or a .bak file as a copy, you can ensure that the entire database is copied.

Database Column Limitations

SQL Server databases support up to 1024 columns per table. Oracle databases support up to 1000 columns per table. For each field that you create in SBM, a new column is added to the associated table inside the database. Keep in mind that when you delete a field from SBM, it is not permanently deleted from your database; it is only marked as deleted and still exists as a column in the table. Although rare, your database tables may exceed this upper limit over time. If you check your deleted fields before adding new fields, you may find that you can use a field that is already in your database, thereby eliminating the need to create additional fields.

Licensing Considerations for Upgraded Systems

Serena License Manager is used to manage SBM licenses and access to each environment in your system.

The following information applies to upgrading customers in regards to licensing:

- Users who connect to Application Administrator, SBM Composer, SBM System Administrator, or the SBM User Workspace consume a user license. Users consume only one license if they are connected to multiple interfaces within a single environment. Note that licenses are consumed only for SBM Composer when it is connected to the SBM Application Repository.
- You do not need to change your current license set up in order to upgrade to SBM. There is no need to change anything in Serena License Manager prior to upgrading your system.
- Seat licenses, which determine the number of users that can be active in an SBM system, are now available for Managed Administrator, Regular User, Occasional User, and External User (Requestor) product-access types. Seat licenses ease administration because you do not need to assign a license to each individual user, as you must with named licenses. You can migrate to seat licenses at any time after upgrading.

Chapter 4: Planning Your Upgrade

This section contains critical information about upgrading your system.

- [Prerequisites \[page 33\]](#)
- [Recommendations for Upgrade \[page 35\]](#)
- [Steps for Upgrading Your System \[page 36\]](#)
- [Process for a Multi-Environment Upgrade \[page 40\]](#)

Prerequisites

Your system must meet the following requirements before you upgrade to Serena[®] Business Manager.



Important: The database must be a supported database, such as Microsoft SQL Server or Oracle. Microsoft Access, Sybase and DB2 are no longer supported database types. If you have one of these databases, you must convert your database into a supported database type before running the database upgrade. This includes the Sample database provided with versions of TeamTrack 6.6.1 and earlier. For details on converting a Microsoft Access database, refer to [Upgrading a Microsoft Access Database \[page 63\]](#).



Note: For a list of each DBMS and O/S that are supported for SBM, access the Supported Platform Matrix from the readme.

- You must be on TeamTrack 6.6.1. The only supported upgrade from TeamTrack to Serena[®] Business Manager is from TeamTrack 6.6.1.
- The version of the database client installed on the SBM Application Engine server must match the version of your DBMS. If you are installing Application Administrator on a separate server, you must install the Oracle client on that machine as well.
- Serena[®] Business Manager no longer supports the Sun One Web server or the old TeamTrack Web server. If you currently use either of these Web servers, contact Serena Support for assistance in your upgrade.
- Ample free disc space on your database machine is required to accommodate the upgraded database. Expect a growth of up to 100 percent for the database, and larger growth for the transaction logs.
- Ample processing power on your machine is required to support the increased memory usage for double-byte character sets. SBM uses double-byte character set UTF-16 to encode all strings in memory, which

means that the memory required for ASCII data will double from 1 to 2 bytes per character. See [Hardware Requirements \[page 34\]](#) for more information.

- Microsoft .NET Framework 3.5.1 must be installed on all Windows machines. If it is not detected, .Net Framework 3.5.1 is installed by SBM. To save download and installation time, you may want to install version 3.5.1 prior to running the SBM installer. Also, if you will not have Internet access during the installation, you should download and install 3.5.1 beforehand.
- On Windows 2003 systems, the SBM installer requires Windows Installer 4.5 in order to install SQL Express without a system restart. If you do not pre-install Windows Installer 4.5, the SBM installer performs the install for you and prompts you to restart the system after you select the option to install SQL Express. Therefore, to avoid an unscheduled system restart, download and install Windows Installer 4.5 from [Microsoft](#), restart your server, and then install SBM. To determine if version 4.5 is already installed, open the command line and enter the following:

```
msiexec -?
```

Hardware Requirements

The hardware requirements for SBM running on a Windows 2003 or Windows 2008 32-bit operating system are as follows:

- **Recommended Requirements** – 2 GHz or higher multi-processors; 4 GB memory; 10 GB operational disk space.
- **Minimum Requirements** – 800 MHz or higher single processor; 2 GB memory; 2.5 GB operational disk space.

The hardware requirements for SBM running on a Windows 2008 R2 64-bit operating system are as follows:

- **Recommended Requirements** – 2 GHz or higher multi-processors; 16 GB memory; 10 GB operational disk space.
- **Minimum Requirements** – 800 MHz or higher single processor; 8 GB memory; 2.5 GB operational disk space.

When you install all SBM Server components on one machine, the recommended requirements will allow SBM Server to have an average response time under a normal load. With the minimum requirements, the response time will be much slower; however, SBM Server will continue to run.

For high load situations, it is recommended that you place your SBM Server and database on different machines.



Note: For upgrading customers, these requirements have increased since TeamTrack 6.6.1. SBM Server requires an increase in processing power because SBM uses the double-byte character encoding UTF-16 to encode all strings in memory, which means that the memory required for ASCII data will double from 1 to 2 bytes per character. Therefore, if your TeamTrack installation uses primarily ASCII, there will be significant increase in memory usage. It is recommended that you upgrade the memory and CPU at least 50% to support SBM.

Due to the Unicode conversion, the base IIS memory footprint (or the amount of memory consumed by the IIS w3wp process during the initial loading of SBM) is greater, but the runtime footprint (additional memory growth that occurs as users access and use the system) is smaller and more stable. If you find that your current installation's base memory footprint is high (approaching the 2GB IIS limit), you should add the Windows Server /3GB switch prior to upgrading to allocate more memory to the SBM address space.

Recommendations for Upgrade

The following are some recommendations to help expedite your upgrade:

1. Read [Database Changes During the Upgrade \[page 26\]](#) to understand the changes that will be made and actions that can be taken to prevent the creation of unwanted projects or workflows.
2. Back up your database as described in [Backing Up Your Existing Database \[page 46\]](#).
3. Upgrade on a test system before upgrading your production system. This will allow you to find any possible upgrade issues and to show you how long the upgrade procedure will take. See [Steps for Upgrading Your System \[page 36\]](#) for information on performing an upgrade to a test system.
4. Plan ample time to perform the upgrade. For example, the step to upgrade only the database may take 2 ½ hours to upgrade a 1 GB database.
5. In a multi-environment upgrade, install Application Administrator on a separate server. In a multiple-environment upgrade, there will be multiple SBM Application Engine Web Servers running on different servers while there is only one Application Administrator.
6. Create two separate database partitions to host your SBM data. All the SBM databases can share a single database space; however, creating at least two databases that separate the runtime data (SBM Application

Engine and SBM Orchestration Engine) and the repository data provides the following benefits:

- The data entered by SBM User Workspace users is kept separate from the data used to build and describe process apps and other design artifacts.
- Storing data in separate databases allows more resources to be dedicated to each database or schema.
- This is the most manageable configuration for systems that use Application Administrator to promote process apps between development, test, and production servers.



Note: In this scenario, the Common Log should have a dedicated database or share the same space as the SBM Application Repository.

7. Some of the post-upgrade procedures do not need to be performed immediately, such as the addition of roles. You may choose to implement these changes after your system is back online.

Steps for Upgrading Your System

Before upgrading your TeamTrack 6.6.1 server, read and perform the steps in described this section. If you plan to install SBM on the same hardware that currently hosts TeamTrack, install the new components in a separate location from your previous TeamTrack installation. There is no need to uninstall TeamTrack first; however, you must install SBM in a new location. The suite installer does not allow you to install SBM on top of your previous TeamTrack installation.



Note: You can expect to perform these steps twice: once to test the upgrade and once to upgrade your production database. Run the procedure outlined from [Pre-upgrade Steps \[page 36\]](#) to [Post-upgrade Steps and Results \[page 39\]](#) on a test system before attempting to upgrade your production system. This will allow you find any possible upgrade issues before you perform the actual upgrade on your production database.

Some of these steps require you to either create or log on to your database. Your database administrator may need to assist you with these steps.

Pre-upgrade Steps

Prior to performing an upgrade, perform the following steps:

1. Before you install the new server components, decide where you will install the various components and determine if you want your components to share the same database. Review the "Installation

Considerations" topic in the *Serena[®] Business Manager Installation and Configuration Guide* for more information.

2. Back up your customized TeamTrack files and copy them outside of the installation directory. After the upgrade, you will merge your customized files with the files that were installed with SBM. See [Adding Custom Templates and Files to Database \[page 65\]](#)
3. Schedule system maintenance time on your server to perform the upgrade. The server must be offline while the upgrade is performed.
4. Validate that you have the correct credentials to connect to the database server.
5. Your database must have TCP/IP protocol enabled. Refer to your database documentation for enabling TCP/IP protocol.
6. If you are using Microsoft SQL Server, verify that the SQL Server Browser service is running. This service is required to verify the database connection during the configuration process.
7. Decide ahead of time whether or not you will use Single Sign-On (SSO). For more information about SSO, see the "Why Use Single Sign-On (SSO)" section of the *Serena[®] Business Manager Installation and Configuration Guide*.
8. Gather the following database connection information ahead of time:
 - Database server name
 - Database name
 - Database user ID and password
 - Database instance name

Overview of the Installation Upgrade

This section provides a broad overview of the installation upgrade. Before upgrading your TeamTrack 6.6.1 server, read and perform the steps in described this section. See the "Installing Serena Business Manager" chapter in the *Serena[®] Business Manager Installation and Configuration Guide* for details on performing the actual installation.

1. Make a copy or back up your production database using the backup and restore tools that are native to your DBMS.



Note: This step will protect you if a problem occurs during your upgrade.

2. Stop your TeamTrack Web server, Notification Server, and Mail Client.

3. If you plan to use a separate database for the SBM Application Repository and Common Log, create the new database and note the database connection information (database user ID and password). You can either use the same existing TeamTrack database to host the new databases or you can create new databases instead. The new databases can be located on the same machine or a different machine than the existing TeamTrack database.
4. Install the server components on one or multiple servers. You must install all server components (SBM Application Engine, Application Administrator, and SBM Orchestration Engine) to use SBM. Note that the SBM Application Engine includes the Notification Server and Mail Client. You must upgrade your TeamTrack 6.6.1 versions of these components to work with SBM.
5. After the installation is finished, launch the SBM Configurator and configure your installation. For distributed installations, you run the SBM Configurator on each server.
6. Verify that the license server is enabled and running. For details on understanding on how licenses are now consumed, refer to [Licensing Considerations for Upgraded Systems \[page 32\]](#).

Overview of the Database Upgrade

Prerequisites:

After you've upgraded your installation, you will perform the database upgrade. This section provides a broad overview of the steps you will follow to upgrade the database. See [Chapter 5: Upgrading Your SBM Application Engine Database \[page 45\]](#) for details on upgrading the database.

Prerequisites: Prior to upgrading your database, you must copy the database using the backup and restore procedures that are inherent to your DBMS.

Upgrade your database as described in [Chapter 5: Upgrading Your SBM Application Engine Database \[page 45\]](#). This includes preparing your database by performing such tasks as:

- Assessing the size of your existing database, the number of TeamTrack projects you have, and whether or not your database contains NVARCHAR columns. See [Preparing Your Database \[page 45\]](#) for more information.
- Determining whether or not you need to run the Unicode Upgrade Utility. Run the utility if required. See [Upgrading Database to Unicode \[page 53\]](#) for details.

-
- Performing the actual database upgrade by connecting to the database via ODBC using the SBM System Administrator installed by the suite installer. For details see [Upgrading the SBM Application Engine Database \[page 62\]](#)



Note: You are no longer prompted for warnings and errors that occur during the database upgrade process. Instead, the database upgrade now ends with a success or failure message that you must confirm. In addition, all errors and warnings that occurred during the upgrade are added to a log file in the `installDirectory\Application Engine\Log` directory. It is strongly recommended that you review this file after the database upgrade and correct any problems before continuing.

Post-upgrade Steps and Results

After you have installed the new version of SBM Server and upgraded the database, perform the following tasks. For more detail on all the post-upgrade tasks, see [Chapter 6: Before Moving Into Production \[page 65\]](#).

1. Merge any custom modifications you made to HTML templates, javascript files, e-mail templates, and SBM User Workspace help files in your prior installation to the 2009 R3 files located here:
`installationDirectory\Serena\SBM\Application Engine`. For details, see [Adding Custom Templates and Files to Database \[page 65\]](#).
2. If you performed step 1, open SBM System Administrator, select **File**, and then select **Put Files in Database**. ALL templates and images in the database are replaced by files on your local machine.
3. If you store file attachments on the file system rather than in your database, you should move attachments from your old installation if you used the default installation location. For more information, see [Setting Attachments Directory Path \[page 68\]](#).
4. Start the SBM Application Engine Web server (Internet Information Services – IIS), Serena Common JBoss Service, Notification Server and Mail Client on your production system.



Note: You can start IIS and the Serena Common JBoss Service on the **Manage Services** tab of the SBM Configurator.

5. Upgrade your integrations if required as described in [Updating Integrations \[page 73\]](#).
6. Launch SBM System Administrator and give the necessary privileges for the administrators who will log on to and deploy from Application Administrator. See [Getting Existing Process Apps into Application Administrator \[page 74\]](#) for more information.

7. Log on to Application Administrator and export the existing process apps into your Application Administrator database.
 - Your SBM Application Engine server will appear as your default environment. Click the environment name to open it and click the Deployed Process Apps tab. A list of the process apps that exist in SBM Application Engine should appear. To Get a process app from SBM Application Engine and make it available in Application Administrator and SBM Composer, select the process app and click **Get Process App From SBM Application Engine**. You can then open the process app in SBM Composer to upgrade it and begin making changes. See [Re-establishing Relationships Between Upgraded Applications \[page 81\]](#) for more information.
8. Run acceptance tests against the installation.

The following will have occurred during the installation (in addition to the installation of the new software):

- The TeamTrack Broker Service is updated with a new path and name. It is now called Serena Broker Service.
- Web service extensions are automatically added to your Web server. The old ones are not deleted; however, they are no longer needed.

Process for a Multi-Environment Upgrade

A multiple environment TeamTrack installation includes multiple SBM Application Engine servers in different environments; for example, a multi-environment installation could have a development environment, a staging environment, and a production environment. In the multi-environment setting, you have multiple databases to be upgraded.

You can upgrade each database independently, as long as each database is an exact copy of the other. To ensure your database is an exact copy, you must use the backup and restore procedure inherent to your DBMS. This is the only way to ensure that the same **database identifier** is copied from one database to another.



Note: To verify the database identifier for a particular database, open the TeamTrack Administrator and open the **Options** menu. Select **License Options** and note the read only **Database Identifier** field.

The TeamTrack Copy Database wizard creates a new database identifier when it copies the data from source to destination. Thus, the new database will not be an exact copy of the original (source) database, so you must use your DBMS to create the copy.



Important: As long as the database identifier is identical in each database and each database has just been restored using a fresh copy of production (after all changes have been moved into the production database), you can upgrade any of the databases and not have to worry about promoting changes from one database to another.

For example, after updating production with any changes from your staging environment, you delete the staging database and restore a copy of production into your staging environment. You now have an updated copy of your TeamTrack production database restored in your TeamTrack staging environment. You can now upgrade the staging environment and make changes, add new users, process apps, etc., and then promote those changes to production after you have upgraded the production database to SBM. If you do not use a fresh copy of production as the basis for your staging database, when you upgrade the staging environment, make some changes, and then attempt to promote those changes to a newly upgraded production database, you may have collisions between objects since the IDs reserved for new items in staging might already be used in production. To avoid this problem, restore a fresh copy of production in your staging environment prior to upgrading the staging database.

You can upgrade each database individually, that is, upgrade the development database, the staging database, and production database directly--only if each database is an exact copy. If the databases are not exact copies, you will encounter an incompatibility issue among the objects. During the upgrade process, unique identifiers (UUIDs) are assigned to every element in the database, which will represent the object from here on. If you run the upgrade process on each database separately and the database identifier isn't identical in each database, objects in each database will then receive unique UUIDs.

This means that you could have "My Project" in Staging with a UUID of 1001 and a "My Project" in Production with a UUID of 2002. When you promote changes from Staging to Production, SBM will not know that "My Project" in

Staging is the same as the "My Project" in Production. This will cause a second "My Project" to be created in Production with a UUID of 1001.

If you find that the databases do not share the same database identifier, then the multi-environment upgrade requires a specific process to keep these multiple databases synchronized. A very high-level view of the process is as follows:

1. Complete all in-progress changes and move them to your production environment.
2. Create new tablespaces for your development and staging environments.
3. Re-establish these environments using a backup and restore of the production database.
4. Perform the upgrade against any of the environments you wish.

A second key component in the multiple environment upgrade is that the multiple environments will share one installation of Application Administrator. This means when upgrading multiple environments, you will only install Application Administrator once. Your installation of Application Administrator must have network access to all of the other environments.

The following steps describe the upgrade process in more detail:

1. Move all changes from your development and staging databases into your production database. This prevents you from losing changes that are in progress.
2. Delete your development and staging databases.
3. Make a backup of your production environment database.
4. Restore this backup in the development and staging environments.
5. Perform the SBM upgrade in a test environment on a copy of the production database as described in [Steps for Upgrading Your System \[page 36\]](#).
6. Run acceptance testing on the upgraded database.
7. Perform a production system upgrade as described in [Steps for Upgrading Your System \[page 36\]](#)
8. Re-establish other environments, such as staging, by installing SBM Application Engine and SBM Orchestration Engine in your staging environment. Upgrade the staging environment database.
9. Create the additional environments in Application Administrator. See [Creating an Environment \[page 75\]](#) for more information.

After you have upgraded all of the environments, you will be able to promote or deploy changes from your Development environment into your Staging environment, and then into your Production environment. See the *SBM Application Administrator Guide* for details on this process.

Chapter 5: Upgrading Your SBM Application Engine Database

This section discusses how to upgrade your TeamTrack database to be compatible with Serena[®] Business Manager.

- [Preparing Your Database \[page 45\]](#)
- [Upgrading the SBM Application Engine Database \[page 62\]](#)
- [Upgrading a Microsoft Access Database \[page 63\]](#)

Preparing Your Database

Perform the following tasks to prepare your database for the upgrade:

- [Backing Up Your Existing Database \[page 46\]](#)
- [Analyzing Your Current Database \[page 46\]](#)
- [Analyzing Attachments \[page 50\]](#)
- [Sample SQL Queries \[page 52\]](#)
- [Converting NVARCHAR Columns \[page 53\]](#)
- [Upgrading Database to Unicode \[page 53\]](#)

The upgrade process will increase the size of your database and cause a drastic increase in size of your transaction logs. For the database, you can expect the database size to increase up to 100%. Depending on your log settings, the transaction logs could triple in size during the upgrade.

To prevent possible hard disk problems, verify that the machine with your database has ample free disc space to perform the upgrade. If the upgrade process runs out of space during the upgrade, it will fail and you will be forced to roll back to the original database and perform the entire procedure again.



Tip: If auxiliary tables, such as the *Contacts* and *Companies* tables, contain a large number of records, clear the **Enable Caching** check box located on the **Advanced** tab of the **Edit Table** dialog box before upgrading the database.

See [Database Changes During the Upgrade \[page 26\]](#) for information on what changes are being made to the database.

Backing Up Your Existing Database

Before performing any of the upgrade actions on your database, create a backup or copy of your database. A copy will allow you to roll back in case you encounter problems.

You can back up your database either by using the utilities supplied with your database.

To back up your database:

1. Stop your TeamTrack Web server, Notification Server, and Mail Client. This prevents users from updating the database while you are making the backup.
2. Create the backup or copy of your database.
3. Restart your TeamTrack Web server, Notification Server, and Mail Client.

Analyzing Your Current Database

The upgrade from TeamTrack to Serena Business Manager makes many changes to your database. As part of the pre-upgrade process, you can execute a single Perl script that runs a series of scripts against your TeamTrack database to produce a series of reports you can use to prepare your database for the upgrade.

The scripts scan your database to identify manual changes that you can make before the upgrade to simplify the overall upgrade process. The scripts do not alter any information in the database; instead, they create reports in an output folder that will help you successfully upgrade the database to SBM. Note that running these scripts before you upgrade is optional; the upgrade will still succeed without them. However, analyzing the database with these scripts can prevent unintended results after the upgrade.

For example, to eliminate the creation of unwanted workflows in your SBM database, use the results of the `NewWorkflow` script to determine which projects have transition overrides. During the upgrade, new workflows are automatically created for projects that contain transition overrides because overrides do not exist at the project level in SBM. Once you know which projects contain transition overrides, you can either remove the override or move the transition override from the TeamTrack project to the TeamTrack workflow before upgrading to prevent a proliferation of workflows in the SBM database.

Additionally, the scripts identify changes you may need to make for certain SQL queries to work. After the upgrade, you may need to update certain SQL queries that are used in TeamScript or other database queries to ensure that the queries interact with certain columns correctly, as some columns will change data type during the upgrade.

Running the Upgrade Scripts

All of the scripts are executed by invoking one master script, `scriptrunner.pl`. This script is available in the "TeamTrack to SBM Upgrade Preparation Scripts" solution in the Knowledgebase at serena.com.



Note: The scripts delivered in this bundle are written in Perl and require a Perl runtime environment. If you do not have the Perl runtime environment, you need to install it and add it to your path. For Windows systems, a free Perl runtime can be downloaded from <http://www.activestate.com/activeperl/downloads/>.

To run the script:

1. Open the command line.
2. Change the directory to the location where you unzipped the scripts.
3. Invoke the following command, using the information for your TeamTrack installation:

```
scriptrunner.pl -f OUTPUTFOLDER - d DATASOURCE_NAME -u USERID -p PASSWORD
```

Note you can invoke `scriptrunner.pl - h` for additional information on running the script.

The output from the scripts is written to the output folder that you specify.



Tip: Save your output after upgrade process is finished. The information in some of the reports is useful after the database upgrade is finished.

Understanding the Results

The following scripts are invoked when you execute the master script, `scriptrunner.pl`:

- **Changed Column Types**
- **Dropped Indexes**
- **Dropped Statistics**
- **E-mail Templates**
- **New Workflows**
- **Project Field Dependencies Promoted from Workflow**
- **Project Field Overrides Promoted from Workflow**
- **Report SQL**

- **TeamScripts**
- **Template Customizations**

The following sections describe each script and how you can use the script results. The descriptions explain what actions should be taken before or after upgrading.

Changed Column Types

The **Changed Column Types** output lists the primary and auxiliary table columns that are changing *data type* on upgrade.

- **Post-Upgrade Task** – Use the results to determine if any of your SQL queries must be updated after the upgrade. The SQL queries could be used in advanced SQL reports, TeamScript, TeamTrack API applications, or direct interaction with the database.

Dropped Indexes

The **Dropped Indexes** output indicates the indexes that are dropped and not recreated during upgrade. The indexes are dropped because Microsoft SQL Server does not allow columns to change data type unless all indexes are removed.

- **Post-Upgrade Task** – Use these results to determine which indexes to re-establish after the upgrade is complete. Note that indexes that begin with "TI_" or "TK_" are usually system indexes, and these will be re-created automatically at the end of the upgrade.

Dropped Statistics

The **Dropped Statistics** output indicates the statistics that must be dropped before performing the upgrade. The statistics must be dropped because Microsoft SQL Server does not allow columns to change data type unless all statistics are removed.

- **Pre-Upgrade Task** – Use these results to determine which statistics need to be manually dropped before performing the upgrade. Note that statistics that begin with "TI_" or "TK_" are usually associated with system indexes that will be dropped automatically.

E-mail Templates

The **E-mail Templates** output lists the e-mail templates that are not in UTF-8 format.

- **Pre-Upgrade Task** – Convert the e-mail templates listed in the results to UTF-8 format. Note that this can be done before or after upgrading.

New Workflows

The **New Workflows** output lists the workflows that have transition overrides at the project level. During the upgrade, new workflows are automatically created for projects that contain transition overrides because overrides do not exist at the project level in SBM. This could cause a proliferation of workflows if your database contains many projects with transition overrides.

- **Pre-Upgrade Task** – Use the results to determine where transition overrides exist. Change the transition overrides before you perform the upgrade to prevent additional workflows from being created.

Project Field Dependencies Promoted from Workflow

The **Project Field Dependencies Promoted from Workflow** output lists the projects that are updated by the upgrade to move dependency configuration for user, multi-user, and multi-group fields from the workflow level to the project level.



Note: In SBM, dependencies that involve user, multi-user, and multi-group fields cannot be configured at the workflow level, as the selections for these fields are groups and users, which do not exist at design time (in SBM Composer). Once the process app is deployed to the SBM Application Engine, user and group selections can be configured for these fields and relationships between independent field selections and dependent field selections can be configured in the project. This could cause a proliferation of projects if your database contains many workflows with field dependencies.

- **Pre-Upgrade Task** – Use the results to determine which workflows have field dependencies. Modify the workflows to eliminate the dependencies to prevent additional projects from being created.

Project Field Overrides Promoted from Workflow

The **Project Field Overrides Promoted from Workflow** output lists the projects that are updated during the upgrade to move field overrides for relational, folder, and project fields from the workflow level to the project level.



Note: In SBM, field overrides for single-relational, multi-relational, project, and folder fields cannot be configured at the workflow level. Instead they are configured at the project level after the process app is deployed. This could cause a proliferation of projects if your database contains many workflows with these field overrides.

- **Pre-Upgrade Task** – Use the results to determine which projects have field overrides that will be promoted from the workflow to the project level. Modify your workflows to eliminate the overrides to prevent additional projects from being created.

Report SQL

The **Report SQL** output lists the Advanced SQL reports that have SQL queries which may need to be altered due to the column data type changes.

- **Post-Upgrade Task** – Examine the reports that are listed for SQL that interacts with date fields that will change data type from integer to database native date types during the upgrade. Update your SQL accordingly.

TeamScripts

The **TeamScripts** output lists the TeamScripts that use "ReadWithWhere" functionality to interact with the database. These scripts may need to be altered to support the change in data type of the database columns.

- **Pre-Upgrade Task** – None. SBM Composer no longer imposes a script size limit; therefore, you do not need to break up your scripts in to smaller scripts.
- **Post-Upgrade Task** – Use the results to determine which scripts need to be updated to match the data type changes made to the table columns during upgrade.

Template Customizations

The **Template Customizations** output displays a list of the e-mail and html templates that have been customized in your installation.

- **Pre-Upgrade Task** – Prior to upgrade, make a copy of your customized templates. You will use these files after upgrade to merge your changes into the new templates.
- **Post-Upgrade Task** – After the upgrade, verify that your customizations are still necessary with SBM. The new templates have several significant enhancements which may make your customizations unnecessary. If you decide to add your customizations to the new templates, use the copies of the files that you made prior to upgrade as a reference for the customizations that you have made. You will need to manually add these changes to the new templates. Note that the templates have changed extensively in SBM.

Analyzing Attachments

Depending on your database configuration, you may have to change the format of how your attachments are stored in your database. In TeamTrack 6.6.1, attachment data could be stored as either LONGRAW or BLOB format in the database. With Serena Business Manager, the data must be stored as BLOB format.

First, you must determine how TeamTrack stores your existing attachment data, which is stored in the TS_BLOBS table. The following example SQL query describes how your data is stored:

```
desc TS_BLOBS;
```

If your TeamTrack 6.6.1 database stores the data in BLOB format, you do not have to do anything.

If the data is stored in LONGRAW format, you can either convert it manually prior to upgrading or allow Serena Business Manager to convert it automatically as part of the database the upgrade. The time to complete the upgrade may be significantly greater if Serena Business Manager has a lot of data to convert as part of the database upgrade. Therefore, it may be useful to know how much data must be converted beforehand. You can run the following SQL query against the TS_BLOBS table to determine the size of the data that must be converted:

```
select
  segment_name table_name,
  sum(bytes)/(1024*1024) table_size_meg
from
  user_extents
where
  segment_type='TABLE'
and
  segment_name = 'TS_BLOBS'
group by segment_name
```

Whether or not you store attachments in the database or not affects the size returned by the SQL query. The size is greater if attachments are stored in the database. If you store your attachments in the database, consider moving your attachments from the database to the file system. This significantly reduces the amount of data in your database that needs to be converted. To remove file attachments from the database:

1. Back up your TeamTrack database.
2. From the **Options** menu in SBM System Administrator, select **Settings** or click the Settings icon on the toolbar.
3. On the Attachments tab, select the **Store File Attachments on the File System** option. You are warned that files in the database will be moved to the file system and deleted from the database.



Note: If you decide to move your attachments to the file system, it is recommended that you take your installation offline beforehand. If not, users may encounter issues because the process to extricate the files from the database to the file system takes time (though the setting is instantaneous). Performing the migration while the system is online causes attachment links to be invalid until after the file has been placed on the file system. It also causes conflicts if an attachment of the same name is uploaded before that file has been removed from the database.

If you decide to keep the attachments in the database, there are two options for converting the data:

- **Convert the data before you run the upgrade** – This significantly reduces the time it takes the SBM System Administrator to finish the upgrade. If you decide to use this option, in order to reduce the total amount of time your system is offline while the database is being upgraded, consider converting the data during off-hours prior to performing the actual database upgrade. Since TeamTrack 6.6.1 supports both formats, your current TeamTrack installation will function normally.

Attachment data is stored in the TS_BLOB column of the TS_BLOBS table. To convert the data in the TS_BLOBS table, run the following SQL Alter Table statement:

```
alter table TS_BLOBS modify (TS_BLOB blob);
```

- **Allow the upgrade to convert the data from LONGRAW to BLOB** – This approach may be acceptable if there is not a large amount of data to convert.

Sample SQL Queries

You can also determine where possible problems reside in your database by running direct SQL queries. Use the following SQL queries to determine which projects will be promoted.

The following SQL query identifies projects that will be promoted to workflows:

```

SELECT DISTINCT TS_PROJECTS.TS_ID AS 'PROJECT ID',
               TS_PROJECTS.TS_NAME AS 'PROJECT NAME'
FROM TS_PROJECTS, TS_PROJECTTRANSITIONS
WHERE TS_PROJECTTRANSITIONS.TS_PROJECTID <> 0 AND
      TS_PROJECTTRANSITIONS.TS_PROJECTID = TS_PROJECTS.TS_ID
ORDER BY TS_PROJECTS.TS_NAME;

```

The following SQL Query identifies transitions that are overridden in each TeamTrack project, thereby causing the project to be promoted to a workflow during the upgrade:

```

SELECT TS_PROJECTS.TS_ID AS 'PROJECT ID',
       TS_PROJECTS.TS_NAME AS 'PROJECT NAME',
       TS_TRANSITIONS.TS_NAME AS 'TRANSITION NAME',
       TS_TRANSITIONS.TS_ID AS 'TRANSITION ID'
FROM TS_PROJECTS, TS_PROJECTTRANSITIONS, TS_TRANSITIONS
WHERE TS_PROJECTTRANSITIONS.TS_PROJECTID <> 0 AND
      TS_PROJECTTRANSITIONS.TS_PROJECTID = TS_PROJECTS.TS_ID AND
      TS_PROJECTTRANSITIONS.TS_TRANSID = TS_TRANSITIONS.TS_ID
ORDER BY TS_PROJECTS.TS_NAME, TS_TRANSITIONS.TS_NAME;

```

Converting NVARCHAR Columns

If you have NVARCHAR columns used in the TeamTrack database, the database upgrade will warn you about these columns. Data problems can occur when you run the upgrade against NVARCHAR columns.

NVARCHAR columns may have been created by importing a Microsoft Access database into SQL Server 2000. This process causes all of the VARCHAR columns to be designated as NVARCHAR columns.

The upgrade utility will not set the column length for NVARCHAR columns, which may result in data loss.

To prevent data loss, you will need to create a copy of the database, using the TeamTrack copy database functionality in the TeamTrack Administrator. The **Copy Database** function will correctly convert the NVARCHAR columns, allowing you to perform the upgrade.

See [Upgrading a Microsoft Access Database \[page 63\]](#) for more information.

Upgrading Database to Unicode

Unicode is required for Serena[®] Business Manager. Before upgrading your database to Serena[®] Business Manager, you must convert your database character set to Unicode.

The upgrade of your database to Unicode will cause the size to increase substantially. Plan ahead and verify that your system has enough free space before performing the upgrade.

The time needed to complete the Unicode upgrade of the database may last multiple hours. The completion time for the upgrade depends on the amount of data in the database, as well as the database type, the "closeness" of the utility to the database (same machine, or running across the network, network speed), and the hardware (CPU, memory). The recommended approach is to run the utility on a test database to get an idea of how long it will take. Expect the process to take multiple hours for large databases.

Process to Upgrade the Database to Unicode

The process to upgrade your database depends on your database, its character set and the character set used by TeamTrack 6.6.1. The following topics give a high-level overview of the process to upgrade your database in the different scenarios.



Note: The following topics require that you install both the SBM Application Engine and SBM System Administrator. You must also back up your production database before running the Unicode Upgrade Utility. It is also recommended that you talk to your DBA about reducing your logging mode during the upgrade, which will help limit the growth of your log files.



Note: After reviewing the following scenarios, if you find that you need to run the Unicode Upgrade Utility, the Oracle NLS_NCHAR_CHARACTERSET must be set to AL16UTF16 before doing so. The Unicode Upgrade Utility can only be run on a Windows machine.

For a SQL Server Database

If you are using a SQL Server database, SQL Server does not support UTF-8 at all; instead, it supports UTF-16 when using 'N' datatypes (nvarchar). The steps to update your SQL Server database to Unicode are:

1. Install both the SBM Application Engine and SBM System Administrator; however, do not upgrade the database using SBM System Administrator.
2. Create a backup of your production database.
3. Change your MSSQL Recovery model from Full to Simple.
4. Run Unicode Upgrade Utility against your production database as described in [Running the Unicode Upgrade Utility \[page 57\]](#).
5. Connect to the newly converted unicode database using the SBM System Administrator and select to upgrade the database.

-
6. Change your MSSQL Recovery model from Simple back to Full.
 7. Shrink your Log file.
 8. Back up your newly upgraded database.



Important: When you are running the Unicode Upgrade Utility on Microsoft SQL, do not run the utility with Recovery Model set to Full. If you do, the upgrade will create a very large log file for recovery purposes. For example, when upgrading a 6 GB database, the log file may grow to greater than 30 GB while the data file may grow to greater than 15 GB. It is recommended that you take a backup immediately before running the utility and then set the recover model to simple before running the utility. The backup will allow a full restoration if something goes wrong during the upgrade rather than using the recovery model to provide for this backup.

For a UTF8 Oracle Database and UTF-8 TeamTrack 6.6.1

For Oracle systems where the client's NLS_LANG is UTF8, the server's NLS_CHARACTERSET is UTF8, the NLS_NCHAR_CHARACTERSET is AL16UTF16, and the existing TeamTrack 6.6.1 TeamTrack character set is UTF-8, perform the following steps to upgrade your TeamTrack database to Unicode:

1. Install both the SBM Application Engine and SBM System Administrator.
2. Create a backup of your production database.
3. Connect to the database using the SBM System Administrator.
4. Click **OK** to upgrade the database, ignoring the warning about running the Unicode Upgrade Utility.
5. Back up your newly upgraded database.

For a UTF8 Oracle Database and non-UTF-8 TeamTrack 6.6.1

For Oracle servers where the NLS_CHARACTERSET is UTF8, the NLS_NCHAR_CHARACTERSET is AL16UTF16, and the existing TeamTrack 6.6.1 TeamTrack character set is **not** UTF-8, perform the following steps to upgrade your TeamTrack database to Unicode:

1. Install both the SBM Application Engine and SBM System Administrator; however, do not upgrade the database using the Administrator.
2. Create a copy of your production database.
3. Run Unicode Upgrade Utility against the database as described in [Running the Unicode Upgrade Utility \[page 57\]](#).
4. Connect to UTF8 database using SBM System Administrator and choose to upgrade your database.

5. Back up your newly upgraded database.

For a non-UTF8 Oracle Database

If you are running an Oracle database that is not using UTF8 or AL32UTF8, you must perform the following the steps to upgrade to Unicode. AL32UTF8 is the preferred option since it supports 4 byte UTF-8 character sequences (whereas UTF8 only supports 3 byte sequences). Note that you will need to use two database instances:

Instance One - which uses the same NLS_CHARACTERSET as your current TeamTrack 6.6.1 production database and has the NLS_NCHAR_CHARACTERSET set to AL16UTF16.

Instance Two - which uses AL32UTF8 as the NLS_CHARACTERSET and has the NLS_NCHAR_CHARACTERSET set to AL16UTF16.

To perform the upgrade to your nonUTF8 Oracle database:

1. Install both the SBM Application Engine and SBM System Administrator; however, do not upgrade the database using the Administrator.
2. Import a copy of the production database into **Instance One**.
3. Run Unicode Upgrade Utility against **Instance One** as described in [Running the Unicode Upgrade Utility \[page 57\]](#).
4. Export the database to .dmp file.
5. Import the .dmp into a database where the NLS_CHARACTERSET is set to AL32UTF8 (**Instance Two**).
6. Connect to the AL32UTF8 database using SBM System Administrator and choose to upgrade your database.
7. Back up your newly upgraded database.

Ways to Upgrade Database to Unicode

The process to upgrade your database to Unicode depends on your database type and the current character set used in your database. There are two ways to upgrade data in a TeamTrack 6.6.1 database to Unicode.

One method is to use the Unicode Upgrade Utility, which reads the data out of the database, performs a character set conversion into a form of Unicode, and puts the data back into the database. This method is required for Oracle databases that are non-UTF8.

The second method is to simply connect to the database using SBM System Administrator and running the database upgrade. This method assumes that the database character set matches the SBM character set. This method is faster, but the scenario is less common. If you choose this option incorrectly,

that is, when the database character set does not match the SBM character set, all non-ASCII data will be corrupted.



CAUTION: If you choose not to run the Unicode Upgrade Utility before running the database upgrade and the database character set does not match the SBM character set, all non-ASCII data will be corrupted!



Important: The Unicode Upgrade Utility is affected by the environment in which it is run. The character set for the environment in which the tool runs must match the character set of TeamTrack 6.6.1. For example, when you run this tool on Oracle, the Oracle client character set (set in the registry keys) for that machine needs to match the Oracle client character set of the machine where TeamTrack 6.6.1 is running.

If you run the utility on the same machine where TeamTrack 6.6.1 is installed, you will not have any problems. If you run the utility on a different machine, pay careful attention that the character sets are identical.

About Completion Time of Upgrade Process

The completion time for each of these methods depends on the amount of data in the database, as well as the database type, the "closeness" of the utility to the database (same machine, or running across the network, network speed), and the hardware (CPU, memory). The recommended approach is to run the utility on a test database to get an idea of how long it will take. Expect the process to take multiple hours for large databases.

Running the Unicode Upgrade Utility



Important: After you run the Unicode Upgrade Utility on your database, the database will be incompatible with TeamTrack 6.6.1.



Note: Before running the Unicode Upgrade Utility, see [Upgrading Database to Unicode \[page 53\]](#) and [Process to Upgrade the Database to Unicode \[page 54\]](#) for additional information about upgrading your database.

Your database will increase in size while the Unicode Upgrade Utility runs. Expect the database and transaction log size to grow substantially. A 100 percent increase in size is common, and you must plan accordingly by having enough free space on your machine to accommodate this size increase.

The utility converts data in active and archived primary and auxiliary tables and system tables provided by the Create Database Wizard. Data in tables is not converted if they have been added to the database but are not provided by SBM.

The Unicode Upgrade Utility converts the data in your TeamTrack 6.6.1 database into the Unicode format required by Serena® Business Manager. You must run this utility when the character set specified by TeamTrack 6.6.1 is different than the character set specified by your database. The Unicode Upgrade Utility reads the data from the database in a method similar to how TeamTrack wrote the data. The utility then writes the data back into the database in a method specific to the database, for example:

- On SQL, the Upgrade Utility writes the data as NVARCHAR(MAX).
- On Oracle, it writes the data as NVARCHAR2/NCLOB.



Note: You must run this utility when the TeamTrack database does not understand the data that it is storing, that is, the database thinks that it has one character set while TeamTrack wrote the data in a different character set.

Notes on Running the Utility

- Full-text indexes should be dropped from your database before you run Unicode Upgrade. The full-text indexes will cause the utility to fail with an error message. After upgrading the database, the full-text indexes can be re-instituted.
- Specifying the number of threads allows the utility to run faster, assuming that the database is a multiprocessor box.
- The Upgrade Utility keeps track of progress in a database table, so if there is some problem, you can restart the utility with no time lost.
- You will not be able to connect to the database until after the Unicode Upgrade Utility has completed. This prevents data corruption in the case of trying to perform an upgrade using SBM System Administrator when the Unicode Upgrade Utility has only partially converted the database.
- Due to heavy database I/O, best performance will probably be achieved by minimizing the network distance between the Unicode Upgrade Utility and the database. For example, run the utility on the same machine or run it on a machine with gigabyte network connection to the database machine.
- For additional usage information, run the Unicode Upgrade Utility without any parameters.

Logging Information

- The utility creates a log in `<install_path>/log/UnicodeUpgradeLog_<date:example:04_10_2007_14_53_10>/`

- If you are running the utility multi-threaded (optionally), there will be 1 file per thread, plus a main file. If you are running the utility as single-threaded (default), there will be only 1 file.

SQL Server Specific Information

- The SQL Server character set comes from string column collation. The default depends on the Regional Settings of Windows when SQL Server is installed.
- Most installations have a different character set in TeamTrack (usually UTF-8) than is set in SQL Server (usually Windows-1252), so this utility should always be run.

Oracle Server Specific Information

- When the TeamTrack Administrator character set is UTF-8 and the Oracle client (registry) and server character set are AL32UTF8, there is no need to run this utility.
- Unicode Upgrade Utility prepares data in Oracle to allow the database to be backed up and restored into a UTF-8 instance. Serena[®] Business Manager will not connect to a non-UTF-8 database.
- SBM does not support Oracle 9i and TeamTrack does not support Oracle 11g. The Unicode upgrade must be performed using either the Oracle 10g or 11g client (with the exception of the Oracle 11.1.0.7 and 11.0.2 clients as SBM is not compatible with these ODBC drivers).
- If you find that you need to run the Unicode Upgrade Utility, review the following scenarios carefully before you begin:

Scenario	Step 1	Step 2	Step 3
Currently running TeamTrack with Oracle 9i	Run the Unicode Upgrade Utility using the Oracle 10g or 11g client (excluding versions 11.1.0.7 and 11.0.2).	Create a backup of the 9i TeamTrack database after the Unicode Upgrade Utility is finished.	Restore (import) the 9i backup from the previous step into an Oracle 10g or 11g instance that uses the UTF8 or AL32UTF8 character set.

Scenario	Step 1	Step 2	Step 3
Currently running TeamTrack with Oracle 10g	Run the Unicode Upgrade Utility using the Oracle 10g client.	Create a backup of the 10g TeamTrack database after the Unicode Upgrade Utility is finished.	Restore (import) the 10g backup from the previous step into an Oracle 10g or 11g instance that uses the UTF8 or AL32UTF8 character set.



Important: In either scenario, you must ensure that the 10g or 11g database uses the same NLS_CHARACTERSET as your current TeamTrack production database and that the NLS_NCHAR_CHARACTERSET is set to AL16UTF16 prior to running the utility using the 10g or 11g client.

Once the Unicode upgrade is completed, perform the SBM database upgrade using either the Mashup2009 DSN or a DSN that uses the "Oracle for SBM" driver." It is important to note that the "Oracle for SBM" driver that is shipped with SBM requires a native Oracle 10g or 11g client installation that is compatible with the Oracle database server version.



Important: Do not use the "Oracle for SBM" driver to run the Unicode Upgrade Utility. To successfully upgrade the database to Unicode, you must use an Oracle ODBC driver that is supplied by Oracle (with the exception of the Oracle 11.1.0.7 and 11.0.2 clients as SBM is not compatible with these ODBC drivers). Once the Unicode upgrade is complete, use the "Oracle for SBM" driver to upgrade the SBM database.

- It is important to ensure that the Oracle client you use is configured the same as the Oracle client used by TeamTrack. If the Oracle client that TeamTrack uses is set to a certain character set (NLS_LANG registry key setting), use the same setting for the Oracle Client used by Unicode Upgrade Utility. Otherwise, the Unicode Upgrade Utility cannot emulate the way that TeamTrack reads and writes to the database, and the data will not be transcoded into Unicode correctly.



Note: If you find that you need to run the Unicode Upgrade Utility, the NLS_NCHAR_CHARACTERSET in Oracle must be set to AL16UTF16.

- If you find that you need to run the Unicode Upgrade Utility and you are planning to run SBM on one or more 32-bit servers, perform the following steps:

-
1. Run the Unicode Upgrade Utility against the TeamTrack database using your current Oracle DSN that is connected to the TeamTrack database. (This ensures that the same driver is used by the Unicode Upgrade Utility to write data out of the database and write it back in).
 2. Once the Unicode Upgrade Utility is finished, install SBM and perform the database upgrade on the SBM Application Engine server using the "Mashup2009" DSN or a DSN of your choice that uses the "Oracle for SBM" driver that is installed with SBM.
- If you find that you need to run the Unicode Upgrade Utility and you are planning to run SBM on one or more 64-bit servers, perform the following steps:
 1. Run the Unicode Upgrade Utility against the TeamTrack database using the current Oracle DSN on the current 32-bit TeamTrack server. (This ensures that the same driver is used by the Unicode Upgrade Utility to write data out of the database and write it back in).
 2. Once the Unicode Upgrade Utility is finished, install SBM on one or more 64-bit servers and perform the database upgrade on the 64-bit SBM Application Engine server using the "Mashup2009" DSN or a DSN of your choice that uses the "Oracle for SBM" driver that is installed with SBM.

Command to Run Utility

To run the Unicode Upgrade Utility from the command line, pass it parameters with the dataset name and the connection information, such as the user ID and password information needed to connect to the database.

The following examples show how to call the command to invoke the Unicode Upgrade Utility. The command requires you to pass the DSN name, the user ID (UID), and password for connecting to the database. You can also include an optional parameter specifying the number of threads. The utility is installed in *installationDirectory\Serena\SBM\Application Engine/bin*.

```
Unicode Upgrade Utility "DSN=myDSN;UID=sa;PWD=sa"
```

```
Unicode Upgrade Utility "DSN=myDSN;UID=sa;PWD=sa" 4
```

If the Oracle client, Oracle server and TeamTrack character set are identical, but not UTF8, an additional parameter can be specified that allows Oracle to handle the character set conversion. By specifying this parameter, the Unicode Upgrade Utility prepares the database schema for conversion to UTF8 by increasing column sizes to handle the expanded length of data in UTF8. Allowing Oracle to handle the conversion reduces the amount of time to complete the upgrade to Unicode.

To allow Oracle to handle the conversion, add an additional parameter after the thread parameter. Set this additional parameter to "1". For example:

```
Unicode Upgrade Utility "DSN=myDSN;UID=sa;PWD=sa" 4 1
```



Note: This parameter is only valid if the Oracle client NLS_LANG, Oracle server NLS_CHARACTERSET, and TeamTrack character set are identical, but are not set to UTF8. If the non-UTF8 character set is not consistent, you can not use this parameter.

Upgrading the SBM Application Engine Database

Prerequisites:

Complete the procedures described in [Preparing Your Database \[page 45\]](#), such as upgrading your SBM Application Engine database to Unicode.



Note: The time needed to run the upgrade depends on the size of your database and your system's processing power. Expect at least an hour or more than four hours for larger databases.

Upgrade support for migrating TeamTrack to a 64-bit version of SBM is handled through a new suite install on one or more 64-bit Windows 2008 R2 servers. You can either perform a **Custom** installation that installs one or more SBM components on multiple 64-bit operating systems or you can perform a **Complete** installation, which installs every component on a single 64-bit server.

You can use the SBM System Administrator that is installed by the suite installer on a 64-bit Windows 2008 R2 server to upgrade the TeamTrack database. As part of the upgrade, review and upgrade any scripts and APIs that were originally created on a 32-bit operating system to ensure that they also run on a 64-bit system. For example, if you have any scripts that load .dll files, those dll files must be upgraded to run on a 64-bit machine. If you have to run the Unicode Upgrade Utility as part of the upgrade, see [Oracle Server Specific Information \[page 59\]](#) for more information.

To upgrade your database:

1. Launch the new version of SBM System Administrator that you installed.



Note: You must upgrade your database by connecting to it with the SBM System Administrator that is installed by the suite installer. The upgrade must be performed by the SBM System Administrator that is installed on the server, not the client version.

2. Connect to the database.



Important: The user that you connect to the database needs the appropriate permissions to upgrade the database. For example, on an Oracle database, these privileges include:

- Roles Privileges: CONNECT
- System Privileges: CREATE ANY SEQUENCE; CREATE, ALTER, and DROP TABLE; CREATE TRIGGER; CREATE and DROP INDEXES, UNLIMITED TABLESPACE; SELECT ANY SEQUENCE; CREATE ANY TRIGGER; INSERT, SELECT, UPDATE, DELETE access to all SBM tables; ACCESS CATALOG (to get column information), CREATE PROCEDURE (to allow database column changes from INTEGER to VARCHAR).

After you connect, you are prompted to upgrade the database.

3. Select to upgrade the database.

4. Review the database upgrade log file in the

installDirectory\Application Engine\Log directory and correct any problems that occurred during the upgrade. If the log file is empty, no errors or warnings occurred during upgrade.

5. After you have finished the above steps and the tasks listed in [Chapter 6: Before Moving Into Production \[page 65\]](#), restart your SBM Application Engine Web Server for changes to take effect.



Note: If you upgrade your database some time after SBM has been installed, you must restart the Serena Common JBoss service once the upgrade is finished in order to create the Common Log tables in the database. If you do not restart JBoss, you may receive errors related to the Common Log. Normally these tables are created in the database when you provide your database connection information and restart JBoss after running the SBM Configurator. However, if the database you plan to upgrade wasn't connected during the configuration, you must connect to the database and restart JBoss to populate your database with the Common Log tables.

Upgrading a Microsoft Access Database

This topic describes the steps needed to upgrade a Microsoft Access database to work with SBM.

Microsoft Access is no longer a supported database with SBM. You must upgrade your existing Access database to a supported database, Microsoft SQL or Oracle, before performing the upgrade procedures for the database, such as

running the Unicode Upgrade Utility and using the SBM System Administrator to upgrade the database.



Important: For Microsoft Access databases, it is necessary to use the TeamTrack 6.6.1 Administrator to copy the database to either Microsoft SQL Server or Oracle. Non-TeamTrack tools, such as Microsoft SQL Server's import tool, will misinterpret TeamTrack data when used to migrate data from Access.

The complete procedure to upgrade your Microsoft Access database:

1. If necessary, install Microsoft SQL or Oracle. You can download Microsoft SQL Express 2005 from Microsoft. Microsoft SQL Express is a free, easy-to-use and lightweight version of SQL Server 2005.
2. Create a backup of your Microsoft Access database.
3. Copy the Access database to either Microsoft SQL or Oracle using the TeamTrack 6.6.1 Administrator. Not using the TeamTrack Administrator will create problems with data misinterpretation. See [Converting NVARCHAR Columns \[page 53\]](#) for more information.
4. Perform the remaining steps to prepare your database as described in [Preparing Your Database \[page 45\]](#).
5. Complete the steps described in [Upgrading the SBM Application Engine Database \[page 62\]](#).

Chapter 6: Before Moving Into Production

The following tasks are performed after you have finished the upgrade and before you have moved into production.

- [Adding Custom Templates and Files to Database \[page 65\]](#)
- [Reconfiguring Directory Paths for License, Mail, and Notification Server Logs \[page 67\]](#)
- [Adding Elapsed Time Records for State Changes \[page 68\]](#)
- [Setting Attachments Directory Path \[page 68\]](#)
- [Setting Privileges for Administrators \[page 69\]](#)
- [Verifying Installation \[page 69\]](#)
- [Upgrading Your Scripts \[page 71\]](#)
- [Updating Integrations \[page 73\]](#)
- [Getting Existing Process Apps into Application Administrator \[page 74\]](#)
- [Preparing Process Apps For Production \[page 77\]](#)
- [Distributing New Clients \[page 80\]](#)
- [Re-establishing Relationships Between Upgraded Applications \[page 81\]](#)
- [Informing Users of Interface Changes \[page 81\]](#)

Adding Custom Templates and Files to Database

Prerequisites:

Install the SBM Application Engine and upgrade your SBM Application Engine database as described in [Upgrading the SBM Application Engine Database \[page 62\]](#).

To add your existing and custom templates files to your upgraded SBM Application Engine database:

1. Merge custom modifications made to HTML templates, e-mail templates, and browser online help files in your old system to your upgraded files. During the upgrade process, templates and files from the previous TeamTrack version are not moved or backed up during the upgrade. The existing TeamTrack installation directory is left alone. You should not delete your previous installation files until you merge any customizations you have made into your upgraded files.



Important: The upgraded customized files must be UTF-8 encoded. See [Updating E-mail Templates \[page 66\]](#) for additional information about upgrading the e-mail templates.



Note: Serena Customer Support recommends that HTML templates, HTML style sheets, and Java classes be customized only by users with advanced knowledge of HTML and Java. While Customer Support supports the process of placing customized files in the database, the process of customizing HTML templates, HTML style sheets, and Java classes is supported only through a Professional Services contract.

2. Move the merged custom templates into the appropriate installation directories.
3. Put the custom templates into the database. From SBM System Administrator, select **File**, and then select **Put Files in Database**. ALL templates and images in the database are replaced by files on your local machine.



Note: If you have already started your SBM Application Engine Web Server, you must stop and restart it for the changes made to the file to take effect.

Updating E-mail Templates

If you use customized e-mail templates in TeamTrack 6.6.1, these templates may need to be updated to work with SBM.

The following updates may be required to your e-mail templates:

- The e-mail templates used by the Notification Server and Mail Client must now be saved as and encoded for UTF-8.
- \$CONTENTTYPE (content type;character set) e-mail template tags in e-mail templates must be modified to specify UTF-8, such as \$CONTENTTYPE(text/html; charset="UTF-8").



Note: After modifying e-mail templates, you must open SBM System Administrator, select **Put Files in Database**, and then stop and start the SBM Application Engine Web Server.

Reconfiguring Directory Paths for License, Mail, and Notification Server Logs

Depending on how you performed your upgrade, you may need to reconfigure the log paths for your license, mail and notification servers. The LDAP update and import log file path may also need to be reconfigured. These configuration parameters are not changed during the upgrade, even though your installation path has changed.

This means that SBM will continue to update the log files in the old directories. This may prove to be confusing.

To update the log settings to a new directory:

1. Copy the files, such as the notification log, license log, LDAP log, and notification template, to your new installation directory.



Note: The reason to copy the old logs is to preserve previous information.

2. Set the paths to the new installation location using SBM System Administrator.
 - a. Launch SBM System Administrator.
 - b. Choose **Options | Manage Services**.
 - c. Select **Mail Client** and click **Properties**.
 - d. On the Options tab, browse or enter the new path to the Mail Client. For example: `installationDirectory\Serena\SBM\Application Engine\log\mailclient.log`.
 - e. Repeat steps 3 and 4 for the **Notification Server**.
 - f. Choose **Options | License Options**.
 - g. Under **License Usage Logging**, choose the new **logfile** path. For example: `installationDirectory\Serena\SBM\Application Engine\Log\TTLicenseUsage.log`.
 - h. Choose **Tools | LDAP Setup & Tools**.
 - i. On the **Options** tab, choose the new **logfile** path. For example: `installationDirectory\Serena\SBM\Application Engine\log\ttldap.log`.

Adding Elapsed Time Records for State Changes

Prerequisites:

Upgrade your TeamTrack database to Serena® Business Manager.

You must have the datasource name, a logon ID, and password to the SBM database.

SBM offers Time in State and Average Time to State duration reports and Backlog Trend reports that enable you to report on elapsed time based on state changes for primary items. By default, elapsed time is automatically recorded for primary items added to your database after you upgrade.

To add elapsed time records for items that existed in your database before you upgraded to SBM, you must run a post upgrade utility AFTER you upgrade but BEFORE you use the new report types.

The post upgrade utility records elapsed time using a 24-hour-day/seven-day-week calendar. The utility does not record elapsed time based on custom calendars that you have added to your system.

To add elapsed time records for upgraded primary items:

1. On the SBM Application Engine Web Server machine, open the command line utility.
2. The command-line executable, PostUpgradeUtil.exe, is located in the bin directory of your SBM installation. At the command line, change to that directory.
3. Run the following command:`PostUpgradeUtil "connectionString"`. Replace `connectionString` with `"DSN=dbName;UID=database logon ID;PWD=database password"`.

The upgrade utility processes each primary table in the database and adds a record for the elapsed time between state changes for every primary item in each table. The amount of time required for this upgrade could be extensive depending on the number of primary items in your database.

Setting Attachments Directory Path

If you store attachments on a file system rather than in the database, you should verify the attachment directory location in the SBM System Administrator after you upgrade to SBM. If you used the default attachment directory in TeamTrack, attachments added after you move to SBM will be

stored in the TeamTrack installation directories. You may want to change this location to the new SBM installation directories or another network location.

To change the path of the attachments directory to a new location:

1. Copy the contents of the previous location to the new directory (`installationDirectory\Serena\SBM\Application Engine\attachments`) or to a network location of your choice.



Note: You can store attachments in a directory on a server other than the SBM Application Engine Web server as long as you set correct network permissions for that directory, and then specify an SBM login ID and password for a user who can access that directory

2. Launch SBM System Administrator.
3. Choose **Options | Settings**.
4. On the **Attachments** tab, choose the path to the new attachments folder.

Setting Privileges for Administrators

You must configure additional privileges before users can work with process apps. The privileges are set in SBM System Administrator and Application Administrator.

The overall privileges for administrators to export and deploy process apps are set in SBM System Administrator. You must make the user a **Managed Administrator**. In addition, you must grant the user the appropriate deployment privilege on the **Deployment** sub-tab of the Administrator tab.



Important: Administrators need this permission to access Application Administrator and manage process apps.

You must also set the privileges for a user to deploy a particular process app from SBM Composer. These permissions are set in Application Administrator. They are set after you have connected to an environment and exported the process apps to the SBM Application Repository, as described in [Getting Existing Process Apps into Application Administrator \[page 74\]](#). Once the process app is in the SBM Application Repository, select the process app and make it available from SBM Composer by enabling the appropriate *privileges*.

Verifying Installation

After you have installed the components on your server, verify that they are installed correctly by accessing each component.

Verifying the SBM Application Engine and SBM User Workspace

Validate that the SBM User Workspace is available by navigating to the following URL:

```
http://serverName/tmtrack/tmtrack.dll?
```

Log on using a user in your database. You should see the SBM home page. If you do not, then the SBM Application Engine Web Server is not started or a problem exists with the `tmtrack` virtual directory.

Verifying the Web Services

Validate that the SBM Server interface is available by navigating to the following URL:

```
http://serverName:aePort/gsoap/gsoap_ssl.dll?sbmappservices72
```



Note: The port should be the same TCP port specified by the Default Web site in IIS (typically port 80).

You should see a message that states something like 'You must use a POST request to get answer from gsoap!'. If you do not see this message then SBM Application Engine Web Server has not started or a problem exists with the `gsoap` virtual directory.

Verifying Application Administrator

Verifying Application Administrator requires granting at least one user the privileges necessary to log on to Application Administrator.

To grant a user permission, launch SBM System Administrator and connect to your database. Edit one user (or group), select the Privileges tab, and grant the **Remote Administration** privilege on the System sub-tab.

To validate that Application Administrator is available, navigate to the following URL and attempt to log in with any user that has the Remote Administration privilege.

```
http://serverName:port/mashupmgr
```

You should see Application Administrator logon page. If you do not, then most likely the Serena Common JBoss service is not running or the data source information specified during configuration is incorrect. After validating that Serena Common JBoss is running in the Windows Services Manager, check that the information is correct in the **Database Servers** dialog box of the SBM Configurator.

Once you can access the logon page, log in with a user account that has the **Remote Administration** privilege. If you are not able to log on, then most likely the URL to the primary SBM Application Engine host is incorrect. Application Administrator requires a primary SBM Application Engine host in order to validate users and check their privileges. The primary SBM Application Engine is set in the **Component Servers** dialog box of the SBM Configurator.

Verifying SBM Composer

Launch SBM Composer using the Microsoft Windows **Start** menu. In SBM Composer, click the **Composer Button**, then click **SBM Composer Options** at the bottom of the menu. On the left side of the dialog box, select **Repository**. In the Connection Information section, enter the Application Administrator Machine Name and Port (the default is 8085). Enter the User Name and Password of a user that has Application Administrator access.

After providing credentials, click **Test Connection**. If the connection succeeds, you are ready to start developing applications. To maintain access to the repository for a given SBM Composer session, make sure you select **Work Online**.

About JBoss Memory Usage

This version of SBM uses the JBoss enterprise application server. You may notice that JBoss consumes several hundred megabytes of available memory. This is normal behavior for a J2EE enterprise application server. See the documentation at the JBoss Web site for full details.

Upgrading Your Scripts

Your SBM AppScripts, previously known as TeamScripts, must be updated to be compatible with the new formats found in Serena[®] Business Manager.

The following sections are changes that would require you to update your scripts. See the *SBM AppScript Reference* for more information.

Field Value Scripts



Important:

If you have scripts that automatically update values in your system tables, such as selection values, you will need to manually synchronize your SBM Application Engine database and SBM Application Repository.

See [Synchronizing Manual or Automated Database Changes \[page 77\]](#) for additional information.

Extended Date Format Change

If you want to update your scripts to be compatible with the extended date format used by SBM, you need to call the `Ext.SetCompatibilityVersion` function at the beginning of your script with at least a major version number of 7 and a minor version number of 1. Otherwise, for backward compatibility, the `Date/Time` type will continue to use an integer representing the number of seconds since the start of Jan 1, 1970 (GMT).

See the *SBM AppScript Reference* for more information.

GetFieldValue and Multi-User Field Scripts

Legacy scripts that depend on a list of only integers returned from `GetFieldValue()` called on a Multi-User field must be adapted to handle integers preceded by "G" as well.

If the **Groups and Users** selection mode is enabled for the field, the value can also include group identifiers (TS_IDs from the TS_GROUPS table), which are in the form G1, G2, and so forth.

The internal format for the **Multi-User** field is now a comma-separated list (with leading and trailing commas) of TS_IDs from the TS_USERS table.

More About the Group Setting

Multi-User fields now allow you to **Leave Groups Rolled Up**, which lets the SBM User Workspace user select whole groups in addition to individual users. When this setting is enabled in SBM Composer and deployed to SBM Application Engine, the SBM Application Engine will store the group that was selected instead of unrolling the group into a set of users.

When an existing TeamTrack 6.6.1 API is used to read an item that contains a Multi-User field that has been set to **Leave Groups Rolled Up**, the groups stored in the database will be unrolled into a list of users before being sent to the API. If the API calls back into SBM to update the item, the individual users who were in the group will now be stored in the database (not the groups that were specified when the API item was read). So, the data associated with the Multi-User field will be changed regardless of whether the API explicitly changed the field. When this condition is detected, an error message will be logged to the Event Log denoting that Multi-User data may have been inadvertently changed. This message will be repeated every time the situation is detected, but not more than once an hour.

Unless the API program is modified to explicitly set a session parameter as described previously, the API program will continue to operate as if it is using the older TeamTrack 6.6.1 version of the API. In this case, groups will continue to be unrolled in the server before being sent to the client.

When the call is modified, you will be able to make a single call and the runtime will start sending the data associated with Multi-User fields, leaving

the Groups rolled up. This will stop warning messages in the Event Log and data integrity will be restored.

See the *SBM AppScript Reference* for more information.

GetFieldValue and Elapsed Time Field Scripts

For elapsed-time fields, the value that you retrieve from a `GetFieldValue()` call is not compatible with a call to `SetFieldValue()`, because a standalone number in an elapsed-time field is interpreted as hours rather than seconds.

To get around this, provide `SetFieldValue()` with the string `"00:00:"` plus the number of seconds retrieved by `GetFieldValue()`.

For example:

```
"00:00:" & elapsedTime
```

SBM converts the seconds into the correct hours, minutes, and seconds for you.

See the *SBM AppScript Reference* for more information.

Updating Integrations

The change in the schema of the SBM database makes previous versions of integrations incompatible with Serena[®] Business Manager. For example, the change in the date and time format changes how you access this information.

To upgrade your integrations, you will need to update the API calls to match the new SBM Application Engine database schema.

The following are database changes that may force a change to your API calls:

- The SBM Application Engine database uses the extended date format, meaning that *Date/Time* values have been converted from numeric integers to the DBMS native date data type. You must update your API calls to match this new format for these fields.
- The SBM Application Engine database supports Unicode. This means that your API calls must be sending and receiving in UTF-8 format to work with the new database.



Note: Test your integrations on a staging system before attempting to upgrade them on your production system.

About Integrations that Update the Systems Tables

If your integrations update values in your system tables, such as selection values, you will need to manually synchronize your SBM Application Engine database and SBM Application Repository.

See [Synchronizing Manual or Automated Database Changes \[page 77\]](#) for additional information.

Getting Existing Process Apps into Application Administrator

Prerequisites:

You must install both Application Administrator and SBM Application Engine before you can perform an export of existing process apps.

You must give the Internet user account write permission to the Application Engine folder as described in the *Serena® Business Manager Installation and Configuration Guide*.

The user who performs the export must be a Managed Administrator. In addition, the user must have been granted the appropriate privileges in SBM System Administrator. These privileges are on the **Deployment** sub-tab of the Administrator tab.

Getting a process app moves process apps that exist in the SBM Application Engine into the SBM Application Repository. This allows your designers to perform checkouts of the process app from SBM Composer.

Before you can "Get" the process app, you may have to create an environment that points your server, if it doesn't already exist.

The following tasks explain how to get process apps into Application Administrator:

- [Creating an Environment \[page 75\]](#)
- [Getting a Process App from the SBM Application Engine Server \[page 76\]](#)
- [Synchronizing Manual or Automated Database Changes \[page 77\]](#)

Creating an Environment

Prerequisites:


Create, Edit, and Delete Environments privilege (set in SBM System Administrator)

An environment describes the runtime server to which you deploy process apps. An environment requires an SBM Application Engine server.

After you create the environment, you can add other target servers (such as a BPEL engine or Event Manager server) as well as any Web service end points that are required to support the process app.

To create an environment, perform the following steps:

1. In the navigation pane, from the Deployment view, select **Environments**.
2. On the **Environments** tab, click **New**.
3. In the **New Environment** dialog box, complete the fields as described in the following table.

Field	Description
Name	A descriptive name for the environment; for example, Production, Test, or Development.  Note: Consider including the environment set name to identify the collection of environments to which this one belongs.
Description	A text string describing the environment.
SBM Composer	Enable Deployment, Enable Development Deployment, or Disable Deployment. Enables SBM Composer users to deploy a process app from within SBM Composer. Enabling development deployment means that an SBM Composer user can deploy development versions of a process app to the environment for testing purposes without generating new versions of the process app.
SBM Application Engine Server	
Name	A descriptive name for the SBM Application Engine server.

Field	Description
Description	A text string describing the SBM Application Engine server (optional).
URL	The address to the SBM Application Engine server.
Test Connection	Pings the server to see whether it is available.

4. Click **OK**.

The new environment shows in the list on the **Environments** tab.

Getting a Process App from the SBM Application Engine Server

Prerequisites:

Export Process Apps privilege (set in SBM System Administrator)

You can get a process app that is running on the SBM Application Engine server and check it into the SBM Application Repository, making it available to Application Administrator and SBM Composer. If there is already a copy of the process app in the SBM Application Repository, getting a copy from the server creates a new version.

To get a process app from the SBM Application Engine server, perform the following steps:

1. In the navigation pane, from the Deployment view, select **Environments**.
2. On the **Environments** tab, select the environment where the process app is running.
3. Click the **Process Apps** tab.
4. Select the process app that you want to get from the SBM Application Engine server.
5. Click **Get Process App from SBM Application Engine**.
6. In the **Get Process App From SBM Application Engine** dialog box, enter a label, if you want. This appears in SBM Composer as the Baseline Label.

7. Click **OK**.

The process app is retrieved from the SBM Application Engine server, checked into the SBM Application Repository, and appears in the list of process apps on the **Process Apps** tab.

Synchronizing Manual or Automated Database Changes

If automated or manual processes (SBM API, Data Import Wizard, or SQL scripts) are used to update design elements in the SBM Application Engine database, there may be additional steps required to keep your SBM Application Repository and SBM Application Engine database synchronized. If you do not perform the additional steps, you may lose the data added by the process.

For example, if you use the **Import Data Wizard** to import data into the SBM Application Engine database, field selections may be imported along with the data. If you do not perform a **Get Process App** in Application Administrator after importing the data, and then import the process app into SBM Composer, the imported selections are deleted the next time you deploy the process app.



CAUTION: You will not receive a warning or error message on the deploy operation when this overlay occurs.

Preparing Process Apps For Production

Although upgraded process apps will function fine in production, you can make the following changes to the process apps to improve future performance and prevent problems:

- [Implementing Roles \[page 77\]](#)
- [Arranging the Graphical Workflow Depiction \[page 78\]](#)
- [Changing the Selection Mode for Multi-User and Secondary Owner Fields \[page 78\]](#)

Implementing Roles

Roles are a new feature available in Serena[®] Business Manager. Roles enable you to manage users based on their job function. Roles are more powerful than groups in that they can span across multiple workflows in a process app.

The upgrade process does not convert TeamTrack groups to SBM roles; however, after you create one or more roles in SBM Composer, you can easily assign roles to groups using SBM System Administrator.

Before administrators begin making edits on upgraded process apps, you should add the roles that fill your current needs. These roles can then be used while administrators are making changes to the process app.

Arranging the Graphical Workflow Depiction

The graphical display of the workflow has changed in SBM Composer. SBM Composer offers more flexibility and control in how you can lay out the states and transitions. The change also means that some of the graphical manipulations made to a workflow in the TeamTrack Administrator client are no longer possible in SBM Composer. For example, you cannot create arched lines in SBM Composer.

The upgrade process uses an auto-arrange mechanism to choose the best new arrangement for your workflow. The arrangement is based on your previous arrangement and the graphical representation available in SBM Composer.

This auto-arrangement may not render the workflow graphic in the best possible way. This is especially true with complicated workflows with crossing transitions.

The main administrator needs to check the workflow graphics. If the graphic does not appear in a comprehensible arrangement, the administrator can update it to prevent future frustration by other administrators who try to decipher the workflow.

To update the graphical workflow in a process app:

1. Check out the process app in SBM Composer.
2. Update the workflow by dragging the individual components.
3. Check the process app back into the SBM Application Repository.

See the *SBM Composer Guide* for more details on working with workflows.



Important: Before you perform a manipulation to the workflow, SBM users will see the old workflow graphic in the SBM User Workspace. After an update, they will see the new graphic.

Changing the Selection Mode for Multi-User and Secondary Owner Fields

In SBM Composer, a new **Selection Mode** option is available for *Multi-User* fields as well as the *Secondary Owner* system field. You can now display either **Individual Users** or **Groups & Users** in these fields.

This option allows group values for the *Secondary Owner* and *Multi-User* fields to remain "rolled up", thereby preserving the dynamic nature of group membership. For example, instead of checking to see if Bill is selected in the *Secondary Owner* field, SBM will verify that Bill is a member of the Managers

group that now appears in the *Secondary Owner* field. This means the administrator can add new members to the Managers group, and reports or searches will return the correct results when searching for items that are owned by the newest members of the Managers group.

On upgrade, the default selection for both *Multi-User* and *Secondary Owner* fields is **Individual Users**. After the database upgrade is finished, your existing items will remain unchanged: every *Multi-User* and *Secondary Owner* field will still display a list of users. However, if you change the option to **Groups & Users**, the behavior for each field will change. The following sections describe how this setting affects the behavior for new items as well what happens when you update existing items after making the change.

Changing the Selection Mode for a Multi-User field

If you change a *Multi-User* field's **Selection Mode** to **Groups & Users** in SBM Composer, that field will not only display individual user names, but it will also display one or more group names as an available selection in the SBM User Workspace if the members of a group were designated as a possible selections for the *Multi-User* field within SBM System Administrator.

For example, in SBM System Administrator the possible selections for the Managers field are John, Tammy, Bill, [Members Of: Engineering Managers], and [Members Of: Support Managers]. On upgrade, the Managers field will display a list of individual user names just as it did in TeamTrack. However, if you change the field's **Selection Mode** to **Groups & Users**, then the available selections in the SBM User Workspace will change: the users that appeared in the list as a result of being a member of Engineering Managers or a member of Support Managers will be replaced by the actual group names. When you submit a new item, **John, Tammy, Bill, Engineering Managers, and Support Managers** will appear as the available selections in the Managers field.



Note: You will also notice that each [Member Of:] selection in the *Multi-User* field will change to the actual group name when you edit the field in SBM System Administrator. If you change the **Selection Mode** back to **Individual Users** in SBM Composer and re-deploy your process app, the selections will revert and you will see [Member Of:] selections again instead of group names.

When a user updates an existing item after making this change, selected user names that appear in the field as a result of being a member of a particular group will appear as (Disabled). However, the update will complete without issue and the individual user names will still appear. This happens because the user names that are already selected in an item are never rolled up into a group that contains those users. Instead, the group name will now appear as a new available selection that you can choose to select or not, depending on how you want the field to appear when the transition is complete.

For performance reasons, you may consider selecting the group name rather than continuing to select each user name individually, especially if the field is displaying several individual users.

Changing the Selection Mode for the Secondary Owner Field

Changing the **Selection Mode** to **Groups & Users** for the *Secondary Owner* field also enables the display of user and group names within the same field. However, the *Secondary Owner* field is typically auto-populated with values from a *User*, *Multi-User*, or *Multi-Group* field. Thus, the behavior is somewhat different.

If you decide to change *Secondary Owner's* **Selection Mode** to **Groups & Users** after upgrading to SBM, then the values that are used to populate *Secondary Owner* will either appear as a list of individual users, a list of groups, or a combination of both users and groups, depending on the values that are auto-populating *Secondary Owner* from the source field.

Groups will only appear in the *Secondary Owner* field if the source field that determines secondary ownership contains group names and the **Selection Mode** for *Secondary Owner* is set to **Groups & Users**. For example, if you change a *Multi-User* field's **Selection Mode** to **Groups & Users**, and the *Multi-User* field sets the value for *Secondary Owner*, then any groups are that are selected in the *Multi-User* field will appear in *Secondary Owner* as well, as long as *Secondary Owner's* **Selection Mode** is also set to **Groups & Users**.

If *Secondary Owner* is not set to **Groups & Users**, then a potentially large list of users can appear in *Secondary Owner* if groups with broad membership are selected in the *Multi-User* field. This can negatively affect performance when displaying *Secondary Owner* on items or in report results.



Note: If you change the **Selection Mode** for either a *Multi-User* or *Secondary Owner* field back to **Individual Users** after populating groups in either field, performance may be impacted when the groups are unrolled in order to display large lists of individual users. Alternatively, you can improve performance by selecting **Groups & Users** for any *Secondary Owner* field that is auto-populated by a *Multi-Group* or *Multi-User* field that contains groups: the list of users that would otherwise appear in *Secondary Owner* are rolled up into groups after selecting **Groups & Users** in that case.

When a user updates an existing item after making this change to *Secondary Owner*, the *Secondary Owner* field will be updated with the values from the source field that determines secondary ownership. The auto-populated values in *Secondary Owner* will be rolled up into groups only if groups were selected in the *Multi-user* or *Multi-Group* field that determines secondary ownership.

Distributing New Clients

After upgrade, you must instruct all administrators to install the new versions of SBM System Administrator and SBM Composer.

The role of the administrators determines if they need one or both of the clients. Administrators who will be designing workflows will need SBM Composer. The administrators who will be setting permissions or managing

projects need SBM System Administrator. Most administrators will need both of the clients.

See [Using SBM Composer and SBM System Administrator \[page 17\]](#) for more information on when to use either of the clients.

To use SBM Composer, administrators will need the access information to Application Administrator and permissions to check in and check out process apps.

Previous users who used the TeamTrack Administrator client should be able to access SBM Application Engine using the same parameters in SBM System Administrator.

Re-establishing Relationships Between Upgraded Applications

Each upgraded solution is converted into an application and stored in its own process app. Relationships between applications and tables are initially maintained in the SBM Application Engine during the upgrade process, but to view those relationships in SBM Composer, you must manually re-establish these relationships after you import the process apps into SBM Composer.

Relationships between applications are generally:

- A Relational field between two tables
- A Post or Subtask transition between two applications

To re-establish relationships between applications, click **References** in the App Explorer. You will see all the related applications. Any referenced application that has not been re-established will appear in red. When you connect to the repository, you should see red icons next to the process apps that have not been upgraded. To upgrade a process app, simply open it in SBM Composer. After the process app has been upgraded, it can be referenced by other process apps. Once all the references have been re-established, you can make changes to your process app and deploy it back to the repository.

Informing Users of Interface Changes

The SBM User Workspace has changes that will affect some users. The following is a list of changes that may affect users, and which administrators need to be aware of.

Note that the URL for the SBM User Workspace is:

```
http://<myHost>:<myPort>/tmtrack/tmtrack.dll?
```

Quick Links

Quick links are now available in a drop-down list on the application toolbar, allowing you to define an unlimited number of links. You can add a quick link for any page that is open in the content pane. Existing quick links are moved to the **Favorites** system folder.

In addition, after the upgrade to Serena® Business Manager, a user's Quick Links may stop working due to the change in URLs. This will happen when the Quick Link points to a report.

To fix the problem, the user must delete the quick link and create a new one to the report.

Also, Quick Links that contain external URLs will now open in a new browser window or tab.

Favorites Not Displaying

Serena® Business Manager defines **Favorites** differently from previous releases of TeamTrack. The combination of changes to the definition and the user interface means that not all Favorites are not backward compatible. You will find in a small percentage of users, their Favorites will not translate to Serena® Business Manager. Additionally, a custom form will not retain any data that was previously entered on the Submit form and saved as a Favorite. Only the default Quick Form allows users to enter data and save it as a Submit form template.

There is a second difference in Favorites with its treatment of System Folders. The **System Folders** in Favorites are now hidden by default, unless users have their Auto Folder Items option checked, (**User Profile | Display**). Note that this is not a very common scenario.

If a TeamTrack user was using the **Inbox** folder, which is a **System** folder, to store personal favorites and the user was not using the Auto Folder Items option, the **Favorites** will not appear on upgrade.

To fix this problem, the user needs to follow these steps:

1. Temporarily, check the **Auto Folder Items** option in the User Profile.
2. In the **Favorites** pane, move any personal items in the System folders to either the **Quick Links** or a newly created folder.
3. Return to the User Profile and uncheck the **Auto Folder Items** option.

Active/Inactive Icons Not Displaying

Active/Inactive icons no longer display next to items returned in Listing reports or searches in the SBM User Workspace. Thus, any custom icons you might have created for Active/Inactive items will not appear in the SBM User Workspace. Instead, the item's Title will now indicate the status of the item.

Submit Form Opens to Submit Tree

In TeamTrack, the **Submit** form opened if users had only one preferred project defined or had only one project available to submit into. In SBM, users are always presented with the **Submit Tree** when they click the **Submit** tab or the Submit to my Preferred Projects link in the Navigation pane.

You can use a system setting to change this default behavior to the legacy TeamTrack behavior. Contact Customer Support for information about implementing this setting.

Rich Graphical Reports

Graphical report rendering has improved for Distribution, Trend, and Duration reports. Rich Graphical Reports offer dynamic charting and animation capabilities. Adobe Flash Player is required for users to run Rich Graphical Reports, which are enabled by default for your system. To disable Rich Graphical Reports after you upgrade:

1. Open SBM System Administrator.
2. Select **Settings** from the **Options** menu.
3. Select the **Display** tab.
4. Clear the **Enable Rich Graphical Reports** check box.
5. Click **OK**.