



Blackboard

Blackboard Academic Suite™

Release Notes

Release 7, Application Pack 3
Blackboard Community System™
Blackboard Learning System™ - Basic Edition
Blackboard Learning System – Enterprise Edition
Blackboard Content System™
Blackboard Outcomes System™

Release Notes (173019en_US)

Publication Date: June 2007

WORLDWIDE HEADQUARTERS	INTERNATIONAL HEADQUARTERS
Blackboard Inc.	Blackboard International B.V.
1899 L Street, NW, 5th Floor Washington, DC 20036-3861 USA	Dam 27 2nd Floor 1012 JS Amsterdam The Netherlands
800-424-9299 toll free US & Canada	
+1-202-463-4860 telephone	+31 (0)20 520 6884 (NL) telephone
+1-202-463-4863 facsimile	+31 (0)20 624 3361 (NL) facsimile
www.blackboard.com	global.blackboard.com

Blackboard, the Blackboard logo, Blackboard Academic Suite, Blackboard Learning System, Blackboard Learning System ML, Blackboard Community System, Blackboard Content System, Blackboard Outcomes System, Blackboard Learning Environment Connector, Blackboard Transaction System, Building Blocks, and Bringing Education Online are either registered trademarks or trademarks of Blackboard Inc. in the United States and/or other countries. Intel and Pentium are registered trademarks of Intel Corporation. Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries. Sun, Solaris, UltraSPARC, and Java are either registered trademarks or trademarks of Sun Microsystems, Inc. in the United States and/or other countries. Oracle is a registered trademark of Oracle Corporation in the United States and/or other countries. Red Hat is a registered trademark of Red Hat, Inc. in the United States and/or other countries. Linux is a registered trademark of Linus Torvalds in the United States and/or other countries. Apache is a trademark of The Apache Software Foundation in the United States and/or other countries. Macromedia, Authorware and Shockwave are either registered trademarks or trademarks of Macromedia, Inc. in the United States and/or other countries. Real Player and Real Audio Movie are trademarks of RealNetworks in the United States and/or other countries. Adobe and Acrobat Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries. Macintosh and QuickTime are registered trademarks of Apple Computer, Inc. in the United States and/or other countries. WebEQ is a trademark of Design Science, Inc. in the United States and/or other countries. JSpell is a trademark of The Solution Café in the United States and/or other countries. Other product and company names mentioned herein may be the trademarks of their respective owners. U.S. Patent No. 6,988,138. Patents pending.

© 2007 Blackboard Inc. All rights reserved. Made and printed in the USA.

No part of the contents of this manual may be reproduced or transmitted in any form or by any means without the written permission of the publisher, Blackboard Inc.

TABLE OF CONTENTS

Table of Contents	3
Introduction	4
New Features and Enhancements	5
Blackboard Outcomes System Upgrade	6
Support for right-to-left languages	7
Blackboard Learning Environment Connector	8
Blackboard Content System Enhancements	11
Discussion Board Enhancements	12
<i>Blackboard Academic Suite Changes</i>	14
Compatibility Matrixes	18
Server Compatibility Matrix	19
End User Configuration Matrix	24
Supported Paths for Importing and Restoring Courses	26
Supported Update Paths	27
Update Instructions for Windows (From 7.1 or 7.2)	28
Update Instructions for UNIX (From 7.1 or 7.2)	31
Update Small-Scale Oracle Database	34
Update eCommerce	37
EnviServ Installation	38
Configure Communication Between the Blackboard Community System and the Blackboard Transaction System—UNIX Edition	40
Reference Materials	41

INTRODUCTION

About the Release Notes

The Release Notes provide Administrators with the information needed for a successful installation. This includes information on running the Updater, product and browser compatibility, new feature descriptions, and fixed and known issues. It also includes changes to existing functionality that may impact the way the system is currently used.

What is in the Release Notes?

The Release Notes contain the following sections:

- [New Features and Enhancements](#) – Describes new features in this release, as well as, additional important enhancements that have been made to the system. This section also includes information about how to enable or disable these features.
- [Compatibility Matrixes](#) – Explains dependencies between the new application and existing Blackboard applications in the field. Also, includes information on which server configurations are supported with this release and which end user browsers and operating systems are supported.
- *Blackboard Academic Suite*[™] [Updater instructions](#) – Describes general information about the Blackboard Academic Suite Updater and explains steps for running the Updater.
- [Reference materials](#) – Lists and describes reference manuals available for this release.
- Resolved Issues from previous releases and Known Issues in the current release can be found in separate reports. Please check Behind the BlackboardSM for more information.

NEW FEATURES AND ENHANCEMENTS

Overview

In response to user feedback, Blackboard Academic Suite, Application Pack 3 (Release 7) introduces a number of new features and enhancements to the existing features.

This section reviews the new features in Application Pack 3 (Release 7), explains their default availability upon installation, and specifies Blackboard license requirements.

New features and enhancements fall into the following categories:

- [*Blackboard Outcomes System™ Upgrade*](#)
- [*Blackboard Content System™ Enhancements*](#)
- [*Discussion Board Enhancements*](#)
- [*Support for right-to-left languages*](#)
- [*Blackboard Learning Environment Connector™*](#)

BLACKBOARD OUTCOMES SYSTEM UPGRADE

Information Visibility

An immediate improvement to the Blackboard Outcomes System is the greater visibility of Outcomes information. Now, the module My Outcomes Evaluations can be enabled to be visible on the My Institution homepage. The user can view and evaluate each Portfolios and Artifacts.

As well, throughout the Blackboard Outcomes System tab, the user will be able to view existing Rubrics, Outcomes Portfolio Templates, Outcomes Artifact Templates, Course Evaluations, and Surveys. Each of these can be expanded to view the sub-contexts of the unit.

Home Page

The left navigation area of the Home Page has been redesigned, as well as the location and design of the Blackboard Content System, *Blackboard Community System™* and 360° View icons.

Discover Page

The Discover Page has been redesigned to provide the most relevant information by default. Helpful information accompanies each of the various items available on the Discover Page, with the added option to expand for further detail.

SUPPORT FOR RIGHT-TO-LEFT LANGUAGES

Overview

A new feature in the Blackboard Academic Suite allows users to view the application from right to left so that using Arabic languages and the Hebrew language reflect the correct orientation of text on the screen. This feature will affect the entire Academic Suite, including all features and tools in the Learning System, the Community System and the Content System (with the exception of those items listed below). This also includes all Instructor and Administrator functions.

The right-to-left text function will be automatically applied to Blackboard Academic Suite when an existing right-to-left language pack is applied to the Blackboard Academic Suite.

Academic Suite sub-systems that do not support right-to-left text orientation

Some sub-systems and functions within the Blackboard Academic Suite are not part of right-to-left text orientation. These include:

- Making functional changes to Course Statistics
- Enabling right-to-left language support in the Collaboration Tools, including Virtual Classroom and Chat.
- Engineering changes to any external service that feeds information to or from the Blackboard Academic Suite such as RSS.
- Blackboard Backpack does not support right to left viewing.
- Any data that is entered as mixed orientation, some text formatted left to right and some formatted right to left in the same file.
- The Visual Text Box Editor will not spell check for right to left.

Installing right-to-left languages on Windows XP Professional

Windows XP has built-in support for most languages, including Arabic and Hebrew. To configure the operating system to type in the appropriate language, the language must be installed and the keyboard set to type in that language. Both tasks are accomplished using the Windows Control Panel. See Windows help for more detailed information.

Importing and exporting data in a right-to-left environment

Blackboard support for right-to-left languages ensures that import and export functions including Snapshot, Batch, and CSV will preserve data integrity during these operations in the right-to-left locale; for example, the data is stored correctly to the database or exported in the correct order. How flat files are formatted for these operations is dependent on the operating system of the Blackboard server and the language pack of the Blackboard application. For more information see the *Academic Suite Advanced Integration and Data Management Guide*.

Viewing data in a right-to-left environment

Blackboard is not responsible for how imported and exported data will be displayed to the user when it is viewed using third party applications that are not configured to view right-to-left languages or do not support right-to-left languages. For example, if the user decided to view an exported Arabic spreadsheet in Microsoft Excel and the Arabic language pack has been installed, then Microsoft Excel will automatically reorder the text and the columns from right to left. Though, if the data is viewed in the file of another application, it may not have right-to-left support.

BLACKBOARD LEARNING ENVIRONMENT CONNECTOR

Overview

Blackboard Learning System™ – Vista Enterprise and Blackboard Learning System – CE Enterprise can now be integrated into the Blackboard Academic Suite. The Blackboard Learning Environment Connector provides Instructors and Students with access to a set of powerful new features that will deepen and strengthen their experience within the Blackboard Academic Suite while maintaining their normal Vista or CE environment. All existing personalization features, Powerlinks and authentication systems work as they did before within a rich array of useful and interesting Academic Suite functionality.


Interface Changes


The Blackboard Academic Suite environment includes a header frame with images and buttons customized by the System Administrator and tabs that navigate to different areas. Once integrated, each instance of Vista or CE will have its own tab. Clicking on a tab will open that area in the content frame. The tabs that are available to users are determined by the systems that are installed and the roles the users have within the systems. The most common tabs are listed below:

- **My Institution:** The **My Institution** tab contains tools and information specific to each user's preferences. Tools and information are contained in modules. Users can add and remove modules from their My Institution tab. The System Administrator may restrict access to or require specific modules. The My Institution tab is available for all licenses, however, only Blackboard Community System users have access to advanced, customizable modules.
- **Blackboard Learning Environment Connector:** The **Learning Environment Connector** tab provides direct access to users' Vista or CE institution. A tool panel and four modules are available on the Integrated Learning Environment tab for Vista and CE integrations. The information on each tab is specific to that Learning Environment. Multiple tabs may be present for users with access to multiple Learning Environments.
- **Courses:** The **Courses** tab links to the Blackboard Learning System. It contains the Course List module that lists users' Blackboard Learning System Courses and the Course Catalog. All Blackboard Learning System and Blackboard Vista and Blackboard CE courses can be listed in the Course Catalog.
- **Community:** The **Community** tab lists Organizations specific to each user, the Organization Catalog for the institution, and institution Discussion Boards. Users click on a link from the Community tab to access an Organization. The Community tab is only available with the Blackboard Community System.
- **Content Collection:** The **Content Collection** tab opens the Blackboard Content System when available. The Content System is a file repository with several sophisticated features for working with content. Users can access personal content, course, organization and institutional content based upon system settings and system role. Other content system features are available here as well including Portfolios, a Learning Objects Catalog, and a set of tools for locating and managing digital content.
- **Services:** The **Services** tab contains links to other institutional offerings outside of the Blackboard Community System. The links are set by the System Administrator. In addition, the Blackboard Community System enables the institution to create custom tabs and present different tabs to users based on Institution Roles.
- **Outcomes:** The **Outcomes** tab opens the Blackboard Outcomes System when available, The Outcomes System is a fully customizable application for supporting and coordinating systematic assessment processes throughout an institution.

Logging In and Out

All users log into the system through the Blackboard Community System. Users who attempt to log in to MyWebCT by entering the URL in the address bar will be redirected to the Blackboard login page.

	NOTE: Server and Domain Admins continue to use their own direct access URL to log in and perform admin functions. CE4 Admin users can continue to use their own direct access URL. WebCT Portfolio users are still able to access Portfolios using the direct access URL.
---	--

	NOTE: Due to general browser cookie handling limitations in an integrated environment, users may experience login inconsistencies when using an alias-based path and they may not be able to access Vista or CE material.
---	--

All users log out using the Blackboard Community System **logout** button, which logs users out of both systems.

Getting Help

Help for all Blackboard applications is provided through the **Help** icon located in the top header frame. **Help** is linked to a URL that has been configured by the system administrator to provide access to online resources to assist users.

Help for all Blackboard Vista and Blackboard CE applications is provided in the **My Features** tool panel on the integrated learning environment tag. In addition, most pages include a Help button at the top of the content frame that will direct users to the page corresponding to the tool they are currently using.

Blackboard Community System

The Blackboard Community System enables educational institutions to build vibrant online communities and improve information flow. The system is deployed by institutions to develop an academic gateway, providing central access to course management systems, libraries, content management tools and student information systems.

Users can personalize available components to best meet their own needs. The system can also support educational and extracurricular activities.

Blackboard Content System

The Blackboard Content System is a file repository with several sophisticated features for working with content. It is fully integrated with the Blackboard Learning System and the Blackboard Community System and can create repositories for Blackboard Learning System and Blackboard Vista and Blackboard CE courses and users as well as for Library and eReserves. For detailed information on using the Blackboard Content System, see the Blackboard Content System User Manual.

Blackboard Outcomes System

The Blackboard Outcomes System is fully customizable application for supporting and coordinating systematic assessment processes throughout an institution. The system supports and connects the academic and administrative assessment processes across an institution's many departments enabling the planning, measuring and improving of outcomes. Learning contexts (sections, courses) from Learning Environments can be directly associated to the Outcomes System for targeted assessment. Blackboard Outcomes System provides comprehensive set of tools and instruments for student and program

assessment. For more information on using and administering the Blackboard Outcomes System, see the Blackboard Outcomes System User Manual.

BLACKBOARD CONTENT SYSTEM ENHANCEMENTS

Metadata

Metadata and its privileges are now displayed prominently in the content system as a default icon in the Tools menu, and are available to librarians. Metadata forms organize content for an institution. By managing Metadata, a user can facilitate the access to, and the use of, multitudinous documents, files, and content for one or many institutions, and subsequently catalyze the spread of educational content. As well, users can now import or export items with their associated Metadata.

Users now have the ability to create, modify and search for metadata forms and their fields to efficiently organize content. As well, metadata can be applied to content folders and not just individual files. Furthermore, the librarian can import and export content items with their associated metadata.

Metadata templates are setup with three default templates and an icon for custom templates. The IMS Metadata template has been enhanced with added multiplicity fields that allow a librarian to add multiple values to one field. As well, librarians have the privilege to modify some of the default templates' fields.

Recycle Bin

A new feature in the Content System is the Recycle bin. The Recycle bin stores deleted content items.

Administrators and users have several feature capabilities within the Recycle Bin. Users can search and access their previously deleted content items and restore them to Content Collection.

Administrators have the ability to enable or disable the Recycle Bin; restore permanently deleted items; modify and rename items; and search for items in the Recycle Bin

Archive/Restore

Instructors and administrators now have the ability to fully archive and restore content items, including their associated metadata.

Search Tool

The Content System Search tool has been enhanced to yield more accurate search results, including the Content Collection, courses and organizations. Associated command line tools have also been updated to enable Administrators to quickly bulk populate content areas that are turned off and then turned back on. Advanced Searches can be saved and shared with other Content System users.

Unique ID Tool

Upon upgrade to 7.3, the Unique ID Tool assigns a unique ID to every new item in the Content System. Links to the Content System files and folders are no longer stored as absolute paths in the database tables, and with the Unique ID Tool, Content System items may be moved freely within the application.

Upon upgrade to 7.3, and if Content System is being installed for the first time, a unique ID will be created for only new Content System items. To create IDs for Content System items created prior to the update, refer to the Update Instructions included in these release notes (see [Executing the Unique ID Tool](#)).

DISCUSSION BOARD ENHANCEMENTS

Course Discussions

Restoring the capability in release 7.1, the user can again view the Course Discussions in a Tree View, in which the post titles to a particular thread are visible. The user must select the **Tree View** icon located on the right side of the Course Discussions page. Selecting a post from the Course Discussions page will navigate the user to the Thread Detail page and will display the post as well.

On the action toolbar, there are new icons. **Mark as Read** and **Mark as Unread** allow the instructor to classify which forums have been read or not. The Search area has been rolled up into a graphic icon of a magnifying glass. Selecting this icon will drop down the search area. Within the Search tool, it is now possible to search by time. Also, **Subscribe** and **Unsubscribe** icons allow users to subscribe or unsubscribe to a forum.

Within the Thread table of the Course Discussion page, several enhancements have been made. Grade and Tag columns have been added to the page, as well as a **Grade** icon that allows the user to navigate to Modify Grade Item page and grade the students' forum performance. As well, the Subscribe and Flag indicators columns have been added, allowing the user to see the subscribed and flagged forums. Also, the Date column includes the exact time of the latest change to the forum. Also, the number of unread posts in the Unread Posts column is a clickable icon that directs the user to the text of these unread posts.

Collections

There are several new features on the Collections page. Atop the page is the Grade field and entry box for the instructor. Within the action bar, like the Course Discussions page, there are icons for **Mark Read** and **Mark Unread**.

Within the Filter action bar, the user will notice a filter that includes filters for Author, Status, read Status, and Tags. As well, under this bar, the user can sort by a number of options, and choose the order in which they are displayed.

Within each post, the user has the ability to **Reply**, **Quote**, and **Mark as Unread**, the preceding post. Also, there is now an area for Tags that displays the tags that correspond to a particular post. There is also an **Add** icon to allow instructors to add tags.

Thread Detail

The Thread Detail page has been changed and enhanced. Now, within the action bar are the icons to **Subscribe** and **Unsubscribe**. As well, there are the icons to **Mark Read** and **Mark Unread**.

Clickable number links for Unread Posts have been added and direct the user to the collection of unread posts.

The new **Quote** icon is located within the action bar of a post. Selecting the icon directs the user to the Reply to Post page, to reply to a post, and within the Message text box is included the text from the post to which the user is responding.

Within a post, a user can now rate a post based on a star rating system. The user can also navigate to both the **Previous Post** and the **Next Post**.

Tagging Messages

Tags allow arbitrary message grouping independent of thread or thread status. Forum managers or Instructors can create and apply text labels of their own choosing to messages in a forum; other Discussion Board users can read, filter, and search messages using the tags, but cannot create new ones.

Modify Forum

Within the Modify Forum page, there are a number of new, available Forum Settings. As well, the Forum Moderator can select the Forum Availability date and time restrictions.

BLACKBOARD ACADEMIC SUITE CHANGES

The table below displays a quick look at the functional changes in Application Pack 3

COMPONENT – SUBSYSTEM/ LICENSE	CHANGE/NEW FEATURE	DESCRIPTION
Discussion Board All Licenses	Course Discussions> Tree View	Displays the forums and their respective posts
Discussion Board All licenses	Course Discussions; Collections; Thread Detail> Mark Read	User may mark a forum, thread, or post as read.
Discussion Board All license	Course Discussions; Collections; Thread Detail> Mark Unread	User may mark a forum, thread, or post as unread.
Discussion Board All licenses	Course Discussions; Collections; Thread Detail> Subscribe	User may subscribe to a forum, thread, or post.
Discussion Board All licenses	Course Discussions; Collections; Thread Detail> Unsubscribe	User may unsubscribe to a forum, thread, or post.
Discussion Board All licenses	Course Discussion column: Add Tags	Instructor can add tags to selected Threads or Messages.
Discussion Board All licenses	Course Discussion column: Tags	Displays any tags associated with a forum.
Discussion Board All licenses	Course Discussion column: Grade	Includes a grade icon, or a Modify icon , or displays the grade.
Discussion Board All licenses	Course Discussion column; Thread Detail: Subscribe forum	Displays a visual indicator of the subscription status of a forum or a thread.
Discussion Board All Licenses	Course Discussion column; Thread Detail: Flagged forum	Displays a visual indicator for a flagged forum or a thread.
Discussion Board All Licenses	Course Discussions and Thread Detail Date columns: time	The time of the most recent change to a forum and a thread.
Discussion Board All Licenses	Course Discussions and Thread Detail: Unread Posts – clickable number icon	User can select the number of unread posts to be directed to the unread posts.
Discussion Board All Licenses	Thread Detail: New Replies to My Post – clickable number icon	Displays the number of new replies to a particular user's post. Selecting the number will direct the user to the text of the posts.

COMPONENT – SUBSYSTEM/ LICENSE	CHANGE/NEW FEATURE	DESCRIPTION
Discussion Board All Licenses	Thread Detail> Quote	Selecting this icon in a post will direct the user to the Reply to a Post page, and will paste the text into the Message Box.
Discussion Board All Licenses	Thread Detail> Previous Post	Selecting this icon will direct the user to the previous post in the thread.
Discussion Board All Licenses	Modify Forum page: time and date restrictions	Forum moderator can now set the time and date restrictions of a forum.
Blackboard Content System - Tools Blackboard Content System License	Metadata Templates	Gives librarians the ability to navigate to the Metadata page
Blackboard Content System – Metadata Templates Blackboard Content System License	Add Templates icon within the Metadata Templates	Allows librarians and administrators to create and modify their own metadata template; impacts librarians and administrators
Blackboard Content System – Metadata Templates Blackboard Content System License	Manage Attributes	Displays the attributes or fields created and/or usable for librarians and administrators for Metadata; impacts librarians and administrators
Blackboard Content System – Metadata Templates Blackboard Content System License	Modify	Allows administrators and librarians to modify Metadata; impacts librarians and administrators
Blackboard Content System – Metadata Templates Blackboard Content System License	Copy	Allows administrator and librarians to copy metadata; impacts librarians and administrators
Blackboard Content System – Metadata Templates Blackboard Content System License	Remove	Allows administrators and librarians to remove Metadata. Impacts librarians and administrators.
Blackboard Content System – Metadata Templates Blackboard Content System License	Modify>Properties	Allows librarians and administrators to modify the name and description of the template

COMPONENT – SUBSYSTEM/ LICENSE	CHANGE/NEW FEATURE	DESCRIPTION
Blackboard Content System – Metadata Templates Blackboard Content System License	Modify>Form Design	Allows librarians and administrators to modify the fields, labels, and organization of the form
Blackboard Content System – Metadata Templates Blackboard Content System License	Modify>Availability	Modify the availability of the template
Blackboard Content System – Metadata templates Blackboard Content System License	Run Reports	Allows librarians and administrators to run available reports
Blackboard Content System – Tools Blackboard Content System License	Workflow Activities renamed My Workflows	Accesses My Workflows page, where users can organize and manage their Workflows; impacts all users of the content system
Content System – My Content Blackboard Content System License	Added Recycle folder	A storage area for deleted content items; all tool available to users for other content items are available in the Recycle bin.
Blackboard Content System – Recycle Blackboard Content System License	Empty Bin	Allows the user the ability to permanently delete content items from the system
Blackboard Community System – System Admin Blackboard Building Blocks Management	Added “Learning Environment Connector” Settings area	Allows the System Administrator to provide a name for the Native Learning Environment as well as add, modify and Remove Vista or CE4 integrations.
Blackboard Community System – Integration Tab Blackboard Vista/CE License with Community	Added an integration tab containing integration modules	Allows Vista/CE users to access their Vista/CE sections/courses and tools via the Bb AS Community System

COMPONENT – SUBSYSTEM/ LICENSE	CHANGE/NEW FEATURE	DESCRIPTION
Blackboard Community System – My Institution tab Blackboard Vista/CE License with Community	Added Vista/CE sections/courses to My Institution Course List and Courses > My Courses	Allows Vista/CE users to enter their Vista/CE sections/courses from within the My Institution tab and the Courses tab.
Blackboard Content System – Courses and Users areas Blackboard Vista/CE License with Community and Content	Automatically create a Course/User folder when a Vista/CE Course/User is added	Allows Vista/CE users to take advantage of the Content System functionality through the Blackboard Community System Content Collection tab.
Blackboard Outcomes System – Learning System Associations Blackboard Vista/CE License with Outcomes	Vista/CE courses/users added	Allows Administrators to associate Outcomes System Sections to Vista/CE sections and to affiliate OS Person Records to Vista/CE users.

COMPATIBILITY MATRIXES

Overview

This section of the document includes information on the following:

- [Server Compatibility Matrix](#) – Explains which server configurations are supported with this release. For example, the required versions of databases and operating systems are included here.
- [End User Compatibility Matrix](#) – Reviews which end-user browsers and operating systems are supported with this release.

SERVER COMPATIBILITY MATRIX

Server Compatibility

Server software must meet certain requirements before installing the Blackboard Academic Suite, Application Pack 3 (Release 7.3). The following are important to keep in mind when setting up the server software:

- The database is run on a separate server when using two or more servers. Thus, appropriate client tools for the database must be installed on the Web/Application server or servers when using a configuration with two or more servers.
- Certified configurations are fully tested and supported.
- Compatible configurations are partially tested but should function properly.
- When installing the Java 2 Platform, Standard Edition (J2SE), make sure that both the JDK and the JRE components are installed. Also, ensure that there are no spaces in the path name to the J2SE.
- Solaris users: ensure that the Swap space for the operating system is at least twice the amount of physical RAM on the server.



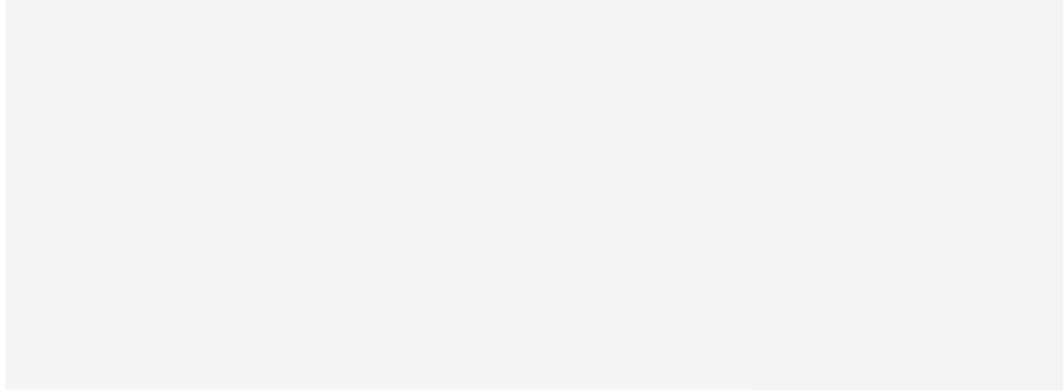
NOTE: Clients running the Blackboard Academic Suite on a Windows Operating System must install the .NET framework if they plan on using .NET Building Blocks.

Updating the Operating System or Database Version

When installing an update to the operating system or database to support a new version of the Blackboard Academic Suite, always update the Blackboard Academic Suite and then make the updates to the database and operating system. Installing the database or operating system on an earlier version creates the risk of destabilizing the existing, earlier version. Please take care to back up the database and file system and test the restore process before installing an update.

Certified Server Configurations for the Blackboard Academic Suite

WINDOWS	SUN SOLARIS	RED HAT ENTERPRISE LINUX
Microsoft® Windows® 2003 Server SP1 (32-bit)	Sun® Solaris™ 10	Red Hat® Enterprise Linux® 4.0
<ul style="list-style-type: none"> • Microsoft® SQL Server 2005 Enterprise Edition or Microsoft® SQL Server 2005 Standard Edition • Microsoft® Internet Information Server (IIS) 6* (not included with Blackboard) • Java 2 Platform, Standard Edition 5.0 • Perl 5.6.1 / Perl Ex 2.3.1 • Tomcat 5.5 	<ul style="list-style-type: none"> • Oracle 10g R2 version 10.2.0.2 • Apache HTTP Server Version 1.3.33 • Java 2 Platform, Standard Edition 5.0 • Perl 5.6.1 / Perl Ex 2.3.1 • Tomcat 5.5 	<ul style="list-style-type: none"> • Oracle 10g R2 version 10.2.0.2 • Apache HTTP Server Version 1.3.33 • Java 2 Platform, Standard Edition 5.0 • Perl 5.6.1 / Perl Ex 2.3.1 • Tomcat 5.5



Certified Server Configurations for Blackboard Learning System – Basic Edition

WINDOWS	SUN SOLARIS	RED HAT ENTERPRISE LINUX
Microsoft® Windows® 2003 Server SP1 (32-bit)	SUN® SOLARIS™ 10 UPDATE 2	RED HAT® LINUX® ENTERPRISE LINUX 4.0
<ul style="list-style-type: none"> • Microsoft® SQL Server 2005 Enterprise Edition • Microsoft® SQL Server 2005 Standard Edition • Microsoft® Internet Information Server (IIS) 6* (not included with Blackboard) • Java 2 Platform, Standard Edition 5.0 • Perl 5.6.1 / Perl Ex 2.3.1 • Tomcat 5.5 	<ul style="list-style-type: none"> • Small-scale Oracle 10G version 10.2.0.2 • Apache HTTP Server Version 1.3.33 • Java 2 Platform, Standard Edition 5.0 • Perl 5.6.1 / Perl Ex 2.3.1 • Tomcat 5.5 	<ul style="list-style-type: none"> • Small-scale Oracle 10G R2 version 10.2.0.2 • Apache HTTP Server Version 1.3.33 • Java 2 Platform, Standard Edition 5.0 • Perl 5.6.1 / Perl Ex 2.3.1 • Tomcat 5.5

Compatible Server Configurations for Blackboard Academic Suite

WINDOWS	WINDOWS	SUN SOLARIS	RED HAT LINUX
Microsoft® Windows® 2003 Server SP1 (32-bit)	Microsoft® Windows® 2003 Server SP1 (mixed mode)	Sun® Solaris™ 10 Updater 2	Red Hat® Enterprise Linux® 4.0
<ul style="list-style-type: none"> Microsoft® SQL Server 2000 Enterprise Edition Microsoft® SQL Server 2000 Standard Edition Microsoft® Internet Information Server (IIS) 6* (not included with the Blackboard Academic Suite) Java 2 Platform, Standard Edition 5.0 Perl 5.6.1 / Perl Ex 2.3.1 Tomcat 5.5 	<ul style="list-style-type: none"> Microsoft® SQL Server 2005 Enterprise Edition on Windows 2003 64-bit Microsoft® SQL Server 2005 Standard Edition on Windows 2003 64-bit Microsoft® Internet Information Server (IIS) 6* (not included with the Blackboard Academic Suite) running on Microsoft Server 2003 32-bit Java 2 Platform, Standard Edition 5.0 Perl 5.6.1 / Perl Ex 2.3.1 Tomcat 5.5 	<ul style="list-style-type: none"> Oracle 9i version 9.2.0.8 Apache HTTP Server Version 1.3.33 Java 2 Platform, Standard Edition 5.0 Perl 5.6.1 / Perl Ex 2.3.1 Tomcat 5.5 	<ul style="list-style-type: none"> Oracle 9i version 9.2.0.7 Apache HTTP Server Version 1.3.33 Java 2 Platform, Standard Edition 5.0 Perl 5.6.1 / Perl Ex 2.3.1 Tomcat 5.5

- Non-English applications, both operating systems and databases (such as a Chinese-language version of Oracle), are considered compatible with Blackboard Academic Suite Application Pack 3 (Release 7.3). These systems have not undergone official Blackboard Product Development testing.
- The Blackboard Academic Suite Application Pack 3 (Release 7.3) products ship with Apache HTTP Server Version 1.3.33 (UNIX operating systems only).
- The Blackboard Academic Suite Application Pack 3 (Release 7.3) products ship with Perl 5.6.1 / Perl Ex 2.3.1

Certified Server Configurations for Vista 4/CE 6

WINDOWS	SUN SOLARIS	RED HAT LINUX
Microsoft® 2003 Server R2 <ul style="list-style-type: none"> Microsoft® SQL Server 2005 Enterprise Edition or Microsoft® SQL Server 2005 Server Standard Edition Java 2 Platform, Standard Edition 5.0 Weblogic 9.2 	Solaris 10 Update 2 <ul style="list-style-type: none"> Oracle 10G R2 10.2.0.3 (9.2.0.8) Java Platform, Standard Edition 5.0 Weblogic 9.2 	Red Hat Linux <ul style="list-style-type: none"> Red Hat Linux 4.0 Oracle 10G R2 10.2.0.3 Java Platform, Standard Edition 5.0 Weblogic 9.2

Certified Server Configurations for CE 4

WINDOWS	SUN SOLARIS	RED HAT LINUX
Microsoft® Windows® 2003 Server R2	Solaris 10 Updater 2	Red Hat Linux 4.0

Compatible Server Configurations for Vista 4/CE 6

WINDOWS	SUN SOLARIS	RED HAT LINUX
There is no Compatible Configuration for Windows and SQL Server.	Solaris 9 <ul style="list-style-type: none"> Oracle 9.2.0.8 Java 2 Platform, Standard Edition 5.0 WebLogic 9.2 	RED HAT LINUX 3.0 <ul style="list-style-type: none"> Oracle 9.2.0.8 Java 2 Platform, Standard Edition 5.0 WebLogic 9.2

END USER CONFIGURATION MATRIX

End User Configuration Guidelines

End users must use a certified or compatible operating system and browser configuration with the *Blackboard Academic Suite*.

		Windows® Operating Systems			Mac® Operating Systems		
		2000	XP	Vista Desktop	10.2	10.3	10.4
Microsoft® Internet Explorer® Web Browsers	5.2	N/A	N/A	N/A	N/A	N/A	N/A
	5.5	N/A	N/A	N/A	N/A	N/A	N/A
	6	C	✓	N/A	N/A	N/A	N/A
	7	N/A	P	✓	N/A	N/A	N/A
Netscape® and Mozilla® Web Browsers	NS 7.1	C	C	✓	C	C	N/A
	NS 8.0	C	✓	P	N/A	N/A	N/A
	Firefox 1.0	C	C	N/A	C	C	C
	Firefox 1.5				N/A	C	✓
	Firefox 2.0	N/A	P	✓	N/A	N/A	P
Web Browsers Apple® Safari®	1	N/A	N/A	N/A	C	N/A	N/A
	1.1	N/A	N/A	N/A	N/A	C	N/A
	1.2	N/A	N/A	N/A	N/A	✓	N/A
	2	N/A	N/A	N/A	N/A	N/A	✓

KEY	
✓	Certified – fully tested and supported
C	Compatible – key application areas tested
N/A	Not tested – specified Browser is not supported for the Operating System
P	Provisional – will test on Beta versions of new platforms and browsers. Certification is dependant on release by 3 rd parties

* All configurations marked as Compatible and have undergone a limited engineering analysis to test areas of the *Blackboard Academic Suite* that may have browser issues. Additional information on known browser issues may be found in the Knowledge Base.

** Microsoft Windows 2000 supported configurations are considered compatible when run on Windows 95, Windows 98, and Windows ME.

*** Gecko is the shared rendering engine at the heart of the Firefox 1.0, Netscape 7.1 and Mozilla 1.5 browsers, which are all considered compatible browsers. Only Firefox has undergone testing that qualifies it as Certified.

**** The Safari Web browser and the Gecko browsers for Apple do not currently fully support the Live Connect technology used by some features in the *Blackboard Learning System*. The Equation Editor, Collaboration tool and SCORM Content type may experience issues when these browsers are used. See the Knowledge Base articles 181-2429, 181-2428, 181-2431, 181-2432 for detailed information.

*****The preview version of Mozilla Firefox (version 0.10.0) is not supported.

SUPPORTED PATHS FOR IMPORTING AND RESTORING COURSES

Supported Paths for Blackboard Academic Suite Release 7

The table below identifies the supported paths for importing or restoring a course that was exported or archived from an earlier version. Certified paths are fully tested and supported by Blackboard. Compatible paths are not fully tested but should function correctly based on past performance.

SOURCE*	SUPPORT
Academic Suite Release 7	Certified
Academic Suite Release 6	Certified
Blackboard ML	Certified
Blackboard 5.5**	Certified
Blackboard 5.0**	Compatible
CourseInfo 4	Not Supported

*Paths for Importing and Restoring courses are not backward compatible. Courses may be Imported or Restored to a newer version, but courses from a newer version may not be Imported or Restored to an earlier version.

**Blackboard 5 and Blackboard 5.5 did not include an Archive and Restore function. Courses from these releases may be imported but courses cannot be restored with user data and interactions intact.

SUPPORTED UPDATE PATHS

The table below outlines the update paths for Release 7, Application Pack 3.

PREVIOUS VERSION	DIRECT UPDATE TO 7.3	DETAILS
5.5.x	No	First migrate to 6.1.x then update through the Release 6 Application Packs to Release 6.3. Then update to Release 7.3.
5.6.x	No	First migrate to 6.1.x then update through the Release 6 Application Packs to Release 6.3. Then update to Release 7.3.
5.7.9 or higher (ML)	No	Install Release 7.3 and then move ML data from a separate server. See the ML Migration Guide for more information.
6.0.x	No	Update through the Release 6 Application Packs to Release 6.3. Then update to Release 7.3.
6.1.x	No	Update through the Release 6 Application Packs to Release 6.3. Then update to Release 7.3.
6.1.5.x (AP1)	No	Update through the Release 6 Application Packs to Release 6.3. Then update to Release 7.3.
6.2.x (AP2)	No	Update to Release 6.3 and then update to Release 7.3.
6.3.x (AP3)	No	Update to Release Release 7.1 and install the latest Service Pack before upgrading to Release 7.3. Update to Windows 2003 before running the updater to move to Release 7.1. Update to Oracle 9i while running Release 6.3. After moving to Release 7.1, update to Oracle 10g.
7.0	No	Update to Release 7, Application Pack 1 or Application Pack 2. Install the latest Service Pack and then update to Application Pack 3.
7.1 (SP2 and later)	Yes	Direct update path to 7.3. See the following pages for updater instructions.
7.2 (SP1 and later)	Yes	Direct update path to 7.3. See the following pages for updater instructions.

UPDATE INSTRUCTIONS FOR WINDOWS (FROM 7.1 OR 7.2)

Overview

Before running the updater, please backup the system and make sure it can be restored.

Client beta-testing revealed that the update may take as long as 4 hours for systems with large databases due to the database updates included in this release. Please allow enough time to complete the update.

Run the Updater on a Load-Balanced System

The Updater must be run on each Web/app server and the Collaboration server on a load-balanced system. The method is similar to the Installer—the Updater is run on each Web/App server in sequential order and then run on the Collaboration server (if the Collaboration server resides on a separate server). After running the Updater the first time, choose the Update an App Server for all other Web/app servers and the Collaboration server. This option will update the application files without making any of the database changes. If .NET Building Blocks are used in the system, please see the troubleshooting section below for an important step to ensure that .NET Building Blocks function correctly in a load-balanced system.

Run the Updater on Windows

Follow these steps to run the Updater on Windows.

- 1 Make sure that the Java environment variable is properly set.
- 2 Click on the Updater file to launch it or open a command-line prompt and navigate to the directory that holds the Updater. Run the following command to launch the Updater:

```
C:\bb_updater_directory>java -jar <updater_file>
```

Where `bb_updater_directory` is the location where the updater file resides on the server and `<updater_file>` is the name of the updater file, this is a .jar file that begins with `bb-as-windows`. To launch the Updater and use the command-line interface, run the following command (the following steps assume that the GUI Updater is used):

```
C:\bb_updater>java -jar <updater_file> -text
```

- 3 A welcome message will appear with a reminder to read the release notes and the installations instructions completely before updating. Click **Next** to continue.
- 4 The first Updater page asks where the `/blackboard` is found and where the `blackboard/content` directory is found. Click **Next** to accept the defaults or enter new values and then click **Next**. Load-Balanced users should use the mapped UNC path.
- 5 The next prompt presents several options. The options are **Update**, **Provide new License file**, **Uninstall Blackboard Academic Suite**, and **Uninstall appserver**. Select the appropriate option and click **Next**.
- 6 A message will appear that displays the changes that will be made when the Updater is run. Click **Next** to start the update. If the Updater was launched from the command line, do not close the command line window or any of the other windows that pop-up during the update.

Executing the Unique ID Tool

Follow these steps to run this tool from the command line:

1. Open the command line interface
2. Navigate to this folder: `blackboard-installation-dir\apps\bbcms\bin`.
3. Type `updatecspaththoxythosid` and press **Enter**.

The Unique ID Tool will now assign IDs to all Content System items created prior to the update. As well, the Unique ID Tool will create IDs to all Content System items created thereafter.

Troubleshooting the Updater

The Updater logs are an important source of information when troubleshooting issues that arise during an update. The Updater writes the following logs:

```
\blackboard\logs\bb7-installer-log.txt
```

If the installer log file does not identify the problem, the update tool log most likely contains the cause of any installation errors:

```
\blackboard\logs\update-tools\update-tool-log.txt
```

Also check:

```
\blackboard\logs\install\
\blackboard\logs\install\db-install-errors-log-bb_bb60.txt
\blackboard\logs\install\db-install-errors-log-bb_bbadmin.txt
\blackboard\logs\install\db-install-info-log-bb_bb60.txt
\blackboard\logs\install\db-install-info-log-bb_bbadmin.txt
```

Microsoft .NET Building Blocks on load-balanced configurations

After running the update, an error message may appear in the system when attempting to launch a Building Block built using Microsoft .NET. The system reports a Parser Error Message. To resolve the problem, copy the Webapp directory for any Building Blocks created using Microsoft .NET to each application server so that the directories may be accessed locally. Here is an example of the Webapp directory for a Building Block .NET directory on the UNC share:

```
\\UNC_server_name\bb_content\vi\bb_bb60\plugins\name_of_building_block\webapp
```

After copying the Building Blocks directories to each application server, follow these steps to remap the virtual directory in IIS on each application directory to point to the local directory:

1. Open **Start**. Select **Programs**. Select **Administrative Tools**. Select **Microsoft .NET Framework 1.1 Configuration**.
2. Expand **Runtime Security Policy**. Select **Machine**. Select **Code Groups**. Select **All_Code**.
3. Right-click **All_Code**. Select **New...**
4. Create a code group name, for example dotNETB2, and then choose **Next**.
5. Set **condition type** to URL.
6. In the URL field, enter:

```
file:///\\[local_server_name]\[sharename]
```

for example:

```
file:///\\bb_app_server_01\bb_content\vi\*
```

7. Restart IIS.

Token Warnings

Users may see token warnings that begin with antarg. These warnings can be safely ignored.

```
Infinite loop in tokens. Currently known tokens : [antargs.default.users.admini
trator.password]
Problem token : @antargs.default.users.administrator.password@ called from @ant
args.default.users.administrator.password@
Infinite loop in tokens. Currently known tokens : [antargs.default.users.integr
tion.password]
Problem token : @antargs.default.users.integration.password@ called from @antar
s.default.users.integration.password@
Infinite loop in tokens. Currently known tokens : [antargs.default.users.rootad
in.password]
Problem token : @antargs.default.users.rootadmin.password@ called from @antargs
default.users.rootadmin.password@
Infinite loop in tokens. Currently known tokens : [bbconfig.cs.db.cms-user.pass
```

Upgrade Failure due to Strict Password Requirements (SQL Server)

On an upgrade with SQL Server, the upgrade may fail due to the strict parameters for password requirements. The user will receive the following message:

Password validation failed. The password does not meet Windows policy requirements because it is too short.

To override or reset the password requirements, follow these steps:

1. Create a text file `mycustom.properties` and add the following line to it (substitute the right value):

```
bbconfig.database.jreport.password=pAssw0rd
```

2. Run the Academic Suite installer as follows (text in caps should be filled in as appropriately):

```
java -jar bb-as-PLATFORM-VERSION.jar -config mycustom.properties
```

Language Pack Changes

To ensure consistency across releases, the Blackboard Academic Suite Updater will compare the existing `en_US` language pack against the version that is being installed. The differences are noted and output in a file called `bundle_diff.txt`. This file is added to the `blackboard/backups/<updater_time_stamp>` directory. Use this file to review the text differences between releases and make updates to any custom Language Packs.

UPDATE INSTRUCTIONS FOR UNIX (FROM 7.1 OR 7.2)

Overview

Before running the updater, please backup the system and make sure it can be restored. Solaris users: ensure that the Swap space for the operating system is at least twice the amount of physical RAM on the server.

Client beta-testing revealed that the update may take as long as 4 hours for systems with large databases due to the database updates included in this release. Please allow enough time to complete the update.

Run the Updater on a Load-Balanced System

The Updater must be run on each Web/app server and the Collaboration server on a load-balanced system. The method is similar to the Installer—the Updater is run on each Web/App server in sequential order and then run on the Collaboration server (if the Collaboration server resides on a separate server). After running the Updater the first time, choose the Update an App Server for all other Web/app servers and the Collaboration server. This option will update the application files without making any of the database changes.

Run the Updater on UNIX

Follow these steps to run the Updater on UNIX.

- 1 Open a command-line prompt and navigate to the directory that holds the Updater.
- 2 Run the following command to launch the Updater:

```
/usr/local/bbupdater/java -jar <updater_file>
```

If Xwindows or a similar GUI is running and the DISPLAY variable is properly configured, the Updater will launch in GUI mode (remember that the following steps assume that the command line Updater is used)

A welcome message will appear with a reminder to read the release notes and the installations instructions completely before updating. Hit **ENTER** to continue.

- 3 Instructions will appear for navigating through the Updater prompts. The Updater, in most cases, will provide a default value in brackets. Hit **ENTER** to accept the default and continue or enter a different value. Hit **ENTER** to continue after entering a new value.
- 4 The first Updater prompt asks for the directory where Blackboard will be found. Hit **ENTER** to accept the default or enter a new value and then hit **ENTER**. If The *Blackboard Academic Suite* is not found in the directory provided, the Updater will attempt to install at the given location.
- 5 The next prompt presents several options. The options are **Update**, **Provide new License file**, **Uninstall Blackboard Academic Suite**, and **Uninstall appserver**. Type **1** and hit **ENTER** to select **Update**.
- 6 A message will appear that displays the changes that will be made when the Updater is run. Hit **ENTER** to start the update. Do not close the command line window or any of the other windows that pop-up during the update.
- 7 After running the update, stop the Blackboard services and then stop the shutdown the Oracle database. Restart in the reverse order. Start the Oracle database first and then start the Blackboard services. Shutting down and restarting the Blackboard services and the Oracle database will prevent any potential problems with database caching after running the update.

Troubleshooting the Updater

The Updater logs are an important source of information when troubleshooting issues that arise during an update. The Updater writes the following logs:

```
/blackboard/logs/bb7-installer-log.txt
```

If the installer log file does not identify the problem, the update tool log most likely contains the cause of any installation errors:

```
/blackboard/logs/update-tools/update-tool-log.txt
```

Also check:

```
/blackboard/logs/install/
/blackboard/logs/install/db-install-errors-log-bb_bb60.txt
/blackboard/logs/install/db-install-errors-log-bb_bbadmin.txt
/blackboard/logs/install/db-install-info-log-bb_bb60.txt
/blackboard/logs/install/db-install-info-log-bb_bbadmin.txt
```

Language Pack Changes

To ensure consistency across releases, the Blackboard Academic Suite Updater will compare the existing en_US language pack against the version that is being installed. The differences are noted and output in a file called `bundle_diff.txt`. This file is added to the `blackboard/backups/<updater_time_stamp>` directory. Use this file to review the text differences between releases and make updates to any custom Language Packs.

Oracle 10gR2 Installation Error

Users installing the Blackboard Academic Suite on the Oracle 10g (Release 2) database report that the Blackboard installation fails to complete. Only the BBADMIN and BB_BB60 users and tablespaces are created. When this problem occurs, the following error is reported in the `bb7-installer-log.txt` file:

```
java.sql.SQLException: ORA-01031: insufficient privileges
at oracle.jdbc.driver.DatabaseError.throwSQLException(DatabaseError.java:125)
Error while running tool: blackboard.apis.updatetools.FatalUpdateToolException:
An error occurred creating the database for your virtual installation.
Review log logs/update-tools/update-tool-log.txt for details
```

The `update-tool-log.txt` file reports the error as:

```
blackboard.apis.updatetools.FatalUpdateToolException: An error occurred
creating the database for your virtual installation.
at
blackboard.apis.updatetools.tooldefs.install.DatabaseSetupTool.createAllDatabases
(DatabaseSetupTool.java:91)

java.sql.SQLException: ORA-01031: insufficient privileges
at oracle.jdbc.driver.DatabaseError.throwSQLException(DatabaseError.java:125)
```

Prior to Oracle 10g Release 2, the `CONNECT` role was granted eight privileges: `create session`, `create table`, `create view`, `create synonym`, `create database link`, `create cluster`, `create sequence`, and `alter session`. With the release of Oracle 10.2.0.1, only the `create session` privilege is granted to the `CONNECT` role. Oracle removed the additional `CONNECT` role privileges in Oracle 10g (Release 2) to provide additional security by enforcing a principle of least privileges.

The Blackboard installer requires the `CONNECT` role to have both the `create session` and `create table` privileges.

The following will grant the two privileges that are required to install Blackboard on Oracle 10g (Release 2):

```
sqlplus "/as sysdba"  
SQL> @$ORACLE_HOME/rdbms/admin/rstrconn.sql  
SQL> GRANT create session, create table TO CONNECT;  
SQL> commit;  
SQL> exit
```

Another minor issue that occurs with Oracle 10g (Release 2) is that the databases and listener will not startup correctly when running the `dbstart` and `dbshut` oracle scripts to startup and shutdown the databases. To fix the problem follow these steps:

Linux:

1. `su - oracle`
2. `vi $ORACLE_HOME/bin/dbstart & vi $ORACLE_HOME/bin/dbshut`
3. Replace `ORACLE_HOME_LISTNER=$i` with `ORACLE_HOME_LISTNER=$ORACLE_HOME`
4. Save the file.

Solaris:

1. `su - oracle`
2. `vi $ORACLE_HOME/bin/dbstart & vi $ORACLE_HOME/bin/dbshut`
3. Replace `ORACLE_HOME_LISTNER=$i` with `ORACLE_HOME_LISTNER=$ORACLE_HOME`
4. Replace `ORATAB=/etc/oratab` with `ORATAB=/var/opt/oracle/oratab`
5. Save the file.

UPDATE SMALL-SCALE ORACLE DATABASE

Overview

The Blackboard Learning System – Basic Edition includes a version of Oracle that is run on a UNIX-based operating system. This version of Oracle is called Small-Scale Oracle. This topic contains information on upgrading the Small-Scale Oracle database from version 9I to 10G.



NOTE: Cloning the database and performing a test upgrade on the clone database before updating is strongly recommended. This encourages familiarity with the process without risking loss or corruption of data.

Red Hat Linux Prerequisite

If the Oracle database is running on Linux, make sure `/etc/sysctl.conf` contains the following lines:

```
kernel.sem = 250 32000 100 128
kernel.shmmax = 4294967295
net.ipv4.ip_local_port_range = 1024 65000
net.core.rmem_default = 262144
net.core.rmem_max = 262144
net.core.wmem_default = 262144
net.core.wmem_max = 262144
```

Solaris Prerequisite

If the Oracle database is running on Solaris, make sure `/etc/system` contains the following line:

```
set noexec_user_stack=1
```

General Prerequisites

Before beginning the upgrade process, perform the following tasks:

- Perform a full backup of the Blackboard database.
- Perform a system backup of the database server, including the directory that contains the Oracle software.
- Perform a backup of the `/etc/oratab` and `/etc/orainst.loc`.

Once all of the prerequisite tasks are complete, reboot or execute `/sbin/sysctl -p` as root. After that, check for invalid objects in the database and recompile them if necessary.

The next step is gathering schema statistics, which is discussed in the next section.



NOTE: The database server and application server must meet the system requirements described in the appropriate version of the Release Notes.

Gathering Schema Statistics

Before performing the upgrade collect optimizer statistics for the standard schemas. Follow these steps to collect these schema statistics:

1. Login as oracle user:

```
su - oracle
```

2. Start SQL*Plus and execute the following:

```
sqlplus "/ as sysdba"
spool gdict
grant analyze any to sys;
exec dbms_stats.gather_schema_stats('WMSYS',options=>'GATHER',
estimate_percent => DBMS_STATS.AUTO_SAMPLE_SIZE,
method_opt => 'FOR ALL COLUMNS SIZE AUTO', cascade => TRUE);
exec dbms_stats.gather_schema_stats('CTXSYS',options=>'GATHER',
estimate_percent => DBMS_STATS.AUTO_SAMPLE_SIZE,
method_opt => 'FOR ALL COLUMNS SIZE AUTO', cascade => TRUE);
exec dbms_stats.gather_schema_stats('XDB',options=>'GATHER',
estimate_percent => DBMS_STATS.AUTO_SAMPLE_SIZE,
method_opt => 'FOR ALL COLUMNS SIZE AUTO', cascade => TRUE);
exec dbms_stats.gather_schema_stats('OUTLN',options=>'GATHER',
estimate_percent => DBMS_STATS.AUTO_SAMPLE_SIZE,
method_opt => 'FOR ALL COLUMNS SIZE AUTO', cascade => TRUE);
exec dbms_stats.gather_schema_stats('DBSNMP',options=>'GATHER',
estimate_percent => DBMS_STATS.AUTO_SAMPLE_SIZE,
method_opt => 'FOR ALL COLUMNS SIZE AUTO', cascade => TRUE);
exec dbms_stats.gather_schema_stats('SYSTEM',options=>'GATHER',
estimate_percent => DBMS_STATS.AUTO_SAMPLE_SIZE,
method_opt => 'FOR ALL COLUMNS SIZE AUTO', cascade => TRUE);
exec dbms_stats.gather_schema_stats('SYS',options=>'GATHER',
estimate_percent => DBMS_STATS.AUTO_SAMPLE_SIZE,
method_opt => 'FOR ALL COLUMNS SIZE AUTO', cascade => TRUE);
spool off
```

3. Stop the database services (if they are installed):


```
/usr/local/blackboard/tools/admin/ServiceController.sh services.stop
```

4. Shut down the Oracle 9i database:

```
su - oracle
sqlplus "/ as sysdba"
shutdown immediate;
```

Performing the Oracle Database Upgrade

The upgrade process involves installing the Small-Scale Oracle database software and then upgrading the database itself using `BbUpdateSSO.sh`.

	<p>NOTE: If the upgrade process fails, execute the DB Restore Script first and then contact Blackboard support:</p> <pre>su - oracle [Linux only] /usr/local/oracle/dbuabackup9i/SMALL9I_restore.sh</pre>
---	---


Follow these steps to upgrade the Small-Scale Oracle database from 9I to 10G:


1. Install the Oracle 10G database software.

	<p>NOTE: For detailed information on installing the Oracle 10G software (SSO), refer to the appropriate Small-Scale Oracle 10G Guide (SSO).</p>
---	--

2. Upgrade the database by logging in to oracle and execute the following commands:

```
su - oracle
cd /usr/local/SSO
/usr/local/SSO/BbUpdateSSO.sh -b /usr/local/oracle -h
/usr/local/oracle/10g -i /usr/local/oracle/9i -k
/usr/local/oracle/dbuabackup9i -s SMALL9I
```

	<p>NOTE: The parameters -A, -B, and -S are used to specify your current bbadmin bb_bb60, and bb_bb60_stats users' passwords, respectively.</p>
---	---

	<p>NOTE: Replace SMALL9I with the name of the real instance in these commands.</p>
---	---

3. Set the ORACLE_HOME directory in `.profile` or `.bash_profile` to point to the Oracle 10g home directory by executing the following command:

```
ORACLE_HOME=/usr/local/oracle/10g
```

4. Log out and then log back in as Oracle user.
5. Start up the Oracle 10G database.

```
sqlplus "/ as sysdba"
startup
```

6. Start the Blackboard services:

```
/usr/local/blackboard/tools/admin/ServiceController.sh services.start
```

UPDATE ECOMMERCE

Installation Process

If the Blackboard Transaction System—Universal Edition or Windows Edition is used, the Enviserv middleware must be updated along with the Blackboard Community System. Enviserv is additional software that allows communication between the Blackboard Transaction System and the Blackboard Community System. Updating the Enviserv software requires the uninstallation of the old version and installation of the new version. Before doing so, make a backup of the existing installation so the system can be restored to its current state.

Clients running the Blackboard Transaction System—UNIX Edition must configure the Blackboard Community System to support communication using the TIA protocol. The TIA protocol is supported beginning with Hotfix 1 for Service Pack 1 of the Blackboard Academic Suite, Release 7, Application Pack 1.

The process for connecting the Community System to the Transaction System depends upon the licensed version of the Transaction System. Use the table below to determine which process to follow:

TRANSACTION SYSTEM VERSION	PLEASE SEE . . .
Blackboard Transaction System—Universal Edition	Install Envision
Blackboard Transaction System—Windows Edition	Install Envision
Blackboard Transaction System—UNIX Edition	Configure TIA

e-Commerce Prerequisites

The following prerequisites must be met before connecting the Blackboard Community System to the Blackboard Transaction System.

- Blackboard Transaction System—Universal Edition; Blackboard Transaction System—Windows Edition, package 212 or higher; or Blackboard Transaction System—Unix Edition, Release 9.0 or higher.
- Blackboard Community System Release 7.0 or higher with the Blackboard Transaction System—Universal Edition and the Blackboard Transaction System—Windows Edition. The version of Enviserv must match the version of the Blackboard Community System. For example, if the Blackboard Community System is build 7.0.298, use Enviserv 7.0.298 or Optiserv 7.0.298.
- Hotfix 1 for Service Pack 1 for the Blackboard Academic Suite Release 7.1 or higher is required for the Blackboard Transaction System—UNIX Edition to communicate through the TIA protocol.
- SSL-Enabled on the Blackboard Community System.

NOTE: For SSL to work with the MyAccounts module it must be enabled for all parts of the Blackboard Community System. If SSL Choice is used, the MyAccounts module will not be secured under SSL. Also, it is not possible to make purchases in the eMarketplace without an SSL certificate.

Information on installing the Blackboard Community System can be found in the Blackboard Community System Setup Guide. Information on configuring SSL can be found in the Server Administration Guide. Please consult the Blackboard Transaction System documentation for information on installing the Blackboard Transaction System.

ENVISERV INSTALLATION

The EnviServ server enables communication between the Blackboard Community System and the Blackboard Transaction System—Universal Edition or the Blackboard Transaction System—Windows Edition. The EnviServ middleware is installed on the Blackboard Transaction System server. Instructions for installing EnviServ appear below.

NOTE: The EnviServ version must match the version of the Blackboard Community System.

Enviserv Settings

The following settings are required when installing Enviserv. Gather the values for each setting before running the installer. This data can be found in the properties file:

`C:\enviserv\blackboard\config\bb-config.properties`

SETTING	VALUE
Enviserv Directory	The directory where Enviserv will be installed. The default value is C:\Enviserv
J2SE Directory	The location of the Java 2 Platform, Standard Edition. Make sure that the full SDK is available on the server and matches the version required for the Blackboard Community System.
Enviserv Server Configuration	
Host Name	Enter the IP Address or DNS name for the server hosting Enviserv.
Port	Enter the port number that Enviserv will use to listen for requests from the Blackboard Community System. The default is Port 3784 (The port must match transaction system settings configuration of the Community System.)
Secret Key	The Key must be 16 characters long and can be any combination of alphanumeric characters. The same key will later be entered into the Blackboard Community System.
Windows Service Name	Enviserv runs as Bb-Enviserv within the Windows operating system.
Transaction System Configuration	
Host Name	Enter the IP Address or DNS name for the server hosting the Transaction System Database.
Port	1521
SID	Enter the Database SID used with Transaction System Database.
User	Enter the user name as envision.
Password	Enter a password for the user.

Install Enviserv on a Windows Server

Follow these steps to install the EnviServ server software.

1. Stop Enviserv.

```
C:\enviserv\blackboard\tools\admin\ServiceController.bat services.stop
```

2. Remove the NT service.

```
C:\enviserv\blackboard\tools\admin\RemoveServices.bat
```

3. Rename the C:\enviserv directory to C:\enviserv.orig.

4. Download bb_enviserv_windows_X_X_X_XXX (Where the X's are the version number) to the Blackboard Transaction System server. Make sure that the Enviserv version number matches the version number of the Blackboard Community System.

5. Run the installer.

6. Confirm the license agreement and click **Next**.

7. Complete the fields in the installer using **Next** and **Back** to navigate between pages. Descriptions of the data that must be provided are included above in the Enviserv Settings table.

8. Click **Finish** after completing the installer.

9. Once the installation is finished, start the Bb-Enviserv service through the Windows operating system.

10. After installation is complete and the Bb-Enviserv service is running, test the system.

11. After verifying that Enviserv is operating properly, remove the C:\Enviserv.orig backup directory.

Enviserv Config File and Command Line Tools

After installing Enviserv, the properties file that stores user-defined settings is stored at:

```
C:\enviserv\blackboard\config\bb-config.properties
```

This file is useful when making updates to Enviserv. Keep a backup copy to easily reapply settings after an update. Keep in mind that the Enviserv version must be kept consistent with the Blackboard Community System version. Update Enviserv every time the Blackboard Community System is updated.

To start and stop Enviserv services, use the following tool:

```
C:\enviserv\blackboard\tools\admin\ServiceController.bat
```

To start services:

```
C:\enviserv\blackboard\tools\admin\ServiceController.bat services.start
```

To stop services:

```
C:\enviserv\blackboard\tools\admin\ServiceController.bat services.stop
```

As part of the uninstallation process, the service must be removed from the server. Use the following tool to remove the NT service:

```
C:\enviserv\blackboard\tools\admin\RemoveServices.bat
```

CONFIGURE COMMUNICATION BETWEEN THE BLACKBOARD COMMUNITY SYSTEM AND THE BLACKBOARD TRANSACTION SYSTEM—UNIX EDITION

Overview

Communication between the Blackboard Community System and the Blackboard Transaction System—UNIX Edition no longer uses Optiserv or a Lantronix device. Instead, communication occurs through the TIA protocol.

Configuration requires Hotfix 1 for Service Pack 1, Blackboard Academic Suite, Release 7.3.

TIA Protocol Configuration

After installing the Hotfix, follow these steps to configure communication between the Blackboard Transaction System and the Blackboard Community System.

1. Stop the Optiserv service. This service is no longer required.
2. Record the following information from the Blackboard Transaction System:
 - Server:** IP address that identifies the Blackboard Transaction System server.
 - Port:** Port used by the Blackboard Transaction System server to communicate with the Blackboard Community System.
 - Key:** 32 bit hexadecimal encryption key. This key must match the key on the Blackboard Transaction System.
 - Terminal:** Used to match the Blackboard Community System to a specific point of sale identified by the Blackboard Transaction System.
 - Tender:** Used to match the Blackboard Community System to a specific point of sale identified by the Blackboard Transaction System.
3. Configure the Blackboard Transaction System to implement TIA using a properly formatted iptxninterface file. Details can be found in the *Transaction Integration Agent Setup, Configuration and Support Guide*, which is available on Behind the Blackboard.
4. Login to the Blackboard Community System as a user with Administrator privileges.
5. From the Admin tab, click **eCommerce** and then select **Transaction System Settings**.
6. Under **TIA – UNIX Transaction System Settings**, enter the information recorded in step 2. Click **Submit**.
7. The Blackboard Community System should now be able to communicate with the Blackboard Transaction System to handle eCommerce transactions.

REFERENCE MATERIALS

About Reference Materials

A full suite of reference materials is available with the Academic Suite. All materials are located in the Reference Center at <http://behind.blackboard.com>. These materials include:

MANUAL NAME	DESCRIPTION
<i>Blackboard Academic Suite Hardware/Software Guide</i>	
Hardware Sizing Guide	Helps Administrators plan their hardware needs for running the <i>Blackboard Academic Suite</i> .
<i>Blackboard Academic Suite Installation Guide</i>	
Setup Guide	Installing the <i>Blackboard Academic Suite</i> .
<i>Blackboard Academic Suite Administrator Guides and Manuals</i>	
System Administrator Manual	Reference manual detailing the tools and functions available through the Administrator Panel. This manual covers the entire <i>Blackboard Academic Suite</i> .
Server Administrator	Background information, specific instructions, and resources covering different types of end-user authentication, application architecture, Virtual Installations, and SSL.
Advanced Integration and Data Management Manual	Background information on integration and instructions for using integration tools included in the <i>Blackboard Academic Suite</i> .
Outcomes Manual	This provides information and instructions on the usage and capabilities of the Outcomes System.
<i>Blackboard Academic Suite API Specifications and Building Blocks</i>	
Introduction to the Building Blocks APIs and Runtime	Reference material about the Building Block APIs and Runtime for developers creating Building Blocks.
System Extension Developers Guide	An overview of the Building Block framework and a quick start reference to begin creating Building Blocks.
Module Developers Guide	A quick start reference to create Building Block modules.
Building Block API Specifications	The Building Block API JavaDoc; this serves as the authoritative reference for developers creating Building Blocks for the <i>Blackboard Learning System</i> and the <i>Blackboard Community System</i> .
Administrative API Specifications	The Snapshot API JavaDoc; this serves as the authoritative reference for Administrators using the snapshot tool.
<i>Blackboard Academic Suite End User Manuals</i>	

MANUAL NAME	DESCRIPTION
User Manual	Reference manual detailing the tools and functions included in the platform from the general user perspective. This manual includes information on the <i>Blackboard Learning System</i> and the <i>Blackboard Community System</i> .
Instructor Manual	Reference manual providing detailed information about building and managing courses and organizations. This manual includes information on the <i>Blackboard Learning System</i> and the <i>Blackboard Community System</i> .
<i>Blackboard Content System API Specifications and Building Blocks</i>	
<i>Blackboard Content System</i> Building Blocks API Specifications	The Building Block API JavaDoc for the <i>Blackboard Content System</i> ; this serves as the authoritative reference for developers creating Building Blocks for the <i>Blackboard Content System</i> .
<i>Blackboard Content System End User Manuals</i>	
User Manual	Reference manual detailing the tools and functions included in the system for all end users. This manual includes information on the <i>Blackboard Content System</i> .