

# Essbase® Deployment Services

Release 7.1

---



## *Installation Guide*



Hyperion®

Hyperion Solutions Corporation

Copyright 2001–2004 Hyperion Solutions Corporation. All rights reserved.

May be protected by Hyperion Patents, including U.S. 5,359,724 and U.S. 6,317,750

“Hyperion,” the Hyperion “H” logo and Hyperion’s product names are trademarks of Hyperion. References to other companies and their products use trademarks owned by the respective companies and are for reference purpose only.

No portion of this manual may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or information storage and retrieval systems, for any purpose other than the purchaser’s personal use, without the express written permission of Hyperion.

The information contained in this manual is subject to change without notice. Hyperion shall not be liable for errors contained herein or consequential damages in connection with the furnishing, performance, or use of this material.

This software described in this manual is licensed exclusively subject to the conditions set forth in the Hyperion license agreement. Please read and agree to all terms before using this software.

GOVERNMENT RIGHTS LEGEND: Use, duplication or disclosure by the U.S. Government is subject to restrictions set forth in the applicable Hyperion license agreement and as provided in DFARS 227.7202-1(a) and 227.7202-3(a) (1995), DFARS 252.227-7013(c)(1)(ii) (Oct 1988), FAR 12.212(a) (1995), FAR 52.227-19, or FAR 52.227-14, as applicable.

Hyperion Solutions Corporation  
1344 Crossman Avenue  
Sunnyvale, California 94089

Printed in the U.S.A..

# Contents

|  |      |
|--|------|
| <b>Preface</b> .....   | vii  |
| Purpose .....  | vii  |
| Audience .....   | vii  |
| Document Structure .....   | vii  |
| Related Documentation .....  | viii |
| Online Help .....  | ix   |
| Online Guides.....   | ix   |
| Conventions.....   | ix   |
| Additional Support.....  | xi   |
| Documentation Feedback.....  | xi   |
| <b>Chapter 1: Product Overview</b> .....                                 | 13   |
| About Essbase Deployment Services.....                                   | 14   |
| Understanding the Essbase Deployment Services Development Platform ..... | 16   |
| TCP/IP Client Programs .....   | 18   |
| HTTP Client Programs .....   | 19   |
| EJB Client Programs .....  | 20   |
| Allocating Computing Resources for Essbase Deployment Services.....      | 21   |
| Analyzing Essbase Applications .....                                     | 21   |
| Concurrent Usage Limits and Considerations .....                         | 23   |
| Allocating Processing and Memory Resources .....                         | 24   |
| Persistent Storage Considerations .....                                  | 25   |
| Assessing Network Bandwidth Requirements .....                           | 25   |

- Chapter 2: Installing Software on Windows Systems..... 27**
- Windows System Requirements ..... 28
- Installing Essbase Deployment Services on Windows Systems ..... 28
  - Installation Procedure for Windows Systems ..... 29
  - Directories Created on Windows Systems ..... 31
- Installing Essbase Deployment Services as a Service on Windows 2000 ..... 33
- Chapter 3: Installing Software on UNIX Systems ..... 35**
- Solaris System Requirements ..... 36
- Installing Essbase Deployment Services on UNIX Systems ..... 37
  - Installation Procedure for UNIX Systems ..... 37
  - Directories Created on UNIX Systems ..... 39
- Installing Essbase Deployment Services to Run as a Background Process..... 41
- Installing From the Command Line..... 41
- Uninstalling Previous Versions ..... 41
- Specific UNIX Installation Settings ..... 42
- Viewing Online Documentation on UNIX Systems ..... 43
- Chapter 4: Advanced Installation Topics ..... 45**
- Migrating to New Releases ..... 45
- Creating Pointer Files to Essbase.properties ..... 46
- Command Shell Commands ..... 47
- Uninstalling Essbase Deployment Services..... 48
  - Instructions for Uninstalling from Windows Systems ..... 49
  - Instructions for Uninstalling from UNIX Systems ..... 49
- Configuring Essbase Deployment Services Servers ..... 50
  - Configuring Domain Storage for Essbase Deployment Services ..... 50
  - Configuring Servers to Use TCP/IP, HTTP, or EJB ..... 53
- Configuring Essbase Analytic Servers..... 54
  - Configuring Essbase Servers for Remote Activation..... 55
- Defining Clusters and Connection Pools ..... 57
  - Defining Essbase Server Clusters ..... 57
  - Defining Connection Pools ..... 58

|   |           |
|---|-----------|
| Deploying Deployment Services on Application Servers .....        | 59        |
| Making Configuration Changes.....                                 | 60        |
| Setting ARBORPATH and PATH on Windows .....                       | 60        |
| Setting ARBORPATH and PATH on UNIX .....                          | 60        |
| Before Deploying on an Application Server.....                    | 62        |
| Deploying on Apache Tomcat Server .....                           | 67        |
| Deploying on BEA WebLogic Server 7.x.....                         | 67        |
| Deploying on BEA WebLogic Server 8.x.....                         | 69        |
| Deploying on IBM WebSphere Enterprise Server 5.0.x or 5.1.x ..... | 70        |
| Deploying on a Sun ONE Application Server .....                   | 71        |
| <b>Chapter 5: System Administration .....</b>                     | <b>73</b> |
| Starting and Stopping Essbase Deployment Services .....           | 74        |
| Starting and Stopping Essbase Deployment Services Servers.....    | 74        |
| Starting and Stopping the Deployment Services Console .....       | 75        |
| Starting and Stopping the Deployment Services Command Shell ..... | 76        |
| Managing Essbase Server Clusters.....                             | 77        |
| Outline Caching .....   | 77        |
| External Authentication .....                                     | 78        |
| Disk Space Management .....                                       | 78        |
| Synchronizing Data Across a Cluster .....                         | 78        |
| Synchronizing Data Using Partitioning .....                       | 79        |
| Synchronizing Data Using Essbase Integration Server .....         | 79        |
| Synchronizing Data Using Export and Load Functions .....          | 79        |
| Synchronizing Users and Security Across a Cluster .....           | 80        |
| Loading Essbase Users into Essbase Deployment Services .....      | 80        |
| Fault Tolerance .....   | 82        |
| Fault Tolerance in the Java API .....                             | 82        |
| Fault Tolerance in Essbase Deployment Services .....              | 82        |
| <b>Chapter 6: Setting up the Sample Programs.....</b>             | <b>87</b> |
| Understanding the Sample Programs .....                           | 87        |
| Configuring Analytic Servers.....                                 | 90        |
| Configuring Essbase Deployment Services Servers.....              | 91        |

## Contents

|   |     |
|---|-----|
| Compiling and Running the Sample Programs ..... | 92  |
| Configuring the runsamples Script File .....    | 92  |
| Running the runsamples Script .....             | 93  |
| Creating Compile and Run Scripts.....           | 94  |
| Running Compile and Run Scripts.....            | 95  |
| Next Steps .....                                | 95  |
| <b>Glossary</b> .....                           | 97  |
| <b>Index</b> .....                              | 101 |

## Purpose

This guide provides you with the information that you need to install and configure Essbase Deployment Services and Essbase Spreadsheet Services for use with Essbase. This book explains Essbase Deployment Services features and options and contains the concepts, processes, and procedures that you need to use the software.

## Audience

This guide is for system administrators and software developers who are responsible for installing Essbase Deployment Services, configuring it, and building client programs for use with the product.

## Document Structure

This document contains the following information:

- [Chapter 1, “Product Overview,”](#) introduces Essbase Deployment Services features, the development platform, and computer resource allocation for the product.
- [Chapter 2, “Installing Software on Windows Systems,”](#) describes how to install Essbase Deployment Services on Windows systems.
- [Chapter 3, “Installing Software on UNIX Systems,”](#) describes how to install Essbase Deployment Services on UNIX systems.

- [Chapter 4, “Configuring Software Components,”](#) describes how to configure and run Essbase Deployment Services servers. This chapter also describes how to configure Essbase servers to work with Essbase Deployment Services servers.
- [Chapter 6, “Setting up the Sample Programs,”](#) describes how to setup, compile, and run the sample client programs provided with Essbase Deployment Services.
- [Chapter 5, “System Administration,”](#) outlines how to perform administration and maintenance tasks for Essbase Deployment Services systems.
- [Chapter 4, “Advanced Installation Topics,”](#) lists locations of essential files and describes how to create pointer files, replicate users across a cluster of servers, and uninstall the product.
- [Glossary](#) contains a list of key terms and their definitions.
- [Index](#) contains a list of Essbase Deployment Services terms and their page references.

## Related Documentation

Hyperion provides the following documentation for this product:

- The online *Essbase Deployment Services Console Help* in the Essbase Deployment Services DOCS directory, for more information about using the Deployment Services Console to manage servers and domains.
- The online *Essbase Deployment Services JAPI Reference* in the Essbase Deployment Services DOCS directory, for more information about using the Essbase Deployment Services Java application programming interface (JAPI).
- The online *Essbase.properties Reference* in the Essbase Deployment Services DOCS directory, for more information about using the settings of the `essbase.properties` configuration file.
- The *Essbase Analytic Services Database Administrator’s Guide*, for more information about configuring and using Essbase OLAP servers.



## Online Help

- To access online help:
  1. In the installation directory for Essbase Deployment Services, locate the `viewDocs.cmd` file in the `bin` subdirectory.
  2. Run the `viewDocs.cmd` file to display the online help.
- To print an online help topic, display the topic and select File > Print.

To enable viewing of online documentation from the Help menu of Essbase Deployment Services Console on UNIX Systems, see [Chapter 3, “Installing Software on UNIX Systems”](#).

## Online Guides

The online guides are electronic versions of the printed documentation.

- To display an online guide:
  1. In the installation directory for Essbase Deployment Services, locate the `viewDocs.cmd` file in the `bin` subdirectory.
  2. Run the `viewDocs.cmd` file to display the online help.

## Conventions

The following table shows the conventions used in this document:

*Table i: Conventions Used in This Document*

| Item         | Meaning   |
|--------------|---|
| ➤            | Arrows indicate the beginning of a procedure consisting of sequential steps.  |
| Brackets [ ] | In examples, brackets indicate that the enclosed elements are optional.   |
| <b>Bold</b>  | Bold text indicates words or characters that you type exactly as they appear on the page. Bold in procedural steps highlights major interface elements. |

Table i: Conventions Used in This Document (Continued)

| Item                   | Meaning  |
|------------------------|--|
| CAPITAL LETTERS        | Capital letters denote commands and various IDs. (Example: CLEARBLOCK command)   |
| Ctrl + 0               | Keystroke combinations shown with the plus sign (+) indicate that you should press the first key and hold it while you press the next key. Do not type the plus sign.  |
| Example text           | Courier font indicates that the example text is code or syntax.  |
| <i>Courier italics</i> | Courier italic text indicates a variable field in command syntax. Substitute a value in place of the variable shown in Courier italics.  |
| <i>Italics</i>         | Italics in a product-related term in the body of a book indicates that the term is also included in the glossary of the book.  |
| <i>n, x</i>            | Italic <i>n</i> stands for a variable number; italic <i>x</i> can stand for a variable number or an alphabet. These variables are sometimes found in formulas.   |
| Ellipses (...)         | Ellipsis points indicate that text has been omitted from an example.   |
| Mouse orientation      | This document provides examples and procedures using a right-handed mouse. If you use a left-handed mouse, adjust the procedures accordingly.  |
| Menu options           | Options in menus are shown in the following format. Substitute the appropriate option names in the placeholders, as indicated.<br><b><i>Menu name &gt; Menu command &gt; Extended menu command</i></b><br>For example: <b>1.</b> Select <b>File &gt; Desktop &gt; Accounts</b> . |

# Additional Support

In addition to providing the documentation and online help, Hyperion offers the following support for product information.

## Education Services

Hyperion offers instructor-led training, custom training, and eTraining covering all Hyperion applications and technologies. Training is geared to administrators, end users, and information systems (IS) professionals.

## Consulting Services

Experienced Hyperion consultants and partners implement software solutions tailored to clients' particular reporting, analysis, modeling, and planning requirements. Hyperion also offers specialized consulting packages, technical assessments, and integration solutions.

## Technical Support

Hyperion provides enhanced electronic-based and telephone support to clients to resolve product issues quickly and accurately. This support is available for all Hyperion products at no additional cost to clients with current maintenance agreements.

# Documentation Feedback

Hyperion strives to provide complete and accurate documentation. We value your opinions on this documentation and want to hear from you. Send us your comments by clicking the link for the Documentation Survey, which is located on the Information Map for your product.



# Product Overview

---

This chapter provides an overview of the Essbase Deployment Services product, including major features, software components, development platform, and discusses the allocation of computer resources for a production system. Essbase Deployment Services is a highly flexible software product and development technology platform, and it is recommended that you review this chapter in full before starting to develop client programs and deploy the product.

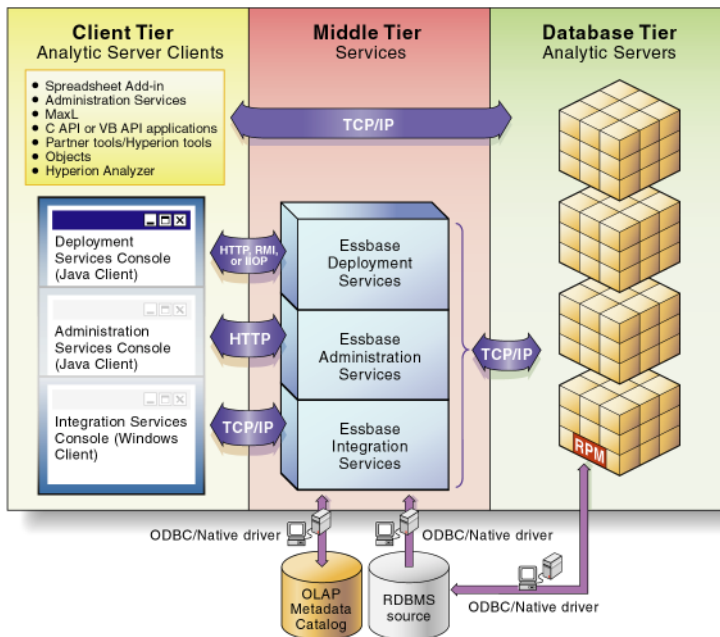
This chapter contains the following topics:

- [“About Essbase Deployment Services” on page 14](#)
- [“Understanding the Essbase Deployment Services Development Platform” on page 16](#)
- [“Allocating Computing Resources for Essbase Deployment Services” on page 21](#)

# About Essbase Deployment Services

Essbase Deployment Services provides a highly scalable, available, and reliable platform for developing large-scale, Web-enabled Essbase applications. Essbase Deployment Services works with Essbase and large-scale Java™ programming technology to bring enterprise-level performance and reliability to Essbase applications.

Figure 1: Essbase System Architecture Overview



The Essbase Deployment Services platform supports large scale Essbase applications by providing the following capabilities:

- **Essbase server clustering:** Essbase Deployment Services enables you to group sets of Essbase servers running applications with identical databases and use them as a single resource in your client programs. Support for server clustering enables additional features such as request load balancing and failover support.
- **Essbase server load balancing:** Essbase Deployment Services servers can receive requests to a single Essbase application and distribute requests across a cluster of Essbase servers running copies of that application.

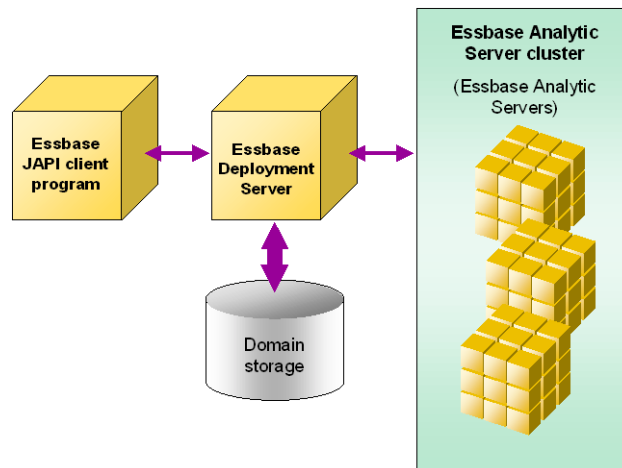
- **Essbase server failover support:** Essbase Deployment Services detects Essbase service interruptions in a cluster and automatically reroutes requests to other available Essbase servers.
- **Essbase server connection pooling:** Essbase Deployment Services enables client requests to share connections, conserving software and network resources and improving performance.

For an overview of the Essbase Deployment Services technology platform, see [“Understanding the Essbase Deployment Services Development Platform”](#) on page 16.

### Software Components

Essbase Deployment Services requires two software components: Deployment Services must be connected to Essbase and you must have Java API client programs to run against the Deployment Services server. The Java API is included with Essbase Deployment Services and Java API client programs can be developed with it. You must purchase Essbase separately and develop the client programs using the Java programming language and the Essbase Java API. The relationship between the various Essbase and Essbase Deployment Services components is shown in [Figure 2](#). The communication between Essbase Deployment Services and the Essbase cube is through TCP/IP or HTTP. Optional protocols are described in this chapter.

*Figure 2: Essbase Deployment Services System*



The client program is a custom-developed Java program that uses the Essbase JAPI to request data from Essbase applications.

Essbase is a multidimensional database server for business analysis. Essbase Deployment Services is designed to provide the services of Essbase servers in a distributed, highly scalable way.

Essbase Deployment Services acts as a broker for client program requests to Essbase servers. The Essbase Deployment Services product family has four major components:

- **Essbase Deployment Services Server**, which acts as a gateway for Essbase requests and provides user authentication, load balancing, failover support, event handling, and messaging services.
- **Essbase Deployment Services Console**, which is a program for administering Deployment Services servers, Essbase servers, user accounts, and security information.
- **Essbase Deployment Services Command Shell**, which is a command-line interface for administering Deployment Services domains, Essbase servers, user accounts, and security information.
- **Essbase Java API**, which provides Java programming interfaces for developing custom, Web-enabled programs that use Essbase services.

These components work together with Essbase servers and Essbase Deployment Services client programs to provide the services of the Essbase Deployment Services product.

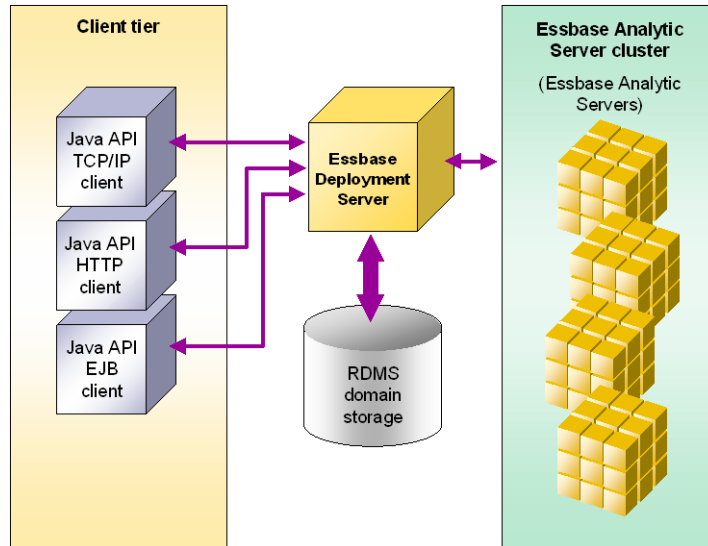
## Understanding the Essbase Deployment Services Development Platform

Essbase Deployment Services supports three types of software technologies for Essbase JAPI client programs: Transfer Control Protocol/Internet Protocol (TCP/IP), Hypertext Transfer Protocol (HTTP), and Enterprise JavaBeans (EJB).



When you start developing client programs for Essbase Deployment Services, you must choose one of these technologies for your client programs. The client program technologies are shown in [Figure 3](#).

*Figure 3: Client Program Technologies*



Client programs for Essbase Deployment Services must be written in Java, either as a servlet, applet, stand-alone application, or Enterprise Java Bean (EJB). The type of Java program you develop depends on the development technology (TCP/IP, HTTP, or EJB) you use with Essbase Deployment Services.

The following sections provide a brief overview of each of these supported technologies, along with some of their advantages and disadvantages.

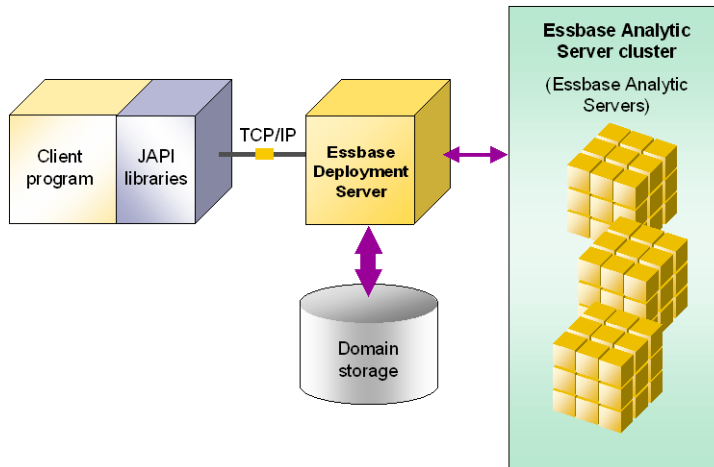
For information about how to configure Essbase Deployment Services using one of these technologies, see [Chapter 4, “Configuring Software Components.”](#)

## TCP/IP Client Programs

Client programs can use TCP/IP to communicate with Essbase Deployment Services. TCP/IP is a well known and widely supported communication protocol used for computer to computer communication over the Internet.

Essbase Deployment Services can be installed either as an executable or as a service on Windows. Refer to [Chapter 2, “Installing Software on Windows Systems.”](#)

*Figure 4: Java Applet Client Program Using TCP/IP*



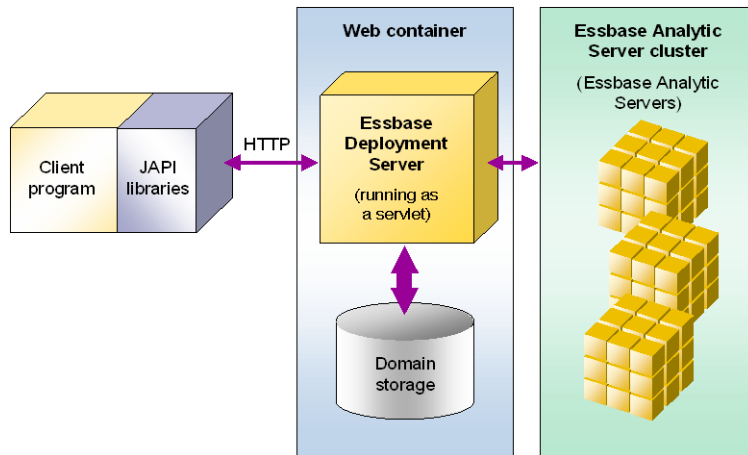
Client programs that use TCP/IP are usually stand-alone Java programs. However, these client programs can also run as Java servlets. If the client program uses TCP/IP, Essbase Deployment Services must run as a stand-alone Java program listening to TCP/IP on a defined port.

## HTTP Client Programs

Client programs can use HTTP to communicate with Essbase Deployment Services. HTTP is a well known and widely supported communication protocol used by Web browsers and Web servers to communicate over the Internet.

Client programs that use HTTP are usually Java applets running in a Web browser, as shown in [Figure 5](#). However, the client program can also run as a stand-alone Java program or servlet. If the client program uses HTTP, Essbase Deployment Services must run as a Java servlet in a Java application server. The Essbase Deployment Services product includes Apache Tomcat application server in the default installation. Other application servers must be purchased separately.

*Figure 5: Java Applet Client Program Using HTTP*



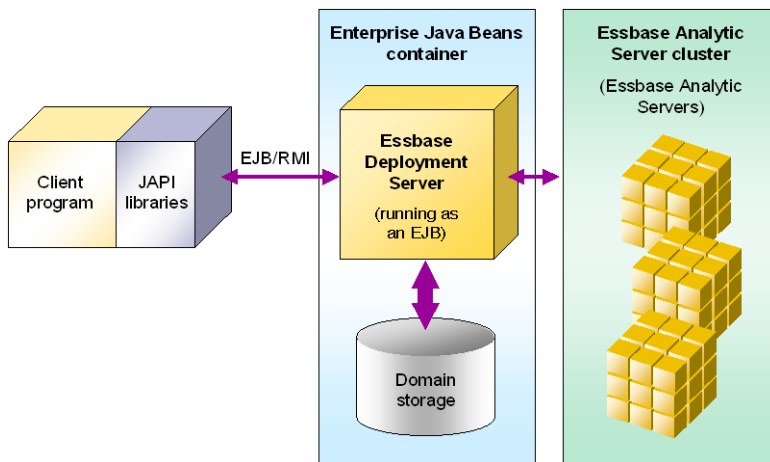
Implementations of Essbase Deployment Services client programs using HTTP technology have the advantage of using the lightest client programs. Using an HTTP configuration also enables client programs to use Secure Sockets Layer (SSL) communication protocols. Client programs using HTTP with Essbase Deployment Services tend to be slower because the HTTP protocol is not optimized for software to software communication.

## EJB Client Programs

Client programs can use EJB and Remote Method Invocation (RMI) to communicate with Essbase Deployment Services. The RMI protocol is specifically designed for Java-to-Java communications and is meant for use within the context of Java application servers.

If you use EJB technology, both the client program and Essbase Deployment Services must run as EJBs within a Java application server. The Essbase Deployment Services product does not include a Java application server—this software must be purchased separately.

*Figure 6: Client Program Using EJB*



Implementations of Essbase Deployment Services client programs using EJB technology have the advantage of running both the client and server software in a single Java application server context. The disadvantage to this type of implementation is that a service interruption in either the client or server component can stop the Essbase Deployment Services system. This problem can be addressed by clustering Java application servers; that is, running additional copies of the Essbase Deployment Services client and server on separate, connected Java application servers.

# Allocating Computing Resources for Essbase Deployment Services

In planning the deployment of Essbase Deployment Services as a production system, developers and system administrators must answer several questions to properly deploy the software on their computers and networks.

- What are the current computing resource requirements and user capacity of the Essbase application that will be served by Essbase Deployment Services?
- What is the projected number of concurrent users for the Essbase Deployment Services system?
- How much concurrent usage can the different components of the Essbase Deployment Services system effectively serve?
- How much memory and processing power should be devoted to the Essbase Deployment Services servers, Deployment Services client programs, and Essbase servers?
- How much and what type of persistent storage will the Essbase applications and the Essbase Deployment Services servers require?
- Is there enough network bandwidth to handle communications between the different components of the new Essbase Deployment Services system?

Allocating resources for large-scale server applications is a challenging task. It is not possible to provide definitive answers to these questions because Essbase applications, Essbase Deployment Services servers, and client programs require different resources in every case. However, the following considerations and guidelines should help in planning allocation of computing resources to your Essbase Deployment Services system.

## Analyzing Essbase Applications

Before beginning the process of allocating resources for an Essbase Deployment Services system, you must first analyze the Essbase application you plan to serve with Essbase Deployment Services. The information obtained from this analysis will aid you in allocating resources for the Essbase Deployment Services system.

- ▶ To analyze the Essbase application, perform the following general steps:
  1. Investigate the current system requirements for the Essbase application you will be serving through Essbase Deployment Services. Make note of the following items:
    - Processor usage (how many and what type)
    - Memory usage while under a sustained load
    - Disk space usage
  2. Investigate how many concurrent users the application can serve with acceptable performance.

The statistics gathered in steps 1 and 2 provide a baseline for scaling your application to many more users. Once you understand the resources required to serve your Essbase application to a certain number of users, you can use this combination of processing power, memory, and disk space as a computing resource unit from which to estimate the resources required to serve a larger set of users.

3. Assess whether the Essbase application is optimized for best performance.

Many factors can affect the performance of a Essbase application. Ensuring that the Essbase application is designed for best performance will improve the overall performance of the Essbase Deployment Services system. For information about optimizing the performance of Essbase applications, see the *Essbase Analytic Services Database Administrator's Guide*.

In your performance analysis, pay particular attention to retrieval performance. Since Essbase Deployment Services supports primarily retrieval operations, performance for these tasks is critical.

4. Make changes to the Essbase application to improve performance.
5. Repeat steps 1 and 2 to reassess the system requirements and concurrent load capabilities of the Essbase application.

## Concurrent Usage Limits and Considerations

In planning to serve a large number of users, there are some concurrent usage limitations to take into consideration. Server software programs typically have limitations as to the actual number of concurrent users they can support. Knowing these general limitations will help you in planning the number of servers you will need to deploy.

---

**CAUTION:** The numbers provided in the following section are estimates of capacity and are provided for planning purposes only. These estimates do not constitute a guarantee of actual capacity, as these numbers vary depending on application size, application logic, and hardware limitations.

---

In planning capacity for large numbers of users, keep in mind that the total user community will typically not use the system at the same time. The standard estimate for the percentage of a total user community that will actually be logged on and using a large-scale system at any one time is 20%. Thus, to serve a total user community of 10,000 users, plan to provide capacity to serve at least 2,000 concurrent users.

A single Java 2, Enterprise Edition (J2EE)-compliant application server can typically handle up to 4000 concurrent users. Concurrent user limitations vary depending on the application server vendor. See the documentation for your application server for more information.

A single Essbase Analytic server can typically handle between 250 and 500 concurrent users. Concurrent user limitations for Essbase depend on the size of the Essbase application and hardware limitations.

A single Essbase Deployment Services server can typically handle up to 2000 concurrent users. Concurrent user limitations for Essbase Deployment Services depend on the size and complexity of the client program logic and hardware limitations.

## Allocating Processing and Memory Resources

In an Essbase Deployment Services system, the Essbase OLAP Server consumes the largest chunk of processing power and memory. Start your estimates with the resource requirements for your Essbase application as a stand-alone system.

---

**CAUTION:** The guidelines provided in the following section are estimates and are provided for planning purposes only. Actual requirements will vary depending on application size, application logic, and hardware limitations.

---

To get a rough idea of the amount of processing and memory your Essbase Deployment Services system needs, take the number of concurrent users you need to serve with the system and divide it by the number of concurrent users that the computer running your Essbase application can effectively handle. This result tells you roughly how many computers with your current configuration you need to serve your user community.

**Tip:** If you are unsure of the number of concurrent users your Essbase application can handle, assume a maximum of 500 concurrent users

Estimating the computing resources necessary for Essbase Deployment Services servers and your client programs is challenging, because it depends on the software technology you choose, the size of your client program code and the complexity of its logic. However, as a starting point, assume that Essbase Deployment Services servers requires about one quarter to one third the processing power and memory that your Essbase servers need. For Essbase Deployment Services client programs that use a server component to feed requests to Essbase Deployment Services servers, assume these servers will need processing and memory resources at least equal to that of your Essbase Deployment Services servers.



## Persistent Storage Considerations

Persistent storage and retrieval of data on hard disks are typically the slowest parts of a software system. Software processes that require access to data on hard disks typically have the most impact on software performance.

In an Essbase Deployment Services system, the majority of performance impact from hard disk access comes from retrieval of data from Essbase databases. The Essbase Deployment Services server also requires hard disk access for retrieving user authentication and server cluster information, but this impact is not as significant on system performance.

To minimize the impact of hard disk access on an Essbase Deployment Services system, it is recommended that you store the database files for the Essbase applications in a high-speed RAID (Redundant Array of Independent Disks) system. This strategy minimizes the performance impact of hard disk access and increases the reliability of the Essbase Deployment Services system.

## Assessing Network Bandwidth Requirements

Communications between large-scale server applications are taxing on network bandwidth. At the minimum, you should ensure that the computers that make up your Essbase Deployment Services system, including the Deployment Services servers, Essbase servers, and servers running the Essbase Deployment Services client programs have at least 100 megabit connections between each other. Higher bandwidth connections and dedicated network connections between the computers in your Essbase Deployment Services system are preferable. In general, the more concurrent usage of the system (the more users on the system at once), the more network bandwidth is required.



# Installing Software on Windows Systems

This chapter describes the installation procedures for Essbase Deployment Services software (Server, Console, Command Shell, Essbase JAPI, batch files, data files, and sample programs) on Windows systems.

This chapter contains the following topics:

- [“Windows System Requirements” on page 28](#)
- [“Installing Essbase Deployment Services on Windows Systems” on page 28](#)
- [“Installing Essbase Deployment Services as a Service on Windows 2000” on page 33](#)

To complete the installation and run Essbase Deployment Services after running the installation program, see [Chapter 4, “Configuring Software Components.”](#)

For information about setting up the sample applications for use with Essbase Deployment Services, see [Chapter 6, “Setting up the Sample Programs.”](#)

## Windows System Requirements

Essbase Deployment Services for Windows needs a system that meets specific requirements. These requirements are described in [Table 1](#).

*Table 1: Essbase Deployment Services Server Windows System Requirements*

| Component       | Requirements  |
|-----------------|---|
| Microprocessor  | Pentium or higher   |
| RAM             | 128 MB  |
| Windows version | Windows 2000 SP3 or Windows 2003  |
| Disk space      | 148 MB: <ul style="list-style-type: none"> <li>• 85 MB for the server software, API, sample applications, and documentation</li> <li>• 22 MB for the Essbase libraries</li> <li>• 40 MB for the Java Runtime Environment</li> </ul> |
| Essbase Release | 7.0 or later  |
| Java™ platform  | Java Runtime Environment version 1.4.1  |

Depending on the type of client programs you use with Essbase Deployment Services, additional system and software resources may be required. For more information on the types of client programs you can use with Essbase Deployment Services, see [Chapter 1, “Product Overview”](#) and [Chapter 4, “Configuring Software Components.”](#)

## Installing Essbase Deployment Services on Windows Systems

The Essbase Deployment Services installation program installs Deployment Services files and common components that are used by various Hyperion products. The installation program does the following:

- Copies Essbase Deployment Services files to the `\HYPERION_HOME\eds\7.1.0.0\` directory (or to the directory you specify) on your hard disk

- Installs, if you choose, the Java Runtime Environment to the `\HYPERION_HOME\common\jre` directory
- Copies the Essbase Deployment Services sample application files to the `\HYPERION_HOME\eds\samples` directory on your hard disk
- Copies the Essbase Deployment Services documentation files to the `\HYPERION_HOME\eds\docs` directory on your hard disk
- Updates existing directories if you have a previous release of Essbase Deployment Services installed.
- Creates the initial default user account with name=`system` and password=`password`. This account is used to build additional user accounts. The password of the system account can be changed.

For more information about the directories created and files installed, see [“Directories Created on Windows Systems” on page 31](#).

## Installation Procedure for Windows Systems

Install Essbase Deployment Services server software on Windows platforms by running the self-extracting installation program that you downloaded from the Hyperion Web site.

- To install Essbase Deployment Services software to a computer running Windows:
  1. Start the installation program by double-clicking on `setup.exe`. The InstallShield installation program displays the startup screen with a progress bar for loading the setup executable.
  2. The first dialog specifies the language to be used for the installation. Select a language and click **OK** to continue.
  3. The installation program displays an Essbase Deployment Services banner and launches the installation wizard. The first wizard screen displays some instructions for completing the installation process. Read the short list and click **Next**.
  4. The next dialog displays the location for the Hyperion Home Directory. The `HYPERION_HOME` directory contains the Deployment Services files and a directory containing components that are common to Hyperion products.

Those components include application servers, the Hyperion security platform components, the MySQL database, and the JDK Java Runtime Environment components.

If this location is already in the environment variables of your system, then it can not be modified. If it is not already in your environment variables, customize the location of your `HYPERION_HOME` directory, then click **Next**.

5. If a previous installation of Essbase Deployment Services is found, the installation program will give you a choice of whether to continue or cancel the new installation. You should uninstall previous versions before continuing. If you are going to install in a different directory you can continue.
6. The next dialog displays the location for the Deployment Services files. The default location for the installed files is `C:\Hyperion\eds\7.1.0`. This is the recommended location for all the installed files. Click **Next**.
7. The next dialog displays a choice of either the Typical or Custom installation. The Typical installation installs all Deployment Services files and is strongly recommended. A custom-designed installation is outside the scope of these steps. Click **Next**.
8. The next dialog assigns ports for the default application server, Apache Tomcat. The assignments can be changed later. Deployment Services installs Jakarta Tomcat Application Server and by default configures Tomcat Default with port numbers 8080 for startup and 8005 for shutdown. Click **Next**. Make sure that subsequent installations of Apache Tomcat associated with other software (including Essbase Spreadsheet Services) use different port assignments.
9. The next dialog assigns the port and location of the MySQL database. The port assignment can be changed later if needed. By default, Deployment Services installs MySQL as the domain storage database. The default path to the MySQL files (`c:\Hyperion\common\DBMS\MySQL`) is a directory of files that are commonly needed by Hyperion programs. A previous installation of Deployment Services or any of the other Hyperion products that use the common folder will have established the `HYPERION_HOME\common` path and the Deployment Services installation program will recognize that path. A first-time installation will not have that path set. By default, the port number for MySQL is 3306 and the database name is Essbase. It is recommended that you accept the default settings. Click **Next**.

10. The next dialog displays all the Deployment Services components that will be installed and their locations. Click **Next** to continue the installation.
11. The installation program next displays a series of screens with a progress bar that indicates the percentage completion of the installation process. Wait until the process is complete and the final screen is displayed. Click **Finish** to end the installation.
12. To start the server, go to **Start > Programs > Hyperion Solutions > Essbase Deployment Services > Start Essbase Deployment Server - HTTP** or **Start > Programs > Hyperion Solutions > Essbase Deployment Services > Start Essbase Deployment Server - TCPIP**

## Directories Created on Windows Systems

If you chose to install the Essbase Deployment Services and Client, the installation program creates a directory structure including the following directories:

```
\HYPERION_HOME\eds\  
    bin  
    data  
    deployments  
    devtools  
    docs  
    essbase  
    external  
    lib  
    redist  
    samples  
\HYPERION_HOME\common\  
    appServers  
    CSS  
    DBMS  
    JDK  
    JRE  
    XML  
\HYPERION_HOME\uninstall
```

In addition to the Deployment Services components, the installation program installs several components in the `\HYPERION_HOME\common` directory and uninstaller programs in `\HYPERION_HOME\uninstall`.

The `devtools` directory is not installed if you chose to install only the Essbase Deployment Client.

The `\eds` directory contains the subdirectories where the files for Essbase Deployment Services are located. This directory is referred to in later chapters as the `\HYPERION_HOME\eds\` directory.

- The `\bin` directory contains the executable program files and server setting files for Essbase Deployment Services.
- The `\data` directory contains a database file which Essbase Deployment Services uses by default to store user names, server names, and other domain information.
- The `\deployments` directory contains application server files.
- The `\devtools` directory contains documentation for developers using the Essbase JAPI and Essbase Deployment Services.
- The `\docs` directory contains documentation for the Essbase Deployment Services, including the readme file and the Essbase Java API documentation.
- The `\essbase` directory contains a runtime version of Essbase.
- The `\external` directory contains library files from other vendors that support Essbase Deployment Services.
- The `\lib` directory contains library files for Essbase Deployment Services, including versions of the software that run as a Java servlet and an Enterprise Java Bean (EJB).
- The `\redist` directory contains the Deployment Services redeployment WAR files.
- The `\samples` directory contains sample programs for use with Essbase Deployment Services. For more information about the sample programs, see [Chapter 6, “Setting up the Sample Programs.”](#)
- The `\HYPERION_HOME\common\jre` directory contains a copy of the Java Runtime Environment. This directory is present only if you chose to install Java during installation.
- The `\HYPERION_HOME\uninstall` directory contains information and executables for uninstalling Essbase Deployment Services.



# Installing Essbase Deployment Services as a Service on Windows 2000

Essbase Deployment Services can be installed to run as a service under Windows 2000. As a service, Essbase Deployment Services uses the native TCP/IP communications protocols.

The installation of Essbase Deployment Services as a service is slightly different than the standard installation under Windows 2000. After performing the standard installation on Windows 2000, complete the following steps to run Essbase Deployment Services as a Windows service.

1. Add the following statements to the System path (this example assumes that you have installed Java at `c:\jdk1.4.1` and installed Essbase Deployment Services at `c:\eds`):

```
c:\jdk1.4.1\bin;c:\jdk1.4.1\jre\bin\server;c:\
HYPERION_HOME\eds\bin
```

2. Add the following statements to the Class path:

```
c:\jdk1.4.1\bin;c:\eds\lib\ess_es_server.jar;c:\
HYPERION_HOME\eds\lib\ess_japi.jar;
```

3. Add the following jar/zip files to the Class path if you are using RDBMS as your Domain Storage:

- For DB2: `db2java.zip`
- For SQL: `JSQLConnect.jar`
- For Oracle: `classes12.zip`
- For MySQL: `mysql-connector-java-3.0.8-stable-bin.jar`

4. In the `Essbase.Properties` file, specify the absolute paths to the following EDS components (by default they are specified by a relative path):

- `system.arborPath`
- `system.dataDir`
- `system.log.file.name` (if you enable logging)
- `domain.store.file.name`

5. The system variable ARBORPATH should point to the `c:\HYPERION_HOME\eds\essbase\` directory and PATH should also point to `ARBORPATH\bin`.
6. Leave the EDS executable, `EssbaseEnterprise.exe`, in the `eds\bin` folder. It is not necessary to put the EDS executable in a system directory as is often the case with Windows services.
7. Restart your machine to effect all the Path and Classpath settings.
8. Register the service: `EssbaseEnterprise -i`.  
You will get a message stating that “the Essbase Deployment Services are ready”. For future reference, the statement to unregister is similar (`EssbaseEnterprise -u`). Do not unregister at this time.
9. After registering the service, go to **Start > Control Panel > Services > EssbaseDeploymentServices**, to start the service.

The Essbase Deployment Services are now available through the EDS console or through the client tools (`startcmd.cmd`, `startgui.cmd`, and `startees.cmd`).

# Installing Software on UNIX Systems

This chapter describes the installation procedures for Essbase Deployment Services software (Server, Console, Command Shell, Essbase JAPI, batch files, data files, and sample programs) on Solaris™.

This chapter contains the following topics:

- [“Solaris System Requirements” on page 36](#)
- [“Installing Essbase Deployment Services on UNIX Systems” on page 37](#)
- [“Installing Essbase Deployment Services to Run as a Background Process” on page 41](#)

To complete the installation and run Essbase Deployment Services after running the installation program, see [Chapter 4, “Configuring Software Components.”](#)

For information about setting up the sample applications for use with Essbase Deployment Services, see [Chapter 6, “Setting up the Sample Programs.”](#)

## Solaris System Requirements

Essbase Deployment Services for UNIX requires a system that meets minimal hardware and software requirements. Essbase Deployment Services for Solaris requires a system with the following minimal hardware and software requirements:

*Table 2: Essbase Deployment Services Solaris System Requirements*

| Component       | Requirements  |
|-----------------|---|
| Server platform | Sun SPARC or ULTRASPARC machines  |
| Solaris version | 7 or 8  |
| Physical memory | 128 MB RAM  |
| Disk space      | 148 MB: <ul style="list-style-type: none"> <li>• 85 MB for the server software, API, sample applications, and documentation</li> <li>• 19 MB for the Essbase libraries</li> <li>• 40 MB for the Java Runtime Environment</li> </ul> |
| Essbase Release | 7.0 or later  |
| Java™ platform  | Java Runtime Environment version 1.4.1  |

Depending on the type of client programs you use with Essbase Deployment Services, additional system and software resources may be required. For more information on the types of client programs you can use with Essbase Deployment Services, see [Chapter 1, “Product Overview”](#) and [Chapter 4, “Configuring Software Components.”](#)

# Installing Essbase Deployment Services on UNIX Systems

The Essbase Deployment Services installation program performs the following operations:

- Copies Essbase Deployment Services files to the `/HYPERION_HOME/eds` directory (or to the directory you specify) on your hard disk.
- Installs, if you choose, the Java Runtime Environment to the `/HYPERION_HOME/common/jre` directory.
- Copies the Essbase Deployment Services sample application files to the `/HYPERION_HOME/eds/samples` directory on your hard disk.
- Copies the Essbase Deployment Services documentation files to the `/HYPERION_HOME/eds/docs` directory on your hard disk.
- Creates the initial default user account with name=`system` and password=`password`. This account is used to build additional user accounts. The password of the system account can be changed.
- Updates existing directories if you have a previous release of Essbase Deployment Services installed.

For more information about the directories created and files installed, see [“Directories Created on UNIX Systems” on page 39](#).

## Installation Procedure for UNIX Systems

Install Essbase Deployment Services server software on UNIX platforms by running the self-extracting installation program that you downloaded from the Hyperion Web site.

- To install Essbase Deployment Services software on a computer running a UNIX operating system:
  1. Start the installation program by double-clicking on `setup.bin`. The installation program displays the startup screen with a progress bar for loading the setup executable.
  2. The first dialog specifies the language to be used for the installation. Select a language and Click **OK** to continue.

3. The installation program displays an Essbase Deployment Services banner and launches the installation wizard. The first wizard screen displays some instructions for completing the installation process. Read the short list and click **Next**.
4. The next dialog displays the location for the Hyperion Home Directory. The `HYPERION_HOME` directory contains the Deployment Services files and a directory containing components that are common to Hyperion products. Those components include application servers, the Hyperion security platform components, the MySQL database, and the JDK Java Runtime Environment components.

If this location is already in the environment variables of your system, then it can not be modified. If it is not already in your environment variables, customize the location of your `HYPERION_HOME` directory, then click **Next**.

5. If a previous installation of Essbase Deployment Services is found, the installation program will give you a choice of whether to continue or cancel the new installation. You should uninstall previous versions before continuing. If you are going to install in a different directory you can continue.
6. The next dialog displays the location for the Deployment Services files. The default location for the installed files is `<user_home>/eds/7.1.0.0`. To change the location, either browse to a directory or type in the path. Click **Next**.
7. The next dialog displays a choice of either the Typical or Custom installation. The Typical installation installs all Deployment Services files and is strongly recommended. A custom-designed installation is outside the scope of these steps. Click **Next**.
8. The next dialog assigns ports for the default application server, Apache Tomcat. The assignments can be changed later through the Tomcat user interface. Deployment Services installs Jakarta Tomcat Application Server and by default configures Tomcat with port numbers 8080 for startup and 8085 for shutdown. Make sure that any other instances of Tomcat on this machine use different port assignments. If you have already installed Jakarta Apache Tomcat and know the port assignments are different from the defaults, type those port numbers in the text boxes. In other cases, leave the default port assignments and click **Next**.
9. The next dialog assigns the port and location of the MySQL database. The port assignment can be changed later if needed. By default, Deployment Services installs MySQL as the domain storage database. The default path to the

MySQL files (`HYPERION_HOME/common`) is a directory of files that are commonly needed by Hyperion programs. A previous installation of Deployment Services or any of the other Hyperion products that use the common folder will have established the `HYPERION_HOME/common/` path and the Deployment Services installation program will recognize that path. A first-time installation will not have that path set. By default, the port number for MySQL is 3306 and the database name is Essbase. It is recommended that you accept the default settings. Click **Next**.

10. The next dialog displays the all the Deployment Services components (and locations) that will be installed. Click **Next** to continue the installation.
11. The installation program next displays a series of screens with a progress bar that indicates the percentage completion of the installation process. Wait until the process is complete and the final screen is displayed. Click **Finish** to end the installation.

**Note:** The Essbase Deployment Services installer requires a system with the JAVA 1.4.1 Runtime environment installed.

## Directories Created on UNIX Systems

If you chose to install the Essbase Deployment Server and Client, the installation program creates a directory structure including the following directories:

```

/HYPERION_HOME/eds/
    bin
    data
    deployments
    devtools
    docs
    essbase
    external
    lib
    redist
    samples
/HYPERION_HOME/common/
    appServers
    CSS
    DBMS
    JDK
    JRE
    XML
/HYPERION_HOME/uninstall

```

In addition to the Deployment Services components, the installation program installs several components in the `/HYPERION_HOME/common` directory and uninstaller programs in `/HYPERION_HOME/uninstall`.

The `devtools` directory is not installed if you chose to install only the Essbase Deployment Client.

The `/eds` directory contains the subdirectories where the files for Essbase Deployment Services are located. This directory is referred to in later chapters as the `HYPERION_HOME/eds` or the `eds_home` directory.

- The `/bin` directory contains the executable program files and server setting files for Essbase Deployment Services.
- The `/data` directory contains a database file which Essbase Deployment Services uses by default to store user names, server names, and other domain information.
- The `/deployments` directory contains application server instances.
- The `/devtools` directory contains documentation for developers using the Essbase JAPI and Essbase Deployment Services.
- The `/docs` directory contains documentation for the Essbase Deployment Services, including the readme file and the Essbase JAPI documentation.
- The `/essbase` directory contains a runtime version of Essbase.
- The `/external` directory contains library files from other vendors that support Essbase Deployment Services.
- The `/lib` directory contains library files for Essbase Deployment Services, including versions of the software that run as a Java servlet and an Enterprise Java Bean (EJB).
- The `/redist` directory contains the Deployment Services redeployment WAR files.
- The `/samples` directory contains sample programs for use with Essbase Deployment Services. For more information about the sample programs, see [Chapter 6, “Setting up the Sample Programs.”](#)
- The `/HYPERION_HOME/common/jre` directory contains a copy of the Java Runtime Environment.



# Installing Essbase Deployment Services to Run as a Background Process

To Start the EDS Server As Background Process on UNIX, you need to make a change to the StartEES command file.

In the startees file, edit the last line. Originally, the last line in the file is:

```
java com.essbase.server.EssbaseEnterprise tcpip
```

Change that line as follows:

```
nohup java com.essbase.server.EssbaseEnterprise tcpip &
```

The change will take effect on the next restart of the machine.

## Installing From the Command Line

To run the Deployment Services installation program from the UNIX command line in console mode, without graphical windowing software such as X-Windows, use the following command:

```
> setup.bin -console
```

## Uninstalling Previous Versions

If you have an older version of Essbase Deployment Services installed, before you install a newer version, you must run the uninstall program. In addition to running the uninstall program, you need to delete the folder where the previous version of the product was installed. You must do this step because the uninstall program does not completely remove the configuration information from the previous version of Essbase Deployment Services.

Manually delete the `essbase.properties`, `css.xml`, `domain.db`, and `console.log` files. These files are not automatically removed by the uninstaller program.

If these files are modified after installation either by the user or by Deployment Services, a new installation will prompt to overwrite them. If the earlier configuration needs to be preserved, manually save the `essbase.properties`, `css.xml`, and `domain.db` files to a safe location and replace them to their respective locations after the new installation is completed.

## Specific UNIX Installation Settings

For AIX 5.1 and 5.2, apply the following patch:

- PTF fix number U489780
- Fileset xIC.aix50.rte.6.0.0.7 "C Set ++ Runtime for AIX 5.0"

For AIX, EDS packages a JDK installed under the `HYPERION_HOME` environment variable. Depending on the installation, Deployment Services can have trouble recognizing the path to the JDK. Users should make sure that a valid JDK version 1.4.2 is installed in the target machine and that the batch files in the `eds/bin` folder point to this valid JDK.

| Batch File              | Environment Variables       |
|-------------------------|-----------------------------|
| StartEDSTomcatServer.sh | JAVA_HOME, PATH and LIBPATH |
| StopEDSTomcatServer.sh  | JAVA_HOME, PATH and LIBPATH |
| startees                | PATH and LIBPATH            |

On UNIX platforms if the Deployment Server cannot connect to the MySQL domain store, the file `mysql_start.sh` located in `$HYPERION_HOME/common/DBMS/MySQL/4.0.12/bin/` must be modified to refer to `mysqld` instead of `mysqld_safe`. The domain store database must be named “essbase” and is created by the command:

```
>mysqladmin -uroot create essbase
```

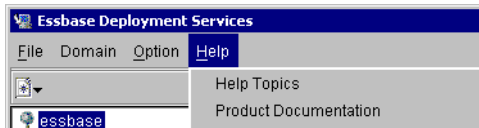
Most UNIX platforms have a loopback “localhost” record in the `/etc/hosts` file, but the order may differ. So, in order to make MySQL accept connection for user “root” from localhost, you need to modify `/etc/hosts` to make sure “localhost” immediately follows the first IP address. For example:

```
127.0.0.1    localhost    localhost.localdomain
```

# Viewing Online Documentation on UNIX Systems

On UNIX systems, you must modify the `startgui` file in order to launch the online documentation properly from the Help menu of Essbase Deployment Services Console.

Figure 7: Help Menu of Essbase Deployment Services Console



- To enable viewing of online documentation from the Help menu:
  1. Edit `startgui`, located in the `HYPERION_HOME/eds/bin` directory.
  2. Add the following `CODEBASE` parameter to the `java.com` statement in `startgui`:

```
java.com.hyperion.essbase.beans.main.EssGuiConsole
CODEBASE=HYPERION_HOME/eds username=guest password=
password DOMAIN=essbase PREFSERVER=localhost ORBTYPE=
tcpip PORTNO=5001
```

where `HYPERION_HOME/eds` is the directory where you installed Essbase Deployment Services.

3. Save the `startgui` file.

Selecting Help Topics or Product Documentation from the Help menu of Essbase Deployment Services Console launches the documentation properly.



This chapter describes advanced installation procedures for Essbase Deployment Services, provides a list of locations for commonly needed files, lists the commands for Essbase Deployment Services Command Shell, and provides instructions for uninstalling the product.

This chapter contains the following topics:

- [“Migrating to New Releases” on page 45](#)
- [“Creating Pointer Files to Essbase.properties” on page 46](#)
- [“Command Shell Commands” on page 47](#)
- [“Uninstalling Essbase Deployment Services” on page 48](#)
- [“Configuring Essbase Deployment Services Servers” on page 50](#)
- [“Configuring Essbase Analytic Servers” on page 54](#)
- [“Defining Clusters and Connection Pools” on page 57](#)
- [“Deploying Deployment Services on Application Servers” on page 59](#)

## Migrating to New Releases

When migrating to a new release of Deployment Services, administrators should consider the following issues:

- Deployment Services keeps the domain information in two locations. The accounts, connection pool, cluster, and outline caching information is stored in `domain.db`. The table space based on the domain types referred in `essbase.properties` is stored in the file `ess_sys_001`. Save these files before installing the new release. These files should also be backed up during the routine maintenance of Deployment Services.

- Deployment Services provides the Hyperion security platform information in `css.xml` (`<EDS_HOME>\data\css.xml`). If you are using this configuration for your production setup, back up this file before installing the new release.
- Any other modified files can be saved based on the individual needs of customer. This includes `essbase.properties`, `startees`, `startgui`, and `startcmd`.

## Creating Pointer Files to `Essbase.properties`

When you set up Essbase Deployment Services to run as servlet or EJB in a Java application server or Web server, you must provide the Deployment Services server with access to an `essbase.properties` file. The usual way to handle this requirement is to copy the `essbase.properties` file into a directory of the Java application server or Web server. However, you can avoid having duplicate copies of this file by creating `essbase.properties` files that act as pointers to a central `essbase.properties` file. By creating files that point to a central `essbase.properties` file, you can have a single `essbase.properties` file for all Essbase Deployment Services servers. This technique simplifies the administration of Essbase Deployment Services by minimizing the number of `essbase.properties` files you have to manage.

**Note:** A pointer file cannot point to another pointer file.

- To create a pointer file to another `essbase.properties` file:
  1. In a text editor, start a new file called `essbase.properties`.
  2. Type the following text into the file:

```
# pointer file to essbase.properties
system.props.file=
C:/HYPERION_HOME/eds/bin/essbase.properties
```

The above example shows the default location for the `essbase.properties` file. Modify the path to this file to fit your computer environment.

3. Save the `essbase.properties` file in directory of the Java application server where you would normally put the full `essbase.properties` file.

For more information on where this file should be located, see [“Configuring Servers to Use TCP/IP, HTTP, or EJB”](#) on page 52.

# Command Shell Commands

Essbase Deployment Services has a command line interface component called the Command Shell. When you start the Essbase Deployment Services server as a stand-alone application—using the `startees.cmd` file—the Command Shell is displayed. Use this console to perform high-level server operations. Pressing the Enter key in the server window displays the Command Shell prompt. Typing help and pressing Enter provides a list of all available commands.

You can start the Command Shell as a program separate from the Essbase Deployment Services server. For information about starting the Command Shell as a separate program, see [“Starting and Stopping the Deployment Services Command Shell” on page 49](#).

You can use the following commands in the Command Shell:

*Table 3: Command Shell Commands*

| Commands          | Description  |
|-------------------|--|
| quit/exit         | Shuts down the Command Shell<br>If this command is issued from within the Essbase Deployment Services server window, the server is also shut down. |
| help              | Lists all Command Shell commands and their functions   |
| runningeesservers | Lists all the currently running Essbase Deployment Services servers  |
| signon            | Logs on to an Essbase Deployment Services domain   |
| signoff           | Logs off of an Essbase Deployment Services domain  |
| apiver            | Displays the Essbase JAPI version number   |
| apiverdetail      | Displays the Essbase JAPI version number, client version number, and compatibility information   |
| adduser           | Adds a user to the root domain   |
| changepwd         | Changes the password for a user  |
| listusers         | Displays a list of all users that are registered in the root domain of the Essbase Deployment Services server                                      |
| removeuser        | Removes a user from the root domain  |

Table 3: Command Shell Commands (Continued)

| Commands          | Description   |
|-------------------|---|
| addolapserver     | Adds a Essbase server to the root domain  |
| listolapservers   | Lists the Essbase servers in the root domain  |
| removeolapserver  | Removes an Essbase server from the root domain  |
| setprompt         | Sets the prompt text for the Command Shell  |
| synccube replicas | Synchronizes data among replicas of a Essbase application   |
| syncsectoees      | Synchronizes security information from a Essbase server to the Essbase Deployment Services server |
| copyOlapApp       | Copies an Olap application from one host to another.  |
| copyCube          | Copies an Olap database from one host to another.   |
| createCluster     | Creates a new Olap server cluster.  |
| deleteCluster     | Deletes an existing OLAP server cluster.  |
| listClusters      | Lists all Olap server clusters.   |
| getCluster        | Retrieves an Olap server cluster.   |
| createConnPool    | Creates a a new connection pool.  |
| deleteConnPool    | Deletes an existing connection pool.  |
| listConnPools     | Lists all the existing connection pools.  |
| getConnPool       | Retrieves a connection pool.  |
| builddetail       | Retrieves details about this product build.   |
| session           | Retrieves a list of users currently signed on.  |

## Uninstalling Essbase Deployment Services

You can uninstall Essbase Deployment Services from Windows systems and UNIX systems. This section shows you how to uninstall Essbase Deployment Services software from your computer or from a network drive.



## Instructions for Uninstalling from Windows Systems

To uninstall Essbase Deployment Services, use the Windows Add/Remove Programs icon in the Control Panel.

- To uninstall Essbase Deployment Services from Windows 2000:
  1. Select **Start > Settings > Control Panel > Add/Remove Programs**.
  2. Select **Change/Remove Programs**, select the Essbase Deployment Services software you want to remove, and click **Change/Remove**.
  3. Click **Yes** to confirm that you want to remove the program.
  4. If a **Remove Shared File?** prompt appears, click **Yes To All**.

Windows removes the program and associated files. If some elements of the program could not be removed, click **Details** for more information.

5. Click **OK**.

## Instructions for Uninstalling from UNIX Systems

To uninstall Essbase Deployment Services, use the uninstaller program created by the Essbase Deployment Services setup program. The uninstaller program requires a supported version of the Java Runtime Environment to be in the path.

- To uninstall Essbase Deployment Services from UNIX systems:
  1. Log on to the computer where Essbase Deployment Services using the same user account that installed the software.
  2. Move to the `HYPERION_HOME/eds/Uninstall/` directory.
  3. Execute the `UninstallEDS` file; for example, at the command prompt, type the following command:

```
>./UninstallEDS
```

The uninstaller program removes the program and associated files.

## Configuring Essbase Deployment Services Servers

Before you can run Essbase Deployment Services servers, you must configure a database for storing domain information. For this purpose, Deployment Services installs the MySQL database in the `HYPERION_HOME/common` folder and configures it for use by default.

You must also configure an Essbase Deployment Services server to use TCP/IP, HTTP, or EJB.

For information on configuring domain storage, see [“Configuring Domain Storage for Essbase Deployment Services” on page 50](#). For information on configuring Essbase Deployment Services to use TCP/IP, HTTP, or EJB, see [“Configuring Servers to Use TCP/IP, HTTP, or EJB” on page 53](#).

### Configuring Domain Storage for Essbase Deployment Services

Essbase Deployment Services requires a place to store information about domains, including domain names, servers, users, and groups. Two mechanisms are available for storing domain information:

- Java Database Connectivity (JDBC)-compliant Relational Database Management System (RDBMS) such as MySQL.
- Flat file database, `domain.db`

Essbase Deployment Services is configured to use the installed MySQL database by default.

**Note:** Before putting Essbase Deployment Services servers into production, you must configure them to use an RDBMS for domain information storage.

### Configuring RDBMS Domain Storage

When you use Essbase Deployment Services in a production environment, you must use an RDBMS for domain storage. You must have RDBMS software installed, such as IBM DB2, to create and use an RDBMS domain storage. RDBMS software is not included with Essbase Deployment Services.

To configure Essbase Deployment Services to use an RDBMS for domain storage, you must set up a database on the RDBMS server and edit the `essbase.properties` file.

- To configure an RDBMS database for domain storage:
  1. Create a database called **essbase** in the RDBMS.
  2. Add a user with full administrative rights to the database **essbase**; for example, **db2admin** with the password **password**.

Specific procedures for creating a new database varies with the RDBMS product you are using. For more information about creating a new database, see the documentation for the RDBMS product.

You do not need to create a database schema (tables and fields) in the new database. The database schema is created the first time Essbase Deployment Services successfully connects to the RDBMS.

- To configure domain storage to use an RDBMS database:
  1. In the `HYPERION_HOME\eds\bin` directory, locate the `essbase.properties` file and open it in a text editor.
  2. Set the `domain.store.type` variable to the value **rdbms** (all lower case); for example,

```
domain.store.type=rdbms
```

3. Set the `domain.store.rdbms` variables to the appropriate values; for example,

```
domain.store.rdbms.product=DB2
domain.store.rdbms.jdbc.driver=
COM.ibm.db2.jdbc.net.DB2Driver
domain.store.rdbms.jdbc.url=
jdbc:db2:localhost:essbase
domain.store.rdbms.user=db2admin
domain.store.rdbms.password=password
domain.store.rdbms.connectionPool.capacity=2
```

Verify that the user and password you specify in these fields is the same as those created in the RDBMS in the previous procedure.

4. If you are using RDBMS as your Domain Storage, add the following jar/zip files to the CLASSPATH statement:
  - For DB2: `db2java.zip`
  - For SQL: `JSQLConnect.jar`
  - For Oracle: `classes12.zip`
  - For MySQL: `mysql-connector-java-3.0.8-stable-bin.jar`
5. Save `essbase.properties` and close the file.

The `essbase.properties` file contains sample settings for DB2, Oracle, and SQL Server systems. Use the sample settings as a starting point for configuring the connection to your RDBMS database. For more information about configuring a JDBC connection to an RDBMS, refer to the documentation for the RDBMS product.

## Configuring Flat File Domain Storage

To configure Essbase Deployment Services to use a flat file for domain storage, you must edit the `essbase.properties` file.

- To configure domain storage to use a flat file:
  1. In the `HYPERION_HOME\eds\bin` directory, locate the `essbase.properties` file and open it in a text editor.
  2. Set the `domain.store.type` variable to the value **file**; for example,
 

```
domain.store.type=file
```
  3. Set the `domain.store.file.name` variable to the full path and file name of the domain storage file; for example,
 

```
domain.store.file.name=
c:/HYPERION_HOME/eds/data/domain.db
```
  4. Save `essbase.properties` and close the file.

## Configuring Servers to Use TCP/IP, HTTP, or EJB

Essbase Deployment Services servers can run using TCP/IP, HTTP, or EJB configurations. Each of these types of implementations requires additional software components and configuration of these components. The type of server you set up depends on the type of client program technology you plan to use with Essbase Deployment Services. If you simply want to start working with Essbase Deployment Services, use either the default HTTP or TCP/IP configurations, which are created by the installation program.

For more information on the use of TCP/IP, HTTP, or EJB technology with Essbase Deployment Services, see [“Understanding the Essbase Deployment Services Development Platform”](#) on page 16.

The following sections explain how to create Essbase Deployment Services servers in these configurations:

- TCP/IP running Deployment Services as a stand-alone program.
- HTTP using Tomcat to run Deployment Services as a servlet. For more information see, [“Deploying on Apache Tomcat Server”](#) on page 67.
- EJB using WebLogic to run Deployment Services as an EJB. For more information see [“Deploying on BEA WebLogic Server 8.x”](#) on page 69

For information on running the server configurations described here, see [“Starting and Stopping Essbase Deployment Services Servers”](#) on page 74.

### Configuring TCP/IP Servers

The installation program creates a TCP/IP implementation of Essbase Deployment Services automatically. In this configuration, the Essbase Deployment Services server runs as a stand-alone program and does not require any additional software.

**Note:** Essbase Deployment Services client programs communicating with TCP/IP configurations of the server are configured to use 5001 by default. That can be changed by editing the `essbase.properties` file in the `/eds/bin` directory.

- ▶ To configure a TCP/IP server:
  1. In the `HYPERION_HOME\eds\bin` directory, locate the `essbase.properties` file and open it in a text editor.
  2. Set the `system.dataDir` variable to the Essbase Deployment Services data directory; for example,
 

```
system.dataDir=../data
```
  3. Verify that the domain storage is configured.
 

For more information about configuring domain storage, see [“Configuring Domain Storage for Essbase Deployment Services” on page 50](#).
  4. Save `essbase.properties` and close the file.

For information on starting Essbase Deployment Services TCP/IP servers, see [“Starting and Stopping TCP/IP Servers” on page 74](#).

## Configuring Essbase Analytic Servers

Before using Essbase Analytic servers with Essbase Deployment Services, you must configure the Essbase Analytic servers to better support concurrent usage, create replicas of your application, and create users for Essbase Deployment Services. In addition, for Essbase servers running on Windows systems, you should configure them for remote activation.

- ▶ To configure Essbase servers for use with Essbase Deployment Services:
  1. On the computer running Essbase server, in the `ARBORPATH\bin` directory, locate the `essbase.cfg` file. If the `essbase.cfg` file does not exist, create one using a text editor.
  2. For Essbase servers used in a production system with Essbase Deployment Services, consider adding the following lines to the `essbase.cfg` file:

```
AGENTLOGMESSAGELEVEL ERROR
LOGMESSAGELEVEL ERROR
```

These settings reduce the amount of messages that are logged by the Essbase Analytic server. Under heavy use, Essbase logs can become very large and unusable by the server, requiring that you delete the log or reduce its size. Adding these settings will reduce the amount of information recorded in the

logs and, consequently, reduce the need to manage the logs. To permanently solve problems with overlarge log files, consider adding the following line to the `essbase.cfg` file:

```
CLEARLOGFILE TRUE
```

The `CLEARLOGFILE` setting causes Essbase to clear the log file before recording any new message, so that only the last message is available in the log file. For more information about these `essbase.cfg` file settings, see the *Technical Reference*.

3. If you plan to use Essbase servers in a cluster configuration with Essbase Deployment Services, you must make copies of the Essbase application that the cluster will serve on each of the Essbase servers in the cluster.

To gain a minimal benefit of load balancing and failover from Essbase Deployment Services, you must set up at least a main application with a database and one replica application with an identical database. For more information about setting up clusters, see [“Defining Clusters and Connection Pools” on page 57](#).

For more information about copying Essbase applications, see the *Essbase Analytic Services Database Administrator’s Guide*.

4. Create users and their access permissions on each of the Essbase servers to use with Essbase Deployment Services.

For more information about creating users in Essbase, see the *Essbase Analytic Services Database Administrator’s Guide*.

For more information about creating users across a cluster of Essbase servers, see [“Synchronizing Users and Security Across a Cluster” on page 80](#).

## Configuring Essbase Servers for Remote Activation

You can enable Essbase Deployment Services to start an Essbase Analytic server on a remote Windows system. You need to have the appropriate privileges and you must specify the exact path of the Essbase Analytic server on the remote machine. This feature uses DCOM activation on both machines.

► To configure remote activation of Essbase Analytic servers on Windows systems:

1. Run the batch file `regact.cmd` in the `HYPERION_HOME\eds\bin` directory. This updates the registry to enable DCOM activation.
2. Copy `regact.cmd` and `eds_rexec.exe` to the `/bin` directory of the remote Essbase server. Run `regact.cmd` (it calls `eds_rexec.exe`).
3. Edit the file `startolap.cmd` in the `HYPERION_HOME\eds\bin`. The `ARBORPATH` entry must specify the path of the `HYPERION_HOME` directory on the remote machine. The entries in the `startolap.cmd` file should appear as follows:

```
@echo off
REM This command file is used to start the Essbase OLAP server.
REM Make sure to change the ARBORPATH to suit your setup.
REM For remote activation set ARBORPATH to point to the remote
machine.
set ARBORPATH=C:\hyperion\essbase
set PASSWORD=%1
set PATH=%ARBORPATH%\bin;%PATH%;essbase %PASSWORD%
```

4. Copy `startolap.cmd` to the `/bin` directory of the remote Essbase server.
5. Using the Deployment Services Console, add the remote Essbase server to the Enterprise Services domain. Set the server property named Remote start command to `HYPERION_HOME\eds\bin\startolap.cmd <password>` (for example, `c:\essbase\eds\bin\startolap.cmd password`). Save the server properties.
6. Edit `startees.cmd` and make sure all directories are specified as absolute paths.
7. Edit the `essbase.properties` file to replace `system.dataDir=..\data` with the absolute path. For example, `c:\essbase\eds\data`.
8. In the EDS Console, add the Deployment server to the Essbase Deployment domain, and set the Remote start command property to the absolute path of the `startees.cmd` file.
9. Remote activation is now enabled. From the EDS Console, select `olap` or `deployment server`, and select **Control > Start**.



# Defining Clusters and Connection Pools

Essbase server clusters and connection pools enable Essbase Deployment Services to provide features of load balancing, failover, and handling of large concurrent loads. If you do not use clusters and connection pools in your client programs, you are not taking advantage of the primary benefits of using Essbase Deployment Services.

A cluster of Essbase servers is a set of servers running on different computers (or different CPUs, on multi-processor systems) that run copies, or replicas, of the same Essbase application, a single Essbase server that runs replicas of the same application, or a combination of both.

A connection pool is set of login sessions from Essbase Deployment Services to a Essbase server. Deployment Services uses a connection pool to process requests for Essbase services.

Clusters and connection pools are defined in the `essbase.properties` file and can be used only through client programs. In general, client programs should take advantage of clusters and connection pools by using connection pools that include clusters. Thus, in general, you should include a cluster in your connection pool to take full advantage of the features of Essbase Deployment Services.

For an example of a client program that uses connection pools and clusters, refer to the `DataQuery` sample program in the `HYPERION_HOME\eds\samples` directory. For more information about the sample programs, see [Chapter 6, “Setting up the Sample Programs.”](#) For more information about using clusters and connection pools in client programs, see the `IEssCube.openCubeView` method and related methods in the online *Essbase Deployment Services JAPI Reference* in the Essbase Deployment Services `DOCS` directory.

## Defining Essbase Server Clusters

Essbase servers must be configured to be used effectively with Essbase Deployment Services. For more information about configuring Essbase servers for use in a cluster, see [“Configuring Essbase Analytic Servers” on page 54.](#)

Essbase Deployment Services enables you to group sets of Essbase servers running applications with identical databases and use them as a single resource in your client programs. Clustering of servers enables features such as load balancing and failover support. Load balancing enables requests to Essbase servers to be distributed across a cluster of Essbase servers running identical databases. Failover

support detects service interruptions in a cluster, and reroutes requests to other available Essbase servers in a cluster. You must restart the server to reflect changes to the cluster.

- ▶ To define a cluster:
  1. In the left pane of the Deployment Services Console, select a domain under **Domains** or select **Clusters** if clusters have already been created.
  2. Right-click, then select **Create > Cluster**.
  3. In the dialog that is displayed, type the name for your cluster; for example, `mycluster`.
  4. Click **OK**.
  5. In the left pane, select the cluster that you have just created.
  6. In the cluster's properties panel, set the service component name; for example, `localhost/Demo/Basic;localhost/Demo2/Basic`.
  7. Click **Save**.
  8. Specify the cluster name in the properties panel of the Enterprise Services server for which you want to associate the cluster.

After configuring a set of Essbase servers for use in a cluster, you must define and enable the cluster in the Deployment Services Console. For complete instructions on configuring clusters refer to the online *Essbase Deployment Services Console Help* in the Essbase Deployment Services DOCS directory.

## Defining Connection Pools

Connection pools are defined in the Deployment Services Console. For complete information on configuring connection pools refer to the online *Essbase Deployment Services Console Help* in the Essbase Deployment Services DOCS directory.

Essbase Deployment Services enables client requests to share connections, which conserves software and network resources, and improves performance. You must restart the Enterprise Services server to reflect changes to the connection pool.

- ▶ To define a connection pool:
  1. In the left pane of the Deployment Services Console, select a domain under **Domains** or select **Connection Pools** if connection pools have already been created.
  2. Right-click, then select **Create > Connection Pool**.
  3. In the dialog that is displayed, type the name for your connection pool; for example, `mypool`.
  4. Click **OK**.
  5. In the navigation panel, select the connection pool that you have just created.
  6. In the connection pool's properties panel, set the service component name for the cluster associated with the connection pool; for example, `mycluster`.
  7. Enable the check box for the service component.
  8. Enter the username and password.
  9. Set the initial capacity, maximum capacity, capacity increment.
  10. Specify whether to enable access for everyone.
  11. Click **Save**.
  12. Specify the connection pool name in the properties panel of the Enterprise Services server you want to associate with the connection pool.

## Deploying Deployment Services on Application Servers

This section describes what you need to do to configure Essbase Deployment Services and deploy it within the Apache Tomcat application server or other supported application servers.

There are three steps to the configuration and deployment:

1. Making Configuration Changes
2. Setting ARBORPATH and PATH on Windows or on UNIX
3. Configuration of the application server environment and Essbase Deployment Services, as described in [“Before Deploying on an Application Server” on page 62](#), and deployment on application servers

## Making Configuration Changes

Open the `essbase.properties` file located in the `$HYPERION_HOME/eds/7.1.0.0/bin/` folder and replace all the relative path references (`../essbase`) to the full path of the location of Essbase Deployment Services.

For example, `system.dataDir=../data` should be changed to `system.dataDir=c:/HYPERION_HOME/eds/7.1.0.0/data`.

Copy the Essbase configuration file (`essbase.cfg`) from the target Essbase database to the Deployment Services `essbase` folder. Find the file `c:/Hyperion/essbase/bin/essbase.cfg` and copy that file to `c:/Hyperion/eds/7.1.0.0/essbase/bin/essbase.cfg`.

## Setting ARBORPATH and PATH on Windows

Before configuring the application server to host Deployment Services, the `ARBORPATH` and `PATH` environment variables have to be configured properly.

1. Set the `ARBORPATH` variable to `$HYPERION_HOME/essbase`.
2. Add `$HYPERION_HOME/eds/bin` and `$ARBORPATH\bin` to the system path.

Examples:

If Deployment Services is installed in `c:\hyperion\essbase\eds` add the following environment variables:

```
SET ARBORPATH=c:\hyperion\essbase\eds\essbase
SET PATH=
%ARBORPATH%\bin;c:\hyperion\essbase\eds\bin;%PATH
```

## Setting ARBORPATH and PATH on UNIX

Before configuring the application server to host Deployment Services, the `ARBORPATH` and `Library path` environment variables have to be configured properly. You can set these parameters through your `.bashrc`, `.cshrc`, or `.profile` depending on the shell you are using.

Make sure these parameters are set before starting the application server configuration. The following examples are for bash shell.

## AIX

1. Set ARBORPATH to `$HYPERION_HOME/eds/essbase`
2. Set LIBPATH to `$HYPERION_HOME/eds/bin:$HYPERION_HOME/eds/essbase/bin`

Examples:

For Deployment Services installed in `/export/home/eds`, add the following environment variables:

```
export ARBORPATH=/export/home/eds/essbase

export LIBPATH=
/export/home/eds/bin:/export/home/eds/essbase/bin:$LD_LI
BRARY_PATH
```

## HP-UX

1. Set ARBORPATH to `$HYPERION_HOME/eds/essbase`
2. Set SHLIB\_PATH to `$HYPERION_HOME/eds/bin:$HYPERION_HOME/eds/essbase/bin`

Examples:

For Deployment Services installed in `/export/home/eds`, add the following environment variables:

```
export ARBORPATH=/export/home/eds/essbase

export SHLIB_PATH=
/export/home/eds/bin:/export/home/eds/essbase/bin:$LD_LI
BRARY_PATH
```

## Solaris

1. Set the ARBORPATH variable to `$HYPERION_HOME/eds/essbase`
2. Set LD\_LIBRARY\_PATH to `$HYPERION_HOME/eds/bin:$HYPERION_HOME/eds/essbase/bin`

Examples:

For Deployment Services installed in `/export/home/eds`, add the following environment variables:

```
export ARBORPATH=/export/home/eds/essbase
export LD_LIBRARY_PATH=
/export/home/eds/bin:/export/home/eds/essbase/bin:$LD_LI
BRARY_PATH
```

## Linux

1. Set the `ARBORPATH` variable to `$HYPERION_HOME/eds/essbase`
2. Set `LD_LIBRARY_PATH` to `$HYPERION_HOME/bin:$HYPERION_HOME/essbase/bin`

Examples:

For Deployment Services installed in `/export/home/eds`, add the following environment variables:

```
export ARBORPATH=/export/home/eds/essbase
export LD_LIBRARY_PATH=
/export/home/eds/bin:/export/home/eds/essbase/bin:$LD_LI
BRARY_PATH
```

## Before Deploying on an Application Server

Before you begin deploying Essbase Deployment Services on an application server, you must perform the following tasks:

- Update the application server environment for Deployment Services  
See [“Updating the Application Server Environment” on page 63](#).
- Extract the contents of the Deployment Services `.war` file, edit the `web.xml` file to specify the location of the location of the Deployment Services installation and customize the Deployment Services options that you require, and then repack the `.war` file.  
See [“Updating eds.war and web.xml” on page 65](#).

These tasks assume that you have already installed Deployment Services and your application server.

## Updating the Application Server Environment

Make updates to your application server environment by editing the startup or configuration file appropriate to your application server, as listed below:

- **WebLogic:** `StartWLS.cmd` (startup file)  
Located by default in `WL_HOME>\weblogic81\server\bin`
- **WebSphere:** `setupCmdline.bat` (startup file)  
Located by default in `\websphere\appserver\bin`
- **Sun One:** `asenv.conf` (configuration file)  
Located by default in `etc/opt/SUNWappserver7/`

➤ To update the application server environment for Deployment Services:

1. Edit the startup or configuration file appropriate to your application server as follows:

```
set ESS_ES_HOME=c:\Hyperion\eds
// Set ESS_ES_HOME to the absolute path of EDS_HOME;
// for example, if you have installed Deployment Services
// at c:\Hyperion\eds, then ESS_ES_HOME=c:\Hyperion\eds

set ARBORPATH=%ESS_ES_HOME%\essbase

set THIRDPARTY=%ESS_ES_HOME%\external

set J2EE_LIBS=
%THIRDPARTY%\j2ee\activation.jar;%THIRDPARTY%\j2ee\mail.jar;

set MYSQL=
%THIRDPARTY%\mysql-connector-java-3.0.8-stable-bin.jar;

set CSS=
%THIRDPARTY%\css\css-2_5_3.jar;%THIRDPARTY%\css\jdom.jar;
%THIRDPARTY%\css\log4j-1.2.7.jar;

set CLASSPATH=
%ESS_ES_HOME%\lib\ess_japi.jar;%ESS_ES_HOME%\lib\
ess_es_server.jar;%J2EE_LIBS%;%MYSQL%;%CSS%;
```

**Note:** Add the following jar/zip files to the CLASSPATH statement based on your RDBMS domain storage:

**For DB2:**

db2java.zip

**For SQL:**

JSQLConnect.jar

**For Oracle:**

classes12.zip

**For MySQL:**

mysql-connector-java-3.0.8-stable-bin.jar

**Note:** Be sure to include the PATH statement for your operating system as follows:

**For Windows:**

```
set PATH=%ESS_ES_HOME%\bin;%ARBORPATH%\bin;%PATH%;
```

**For AIX:**

```
LIBPATH=  
$HYPERION_HOME/eds/bin:$HYPERION_HOME/eds/essbase/bin
```

**For HP-UX:**

```
SHLIB_PATH=  
$HYPERION_HOME/eds/bin:$HYPERION_HOME/eds/essbase/bin
```

**For Solaris and Linux:**

```
LD_LIBRARY_PATH=  
$HYPERION_HOME/eds/bin:$HYPERION_HOME/eds/essbase/bin
```

2. Ensure that the `essbase.properties` file (`EDS_HOME\bin\essbase.properties`) specifies the absolute path of `EDS_HOME` for the following properties:

```
system.dataDir=../data  
system.arborPath=../essbase
```



## Updating eds.war and web.xml

► To update the `.war` file and edit the `web.xml` file:

1. Copy the `eds.war` file, located by default in `HYPERION_HOME\eds\7.1.0.0\redist`, to a temporary directory and unpack it using the following command:

```
jar -xvf eds.war
```

The `.war` file is located by default in the `HYPERION_HOME\eds\7.1.0.0\redist` folder.

**Note:** It is recommended that you make a backup of the `eds.war` file.

2. Delete the `.war` file that was copied into the temporary directory.
3. Edit the `web.xml` file that was unpacked into the temporary directory to add `essbase.properties` as a servlet parameter, specifying the absolute path of the `essbase.properties` file.

The following is an example from the `web.xml` file with `essbase.properties` added as a servlet parameter using the absolute path of the `essbase.properties` file.

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE web-app PUBLIC "-
//Sun Microsystems, Inc.//DTD Web Application 2.2
//EN" "http://java.sun.com/j2ee/dtds/web-app_2_2.dtd">
<web-app id="WebApp_ID">
  <display-name>EDSWebModule</display-name>
  <servlet id="Servlet_1">
    <servlet-name>EssbaseEnterprise</servlet-name>
    <servlet-class>
      com.essbase.server.plugins.http.EssbaseEnterprise
    </servlet-class>
    <init-param>
      <param-name>essbase.properties</param-name>
      <param-value>
        C:/Hyperion/eds/7.1.0.0/bin/essbase.properties
      </param-value>
    </init-param>
  </servlet>
  <servlet-mapping id="ServletMapping_1">
    <servlet-name>EssbaseEnterprise</servlet-name>
    <url-pattern>/EssbaseEnterprise</url-pattern>
```

```
        </servlet-mapping>  
</web-app>
```

4. If you are using a relational database for your domain storage, copy the appropriate .jar or .zip file from the RDBMS product files to the WEB-INF\lib directory.

**For DB2:**

```
db2java.zip
```

**Note:** The db2java.zip file must be renamed db2java.jar when you copy it to the WEB-INF\lib directory.

**For SQL:**

```
JSQLConnect.jar
```

**For Oracle:**

```
classes12.zip
```

**Note:** The classes12.zip file must be renamed to classes12.jar when you copy it to the WEB-INF\lib directory.

**For MySQL:**

```
mysql-connector-java-3.0.8-stable-bin.jar
```

5. Save the web.xml file.
6. Repack the eds.war file using the following command:  

```
jar -cvf eds.war .
```
7. **Optional.** Copy the eds.war file back to the original location; typically the HYPERION\_HOME\eds\7.1.0.0\redist folder.
8. Restart the application server program.

After you complete this procedure, you are ready to begin deploying Deployment Services on your application server.

## Deploying on Apache Tomcat Server

Apache Tomcat 4.1 is included with Deployment Services and is installed and configured by default. The procedure in this section can be used to validate the installation.

If you have an existing installation of Apache Tomcat that want to deploy and configure for use with Deployment Services, complete the steps in [“Before Deploying on an Application Server” on page 62](#), and then perform the following steps.

- ▶ To deploy the Essbase Deployment Services files to Apache Tomcat Server:
  1. If Apache Tomcat is already running, stop the application server.
  2. Copy `C:\Hyperion\7.1.0.0\eds\redist\eds.war` file from `$HYPERION_HOME\eds\redist` to the `\tomcat\4.1.18\webapps` directory.
  3. Copy the `essbase.properties` file to the `/bin` folder of Tomcat.
  4. Start Apache Tomcat to complete the deployment process.
  5. Start Deployment Services and verify that you have successfully deployed Essbase Deployment Services by entering the URL for Deployment Server into a browser.

**Note:** To validate that you have successfully installed and deployed the application server that you are using, go to `http://<hostname>:<port number>/eds/EssbaseEnterprise` to verify that the Deployment Server is up and running.

For example, for Essbase Deployment Services deployed with the context root name “eds” and the HTTP port on which Deployment Server is 7001:

```
http://localhost:7001/eds/EssbaseEnterprise
```

## Deploying on BEA WebLogic Server 7.x

If you plan to use the BEA WebLogic application server with Deployment Services, complete the steps in [“Before Deploying on an Application Server” on page 62](#), then start the WebLogic server and then perform the following steps.

- ▶ To deploy the Essbase Deployment Services files to WebLogic Server 7.x:
  1. In the WebLogic navigation frame, click **mydomain**, then click **Applications**.
  2. From the menu displayed, select **Configure a New Application**.
  3. On the **Locate Application or Component to Configure** page of the configuration wizard, select **upload it through your browser**. This will enable you to upload the Deployment Server `.war` file and deploy to the WebLogic server.
  4. On the **Install or Update an Application** page of the configuration wizard, click **Browse** to navigate to the `.war` file.
  5. Navigate to `$HYPERION_HOME\eds\redist\eds.war`.
  6. The installation process returns you to the **Locate Application or Component to Configure** page of the configuration wizard, and the `eds.war` file is displayed in the list of the `WebLogic ... \server\bin` files.
  7. Click **Select** next to the `eds.war` file to select it from the list. This displays the **Configure Application or Component to Configure** page of the configuration wizard.
  8. In the **Available Servers** list box, select the server to configure, then enter a name for the application in the **Target Servers** text box to the right, and click **Configure and Deploy**.
  9. Copy the `essbase.properties` file from `$HYPERION_HOME\eds\bin` to the location of the `startweblogic.cmd` (or `startWebLogic.sh` for UNIX). For example, if you are using the default domain, `mydomain`, the `startwebLogic.cmd` is in `c:\bea\user_projects\mydomain`.
  10. Start Deployment Services and verify that you have successfully deployed Essbase Deployment Services by entering the URL for Deployment Server into a browser.

**Note:** To validate that you have successfully installed and deployed the application server that you are using, go to `http://<hostname>:<port number>/eds/EssbaseEnterprise` to verify that the Deployment Server is up and running.

For example, for Essbase Deployment Services deployed with the context root name “eds” and the HTTP port on which Deployment Server is 7001:

`http://localhost:7001/eds/EssbaseEnterprise`

## Deploying on BEA WebLogic Server 8.x

If you plan to use the BEA WebLogic application server with Deployment Services, complete the steps in “[Before Deploying on an Application Server](#)” on [page 62](#), and then perform the following steps.

- To deploy the Essbase Deployment Services files to WebLogic Server 8.x:
  1. Start Weblogic Server 8.1 and sign on to the WebLogic Server console.
  2. In the WebLogic navigation frame, select **mydomain**, then select **Deployments > Web Application Modules**.
  3. On the **Web Applications** page, ensure that the **Configuration** tab is selected and click the **Deploy a new Web Application Module** link to deploy a new web module.
  4. On the **Deploy a Web Application Module** page, click the **myserver** folder link to select the **myserver** domain.
  5. Click the **upload** link to upload the the eds.war file.
  6. On the **Upload and Install an Application or Module** page, click the **Browse** button to navigate to the location of the `redist` folder containing the eds.war file; for example, `C:\Hyperion\eds\redist\eds.war`), and then click the **Upload** button.
  7. In **Select the archive for this Web application module**, click the **Myserver** folder, then click the **upload** folder link.
  8. Select the radio button for the eds.war file and click the **Target Module** button.
  9. In **Review your choices and deploy**, verify that the information under **Deployment Targets**, **Source Accessibility**, and **Identify** is correct and click the **Deploy** button.  
A “Success” status is displayed on the message page.
  10. Log out from the WebLogic Server console and restart the WebLogic Server.

11. Start Deployment Services and verify that you have successfully deployed Essbase Deployment Services by entering the URL for Deployment Server into a browser.

**Note:** To validate that you have successfully installed and deployed to the application server that you are using, go to `http://<hostname>:<port number>/eds/EssbaseEnterprise` to verify that the Deployment Server is up and running.

For example, if Essbase Deployment Services is deployed with “eds” as the context root name “eds” and 7001 as the HTTP port on which Deployment Server:

`http://localhost:7001/eds/EssbaseEnterprise`

## Deploying on IBM WebSphere Enterprise Server 5.0.x or 5.1.x

If you plan to use the WebSphere Enterprise Server 5.0.x or 5.1 application server with Deployment Services, complete the steps in [“Before Deploying on an Application Server” on page 62](#), then start the WebSphere and perform the following steps.

- ▶ To deploy the Essbase Deployment Services files to WebSphere Enterprise Server 5.0.x:
  1. Bring the up the WebSphere Administrative Console by typing the following URL in a browser. For example:  
`http://<hostname>:<port number>/admin`
  2. In the **Login** window, type your user ID in the text box and click **OK**.
  3. In the left frame of the Administrative Console, select **Applications > Install New Application**.
  4. On the **Preparing for the application installation** page, click **Browse** and navigate to the `$HYPERION_HOME\eds\redist\eds.war` file.
  5. In the **Context Root** text box, type `/eds` and click **Next**.

**Note:** If you do not want any context root, you must stop all the default applications except the administrative application because “/” is used by one of the applications.

6. In the **Generate Default Bindings** box, click **Next** to accept the default values.
7. In the **Step 1 Provide options to perform the installation** box, click **Next** to accept the default values shown in the **AppDeployment Options** box.
8. In the **Step 2 Map virtual hosts for web modules** box, click **EDSWebModule** to select it as the default host, then click **Next**.
9. In the **Step 3 Map modules to application servers** box, check **EDSWebModule**, to indicate `eds.war` is the module to map to the WebSphere server, and then click **Next**.
10. In the **Step 4 Summary** box, click **Finish** to initiate the installation. When the installation is completed, a message advises you that the `eds_war` application is successfully installed.
11. Click the **Save to Master Configuration** option to enable startup of Deployment Server, then click the **Save** button.
12. In the left frame, select **Applications > Enterprise Applications**.
13. When the **Enterprise Applications** page is displayed, select the check box next to `eds.war`, and then click **Start** to start Deployment Server.
14. Verify that you have successfully deployed Essbase Deployment Services by entering the URL for Deployment Server into a browser.

**Note:** To validate that you have successfully installed and deployed the application server that you are using, go to `http://<hostname>:<port number>/eds/EssbaseEnterprise` to verify that the Deployment Server is up and running.

## Deploying on a Sun ONE Application Server

If you plan to use the Sun™ ONE application server 7.0 with Essbase Deployment Services, complete the steps in [“Before Deploying on an Application Server” on page 62](#), then start the Sun ONE application server, and perform the following steps.

- To deploy the Essbase Deployment Services files to Sun ONE 7.0:
  1. Install and start the Sun ONE application server.
  2. In the navigation frame of the Sun ONE Administrative Console, navigate to **Web Apps** under **server1->applications**.

3. On the **Applications** page, click **Deploy**.
4. On the **Upload WAR File** page, click **Browse** and navigate to the `$HYPERION_HOME\eds\redist\eds.war` file. Click **OK**.
5. In the **Server1:Applications:Web:Deploy** page, click **OK** accept the default values.
6. Copy the `essbase.properties` file from `$EDS_HOME\bin` to the configuration folder of your application server domain. For example, for default installation, copy the `essbase.properties` file to the `AppServer\domains\domain1\server1\config` folder of your Sun ONE installation.
7. Modify the policy of your virtual server to allow reading and writing of properties. Open the `server.policy` file located in the `AppServer\domains\domain1\server1\config` folder and search for the string `permission java.util.PropertyPermission "*" , "read"`; Change it to `permission java.util.PropertyPermission "*" , "read,write"`;
8. Restart the Sun ONE application server for the settings to take effect.
9. Verify that you have successfully deployed Essbase Deployment Services by entering the URL for Deployment Server into a browser.

**Note:** To validate that you have installed and deployed the application server that you are using, go to `http://<hostname>:<port number>/eds/EssbaseEnterprise` to verify that your Essbase Deployment server is up and running.



This chapter discusses administration tasks for system administrators of Essbase Deployment Services, including managing data and security information in a Essbase server cluster.

- “Starting and Stopping Essbase Deployment Services” on page 74
  - “Starting and Stopping Essbase Deployment Services Servers” on page 74
  - “Starting and Stopping the Deployment Services Console” on page 75
  - “Starting and Stopping the Deployment Services Command Shell” on page 76
- “Managing Essbase Server Clusters” on page 77
  - “Outline Caching” on page 77
  - “External Authentication” on page 78
  - “Disk Space Management” on page 78
  - “Synchronizing Data Across a Cluster” on page 78
- “Fault Tolerance” on page 82

# Starting and Stopping Essbase Deployment Services

Essbase Deployment Services contains several software components in that you must start and stop separately. Depending on the configuration of the Essbase Deployment Services server, there are different procedures for starting and stopping it. For more information about starting Essbase Deployment Services server, see [“Starting and Stopping Essbase Deployment Services Servers” on page 74](#).

For information about starting Essbase servers, see the *Essbase Analytic Services Installation Guide*.

After the preceding software components have been started, you can start the following components in any order:

- Essbase Deployment Services Console
- Essbase Deployment Services Command Shell
- Essbase Deployment Services client programs

## Starting and Stopping Essbase Deployment Services Servers

This section describes how to start and stop the following Essbase Deployment Services server configurations:

- TCP/IP servers
- HTTP/Tomcat servers

For more information about configuring the different types of Essbase Deployment Services servers, see [“Configuring Servers to Use TCP/IP, HTTP, or EJB” on page 53](#).

## Starting and Stopping TCP/IP Servers

Essbase Deployment Services servers can be started from the Start menu on windows by selecting Start > Programs > Hyperion Solutions > Essbase Deployment Services>Start Essbase Deployment Server - TCPIP.

An Essbase Deployment Services server can also be started in TCP/IP mode by running a command script. For information about configuring the command script, see “Configuring TCP/IP Servers” on page 53.

- To start a Deployment Sever in TCP/IP mode:
  1. At a command prompt, change to the `HYPERION_HOME\eds\bin` directory, locate the `startees` file (`.cmd` on Windows systems, `.sh` on UNIX systems).
  2. Run the `startees` file with the input parameter `TCPIP`; for example:
 

```
>startees tcpip
```
- To stop a TCP/IP server:
  1. Click the window for the TCP/IP server and press **Enter**.
  2. At the prompt, type `exit` and press **Enter**.

## Starting and Stopping HTTP/Tomcat Servers

Essbase Deployment Services servers can be started from the Start menu on windows by selecting Start > Programs > Hyperion Solutions > Essbase Deployment Services > Start Essbase Deployment Server - HTTP.

## Starting and Stopping the Deployment Services Console

The Essbase Deployment Services Console is a graphical interface that enables you to manage Essbase Deployment Services domains, servers, users, and groups. You must have a Essbase Deployment Services server running to start the Console.

For more information about using the Console, see the online *Essbase Deployment Services Console Help* in the Essbase Deployment Services `DOCS` directory.

- To start the Console:
  1. Verify that the Essbase Deployment Services server is running.
  2. In the `HYPERION_HOME\eds\bin` directory, locate the `startgui` file (`.cmd` on Windows systems, `.sh` on UNIX systems).
  3. Run the `startgui` file.
  4. In the **User Name** field, type a user name; for example, **system**.

5. In the **Password** field, type a password; for example, **password**.
6. In the **Domain** field, type the name of a Essbase Deployment Services domain; for example, **essbase**.  
  
The default domain for Essbase Deployment Services is **essbase**.
7. In the URL field, enter the URL to the Essbase Deployment Server. For example, `http://localhost:8080/eds/EssbaseEnterprise` or `tcpip://localhost:5001`. The TCP/IP port is changed by editing the `essbase.properties` file in the `HYPERION_HOME\eds\bin` directory.
8. Click **Sign On** to log on to the Essbase Deployment Services server and start the Console.

- To stop the Console, in the Console window, select **File > Exit**.

## Starting and Stopping the Deployment Services Command Shell

The Essbase Deployment Services Command Shell is a command-line interface that provides basic tools to manage Essbase Deployment Services servers and users. You must have an Essbase Deployment Services server running to start the Command Shell.

For more information about using the Command Shell commands, see [“Command Shell Commands” on page 47](#).

- To start the Command Shell:
  1. Verify that the Essbase Deployment Services server is running.
  2. In the `HYPERION_HOME\eds\bin` directory, locate the `startcmd` file (`.cmd` on Windows systems, `.sh` on UNIX systems).
  3. Run the `startcmd` file.
  4. At the prompt, use the `signon` command to log on to the Essbase Deployment Services server; for example, type:

```
ESS>signon
```

5. At the next prompt, type an Essbase Deployment Services user name, password, domain name, server name, and server type, separated by commas; for example,

```
admin,password,essbase,sequoia2, port#
```

6. Press **Enter** to log on to the Essbase Deployment Services server.

- To stop the Command Shell, in the Command Shell window at the prompt, type **Exit**.

## Managing Essbase Server Clusters

Using Essbase Deployment Services with clusters of Essbase servers creates a new set of tasks for Essbase system administrators. In particular, administrators must develop strategies for synchronizing data and security information across multiple Essbase servers.

The Essbase Deployment Services and Essbase teams are working toward solutions to these server management challenges. In the meantime, the following sections provide strategies for managing data and security synchronization.

### Outline Caching

Essbase Deployment Services has the option of storing outline information along with other services information. This option makes it possible to keep the outline of a specific Essbase database locally on the Deployment Server eliminating unnecessary queries of the database itself. This option is enabled through the Essbase Deployment Services console and can be set and reset as required. Outline Caching is set by specifying the absolute path to the specific Essbase Olap Server. For more information refer to the Essbase Deployment Services Console Help.

## External Authentication

Essbase Deployment Services allows the authentication of users external to the security measures present in the Essbase database itself. Security authentication of users can be done through two different schemes:

- Native—Essbase Deployment server authentication (default).
- External—The Hyperion security platform components can be configured to enable the authentication of users on Hyperion systems. For more information, see the “Security Platform Reference” section of the Essbase Analytic Services *Technical Reference*.

The native internal authentication by Essbase Deployment Services is the default scheme.

## Disk Space Management

Essbase Deployment Services uses temporary directories (on Windows `HYPERION_HOME\eds\temp`, `HYPERION_HOME/eds/tmp` on UNIX) to store databases and outlines. Even though the duration of the usage can be short, the outlines and databases can require large amounts of temporary physical disk space. Memory and disk space must be allocated to take into account the sizes of typical databases and outlines.

## Synchronizing Data Across a Cluster

There are three general strategies for replicating data across a cluster:

- Using the features of Essbase Partitioning to create replicated partitions of the served application on each Essbase server
- Using Essbase Integration Server to load data onto each server in the cluster
- Exporting data from the master server and loading it into each Essbase server

## Synchronizing Data Using Partitioning

The Essbase Partitioning module enables you to create replicated partitions of a database over multiple Essbase servers. By creating replicated database partitions which mirror each other on each of the servers in a Essbase server cluster, you can effectively synchronize data across multiple Essbase servers.

For more information about using Partitioning, see the *Essbase Analytic Services Database Administrator's Guide*.

## Synchronizing Data Using Essbase Integration Server

Essbase Integration Server enables you to load data into Essbase databases quickly and easily. If you use Essbase Integration Server to load and update your master Essbase application for a cluster, you can also use it to load and update the other mirror application on the other Essbase servers in a cluster.

For more information about using Essbase Integration Server, see the *Essbase Integration Services System Administrator's Guide*.

## Synchronizing Data Using Export and Load Functions

Essbase provides a basic solution to synchronizing data between servers in the data export and import features. Using this methodology you export the data from the master Essbase database and import it into the other servers in the cluster.

Essbase Deployment Services provides a command to perform this type of synchronization in the Command Shell. This command uses the Essbase JAPI method `IEssDomain.syncCubeReplicas()`. A sample client program demonstrating this method is provided in the `HYPERION_HOME\eds\samples` directory. The sample program file is named `SyncCubeReplicas.java`.

For more information about the Command Shell, see [“Command Shell Commands” on page 47](#). For more information about the sample programs, see [Chapter 6, “Setting up the Sample Programs.”](#) For more information about using exporting and loading data, see the *Essbase Analytic Services Database Administrator's Guide*.

## Synchronizing Users and Security Across a Cluster

When you create a cluster of Essbase servers with Essbase Deployment Services, you must add users and their relevant access permissions to all Essbase servers in the cluster. If you have large numbers of users, this can be time consuming.

Essbase Deployment Services provides a command for loading Essbase users into its domain storage and settings for pushing those users to other Essbase servers in a cluster, but the information is incomplete. For more information see, “[Loading Essbase Users into Essbase Deployment Services](#)” on page 80.

Beyond the procedure mentioned above, consider creating users and access information on the master Essbase server using a MaxL or ESSCMD script and reuse this script on the other servers in the cluster. Finally, you may have to manually replicate some user and access information across the servers of your cluster. For more information about using MaxL and ESSCMD, see *Technical Reference*.

## Loading Essbase Users into Essbase Deployment Services

Essbase Deployment Services provides a way to load users from a Essbase server and then push those user names and passwords onto other Essbase servers. The process requires that the Deployment Services server reset all the passwords on the Essbase server and the push process creates the users but does not replicate their privileges on the other Essbase servers.

- ▶ To load users into Essbase Deployment Services from a Essbase server:
  1. Verify that the Essbase Deployment Services server and the Essbase server containing the users you want to load are running.
  2. In the `HYPERION_HOME\eds\bin` directory, locate the `startCmdShell` file (`.cmd` on Windows systems, `.sh` on UNIX systems).
  3. Run the `startCmdShell` file.
  4. Log on to the Essbase Deployment Services server using the `signon` command; for example,

```
EDS>signon
Enter input as user,password,domain,prefServer,plugin:
system,password,essbase,localhost,http
```



5. Use the `syncsectoees` command to load the user name information into the Essbase Deployment Services server and reset the password to a default value on both servers; for example,

```
EDS>syncsectoees
Enter input as olapSvrName,domName,defPwd,syncPwd:
localhost,essbase,password,true
```

---

**CAUTION:** Performing this operation resets the passwords for all users on the Essbase server.

---

User names and passwords are now the same on the Essbase Deployment Services server and Essbase server with which you connected.

After loading the user names, you can configure the Essbase Deployment Services server to create user names on Essbase servers as it connects to them. The settings for this configuration are set in the `essbase.properties` file.

Essbase Deployment Services can create Essbase users and passwords, but can not set security access levels for those users. Create all needed user accounts directly on the Essbase servers and assign the required security access privileges. If necessary you can replicate the user list on additional Essbase servers. If a user changes a password through an Essbase Deployment Services client program, that password is loaded on to the Essbase servers as the user connects to each server.

---

**CAUTION:** The Deployment Services server creates the users and passwords on the Essbase servers but it does not replicate the access privileges of the users.

---

You must manually create the privileges for the users on each of the Essbase servers. After these privileges have been assigned, the maintenance of the users and privileges must continue on the Essbase servers. Essbase Deployment Services does not synchronize the privileges of users across the Essbase servers.

# Fault Tolerance

There are two levels of fault tolerance in Essbase Deployment Services.

## Fault Tolerance in the Java API

If Essbase Deployment Services stops (normally or abnormally) and is restarted while a Java API client session is already in progress, the Java API will automatically restore the session. This feature is currently not supported for outline operations and cube view operations, and is supported for all the rest of the functionality.

## Fault Tolerance in Essbase Deployment Services

### Case 1

To get Essbase Deployment Services to reconnect and retry data query operations (read-only) on the same OLAP server, perform the following steps.

Deployment Services needs to be configured with connection pooling (in connection per operation mode or connection per session mode) over a cluster or over a component (cube).

The Java API client performing data query using `openCubeView`, make sure that the last four parameters are `True`.

```
IEssDomain.openCubeView(String cubeViewName,
                        String olapSvrName,
                        String appName,
                        String cubeName,
                        boolean useConnPool,
                        boolean connPerOp,
                        boolean useCluster,
                        boolean readOnly)
```

In addition, make sure connection pool is configured for the specified `appName` and `cubeName`.

The following Essbase error conditions can be recovered:

- User logged out by Supervisor (1013095 ).
- Essbase agent restarted (1042006 ).
- Invalid login id (1013136).

- Logged out due to inactivity (1051021 ).
- System is temporarily busy (1051010 ).
- Client timed out to receive data via tcp (1042017).
- Cannot receive data (1042013).

Several external conditions can also be recovered. Many conditions can be identified in the `Essbase.Properties` file before the condition occurs. Specify the following in the `Essbase.Properties` file before starting the Essbase Deployment Services server:

```
system.faultTolerance.reconnectRetryOnSameSvcComp.onErrorCodes=
1013095,1042006,1013136,1051021,1051010,1042017,1042013
```

If you encounter error codes other than those specified in the condition above, add those to the comma-separated list in the above `Essbase.Properties` entry.

Example usage scenario:

1. Create a cluster (for example, `demobasiccluster`) with 2 identical components (`localhost/demo/basic`, `localhost/demo2/basic`)
2. Create a connection pool (for example, `demobasicpool`) using this cluster (`demobasiccluster`), and set initial connections as 4, maximum connections as 4, and connection increment as 0.
3. Enable this cluster and connection pool to be hosted by the Essbase Deployment Services server.
4. Start the OLAP servers and the Essbase Deployment Services server.
5. Start the clients that use Java API data query operations over the connection pool.
6. See that the requests are equally distributed between `demo/basic` and `demo2/basic`.
7. Logout the connection pool user from the OLAP server using the Essbase Application Manager.
8. Continue running clients using the Java API data query operations.
9. See that the Essbase Deployment Services server automatically reestablishes the connection on the same OLAP server, without interrupting the clients.

## Case 2

To get Essbase Deployment Services to retry (without reconnecting) data query operations (read-only) on the same OLAP server, perform the following steps.

1. Essbase Deployment Services needs to be configured with connection pooling (in connection per operation mode or connection per session mode) over a cluster or over a component (cube).
2. Specify the following in the `Essbase.Properties` file, along with proper error codes separated by comma, before starting the EDS server:

```
system.faultTolerance.retryOnSameSvcComp.onErrorCodes=
```

## Case 3

To get Essbase Deployment Services to retry data query operations (read-only) on different OLAP server in the cluster, perform the following steps.

Essbase Deployment Services needs to be configured with connection pool (in connection per operation mode) over a cluster. In addition, make sure connection pool over cluster is configured with at least one component matching the specified `appName` and `cubeName`.

The Java API client performing a data query using `openCubeView` needs to make sure that the last four parameters are `True`.

```
IEssDomain.openCubeView(String cubeViewName,
                        String olapSvrName,
                        String appName,
                        String cubeName,
                        boolean useConnPool,
                        boolean connPerOp,
                        boolean useCluster,
                        boolean readOnly)
```

The following error conditions can be recovered :

- Disabled user commands (1013009, 1013204, 1054009, 1054010)
- Active database stopped by supervisor (1013110)

Several external conditions can also be recovered. Many conditions can be identified in the `Essbase.Properties` file before the condition occurs. Specify the following in the `Essbase.Properties` file before starting the Essbase Deployment Services server:

```
system.faultTolerance.retryOnNextSvcComp.onErrorCodes=
1013009,1013204,1054009,1054010,1013110
```

If you encounter error codes other than those specified in the condition above, add those to the comma-separated list in the `Essbase.Properties` entry.

Example usage scenario:

1. Create a cluster (for example, `demobasiccluster`) with 2 identical components (`localhost/demo/basic`, `localhost/demo2/basic`)
2. Create a connection pool (for example, `demobasicpool`) using this cluster (`demobasiccluster`), and set initial connections as 4, maximum connections as 4, and connection increment as 0.
3. Enable this cluster and connection pool to be hosted by the Essbase Deployment Services server.
4. Start the OLAP servers and the Essbase Deployment Services server.
5. Start the clients that use the Java API data query operations over the connection pool.
6. See that the requests are equally distributed between `demo/basic` and `demo2/basic`.
7. Disable commands on demo application using the Essbase Application Manager or the Essbase Deployment Services Console. The reason to disable commands on an application is to perform operations such as data load.
8. See that the requests now only go to `localhost/demo2/basic`, as Essbase Deployment Services detects the error and re-routes the request to the next component in the cluster (`localhost/demo2/basic`)
9. Enable commands on demo application.
10. See that the requests are equally distributed between `demo/basic` and `demo2/basic`.



# Setting up the Sample Programs

Essbase Deployment Services includes a set of sample Java programs for testing the product and to use as a reference when developing custom client programs. This chapter discusses the sample programs, how to set up your computer environment to work with them, and how to compile and run them.

This chapter contains the following topics:

- [“Understanding the Sample Programs” on page 87](#)
- [“Configuring Analytic Servers” on page 90s](#)
- [“Configuring Essbase Deployment Services Servers” on page 91](#)
- [“Compiling and Running the Sample Programs” on page 92](#)
- [“Next Steps” on page 95](#)

## Understanding the Sample Programs

The sample programs provided with Essbase Deployment Services help you test the software and get you started on developing client programs for Essbase Deployment Services. In order to run the sample programs, you must configure your environment with the following components:

- An Essbase Deployment Services server
- A supported Essbase server with users and sample applications

For information about setting up Essbase Deployment Services for the sample programs, see [“Configuring Essbase Deployment Services Servers” on page 91](#). For information about setting up Essbase for the sample programs, see [“Configuring Analytic Servers” on page 90](#).

Unless otherwise noted in this document, the sample programs assume that all necessary software components (Essbase Deployment Services, Essbase, and the sample programs themselves) are running on the same computer.

The sample programs demonstrate areas of functionality provided through the Essbase JAPI. The sample programs are located in the `HYPERION_HOME\eds\samples` directory. The areas covered by each sample program are summarized in the following list:

- `BuildDimension.java`, adds and removes members from the outline in the active database.
- `CdfCdm.java`, shows the usage of CDF and CDM.
- `CellAttributes.java`, signs on to essbase domain, opens a cube view, performs a retrieval, gets the cell attributes, and signs off.
- `ClientCache.java`, demonstrates the setting and use of client-side caching with the Essbase JAPI.
- `Connect.java`, demonstrates a simple connection and disconnection from a Essbase Deployment Services server.
- `ConnectUsingHttpUrl.java`, signs on to a domain using HTTP and signs off.
- `ConnPoolDataSource.java`, demonstrates using connection pool for data source operations.
- `CopyOlapAppAndCube.java`, copies an Essbase application and cube from one server to another.
- `CreateConnPoolAndCluster.java`, creates a cluster and a connection pool.
- `CreateOlapApp.java`, creates olap applications.
- `CreateOutline.java`, creates a cube outline, creates dimensions, members and other outline elements, verifies the outline and restructures the database.
- `DataQuery.java`, demonstrates basic retrieval of data from a Essbase database.
- `DataSource.java`, demonstrates the retrieval of Essbase server information and execution of reports.
- `Domain.java`, demonstrates management of Essbase Deployment Services domains, including adding and removing of users, groups, domains, Essbase servers, and Essbase Deployment Services servers.



- `EmailDataQueryOutput.java`, signs on to an essbase domain, opens a cube view, performs a retrieval, Emails the output to a recipient and signs off.
- `GetMembers.java`, signs on to essbase domain, performs various metadata operations and signs off.
- `GridDataUpdate.java`, demonstrates the retrieving and updating of data in a grid format.
- `GridLockUnlock.java`, signs on to an essbase domain, opens a cube view, performs a lock, retrieval, unlock and signs off.
- `GridWithUnknownMembers.java` demonstrates how to detect unknown members in data query.
- `HisDrillThrough.java`, signs on to an essbase domain, opens a cube view, performs HIS drill-through, lists reports, executes reports, and signs off.
- `HisDrillThroughOnRange.java`, signs on to an essbase domain, opens a cube view, performs HIS drill-through, lists reports, executes reports, and signs off.
- `HybridAnalysis.java`, demonstrates how to use the Hybrid Analysis option for data query and meta data operations.
- `HyperionCss.java`, demonstrates how to use Hyperion Security Platform.
- `KillRequest.java`, demonstrates how to kill long-running olap requests.
- `LinkedObjects.java`, signs on to an essbase domain, opens a cube view, performs a retrieval, performs LRO operations, and signs off.
- `LinkedPartition.java`, signs on to an essbase domain, opens a cube view, performs a retrieval, looks for a linked partition in a cell, and signs off.
- `ListAndKillOlapRequests.java`, signs on to an essbase domain, connects to an analytic server, lists the requests, kills requests, and signs off.
- `LoadData.java`, loads data to a cube.
- `LocateServers.java`, locates the running Deployment servers.
- `MdxQuery.java`, signs on to an essbase domain, opens a cube view, performs a retrieval, a zoom in, a zoom out, a keep only, a remove only, a pivot, and signs off.
- `MemberSelectionOverOutlineCache.java`, performs member selection over outline cache maintained in a Deployment server.

- `MetaData.java`, demonstrates retrieval of metadata information from a Essbase database, including member selection.
- `OlapServerConnect.java`, signs on to an Analytic server and signs off.
- `PropertyViewer.java`, gets an application/database object, enumerates its properties and prints the values.
- `ReadOutline.java`, signs on to an essbase domain, reads various items in an outline and signs off.
- `RunReport.java`, demonstrates the running of a report from a Essbase database.
- `SyncCubeReplicas.java`, demonstrates the replication of data between two Essbase databases.
- `UserCustomPreference.java`, demonstrates the setting of a custom preference for a user on a Essbase Deployment Services server.
- `ViewOutlineTree.java`, demonstrates the listing of all outline members from Essbase database outline.

The sample programs can use an Essbase Deployment Services server that uses a supported configuration. For more information about creating client programs that work with Essbase Deployment Services servers, see the online *Essbase Deployment Services JAPI Reference* in the Essbase Deployment Services DOCS directory.

## Configuring Analytic Servers

The sample programs require a Essbase Analytic Server Release 7.0 or later server with the Demo Basic sample application loaded. You must also create the users system and guest on the Analytic server.

If you plan to use several Analytic servers in a cluster with the sample programs, you must perform the following procedure for all Analytic servers in the cluster.

- To configure Analytic servers for use with the sample programs:
  1. On the Analytic server, verify that the sample applications Demo Basic and Sample Basic are installed and that the databases have been loaded with data. For information about installing the sample applications in Essbase, see the *Essbase Analytic Services Installation Guide*.
  2. If you are going to use the SyncCubeReplicas sample program, make a copy of the Demo application and name it Demo2. For information about copying Essbase applications, see the *Essbase Analytic Services Database Administrator's Guide*.
  3. On the Essbase server, create the following users:
    - **system**, a user with supervisor rights and a password of password
    - **guest**, a normal user with read access to the Demo application (and the Demo2 application, if created) and a password of password

For information on creating users in Essbase, see the *Essbase Analytic Services Database Administrator's Guide*.

4. After completing these steps, keep the Essbase server running.  
You do not have to keep the Essbase Demo and Demo2 applications running. Essbase Deployment Services starts these applications automatically when they are required.

## Configuring Essbase Deployment Services Servers

In order to use the sample programs, you must configure and run an instance of the Essbase Deployment Services server that uses one of the supported configurations. For information on configuring an instance of the server, see [“Configuring Servers to Use TCP/IP, HTTP, or EJB” on page 52](#).

Once you have configured an instance of the server, you must perform additional configuration so you can use it with the sample programs.

- ▶ To configure a Essbase Deployment Services server for use with the sample programs:
  1. In the `HYPERION_HOME\eds\bin` directory, locate the `essbase.properties` file and open it in a text editor.
  2. In the `essbase.properties` file, find the line that starts with `olap.server.autoStart=` and set this parameter to `true`; for example, `olap.server.autoStart=true`

This setting enables the Essbase Deployment Services server to start applications automatically on connected Essbase servers.

3. Save your changes and close the `essbase.properties` file.

After you have set this parameter, you must stop and restart the Essbase Deployment Services server. For information on starting servers see, [“Starting and Stopping Essbase Deployment Services Servers” on page 46.](#)

## Compiling and Running the Sample Programs

After you have configured the required servers, you can then compile and run the sample programs.

The script file `runsamples` is provided for compiling the sample programs. This script must be configured to work with your computer environment. Once you have this script working in your environment, you can use it as a template for creating compile and run scripts for the other sample programs.

### Configuring the `runsamples` Script File

To configure the `runsamples` script file to work in your computer environment, you must verify that the path and other environment variables in the script are set correctly.

- ▶ To configure the `runsamples` file to work with your computer environment:
  1. In the `HYPERION_HOME\eds\samples` directory, locate the `runsamples` script (`.cmd` on Windows systems, `.sh` on UNIX systems).
  2. Open the `runsamples` script in a text editor.

3. Verify that the `HYPERION_HOME\eds` variable is set to the location of your Essbase Deployment Services installation; for example,

```
set HYPERION_HOME\eds=C:\hyperion\eds\
```

4. Verify that the `JAVA_HOME` variable points to a supported version of the Java Runtime Environment. If you did not install the Java Runtime Environment with Essbase Deployment Services, you must update this variable with a full path to the Java installation; for example,

```
set JAVA_HOME="C:\Program Files\JavaSoft\JRE\1.3\"
```

5. Replace the variable values for `USER`, `PASSWORD`, `DOMAIN`, `EDS_SERVER`, and `OLAP_SERVER`, as necessary. These variables are set at the beginning of the `runsamples` file.

**Tip:** To make running the example programs easier, set up Essbase Deployment Services and Essbase on your local computer. Then, in Essbase, create a user system with a password of `password` and full access to the Sample Basic, Demo Basic, and Demo2 Basic databases. If you set up your computer system in this configuration, you do not need to modify the default settings for the sample client programs.

6. Save the `runsamples` script file.

## Running the runsamples Script

After you have configured the `runsamples` script to work with your environment, you are ready to run the script, which compiles the sample programs and runs one of them.

- ▶ To run the `runsamples` script:
  1. Verify that the Essbase Deployment Services server and Essbase server are running.
  2. In the `HYPERION_HOME\eds\samples` directory, locate the `runsamples` script (`.cmd` on Windows systems, `.sh` on UNIX systems).

3. Run the script by typing the following command at the command prompt:

```
>runsamples http
```

This example runs the sample program for a Essbase Deployment Services server that uses HTTP. For other server types, replace HTTP with the server type you are using.

4. Follow the on-screen prompts to compile and run the sample programs.

## Creating Compile and Run Scripts

The runsamples script compiles all the sample programs but runs only one of them. To run the other sample programs, you must create your own scripts or modify the runsamples script.

You can use the runsamples script as a template for new scripts. The following procedure shows you how to create a version of the runsamples script to run a different sample program.

- To create a version of the runsamples script to run another sample program:

1. In the HYPERION\_HOME\eds\samples directory, locate the runsamples script (.cmd on Windows systems, .sh on UNIX systems).
2. Open the runsamples script in a text editor.
3. In the script file, find the line that begins with echo Step-2 and modify the two lines as shown below:

```
echo Step-2: Ready to run MetaData example ...
pause
%JAVA_HOME%\bin\java %VBROKER_PROPS%
com.hyperion.essbase.samples.MetaData %USER% %PASSWORD%
%DOMAIN% %EDS_SERVER% %ORB% %PORT% %OLAP_SERVER%
```

To use the script to run another sample program, substitute the name of the sample program class for MetaData, as shown in the preceding sample.

4. Configure this script to work in your computer environment by performing the procedure described in [“Configuring the runsamples Script File” on page 92](#).
5. Save the script file in the HYPERION\_HOME\eds\samples directory. Save the file with an extension .cmd on Windows systems or a .sh extension on UNIX systems.

## Running Compile and Run Scripts

After you have created compile and run scripts for the other sample programs and configured them to work with your computer environment, you are ready to run these scripts.

- To run the compile and run scripts:
  1. Verify that the Essbase Deployment Services server and Essbase server are running.
  2. In the `HYPERION_HOME\eds\samples` directory, locate the script file (`.cmd` on Windows systems, `.sh` on UNIX systems).
  3. Run the script by double-clicking the file or by typing the name of the script command at the command prompt.
  4. Follow the on-screen prompts to compile the sample program and run it.

## Next Steps

After you have successfully compiled and run the sample programs, you are ready to create your own client programs for Essbase Deployment Services.

For more information about the available classes and methods in the Essbase JAPI, see the online *Essbase Deployment Services JAPI Reference* in the Essbase Deployment Services `DOCS` directory.





**accounts.** A list of users and groups that determine access to a domain in Essbase Deployment Services.

**Application Programming Interface (API).** A library of functions that you can use in a custom program. Essbase Deployment Services provides a Java API that you can use to develop client programs.

**applet.** In Java, a program that can run in a Web browser. Small programs written in languages other than Java are sometimes referred to as applets.

**application server.** A Java software server that runs Enterprise Java Bean (EJB) programs, Java servlets, Java Server Pages (JSPs) and provides infrastructure for large-scale Java programs, such as connection pooling, session pooling, multithreading and load balancing.

**cluster.** A group of Essbase Deployment Services or Essbase servers to act as a single server to share task loads and provide failover support. Clustering eliminates Essbase servers as a single point of failure in a system.

**connection pooling.** A collection of user logins to Essbase servers. Pooling of user connections facilitates the scaling of Essbase applications to thousands of users.

**Common Object Request Broker Architecture (CORBA).** A distributed software-to-software communication specification which enables remote procedure calls from one software program to another on the same computer or across a network.

**cube.** A representation of an Essbase multidimensional database.

**domain.** A logical grouping of administrative objects, such as users, groups, and servers.

**Enterprise JavaBean (EJB).** Server side framework and programming architecture for creating distributed java applications.

**Deployment Services server.** A server running the Essbase Deployment Services software that manages requests between the client and OLAP servers, in addition to providing various services, such as event handling and authentication.

**Essbase JAPI.** Object-oriented application programming interface, enabling programmers to create custom Java applications for Essbase and Essbase Deployment Services.

**failover support.** Automatic detection of service interruption due to Essbase server failure. When failure occurs, Essbase Deployment Services dynamically routes server requests to the next Essbase database in the cluster.

**group.** A list of Essbase users. A user can belong to more than one group.

**Hypertext Transfer Protocol (HTTP).** A widely supported communication protocol used by Web browsers, Web servers, and other software programs to communicate over the Internet.

**Internet Inter-ORB Protocol (IIOP).** The communication protocol used to communicate between CORBA ORBs over TCP/IP.

**JAPI.** Java Application Programming Interface.

**J2EE (Java 2, Enterprise Edition).** A specification for Java technology, including the Java programming language, Java application servers and related technology.

**load balancing.** Distribution of requests across a group of Essbase servers, which ensures optimal end user performance.

**OLAP server.** A server running multidimensional databases, such as Essbase.

**Object Request Broker (ORB).** Technology that enables clients to communicate with servers via an object bus.

**RAID (redundant array of independent [or inexpensive] disks).** A persistent storage system that provides convenient, low-cost, and highly reliable storage by saving data on more than one disk simultaneously.

**Relational Database Management Systems (RDBMS).** A type of database management system that stores data in the form of related tables.

**Remote Method Invocation (RMI).** A programmatic remote access communication protocol for communication between Java programs. This protocol is typically used in communication between EJBs running on application servers.

**replication.** In Essbase Deployment Services, the copying of data from one Essbase application database to another.

**single sign-on.** Ability to log into an Essbase Deployment Services domain only once and, based on access rights, access resources.

**Service Provider Interface (SPI).** A technology enabling new services to be added to Essbase Deployment Services.

**Servlet.** An small application (applet) that runs on the server rather than the client in a client/server system.



# Index

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

## Symbols

/temp, 78

/tmp, 78

## A

advanced topics, 45

analyzing applications, 21

API, 88

Application Servers, 59

ARBORPATH, 60

architecture, 14

Authentication, 78

## B

background process

    UNIX, 41

bandwidth requirements, 25

## C

caching, outline, 77

client programs, 16, 18 to 20

cluster management, 77

clustering, server, 14

Clusters

    defining, 57

clusters, 57

CODEBASE parameter, 43

command shell, 16, 47, 76

commands, 47

communications protocols, 16

compiling, 92

components, EDS, 16

configuring, 91

configuring Application Servers, 59

configuring Essbase servers, 54

configuring protocols, 53

configuring scripts, 92

configuring Sun ONE, 71

configuring TCP/IP, 53

configuring Tomcat, 67

configuring WebLogic, 67, 69

configuring WebSphere, 70

connection pooling, 15

connection pools, 57

console, EDS, 16, 75

consulting services, xi

## D

Defining Clusters, 57

defining clusters, 57

defining pools, 57

directories

    for UNIX, explained, 39

directories, Windows, 31

disk space

    Solaris system requirements, 36

    Windows system requirements, 28

Disk Space, Managing, 78

documents

    feedback, xi

domain storage, 50, 52

    RDBMS, 50

**A B C D E F G H I J K L M N O P Q R S T U V W X Y Z**

**E**

education services, [xi](#)  
EES as a UNIX process, [41](#)  
EJB, [20](#)  
Essbase, [77 to 78](#)  
Essbase and EDS, [13](#)  
Essbase Integration Server, [79](#)  
Essbase servers, [54](#)  
Essbase system architecture, [14](#)  
Essbase.Properties file, [46](#)  
export, [79](#)  
External Authentication, [78](#)

**F**

failover support, [15, 82](#)  
fault tolerance, [15, 82](#)  
features, EDS, [14](#)  
flat file, [52](#)  
flat file domain storage, [52](#)

**H**

HTTP, [19](#)  
HTTP mode, [75](#)  
Hyperion Consulting Services, [xi](#)  
Hyperion Education Services, [xi](#)  
Hyperion Technical Support, [xi](#)  
hyperion\_home variable, [32, 40](#)

**I**

installed files, [31](#)

**J**

Java, [15, 28, 88](#)  
Java API, [16, 88](#)  
Java programs, [87](#)

**L**

load, [79 to 80](#)  
load balancing, [14](#)

**M**

managing clusters, [77](#)  
Migrating, [45](#)  
Migration, [45](#)

**N**

network protocols, [28](#)  
New Releases, [45](#)

**O**

online guide  
    accessing, [ix](#)  
    displaying, [ix](#)  
    searching, [ix](#)  
online help  
    accessing, [ix](#)  
    accessing on UNIX systems, [43](#)  
    printing, [ix](#)  
Outline Caching, [77](#)  
overview, EDS, [13](#)

**P**

partitions, [79](#)  
physical memory  
    Solaris system requirements, [36](#)  
pointer, to properties file, [46](#)  
Preserving Existing Installations, [45](#)  
properties file, [46](#)  
protocols, [16, 18 to 20](#)  
    configuring, [53](#)

**R**

RDBMS domain storage, [50](#)  
remote activation, [55](#)  
replicating databases, [78](#)  
requirements on Windows systems, [28](#)  
resource allocation, [21, 24](#)  
retrieval, [25](#)  
runsamples script, [92](#)

**A B C D E F G H I J K L M N O P Q R S T U V W X Y Z****S**

- sample programs, 87 to 88
- samples, 92
- script file, 92
- security, 80
- Security Authentication, 78
- server
  - configuring for samples, 91
- server clustering, 14
- Server Clusters, 57
- server management, 73
- server, EDS, 16
- setting ARBORPATH on UNIX, 60
- setting ARBORPATH on Windows, 60
- setting up sample programs, 87
- shell, 47
- startees script, 47
- startgui file, 43
- starting EDS command shell, 76
- starting EDS console, 75
- starting EDS servers, 74
- stopping EDS command shell, 76
- stopping EDS console, 75
- stopping EDS servers, 74
- storage, 25
- Sun ONE, 71

- supported protocols, 28
- synchronizing, 79
- synchronizing databases, 78
- synchronizing users, 80
- system administration, 73

**T**

- TCP/IP, 18
- TCP/IP, configuring, 53
- technical support, xi
- Temporary directory, 78
- Tomcat, 67

**U**

- uninstalling, 48
- Uninstalling on UNIX, 41
- usage limits, 23

**W**

- WebLogic, 67, 69
- WebSphere, 70
- Windows, 28

**A B C D E F G H I J K L M N O P Q R S T U V W X Y Z**