SYBASE®

Installation Guide

Sybase® Data Integration Suite

1.1

[UNIX]

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Contents

About This Book

Audience

This guide is intended for data administrators and developers who are responsible for installing and configuring Sybase® Data Integration (DI) Suite components.

How to use this book

The *Sybase Data Integration Suite Installation Guide* is structured as follows:

- Chapter 1, “Introduction” is an overview of DI Suite components.
- Chapter 2, “Before You Begin” outlines the requirements for preparing your environment before you begin to install.
- Chapter 3, “Installation” describes how to install DI Suite components.
- Chapter 4, “Post-Installation Tasks” describes the tasks you must perform after you have installed the DI Suite components.
- Chapter 5, “Upgrading” describes how to upgrade to DI Suite 1.1.
- Chapter 6, “Migration” describes how to migrate from a standalone product to DI Suite 1.1.
- Chapter 7, “Uninstallation” describes how to uninstall DI Suite components.
- Chapter 8, “Typical Deployment Scenarios” provides typical deployment scenarios for all DI Suite components.
- Appendix A, “Setting up a SySAM Standalone License Server” provides instructions on installing a SySAM standalone license server.

Related documents

This section describes the DI Suite documentation set, which you can find on the Getting Started CD and the various SyBooks™ CDs.

The DI Suite Getting Started CD includes:

- *Sybase Data Integration Suite Release Bulletin* for your platform – contains last-minute information that was too late to be included in the books.

- *Sybase Data Integration Suite Installation Guide* for your platform (this document) – describes installation procedures for the various components of the DI Suite.
- *Sybase Software Asset Management and User's Guide* – describes asset management configuration concepts and tasks.
- Release bulletins, installation guides, and administration guides for these Sybase products, which are included with DI Suite:
  - Avaki® EII 7.1 (Data Federation)
  - EAServer 5.x
  - Enterprise Connect™ Data Access 12.6.1
  - Real-Time Data Services 4.0
  - Replication Agent™ 15.0
  - Replication Server® 15.0.1
  - Sybase Search 3.2
  - Sybase ETL 4.2

DI Suite includes a separate SyBooks CD for each DI Suite component. In addition to the documents listed below, each CD also includes the *DI Suite Overview Guide*, and the *DI Suite New Features Guide*.

- SyBooks CD for Data Federation includes:
  - Product manuals for Avaki EII 7.1 (Data Federation)
- SyBooks CD for Replication includes:
  - Product manuals for these Sybase products, which are included with the Replication component of DI Suite:
    - Replication Server 15.0.1
    - Replication Agent 15.0
    - Enterprise Connect Data Access 12.6.1
- SyBooks CD for Real-Time Events includes:
  - Product manuals for these Sybase products, which are included with the Real-Time Events component of DI Suite:
    - Replication Server 15.0.1
    - Replication Agent 15.0

    - Real-Time Data Services 4.0
    - EAServer 5.x
    - Adaptive Server® Anywhere 9.0.2
  - *Data Integration Common Services* online topics
- SyBooks CD for Search includes:
  - Product manuals for Sybase Search 3.2
- SyBooks CD for ETL includes:
  - Product manuals for Sybase ETL 4.2

Other sources of information

Use the Sybase Getting Started CD, the SyBooks CD, and the Sybase Product Manuals Web site to learn more about your product:

- The Getting Started CD contains release bulletins and installation guides in PDF format, and may also contain other documents or updated information not included on the SyBooks CD. It is included with your software. To read or print documents on the Getting Started CD, you need Adobe Acrobat Reader, which you can download at no charge from the Adobe Web site using a link provided on the CD.
- The SyBooks CD contains product manuals and is included with your software. The Eclipse-based SyBooks browser allows you to access the manuals in an easy-to-use, HTML-based format.

  Some documentation may be provided in PDF format, which you can access through the PDF directory on the SyBooks CD. To read or print the PDF files, you need Adobe Acrobat Reader.

  Refer to the *SyBooks Installation Guide* on the Getting Started CD, or the *README.txt* file on the SyBooks CD for instructions on installing and starting SyBooks.
- The Sybase Product Manuals Web site is an online version of the SyBooks CD that you can access using a standard Web browser. In addition to product manuals, you will find links to EBFs/Maintenance, Technical Documents, Case Management, Solved Cases, newsgroups, and the Sybase Developer Network.

  To access the Sybase Product Manuals Web site, go to Product Manuals at http://www.sybase.com/support/manuals/.

Sybase certifications on the Web

Technical documentation at the Sybase Web site is updated frequently.

❖ **Finding the latest information on product certifications**

1 Point your Web browser to Technical Documents at http://www.sybase.com/support/techdocs/.

2 Click Certification Report.

3 In the Certification Report filter select a product, platform, and timeframe and then click Go.

4 Click a Certification Report title to display the report.

❖ **Finding the latest information on component certifications**

1 Point your Web browser to Availability and Certification Reports at http://certification.sybase.com/.

2 Either select the product family and product under Search by Base Product; or select the platform and product under Search by Platform.

3 Select Search to display the availability and certification report for the selection.

❖ **Creating a personalized view of the Sybase Web site (including support pages)**

Set up a MySybase profile. MySybase is a free service that allows you to create a personalized view of Sybase Web pages.

1 Point your Web browser to Technical Documents at http://www.sybase.com/support/techdocs/.

2 Click MySybase and create a MySybase profile.

Sybase EBFs and software maintenance

❖ **Finding the latest information on EBFs and software maintenance**

1 Point your Web browser to the Sybase Support Page at http://www.sybase.com/support.

2 Select EBFs/Maintenance. If prompted, enter your MySybase user name and password.

3 Select a product.

4 Specify a time frame and click Go. A list of EBF/Maintenance releases is displayed.

Padlock icons indicate that you do not have download authorization for certain EBF/Maintenance releases because you are not registered as a Technical Support Contact. If you have not registered, but have valid information provided by your Sybase representative or through your support contract, click Edit Roles to add the "Technical Support Contact" role to your MySybase profile.

5 Click the Info icon to display the EBF/Maintenance report, or click the product description to download the software.

Conventions

The formatting conventions used in this guide are:

Formatting example	Indicates
command names and method names	When used in descriptive text, this font indicates keywords such as: • Command names used in descriptive text • C++ and Java method or class names used in descriptive text • Java package names used in descriptive text
myCounter variable *Server.log* *myfile.txt*	Italic font indicates: • Program variables • Parts of input text that must be substituted • Directory and file names
File | Save	Menu names and menu items are displayed in plain text. The vertical bar shows you how to navigate menu selections. For example, File | Save indicates "select Save from the File menu."
create table table created	Monospace font indicates: • Information that you enter on a command line or as program text. • Example output fragments

Accessibility features

This document is available in an HTML version that is specialized for accessibility. You can navigate the HTML with an adaptive technology such as a screen reader, or view it with a screen enlarger.

Sybase Data Integration Suite documentation has been tested for compliance with U.S. government Section 508 Accessibility requirements. Documents that comply with Section 508 generally also meet non-U.S. accessibility guidelines, such as the World Wide Web Consortium (W3C) guidelines for Web sites.

Note You might need to configure your accessibility tool for optimal use. Some screen readers pronounce text based on its case; for example, they pronounce ALL UPPERCASE TEXT as initials, and MixedCase Text as words. You might find it helpful to configure your tool to announce syntax conventions. Consult the documentation for your tool.

For information about how Sybase supports accessibility, see Sybase Accessibility at http://www.sybase.com/accessibility. The Sybase Accessibility site includes links to information on Section 508 and W3C standards.

If you need help

Each Sybase installation that has purchased a support contract has one or more designated people who are authorized to contact Sybase Technical Support. If you cannot resolve a problem using the manuals or online help, please have the designated person contact Sybase Technical Support or the Sybase subsidiary in your area.

CHAPTER 1

Introduction

This chapter provides an introduction to Sybase Data Integration Suite (DI Suite) and its components.

About Data Integration Suite

DI Suite includes components that help to implement key data integration techniques, including data federation, replication, real-time events, data search, and ETL, with integrated tools for development and administration.

DI Suite includes these components:

- Sybase Replication
- Sybase Search
- Sybase Data Federation
- Sybase Real-Time Events
- Sybase ETL

Sybase also offers these tools for administration and development:

- Sybase Data Services Administrator, which is included with DI Suite.
- Sybase WorkSpace, which is packaged separately from DI Suite.

Sybase Replication

The Sybase Replication component replicates transactional data and synchronizes operational data across heterogeneous databases in your enterprise.

It includes these subcomponents, which you can install using DI Suite installer:

- Replication Server – enables distribution and synchronization of operational data.
- Replication Agents – captures transactions and transfers them to Replication Server.
- DirectConnect – enables access to heterogeneous data sources, as well as mainframe data sources.

Mainframe options Sybase Replication supports replication of transactional data from a mainframe-based DB2 server. This support is available as add-on options, which you can purchase separately:

- Sybase Replication Agent for DB2 UDB for OS/390 – supports replication of transactional data from DB2 UDB running on a mainframe system to target databases.
- Mainframe Connect™ with DirectConnect for z/OS – supports replication of data to a mainframe system. This option enables client applications and Replication Server to access data stored in mainframe database management systems (DBMSs), file systems, and applications. In addition, Mainframe Connect allows you to create custom mainframe applications that provide access to data stored on mainframe-based DB2 servers.

Note Sybase Replication includes basic, simple-to-configure support for replicating to mainframe DB2 through DirectConnect. The Mainframe Connect option is an alternative that provides enhanced performance and functionality while replicating to mainframe DB2. You must purchase the Mainframe Connect option separately.

Sybase Search

The Sybase Search component provides advanced data services for querying, locating, and analyzing your enterprise data.

It includes these subcomponents, which you can install using the DI Suite installer:

- Hub Container – includes a central Search server module (hub) that coordinates other Search server modules. This hub contains the central query module that is the main access point for the entire Sybase Search system.
- Satellite Container – includes modules required to distribute the indexing and search modules.

- Web Administration – includes the JSP/Servlet container used for Search server administration.

Sybase Search Content Adapter option Sybase Search uses the Sybase Search Content Adapter, which is an add-on option you can purchase separately, to perform searches across proprietary document formats such as Microsoft Word and Adobe Acrobat PDF documents. The base Sybase Search performs searches across simple, and non proprietary formats such as plain text files, databases, and HTML Web pages.

Sybase Data Federation

The Sybase Data Federation component streamlines integration of data from many distributed sources while providing access to integrated views of your enterprise data.

It includes these subcomponents, which you can install using DI Suite installer:

- Grid Server – hosts the data catalog, provides authorization services for clients that request data access, and runs data services and database operations.
- Data Grid Access Server – provides high-performance caching and makes data catalogs and their contents available to Network File System (NFS) and Common Internet File System (CIFS) clients in a secure fashion.
- Share Server – responsible for file I/O and making data stored in local file systems visible in the data catalog.
- Firewall Proxy Server – makes federated data accessible across firewalls.
- Command-Line Client – enables you to perform all data federation and administration tasks using the command line interface.

Sybase Real-Time Events

The Sybase Real-Time Events component captures and moves time-critical events from your heterogeneous data sources to business applications through a messaging infrastructure.

There are two Real-Time Events subcomponents, which you can install using DI Suite installer:

- RepConnector – capture events nonintrusively from a database such as Adaptive Server Enterprise (ASE) or Oracle, and deliver these events to any standard messaging infrastructure such as WebSphere MQ, BEA WebLogic JMS, and TIBCO EMS. Real-time messaging through RepConnector is achieved using the RepConnector Server, Replication Server, and Replication Agents subcomponents.

- ASE Active Messaging – capture events from the ASE database and publish directly to any standard messaging infrastructure such as WebSphere MQ, TIBCO EMS, and Sybase EAServer JMS. ASE Active Messaging is easy to configure, and provides high performance and enhanced transactional messaging support for ASE databases.

An integrated set of common services is installed with the Sybase Real-Time Events component, which are used internally by its components. These services include an application server, service container, messaging system, global catalog, and security infrastructure. For more information on these common services, see the *Data Integration Common Services* online topics on your SyBooks CD for Real-Time Events component.

Sybase ETL

Sybase ETL extracts data from multiple, heterogeneous data sources and loads it into one or more data targets using a comprehensive set of transformation functions.

Sybase ETL includes these subcomponents available for installation:

- ETL Server – a scalable and distributed grid engine, which connects to data sources, and extracts and loads data to data targets using transformation flows designed using ETL Development. Install ETL Server using the DI Suite installer.
- ETL Development – graphical user interface (GUI) tools for ETL development and deployment for use with ETL Server. These tools provide a complete simulation and debugging environment to speed the development of ETL transformation flows.

  ETL Development is packaged separately from DI Suite. Use the installer provided with ETL Development to install this subcomponent.

  Note ETL Development is available only on Windows.

Sybase Data Services Administrator

Sybase Data Services Administrator (DSA) is the centralized management console for the administration of DI Suite components. It provides administration capabilities through its plug-in to the Sybase Central™ framework. DI Suite components are administered in DSA with GUI-based servers or server managers that are accessible via Web consoles and Sybase Central plug-ins.

DSA is available for installation with every DI Suite component except Sybase ETL. To manage and administer the ETL component, use ETL Development, rather than DSA. For more information about ETL Development tools, view the product manuals on the SyBooks CD for Sybase ETL.

Sybase WorkSpace

Sybase WorkSpace provides development capabilities for the Sybase Data Federation, Sybase Replication, and Sybase Real-Time Events components of DI Suite.

Sybase WorkSpace is packaged separately from DI Suite. Use the installer provided with Sybase WorkSpace to install this development tool for DI Suite.

Note Sybase WorkSpace is available on Windows only.

For more information about DI Suite and how to use the various components for your data integration needs, see the *Sybase Data Integration Suite Overview Guide*.

CHAPTER 2

Before You Begin

This chapter describes the tasks you must complete before you begin installing the DI Suite components. Sybase recommends that you read this chapter before proceeding with the installation.

Licenses for DI Suite components

DI Suite uses the Sybase Software Asset Management (SySAM) licensing mechanism for license administration and asset management tasks. After you purchase DI Suite components, go to the Sybase Product Download Center (SPDC) Web site at http://sybase.subscribenet.com to generate and download the licenses. For more information, see the *Sybase Software Asset Management User's Guide*.

License models

DI Suite supports served and unserved license models:

- The served license model uses a license server to store licenses for DI Suite components that are distributed across the network. To use the served license model for DI Suite, set up the SySAM license server and deploy the licenses to this license server.
- The unserved license model gets licenses directly from the license file, which is installed locally.

Before generating licenses, decide whether you are using a served or an unserved license model. For information on how to determine which is appropriate for your site, see Chapter 2, "Choosing a License Model" in the *Sybase Software Asset Management User's Guide.*

DI Suite licenses

You can obtain licenses for individual DI Suite components separately or for Data Integration Suite Standard Edition.

- For DI Suite components, you can use a served or unserved product license. However, to deploy DI Suite components on different machines across the network, use a served license. Licenses available for the DI Suite components are:
  - Sybase Replication
  - Sybase Search
  - Sybase Data Federation
  - Sybase Real-Time Events
  - Sybase ETL

  For more information about deployment and licensing options for DI Suite components, see "Deployment and licensing options for DI Suite components" on page 9.
- For Data Integration Suite Standard Edition, you must use the unserved license only. The license for Standard Edition includes unserved licenses for all DI Suite components.

  Standard Edition is limited to use on a single machine with a maximum of 2 CPUs. The functionality of the DI Suite components included in the Standard Edition is the same as those offered separately. However, it does not include the Sybase Search Content Adapter, which is an add-on option for use only with the Sybase Search component available outside the Standard Edition.

  For more information about deployment and licensing options for Standard Edition, see "Deployment and licensing options for Standard Edition" on page 11.

Deployment and licensing options for DI Suite components

Table 2-1 describes the deployment and license options for DI Suite components. For deployment and licensing options for Standard Edition, see "Deployment and licensing options for Standard Edition" on page 11.

Table 2-1: Deployment and licensing options for DI Suite components

DI Suite component	Subcomponent	Deployment and licensing options
Sybase Replication	Replication Server	• A SySAM served or unserved license is required to unlock this subcomponent. • Installation is allowed on multiple machines in the distributed environment. This depends on the number of CPU licenses you have purchased. • The license of this subcomponent includes licenses for Replication Agents and DirectConnect.
	Replication Agents	• A Replication Server license is required to install this subcomponent. • Installation is allowed on multiple machines that contain the supported database in the distributed environment. • This subcomponent can be used only with the Replication Server that contains its license.
	DirectConnect	• A Replication Server license is required to install this subcomponent. • Installation is allowed on multiple machines in the distributed environment. However, for improved performance, Sybase recommends you to install DirectConnect on the same server as the database it supports. • This subcomponent can be used only with the Replication Server that contains its license.
Sybase Search	Hub Container	• A SySAM served or unserved license is required to unlock this subcomponent. • Installation is allowed on multiple machines in the distributed environment. This depends on the number of CPU licenses you have purchased.
	Satellite Container	
	Web Administration	
	Single Server	

DI Suite component	Subcomponent	Deployment and licensing options
Sybase Data Federation	Grid Server	• A SySAM served or unserved license is required to unlock this subcomponent. • Installation is allowed on multiple machines in the distributed environment. This depends on the number of CPU licenses you have purchased. • The license of this subcomponent includes licenses for Data Grid Access Server, Share Server, Firewall Proxy Server, and Command-Line Client.
	Data Grid Access Server Share Server Firewall Proxy Server Command-Line Client	• A Grid Server license is required to install this subcomponent. • Installation is allowed on multiple machines in the distributed environment. • This component can be used only with the Grid Server that includes its license.
Sybase Real-Time Events	RepConnector Server Replication Server	• A SySAM served or unserved license is required to unlock this subcomponent. • Installation is allowed on multiple machines in the distributed environment. This depends on the number of CPU licenses you have purchased. • A Real-Time Events license includes a license for Replication Server and ASE Active Messaging; a Replication Server license includes a license for Replication Agents.
	Replication Agents	• A Replication Server license generated for the Real-Time Events component is required to install Replication Agents. • Installation is allowed on multiple machines that contain the supported database in the distributed environment. • This subcomponent can be used only with the Replication Server installed with the Real-Time Events component.
	ASE Active Messaging	• A Real-Time Events license is required to install ASE Active Messaging. • Installation is allowed on multiple machines that contain the Adaptive Server Enterprise (ASE) database in the distributed environment. • An ASE Enterprise Edition license is required on the machine where this component is installed.

DI Suite component	Subcomponent	Deployment and licensing options
Sybase ETL	ETL Server	• A SySAM served or unserved license is required to unlock this subcomponent. • Installation is allowed on multiple machines in the distributed environment. This depends on the number of CPU licenses you have purchased.
	ETL Development	• A SySAM served or unserved license is required to unlock this subcomponent. • Installation is allowed on multiple Windows machines in the distributed environment. This depends on the number of licenses you have purchased.

Deployment and licensing options for Standard Edition

The deployment and licensing mechanisms described in Table 2-1 apply to the DI Suite components included in Standard Edition, except:

- You must install DI Suite components included in the Standard Edition on a single machine with a maximum of 2 CPUs.
- You must use the unserved license model for DI Suite components included in the Standard Edition.
- You can install the Replication Agent subcomponent on any machine in your distributed environment with no restriction on the number of CPUs. The product license for this subcomponent is included with the Sybase Replication or Sybase Real-Time Events installation. Copy this license to the machine on which you are installing Replication Agent.
- You can install the ASE Active Messaging subcomponent on a separate machine with a maximum of 2 CPUs and with a restricted number of ASE running engines. The product license for this subcomponent is included with the Sybase Real-Time Events installation. Copy this license to a machine that contains ASE to install ASE Active Messaging.

Sybase WorkSpace licenses

To use development capabilities for the Sybase Data Federation, Sybase Replication, and Sybase Real-Time Events components of DI Suite, you must download Sybase WorkSpace, which is packaged separately.

Select Sybase WorkSpace from the SPDC to generate and download WorkSpace development licenses. Use the installer provided with Sybase WorkSpace to install this development tool for DI Suite.

Table 2-2 describes the Sybase WorkSpace development licenses available for DI Suite components.

Note Sybase WorkSpace is available on Windows only.

Table 2-2: Sybase WorkSpace development licenses for DI Suite components

DI Suite components	Sybase WorkSpace license
Sybase Data Federation	WorkSpace Data Federation
Sybase Replication	Workspace Database Development
Sybase Real-Time Events	

Note For more information about Sybase WorkSpace development licenses and installation procedures, see the Sybase WorkSpace documentation at http://www.sybase.com/support/manuals/.

System requirements

Before installing DI Suite components, make sure your system meets the operating system, hardware, and browser requirements.

Operating system requirements

DI Suite is compatible with the following platform and operating system configurations:

Sun Solaris

- Solaris 9 – patch level 9 recommended (SPARC 64-bit)
- Solaris 10 – patch level 10 recommended (SPARC 64-bit)

IBM AIX

AIX 5.3 on IBM pSeries (64-bit)

Hardware requirements

This section lists the hardware requirements for DI Suite components and subcomponents.

Installation media

The installation media for DI Suite is DVD. Make sure the machine identified for DI Suite installation has a DVD drive.

CPU requirement

- Solaris – Sun Solaris (SPARC)
- IBM AIX – AIX on IBM pSeries

Memory and disk space requirements

Table 2-3 lists the recommended memory and disk space required for DI Suite components and subcomponents.

Table 2-3: Recommended memory and disk space requirements

DI Suite components and subcomponents	Platform			
	Sun Solaris		IBM AIX	
	Memory (RAM)	Disk space	Memory (RAM)	Disk space
Sybase Replication (Full)	512MB	1.44GB	512MB	1.15GB
- Replication Server	512MB	520MB	512MB	380MB
- Replication Agents	128MB	210MB	128MB	180MB
- DirectConnect	256MB	700MB	256MB	560MB
Sybase Search (Full)	512MB	170MB for installation files, plus 1GB for generated data files	512MB	170MB for installation files, plus 1GB for generated data files
- Hub Container	256MB	170MB	256MB	170MB
- Satellite Container	512MB	170MB for installation files, plus 1GB for generated data files	512MB	170MB for installation files, plus 1GB for generated data files
- Web Administration	256MB	170MB	256MB	170MB
Sybase Data Federation (Full)	1GB	350MB plus 1K per shared file	1GB	350MB plus 1K per shared file
- Grid Server	1GB	300MB plus1K per shared file	1GB	300MB plus 1K per shared file
- Data Grid Access Server	1GB	200MB	1GB	200MB
- Share Server	1GB	200MB	1GB	200MB

DI Suite components and subcomponents	Platform			
	Sun Solaris		IBM AIX	
	Memory (RAM)	Disk space	Memory (RAM)	Disk space
- Firewall Proxy server	1GB	200MB	1GB	200MB
- Command-Line Client	256MB	120MB	256MB	120MB
Sybase Real-Time Events (Full)	1GB	1.64GB	1GB	1.69GB
- RepConnector Server	512MB	920MB	512MB	1.15GB
- Replication Server	512MB	520MB	512MB	380MB
- Replication Agents	128MB	210MB	128MB	180MB
- Sybase ASE Active Messaging	512MB	80MB	512MB	70MB
Sybase ETL	512MB	220MB	512MB	230MB
Sybase Data Services Administrator	512MB	340MB	512MB	260MB
Standard Edition	2.5GB recommended 1.5GB minimum	1.5GB	2.5GB recommended 1.5GB minimum	1.5GB

DI Suite component coexistence matrix

Table 2-4 shows the various DI Suite components that can coexist and function on the same machine.

Table 2-4: DI Suite component coexistence matrix

DI Suite	Compatible Sybase products								
	ASE		Replication Server		Sybase IQ			DirectConnect	Replication Agent
	12.5.x	15.0.x	12.6	15.x	12.5	12.6	12.7	12.x	12.x
Sybase Replication									
- Replication Server	n	y	y	y	n	n	y	y	y
- Replication Agents	y	y	y	y	y	y	y	y	y
- DirectConnect	y	y	y	y	y	y	y	y	y
Sybase Search	y	y	y	y	y	y	y	y	y
Sybase Data Federation	y	y	y	y	y	y	y	y	y
Sybase Real-Time Events									
- RepConnector Server	y	y	y	y	y	y	y	y	y

DI Suite	Compatible Sybase products								
	ASE		Replication Server		Sybase IQ			DirectConnect	Replication Agent
	12.5.x	15.0.x	12.6	15.x	12.5	12.6	12.7	12.x	12.x
- Replication Server	n	y	y	y	n	n	y	y	y
- Replication Agents	y	y	y	y	y	y	y	y	y
- ASE Active Messaging	y*	y*	y	y	y	y	y	y	y
Sybase ETL	y	y	y	y	y	y	y	y	y

LEGEND: y = compatible; n = not fully compatible; y* = On Sun Solaris, compatible with 32-bit and 64-bit versions of ASE 12.5.4 ESD#3 or later, or ASE 15.0.1 ESD#1 or later. On IBM AIX, compatible with 64-bit version of ASE 12.5.4 ESD#3 or later, or ASE 15.0.1 ESD#1 or later.

Installation directory

DI Suite components are, by default, installed in the */opt/sybase* directory. During installation, the installer checks the $SYBASE environment variable for any existing Sybase directory that was created for another Sybase product. If the installer locates a Sybase directory, it by default installs the components in this directory. If the installer cannot locate such a directory, it creates one and installs all components in the new directory.

Sybase recommends that you install DI Suite components into the existing Sybase directory, if one exists.

Installation type

The DI Suite setup program provides you with the following two installation options, allowing you to install the configuration most appropriate for your system:

- Full – installs all features of the selected component on a single machine.
- Custom – allows you to select the components to install on multiple machines depending on the data integration architecture in your organization. To install components on different machines, run the installer separately on each machine.

In case of Standard Edition, all DI Suite components included in the Standard Edition, except Replication Agent and ASE Active Messaging subcomponent, must be installed on a single machine. The Replication Agent and ASE Active Messaging subcomponent can be installed on separate machines. For more information, see “Deployment and licensing options for Standard Edition” on page 11.

Note Before you begin a custom installation, you must have a thorough understanding of a typical installation architecture for each DI Suite component. See Chapter 8, “Typical Deployment Scenarios,” for information you may need before using the Custom option.

Installation mode

You can install the DI Suite components using:

- GUI mode – allows you to install the components using a graphical user interface. This is the default installation mode. See “Installing in GUI mode” on page 21.
- Console mode – allows you to install components using a command line interface. See “Installing in console mode” on page 31.
- Response file mode – allows you to record or create a response file. Using a response file, you can install components in two different ways:
  - Silent – lets you install the components without any interaction. This is convenient if you are performing identical installations on multiple machines.
  - Interactive installation using a response file – lets you install interactively, but with all the responses already filled in, so that you can accept or change the default values and install the components according to the responses in the response file. This can be convenient if several sites are installing the suite and must conform to a standard installation.

  See “Installing using a response file” on page 31.

CHAPTER 3

Installation

This chapter provides instructions for installing the DI Suite components.

Installation overview

This section provides an overview of various installation scenarios, and provides the prerequisties for installing DI Suite components.

Installation scenarios

- To install individual DI Suite components or the Standard Edition for the first time:
  - In GUI mode, see “Installing in GUI mode” on page 21.
  - In console mode, see “Installing in console mode” on page 31.
  - Using response file, see “Installing using a response file” on page 31.
- To install additional DI Suite components and subcomponents after an initial installation of DI Suite, see “Installing additional components” on page 29.
- To install accessory subcomponents in a distributed installation environment, see “Installing accessory subcomponents” on page 29.

Installation prerequisites

Before you install DI Suite components:

- Close any open applications or utilities.
- If you are using the installation media for DI Suite installation, make sure your installation machine has a DVD drive.

- Make sure that the target computer meets the hardware requirements and operating system requirements for installing DI Suite components. See “System requirements” on page 12.
- Review the compatibility of DI Suite components against other Sybase products across different versions. See “DI Suite component coexistence matrix” on page 14.
- Review the SySAM license requirements. See “Licenses for DI Suite components” on page 7.
- Create a “sybase” account on your system to perform all installation tasks.

  The “sybase” user must have write permissions on the directory where the DI Suite will be installed. The “sybase” user must also have a home directory.
- Make sure the following directories have at least 1GB of free disk space:
  - /var/*tmp* directory on Sun Solaris
  - */tmp* directory on IBM AIX

  Also, verify that your home directory ($HOME) has *write* permissions.
- Log in to the machine as the “sybase” user.

  Note If you specify a user name that contains non-ASCII characters, DI Suite installation can fail.

  Maintain consistent ownership and privileges for all files and directories. A single user—the Sybase System Administrator with read, write, and execute permissions—should perform all installation, upgrade, and set up tasks.
- If you are installing the RepConnector subcomponent of Sybase Real-Time Events on a BEA WebLogic application server, make sure that you have installed and started the BEA WebLogic application server prior to the installation of RepConnector. Also, make sure you have write permission to the BEA WebLogic installation directory.

  For more information, see the BEA documentation for WebLogic.
- If you are installing the ASE Active Messaging subcomponent of Sybase Real-Time Events, make sure you have installed:
  - 32-bit or 64-bit versions of ASE 12.5.4 ESD#3 or later, or ASE 15.0.1 ESD#1 or later on Sun Solaris.

    - 64-bit version of ASE 12.5.4 ESD#3 or later, or ASE 15.0.1 ESD#1 or later on IBM AIX.
- If you are installing ETL Server, make sure your PATH environment variable includes these files:
    - sed
    - awk
    - tar
    - gzip
    - wc
    - mkdir
    - touch
    - df
    - tr
    - uudecode

Installing DI Suite components

You can install DI Suite components using the setup program provided in your installation media, or download and extract the DI Suite component images from the SPDC Web site at http://sybase.subscribenet.com.

Installing using the installation media

Use the installation steps described in “Installing in GUI mode” on page 21.

Installing from the SPDC

Sybase Product Download Center (SPDC) lists all the components for the DI Suite supported platforms. Each component includes a set of download files, which are listed against the relevant component in Table 3-1.

Table 3-1: DI Suite download files

DI Suite components on the SPDC	Download files (for your platform)	Description
Sybase Data Integration Suite 1.1 Replication	Data Integration Suite 1.1 Core	Provides core install framework for DI Suite
	Data Integration Suite 1.1 Rep DC	Provides the DirectConnect subcomponent
	Data Integration Suite 1.1 Rep RA	Provides the Replication Server and Replication Agent subcomponents
Sybase Data Integration Suite 1.1 Search	Data Integration Suite 1.1 Core	Provides core install framework for DI Suite
	Data Integration Suite 1.1 Search	Provides the Search component
Sybase Data Integration Suite 1.1 Data Federation	Data Integration Suite 1.1 Core	Provides core install framework for DI Suite
	Data Integration Suite 1.1 Data Federation	Provides the Data Federation component
Sybase Data Integration Suite 1.1 Real-Time Events	Data Integration Suite 1.1 Core	Provides core install framework for DI Suite
	Data Integration Suite 1.1 RTE	Provides the Real-Time Events component
	Data Integration Suite 1.1 Rep RA	Provides the Replication Server and Replication Agents subcomponents
Sybase Data Integration Suite 1.1 ETL	Data Integration Suite 1.1 Core	Provides core install framework for DI Suite
	Data Integration Suite 1.1 ETL	Provides the ETL component
Sybase Data Integration Suite 1.1 ETL Development	Data Integration Suite 1.1 ETL Dev	Provides the ETL Development subcomponent
Sybase Data Integration Suite 1.1 Standard Edition	Data Integration Suite 1.1 Standard Ed	Provides the Standard Edition

❖ **Installing DI Suite components from the SPDC**

1 Select the DI Suite components relevant to your platform. Then, download the required files associated with each component to your hard drive. See Table 3-1 for a list of files, which you must download for each component.

Note Certain download files are common to DI Suite components. You can download these common files once for multiple components. For example, *Sybase Data Integration Suite 1.1 Core* is common to all DI Suite components, so you can download this file only once for multiple components.

2 Use an appropriate extraction utility to extract the download files to a temporary directory. UNIX download files are compressed using the GNU Tar format (.tgz). To uncompress, use the GNU Tar utility.

Note You must extract all the files for a specific DI Suite component into a *single* directory. The setup program may not start if the files are extracted into different directories. Also, make sure that the temporary directory name does not have non-ASCII characters or spaces.

The extracted files include the setup program file, which you can run to start installing the DI Suite component. For installation procedure, see "Installing in GUI mode" on page 21.

Installing in GUI mode

This section describes the steps for installing DI Suite components for the first time using the GUI mode.

1 Run the installer.

If you are installing from the SPDC, run the setup program from the directory where you have extracted all the files. For more information on how to install from the SPDC, see "Installing from the SPDC" on page 19.

If you are installing using the DI Suite installation media:

a Insert the DI Suite installation media.

b At the command line enter:

```
/cdrom/setup
```

c The Welcome window displays. Click Next to proceed.

2 Specify the geographic location.

Select the geographic location where you are installing to display the agreement appropriate to your region. Read the End-user License and Copyright Agreement. Select "I agree to the terms of the Sybase license for the install location specified" and click Next.

3 Provide the license information.

a On the Sybase Software Asset Management License Server window, provide the licenses for the components you want to install. For information on various component licenses, see "Licenses for DI Suite components" on page 7.

Use one of these options to enter the licenses:

- Specify License Keys – click Browse to select the license file. To select multiple license files, use Shift+Click or Ctrl+Click. The license pane displays the license information.

  Alternatively, copy and paste the license information directly in the license pane. Click Next to proceed.

  The installer determines if the license you have entered is a served or an unserved license.

  For a served license:

  - If the served license requires a license server for the machine on which you are installing the DI components, the installer prompts you to provide the directory in which you want to install the license server. Click Next. The installer displays an installation summary window and proceeds to install the license server.
  - If the served license is activated for a machine other than where you are installing the DI Suite components, you must set up a license server on that machine, deploy the license, and then select Use Previously Deployed License server option on the installer.

    For information on how to set up a standalone license server, see the Appendix, "Setting up a SySAM Standalone License Server."

If you are intalling the license server on a platform that is not supported by DI Suite 1.1, go to the SySAM Web site at http://www.sybase.com/sysam to download the license server setup program.

- Use Previously Deployed License server – if you have a previously deployed license server, enter the host name of the machine where the license server is running, and the port number if the port number you are using is not default. Click Next.

For more information on SySAM licensing, see the *Sybase Software Asset Management User's Guide*.

b Depending on the license information you provide, the components that are available for installation are displayed. You may see any or all of the following components:

- Sybase Replication
- Sybase Search
- Sybase Data Federation
- Sybase Real-Time Events
- Sybase ETL
- Sybase Data Integration Suite – Standard Edition

Review and verify the list. If you do not see a component you want to install, return to the previous window and provide the license for the component. Click Next.

Note You can install the Standard Edition only on a single machine with a maximum of 2 CPUs. If the installer detects more than 2 CPUs on the installation machine, it displays an error.

4 Select to install either the Individual Data Integration Suite Components or the Standard Edition.

If you have provided the license for individual Suite components, along with the licenses for the Standard Edition, the installer prompts you to select one of the following options:

- Individual Data Integration Suite Components
- Standard Edition

Click Next.

5 Specify the installation directory.

a Click Browse to select a directory, click Next to accept the default directory, or enter a different directory name where you want to install the DI Suite components. The default directory is */opt/sybase*. Sybase recommends that you install the DI Suite components into the *Sybase* directory, if one already exists on your machine.

Note Make sure that the installation directory name does not have non-ASCII characters or spaces.

b If the installation directory you specified already exists, and contains an earlier installation, you see:

```
You have chosen to install into an existing
directory. Any older versions of the products you
choose to install that are detected in this
directory will be replaced.

Do you want to continue with installation into
this directory?
```

Click Yes to replace any previous installation in this directory.

If the installation directory you specify does not exist, you see:

```
The directory does not exist. Do you want to
create it?
```

Click Yes. By default, the installer installs the components in the $SYBASE directory, if it exists. If you proceed to install in a new directory, the existing Sybase products may not work properly. Click No to go back and change the directory. Click Yes to proceed.

Note If the installer detects an incompatible version of a Sybase product in this directory, it displays a warning. For compatibility information of DI Suite components against other Sybase products, see “DI Suite component coexistence matrix” on page 14.

6 Select the components to install

Select the individual components you want to install. If you want to select all the displayed components for installation, click Select All Components.

7 Select the installation type:

a Select Full to install all the subcomponents for the selected component on a single machine. For example, if you have selected the Sybase Replication component, the Full option installs all subcomponents available under this component. Click Next.

b Select Custom to choose specific subcomponents you want to install for the selected component. You can install these subcomponents on a single machine or multiple machines. For example, if you have selected the Sybase Replication component, the Custom option allows you to install any or all of the subcomponents available under this component on a single machine or multiple machines. Click Next.

In the case of Standard Edition, you must install all DI Suite components on a single machine, except the Replication Agent and ASE Active Messaging subcomponents. You can install Replication Agent and ASE Active Messaging subcomponents on separate machines. For more information, see "Deployment and licensing options for Standard Edition" on page 11.

Note Before you begin a custom installation, you must have a thorough understanding of a typical installation architecture for each DI Suite component. See Chapter 8, "Typical Deployment Scenarios," for information you may need before performing a custom installation.

For more information on the Full and Custom installation type, see "Installation type" on page 15.

8 Review the subcomponents to install.

The installer displays all the subcomponents that are available for each selected component. Review the list to verify the subcomponents you want to install. Unselect the subcomponents you do not want to install. Click Next.

For certain components, you must provide additional information before you can proceed with the installation:

- *For Sybase Search*

  Depending on the installation type you chose, you are prompted to provide configuration parameters as listed in the following tables. Modify or accept the default values, and click Next.

Table 3-2: Search configuration parameters for Full install

Parameter name	Description
Hub Container Port	Identifies the port number on which the single container will run. Enter an appropriate value between 1024 and 65535.
Container RMI Port	Identifies the port number on which the hub container RMI service will run. Enter an appropriate value between 1024 and 65535.
Hyena Port	The port number on which the Hyena Web server will run. Enter an appropriate value between 1024 and 65535.
Web Administrator Password	Enter the Web administrator password. The password can be alphanumeric and must have a minimum of 6 characters.
Confirm Web Administrator Password	Re-enter the Web administrator password.

Table 3-3: Search configuration parameters for Custom install

Selection	Parameter name and description
Hub Container	• Hub Container Port – identifies the port number on which the single container will run. Enter an appropriate value between 1024 and 65535. • Container RMI Port – identifies the port number on which the hub container RMI service will run. Enter an appropriate value between 1024 and 65535.
Satellite Container	• Container ID – identifies the unique container ID. Enter an appropriate value between 2 and 99. • Container RMI Port – identifies the port number on which the hub container RMI service will run. Enter an appropriate value between 1024 and 65535. • Container Port – identifies the port number on which the satellite container will run. Enter an appropriate value between 1024 and 65535. • Hub Container Host Name – identifies the host name on which the hub container will run. Enter a host name.
Web Administration	• Container RMI Port – identifies the port number on which the hub container RMI service will run. Enter an appropriate value between 1024 and 65535. • Hub Container Host Name – identifies the host name on which the hub container will run. Enter a host name. • Hyena Port – the port number on which the Hyena Web server will run. Enter an appropriate value between 1024 and 65535. • Web Administrator Password – enter the Web administrator password. The password can be alphanumeric and must have a minimum of 6 characters. • Confirm Web Administrator Password – re-enter the Web administrator password.

- *For Sybase ASE Active Messaging*

  Enter or select an existing Adaptive Server Enterprise (ASE) installation directory and click Next to proceed.

  Note Sybase ASE Active Messaging on Sun Solaris supports 32-bit and 64-bit versions of ASE 12.5.4 ESD#3 or later, or ASE 15.0.1 ESD#1 or later. On IBM AIX, it supports 64-bit version of ASE 12.5.4 ESD#3 or later, or ASE 15.0.1 ESD#1 or later.

  If the installer detects a supported version of ASE, it proceeds with the installation.

  If the installer detects multiple supported versions of ASE installations, it displays all of them and prompts you to select the versions to install the Sybase Real-Time Events ASE Active Messaging component. Click Next.

  If the installer does not detect an ASE installation in the specified directory, or detects an unsupported ASE version, it asks if you want to continue installing without the Sybase ASE Active Messaging subcomponent. Click Yes to continue. Click Next.

- *For RepConnector*

  1 Before installing, make sure you have completed the prerequisites for installing RepConnector. For more information, see “Installation prerequisites” on page 17.

  2 Select the application server where you want to install RepConnector:

    - RepConnector for Sybase EAServer
    - RepConnector for BEA WebLogic

    Click Next.

    Note RepConnector supports Sybase EAServer version 5.3 on Sun Solaris and 5.2.1 on IBM AIX.

  3 If you have selected BEA WebLogic as the application server, specify the directory in which BEA WebLogic is installed. Make sure you have write permission to the BEA WebLogic installation directory.

    Click Next.

4 Provide the BEA WebLogic server information:

- Domain Name – the name of the WebLogic domain you will be deploying RepConnector to.
- Server Name – the name of the WebLogic server you will be deploying RepConnector to.
- WebLogic Server Host Name – the name of the machine you are installing on.
- WebLogic Server Port Number – the WebLogic listening port. The default port is 7001.
- Server administrator account information (Username and Password) – your WebLogic user name and password.

9 Configure e-mail notifications for SySAM events.

The SySAM notification window prompts you to configure the DI Suite for e-mail notification. When configuration is enabled, you receive information about license management events that require attention. Select Yes and either accept the default values that are supplied, or enter new values for the following:

- SMTP server host name – the Simple Mail Transfer Protocol (SMTP) host to use for routing e-mail notifications.
- SMTP server port number – the port number to use for contacting the SMTP host.
- Sender e-mail – the return e-mail address to which notification replies are sent.
- Recipient e-mail – the e-mail addresses to which notifications are sent.
- Message severity for e-mail alerts – the minimum severity level that must exist before an e-mail notification is sent.

If you choose not to have e-mail alerts or severity messages logged, select No. Click Next.

10 Review the installation summary.

The installer displays the selections you have made. Review the information, and click Next.

11 Complete the installation.

If the software is installed successfully, a final window appears, indicating a successful installation. It also advises you to read the configuration guides for configuration information, and the release bulletin for last-minute information about the Sybase DI Suite, and check for software updates on the Sybase download Web page at http://www.sybase.com/downloads.

Click Finish to exit the installer.

If you encounter errors during installation, check the *di_log.txt* file in the *installation directory*, to see a record of the installation process and to troubleshoot the errors.

After successful installation:

- Check for a valid installation of components. See "Check for a valid installation" on page 35.
- Configure the installed components. See "Configure individual components" on page 43.

Installing additional components

To install additional DI Suite components and subcomponents, after you have completed an initial installation, run the DI Suite setup program and select additional components to install. Components that are already installed, are identified as `(installed)` on the installer window that provides custom selection. Follow the installation steps described in "Installing in GUI mode" on page 21.

Installing accessory subcomponents

DI Suite supports distributed installation of its subcomponents. Each distributed installation consists of a base subcomponent and accessory subcomponents. For example, Replication Server is the base subcomponent and Replication Agent and DirectConnect are accessory subcomponents of Sybase Replication.

Table 3-4 provides a list of the base and accessory subcomponents.

Table 3-4: Base and accessory subcomponents

DI Suite components	Base components	Accessory components
Sybase Replication	Replication Server	Replication Agents DirectConnect
Sybase Real-Time Events	Replication Server RepConnector Server	Replication Agents
Sybase Data Federation	Grid Server	Data Grid Access Server Share Server Firewall Proxy Server Command-Line Client

In the Standard Edition, the Replication Agent and ASE Active Messaging are the only accessory subcomponents that can be installed on a different machine.

Licenses

Licenses for accessory subcomponents are available as a part of the DI Suite component license. If you have already installed the base subcomponent, the installer allows you to install only the accessory subcomponents.

For the Standard Edition, the licenses for Replication Agent and ASE Active Messaging accessory subcomponents are included with the Sybase Replication or Sybase Real-Time Events installation in the *installation_ directory/DI_Standard_Accessory_Licenses* folder. Copy these licenses to the machine on which you are installing the accessory subcomponents.

Installation recommendations

For installation recommendations, see Chapter 8, “Typical Deployment Scenarios.”

Installation instructions

Before installing any accessory subcomponents, make sure you have installed the corresponding base subcomponent using a served license on a different machine. Run the DI Suite installer, provide the following license information, and follow the steps provided in “Installing in GUI mode” on page 21.

In the SySAM license window:

- For accessory subcomponents of the individual DI Suite components, select the Use Previously Deployed License server option to point to the license server, which contains the base subcomponent license.
- For accessory subcomponents of the Standard Edition, select the Specify License Keys option, and specify the folder where you have copied the license file.

Installing in console mode

To run the installer without the GUI, launch the installer in console mode.

The steps for installing components in console mode are the same as those described in “Installing in GUI mode” on page 21, except that you run the installer from the command line using the setup -console command.

Enter the following command:

```
./setup -is:javaconsole -console
```

The installation program starts and displays the Welcome message.

The flow of the installation is identical to a GUI installation, except that the display is written to a terminal window and you enter responses using the keyboard. See “Installing in GUI mode” on page 21.

Installing using a response file

Perform silent installation (sometimes referred to as an “unattended installation”) by running the installer and providing a response file that contains answers to all the installer questions.

There are two ways to create a response file for the installer; using record mode or template mode.

Creating a response file using record mode

In this mode, the installer performs an installation of the product and records all your responses and selections in the specified response file. You must complete the installation to generate a response file. To create a response file, enter:

```
./setup -options-record responseFileName
```

where *responseFileName* is the absolute path of the file name you choose for the response file.

You can also use the console mode to generate a response file without using the graphical interface. Enter the following:

```
./setup -is:javaconsole -console -options-record responseFileName
```

These commands result in:

- An installation of DI Suite components on your computer
- A response file containing all of your responses from the installation

If you use this response file for a silent installation, the resulting installation is identical to the one from which the response file was created; the same installation location, same feature selection, and all the same remaining information. The response file is a text file that you can edit to change any responses before using it in any subsequent installations.

Creating a response file using template mode

In this mode, the installer creates a response file containing commented-out values for all required responses and selections. To create this template file, enter:

```
./setup -is:javaconsole -options-template responseFileName
```

where *responseFileName* is the file name you choose for the response file. When specifying the response file name, include the full directory path of its location.

To use this response file for a silent installation, you must manually edit the template with the values you want to use during installation.

Installing interactively using a response file

An interactive installation using a response file allows you to accept the default values from the response file, or to change any of those values for the specific installation. This is useful when you have multiple similar installations that have minor differences that you want to change at installation time.

Enter the following at the command line:

```
./setup -options responseFileName
```

where *responseFileName* is the file name containing the installation options you chose. When specifying the response file name, include the full directory path of its location.

Installing in silent mode

A silent-mode installation allows you to install the product with all responses being taken from the response file that you have set up. There is no user interaction. This is useful when you want multiple identical installations, or you want to automate the installation process.

Enter the following at the command line:

```
./setup -is:javaconsole -silent -options
responseFileName -W SybaseLicense.agreeToLicense=true
```

where *responseFileName* is the absolute path of the file name containing the installation options you chose. The `-W` option specifies that you agree with the Sybase License Agreement text.

Except for the absence of the GUI screens, all actions of the installer are the same, and the result of an installation in silent mode is exactly the same as one performed in GUI mode with the same responses.

Command line options

Table 3-5 lists the command line options that you can use when installing DI Suite components in console mode, or using a response file.

Table 3-5: Command line options

Option	Description
-console	Runs the installer in console mode. To view installation messages, use -is:javaconsole with this option.
-is:javaconsole	Displays the Java console during installation. This has no effect on the mode in which the installer runs.
-is:javahome *Java home directory*	Indicates that the installer or uninstaller uses the specified JVM rather than the default. You can specify the home directory for only version 1.4.x.
-is:tempdir *directory*	Sets the path to the temporary directory (*directory*) to which the installer should write its temporary files. If the specified directory does not exist or is not a directory, the installer uses the system *temp* directory instead, and no error message is provided.
-log !*filename*	Initializes logging for the installer, where *filename* is the name of a file to save the log information. If you specify "!" without a file name, the default log file name is used.
-options-template *responseFileName*	Automatically generates a response/options "template" type file (*responseFileName*) that you can use to provide user input during installation.
-options-record *responseFileName*	Automatically generates a response/options "record" type file *responseFileName* after the completion of the installation or uninstallation.
-options *responseFileName*	Specifies that a response/options file (*responseFileName*) be used to execute the installation/uninstallation, which contains command line options, one command per line, that set specified properties for the installation. A response/options file is usually used when a silent installation is run (see the next option).
-silent	Specifies to install or uninstall the product in silent mode, where the installation/uninstallation is performed with no user interaction. Use this option with -is:javaconsole option.
-W *beanID.property name.subproperty nam>=value*	Specifies properties to the installer. Use this option to agree to the Sybase license conditions during a silent installation.

Option	Description
-G *globalWizardProperty = "value"*	Sets the global wizard properties on the command line or in a *responseFile*. This option sets the expected response from the end user during silent installation or uninstallation. This option must include at least one argument. These are the *globalWizardProperty="value"* options you can specify: • replaceExistingResponse="yes | no | yesToAll | noToAll" Set this to store the end-user response whether to replace a file that currently exists on their system with the one being installed. • replaceNewerResponse="yes | no | yesToAll | noToAll" Set this to store the end-user response whether to replace a file that currently exists on their system with the one being installed if the existing file is newer than the file being installed. • removeExistingResponse="yes | no | yesToAll | noToAll" Set this to store the end-user response to whether to remove a file that currently exists on their system. • removeModifiedResponse= "yes | no | yesToAll | noToAll" Set this to store the end-user response whether to remove a file that has been modified since installation. • overwriteJVM="yes | no | cancel" Set this to determine whether to overwrite "*_jvm*" directory, if it already exists on the target system. The JVM Resolution bean looks for the value of this property which, if set to "no" or "cancel" prevents the directory from being overwritten.

Note When using the command line option, specify the full path, including the file name, for the *responseFileName*.

CHAPTER 4

Post-Installation Tasks

This chapter describes the post-installation tasks you must perform after installing the DI Suite components, or DI Suite Standard Edition.

Post-installation tasks

After installing the DI Suite components:

- "Check for a valid installation" on page 35
- "Configure individual components" on page 43

Check for a valid installation

This section describes how to verify a valid and successful installation of DI Suite components.

Sybase Replication

Perform the following tasks to check if the Sybase Replication component has been successfully installed.

Replication Server

To verify that the Replication Server is installed successfully:

1 Create and start the sample Replication Server.

   a Go to the $SYBASE directory and enter:

```
source SYBASE.csh
```

   b Go to the *$SYBASE/REP-15_0/install* directory and enter:

```
./rs_init -r ../samp_repserver/SAMPLE_RS.res
```

   The sample Replication Server starts.

2 Log in to Replication Server from the command prompt using isql commands with the *sa* user name. If the installation is successful, you can connect to the Replication Server using isql.

```
isql -Usa -P -SSAMPLE_RS
1>admin who
2>go
```

Note admin who displays the newly created connection.

Logging in to Replication Server is an easy way to find out if Replication Server is running. If you can successfully log in to Replication Server and find it running, then the installation is successful.

Replication Agent

To verify that Replication Agent is installed successfully:

Go to the $SYBASE directory and check if the following directories and files exist:

- *_jvmrax*
- *installed*
- *RAX-15_0*
  - *ASA-9_0*
  - *bin*
  - *classes*
  - *config*
  - *JRE-1_4_2*
  - *lib*
  - *scripts*
  - *sysam*
  - *ThirdPartyLegal*
- *SYSAM-2_0*
  - *bin*
  - *licenses*
  - *log*
- *uninstall*

    - *RAX-15_0*
- *log.txt*
- *SYBASE.sh*
- *SYBASE.csh*
- *SYBASE.env*

If all these directories and files exist, then your Replication Agent installation is successful.

DirectConnect

To verify that DirectConnect is installed successfully:

1 Create a DirectConnect server.

   a Go to the *$SYBASE/DC-12_6/bin* directory and enter:

```
AddServer server_name port_number
```

   where *server_name* is the name of the new DirectConnect server and *port_number* is the port on which the server listens. The AddServer utility creates the necessary entries in the *interfaces* file before starting the DirectConnect server.

   The command line displays that the new server has been started and is ready for connections.

   b To set the environment variables, go to the *$SYBASE/DC-12_6* directory and enter:

```
source DC_SYBASE.csh
```

2 Verify that the server is set up properly. Using isql, enter:

```
isql -Sserver_name -Usa -P

1>exec adm_version
2>go
```

If DirectConnect is successfully installed, this command displays the product name, version, platform, and release date along with other information.

Note To verify if DirectConnect for Oracle (DCO) is installed successfully, first use the DCOConfig utility in the *DCO-12_6/install* directory to configure and start the DCO. Then use isql to the configured and started DCO with a valid Oracle user ID and password. For details on how to configure and start a DCO, see the *Sybase Enterprise Connect Data Access Option for Oracle 12.6 Server Administration and User's Guide*.

Sybase Search

To check for a valid installation of Sybase Search:

1 Start the Search servers.

- If you have performed a full installation of Sybase Search:

  On Sun Solaris:

  1 Go to the *$SYBASE/Search-3_2/OmniQ/bin* directory and enter:

  ```
  . ./env.sh
  ./sysearch64.sh start 1
  ```

  2 Go to the *$SYBASE/Search-3_2/Hyena/bin* directory and enter:

  ```
  ./Hyena64.sh start
  ```

  On IBM AIX:

  1 Go to the *$SYBASE/Search-3_2/OmniQ/bin* directory and enter:

  ```
  . ./env.sh
  ./sysearch32.sh start 1
  ```

  2 Go to the *$SYBASE/Search-3_2/Hyena/bin* directory and enter:

  ```
  ./Hyena32.sh start
  ```

- If you have performed a custom installation of Sybase Search, you must start the various Search servers.

  1 Go to the *$SYBASE/Search-3_2/OmniQ/bin* directory and start the hub container.

    On Sun Solaris:

    ```
    . ./env.sh
    ./sysearch64.sh start 1
    ```

    On IBM AIX:

    ```
    . ./env.sh
    ./sysearch32.sh start 1
    ```

  2 Go to the *$SYBASE/Search-3_2/OmniQ/bin* directory and start the satellite container:

    On Sun Solaris:

    ```
    . ./env.sh
    ./sysearch64.sh start 2
    ```

    On IBM AIX:

    ```
    . ./env.sh
    ./sysearch32.sh start 2
    ```

  3 Go to the *$SYBASE/Search-3_2/Hyena/bin* directory and start the Web administration server:

    On Sun Solaris:

    ```
    ./Hyena64.sh start
    ```

    On IBM AIX:

    ```
    ./Hyena32.sh start
    ```

2 Invoke the Web administration console:

  a Start Sybase Central.

    1 Go to the $SYBASE directory and enter:

    ```
    source SYBASE.csh
    ```

    2 Go to the $SYBASE directory and enter:

    ```
    ./startdsa
    ```

  b In the left navigation pane, click Data Services Administrator.

c Select the Sybase Search tab displayed in the right pane of the Sybase Central screen.

d Right-click Web Administration Server and select Open. The Sybase Search 3.2 administration page displays.

Note The default address of the Web Administration Server is *http://localhost:8111/omniq*. Replace *localhost* with the host name on which the Web Administration Server is running, if Sybase Search is installed on a different host. See the Data Services Administrator online help for information on how to change the Web address.

e Enter the administrator password and click Login. The Sybase Search Home Page appears.

3 On the Sybase Search 3.2 Home Page, click the System tab. If the installation is successful, you can view the environment details, memory usage, and events for all installed containers within the Sybase Search installation.

Sybase Data Federation

To check for a valid installation of Sybase Data Federation:

1 Start the Data Grid Server.

Go to the *$SYBASE/DF-7_1* directory and enter:

```
./grid-server --start
```

2 Invoke the Web administration console:

a Start Sybase Central.

Go to the $SYBASE directory and enter:

```
./startdsa
```

b In the left navigation pane, click Data Services Administrator.

c Select the Sybase Data Federation tab displayed in the right pane of the Sybase Central screen.

d Right-click Grid Server and select Open. The Create Grid Domain screen displays.

Note The default address of the Avaki Data Grid Web console is *https://localhost:8443/avaki*. You must replace *localhost* with the name of the host where the Grid Server is running, if Data Federation is installed on a different host. See the Data Services Administrator online help for information on how to change the Web address.

3 In the Create Grid Domain screen, provide a grid domain name for your domain. Accept the default grid domain controller connect port and click Submit.

4 The Avaki Data Grid login screen appears. Log in to the Avaki environment using Administrator as both the user name and password. Click Sign in.

If your installation is valid and successful, the Avaki Data Grid page appears.

Sybase Real-Time Events

Perform the following tasks to check if the Sybase Real-Time Events components have been successfully installed.

RepConnector

To verify the RepConnector installation for your application server:

- For EAServer JMS:

  Go to *$SYBASE/EAServer* and check if the *repra* directory exists under it. If RepConnector is installed successfully, you see the *repra* directory.

- For BEA Weblogic JMS:

  Go to the *Weblogic_installation_directory* and check if the *repra* directory exists under it. If RepConnector is installed successfully, you see the *repra* directory.

Replication Server

To verify if the Replication Server subcomponent has been successfully installed, see “Replication Server” on page 35.

Replication Agent

To verify if the Replication Agent subcomponent has been successfully installed, see “Replication Agent” on page 36.

Sybase ASE Active Messaging

To verify that Sybase ASE Active Messaging has been installed successfully:

1. Make sure you have the message bus software, such as IBM WebSphere MQ, TIBCO EMS and EAServer JMS installed in your environment, and you have already:
   - For IBM WebSphere MQ, set the environment variables to include *$IBM_MQ/lib* to LD_LIBRARY_PATH.

     Note *IBM_MQ* is the installation directory for IBM WebSphere MQ.

   - For TIBCO EMS and EAServer JMS, set the $SYBASE_JRE variable to point to *$SYBASE/Shared/jre142*, so that the JVM can start when you enable real-time messaging.
2. Make sure the ASE Active Messaging subcomponent has been installed successfully:
   - For IBM WebSphere MQ, go to the *$SYBASE/ASE-15_0/lib* directory and check if the *libsybibmmq.so* file exists.
   - For TIBCO EMS and EAServer JMS, go to the *$SYBASE/ASE-15_0/lib* directory and check if the following files exists.
     - *jrtms.jar*
     - *libshmemrtds.so*
3. Make sure Adaptive Server is up and running.
4. Go to the *$SYBASE/ASE-15_0/scripts* directory. Using isql, enter:

   ```
   isql -Usa -P –Sserver_name -i installmaster
   isql -Usa -P -Sserver_name -i installmsgsvss
   isql -Usa -P -Sserver_name -i instmsgs.ebf
   ```

   Note The instmstr and installmaster scripts return system procedures to their original version, installmsgsvss script installs system stored procedures for real-time messaging services, and instmsgs.ebf script brings your Adaptive Server messages up to the correct level.

5. If you have installed the ASE Active Messaging subcomponent on top of ASE 12.5.4 ESD#3, go to the *$SYBASE/ASE-12_5/scripts* directory using a command line. Using isql, enter the following for IBM WebSphere MQ and TIBCO EMS:

   ```
   isql -Usa -P -Sserver_name -i installmsgsvss
   ```

6 Restart ASE.

7 Go to the $SYBASE directory. Using isql, enter:

```
isql –Sserver_name –Usa -P
```

8 To configure the server to use real-time messaging, enter:

- For IBM WebSphere MQ:

```
1>sp_configure "enable real time messaging", 1,
"ibm_mq"
2>go
```

- For TIBCO EMS:

```
1>sp_configure "enable real time messaging", 1,
"tibco_jms"
2>go
```

- For EAServer JMS:

```
1>sp_configure "enable real time messaging", 1,
"eas_jms"
2>go
```

Check the return status value to verify if real-time messaging has been successfully enabled. A return status value of 0 means success.

Sybase ETL

Perform the following tasks to check if the Sybase ETL Server has been successfully installed.

ETL Server

To verify that ETL Server has been installed successfully:

Go to the *$SYBASE/SybaseETLServer* directory and enter the following command:

```
GridNode.sh -ll
```

If your installation is valid and successful, a page displaying the license information appears.

Configure individual components

After validating a successful installation, configure the components using the procedures described in this section. To obtain more information on each component, access the documentation for each component from:

- Sybase Product Manuals Web site at http://www.sybase.com/support/manuals.
- Getting Started CD or the DI Suite component-related SyBooks CD provided with the installation package.

Sybase Replication

Table 4-1 lists the configuration steps and the related documents that describe them.

Table 4-1: Configuration information for Sybase Replication

Configuration steps	Where to find instructions
1. Set up a heterogeneous replication system.	
Know how to set up a heterogeneous replication system and the various components required for such a system.	Chapter 1, "Sybase Replication System Overview" in the *Replication Server 15.0 Heterogeneous Replication Guide*
2. Set up the primary and replicate data servers.	
a. Set up a non-Sybase primary data server.	
Understand issues and considerations specific to non-Sybase primary data server in a Sybase replication system.	"Primary data servers," in Chapter 4, "Data Server Issues" in the *Replication Server 15.0 Heterogeneous Replication Guide*
b. Set up a replicate data server.	
Understand issues and considerations specific to replication in a heterogeneous replication system.	"Replicate data servers," in Chapter 4, "Data Server Issues" in the *Replication Server 15.0 Heterogeneous Replication Guide*
3. Configure Replication Server.	
a. Plan and prepare your replication system.	Chapter 1, "Preparing to Install and Configure Replication Server" in the *Replication Server 15.0.1 Configuration Guide*
b. Collect and record the information you need to prepare your replication system.	Appendix A, "Worksheets" in the *Replication Server 15.0.1 Configuration Guide*
c. Configure Replication Server.	Chapter 2, "Configuring Replication Server and Adding Databases with rs_init" in the *Replication Server 15.0.1 Configuration Guide*
4. Configure Replication Agent for non-Sybase data server.	

Configuration steps	Where to find instructions
a. Prepare to configure Replication Agent.	"Completing the installation and Setup worksheet," in Chapter 1, "Preparing for Installation" in the *Replication Agent 15.0 Installation Guide*
b. Create Replication Agent for your data server instance.	"Creating the Replication Agent instance," in Chapter 2, "Setting Up and Configuring Replication Agent" in the *Replication Agent 15.0 Administration Guide*
c. Create an entry for the Replication Agent in the interfaces file.	"Using the Replication Agent administration port," in Chapter 2, "Setting Up and Configuring Replication Agent" in the *Replication Agent 15.0 Administration Guide*
d. Configure connectivity to the primary data server, Replication Server, and RSSD.	"Setting up Replication Agent Connectivity," in Chapter 2, "Setting Up and Configuring Replication Agent" in the *Replication Agent 15.0 Administration Guide*
e. (For SQL Server) Set up the SQL Server JDBC driver.	"Replication Agent communications," Chapter 2, "Replication Agent for Microsoft SQL Server" in the *Replication Agent 15.0 Primary Database Guide*
f. (For Oracle) Set up the Oracle JDBC driver.	"Replication Agent connectivity," in Chapter 3, "Replication Agent for Oracle" in the *Replication Agent 15.0 Primary Database Guide*
g. (For DB2 UDB) Configure DB2 UDB primary database and JDBC driver.	"DB2 Universal Database Requirements," in Chapter 1, "Replication Agent for UDB" in the *Replication Agent 15.0 Primary Database Guide*
h. Test network connectivity.	Section "Testing network connectivity," in Chapter 2, "Setting Up and Configuring Replication Agent" in the *Replication Agent 15.0 Administration Guide*
i. (For SQL Server and Oracle) Grant necessary permissions to the Replication Agent user ID.	"Replication Agent permissions," in Chapters 2 and 3 in the *Replication Agent 15.0 Primary Database Guide*
j. Mark a table in the primary database for replication.	"Marking objects in the primary database," in Chapter 2, "Setting Up and Configuring Replication Agent" in the *Replication Agent 15.0 Administration Guide*

Configuration steps	Where to find instructions
k. Verify that database objects are replicated in the correct character case.	"Character case of database object names," in Chapters 1, 2, and 3 in the *Replication Agent 15.0 Primary Database Guide*
l. Verify the data server's datatype compatibility with Replication Server.	"Datatype compatibility," Chapters 1, 2, and 3 in the *Replication Agent 15.0 Primary Database Guide*
5. Configure DirectConnect, if replicating to a non-Sybase data server.	
a. Understand the configuration overview and high-level steps.	Chapter 3, "Installation and Configuration Overview" in the *Enterprise Connect Data Access 12.6.1 Installation Guide*
b. Set up and configure DirectConnect server.	
i. Create a new DirectConnect server.	Chapter 5, "Installing DirectConnect" in the *Enterprise Connect Data Access 12.6.1 Installation Guide*
ii. Issue the AddServer command.	Chapter 5, "Installing DirectConnect" in the *Enterprise Connect Data Access 12.6.1 Installation Guide*
iii. Use DirectConnect Manager to configure the server and services.	"Using DirectConnect Manager," in Chapter 7, "Installing DirectConnect Manager" in the *Enterprise Connect Data Access 12.6.1 Installation Guide*
iv. Create a new access service.	"Installing DirectConnect," in Chapter 5 and 7 in the *Enterprise Connect Data Access 12.6.1 Installation Guide*
v. Configure DSNs.	"Installing DirectConnect," in Chapter 5, "Installing DirectConnect" and "Installing DirectConnect Manager," in Chapter 7, "Installing DirectConnect Manager" in the *Enterprise Connect Data Access 12.6.1 Installation Guide*
vi. Use DirectConnect Manager to create and configure the access services.	"Installing DirectConnect Manager," in Chapter 7, "Installing DirectConnect Manager" in the *Enterprise Connect Data Access 12.6.1 Installation Guide*
vii. Configure Client Connectivity.	Chapter 8, "After Installation" in the *Enterprise Connect Data Access 12.6.1 Installation Guide*

Configuration steps	Where to find instructions
c. Set up and configure DirectConnect access service.	Chapter 2, “Configuring the Access Service Library for DirectConnect” and Chapter 3, “Configuring Access Services to Work with Related Products” in the *Enterprise Connect Data Access Option 12.6.1 User's Guide for Access Services*
6. (Optional) Test sample replication system configuration.	
a. View examples of several replication system configurations with heterogeneous or non-Sybase data servers and understand the issues involved with each configuration.	Chaper 6, “Replication System Configuration Examples” in the *Replication Server 15.0 Heterogeneous Guide*
b. Test a heterogeneous replication test environment to verify the installation and configuration of Replication Agent software and the basic function of other components in your replication system.	“Replication Agent for <data server> setup test scripts,” in Chapters 1, 2, and 3 in the *Replication Agent 15.0 Primary Database Guide*

Sybase Search

Table 4-2 lists the configuration steps and the related documents that describe them.

Table 4-2: Configuration information for Sybase Search

Configuration steps	Where to find instructions
1. Set up Sybase Search system.	“Setting Up Sybase Search,” in Chapter 2, “Administering Sybase Search” in the *Sybase Search 3.2 Administration and User's Guide*
2. Configure Sybase Search.	Chapter 3, “Configuring Sybase Search” in the *Sybase Search 3.2 Administration and User's Guide*
3. (Optional) Set key configuration parameters for the Hyena servlet container. Skip this step if you are integrating Sybase Search with a J2EE application server, such as Apache Tomcat.	Chapter 4, “Configuring Web Administration” of the *Sybase Search 3.2 Administration and User's Guide*
4. (Optional) Develop, configure, and use custom HTTP handlers, filters, parsers, and text splitters for use with Sybase Search.	Chapter 5, “Customizing Sybase Search” in the *Sybase Search 3.2 Administration and User's Guide*

Sybase Data Federation

Table 4-3 lists the configuration steps for setting up a single Data Federation domain and the related documents that describe them. After you set up a new domain, start the Grid Domain Controller (GDC), configure it, and initialize the domain before starting the other servers.

Table 4-3: Configuration information for Sybase Data Federation

Configuration steps	Where to find instructions
Before you start Data Federation servers:	
1. Determine whether you need to set the host name for any Data Federation servers in your grid domain.	"Setting a server's host name or IP address," in Chapter 2, "Installing Avaki software" in the *Sybase Avaki EII Administration Guide*
2. (Optional) Use self-signed SSL certificates.	"Generating self-signed SSL certificates," in Chapter 2, "Installing Avaki software" in the *Sybase Avaki EII Administration Guide*
3. Start the GDC. If you discovered any port conflicts on the GDC machine during your planning, resolve them before you initialize the grid domain.	"Starting a primary GDC," in Chapter 2, "Installing Avaki software" in the *Sybase Avaki EII Administration Guide*
After you start GDC:	
1. Install an SSL certificate on the GDC.	"Installing an SSL certificate," in Chapter 2, "Installing Avaki software" in the *Sybase Avaki EII Administration Guide*
2. Configure the GDC.	"Configuring a primary GDC," in Chapter 2, "Installing Avaki software" in the *Sybase Avaki EII Administration Guide*
3. If the GDC will host any database connectors, install JDBC drivers for the databases you plan to use.	"Installing database JDBC drivers," in Chapter 3, "Setting up Avaki servers and clients" in the *Sybase Avaki EII Administration Guide*
4. (Optional) Include a secondary GDC in your domain.	"Starting a secondary GDC" in Chapter 2, "Installing Avaki software" in the *Sybase Avaki EII Administration Guide*
5. (Optional) Start and configure other servers.	• "Setting up grid servers," in Chapter 3, "Setting up Avaki servers and clients" in the *Sybase Avaki EII Administration Guide* • "Setting up share servers," in Chapter 3, "Setting up Avaki servers and clients" in the *Sybase Avaki EII Administration Guide* • "Setting up data grid access servers," in Chapter 3, "Setting up Avaki servers and clients" in the *Sybase Avaki EII Administration Guide*
6. (Optional) Interconnect two Data Federation domains.	"Setting up proxy servers and routing tables" in Chapter 3, "Setting up Avaki servers and clients" in the *Sybase Avaki EII Administration Guide*
After you set up servers:	
1. Set up user accounts.	

Configuration steps	Where to find instructions
a. Import user accounts from an LDAP or NIS service.	"Managing authentication services," in Chapter 5, "Managing authentication services, users, and groups" in the *Sybase Avaki EII Administration Guide*
b. Create user accounts in the Data Federation domain.	"Managing users," in Chapter 5, "Managing authentication services, users, and groups" in the *Sybase Avaki EII Administration Guide*
2. Set up administrative accounts in Avaki.	"Setting up administrative accounts," in Chapter 2, "Installing Avaki software" in the *Sybase Avaki EII Administration Guide*
3. If your domain includes a Data Grid Access Server, create NFS clients, CIFS clients, or both.	• "Setting up NFS clients," in Chapter 3, "Setting up Avaki servers and clients" in the *Sybase Avaki EII Administration Guide* • "Setting up CIFS clients" in Chapter 3, "Setting up Avaki servers and clients" in the *Sybase Avaki EII Administration Guide*
4. (Optional) If you are an advanced user, to issue commands using command line interface on any grid server or standalone on any other machine.	"Setting up command clients" in Chapter 3, "Setting up Avaki servers and clients" in the *Sybase Avaki EII Administration Guide*

Sybase Real-Time Events

You can use RepConnector or Sybase ASE Active Messaging subcomponents, to capture data changes and propagate them to standard messaging architectures. Configuration steps for these subcomponents are listed separately in Table 4-4 and Table 4-5.

RepConnector

Table 4-4 lists the configuration steps for RepConnector and the related documents that describe them.

Table 4-4: Configuration information for RepConnector

Configuration steps	Where to find instructions
1. Prepare your system for RepConnector messaging.	
Know how to set up a RepConnector messaging system and the high-level configuration steps.	• Chapter 1, "Overview" in the *RepConnector 15.0.1 Configuration and User's Guide* • Chapter 2, "Overview of RepConnector Configuration" in the *RepConnector 15.0.1 Configuration and User's Guide*
2. Configure Replication Server for RepConnector.	

Configuration steps	Where to find instructions
a. Add an entry for RepConnector in the Replication Server interfaces file.	Chapter 3, “Configuring Replication Server for RepConnector” in the *RepConnector 15.0.1 Configuration and User's Guide*
b. Verify that Replication Server is up and running.	
c. Create a database connection in Replication Server to communicate with RepConnector.	
d. Create a replication definition in Replication Server to identify the data to be replicated.	
e. Create a subscription in Replication Server to identify the location to which the data will be replicated.	
f. Resume the database connection.	
3. Configure your messaging system.	Chapter 4, “Configuring the Messaging System” in the *RepConnector 15.0.1 Configuration and User's Guide*
4. Obtain information on how to get started using RepConnector Manager to create, configure, and manage RepConnector connections.	Chapter 5, “Getting Started with RepConnector Manager” in the *RepConnector 15.0.1 Configuration and User's Guide*
5. Configure the RepConnector environment and create a RepConnector connection.	Chapter 6, “Configuring RepConnector” in the *RepConnector 15.0.1 Configuration and User's Guide*
6. Use RepConnector Manager to manage your RepConnector connections.	Chapter 7, “Managing RepConnector Connections” in the *RepConnector 15.0.1 Configuration and User's Guide*
7. Learn about the syntax for the ratool utility, including all command line flags and command options.	Chapter 8, “Using the ratool Utility” in the *RepConnector 15.0.1 Configuration and User's Guide*
8. Create customized sender and message formatter processors.	Chapter 10, “Customizing the Sender and Formatter Processors” in the *RepConnector 15.0.1 Configuration and User's Guide*
9. Customize the message generator for use with TIBCO Active Enterprise for wired message format.	Chapter 11, “Customizing the MessageGenerator for TIBCO AECM” in the *RepConnector 15.0.1 Configuration and User's Guide*
10. Collect and record the configuration information for your RepConnector environment.	Appendix A, “Configuration Worksheets” in the *RepConnector 15.0.1 Configuration and User's Guide*
11. (Optional) Troubleshoot the scenarios you may encounter while configuring the RepConnector environment.	Appendix B, “Troubleshooting” in the *RepConnector 15.0.1 Configuration and User's Guide*

Sybase ASE Active Messaging

Table 4-5 lists the configuration steps for Sybase ASE Active Messaging and the related documents that describe them.

Table 4-5: Configuration information for Sybase ASE Active Messaging

Configuration steps	Where to find instructions
1. Prepare your system for real-time messaging.	
a. Learn about the various components required for setting up real-time messaging with ASE messaging libraries.	Section, "Using RTDS with Adaptive Server Enterprise" in the *Sybase Real-Time Data Services 4.0 Installation and Release Bulletin*
b. Enable ASE for real-time messaging.	Section, "Configuring RTDS for Adaptive Server" in the *Sybase Real-Time Data Services 4.0 Installation and Release Bulletin*
c. Configure your installation to install system stored procedures for real-time messaging services.	Section, "Configuring RTDS for Adaptive Server" in the *Sybase Real-Time Data Services 4.0 Installation and Release Bulletin*
d. Set up IBM WebSphere MQ messaging software.	Section, "Configuring RTDS for Adaptive Server" in the *Sybase Real-Time Data Services 4.0 Installation and Release Bulletin*
e. Set up TIBCO EMS using the appropriate TIBCO Admin tool to create a queue and grant user permission.	TIBCO documentation.
f. Set up EAServer JMS using the appropriate EAS Admin tool to create a queue and grant user permission.	"Message queues," in Chapter 2, "Setting up the Message Service" in the *EAServer Java Messaging Services User's Guide*
2. Configure ASE for your messaging software.	
a. Configure ASE for MQ. **Note** No configuration is required for TIBCO EMS and EAServer JMS.	Section, "Configuring ASE for MQ" in the *Sybase Real-Time Data Services 4.0 Installation and Release Bulletin*
b. (Optional) Troubleshoot problems you may encounter while configuring real-time messaging with ASE.	Section, "Error messages" in the *Sybase Real-Time Data Services 4.0 Installation and Release Bulletin*

Sybase ETL

Table 4-6 lists the configuration steps and the related documents that describe them.

Table 4-6: Configuration information for Sybase ETL

Configuration steps	Where to find instructions
1. Select the default GRID engine to use for project execution.	"Customizing preferences," in Chapter 2, "Sybase ETL Development Desktop" in the *Sybase ETL 4.2 User's Guide*
2. Set up a GRID environment.	
a. Install ETL Server.	Chapter 3, "Installation" in the *Sybase Data Integration Suite Installation Guide*
b. (Optional) Configure and start ETL Server.	Appendix B of the *Sybase ETL 4.2 User's Guide*
c. (Optional) Select the default GRID engine to use for project execution.	"Customizing preferences" in Chapter 2, "Sybase ETL Development Desktop" in the *Sybase ETL 4.2 User's Guide*
d. Register engines in ETL Development. **Note** Embedded ETL Server installed with ETL Development on Windows is not GRID-enabled. Although this server displays in the Engine Monitor, if the same communication port is being used, do not select this server. This server will not accept any remote execution request.	"Using multiple engines to reduce job execution time," in Chapter 5, "Advanced Concepts and Tools" in the *Sybase ETL 4.2 User's Guide*
e. Enable jobs for execution in the GRID environment.	"Defining multi-engine jobs" in Chapter 5, "Advanced Concepts and Tools" in the *Sybase ETL 4.2 User's Guide*
f. Set up the connectivity to all your data sources and targets in all environments participating in GRID.	Vendor documentation

CHAPTER 5

Upgrading

This chapter describes how to upgrade DI Suite.

Upgrading Sybase Replication

This section describes the upgrade procedure for Sybase Replication, which includes procedures for upgrading Sybase Replication subcomponents such as Replication Server, Replication Agent, and DirectConnect.

Upgrading Replication Server

For information on how to upgrade Replication Server, see the *Release Bulletin for Sybase Replication Server 15.0.1* for your platform.

Upgrading Replication Agent

To upgrade Replication Agent:

1 Create a backup copy of the existing installation directory.

2 Install DI Suite 1.1 in the same installation directory as the existing version. This installs the current version of Replication Agent on your machine, without affecting the earlier version of Replication Agent.

For instructions on installing DI Suite, see Chapter 3, “Installation.”

3 Make sure Replication Agent has been successfully installed. To check for valid installation, see “Check for a valid installation” on page 35.

4 Upgrade from the earlier version of Replication Agent to the current version. For more information, see Appendix A of the *Sybase Replication Agent 15.0 Primary Database Guide*.

Upgrading DirectConnect

To upgrade DirectConnect:

1 Create a backup copy of the **.cfg* files available in the *$SYBASE/DCO-12_6/install* and *$SYBASE/DC-12_6* directories.

2 Shut down all DirectConnect servers.

3 Install DI Suite 1.1 in the same installation directory as the version from which you are upgrading. For instructions on installing DI Suite, see “Installing DI Suite components” on page 19.

Note In the case of DirectConnect for Oracle (DCO), if you intend to use the same server configurations as the existing one after upgrading, you need not run the DCOConfig script. This script needs to be run only when you define a new server.

4 During installation, if the installer prompts you with a message that certain files already exists on the system and is newer than the file being installed, and asks you if you want to replace these files, select the No to All option and proceed with the installation.

5 Make sure DirectConnect has been successfully installed. To check for valid installation, see “Check for a valid installation” on page 35.

Upgrading Sybase Search

This section describes the upgrade procedure for Sybase Search.

❖ **To upgrade Sybase Search**

1 Create a backup copy of the *$SYBASE/OmniQ/config* directory.

2 Install DI Suite 1.1 in the same installation directory as the version from which you are upgrading. For instructions on installing DI Suite, see "Installing DI Suite components" on page 19.

Note The current version of Sybase Search does not overwrite the earlier version as they are installed in two separate directories. This may lead to a port conflict when you try to run both versions simultaneously. However, to run both versions simultaneously, and to avoid the port conflict, change the port numbers. For more information, see Chapter 4, "Configuring Web Administration" of the *Sybase Search 3.2 Administration and User's Guide*. You may also uninstall the previous version of Sybase Search from your machine using the DI Suite uninstaller.

3 Make sure Sybase Search has been successfully installed. To check for valid installation, see "Check for a valid installation" on page 35.

4 Import indexed data from the earlier version of Sybase Search to the current version. To do so, create document stores and import the previously indexed documents from file systems and databases. For more information, see Chapter 2, "Administering Sybase Search," of the *Sybase Search Administration and User's Guide*.

Upgrading Sybase Data Federation

For information on how to upgrade Sybase Data Federation, see the *Release Bulletin for Sybase Avaki EII 7.1 (Data Federation)*.

Upgrading Sybase Real-Time Events

This section describes the upgrade procedure for Sybase Real-Time Events, which includes procedures for upgrading Sybase Real-Time Events subcomponents such as RepConnector and Sybase ASE Active Messaging.

Upgrading Sybase ASE Active Messaging

1 Before upgrading Sybase ASE Active Messaging, make sure the Adaptive Server Enterprise version installed on your machine is 12.5.4 ESD#3 or later, or ASE 15.0.1 ESD#1 or later.

2 Install DI Suite 1.1 in the same installation directory as the earlier version. The current version overwrites the earlier version.

For instructions on installing DI Suite, see “Installing DI Suite components” on page 19.

3 Make sure ASE Active Messaging has been successfully installed. To check for valid installation, see “Check for a valid installation” on page 35.

Upgrading RepConnector

To upgrade RepConnector:

1 Create a backup of the existing installation directory.

2 Install DI Suite 1.1 in the same installation directory as the earlier version. The current version of RepConnector overwrites the earlier version.

For instructions on installing DI Suite, see “Installing DI Suite components” on page 19.

3 Make sure RepConnector has been successfully installed. To check for valid installation, see “Check for a valid installation” on page 35.

4 Restart your Application Server.

If you are using EAServer, see the *EAServer Installation and Configuration Guide* for more information.

If you are using WebLogic, see the BEA documentation for WebLogic for more information.

CHAPTER 6

Migration

This chapter describes how to migrate from standalone products to DI Suite 1.1.

Migration overview

You can migrate from the following product versions to DI Suite 1.1:

- OmniQ 3.1
- Avaki
  - Avaki 6.2.1
  - Avaki 7.0
- RepConnector 12.5
- ASE Active Messaging
  - RTDS 3.1
  - RTDS 3.5
  - RTDS 4.0
- ETL
  - Tron 4.0
  - ETL 4.1

You *cannot* migrate these products to DI Suite 1.1:

- Replication Server
- DirectConnect
- Replication Agent

Migrating to Sybase Search

This section explains how to migrate OminQ 3.1 to DI Suite 1.1 Sybase Search. For information on how to upgrade, see “Upgrading Sybase Search” on page 55.

Migrating to Sybase Data Federation

This section explains how to migrate from an Avaki domain to DI Suite 1.1 Data Federation.

Before migrating to DI Suite 1.1 Data Federation, note that:

- If you are running Avaki 6.2.1 on IBM AIX or Sun Solaris, you must upgrade to Avaki 7.0 before upgrading to DI Suite 1.1 Data Federation. For instructions on upgrading from Avaki 6.2.1 to Avaki 7.0, see the *Sybase Avaki EII Administration Guide.*
- If you are running Avaki 7.0 on IBM AIX or Sun Solaris, you can directly ugrade to DI Suite 1.1 Data Federation. For information on the upgrade procedure, see the *Release Bulletin for Sybase Avaki EII 7.1 (Data Federation).*

Download the Avaki version you want to upgrade to from the Sybase Product Download Center (SPDC) at https://sybase.subscribenet.com.

Note Avaki Studio is now distributed as an integrated component of Sybase WorkSpace, which is available by itself or as part of the DI Suite. Within WorkSpace and the DI Suite, Avaki Studio is called Data Federation Studio.

For information on the upgrade procedure, see the *Release Bulletin for Sybase Avaki EII 7.1 (Data Federation).*

Migrating to Sybase Real-Time Events

This section provides information on how to migrate RepConnector and ASE Active Messaging standalone versions to DI Suite 1.1.

RepConnector

This section explains how to upgrade RepConnector 12.5 to DI Suite 1.1 Sybase Real-Time Events.

❖ **To upgrade:**

1 Install RepConnector using the DI Suite1.1 installer.

2 To upgrade the RepConnector Server, replace the *.prop* files in the *repra/conf* directory with the *.prop* files from the previously installed RepConnector installation directory. This enables you to access all the existing RepConnector connections. Check each connection to verify if any of the values need to be updated.

3 To upgrade RepConnector Manager, copy the *profile.xml* file available in the *repra/plugins/com.Sybase.connector.ui.15.0.0* directory to *sybase_workspace/database_management/eclipse/plugins/com.sybase.connector.ui.15.0.0* directory.

ASE Active Messaging

This section explains how to migrate RTDS versions 3.1, 3.5, or 4.0 to DI Suite 1.1 Sybase Real-Time Events.

If you are running RTDS 3.1, 3.5, or 4.0, you can directly upgrade to DI Suite 1.1 Sybase Real-Time Events.

❖ **To upgrade**

1 DI Suite 1.1 supports the following ASE versions. Make sure you have any one of these ASE versions installed on your machine:

- ASE 12.5.4 ESD#3 or later
- ASE 15.0.1 ESD#1or later

2 Install the ASE Active Messaging subcomponent of Real-Time Events using the DI Suite 1.1 installer.

Migrating to Sybase ETL

This section explains how to directly migrate the following supported versions of ETL to DI Suite 1.1.

- ETL 4.x
- Tron 4.x, if none of the following features are used:
  - UTL projects
  - XML via SQL Transformer component
  - XML via XSLT Transformer component
  - Job Guard Calculation
  - Job project pre or post-processing
  - Global variables

❖ **Upgrading Sybase ETL Server**

1 Use the DI Suite installer to install the new version of Sybase ETL Server in a directory different than the earlier installation.

2 At the command prompt, shut down any running GridNode:

```
./GridNode.sh --shutdown
```

3 Verify that the GridNode has shut down successfully:

```
ps -e | grep GridNode
```

If the GridNode is still running, kill the process.

4 Copy the *.ini* files from the *etc* directory in the earlier installation to the new installation directory.

5 Start the new ETL Server.

- To start the ETL Server directly, enter:

```
GridNode.sh
```

- To start the ETL Server as a service, enter:

```
GridNode --install
```

6 To verify whether the startup is successful, enter:

```
ps -e | grep GridNode
```

7 If GridNode is running, you can safely uninstall the older version of the Sybase ETL Server.

Note To reuse the *.odbc.ini* file that contains the ODBC data source definitions, create a backup of this file before uninstalling the older version of the ETL Server.

CHAPTER 7

Uninstallation

This chapter describes how to uninstall DI Suite components.

Preparing to uninstall

Before beginning the uninstallation process:

- Log in to your machine using an account with administrator privileges.
- Shut down all Sybase applications and processes.
- Determine the mode of uninstallation. You can invoke the uninstaller using either the GUI or console mode. Sybase recommends that you use the GUI mode.

Notes on the uninstallation of DI Suite components

Table 7-1 describes various uninstallation scenarios and expected behavior when you uninstall DI Suite components from the directory that contains other Sybase products, or vice versa.

Table 7-1: DI Suite uninstallation scenarios

Installation environment	Expected behavior	Recommendations, if any
Only DI Suite components are present.	DI Suite uninstaller: • Removes DI Suite component and its subcomponents. • Does not remove component-related DSA plug-ins.	None.
Sybase DI Suite components coexist with Sybase IQ 12.x.	Sybase IQ uninstaller: • Removes Sybase IQ, and the connectivity products installed with it. Removal of connectivity products can affect the working of DI Suite components. • Does not remove DI Suite components. DI Suite uninstaller: • Removes DI Suite component and its subcomponents. • Does not remove component-related DSA plug-ins. • Does not remove Sybase IQ installation but removes the connectivity products installed with it. Removal of connectivity products can affect the working of Sybase IQ.	Do not uninstall Sybase IQ, or reinstall DI Suite components after uninstalling Sybase IQ, or vice versa.
Sybase DI Suite components coexist with ASE.	ASE uninstaller: • Removes ASE but may make the DI Suite components inoperable. DI Suite uninstaller: • Removes component and its subcomponents. • Does not remove component-related DSA plug-ins.	Do not uninstall ASE, or reinstall DI Suite components after uninstalling ASE.

Installation environment	Expected behavior	Recommendations, if any
Sybase Real-Time Events ASE Active Messaging subcomponent coexists with ASE.	ASE uninstaller: • Removes ASE but may make the Sybase Real-Time Events component inoperable. DI Suite uninstaller: • Removes ASE messaging libraries. • Does not remove component-related DSA plug-in. • Does not affect ASE installation.	None.
Sybase DI Suite components coexist with Replication Server 15.0.x, DirectConnect 12.x, and Replication Agent 15.x.	Replication Server, DirectConnect, or Replication Agent uninstaller: • Removes these products, but may make the DI Suite components inoperable. DI Suite uninstaller: • Removes Sybase Replication and its subcomponents such as Replication Server, Replication Agent, and DirectConnect. • Does not remove component-related DSA plug-in. • Removes existing Replication Server 12.5.x.	Do not uninstall existing Replication Server 15.0.x, DirectConnect 12.x, or Replication Agent 15.x, or reinstall DI Suite components after uninstalling existing Replication Server, DirectConnect, or Replication Agent.

Uninstalling in GUI mode

1 Invoke the uninstaller.

Enter the following at the command line:

```
$SYBASE/uninstall/DI/uninstall
```

The Uninstaller Wizard Welcome window displays. Click Next.

2 Select the components or the subcomponents to remove. Click Next.

Note Uninstalling Replication Server or Replication Agent under the Replication component uninstalls these components under Real-Time Events. Similarily, uninstalling Replication Server or Replication Agent under the Real-Time Events component, uninstalls these components under Replication.

3 In the Uninstall Summary window, verify the summary information and if you are satisfied with your selections, click Next.

The selected components and its subcomponents are uninstalled, and all files associated with these components are removed.

Note You may be prompted to decide whether to remove shared files. Sybase recommends that you do not remove them.

4 When the uninstallation is complete, click Finish to exit the uninstaller.

Note After the uninstallation is complete, some files and directories remain. After moving files that you want to keep to another location, you can manually delete these directories.

Uninstalling in console mode

1 To uninstall DI Suite in console mode, enter:

```
$SYBASE/uninstall/DI/uninstall -console -is:javaconsole
```

The uninstall program starts.

2 Choose the components you want to uninstall and click OK. The selected components are uninstalled.

For a complete list of the available command line options you can use in console mode, see Table 3-5 on page 33.

CHAPTER 8

Typical Deployment Scenarios

This chapter discusses Sybase-recommended deployment scenarios for DI Suite components.

Sybase Replication deployment

Sybase Replication enables heterogeneous replication in your data integration environment. It accesses a variety of heterogeneous databases such as Oracle, Microsoft SQL Server, IBM DB2, Sybase ASE, and mainframe data sources, and replicates transactional data from a primary database to target databases in your enterprise.

Before installing Sybase Replication, have a clear understanding of the replication needs of your enterprise. Use the following options to determine the type of replication to enable, the type and number of databases to include in your replication system, and the size of your replication system:

- Unidirectional or bidirectional data replication across heterogeneous databases in your enterprise:
  - In unidirectional replication, data transactions are replicated one way; from a primary database to replicate databases.
  - In bidirectional replication, data transactions are replicated both ways; from a primary database to replicate databases and vice versa.

- Replication system setup options:
  - Replication system with Adaptive Server Enterprise (ASE) as both primary and replicate database.
  - Heterogeneous replication system with:
    - Adaptive Server as your primary or replicate database, and a non-Sybase database (such as DB2 Universal Database) as the other database.
    - Primary and replicate databases are both non-Sybase databases (for example, Oracle is the primary database and DB2 Universal Database is the replicate database).

    To implement a replication system with non-Sybase databases, besides the Replication Server, you must have two additional subcomponents—Replication Agent and DirectConnect—for each non-Sybase database.
  - Decide how many Replication Servers are required and which databases they will manage. A Replication Server can manage one or more databases. One Replication Server is adequate for small replication systems. Medium or large replication systems require one or more Replication Servers at each geographical site, to handle many databases or heavy transaction volumes.

Sybase Replication subcomponents

To set up heterogeneous replication in your environment, you can install any or all of these subcomponents:

- Replication Server – installs all Replication Server components, including Replication Monitoring Services and the Replication Manager plug-in. Replication Server enables distribution and synchronization of operational data in your enterprise.

  If both primary and replicate databases are ASE, you can implement a replication system using only Replication Server. The Replication Agent for ASE is a thread that is internal to the primary ASE.
- Replication Agents – installs Replication Agent software for Microsoft SQL Server, IBM DB2, or Oracle. Replication Agent captures transactions from the non-Sybase database and transfers them to Replication Server. This subcomponent is required to replicate from a non-Sybase database.

- DirectConnect – installs DirectConnect software for Microsoft SQL Server, IBM DB2, or Oracle. DirectConnect enables replication to a variety of LAN-based, heterogeneous databases, as well as mainframe data targets. DirectConnect is required to replicate to a non-Sybase database. ASE does not require DirectConnect.

Installation recommendations

- Allocate a disk partition of at least 20MB for each Replication Server you install. You can add more partitions later, if necessary. Check each partition to make sure it is available and has write permissions.

  Allocate the entire partition to the Replication Server. If you allocate only a portion of the partition to Replication Server, you cannot use the remainder for any other purpose.

- Install Replication Agent for Oracle on a server where it can directly access the Oracle online redo logs and the archive logs. Install Replication Agent for DB2 UDB for OS/390 on mainframe system that runs DB2. For other databases, you can install the appropriate Replication Agent on any server.

- Install one Replication Agent per database. The DI Suite installer installs Replication Agent software for all supported heterogeneous databases. You must configure the appropriate Replication Agent software for the non-Sybase database to which you want to connect.

- Before you install the DirectConnect component for a target database, set up connectivity between the machine that will host the DirectConnect server and the target database. The DI Suite installer provides you with options to install DirectConnect for Microsoft SQL Server, IBM DB2, and Oracle database.

- Install DirectConnect on the same server that contains the replicate databases. This eliminates a network hop and improves performance.

Note For the Standard Edition, DirectConnect must be installed on the same machine as the other DI Suite components.

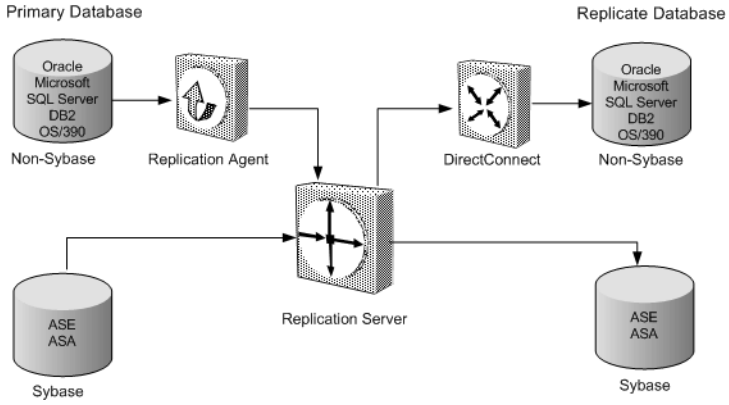
Example deployment architecture

Figure 8-1 shows an example architecture for these replication systems:

- Simple replication system with Adaptive Server Enterprise (ASE) as both primary and replicate databases.

- Heterogeneous replication system with non-Sybase databases.

Figure 8-1: Sybase Replication deployment architecture



For more information about heterogeneous replication concepts and how to set up a heterogeneous replication environment, see the *Heterogeneous Replication Guide* on the SyBooks CD for Sybase Replication or at Sybase product manuals at http://www.sybase.com/support/manuals/.

Sybase Search deployment

Sybase Search automates the process of locating relevant business information from the masses of unstructured information stored in databases, intranets and the Internet, centralized repositories, libraries, file systems, network drives, and existing document management systems in your enterprise.

Before installing Sybase Search, determine how to deploy Sybase Search in your environment. Have a clear understanding of performance expectations, how many servers are needed in your environment, and the components that are required to set up Sybase Search.

Sybase Search subcomponents

Using DI Suite installer you can install any, or all, of these Sybase Search subcomponents:

- Hub container – runs Sybase Search and coordinates all other satellite containers.

- Satellite container – remote component of Sybase Search that contains the modules required to distribute the indexing and search modules.
- Web administration server – installs Hyena, which is a lightweight J2EE-compliant JSP/servlet container, and the Web application for performing Sybase Search administration tasks. Sybase Data Services Administrator, the common administration tool for DI Suite components, includes a plug-in to Sybase Central that invokes the Web application for administration.

Installation recommendations

Sybase Search is a fully distributed system, with a central hub server and one or more satellite servers. Each server can contain one or many containers with one or more modules for indexing and search features deployed in each container. The exact number of servers, containers, and modules depends on the needs of the Sybase Search installation.

Depending on your hardware specifications, Sybase recommends that you plan for one server per 500,000 documents indexed, with an additional server for the Sybase Search hub. For example, an estimation of 2 million documents to be indexed would require five servers.

- For a medium or large installations, you can have combinations of a hub container, satellite container, and Web administration server to be installed across multiple servers.
- For smaller installations, you can install all Sybase Search components on one machine. The components include a single container, which consists of hub and satellite installation in one container and the Web administration server.

Note The Full installation option in the DI Suite installer allows you to install Sybase Search on one machine, whereas the Custom installation option allows you to install Sybase Search across multiple servers.

Use the information in Table 8-1 to identify your set up type and plan your Sybase Search deployment accordingly:

Table 8-1: Sybase Search deployment setup information

Setup	Sybase Search feature	Number of servers
Small: Fewer than 500,000 documents to be indexed.	Single-server installation	One server
Medium: 500,000 to 1.5 million documents to be indexed.	Hub container	One server
	Satellite container	One server
	Web administration	One server
Large: More than 1.5 million documents to be indexed.	Hub container	One server
	Satellite container	Five servers
	Web administration	One server

After you have determined the hardware requirements based on the search requirements of your enterprise, determine how to deploy Sybase Search for these configurations:

- Deployment across multiple servers

  There should be no more than one container per server. Multiple containers residing on a server must access the same disk drive, which can slow down performance. The Java 2 Platform Enterprise Edition (J2EE) server hosting the Sybase Search Web application should also reside on its own server. Distributing Sybase Search across multiple servers helps maximize resources available to each container and helps prevent I/O bottlenecks.

  Installing one container per server also reduces unnecessary network traffic among containers.

  If you install two containers on one server, their network traffic can be eliminated by combining their internal modules together into a single container. Sybase recommends that you do not run more than one container on a single server.

- Deployment on one server

  For a small installation on one server, Sybase recommends that you use only one container, with the modules shared across multiple containers located together in a single container. For more information, see “Determining module groups” on page 73.

Note Each container runs within a Java virtual machine (JVM) tied to a single CPU. You can run multiple containers on a server with multiple CPUs, with each container’s JVM attached to a different CPU.

Determining module groups

Sybase recommends that you group the following modules in the hub container:

- Unique ID (UID) Generator
- Document Group Manager
- Text Manager
- Term Lexicon Manager
- Metadata Manager
- Query Manager
- Repository Manager
- Schedule Manager
- Category Manager
- Category Tree Manager

Sybase recommends that you group the following modules in each satellite container:

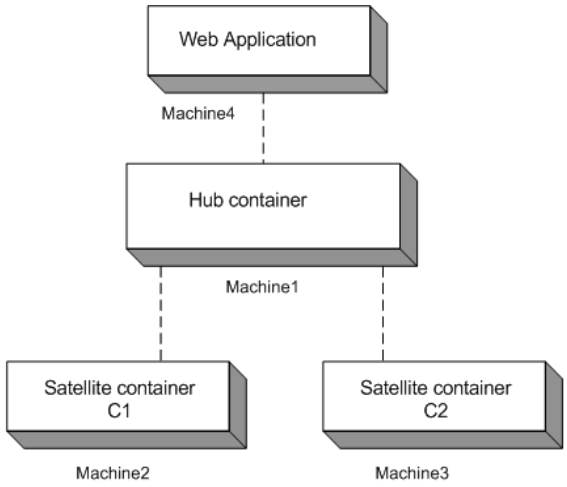
- Term Lexicon Manager Delegate
- Metadata Manager Delegate
- Filter Factory Manager
- File System Import Manager
- Database Import Manager
- Passive Import Manager
- Web Robot Manager

Example deployment architecture

Figure 8-2 shows an example architecture of a distributed system that contains the following Sybase Search subcomponents installed across multiple servers:

- A central hub on Machine1
- Two satellite containers on Machine2 and Machine3
- A J2EE server containing the Web application on Machine4

Figure 8-2: Sybase Search deployment architecture



Sybase Data Federation deployment

Sybase Data Federation is enabled via Data Federation servers that provide Enterprise Information Integration (EII) capabilities. These servers simplify provisioning, access, and integration of distributed data for one group, or across the extended enterprise.You can integrate relational data, XML documents, files, and application data across departments, locations, and companies, and allow access to authorized users via a number of protocols and interfaces including transparent file access, ODBC, JDBC, and SOAP.

Before installing Sybase Data Federation, determine how to deploy Data Federation subcomponents in your environment. Decide the number of Data Federation servers required in your domain, and the machines on which these servers will run.

Sybase Data Federation subcomponents

Use the DI Suite installer to install the Sybase Data Federation subcomponents. The Sybase Data Federation domain can consist of one or more servers that together implement the data catalog and provide data integration framework and its provisioning and access services.

Basic Data Federation domain

A basic Data Federation domain can contain one or more grid servers, with one serving as the grid domain controller (GDC).

- Grid server – hosts the data catalog, provides authorization services for clients requesting data access, serves files shared from the local file system, caches data to improve performance, and runs data services, database operations, and queries.
- Grid domain controller (GDC) – the grid server on which a Data Federation domain is initially started. The grid domain controller has all the functionality of a grid server. A Data Federation domain must have at least one grid domain controller.

  In a Data Federation domain that is configured for failover, there are two GDCs: a primary and a secondary. The secondary GDC is a hot standby that handles requests when the primary GDC cannot be reached.

NFS or Windows file access

- Data grid access server (DGAS) – provides high-performance caching and makes data catalogs and their contents available to Network File System (NFS) and Common Internet File System (CIFS) clients in a secure fashion.

Extended file sharing

- Share server – makes selected data stored in local file systems visible in the data catalog. Share servers are responsible for file I/O.

Interconnecting domains

- Firewall proxy server – allows Data Federation domains on opposite sides of a firewall to communicate securely with one another so that users of each domain can access data in the other.

Data Federation domains can be accessed by a number of different clients. In some cases, clients require no Sybase software installed on their machines. This category includes transparent file access clients that access files in the data catalog via NFS or CIFS and Web service clients that access Avaki via SOAP calls. Clients that require some Sybase software installed include ODBC or JDBC clients and machines that are used for running the Avaki command line interface (CLI) client.

Avaki Client

- Command-line Client – enables you to perform all data federation and administration tasks using the command line interface.

Note To use Sybase Data Federation development capabilities, install Sybase WorkSpace. Sybase WorkSpace is packaged separately from DI Suite. You must use the installer provided with Sybase WorkSpace to install this development tool for DI Suite.

Installation recommendations

Consider the following installation guidelines to help you plan your Data Federation domain. These are general guidelines that do not cover all possibilities. Planning a Data Federation domain is a complex activity that must be performed in consultation with a Sybase deployment architect.

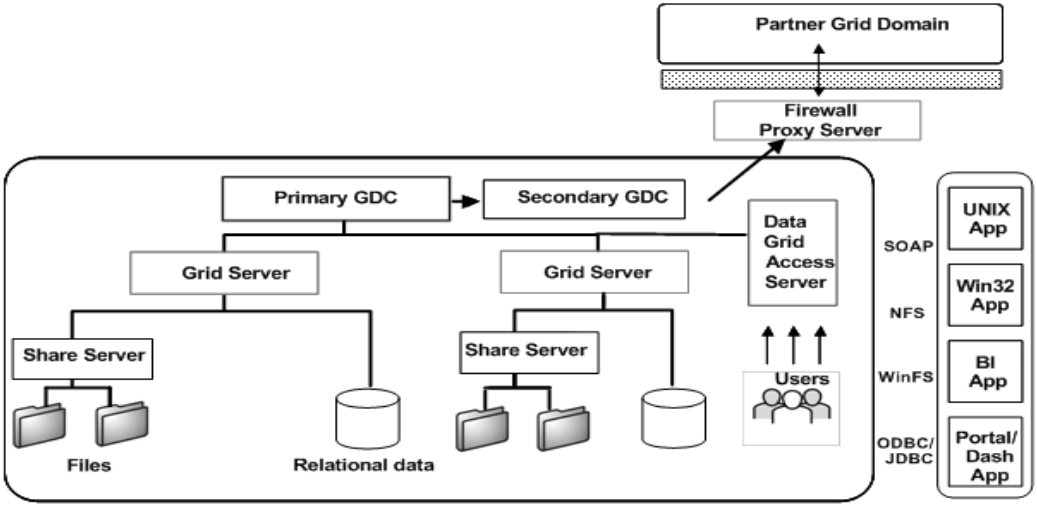
- Some data grids are used primarily for file access, some primarily for database access, and some are used for both. Based on the usage scenarios for your data grid, choose the appropriate servers to deploy.
- The GDC functions as the first grid server in the domain. Add more grid servers to accommodate more file data, more data services, more concurrent users, or additional sites that require administrative autonomy.
- If you include a secondary GDC in your domain, install the primary and secondary GDCs on different machines.
- If you want a secondary GDC in your Data Federation domain, set it up after you set up the primary GDC, but before you set up the other Avaki servers in the domain. If you set up other servers before the secondary GDC, the Avaki failover mechanism does not function properly.
- Install one grid server per machine. Sybase recommends that you use a dedicated machine for each grid server. A dedicated machine is particularly important for a GDC.

- The location of a grid server that performs caching can affect network loads and the performance and response time experienced by users and applications that consume the cached data. In choosing a location, consider whether the caching will be primarily local or primarily remote. A grid server performing local caching is best located close to the data sources it uses. A grid server performing remote caching is best located close to the consumers of the cached data.
- Each grid server can be associated with several share servers.
- For best performance, install each share server close to its data—if possible, on the same physical machine. A grid server that functions as a share server should also be close to its data, but this consideration must be balanced against the needs of other services the grid server provides, such as caching and data service execution and the desirability of installing grid servers on dedicated machines.
- You can install multiple share servers on one machine; the benefit of this arrangement is to limit the I/O between share server processes and local directories.

Example deployment architecture

Figure 8-3 shows an example deployment architecture of a Data Federation domain with primary and secondary grid domain controllers, grid servers, share servers, a firewall proxy server, and a data grid access server deployed. Users and applications can access relational data and Web Services via Avaki services configured on the grid servers and files via the data grid access server using NFS or CIFS (Windows) clients.

Figure 8-3: Sybase Data Federation deployment architecture



Sybase Real-Time Events deployment

Sybase Real-Time Events captures transactions (data changes) in a heterogeneous database and delivers them as events to external applications in real time. These events are delivered to applications through a message bus such as WebSphere MQ, BEA WebLogic JMS, TIBCO EMS, and Sybase EAServer JMS.

DI Suite includes the following Sybase Real-Time Events subcomponents that you can use to capture and propagate data changes from heterogeneous databases to standard messaging architectures:

- RepConnector – capture events nonintrusively from a database such as ASE or Oracle, and deliver these events to any standard messaging infrastructure such as WebSphere MQ, BEA WebLogic JMS, and TIBCO EMS. Real-time messaging through RepConnector is achieved using the RepConnector Server, Replication Server, and Replication Agents subcomponents.

- RepConnector Server – contains event capture, event transformation, and event sender modules.
- Replication Server – detects business events that occur in the database and sends them to RepConnector Server.
- Replication Agents – captures transactions in the heterogeneous database and transfers them to Replication Server.

Note RepConnector Manager is the graphical tool that enables you to set up RepConnector connection profiles and connections to Sybase Replication Server. This tool is a part of the Sybase WorkSpace installation.

- Sybase ASE Active Messaging – provides messaging-services capability to capture events from the ASE database and publish directly to any standard messaging infrastructure such as WebSphere MQ, TIBCO EMS, and Sybase EAServer JMS. ASE Active Messaging is easy to configure, and provides high performance and enhanced transactional messaging support for ASE databases.

Installation recommendations

This sections contains Sybase-recommended deployment architecture and installation recommendations for each Sybase Real-Time Events subcomponent.

Real-Time Events using RepConnector Server and Replication Server deployment

- Install messaging software on a separate machine.
- Install Replication Agent for Oracle on the same server that contains Oracle database and Replication Agent for DB2 UDB for OS/390 on the mainframe system that runs DB2. For other databases, you can install the appropriate Replication Agent on any server.
- Depending on your deployment setup, you can install:
  - Replication Server and RepConnector Server on separate machines.
  - Replication Server and RepConnector Server on the same machine.
  - Replication Server, RepConnector Server, and Replication Agent on the same machine as the data source. The Full installation option in the DI Suite installer enables you to install all Sybase Real-Time Events components on one machine.

Real-Time Events using ASE Active Messaging and Replication Server deployment

- Make sure that a standard message bus is already installed in your environment.
- Install Sybase ASE Active Messaging on a machine that already contains an ASE 12.5.4 ESD#3 or later, or ASE 15.0.1 ESD#1 or later installation.
- Set these environment variables:

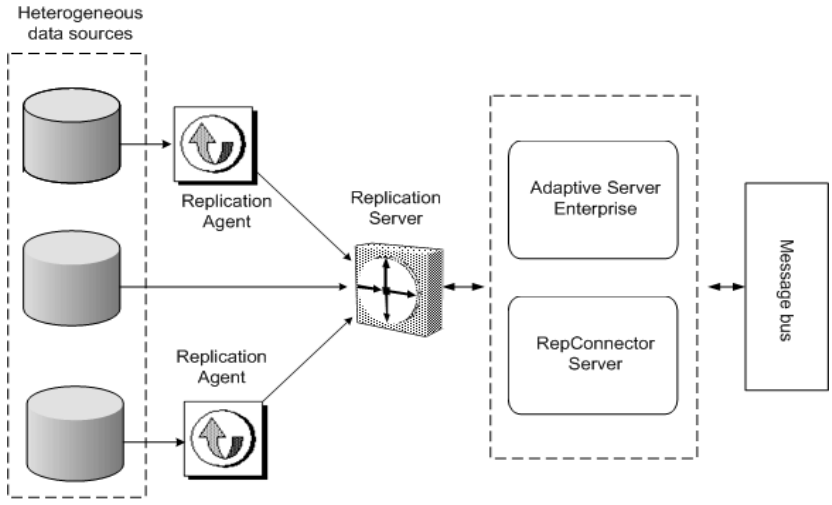
Environment variable	Value
$SYBASE	Installation directory of Real-Time Events
$SYBASE_JRE	Location of the Java runtime environment
On Sun Solaris – LD_LIBRARY_PATH On IBM AIX – LIBPATH	Location of messaging software's shared libraries

Example deployment architecture

Figure 8-4 shows an example architecture of a distributed system that contains the following real-time events subcomponents installed across multiple servers:

- Replication Agents
- Replication Server
- RepConnector Server
- ASE Active Messaging

Figure 8-4: Sybase Real-Time Events deployment architecture



Sybase ETL

Sybase ETL extracts data from multiple heterogeneous data sources and loads it into one or more data targets using a comprehensive set of transformation functions.

Sybase ETL capabilities include:

- Data extraction – provides the ability to extract data from a variety of data sources, such as Sybase ASE, Sybase IQ, Microsoft Access, Oracle, DB2, Microsoft SQL Server, flat files, XML files, and ODBC data sources.
- Data transformation – provides the ability to convert, cleanse, merge, and split data streams, which you can then insert, update, or delete data in a data target.
- Data loading – provides the ability to load data into a target database via update, insert or delete statements, or in bulk.

Sybase ETL subcomponents

You can use the following ETL subcomponents to extract, transform, and load data:

- Sybase ETL Server – provides a scalable and distributed grid engine that connects to data sources and extracts and loads data to data targets using transformation flows designed using ETL Development.
- Sybase ETL Development – provides a GUI tool for ETL development and deployment for use with ETL Server. These tools provide a complete simulation and debugging environment to speed the development of ETL transformation flows.

Note ETL Development is available only on Windows, on a separate media.

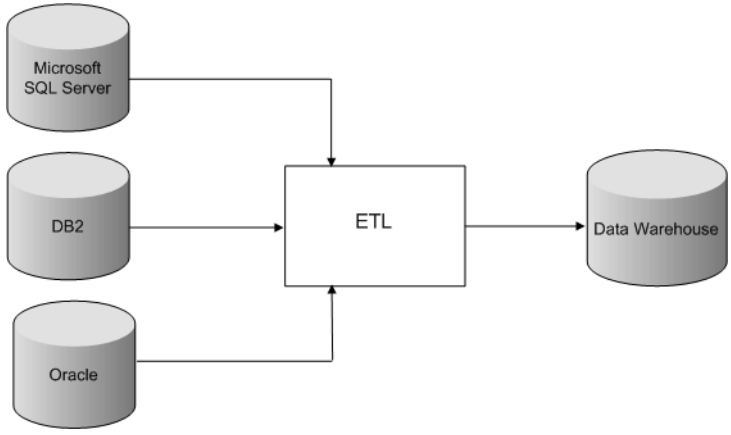
Installation recommendations

On the machine where you have installed ETL Server, make sure the database connectivity libraries are available for the source database you are extracting the data from, and the target database where you are loading the data.

Example deployment architecture

Figure 8-5 shows an example architecture, in which data is extracted from heterogeneous data sources, transformed using the Sybase ETL Server, and loaded into a data warehouse.

Figure 8-5: Sybase ETL deployment architecture



APPENDIX A

Setting up a SySAM Standalone License Server

This appendix describes how to install and set up a standalone license server on a machine different from where you are installing the DI Suite components, and on platforms supported by DI Suite 1.1. For a list of supported platforms, see “System requirements” on page 12.

For installing and setting up a standalone license server on a platform not supported by DI Suite 1.1, go to the SySAM Web site at http://www.sybase.com/sysam to download the license server setup program.

Installing a standalone license server

This section describes the tasks you must complete before you begin installing a standalone license server. It also lists the steps for installing the license server using different installation modes.

Installation prerequisites

Before you install:

- Close any open applications or utilities.
- Make sure your installation machine has a DVD drive.
- Make sure the machine on which you are installing the standalone license server has a minimum of 77MB of disk space on Solaris and 63MB on IBM AIX.
- Create a “sybase” account on your system to perform all installation tasks.

The “sybase” user must have write permissions on the directory where the license server will be installed. The “sybase” user must also have a home directory.

- Log in to the machine as the “sybase” user.

Note User names that contain non-ASCII characters, may casue the installation to fail.

Maintain consistent ownership and privileges for all files and directories. A single user—the Sybase System Administrator with read, write, and execute permissions—should perform all installation, upgrade, and set up tasks.

Installing in GUI mode

1 Insert the DI Suite installation media into the DVD drive.

At the command line, enter:

```
/cdrom/SySAM/setup
```

The Welcome window displays. Click Next to proceed.

2 Select the geographic location where you are installing to display the agreement appropriate to your region. Read the End-user License and Copyright Agreement. Select “I agree to the terms of the Sybase license for the install location specified” and click Next.

3 Specify the installation directory.

a Click Browse to select a directory, click Next to accept the default directory, or enter a different directory name where you want to install the standalone license server. The default directory is /opt/sybase.

Note Make sure that the installation directory name does not have non-ASCII characters or spaces.

b If the installation directory you specified already exists, and contains an earlier installation, you see:

```
You have chosen to install into an existing
directory. Any older versions of the products you
choose to install that are detected in this
directory will be replaced.
```

```
Note: DO NOT install into a pre 12.5.1 ASE release
area as this will break ASE.

Do you want to continue with installation into
this directory?
```

Click Yes to continue installing the license server into the same directory.

If the installation directory you specify does not exist, you see:

```
The directory does not exist. Do you want to
create it?
```

4 Select the installation type. Select Full to install all of these components:

- SySAM License Server
- SySAM License Utilities
- Sybase Unified Agent

Select Custom to choose the components to install. Click Next.

5 The installer displays the selections you have made. Review the information, and click Next.

6 On successful installation, installer displays:

```
The InstallShield Wizard has successfully installed
Sybase Software Asset Management. Choose Next to
continue the wizard.
```

Click Next.

Note In case of an unsuccessful installation, check the *log.txt* file located in the installation directory.

7 A final window appears, indicating a successful installation. It also advises you to check for updates at http://www.sybase.com/downloads.

Click Finish to exit the installer.

You can also install the standalone license server using:

- Console mode – To install the standalone license server in console mode, see “Installing in console mode” on page 31.
- A response file – To install the standalone license server using a response file, see “Installing using a response file” on page 31.

Deploying DI Suite licenses to the standalone license server

After the standalone license server is successfully installed:

1 Copy the licenses for the DI Suite licenses you have obtained from the SPDC into the *installation_directory/SYSAM-2_0/licenses* directory on the license server. For more information on the various DI Suite licenses, see "Licenses for DI Suite components" on page 7.

2 Start the license server. For information on how to start the license server and for other administration tasks, see the *Sybase Software Asset Management User's Guide*.

3 Install the DI Suite components or configure the previously installed components to use the newly setup license server by providing the host name and port number of the machine where the license server is running. For more information, see "Installing DI Suite components" on page 19.

Uninstalling license server

This section describes the steps to uninstall the license server using different modes.

Uninstalling in GUI mode

1 Shut down the license server. For information on how to shut down the license server, see the *Sybase Software Asset Management User's Guide*.

2 Invoke the uninstaller.

At the command line, enter:

```
$SYBASE/uninstall/SYSAM/uninstall
```

Note $SYBASE is the DI Suite installation directory.

The Uninstaller Wizard Welcome window displays. Click Next.

3 Select the components to remove. Click Next.

4 In the Uninstall Summary window, verify the summary information and if you are satisfied with your selections, click Next.

The selected components are uninstalled, and all files associated with these components are removed.

Note You may be prompted to decide whether to remove shared files. Sybase recommends that you do not remove them.

5 When the uninstallation process is complete, click Finish to exit the uninstaller.

Uninstalling in console mode

1 To uninstall the license server in console mode, at the command line, enter:

```
$SYBASE/uninstall/SYSAM/uninstall -console -is:javaconsole
```

The uninstall program starts.

2 Choose the components to uninstall and click OK. The selected components are uninstalled.

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