

SYBASE®

Samples

**Sybase WorkSpace**

2.0.2

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Sybase, Inc., One Sybase Drive, Dublin, CA 94568.

# Contents

<b>About This Book .....</b>	<b>v</b>	
<b>CHAPTER 1</b>	<b>Introduction .....</b>	<b>1</b>
	Overview .....	1
	SybStore_Sample application .....	1
	SybStore_Sample .....	2
	SybStore_Web_Sample application.....	3
<b>CHAPTER 2</b>	<b>Installing and running the SybStore Samples.....</b>	<b>5</b>
	Sybase WorkSpace Requirements .....	5
	Downloading samples and tutorials.....	6
	Installing the samples and tutorials .....	8
	Creating the sample projects .....	9
	Launching the cheat sheets .....	9
	Running the SybStore Web Application sample.....	11
<b>CHAPTER 3</b>	<b>Exploring the Samples .....</b>	<b>15</b>
	SybStore_Sample contents.....	15
	SybStore models .....	16
	SybStore modeling and development process.....	16
	SybStore database .....	18
	SybStore services .....	18
	SybStore_Web_Sample contents .....	19
	JSF resources .....	20
	Managed beans and server-side event handlers .....	20
	Service invocation-generated files .....	21
	DataWindow libraries .....	21
	Application configuration file.....	22



# About This Book

## Audience

This document is for developers who want to use Sybase® WorkSpace integrated development tooling.

## How to use this book

This guide is divided into these chapters:

- Chapter 1, “Introduction” provides an overview of the WorkSpace SybStore-based samples.
- Chapter 2, “Installing and running the SybStore Samples” explains how to install and run the SybStore-based samples.
- Chapter 3, “Exploring the Samples” describes the contents of the sample projects, including various scripts, stored procedures, and folders.

## Related documents

**Sybase WorkSpace tutorials** Sybase WorkSpace includes interactive tutorials and cheat sheets that show you how to use WorkSpace tools to create basic parts of a service-oriented application.

You can download the tutorial files and documentation from Sybase CodeXchange.

**Sybase WorkSpace online bookshelf** The online bookshelf contains all of the WorkSpace documentation:

- 1 In Windows, select **Start | Programs | Sybase | Sybase WorkSpace | Sybase WorkSpace 2.0** to start Sybase WorkSpace.
- 2 Select **Help | Help Contents** from the WorkSpace main menu bar. The main **Help** window opens.

The left pane displays the bookshelf contents, while the right pane displays the details of the selection in the left pane. Until you make a selection on the left, the right pane displays “Introduction to Sybase Help.”

The WorkSpace document collections include:

- *Sybase WorkSpace 2.0 New Features* – summarizes new functionality in this version.

- 
- *Sybase WorkSpace* – includes Getting Started, and help for each major component service.
  - *EAServer 6.0, Service Container, and SQL Anywhere Studio 10.0* – documentation for starting, stopping, and managing the servers included with Sybase WorkSpace.

**Sybase WorkSpace Getting Started CD** The Sybase WorkSpace Getting Started CD includes these documents:

- *Sybase WorkSpace 2.0 Installation Guide*
- *Sybase WorkSpace 2.0 Release Bulletin*
- *EAServer 6.0 Release Bulletin*
- *Sybase Developer Edition Servers Installation Guide*
- *Sybase Adaptive Server Enterprise 15.0 Installation Guide*

#### 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 following formatting conventions are used in this document:

Formatting example	To indicate
command names and method names	When used in descriptive text, this font indicates keywords such as: <ul style="list-style-type: none"> <li>• Command names used in descriptive text</li> <li>• C++ and Java method or class names used in descriptive text</li> <li>• Java package names used in descriptive text</li> </ul>
<i>myCounter</i> variable <i>server.log</i> <i>myfile.txt</i>	Italic font indicates: <ul style="list-style-type: none"> <li>• Program variables</li> <li>• Parts of input text that must be substituted</li> <li>• Directory and file names</li> </ul>
<code>sybase\bin</code>	A backward slash (“\”) indicates cross-platform directory information. A forward slash (“/”) applies to information specific to UNIX.
<b>File   Save</b>	Menu names and menu items display in bold. The vertical bar indicates how to navigate menu selections, such as from the <b>File</b> menu to the <b>Save</b> option.
<code>parse put get</code> <code>Name Address</code>	In syntax and code examples, the vertical bar indicates: <ul style="list-style-type: none"> <li>• Options available within code</li> <li>• Delimiter within message examples</li> </ul>
<code>create table</code> <code>table created</code>	Monospace font indicates: <ul style="list-style-type: none"> <li>• Information that you enter on a command line or as program text.</li> <li>• Example output fragments</li> </ul>
Type the <b>Name</b> of the attribute. Click <b>Apply</b> .	GUI field or button name that is the recipient of a procedural action.



Formatting example	To indicate
<pre>setup -is:tempdir &lt;full path to alternate temp directory&gt;</pre>	Information that must be supplied by the user is displayed between brackets.

### 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.

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**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.

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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.



# Introduction

This chapter introduces you to the Sybase WorkSpace SybStore\_Sample and the SybStore\_Web\_Sample sample projects.

Topic	Page
Overview	1
SybStore_Sample application	1
SybStore_Web_Sample application	3

## Overview

Sybase WorkSpace includes sample projects (SybStore\_Sample and SybStore\_Web\_Sample), that you can run as complete working applications. The SybStore samples demonstrate the complete development of a service-oriented inventory application, and the development of a JavaServer Faces (JSF)-based Web application.

This guide provides instructions for installing, and running SybStore\_Sample and SybStore\_Web\_Sample.

In addition to running the sample applications, you can also explore Sybase WorkSpace, explore the sample's artifacts, and view, deploy, or test SybStore\_Sample services.

## SybStore\_Sample application

The end-to-end WorkSpace sample application contains two sample projects—SybStore\_Sample and SybStore\_Web\_Sample.

- SybStore\_Sample – a services-based project that demonstrates Enterprise Modeling, Database Development, and Service Development.

- SybStore\_Web\_Sample – a simple purchase order project, developed using the JavaServer Faces (JSF) framework, that demonstrates Web Application Development.

**Figure 1-1: Basic flow of SybStore application**

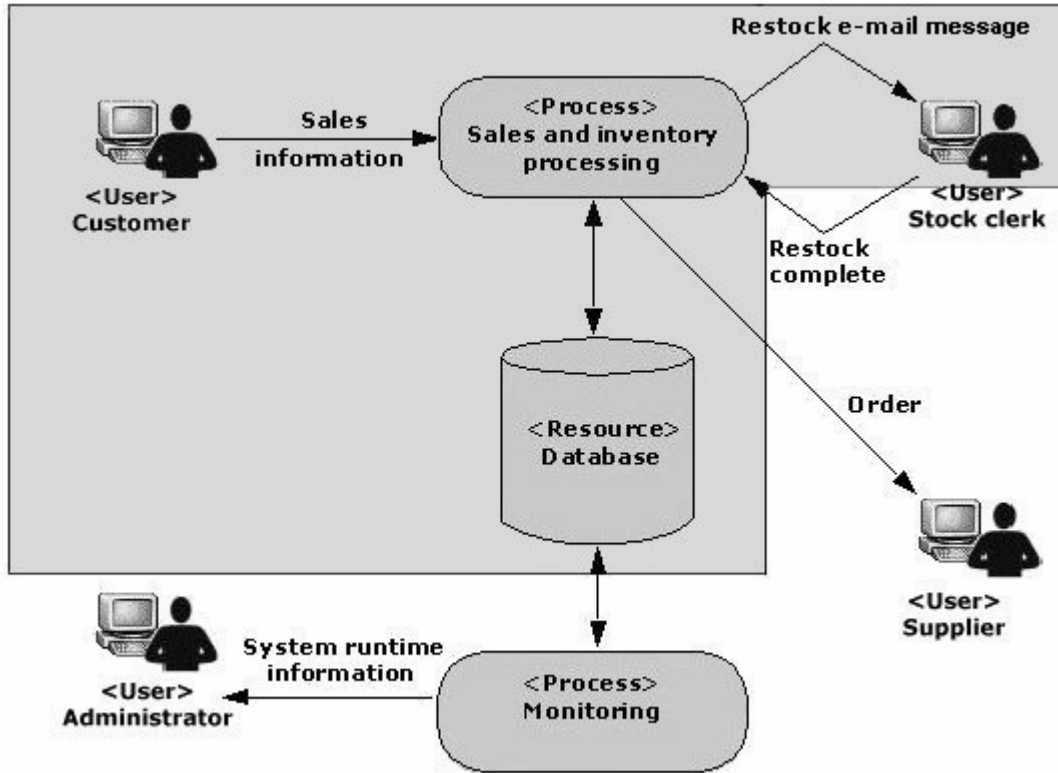


Figure 1-1 includes several actions that are not implemented in SybStore. The actions that are implemented are shown in the shaded area and contain enough examples to demonstrate how to use Sybase WorkSpace.

## SybStore\_Sample

SybStore\_Sample is a sales and inventory system that automates a retail business process:

- 1 A customer buys items from the store, and the cash register records that the items have been removed from the shelves.

- 2 The stock clerk receives an e-mail message to restock specific items when the sales and inventory system determines that restocking is required.
- 3 When restocking is complete, the stock clerk updates the sales and inventory system.

## SybStore\_Web\_Sample application

SybStore\_Web\_Sample is a simple purchase order application that demonstrates:

- 1 A welcome page that allows a customer to access inventory, view pending orders, and view pending restock requests.
- 2 The inventory page, which contains an inventory list and an order entry area.
- 3 How a customer orders an item by clicking the item's ID in the inventory list. The information for that item displays in the order entry area. The customer enters the sales ID, the quantity, and the sales date, then clicks a button to submit the order. The order then appears in an existing orders list.  
  
The customer can select an item in the existing orders list, remove the item from the list, then update the list with his or her changes.
- 4 A read-only restock request page, which lists all pending restock requests.



# Installing and running the SybStore Samples

This chapter describes how to install and run the WorkSpace samples.

Topic	Page
Sybase WorkSpace Requirements	5
Downloading samples and tutorials	6
Installing the samples and tutorials	8
Creating the sample projects	9
Launching the cheat sheets	9
Running the SybStore Web Application sample	11

## Sybase WorkSpace Requirements

To use the SybStore\_Sample, you must install Sybase WorkSpace 2.0 WorkSpace Service Development, WorkSpace Database Development, and WorkSpace Process Orchestration. A modeling license is required only to explore the SybStore models (see SybStore models). The Evaluation version software contains all of these.

To use the SybStore\_Web\_Sample, only the WorkSpace Web Application Development license is required, which is also contained on the Evaluation version software.

You must install Sybase WorkSpace and all Developer Edition servers before you begin.

See the *Sybase WorkSpace Installation Guide* and the *Sybase Developer Edition Servers Installation Guide*.

## Downloading samples and tutorials

Samples can be downloaded using Eclipse Update Manager, Sybase Download Manager, or Sybase CodeXchange.

Download using one of the following:

Samples	Eclipse Update Manager	From the user interface of your installed product, use the Eclipse Update Manager to download and install the Sample feature. In addition, Update Manager allows you to discover, download, and install updated features and plug-ins from special web based Eclipse and Sybase update sites and manage all of these on an on-going basis.
Samples	Sybase Download Manager	Access the Sybase Downloads site to download and install product updates, which include the product sample if available. Updates are installed using a native installer outside of the Eclipse platform.
Samples and/or Tutorials	Sybase CodeXchange	Download directly from CodeXchange. CodeXchange is a Sybase Developer Network (SDN) forum - organized by projects - to exchange code samples, utilities, scripts, stored procedures, or other tools created by members that makes Sybase products easier to use. Updates to the samples and tutorials are posted to CodeXchange as they are available between releases.

### ❖ Installing Updates using Eclipse Update Manager

Before accessing Eclipse Update Manager for updates to your installation, you must:

- 1 Create a "MySybase" account and know the email address and password to access your account.
- 2 Set the Sybase Update preferences to include your user name/email address and password for My Sybase authentication.
- 3 Set the Install / Update preferences to the appropriate scope.
- 4 Install Sybase WorkSpace 2.0.1 from the Sybase download site at <http://downloads.sybase.com>.

After the prerequisites are complete, you are ready to install updates.

- 1 From the main menu, select Help > Software Updates > Find and Install.



- 2 Select Search for updates of the currently installed features and click Finish. Do not select Search for new features to install. For Sybase WorkSpace, new product features -- enhancements and functionality -- are installed with updated versions of existing features. There are no new features to install using Eclipse Update Manager. Update Manager queries the update site and presents a list of features available for update.
- 3 Select the features you want to update in your installation. As you select a feature, a link to the feature readme is available, allowing you to review information about the feature.
- 4 Click Next.
- 5 Click to accept the license agreement, then click Next.
- 6 Click Finish on the Feature Summary / Change Location page.
- 7 Choose either:
  - Install All – installs all selected features.
  - Install – installs features individually as you select each.
- 8 After the installation successfully completes, click Yes to restart your product.

❖ **Installing Updates using Download Manager**

Before accessing Download Manager for updates to your installation, you must Create a "MySybase" account and know the email address and password to access your account. After the prerequisite is complete, you are ready to download and install updates.

- 1 In a Web browser, go to the Sybase download site at <http://downloads.sybase.com>. Log into MySybase, if prompted.
- 2 Select the product for which you want to review updates.
- 3 Choose the update you want to download and install.
- 4 Review the download cover letter for the update by clicking the icon in the left column. The cover letter provides complete instructions for completing the download and installation.

❖ **Downloading Samples and Tutorials from CodeXchange**

- 1 In a Web browser, go to the CodeXchange Web site at <http://codexchange.sybase.com/>. The MySybase Login page opens.
- 2 Open the CodeXchange Project page from either:

- An existing MySybase account:
    - a Enter your E-mail address and Password, and click Login. If you have not yet registered with CodeXchange, the Registration page displays automatically.
    - b Enter the required registration information and click Register.
    - c On the Welcome to Sybase page, click Continue.

Or,

  - A new MySybase account:
    - a Click Register Now!.
    - b When the Create Sybase Account page opens, enter the required information, then click Submit.
- 3 From the CodeXchange Project page, you can review the instructions and select a product.

The project page appears, providing download instructions and a description of the available tools, including samples and tutorials.

## Installing the samples and tutorials

The Samples consist of three parts: Sybase WorkSpace sample documentation, samples cheat sheats, and the samples plugin containing the projects.

### ❖ Installing the samples into WorkSpace

- 1 Shut down Sybase WorkSpace.
- 2 Download and install the Sample and/or tutorials using any of the methods described in Downloading samples and tutorials.
- 3 Restart Sybase WorkSpace using the -clean option:
  - a From the command line, go to the *Eclipse* subdirectory of your Sybase WorkSpace installation directory. For example, `C:\Sybase\WorkSpace\Eclipse`.
  - b Enter the command `SybaseWorkSpace -clean`.

## Creating the sample projects

You must create the sample projects before you can successfully run any sample related cheat sheets. The procedure for creating the sample projects is the same for both `SybStore_Sample` and `SybStore_Web_Sample`.

### ❖ **Creating the `SybStore_Sample` and `SybStore_Web_Sample` projects**

- 1 Select **File | New | Other** from the WorkSpace main menu bar.
- 2 Expand the **Sybase | WorkSpace Samples** folder and select **Sybase WorkSpace SybStore Sample** or **Sybase WorkSpace SybStore Web Sample** and click **Next**.

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**Note** If you want to create both projects, you must follow this procedure twice.

- 3 When the New Example dialog box opens, select **SybStore\_Sample** (`SybStore_Sample` project) or **SybStore\_Web\_Sample** (`SybStore_Web_Sample` project) and click **Finish**.

---

**Note** Creating the project may take several minutes. The status bar in the lower right hand corner of WorkSpace indicates the progress. When complete, the sample project is available from WorkSpace Navigator, and you are ready to complete the configuration and deployment of the samples by launching the Getting Started with SybStore Samples cheat sheet.

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## Launching the cheat sheets

WorkSpace provides two sample projects—`SybStore_Sample` and `SybStore_Web_Sample`, along with the services, artifacts, and other support files. This section describes the cheat sheets that guide you through setting up both projects, running the `SybStore_Sample` project, testing sample project services, exploring sample artifacts and resources (for both projects), and removing the samples from WorkSpace. See *Running the SybStore Web Application* sample for instructions about running the `SybStore_Web_Sample` and Chapter 3, “Exploring the Samples,” for a description of the samples contents.

When you use the SybStore\_Sample, you can run the front-end sample applications, or you can explore the back-end services and models that make up the applications.

You can refer to the SybStore\_Sample or SybStore\_Web\_Sample at any time—instead of running the cheat sheets, before you start a cheat sheet, while you are working through a cheat sheet to compare a resource that you create with a prebuilt resource, or after you complete a cheat sheet to compare your results with the sample or to view the equivalent of a completed cheat sheet's execution.

❖ **Launching the cheat sheets**

You must install and set up the samples before you launch any sample related cheat sheets. See “Creating the sample projects” on page 9.

- 1 Start Sybase WorkSpace.
- 2 Launch the cheat sheet dialog by selecting **Help | Cheat Sheets...**
- 3 Expand the **Sybase WorkSpace Samples** folder.
- 4 Select a cheat sheet. The cheat sheets included with the samples are:
  - *Getting started with the SybStore samples* – you should run this cheat sheet before doing anything else. This cheat sheet:
    - Introduces you to the Sybase WorkSpace environment
    - Establishes connections to the servers required to run the samples and test the services
    - Configures and updates the services and samples based on your environment
    - Deploys the SybStore\_Sample to the servers

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**Note** After you complete the *Getting started with the SybStore samples* cheat sheet, you can run any of the other cheat sheets in any order. But you should only run *Cleaning up the Sybase WorkSpace environment* when you want to remove the samples from Sybase WorkSpace.

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- *Executing the SybStore\_Sample services* – this cheat sheet deploys and tests the individual service packages without testing the entire sample application, and includes:
  - Testing the SalesBPSERVICE business process service package

- Testing the SalesDBService database service package
- Testing the ValidateSale Java service package
- Testing the SalesEmailXform transformation service package
- Testing the SalesEmailSend message service package
- *Exploring sample resources* – run this cheat sheet to explore the various scripts and resources included with the samples, including:
  - Viewing SybStore\_Sample database scripts and stored procedures
  - Viewing SybStore\_Web\_Sample resources
- *Cleaning up the Sybase WorkSpace environment* – run this cheat sheet if you want to remove the SybStore\_Sample and SybStore\_Web\_Sample projects, services, and other resources from Sybase WorkSpace

## Running the SybStore Web Application sample

After installing the SybStore\_Web\_Sample, creating the SybStore\_Web\_Sample project, and running the Getting Started with SybStore samples cheat sheet, follow the instructions in this section to run the SybStore Web Application sample.

### ❖ Running the SybStore\_Web\_Sample application

- 1 Open the Web Application Development perspective. From the menu bar, select **Window | Open Perspective | Other**, choose **Web Application Development** and click **OK**.
- 2 The Build Path Entries need to be updated for your specific installation. From **WorkSpace Navigator**, right-click the SybStore\_Web\_Sample project and select **Update WorkSpace Build Path Entries**.
- 3 The SybStore Web Application needs to go through a build process for your specific installation, which takes several minutes.

Select **Project | Clean** from the main menu bar. The Clean dialog box appears. Within the wizard you can choose to clean all projects or just SybStore\_Web\_Sample.

- 4 In the **WorkSpace Navigator**, expand **SybStore\_Web\_Sample/WebContent**, right-click **entrypage.jsp**, and select **Run** from the context menu.
- 5 When the **Run On Server** dialog box opens, select the **Choose an Existing Server** option, select **MyAppServer** in the tree view, and click **Finish**.

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**Note** If `MyAppServer` does not display in the Run On Server dialog box, select **Manually Define a New Server**, enter the **Host Name**, select **EAServer 6.x** for the **Server Type**, and click **Finish**.

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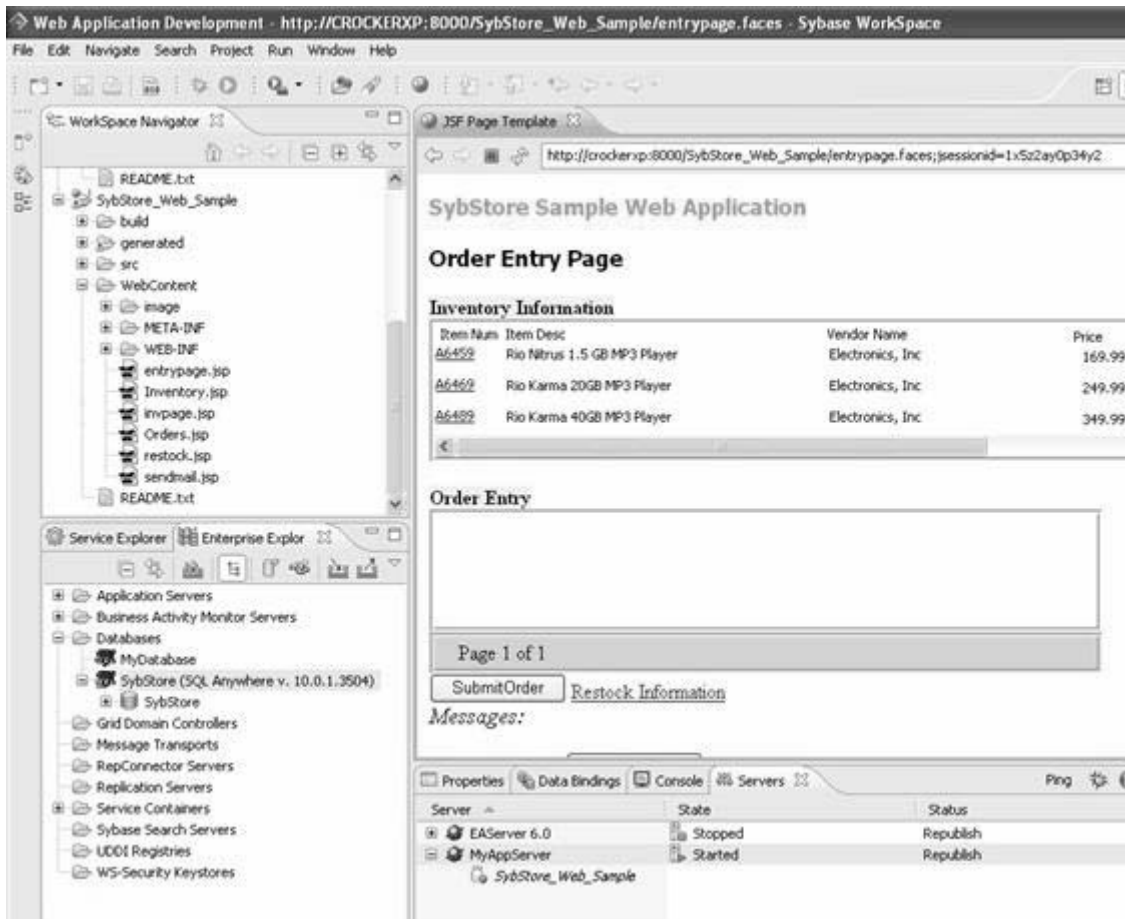
The first page of the JSF-based Web application displays.

The screenshot shows a web browser window with the following details:

- Browser Title:** JSF Page Template
- Address Bar:** http://crockerxp:8000/SybStore\_Web\_Sample/entrypage.faces
- Page Title:** SybStore Sample Web Application
- Diagram Title:** SybStore High-Level Application Diagram
- Diagram Components:**
  - Actors:**
    - Customer:** Labeled as <<Actor>> Customer, sends "Sales Information" to the central process.
    - Steel Clerk:** Labeled as <<Actor>> Steel Clerk, sends "Restock Request" to the central process and receives "Restock Complete" in return.
    - Supplier:** Labeled as <<Actor>> Supplier, receives "Orders" from the central process.
    - Administrator:** Labeled as <<Actor>> Administrator, receives "System Runtime Information" from the monitoring component.
  - Central Process:** Labeled as <<Process>> Sales and Inventory Processing.
  - Database:** Labeled as <<Resource>> Database(s), connected to the central process.
  - Monitoring:** Labeled as <<Process>> Monitoring, connected to the central process and the Administrator.
- Page Footer:** A link labeled [Inventory](#) is followed by the text "Restock Request Orders".

- 6 Click the **Inventory** link at the bottom of the page.

- 7 When you see the **Restock Information Page**, click **Go to Order Page** to view the **Order Entry Page**.



- 8 Select **File | Close**. You have started the Web server and displayed the purchasing Web application order entry page.



# Exploring the Samples

This chapter describes the contents contained in each of the samples and how to run the SybStore Web application sample.

Topic	Page
SybStore_Sample contents	15
SybStore_Web_Sample contents	19

## SybStore\_Sample contents

All SybStore\_Sample are in the SybStore\_Sample sample project. To explore the project's contents, expand the project in the WorkSpace Navigator.

The following table describes the top-level folders in SybStore\_Sample.

Folder	Contents
<i>src</i>	Source files for the application and services.
<i>bin</i>	Binary files for the application and services, including the <i>com</i> and <i>Services</i> subfolders that is automatically generated based on package names contained in services and schemas.
<i>Deployment</i>	Package definitions for packages that you have deployed in WorkSpace. This folder is automatically generated when you deploy or build a package.
<i>Models</i>	Sample models.
<i>Schemas</i>	This folder contains the XML schemas (.xsd files) for the complex types used within the application. Many of these files are automatically generated. In addition, this folder contains the XML schema for the XML model.
<i>Services</i>	Services files for each service type—business process, database, Java, message, and transformation.
<i>Setup</i>	The sample database and related SQL scripts, including the batch file that starts the Sybstore database.

## SybStore models

The SybStore sample models were created using WorkSpace enterprise modeling tools that use standard techniques and notations to help you analyze, design, build, and maintain your applications. For more information, select **Help | Online Help** in Sybase WorkSpace, then select *Sybase PowerDesigner* from the bookshelf contents list.

To open and explore the SybStore sample models, expand the *SybStore\_Sample/Models* folder in the WorkSpace Navigator and double-click the model file name in the Application, DB, or XML folder. The first time you open a model, you may be prompted to update the referenced model file path. If this happens, click Yes to continue, then save the model by selecting File | Save from the WorkSpace main menu bar.

The following table lists all of the models in the SybStore application.

Model type	Model file
Business integration analysis models	<i>Models/Application/SybStoreBPAnalysisModel.bpm</i> <i>Models/Application/SalesProcessingAnalysismodel.bpm</i> <i>Models/Application/RestockProcessingAnalysisModel.bpm</i>
Sybase WorkSpace business integration models	<i>Models/Application/SalesProcessingWorkSpaceBPModel.bpm</i> <i>Models/Application/RestockProcessingWorkSpaceBPModel.bpm</i>
Dataflow model	<i>Models/Application/SybStoreDataflowModel.bpm</i>
Physical data model	<i>Models/DB/SybStoreDB.pdm</i>
XML model	<i>Models/XML/SybStoreXML.xsm</i>

## SybStore modeling and development process

1 SybStore sample application development began with a high-level model diagram of the application, *SybStore\_Sample/Models/Application/SybStoreHighLevelDiagram.fem*.

2 The business process analysis model *SybStore\_Sample/Models/Application/SybStoreBPAnalysisModel.bpm* was defined for the entire application.

This model identifies business processes, resources, interaction points, and information flow between various parts of the application.

The SybStore business process analysis model defines two specific processes:

- Sales order processing (*SalesProcessingAnalysisModel.bpm*)

- Restock processing (*RestockProcessingAnalysisModel.bpm*)

Business process analysis models were created for each process to specify tasks, sequence of tasks, and business rules that define the flow of the business process.

Business process analysis models are tools you can use to refine, verify, and analyze the business process.

- 3 When the business process analysis models were complete, they were used to generate Sybase WorkSpace business process models (WorkSpace BPMs). The Sybase WorkSpace BPMs are used to generate Sybase WorkSpace business process services, which are then loaded in the service editors to complete implementation:

- The WorkSpace BPM for sales order processing (*SybStore\_Sample/Models/Application/SalesProcessingWorkSpaceBPMModel.bpm*) was generated from the analysis model, *SalesProcessingBPAAnalysisModel.bpm*.
- The WorkSpace BPM for restock processing (*SybStore\_Sample/Models/Application/RestockProcessingWorkSpaceBPMModel.bpm*) was generated from the analysis model *RestockProcessingBPAAnalysisModel.bpm*.

Each WorkSpace BPM has been checked and modified to generate business process service implementations.

- 4 The SybStore application database schema was defined in the Physical Data Model (PDM) *SybStore\_Sample/Models/DB/SybStoreDB.pdm*.

The PDM contains definitions for schema objects (such as tables, indexes, referential constraints, and keys) and stored procedures.

A SQL script (*SybStore\_Sample/Setup/Database/SQL/InitDB.sql*) was generated from the PDM, and the script was executed on a data server to create the database objects.

- 5 SybStore application services exchange messages in XML. The message formats were defined in an XML model (*SybStore\_Sample/Models/XML/SybStoreXML.xsm*), and then an XML schema (XSD) was generated from the model.

The XSD document (*SybStore\_Sample/Schemas/SybStore.xsd*) contains schema definitions for input and output messages used in the business process service and in component services.

## SybStore database

The following table describes the stored procedures included with the SybStore\_Sample project and can be viewed by launching the **Exploring sample resources** cheat sheet. See “Launching the cheat sheets” on page 10.

Stored procedure	Description
sybstore_able_to_restock	Used in restock checking to obtain current and backorder threshold quantities.
sybstore_get_next_restock_id	Used to obtain a new restock order ID.
sybstore_get_next_sales_id	Used to get an ID for a new sales order.
sybstore_prepare_restock_order	Processes new restock order requests.
sybstore_save_salesdata	Saves incoming sales orders in the database.
sybstore_update_shelf	Creates a record when the item is restocked on the store shelf.
sybstore_validate_salesdata	Used to validate incoming sales data.

## SybStore services

The SybStore sample services are located in folders beneath *SybStore\_Sample/Services* in the WorkSpace Navigator.

There are two major types of SybStore services:

- Component services (including database, Java, message, and transformation services), which are based on enterprise components, such as stored procedures in the database – you can deploy and test these services independent of the SybStore\_Sample application using the *Deploying and testing SybStore services* cheat sheet. See “Launching the cheat sheets.”
- Business process services that enable integration of service execution using business logic and rules

The following table lists the services developed in the SybStore application.

Service file name	Type	Description
DebugJavaService	Java	A Java service that writes trace information to the Service Container log file. Used in a business process service to trace the business process logic.
InsertSalesOrder	Java	A composite Java service that invokes a database service to obtain a new sales ID, then invokes a business process service for order processing. Used by the sample applications.

Service file name	Type	Description
SalesBPService	Business process	A business process that manages inventory when a new sales item is processed. Invokes the services that update the inventory database, determines whether shelf restocking is needed, and prepares a work order and e-mail message for the restocking clerk.
SalesDBService	Database	Several operations that invoke stored procedures to query and update the SybStore inventory database.
ValidateSale	Java	A composite Java service that invokes a database service to validate the sales item.
SalesEmailXform	Transformation	Constructs an e-mail message for the restocking clerk.
SalesEmail	Message	Sends an e-mail message to the restocking clerk.

## SybStore\_Web\_Sample contents

The SybStore\_Web\_Sample is a simple purchase order application developed using the JavaServer Faces (JSF) framework. The sample demonstrates how:

- The DataWindow<sup>®</sup> is used in a JSF page
- The ManagedBean is used in a JSF page
- The business logic is written to update data in the database using the JavaDatastore APIs
- The action listeners and server-side event handlers are written using the JavaDatastore APIs
- A predefined service is integrated in a JSF page
- Two JSF pages are linked using navigation rules

The SybStore\_Web\_Sample project contains these resources:

- JSF pages
- Managed beans, server event handlers, and action listeners
- Files generated for service invocation
- DataWindow library

- Application configuration file

This section describes each of these resources. They can be viewed by launching the **Exploring sample resources** cheat sheet. See “Launching the cheat sheets” on page 10.

## JSF resources

Use the WorkSpace Navigator to view the SybStore\_Web\_Sample JSF pages, which are located in *SybStore\_Web\_Sample/WebContent*.

Page file name	Description
<i>entrypage.jsp</i>	Main entry page for the sample purchase order Web application. The page contain links to other pages—the inventory page, the view pending order page, and the view pending restock requests page.
<i>Inventory.jsp</i>	Another sample page with master and detail DataWindows.
<i>invpage.jsp</i>	Contains master and detail DataWindows. Both the master DataWindow (Orders) and the detail DataWindow (Existing Orders) use the SALESDATA table. This page is associated with managed beans and server-side event handlers.
<i>Orders.jsp</i>	Contains a DataWindow, based on the SALESDATA table, that lists pending orders.
<i>restock.jsp</i>	Contains a DataWindow, based on the RESTOCK_ORDERS table, that lists all restock requests.
<i>sendmail.jsp</i>	Invokes the e-mail service that is deployed to the Service Container, and sends a confirmation e-mail message to the customer when an order is placed.  For this JSP to work correctly, the SybStore SalesEmail service must be deployed. Also, to utilize services from the SybStore_Sample project, the SybStore_Web_Sample project must be linked to this project within the SybStore_Web_Sample project’s properties.

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**Note** In WorkSpace, table names can be either uppercase or lowercase, or a mixture of both.

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## Managed beans and server-side event handlers

Use the WorkSpace Navigator to view the resources of the managed beans implementation, which are located in *SybStore\_Web\_Sample/src*.

Resource file	Description
<i>DwManagedBean.java</i>	A managed bean that handles updates to the SALESDATA table.

Resource file	Description
<i>LoadOrderDWHandler.java</i>	DataWindow OnLoad Handler class. Triggers a server-side event to initialize all DataWindows used in the <i>invpage.jsp</i> and <i>inventory.jsp</i> pages.
<i>LoadOrderDWTabularHandler.java</i>	DataWindow OnLoad Handler class. Triggers a server-side event when the <i>orderdwTabular</i> DataWindow is loaded in the <i>invpage.jsp</i> page.
<i>OrderButtonListener.java</i>	Command button Action Listener class that is triggered when the Order button is clicked on the <i>invpage.jsp</i> page.

## Service invocation-generated files

Use the WorkSpace Navigator to view files that invoke services, which are located in *SybStore\_Web\_Sample/generated/mycompany*.

## DataWindow libraries

Use the WorkSpace Navigator to view the DataWindow library, which is located in *SybStore\_Web\_Sample/WebContent/WEB-INF/pbl*.

DataWindow library	Description
<i>tutorial.pbl</i>	Contains these DataWindows: <ul style="list-style-type: none"> <li>• <i>locationdw</i></li> <li>• <i>orderdw</i></li> <li>• <i>orderdwtabular</i></li> <li>• <i>restockdw</i></li> <li>• <i>storedw</i></li> <li>• <i>uniqueiddw</i></li> <li>• <i>warehouseinv</i></li> </ul>
<i>dwlibrary1.pbl</i>	Contains the <i>orders</i> DataWindow.

## Application configuration file

The *faces-config.xml* file, which is located in *SybStore\_Web\_Sample/WebContent/WEB-INF* in the WorkSpace Navigator, is the Web Application Development sample configuration file that contains the managed beans and navigation rules used in the sample application. The navigation rules demonstrate how the *entrypage.jsp* page links to other pages based on which buttons the user clicks on *entrypage.jsp*.