Sample.com

ORDER ONLINE

SOFTWARE DESIGN SPECIFICATION

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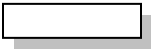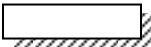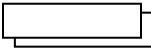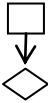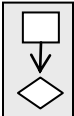
PREFACE

This Chapter describes the conventions used in this design document. It also contains a glossary of common field types referenced in the source code.

Conventions Used in Visio Flow Diagrams

	Group Operation.
< Back	The link sets a value and returns to the previous page.
< Open	Opens another ColdFusion page.
< Post	Additional data processing occurs when the form is submitted.
	Reference to another page. Page logic diagram appears in this chapter.
	Reference to another page. Page logic diagram appears in another chapter.
	Reference to another page. Logic described in place.
	Database access.
	Uses a stored procedure.
	Sends email.
	Uses a secure server.
Login	Requires login.
Bolded Text	Hypertext link.
	Flow diagram for top-level page.
	Flow diagram for lower-level page.

Glossary

Address Record Type	S	Customer provided shipping address.
	B	Customer provided billing address.
	X	Customer provided one address used for both shipping and billing.
ColdFusion		A Web development product available from Allaire Corporation.
DEA		Drug Enforcement Agency. DEA approval required to purchase certain items.
ODBC		Open Database Connectivity. A standard protocol for database servers providing a common language for Windows applications to gain access to a database on a network.
Order - Sales Order	SO	Regular Sales Order
	EO	Web Sales Order
	SD	Drop-Ship Order
	ED	Drop-Ship Web Order
Order - Bid & Quote	SQ	Approved Bid & Quote
Order - Credits	CO	Credit Order – Return
	CN	Credit Order – Non-Return
	CD	Credit Order – Drop-Ship
	ZO	Web Credit Order – Return
	ZN	Web Credit Order – Non-Return
	ZD	Web Credit Order – Drop Ship
Shipping Conditions	HZD	Hazardous. Can only be shipped in the Continental US and cannot be shipped by air. Special charges apply.
	ORM	Can only be shipped in the Continental US and cannot be shipped by air. Special charges apply.
	SOI	Ship on Ice. Item can only be sold in the US or Canada. Special charges apply.
	SPC	Special drop ship item, cannot be ordered over the Web.

	TRK	Item must be shipped by truck.
Sales Category Code	OTC	Over the Counter. DEA approval not needed.
	ROC	DEA approval not needed.
	RX	Prescription required.
SKU		
SQL		Structured Query Language. A database query and programming language.
SQL Server		Microsoft SQL Server for Windows NT is a powerful, high-performance relational database management system for distributed client/server computing.
WDDX		Web Distributed Data Exchange. Facilitates the exchange of complex data structures between common web programming environments. CFML2WDDX: Serialize CFML to WDDX format. WDDX2CFML: Deserialize WDDX to CFML. [Used in inc_order to retrieve information about promotional specials.]

CHAPTER 1 - OVERVIEW

Chapter 1 contains a brief overview of the Sample Web site. It also describes the development tools and development environment.

Sample.com

Sample.com provides a way for new and existing Sample customers to order supplies over the Web.

Casual site visitors can view the supply catalog, learn about special promotions, learn more about Sample or chat with live Customer Service representatives. Registered users can perform all the browse activities available to casual users and they can order supplies online.

This document is the design specification for the online order processing portion of the Sample Web site. It includes a description of the registration process, login process and all order processing functions.

ColdFusion

Sample.com was developed using ColdFusion, a Web development product available from Allaire Corporation.   ColdFusion uses ColdFusion Markup Language (CMFL), a tag-based language that can dynamically control data integration, application logic, and user interface generation.

CMFL contains more than 70 tags and more than 200 functions. It encapsulates complex processes such as connecting to a database and sending email.

ColdFusion pages are saved with a .cfm extension. A Web server knows to pass a page that contains a cfm extension to the ColdFusion server when the page is requested by a browser. The ColdFusion server processes the CFML tags, populating the dynamic portions of the page by for example performing a database lookup. Once the CFML tags have been processed, the ColdFusion server passes the page back to the Web server for routing to the requesting browser.
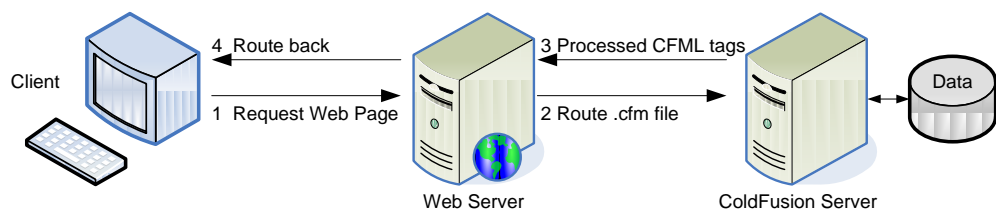
A complete set of ColdFusion documentation is available at www.allaire.com/developer/documentation.

Figure 1 ColdFusion

The Development Environment

Development work is done on a dedicated development server. All code enhancements and bug fixes are performed offline on this standalone server. Code is moved to a staging server once development coding and testing are complete. The QA team tests the new code on the staging server. If the code passes QA testing, client testing begins. If the QA team discovers problems, the system is returned to development for correction. The system is not moved to production until the client finishes testing and approves the software.

Development
Server

Code
Development Testing

Staging
Server

QA Testing
Client Testing and Approval

Production
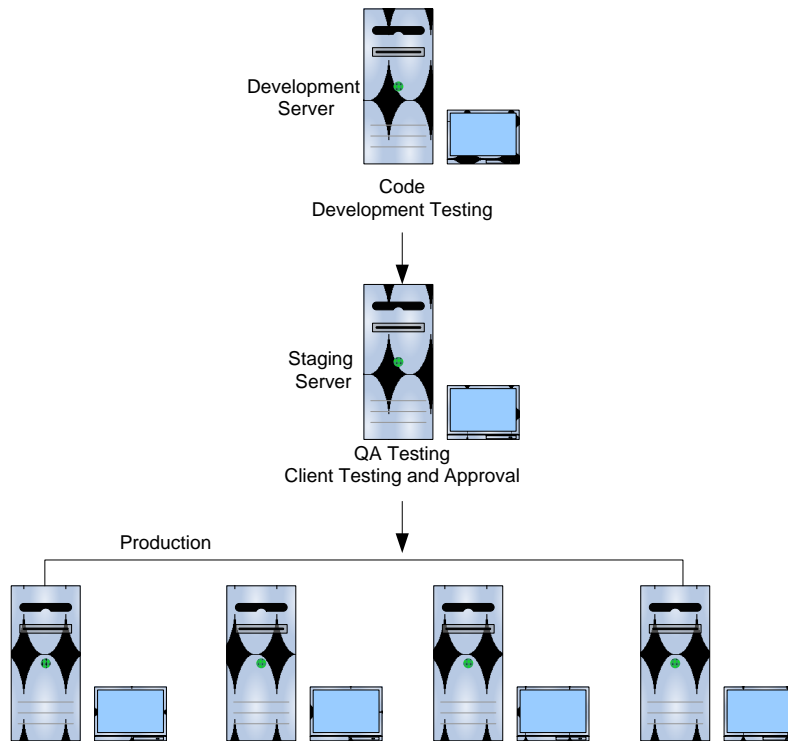
Development Software

Microsoft Windows NT

ColdFusion by Allaire Corporation

Microsoft SQL Server   - database connectivity provided using ODBC.

CHAPTER 2 – SYSTEM ARCHITECTURE

Chapter 2 is the high-level design of Sample.com. It shows the overall hardware and software architecture and describes the relationship between the TWI server software and Sample's JDE system.

Production Hardware Overview

TWI hosts the Sample Web site on four separate servers. Batch processes run every morning to update the Sample database with product and pricing information stored in the Sample JDE system.
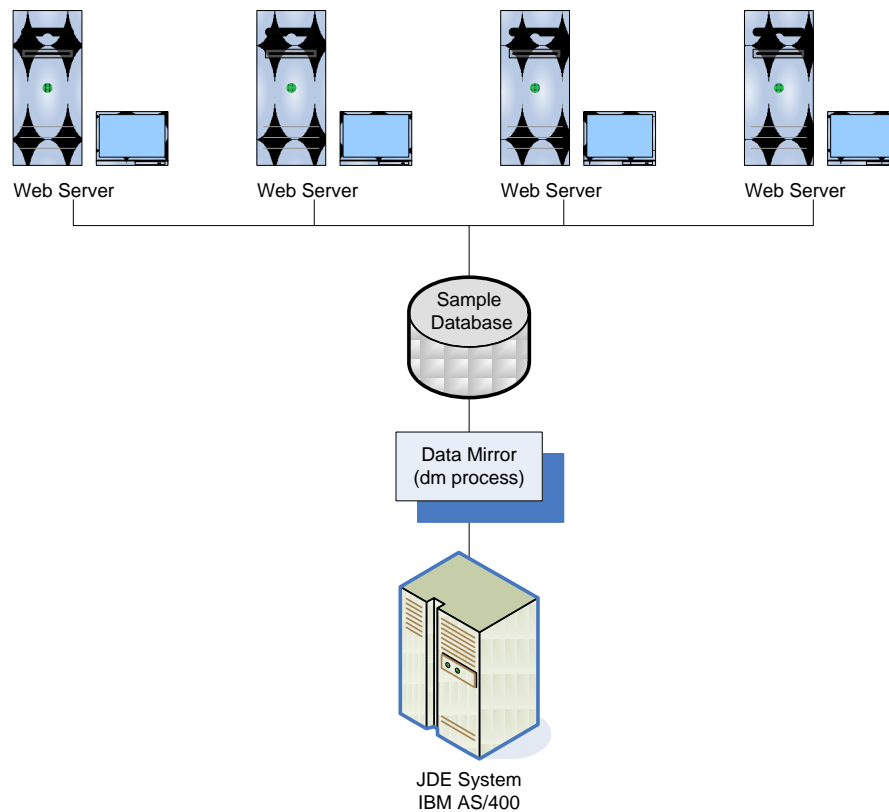
Software Architecture

The Sample Web site is managed by the TWI CMS product. The CMS interface is proprietary and this interface is not included for discussion in this document. The application code written to handle order processing is the subject of this document.

Store.cfm

Controlling application logic is contained in store.cfm. Store.cfm is case driven with the high-level architecture shown below. store.cfm is located in the Custom Tags directory.

logout	Logout (/store/user/logout.cfm)
login	Login (/store/inc_login.cfm)
register	Register (/store/inc_register.cfm) 🔒
cart	Show cart (/store/inc_cart.cfm)
order	Check out (/store/inc_order.cfm) **LOGIN** 🔒
catalog	Product catalog (/store/inc_catalog.cfm)
account	Account Details (/store/account.cfm) **LOGIN** 🔒
supplylist	Personalized cart (/store/supplylist.cfm) **LOGIN**
quickorder	Add items directly to cart (/store/inc_cart.cfm)
searchresults	Find (/store/inc_searchresults.cfm)
bids	Request special pricing (/store/bids.cfm) **LOGIN**
skupopup	Display product details (/store/skupopup.cfm)
resume	Submit resume (/store/resume.cfm)
admincatalog	Online catalog update /store/admincatalog
lefthandwidget	See Figure 3 (/store/lefthandwidget.cfm)
showname	Display logged in user name or company name

Directory Structure

Directory Name	Contents
Custom Tags	Reusable code. Application processing based on passed attributes.
sql	Common database queries.
store	Contains top-level pages named for the functionality they provide (e.g. the login logic can be found in \store\inc_login). Top-level pages selectively embed other pages from their associated subdirectory, depending on the current state of processing. For example the top-level order function (inc_order) includes template order\oos to determine if any ordered items are out-of-stock. store subdirectories are listed below.
account	See Chapter 3.
admincatalog	See Chapter 6.
bids	See Chapter 4.
cart	See Chapter 5.
login	See Chapter 7.
order	See Chapter 8.
register	See Chapter 9.
Resume	Handles online submission of employment resume.
searchresults	Contains Logic for product lookup.
supplylist	See Chapter 10.
user	Creates a temporary user if the user has not yet logged in and wants to add items to the shopping cart.

File Naming Conventions

Convention		Meaning
suffix	.cfm	The page contains ColdFusion code and must be processed by the ColdFusion server.
prefix	inc_	This page is optionally included in different parts of the site.
prefix	sql_	SQL code. bln: Returns a boolean variable. cfq: Returns a query result. multi: May return one or more variables or query result. sct: Returns a CF structure.
contains	do	Validation logic e.g. inc_doregistertype.cfm performs edit checks on data entered in inc_registertype.cfm
contains	form	Presents a form to the user
contains	hidden	Creates a hidden field list on the form.
contains	params	Sets parameter default values.
contains	update	Database update processing, e.g. updatesku.cfm writes the changes entered in editsku.cfm to the database.

CHAPTER 3 – ACCOUNT

Chapter 3 describes the processing that occurs when a user requests account history or shipping information or when a user requests to update account demographic information.

A user's account history shows previously ordered supplies, invoice amounts and the shipping status of all orders. Individual shipments can be tracked directly from the Sample application.

A user's account information includes the system assigned account number, user selected password and address information.

The controlling account logic is contained in account.cfm. The passed in value (e.g. account history) determines the path taken in account.cfm.

Business Rules

Account History

Account history lists all orders placed after March 1999.

- Order types SO, EO, SD, ED are *Sales*.

- Order type SQ is an *Approved* Bid & Quote.

- Order types CO, CN, CD, ZO, ZN or ZD are *Credits*.

- An order number may appear in both the open and historical file (except for Bid & Quote information) if all items have not been shipped.

- Sales orders with a status code from 580 to 620 are *Shipped*, status codes outside the range 580 to 620 are *In Process*.

- Credit orders with a status code from 580 to 620 are *Processed*, status codes outside the range 580 to 620 are *In Process*.

- Account information displays the order number, order date, purchase order number (if applicable), order amount and status.

- Account detail includes quantity shipped, quantity canceled or back-ordered (if applicable), item number, product description, unit price, extended unit price, invoice number and actual ship date.

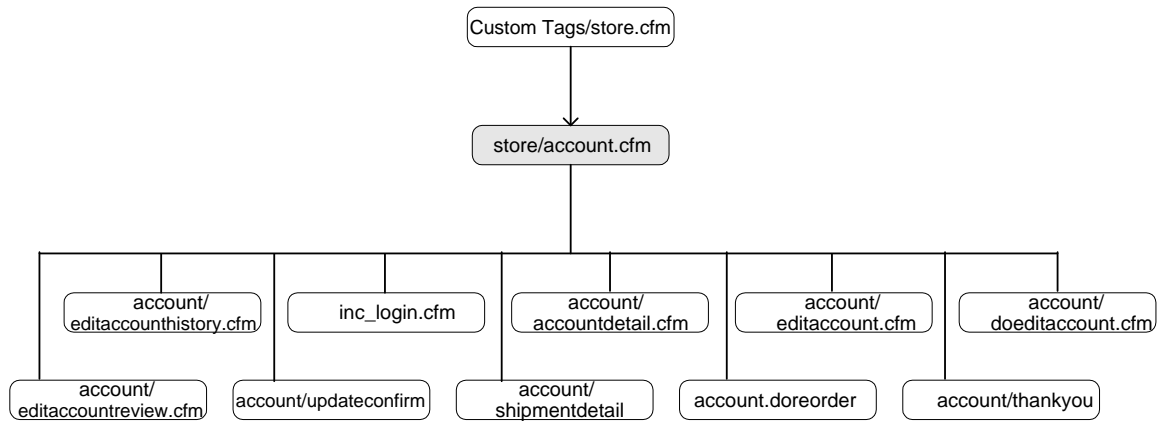- Account detail also includes the carrier and tracking number to allow shipments to be traced.

Account Information

The following fields can be modified (see Registration processing for edit checks performed):

- First Name, Middle Initial, Last Name or Business Name

- Shipping Address (the billing address cannot be changed online)

- email Address (and email option)

- Phone number(s)

- Password

Link View

```
                                    ┌──────────────────────┐
                                    │ Custom Tags/store.cfm │
                                    └──────────┬───────────┘
                                               │
                                               ▼
                                    ┌──────────────────────┐
                                    │   store/account.cfm   │
                                    └──────────────────────┘
```

account/ editaccounthistory.cfm	inc_login.cfm	account/ accountdetail.cfm	account/ editaccount.cfm	account/ doeditaccount.cfm

account/ editaccountreview.cfm	account/updateconfirm	account/ shipmentdetail	account.doreorder	account/thankyou

Functional Analysis

Called From

store.cfm based on the value set in apptoplevel.cfm. Displays the Account Details Page. From the Account Details Page a registered user can request account history or an update to stored account information.

Processing Logic (account)

A customer can request account history (history) or edit account (edit) from the Account Details Page. Subsequent requests (e.g. reorder) are a result of actions taken from the either the account history view or the edit account view.