



IBM Software Group

WebSphere® Commerce V6

Customizing IBM Gift Center



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This presentation discusses customizing the IBM Gift Center for WebSphere Commerce.

Agenda

- Overview of IBM Gift Center for WebSphere Commerce (IBM Gift Center)
- Customizing the IBM Gift Center



The agenda for this presentation is to discuss an overview of the IBM Gift Center for WebSphere Commerce, which will be known through out this presentation as IBM Gift Center. Following the overview, the basics of customizing the Gift Center are discussed.

Section

Overview



This section discusses an overview of the IBM Gift Center.

IBM Gift Center purpose

- Gift registry solutions for e-business
 - ▶ Weddings
 - ▶ Anniversaries
 - ▶ Baby or bridal showers
 - ▶ Significant birthdays
- Optional, chargeable feature
- Licensed to run under WebSphere Commerce V6 Enterprise or Professional Editions



IBM Gift Center for WebSphere Commerce allows you to incorporate a gift registry solution into your business. You can offer a gift registry service to customers to ease gift selection and decision making. Weddings, anniversaries, baby or bridal showers, and significant birthdays are popular events for gift registries.

IBM Gift Center can be licensed to run only on WebSphere Commerce Enterprise or WebSphere Commerce Professional, but not WebSphere Commerce Express. IBM Gift Center software can be installed using the installation media from either WebSphere Commerce Enterprise or WebSphere Commerce Professional, but you are required to purchase separate licenses to legally use the IBM Gift Center software.

IBM Gift Center user roles

- Roles in gift registry solution
 - ▶ Gift registrant and co-registrants define and manage the gift registry profile
 - ▶ Gift giver purchases gifts from the gift registry
 - ▶ Gift consultant helps to manage a registry



There are three roles in the gift registry solution. The gift registrant selects the gifts they want and manages aspects of the gift registry profile. The gift giver purchases gifts for the registrants from the gift registry. The gift consultant, typically on the store staff, helps to manage the gift registry. Management duties include creating and removing registries, updating items in the registry, and recording purchases.

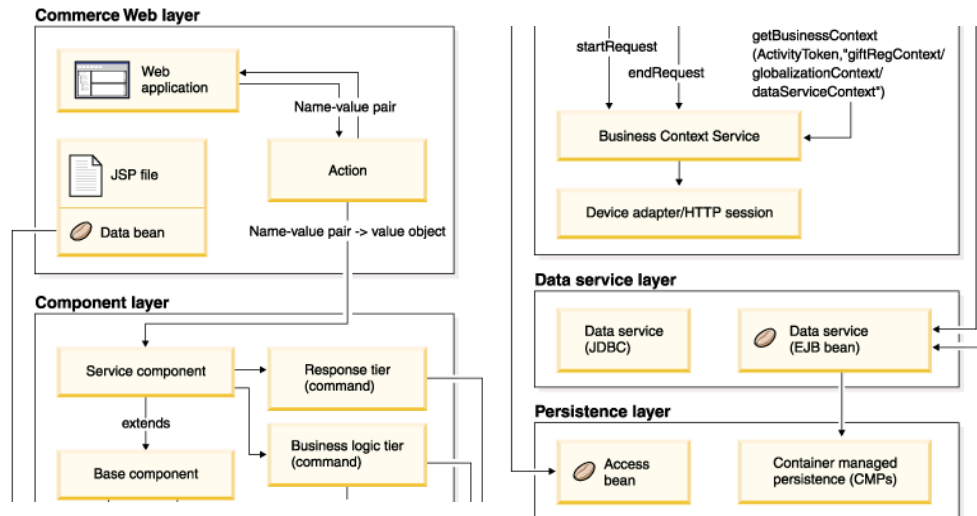
IBM Gift Center architecture

- Web (presentation) layer
- Component (business logic) layer
- Data service layer
- Persistence layer



To allow for separation between the front-end user interface and back-end business logic, the IBM Gift Center is built on a layered architecture. The IBM Gift Center architecture consists of these four layers: the Web application, or presentation layer, the component, or business logic layer, the data service layer, and the persistence layer. The next slide discusses these four layers in detail.

IBM Gift Center architecture



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Customizing IBM Gift Center

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The Web layer includes JSP files and Struts actions. The presentation layer controls the display to the customer who creates gift registries. The Struts actions convert name-value pairs passed by the Web application to the appropriate business object document (BOD), and delegate the actual business logic to the gift registry service. Within the IBM Gift Center, a BOD is a business object that encapsulates a request to manipulate gift registries. BODs are passed to and from the IBM Gift Center service interface. A BOD can be considered a self-describing message. It describes the context in which a request is completed, what data is updated, and how the data is updated.

For more information about the OAGIS message architecture and the BOD specifications, see the presentation **OAGIS message architecture**.

The component layer includes the core functionality for the IBM Gift Center. The GiftRegistryServiceBean is a single entry point for all communication. The bean is implemented as a stateless session bean, which you can extend to include new functionality. The component layer is composed of BOD commands; that is, every command from this layer extends from a BusinessObjectDocumentCmd command. This layer interacts with the Business Context Service and calls persistence BusinessObjectDocumentCmd commands to store data.

The data service layer is closely related to the component layer. The persistence BusinessObjectDocumentCmd commands can be viewed as part of the data service layer. The persistence commands take a BOD as input, and by using access beans, saves it for later use.

The data persistence layer uses standard EJB bean and access bean technology.

IBM Gift Center sample applications

- Online Web site
- In-store consultant
- In-store kiosk



You can download three sample applications that contain the user interfaces for a multi-channel solution. The sample applications illustrate how customers can create and manage their gift registries by using these styles: an online Web site, an in-store application or Web site, or an in-store kiosk with a hand-held scanner to add items.

Web sample application

- Implements channel as a normal JSP store
- Enhances an existing ConsumerDirect store, using the WebSphere Commerce administration console
- Available as free download

<ftp://ftp.software.ibm.com/software/websphere/commerce/60/refapp/online/GiftCenterConsumerDirect.sar>



For the Web gift registry channel model, a customer logs onto their personal computer to create, manage, or buy from gift registries within the store. The IBM Gift Center sample application provides functionality for gift registrants who create or update gift registries online, and it provides features for gift givers who shop for gifts.

IBM Gift Center implements its Web channel as a normal JSP store. The business-to-consumer ConsumerDirect store is updated to support the IBM Gift Center feature. Many JSP files and supporting files are copied to an existing ConsumerDirect directory when the IBM Gift Center sample application is published.

You can download the gift consultant sample from the URL shown in the slide.

IBM Gift Center gift consultant sample

- A Gift consultant is a customer service representative with expertise in gift registry
- Utilizes an in-store assistant to create new customers or locate existing customers and their gift registries
- Supports Internet Explorer® V6 browser only
- Available for free download

<ftp://ftp.software.ibm.com/software/websphere/commerce/60/refapp/giftconsultant/GiftCenterGiftConsultant.sar>



The Gift Center sample application introduces a new store role, the gift consultant. This in-store role assists customers with creating and managing gift registries. The gift consultant is a customer service representative with expertise in gift registries. The gift consultant can search for, create, and update gift registries on behalf of a new registry customer, an existing registrant, or an existing co-registrant.

The gift consultant channel is supported on, and has been tested by using, Microsoft Internet Explorer V6. Other browsers are not supported.

You can download the gift consultant sample from the URL shown in the slide.

IBM Gift Center kiosk sample

- Implements kiosk as standard JSP store
- Employs a tag library PageConfig.tld to control page flow
- Page configuration files
 - ▶ Declarative description of kiosk page for non-developer customization
 - ▶ One configuration file per JSP file
 - ▶ Kiosk pages can also be developed directly as JSP files
- Available for free download

ftp://ftp.software.ibm.com/software/websphere/commerce/60/refapp/kiosk/IBMGiftCenter_kiosk.zip



IBM Gift Center implements the kiosk as a normal JSP store. However, the kiosk employs a tag library to control the flow of the kiosk pages. The tag library is used because kiosk pages share many similarities. For example, many pages have the same keyboard layout, use the same command for user data validation, or share the same input fields. The tag library descriptor file, PageConfig.tld, is found under the ConsumerDirect store WEB-INF directory.

Each kiosk JSP page provided with the IBM Gift Center sample application is coupled with an XML configuration file with the same name as the JSP file. The XML configuration file defines the title, input fields, and buttons that are rendered on the JSP page. The configuration files are provided as a convenience, so that a non-developer has the necessary information to easily configure the flow of each JSP page.

You can download the gift consultant sample from the URL shown in the slide.

Section

Customization



This section discusses customization of the IBM Gift Center.

IBM Gift Center customization overview

- Development environment
 - ▶ WebSphere Commerce Developer Enterprise
 - ▶ WebSphere Commerce Developer Professional



IBM Gift Center uses the same development environment as WebSphere Commerce server, namely WebSphere Commerce Developer.

IBM Gift Center customization overview

- IBM Gift Center integrated with server order system
 - ▶ Saves Gift Registry ID in the ORDERITEMGIFT database table
 - ▶ Handles the gift item shipping address
 - ▶ Creates a gift registry record on order completion
 - ▶ Adds name-value pairs to existing *OrderItemAdd* and *OrderItemUpdate* commands to support IBM Gift Center



When a gift giver or gift registrant purchases an item from a gift registry list, the order and checkout process are integrated with the WebSphere Commerce order flow. More specifically, from a shopper's perspective, the process for placing an item in the shopping cart and submitting the order is the same as if the shopper had purchased a non-gift registry item.

To integrate the IBM Gift Center with the WebSphere Commerce order system, the IBM Gift Center performs these tasks:

When adding a gift item to the shopping cart, it saves the relationship between the order item and the gift registry ID into the database.

IBM Gift Center handles the gift item shipping address. The shipping address for the gift item might not be the address of the gift giver; for example, you can purchase a gift registry item and have it sent directly to the gift registrant. A task command is extended to allow shipping items to the registrant's address, instead of to the shopper's address.

IBM Gift Center creates a gift registry purchase record once the order is processed. This is handled by extending the OrderProcess command to create a purchase record if appropriate.

Customizing the Web layer

- Edit
/xml/config/giftcenter/service_mapping_config.xml
to create a service mapping group for new action
- Extend the service interface for the gift registry
 - ▶ Create new interface containing your method
 - ▶ Create new stateless session bean that implements the interface
 - ▶ Add JNDI name to instance_name.xml file
 - ▶ Call interface from an action
- Specify the gift registry action as a service request in struts-config-GiftCenter.xml file



A gift registry action is a normal Struts action. The following steps are specific to creating IBM Gift Center actions.

Create a new service mapping group for the new action. This mapping group is added to the service mapping file. A service mapping group describes how incoming name-value pairs can be translated to a BOD. See the next slide for an example of a service mapping group.

Extend the service interface for the gift registry by doing these steps: Create a new interface containing your new method. Next, create a new stateless session bean which extends the existing service interface session bean and implements the newly created interface. Ensure that the *instance_name.xml* file specifies your new JNDI name. Once you have extended the service interface for the gift registry, you call your interface from an action.

Create an entry for the new Struts action in the struts-config-GiftCenter.xml file. If an existing IBM Gift Center action can accomplish the job, you can specify that action class as the class of this new action. If you need new functionality, such as post-processing service responses, then create a Struts action class that extends one of the IBM Gift Center action classes. All IBM Gift Center action classes should extend GiftRegistryBaseAction.

IBM Gift Center service mapping group

Create service mapping group for action in
service_mapping_config.xml file:

```
<MappingGroup
  name="GiftRegistryItemDelete"
  service="updateGiftRegistry"
  verbType="com.ibm.commerce.component.bod.UpdateVerb"
  defaultNounType="com.ibm.commerce.giftregistry.service.valueobjects.GiftRegistryVO"
  serviceInputType="com.ibm.commerce.giftregistry.service.businessobjects.UpdateGiftRegistryBOD">
  <Mapping source="externalId"
    target="nouns[1]/externalId" />
  <Mapping source="giftRegistryId"
    target="nouns[1]/giftRegistryId" />
  <Mapping source="giftItemId"
    target="nouns[1]/giftItems[1]/giftItemId"/>
  <Mapping source="memberId"
    target="nouns[1]/giftItems[1]/memberId" />
  <Mapping source="partNumber"
    target="nouns[1]/giftItems[1]/partNumber" />
</MappingGroup>
```

The slide shows an example of a service mapping group.

Customizing component and data services

- Component services customization
 - ▶ Extend existing services
 - ▶ Create new services
- Data service layer customization
 - ▶ Create new BOD commands



Customization of the component services layer involves either extending existing services or creating new services.

Customization of the data service layer involves creating new BOD commands.

Examples of these customizations are discussed in the next slides.

Extending Gift Registry code example

- Extend the `ValidateGiftRegistryValuesCmd` → `MyValidateGiftRegistryValuesCmd`
- Update CMDREG WebSphere Commerce table
 - ▶ `UpdateGiftRegistryCmd` controller command calls `performExecute()` method
 - `STOREENT_ID = store_ID`
 - `INTERFACENAME = 'com.ibm.commerce.component.giftregistry.commands.ValidateGiftRegistryValuesCmd'`
 - `CLASSNAME = 'com.ibm.commerce.component.giftregistry.commands.MyValidateGiftRegistryValuesCmdImpl'`



This slide shows an example of extending a Gift Registry class to a customized class.

IBM Gift Center BOD service example

Create a new BOD command to store a “fraud list”:

```
public class UpdateGiftRegistryFraudListCmdImpl
    extends BusinessObjectDocumentCmdImpl
    implements UpdateGiftRegistryFraudListCmd {

    public void performExecute() throws ECEException {
        super.performExecute();
        // call several other task commands
        BusinessObjectDocument inputBOD = super.getRequestBOD();
        PersistGiftRegistryFraudListCmd cmd =
            (PersistGiftRegistryFraudListCmd)CommandFactory.createCommand(
                PersistGiftRegistryFraudListCmd.NAME, getStoreId());
        cmd.setRequestBOD(getRequestBOD());
        cmd.setCommandContext(getCommandContext());
        cmd.execute();
        setResultBOD(cmd.getResultBOD());
    }
}
```

This slide shows a code example of a customized BOD command to store a fraud list.

Customizing the data persistence layer

- Extend code
- Extend data schema
 - ▶ Gift Registry tables have **GR** name prefix
 - ▶ Utilize customizable fields first
 - Field1, Field 2
 - ▶ Create additional tables



You customize the persistence layer exactly the same way as other WebSphere Commerce components. There is nothing specific for customizing this layer for the IBM Gift Center.

You might need to customize the data schema. The gift registry tables have names prefixed with **GR**.

These tables contain customizable, or dummy fields, Field1, Field2, and so on. Use these fields for your own needs. If there are not enough customizable fields for your needs, then create a new database table and add Enterprise Java Beans™ and access beans.

IBM Gift Center access control

- Shoppers require access control policy defined under a role in the gift registry
- The GRUSERAUTH database table defines policy
- IBM Gift Center access types
 - ▶ Registrant/Co-registrant manages the gift registry
 - ▶ Gift Giver gives a gift to the Registrant
- Additional access control policies for other roles
 - ▶ getResources()
 - ▶ getDelegate()
 - ▶ fulfills()



Access control for the IBM Gift Center is defined in the GRUSERAUTH database table. A shopper does not have access if a relationship is not set. The access control policies must define each role's access level for a gift registry. For example, a gift registrant can have different access levels from a co-registrant, and this relationship must be defined in the access control policies.

Default policies provide access to shopper roles for a gift registry registrant, and for a gift giver.

See the WebSphere Commerce Information Center for details on how to use the methods getResources, getDelegate, and fulfills.

GRUSERAUTH database table

| Column Name | Column Type | Description |
|------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GIFTREGISTRY_ID | BIGINT NOT NULL | The gift registry with which this row is associated. |
| PASSWORD | BINARY NOT NULL | The password for a user to access the associated gift registry, if password is required. |
| OPTCOUNTER | SMALLINT | Reserved for IBM internal use. |
| ACCESSTYPE | INTEGER NOT NULL | The type of user. The following types are supported: <ul style="list-style-type: none"> ◆ 1: Registrant, or co-registrant (if applicable) ◆ 2: Gift giver |
| STATUS | INTEGER NOT NULL DEFAULT 1 | The access status of the user. Two options are supported: <ul style="list-style-type: none"> ◆ 0: The user's access to the gift registry is revoked ◆ 1: The user's access is active |
| PASSWORDCREATION | TIMESTAMP NOT NULL DEFAULT CURRENT TIMESTAMP | The creation time of the password. |
| SALT | VARCHAR(254) NOT NULL | The salt used to cipher and decipher the password. |

The table on this slide summarizes the columns in the GRUSERAUTH table.

IBM Gift Center exception handling

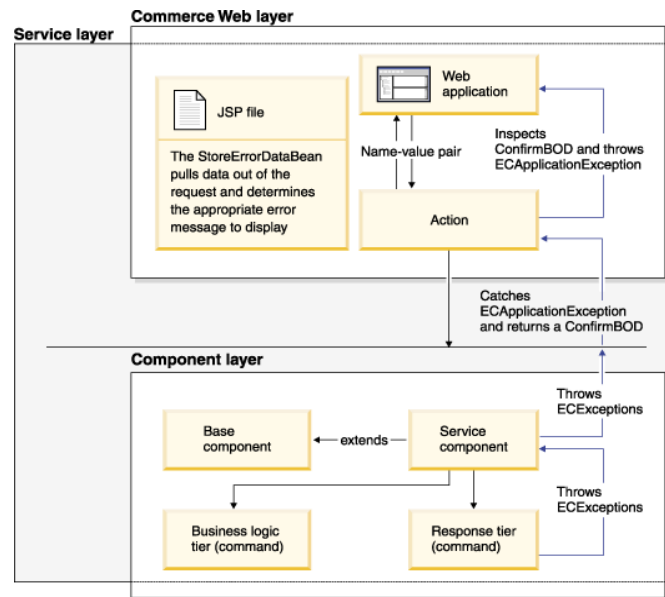
- GiftRegistryComponentServiceImpl catches all non-runtime exceptions
 - ▶ ECApplcationException converted to confirmBOD and returned
 - ▶ Otherwise converted to ServiceException and re-thrown
- Action helper inspects confirmBOD and throws ECApplcationException



When an exception occurs in a subcomponent of the component service layer, an `ECApplcationException` is thrown. The component service layer catches all non-runtime exceptions and processes them. If the thrown exception is an application exception, the exception is converted to a `confirmBOD` and returned to the calling command. If the thrown exception is not an application exception, the exception is converted into a service exception and thrown to the WebSphere Commerce calling commands to handle.

A WebSphere Commerce action can call a helper method to inspect the `confirmBOD` and throw another application exception.

IBM Gift Center exception handling



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The diagram illustrates the path that an exception follows from the component layer through the Web layer.

Messaging

- WebSphere MQ messaging is supported
- Inbound messages
 - ▶ Mimic BOD structure
- Outbound messages
 - ▶ SendGiftRegistryMessageCmd command
 - ▶ Customized by overriding sendAllMessages method



The IBM Gift Center for WebSphere Commerce uses messages to communicate with an external back-end system, where you store gift registry information. The IBM Gift Center supports inbound and outbound messages. Only WebSphere MQ messaging is supported.

Inbound messages are messages from an external system entering the IBM Gift Center system. The IBM Gift Center can accept a valid inbound message, turn that message into a corresponding service request, and perform the service. Each inbound message mimics the structure of a BOD. Each property in a BOD has a corresponding element in the message.

Outbound messages are messages sent from IBM Gift Center to an external system. To customize outbound messages, you must override the sendAllMessages method. An outbound message is a JSP file which is rendered by WebSphere Commerce sendMsgCmd.

References

- Customizing IBM Gift Center

<http://publib.boulder.ibm.com/infocenter/wchelp/v6r0m0/index.jsp?topic=/com.ibm.commerce.giftcenter.doc/refs/rgcibmgiftcentercustomization08.htm>



The Information Center article Customizing IBM Gift Center is found at the URL in the slide.

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