Adobe Commerce Business Practitioner Prep Course

SwiftOtter

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Features

Core Features / General Configuration

SwiftOtter

1.01 Identify the features of Adobe Commerce Open Source Edition and Commerce Edition

Open Source and Commerce operate on the same codebase. Commerce brings many additional features to the table. It also is covered by a support plan as a backup to an internal Adobe Commerce team.

From an architectural perspective, there are little differences. Especially as of Adobe Commerce 2.3, features like ElasticSearch and RabbitMQ have been moved back to Open Source. Additionally, as of 2.4 Open Source now has scheduled indexing options and access to business intelligence.

However, from a store management perspective, there are hundreds of features that Adobe Commerce brings to the table. Here is a basic list of additional features in Adobe Commerce:

- Related product rules
- Product Recommendations
- Content Staging
- Gift cards
- AI Search (live search)
- Category Permissions
- Email reminders (abandoned cart emails)
- Gift wrapping
- RMA workflow
- Unlimited wishlists & wishlist search
- GTM Integration
- Gift registries
- Visual merchandiser
- Private sales & events
- Store Credit
- Loyalty/reward points

- Role scopes

- Customer segmentation
- Dynamic blocks & Page Hierarchy
- Admin action logging
- Scheduled imports/exports
- Customer attribute creation/control in admin
- SWAT (Commerce Cloud)

B2B features

- Company permissions
- Shared catalogs (public and custom)
- Negotiable quotes
- Credit limit
- Payment method per company
- Quick order
- Requisition list

Further reading:

- [Magento Commerce vs. Magento Open Source]

1.02 Distinguish the differences between all editions of Adobe Commerce products

What are the benefits and drawbacks of on-premise vs. cloud?

On-premise (hosted)

The merchant is responsible for maintaining their website. Since merchants are experts at selling products, they often do not have the budget or the internal expertise to ensure that the site is properly maintained. Also, new technology requirements in 2.4 (for instance, ElasticSearch) add complexity to the server architecture, so be mindful that inexperienced

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hosting providers or developers can cause problems. The good news is that many hosting providers have learned the secrets of Adobe Commerce hosting and are providing at least reasonable service.

Adobe Commerce Cloud

Adobe Commerce Cloud offers a one-stop approach. The merchant is still responsible for applying patches, but they do not have to worry about the hosting environment because it is maintained by the team that writes the software. The goal is that this provides an exceptional hosting package with unparalleled support and service. Cloud is built on platform.sh. Platform.sh provides the platform with the capability for continuous integration (automated way to get code to production).

In addition, Cloud is integrated with 3rd-party systems to provide a better experience:

- **Fastly full-page cache** and **content delivery network (CDN)**. This also features GeoIP routing to specific store views. Fastly also optimizes images and prevents attacks through the WAF.
- **New Relic Application Performance Monitor** to find performance bottlenecks (or slow-running code) in the application.
- **SendGrid** service for sending outbound emails
- **ElasticSearch** for database search
- **SWAT** (not necessarily a 3rd-party tool) to ensure service continuity.
- **PrivateLink** to connect the transacting environment with other AWS instances. (see more)
- **SSH access**. (see more)

Cloud has multiple environments. We won't get into all the details, but here are a few of the most important:

- **Integration:** multiple integration environments for testing purposes before continuing to production
- **Staging:** a single environment that closely replicates (or is identical to) production

- **Production:** a single environment that is used for running a production website

There are two types of Cloud packages from Adobe Commerce: Starter and Pro

- Pro basically has all the Starter features plus:
    - Business Intelligence Pro
    - Dedicated hardware environment for production (better stability and availability)
    - Slightly different paths for getting code to production
    - B2B is standard (can add to starter with additional licensing fees)

Further reading:

- Cloud Guide for Commerce

Simple Products

This represents the basic unit of inventory. Most products that are delivered can be boiled down to a simple product. These are the products that are picked from stock shelves and shipped to a customer.

Simple products have inventory tracking. With this, product stock is kept up-to date (especially with the Multi-Source Inventory features)

Further reading:

- Simple Product | Adobe Commerce 2.4 User Guide (magento.com)

Configurable Products

Configurable products combine the selection of multiple products into a single page. These drop-down selections are controlled by attributes: the parent is associated with an attribute, and the child products have this attribute specified (and are also associated with the parent). The customer does not see the final selection other than the selection choices they made. Adobe Commerce combines the customer's choices to find the product that matches the customer's final choice.

At the time of purchase, two products are purchased: the parent configurable product and the child simple product.

Child products of a configurable product are either simple or virtual products.

Configurable product attributes must be in the global scope and must be of the select or swatch types.

If a merchant sells many variations of the same product, this is likely a good option as it makes the catalog easier to navigate for a user. If you searched for a shirt and received 300 search results (each size and color variation showing in the results), it can be overwhelming for a customer to find the correct variation they need. Conversely, showing only the configurables on the catalog page allows a user to pick a style before confirming size & color.

Further reading:

- Configurable Product | Adobe Commerce 2.4 User Guide (magento.com)

Virtual Products

Virtual products represent a product that has no physical entity. For example, this might be a membership or an online ticket.

Further reading:

- Virtual Product | Adobe Commerce 2.4 User Guide (magento.com)

Bundle Products

Bundle products are somewhat of a hybrid between configurable and grouped products. The difference is that bundle products do not rely on attributes. A bundle product's options are created and configured. The children are then assigned.

Each bundle option's choice can be selected with radio buttons, a drop-down menu, checkboxes or multiple select.

The bundle product's price is the sum of the chosen bundle products. However, a merchant can apply a special price discount percentage to reduce the amount of the chosen products.

Further reading:

- Bundle Product | Adobe Commerce 2.4 User Guide (magento.com)

Downloadable Products

Adobe Commerce also allows merchants to create products that the customer can download. A downloadable product has Links and Samples

Links

A "link" is provided to a downloadable file. Once the order for a downloadable product is invoiced, a customer can then download it in their account. If the link is shareable, then the customer does NOT have to be logged in to access. However, each download still counts against the overall Max Downloads value.

Each link can have its own price and sample.

Samples

Ultimately, there are two types of samples: those associated with links and those added separately. You can add as many samples as desired.

Further reading:

- Downloadable Product | Adobe Commerce 2.4 User Guide (magento.com)

Gift Card (Commerce Only)

Gift cards allow a customer to gift value from an online store to someone else. These are common in the United States and encourage people to give, even if the giver doesn't know what item or size the recipient would prefer.

Gift cards are physical or virtual. Physical means that it is mailed (and shipping is charged).

Virtual means that the card is delivered by email. Amounts can be Open, meaning that the purchaser can specify how much they want to give, or it can be a fixed amount (limited to what is specified on the backend).

Once invoiced (or ordered, if specified in configuration), a gift card account with the proper value is assigned to the customer account and is ready for use.

Further reading:

- Gift Cards | Adobe Commerce 2.4 User Guide (magento.com)

Product attributes

In Adobe Commerce, attributes are used for any data point related to a particular entity. Product attributes identify data points used for a long list of things. An attribute could show on a product page, be used for configurable variations, be for admin use only, for customizations, and many more. When a custom module is installed that relates to products, you will likely see attributes installed for use by the module.

Attribute codes must contain only lowercase letters and numbers and must start with a letter. This code is the golden record for the attribute and will be used for imports and integrations with the product data.

When setting up attributes, it is important to set them up correctly for their specific purpose. There are some configurations that can be updated after creation, but others that cannot. Below are some of the questions you should consider.

- Will they be used in an integration or for data transfer to/from another system?
- Will the attribute be visible on the front end? If yes, where?
- Will the attribute be used for a configurable variation?
- Are there multiple websites, stores or store views to account for?

Remember that it is best practice to create attributes at the highest appropriate scope. Also, keep in mind that drop-down type attribute values are translatable—you do not need to create a new value or attribute for each store view.

Further reading:

- Product Attributes

Attribute Sets & Groups

Attribute sets contain attributes. Each attribute doesn't always describe every product in a store. For example, if a store sells both t-shirts and chocolate chips, the ingredients' list wouldn't be applicable to t-shirts. Additionally, the size attribute wouldn't be applicable to chocolate chips.

For this reason, attribute sets display only attributes that are applicable to the specific product.

In each attribute set, the administrator can create groups of sets (the tabs you see in the product edit screen).

In most cases, a store will have an attribute set for each "type" of product sold (apparel, food, tool, etc.). Additional attribute sets may be warranted for more specific types (like splitting apparel into "top" and "bottom" attributes).

When configuring attribute sets, remember that if an attribute isn't part of the attribute set the product is assigned to, you will not see that as an available field for entry. Also keep in mind that while creating sets can be helpful, creating too many sets or using ambiguous set names can hinder product maintenance in the future.

Further reading:

- Attribute Sets | Adobe Commerce 2.4 User Guide (magento.com)

Images & Videos

Adobe Commerce allows merchants the ability to upload videos for products. Adobe Commerce supports Vimeo and YouTube videos. Before a merchant can display a YouTube video, they must configure a YouTube API key.

Videos are injected into the product media gallery. The video thumbnails can be used in the same way as normal images: base, small, thumbnail, and hide from product page.

Version 2.4 has a new media gallery that contains the same functionalities as the existing media storage, but offers an improved user interface and a closer integration with Adobe stock.

Further reading:

- Catalog Images and Video
- Media Gallery
- Video

Swatches

Product swatches are frequently used as options for colors because they show the customer an example of the variation instead of a word. For example, on a configurable page the customer chooses by clicking the visual swatch of the option they'd like to choose instead of a drop down containing spelled out variations.

Product Options

Product Options are a way that you can offer customizable options at the product level. You can add text fields, allow a user to upload a file, choose from options listed, or enter a date.

Note that these can be leveraged for custom workflows, but core functionality just allows

these fields to be created for input. For instance, you wouldn't want to offer this solution to a client who wants a customer to request an "arrive by" date as you'd have no control over what date the customer can choose (today? 6 months from now? last week?)

Product Grid

Admin grids have tremendous useful functionality in Adobe Commerce. For example:

- Filters to limit results for columns displayed
- Adjustable columns to change the order of columns displayed
- Column selector to customize the number of columns displayed
- Ability to create views for easy retrieval of the same display

The product grid also allows you to make bulk updates via the actions tab. You can filter to find the products you want to edit, select them via checkbox or select all, and then perform several different actions. An example would be updating attribute values.

You can control what attributes show in the grid for filtering under the individual attribute configuration. Note that having too many attributes configured to show in the product grid can affect admin load time and performance.

Advanced Pricing

A product's advanced pricing provides additional options at the product level. You can identify a special price for the product within a particular date range or you can identify tiered pricing for a customer group. Tiered pricing allows you to charge a different price point depending on the quantity of a specific item a customer is purchasing.

What determines if a product is visible on the storefront?

Note that visible is different from saleable. We will discuss the differences in the next section.

For a product to be visible in search or a category page

- Must be in stock or Display Out of Stock Products = Yes
- Must be enabled
- Must be associated with a website (or Single-Store Mode = Yes)
- Must not have the Visibility attribute set to Not Visible Individually
- Must be in a public or custom shared catalog (B2B)

Can be sold on the storefront (saleable)

Generally speaking, a product must be visible in order to be sold. A good example of an exception is the first visibility requirement. If a product is Out of Stock, Allow Backorders is enabled and Display Out of Stock Products is No, that product won't be visible in a category, but you can directly access the product page and order products.

For a product to be saleable on the storefront

- Must be in stock or backorders enabled.
- Must be enabled and NOT set to Not Visible Individually.

1.04 Interpret requirements and mock ups to determine if they can be met with native functionality

A mockup is a visual representation of a page or element. In order to properly estimate build time, you will need to be able to understand what elements are part of the core platform and which are customization requests. Please be sure to reference to Open Source and Commerce differences section, as they are not noted inline below)

The best way to learn all of these options is to review the Adobe Commerce user guide, as the possibilities are vast, but here is an outline of the most common features you want to be aware of.

Content

A store **design configuration** includes identifying a logo (for header & transactional emails).

Dynamic content can be inserted using **dynamic blocks, related products rules**, or the new **Product Recommendations** module. **Default widgets** can be inserted in pages to show order status search, wishlist search, recently viewed, etc.)

Categories can be populated with dynamic rules and be configured to show products only, products and blocks, or blocks only.

Product pages can be configured to show **stock status, only x left** messaging, and be set to **allow backorders** (or allow **back in stock notifications**)

Further reading:

- Category Permissions
- Checkout Options
- Basic Delivery Methods
- Table Rates
- Product Recommendations
- Design Configuration
- Products in Category
- Configuring Inventory Management

Sections of the Admin Interface

The admin interface consists of many areas of functionality. Each of these controls unique parts of the frontend or user experience.

It is important that you are familiar with each of these and what they do.

Importing and exporting Data in the admin interface

The ability to import and export data is extremely useful. Adding/updating data via import allows a user to test changes in staging prior to importing into production and makes it easier to keep the environments in sync. It also allows for scheduled updates from upstream systems or sources. Exporting allows you to review information for inconsistencies and to send information to downstream systems. This can be done manually or by scheduled jobs (in Commerce).

The menu items related to this are found in Systems > Data Transfer. In addition to separate import and export menus, you will also find an import history and a separate menu option for tax related imports.

Index Management & Cache Management

These options can be found in the Systems menu in the tools section.

Index management allows you to see the current state of the indexes, invalidate each index, and set them to run on schedule or on save. It is important to note that setting indexers to run on schedule instead of save can be useful if many changes are being made in the admin. If they are set on save, you may continuously trigger reindexes and see performance issues.

The cache management area is where you can clear cache after making changes to content or configuration in order to see those changes reflect on the front end.

Reports

Magento provides approximately 27 different reports. Some of these reports are based on aggregated data that has to be compiled (see list in next section). That means that after some types of changes, the data is out of date and you need to refresh it.

It is important to familiarize yourself with the reports and the data that each displays.

Reports > Refresh Statistics

In this admin section, you can refresh several reports' data for the last day or the lifetime. Note that refreshing the latter may render the admin panel unresponsive to you and slower on the frontend.

- Orders
- Tax

- Shipping
- Total Invoiced
- Total Refunded
- Coupons
- Bestsellers
- Most Viewed

Email Reminders

In the marketing menu, you will see email reminders. The most common use of this area is to create abandoned cart email reminders. These reminders can be set to run once or on a schedule.

Customers

There are many functions housed in the customer menu. This is where you maintain your customer records and set up companies, customer groups, and customer segments.

As of 2.4, assisted shopping is available in the admin (Commerce only). While inside a customer record, you will now see "login as customer" available. Actions taken in this mode will also be included in the admin actions log.

Further reading:

- Login as Customer

Customer Attributes

Customer attributes are used to store information about a customer. Adobe Commerce provides the capacity to create and modify customer attributes.

There are custom attributes and system attributes (the ones that are automatically created when installing Adobe Commerce). The latter attributes cannot be deleted.

System attributes (and to the extent that custom attributes are created by a developer) are utilized throughout the application. For example, the Customer Group attribute is utilized by the Cart Price Rules and Catalog Price Rules.

What kind of customer attributes can be created?

- Text field
- Text area
- Multiple Line
- Date
- Dropdown (for configurable products)
- Multiple Select
- Yes/No
- File (attachment)
- Image File
- Swatches (for configurable products)
- FPT, fixed price tax (WEEE, bottle taxes)

The difference in customer attribute configuration between Commerce & Open Source

Open Source requires that attribute additions/updates be accomplished by a developer either in the database or through upgrade scripts.

Adobe Commerce provides a complete interface for creating and managing customer attributes.

Further reading:

- Customer Attributes

Common store configuration menu areas

- General Menu is where you will find web settings, store details, and the B2B configuration

- Catalog Menu will provide inventory and catalog visibility options

- Customer Menu hold general settings for customer activities (wish lists, company & customer account configurations, etc.)
- Sales menu controls shipping and payment settings, sales emails, tax configurations, etc.

Native import/export options

Adobe Commerce offers the capability to import and export:

- Advanced product pricing
- Products
- Customer finances (store credit)
- Customers
- Customer Addresses
- Stock Sources
- Tax Rates (under System > Import/Export Tax Rates)

Import

For each type of import entity, you can download a sample file. This sample file is generic and not related to your store build, but will give you a good starting point to create your own import template.

Import behavior for product-related entities:

- Add/Update: appends import table data to what is already specified. If a value exists on the product in the database, that value is set to the imported value. This is the setting used for well over 90% of imports.
- Replace: deletes the product and re-adds it with the values specified in the import. This is quite dangerous to do as product IDs are changed AND all other values are destroyed.
- Delete: does what you think.

Import behavior for customer-related entities:

- Add/Update Complex Data: any value that the import row contains is replaced, all other values are appended.
- Delete Entities: no surprises here.
- Custom Action: the behavior is determined for each row based on the value in the <code>_action</code> column.

Further reading:

- Data Import
- Data Scheduled Import/Export

Export

When running exports, you can exclude attributes and add filters for which entities you want to load. For example, you can export a specific product by setting the SKU filter to be the SKU of the product to download.

Scheduled Import/Export (Commerce)

Commerce can import or export on a schedule. These files can be saved to the local server's file system or uploaded to an FTP server. You can also be notified by email if an export fails to run.

Product Imports

Product imports for creating new products (or updating for that matter) are the most complex imports to prepare. The sample file may not contain all the fields that you are interested in importing. If you are having difficulty populating a column correctly or finding the correct column header, you can always run an export for your catalog (or a sample product you create manually) to identify the data you need. This is especially helpful when you are learning to create configurable, bundle, and grouped product imports. Also, note that because a store can have many custom attributes, the export will concatenate many attributes into the "additional attributes" column.

Creating a product via import will require the same mandatory fields as if you were creating the product directly in the admin.

It is best practice to always use the "data check" before importing a file. This will run your file through a validation and provide a by-line error report if there are any issues. The data validation has improved substantially in 2.4, in my opinion.

1.07 Demonstrate how to restrict the Adobe Commerce data access with roles and permissions

User Roles

User roles define what capabilities an admin user has. For example, you can prevent an admin user from modifying products or viewing orders. Additionally, in Commerce, you can restrict an admin user to a particular website.

These are configured in System > Permissions > User Roles.

Each admin user can have one role assigned to them.

There are hundreds of configuration points of authorization for a user. They cover every aspect of the default admin area. It is best practice to limit the scope of user privileges to include only what is needed.

Note that 2FA, which is enabled by default in 2.4, has its own permission that must be enabled for a user to be able to sign in.

Further reading:

- Permissions

Overview

As mentioned in 1.4, there are many native configurations that affect cart and checkout. These configurations are mostly inside the sales menu of the store configuration. It is recommended that you go through this area in its entirety to review each configuration and what the native options are.

The most noteworthy areas for this section are:

- Sales > Shipping Settings
- Sales > Tax
- Sales > Checkout

Further reading:

- Sales

What can registered customers do that guest customers cannot?

Registered customers can save address information and use previously-saved addresses.

Registered customers can also save payment information (if a vault-enabled payment method is enabled and chosen) and utilize this payment method in the future.

Registered customers can also use the Instant Purchase feature.

You can enable/disable guest checkout here: Sales > Checkout > Allow Guest Checkout

Further reading:

- Guest Checkout

Why is the payment step last before order placement?

The payment step is located here for several reasons:

- Customers are used to entering payment details last.

- When utilizing off-site hosted payment methods, customers are immediately redirected there to make their payment.
- When utilizing on-site hosted payment methods, the card information is tokenized and sent with the place order request.

Payment & Shipping Configurations

For every delivery and payment method, you have additional configuration options. You can review these under Sales > Delivery Methods. The most noteworthy of these options is the ability to limit a carrier or payment type based on "allowable countries." You have additional control over allowable delivery and payment methods at the company configuration level.

Checkout

You can configure the store to not allow **guest checkout** (this will ask a user to create an account to checkout) You can also utilize **category permissions.** You can set by category or across all categories to allow a customer group permission to see products, see pricing, and allow add to cart.

You can enable/disable the **mini-cart** (enabled by default), configure how many products will show, and how many will show before the scrollbar is triggered.

Instant checkout can be enabled and used by customers as long as the rest of the store configuration supports it. The store would also need to have a credit card vault holding saved credit card info. Once enabled, it would show up for a signed in user that has a saved credit card and default address details.

It is very important to review all configuration options associated with this, found in Stores > Configuration > Sales > Sales, Checkout

Rewards (loyalty)

Configurations for reward points are found in two places. You must set up the main configuration in Stores > Configuration > Customers > Reward Points. Additionally, you will need to set up exchange rates for earning & redemption here Stores > Reward Exchange Rates. These rates are based on the website and customer group.

Further reading:

- Rewards and Loyalty

Additional Noteworthy Features that can be configured for checkout

- Terms and Conditions
- Shipping Policies
- Minimum Order Restrictions
- Gift Options
- Store Credit
- Multi-address Shipping

Further reading:

- Terms and Conditions
- Shipping Policy

Overview

Carrier direct integration (**USPS, UPS, FedEX, DHL**) can be configured to show real rates (based on the client's contract). The configuration allows you to identify which options to make available (2 Day, etc), if handling changes should be included, and what countries are allowable destinations for each carrier. It is also possible to configure a carrier to only be used for providing return labels for approved returns or only to be available for tracking links.

Every shipping method has several common configurations:

- Enabled. This is per website scope and enables a shipping method.
- Ship to Applicable Countries. This can prevent creating a new website—if certain

destinations get certain shipping types.

Available out of the box Shipping Methods

- Flat Rate
- Free Shipping
- Table Rates
- UPS
- USPS
- FedEx
- DHL
- Magento Shipping is no longer available in 2.4

Configuring Table Rates

Table rates are configured by selecting the 2 data points your calculation will be based on and uploading a CSV file into the Website scope (not Global). As with imports, there is a sample file available for download in this configuration area. The options for the calculation are:

- Items vs Destination (new in 2.4)
- Price vs Destination
- Weight vs Destination

Note that there is only one table rate that is available per order. In other words, you cannot use the table rate module to create an Overnight rate and a Standard rate that are both displayed in the checkout.

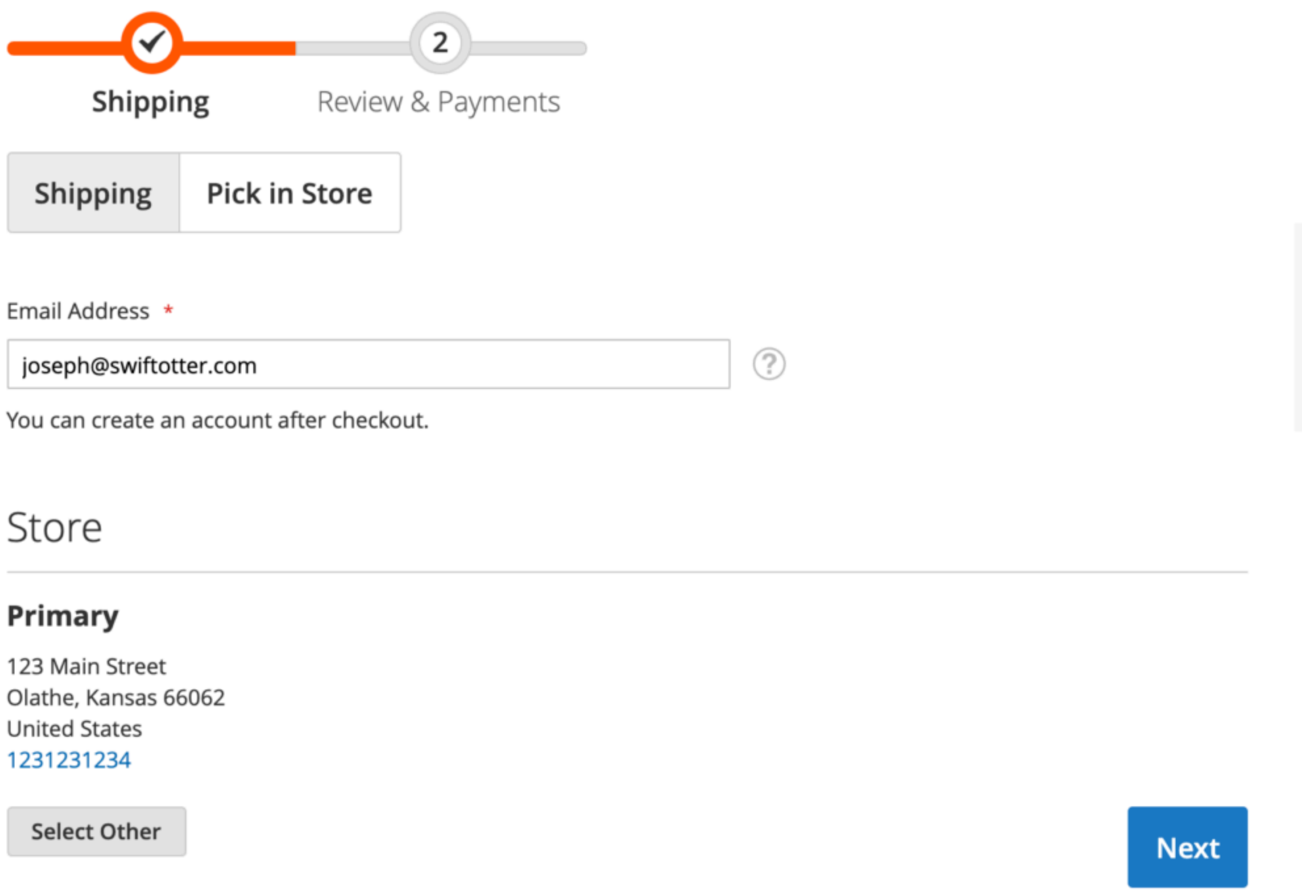
Further reading:

- Table Rates

In Store Pick Up

New in 2.4 is the ability to use a set up stock location for store pickup. If the source is configured to allow pick ups and your configuration is set up in Sales > Delivery Methods, a customer whose cart items are in stock at the location within their area, will see the option in checkout.

- You need to enable the In-Store Pickup Method.
- Each applicable source also needs to be available for In-Store Pickup.
- Step 1 of the checkout: the customer can select In-Store Pickup (see picture below).
- Once the order is placed, the Administrator can click "Notify Order is Ready for Pickup". This will trigger an email to the customer. Shipping this order is not an action that is available. Once the order is invoiced, stock is decremented.



Further reading:

- In-store Delivery

Return Shipping Labels

The RMA workflow allows an admin user to provide a return shipping label for a customer with an approved return request. If this is configured, an admin user can generate one inside the RMA workflow and the label will be available to the customer in their account.

Free Shipping

In addition to setting up free shipping at a threshold, you can also set up a promotion for free shipping which can be done as a shopping cart price rule (which allows discounts and promotions to be applied to a shopping cart.) These are configured in Marketing > Cart Price Rules.

There are two actions available that can affect shipping price in the cart:

- "Apply to Shipping Amount": will utilize the totals calculated to reduce the customer's shipping total in addition to the subtotal of the order.
- Free shipping: Permits free shipping on the order and can be applied to either the entire order or just matched items

Promotional Rules will be addressed in detail later on.

PageBuilder

PageBuilder is a powerful tool for building content and end-user experiences. Note that this is now available in Open Source as of Magento 2.4.3.

From an administrator's perspective, PageBuilder is easy to manage. You can go to Stores > Store Configuration > General > Content Management. There you can configure:

- Enable PageBuilder + Content Preview
- Google Maps API Key. This allows maps to be displayed on the frontend.
- Grid size

Before you take the test, make sure you are familiar with how to create a new CMS page with PageBulder.

Further reading:

- Learning Page Builder

CMS Pages

These render HTML on the frontend. With the addition of Page Builder (Commerce) editing content is even easier for admin users.

Embedding external images in CMS content

- Locate the image's URL (right-click on the image and click Copy Link Address).
- Click the Insert Image button in the WYSIWYG.
- Paste the full address.
- Click OK.

Managing multilingual CMS content

Unfortunately, this is one of the less-intuitive parts of Adobe Commerce. There is no Store View selector for CMS pages or blocks (unlike most other areas).

To create language-specific pages, you create a new page for each language. That page is assigned to one or more store views (or All Store Views). The URL Key must be unique for each page + store combination. For example, if you have two pages with a URL Key of "privacy-policy," you cannot have these both associated with the same store view.

Blocks

Blocks are the basic building components of CMS content. Sometimes referred to as static blocks or CMS blocks, they can be used to display fixed information or to display dynamic widgets and other content elements. This is not to be confused with the next item to discuss: widgets.

Widgets

Widgets are a way to inject content into targeted locations on an Adobe Commerce website (on a more global basis, instead of one-off placements). The sample data heavily utilizes widgets to display the image blocks. ***This is probably one of the most underutilized features in Magento.***

Ultimately, this is easily confused with CMS content widgets (as I call it). Content widgets are code directives that are injected into the WYSIWYG editor.

Widgets are managed in Content > Widgets. They are available in both Open Source and Commerce.

To create a widget, you first specify the type of the widget (this happens to be the same list as used in the WYSIWYG editor). Then, specify the theme.

The widget is assigned to specific store views (or all store views).

Finally, you identify where to display the widget:

- Anchor categories (all or specific categories)
- Non-anchor categories (all or specific categories)
- All product types (all or specific products)
- Simple Product (all or specific products)
- Virtual Product (all or specific products)
- Configurable Product (all or specific products)
- Downloadable Product (all or specific products)
- Gift Card (all or specific products)
- Grouped Product (all or specific products)
- All Pages
- Specified Page (select page)
- Page Layouts (select custom page layout)

Once you determine on what pages to display the widget, the last thing to do is to determine

TEST DOCUMENT — TEST DOCUMENT — TEST DOCUMENT — Document doesn't look right? We'll help you out! — TEST DOCUMENT — TEST DOCUMENT — TEST DOCUMENT

the container (where on the page to display the widget).

You can also configure the options for the widget in the Widget Options tab.

Further reading:

- Widget Static Block

Page hierarchy (Commerce)

One challenge in maintaining content on a website is how to structure it. This capability in Open Source is limited, at best. This forces merchants to look to other creative alternatives.

The hierarchy feature in Commerce allows CMS pages to be nested inside of each other. This is similar to how Category navigation works. You can add pages to the hierarchy in the Edit CMS page area.

You can also use the Content > Hierarchy tool to create Nodes. A node is a way to group multiple pages into a logical section. Nodes do not have their own page, even though you can specify a URL key. For each node, you can specify the next and start meta links to help SEO.

Further reading:

- Page Hierarchy

Banners

- And interactive component to engage users with a call to action and button
- This banner in unrelated to the old banner, which is now called a dynamic block

Further reading:

- Page Builder Media Banner

Dynamic Blocks

Formerly referred to as banners (if you see "banner" on the test, you can automatically discount that answer), these are different from widgets in that these inject content into specific places on the entire site:

- Content Area
- Footer
- Header
- Left Column
- Right Column

After selecting where the content will appear, the next thing to select is the customer segment(s).

Finally, you can use the WYSIWYG editor to add content (including widget and variables).

Further reading:

- Dynamic Blocks

Custom Variables

Custom Variables are a way to save commonly-used pieces of information and display them throughout the website. They are similar to static blocks (in idea), but their content is not parsed to render widgets. This makes them more suitable for displaying strings of text like a phone number, store hours, driving directions, etc.

Custom variables are set in System > Custom Variables. These are added through the WYSIWYG editor by clicking the variable button.

Custom Variables are easily injected into Email Templates by clicking the Insert Variable button when editing an email template.

Content Staging

Staging (Scheduled Updates, Content Updates) is a powerful feature in Commerce. This allows you to make changes to content, preview, and then release them at a specified date/ time.

Further reading:

- Content Staging

Staging Timelines

Staging timelines allow you to visualize updates on a timeline. This is done in Content > Content Staging > Dashboard.

Use Cases for staging

Staging is a powerful way to make updates to the website. You are able to visualize changes before they go live. In addition, you can schedule a group of changes to go live at any given point. This is especially useful for a sale or a product launch that begins at midnight on a specific day (so you don't have to set your alarm to release it, or worse yet, configure it).

How can staging be previewed?

There are two ways:

1. Go into the entity that you are editing, select the update, and click Preview.
2. Go into the content staging dashboard, select the update, and click Preview.

Previews can be shared, but only with admins with permissions to view this area of the admin. Also, note that promotions in progress versus those planned for the future are shown in different colors. After a scheduled change has begun, you will not be able to edit any component of it. This is why staging and preview are such valuable tools.

Limitations of Staging

- Staging is not version management. While previous staging updates are stored, the changes from every time you save a product are not stored.

- Staging relies on a properly configured and running cron system. Otherwise, staging updates will not be released.

Which entities can staging be used with?

- Products
- Categories
- Catalog Price Rules (replaces start and end dates)
- Cart Price Rules (replaces start and end dates)
- CMS Pages
- CMS Blocks

How can staging be used with third party extensions?

Staging is used with 3rd-party extensions if they choose to integrate it. There's not much else to say.

1.11 Using native tools to manage the order life cycle

Order status can be customized (and often are), but understanding the core workflow is necessary before solutioning those changes.

Order

- A order is created and is in pending status until payment is confirmed

Invoice

- Offline payments confirms payment has been received
- Online payments (credit cards) confirms funds have been captured
- If the credit card gateway is set to "authorize & capture" at order, the order will be invoiced when placed and it will be in processing status.

Editing orders

- Before an order in invoiced, you will be able to make changes to the order itself
- After an order is invoiced, you will only be able to update address information
- You can edit the customer's email at any point by editing the customer.

Shipment

- Creating a shipment also creates a packing slip, which can be printed from the order or the order grid
- Once a shipment is created, address information can no longer be edited
- Once all items in an order are invoiced and shipped, status will show complete

RMA (Commerce only)

- If configured for the store and for the item on an order, a customer can request a return inside their account
- Return attributes can be created to track any information you want a customer to complete
- If configured for the store and for the item on an order, a customer can request a return inside their account
- Once the return is authorized, the customer can be provided a return label or be asked to mail the item back
- After the item is received, the return is marked complete and a replacement can be sent, a credit memo created for a refund (online or offline), or store credit can be issued

Further reading:

- Order Workflow
- Returns

Gift cards

Gift cards have their own product type and can be physical, virtual, or combined. They can be configured as open amounts (allowing a customer to designate any amount) or specific amount options.

Gift card accounts need to be created before they can be assigned to a customer.

Further reading:

- Product Gift Card

Gift Accounts

Gift accounts are the accounting item that tracks the amount available on a given gift card. You will find this in Marketing > Gift Card Accounts.

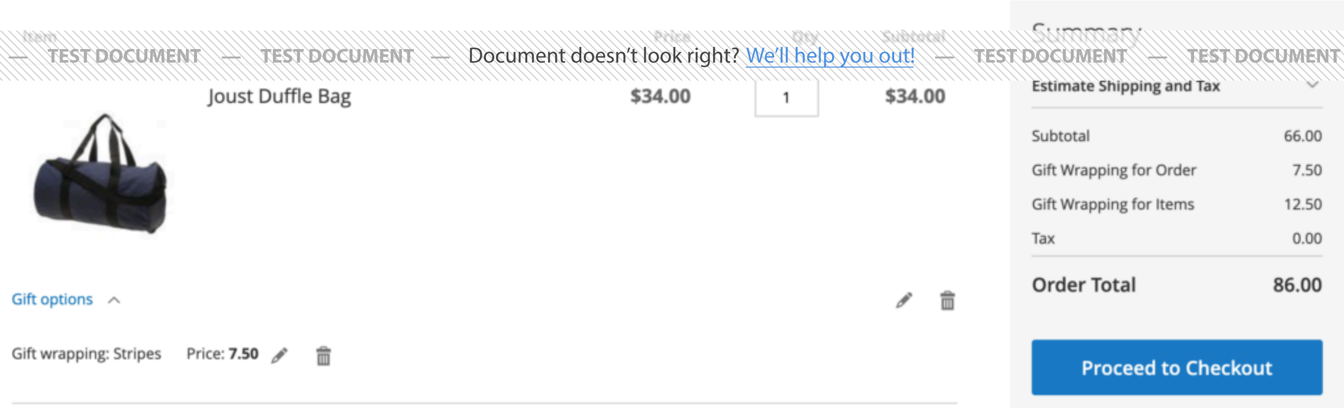
A merchant can create a gift card and send it to a recipient. Most commonly, these are created when a customer purchases a gift card and it is invoiced (by default, but the gift card can be created when the order is placed).

Customers can then apply a gift card code to the shopping cart or at the payment method screen. They can also redeem a gift card in the "My Account" area.

Gift wrap

Gift wrap options can be configured with different pricing and can include swatches of the paper options.

Each product in the cart can be individually wrapped. The fee for gift wrap applies to each item individually AND/OR for the entire order:



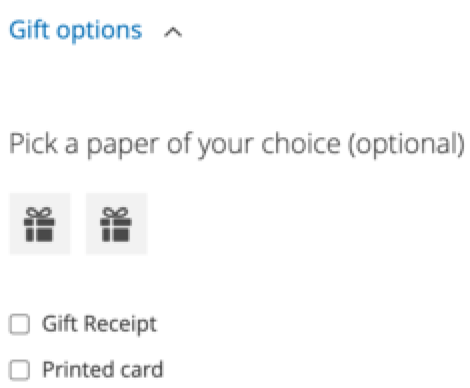
Further reading:

- Gift Wrap

Gift options

Open source does offer the ability to provide gift messages, but the options are much more robust for Adobe Commerce.

Gift options can be configured in the store configuration:



Further reading:

- Product Gift Options
- Gift Options

1.13 Configuring and modifying transactional emails

Transactional emails are set up and enabled by default to notify your customers of new orders, invoices, shipments, and other configured activities. Each template will send based on the confirmation set in Stores > Configuration > Sales > Sales Emails. You can turn each one on or off, designate templates and set up email addresses to receive cc'd copies.

Templates can be revised in Marketing > Communications > Email Templates. You won't see the core templates listed, but when you "add new template" you have the option to load any existing template to use as a start. After saving your changes, be sure to identify the new template is to be used in the appropriate configuration setting.

Customer Groups

Customer groups are a way to categorize customers. By default, one customer group is set up and you can create more. You can also specify the default customer group in Stores > Configuration > Customers > Customer Configuration. Observe that you can also have the group automatically assigned based on VAT ID validation.

Use Cases for Customer Groups

Customer groups are used to configure aspects of pricing.

- **Tiered pricing:** customer groups are a selection criteria in the use of product tiered pricing. This allows a store administrator to give those in a specific customer group a better (or worse) discount.
- **Catalog price rules:** customer groups are filters to ensure the rules are given to the correct customers.
- **Cart price rules:** customer groups are a filter here, too.
- **Private sale invitations** (Commerce only)

Customer groups are assigned a tax class. This tax class can be used to create tax-exempt customers or configure additional rules.

Customer groups are configured in Customer > Customer Groups.

Further reading:

- Customer Groups

Customer Segments

Customer segments allow an administrator to group customers based on properties or actions they have taken.

This is different from customer groups. A customer group is set at the time when a customer is created. That group can be changed any time. Customer segments are created after the fact. They are constantly updated on the fly.

Use Cases for Customer Segments

Customer segments utilize a different area of configuration than customer groups.

- **Dynamic blocks:** target these banners to customers who qualify.
- **Cart price rules:** you can configure a customer segment as a condition.
- **Customer segment report:** browse customer segments and view customers per segment

Configuring Customer Segments

Customer segments are configured with rules (like cart price rules and catalog price rules).

Each segment is either for visitors, registered guests, or both. This part of the configuration cannot be changed after the segment is created.

Here are the available selection choices:

- Customer Address (City, Company, Country, First Name, Last Name, Phone Number, State/Province)
- Customer

- Created at
- Date of Birth
- Default Billing Address
- Default Shipping Address
- Email
- First Name
- Last Name
- Gender
- Group
- Last Name
- Newsletter Subscription
- Store Credit
- Shopping Cart
- Shopping Cart Total
- Number of Cart Line Items
- Products Quantity
- Products
- Product List
- Product History
- Sales
- Order Address
- Sales Amount
- Number of Orders
- Purchased Quantity

Further reading:

- Customer Segments

Customer Self Service Features

Wishlist

This allows customers to save items for later. “Save to Wishlist” is available on product and

category pages. Clicking this link will ask the customer to register/login (if they haven’t done so already).

Both Open Source and Commerce have wishlist capabilities. Commerce allows for multiple wishlists.

New in 2.4, there is also a default widget to allow searches for public wishlists. If a customer creates a public wishlist and a user has a few details, they can locate the wishlist.

Further reading:

- Wishlist Configuration
- Wishlist Search

Gift registry (Commerce only)

The registry is similar to a glorified wish list. The customer first selects the type of wish list. Then, they fill out information about the registry:

- Inactive/active
- Event date
- Event details
- Contact information

Administrators also have the capability to manage gift registries.

New in 2.4, there is also a default widget to allow searches for registries.

Further reading:

- Gift Registries

Returns (Commerce only) and Reorders

Customers also have the capability to reorder or return products, at their leisure, from their account. The link for creating a return is accessible when viewing each order (on items configured to allow) These are separate configurations, but are accessible in the same place to the customer.

Customers requesting a return can:

- Select item(s) to return, and specify the quantity, resolution, return, etc.
- Add comments to the return.
- After a return is approved, if the configuration is setup, they can print a return label

Customer reordering simply clicks "reorder" and the item is placed in the cart ready for checkout.

Further reading:

- RMA Customer Experience
- Reorders

Rewards (Loyalty Program)

From the customer perspective, earning rewards can boost brand loyalty. Once the configuration and exchange rates are set up, a customer can earn points for actions beyond making a purchase including creating an account, joining the newsletter, etc.

Rewards for actions show in the account area immediately. Rewards earned for purchases will show up in the account after the order has been invoiced. The customer can use these as a payment method at checkout.

Merchandising

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Shopping Cart Rules

Shopping Cart Rules allow discounts and promotions to be applied to a shopping cart. These are configured in Marketing > Cart Price Rules.

These rules can be customized with Scheduled Changes in Commerce. In Commerce, the From and To fields are gone as of 2.3 and Scheduled Updates is how you configure the duration of these rules.

You are able to restrict Cart Price rules to:

- Customer groups
- Website
- Specific coupon code (or auto-generated)
- Uses per coupon code or customer

Related Dynamic Blocks (formerly banners), Commerce-only

You can associate Dynamic Blocks with a cart price rule to draw attention to it. This is helpful if you are requiring the customer to enter a coupon code for free shipping, for example.

Further reading:

- Cart Price Rules

Cart Conditions

This section defines the filter parameters to determine whether or not this rule is eligible for a given cart.

Conditions availability:

- Products in cart:
    - Any product attribute that is marked as “Use for Promo Rule Conditions” is found in the condition list.

- Category
- Attribute Set

- Number of products in the cart
- Total price of products in the cart
- Row total of products in the cart
- **Customer segment**

It is important to remember that conditions represent the first Yes/No decision for whether or not this rule applies to the cart.

Cart Actions

This tab defines what happens to the cart. There are several options for Apply:

- Percent of product price discount: the Discount Amount will become a percentage and will be the discount for all matched products.
- Fixed amount discount: the fixed (not a percentage) amount that is reduced per product. The maximum value will effectively be the total price of the item.
- Fixed amount discount for whole cart: the fixed amount that is reduced as applied to the entire cart. If an item sells for $2, and you set a Discount Amount of $4, $4 will be reduced for each matched item.
- Buy X get Y free: the Discount Amount is how many to credit back as a discount. The quantity in the user's cart will not increase. Note that this means a typical "buy one get one" promo is configured as Buy 2 get 1 (the customer buying 2 will get 1 free)

Here are a couple of noteworthy fields:

- Maximum Qty Discount is Applied to: this field governs the maximum number of items that are eligible for a discount.
- Apply to Shipping Amount: utilize the totals calculated to reduce the customer's shipping total in addition to the subtotal of the order.
- Free shipping: use this field to select if free shipping is allowed on the order and if it applies to the entire order or to the matched products in an order.

- Add Reward Points: utilize the loyalty feature in Commerce to add additional points to a customer´s account.

There are powerful features that are often overlooked in Cart Price Rules. One is the ability to apply the rule to specific products in the cart which can be used in conjunction with the Conditions to provide multiple levels of filtering. Additionally, sort order and disallow further rule processing can be used together to create tiered rules. For instance, a "buy more, save more" sale.

Manage coupon codes

You can create pools of coupon codes that are utilized. The purpose of these is to track usage from a mail or email campaign. You can also create single codes or have a promo set to apply without the need for a code. Each code can be set with a total uses restriction or total uses by individual user restriction. Note that a code with an individual user quantity restriction will natively only know when a logged in user has previously utilized the code.

Further reading:

- Coupon Codes

Catalog Price Rules

While cart price rules affect pricing after an item is added to the cart, catalog price rules reflect before items are added to the cart and flow through cart and checkout. Catalog price rules apply customer groups.

Further reading:

- Catalog Price Rules

Related Products, Upsells, Cross-sells

These are configured on the Edit Product page. Other than selecting and reordering products for each of these relation types, there are no additional options.

Related Product Rules (Commerce)

In Commerce, though, you can configure rules to display lists of products. The benefit of this is that an administrator can specify a list of products to apply the rule to and a list of products to display.

For example, if you have a category of Women's Jackets, you might want to show Women's Pants as related products and Women's Shirts as up-sell products. Instead of going through each product in the Women's Jackets category and selecting related products and up-sell products, you would:

- Create two new related product rules, one for related products and one for up-sell products.
- Specify the Customer Segment (if applicable).
- Set rule conditions for what products to match (which products the selected products will display on).
- Set rule conditions for what products to display.

Configuration for this is found in Stores > Configuration > Catalog > Catalog > Rule-Based Product Relations.

You can also configure the store to use a combination of noted related products with the rules created.

Further reading:

- Related Product Rules
- Related Products, Up-Sells, and Cross-Sells

Product Recommendations

A new module available for installation Adobe Commerce (not for Open Source). It comes as part of the license, but doesn't install with the base installation. This module uses Adobe AI to

create related product rules with more flexibility than was previously available. It comes with an easy user interface that provides a preview as you choose options.

A user can select their recommendation to show:

- Homepage
- Category
- Product detail
- Cart
- Order confirmation
- Be available for PageBuilder

The recommendation types available are:

- Most Viewed
- Most Purchased
- Most added to cart
- Trending
- Recommended for you

A user can designate the display label for the recommendations list, choose the number of products to display, and identify additional placement (bottom or top of main content) and position if there are several recommendations built to display in the same area.

There are many filters available to use. You can include/exclude products by

- Category
- Price
- Product details
- Stock status (out of stock or low stock can be excluded)
- Product Type
- Visibility

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Further reading:

- Product Recommendations

Categories

Products and categories are associated in the Catalog > Categories area. Categories are quite flexible when viewed as a navigation tool. They can be added to the top menu on the frontend ("Include in Menu"). This association is also editable in the product listing and via product import.

Root Category

A root category is the top-most category display on a given **store scope.** If the merchant needs a new category structure, you'll need a new store and a new root category.

Further reading:

- Root Categories

Display Settings

Categories can be viewed in three modes:

- Static block only: only shows content from the "Add CMS Block" attribute.
- Products only: only shows products and no static block.
- Static block and products: shows both.

The Anchor setting is used to enable layered navigation (the sidebar in a category). This setting also merges the current category's products with the products from the category's children.

Further reading:

- Creating Categories

- How to enable Layered Navigation in Magento 2 store

- Anchor categories and position sorting explained (Magento 1, but the concepts still apply)

Products in Category

Products are added to the category manually (Open Source and Commerce) or automatically (Commerce).

To add products manually, simply click “Add Products” and choose which products you would like. Specify the appropriate position for these products. Note that the lower the position, the higher products are displayed. This can be troublesome as the default position is “0,” meaning, the top of the list.

To add products automatically in Commerce, select “Match products by rule.” Then you can add attribute conditions where the value matches or does not match. Additionally, you can set automatic sorting rules (such as by stock quantity or special price).

What is the visual merchandiser?

The visual merchandiser is a way to re-order products visually. Instead of trying to manage sort orders (Open Source), the administrator can simply drag and drop. Products are viewed in table or grid format (the latter contains the photo). In the sample data, note that there are many products assigned to a category that are “Not Visible Individually”. As you adjust sort order here, you might be adjusting non-visible products and thus won't see changes on the frontend.

To make an attribute appear in the list of product conditions, you must add it under Store > Configuration.

Further reading:

- Visual Merchandiser
- Configuring Smart Attributes for Visual Merchandiser

How can the visual merchandiser be used?

The visual merchandiser is used to fine-tune the display of products in a category. There are some cases where category navigation is preferred by customers and this helps to see how the new changes will look.

Managing Categories

- To reorder categories, click and drag. They will automatically be saved.
- To disable a category, uncheck "Enable Category." Note that this can hurt search engine optimization as the existing category page will result in a 404. It is best to create a redirect.

Category permissions (Commerce only)

A precursor to the B2B module was category permissions. Each category could have its own set of permissions to determine whether or not this category (or features) is available.

The criteria are the Website (can be set to All Websites) and Customer Group (can be set to All Customer Groups).

The administrator can then configure whether to allow, deny, or use Parent on:

- Browsing category (whether or not the category is enabled)
- Display product prices
- Add to cart

Note that when you enable shared catalogs, by default, category permissions will enable.

Further reading:

- Category Permissions

Tiered pricing

Tiered pricing allows you to identify different pricing, at the product level, for specific customer groups. This can also include tiers (for example, a lower price if a customer puts 10 or more of a single item in the cart) These can be entered in the product listing or imported via special pricing import.

Catalog rules & Cart Price Rules

Discussed in greater detail earlier, catalog rules reflect on the catalog pages and cart price rules will apply in the cart. A catalog price rule, for example, cannot include any shipping discounts.

Checkout Price Calculations

The price calculation in the checkout utilizes more data points to determine the price.

In addition to the factors taken into account on the catalog (special price, catalog price rules) these affect the total price:

- Tiered price is taken into account
- Cart price rules are checked
- Taxes
- Shipping

Shared Catalogs (B2B)

Shared catalogs are a pretty wrapper on tiered pricing.

Shared catalogs can have unique pricing structures or unique product sets. They can be set to have individual prices per item or a flat discount across the catalog. Shared catalogs are part of the B2B module and can be assigned to a company. Individual customers can also be assigned to a shared catalog instead of a customer group. Shared catalog pricing can be created in the shared catalog area or imported via special pricing import entity.

Special price

A product can be set to have a special price for a time frame. This shows in the catalog and can be part of scheduled updates.

MAP & MSRP

MSRP is a manufacturer's Suggested Retail Price. Some manufacturers contractually prohibit their resellers from showing a price under MSRP. Minimum Advertised Price (MAP) logic gives you the ability to hide the product prices in the storefront view.

Further reading:

- Minimum Advertised Price

Tax Configuration

Adobe Commerce has extensive support for all forms of commerce taxation.
These rules are configured in Stores > Tax Rules
Configuration for tax happens in Stores > Configuration > Sales > Tax

Most tax calculation settings are configured at the website scope. Most tax display settings are configured at the store view scope. A big difference for tax displays between the EU and the US is whether to include tax estimates in the product prices. This can be configured in this area as well.

To determine the correct tax rate, Adobe Commerce must have three things:

- The product's tax class
- The customer's tax class (or default tax class)
- The destination

Adobe Commerce will use the above information to select the applicable tax rate. A store administrator can import and export these tax rates to simplify the administration of them.

FPT, WEEE, and Container Tax

The FPT (Fixed Product Tax in the US), WEEE (Waste Electrical and Electronic Equipment Directive in the EU), and Container Tax (in Canada) are configured in the store in the same way.

Some taxation bodies require additional flat fees be charged for specific product types. A bottle deposit is an example of this. Configurations for these can be found in Sales > Tax > FPT.

To add FPT to a product:

- Enable Fixed Price Tax in Stores > Configuration > Sales > Tax > Fixed Product Taxes
- Create a new product attribute with the Fixed Product Tax type.
- Add the attribute to all related attribute sets.

Further reading:

- Fixed Product Tax

Currency Settings

There are three types of currency configuration (Stores > Configuration > General > Currency Setup):

- **Base currency:** this is the currency in which a product's price is entered. This value flows through to the order and is the amount and currency that the order is charged in. The scope for this setting is driven by the Price scope in Store Configuration. Note that this is a critical element to determining how many websites/stores/store views a website should have.
- **Default Display currency:** this is the currency that the customer sees on the frontend.
- **Allowed currencies:** this is how you allow customers to choose which currency they want to browse the website in.

Default display and allowed currencies will use the conversion rates setup in the admin to calculate the current estimated conversion. These can be set in Stores > Currency > Rates

For reference, product prices before the product page (category pages, up-sell, cross-sell and related products) are indexed and stored in the database. Starting at the product page, Adobe Commerce uses price calculation classes to determine the product's price.

Further reading:

- Currency Setup

Marketing

Digital Marketing

SwiftOtter

SEO

Search engine optimization is the darling child of online shops. Getting to the #1 place on the respective search engines is not an overnight task and involves several concurrent projects. However, getting to page one is often worth the effort. Additionally, you do not pay per click (unlike paid advertising, such as Google Ads), so the cost per click is perceived to be less. Whether or not it is, is another discussion that depends on many factors.

Having a basic working knowledge of SEO is critical to helping merchants increase revenue and knowing the native functionality built in to assist is imperative.

We are going to present an overly simplified version of SEO with links for you to gain more understanding.

Backlinks

How many people link to your website? The more links from quality sources (reputable websites), the better. Google views your website as an authority and will boost your rankings. SEO firms often utilize link building campaigns to encourage other people to link to you.

Common SEO impacts

While your job title may not be “SEO expert,” you do need to know some basic troubleshooting tips - ones that will save you and your merchants many headaches.

When creating a new website, ensure that every page on the old website redirects to a page on the new website. This is done by creating redirects in the admin (Marketing > URL Rewrites) or through web server configuration. Google has enough trouble browsing a website that has a new URL and file structure, and by not providing the new versions of these links, it is a recipe for a major disaster. Sadly, I have seen this impact way too many websites—all by competent Adobe Commerce agencies.

All duplicate content (staging or development sites) should be locked down with HTTP authentication (a password). You should also configure the robots.txt file to disallow access for

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all robots. You can also set in Store Configuration to put a meta tag on each page to prevent indexing or following links.

Ensure that all titles and descriptions have unique content. There are entries for this content on categories, products, and CMS pages. If you have multiple domains selling the same product, this is especially important to avoid duplicate content issues.

Utilize the metadata fields in your product listings and include image labels when adding images (either manually or via import)

Utilize a sitemap and submit this to Google Webmaster tools. You can configure this to generate this on a schedule.

Ensure Google Analytics is correctly installed and monitor it.

We have also been seeing a drop in search engine rankings where an old website is migrated to Adobe Commerce (Magento), but the content structure is not the same. For example, the old website might have few content-heavy pages (like combining category and product pages). Adobe Commerce (Magento) has many content-light pages. Utilizing a slow migration can help reduce loss of rankings, and ultimately, loss of traffic.

Further reading:

- 2022 comparison of Google organic clickthrough rates (SEO CTR) by ranking position
- Search Engine Optimization (SEO) Starter Guide
- Webmaster guidelines
- Link Building Campaigns
- The Web Robots Pages

The "all-important" canonical link element

The canonical link element is an HTML meta tag that resides in the HTML source (right-click on a page and click View Source).

In Adobe Commerce (Magento), there are pages that can show the same content as other pages. The best example is a product page (from the Magento Luma store):

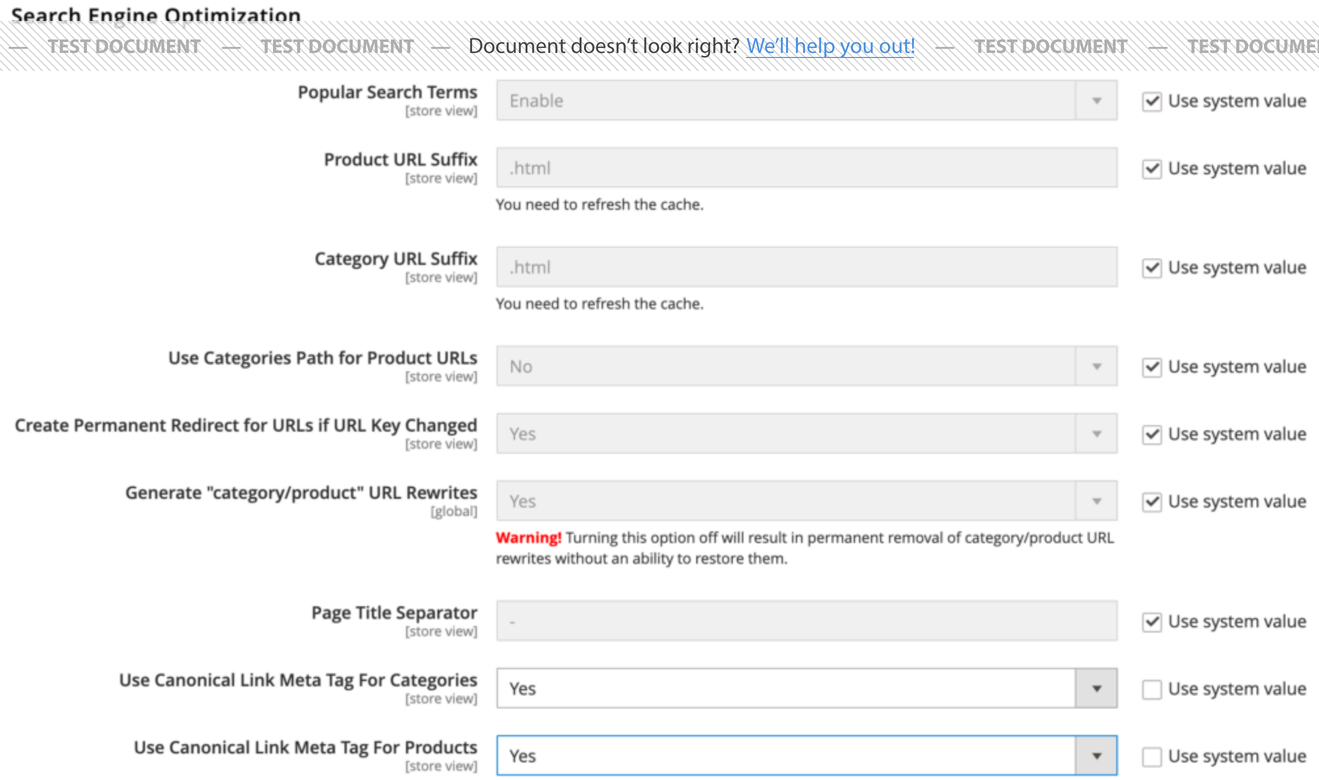
- `/gear/bags/push-it-messenger-bag`
- `/push-it-messenger-bag`
- `/catalog/product/view/id/14`

If Google has knowledge of each of these links (#1 and #2 are the biggest problems), it might not know which items to show to visitors. You might have search engine results pointing to the #1 scheme and others pointing to the #2 scheme.

The canonical URL resides in the head tag:

```
<pre class="wp-block-code<code>&lt;link rel="canonical" href="https://super-fancy-store
```

This tells Google that the canonical (authoritative) reference to this page is the `href` link. To enable it, go to Store Configuration > Catalog > Search Engine Optimization > Use Canonical Link Meta Tag For Products and Use Canonical Link Meta Tag For Categories.



Note that this feature is quite basic for products. By default, Adobe Commerce (Magento) only links to the product in the website root URL and not the category > product path.

Social merchandising/marketing

Social merchandising is encouraging a customer to take actions on your behalf. Here are examples:

- Clicking the Facebook like button on your product.
- Writing a review of the product.
- Sharing your product via a tweet.
- Pinning your product image.

One reason this is effective is that customers rely on social proof, where others provide their word about the product or service that you are offering. As you can encourage your customers to provide more of this proof (through social merchandising) you and your customers win.

Further reading:

- Social Merchandising Techniques And Tools Used In Ecommerce

Affiliate marketing

Affiliate marketing is when other people link to you and you give them a cut of your profits as a "thank you" for the traffic or sales. This can motivate influencers to send traffic your way.

Adobe Commerce (Magento) has no system for tracking this, and you need to use a third-party module.

Google Analytics, GTM, Google Adwords

These tools are an effective way to monitor traffic and usability of a website. It is helpful for studying user trends.

- A/B testing
- Optimization and personalization
- Bounce rate: the number of visitors that return to the search engine (or referring website) without clicking to a new page. The lower this is the better. However, we have run into a number of cases where the bounce rate is very low because the page view event in Google Analytics was fired twice.
- Conversion rate: the number of visitors divided by the number of purchases. This is the number of visitors who make a purchase. The higher, the better.
- Average order value: the average amount ordered. The higher, the better.
- Session duration: the length of the average browsing session. The longer this is, either people are having a hard time finding what they want, or they really like the content on this page.
- Pages / session: the average number of pages that a visitor goes to during a given browsing session.

Utilizing

A website's revenue is fairly accurately determined by:

- Visitors
- Conversion Rate
- Average order value

Using the analytics to testing changes for maximum impact

- User testing
- A/B testing

Google Tag Manager

Google Tag Manager is a way to inject scripts (tags) into a website. For example, instead of adding Google Analytics, you can inject GA through GTM. One thing to note is that the default Magento implementation of GTM does not send enhanced ecommerce data to Google Analytics. You need a module to do that.

Business Intelligence (BI)

Business Intelligence (BI) provides reporting that is specific to ecommerce on your store. Whereas Google Analytics is primarily focused on traffic, BI's emphasis is on commerce, with other data sources such as Google Analytics bolted on.

BI is designed to provide insights around your data and answer questions like: "How are my orders growing month-over-month?", "Who are my most loyal customers?", and "Is my coupon strategy working?".

Most common metrics

- Users, Sessions, Page views
- Conversion rate
- Average order value
- Revenue

GA common reports

- Filtering by date, segmenting, comparing.
- Each report overview
- Audience > Demographics
- Audience > Mobile
- Audience > Technology > Browser & OS
- Behavior > Site Content > All Pages, Landing Pages
- Bounce Rate
- Average time on page
- Exit %
- Behavior > Site Content > Exit Pages
- Where people most likely leave (pages they are not interested in).
- Behavior > Experiments
- Conversions > Ecommerce

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Add-ons

Add-on Modules and Additional Products

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Overview

The Magento B2B module is included with Adobe Commerce. This module provides common features that B2B websites require. Note that this module is not automatically installed.

This area will serve as a basic overview of B2B. If you would like additional information about this module, please consider our guaranteed prep course, as we delve deeply into B2B features and how to utilize them.

The B2B module provides the capability to:

- Manage company accounts
- Define access controls for company accounts so they can create sub-accounts and manage purchases for these accounts
- Create specialized product catalogs with unique pricing
- Create quotes that have custom prices: these quotes can then be purchased by the customer on the frontend
- Quick order by SKU
- Create requisition lists

We will take a look at the features of each of these capabilities. Please note that no amount of reading substitutes for experience. This test requires advanced knowledge of Adobe Commerce and a good understanding of Open Source.

Manage company accounts

A key component of B2B is treating companies as a separate entity from a customer. A customer can be linked to a single company, which is linked to a single shared catalog.

You will find company accounts in Customers > Companies.

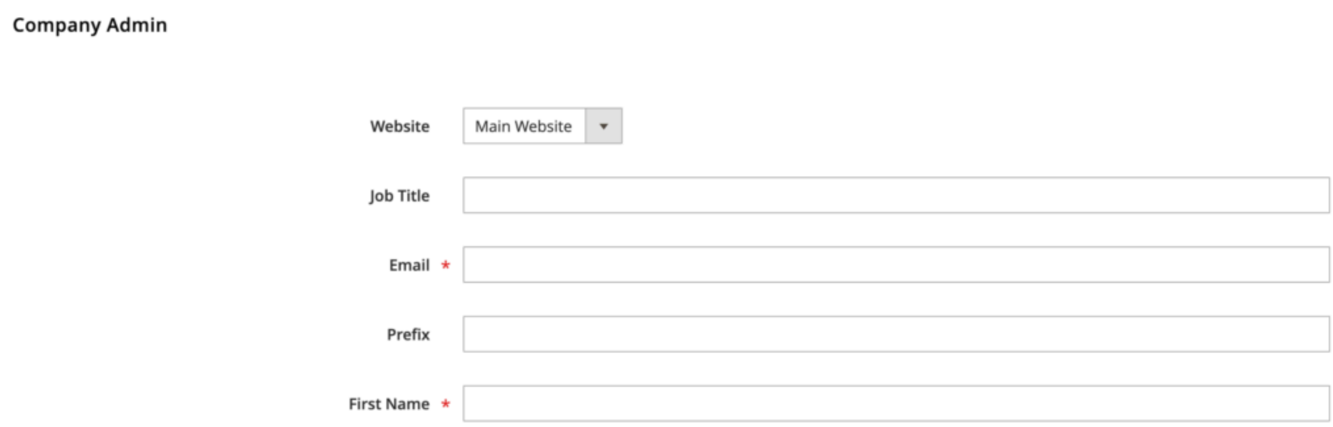
In the company screen, you can set up all the normal fields (address, tax ID, comments, who is the point of contact, etc.). You can also configure their available payment terms and see how much they have spent against that. Once the company utilizes payment on account, this is also where an admin will credit the account for payments received.

You can configure their shared catalog from Catalog > Shared Catalog (see following section). This is how you assign the specific catalog of products to members of a company.

Finally, you can configure if they can have quotes and which payment and shipping methods can be used.

When a company signs up on the frontend (this permission can be disabled), they go into the Pending Approval status. An administrator must move these companies into the Approved status for them to begin purchasing. Once the company is approved, the primary contact receives an email notifying them of the update.

One confusing aspect of managing a company is the Company Admin fields:



It's confusing because these attributes come directly from the customer administration panel. If your developers create a modification to the customer's uiComponents, they also will want to make the change here, too.

Further reading:

- Company Accounts

Company account permissions / frontend

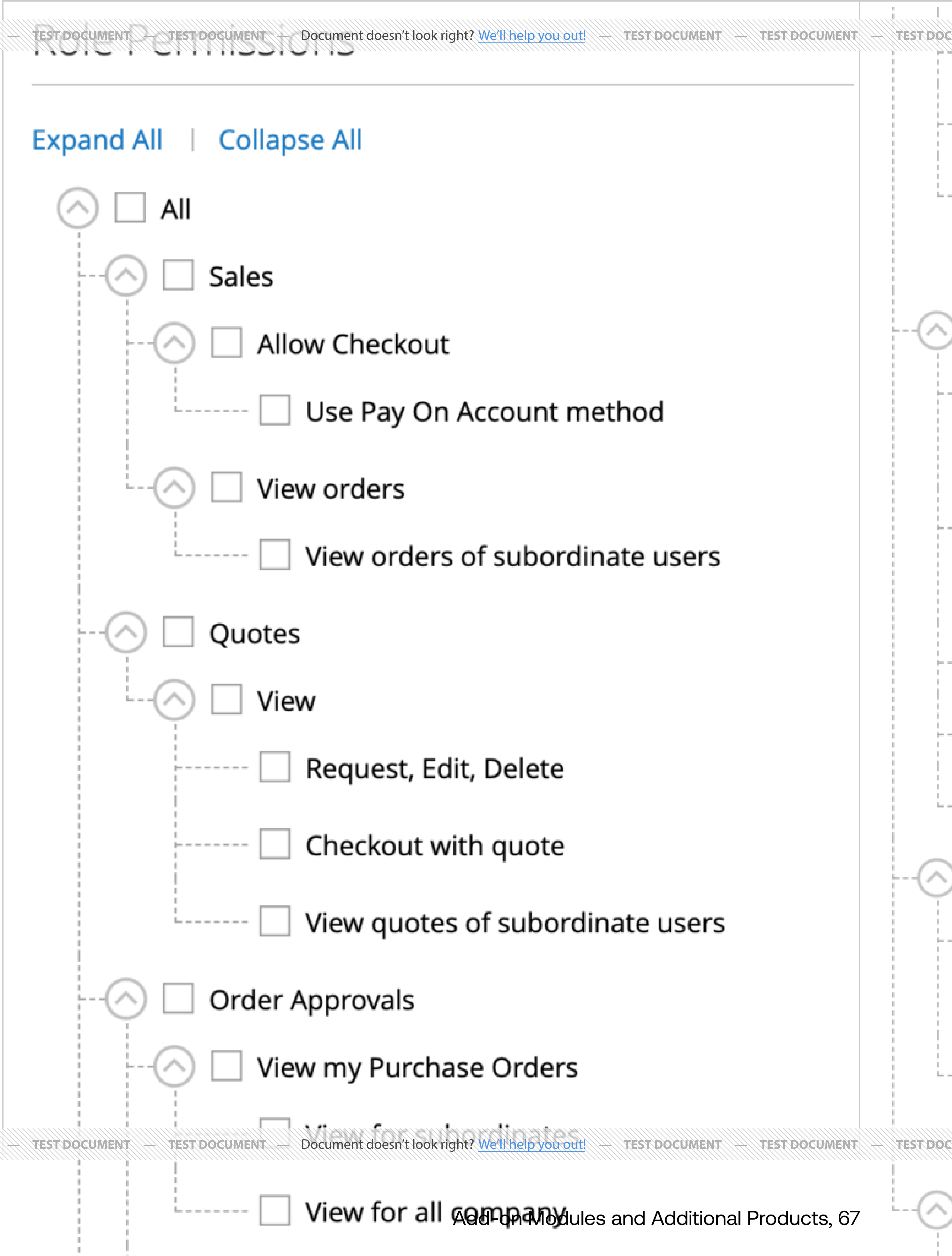
If allowed, anyone can create a company account. The visitor specifies initial information and can submit the application.

If the visitor already has a user account, that account will be assigned as the primary contact. Otherwise, Magento will create a new customer, who will receive an email to set a password.

Once in the company account, the new manager can:

- edit their company information
- create new users
- assign a company hierarchy tree
- create and assign permissions for company users
- Create approval rules for company users

In addition to having visibility into the company's full history across users, it allows the procurement manager for a company to have great powers over how the website is utilized by company users.


Role Permissions
Expand All | Collapse All
All
Sales
Allow Checkout
Use Pay On Account method
View orders
View orders of subordinate users
Quotes
View
Request, Edit, Delete
Checkout with quote
View quotes of subordinate users
Order Approvals
View my Purchase Orders
View for subordinates
View for all company

Further reading:

- Company Structure

Shared catalogs

There are many instances where merchants have custom product offerings and pricing for companies they sell to. The B2B module allows easy customization of this with Shared Catalogs (Catalog > Shared Catalogs).

If shared catalog is enabled, each instance has one Public Shared Catalog and as many Custom ones as necessary. There must always be a Public catalog enabled as this controls the pricing and products visible to not-logged-in visitors. Note that enabling shared catalogs automatically enables category permissions.

You can switch any Custom catalog to be a Public catalog. Doing so will convert the existing public catalog to be a Custom catalog. In addition, all companies who have been assigned to the existing catalog will be switched to the new catalog. All companies assigned to the new catalog will remain assigned.

Assigning products and prices happens through the Set Pricing and Structure. You can set a fixed price or a discount for products. You can also do this en masse. You can also import the unique pricing via special pricing import entity.

Shared catalogs function in a similar way as customer groups. As when you create customer groups, settings in the shared catalog will identify the customer tax class. This is important to note when reviewing requirements because if you have 2 companies with the same catalog and pricing structure and different tax rules, you will need to create separate shared catalogs.

Further reading:

- Shared Catalogs

Create quotes

The final major feature that we will cover in the Magento B2B module is the ability to create quotes with custom prices.

Once customers populate their cart with desired products, they can choose to request a quote (note that this feature can be permitted for all companies or individual companies). Once they submit the request, they are taken to a list of quotes in My Account.

Administrators can:

- update the contents of the quote
- write notes
- set a new price for the cart, apply a discount percent, or apply a discount amount
- set an expiration date
- send the quote back to the customer

The customer can then purchase the quote via the standard checkout workflow.

Further reading:

- Quotes

What is MSI?

Multi-source inventory was a new feature for 2.3 and it brought many new ideas to the table. We will provide basic information about the concepts surrounding MSI, but suggest that you delve into the documentation (or follow along in the course). This is a powerful feature that many merchants are starting to take advantage of.

Terminology

- Source: fulfillment location, such as a warehouse, physical store, or your garage
- Sales channel: a website (as in the website scope)
- Stock: the link between a source and a sales channel. A stock can be linked to multiple

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sales channels (websites) and multiple sources.

Source

These define where inventory is stored. Each website has a default source. Sources are configured in Stores > Sources.

You can specify a latitude and longitude for each source. If you also specify a Google API key in Store Configuration, Magento will calculate the distance between the shipping address and the source, choosing the closest source to reduce shipping costs.

Note that you cannot alter the details of the default stock or source or enable store pickup.

Stock

Stocks provide the link between sources and websites. These are configured in Stores > Stocks. You can configure the sales channels (websites) and sources. Sources are orderable. These must be configured to tell the website which source to load inventory information from.

Products

Inventory is controlled at the global level for simple products. Each product must be found in at least one source (by default it is the Default Source). This specifies where the product will ship from. The administrator must enter the number of products in stock. The administrator can specify a reserve quantity at that source by setting (or overriding) the Notify Quantity. This is, in effect, the safe (reserve) stock quantity at a source location. For example, if a source is a physical retail store, you would want to keep some level of inventory on the shelf for walk-in customers, but you may not need a reserve quantity for a warehouse location.

Orders

When orders are placed for products that have multiple sources, the quantity is not immediately deducted. Rather, the person creating the shipment can choose the source. Here is an example:

You are able to change the source algorithm (distance or source priority) and create a

shipment. Shipments are created for each source. If you wish to ship some inventory from one location and other inventory from another location, you would create two shipments, specifying the source for each shipment.

Configuration

MSI provides configuration values to select the distance provider (Google Maps or offline).

If the merchant wishes to open a new store and ship stock from there, they must first create the new source. The source must be added to the stock linked to the website. Then, they assign that source to individual products (Assign Sources button) or with mass actions on the product grid:

- **Assign Inventory Source:** adds a new inventory source for selected products
- **Transfer Inventory to Source:** moves inventory from one source to another source
- **Unassign Inventory Source:** removes the inventory source for the selected products

Now you are now able to set quantities for each at the product level.

This is somewhat off-topic, but in Adobe Commerce, you can select "Use deferred Stock update" in the Catalog Inventory configuration. Enabling this makes the inventory table updates happen asynchronously after an order is placed. Not enabling this can lead to errors when two or more orders are placed at the exact same time.

Further reading:

- Inventory Management
- Managing Inventory in Commerce
- Magento 2 Multi Source Inventory (MSI) {

How can MSI sourcing algorithms be used?

Sourcing algorithms determine the source to ship from. Note that choosing stock for fulfillment of an order is manual. You can choose the default algorithm, but it still requires manual intervention via admin to create a shipment.

Distance priority: use this if you wish to prioritize the closest source (warehouse). This would be helpful if you ship from multiple warehouses and wish to reduce shipping costs by shipping from a closer warehouse.

Source priority: use this if you have a preferred source. This would be helpful if you have a warehouse and a store and wish to preserve stock at your store.

Google Maps or Offline?

Google Maps requires an API key, and along with this, a credit card or a free-tier cap. I can't imagine why you wouldn't use Google Maps as that's guaranteed accurate, but maybe there's someone out there that wouldn't? I'll spare you the time of me trying to answer this question as I can guarantee it's not on the test.

To configure offline calculation, you must select this method and THEN https://www.geonames.org/download the address to lat/lon dataset. This must be done for every country you are shipping from AND every country to which you ship.

Buy-on-line / pick-up-in-store

New enhancements to MSI allows you to identify sources that allow pick up at store (in the source configuration). If the product in the cart is in stock at a pick up enabled source and the user is within the identified radius set in the store configuration, an option for pick up in store will appear in the shipping area of checkout.

Further reading:

- In-store Delivery

Advanced reporting (also available in OS)

Advanced Reporting is a suite of dynamic reports based on your product, order, and customer data, with a personalized dashboard tailored to the business' needs.

Requirements for Advanced Reporting:

- The website must run on a public web server.
- The domain must have a valid security (SSL) certificate.
- Secure URLs on Storefront and Use Secure URLs in Admin must be set to Yes.
- Single base currency in use since time of installation

Magento Business Intelligence

Magento BI is a cloud-based data management and analytics platform that provides the ability to easily consolidate and manage data sources, model your data, create charts and reports, and maintain a single source of truth.

There are five dashboards with approximately 100 reports and workflows based on business roles (data user, data analyst, administrator)

A best practices guide is available as well as self guided tutorials.

Note that for on prem installations and cloud pro after admin configuration, the client's customer success manager or technical advisor will need to be contracted to complete the setup.

Further reading:

- Business Intelligence Tools
- Tutorials

4.04 Distinguish the differences between native search and LiveSearch

Adobe live search was introduced June 2021 and is available for installation from the marketplace. Compatible with Adobe Commerce 2.4, it combines the power of Adobe Sensei

AI with real-time data to return personalized results.

Key Features of Live Search

- Search-as-you-type results give shoppers results on each keystroke
- Multiple filters let shoppers narrow their search quickly
- AI-supported workflows reduce manual inputs and automatically assigns facets, tags storefront pages, and syncs catalogs
- Rich rules let you easily boost, bury, pin, or hide products
- Flexible synonyms allow the merchant to point shoppers to the right product
- Flexible framework makes it easy for a developer to additionally customize
- It doesn't tax the instance because processing happened on Adobe AI server
- Dedicated reporting
    - Filter metrics by impressions, views, clicks, and more
- Identify shopper behavior with insights into queries, their variations and results, and how queries fluctuate over time
- Measure merchandising effectiveness with revenue attribution

Further reading:

- Introducing Live Search in Adobe Commerce
- Live Search

Overview

In section 2.4, we began the discussion on tax setup options, including FPT. We also touched on the fact that customer groups and shared catalogs function in a similar fashion, which is relevant to tax configuration. There are many core configurations already touched on in this guide that will allow customizations to meet requirements in the B2B environment. Below is a highlight for additional reference.

Payment & shipping methods can be restricted from companies. You can utilize this, for instance, if you have a contract including free shipping or to only ship via specified carrier.

The company Admin user can set up internal approval processes using company roles & approval rules.

Company credit can be permitted and managed at the company level.

Tax Terminology

Tax rules identify what rates are applied to which customer tax classes (based on product tax class & destination)

Product Tax Classes are assigned at the product level. Different types of products are sometimes taxed at different rates. This information is best confirmed by your client's designated tax professional due to the legality involved.

Customer tax Classes give a designation to customer groups or shared catalogs. Some customer groups are tax exempt in certain circumstances. Perhaps they are a government entity and fully tax exempt, for instance.

Tax Rates are the specific rate that will be charged by shipment destination.

Customer groups can be used for specific websites in the instance, even though the tax rules aren't website specific. If you have a wholesale storefront setup and you need the default users to be part of a resale tax class, you may use automatic groups assignment for that website scope to manage where the users are assigned and set up appropriate tax rules for that group's requirements.

Because shared catalogs link to a customer tax class, remember when mapping out shared catalogs for creation to take this into account.

VAT Tax

If your B2B storefront has VAT tax requirements, you can also configure automatic groups assignment based on VAT ID validation

Further reading:

- Configuring VAT

- International Tax Guidelines

4.06 Understand how to apply tailored pricing to a B2B customer

A Shared catalog can be set up with a unique product set and unique pricing. Pricing structure can be set with a flat discount amount, a percentage discount amount, or unique prices for each product. Unique pricing by sku for a shared catalog can also be imported.

Category permissions can be set for each shared catalog too. This allows you to dictate if a customer group or shared catalog can view the category items, see pricing, or add to cart.

You can also utilize catalog price rules on a shared catalog.

4.07 Understand the differences between Adobe Commerce native product and Adobe Sensei product recommendations

Related product rules

Related product rules allows dynamic population of cross sells, up sells and related products for products by attributes or special pricing. This can be configured to be used in combination with products specifically identified as a related sku for a particular product.

Product recommendations

Product Recommendations leverages Adobe Sensei for creating personalized product sliders. It provides an easy user interface to allow an admin user to draft, edit, preview and publish using a variety of options. Available for Adobe Commerce 2.4, it is not included with the base installation.

- Allows filtering (include/exclude) by

    - Price

    - Product
    - low stock
    - out of stock
    - Type
    - visibility
- Allows placement on certain page types and specific area on the page
- Allows availability for use with PageBuilder for added flexibility of placement
- Base algorithms
    - most viewed
    - most purchased
    - most added to cart
    - Trending
    - recommended for you
- Allows creation of custom label for front end

Architecture

System Architecture

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Overview

- Website: controls functionality of a website (like payment methods, product pricing)
- Store: controls the root category
- Store view: specifies text updates for languages

When does a solution need to include multiple websites or stores?

A Magento installation needs to include multiple websites when there is a requirement to:

- Localize (translations) for different languages or regions
- Target different markets or segments with unique designs or products.
- Inventory source delineation by domain/sales channel

Most times that a merchant would like to set up a separate instance, the same requirements can be accomplished in one instance, with the careful planning of scopes.

Further reading:

- Scope Quick Reference

Product Attribute Scopes

Reviewed in detail earlier, product attribute scopes come in three levels: Global, Website, and Store View

Further reading:

- Attributes

Multi-site infrastructure

The Magento frontend is browsed at a store view level.

As such, every website must have a store, which must have at least one store view. Any one of these levels can have multiple children (a store can have multiple store views). The lowest

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scope at which you can set a store domain is the store view. This means that you can register three domains and create one website, one store and three store views to power each domain.

Websites

Most configuration and product attributes are available at the Global and Website configuration levels. This controls aspects such as payment and shipping methods (active, applicable countries, etc.), and product assignments and prices (provided they are set for this scope). You can select the scope for the price attribute (global or website). This, in turn, affects the base currency for an order: the currency in which the customer's payment method is billed.

Stores

The primary use for the Store scope is to specify the root category. This is selected in Stores > All Stores.

Store Views

The store view scope usually specifies translatable information, such as names, templates, currency, and language. You can also set the domain URL at this level. At this point few, if any, features are switched on or off.

Some specific examples are:

- Translatable attributes for a product
- Display currency (default & allowable)
- Labels for ship & payment methods
- Default tax destination
- Whether or not to include taxes
- Locale (language)

Localization Taxes and pricing in websites, stores, and store views

Magento pricing is either determined at the global or the website scope (customized in Store > Configuration > Catalog > Pricing).

Product tax classes are assigned and are configured in the website scope.

As detailed earlier in the guide, the three types of currency configuration can be set under Stores > Configuration > General > Currency Setup

- Base currency set at the website scope.
- Default display currency set at the store view scope.
- Allowed currencies set at the store view scope.

Further reading:

- Currency Configuration

5.02 Identify and analyze performance metrics to make improvements

Site Wide Analysis Tool (SWAT) is 24/7 real-time performance monitoring. It provides alerts, a user friendly dashboard with reports, and recommendations for improvements. Adobe adds more scans and checks to this tool with each release. This is included with Adobe Commerce Cloud.

- Site-Wide Analysis Tool

New Relic provides performance monitoring to show performance trends and site traffic. This is included with Adobe Commerce Cloud.

Google Lighthouse allows users to run audits for performance, accessibility, progressive web apps, SEO, and more

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SOAP

This utilizes XML and a very structured language to communicate between endpoints. Typically, this represents server-to-server communication. Many server-side languages have a built-in means to integrate the connection directly into the code.

This is most often used in server-to-server environments, such as:

- ERP connections
- External system integrations
- Pre-built connectors

The SOAP API is strongly typed, so it keeps track of what is a number, a decimal, a string of text, and different types of objects. This provides a layer of validation without a developer writing custom validation code.

REST

This utilizes JSON (Javascript Object Notation) to send information and retrieve information. The Magento checkout utilizes the REST API. The REST API is fairly unstructured and is the easiest (fastest) method for integrating with Magento.

This is used in a variety of connections, such as:

- Frontend integration, for example, the Magento checkout
- Frontend enhancements where cookies are not utilized
- Server-to-server integrations (see above)

The REST API is not strongly typed. This can result in validation problems (i.e. passing a float where an integer is expected). As such, developers need to keep this in mind to prevent strange data problems (like rounding a decimal number to an integer with no decimal places). With the REST API, there is no defined query language, so formulating selection criteria is up to the developer to specify

GraphQL

This utilizes a new query and data syntax. The syntax is structured. GraphQL is strongly typed, so it is particularly useful for building frontend applications. In addition, its query language is powerful for creating queries to select data. It is an alternative to REST and SOAP for front end development. Magento teams are working on completing GraphQL coverage for all B2C use cases.

Because this is a new inclusion in Magento, its full scope of use cases is yet to be determined.

- Magento PWA studio
- Frontend integration

Further reading:

- GraphQL Overview

Authentication methods for APIs

oAuth

Basic functionality:

- The 3rd-party website needs to connect to Magento
- You have a Magento admin user account
- The 3rd-party website directs you to the Magento OAuth page
- Magento asks you to log in (if you aren't already logged in)
- Magento then asks you to authorize the 3rd-party website
- When you do, you are redirected to the 3rd-party website with a token from Magento providing authorization

Further reading:

- OAuth-based authentication

Token

There are two use cases for tokens: public communications and private communications.

Public communications represent when someone can locate the token being used. In these cases, the token is typically limited based on the permissions that the user has (for example an admin user will have more permissions than a visitor who isn't even logged in). These tokens are usually time-limited as well.

Private communications represent when a 3rd-party should have little to no access to a token. These cases would be server-to-server integrations or a mobile app. You can configure these tokens in System > Integrations.

Further reading:

- Token-based authentication

Login credentials

If a customer is logged in, Magento can utilize this login to provide authorization for areas in the system. For example, a developer can look up the customer's ID in these cases.

For admin users, a token must first be generated with the admin user's session. Then, they can access resources with the token.

Credential management in admin

System > Integrations: used to configure token and OAuth endpoints. You can assign specific resources (activities or available data) to a specific token. If you are developing a mobile app for your store, you likely do not want the mobile app to have access to create shopping cart rules.

System > Users: an admin user has API access to everything that they have admin interface access to. For example, to prevent an admin user from accessing your customers (in the admin panel or API), simply uncheck their access in Role Resources.

5.04 Differentiate between headless approaches and traditional

A Progressive Web App, or PWA, is a term for any web application that uses modern web technologies and design patterns to provide a reliable, fast, and engaging user experience. PWA websites are fast, secure, responsive, and cross-browser compatible. They are able to work offline and act like a native app on mobile.

- PWA sites use a variety of performance optimization strategies to provide a responsive experience or load content fast, even on slow networks.
- Secure HTTPS connections
- Responsive design strategies
- Cross-browser compatible
- Offline Mode - cache some content to serve when a user is offline
- Mobile users can add PWA sites to their home screens and even receive Push notifications from the site.
- Each page in a PWA site has a unique URL that can be shared with other apps or social media.

The RAIL model lays out the user-centric goals for PWA websites:

- Response – An application is receptive to the user's request.
- Animation – It shows a movement to keep the user pausing.
- Idle – A PWA utilizes the "idle" second to cache content.
- Load – It loads under a moment.

Further reading:

- Venia storefront setup
- Build a PWA Storefront on Adobe Commerce
- The PWA frontend for Magento
- What is Vue Storefront

- Magento PWA Documentation
- Magento's PWA Studio Overview

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Compliance

Compliance / Security

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6.01 Demonstrate how to secure the Adobe Commerce data access with roles and permissions

It is best practice for site security as well as PCI compliance to actively maintain user access.

- Create roles specific to permissions each user group needs. A partner who requires admin access may only require access to their integration's specific configuration.
- Be sure to include 2FA access to all users. Note there is a permission to manage 2FA as well as one to allow a user to set it up. Be sure to grant the correct permission.
- Be sure restricted users don't have access to change user roles or permissions. You wouldn't want a restricted user to be able to change their permissions or add another user with unrestricted access.
- Only grant access to users as needed. If you have a staff member temporarily assisting with merchandising, you should disable their user after their work is complete.
- Utilize user access expirations, when appropriate. This is a great way to turn off access without having to manually disable. If the user requires an extension, it takes only a moment to update the expiration date as needed.
- If using Commerce, you can also limit user permissions by website. This is helpful when you have separate merchandising teams. This can help prevent data entry for the incorrect website.

For additional security

- Prevent shared use of a single log in
- Force password resets via configuration

PCI compliance

When a merchant is "PCI compliant," they are in compliance with the standards put forth by the Payment Card Industries. PCI compliance dictates how an organization must treat payment card data. The most important part of PCI-DSS is to limit your scope in any way possible. This reduces the opportunities for cardholder data to be accessed by unauthorized

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third-parties.

These standards are segmented into two primary areas of concern:

- PCI-DSS: data security standards. These cover the entire organization which accepts payment cards (credit and debit cards).
- PA-DSS: application security standards. This covers the application, such as Adobe Commerce.

PCI Merchant Levels

There are 4 merchant levels: Level 1 through Level 4. These levels are primarily determined by the number of payment card transactions. Level 1 merchants have over six million payment card transactions in a year. As such, they are a higher profile for security breaches and need to take extra precautions. The other way to fit into Level 1 is if you have had a security breach.

Level 1 merchants are not eligible for a Self-Assessment Questionnaire (see next section). Their compliance must be signed off by a Qualified Security Assessor who writes up a Report on Compliance.

All other merchant levels have varying requirements for compliance. Most Magento merchants fit into Level 2 through Level 5.

If credit cards are accepted, the merchant must be PCI compliant. Remember, PCI compliance is whole-organization compliance and not "just the credit card" area.

Further reading:

- A Beginner's Guide to the PCI Compliance Levels

Self-Assessment Questionnaire (SAQ)

To verify compliance, Level 2-Level 4 merchants must self-assess their organization. This questionnaire ensures proper standards are met and controls are in place.

The self-assessment questionnaires are labeled. We do not have time to go into each one, but I recommend being familiar with the labels. Here are the most common you will run into:

A: ecommerce (or mail/telephone-order) merchants who have completely outsourced credit card functions to a compliant 3rd-party. In my interpretation, this would be utilizing any type of redirection for payment. When someone enters their credit card, the URL in the address bar is the payment provider's website (like paypal.com).

A-EP: ecommerce merchants who have in-page payment processing (Javascript or iframe), but the card does NOT proceed through merchant servers. In my interpretation, this would be Braintree or Stripe or Paypal Express.

D: merchants who do not fit into other categories. In my interpretation, if credit cards are processed through the merchant server, the merchant falls into this category.

Please take time to familiarize yourself with the quick-start guide. I highly recommend the requirements awareness training: it isn't much money for the value that you gain.

Further reading:

- Assessing the Security of Your Cardholder Data
- PCI Awareness Training
- PCI Quick Reference Guide
- PCI Compliance
- Responding to a Cardholder Data Breach

ADA Compliance

ADA Compliance ensures that your website is accessible to all people with disabilities. There are compliance checkers and browser extensions that can help audit websites. (Google Lighthouse is a popular choice.) This includes things like making sure all images have tags (the image labels are used for this by default), making sure contrast between elements meets regulations, and many more.

Further reading:

- ada.gov

GDPR (General Data Protection Regulation)

Any site operating in the EU is required to comply with GDPR regulations. The key points are outlined below.

Data protection

Companies must employ "reasonable" protection for their user's data. Reasonable has not been tested or defined. Presumably, reasonable would be not to publish user data. What is user data? Anything that is personally identifiable (including IP addresses) or considered sensitive (see the links in the further reading for better definitions).

Users also have the right to see their stored data and request it be erased.

GDPR also sets up requirements for companies to have a designated Data Protection Officer or Data Controller. This person makes sure that policies are followed, that compliance is maintained, and is the point person for interacting with the supervisory authority.

Company responsibility

GDPR defines a basic framework (aka common sense) for how companies should treat customer data. If the company is switching technologies or something similar that could affect the security of their customer's data, they must perform a data protection impact assessment.

When a data breach occurs, the company must notify the applicable supervisory authority within 72 hours. They must communicate to their customers the impact.

Further reading:

- What is GDPR? The summary guide to GDPR compliance in the UK
- General Data Protection Regulation GDPR

- General Data Protection Regulation (GDPR): What you need to know to stay compliant

Core features that support GDPR

Adobe Commerce is officially GDPR compliant. However, a merchant is ultimately responsible to ensure their site is compliant, and Magento provides features that assist with this. For example, a merchant can create a new customer attribute to allow customers to opt into communications. Cookie Restriction Mode (in Stores > Configuration > Web) is another feature that supports GDPR compliance.

Further reading:

- Magento is Ready for GDPR

6.03 Explain common security aspects of an Adobe Commerce project

Requiring 2 factor authentication for admin users and creating a unique admin url helps prevent auto-login attacks

Limiting admin user access scope by setting up appropriate user roles, forcing password resets, and utilizing the admin action log keeps your admin secure, which in turn keeps your store secure.

Enabling secure pages (HTTPS) and setting up a proper SSL cert encrypts communications, which is vital for PCI compliance

Configuring recaptcha for front end submissions helps prevent bots and spam submissions. This can help prevent DDos attacks.

Applying security patches as they become available keeps your store safe from known vulnerabilities. To allow merchants to install this faster than a version upgrade, Adobe has begun releasing security only patches.

It is best practice to install security patches using composer through the lower environments per standard deployment procedure. Adobe commerce also offers the ability to install updates via scheduled cron task, but this can be risky for a site as it would deploy to the live site without testing. Note that as of 2.4, the web installation wizard is no longer available to use.

VAT and Digital VAT

VAT is the most common system of taxation in the world. VAT is collected incrementally, from the point of manufacture to the final sale. VAT is charged on the value added from the previous buyer. Adobe Commerce provides the capability to charge VAT on orders. VAT is collected on all B2C sales. In addition, VAT is collected on all B2B sales that are in-country OR are out-of-country with a valid VAT ID.

Further reading:

- The Ultimate Guide to EU VAT for Digital Taxes
- What is VAT?
- Value Added Tax (VAT)
- 2022 European Union VAT rates
- General Tax Settings

Configuring VAT

To set up VAT for European countries:

- Import the applicable rates into Magento using System > Import/Export Tax Rates
- Create two tax rules:
    - B2C
        - Select a B2C customer group (those that do not have a valid VAT ID)
        - Select all EU B2C tax rates
    - B2B
        - Select a B2B customer group (customers who have a valid VAT ID)
        - Select tax rates applicable to the current country

- You can also set up automatic group assignment for validated VAT

Remember, the above does not constitute tax advice and will certainly not stand up in a court of law.

Further reading:

- Configuring VAT ID Validation

Cross border trade

Cross border trade is selling products into a different country. In most cases, the laws of the country to which you are selling are applicable (unless there are export restrictions or the like.)

Cross border taxes

In most jurisdictions, the tax rate is based on the shipment's destination. However, there may be some instances where the merchant desires the delivered price to be the same, regardless of what the destination's tax rate is. In these cases, the merchant takes the hit (out of their profits) for any extra taxes paid.

Further reading:

- Cross-Border Price Consistency

Fixed Price Tax (WEEE in the EU, Container Tax in Canada)

This was detailed earlier in the guide

Distance selling (UK)

Distance selling is a UK law that dictates how a merchant must advertise their products. My understanding is that this law is pretty much common practice for reputable merchants (see the Further reading links for more details). Here are the most important points:

- You must display your business name, contact details, and address
- The price of the product (including taxes)
- How they can pay for their order
- How they can cancel their order
- Most websites specify this information explicitly. Depending on the country, tax must be included in the selling price (UK and the EU are two examples)

It is important to familiarize yourself with the overview of the law (see the gov.uk link below) as there are some exceptions to these rules.

Further reading:

- [Online and distance selling]
- [Distance selling - what the law says]

US and EU tax regulations

Two things in life are guaranteed: death and taxes. It is important for you to have a general understanding of taxes and a merchant's legal requirements for this. If taxes are not properly collected, the merchant is left holding the bag.

US

The United States utilizes a sales tax system: the final seller charges a percentage of the purchase price and remits that to the government.

Unfortunately, this has become extremely convoluted. There are 50 states, but with the "streamlined sales tax" initiative, every city can charge their own tax rate. As such, there are thousands of sales tax rates. Many merchants are turning to 3rd-party systems (like Vertex, which is bundled with Magento) to resolve their compliance issues. Otherwise, a merchant can import tax rates into their Magento website.

EU

The European Union uses the VAT system. Each country has its own tax rate.

In-state and out-of-state taxes

Please note this is not tax advice, only a high level overview for basic understanding. Also note that tax laws can change fairly frequently and that there are many government agencies dictating these on federal, state, and local levels. Tax requirements should always come from the merchant's tax expert as they are ultimately responsible for proper tax collection.

In the United States, as of early 2019, tax is charged for shipments to any state in which the merchant has nexus (or a presence there). This nexus can be an employee, retail store, warehouse or headquarters.

US sales tax is calculated on top of the order. US residents know that sales tax automatically adds 10% (give or take) to whatever they are purchasing.

These rates are configured in roughly the same way as VAT, except:

- Prices are shown excluding tax.
- Many more rates need to be added to Magento.
- In some states, sales tax is NOT charged on shipping.

Further reading:

- General Tax Settings