

Selling and Fulfillment Foundation

Setting Up Quotes

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Contents

Overview of Quotes	4
Overview of Opportunity Management	6
Opportunity Fulfillment Pipeline	7
Opportunity Scenarios	8
Overview of Quote Management	10
Quote Fulfillment Pipeline	12
Setting Up and Validating Items in a Quote	14
Including Special Requests in a Quote	14
Adding Noncatalog Items to a Quote	14
Managing Recommended Items in a Quote	15
Hiding Minor Line Items in a Quote	15
Validating Items in a Quote	16
Quote Expiration Policy	17
Reworking a Quote	18
Creating an Order from a Quote	19
Quote Scenarios	20
Pricing a Quote	22
Overview of Approvals for Quotes	23
Determining if a Quote Requires an Approval	24
Determining Who Approves a Quote	26
Storing Approvals in a Quote	28
Index	29

Overview of Quotes

The Quote feature in Sterling Selling and Fulfillment Suite™ provides a seller with the capability to create a sales opportunity for a customer, and to present one or more quotes to the customer for a potential sale. For example, a Field Sales Representative of ABC Corporation may see an opportunity to sell computers to a customer, XYZ Corporation, and present several quotes to XYZ Corporation.

The Quote feature comprises the following components:

- ◆ A sales opportunity

An opportunity is a container for holding one or more related quotes presented to a customer. Related, alternative quotes are a set of quotes that are separate from each other, but are associated with a single sales opportunity. Negotiations can be performed for all these quotes, but a customer can accept only one quote, thereby abandoning all the other quotes. In such a scenario, when an order is created from a quote, the opportunity is closed with the status of Won. If the quotes either expire or are abandoned by the customer, the Field Sales Representative closes the opportunity with the status of Lost.

- ◆ One or more quotes that are related to a single sales opportunity

A quote represents a legally binding agreement between a seller and a customer for the purchase of a predetermined set of items and the quantities of these items, at a predetermined price, with delivery on a specific date. A quote is created by a Field Sales Representative, and can be rejected by a customer, expire after the quote expiration date, or, if a customer accepts the quote, result in a single order.

- ◆ A primary quote for an opportunity

An opportunity can contain multiple quotes. In such a scenario, any quote for an opportunity can be marked as the “primary quote”, which helps in determining the quote to be used for analysis and reporting. The first quote created is considered as the primary quote, by default. The `manageOrder`, `createOrder` and `changeOrder` APIs that are called for processing quotes also consider the primary quote setting and validate the same when displaying the output.

A quote document consists of a header and line items, and contains additional attributes that support the quote process. For example, the quote header contains an attribute that enables a quote to be linked to its associated opportunity. Information entered in the quote includes, for example, the name of the quote, a description of the quote, the name of the quote owner, customer information, shipping information, and items with their applicable quantities and prices. A quote also contains an expiration date, which is either computed by the system when order APIs are called, or is entered or overridden by a Field Sales Representative.

The quote process involves a seller foreseeing a sales opportunity and presenting one or more quotes to a customer to initiate the execution of a potential sale. The seller and the customer can negotiate the terms of a quote, and a quote approval process ensues. A quote can be accepted, rejected, or abandoned by the customer. When a quote is accepted by the customer, an order is created for the corresponding quote and, subsequently, all the alternative quotes are terminated, with the status as Abandoned. Quotes can also be abandoned at the customer’s request or when a quote expires. After an order is created from a quote, the quotes and their associated opportunity are purged, and the order is fulfilled through the Order Fulfillment pipeline.

For example, a Field Sales Representative of ABC Corporation may see an opportunity to sell computers to a software company, XYZ Corporation, and may offer the following alternative quotes to this customer:

- ◆ Quote A: Buy two laptop computers and receive a 5% discount off the list price.
- ◆ Quote B: Buy one laptop computer and one desktop computer and receive a 6% discount off the list price.
- ◆ Quote C: Buy two desktop computers and receive a 7% discount off the list price.

XYZ Corporation is offered a choice between Quote A, Quote B, and Quote C, and negotiates the terms of each of these options with the Field Sales Representative. When XYZ Corporation decides to accept Quote A, an order is created from that quote, Quote B and Quote C are automatically abandoned, and the sales opportunity is Won. The order created from Quote A is then fulfilled in the Order Fulfillment pipeline.

For information about how to configure quotes and opportunities, refer to the *Sterling Distributed Order Management: Configuration Guide*.

Overview of Opportunity Management

Opportunity management involves the creation and management of a sales opportunity and its associated quotes through the lifecycle of the opportunity, until the opportunity is either won or lost. Opportunity management uses the Opportunity Fulfillment pipeline in Process Modeling to send an opportunity through its various stages, such as creation and negotiation, and track the opportunity's lifecycle.

A sales opportunity can be created in two ways:

- ◆ A customer may contact a Field Sales Representative and ask for a quote, resulting in the creation of an opportunity.
- ◆ A Field Sales Representative may see a potential sales opportunity, and create an opportunity for a customer.

When an opportunity is created, it can either be assigned directly to one or more Field Sales Representatives, or can be temporarily assigned to a team until a Field Sales Representative is assigned to it. The origin of the lead can be specified in the opportunity; for example, a Field Sales Representative can specify the origin of the lead as Trade Show, Call Center, or Customer Call. In addition, a Field Sales Representative can add notes to the opportunity, and associate a note reason for each note that is added.

Note: Codes for note reasons and codes for origin of leads can be configured in the Applications Manager.

A customer contact is generally associated with an opportunity. However, when a customer contact is not available, a contact address is used in the opportunity record.

After an opportunity is created, the Field Sales Representative creates one or more quotes for this opportunity, and presents these quotes to the customer. A quote can be marked as the primary quote, when there are multiple quotes for an opportunity. By default, the first quote created for an opportunity is considered as the primary quote.

If the customer accepts one of the quotes, an order is created from that quote, all the alternative quotes are abandoned, and the opportunity moves to the Won status. If the quotes expire or the customer does not want to negotiate on the quotes anymore, the quotes are abandoned and the Field Sales Representative may manually move the opportunity to the Lost status. If the opportunity is lost, the Field Sales Representative can specify the reason why the opportunity was lost.

When an opportunity is moved to either the Won status or the Lost status, the opportunity purge agent verifies that all the associated quotes have been purged, and then purges the opportunity.

Opportunity Fulfillment Pipeline

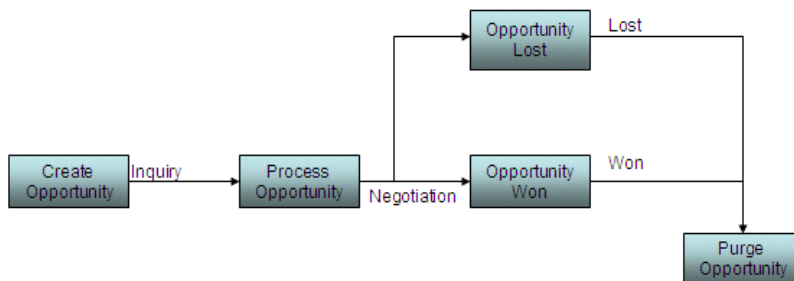
From its creation, an opportunity flows through a set of transactions and statuses until its completion. The chain of transactions and statuses is called an Opportunity Fulfillment pipeline.

The following statuses may be used in an Opportunity Fulfillment pipeline:

- ◆ Inquiry - An opportunity has been created by a Field Sales Representative.
- ◆ Negotiation - An opportunity moves to the Negotiation status when either:
 - ◆ The opportunity was automatically created after a Field Sales Representative created a quote at the request of a customer.
 - ◆ A Field Sales Representative created a quote and associated the quote to an existing opportunity.
- ◆ Won - An order has been created from one of the associated quotes, resulting in a Won opportunity.
- ◆ Lost - The Field Sales Representative moved the status of the opportunity to Lost because all the associated quotes are abandoned. The quotes are abandoned either because the customer rejected the quotes or the quotes expired.

Note: Won and Lost are terminal statuses, which are evaluated by the opportunity purge agent when purging opportunities and their associated quotes.

Following is a graphical representation of the Opportunity Fulfillment pipeline.



Opportunity Scenarios

This section provides a few examples of opportunity scenarios.

Scenario 1 - A Customer Requests a Quote from a Field Sales Representative

Ann Smith, who works at a local hospital, contacts John Nickle, a Field Sales Representative at Medical Equipment Corporation, and requests a quote for 10 stethoscopes. John creates a quote for the 10 stethoscopes, and also creates two additional quotes in the hope that Ann might purchase more stethoscopes. To associate these quotes, John creates an opportunity. He assigns the opportunity to himself, lists Ann as the customer contact, and specifies that the lead originated from a customer call.

John presents the following quotes to Ann:

- ◆ Quote A: Buy 10 stethoscopes at \$200.00 each.
- ◆ Quote B: Buy 15 stethoscopes at \$180.00 each.
- ◆ Quote C: Buy 20 stethoscopes at \$150.00 each.

Ann decides to accept Quote B, which results in an order being created for 15 stethoscopes at \$180.00 each. Quote A and Quote C are subsequently abandoned, and the opportunity is moved to the Won status. The opportunity purge agent purges the opportunity after all the associated quotes have been purged.

Scenario 2 - A Field Sales Representative Creates an Opportunity

Peter Connors, a Field Sales Representative at Kids and Crayons, sees a potential sales opportunity to sell crayons to a new school in the area, ABC Kindergarten School. Peter heard about the new school when he attended a Trade Show the previous week. Peter creates an opportunity, assigns the opportunity to himself and his colleague, Jim, and specifies that the lead origin of the opportunity was a Trade Show. At this point, because Peter does not have the name of a customer contact at ABC Kindergarten School, he adds a contact address to the opportunity record. Peter then asks his colleague, Jim, to manage the opportunity.

Jim creates the following four quotes, which he presents to Mary Hopkins, the Headmistress at ABC Kindergarten School:

- ◆ Quote A: Buy 10 packets of crayons, and get a 5% discount.
- ◆ Quote B: Buy between 11 and 20 packets of crayons, and get a 10% discount.
- ◆ Quote C: Buy between 21 and 30 packets of crayons, and get a 15% discount.
- ◆ Quote D: Buy more than 30 packets of crayons, and get a 20% discount.

Mary is not impressed with these prices, so she rejects all the quotes. As a result, Jim reworks the quotes and resubmits the following quotes to Mary:

- ◆ Quote A: Buy 10 packets of crayons, and get a 10% discount.
- ◆ Quote B: Buy between 11 and 20 packets of crayons, and get a 15% discount.
- ◆ Quote C: Buy between 21 and 30 packets of crayons, and get a 25% discount.
- ◆ Quote D: Buy more than 30 packets of crayons, and get a 30% discount.

However, Mary rejects the revised quotes as well, and tells Jim that she is going to buy crayons from another company at a cheaper price. As a result, Jim adds a note to the opportunity, specifying why the opportunity

was lost. The quotes are moved to the Abandoned status, and the opportunity is moved to the Lost status. The opportunity purge agent purges the opportunity after all the associated quotes have been purged.

Overview of Quote Management

Quote management involves the management of quotes that are associated with a sales opportunity.

Quote management uses the Quote Fulfillment pipeline in Process Modeling to send a quote through its various stages, such as creation, approval, presentation, acceptance or rejection, and order placement, and track the quote's lifecycle. The lifecycle of quotes associated with an opportunity begins with the creation of one or more quotes by a Field Sales Representative, and ends when either an order is created from one of the associated quotes, or the quotes are abandoned. When multiple quotes are present, a quote can be marked as the "primary quote", which helps in analysis and reporting.

A Field Sales Representative can create and present one or more associated quotes to a customer for a single sales opportunity. However, the customer can accept only one quote for that opportunity, thereby abandoning all the other associated quotes. When a quote is accepted by a customer, the quote can be converted into an order any time prior to the quote's expiration date. Subsequently, the quote is moved to the Ordered status, the opportunity is moved to the Won status, and all the remaining associated quotes are abandoned. If the quotes expire, or the customer does not want to negotiate on any of the quotes associated with an opportunity, the quotes are moved to the Abandoned status, and the Field Sales Representative manually moves the opportunity to the Lost status. Quotes are purged when they are moved to either the Ordered status or the Abandoned status in the Quote Fulfillment pipeline.

Note: A sales order associated with a quote can be purged only if the quote associated with the sales order has already been purged.

A Field Sales Representative can add notes to a quote throughout the quote's lifecycle, and associate a note reason for each note added, such as Customer Inquiry, Competitor Price, and Customer Satisfaction.

Note: The codes for the note reasons are configured in the Applications Manager.

A quote flows through the following process:

1. A Field Sales Representative creates a quote either as a result of a sales opportunity or at the direct request of a customer. If a sales opportunity already exists, the Field Sales Representative creates one or more quotes related to that opportunity. If a customer initiates the creation of a quote, the Field Sales Representative creates an opportunity for that quote, and may also create additional, alternative quotes.
2. If a customer requests a special feature or function for an item in a quote, the request must be evaluated and worked on by engineering before the quote is submitted for approval.

Note: Handling of special requests is achieved through the customization of the Quote Fulfillment pipeline.

3. A quote may require one or more approvals before being presented to the customer. For example, if a Field Sales Representative offers a discount that exceeds the amount the Field Sales Representative is allowed to offer, a supervisor may be required to approve the quote. In a more complex scenario, multiple people and multiple departments may have to approve the quote.

An approval transaction determines whether the quote has to be submitted for approvals, and if yes, the people who have to approve the quote. If approvals are required, the quote is put on hold, and the appropriate approvers are notified that the quote is waiting for their approval. All the approvers must approve the quote before the quote can be presented to the customer. If approvals are not required, the quote is automatically moved to the Approved status.

4. The Field Sales Representative presents the quote to the customer after all the items in the quote have been validated using the `validateItemForOrdering` API.
5. The customer can either accept or reject the quote.
 - ◆ If the customer accepts the quote, an order is created from the quote, either automatically or by the Field Sales Representative. The quote is moved to the Ordered status, all the associated quotes are moved to the Abandoned status, and the opportunity is moved to the Won status.
 - ◆ If the customer rejects the quote, the Field Sales Representative may rework the quote and present the reworked quote to the customer, or the quote may expire. When the customer does not want to negotiate on the quote anymore, the customer may request an abandonment of the quote. In such a case, the quote is moved to the Abandoned status in the Quote Fulfillment pipeline.

Note: If a customer accepts a quote and then requests changes to the quote, the quote must be reworked, and is moved back to the Created status in the Quote Fulfillment pipeline.

6. The order purge agent purges the quotes that are in the Ordered status and the Abandoned status. A quote is in the Abandoned status under any of the following conditions:
 - ◆ The Field Sales Representative decides that the quote is no longer negotiable, and moves the quote to the Abandoned status.
 - ◆ An order is created for an associated quote in the sales opportunity.
 - ◆ The quote has expired and has been moved to the Abandoned status.

The opportunity purge agent purges the corresponding opportunity after all the quotes associated with the opportunity have been purged.

After an order is created from a quote, the order gets fulfilled through the Order Fulfillment pipeline.

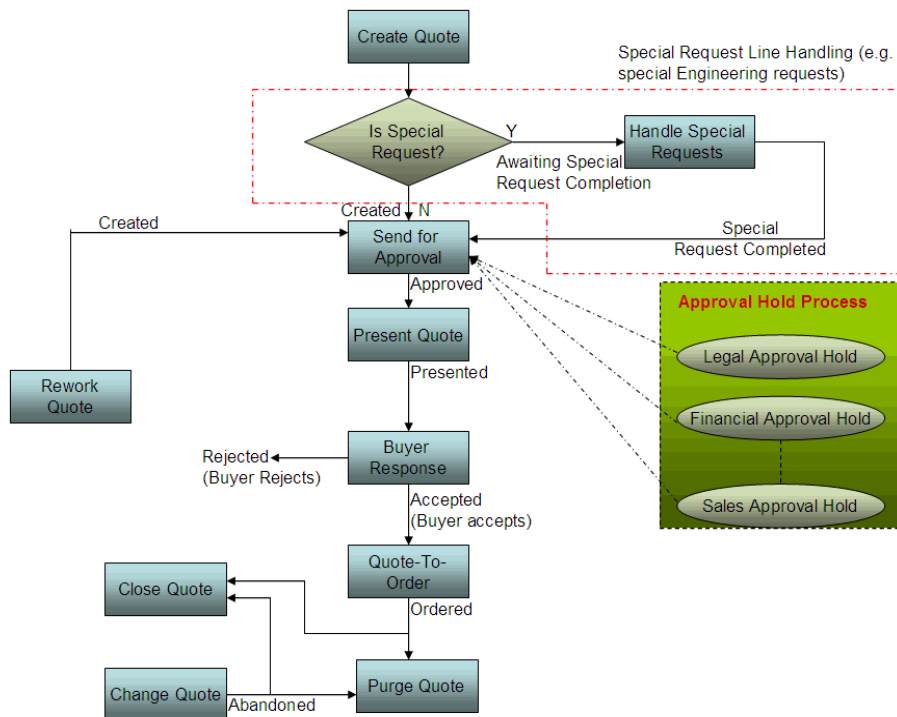
Quote Fulfillment Pipeline

From its creation, a quote flows through a set of transactions and statuses until its completion. The chain of quote transactions and statuses is called the Quote Fulfillment pipeline.

The following statuses can be used in a Quote Fulfillment pipeline:

- ◆ Created - A quote has been created.
- ◆ Approved - The quote has been approved by all the required approvers, if any.
- ◆ Presented - The quote has been presented to the customer.
- ◆ Rejected - The quote has been rejected by the customer.
- ◆ Accepted - The quote has been accepted by the customer.
- ◆ Ordered - An order has been created from the quote.
- ◆ Abandoned - The quote has been abandoned for one of the following reasons:
 - ◆ When a quote is accepted by a customer, all the associated quotes for that opportunity are abandoned.
 - ◆ The customer no longer wants to negotiate on the quote.
 - ◆ The quote has expired.

Following is a graphical representation of the Quote Fulfillment pipeline.



Note: Special requests can be handled through pipeline extensions, and implemented by setting a condition in the Quote Fulfillment pipeline to determine if the line item is a special request. If the condition flag returns Y, indicating that the line item is a special request, the createOrder API call automatically moves the status of the line item to Awaiting Special Request Completion, enabling the special request to be picked up by a special request transaction. After the engineering team resolves the special request, the team manually moves the quote line to the Special Request Completed status, enabling the line item to be sent for approval in the Quote Fulfillment pipeline.

Setting Up and Validating Items in a Quote

A Field Sales Representative can either create a quote from scratch, or create a quote from an existing quote using the `copyOrder` API. When a quote is copied from another quote, the `copyOrderTemplate` for quote fulfillment controls the copying over of the attributes and elements from the original quote.

Including Special Requests in a Quote

A customer may request that a special feature or function be added to an item in a quote. For example, a customer may request that a forklift be enhanced to have the capability of lifting 1,200 pounds instead of 1,000 pounds. Such special requests must be evaluated before they can be sent for approval. In the case of the forklift, for example, an engineer will have to verify and approve the requested forklift configuration.

Special requests can be handled through pipeline extensions, and implemented by setting a condition in the Quote Fulfillment pipeline to determine if the line item is a special request. For information about pipeline extensions for special requests, refer to the topic [“Quote Fulfillment Pipeline”](#).

Adding Noncatalog Items to a Quote

A Field Sales Representative may want to offer an item that is not listed in the catalog of products, such as an item from a different manufacturer or a special engineering request.

For example, consider a two-tier sales and distribution organization model, where a manufacturer may sell its products through a dealer network or a network of franchise owners. A dealer may create a quote that uses the manufacturer’s Sterling quoting system, and that contains products provided by the dealer as well as products provided by the manufacturer. Even though the manufacturer has given permission for the dealer to include the dealer’s own products in the quotes, the products in the dealer’s system may not be integrated with the catalog of products in the manufacturer’s Sterling quoting system.

A special engineering request is another example of a noncatalog item in a quote. For example, a Field Sales Representative may be aware that a manufacturer can make certain configuration changes to an item, but the configured item is not defined in the catalog of items.

To prevent such noncatalog items from failing validation when either the `createOrder` API or the `changeOrder` API is run, the `ValidateItem` flag must be set to N at the appropriate header level or line level in the quote in order to ignore validations from occurring against the catalog for such noncatalog items.

Managing Recommended Items in a Quote

Depending on the items that a customer requests in a quote, a Field Sales Representative may recommend additional items in the quote. For example, if a customer requests a quote for a vacuum cleaner, the Field Sales Representative may recommend a package of vacuum cleaner bags as a recommended item.

Recommended items are configured for pricing information only; that is, the pricing for these recommended items is displayed, but is not included in the calculated total cost for the quote. However, if the customer decides to purchase the recommended item, the recommended line item is changed to a regular line item, the cost of the item is included in the calculated total cost of the quote, and, depending on pricing rules that

may be applied, repricing of the quote may occur. If additional discounts are applied to the order, the changeOrder API will throw an error indicating the quote will need to be reworked.

For example, the calculated total cost for a quote that contains the following line items is \$500.00, which is the cost of only the vacuum cleaner, and does not include the cost of the recommended line item:

- ◆ Line item: One Vacuum Cleaner at \$500.00 each
- ◆ Recommended line item: One package of Vacuum Cleaner Bags at \$25.00 per bag

The customer decides to accept the quote for one Vacuum Cleaner at \$500.00. However, before a sales order is created for this quote, the customer decides to also purchase one package of Vacuum Cleaner Bags, resulting in the Field Sales Representative changing the recommended line item to a regular line item. The changeOrder API calls the Pricing Engine to determine if there are any pricing changes as a result of adding the package of Vacuum Cleaner Bags to the quote.

- ◆ If the quote does not trigger any additional pricing rules, the quote is repriced as expected. That is, the cost of the package of Vacuum Cleaner Bags is included in the calculated total cost for the updated quote, which is \$525.00 (one Vacuum Cleaner at \$500.00 and one package of Vacuum Cleaner Bags at \$25.00 per bag).
- ◆ If the quote triggers a pricing rule that causes a price change to the quote, the changeOrder API will throw an error, indicating that the quote will need to be reworked. For example, if a pricing rule, Buy One Vacuum Cleaner and Get One Package of Vacuum Cleaner Bags Free, is applied to the quote, the changeOrder API will throw an error because the automatic discount of \$25.00 for the free package of Vacuum Cleaner Bags causes a price change of -\$25.00 in the quote. When the Field Sales Representative reworks the quote and the reworkQuote API is called, the calculated total cost of the reworked quote that is presented to the customer is \$500.00.

Hiding Minor Line Items in a Quote

When presenting a quote to a customer, a Field Sales Representative may want to hide minor line items that are of no interest to the customer. For example, a customer who is interested in buying a laptop computer may not be interested in minor line item components, such as a motherboard or hard disk, that comprise the bundled laptop package. The Field Sales Representative can hide these minor line item components.

Validating Items in a Quote

The validateItemForOrdering API validates the line items in a quote when the ValidateItem flag is set to Y, and ignores line item validation when the ValidateItem flag is set to N.

When order APIs, such as the createOrder API, are called, the ValidateItem flag at the header level and line level of the quote is used to determine whether to perform item validations against the catalog. The ValidateItem flag should be set to N to ignore validations of noncatalog items.

Quote Expiration Policy

The expiration date for quotes is determined by the following configurations:

- ◆ IsExpirationDateOverridden flag
- ◆ Recalculate Expiration Date rule
- ◆ Default Expiration Period (Number of Days) rule

The default value is 30 days after the current date.

If a Field Sales Representative overrides the expiration date in a quote, the date entered is in effect for the lifecycle of the quote, or until the Field Sales Representative either enters another date or resets the IsExpirationDateOverridden flag.

If a Field Sales Representative does not override the expiration date in a quote, the expiration date is computed by the system, based on the configuration rules that have been set in the Applications Manager. When a quote is presented to a customer:

- ◆ If the quote does not already contain an expiration date, the expiration date stamped in the quote is computed, as follows:
Current date + Default Expiration Period (Number of Days)
- ◆ If the quote already contains an expiration date, the expiration date stamped in the quote is computed, as follows:

Expiration date + Default Expiration Period (Number of Days)

Note: The expiration date is computed only if the Recalculate Expiration Date rule is activated, and the Field Sales Representative has not overridden the expiration date in the quote.

If a customer rejects a quote, and if the Recalculate Expiration Date rule has not been selected in the Applications Manager, the expiration date is not recomputed and it remains the same. However, if the Recalculate Expiration Date rule has been selected in the Applications Manager, the expiration date in the quote is recomputed, as follows:

Current date + Default Expiration Period (Number of Days)

Reworking a Quote

A quote may have to be reworked by a Field Sales Representative for several reasons, such as:

- ◆ Before the quote is presented to a customer, one or more line items in the quote fail item validation.
- ◆ The customer accepts a quote, but asks for some of the quote's attributes to be changed, such as an address correction.
- ◆ When a recommended line is added to a quote, the quote must be repriced.
- ◆ To address inconsistencies in a quote, the Field Sales Representative may make changes to the quote before it is converted into an order. These changes require the customer to reaccept the quote. When this occurs, the `reworkQuote` API is called to reprocess the quote, which removes approval holds, if any, and moves the quote back to the Created status in the Quote Fulfillment pipeline.

Note: If any changes are made to a quote after it has been presented to a customer, the rework quote transaction moves the quote back to the Created status in the Quote Fulfillment pipeline.

Creating an Order from a Quote

When a customer accepts a quote, the quote is converted into a sales order using the `createOrderFromQuote` API. This is usually accomplished by a Field Sales Representative creating the sales order, although, in some cases, a sales order may be generated automatically. For example, a customer's acceptance of an online quote may automatically trigger the creation of a sales order.

The `createOrderFromQuote` API is called to create an order from a quote. The document type to be used for the order is configurable in the Applications Manager, and is determined by the `createOrderFromQuote` API. By default, the document type is Sales Order. The `createOrderFromQuote` API then creates an order from the quote using the applicable document type, enterprise code, order number, order header key, or both order number and order header key, and links the order to the corresponding quote. The creation of the order is driven by a template, `DefaultFromQuoteTemplate`, whereby line items and attributes from the quote are automatically copied to the order. Default customer information is copied from the quote to the sales order, as well as all the line items, except the recommended lines. The status of the order is either Draft or Created, depending on whether the `DraftOrderFlag` is set to Y or N in the input XML file.

After the order is created, the quote is moved to the Ordered status, enabling it to be purged by the purge agent. The associated opportunity record is moved to the Won status, and all the related alternative quotes for the opportunity are moved to the Abandoned status. The opportunity purge agent purges the opportunity after all the associated quotes have been purged.

Quote Scenarios

This section provides a few examples of quote scenarios.

Scenario 1 - A Field Sales Representative Creates Three Quotes for an Opportunity

Jeff Brown, a Field Sales Representative for Office Corporation, sees an opportunity to sell office furniture to XYZ Corporation. Jeff first creates an opportunity, and then creates the following associated quotes to present to Sarah Jackson at XYZ Corporation:

- ◆ Quote A: Buy 5 desks and get 1 chair free.
- ◆ Quote B: Buy 10 desks and get 3 chairs free.
- ◆ Quote C: Buy 20 desks and get 8 chairs free.

Because Jeff is allowed to offer such discounts without requiring approval from anyone else at Office Corporation, a transaction automatically moves the quotes to the Approved status. The `validateItemForOrdering` API validates all the items in the quotes, and Jeff presents the quotes to Sarah.

Sarah is interested in Quote B, but she rejects it and negotiates with Jeff to receive five free chairs instead of three free chairs. Jeff reworks Quote B as follows, which moves the quote back to the Created status in the pipeline:

Quote B: Buy 10 desks and get 5 chairs free.

Because Jeff is allowed to offer this additional discount without requiring approval from anyone else at Office Corporation, the quote is automatically moved from the Created status to the Approved status, enabling Jeff to present the updated Quote B to Sarah.

Sarah accepts the updated Quote B, and Jeff creates an order from this quote. The quote is moved to the Ordered status, resulting in a Won opportunity. Quote A and Quote C are automatically moved to the Abandoned status. The order purge agent purges all three quotes because they are in either the Ordered status or the Abandoned status.

Scenario 2 - A Customer Requests a Quote from a Field Sales Representative

Ann Smith, who works at a local hospital, contacts John Nickle, a Field Sales Representative at Medical Equipment Corporation, and requests a quote for five Recovery Couches that will be used in the Outpatient Department of the hospital. Ann wants each Recovery Couch to have an adjustable headrest, which is not a standard item in Medical Equipment Corporation's catalog.

John creates a quote for this special request. In addition, he sees an opportunity to sell an associated item, Bedding Package, and adds this recommended item to the quote. Each Bedding Package consists of a set of sheets, two pillows, and one blanket, but John hides these minor line items in the quote because he knows that Ann is familiar with the contents of a Bedding Package.

The quote contains the following line items:

- ◆ Special request line item: Five Recovery Couches, with adjustable headrests, at \$350.00 each
- ◆ Recommended line item: Five Bedding Packages at \$75.00 each

Because recommended line items and their costs are configured for information purposes only, the cost of the five Bedding Packages is not included in the order total of the quote. Therefore, the order total of the quote is \$1,750.00 (five Recovery Couches at \$350.00 each).

John then creates an opportunity, linking the quote to the opportunity.

The Recovery Couches line item is flagged as a special request line item in the Quote Fulfillment pipeline, and its status is moved to Awaiting Special Request Completion, enabling it to be picked up by the transaction that handles special requests. The engineering team evaluates the special request, and determines that an adjustable headrest can be configured for the applicable Recovery Couch. An engineer manually moves the special request line item to the Special Request Completed status, enabling it to be picked up by the next transaction in the pipeline, which sends the quote through the approval process.

Items in the quote are validated, and because John is allowed to offer these items without requiring approval from anyone else at Medical Equipment Corporation, the items are automatically moved to the Approved status.

John presents the quote to Ann, and she decides to purchase both items in the quote. As a result, the recommended Bedding Package is changed to a regular line item, as follows:

- ◆ Special request line item: Five Recovery Couches, with adjustable headrests, at \$350.00 each
- ◆ Regular line item: Five Bedding Packages at \$75.00 each

The order does not trigger any pricing rules. Therefore, when the changeOrder API calls the Pricing Engine, the order total of the quote is changed to \$2,125.00 (five Recovery Couches at \$350.00 each = \$1,750.00, plus five Bedding Packages at \$75.00 each = \$375.00).

Ann accepts the quote, and John creates an order from the quote. The quote is moved to the Ordered status, and the opportunity is moved to the Won status. After the order purge agent purges the quote, the opportunity purge agent purges the opportunity.

Pricing a Quote

A quote is a type of order. The pricing or repricing of a quote is similar to the pricing or repricing of an order.

For information about the pricing of quotes, refer to the *Selling and Fulfillment Foundation: Pricing Concepts Guide*.

Overview of Approvals for Quotes

In business-to-business (B2B) transactions, one or more approvals are often required for quotes when special discounts are offered to customers and depending on the approval rules that are applicable for the quote. For example, if a Field Sales Representative gives a discount in a quote that exceeds the amount that the Field Sales Representative is authorized to offer, a Supervisor may be required to approve the quote. In a more complex scenario, multiple people from multiple departments may be required to approve a quote. For example, a \$500,000.00 quote for a computer company in France may have to be approved at multiple levels or by multiple people within the corresponding Sales organization. In addition, the Legal department may have to approve the quote to ensure that it complies with international regulations.

Approvals for quotes are triggered automatically by approval rules, which are based on a combination of factors, such as category ID, item attributes, user group/role and team code, and manual discount percentage. Approval rules can be configured for the line level and the header level of quotes. If a quote violates at least one approval rule, for example, if the manual percentage discount applied in a quote exceeds the manual discount percentage of any approval rule, one or more approvals are required. If a quote requires approval, the quote is placed on hold, and the reason why the approval rule was violated is specified in the quote. The required approvers can be notified that the quote is pending their approval. Depending on the configuration of the approval plan for a quote, the quote may have to be approved simultaneously by all the approvers, or may have to be approved in a hierarchical sequence.

Note: Each approval in an order has a corresponding status, which indicates who has to approve the quote next in the approval sequence.

Each approver of a quote can either accept or reject the quote, but all the required approvers must approve the quote before it can be presented to a customer. When all the approvers have approved a quote, the hold is removed from the quote, and the quote is moved to the Approved status in the Quote Fulfillment pipeline.

Note: An approval hold, if any, will be resolved automatically when a quote is reworked.

Determining if a Quote Requires an Approval

A quote may or may not require approval before it is submitted to a customer. For example, if the manual discount percentage applied at either the header level or the line level of a quote does not exceed the manual discount percentage specified in any of the approval rules that are applicable for that quote, an approval is not required. However, if the manual discount percentage applied at either the header level or the line level of a quote exceeds the manual discount percentage specified in any of the approval rules that are applicable for that quote, at least one approval is required.

For example, in a simple scenario, if a Field Sales Representative creates a quote that offers a 20% manual discount for a line item in a quote, and the Field Sales Representative is authorized to offer a manual discount of 25%, an approval is not required. However, if the Field Sales Representative offers a 30% discount for a line item in the quote, an approval is required, because the manual discount percentage that the Field Sales Representative is authorized to offer has been exceeded.

The `sendOrderForApproval` API is called to verify every line in a quote and determine if an approval is required, based on the attributes in the resource XML file, `orderApprovalGreexTemplate.xml`.

Note: You can extend the attributes in the resource XML file, `orderApprovalGreexTemplate.xml`. To extend this resource XML file, refer to the *Selling and Fulfillment Foundation: Customization Basics Guide*.

Note: If an attribute could trigger approval, modification of the attribute on the order should be prevented. You must prevent this modification in two ways, as described in the *Sterling Distributed Order Management: Configuration Guide*:

- ◆ Configure a modification type so that it does not allow the attribute to be changed.
- ◆ Configure an approval hold type to prevent modification of the attribute.

Approval rules can be configured at the line level or header level, and approvals are triggered automatically, based on a combination of parameters in the approval rules. The following table describes the parameters, and indicates whether the parameter is applicable at the line level or the header level:

Parameter	Description	Level
Category ID	Indicates the category ID of a line item, for example, Electronics.	Line
Item Attributes	Indicates the attributes of a line item, for example, Brand-X may be an attribute of TV.	Line
User Group/Role	Indicates the different approval levels, for example, Sales Manager, Sales Director, and CEO.	Header
Manual Discount Percentage	Indicates the manual discount percentage that can be applied to a quote at the specified line level or header level, without either an approval rule being violated or an approval being required.	Header/Line
Expiration Date Overridden	By default, the expiration date in a quote is determined by the configuration rules in the Applications Manager. If a Field Sales Representative overrides this date, an approval is required.	Header

For more information about the parameters used in approval rules, refer to the *Selling and Fulfillment Foundation: Javadocs*.

If an approval rule does not specify a parameter, the approval rule applies to all the values for that parameter. For example, if an approval rule does not specify a Category ID, the approval rule applies to all categories.

Based on the output of an approval rule, one or more approvals may be required.

Consider the following matrix of approval rules:

Approval Rule	Category ID	Item Attribute (Brand)	User Group/ Role	Rule Type	Manual Discount Percentage	Override Flag	Approval Required
A	Electronics			Line		N	
B		Brand-X		Line	15%	Y	N
C			Sales Manager	Line	20%	N	
D	Electronics	Brand-X		Line	35%	Y	N
E			Accountant	Hdr		N	
F			Vice President	Hdr	100%	Y	N

For example, let us assume that a Field Sales Representative creates a quote for a customer who wants to purchase a Brand-X TV, which has a Category ID of Electronics. Based on the matrix of approval rules in the previous table:

- ◆ The Field Sales Representative can create a quote that offers a 5% manual discount on the Brand-X TV without requiring approval, because the manual discount percentage has not been exceeded for any of the approval rules.
- ◆ If the Field Sales Representative offers a 45% manual discount on the Brand-X TV, an approval is required, because the manual discount percentage has been violated by Rule A, Rule B, or Rule D.

Approval rules can be enhanced to provide more flexibility. For example, an Override flag can be set in an approval rule. When the Override flag is set to Y in an approval rule, all the other approval rules that prevent giving this discount are ignored. If multiple approval rules have the Override flag set to Y, the approval rule with the highest manual discount percentage is used. For example, in the previous table, the Override flag is set to Y for Rule B, Rule D, and Rule F. Of these three approval rules, only Rule B and Rule D are applicable for the Field Sales Representative. Rule F, which is specific to the Vice President user group/role, is not applicable. Rule D has a higher manual discount percentage than Rule B. Therefore, a manual discount of 35% can be applied to a quote without requiring approval.

If an order line or an order header satisfies the conditions that are configured in an approval rule, an approval is required. You can also configure an override rule whereby, if an order satisfies the conditions that are configured in an approval rule, an approval is not required. For example, in the previous table, the Override flag is set to Y for Vice President, and, therefore, approval is not required.

Note: Approval rules with the Override set to Y take precedence over approval rules without overrides.

For information about configuring approval rules, refer to the *Business Center: Pricing Administration Guide*.

Determining Who Approves a Quote

Depending on the approval rules that have been violated, a quote may have to be approved by one or more approvers. To determine who must approve a quote, and the sequence, if any, in which the approvals must occur, you can configure an approval plan in Sterling Distributed Order Management of the Applications Manager.

Sometimes, multiple users have to approve a quote in a hierarchical sequence. To be defined as an approver of a quote, a user must belong to both the appropriate user group/role and team code. For example, Tom, a sales manager, is assigned to the manager user group/role and to the sales team code. However, Joe, an accounting manager, is assigned to the manager user group/role and to the accounting team code. If only the users from the manager user group/role and sales team code are allowed to approve a quote, Tom can approve the quote, but Joe cannot approve it.

If a quote has to be approved in a hierarchical sequence, the quote is first approved by the users from the user group/role-team code that has no predecessors. The hierarchy of subsequent approvers is based on the assignment of predecessors.

If Mandatory is set to Y in an approval plan, approval is required from the users in the corresponding user group/role-team code, regardless of whether approval rules have been violated or not. If mandatory approvals are not required, the approval process is complete when approvers in the hierarchy have approved the quote, and there are no further violations of approval rules.

Consider the approval plan described in the following table, where:

- ◆ Approval Sequence - Indicates the sequence of approvals.
 - ◆ Approval Name - Indicates the approval name.
 - ◆ Team Code - Indicates the team that provides the approval, such as Sales.
 - ◆ User Group/Role - Indicates the user role of the approver, such as Sales Manager or Accountant.
 - ◆ Predecessor Sequence - Indicates the sequence of predecessor approvers.
- Note:** Approvers do not necessarily need to approve in this sequence.
- ◆ Is Approval Mandatory - If the Mandatory flag is set to Y, approval is required, regardless of whether approval rules have been violated or not, and regardless of the approval hierarchy.

Approval Sequence	Approval Name	Team Code	User Group/ Role	Predecessor Sequence	Is Approval Mandatory
1	K1	Sales	Sales Manager		
2	K2	Sales	Sales Director	1	
3	K3	Accounting	Accountant	1	
4	K4	Vice President	Vice President	2, 3	Y

In the approval plan described in the previous table, the Sales Manager is the first approver because the Sales Manager has no predecessors. After the Sales Manager approves the quote, the next approvers are the Sales Director and Accountant, who can simultaneously approve the quote. The Vice President, who is a mandatory approver, is the last approver in the sequence.

Note: If an approver who is higher up in the approval sequence approves a quote, all predecessor approvers automatically appear as Approved in the quote.

For information about how to configure approval plans, refer to the *Sterling Distributed Order Management: Configuration Guide*.

Storing Approvals in a Quote

Order approval rules determine the criteria that require a quote to go through the approval process. When a quote is created or changed, order approval details are created, which contain the information about the criteria that triggered them. When changes are complete in a quote, the quote can be sent for the approval process with the `sendOrderForApproval` API. The `sendOrderForApproval` API evaluates all applicable approval plans, and creates order approvals and order approval details based on the same order approval rules, but specific for each approval plan. For additional information about the `sendOrderForApproval` API, refer to the *Selling and Fulfillment Foundation: Javadocs*.

If it is determined that a quote requires an approval and if a hold is configured, the quote is placed on hold. The hold should be configured such that it prevents modification types that can trigger approvals.

Note: For information about how to configure hold types, refer to the *Sterling Distributed Order Management: Configuration Guide*.

For example, consider a quote in which a Field Sales Representative applies a manual discount of 15% to a line item in the quote. In this scenario, a Supervisor is authorized to approve a maximum discount of 10%, a Sales Manager is authorized to approve a maximum discount of 20%, a Vice President is authorized to approve a maximum discount of 50%, and the CEO is authorized to approve a maximum discount of 50%. When the `sendOrderForApproval` API is called, the following order approvals are created and stored in the quote:

Sequence	Approval Name	Team Code	User Group/ Role	Predecessor Sequence	Mandatory
1	K1	Sales	Supervisor		
2	K2	Sales	Sales Manager	K1	
3	K3	CEO	CEO	K2	Y

In this scenario, a Sales Manager is authorized to approve a maximum discount of 20%. Therefore, authorization is not required by the users in the next user group/role-team code in the approval hierarchy, which is a Vice President, because no further approval rules have been violated. Consequently, Vice President is not populated in the order approval plan for this quote. The CEO, however, is populated in the order approval plan for the quote, because CEO is a mandatory approver.

As users from the user groups/roles-team code approve a quote, an order approval table is populated with the identification of the approval rule that was triggered, a key to the sequence of the approvals, and a message and a message code that indicate which rule was violated. This order approval table enables a user to see which line items have triggered which approvals.

A

approvals
 determining if approval is required 24
 determining who approves a quote 26
 overview 23
 storing in a quote 28

C

create order from quote 19

H

hiding minor line items in a quote 15

M

managing
 opportunities 6
 quotes 10

N

noncatalog items, adding to a quote 14

O

opportunity
 definition 4
 management 6
 pipeline 7
 purging 6
 scenarios 8
 statuses 7

Opportunity Fulfillment pipeline 7

P

pipelines
 Opportunity Fulfillment pipeline 7
 Quote Fulfillment pipeline 12

pricing of quotes 22

purging
 opportunities 6
 quotes 10, 11

Q

quote
 adding noncatalog items to 14
 create order from 19
 definition 4
 expiration policy 17
 format of 4
 hiding minor line items 15
 item validations on 16
 management 10
 overview 4
 pipeline 12
 pricing 22
 process 4, 10
 purging 10
 recommended items 15
 reworking 18
 scenarios 20
 special requests on 14
 statuses 12

Quote Fulfillment pipeline 12

R

recommended items on a quote 15
rework a quote 18

S

special requests on a quote 14
statuses
 Opportunity Fulfillment pipeline 7
 Quote Fulfillment pipeline 12

V

validating items in a quote 16