JD Edwards EnterpriseOne Tools

Enterprise Process Manager Guide

9.2

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Preface

1 Introduction to Enterprise Process Manager

Welcome

Welcome to the *JD Edwards EnterpriseOne Tools Enterprise Process Manager Guide*.

Enterprise Process Manager is a design tool that you use to create process models, metrics, and analytics for specific business processes. Process owners then use Enterprise Process Modeler to interact with those models, metrics, and analytics to monitor and analyze the business processes, and ideally improve them. In this way, the design-time experience of Enterprise Process Manager and the run-time experience of Enterprise Process Modeler go hand-in-hand to provide process models, metrics, and analytics—visualizations of how your processes are actually running—based on live data from your EnterpriseOne system.

The main chapters in this guide contain instructions on how to:

- Define a process model based on the nodes (for example, statuses or steps) and the links (relationships) between the nodes.
- Define metrics that are specific to the context of a node or a link, for example, how many sales orders are at status 520, or how many sales orders are moving from status 520 to status 540.
- Create analytics—data visualizations, such as pie charts and line graphs—that are contextually related to nodes, links, or the process as a whole.
- Define data filters, such as date range, company, or business unit, to refine the analysis of processes.
- Create process models that branch into subprocesses.

When you have finished designing a process model, the EnterpriseOne system saves it as a user-defined object (UDO), which you can then publish and share with business process owners. The business process owners will then use Enterprise Process Modeler to open, explore, and analyze the process model along with its metrics and analytics.

This guide has been updated for JD Edwards EnterpriseOne Tools Release 9.2.26.2.

Note: *Creating a User-Defined Process Model*

Audience

This guide is intended for process model designers, who are typically business analysts or project managers responsible for some business domain, such as procurement, order management, manufacturing, and so on. It is assumed that, you are familiar with how the business process functions at your organization, as well as the JD Edwards EnterpriseOne applications and business data that support the business process. As a process model designer, you use Enterprise Process Manager to create process models, metrics, and analytics. The JD Edwards EnterpriseOne system stores a process model as a user-defined object, which you then publish and share for your business process owners to interact with using Enterprise Process Modeler.

Before You Begin

Before you begin to create your first process model, it is recommended that you first study the *Enterprise Process Modeler Guide* and explore preexisting process models. This helps you become familiar with the components of a process model and the experience that your process owners have when using the process model.

You should also have deep knowledge of:

- The business process for which you are designing a process model, including any subprocesses.
- The steps or statuses (nodes) that define the process, and the relationships (links) between those steps.
- The source of the data (data providers), such as EnterpriseOne tables, business views, logic extensions, or orchestrations that will be the basis for the metrics, analytics, and runtime options (Data Filtering and Grouping Options).
- Ideas about what metrics and analytics would be most useful for your process owners, and what data is needed to create the charts and graphs.

The Components of a Process Model

Process Definition

A process definition contains the core configuration for a process in Enterprise Process Modeler. It includes the basic setup information (such as the source of definition, process name, description, and node and filter configurations), and defines the process structure through its node configuration (details such as from node, start node, and to node).

This is the data from your EnterpriseOne system that Enterprise Process Modeler uses to draw the picture—nodes and links— of the process model. For example, if your business process is tracking the status of purchase orders or sales orders, the process definition will likely come from Order Activity Rules data (P40204). You can also use the Process Definition application (P00201) to define an ad-hoc process.

In addition, the process definition includes filter configuration that controls which transactions or instances are included when analyzing the process (for example, filtering by company, business unit, document type, supplier, date range, or status). Together, these configurations determine how the process is modeled and how its analytics are calculated and displayed.

Design Options

Design options are attributes of the process model that define the scope of the process. For example, in an order-to-cash process, you might choose to define the process by the lifecycle of a sales order document, and more specifically, by the line type of stock items. In this case, Document Type and Line Type are design options, and Document Type=Sales Order (SO) and Line Type=Stock (S) define the scope of the process.

If you are generating a process model from a preconfigured process model template, then the design options are predefined in the template, and you cannot change them. If you are creating a user-defined process model, you will define the design options that are appropriate for your process model. In either case, users who are interacting with the process model in Enterprise Process Modeler cannot change design options.

Data Filtering and Grouping Options

Data filtering and grouping options are attributes of the process model that you intend for your process owners to control and change while they are interacting with the process model in Enterprise Process Modeler. For example, if you have established design options such as Document Type=Sales Order and Line Type=Stock for your order-to-cash process, you could also establish data filtering options such as Order Date, Company, and Business Unit. Using these filters, your process owners can explore different dimensions of the process, for example, showing the process model, metrics, and analytics only for Company 1, and then comparing that to Company 2. Further, if you designate a data filter to allow grouping, then your process owners can easily show the data segregated into groups.

Metrics

A metric is a measurable value tied to a business process that you define for a node or a link so your process owners can monitor, analyze, and report on how that process is performing.

A node metric measures performance or outcomes associated with a specific process step (node)—in other words, the work performed at that activity. For example, a node metric might track the number of sales order lines at a certain status, or the sum total of the value of the sales orders at that status.

A link metric is a measurement associated with the link (transition) between two nodes. To define link metrics, you must be able to identify data that defines the start and end of the link, for example, the Last Status and Next Status for sales orders. Link metrics quantify what occurs as work moves from one process node (step) to the next, for example, the number of sales order lines that have a Last Status of 520 and a Next Status of 540.

Analytics

Similar to business intelligence applications, analytics draw data from your EnterpriseOne system and present it as visualizations, such as pie charts, bar charts, and line graphs. However, the advantage with Enterprise Process Modeler is that these analytics are presented in the context of a process model, making it easier for your users to identify the point in a process where a bottleneck or issue might be occurring. You can define analytics at three levels: the process level, the node level, and the link level.

A process analytic is a measure that summarizes the overall performance of an end-to-end process using data captured across its nodes and links. Process analytics help you evaluate how the overall process is operating. For example, total cycle time, total volume, cost, throughput, and exception or rework rates—so you can identify bottlenecks and improvement opportunities.

Node analytics and link analytics are analytics (measures, results, and visual indicators) applied to individual process nodes (steps) or the links (connections) between steps to help you assess performance at each activity and across each transition.

If you are generating a process model from a preconfigured process model template, then the metrics and analytics are predefined in the template, and you cannot change them. You can, however, choose to show or hide them from users in Enterprise Process Modeler. If you are creating a user-defined process model, you define the metrics and analytics that are appropriate for your process model. In either case, users who are interacting with the process model in Enterprise Process Modeler cannot change metrics and analytics, but they can change data filters to show different dimensions of the data, and they can change certain visualization options, such as visualizing a bar chart horizontally or vertically.

Approaches to Creating a Process Model

There are three approaches to creating a process model, as described in the following sections.

Using a Predefined Process Model Template

If the business process you want to model matches one of the predefined process model templates provided by the JD Edwards product development team, then this is the easiest and most direct way to generate the process model. Within the templates, the process definition, data providers, metrics, analytics, data filters, and groupings have all been established. You simply need to choose values for the design options and generate the model. For example, with the Order-to-Cash template, the design options of Document Type and Line Type have been established. You simply need to input which Document Type (for example, Sales Order) and which Line Type (for example, Stock), and generate the model. You can also drag-and-drop to rearrange the layout of the nodes before saving the model. That's it; your model is complete. Refer to *Creating an Enterprise Process Using Predefined Templates* for a current list of which process model templates are available.

Extending a Process Model Created from a Template

If one of the existing process model templates *almost* matches your requirements, but you want to make some modifications, you can do so. Start by creating a process model from a template, as described in the previous topic. Then, in Enterprise Process Modeler:

You can:

- Hide the predefined metrics or analytics that you do not want process owners to view.
- Add new metrics or analytics, including data from new data providers and additional data filters and grouping.

You cannot:

- Change the process definition, that is, the source of the data that defines the nodes and links of the process model.
- Modify an existing metric or analytic; however, you can hide the existing one and recreate your own metrics and analytics.
- Modify template-inherited design, data filtering and grouping options.

Manually Creating a Process Model, Metrics, and Analytics

If none of the available process model templates match the business process you are designing, then you can create all the necessary components using the steps documented in this guide.

See *Creating a User-Defined Process (Release 9.2.26.2)*.

2 Understanding the Enterprise Process Manager User Interface

Understanding Icons

This section lists the icons and tabs displayed on the Enterprise Process Manager (design time) and Enterprise Process Modeler (runtime) windows:

Image	Name	Type
	Show Display Options	Icon
	Show Analytics Options	Icon
	Open Process Definition	Icon
	Process Properties (available in design mode only)	Tab
	Process Metrics (available in design mode only)	Tab
	Nodes Metrics (available in design mode only)	Tab
	Links Metrics (available in design mode only)	Tab
	Show Filter Options	Icon
	Snap to Node	Icon
	Snap to Grid	Icon
	Hold the Ctrl key when dragging and dropping a node to disable Snap to Grid and Snap to Node features temporarily.	Information Icon
	Zoom to Fit	Icon

Image	Name	Type
	Process Analytics	Tab
	Node Analytics	Tab
	Link Analytics	Tab
	Click to set the context to the process level	Icon
	Configure	Icon
	Maximize	Icon
	Minimize	Icon
	Node Properties (available in design mode only)	Icon
	Link Properties (available in design mode only)	Icon
	Design Option (available in design mode only)	Tab
	Data Filtering and Grouping Options (available in design mode only)	Tab
	<Template Name> (available in design mode only)	Tab
	Preview (available in design mode only)	Tab
	Save as Snapshot (available in runtime mode only)	Icon
	Save Snapshot (available in snapshot mode only)	Icon
	Delete Snapshot (available in snapshot mode only)	Icon
	Show Context Analysis (available when context analytics tabs are hidden)	Icon
	Timeline View	Indicator

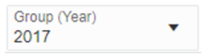
Image	Name	Type
	Moving clock hand	Indicator
	Domain View	Indicator
	Metrics Selector	Icon
	Normal	Indicator
	Warning	Indicator
	Critical	Indicator
	Group Selector (available if any option other than Overview is selected in the View By drop-down list in the Show Analytics Options pane.)	Drop-down list
	(Tools Release 9.2.9.3) Show Metric Selectors	Icon
	(Tools Release 9.2.9.3) Hide Window	Icon
	(Tools Release 9.2.9.3) Show Mini Map	Icon
	(Tools Release 9.2.9.3) Show Hierarchy Window	Icon
	(Tools Release 9.2.26.0)Toggle Compare View Mode	Icon
	(Tools Release 9.2.26.0) Link Level Summary for Comparison	Icon
	(Tools Release 9.2.26.0) Node Level Summary for Comparison	Icon
	(Tools Release 9.2.26.0) Preferences	Drop-down list
	(Tools Release 9.2.26.0) Show Inputs	Icon
	(Tools Release 9.2.26.0) Table Summary Format	Icon
	(Tools Release 9.2.26.0)Diagram Format	Icon
	(Tools Release 9.2.26.0) Create a New Split View	Icon

Image	Name	Type
	(Tools Release 9.2.26.0) Request Time Out: 30 Seconds	Icon
	(Tools Release 9.2.26.0) Remove this Split View	Icon
	(Tools Release 9.2.26.0) Drill into Data	Icon
	(Tools Release 9.2.26.0) Show Query Details	Icon
	(Tools Release 9.2.26.0) Toggle Table View	Icon
	Analytic	Indicator
	Metrics	Indicator
	(Tools Release 9.2.26.0)Analyze Snapshot	Menu
	incomplete or invalid input	Indicator
	(Tools Release 9.2.26.0) Open Sub Process	Menu
	(Tools Release 9.2.26.0) Remove Sub Process	Menu

Understanding Color Codes

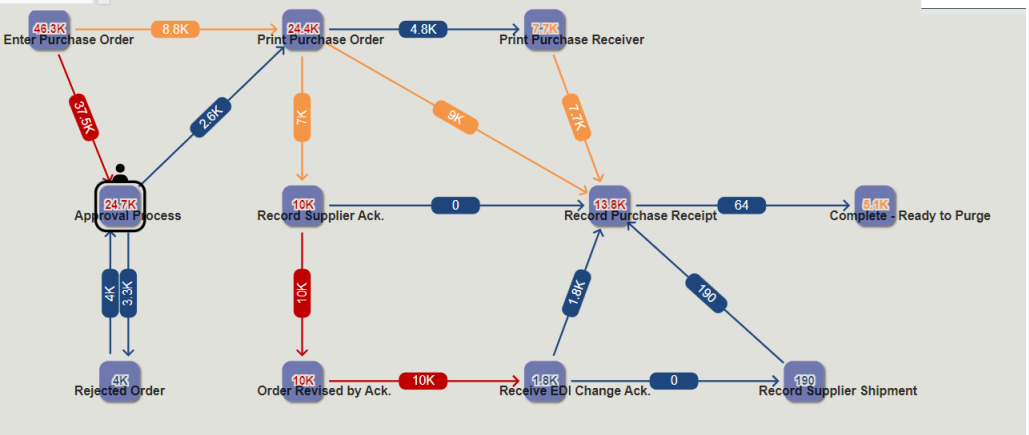
You can determine the status of the nodes and links by their color codes.

The threshold values for nodes and links can be defined using the Node Metrics and Link Metrics options. This table explains the colors and their corresponding statuses:

Colors	Status	Icons displayed in Node Metrics and Link Metrics Options
Blue	Metrics within a normal threshold	
Orange	Metrics above or below a warning threshold	

Colors	Status	Icons displayed in Node Metrics and Link Metrics Options
Red	Metrics above or below a critical threshold	

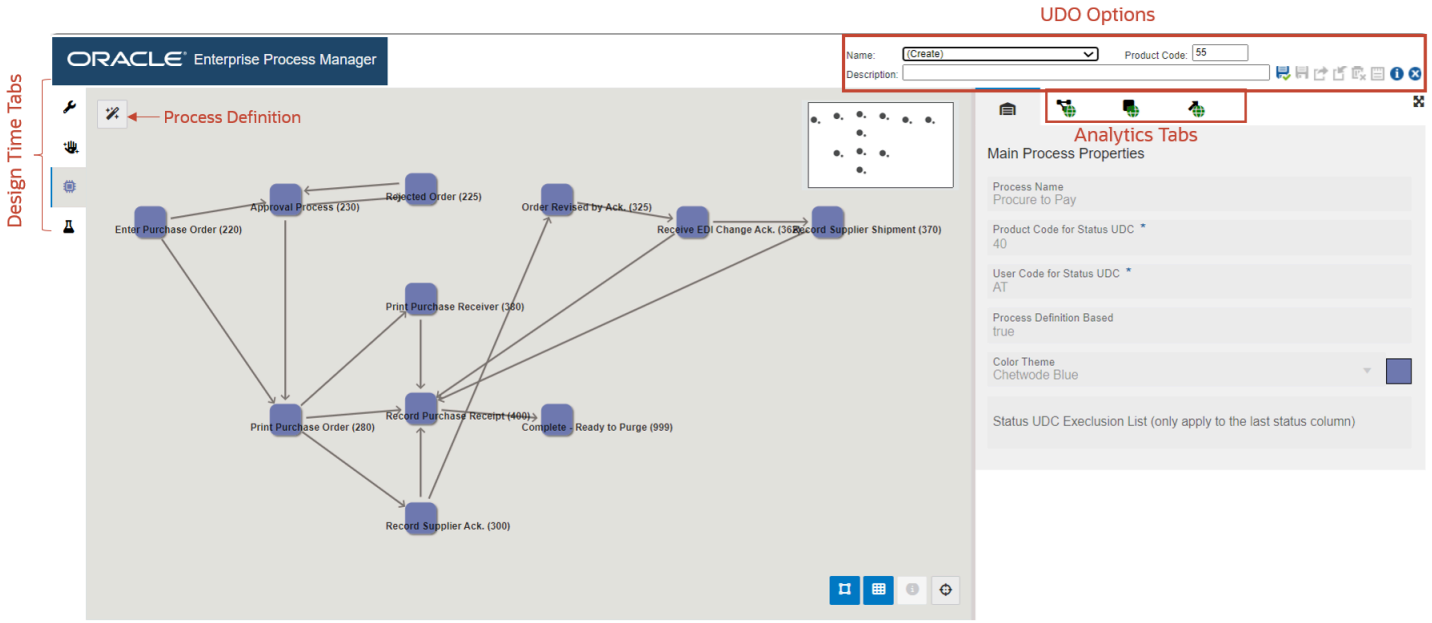
This example screenshot displays nodes, links, and their values in different colors to indicate the normal, warning, and critical statuses.



Understanding Enterprise Process Manager User Interface

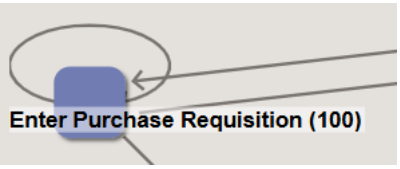
The Enterprise Process Manager window displays the enterprise process diagram while you are creating the process model.

The window displays icons for filtering and refining the data displayed on the enterprise process diagram and analytics tabs. You can hover your mouse over the icons and tabs to view the label of the component. See *Creating an Enterprise Process*.



The enterprise process diagram displays nodes and the links between the nodes. The nodes represent the tasks in the process and the links represent the connection between the nodes.

(Tools Release 9.2.9.3) You may see a loop around the node as shown in the following screenshot. The system displays a loop around the node in the design mode if an activity rule involves a self-referential loop (for example, transitioning from the 400 status back to the 400 status within the activity rules).

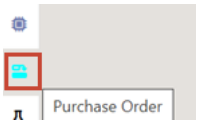


Process Definition : Displays the tab with basic, filter, and status configuration details. This tab is read-only when inherited from a template, but editable in user-defined processes.

Design Time Tabs

The Enterprise Process Manager window displays the following tabs with design time details on the left side of the interface:

- **Design Option** (read-only when inherited from a template, but editable in user-defined processes)
- **Data Filtering and Grouping Options** (read-only when inherited from a template, but editable in user-defined processes)
- **Process Model** (The selected color theme and name of the process is displayed on this tab) : Displays the automatically generated process model diagram.
  (Tools Release 9.2.9.3) If you are creating a process model from a template and the template contains a connected process, the child Process Model tab is displayed below the parent Process Model tab. The selected color theme and name of the connected process are displayed on the child process tab.



- **Preview** : Displays the preview of the runtime view for the process model. The preview approximates how your users will see the process model in Enterprise Process Modeler.

  Note: This tab will not be displayed if there are any validation errors in the process design.

These analytics tabs are displayed in the Enterprise Process Manager window on the right:

- **Main Process Properties**
- **Process Metrics**
- **Nodes Metrics**
- **Links Metrics**

Preview Tab

In the Preview tab, the metrics and colors displayed on the nodes and links are based on the values selected in the Node Metrics and Link Metrics fields.

(Tools Release 9.2.9.3) You may see a self-referential loop around the node. In the Preview tab, the self-referential loop displays the appropriate metric values depending on the options defined in the Show Display Options and Show Filter Options windows.

You can drag and drop the nodes to the desired location, and use the Snap to Grid , Snap to Node , and Zoom to Fit options to make changes to your layout.

You can use the following icons available above the model pane to view display, analytics, and filter options:

- **Show Display Options**

  When you click this icon, the system displays a left pane with display options. You can click the Hide View Options (X) icon to close this pane.

- **Show Analytics Options**

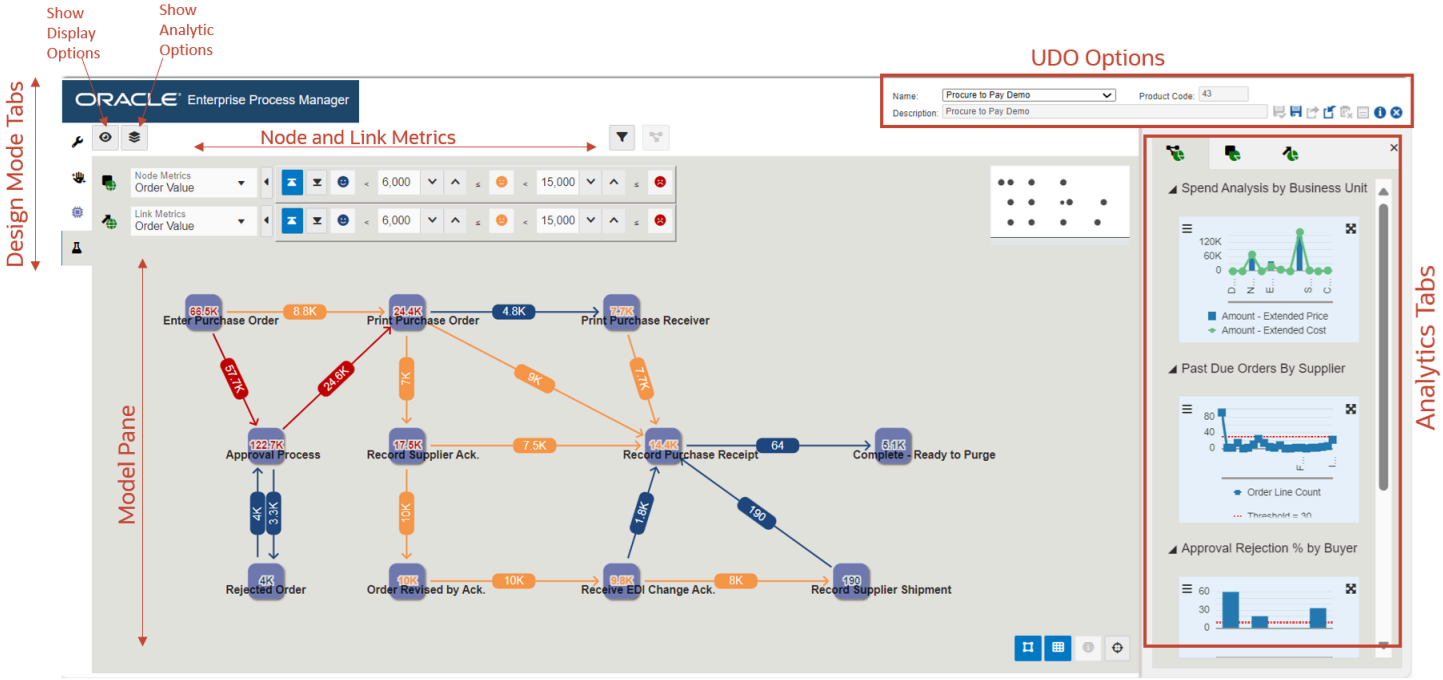
  When you click this icon, the system displays a left pane with analytics options. You can click the Hide View Options (X) icon to close this pane.

- **Show Filter Options**

  When you click this icon, the system displays a top pane (on top of the model pane) with filter options. You can click the Hide Filter Options (X) icon to close this pane.

The tabs at the right display the graphs to view analytical details of the enterprise process diagram, and you can refine the data displayed on the graphs by using the Configure icon on each graph. You can also hide and unhide the analytics tabs by using the Hide Context Analytics and Show Context Analytics icons. You can click the arrow icons to collapse or expand the individual graphs in the analytics tabs. Also, you can click the Maximize or Minimize icons on the graphs to view them in maximized or minimized modes.

The system displays the **Click to set the context to the process level** icon when the Node Analytics and Link Analytics tabs are displayed. You can click this icon to view the Process Analytics tab.



Between the left pane (displayed when you click Show Display Options or Show Analytic Options), model pane, and analytics pane, there is a resize area, which is highlighted when you hover over with your mouse cursor. You can drag it left or right to resize the panes.

UDO Options

Because a process model is a user-defined object, the system displays the standard UDO options at the top of the window: Save, Save As, Request to Publish, Reserve, Delete, and Notes.

Tips

When creating a process model in Enterprise Process Manager, you may need the Data Browser and other JD Edwards EnterpriseOne applications to inspect data. This section provides tips to help you work more effectively with Enterprise Process Manager and navigate EnterpriseOne applications easily.

- Before accessing Enterprise Process Manager, open the EnterpriseOne Data Browser and any relevant EnterpriseOne tables or business views, and keep them open.
- From the Personalization menu, open Preferences and select Open Application in New Window to launch applications in a new window.

These tips will enable you to open Enterprise Process Manager, Data Browser, and EnterpriseOne applications in separate browser tabs and switch between them as you create enterprise process models.

3 Creating an Enterprise Process

Creating an Enterprise Process Using a Predefined Template

If the business process for which you are designing a process model matches one of the predefined process model templates delivered by the Oracle JD Edwards product team, for example, Order-to-Cash or Procure-to-Pay, then the easiest way to create the process model is to load the appropriate template into Enterprise Process Manager, provide a few configuration details, and save the process model. Enterprise Process Manager enables you to select a template that has been uploaded into the system (typically by a system administrator). The design options, data filtering and grouping options, metrics, and analytics have all been preconfigured for you in the template. You simply have to make a few configuration choices. You can then save your process model, which EnterpriseOne manages as a user-defined object (UDO).

For more information, see *User Defined Object (UDO) Features in Enterprise Process Manager*.

To create a new enterprise process from a template:

1. Access the JD Edwards EnterpriseOne application.
2. From the User menu, click **Manage Content**, and select **Processes**.

   The system displays the Create Process window.

   > **Note:** The Create Process window is only displayed when you are creating an enterprise process for the first time. After creating a process, when you click **Processes** again, the system displays the previously created process.

   If you want to create a new process, in the Enterprise Process Manager window, click the **Name** drop-down list, and in the Personal section, select **Create**.
3. On the Create Process window, from the Foundation of Process drop-down list, select **Enterprise Process Template**.
4. From the Import Process Template drop-down list, select a template. The available templates are:
   - JDE TMPL Procure to Pay. See *Enterprise Process Model Template for Purchase Orders.*
   - JDE TMPL Order to Cash. See *Enterprise Process Modeler for Order to Cash*.
   - JDE TMPL Requisition. See *Enterprise Process Model Template for Requisition*.
   - JDE TMPL O2C with Warehouse. See *Enterprise Automation for Order to Cash Warehouse*.

   Starting with Tools Release 9.2.26.0, you can create Procure to Pay enterprise processes using process definition IDs. The templates available are:
   - JDE TMPL P2P Procure to Pay. See *Procure to Pay Process Model Template Metrics*.
   - JDE TMPL P2P Purchase Order. See *Purchase Orders Process Model Template Metrics*.
   - JDE TMPL P2P Requisition. See *Requisition Process Model Template Metrics*.
   - JDE TMPL P2P Approval. See *Approvals Process Model Template Metrics*.
   - JDE TMPL P2P Receipt. See *Receipts Process Model Template Metrics*.

- JDE TMPL P2P Receipt Routing. See *Receipt Routing Process Model Template Metrics*.
- JDE TMPL P2P Voucher Match. See *Voucher Match Process Model Template Metrics*.

> **Note:** The Oracle JD Edwards product team may periodically deliver additional process model templates. For details about the availability of new templates, review the EnterpriseOne Release Announcements.

5. Click **OK**. The available design time options are displayed in the Create Process window.
6. You can either change the values for these options or accept the default values.

> **Note:** If you are on Tools Release 9.2.9.3, refer to the next step (step 7) to understand how to make the design option changes in the Create Process window. For example, the Procure to Pay template provides design options for Order Type, Line Type, and Start Status. Although you cannot change these three design options, you can change their values from the default values, for example, to create your process around a document type other than the default value OP (Purchase Order) or the default Line Type S (Stock).

- **Order Type (DCTO):** Depending on the template you select, this value may be read-only or editable.
- **Line Type (LNTY):** Depending on the template you select, this value may be read-only or editable.

  > **Note:** The system displays the design options based on the template you select. Therefore, the field names displayed in your environment may differ. The system allows editing the design options depending on the template you select.

- **Start Status**: Select the value from the drop-down list. The system displays the available nodes from the template you selected in this drop-down list. The value you select in this field becomes the first (start) node in the automatically generated process model.

7. (Tools Release 9.2.9.3) You can either enter values for these design options or accept the default values. The design options are displayed depending on the template you select.

   The Create Process window also enables you to choose a color theme for the nodes.

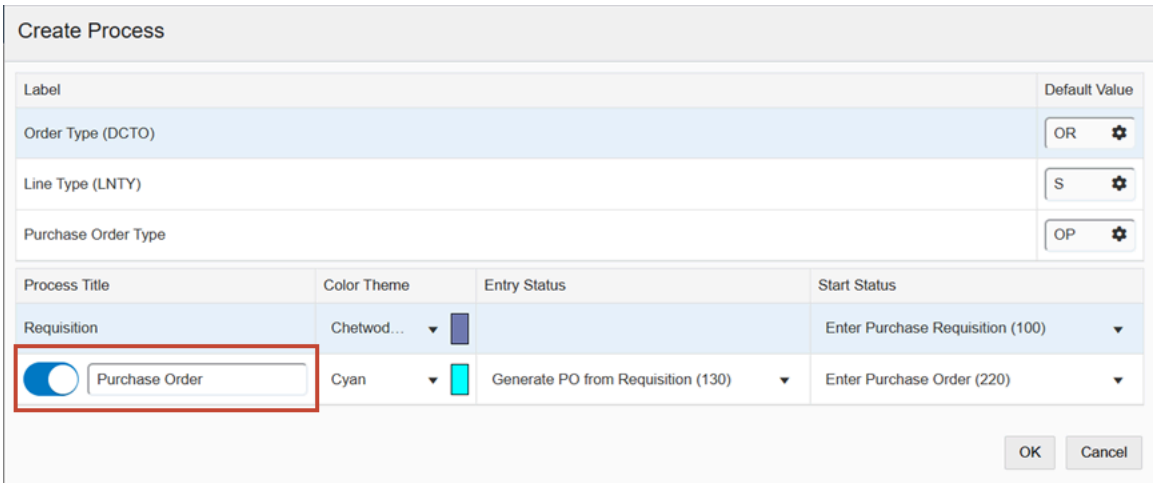
   - If the selected template does not contain any connected templates, select the color from the **Color Theme** drop-down list and select the node from the **Start Status** drop-down list.
   - If the selected template contains connected templates, the Create Process window provides the option to disable the connected templates. This option is enabled by default.

     In the parent template row, select the color from the **Color Theme** drop-down list and select the node from the **Start Status** drop-down list.

     In the child template row, you can disable the option to remove the connected template. When the option is enabled, you can select the color from the **Color Theme** drop-down list and select the node from the **Entry Status** and **Start Status** drop-down lists.

     The Entry Status node determines the node from where the connected process starts from the parent process. The node you select in the Start Status field becomes the first (start) node in the child process.

     In the following example, the Purchase Order child process is enabled for the Requisition parent process.

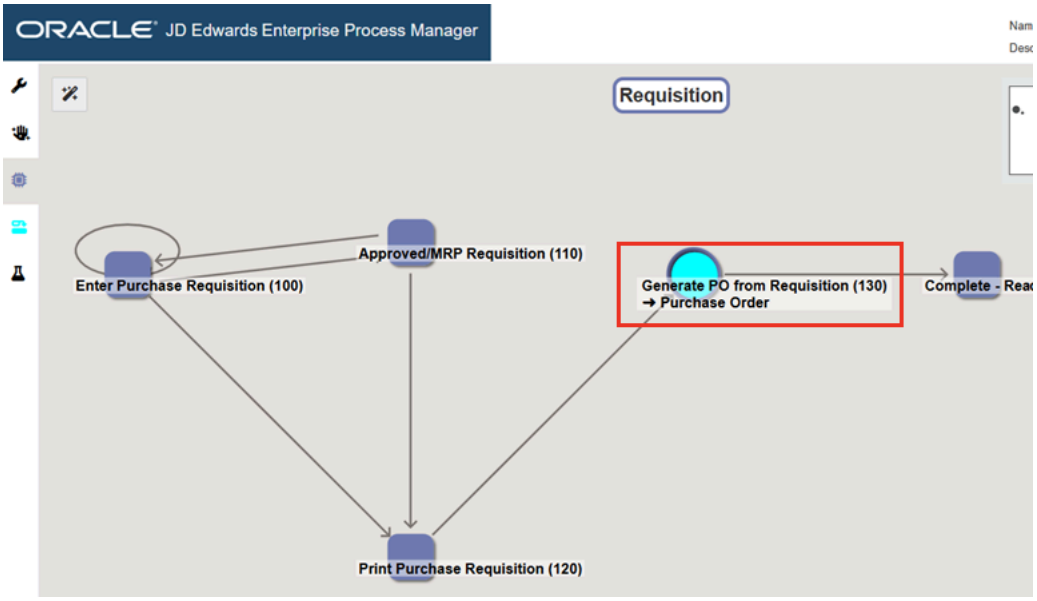


8. Click **OK**. The Main Module tab is displayed in the Enterprise Process Manager window, where you can see the automatically generated enterprise process diagram based on the selected template and values defined in the Create Process window.

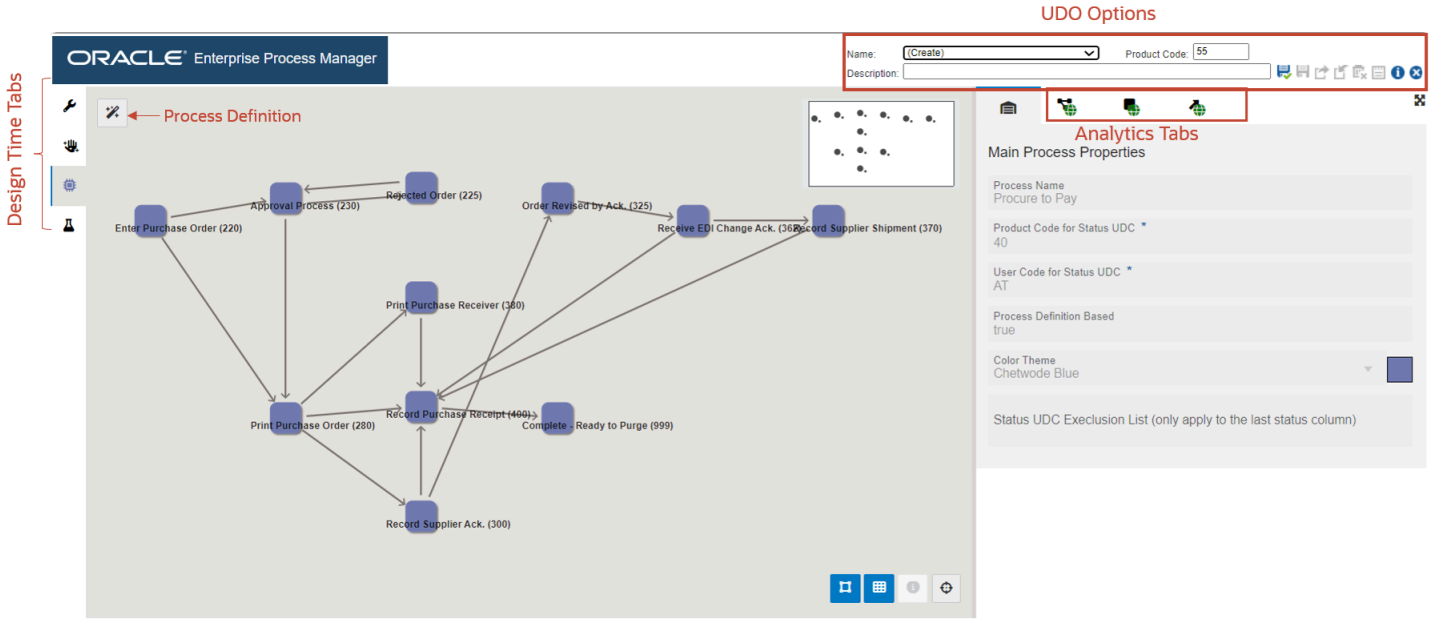
   The nodes represent the tasks in the process template and the links represent the connection between the nodes.

   Starting with Tools Release 9.2.9.3, to indicate that a child template is linked to a node, the Enterprise Process Manager shows a circular node in the specified color scheme. In the following example, the name (Requisition) of the parent template is displayed on the generated process diagram. The

child template is linked from the Generate PO from Requisition node (indicated by the Cyan color).



Before saving your process model, you can review the configurations to ensure that the data and metrics are defined according to your requirements.



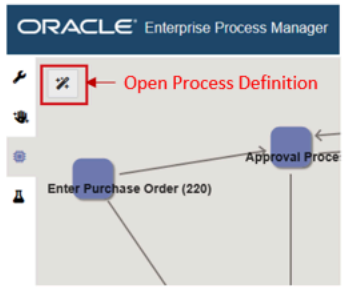
9. You can drag and drop the nodes to the required position and use the following options to adjust the layout of the process model:

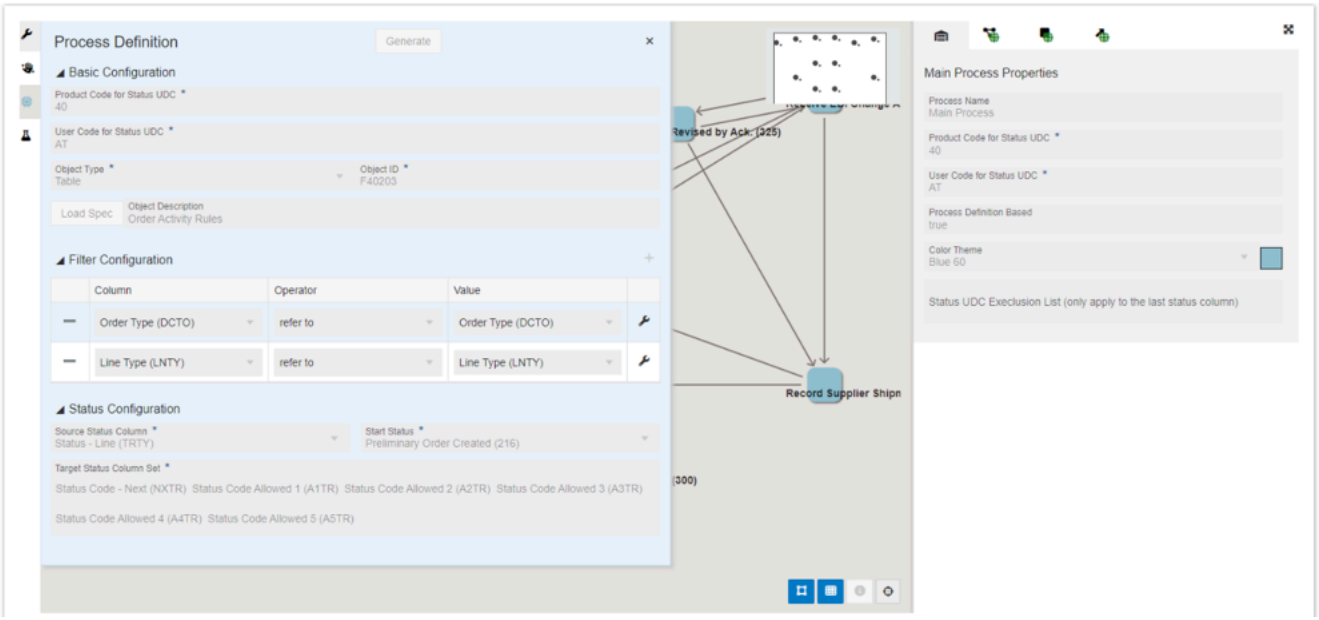
   Note: Your users can also use these options to make changes to the enterprise process diagram in Enterprise Process Modeler:

   - **Snap to Node:** Click the **Snap to Node** icon to align the template to the node points.
   - **Snap to Grid:** Click the **Snap to Grid** icon to align the template to the grid points.
   - **Zoom to Fit:** Click the **Zoom to Fit** icon to resize the template to fit into the model pane.

   You can hold down the Ctrl key when dragging and dropping a node to disable Snap to Grid and Snap to Node features temporarily.

10. Click the **Open Process Definition** icon (next to Design Option) to review the settings in the read-only mode.





11. In the Process Model tab, to review the details of the metrics, click the following tabs on the right:

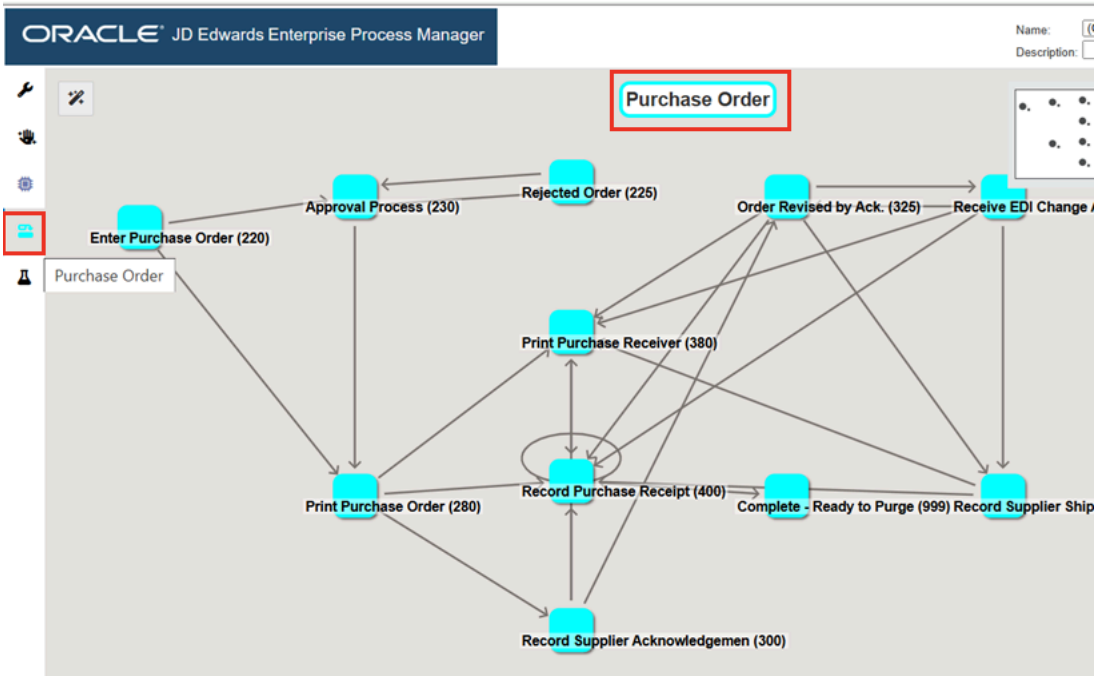
    Note: You can click the subtabs on these tabs to review the table specific metrics and business views. Use Maximize or Minimize on the tabs to view them in maximized or minimized modes.

    - **Main Process Properties** : Displays the process name, status codes, and color themes in read-only mode.
    - **Process Analytics** : Displays tabs with details such as Filter Criteria, Return Fields, Context Analytics and so on for the related tables and business views of the selected enterprise process template.
    - **Nodes Metrics and Analytics** : Displays tabs with details such as Filter Criteria, Return Fields, Context Analytics and so on for the node specific tables and business views.
    - **Links Metrics and Analytics** : Displays tabs with details such as Filter Criteria, Return Fields, Context Analytics and so on for the link specific tables and business views.
12. Starting with Tools Release 9.2.26.2, the Shown at Runtime option is available on the Process Analytics, Node Metrics and Analytics, and Link Metrics and Analytics tabs. This option is enabled by default. When enabled, metrics and analytics are displayed to users in Enterprise Process Modeler. Disable this option to hide metrics and analytics from users in Enterprise Process Modeler. This is helpful when you extend your process by defining your custom metrics and analytics. See *Extending an Enterprise Process Created from a Template*.
13. To review the node properties such as Type and UDC status, click the individual nodes in the process model diagram. The system displays the Selected Node Properties tab (read-only) on the right.
14. To review the link properties, click the individual links in the process model diagram. The system displays the Selected Link Properties tab (read-only) on the right.
15. Click the following tabs on the left to review the details:

    - **Design Option** (read-only) : This tab displays the values you entered in the Create Process window.
    - **Data Filtering and Grouping Options** (read-only) : This tab displays the template specific data filtering and grouping options.
    - **Process Model** (The name of the template is displayed for this tab) : This tab displays the automatically generated process model diagram.

      Starting with Tools Release 9.2.9.3, if a template contains a child process, the system displays a child process tab icon below the Process Model tab icon. This tab displays the automatically generated process model diagram of the child process. The name and the color theme (in this

example, Cyan) of the child process is displayed for this tab as shown in the following example:



- **Preview** : In this tab, you can preview the process model approximately how your users will see it in Enterprise Process Modeler. For more information on how to preview the metrics by using the Preview tab, see *Previewing the Enterprise Process Model*.

  If the process model generated from the template, including your inputs to the design options, meets your requirements, you can save the process model with a name of your choosing. You can then review it with your process owners. When it is ready to be shared with a broader set of users, you can use the user-defined object (UDO) framework to request to publish, approve, and share the model with users or roles.

  If the process model does not meet your requirements or expectations, you cannot change the design option decisions that you made at the beginning. You must go back to choose (Create) from the Name field and begin the process again making different design option choices.

  If the process model still does not meet your requirements, you may need to proceed with the next section, “Extending an Enterprise Process Created from a Template,” or even create a user-defined process from scratch.

  See *Creating a User-Defined Process*

Extending an Enterprise Process Created from a Template (Release 9.2.26.2)

If an existing process model template closely matches your needs but requires minor changes, you can use the predefined template to create a process model and then define custom metrics and analytics by following these steps:

1. Create an enterprise process using a predefined template. See *Creating an Enterprise Process Using Predefined Templates*.

2. To define custom metrics and analytics for processes, nodes, and links, click the **Add Metrics or Add Analytics** (**+**) icons on the Process Analytics, Node Metrics and Analytics, and Link Metrics and Analytics tabs.

   The system displays a new tab where you can define custom metrics and analytics alongside the predefined metrics and analytics provided by the template.
3. The **Shown at Runtime** option on the **Process Analytics**, **Node Metrics and Analytics**, and **Link Metrics and Analytics** tabs is enabled by default. When enabled, users can view the metrics and analytics in Enterprise Process Modeler. Disable this option to hide them.
4. See these links to define custom metrics and analytics:
   - *Defining Process Analytics Based on a Table or Business View*
   - *Defining Process Analytics Based on a Logic Extension or Orchestration*
   - *Defining Node Metrics*
   - *Defining Link Metrics*
   - *Defining Node Analytics Based on a Table or Business View*
   - *Defining Node Analytics Based on a Logic Extension or an Orchestration*
   - *Defining Link Analytics Based on a Table or Business View*
   - *Defining Link Analytics Based on a Logic Extension or Orchestration*

Creating a User-Defined Process (Release 9.2.26.2)

You can configure a user-defined process model, as well as metrics and analytics related to that model, for any business process for which there is data in the EnterpriseOne system using the Enterprise Process Manager.

For example, you can configure a process model, along with metrics and analytics, for the lifecycle of a lease, or the tracking of work order stages if a preconfigured template is not available.

The business process you design must have the following data in your EnterpriseOne system in order to define the process:

- Some type of document, item, or other record on which the lifecycle of the process can be based. For example, you might design a process around the lifecycle of a work order, a lease, an expense report, and so on. That document, item, or other record might even be defined by multiple fields. For example, the preconfigured template for Order to Cash is based on the lifecycle of a document type (DCTO = SO) and is further defined by a line type (LNTY = S).
- Some data item associated with that document, item, or record that describes a state that changes, such as a status. The values for those states are defined in user-defined code (UDC) tables. For example, the preconfigured template for Order to Cash is based on tracking the Last Status (LTTR) and Next Status (NXTR) fields of sales order documents, and the allowable values for Last Status and Next Status (220, 230, 240…) are stored in a UDC table. You will use those states to define the nodes and links in the Process Definition application, which in turn generates the process diagram. This data is also used as a context sensitive filter to provide metrics and analytics on nodes and links. If you want to add metrics to links, then you will need two states to identify and filter data based on the start of the link and the end of the link.

Before you begin to use Enterprise Process Manager to create an enterprise process model, study your JD Edwards business data for these data elements.

Understanding User-Defined Process Models

A User-defined process model contains these major components:

1. The Graphical Layout of the Process Model

This contains the process diagram with nodes and the link between the nodes. The data that defines the nodes and the links between the nodes is derived from one of these sources:

- A boilerplate, which is a pointer to one of six tables in JD Edwards EnterpriseOne with data that implies a business process. Those six boilerplates are:

Boilerplate	Table	Usage
Case Status Rules Table	F1751	Case Management process
Expense Reimbursement Routing Rules	F09E110	Expense Management process
HomeBuilder Activity Rules	F44H002	HomeBuilder process
Order Activity Rules	F40203	Order to Cash (Sales Orders) or Procure to P
Registration Activity Rules	F1732	Asset Registration process
W. O. Status Action Table	F4826	Work Order process

- The Process Definition application (P00201), which you can use to create a custom definition of nodes and links.

  If you use the Process Definition application to define a custom process, complete that task, as described in Chapter 4. “Defining a Custom Process,” before you begin designing the enterprise process in Enterprise Process Manager.

2. Filters

Design Option: A filter over the data that applies generally across the process model—a hard-coded “boundary”—which the user cannot change at runtime. For example, if you decide that the Order-to-Cash process will be based on tracking Stock items on Sales Orders, then the Design Options “Document Type = SO” and “Line Type = S” are used to establish the process, and they cannot be altered at runtime. The design options are displayed in the Design Option tab.

Runtime Option: A filter over the data that you establish so that the user can change it at runtime. For example, if you establish Runtime Options for Company, Business Unit, and Date, then the user can modify these filters at runtime if **"Allow Override"** is enabled for this filter, or accept the defaults that you defined for the process model. The runtime options are displayed in the Data Filtering and Grouping Options tab.

When you define data filters, you can also allow those filters to designate grouping of data. This enables your users to view the data in the process model by different dimensions. For example, you could define “Company” or “Order Date” as data filters. If you also choose to allow those filters for grouping, then your users can use the **“View By”** drop-down list (in the Analytics Options tab) in Enterprise Process Modeler to easily navigate through the data by those dimensions, for example, Company 1, Company 2, Company 3, and so on.

See *Using the Show Analytics Option*.

Note: Common Design Practice: When defining filters for metrics and analytics, apply a consistent set of filters across all metrics and analytics. In the Default Value field, use consistent entries, map to consistent input parameters, or reference the appropriate runtime or design-time options as needed.

3. Metrics and Analytics

Metrics are numbers associated with the nodes and links on a process model.

Analytics are data visualizations, such as pie charts, bar graphs, and line graphs, that are contextually related to nodes, links, or the process as a whole.

Metrics and analytics are derived from these three components:

1. A source of the data. The data can come from:
   a. A JD Edwards table
   b. A JD Edwards business view
   c. The output of a logic extension or an orchestration (analytics only)
2. Filters over the data, either from design options or runtime options or static values (configured at design time).
3. Aggregations of the data, such as counts, sums, or averages. This applies to table or business view only.
4. A grouping of the data that ties it to a specific node or link. For example, if the nodes in the process model represent statuses of sales orders, then the data should be grouped by Status.

Defining a Process

1. Access the JD Edwards EnterpriseOne application.
2. From the User menu, click **Manage Content**, and select **Processes**.

   The system opens Enterprise Process Manager and displays the Create Process window.

   Note: The Create Process window is only displayed when you are creating an enterprise process for the first time. After creating a process, when you click **Processes** again, the system displays the previously created process. If you want to create a new process, in the Enterprise Process Manager window, click the **Name** drop-down list, and in the Personal section, select **Create**.

3. To define a user-defined process, from the Foundation of Process drop-down list, select **User-defined**.
4. Click **OK**.

   The system displays the Enterprise Process Definition Manager window along with the Process Definition tab where you can define the basic configurations for the user-defined process. In the Basic Configuration section, the system displays the available boilerplates in the Table ID drop-down list.
5. Enter a Table ID or click the drop-down list to select a boilerplate.

   The table below displays the available table IDs (boilerplates) from the Table ID drop-down list, the details automatically populated by the system upon selection, and the example user input values.

   In the Filter Configuration section, you can either use the values in the following table or define design time filter values. To define design time values, select **refer to** from the Operator drop-down list, then select **(new)** under Design Option from the Value drop-down list.

Boilerplates in the Table ID Drop-down List	Auto-populated Values on the Process Definition Tab

Case Status Rules Table (F1751)	**Table ID:** F1751 **Description:** Case Status Rules Table **Product Code for UDC:** 17 **User Defined Code for UDC:** ST **From Node Column**: Case Status Code (CLST) **To Node Columns:** CLSTA, CLST, CLST2, CLST3, CLST4, CLST5 **Filter Configuration**: [{"column":"DCTO","operator":"=", value:""}, {"column":"CALLQ","operator":" {"column":"CT01","operator":"=", value:""}]
Expense Reimbursement Routing Rules (F09E119)	**Table ID:**F09E119 **Description:** Expense Reimbursement Routing Rules **Prod Code for UDC:** 09E **User Defined Code for UDC:** RS **From Node Column:** FROMSTA **To Node Columns**: NEXTSTA, REJESTA **Filter Configuration:** [{"column":"EXRPTTYP","operator":"=", value:""}]
HomeBuilder Activity Rules (F44H002)	**Table ID:** F44H002 **Description:** HomeBuilder Activity Rules **Prod Code for UDC:** 44H0 **User Defined Code for UDC:** RL **From Node Column:** HBLST **To Node Columns**: HBNXT, HBA1TR, HBA2TR, HBA3TR, HBA4TR, HBA5TR, HBA6TR, HBA7TR, HB **Filter Configuration:** [{"column":"HBRLTP","operator":"=", value:""}, {"column":"HBACTP","operato
Order Activity Rules (F40203)	**Table ID:**F40203 **Description:** Order Activity Rules **Prod Code:** 40 **User Code:** AT

	From Node Column: TRTY **To Node Columns:** NXTR, A1TR, A2TR, A3TR, A4TR, A5TR **Filter Configuration:** [{"column":"DCTO","operator":"=", value:""}, {"column":"LNTY","operator":"=
Process Definition (F00202) **Note:** This option is displayed only if the header table specification for F00201 (ESU) exists in your environment and contains at least one record.	When you select this table ID, the system displays the Object List window along with the process de from F00201.Select the required record process definition record. The system closes the Object Lis auto-populates the Product Code, User Code, and filter value for PRCDID based on the selected rec F00201 table. The system will also display the name of the selected process definition in the Descri example, for a process definition named Warehouse Pick Process, the system displays these auto-p **Table ID:** F00201 **Description:** Process Definition - Warehouse picking process **Product Code:** 46 **User Code:** PS **From Node Column:** FRPN **To Node Columns:** TOPN, OTPN1, OTPN2, OTPN3, OTPN4, OTPN5, OTPN6, OTPN7, OTPN8, OTPN **Filter Configuration:** [{"column": "PRCDID", "operator": "=", "value": "99990001"}]
Registration Activity Rules (F1732)	**Table ID**: F1732 **Description**: Registration Activity Rules **Product Code**: 17**User Code**: RS **From Node Column**: REGSTS **To Node Columns**: REGSTSN, REGSTS1, REGSTS2, REGSTS3, REGSTS4, REGSTS5 **Filter Configuration**: [{"column":"ITYPE","operator":"=", value:"}]
W.O. Status Action Table (F4826)	**Table ID:**F4826 **Description:** W.O. Status Action Table **Product Code:** 00 **User Code:** SS **From Node Column:** SRST **To Node Columns:** NTST , A1ST, A2ST, A3ST, A4ST, A5ST

	Filter Configuration:[{"column":"DCTO","operator":"=", value:""}, {"column":"TYPS","operator":"="

Note: To manually configure fields on the Process Definition tab, enter the Table ID and the required values (Product Code, User Defined Code) in the fields, and click **Load Process Definition**. The system will then display the remaining configuration fields. Enter the required values in these fields to continue with your design configuration.

6. In the Object List window, if you select:
   - **Process Definition:**

     The system displays the process definition records from F00201. Select the required process definition record.

     The system auto-populates the Table ID, Product Code for UDC, User Defined Code for UDC, From Node Column, To Node Columns, and Filter Configuration fields based on the process definition records. See the table in the previous section for details. See *Understanding the Process Definition Application*.
   - **Tables:**

     The system auto-populates the Table ID, Product Code for UDC, User Defined Code for UDC, From Node Column, To Node Columns, and Filter Configuration fields based on the table data.

     You can override these values.
7. From the Start Node drop-down list, select the start node. This indicates the first node of the process flow diagram that is generated by the system.
8. In the Filter Configuration section, values are automatically populated based on the selected boilerplate. You can either use the example input values shown in the table in Step 5, or define design time values by following these steps:

   a. From the Operator drop-down list, select **refer to**.

   b. From the Value drop-down list, select **(new)**. The system displays the **Open Design Option** icon next to the Value field and a red "i" icon on the Design Option tab to indicate invalid or incomplete input.

   c. You can either click the **Open Design Option** icon or click the **Design Option** tab on the left. On the Design Option tab, enter a value in the Default Value field.

   d. Click the **Parent Process** icon to return to the Process Definition tab.

Note: To add more filters, click the Add Filter (+) icon.

9. Click the **Generate** button. The system displays the Parent Process tab along with the newly generated process diagram based on the settings you specified on the Process Definition tab.

   Note: The Generate button is disabled if there are any validation errors or if any required fields are missing in this tab.

   Note: You can click the Open Process Definition icon to review or make changes to the values. If you make changes, click the **Generate** button again to generate the modified process flow diagram in the Parent Process tab.

10. On the Parent Process tab, drag and drop the nodes to the required position. You can click the following icons to modify the process diagram.

    - **Snap to Node:** Click the **Snap to Node** icon to align the process diagram to the node points.
    - **Snap to Grid:** Click the **Snap to Grid** icon to align the process diagram to the grid points.
    - **Zoom to Fit:** Click the **Zoom to Fit** icon to resize the process diagram to fit into the model pane.

    You can hold the Ctrl key when dragging and dropping a node to temporarily disable Snap to Grid and Snap to Node features.

11. On the Main Process Properties tab on the right, in the Process Name field, override the default value and enter an appropriate name for your process. Also, you can change the color of the nodes by using the Color Theme Override drop-down list.
12. Click **Save**. The Enter New Name window is displayed.
13. Enter a new name and click **OK**.

Defining Analytics and Metrics

Following the process definition, you should define the process analytics, node and link metrics, and node and link analytics by:

1. Selecting the data provider type.

   This table lists the options displayed in the Data Provider Type drop-down list in the Process Analytics, Node Metrics and Analytics, and Link Metrics and Analytics tabs:

Data Provider Type Drop-down List	Process Analytics Tab	Node Metrics and Analytics Tab	Link Metrics a
Table Analytic	Yes	Yes	Yes
View Analytic	Yes	Yes	Yes
Table Metrics	No	Yes	Yes
View Metrics	No	Yes	Yes
Logic Extension – Analytic	Yes	Yes (Analytics)	Yes (Analytics)

Orchestration - Analytic	Yes	Yes (Analytics)	Yes (Analytics)

2. Defining the filter criteria.

   Note: When defining filters for metrics and analytics, apply a consistent set of filters across all metrics and analytics. In the Default Value field, use consistent entries, map to consistent input parameters, or reference the appropriate runtime or design time options as needed.

3. Defining the series type based on returns, formula of variables, or complex conditions for analytics (available only for Table and View Analytics).
4. Defining the context chart.

   Note: On the Analytics and Metrics tabs, the required fields are indicated by a Star * icon and an invalid or incomplete field is indicated by the " i " icon . You can click the Delete (-) icon to delete a row and **X** icon to delete a section such as a Context Chart.

Note: You can click the **Maximize** icon to view the Metrics and Analytics tab in maximized mode while defining metrics and analytics for easier viewing. Click the **Minimize** icon to return the tabs to minimized mode.

Defining Process Analytics

In the **Process Analytics** tab, you can define process analytics by selecting a data provider such as a table, business view, logic extension, or orchestration. Then define the filter criteria, series type, and context chart to configure and display the analytics charts.

Defining Process Analytics Based on a Table or Business View

To define the process analytics using a table or business view as the data provider:

1. Access the Parent Process tab of your newly created user-defined process and click the **Process Analytics** tab on the right.
2. Click the **Add Metrics or Analytic** (**+**) icon.
   The Shown at Runtime option is enabled by default, allowing users to view and analyze process analytics at runtime. Disable this option to hide process analytics during runtime.
3. From the Data Provider Type drop-down list, select the required data provider type as **Table - Analytic** or **View - Analytic** for your process. The available data provider types for process analytics are Table - Analytic, View - Analytic, Logic Extension - Analytic, and Orchestration - Analytic.
4. In the Object Name field, enter the data provider ID (Table ID or a Business View ID), and press **Enter**. The Label field is auto populated with the same value as the Object Name field. You can override this value. The system displays the value in the Label field as the name of the Process Analytics tab.
   The system also displays the Filter Criteria, Return Fields, and Context Chart sections on the new Process Analytics tab.
5. (Optional) In the Filter Criteria section, click the **Add Filter** (**+**) icon, and complete these fields:
   - **Column:** This drop-down list displays the columns from the selected table or business view. Select the required column to filter the fields.
   - **Operator:**
     This drop-down list displays the available operators based on the data type of the selected column. Select an operator, or select **refer to** to allow users to specify values at design time or runtime.

> **Note:** If you select in list as the operator, the system displays the Add More Value (+) icon to add more values to the list.

- **Value:**

  Enter a value.

  If you selected **refer to** in the Operator field, the system displays (new) under Design Options and Runtime Options in this field. Select the required value to allow users to enter values at design time or runtime.

  When you select **(new)** under Design Options, the system displays the Open Design Option icon next to the Value field. Click the icon to open the Design Option tab, and enter a value in the Default Value field.

  When you select **(new)** under Runtime Options, the system displays the Open Data Filtering and Grouping Options icon next to the Value field. Click the icon to open the Open Data Filtering and Grouping Options tab, and then enter a value in the Default Value field.

  > **Note:** The value (new) appears in the Value field the first time you define a filter value (runtime or design-time). If a value has already been defined for either option, the system displays the existing value in the Value field under Design Options and Runtime Options along with the (new) value. You can click the **Add Filter** (**+**) icon and define more filter criteria for your analytics chart.

  > **Note:** When defining filters for metrics and analytics, use a consistent set of filters across all metrics and analytics, and reference the appropriate runtime or design time options as needed.

6. Click the **Parent Process** icon to return to the Parent Process tab if you defined runtime or design-time values for your filters.

7. From the Series Type drop-down list, select a value to define how you want the data to be grouped and plotted in the process analytic chart. The available series types are:
   - **Based on Returns:** It is mandatory to define at least one return field if you select this option. See point 8.
   - **Based on Formula of Variables:** When you select this option, the system enables you to define the values in the Variables Definition and Series Definition sections. You can specify the values as Design Time or Runtime by selecting **refer to** from the Operator drop-down list.

     It is mandatory to define exactly one return field if you select this option. See Step 8.

     In the Variable Definition section, enter the **Variable ID**, and then complete the **Column**, **Operator**, and **Value** fields. To allow values to be specified at design time or runtime, select **refer to** from the Operator drop-down list.

     > **Note:** If you select in list as the operator, the system displays the Add More Value (+) icon to add more values to the list.

     In the Series Definition section, click the **Add Series Return** (+) icon and complete these fields:
     - **Label:** Enter a value in the Label field.
     - **Formula:** Enter a math expression using the defined variables. For example, {1}*100/({0} + {1})
     - **Decimal Places:** Enter the value to specify decimal place.
     - **Data Label Format:** Enter a data label format using the {0} placeholder. For example, USD{0}, {0}%,{0}days and so on.
     - **Series Chart Type:** Select a chart type from the drop-down list.
     - **Color Theme:** Select a color theme from the drop-down list.
     - **Dual Y:** This option is disabled by default. Enable this option if you want to plot one or more data series on a secondary vertical (Y) axis.
   - **Based on Complex Condition:** Click the **Add Variable** (**+**) icon to define the complex condition for the series. The system displays the Extra Filter Criteria for the Variable and Series Definition sections.

     In the Extra Filter Criteria for the Variable section, click **Add Conditions** (+) icon and then complete the **Column**, **Operator**, and **Value** fields. To allow values to be specified at design time or runtime, select **refer to** from the Operator drop-down list.

     In the Series Definition section, complete these fields:
     - **Label:** Enter a value in the Label field.
     - **Formula:** Enter a math expression using the defined variables. For example, {1}*100/({0} + {1})
     - **Decimal Places:** Enter the value to specify decimal place.
     - **Data Label Format:** Enter a data label format using the {0} placeholder. For example, USD{0}, {0}%,{0}days and so on.
     - **Series Chart Type:** Select a chart type from the drop-down list.
     - **Color Theme:** Select a color theme from the drop-down list.
     - **Dual Y:** This option is disabled by default. Enable this option if you want to plot one or more data series on a secondary vertical (Y) axis.

     > **Note:** You can click the **Add Variable** (**+**), **Add Series Return** (**+**) icons to define additional variable and series conditions.

8. In the Return field section, the Include Count option is enabled by default. You can disable the Include Count option. When Include Count option is enabled, complete these fields:

   Note: This section is displayed only if you have selected the Series Type as Based on Returns or Based on Formula of Variables.

   - **Label:** Enter a label text.
   - **Series Chart Type:** Select the required chart type from the drop-down list.
   - **Color Theme Override:** Select the color from the drop-down list to override the current color theme.

   Click the **Add Return** (**+**) icon and complete these fields:

   - **Column:** This drop-down list displays the columns from the selected table or business view. Select the required column.
   - **Label:** Enter the label.
   - **Operator:** Select the required operator from the drop-down list. The operator values are displayed based on the data type of the selected column.
   - **Decimal Places:** Enter the value to specify decimal place.
   - **Data Label Format:** Enter a data label format using the {0} placeholder. For example, USD{0}, {0}%, {0}days and so on.
   - **Series Chart Type:** Select a chart type from the drop-down list.
   - **Color Theme:** Select the required color theme.
   - **Dual Y:** Enable this option to display two different Y-axes so you can plot two measures with different scales or units on the same chart.

9. To define the Context Chart, click the **Add Context Chart** icon (+) and complete these fields:
    - **Groups:** Select the required column to group from the drop-down list.
    - **Chart Name:** The selected value in the Group field (column name) is displayed by default as the chart name. You can override this value and enter a new name.
    - **Orientation:** Select the orientation as Horizontal or Vertical.
    - **Data Label Display:** Select an option from the drop-down list. The available options are: Never, Always, and Max Mode only.
    - **Data Label Position:** This value sets the position of the data label on the chart. Select a value from the drop-down list.
    - **Stack Series:** This option is disabled by default. Enable this option if you want to stack the series on the chart.
    - **Y Axis Title** and **Dual Y Axis Title:** Enter the titles for the axis in these fields.
    - **Sort By**: Select the value from the drop-down list.
    - **Show Top:** This field limits the chart to the specified number of results (for example, the top 10 customers). Enter a value as required, and then click the **Ascending** or **Descending** icon to display the top records in the selected order.
    - **Reference Line Name:** Enter a name. This is the display text shown on the reference line. After you enter a name in this field, the system displays the following fields:
        - **Display Format:** Enter a reference line format using the {0} placeholder (For example, Min = {0}, Max = {0}).
        - **Default Value:** (optional) Enter a default value.
        - **Color Theme:** Select the required color theme from the drop-down list.
    - **Show Zero Groups:** This option is enabled by default. Disable it if you do not want to display groups with zero values.
10. Click **Save**.

Defining Process Analytics Based on a Logic Extension or Orchestration

If you want to configure an analytic chart based on the output from a logic extension or orchestration, you must first create that logic extension or orchestration and configure it with inputs and output, most likely array output, that is appropriate for the chart type you are creating.

To define the process analytics based on a logic extension or orchestration:

1. Access the Parent Process tab of your newly created user-defined process and click the **Process Analytics** tab on the right.
2. Click the **Add Metrics or Analytic** (**+**) icon.
3. From the Data Provider Type drop-down list, select the required data provider type as **Logic Extension – Analytic** or **Orchestration - Analytic** for your process.
4. In the Object ID field, click the **Search** icon to find and select the required logic extension or orchestration. By default, the name of the selected logic extension or orchestration is displayed in the Label field. You can override this value. Depending on the value selected in Object ID, the system displays the Input Parameters, Output Annotations, and Output Analytic sections.
5. (Optional) The **Show Analytic Conditionally (Boolean Type)** drop-down list is available only when the called object (a logic extension or orchestration) provides at least one Boolean output data structure. Select the appropriate Boolean output. At runtime, the selected output's return value determines whether the analytic is shown or hidden.
6. In the Input Parameters section, you can override the value in the Label fields. Select the values from the Operator and Default Value drop-down list.

The Operator drop-down list displays the available operators based on the data type of the Label field. Select an operator, or select **refer to** to allow users to specify values at design time or runtime.

If you selected **refer to** in the Operator field, the system displays the available options and (new) under Design Options and Runtime Options in the Default Value field. Select the required value to allow users to enter values at design time or runtime.

> **Note:** The value (new) appears in the Value field the first time you define a filter value (runtime or design-time). If a value has already been defined for either option, the system displays the existing value in the Value field under Design Options and Runtime Options along with the (new) value. You can click the **Add Filter** (**+**) icon and define more filter criteria for your analytics chart.

> **Note:** When defining filters for metrics and analytics, use a consistent set of filters across all metrics and analytics, and reference the appropriate runtime or design time options as needed.

7. Click the **Parent Process** icon to return to the Parent Process tab if you defined runtime or design-time values for your filters.
8. (Optional) In the Output Annotation section, complete these fields:
   - **Show Annotations Conditionally (Boolean Type):**This field is displayed only if at least one output Boolean data structure is available. Select the value from the drop-down list.

     > **Note:** If no condition is specified, only the Positive Annotation Template field is available. If a condition is specified, it is displayed at runtime. If a condition is specified, both Positive Annotation Template and Negative Annotation Template fields are available. At runtime, the condition's return value determines which annotation is displayed (**true** = Positive, **false** = Negative).

   - **Positive Annotation Template:** Enter a multiple line formatted text with optional placeholders such as {0} and {1}.
   - **Negative Annotation Template:** Enter a multiple line formatted text with optional placeholders such as {0} and {1}.

   After you specify placeholders in the annotation templates, the system displays the placeholder mapping table with the Placeholder ID field and the Mapped to Output Data Structure drop-down list. Use this table to map each placeholder to the output data structure.

   From the **Mapped to Output Data Structure** drop-down list, select the value to map to each placeholder ID.
9. In the Output Analytic section, select the required chart type from the **Chart Type** drop-down list, and then complete the fields for that chart type.
10. Click **Save**.

Defining Metrics

You can define the metrics displayed on the nodes and links by selecting an EnterpriseOne table or a business view as the data provider. Then, you can define the filter criteria, series type, and context chart to display those node and link metrics.

Defining Node Metrics

To define the metrics displayed on a node using an EnterpriseOne table or business view:

1. Access the Parent Process tab of your newly created user-defined process and click the **Node Metrics and Analytics** tab on the right.
2. Click the **Add Metrics or Analytic** (**+**) icon.

3. From the Data Provider Type drop-down list, select the data provider as **Table-Metrics** or **View-Metrics**.
4. In the Object Name field, enter the data provider ID, and press **Enter**. The Label field is auto populated with the same value as the Object Name field. You can override the value in the Label field. The system displays the value in the Label field as the name of the Node Metrics and Analytics tab.

   The system also displays the Filter Criteria, Return Fields, Group By, and Context Chart sections on the new Node Metrics and Analytics tab.
5. In the Filter Criteria section, click the **Add Filter** (**+**) icon.
6. (Optional) To define the filer criteria, complete these fields:
   - **Column:** This drop-down list displays the columns from the selected table or business view. Select the required column to filter the fields.
   - **Operator:**

     This drop-down list displays the available operators based on the data type of the selected column. Select an operator, or select **refer to** to allow users to specify values at design time or runtime.

     > **Note:** If you select in list as the operator, the system displays the Add More Value (+) icon to add more values to the list.

   - **Value:**

     Enter a value.

     If you selected **refer to** in the Operator field, the system displays (new) and the available values under Design Options and Runtime Options in this field. Select the required value to allow users to enter values at design time or runtime.

     > **Note:** The value (new) appears in the Value field the first time you define a filter value (runtime or design-time). If a value has already been defined for either option, the system displays the existing value in the Value field under Design Options and Runtime Options along with the (new) value.

     When you select an option under Design Options, the system displays the Open Design Option icon next to the Value field. Click the icon to open the Design Option tab, and then review or enter the Default Value.

     When you select an option under Runtime Options, the system displays the Open Data Filtering and Grouping Options icon next to the Value field. Click the icon to open the Open Data Filtering and Grouping Options tab, and then review or enter the Default Value.

   > **Note:** The values displayed in the Operator field drop-down list depends on the data type of the selected Column value. You can click the **Add Filter** (**+**) icon and define more filter criteria for your analytics chart.

7. Click the **Parent Process** icon to return to the Parent Process tab if you defined runtime or design-time values for your filters.
8. In the Return Field section, you must define at least one returned field. The Include Count option is enabled by default. You can disable this option if you do not want to show the number of records on the charts. Click the **Add Return** (**+**) icon and complete these fields:
   - **Label:** Enter a label text.
   - **Column:** Select the column from the drop-down list.

- **Label:** This field displays the name of the selected Column. You can override and enter a new value.
- **Operator:** Select the required operator from the drop-down list. The drop-down list displays the value depending on the data type of the selected column.
- **Decimal Places:** Enter the value to specify decimal place.
- **Data Label Format:** Enter a data label format using the {0} placeholder. For example, USD{0}, {0}%, {0}days and so on.

9. In the Group By section, from the Node drop-down list, select the appropriate column to group the data for the metric, for example, Status Code - Last (LTTR) in Order to Cash.
10. In the Context Chart section, click the **Add Context Chart** (**+**) icon and complete these fields:

    - **Groups:** Select the required column to group from the drop-down list.
    - **Chart Name:** The selected value in the Group field (column name) is displayed by default as the chart name. You can override this value and enter a new name.
    - **Orientation:** Select the orientation as Horizontal or Vertical.
    - **Data Label Display:** Select an option from the drop-down list. The available options are: Never, Always, and Max Mode only.
    - **Data Label Position:** This value sets the position of the data label on the chart. Select a value from the drop-down list.
    - **Stack Series:** This option is disabled by default. Enable this option if you want to stack series on the chart.
    - **Show Top:** This field limits the chart to the specified number of results (for example, the top 10 customers). Enter a value as required.

    > **Note:** You can click the Add Context Chart (+) icon to define more of context charts.

11. Click **Save**.

Defining Link Metrics

To define the metrics displayed on a link using an EnterpriseOne table or business view:

1. Access the Parent Process tab of your newly created user-defined process and click the **Link Metrics and Analytics** tab on the right.
2. Click the **Add Metrics or Analytic** (**+**) icon.
3. From the Data Provider Type drop-down list, select the data provider as **Table-Metrics** or **View-Metrics**.
4. In the Object Name field, enter the data provider ID, and press **Enter**. The Label field is auto populated with the same value as the Object Name field. You can override the value in the Label field. The system displays the value in the Label field as the name of the Link Metrics and Analytics tab.

   The system also displays the Filter Criteria, Return Fields, Group By, and Context Chart sections on the new Link Metrics and Analytics tab.
5. In the Filter Criteria section, click the **Add Filter** (**+**) icon.

6. (Optional) To define the filer criteria, complete these fields:

   - **Column:** This drop-down list displays the columns from the selected table or business view. Select the required column to filter the fields.
   - **Operator:**

     This drop-down list displays the available operators based on the data type of the selected column. Select an operator, or select **refer to** to allow users to specify values at design time or runtime.

     > **Note:** If you select in list as the operator, the system displays the Add More Value (+) icon to add more values to the list.

   - **Value:**

     Enter a value.

     If you selected **refer to** in the Operator field, the system displays (new) under the Design Options and Runtime Options headings in this field. Select **(new)** or the available values as required to allow users to enter values at design time or runtime.

     > **Note:** The value (new) appears in the Value field the first time you define a filter value (runtime or design-time). If a value has already been defined for either option, the system displays the existing value in the Value field under Design Options and Runtime Options along with the (new) value.

     When you select a value under Design Options, the system displays the Open Design Option icon next to the Value field. Click the icon to open the Design Option tab, and then review or enter the Default Value.

     When you select a value under Runtime Options, the system displays the Open Data Filtering and

     Grouping Options icon next to the Value field. Click the icon to open the Open Data Filtering and Grouping Options tab, and then review or enter the Default Value.

   > **Note:** The values displayed in the Operator field drop-down list depends on the data type of the selected Column value. You can click the **Add Filter** (**+**) icon and define more filter criteria for your analytics chart.

7. Click the **Parent Process** icon to return to the Parent Process tab if you defined runtime or design-time values for your filters.
8. In the Return Field section, you must define at least one returned field. The Include Count option is enabled by default. You can disable this option if you do not want to show the number of records on the charts. Click the **Add Return** (**+**) icon and complete these fields:
   - **Label:** Enter a label text.
   - **Column:** Select the column from the drop-down list.
   - **Label:** This field displays the name of the selected Column. You can override and enter a new value.
   - **Operator:** Select the required operator from the drop-down list. The drop-down list displays the value depending on the data type of the selected column.
   - **Decimal Places:** Enter the value to specify decimal place.
   - **Data Label Format:** Enter a data label format using the {0} placeholder. For example, USD{0}, {0}%, {0}days and so on.

9. In the Group By section, select the appropriate columns to group data from the **From Node** and **To Node** drop-down lists, for example, Status Code - Last (LTTR) and Status Code - Next (NXTR) in Order to Cash.
10. In the Context Chart section, click the **Add Context Chart** (**+**) icon and complete these fields:
    - **Groups:** Select the required column to group from the drop-down list.
    - **Chart Name:** The selected value in the Group field (column name) is displayed by default as the chart name. You can override this value and enter a new name.
    - **Orientation:** Select the orientation as Horizontal or Vertical.
    - **Data Label Display:** Select an option from the drop-down list. The available options are: Never, Always, and Max Mode only.
    - **Data Label Position:** This value sets the position of the data label on the chart. Select a value from the drop-down list.
    - **Stack Series:** This option is disabled by default. Enable this option if you want to stack series on the chart.
    - **Show Top:** This field limits the chart to the specified number of results (for example, the top 10 customers). Enter a value as required.

    Note: You can click the Add Context Chart (+) icon to define more of context charts.
11. Click **Save**.

Defining Analytics

You can define node and link analytics by selecting an EnterpriseOne table, business view, logic extension, or orchestration as the data provider. Then you can specify the filter criteria, series type, and context chart to configure and display the node and link analytics charts.

Defining Node Analytics Based on a Table or Business View

To define the node analytics based on an EnterpriseOne table or business view:

1. Access the Parent Process tab of your newly created user-defined process and click the **Node Metrics and Analytics** tab on the right.
2. Click the **Add Metrics or Analytic** (**+**) icon.
3. From the Data Provider Type drop-down list, select the required data provider type as **Table - Analytic** or **View - Analytic**.
4. In the Object Name field, enter the data provider ID (Table ID or a Business View ID), and press **Enter**. The Label field is auto populated with the same value as the Object Name field. You can override this value. The system displays the value in the Label field as the name of the Node Metrics and Analytics tab.

   The system also displays the Filter Criteria, Return Fields, and Context Chart sections on the new Node Metrics and Analytics tab.
5. (Optional)In the Filter Criteria section, click the **Add Filter** (**+**) icon, and complete these fields:
    - **Column:** This drop-down list displays the columns from the selected table or business view. Select the required column to filter the fields.
    - **Operator:**

      This drop-down list displays the available operators based on the data type of the selected column. Select an operator, or select **refer to** to allow users to specify values at design time or runtime.

      Note: If you select in list as the operator, the system displays the Add More Value (+) icon to add more values to the list.

- **Value:**

  Enter a value.

  If you selected **refer to** in the Operator field, the system displays (new) and the available values under Design Options and Runtime Options in this field. Select the required value to allow users to enter values at design time or runtime.

  When you select a value under Design Options, the system displays the Open Design Option icon next to the Value field. Click the icon to open the Design Option tab, and then review or enter the Default Value.

  When you select a value under Runtime Options, the system displays the Open Data Filtering and Grouping Options icon next to the Value field. Click the icon to open the Open Data Filtering and Grouping Options tab, and then review or enter the Default Value.

  > **Note:** The value (new) appears in the Value field the first time you define a filter value (runtime or design-time). If a value has already been defined for either option, the system displays the existing value in the Value field under Design Options and Runtime Options along with the (new) value. You can click the **Add Filter** (**+**) icon and define more filter criteria for your analytics chart.

6. Click the **Parent Process** icon to return to the Parent Process tab if you defined runtime or design-time values for your filters.

7. From the Series Type drop-down list, select a value to define how you want the data to be grouped and plotted in the analytic chart. The available series types are:
   - **Based on Returns:** It is mandatory to define at least one return field if you select this option. See Step 8.
   - **Based on Formula of Variables:** When you select this option, the system enables you to define the values in the Variables Definition and Series Definition Sections. You can specify the values as Design Time or Runtime by selecting **refer to** from the Operator drop-down list.

     It is mandatory to define exactly one return field if you select this option. See point 8.

     In the Variable Definition section, enter the **Variable ID**, and then complete the **Column**, **Operator**, and **Value** fields. To allow values to be specified at design time or runtime, select **refer to** from the Operator drop-down list.

     > **Note:** If you select in list as the operator, the system displays the Add More Value (+) icon to add more values to the list.

     In the Series Definition section, click the **Add Series Return** (+) icon and complete these fields:
     - **Label:** Enter a value in the Label field.
     - **Formula:** Enter a math expression using the defined variables. For example, {1}*100/({0} + {1})
     - **Decimal Places:** Enter the value to specify decimal place.
     - **Data Label Format:** Enter a data label format using the {0} placeholder. For example, USD{0}, {0}%,{0}days and so on.
     - **Series Chart Type:** Select a chart type from the drop-down list.
     - **Color Theme:** Select a color theme from the drop-down list.
     - **Dual Y:** This option is disabled by default. Enable this option if you want to plot one or more data series on a secondary vertical (Y) axis.
   - **Based on Complex Condition:** Click the **Add Variable** (**+**) icon to define the complex condition for the series. The system displays the Extra Filter Criteria for the Variable and Series Definition sections.

     In the Extra Filter Criteria for the Variable section, click **Add Conditions** (+) icon and then complete the **Column**, **Operator**, and **Value** fields. To allow values to be specified at design time or runtime, select **refer to** from the Operator drop-down list.

     In the Series Definition section, complete these fields:
     - **Label:** Enter a value in the Label field.
     - **Formula:** Enter a math expression using the defined variables. For example, {1}*100/({0} + {1})
     - **Decimal Places:** Enter the value to specify decimal place.
     - **Data Label Format:** Enter a data label format using the {0} placeholder. For example, USD{0}, {0}%,{0}days and so on.
     - **Series Chart Type:** Select a chart type from the drop-down list.
     - **Color Theme:** Select a color theme from the drop-down list.
     - **Dual Y:** This option is disabled by default. Enable this option if you want to plot one or more data series on a secondary vertical (Y) axis.

     > **Note:** You can click the **Add Variable** (**+**), **Add Series Return** (**+**) icons to define additional variable and series conditions.

8. In the Return field section, the Include Count option is enabled by default. You can disable the Include Count option. When Include Count option is enabled, enter the value in the Label field.

   > **Note:** You must define at least one return field for the table or business view based node analytics.

   Click the **Add Return** (**+**) icon and complete these fields:

   - **Column:** This drop-down list displays the columns from the selected table or business view. Select the required column.
   - **Label:** Enter the label.
   - **Operator:** Select the required operator from the drop-down list. The operator values are displayed based on the data type of the selected column.
   - **Decimal Places:** Enter the value to specify decimal place.
   - **Data Label Format:** Enter a data label format using the {0} placeholder. For example, USD{0}, {0}%, {0}days and so on.

9. In the Group By section, from the Node drop-down list, select the appropriate column to group the data for the metric, for example, Status Code - Last (LTTR) in Order to Cash.
10. To define the Context Chart, click the **Add Context Chart** icon (+) and complete these fields:

    - **Groups:** Select the required column to group from the drop-down list.
    - **Chart Name:** The selected value in the Group field (column name) is displayed by default as the chart name. You can override this value and enter a new name.
    - **Orientation:** Select the orientation as Horizontal or Vertical.
    - **Data Label Display:** Select an option from the drop-down list. The available options are: Never, Always, and Max Mode only.
    - **Data Label Position:** This value sets the position of the data label on the chart. Select a value from the drop-down list.
    - **Stack Series:** This option is disabled by default. Enable this option if you want to the stack series on the chart.
    - **Y Axis Title** and **Dual Y Axis Title:** Enter the titles for the axis in these fields.
    - **Sort By**: Select the value from the drop-down list.
    - **Show Top:** This field limits the chart to the specified number of results (for example, the top 10 customers). Enter a value as required, and then click the **Ascending** or **Descending** icon to display the top records in the selected order.
    - **Reference Line Name:** Enter a name. This is the display text shown on the reference line. After you enter a name in this field, the system displays the following fields:
      - **Display Format:** Enter a reference line format using the {0} placeholder (For example, Min = {0}, Max = {0}).
      - **Default Value:** (optional) Enter a default value.
      - **Color Theme:** Select the required color theme from the drop-down list.
    - **Show Zero Groups:** This option is enabled by default. Disable it if you do not want to display groups with zero values.

11. Click **Save**.

Defining Node Analytics Based on a Logic Extension or Orchestration

To define the node analytics based on a logic extension or orchestration:

1. Access the Parent Process tab of your newly created user-defined process and click the **Node Metrics and Analytics** tab on the right.
2. Click the **Add Metrics or Analytic** (**+**) icon.
3. From the Data Provider Type drop-down list, select the required data provider type as **Logic Extension – Analytic** or **Orchestration - Analytic**.
4. In the Object ID field, click the **Search** icon to find and select the required logic extension or orchestration. By default, the name of the selected logic extension or orchestration is displayed in the Label field. You can override this value. Depending on the value selected in Object ID, the system displays the Input Parameters, Output Annotations, and Output Analytic sections.
5. (Optional) The **Show Analytic Conditionally (Boolean Type)** drop-down list is available only when the called object (a logic extension or orchestration) provides at least one Boolean output data structure. Select the appropriate Boolean output. At runtime, the selected output's return value determines whether the analytic is shown or hidden.
6. In the Input Parameters section, you can override the value in the Label fields. Select the values from the Operator and Default Value drop-down list.

   The Operator drop-down list displays the available operators based on the data type of the Label field.

   When defining a logic extension or orchestration based node analytics, the system also displays a **Node** operator in the Operator list. Selecting this option lets you pass the current node's value as an input parameter.

   Select an operator, or select **refer to** to allow users to specify values at design time or runtime.

   If you selected **refer to** in the Operator field, the system displays the available options and (new) under the Design Options and Runtime Options headings in the Default Value field. Select the required value to allow users to enter values at design time or runtime.

   When you select a value under Design Options, the system displays the Open Design Option icon next to the Value field. Click the icon to open the Design Option tab, and then enter the Default Value.

   When you select a value under Runtime Options, the system displays the Open Data Filtering and Grouping Options icon next to the Value field. Click the icon to open the Open Data Filtering and Grouping Options tab, and then enter the Default Value.
7. Click the **Parent Process** icon to return to the Parent Process tab if you defined runtime or design-time values for your filters.
8. (Optional) In the Output Annotation section, complete these fields:
   - **Show Annotations Conditionally (Boolean Type):**This field is displayed only if atleast one output Boolean data structure is available. Select the value from the drop-down list.

     > **Note:** If no condition is specified, only the Positive Annotation Template field is available. If a condition is specified, both Positive Annotation Template and Negative Annotation Template fields are available. At runtime, the condition's return value determines which annotation is displayed (**true** = Positive, **false** = Negative).

   - **Positive Annotation Template:** Enter a multiple line formatted text with optional placeholders such as {0} and {1}.

- **Negative Annotation Template:** Enter a multiple line formatted text with optional placeholders such as {0} and {1}.

After you specify placeholders in the annotation templates, the system displays the placeholder mapping table with the Placeholder ID field and the Mapped to Output Data Structure drop-down list. Use this table to map each placeholder to the output data structure.

From the **Mapped to Output Data Structure** drop-down list, select the value to map to each placeholder ID.

9. In the Output Analytic section, select the required chart type from the **Chart Type** drop-down list, and then complete the fields for that chart type.
10. Click **Save**.

Defining Link Analytics Based on a Table or Business View

To define the link analytics based on an EnterpriseOne table or business view:

1. Access the Parent Process tab of your newly created user-defined process and click the **Link Metrics and Analytics** tab on the right.
2. Click the **Add Metrics or Analytic** (**+**) icon.
3. From the Data Provider Type drop-down list, select the required data provider type as **Table - Analytic** or **View - Analytic**.
4. In the Object Name field, enter the data provider ID (Table ID or a Business View ID), and press **Enter**. The Label field is auto populated with the same value as the Object Name field. You can override this value. The system displays the value in the Label field as the name of the Link Metrics and Analytics tab.

   The system also displays the Filter Criteria, Return Fields, and Context Chart sections on the new Node Metrics and Analytics tab.
5. (Optional) In the Filter Criteria section, click the **Add Filter** (**+**) icon, and complete these fields:
   - **Column:** This drop-down list displays the columns from the selected table or business view. Select the required column to filter the fields.
   - **Operator:**

     This drop-down list displays the available operators based on the data type of the selected column. Select an operator, or select **refer to** to allow users to specify values at design time or runtime.

     > **Note:** If you select in list as the operator, the system displays the Add More Value (+) icon to add more values to the list.

   - **Value:**

     Enter a value.

     If you selected **refer to** in the Operator field, the system displays (new) under Design Options and Runtime Options in this field. Select the value as required to allow users to enter values at design time or runtime.

     When you select a value under Design Options, the system displays the Open Design Option icon next to the Value field. Click the icon to open the Design Option tab, and then enter the Default Value.

     When you select a value under Runtime Options, the system displays the Open Data Filtering and Grouping Options icon next to the Value field. Click the icon to open the Open Data Filtering and Grouping Options tab, and then enter the Default Value.

Note: You can click the **Add Filter** (**+**) icon and define more filter criteria for your analytics chart.

6. Click the **Parent Process** icon to return to the Parent Process tab if you defined runtime or design-time values for your filters.

7. From the Series Type drop-down list, select a value to define how you want the data to be grouped and plotted in the process analytic chart. The available series types are:
   - **Based on Returns:** It is mandatory to define at least one return field if you select this option. See point 8.
   - **Based on Formula of Variables:** When you select this option, the system enables you to define the values in the Variables Definition and Series Definition Sections. You can specify the values as Design Time or Runtime by selecting **refer to** from the Operator drop-down list.

     In the Variable Definition section, enter the **Variable ID**, and then complete the **Column**, **Operator**, and **Value** fields. To allow values to be specified at design time or runtime, select **refer to** from the Operator drop-down list.

     > **Note:** If you select in list as the operator, the system displays the Add More Value (+) icon to add more values to the list.

     In the Series Definition section, click the **Add Series Return** (+) icon and complete these fields:
     - **Label:** Enter a value in the Label field.
     - **Formula:** Enter a math expression using the defined variables. For example, {1}*100/({0} + {1})
     - **Decimal Places:** Enter the value to specify decimal place.
     - **Data Label Format:** Enter a data label format using the {0} placeholder. For example, USD{0}, {0}%,{0}days and so on.
     - **Series Chart Type:** Select a chart type from the drop-down list.
     - **Color Theme:** Select a color theme from the drop-down list.
     - **Dual Y:** This option is disabled by default. Enable this option if you want to plot one or more data series on a secondary vertical (Y) axis. It is mandatory to define at exactly one return field if you select this option. See Step 8.
   - **Based on Complex Condition:** Click the **Add Variable** (**+**) icon to define the complex condition for the series. The system displays the Extra Filter Criteria for the Variable and Series Definition sections.

     In the Extra Filter Criteria for the Variable section, click **Add Conditions** (+) icon and then complete the **Column**, **Operator**, and **Value** fields. To allow values to be specified at design time or runtime, select **refer to** from the Operator drop-down list.

     In the Series Definition section, complete these fields:
     - **Label:** Enter a value in the Label field.
     - **Formula:** Enter a math expression using the defined variables. For example, {1}*100/({0} + {1})
     - **Decimal Places:** Enter the value to specify decimal place.
     - **Data Label Format:** Enter a data label format using the {0} placeholder. For example, USD{0}, {0}%,{0}days and so on.
     - **Series Chart Type:** Select a chart type from the drop-down list.
     - **Color Theme:** Select a color theme from the drop-down list.
     - **Dual Y:** This option is disabled by default. Enable this option if you want to plot one or more data series on a secondary vertical (Y) axis.

       > **Note:** You can click the **Add Variable** (**+**), **Add Series Return** (**+**) icons to define additional variable and series conditions.

8. In the Return field section, the Include Count option is enabled by default. You can disable the Include Count option. When Include Count option is enabled, enter the value in the Label field.

   > **Note:** You must define at least one return field for the table or business view based analytics if Series Type = Based on Returns

   Click the **Add Return** (**+**) icon and complete these fields:

   - **Column:** This drop-down list displays the columns from the selected table or business view. Select the required column.
   - **Label:** Enter the label.
   - **Operator:** Select the required operator from the drop-down list. The operator values are displayed based on the data type of the selected column.
   - **Decimal Places:** Enter the value to specify decimal place.
   - **Data Label Format:** Enter a data label format using the {0} placeholder. For example, USD{0}, {0}%, {0}days and so on.
9. In the Group By section, select the appropriate columns to group data from the **From Node** and **To Node** drop-down lists, for example, Status Code - Last (LTTR) and Status Code - Next (NXTR) in Order to Cash.
10. To define the Context Chart, click the **Add Context Chart** icon (+) and complete these fields:

    - **Groups:** Select the required column to group from the drop-down list.
    - **Chart Name:** The selected value in the Group field (column name) is displayed by default as the chart name. You can override this value and enter a new name.
    - **Orientation:** Select the orientation as Horizontal or Vertical.
    - **Data Label Display:** Select an option from the drop-down list. The available options are: Never, Always, and Max Mode only.
    - **Data Label Position:** This value sets the position of the data label on the chart. Select a value from the drop-down list.
    - **Stack Series:** This option is disabled by default. Enable this option if you want to the stack series on the chart.
    - **Y Axis Title** and **Dual Y Axis Title:** Enter the titles for the axis in these fields.
    - **Sort By**: Select the value from the drop-down list.
    - **Show Top:** This field limits the chart to the specified number of results (for example, the top 10 customers). Enter a value as required, and then click the **Ascending** or **Descending** icon to display the top records in the selected order.
    - **Reference Line Name:** Enter a name. This is the display text shown on the reference line. After you enter a name in this field, the system displays the following fields:
      - **Display Format:** Enter a reference line format using the {0} placeholder (e.g., Min = {0}, Max = {0}).
      - **Default Value:** (optional) Enter a default value.
      - **Color Theme:** Select the required color theme from the drop-down list.
    - **Show Zero Groups:** This option is enabled by default. Disable it if you do not want to display groups with zero values.
11. Click **Save**.

Defining Link Analytics Based on a Logic Extension or Orchestration

To define the link analytics based on a logic extension or orchestration:

1. Access the Parent Process tab of your newly created user-defined process and click the **Link Metrics and Analytics** tab on the right.
2. Click the **Add Metrics or Analytic** (**+**) icon.
3. From the Data Provider Type drop-down list, select the required data provider type as **Logic Extension – Analytic** or **Orchestration - Analytic**.
4. In the Object ID field, click the **Search** icon to find and select the required logic extension or orchestration. By default, the name of the selected logic extension or orchestration is displayed in the Label field. You can override this value. Depending on the value selected in Object ID, the system displays the Input Parameters, Output Annotations, and Output Analytic sections.
5. (Optional) The **Show Analytic Conditionally (Boolean Type)** drop-down list is available only when the called object (a logic extension or orchestration) provides at least one Boolean output data structure. Select the appropriate Boolean output. At runtime, the selected output's return value determines whether the analytic is shown or hidden.
6. In the Input Parameters section, you can override the value in the Label fields. Select the values from the Operator and Default Value drop-down list.

   The Operator drop-down list displays the available operators based on the data type of the Label field.

   When defining a logic extension or orchestration based link analytics, the system also displays the **From Node** and **To Node** operators in the Operator list. Selecting this option lets you pass the current node's value as an input parameter.

   Select an operator, or select **refer to** to allow users to specify values at design time or runtime.

   If you selected **refer to** in the Operator field, the system displays the available options and (new) under Design Options and Runtime Options in the Default Value field. Select the required value to allow users to enter values at design time or runtime.

   When you select a value under Design Options, the system displays the Open Design Option icon next to the Value field. Click the icon to open the Design Option tab, and then enter the Default Value.

   When you select a value under Runtime Options, the system displays the Open Data Filtering and Grouping Options icon next to the Value field. Click the icon to open the Open Data Filtering and Grouping Options tab, and then enter the Default Value.

   > **Note:** You can click the **Add Filter** (**+**) icon and define more filter criteria for your analytics chart.

7. Click the **Parent Process** icon to return to the Parent Process tab if you defined runtime or design-time values for your filters.

8. (Optional) In the Output Annotation section, complete these fields:
   - **Show Annotations Conditionally (Boolean Type):**This field is displayed only if atleast one output Boolean data structure is available. Select the value from the drop-down list.

     > **Note:** If no condition is specified, only the Positive Annotation Template field is available. If a condition is specified, it is displayed at runtime. If a condition is specified, both Positive Annotation Template and Negative Annotation Template fields are available. At runtime, the condition's return value determines which annotation is displayed (**true** = Positive, **false** = Negative).

   - **Positive Annotation Template:** Enter a multiple line formatted text with optional placeholders such as {0} and {1}.
   - **Negative Annotation Template:** Enter a multiple line formatted text with optional placeholders such as {0} and {1}.

   After you specify placeholders in the annotation templates, the system displays the placeholder mapping table with the Placeholder ID field and the Mapped to Output Data Structure drop-down list. Use this table to map each placeholder to the output data structure.

   From the **Mapped to Output Data Structure** drop-down list, select the value to map to each placeholder ID.
9. In the Output Analytic section, select the required chart type from the **Chart Type** drop-down list, and then complete the fields for that chart type.
10. Click **Save**.

Creating Child Processes

In many cases an enterprise process will be closely related to other enterprise processes. For example, the broader Order-to-Cash process might at some point connect to a Warehouse process. Enterprise Process Manager enables you to create processes with such Parent/Child relationships.

- **Parent Process:** A "top-level" process. A process designer creates a parent process in Enterprise Process Manager either from a preconfigured process model template or as a user-defined process. A user can then open a parent process in Enterprise Process Modeler. The EnterpriseOne system manages parent processes as user-defined objects (UDOs); therefore, they can be Personal (to the process designer) or Shared to users and roles.
- **Child Process:** A process that can be entered into from a node in a parent process. For example, the Warehouse process might be considered a child process of the broader Order-to-Cash process. A child process can, and as a best practice should, inherit design options and runtime options from its parent process. A parent process can have multiple child processes.
- **Connected Process:** A child process that is preconfigured in a process model template. A connected process might also exist as its own independent process model (UDO), but when it is incorporated into a parent process via a process model template, its specifications are copied into the parent process and it becomes a dependent, integrated part of the parent process (UDO). When you create a parent process from a process model template that has connected processes within the template, you can choose to include or exclude the connected process(es) from the process model, and which node to launch the connected process from (the entry node).
- **Subprocess:** A child process that you create in Enterprise Process Manager as part of a user-defined process rather than from a process model template.

Whether the child process comes from a process model template or a user-defined process, in both cases the specifications of the child process become embedded as part of the parent process specifications.

To add a subprocess to the user-defined process:

1. Access the JD Edwards EnterpriseOne application.
2. From the User menu, click **Manage Content**, and select **Processes**.

   The system displays the previously created process. If this is not the user-defined process you want, click the **Name** drop-down list, and in the Personal section, select the required process.
3. On the process diagram, right-click the node where you want to add a subprocess, and select **Create Sub Process**. The system displays the Process Definition tab.
4. Perform the steps in this section to create a new subprocess: *Creating a User-Defined Process*.

   A node that contains a subprocess is displayed as a circular node and highlighted in a distinct color in the process diagram. To work with the subprocess, right-click the circular node and select **Open Sub Process** to open it, or select **Remove Sub Process** to remove it.

   To navigate between the subprocess and the parent process, use the **Child Process** and **Parent Process** tabs.

   > **Note:** You can override the default color theme and display title of the subprocess in the subprocess Properties tab.

Previewing the Enterprise Process Model

You can preview the runtime view with the current runtime metrics defined in the template in the Enterprise Process Manager window by using the Preview tab (preview mode). The system displays the process model preview in the model pane and the Process Analytics tab on the right.

> **Note:** In the preview mode, you can adjust the position of the nodes, change the default filters, modify the display options, configure the metrics thresholds, set up chart configurations within the analytic panes, use the snap to node and grid, and zoom to fit options. All these changes can be saved in the preview mode.

Starting with Tools Release 9.2.9.3, if the process model includes subprocesses, you can preview both the parent and the subprocesses using the Preview tab. In this case, the system displays the Hierarchy Map window showing the hierarchy between the processes in the Preview tab. You can drag and drop this window to resize it. You can also use the Hide Hierarchy Window icon or Show Hierarchy Window icon as per your preference.

> **Note:** You can select the color themes for the parent and subprocesses while creating the process.

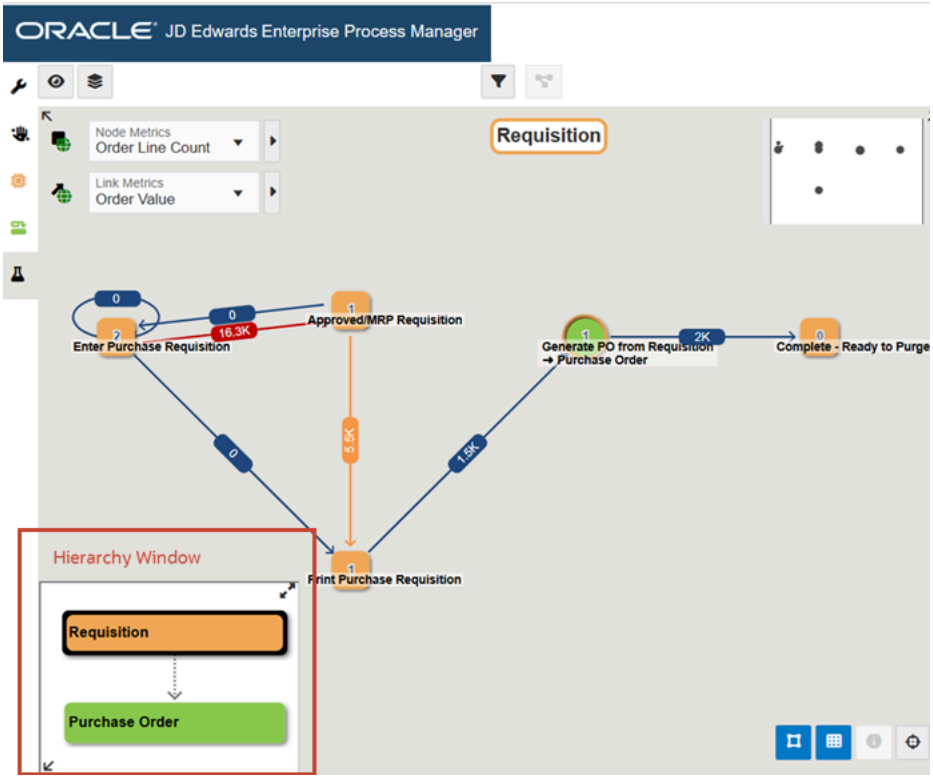
In following example, the parent and subprocesses are displayed based on the selected color themes. The subprocess is indicated by the circular node in green (Purchase Order).

You can right-click this node and click **Open Child Process** to open the child process window.

For example, in the preconfigured template for the Requisition process, Requisition is the parent process, and Purchase Order is a subprocess.

In the Hierarchy window, you can click the **Requisition** (in orange color) to preview the parent process, and you can click the **Purchase Order**(in green color) to preview the child process. To indicate that the parent process is displayed as a preview, the system displays a dotted arrow to the child process. To indicate that

the child process is displayed as a preview, the system displays a prominent arrow to the child process.



To preview the runtime metrics of the enterprise process and make the changes (optional) to the settings:

1. In the Enterprise Process Manager window, click the **Preview** tab. The Process Analytics tab is displayed on the right. This tab displays the analytics charts for the enterprise process.

   When you click a node, the Node Analytics tab is displayed along with the specific node-related metrics, and when you click a link, the Link Analytics tab is displayed along with the specific link-related metrics.
2. You can drag and drop the nodes to change their positions. You can use the **Snap to Node**, **Snap to Grid**, and **Zoom to Fit** options to make changes to the layout of the enterprise process diagram.

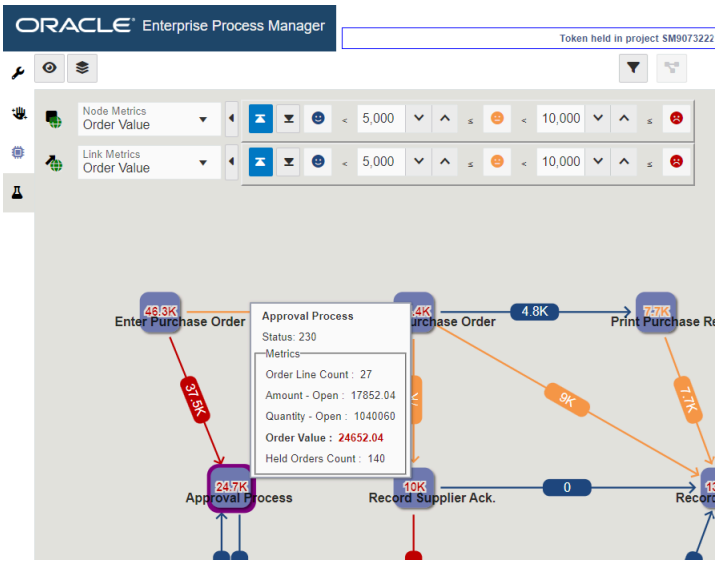
3. You can make changes to the metrics of the nodes and links by selecting the values from the **Node Metrics** and **Link Metrics** drop-down lists. Click the arrow icon next to the Node Metrics and Link Metrics fields to change the threshold values.

   > **Note:** The values and colors change on the nodes and links in the enterprise process diagram when you make changes to the Node Metrics and Link Metrics fields. See *Understanding Color Codes*.

   To preview the node and link metric details:

   a. Hover over the node to view the status code and metric details on the hover form. On the hover form, the field selected in the Node Metrics drop-down list is displayed in bold and its value is displayed in the threshold color.

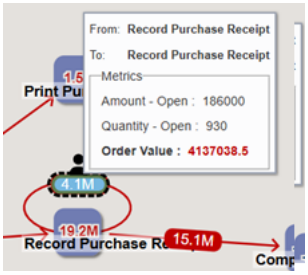
      In the following example screenshot, you can see that the Order Value is selected in the Node Metrics drop-down list. The value is displayed in red, since it exceeds the threshold value.



   b. Hover over the individual link to view the From and To details and metrics on the hover form. On the hover form, the field selected in the Link Metrics drop-down list is displayed in bold and its value is displayed in the threshold color.

   c. (Tools Release 9.2.9.3) The system displays a loop around the node if an activity rule involves a self-referential loop (for example, transitioning from the 400 status back to the 400 status within the activity rules). In the Preview tab, the self-referential loop displays the appropriate metric values depending on the options defined in the Show Display Options and Show Filter Options windows. You can hover over the loop to view the From, To, and Metric details of the loop. When you click the loop, the system displays a People icon and a border to indicate that the link is selected. The system displays a dashed border

(with a "marching ants" effect) around the link when you hover over a selected link. The corresponding analytics are displayed on the Link Analytics tab on the right.



d. (Tools Release 9.2.26.0) Right-click the nodes or links and click the **Drill into Data** option.

   The query conditions and the table or view are determined by the context of the node and link. These are not provided in the Data Browser Query Selector window. The system also displays a Data Browser window to retrieve raw data based on all filters relevant to the current context.

   See *Using the Drill into Data Option (Release 9.2.26.0)*.

e. (Tools Release 9.2.26.0) Right-click the nodes or links and click the **Show Query Details** option.

   The Show Query Details option enables you to view the details of the table selections, returns, inputs and outputs, summary of the queries, and filter details that are used to generate the metrics on the nodes, links, and analytics charts.

   See *Using the Show Query Details Option (Release 9.2.26.0)*.

4. To refine the analytics details in the Process Analytics tab use the following filtering options:

> **Note:** You can click the arrow icons to collapse or expand the individual charts in the analytics tabs. Also, you can click the Maximize or Minimize icons on the charts to view them in maximized or minimized modes. (Tools Release 9.2.26.0) In the maximized mode of the charts, you can click the **Toggle Table View** icon to view the list of Series, Groups, and Values of the chart in a tabular format. You can click the **Show Query Details** and **Drill into Data** icons on the rows to view the Query Details and the Data Browser windows. Additionally, you can right-click the charts to access these windows. To close the table view, click the Toggle Table view icon.

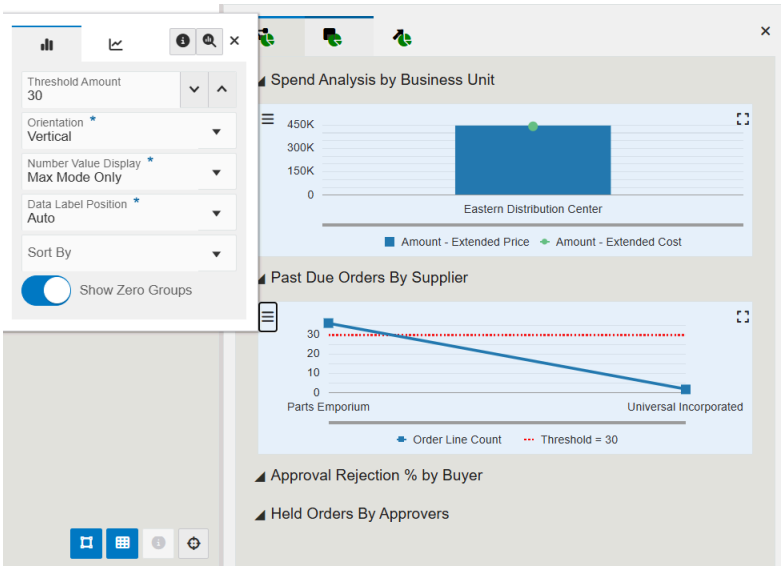
Starting with Tools Release 9.2.26.0, the Configure window displays the Chart Configuration and Series Configuration tabs. The fields displayed on these tabs depend on the chart type (bar or pie chart) and source (aggregation, orchestration, or logic extension) of the analytics charts. The Configure window also displays the Show Query Details and Drill into Data options.

> **Note:** Starting with Tools Release 9.2.26.0, the **Stack Series** option is displayed on the Series Configuration tab (instead of Chart Configuration), and this option is available only for bar, line, area, and combined charts (not the pie charts).

a. On the chart, click the **Configure** icon and enable the **Stack Series** option if you want to view the bar chart or pie chart in the stack chart format .

b. Select the values as required in the Configure window for the charts such as Orientation (Vertical or Horizontal; available for all charts except Pie charts), Number Value Display (Never, Always, or

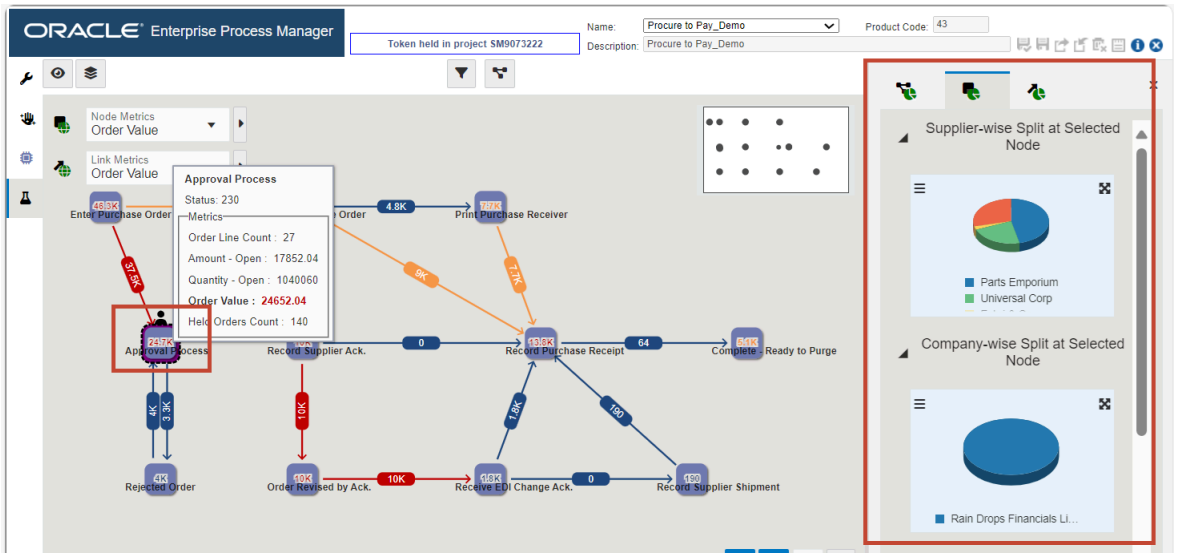
Max Mode Only) and so on. In the Process Analytics tab, you may see the fields such as Threshold Amount, or Alert Limit displayed in the Configure window depending on the design of the analytic.



c. Hover over the colors on the charts to review the details of the individual record.

5. Click the node to view the node-specific analytics in the Node Analytics tab on the right.

Note: The system displays a People icon and a border to indicate that the node is selected. The system displays a dashed border (with a "marching ants" effect) around the node when you hover over a selected node.



To refine the node details, use the following filtering options:

a. Click the **Configure** icon ☰ and enable the **Stack Series** option to view the charts in the stack chart format.

b. Select the values as required in the Configure window for the charts such as Number Value Display (Never, Always, or Max Mode Only) and Decimal Places (you can use the arrow icons in the field to increase or decrease the numbers).

c. Hover over the colors in the stack or pie chart to review the details.

6. When you click a link, the system displays link-specific analytics in the Link Analytics tab on the right.

   Note: The system displays a People icon and a border around the value of the link to indicate that the link is selected. The system displays a dashed border (with a "marching ants" effect) around the value on the link when you hover over a selected node.

   To refine the link details, use the following options:

   a. Click the **Configure** icon and enable the **Stack Series** option to view the charts in the stack chart format.
   b. Select the values as required in the Configure window for the charts such as Number Value Display (Never, Always, or Max Mode Only) and Decimal Places (you can use the arrow icons in the field to increase or decrease the numbers).
   c. Hover over the colors in the stack or pie chart to review the details.

   Note: You can click the **Click to set the context to the process level** icon to view the Process Analytics tab.

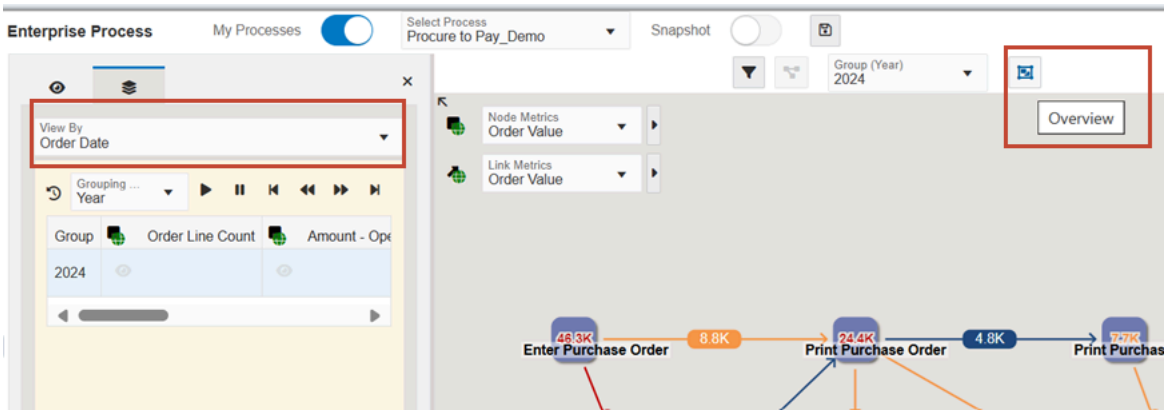
7. Click the **Show Display Options** icon . This tab enables you to choose the display options for your enterprise process model.

   a. From the Label Format for all Nodes drop-down list, you can choose the Description and Code, Description Only, or Code Only values. The system displays the selected label format on the nodes in the process model diagram.
   b. To further refine your process model diagram, enable or disable the Use Short Number Format, Show Undefined Paths, Show Zero Links, Show Orphan Nodes, and Show Zero Nodes options as required for your process model template.
   c. In the Analytics Labels section, select the values in Group Label Format for Analytics drop-down list. You can choose the Description and Code, Description Only, or Code Only fields. The system displays the selected label format in the analytics tabs.

8. Click the **Show Analytics Options** icon . Select the values from the View By drop-down list. The values displayed in this drop-down list are based on the selected template. If you select an option other than Overview, either a Timeline view (for Date and UTIME data types) or a Domain view (for other data types) is displayed.

You can make changes to the node and link metrics in the Timeline and Domain views. The system displays the corresponding changes in the analytics tab on the right.

(Tools Release 9.2.9.3) If you select an option other than Overview, the system displays the Overview icon next to the Group drop-down list. Click this icon to reset the value in the View By drop-down list to Overview.



9. Click **Save**. The system saves the enterprise process as a UDO.

> **Note:** You can reopen the existing personal enterprise process UDOs later, modify the settings, and click **Save** to save them again to overwrite the previous version. You can click **Save As** to save the UDO with a new name. If you click **Close** before saving your changes, the system displays the **Do you want to discard your changes?** message. You can click **OK** to discard your changes or click **Cancel** to proceed and save the changes.

User Defined Object (UDO) Features in Enterprise Process Manager

Enterprise Processes are saved and managed as UDOs in EnterpriseOne. The Enterprise Process Manager includes UDO options on the tool bar that enable you to create enterprise processes for your personal use, publish or share them, and modify shared enterprise processes that are created by other users.

> **Note:** The actions that you are allowed to perform in the Enterprise Process Manager depend on the UDO security permissions that are granted to you by a system administrator. See Setting Up UDO Security for Enterprise Process Manager Users in this guide for more information.

> **Note:** (Tools Release 9.2.9.3): When you save a process UDO from a template that has connected templates, the system will combine the specifications of the connected templates into a single static UDO and save them as a single UDO.

Enterprise processes as UDOs enables administrators to use EnterpriseOne administration tools to manage the life cycle of enterprise processes. For more information about the life cycle management of UDOs, see *"UDO Life Cycle and Statuses" in the JD Edwards EnterpriseOne Tools Using and Approving User Defined Objects Guide* .

The following table describes the UDO options that are available in the toolbar of the Enterprise Process Manager window and the life cycle status enacted by each UDO action.

UDO Options	Description
Save As	Saves the enterprise process to a status of "Personal." Components with a status of "Personal" are components that are being developed and are not shared with other users or roles.
Request to Publish	Sends the enterprise process for approval for sharing. An administrator or approver must approve the enterprise process so that it can be shared. The status changes to "Pending Approval" in the list and then changes to "Shared" when the enterprise process is approved. If rejected, the status changes to "Rework." At that point, you can edit the enterprise process and then use the Request to Publish button to send it for approval again.
Reserve	Reserves a shared UDO so that you can modify it. When reserved, no other users can make changes to a UDO. The component status changes to "Reserved."
Unreserve	Cancels the reserved enterprise process. This action changes the status of the component back to "Shared."
Notes	Available when the enterprise process is in the "Pending Approval" status, this option enables you to add an additional note to send to the approver of the UDO. The Notes option is active only if a note was added the first time the UDO was sent for approval using the "Request to Publish" option. This feature enables you to add an addendum to the original note.

Language Support

UDO object and content translations are supported for the enterprise process model.

For more information about UDO language translations, see *Translations*.

4 Defining a Custom Process

Understanding the Process Definition Application

You can create process definitions that the Enterprise Process Modeler can use to generate process flow diagrams for processes that do not use the order activity rules. The **Work with Process Definition** application (P00201) enables you to define process flows using values from the User-Defined Codes (UDC) tables.

The usage of the Work with Process Definition application is limited to creating process flows in the Enterprise Process Modeler tool and does not allow you to perform transactions or ledger entry activities.

You can create and modify process definitions using the **Process Definition Revision** form.

The system uses the **Work with Process Definition** application (P00201) to write the process flow header and detail record values to these tables:

- Process Definition Header (F00201)
- Process Definition Detail (F00202)

When you delete a process definition header record, the system also deletes the associated detail records from the F00201 and F00202 tables.

You can copy existing process definitions to create new process definition records, thereby minimizing redundant data entry. When you copy a process definition record, the system generates an incremented new and unique Process Definition ID and copies the values from the original record enabling you to revise the values on the new record.

Note: It is recommended to use a unique description for each process definition.

Forms Used to Work with Process Definition

Form Name	Form ID	Navigation	Usage
Work with Process Definition	W00201B	Enterprise Automation (G00EA), Process Definition (P00201) OR Enterprise Automation (G46EA), Process Definition (P00201)	Review process definition header information. Copy and delete process definition records.
Process Definition Revision	W00201G	Click **Add**, **Copy**, or select on the Work with Process Definition form.	Add, copy, or modify a process definition record.

Setting Up a Process Definition Record

Access the **Process Definition Revision** form.

Process Definition ID
The system displays the unique key generated for the Process Definition record. The system generates this number using the Next Unique Number application (P00022).

> **Note:** The Process Definition ID values starting with `9999` are reserved for process model template delivered by JD Edwards. For example, the process model template for Warehouse will have Process Definition ID values starting with `99990001`.

Product Code
Enter the product code that identifies the table that contains the associated user-defined codes.

Process Description
Enter a description for the process definition.

User Defined Codes
Enter a value that identifies the UDC table you want to associate with the process definition.

From Process Node
Enter a status code value from the UDC table, that indicates the first or start node of the process. This indicates the first node of the flow diagram that is generated by the Enterprise Process Modeler.

From Process Node Description
The system automatically populates this field with the description of the status code value entered in the **From Process Node** field.

To Process Node
Enter a status code value from the UDC table, that indicates the primary or recommended next step in the process flow. This indicates the next node of the process flow diagram that is generated by the Enterprise Process Modeler.

To Process Node Description
The system automatically populates this field with the description of the status code value entered in the **To Process Node** field.

> **Note:** You can view the **To Process Node Description** field and Other Process Node 1 to 10 Description fields by selecting the **Show All Columns** format option in the drop-down menu on the grid. The default **Basic** view grid format does not include these process node description fields.

Other Process Node 1 - 10
(Optional) Enter a status code value that indicates an alternative next step in the process flow diagram that is generated by the Enterprise Process Modeler. You can override this status value if it is not the preferred or expected next step.