

JD Edwards EnterpriseOne Applications

Kanban Management Implementation Guide

9.2

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Contents

Preface	i
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1 Introduction to JD Edwards EnterpriseOne Kanban Management	1
JD Edwards EnterpriseOne Kanban Management Overview	1
JD Edwards EnterpriseOne Kanban Management Integrations	1
JD Edwards EnterpriseOne Kanban Management Implementation	3
Business Interface Integration Objects	5
2 Understanding Kanban Management	7
Kanban Management and Kanbans	7
Kanban Management Terms and Concepts	8
Kanban Management Tables	9
3 Setting Up Kanban Management	11
Understanding Kanban Management Setup	11
Setting Up Kanban Master Records	13
Setting Up a Kanban Size Calculation Definition	23
Defining Values for Kanban Calculation Parameters	31
Generating Kanbans	33
4 Processing Kanban Transactions by Item	47
Understanding Kanban Processing	47
Understanding Kanban Transactions	53
Processing Kanban Consumption and Supply by Item	55
Adding Ad Hoc Kanban Cards	60
Releasing Quantity from a Blanket Order Using Kanban Processing	62
5 Identifying Insufficient Inventory	67
Understanding Kanban Replenishment Capacity	67
Setting Processing Options for Kanban Replenishment Capacity (R30470)	67

6	Setting Up Multi-tier Kanban Transactions	69
	Understanding Multi-tier Kanban Transactions	69
	Defining a Kanban Reorder Point	70
7	Using Kanban Capacity Self-Service for Planners	71
	Understanding Kanban Capacity Self-Service for Planners	71
	Adjusting Kanban Size	71
8	Planning for Kanban Management	73
	Understanding Planning for Kanban Management	73
	Index	75

Preface

Welcome to the JD Edwards EnterpriseOne documentation.

Documentation Accessibility

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Related Information

For additional information about JD Edwards EnterpriseOne applications, features, content, and training, visit the JD Edwards EnterpriseOne pages on the JD Edwards Resource Library located at:

<http://learnjde.com>

Conventions

The following text conventions are used in this document:

Convention	Meaning
Bold	Boldface type indicates graphical user interface elements associated with an action or terms defined in text or the glossary.
<i>Italics</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
Monospace	Monospace type indicates commands within a paragraph, URLs, code examples, text that appears on a screen, or text that you enter.
> Oracle by Example	Indicates a link to an Oracle by Example (OBE). OBEs provide hands-on, step-by-step instructions, including screen captures that guide you through a process using your own environment. Access to OBEs requires a valid Oracle account.

1 Introduction to JD Edwards EnterpriseOne Kanban Management

JD Edwards EnterpriseOne Kanban Management Overview

JD Edwards EnterpriseOne Kanban Management from Oracle enables you to streamline the day-to-day functions of the shop floor and associated departments. Kanbans are execution tools that you use when the production and inventory control systems are based on a pull system rather than a push system.

With the JD Edwards EnterpriseOne Kanban Management system, you can:

- Define a kanban master for a kanban-controlled item.
- Define kanban sizing calculation methods.
- Define specific parameter values for kanban-specific and calculation-specific parameters.
- Run the Kanban Size Calculation program (R30450) to establish the size of the kanban.
- Work with kanban-controlled items in the planning systems.
- Identify when insufficient inventory exists.
- Perform kanban card check-ins and check-outs.
- Define ad hoc kanban cards to support a spike in demand.

JD Edwards EnterpriseOne Kanban Management Integrations

JD Edwards EnterpriseOne Kanban Management system integrates with these JD Edwards EnterpriseOne systems from Oracle:

- JD Edwards EnterpriseOne Inventory Management
- JD Edwards EnterpriseOne Product Data Management
- JD Edwards EnterpriseOne Shop Floor Management
- JD Edwards EnterpriseOne Demand Flow® Manufacturing
- JD Edwards EnterpriseOne Product Costing and Manufacturing Accounting
- JD Edwards EnterpriseOne Requirements Planning
- JD Edwards EnterpriseOne Sales Order Management
- JD Edwards EnterpriseOne Procurement
- JD Edwards EnterpriseOne Warehouse Management

JD Edwards EnterpriseOne Kanban Management is one of many systems that you use for supply chain management. Supply chain management enables you to coordinate the inventory, raw material, and labor resources to deliver

products according to a managed schedule. The systems within Oracle's JD Edwards EnterpriseOne Supply Chain Management suite are fully integrated to ensure that information is current and accurate throughout all of the business operations. It is a manufacturing system that formalizes the activities of company and operations planning, as well as the execution of those plans. We discuss integration considerations in the implementation chapters in this implementation guide.

JD Edwards EnterpriseOne Inventory Management

JD Edwards EnterpriseOne Inventory Management from Oracle supplies the basic information about each item, such as part number, description, unit of measure, stocking type, location, and lot control information. It enables you to track materials between inventory or storage locations and the shop floor. You can manage inventory issues and commitments, complete orders, and track order quantities throughout the production process.

JD Edwards EnterpriseOne Product Data Management

JD Edwards EnterpriseOne Product Data Management from Oracle provides information about bills of material, work centers, routing instructions, and product costs.

JD Edwards EnterpriseOne Shop Floor Management

JD Edwards EnterpriseOne Shop Floor Management from Oracle uses bills of material and routing instructions to process work orders and schedule work activity within the plant.

The system also records material issue transactions to determine the actual quantities of materials that are used in the production process, versus the materials that are indicated on the parts list for the work order or rate schedule.

JD Edwards EnterpriseOne Product Costing and Manufacturing Accounting

JD Edwards EnterpriseOne Product Costing and Manufacturing Accounting from Oracle uses bills of material, routing instructions, and work center information to calculate total material, labor, machining, and overhead costs for each primary unit of the parent item.

JD Edwards EnterpriseOne Requirements Planning

JD Edwards EnterpriseOne Requirements Planning from Oracle uses JD Edwards EnterpriseOne Product Data Management and JD Edwards EnterpriseOne Shop Floor Management information to plan finished goods, raw material, and purchased parts that are required to manufacture an item.

It uses sales orders and forecasts to pass down demand for items through the bills of material to the components.

JD Edwards EnterpriseOne Sales Order Management

JD Edwards EnterpriseOne Sales Order Management from Oracle enables you to generate sales orders for outside assembly work and transfer orders between branch/plants.

JD Edwards EnterpriseOne Procurement

JD Edwards EnterpriseOne Procurement from Oracle enables you to automatically generate purchase orders for outside operations on the routing instructions and to transfer orders between branch/plants.

JD Edwards EnterpriseOne Warehouse Management

JD Edwards EnterpriseOne Warehouse Management from Oracle enables you to originate picking requests through manufacturing systems, which further enhances the automated method of tracking inventory movement within a warehouse.

JD Edwards EnterpriseOne Kanban Management Implementation

This section provides an overview of the steps that are required to implement the JD Edwards EnterpriseOne Kanban Management system.

In the planning phase of the implementation, take advantage of all sources of information, including the installation guides and troubleshooting information. A complete list of these resources appears in the preface in *About This Documentation* with information about where to find the most current version of each.

When determining which electronic software updates (ESUs) to install for JD Edwards EnterpriseOne Kanban Management, use the EnterpriseOne and World Change Assistant. EnterpriseOne and World Change Assistant, a Java-based tool, reduces the time required to search and download ESUs by 75 percent or more and enables you to install multiple ESUs at one time.

See [JD Edwards EnterpriseOne Tools Software Updates Guide](#) .

Global Implementation Steps

This table lists the suggested global implementation steps for the JD Edwards EnterpriseOne Kanban Management system:

- Set up global user-defined code tables.
 - See *"Working with User Defined Codes" in the JD Edwards EnterpriseOne Tools System Administration Guide* .
- Set up fiscal date patterns.

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- See *"Setting Up Fiscal Date Patterns" in the JD Edwards EnterpriseOne Applications Financial Management Fundamentals Implementation Guide* .
 - Set up companies.
 - See *"Setting Up Companies" in the JD Edwards EnterpriseOne Applications Financial Management Fundamentals Implementation Guide* .
 - Set up business units.
 - See *"Setting Up Business Units" in the JD Edwards EnterpriseOne Applications Financial Management Fundamentals Implementation Guide* .
 - Set up next numbers.
 - See *"Setting Up Next Numbers" in the JD Edwards EnterpriseOne Applications Financial Management Fundamentals Implementation Guide* .
 - Set up accounts, and the chart of accounts.
 - See *"Setting Up Accounts" in the JD Edwards EnterpriseOne Applications Financial Management Fundamentals Implementation Guide* .
 - Set up the General Accounting constants.
 - See *"Setting Up Constants for General Accounting" in the JD Edwards EnterpriseOne Applications General Accounting Implementation Guide* .
 - Set up multicurrency processing, including currency codes and exchange rates.
 - See *"Understanding Multicurrency Setup" in the JD Edwards EnterpriseOne Applications Multicurrency Processing Implementation Guide* .
 - Set up ledger type rules.
 - See *"Setting Up Ledger Type Rules for General Accounting" in the JD Edwards EnterpriseOne Applications General Accounting Implementation Guide* .
 - Set up address book records.
 - See *"Entering Address Book Records" in the JD Edwards EnterpriseOne Applications Address Book Implementation Guide* .
 - Set up default location and printers.
 - See *"Working with Report Printing Administration" in the JD Edwards EnterpriseOne Tools Report Printing Administration Technologies Guide* .
 - Set up branch/plant constants.
 - See *"Plant Constants" in the JD Edwards EnterpriseOne Applications Inventory Management Implementation Guide* .
 - Set up Manufacturing/Distribution automatic accounting instructions.
 - See *"Setting Up AAls in Distribution Systems" in the JD Edwards EnterpriseOne Applications Inventory Management Implementation Guide* .
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- Set up document types.
See *"Setting Up Document Type Information" in the JD Edwards EnterpriseOne Applications Inventory Management Implementation Guide* .
- Set up shop floor calendars.
See *"Setting Up Shop Floor Calendars" in the JD Edwards EnterpriseOne Applications Shop Floor Management Implementation Guide* .
- Set up manufacturing constants.
See *"Setting Up Manufacturing Constants" in the JD Edwards EnterpriseOne Applications Product Data Management Implementation Guide* .

JD Edwards EnterpriseOne Kanban Management Implementation Steps

This table lists the suggested application-specific implementation steps for JD Edwards EnterpriseOne Kanban Management:

- Set up kanban item records.
See *Kanban Items*.
- Set up kanban master records.
See *Understanding Kanban Management Setup*.
- Set up a kanban size calculation definition.
See *Setting Up a Kanban Size Calculation Definition*.
- Define values for kanban calculation parameters.
See *Defining Values for Kanban Calculation Parameters*.
- Generate kanbans.
See *Generating Kanbans*.
- Define a kanban reorder point.
See *Defining a Kanban Reorder Point*.

Business Interface Integration Objects

A business interface is a set of components that implementation teams can use to create an integration between JD Edwards EnterpriseOne and an external system. Business interfaces can include one or more of these business interface components:

- Business Services
- Real-Time Events

- [Batch Import and Export Programs](#)

For additional information about business interfaces, and the business objects available for this product area, see these topics in the *JD Edwards EnterpriseOne Applications Business Interface Reference Guide*:

- [Business Interfaces Overview](#)
- [Kanban](#)

2 Understanding Kanban Management

Kanban Management and Kanbans

JD Edwards EnterpriseOne Kanban Management enables you to streamline the day-to-day functions of the shop floor and associated departments. Kanbans are execution tools that you use when the production and inventory control systems are based on a pull system, rather than a push system.

Kanbans represent predetermined quantities of components at specified locations on the production line. They are designed to minimize work-in-process inventories.

Kanbans are visual cues that authorize the replenishment of inventory at a specified consuming location in a pull environment. When kanban inventory is consumed, a replenishment action is triggered when the holding bin is emptied.

A kanban can include, but is not limited to, bins used to physically transport material from work center to work center on the production floor. Kanbans can also represent pallets of raw material.

You can replenish inventory by manufacturing activity, procurement, or simply the movement of the required goods. The size attribute of a kanban determines the replenishment quantity. The size of the kanban affects the effectiveness of the kanban system significantly; when the kanban size is too high, the system contains more inventory than necessary, which is unacceptable. When the kanban size is too low, the system eventually runs out of inventory.

Kanbans support just-in-time manufacturing, but are not used exclusively with repetitive or lean manufacturing. You can also use them effectively in a discrete manufacturing environment.

Kanbans enable you to pull material from five sources:

- Work center

When a work center kanban is checked out, the system finds an open work order or rate schedule. When no work order or rate schedule exists, the system creates a work order or rate schedule to fulfill the kanban demand. When the kanban is checked in to indicate replenishment, an inventory transfer from the supplying location to the consuming location occurs as defined in the kanban master.

- Inventory

When an inventory kanban is checked out and checked in at its consuming location, the system creates an inventory transfer to move the material from its supplying location to the consuming location. For example, you can move required materials from raw materials inventory to a work center location on the shop floor.

- Supplier

When you check out a supplier kanban, the system creates a purchase order or initiates a blanket purchase order release, depending on how you set up the system. Additionally, depending upon setup criteria, you can also enable the check in of the kanban to perform the purchase order receipt for goods received. When the kanban is checked in to indicate replenishment, an inventory transfer from the supplying location to the consuming location occurs as defined in the kanban master.

- Branch/plant

When you check out this kanban, the system creates a sales order and purchase order for the kanban item. When the last card is checked in, the system receives the purchase order that was created at check out.

This kanban type is particularly useful for companies that prefer to utilize the formal sales and procurement transactions (transfer orders) between facilities instead of managing inventory replenishment using inventory transfers.

- **Outside assembly**
When you check out an outside assembly kanban, the system creates a sales order for a list of components that is required to make a product. When you check in the kanban, the system creates a purchase order for the finished product. When the kanban is checked in to indicate replenishment, an inventory transfer from the supplying location to the consuming location occurs as defined in the kanban master. This kanban is particularly useful for companies that use outsourcing to provide additional value to their products and want a more robust record of inventory balances. Special setup is required to use this kanban type.

Kanbans provide automated background transactions that eliminate much of the required paperwork and data entry.

Kanban Management Terms and Concepts

This section discusses terms that apply to JD Edwards EnterpriseOne Kanban Management:

Kanban

Method of just-in-time production that uses standard containers or lot sizes. It is a pull system in which work center or locations signal that they need to withdraw parts from feeding work centers, inventory locations, or suppliers. This signal alerts manufacturing to build, suppliers to furnish, or other branch/plants to provide the required part in the standard lot size that is defined in the Kanban Master table (F3016).

Kanban card

Can be represented by a card, bin, or shelf location. Kanban cards can be system-generated.

Kanban ID

Unique identifier for a kanban master record, which can represent one or more physical containers. The Kanban ID is generated from next numbering.

Pull system

Manufacturing environment in which material is pulled through the system by actual system requirements, usually by the use of kanbans.

Push system

Manufacturing environment in which parts are pushed through the system, generally by the use of work orders that the materials planning systems generate.

Ad hoc kanban card

A kanban card that is inserted into a single cycle to cover an abnormal spike in demand.

Calculation method

A business function and defined set of parameters that determines kanban size, the number of kanban cards, and the quantity per card.

Supplying location

The location (defined at the item-branch level) that supplies the kanban item to the consuming location. Kanban processing sends completions of work orders and receipts of purchase orders to this location.

Consuming location

The location (defined at the item branch level) that uses the kanban item. Kanban processing moves replenishment materials from the supplying location to the consuming location.

Source

The type of process that supplies the kanban item, such as a work order or a purchase order.

Phase

A condition that enables you to state that the completion and transfer to the consuming location will be completed at the same time or that another step is involved prior to the transfer.

Check out

A condition that indicates that, when the kanban quantity is depleted at the consuming location, a replenishment action might be required. The actual replenishment transaction, such as the creation of a work order, does not take place until the last card has been checked out.

Check in

A condition that indicates that, when the replenishment action has been completed, the kanban item is available for use by the consuming location.

Kanban flag

An option, called Kanban Item, that indicates that an item is a kanban-controlled item. This option appears on the Additional System Information form of the Item Master (P4101) or the Item Branch program (P41026) program. The system updates these tables for kanban-controlled items:

- Item Master SRM Tag File (F4101SRM)
- Item Branch SRM Tag File (F4102SRM)

The Kanban Item option is used by the JD Edwards EnterpriseOne Requirements Planning system to indicate that generated action messages cannot be processed.

Kanban Management Tables

These tables are used throughout JD Edwards EnterpriseOne Kanban Management:

Table	Description
Bill of Material Master (F3002)	Stores information at the branch/plant level about bills of materials, such as quantities of components, features, options, and levels of detail for each bill.
Routing Master (F3003)	Stores information about routing instructions, including operation sequences; work centers; and run, setup, and machine time. The system uses this information to calculate labor, machine, and overhead costs.
Job Shop Manufacturing Constants (F3009)	Stores general branch/plant information, such as bill of material and routing instruction validation, commitment control, work hours per day, and cost calculation methods.
Kanban Master (F3016)	Stores the set of kanban cards that are associated with an item. Each kanban defines the supplying location, consuming location, quantity, and unit of measure. The system uses next numbers to control the kanban identification number. If the system obtains the item from an external source, the supplier's address book number is included.
Kanban Master Tag (F3016T)	Stores information about the calculation method that is used by the kanban and the related kanban in the case of tiered kanbans.

Table	Description
Kanban Size Calculation Definition (F3017)	Stores information that relates to the calculation method, such as calculation identifier, business function, and whether a parameter is kanban-specific, calculation-specific, or not used.
Kanban Size Calculation Parameters (F3018)	Stores the specific value of kanban-specific and calculation-specific parameters.
Kanban Replenishment Capacity (F3019)	Stores kanban capacity and demand over a user- specified period of time.
Kanban Card Detail (F30161)	Stores information that relates to the kanban, such as status, transaction quantity, and date updated.
Line/Item Relationship Master (F3109)	Stores the relationships between items and production lines. The default production line for an item is the line on which production is scheduled at rate schedule creation for that item.
Work Order Parts List (F3111)	Stores the components that are required by a work order.
Work Order Routing (F3112)	Stores the routing steps that are attached to a work order or rate schedule. It contains one record for each operation sequence number and work center.
Item Master (F4101)	Stores basic information about each defined inventory item, such as item number, description, category codes, and units of measure.
Item Branch (F4102)	Stores the warehouse or plant-level information for an item, such as costs, quantities, category codes, and physical locations.
Item Location (F41021)	Stores all inventory locations for an item.

Note: JD Edwards EnterpriseOne Kanban Management has no table conversions.

3 Setting Up Kanban Management

Understanding Kanban Management Setup

JD Edwards EnterpriseOne Kanban Management integrates with several other systems, and it is critical that you set up each system appropriately to support the business processes.

In the JD Edwards EnterpriseOne Inventory Management system, branch/plant constants enable you to customize how you process daily transactions for each branch/plant in the distribution and manufacturing systems. You use the Branch/Plant Constants program (P41001) to set location control and warehouse control. By predefining locations to which material can be moved or completed through work order completions transactions, location and warehouse control can support backflush as an inventory-level improvement technique.

You must set up the bills of material and routings that support the work order and rate schedule for kanban-controlled items in the JD Edwards EnterpriseOne Product Data Management system. The bill of material associates each component item to a routing step which, in turn, identifies the consuming location of the item. If you are using work center locations for backflushing transactions, you should make sure that the business processes are accurately defined to do so.

In the JD Edwards EnterpriseOne Shop Floor Management system, you set up manufacturing constants to define branch-specific information that affects processing throughout the manufacturing systems. You use the Manufacturing Constants program (P3009) to specify the value for backflush options on the Manufacturing Constants tab. On the Commitment Control tab, you specify when inventory is committed and backflushed.

When you finish producing items on the shop floor, you need to record the completions to inventory. The completion transactions that you enter in the JD Edwards EnterpriseOne Shop Floor Management system update the item quantity records in the JD Edwards EnterpriseOne Inventory Management system. You can record completions for discrete and process work orders, as well as rate schedules.

You use the Super Backflush (P31123) and Work Order Completions (P31114) programs to enter completions for work orders, and the Completions Workbench program (P3119) to enter completions to rate schedules.

The Super Backflush program, which is called by the check-in transaction (one-phase) or completion transaction (two-phase), completes the kanban-generated work orders and rate schedules. To use Super Backflush to complete manufacturing orders, you should:

- Set up the bills of material and routings with the correct issue codes and pay point codes, respectively.
- Define consuming locations in the item's routing that agree with the related kanbans.

When you create a manufacturing order using a kanban transaction, the system automatically updates the work order completion form with the finished goods location identifier. This location is the supplying location identifier of the related kanban.

Inventory kanbans are always only one-phase, even though you can technically define them as two-phase. When you check out an inventory (source type 2) kanban, the kanban is marked in the software as requiring replenishment, but no software transactions occur. When you check in the kanban, you initiate an inventory transfer to move the material from the supplying location to the consuming location.

Kanban-controlled items that are supplied by an outside source (supplier) can use blanket orders in the JD Edwards EnterpriseOne Procurement system to facilitate order and replenishment of those items.

You can enter a blanket order when you have an agreement with a supplier to purchase a certain quantity or amount of goods over a period of time. Blanket purchase orders enable you to negotiate and control supplier prices over longer periods of time. When you create a blanket purchase order, you enter the total quantity for which you have negotiated with the supplier.

When you are ready to receive a portion of the goods or services on a blanket order, you must release the quantity or amount for which you want to create a purchase order. For example, if you have a blanket order for 1200 widgets, and you want to receive 100, you must locate the blanket order detail line and release 100 widgets. When you have a valid blanket order and the kanban is set up to release from blanket purchase orders, the system automatically debits the blanket order for the kanban quantity. When multiple blanket orders for the kanban item exist, a blanket release form appears so that you can select the blanket order from which you want to release materials.

The system creates transfer orders for kanbans that move from one branch/plant to another. You use sales orders and purchase orders during the check-out and check-in processes.

Integration with Oracle's JD Edwards EnterpriseOne Demand Flow® Manufacturing (DFM) provides support for DFM kanbans in base manufacturing. DFM kanbans include raw in-process (RIP) (source type 0) and dual card (source type 6) replenishment sources.

For JD Edwards EnterpriseOne Kanban Management, you must identify the items as kanban-controlled, create the kanban master, define the calculation method, define the parameter values, and then generate and print the kanban cards.

Kanban Items

As with all items, you must set up an item record in both the F4101 and F4102 tables for kanban-controlled items.

Note: All items that are part of a source type 4 kanban must have a stocking type of **9**, including the parent item. Additionally, you must verify that stocking type **9** in the system is defined with **O** in the special handling code and either an **M** or **P** code in the Description 02 column. The stocking type user-defined code (UDC) table is 41/I. The parent item for the source type 4 kanban must have a corresponding bill of material structure. You use this bill of material to perform cost roll-ups and generate sales orders.

On the Additional System Information form (Plant Manufacturing tab) of the item branch record, you must select the associated option to identify the item as kanban-specific to that branch. Within a branch/plant, an item that is kanban-controlled must be a kanban-controlled item throughout the entire branch/plant. This helps the planning system identify kanban-specific items.

Along with the item branch record that you create for a kanban item in the F4102 table, you must define a consuming location (the location to which the item is transferred for consumption) and a supplying location (the originating location, which could be a completion or receiving location, depending on whether the item is manufactured or purchased). The source, or supply, for a kanban can be an inventory location (common parts), a work center (a manufactured subassembly), or a receiving location (a purchased or transferred part).

The system validates that the consuming and supplying locations are set up, regardless of how the location control switch is set on branch/plant constants.

Note:

- *"Defining Branch/ Plant Constants" in the JD Edwards EnterpriseOne Applications Inventory Management Implementation Guide .*
- *"Setting Up Manufacturing Constants" in the JD Edwards EnterpriseOne Applications Shop Floor Management Implementation Guide .*
- *"Working with Completions" in the JD Edwards EnterpriseOne Applications Shop Floor Management Implementation Guide*
- *"Working With Blanket Orders" in the JD Edwards EnterpriseOne Applications Procurement Management Implementation Guide .*
- *"Entering Additional Orders" in the JD Edwards EnterpriseOne Applications Sales Order Management Implementation Guide .*
- *"Managing Kanban in a Demand Flow Environment" in the JD Edwards EnterpriseOne Applications Demand Flow Manufacturing Implementation Guide .*
- *"Setting Up Bills of Material" in the JD Edwards EnterpriseOne Applications Product Data Management Implementation Guide .*

Setting Up Kanban Master Records

This section provides overviews of kanban master records, kanban processing, and kanban processing logic, lists a prerequisite, and discusses how to:

- Set processing options for Kanban Master Revisions (P3016).
- Set up kanban master records.

Understanding Kanban Master Records

Before you can initiate any kanban transactions, you must set up a kanban master record for the item. You set up kanban master records in the Kanban Master Revisions program (P3016). When you set up the kanban master record, you define the information that the system uses to generate the transaction when you initiate a kanban trigger.

Each record in the F3016 table has a unique kanban ID. Each of these kanban records can have multiple containers or cards. The records also appear in the F30161. When you define an item as kanban-controlled, you essentially define the relationship between a supplying location and consuming location. You define a kanban-controlled item by item number, consuming branch/plant, consuming location, supplying branch/plant, and supplying location. The system generates a unique kanban identifier for this specific relationship.

When you have multiple kanban records (kanban IDs) with the same item number, consuming branch/plant, consuming location, supplying branch/plant, and supplying location, the kanban size for each of these records should be the same.

When you set up the item as a kanban item, you define the source type in the kanban master record to indicate how the item is supplied. For example, if the source, or supply, is a manufacturing activity (the item is a subassembly part), the

system can generate a work order when the last kanban card is checked out. You select the source type from the 31/RS Replenishment Source UDC table:

- DFM Raw In-Process (RIP) - Source Type 0
Supports material movement in the RIP area. Valid locations are not required.
- Work center - Source Type 1
- Inventory - Source Type 2
- Supplier - Source Type 3
- Outside assembly - Source Type 4
- Transfer Order - Source Type 5
- DFM Dual Card - Source Type 6

Note: For JD Edwards EnterpriseOne Demand Flow® Manufacturing, the check-in and check-out of kanban cards triggers item completions.

You also define whether the system transfers a kanban item in a one-phase or two-phase process. When the transfer occurs in one phase, the completed work order or received purchase order quantity is directly transferred to the consuming location. When the kanban is set up as a two-phase kanban, the materials that are being facilitated through the processing of the kanban cards require an additional Complete transaction to make the materials ready for transfer to the consuming location, from the supplying location. For example, this option, enables you to test the materials before they move on to be consumed during subsequent manufacturing operations.

When you set up a kanban master record, you can enter the kanban size manually or define a calculation method. If you manually enter the kanban size on the Kanban Master Revisions form, ensure that the quantity that you enter is large enough to supply the material consumed, according to the replenishment lead time that is defined for the item. If you decide that the system should not override the user-specified kanban size, then you must set the override option in the kanban master record to **1**.

If you decide to use a calculation method, you must first define the calculation method in the Kanban Size Calculation Definition program (P3017). You enter the calculation method identifier in the Calculation Method field of the kanban master record.

You then define parameter values in the Kanban Size Calculation Parameter Definition program (P3018) and run the Kanban Size Calculation program (R30450). The system updates the kanban master record with the kanban size, and either the number of cards or quantity per card that the batch program calculated. If more than one kanban master record has the same supplying branch, supplying location, consuming branch, consuming location, and item number, the system uses the calculation value of the first record to calculate the kanban size of the subsequent record.

It is recommended that the first kanban master record have the highest calculation values set up in the Kanban Size Calculation Parameter Definition program (P3018) so that the requirements of the consuming location are met correctly.

When you leave the Calculation Method Identifier field blank, the system supplies the default value of Manual Entry.

When the kanban is a source type 1 (work center), and the item being produced when the kanban is checked out is a rate-scheduled item, you can indicate that you want the rate schedule to be assigned to a particular repetitive line. The line that you specify must be a valid work center in the F30006 table and have a valid line and item relationship.

Note: When a source type 2 kanban is slated to generate multi-tier kanban requests from the supplying location, the system maintains information about the secondary kanban and links to it using the Related Kanban ID.

Given the relationship that you specify between the kanban size and the container size, the system calculates the number of containers. You define each kanban ID with the number of containers, and you can specify as many containers as needed.

For kanbans that are associated with JD Edwards EnterpriseOne Demand Flow® Manufacturing, the kanban sizes that are calculated in JD Edwards EnterpriseOne Demand Flow® Manufacturing populate the kanban size field in base manufacturing. The override flag in the F3016 table is set to **1** for kanban records that are imported from JD Edwards EnterpriseOne Demand Flow® Manufacturing. This prevents the Kanban Size Calculation program (R30450) in Oracle's JD Edwards EnterpriseOne from recalculating the kanban size and overriding the kanban sizes that were calculated in JD Edwards EnterpriseOne Demand Flow® Manufacturing.

See *"Understanding DFM Kanban Management" in the JD Edwards EnterpriseOne Applications Demand Flow Manufacturing Implementation Guide*.

DFM kanbans in RIP (source type 0) function within a raw in-process area and require no check-in or check-out. Type 0 kanbans are optional since they perform no transactions. Inventory (source type 2) and Supplier (source type 3) kanbans are checked in to the first-in-RIP location. Once transactions are successfully completed, inventory balances are reflected in the first-in-RIP location. RIP kanbans pull inventory physically from the first-in-RIP location and item completions is performed which reduces the inventory balances in the first-in-RIP location.

Dual card kanbans (source type 6), specify the number of cards that require check-in before replenishment is performed. The transactions are supported by item completions.

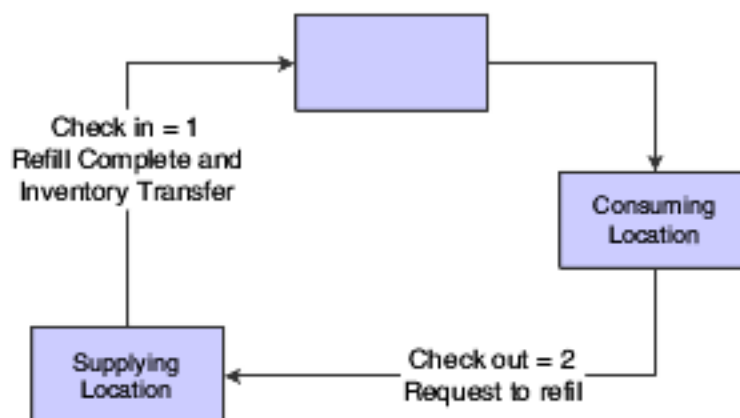
Only internal users can maintain kanban records. When you change the kanban quantity, number of cards, or lead time, you can set up the system to initiate workflow to advise the supplier. All users can review kanban records. Each supplier can review only the procurement kanban master records for that supplier.

Understanding Kanban Processing

Kanbans can be used as part of a one-phase or two-phase process. The one-phase process assumes that the completion or receipt of quantity to the supplying location and transfer to the consuming location are performed in one step. With a one-phase kanban, the status of the kanban progresses as follows:

- Check In to Check Out.
- Check Out to Check In.

This diagram illustrates the one-phase kanban process:

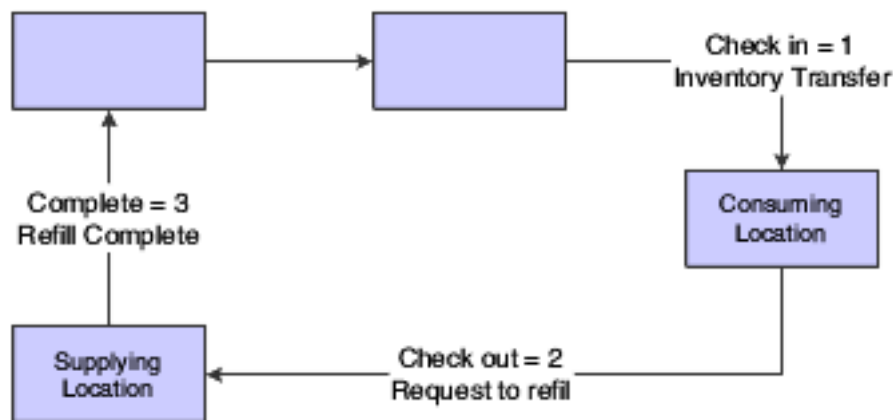


The two-phase approach assumes that the completion and transfer to the consuming location are reported separately. You complete or receive the quantity to the supplying location by using the Complete status, which is status 3. After the quantity has been physically received at the supplying location, you initiate an inventory transfer from the supplying location to the consuming location by checking in the kanban. The kanban status changes to Checked In (1). Using this method is helpful when you are working with items that require inspections or tests before they are moved to the consuming location. With a multiphase kanban, the status of the kanban progresses as follows:

- Check In to Check Out.
- Check Out to Complete.
- Complete to Check In.

When you check in a kanban quantity from the supplier, the system can initiate a receipt transaction if you select the Receipts option in the kanban master.

This diagram illustrates the two-phase kanban process:



You can process kanbans for:

- Inventoried items
- Manufactured items (subassemblies)
- Externally supplied items (supplier)
- Interbranch items

When you check out an inventory kanban (source type 2), the system changes the kanban status. The supplying location replenishes the kanban quantity. You then check in the kanban, which results in an inventory transfer. Inventory kanbans only perform software transactions during the check-in process. All other statuses for this kanban type are informational only.

When you check out a work center kanban (source type 1), the program:

- For discrete manufactured items, the software creates a new work order.
- For rate scheduled items, which have an order policy code of **5** in the item branch record, the software looks for an existing open rate.

If no rate exists for the item and line combination that is specified in the kanban master record, then the software creates a new rate for the kanban quantity.

You should be aware that the software assumes that rate quantities that are generated from kanbans are due the same day that they are initiated. Therefore, no standard spreading of the subsequent rate quantity occurs in the Line Scheduling Workbench. You can set a processing option for the Enter/Change Rate Schedule program

(P3109) so that the system automatically attaches the parts list and routing instructions when a new rate is created or changed.

When you check in a work center kanban, you complete the work order or rate, issue materials, enter hours and quantities, and transfer the parent item to the consuming location.

When you check out a kanban that a work center or production line supplies, and the item is a phantom, no transactions other than inventory transfers occur. When you have no work orders or rates to process; the producing line replenishes the item, and the system completes the kanban and checks it in. This results in a transaction for inventory transfer, from the supplying location to the consuming location.

An externally supplied kanban creates an open purchase order for the kanban item. This purchase order can be an existing one, or, optionally, one that is created during the check-out process. In addition, when you check out the kanban, the system might also initiate an electronic data interchange (EDI) transaction. When you check in kanbans from an external supplier, the system optionally creates a receipt for the purchase order. You can also use kanbans to release quantities from open blanket purchase orders.

A kanban that is supplied from a branch/plant requires you to create a transfer sales order when you check out the kanban. When you check in the kanban that is supplied by another branch/plant, the system creates a transfer purchase order and receipt.

For JD Edwards EnterpriseOne Demand Flow® Manufacturing, a raw in-process (RIP) (source type 0) kanban supports material movement within the RIP without requiring valid locations. The DFM dual card kanban (source type 6) triggers kanban replenishment from a machine cell. For a dual card kanban, the number of cards must be checked out from the consuming location for the replenishment to be triggered. A one-phase DFM kanban check-in triggers lean completions and an inventory transfer. A two-phase DFM kanban complete status triggers lean completions and check-in triggers an inventory transfer.

Understanding Kanban Processing Logic

This table outlines the kanban processing logic:

Source	Source Type	Phase	Status Sequence	Check-in (1) Transactions	Check-out (2) Transactions	Complete (3) Transactions
DFM raw in-process (RIP)	0	1	1 to 2 2 to 1	No transactions within the RIP.	No transactions within the RIP.	Not applicable in a one-phase kanban.
Work center	1	1	1 to 2 2 to 1	Complete to the supplying location using super backflush transactions. <i>and</i> Generate an inventory transfer from supplying location to consuming location.	Create a work order (WO) or rate (SC) if none already exists.	Not applicable in a one-phase kanban.
Work center	1	2	1 to 2	Generate an inventory transfer from the	Create work order (WO) or rate (SC)	Complete to the supplying location

Source	Source Type	Phase	Status Sequence	Check-in (1) Transactions	Check-out (2) Transactions	Complete (3) Transactions
			2 to 3 3 to 1	supplying location to the consuming location.	if none already exists.	using super backflush transactions.
Inventory	2	1	1 to 2 2 to 1	Generate an inventory transfer from the supplying location to the consuming location.	No transaction.	Not applicable in a one-phase kanban.
Inventory	2	2	1 to 2 2 to 3 3 to 1	Generate inventory transfer from the supplying location to the consuming location.	No transaction.	No transaction.
Supplier	3	1	1 to 2 2 to 1	Receive purchase order if Receipts flag is on (Kanban Master) otherwise, no transactions occur. Generate an inventory transfer from the supplying location to the consuming location.	Create a purchase order (PO) if none already exists.	Not applicable in a one-phase kanban.
Supplier	3	2	1 to 2 2 to 3 3 to 1	Generate an inventory transfer from the supplying location to the consuming location.	Create a purchase order (PO) if none already exists.	Receive a purchase order when the Receipts option is turned on in F3016 table; otherwise, no transactions occur.
Outside assembly (subcontract)	4	1	1 to 2 2 to 1	Create a sales order for the related bill of material component items. Create a purchase order for the related bill of material parent item.	Process a shipment confirmation for the shipped component items. Receive a purchase order for the value-add parent item. Generate an inventory transfer for the parent item from the supplying location to the consuming location.	Not applicable in a one-phase kanban.
Outside assembly (subcontract)	4	2	1 to 2 2 to 3	Create a sales order for the related bill of material component items.	Process a shipment confirmation	Generate an inventory transfer for the parent item from the supplying location

Source	Source Type	Phase	Status Sequence	Check-in (1) Transactions	Check-out (2) Transactions	Complete (3) Transactions
			3 to 1	Create a purchase order for the related bill of material parent item.	for shipped component items Receive a purchase order for the value-add parent item.	to the consuming location.
Branch/plant	5	1	1 to 2 2 to 1	Receive a transfer purchase order at the receiving location in the supplying branch. Generate an inventory transfer from the receiving location to the consuming location.	Generate a transfer sales order from the supplying branch to the consuming branch. Generate a transfer purchase order to the supplying branch.	No transaction.
Branch/plant	5	2	1 to 2 2 to 3 3 to 1	Generate an inventory transfer from the receiving location to the consuming location.	Generate a transfer sales order from the supplying branch to the consuming branch. Generate a transfer purchase order to the supplying branch.	Receive a transfer purchase order at the receiving location in the supplying branch.
DFM dual card	6	2	1 to 6 6 to 2 2 to 3 3 to 1	Generate an inventory transfer, and if one-phase, generate an item completion transaction.	Wait for the number of cards to be checked out before the kanban is checked out.	Generate an item completion transaction.

Prerequisite

Verify that kanban item records have been set up.

See *"Entering Item Master Information" in the JD Edwards EnterpriseOne Applications Inventory Management Implementation Guide* .

Forms Used to Set Up Kanban Master Records

Form Name	FormID	Navigation	Usage
Work With Kanban Master	W3016A	Kanban Management Setup (G30411), Kanban Master Revisions	Select a kanban record or complete header information to add a new kanban record.
Kanban Master Revisions	W3016B	On the Work With Kanban Master form, enter item number, consuming branch, and supplying branch information and then click the Add button.	Edit a kanban master record.

Setting Processing Options for Kanban Master Revisions (P3016)

These processing options control default processing for the Kanban Master Revisions program.

Versions

This processing option controls which version the system uses when you call a program from the Kanban Master Revisions program.

1. Kanban Size Calculation (R40450)

Specify the version of the Kanban Size Calculation program. If you leave this processing option blank, the system uses the default version XJDE0001.

Process

This processing option controls the creation of ad hoc kanban cards.

1. Create an Ad Hoc Card

Enter **1** to enable the creation of ad hoc kanbans through the Kanban Master Revisions program. If you leave this processing option blank, you cannot create ad hoc kanbans.

Setting Up Kanban Master Records

Access the Kanban Master Revisions form.

Kanban Size

Enter the total size of the kanban. You can leave this field blank if the size is calculated using the Kanban Size Calculation program (R30450).

Source Type

Enter a code from user-defined code 31/RS that indicates the type of supplying location for a kanban. Values are:

- 0:** DFM Raw and In Process (RIP)
- 1:** Work center
- 2:** Inventory
- 3:** Supplier
- 4:** Outside assembly
- 5:** Transfer Order
- 6:** DFM Dual Card

Container Size

Displays the capacity of a container in a kanban-controlled environment. The value that appears in this field is set up in the Kanban Size Calculation Parameter Definition program (P3018).

Supplier

(Optional) Complete the supplier field if you use source type 3 (Supplier).

Line/Cell Identifier

(Optional) Defines a production line or cell. You can define detailed work center operations inside the line or cell. If the item is a rate schedule item, this field identifies the line where the item is manufactured. For DFM items, the Line Design ID populates this field.

Override

(Optional) Locks the kanban size and quantity to prevent changes by the kanban calculation program. Values are:

- 0:** The system recalculates the size of the kanban.
- 1:** The system does not recalculate the size of the kanban.

If you enable the override option, the system does not update the record when you run the Kanban Size Calculation program (R30450).

Receipts

(Optional) Indicates whether the system runs the receipts process at kanban check-in time. Values are:

- 0:** The system does not run the receipt process.
- 1:** The system runs the receipt process.

If you are setting up a supplier kanban (source type 3) and you want the purchase order receipt process to be initiated by a check-in transaction, you must activate this option.

Number of Cards

Define the number of cards for a kanban. Each card represents a container. This number is determined by dividing the kanban size by the container size. For example, a kanban of 100 might be made up of four containers that each hold 25 components. Therefore, the kanban has four cards (1 of 4, 2 of 4, 3 of 4, and 4 of 4).

Calculation Method

Specify the calculation method that you want the system to use for kanban calculations. The system provides four standard calculation methods to perform Kanban calculations.

Related Kanban ID

(Optional) Identifies the second kanban that is assigned to an item in a specified branch/plant, consuming location, or supplying location. This field is used with multi-tier and reorder point.

Ad Hoc Card Exists

Indicates the presence of an ad hoc kanban card. The card may be active or inactive. If you insert an ad hoc kanban card when an inactive ad hoc card exists, the inactive card is activated.

Dual Cards

Enter the number of cards that are required to trigger the kanban check out transaction for a dual card kanban. For example, there might be five kanbans in use between the supplying and consuming locations, and the number of dual cards is three. Thus, three kanbans must be checked out to trigger replenishment.

Understanding Kanban Status Override (Release 9.2 Update)

If you want to correct the status of a kanban card, you can use the Kanban Status Override program (P3163) to bypass normal kanban processing. It allows you to reset the Kanban Status of a kanban card that was checked out in error. The program will update only the status on the kanban and does not perform any associated processing.

If all kanban card records are updated to the same status, the program will also update the status on the Kanban master record.

To reset Kanban Status:

1. Access Kanban Status Override program (P3163).
2. Select the Kanban Status you want to override.
3. Update the status. Valid statuses are 1 (Checked-In), 2 (Checked-Out), and 3 (Completed). Change in the status is determined by the processing options.

Setting Processing Options for Kanban Status Override

These processing options are available to set while overriding the Kanban Status:

1. Kanban Status '1' – Checked In

Use this processing option to specify whether Kanban Status change should be allowed to Status '1' Checked-In. Valid values are:

Blank = Allow Kanban Status change to Status '1'

1 = Do not allow Kanban Status change to Status '1'

2. Kanban Status '2' - Checked-Out

Use this processing option to specify whether Kanban Status change should be allowed to Status '2' Checked-Out. Valid values are:

Blank = Allow Kanban Status change to Status '2'

1 = Do not allow Kanban Status change to Status '2'

3. Kanban Status '3' – Completed

Use this processing option to specify whether Kanban Status change should be allowed to Status '3' Completed. Valid values are:

Blank = Allow Kanban Status change to Status '3'

1 = Do not allow Kanban Status change to Status '3'

Setting Up a Kanban Size Calculation Definition

This section provides an overview of kanban size calculations and standard kanban equations, and discusses how to set up a kanban size calculation definition.

Understanding Kanban Size Calculations

The Kanban Size Calculation Definition program (P3017) defines a kanban size calculation, also called a calculation method. You can enter a kanban size manually, or you can define a calculation method to be used by the Kanban Size Calculation program (R30450).

The calculation method that determines kanban size, the number of kanban cards, and the quantity per card depends upon these attributes:

- The methodologies that the inventory manager wants to adopt in reducing the work-in-process inventory levels (such as discrete versus rate-based, safety stock, multi-tier).
- The physical dimensions of the product and the holding bin.
- The demand profile of the product.
- The lead time and shipment pattern of the product.
- The cost of the product.

The goal of sizing an ideal kanban is to ensure that the system never runs out of inventory while the inventory level remains as low as possible.

Generally, you perform kanban calculations during periodic item planning cycles when the time periods are long. You should run the Kanban Size Calculation program after you run material requirements planning (MRP), which is generally once per month. When demand fluctuations are high, kanban calculations, particularly the number of kanban cards in process, should be calculated more frequently (for instance, on a weekly basis). You might also need to insert an ad hoc card to cover a short-term spike.

The Kanban Size Calculation Definition program enables you to use one of the default calculation methods that are provided by the system or to define a calculation method. A calculation identifier uniquely identifies each calculation method.

A calculation method consists of a description, business function, and defined set of parameters. The system provides four standard business functions. Each business function contains an equation that calculates the kanban size, and either the number of kanban cards or the quantity per card. The standard calculations that are provided by the system can be found in source module B3003960.

The system enables you to use custom programming to create custom equations, as well as the business functions that are required to implement the calculations. Some restrictions apply.

After you identify the business function for a specific calculation method, you must define which parameters to use. You can define 16 parameters; 13 are standard and three are custom. When you use a parameter in a calculation, you designate the parameter as either kanban-specific (specific to a kanban ID) or calculation-specific. The Kanban Parameter Usage UDC (30/KP) is hard-coded and designates how the system uses a parameter in the kanban size calculation:

- 0 - Parameter not used
- 1 - Kanban-specific parameter
- 2 - Calculation-specific parameter

If you want a kanban to use a specific calculation method, you must link that kanban master record to the calculation method using the Calculation Method field in Kanban Master Revisions program (P3016). It is recommended that you use the same calculation method to set up each kanban ID for the same kanban-controlled item, which eliminates any variance in kanban size.

Kanban Size Calculation Parameters

The Kanban Size Calculation Definition program (P3017) provides 16 parameters to define for a given calculation method. The program has 13 standard parameters and three custom parameters. When you use a parameter, you designate it as either kanban-specific (specific to a kanban ID) or calculation-specific. The Kanban Parameter Usage UDC (30/KP) is hard-coded and specifies how the system uses a parameter in the kanban size calculation.

Understanding Standard Kanban Equations

Software calculation methods that you use to determine the kanban size have associated business functions. The standard business functions contain one of the four standard size-calculation equations that the system provides.

You can customize the existing kanban sizing calculations or create different calculations using custom programming. You can also manually enter a kanban size instead of using a calculation method.

Kanban Equation 1: Fixed Container Size and High Demand

This equation calculates the number of cards when the kanban quantity is fixed to the container size. Use this equation when item demand fluctuates significantly:

$$(\text{Kanban size}) = (\text{high daily demand}) \times [(\text{lead time delivery (days)}) + (\text{scan delta days})] + (\text{safety stock})$$

$$(\text{High daily demand}) = ((\text{Highest period demand in the Periods in MRP Window}) \times (\text{vendor split percent}) \times (\text{demand split percent for the consuming location})) \div (\text{days built per period})$$

The system then calculates the number of kanban cards by dividing the kanban size by the container size.

Kanban Equation 2: Fixed Container Size and Average Demand

This equation calculates the number of cards when the kanban quantity is fixed to the container size and demand is based on the average daily demand.

$$(\text{Kanban size}) = (\text{average daily demand}) \times [(\text{leadtime delivery (days)}) + (\text{scan delta days})] + (\text{safety stock})$$

$$(\text{Average daily demand}) = ((\text{average period demand in the Periods in MRP Window}) \times (\text{vendor split percent}) \times (\text{demand split percent for the consuming location})) \div (\text{days built per period})$$

The system calculates the number of kanban cards by dividing the kanban size by the container size.

Kanban Equation 3: Fixed Number of Cards and High Demand

This equation calculates the kanban quantity for a fixed number of containers when an item has high demand.

$$(\text{Kanban size}) = (\text{high daily demand}) \times [(\text{lead time delivery (days)}) + (\text{scan delta days})] + (\text{safety stock})$$

The quantity per container or container size is calculated by dividing the kanban size by the number of cards.

Kanban Equation 4: Fixed Number of Cards and Average Demand

This equation calculates the kanban quantity for a fixed number of containers with demand based on the average daily demand.

$$(\text{Kanban size}) = (\text{average daily demand}) \times [(\text{leadtime delivery (days)}) + (\text{scan delta days})] + (\text{safety stock})$$

The system calculates the quantity per container or container size by dividing the kanban size by the number of cards.

Manual Entry of Kanban Sizes

The system enables you to manually enter the kanban quantity and number of containers. You enter this kanban information when you set up a kanban master record.

If you manually enter the kanban size on the Kanban Master Revisions form, ensure that the quantity that you enter is sufficiently large enough to supply the material that is consumed, according to the replenishment lead time that is defined for the item.

To prevent the system from overriding the user-specified kanban size, enter **1** in the Override field on the Kanban Master Revisions form.

When you use the manual entry method, the system performs no calculations.

Form Used to Set Up a Kanban Size Calculation Definition

Form Name	FormID	Navigation	Usage
Work With Kanban Calculation Methods	W3017A	Kanban Management Setup (G30411), Kanban Size Calculation Definition	Add a Kanban size calculation definition.
Kanban Size Calculation Revisions	W3017B	Kanban Management Setup (G30411), Kanban Size Calculation Definition Click the Add button on the Work With Kanban Calculation Methods form.	Set up a Kanban size calculation definition.

Setting Up a Kanban Size Calculation Definition

Access the Kanban Size Calculation Revisions form.

Kanban Size Calculation Revisions

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Tools

Calculation Method	<input type="text" value="FIXED1"/>	0 - Parameter Not Used
Description	<input type="text" value="Fixed card and dem"/>	1 - Kanban Specific Parameter
Function Name	<input type="text" value="FixedCardNumberAvgDemandC"/>	2 - Calculation Specific Parameter

Periods in MRP Window	<input type="text" value="2"/>	Minimum Quantity Boundary	<input type="text" value="2"/>
Container Size	<input type="text" value="2"/>	Maximum Quantity Boundary	<input type="text" value="2"/>
Scan Delta Days	<input type="text" value="2"/>	Minimum Number of Cards	<input type="text" value="2"/>
Leadtime Delivery (Days)	<input type="text" value="2"/>	Maximum Number of Cards	<input type="text" value="2"/>
Vendor Split Percent	<input type="text" value="2"/>	Custom Parameter 1	<input type="text" value="0"/>
Standard Pack Size	<input type="text" value="2"/>	Custom Parameter 2	<input type="text" value="0"/>
Safety Stock	<input type="text" value="2"/>	Custom Parameter 3	<input type="text" value="0"/>
Demand Split Percent	<input type="text" value="2"/>	Custom Parameter 4	<input type="text" value="2"/>

Function Name

Identify the actual name of the function. It must follow standard ANSI C naming conventions (for example, no space between words). Select the business function for this calculation method. The system verifies that the business function exists.

Periods in MRP Window

Specify the usage level of the Periods in MRP Window parameter in the Kanban Size Calculation program (R30450). Calculation-specific parameters have values that apply to all kanbans that use a specific size calculation method. Kanban-specific parameters have values that apply to a specific kanban using a particular size calculation method. Values are:

0: Parameter is not used.

1: Parameter is kanban-specific.

2: Parameter is calculation-specific.

This parameter defines the number of time buckets that the system uses to calculate the demand for kanban size.

The system counts the number of time buckets from a defined start date to arrive at the end of a time horizon. You enter the start date in a processing option for the Kanban Size Calculation program (R30450). If you do not specify a date, the system uses the material requirements planning (MRP) generation date as the start date.

It is recommended that you set the MRP Planning Horizon periods in the MRP/MPS Requirements Planning program (R3482) to the same settings as the Periods in MRP Window in the Kanban Size Calculation Parameter Definition program (P3018).

Container Size

Specify the usage level of the Container Size parameter in the Kanban Size Calculation program (R30450). This parameter defines the kanban movement quantity. For example, if the kanban is a physical container, the container size identifies how much the container can hold.

Calculation-specific parameters have values that apply to all kanbans that use a specific size calculation method. Kanban-specific parameters have values that apply to a specific kanban that uses a specific size calculation method. Values are:

0: Parameter is not used.

1: Parameter is kanban-specific.

2: Parameter is calculation-specific.

Scan Delta Days

Specify the usage level of the Scan Delta Days parameter in the Kanban Size Calculation program (R30450). This parameter defines the number of days between a kanban card checkout action and the day on which the supplier receives the notification of the checkout. For example, if a kanban card is scanned at 9:00 am one day, and the supplier receives an EDI 862 transaction the next day through a nightly batch program, the scan delta days parameter would be 1.

Calculation-specific parameters have values that apply to all kanbans that use a specific size calculation method. Kanban-specific parameters have values that apply to a specific kanban that uses a specific size calculation method. Values are:

0: Parameter is not used.

1: Parameter is kanban-specific.

2: Parameter is calculation-specific.

Leadtime Delivery (Days)

Specify the usage level of the Leadtime Delivery (Days) parameter in the Kanban Size Calculation program (R30450). This parameter is the time duration between when the goods leave the supplier and when they arrive at the work center. Calculation-specific parameters have values that apply to all kanbans that use a specific size calculation method. Kanban-specific parameters have values that apply to a specific kanban that uses a specific size calculation method. Values are:

0: Parameter is not used.

1: Parameter is kanban-specific.

2: Parameter is calculation-specific.

Vendor Split Percent

Specify the usage level of the Vendor Split Percent parameter in the Kanban Size Calculation program (R30450).

You specify the vendor in the kanban master record. When a feeder work center is the source of the kanban, then this number indicates the fraction of demand that the particular work center satisfies. The Kanban Size Calculation program multiplies this value by the calculated demand to determine the demand per supplier.

For a kanban master record with the same supplying branch, consuming branch, supplying location, consuming location, and item number, the vendor split percentage is the same for all of the records. The first record's vendor split percentage is applied to all of the records. You can have different vendors for different kanban IDs with the same supplying branch, consuming branch, supplying location, consuming location, and item number combinations. The first record's vendor split percentage should be the highest possible, as set up in the Kanban Size Calculation Parameter Definition program. Thus, subsequent records are covered even if you have set up lower vendor split percentages in the Kanban Size Calculation Parameter Definition program.

Calculation-specific parameters have values that apply to all kanbans that uses a specific size calculation method. Kanban-specific parameters have values that apply to a specific kanban using a particular size calculation method. Values are:

- 0:** Parameter is not used.
- 1:** Parameter is kanban-specific.
- 2:** Parameter is calculation-specific.

This parameter is the percent of demand to which a particular vendor caters.

Standard Pack Size

Specify the usage level of the Standard Pack Size parameter in the Kanban Size Calculation program (R30450). This parameter is the standard shipment size for an item coming from a supplier. When you specify this value, the Kanban Size Calculation program rounds up the calculated kanban size to the closest multiple of this number.

Calculation-specific parameters have values that apply to all kanbans that use a specific size calculation method. Kanban-specific parameters have values that apply to a specific kanban that uses a specific size calculation method. Values are:

- 0:** Parameter is not used.
- 1:** Parameter is kanban-specific.
- 2:** Parameter is calculation-specific.

Safety Stock

Specify the usage level of the Safety Stock parameter in the Kanban Size Calculation program (R30450). This parameter is the quantity kept on hand to cover fluctuations in demand. The Kanban Size Calculation program adds this value to the calculated demand.

Calculation-specific parameters have values that apply to all kanbans that use a specific size calculation method. Kanban-specific parameters have values that apply to a specific kanban that uses a specific size calculation method. Values are:

- 0:** Parameter is not used.
- 1:** Parameter is kanban-specific.
- 2:** Parameter is calculation-specific.

Demand Split Percent

Specify the usage level of the Demand Split Percent parameter in the Kanban Size Calculation program (R30450).

This parameter defines the demand for a kanban item at its consuming location, expressed as a percentage of the total demand for the same item at all locations in the branch/plant over a period of time.

When the consuming location on the kanban is the only location in which the item is used, then the demand split percent is 100 percent.

When multiple consuming locations exist, this parameter identifies the percent of demand from one location. For instance, 40 percent of the demand is planned by this kanban, and 60 percent of the demand is planned by another kanban.

The Kanban Size Calculation program multiplies this value by the demand for the item to determine the demand at the consuming location. For a kanban master record with the same supplying branch, consuming branch, supplying location, consuming location, and item number, the demand split percentage is the same for all the records. The first record's demand split percentage is applied to all of the records.

You can have different demand split percentages for different kanban IDs for the same supplying branch, consuming branch, supplying location, consuming location, and item number. The first record's demand split percentage should be the highest possible, as set up in the Kanban Size Calculation Parameter Definition program. Thus, subsequent records with the same supplying branch, consuming branch, supplying location, consuming location, and item number are covered, even if you have set up lower demand split percentages in the Kanban Size Calculation Parameter Definition program.

Calculation-specific parameters have values that apply to all kanbans that use a specific size calculation method. Kanban-specific parameters have values that apply to a specific kanban that uses a specific size calculation method. Values are:

- 0:** Parameter is not used.
- 1:** Parameter is kanban-specific.
- 2:** Parameter is calculation-specific.

Minimum Quantity Boundary

Specify the usage level of the Minimum Quantity Boundary parameter in the Kanban Size Calculation program (R30450). This parameter defines the minimum quantity that can be ordered by a single kanban trigger. When the Kanban Size Calculation program calculates the kanban size, and the calculated size is less than the minimum quantity, then the system uses the minimum quantity as the size of the kanban.

The system assumes the kanban is fixed-size, when the minimum quantity for an item is same as the maximum quantity defined for the item. The Kanban Size Calculation program (R30450) calculates the number of kanbans required based on the fixed-size.

Calculation-specific parameters have values that apply to all kanbans that use a specific size calculation method. Kanban-specific parameters have values that apply to a specific kanban using a particular size calculation method. Values are:

- 0:** Parameter is not used.
- 1:** Parameter is kanban-specific.
- 2:** Parameter is calculation-specific.

Maximum Quantity Boundary

Indicate the level of usage of the Maximum Quantity Boundary parameter in the Kanban Size Calculation program. This parameter defines the maximum quantity that a single kanban trigger can order. When the Kanban Size Calculation program calculates the kanban size, and the calculated size is greater than the maximum quantity, then the software uses the maximum quantity as the size of the kanban.

The system assumes the kanban is fixed-size, when the maximum quantity for an item is same as the minimum quantity defined for the item. The Kanban Size Calculation program (R30450) calculates the number of kanbans required based on the fixed-size.

Calculation specific parameters have values that apply to all kanbans using a particular size calculation method. Kanban-specific parameters have values that apply to a specific kanban using a particular size calculation method. Values are:

0: Parameter is not used.

1: Parameter is kanban-specific.

2: Parameter is calculation-specific.

Minimum Number of Cards

Specify the usage level of the Minimum Number of Cards parameter in the Kanban Size Calculation program (R30450). This parameter defines the minimum number of kanban cards in the cycle. Each kanban card represents a container. Each kanban should have at least one card. For fixed container size calculations, the Kanban Size Calculation program calculates the number of cards, and, if the calculated value is less than the specified minimum number of cards, the system uses the minimum number of cards.

For calculations that use a fixed number of cards, the minimum number of cards should equal the maximum number of cards.

Calculation-specific parameters have values that apply to all kanbans that use a specific size calculation method. Kanban-specific parameters have values that apply to a specific kanban that uses a specific size calculation method. Values are:

0: Parameter is not used.

1: Parameter is kanban-specific.

2: Parameter is calculation-specific.

Maximum Number of Cards

Specify the usage level of the Maximum Number of Cards parameter in the Kanban Size Calculation program (R30450). This parameter defines the maximum number of cards in the cycle. Each kanban card represents a container. Each kanban should have at least one card. For fixed container size calculations, the Kanban Size Calculation program calculates the number of cards, and, if the number of cards that the program calculates exceeds the maximum number of cards, then the system uses the value that represents the maximum number of cards. For calculations that use a fixed number of cards, the minimum number of cards should equal the maximum number of cards.

Calculation-specific parameters have values that apply to all kanbans that use a specific size calculation method. Kanban-specific parameters have values that apply to a specific kanban that uses a specific size calculation method. Values are:

0: Parameter is not used.

1: Parameter is kanban-specific.

2: Parameter is calculation-specific.

Custom Parameter 1, 2, and 3

(Optional) Specify the usage level of Custom Parameter 1 in the Kanban Size Calculation program (R30450). This custom parameter is user-defined. To use this parameter, you must modify or create the supporting business function.

Calculation-specific parameters have values that apply to all kanbans that use a specific size calculation method. Kanban-specific parameters have values that apply to a specific kanban that uses a specific size calculation method. Values are:

0: Parameter is not used.

1: Parameter is kanban-specific.

2: Parameter is calculation-specific.

Custom Parameter 4

(Optional) A value that specifies the usage level of the Days Built Per Period parameter in the Kanban Size Calculation program (R30450). Calculation-specific parameters have values that apply to all kanbans using a particular size calculation method. Kanban-specific parameters have values that apply to a specific kanban using a particular size calculation method. Values are:

0: Parameter is not used.

1: Parameter is kanban-specific.

2: Parameter is calculation-specific.

Defining Values for Kanban Calculation Parameters

This section provides an overview of kanban calculation parameters and discusses how to:

- Define kanban-specific parameters.
- Define calculation-specific parameters.
- Define fixed-size kanban calculation parameters.

Understanding Kanban Calculation Parameters

Parameters are defined as kanban-specific or calculation-specific for each calculation method in the Kanban Size Calculation Definition program (P3017). After you define a calculation method, you use the Kanban Size Calculation Parameter Definition program (P3018) to define the specific value used by each parameter.

Kanban-Specific Parameters

Parameters are defined as kanban-specific or calculation-specific for each calculation method in the Kanban Size Calculation Definition program (P3017). After you define a calculation method, you use the Kanban Size Calculation Parameter Definition program (P3018) to define the specific value used by each parameter.

The system stores values for calculation method parameters that you defined as kanban-specific parameters (those that are specific to the kanban ID). When you use the Kanban Size Calculation Parameter Definition program (P3018) to enter default values, the system displays:

- Calculation method.
- Kanban ID.
- Parameters that are identified as kanban-specific parameters for the calculation method.

The system enables you to enter or revise values for parameters designated as kanban-specific parameters for a calculation method.

The Kanban Size Calculation program (R30450) uses the value of each parameter from the kanban-specific record.

Calculation-Specific Parameters

The system stores values for calculation method parameters that are defined as calculation-specific parameters. When you use the Kanban Size Calculation Parameter Definition program (P3018) to enter default values, the system displays:

- Calculation method.
- Parameters that are identified as calculation-specific parameters for the calculation method.

The system enables you to enter or revise values for parameters that are designated as calculation-specific parameters for a calculation method.

The Kanban Size Calculation program (R30450) uses the value of each parameter from the calculation-specific record.

Fixed-size Kanban Calculation Parameters

In calculation, the system determines the number of kanbans depending on the size of the kanban. If you want to use fixed-size kanbans, you define a calculation parameter where the maximum and minimum quantities are the same. If you enter the same value for the maximum and minimum quantities, the system assumes that the size of kanban is fixed. The system calculates the number of required kanbans based on the size of the kanban.

In a bicycle manufacturing unit, for example, the production assistant might manage the painting station using kanbans. The painted frames are stacked in a rack which is moved to the shop floor for the next stage of production. Each rack is designed to hold a fixed number of frames. Here the rack serves as a kanban with fixed quantity or size. Based on the quantity of components required and the size of the kanban, the system calculates the required number of racks with painted frames.

Forms Used to Define Values for Kanban Calculation Parameters

Form Name	FormID	Navigation	Usage
Work With Kanban Size Calculation	W3018A	Kanban Management Setup (G30411), Kanban Size Calculation Parameter Definition	Select a kanban size calculation method.
Kanban Parameter Revisions	W3018B	Select the calculation method and kanban ID combination on the Work With Kanban Size Calculation form, and click the Select button.	Define kanban-specific and calculation-specific parameters.

Defining Kanban-Specific Parameters

Access the Kanban Parameter Revisions form.

Kanban Parameter Revisions



Calculation Method		FIXED1	
Periods in MRP Window	<input type="text" value="9.0000"/>	Minimum Quantity Boundary	<input type="text" value="1"/> EA
Container Size	<input type="text" value="50"/> EA	Maximum Quantity Boundary	<input type="text" value="99999"/> EA
Scan Delta Days	<input type="text" value="1"/>	Minimum Number of Cards	<input type="text" value="1"/>
Leadtime Delivery (Days)	<input type="text" value="2"/>	Maximum Number of Cards	<input type="text" value="1"/>
Vendor Split Percent	<input type="text" value="100.00"/>	Custom Parameter 1	<input type="text" value=".00"/>
Standard Pack Size	<input type="text" value="0"/> <input type="checkbox"/>	Custom Parameter 2	<input type="text" value=".00"/>
Safety Stock	<input type="text" value="50.0000"/> EA	Custom Parameter 3	<input type="text" value=".00"/>
Demand Split Percent	<input type="text" value="100.00"/>	Custom Parameter 4	<input type="text" value="5"/> 20.0

Complete the value field for each parameter that is identified as a kanban-specific parameter. The value fields for parameters that were not defined as calculation-specific are disabled, so you cannot enter values in them.

Defining Calculation-Specific Parameters

Access the Kanban Parameter Revisions form.

Complete the value field for each parameter that is identified as a kanban-specific parameter. The value fields for parameters that were not defined as calculation-specific are disabled, so you cannot enter values in them. On the Kanban Parameter Revisions form, complete the value field for each parameter that is identified as a calculation-specific parameter.

Generating Kanbans

This section provides an overview of the kanban generation process and discusses how to:

- Set processing options for Kanban Size Calculation (R30450).
- Calculate kanban size using standard equations.

- Calculate kanban size using processing options.

Understanding the Kanban Generation Process

After you set up the item in the Kanban Master Revisions program (P3016), define the calculation method in the Kanban Size Calculation Definition program (P3017) and define parameter values in the Kanban Size Calculation Parameter Definition program (P3018), you can use the Kanban Size Calculation program (R30450) to calculate the size of a kanban. If you already manually entered a kanban size, you can prevent the system from updating the information that you entered by entering **1** in the Override field on the Kanban Master Revisions form.

For kanbans that are associated with JD Edwards EnterpriseOne Demand Flow® Manufacturing, the kanban sizes that are calculated in JD Edwards EnterpriseOne Demand Flow® Manufacturing populate the kanban size field in base manufacturing. The override flag in the F3016 table is set to **1** for DFM imported kanban records. This prevents the Kanban Size Calculation program (R30450) in JD Edwards EnterpriseOne from recalculating the kanban size and overriding the DFM calculated kanban sizes

See *"Understanding DFM Kanban Management" in the JD Edwards EnterpriseOne Applications Demand Flow Manufacturing Implementation Guide* .

When you generate kanbans, you define these processing options:

- Specify whether the Kanban Size Calculation program runs in proof or final mode.
- Print kanban cards.
- Print an exception report for customization purposes.
- Update the F3016 table if you are running the program in final mode.
- Specify a range, expressed as a percentage, within which the system does not adjust the size of the kanban.
- Specify the source of the demand (such as forecasts, sales orders, planned orders, firm orders, and rate schedules).
- Specify the aggregation of demand.
- Specify the start date to use for the demand calculation.

When you run the Kanban Size Calculation batch program, you use data selection criteria to select records from the Kanban Master table. When you have kanban records (kanban IDs) that have the same item number, consuming branch/plant, consuming location, supplying branch/plant, and supplying location, divide the demand by the number of similar kanban records so that the demand is distributed evenly among the records.

Kanban size is calculated using this formula:

$$(\text{Kanban size}) = [(\text{demand}) \times ((\text{scan delta days}) + (\text{lead time delivery days}))] + (\text{safety stock})$$

After you run the Kanban Size Calculation program, the system updates the F3016 table with the new kanban size, container size, and number of cards, based on the calculation method that you specified.

The system calculates kanban size for the first record for which you defined kanban-specific values. For kanban-specific records, use the first record's calculation values for the kanban size calculation when subsequent records have the same item number, consuming branch/plant, consuming location, supplying branch/plant, and supplying location. Subsequent records that are similar have the same calculation values and kanban sizes. The kanban size is based on the calculation method that is specified in the Kanban Size Definition program.

After you run the Kanban Size Calculation program, a report displays the new calculated kanban size, container size, number of cards, and previous kanban size.

You can run the Kanban Size Calculation program in either proof mode or final mode. When you run the program in proof mode, it displays the calculated size and does not update the Kanban Card Detail table (F30161).

When you run the program in final mode, it displays the calculated size and updates the F30161 table.

The system assumes that the kanban size is fixed when the maximum and minimum quantities are set to be same for a kanban in the Kanban Size Calculation Parameter Definition program (P3018). The Kanban Size Calculation program (R30450) calculates the number of kanbans required based on the specific size of a kanban.

For calculating the required number of fixed-size kanbans, the system uses following formula:

$$\text{Number of kanbans} = (\text{demand}) \times (\text{lead time delivery days} + \text{scan delta days}) / (\text{kanban size} - \text{safety stock})$$

The Kanban Size Calculation program (R30450) compares the number of required kanbans with the current number of kanbans. If the current number is less than the necessary number, the system automatically generates more kanbans. If the current number is larger than the necessary number, the system removes the excessive kanbans from the F3016 table.

The system will not perform any calculation if the kanban is defined with an override flag in Kanban master record.

You can run the Kanban Size Calculation program (R30450) either in proof or final modes. For fixed-size kanbans, the report displays the details of the newly added kanban. In the proof mode, the report lists the new kanbans with sequence numbers and displays a warning message indicating that kanbans will be generated. In final mode the report assigns kanban ids and displays a message that kanbans have been generated. In case of excess kanbans, the system in proof mode prints a warning message indicating the kanbans to be removed. In the final mode, the system removes the kanbans from the database and prints a message indicating the removal of kanbans.

There should be at least two kanbans for an item with a combination of consuming branch/plant, consuming location, supplying branch/plant, and supplying location. If there is only one kanban, then the Kanban Size Calculation program creates a second kanban with the same attributes as the first kanban. While deleting the excess kanbans, the system leaves two kanbans for an item.

Setting Processing Options for Kanban Size Calculation (R30450)

These processing options control default processing for the Kanban Size Calculation program.

Process

These processing options specify how the system performs processes and calculations when running the Kanban Size Calculation program.

1. Kanban Size

Specify whether to calculate kanban sizes. Values are:

Blank: Do not calculate kanban sizes.

1: Calculate kanban sizes.

2. Mode

Specify proof or final mode. Values are:

Blank: Proof mode

1: Final mode

3. Print Kanban Cards

Specify whether to print kanban cards. Values are:

Blank: Do not print kanban cards.

1: Print kanban cards.

4. Print Kanban Exception Report

Specify whether to print the kanban exception report. Values are:

Blank: Do not print the kanban exception report.

1: Print Kanban Exception Report.

5. Filter Control

Enter the range, expressed as a percentage, above or below which the kanban should not be changed. For example, a value of 15 means plus or minus 15 percent.

Demand

These processing options specify what demand to include in calculations when running the Kanban Size Calculation program.

6. Kanban Demand

Specify what value to use to calculate kanban demand. Values are:

Blank: Use planning time fence.

1: Use the sum of the included demands.

2: Use the highest value among the included demands.

a. Forecasts

Specify whether to include forecasts. Values are:

Blank: Do not include

1: Include

b. Sales Orders

Specify whether to include sales orders. Values are:

Blank: Do not include

1: Include

c. Firm Work Orders

Specify whether to include firm work orders. Values are:

Blank: Do not include

1: Include

d. Planned Orders

Specify whether to include planned orders. Values are:

Blank: Do not include

1: Include

e. Rate Schedules

Specify whether to include rate schedules. Values are:

Blank: Do not include

1: Include

7. Start date for demand calculation

Specify a start date for demand calculation. If you leave this field blank, the system uses the MRP generation date.

Calculating Kanban Size Using Standard Equations

Select Kanban Management Setup (G30411), Kanban Size Calculation.

This example illustrates the calculation of each of the four standard kanban equations.

Prerequisite Setup

The demand profile for the item is:

Date	Source	Quantity
October 6	FC	100
October 8	FWO	300
October 15	SO	200
October 17	SO	350
November 6	FC	150

The MPS Regeneration program (R3482) ran for five days, four weeks, and three months. The resulting time series is:

Date	Demand Type	Demand As Of Date	Comment
October 6	FC	100	
October 7			
October 8	FWO	300	
October 9			
October 10			

Date	Demand Type	Demand As Of Date	Comment
October 17	SO	550	
October 24			
October 31			8 periods in MRP Window
November 7	FC	150	
November 28			
December 31			
January 30			

The calculation method has been set up using the Kanban Size Calculation Definition program (P3017). The calculation method has calculation-specific parameter values, as defined in the Kanban Size Calculation Parameter Definition program (P3018).

Parameter	Parameter Value
Periods in MRP Window	8
Days built per week	5
Days built per month	20
Scan delta days	1
lead time delivery (days)	2
Vendor split percent	100
Safety stock	50
Demand split percent	100
Container size	25

Demand Calculation

Forecasts and sales orders are the demand types that are included in the demand calculation. The demand aggregation is the sum of individual demands.

So, because this item has a sales order, a forecast, and a planned order for a particular period, the demand at the end of that period is the sum of the sales order and forecast quantities.

High Daily Demand

Maximum demand occurs in the weekly period ending October 19.

Adjusted maximum demand = 550 units ÷ 5 days built per week = 110 units per day

Maximum demand is 550 units.

Average Daily Demand

Number of months in the chosen time horizon is 0.

Sum of all monthly demands is 0.

Number of weeks in the chosen time horizon is 3.

Sum of all weekly demands is 550 units.

Number of days in the chosen time horizon is 5.

Sum of all daily demands is 100 units.

(Total demand) = (number of months × sum of all monthly demands) + (number of weeks × sum of all weekly demands) + (number of days × sum of all daily demands)

(Total demand) = (0 × 0) + (3 × 550) + (5 × 100) = 2150

(Total number of days) = (number of months × days build per month) + (number of weeks × days build per week) + (number of days)

(Total number of days) = (0 × 20) + (3 × 5) + (5) = 20

(Average daily demand) = (total demand) ÷ (total number of days) = 2150 ÷ 20 = 107.5 units per day

Kanban Equation 1: Fixed Container Size and High Demand

This equation calculates the number of cards when the kanban quantity is fixed to the container size. Use this equation when item demand fluctuates significantly.

(Kanban size) = (high daily demand) × [(lead time delivery (days)) + (scan delta days)] + (safety stock)

(Kanban size) = 110 × (2 + 1) + 50 = 380 units

(Number of cards) = (kanban size) ÷ (container size) = 380 ÷ 25 = 15.2 = 16 cards

(Quantity per container) = (container size) = 25 units

Note: To create a fewer number of cards, increase the container size in the Kanban Size Calculation Parameter Definition program.

Kanban Equation 2: Fixed Container Size and Average Demand

This equation calculates the number of cards when the kanban quantity is fixed to the container size and demand is based on the average daily demand.

(Kanban size) = (average daily demand) × [(leadtime delivery (days)) + (scan delta days)] + (safety stock)

(Number of cards) = (kanban size) ÷ (container size) = 373 ÷ 25 = 14.92 = 15 cards

(Quantity per container) = (container size) = 25 units

Note: To create a fewer number of cards, increase the container size in the Kanban Size Calculation Parameter Definition program.

Kanban Equation 3: Fixed Number of Cards and High Demand

This equation calculates the kanban quantity for a fixed number of containers when an item has high demand.

The number of cards is fixed at 10 in the Kanban Size Calculation Parameter Definition program.

The maximum and minimum number of cards are the same in the Kanban Size Calculation Parameter Definition program for the fixed number of cards.

(Kanban size) = (high daily demand) × [(lead time delivery (days)) + (scan delta days)] + (safety stock)

(Kanban size) = 110 × (2 + 1) + 50 = 380 units

(Container size) = (kanban size) ÷ (number of cards) = 380 ÷ 10 = 38 (quantity per card or container size)

Note: To create a larger container size, decrease the number of cards in the Kanban Size Calculation Parameter Definition program.

Kanban Equation 4: Fixed Number of Cards and Average Demand

This equation calculates the kanban quantity for a fixed number of containers with demand based on the average daily demand.

The number of cards is fixed at 10 in the Kanban Size Calculation Parameter Definition program.

(Kanban size) = (average daily demand) × [(leadtime delivery (days)) + (scan delta days)] + (safety stock)

(Kanban size) = 107.5 ÷ (2 + 1) + 50 = 372.5 = 373 units

(Container size) = (kanban size) ÷ (number of containers) = 373 ÷ 10 = 37.3 = 38 units

Note: To create a larger container size, decrease the number of cards in the kanban Size Calculation parameter Definition program.

Calculating Kanban Size Using Processing Options

Select Kanban Management Setup (G30411), Kanban Size Calculation.

This example illustrates the calculation of kanban size using the processing option on the Demand tab of the Kanban Size Calculation program (R30450).

Sum of Included Demands

The processing option on the Demand tab in the Kanban Size Calculation program is set to 1 - Sum of Included Demands.

Use kanban standard equation 2, fixed container size and average demand to calculate the kanban size and number of kanban cards.

Prerequisite Setup

Forecasts and sales orders were entered for nine time periods. Verify that the MRP Time Periods processing option in the MPS Regeneration program (R3482) is set to 9 periods and the Periods in MRP Window field in the Kanban Size Calculation Parameter Definition program (P3018) is set to 9.

The MRP Regeneration program ran for five days, three weeks, and one month. The resulting time series is:

Date	FSCU Quantity	SOU Quantity	Sum of Included Demands
February 2	100	30	130
February 3	200	40	240
February 4	300	50	350
February 5	300	50	350
February 6	200	100	300
February 13	200	100	300
February 20	300	200	500
February 27	250	200	450
March 31	100	200	300

Note: FSCU Quantity is the unadjusted forecast quantity (gross) for a specific item from the detail forecast table. SOU Quantity is the actual sales orders from the sales order detail table.

The calculation method has been set up using the Kanban Size Calculation Definition program (P3017). The calculation method has calculation-specific parameter values, as defined in the Kanban Size Calculation Parameter Definition program:

Parameter	Parameter Value
Periods in MRP window	9
Days built per week	5
Days built per month	20
Scan delta days	1
Lead time delivery (days)	2
Vendor split percent	0
Safety stock	50
Demand split percent	100
Container size	50
Minimum kanban size	20
Maximum kanban size	60

Average Daily Demand

Number of months in the selected time horizon is 1.

Sum of all monthly demands is 300 units.

Number of weeks in the chosen time horizon is 3.

Sum of all weekly demands = 300 + 500 + 450 = 1250 units

Number of days in the chosen time horizon is 5.

Sum of all daily demands = 130 + 240 + 350 + 350 + 300 = 1370 units

(Total demand) = (number of months × sum of all monthly demands) + (number of weeks × sum of all weekly demands) + (number of days × sum of all daily demands)

(Total demand) = (1 × 300) + (3 × 1250) + (5 × 1370) = 10900

(Total number of days) = (number of months × days built per month) + (number of weeks × days build per week) + (number of days)

(Total number of days) = (1 × 20) + (3 × 5) + (5) = 40

(Average daily demand) = (total demand) ÷ (total number of days) = 10900 ÷ 40 = 272.5 units per day

Kanban Equation 2: Fixed Container Size and Average Demand

Because the demand split percentage is 100 percent, the average daily demand remains the same.

The F3016 table includes three kanban records for the same supplying branch, supplying location, consuming branch, consuming location, and item number. The demand has to be distributed evenly among the records.

$$(\text{Average daily demand}) = (\text{average daily demand}) \div (\text{number of similar kanban records})$$

$$(\text{Average daily demand}) = 272.5 \div 3 = 91$$

$$(\text{Kanban size}) = (\text{average daily demand}) \times [(\text{leadtime delivery (days)}) + (\text{scan delta days})] + (\text{safety stock})$$

$$(\text{Kanban size}) = 91 \times (2 + 1) + 50 = 323 \text{ units}$$

The maximum kanban size is defined as 60 in the Kanban Size Calculation Parameter Definition program. Therefore, the kanban size is 60, because 323 is greater than 60.

$$(\text{Number of cards}) = (\text{kanban size}) \div (\text{container size}) = 60 \div 50 = 1.2 = 2 \text{ cards}$$

Highest Value of Included Demands

The processing option on the Demand tab in the Kanban Size Calculation program is set to 2 - Highest Value of Included Demands.

Use kanban standard equation 2, fixed container size and average demand, to calculate the kanban size and number of kanban cards.

Prerequisite Setup

Forecasts and sales orders were entered for nine time periods. Verify that the MRP Time Periods processing option in the MPS Regeneration program (R3482) is set to 9 periods and that the Periods in MRP Window field in the Kanban Size Calculation Parameter Definition program (P3018) is set to 9.

The MRP Regeneration program ran for five days, three weeks, and one month. The resulting time series is:

Date	FSCU Quantity	SOU Quantity	Highest Value
February 2	100	30	100
February 3	200	40	200
February 4	300	50	300
February 5	300	50	300
February 6	200	100	200
February 13	200	100	200
February 20	300	200	300

Date	FSCU Quantity	SOU Quantity	Highest Value
February 27	250	200	250
March 31	100	200	200

The calculation method has been set up using the Kanban Size Calculation Definition program. The calculation method has calculation-specific parameter values, as defined in the Kanban Size Calculation Parameter Definition program:

Parameter	Parameter Value
Periods in MRP window	9
Days built per week	5
Days built per month	20
Scan delta days	1
Lead time delivery (days)	2
Vendor split percent	0
Safety stock	50
Demand split percent	100
Container size	50
Minimum kanban size	20
Maximum kanban size	60

Average Daily Demand

Number of months in the selected time horizon is 1.

Sum of all monthly demands is 200 units.

Number of weeks in the chosen time horizon is 3.

Sum of all weekly demands = 200 + 300 + 250 = 750 units

Number of days in the selected time horizon is 5.

Sum of all daily demands = 100 + 200 + 300 + 300 + 200 = 1100 units

(Total demand) = (number of months × sum of all monthly demands) + (number of weeks × sum of all weekly demands) + (number of days × sum of all daily demands)

(Total demand) = (1 × 200) + (3 × 750) + (5 × 1100) = 7950

(Total number of days) = (number of months × days built per month) + (number of weeks × days built per week) + (number of days)

(Total number of days) = (1 × 20) + (3 × 5) + (5) = 40

(Average daily demand) = (total demand) ÷ (total number of days) = 7950 ÷ 40 = 198.75 units per day

Kanban Equation 2: Fixed Container Size and Average Demand

Because the demand split percentage is 100 percent, the average daily demand remains the same.

The Kanban Master table contains three kanban records for the same supplying branch, supplying location, consuming branch, consuming location, and item number. The demand must be distributed evenly among the records.

(Average daily demand) = (average daily demand) ÷ (number of similar kanban records)

(Average daily demand) = 198.75 ÷ 3 = 67

(Kanban size) = (average daily demand) × [(leadtime delivery (days)) + (scan delta days)] + (safety stock)

(Kanban size) = 67 × (2 + 1) + 50 = 251 units

The maximum kanban size is defined as 60 in the Kanban Size Calculation Parameter Definition program. Therefore, the kanban size is 60, because 251 is greater than 60.

(Number of cards) = (kanban size) ÷ (container size) = 60 ÷ 50 = 1.2 = 2 cards

4 Processing Kanban Transactions by Item

Understanding Kanban Processing

A single program, Kanban Processing (P3157), manages the electronically-implemented kanbans by using two modes. One mode processes kanban consumption by item, while the other mode processes kanban supply by item. Use the consumption mode to access kanbans at a consuming location, and the supply mode to access kanbans at a supplying location by specifying one or a combination of criteria:

- Item
- Location
- Supplier
- Kanban identification

The Kanban Processing program has a processing option that specifies whether the program uses kanban consumption mode or kanban supply mode. User-defined code (UDC) table 31/KS specifies the kanban status:

- 1 - Check-in
- 2 - Check-out
- 3 - Complete
- 4 - Destroyed

Kanban consumption mode enables you to access all kanbans at a specified consuming location. After you locate items, depending on the status of each item, you can assign one of the statuses at a consuming location:

- 1 - Check-in
- 2 - Check-out

Kanban supply mode enables you to access all kanbans that need replenishment for items that are stored or produced at a specified supplying location. After you locate items, depending on the status of each item, you can assign one of the statuses at a supplying location:

- 1 - Check-in
- 3 - Complete

Kanban check-out occurs when the kanban container is empty and requires replenishment. You use the kanban check-out function to initiate the replenishment transaction. For example, if the system is set up to do so, you might scan the kanban card to check it out.

After you check out the kanban, the software initiates a replenishment action that depends on the source type of the kanban. The system uses both the supplying and consuming locations in the kanban definition to electronically process subsequent material movements, which can include inventory issues to orders and inventory transfers.

You check in a kanban to designate that the materials are available for use. Depending on the individual business practices, you can check in the kanban when the materials become available at the supplying location, or you can wait until the kanban materials have arrived at the consuming location to process the check-in transaction in the software.

In a two-phase kanban, a third kanban status, Complete, indicates that the refill is complete at the supplying location and the kanban can be checked in. Because only inventory transfer transactions occur for source type 2 kanbans, two-phase kanbans do not have a Complete status.

Source Type 1: Work Order and Rate Schedule Kanbans

Use a source type 1 kanban when the replenishment that must occur requires manufacturing activity. This activity can be either a work order to a work center or a rate schedule quantity to a dedicated production line.

The determination of whether you will produce these items with work orders or rate schedules is a fundamental business process decision, and the software determines which document type to create (and identifies the program to call to create the order) by the order policy code value that you set in the additional system information of the related branch/plant record. If you want the kanban to generate rate schedule orders for the item, you must use an order policy code value of 5.

All kanban containers can be reused after they have been checked in, so the records do not have to be managed unless business process or demand information dictates that you do so.

When you perform a check-out transaction for a source type 1 kanban, the system creates a manufacturing order and updates the Order Number and Order Type fields in the detail area. For multi-container kanbans, the system generates orders only when the last card is checked out.

To simplify the process of managing orders and their paperwork, you can set a processing option for the Kanban Processing program (P3157) to specify to automatically run the Order Processing batch program (R31410) when you check out Source type 1 kanbans. Provided that the required manufacturing information has been set up correctly, the software processes the kanban-generated order to attach parts list and routing information to the order header. The work order start date is forward scheduled. For the start date to calculate correctly, you must set up the scan delta days and lead time delivery (days) for the kanban ID in the Kanban Size Calculation Parameter Definition program (P3018). You can also generate pick lists for required components if you are using the JD Edwards EnterpriseOne Warehouse Management functionality .

If the item is a rate-schedule item, the system searches for an existing open rate that meets the kanban requirement and then creates a new rate if one does not exist. For the system to use an existing rate, certain conditions must be met at the time that the kanban is checked out:

- The start date for the existing rate is occurs before or on the date on which you have checked out the kanban.
- The requested date for the existing rate occurs on or after the date on which you have checked out the kanban.
- The exiting rate does not meet or exceed the closed rate status.

This is the rate that you entered in the processing options of the version of the Kanban Processing program that processes the check-out transaction.

If all of these conditions are met, the software then determines whether the line and cell identifier in the kanban master is the same as the line and cell for the existing rate.

After the software validates this information and finds a rate to match all criteria, it adds the kanban quantity to the open rate schedule and aggregates it on the same day that the kanban is checked out.

Note: The system does not use the default period information in the line and item relationships to spread the kanban order quantity. With kanban check-outs for rate scheduled items, the system assumes that the kanban demand is due on the same day that it is checked out. However, you can further manage rate quantities, using the Line Scheduling Workbench (P3153) and Line Sequencing Workbench (P3156) programs.

Typically, you use the supply mode of the Kanban Processing program to initiate movement of replenished materials from the supplying location to the consuming location. For the manufacturing order that was created by the kanban check-out action, the check-in action initiates a super backflush completion transaction. This activity assumes a one-

phase kanban. If this kanban is a two-phase kanban, you must perform the Complete transaction to initiate the work order or rate schedule super backflush transactions.

During the check-in transaction, you complete all of the order completion process steps and transfer the resulting subassembly inventory from the supplying location to the consuming location, each of which would typically be an inventory location at a specific work center or strategic location on a production line. The Work Order Completion Detail form contains information about the location where the material is completed, and the system retrieves this information from the kanban master record. The supplying location in the kanban master record is always the default location where the work order completions occur. From this location, the system automatically transfers the materials by using an inventory transfer function.

For any kanban-generated manufacturing order, the software can interactively or blindly process the related work order issues, hours, quantities, and work order completions. In blind mode, the Super Backflush program (P31123) initiates all of these transactions, and no forms appear to review or revise any of the related order data. You specify whether to use interactive or blind mode processing in the processing options of the Kanban Processing program.

Note: Because the two versions of the Kanban Processing program work independently, you must set the processing options of each to process transactions according to the business process decisions.

The Work Order Inventory Issues program (P31113) can automatically suggest the proper issue quantity for the kanban-generated work order if information is set up in the software:

- The issue code for all components that you want to issue automatically is set to **U** in the bill of material or work order parts list, which is derived from the bill of material.

The **U** issue code is required for super backflush work order completions. Even if you set up the Work Order Inventory Issues program so that it does not validate the issue code type, the software does not suggest the issue quantity for the work order transaction. If you are processing all of these transactions blindly during kanban check-in, invalid issues are recorded.

- The last operation in the item's routing has a pay code of **M** or **B**.

You use the **M** pay code to record only material during super backflush. You use the **B** pay point code to record material and labor. If you do not set up the routing correctly, the software does not issue materials when the work order or rate schedule is completed.

- The processing of the Work Order Inventory Issues program (P31113) is set to suggest issue quantities that are based upon the work order or rate schedule quantity that is completed.

The system retrieves this information from the bill of material, which subsequently becomes the work order parts list. The Work Order Inventory Issues program can be set to both validate the issue code type (manual issue, backflush, and so on) and suggest the issue quantity, based upon the order quantity. You can also apply order yield and shrink, if required.

Note: If you do not use the **U** issue code type in the bill of material (or parts list), the software does not suggest issue quantities, regardless of the processing option setting in the Work Order Inventory Issues program. If you are executing material issues blindly, the system records incorrect issues in the F4111 table.

The Work Order Time Entry program (P311221) provides order hours and order quantity information for manufacturing accounting. When you generate a manufacturing order by using a kanban check-out transaction, the system uses the standard hours in the routing and the kanban order quantity to calculate the required order hours. The system uses the calculated hours for the order to update the hours and quantities information for the kanban order. As a separate process, you then update hours and quantities information for manufacturing accounting batch programs.

On the Work Order Completion Detail form, you can create or review lot and location identifiers for kanban-generated work order completions when location control in the branch/plant constants is inactive. Lot and serial numbers are subsidiary location identifiers in the F41021 table. If you activate the Location Control option in the branch constants, you cannot create new location records during transaction processing. When you use location and lot information during work order or rate schedule completions, all location information carries through to the inventory transfer.

When manufacturing orders are completed, whether by a kanban transaction or manual shop floor management processing activities, the related transactions for work order inventory issues and work order completions are recorded in the F4111 table. Hours and quantities transactions are recorded in the F31122 table. The inventory transfer for the kanban materials movement is also recorded in the F4111 table.

The table lists the default document types for these transactions:

Transaction	Default Document Type
Work order inventory issue	IM
Hours and quantities entries	IH
Work order completions	IC
Inventory transfer	IT

Note: You can change these document types during system setup. These document types are shipped with the software.

Source Type 2: Inventory Transfer Kanbans

When a Source type 2 (inventory) kanban container is emptied of all items, the consuming location checks it out to return it to a raw materials inventory location, which could be a storeroom or a materials staging area from which production inventory requirements enter into the system. This staging area, or *supermarket* location, is used to manage raw in-process inventory (RIP). For example, when the empty container is replenished, a stock person checks it in. The check-in indicates that the kanban has been filled and an inventory transfer transaction is triggered to denote movement of the inventory from the raw material location to the shop floor. In practice, the material moves to its physical consuming location at the work center.

The transactions that occur are inventory transfers, which are noted by an **IT** document type in the F4111 table. When inventory is transferred from one location to another, the item ledger records it as a debit to the *from location* and a credit to the *to location*. Subtraction and addition records appear for all inventory transfers so that inventory records remain balanced.

You can set up a source type 1 kanban as a two-phase kanban, but no additional transactions occur during a Complete transaction for a kanban of this type.

Source Type 3: Supplier Kanbans

You use a source type 3 kanban when you must buy materials from a supplier and have them moved directly to the location at which they will be consumed. The kanban consumption mode of the Kanban Processing program has a processing option that you can set so that the system creates a purchase order and calls a version of Purchase Orders program (P4310). Depending on how you set the processing options, the kanban check-out transaction can trigger one of these software actions:

- A search for an existing open purchase order that the system can use to refill this kanban
- A search for an open blanket purchase order from which a purchase order release can refill the kanban
- The creation a new purchase order for the kanban requirement

When the kanban is checked in, the kanban status changes to 1 to indicate that the supplier has filled the order and the purchase order receipt can be processed. An **OV** transaction (purchase order receipt) is recorded in the F4111 table when a purchase order is received. The **OV** document type indicates that an open purchase order voucher has not been matched and closed for accounting. The system creates a **PV** transaction when the open voucher has been matched.

Note: If you want the system to automatically initiate the purchase order receipts process when you perform a check-in or complete transaction for a source type 3 kanban, you must activate the Receipts option in the related Kanban Master record.

When you check out a supplier kanban, the system uses the unit of measure that you have defined in the kanban master for the purchase order detail line, regardless of the way in which the Unit of Measure processing option is set in the Purchase Orders program (P4310). The kanban unit of measure is the unit of measure that the system uses for the purchasing transaction. When the inventory transfer occurs, it also appears in the kanban unit of measure.

When you enter a lot number on the detail line of a kanban purchase order prior to the check-in transaction, the system does *not* carry the lot number through to:

- The detail transaction line of the Kanban ID, when you check it in to process the purchase order receipt
- The F4111 table, when the **OV** record is created
- The inventory transfer that moves the materials from the supplying location to the consuming location

These actions occur regardless of whether the kanban is one-phase or two-phase. The results are the same in both situations.

You can also use source type 3 kanbans to release quantity from blanket purchase orders that are open and valid for the kanban check-out requirements. You cannot create blanket purchase orders with a kanban check-out transaction. You must set up specific information in the software before you can release from blanket purchase orders with kanban check-out transactions.

Source Type 4: Outside Assembly Kanbans

You can use a source type 4 kanban when you have a value-added manufacturing process that you outsource. As part of the outsourcing process, you provide the outside assembly supplier with the required materials (raw materials or subassembly parts). This situation might occur because the company can provide the raw materials or subassembly parts at a lower overall cost than can the outsourcing supplier. In either situation, you use the outside assembly kanban to create a sales order to sell all of the outside process items to the outsourced supplier; and, as part of the same

kanban process, you use a purchase order to buy back the value-added subassembly or finished product. This process, while similar to an outside operation purchase order in shop floor transactions, offers more direct control and visibility of inventory than the outside operation purchase order. The sales order transaction relieves inventory balances for all components of the outsourced assembly while the purchase order transaction increments inventory for the outsourced parent item.

To control which items are shipped (using a sales order) and acquired (using a purchase order) when you check out a source type 4 kanban, you create a bill of material for the parent item. This bill of material lists:

- The required outsourced component items, which appear as individual detail lines within a sales order document
- The parent item of the bill of material, which is the value-added item that you are buying back from the supplier

When you check in a one-phase kanban of source type 4, the system performs a shipment confirmation transaction, a purchase order receipt transaction, and an inventory transfer transaction that moves the material from the supplying location to the consuming location that is specified in the kanban master record. If the kanban is a two-phase kanban, you must move the kanban to a Complete status before checking it in. The Complete status transaction ship confirms the sales order for the component items and performs the purchase order receipt for the parent item.

Note: When you set up kanban items for outside processing, you must use a stocking type of **9** and a special handling code of **O** for all of the items that are involved in these transactions. Such a transaction includes the parent item of the related bill of material. You should not include kanbans of source type 4 when you run the Kanban Size Calculation program (R30450) . Because the Description 2 column of the stocking type definition in the UDC table 41/I is intentionally blank for stocking type **9**, the system does not consider these items purchased or manufactured. Material requirements planning (MRP) does not plan these items. You will not see a time series for these items in the F3413 table.

Source Type 5: Interbranch Transfer Kanbans

For a kanban of source type 5, the system generates sales transfer orders. When you check out a kanban that is supplied by a branch/plant, the system creates a sales order to the branch/plant for the end-item and a transfer order for the end-item during check-in.

The sales side of the transfer order has one detail line with these fields:

- The Item Number field contains the kanban item.
- The Branch/Plant field represents the kanban that supplies the branch.
- The Quantity Ordered field represents the kanban size.
- The Location field displays the kanban supplying location.

The purchase side of the transfer order has one detail line with these fields:

- The Item Number field contains the kanban item.
- The Branch/Plant field represents the kanban consuming branch.
- The Quantity Ordered field represents the kanban size.
- The Location field displays the kanban consuming location.

After the last card is checked in using the kanban supply mode of the Kanban processing program, the system receives the purchase order that was created at check-out and completes the inventory transfer.

The purchase order is received to the location that is specified in the Transfer Order Receipt Location field in the processing options of the Kanban Processing program (P3157) .

Note: If the system finds errors while receiving the purchase order, the order will be processed.

Ad hoc kanban cards work in the same way as regular kanban cards for all source types. However, an additional status is required for ad hoc cards. When you check in an ad hoc card, the system changes the status to 4 (destroyed) for a one-phase kanban. When the ad hoc card is completed, the system changes the kanban status to 4 (destroyed) for a two-phase kanban.

The Kanban Processing program contains a Row menu option to initiate an ad hoc card when it has a destroyed status (the kanban status is 4). This situation enables you to reuse the ad hoc card for the same supplying branch, consuming branch, supplying location, consuming location, and item number. When you initiate the ad hoc card, the system changes the status from 4 (destroyed) to 1 (check-in). This change indicates that the ad hoc card is ready for use. The Initiate Ad hoc Row menu is enabled only when the kanban status is set to 4 and you highlight that particular record in the detail area.

When using lot or serial numbers, the lot number on any kanban that was entered at the time of check-in must be a valid lot number that exists in the lot master record, and that lot must have a defined expiration date. The lot number that is entered here updates both the Lot To and Lot From fields on the resulting inventory transfer.

The kanban master record does not have fields that are associated with lot or serial numbers. You can indicate only inventory locations that are valid in the F41021 table.

Understanding Kanban Transactions

This section discusses:

- Kanban and replenishment transactions.
- Work order completions and super backflush for kanban.
- Purchase order receipts for kanban.

Kanban and Replenishment Transactions

To support tight integration between kanban and replenishment transactions, the software must retain a relationship between the physical status of the kanban and any resulting transactions in the software. The relationship exists between the kanban and replenishment transaction so that, when the status of the kanban changes, the system is updated accordingly.

For example, when a kanban of source type 1 is checked out, the system generates the associated work order to replenish the kanban. To increase the integration between kanbans and the orders that they generate, you can process the completion transaction for the kanban from the related order completion or receipt program. For example, you can perform a completion transaction for a work order kanban by using the Work Order Completions program (P31114) .

This functionality only applies to two-phase kanbans.

Work Order Completions and Super Backflush for Kanban

For any source type 1 kanban, regardless of whether it is one-phase or two-phase, you can perform completions for a kanban-generated work order either interactively or blindly at the time that you check in the kanban or mark it as complete. The method that you use to process completions depends on the way in which the processing options are set in the version of the Kanban Processing program (P3157) that you are using . Typically, you use the Kanban Supply version of the Kanban Processing program to check in kanbans for which work orders or rate schedules exist, but you can also use the Kanban Consumption version to perform kanban check-in transactions. However, you must use the Kanban Supply version to perform completion transactions for kanban orders.

Note: You should verify that the processing options of the Kanban Processing program that you are using for check-in and completion transactions are set according to the business process. These versions work independently, and the software processes are dictated by the processing option settings of each version.

You can also use the Super Backflush program (P31123) or the Work Order Completions program (P31114) to process the completion of a kanban-generated work order. This situation will move the status of the Kanban ID from checked out (**2**) to complete (**3**). For check-in, you must always use the Kanban Processing program (P3157) .

The system enables you to complete a kanban card from work order completions and super backflush, provided that it has these characteristics:

- The kanban is a source type 1 one-phase or two-phase kanban.
- The kanban is checked out; hence, a work order is associated with the kanban.
- The manufacture of the kanban subassembly is completed by the production cell.

When you attempt to complete a work order through work order completions or super backflush, the system determines whether the work order was generated by a kanban transaction. The system performs a backflush (if it is set up to do so), updates inventory for the completed item, updates inventory for the components, initiates the kanban complete transaction, and updates the kanban status to Checked In.

You must set up the bill of material or generated parts list for the kanban work order (or rate schedule) to backflush order inventory. To do this activity, you must use either the **B** or **U** issue code type. If you are backflushing work order inventory when the order is complete (using the Completion with Backflush version of the Work Order Completions program), then:

- The parts list items must have an issue code type of **B**.
- The work order routing must have at least the last operation step with a pay point code of **B** or **M**.

If you are using the Super Backflush program to backflush materials, then:

- The parts list items must have an issue code type of **U**.
- The work order routing must have at least the last operation step set up with a pay point code of **M** or **B**.

Note: The setup of the system becomes especially critical when you process work order completion activities blindly during kanban complete transactions. If you do not have the proper setup, the system might not account for materials correctly when kanban transactions are processed.

Purchase Order Receipts for Kanban

The system enables you to check in a kanban card from purchase order receipts. The kanban must be a source type 3, two-phase kanban that is checked out.

When you attempt to receive a purchase order through the Purchase Order Receipts program (P4312), the system determines whether the purchase order is generated from a kanban. A check-out process at a specific location within the enterprise initiates kanban records. Thus, the kanban receipt must identify the consuming location to facilitate subsequent movement of the kanban. You enter the purchase order receipt for the kanban and confirm the quantity that was received.

When you approve the receipt, the system updates inventory, creates a receipt record, creates general ledger entries, initiates the check-in transaction, and updates the kanban status to Completed.

When the order quantity is not met, such as when the supplier over ships or under ships, the system updates the purchase order and kanban record, and cancels any remainder.

Note:

- *"Working with Completions" in the JD Edwards EnterpriseOne Applications Shop Floor Management Implementation Guide .*
- *"Using Receipt Processing" in the JD Edwards EnterpriseOne Applications Procurement Management Implementation Guide .*

Processing Kanban Consumption and Supply by Item

This section discusses how to:

- Set processing options for Kanban Processing (P3157).
- Process kanban consumption by item.
- Process kanban supply by item.

Forms Used to Process Kanban Consumption and Supply by Item

Form Name	FormID	Navigation	Usage
Work With Kanban Masters	W3157A	Daily Processing - Repetitive (G3115), Kanban Consumption	Process kanban consumption by item.
Work With Kanban Masters	W3157A	Daily Processing - Repetitive (G3115), Kanban Supply	Process kanban supply by item.

Setting Processing Options for Kanban Processing (P3157)

These processing options control default settings for the Kanban Processing program.

Mode

These processing options specify the processing mode that the system uses when running the Kanban Processing program.

1. Check-out and Check-in Mode

Specify whether the version of the program is used for check-out (consumption) or for check-in (supply). Values are:

1: Set mode to kanban supply.

Blank: Use kanban consumption mode.

2. Display Confirmation Message

Specify whether the system displays a confirmation message when it performs the transaction. Values are:

1: Display confirmation message.

Blank: Do not display confirmation message.

3. Kanban Status

Enter a kanban status to restrict the kanbans that you review to a specified status.

Defaults

These processing options specify the default information the system uses during kanban processing.

1. Item Number (Optional)

Enter the item number to review information for an individual item. The number can be in short, long, or third item number format.

2. Location (Optional)

Enter a location number to review information for an individual location from which goods will be moved.

3. Hours Equivalent to One Day

Specify the number of working hours in a day. The default value is **8**.

4. Closed Status

Enter a Closed Status code (UDC 00/SS) for a rate schedule or work order. The default value is **99**.

5. Bill of Material Type

Specify a value from UDC 40/TB that designates the type of bill of material. You can define different types of bills of material for different uses. For example:

M: Standard manufacturing bill

RWK: Rework bill

SPR: Spare parts bill

The system enters bill type M in the work order header when you create a work order, unless you specify another bill type. The system uses the bill type code on the work order header to identify the bill of material to use during the creation of the work order parts list. MRP uses the bill type code to identify the bill of material to use when it

attaches MRP messages. Batch bills of material must be type M for shop floor management, product costing, and MRP processing.

6. Employee Number (Optional)

(Optional) Indicate the default employee number to use for the detail completion lines and hours and quantities information. Use this employee number when using the Super Backflush program (P31123) to perform completion and check-in transactions that record work order and rate schedule completions.

7. Transfer Order Receipt Location

Specify the default location to which order transfers will be received for type 5 kanbans.

Process

These processing options specify how the system processes and displays values in the Kanban Processing program.

1. Work Order Processing

Specify whether the Work Order Processing program (R31410) runs when a work order is created at the checkout of the last card or container in the kanban.

1: Run Work Order Processing automatically.

Blank: Run Work Order Processing manually.

2. Hours and Quantities

Specify whether you want the Hours and Quantities program to execute in the background, or if you want it to appear. The Hours and Quantities value overrides the processing options for the version of the Super Backflush program (P31123) that you are using. Values are:

1: Execute Hours and Quantities in the background.

Blank: Hours and Quantities appears and requires the interactive involvement for processing.

3. Material Issues

Specify whether you want the Material Issues program to run in the background. The Material Issues value overrides the processing options for the version of the Super Backflush program (P31123) that you are using. Values are:

1: Run Material Issues in the background.

Blank: Material Issues appears and requires the interactive involvement for processing.

4. Work Order Completions

Specify whether you want the Work Order Completions program to run in the background. The Work Order Completions value overrides the processing options for the version of the Super Backflush program (P31123) that you are using. Values are:

1: Run Work Order Completions in the background.

Blank: Work Order Completions appears and requires the interactive involvement for processing.

5. Shipment Confirmation

Specify whether you want the Ship Confirm Batch Application program (R42500) to execute in the background. Values are:

1: Run Ship Confirm Batch Application program in the background.

Blank: Ship Confirm Batch Application program appears and requires the interactive involvement for processing.

6. Inventory Transfers

Specify whether you want the Inventory Transfers program to execute in the background. Values are:

1: Run Inventory Transfers in the background.

Blank: Inventory Transfers appears and requires the interactive involvement for processing.

Purchasing

These processing options specify the information the system uses to create purchase orders during kanban processing.

1. Create Purchase Order

Specify a value that the system uses to create a purchase order for kanban-controlled items. When you enter 1 in the Create a Purchase Order field, the system creates a purchase order when you check out the last card or container in the kanban. When you enter 2 in the processing option, the system checks for an open purchase order that meets the checkout requirements before it creates a new purchase order.

You can enter 1 or 2 in the processing option to automatically release a kanban quantity from an open blanket order. Values are:

Blank: Use purchase order already created.

1: Create a new purchase order.

2: Find existing purchase order. If none exists, create a new purchase order.

3: Find existing purchase order using Transaction Date Range. If none exists create a new purchase order.

2. Transaction Date Range

Search for an existing purchase order created between the Date - From and Date - Thru.

Date - From

Enter a date. If you leave the field blank, the system uses the current date.

Date - Thru (date - through)

Enter a date. If you leave the field blank, the system uses the current date.

3. EDI 862 Transaction

Specify whether to automatically trigger an EDI 862 transaction. Values are:

Blank: Do not trigger an EDI 862 transaction.

1: Trigger an EDI 862 transaction.

Versions

These processing options control which version the system uses when you call other programs from the Kanban Processing program. This table lists the programs in the order that they appear on the Versions tab, along with the default version. If you leave the processing options blank, the system uses this default version. You can define different versions in accordance with business processes.

1. Rate Header Maintenance (P3109)

ZJDE0001

2. Part Availability (P30205)

ZJDE0001

3. Work Order Entry (P48013)

ZJDE0001

4. Work Order Processing (R31410)

ZJDE0001

5. Open Orders Inquiry (P3160W)

ZJDE0001

6. Purchase Orders Entry (P4310)

ZJDE0001

7. Purchase Order Print (R43500)

XJDE0001

8. Purchase Order Receipts (P4312)

ZJDE0008

9. Super Backflush (P31123)

ZJDE0001

10. Hours & Quantities (P311221)

ZJDE0001

11. Material Issues (P31113)

ZJDE0001

12. Work Order Completions (P31114)

ZJDE0001

13. Inventory Transfers (P4113)

ZJDE0001

14. Sales Order Entry (P4210)

ZJDE0001

15. Shipment Confirmation (P4205)

ZJDE0001

16. DFM Item Completion (RF31011B)

XJDE0001

Processing Kanban Consumption by Item

Access the Work With Kanban Masters form.

To process kanban consumption by item:

1. To check out a kanban, select the detail line that represents the kanban container that you want to process, and then select Check Out from the Row menu.

If you have the processing option set up to do so, the system prompts you to confirm the transaction. When the check-out transaction has been processed, the kanban status is 2 (checked out).

2. To check in a kanban that was supplied by the production line (and for which a rate or work order was created), select the Defaults tab and complete the fields:
 - o Shift
 - o Employee Number

3. Select the appropriate Kanban ID record, and then select Check In from the Row menu.
Note: If the kanban card is an ad hoc card, the system updates the kanban transaction status to Destroyed and indicates that you should physically destroy the ad hoc kanban card.
4. To check out a kanban, select the appropriate Kanban ID record, and then select Check out from the Row menu. The system displays a confirmation form that permits you to confirm or cancel the kanban transaction.

Processing Kanban Supply by Item

Access the Work With Kanban Masters form.

To process kanban supply by item:

1. Select the Defaults tab and then complete the fields to check in a kanban that was supplied by the production line (and for which a rate schedule or work order was created):
 - o Shift
 - o Employee Number
2. Select the appropriate kanban record and then select Check In from the Row menu.
3. Click OK.

Adding Ad Hoc Kanban Cards

This section provides an overview of ad hoc kanban cards and discusses how to add ad hoc kanban cards.

Understanding Ad Hoc Kanban Cards

When an abnormal spike in demand occurs, you can insert an ad hoc kanban card for a single cycle to ensure that the in-process inventory will cover the demand.

You use the Kanban Master Revisions program (P3016) to add an ad hoc card. For a unique combination of supplying branch, consuming branch, supplying location, and consuming location, you can have one ad hoc kanban ID. You must have at least one non-ad hoc kanban ID that exists for the combination of supplying branch, supplying location, consuming location, consuming branch, and item number. An ad hoc kanban ID cannot be the first (or only) kanban ID that you have for an item.

You can set the quantity of the ad hoc kanban to be any number. The quantity definition of the ad hoc kanban is not dictated by the detail information for the parent kanban. Ad hoc kanban information is excluded from the Kanban Size Calculation (R30450) and the Kanban Replenishment Capacity (P3019) programs because the demand is uncertain and not planned.

Note: You can have only one ad hoc kanban for each unique combination of supplying branch, consuming branch, consuming location, supplying location, and item number. If two cards exist for an ad hoc kanban in the kanban master, the system represents it as two containers during kanban processing.

When an ad hoc kanban record exists, the system denotes its existence with a **Y** value in the Ad Hoc Card Exists field of both the kanban master and the Kanban Processing program (P3157). The number of cards for the ad hoc kanban

dictates the number of records in the F30161 table. As with other multi-container kanbans, each container is represented as a separate record in the detail table.

Upon check in, the kanban transaction status is set to **4** (destroyed).

You can initiate the ad hoc kanban after it is destroyed. You do this initiation by selecting the ad hoc kanban record and then selecting Initiate Ad Hoc from the Row menu. The Initiate Ad Hoc option is available for selection only when the kanban that you select is an ad hoc kanban. When you select the Initiate Ad Hoc option, the system changes the status of the ad hoc kanban to **1** (checked in).

The kanban master maintains the information that identifies any kanban as an ad hoc card. The system maintains ad hoc card information in the Kanban Master table (F3016), even when the card has a status of Destroyed (kanban status 4).

Forms Used to Add Ad Hoc Kanban Cards

Form Name	FormID	Navigation	Usage
Work With Kanban Master	W3016A	Kanban Management Setup (G30411), Kanban Master Revisions	Select a kanban record or complete header information to add a ad hoc kanban record.
Kanban Master Revisions	W3016B	Kanban Management Setup (G30411), Kanban Master Revisions Select a kanban master record on the Work With Kanban Master form.	Add an ad hoc kanban record.

Adding Ad Hoc Kanban Cards

Access the Kanban Master Revisions form.

Kanban Master Revisions

Form Row Tools

Branch/Plant M30
Item Number KANC
Supplying Location S. . . Consuming Location C. . .

Records 1 - 2

<input type="checkbox"/>	<input type="checkbox"/>	Kanban ID	Supplying Location B/P	Kanban Size	Source Type	Kanban UOM	Phase	Supplier	Line/Cell Identifier
<input type="checkbox"/>	<input type="checkbox"/>	4930	M30	3050	1	EA	1		
<input type="checkbox"/>	<input type="checkbox"/>	4931	M30	3050	1	EA	1		

Select the Insert Ad Hoc option from the Form menu. The system generates a new ad hoc kanban card that includes the same detail information as the first kanban record. To customize the ad hoc kanban record to the demand needs, you can override its information.

Note: You must set the related processing option of the Kanban Master Revisions program (P3016) to enable ad hoc card creation.

Releasing Quantity from a Blanket Order Using Kanban Processing

This section provides an overview of blanket orders, lists prerequisites, and discusses how to:

- Set processing options for Purchase Order Inquiry (P3160W).
- Release quantity from a blanket order.

Understanding Blanket Orders

You can enter a blanket order when you have an agreement with a supplier to purchase a certain quantity or amount of goods over a period of time. You must enter the entire quantity or amount on the blanket order and the negotiated price for those items.

Each time that you are ready to use a portion of the goods on the blanket order, you can create a purchase order to release that quantity from the blanket order.

Prerequisites

To release quantity from an open blanket order using kanban processing, you must:

- Set the Create Purchase Order processing option on the Kanban Consumption program (P3157) to create a new purchase order upon kanban check-out.

You can do this with a processing option value of 1 or 2.

- Set the Blanket Releases processing option on the Processing tab of the Purchase Order Entry program (P4310) to release from blanket orders.

You can do this with a processing option value of **1** or **2**.

- Indicate the Purchase Order Entry version that you have set up to perform blanket order releases in the processing options of the Kanban Consumption program.
- Set up the version of the Purchase Order Inquiry program (P3160W) with the document type that you use for the blanket orders from which you release quantity during kanban processing.

If you do not indicate the document type for blanket orders in the processing options of this program, you cannot perform blanket order releases using kanban processing.

Note: The Purchase Order Inquiry program is not a JD Edwards EnterpriseOne Procurement system program. You use this program only in association with kanban processing. By using this program, you can set up the software to process blanket orders that are separate from other purchasing orders in the system. For example, you can use a different blanket order document type for kanban-specific blanket orders that you negotiate for a six-month period instead of a one-year period.

If you do not set up all of these criteria to release the quantity from an open blanket order, the system creates a new purchase order for the kanban quantity every time that you check out the related kanban.

If you have more than one valid blanket order from which the kanban quantity can be released, the system displays the Work With Open Blanket Orders form so that you can select the open blanket order from which you want to release the kanban transaction quantity. When you release a quantity from a blanket purchase order to create a purchase order, the original blanket order number (and related document type) is referenced in the detail line of the purchase order that you create.

Note: *"Working with Blanket Orders" in the JD Edwards EnterpriseOne Applications Procurement Management Implementation Guide* .

Form Used to Release Quantity from a Blanket Order Using Kanban Processing

Form Name	FormID	Navigation	Usage
Work With Open Blanket Orders	W3160WC	Daily Processing - Repetitive (G3115), Kanban Consumption Select the supplier (source type 3) kanban master record on the Work With Kanban Masters form, and select Check Out from the Row menu.	Release quantity from a blanket order using kanban processing. Note: The kanban that you select on the Work With Kanban Masters form must be a kanban (and related item number) for which you have at least one open blanket order.

Setting Processing Options for Purchase Order Inquiry (P3160W)

These processing options control default processing for the Purchase Order Inquiry program.

Default

These processing options control default values that the system uses during Purchase Order Inquiry (P3160W).

Order Type

Specify the document type (UDC 00/DT) that you associate with the blanket purchase orders from which you will release quantity using kanban processing. If you create a new document type to represent blanket orders, whether for kanban processing or otherwise, you must set up that document type in the Document Type Maintenance program (P40040).

From Status

Specify the valid statuses (UDC 40/AT) of the blanket orders that you use in blanket order releases. The statuses that you indicate must also be set up in the order activity rules for the document type that you specified in the first processing option.

Thru Status

Specify the valid statuses (UDC 40/AT) of the blanket orders that you use in blanket order releases. The statuses that you indicate must also be set up in the order activity rules for the document type that you specified in the first processing option.

Currency Code

Specify a currency code for the transaction, if it is different from the base system currency.

Processing

These processing options specify how the system processes and displays values within Purchase Order Inquiry.

1. Status Code

Specify whether you want the status codes on the Default tab to be the next status or the last status of the blanket order. The system uses these statuses to find only those blanket orders that are within the status limits that you indicate. The system does not use these statuses for purchase orders that are created by kanban processing. Values are:

1: The status codes on the Defaults tab are based on Last Status.

Blank: Use the Next Status of the blanket order.

2. Date Checked Against the Date Range

Specify the order date to use when searching for open blanket orders. You should set this processing option to match the business process for blanket orders because it prevents valid blanket orders from appearing during kanban processing when you search using the wrong date. Values are:

Blank: Requested date

1: Transaction date

2: Promised delivery date

3: Original promised delivery date

4: Receipt date

5: Cancel date

6: General ledger date

3. Display Costs

Specify whether you want the system to display or hide cost information in the orders that the system displays for blanket release. Values are:

1: Hide cost information.

Blank: Display costs.

Versions

This processing option controls which version the system uses when the Purchase Order Inquiry program calls other programs.

PO Receipt Routing (purchase order receipt routing)

Specify the version of the Receipt Routing Movement and Disposition program (P43250) to use if it is different from the pristine version (ZDJE0001). To use receipts routing for purchased items, you must:

- Set up the item branch record of the kanban item so that it invokes receipts routing during purchasing receipts.
- Set up the receipts routing definition and associate it to the item record of the kanban.

Releasing Quantity from a Blanket Order Using Kanban Processing

Access the Work With Open Blanket Orders form.

To release quantity from a blanket order using kanban processing:

1. Select the blanket order from which you want to release the kanban transaction quantity.
2. Click the Select button.
3. If you have the option to confirm kanban transactions were activated, select OK on the Confirmation selection form.
4. Review the purchase order document number and related order document type that the system generated on the Work With Kanban Masters form.

The system displays only the purchase order document type for blanket order releases in the kanban transaction record. Neither the blanket order document number nor the blanket order document type appears in the kanban transaction record.

Note: When you are ready to check in the kanban to designate container fulfillment, the process becomes the same as the check-in process for any other supplier (source type 3) kanban. If you have a one-phase kanban, the system performs the purchase order receipt and the inventory transfer when you check in the kanban. If you have a two-phase kanban, you must perform a completion transaction to process the purchase order receipt of the kanban-generated purchase order, and then check in the kanban to initiate the inventory transfer that disposes the material from the supplying location to the consuming location.

5 Identifying Insufficient Inventory

Understanding Kanban Replenishment Capacity

The Kanban Replenishment Capacity program (R30470) enables you to track the production capacity of a kanban and compare it to the demand pattern of the item on the kanban for a period of time that you specify. The demand is taken as the raw demand from the material requirements planning (MRP) time series. The system calculates the production capacity of a kanban, based on a kanban ID, assuming that the check-out is completed on the start date that is specified. It then calculates the demand for the specified period of time. The system writes all kanbans that cannot meet the demand to a new table and displays an alert. The system clears the Kanban Replenishment Capacity table (F3019) every time that you run the Kanban Replenishment Capacity program.

The system calculates the inventory shortfall or excess:

(Kanban capacity) = (kanban size) × (number of cycles) × (number of kanban records that are similar)

(Number of cycles) = [(number of months) × (number of weeks) × (number of days)] ÷ [(scan delta days) + (leadtime delivery (days))]

If the item number, consuming branch/plant, consuming location, supplying branch/plant, and supplying location are the same, then the kanban capacity and demand are the same for those records.

The number of units by which the inventory exceeds or falls short of the demand is then associated with each kanban master. The system provides a report of the total kanban capacity compared to the total kanban demand.

When the demand exceeds the production capacity, it leads to an inventory shortfall. A shortfall of inventory indicates that the demand taken into account during the kanban size calculation is different from the demand taken into account during the shortfall measurement. The inventory manager can react to the shortfall based on the quantity by which the system falls short of inventory and the nature of the increase in demand. When the inventory falls short by a small quantity, the inventory manager might decide not to react at all. When the shortfall is too high, then the inventory manager might react to it based on the nature of the increase in demand. When the increase in demand is a temporary spike, then the inventory manager can add an ad hoc card to the system. When the demand is permanent, then the inventory manager might run the Kanban Size Calculation program (R30450) to update the sizes.

Note: When the system identifies an inventory starvation situation, the kanban size is too low. Also, when a lot of ad hoc cards appear in the system, the size calculation is a poor representation of the demand. In these instances, the inventory manager should run the Kanban Size Calculation program to adjust the kanban size.

Setting Processing Options for Kanban Replenishment Capacity (R30470)

These processing options control default processing for the Kanban Replenishment Capacity program.

Defaults

These processing options control the default information that the system uses when running the Kanban Replenishment Capacity program (R30470).

1. Start Date

Manually enter the start date for the order or have the system calculate it using a back-scheduling routine. The routine starts with the required date and offsets the total lead time to calculate the appropriate start date.

2. End Date

Enter the date that an item is scheduled to arrive or that an action is scheduled for completion.

Versions

This processing option specifies which version the system uses when the Kanban Replenishment Capacity program calls other programs.

3. Kanban Size Calculation (R30450)

Specify the version of the Kanban Size Calculation program (R30450) called by the Kanban Replenishment Capacity program. If you leave the processing option blank, the system uses the default version XJDE0001.

6 Setting Up Multi-tier Kanban Transactions

Understanding Multi-tier Kanban Transactions

Many manufacturing facilities operate several manufacturing lines (or cells) that consume the same part, where the part operates as a kanban. The assembly line kanbans trigger replenishment through a central store, which, in turn, triggers a consolidated replenishment from a supplier. A kanban reorder point for the source location triggers these multi-tier kanban transactions.

An inventory kanban (primary kanban) can be tiered with another (secondary) kanban. You set up tiered kanbans to form a kanban chain. All links of the chain, other than the one farthest from the point of consumption, have to be inventory-replenished (source type 2) kanbans.

Note: The system requires that the primary kanban be source type 2 to associate it with the secondary kanban. The last kanban in the multi-tier chain can be any source type.

When a source type 2 kanban is slated to generate multi-tier kanban requests from the supplying location, the system maintains the information about the secondary kanban in the Related Kanban ID field in the kanban master record.

When you check in a primary kanban of source type 2 and you set up a related kanban, these events occur:

- The line or cell operator checks in the source type 2 kanban.
- The system updates inventory to indicate that it is being transferred to the line.
- The system decrements inventory at the source location.
- The system performs a reorder point assessment on the source location.

When the quantity at the sourcing location is equal to or less than the defined reorder point, the system creates a replenishment kanban trigger that is based on the item and consuming location. The system checks out the secondary kanban to fill the reorder point trigger. The system checks out a secondary tier kanban only when a primary tier kanban of source type 2 is checked in and the reorder point is triggered at the consuming location of the secondary kanban.

Note: You should enter **1** in the Create Purchase Order processing option on the Purchasing tab of the processing options for the Kanban Processing (P3157) program. The system cannot process this program for multi-tier kanbans when a value of Blank or **2** appears in this processing option.

When the quantity at the sourcing location is greater than the defined reorder point, the system does not create a replenishment trigger.

You are required to set up replenishment reorder points for the secondary kanban. The Fixed Putaway Locations program (P46012) manages kanban replenishment points for fixed locations. When you select the Kanban option, location and normal replenishment point information appears in the detail area.

Note: For kanban-controlled items, enter **4** in the processing option on the Display tab. This value causes the system to display the Normal Replenishment Point field that is used with kanban.

See *"Setting Up Fixed Putaway Locations" in the JD Edwards EnterpriseOne Applications Warehouse Management Implementation Guide* .

The system ensures that the reorder point that you entered is in the primary unit of measure for the kanban item. If you try to enter a different unit of measure, the system displays an error message.

Note: Although this discussion centers on a two-tier kanban, a kanban with more than two tiers follows the same pattern.

Defining a Kanban Reorder Point

This section discusses how to define a kanban reorder point.

Form Used to Define a Kanban Reorder Point

Form Name	FormID	Navigation	Usage
Fixed Location Revisions	W46012B	Kanban Management Setup (G30411), Fixed Locations Click the Kanban option on the Work With Fixed Locations form, and click the Add button.	Define a kanban reorder point.

Defining a Kanban Reorder Point

Access the Fixed Location Revisions form.

Specify the item, branch/plant and location for which you want to define the reorder point.

Normal Replenishment Point

Enter the quantity that represents the normal level of inventory at a fixed picking location. The system uses this value during batch replenishments to generate replenishment requests.

You can have the system perform replenishment when the quantity in a fixed picking location reaches either the normal replenishment point or the minimum replenishment point. During automatic, or online, replenishment, the system uses the minimum replenishment point. For batch replenishment, you specify in the processing options of the Batch Replenishment program (P461601) which replenishment point you want the system to use.

7 Using Kanban Capacity Self-Service for Planners

Understanding Kanban Capacity Self-Service for Planners

To accurately account for kanban-controlled items, planners must first run material requirements planning (MRP) generation and then run the kanban size calculations. Then, the planner can use the self-service portal to access information about kanban capacity.

The kanban self-service portal is restricted to internal users only, particularly item planners who use the tool for easier viewing of kanban requirements. The portal also restricts the planner to changing only the capacity of a kanban.

When in the self-service portal, the planner can review information about kanbans. For instance, the portal alerts the planner about the number of kanbans in which capacity does not meet demand or in which capacity is greater than demand.

The planner's goal is to manage the kanban size in relation to the demand for the item. The capacity of the Kanban to meet the demand is governed by the size, number of cards, and the cycle time for replenishment. The planner should manage the kanban so that the capacity exceeds the demand.

Adjusting Kanban Size

This section discusses how to adjust kanban size using self-service.

Forms Used to Adjust the Kanban Size

Form Name	FormID	Navigation	Usage
View Kanban Capacity	W3019B	Kanban Management Setup (G30411), Kanban Replenishment Capacity	Review the capacity versus demand information.
Edit Kanban Size	W3017B	Kanban Management Setup (G30411), Kanban Replenishment Capacity Select a record on the View Kanban Capacity form, and click Edit in the Action field.	Adjust kanban size.

Adjusting Kanban Size Using Self-Service

Access the View Kanban Capacity form.

To adjust kanban size using self-service:

1. Review the capacity versus demand information.
2. Select a record that you want to work with and then click Edit in the Action field.
3. On the Edit Kanban Size form, either enter a kanban size manually or click the Calculate Size button.

Use the Calculate Size button to have the system calculate the size based on the defined equation and parameter values.

4. Click OK.

The View Kanban Capacity form appears and displays the changes. On the View Kanban Capacity form, an asterisk appears in the Capacity column heading. The record for which the kanban size was edited displays the capacity in red. A note indicates that the capacity has changed and that you should run the Kanban Replenishment Capacity program (R30470) again before the changes take effect.

5. Click the Cancel button on the Edit Kanban Size form to return to the View Kanban Capacity form without saving the changes.

8 Planning for Kanban Management

Understanding Planning for Kanban Management

In the current business environment, you might want to present the supplier of procured kanban items with the demand schedule for the item. To support the generation of a demand schedule, Material Requirements Planning (MRP) must first generate the component demand for kanban-controlled items. Non-procured, kanban-controlled items also use this demand to calculate size.

MRP Schedule Generation for Kanban Management

When you run a material requirements planning (MRP) generation, the system explodes the component demand and stores them in time series buckets. When the component item is kanban-controlled, the system generates the planning schedule and associated planning messages. However, you cannot view or process these messages. You run the MRP generation for kanban-controlled items only to generate the demand. All replenishment action for kanban-controlled items should originate from the Kanban Processing program (P3157).

A kanban that is sourced by a work center creates a work order or a rate schedule that generates component demand requirements in MRP. MRP creates planning messages for a kanban-controlled item and its components. You cannot use messages that are generated for a kanban-controlled item to initiate replenishment.

A kanban that is sourced by an outside supplier initiates replenishment through a purchase order. MRP generates order messages for such items, but they cannot be processed.

When the MRP generation is complete, MRP messages for kanban items do not appear in the MRP Detail Message Review program (P3411). The system does not allow the processing of messages for kanban items in the MRP Detail Message Review program (P3411) or the MRP/MPS Detail Message Processing program (R3411).

Note: The system does not differentiate the messages for kanban items from messages for regular items in any way other than disallowing processing.

All other MRP processing, such as pegging, time series, multiplant, minimum, and maximum, works the same way for kanban-controlled items as it does for regular items.

When MRP generation is complete, you can generate the demand schedule and send information to the supplier.

Demand Schedule Generation for Kanban Management

When material requirements planning (MRP) generation is complete, the planner runs the demand schedule extraction to generate the supplier item demand schedule. The system processes the MRP messages that it generates for both kanban-controlled and non-kanban items.

Before you can successfully use supplier release scheduling (SRS) for kanban-controlled items, you must define the demand by running the MPS Regeneration program (R3482) or inputting a manual (ad hoc) release schedule.

Note: You do not need to create a blanket order for kanban-controlled items. You do not need to set up the supplier release master record in the Supplier Schedule Master Revisions program (P4321) because the kanban master identifies the supplier for the kanban-controlled item.

When SRS is set up, the system generates the demand schedule in the Vendor Schedule Quantity table (F3430).

Each time you generate the demand schedule, the system verifies whether an item is kanban-controlled, but it does not generate releases or purchase orders (neither blanket nor non-blanket, for kanban-controlled items), even when a supplier is commitment for the item.

The purchase order is released at the time of kanban check-out. If you set up an outbound transaction (EDI 862), the system publishes it.

The Supplier Release Schedule Generation program (R34410) ignores release generation for kanban-controlled items.

You can set a processing option that enables you to publish the demand schedule in the form of an outbound transaction (EDI 830).

Index

A

ad hoc kanban cards
 adding *60, 61*
 overview *60*
 ad hoc kanbans *8, 53*

B

Bill of Material Master table (F3002) *9*
 blanket orders
 overview *62*
 releasing quantity using kanban processing *65*
 Branch/Plant Constants program (P41001) *11*

C

calculation methods *8*
 calculation-specific parameters
 defining *33*
 defining values for *31*
 check ins *8*
 check outs *8*
 Completions Workbench program (P3119) *11*
 consuming locations *8*
 consumption by item
 processing kanbans *47*

D

Demand Flow Manufacturing
 calculating kanban sizes *15*
 item completion *14*
 managing kanbans *15*

E

EDIs electronic data interchange *74*
 Edit Kanban Size form *71*
 electronic data interchange 830 *74*
 electronic data interchange 862 *74*
 Enter/Change Rate Schedule program (P3109) *17*

F

F30006 table *14*
 F3002 table *9*
 F3003 table *9*
 F3009 table *9*
 F3016 table *9, 13, 34, 61*
 F30161 table *10, 13, 34, 61*
 F3016T table *9*
 F3017 table *10*
 F3018 table *10*
 F3019 table *10, 67*
 F3109 table *10*
 F3111 table *10*
 F3112 table *10*
 F31122 table *50*
 F3413 table *52*
 F3430 table *74*

F4101 table *10, 12*
 F4101SRM table *9*
 F4102 table *10, 12*
 F41021 table *10, 50*
 F4102SRM table *9*
 F4111 table *49, 50, 50*
 Fixed Location Revisions form *70, 70*
 Fixed Putaway Locations program (P46012) *69*
 fixed-size kanbans *32*

G

global implementation steps *3*

I

implementation *3*
 implementation steps
 global *3*
 kanban-specific *5*
 insufficient inventory identification *67*
 integration
 Warehouse Management *48*
 interbranch transfer kanbans *52*
 Item Branch SRM Tag table (F4102SRM) *9*
 Item Branch table (F4102) *10, 12*
 Item Branch/Plant program (P41026)
 kanban flags *9*
 Item Location table (F41021) *10*
 Item Master program (P4101)
 kanban flags *9*
 Item Master SRM Tag table (F4101SRM) *9*
 Item Master table (F4101) *10, 12*

J

Job Shop Manufacturing Constant table (F3009) *9*

K

kanban and replenishment transactions *53*
 kanban calculation parameters
 defining values *31*
 overview *31*
 kanban capacity self-service
 overview *71*
 Kanban Card Detail table (F30161) *10, 35*
 kanban cards
 adding ad hoc *61*
 definition *8*
 kanban check-ins *47*
 kanban check-outs *47*
 kanban consumption by item
 overview *55*
 processing *59*
 kanban equations
 overview *24*
 kanban flags *8*
 kanban generation *33, 34*
 kanban IDs *8*
 kanban implementation steps *5*

- Kanban Management
 - integration *1*
 - overview *1*
 - setting up kanban master records *13*
 - setup *11, 11*
 - system tables *9*
 - terms and concepts *8*
- kanban master records
 - setting up *13, 20*
- Kanban Master Revisions form *20, 20, 61, 61*
- Kanban Master Revisions program (P3016)
 - ad hoc kanban cards *60*
 - calculation method *24*
 - processing options *20*
 - usage *13, 20*
- Kanban Master table (F3016) *9, 35*
- Kanban Master Tag table (F3016T) *9*
- Kanban Parameter Revisions form *32, 32, 33*
- kanban processing
 - one-phase *15*
 - overview *15, 47*
 - two-phase *15*
- kanban processing logic *17*
- Kanban Processing program (P3157)
 - processing options *56*
 - usage *47, 48, 53, 54, 54, 60, 63, 69, 73*
- kanban reorder points *70, 70*
- Kanban Replenishment Capacity program (P3019) *60*
- Kanban Replenishment Capacity program (R30470)
 - processing options *67*
 - usage *67, 72*
- Kanban Replenishment Capacity table (F3019) *10, 67*
- Kanban Size Calculation Definition program (P3017) *14, 23, 24, 31, 31*
- Kanban Size Calculation Definition table (F3017) *10*
- kanban size calculation definitions
 - overview *23*
 - setting up *23, 26*
- Kanban Size Calculation Parameter Definition program (P3018) *14, 27, 31, 31, 32, 48*
- Kanban Size Calculation Parameters table (F3018) *10*
- Kanban Size Calculation program (R30450)
 - processing options *35*
 - usage *14, 23, 27, 32, 32, 34, 52, 60, 67*
- Kanban Size Calculation Revisions form *25, 26*
- kanban size calculations *37*
- kanban sizes
 - adjusting *71*
 - adjusting using self-service *72*
 - calculating using processing options *40*
 - calculating using standard equations *37*
- kanban sizes using processing options
 - calculating *40*
- kanban supply by item *60*
- kanban transactions
 - overview *53*
- kanban-specific parameters
 - defining *32*
 - defining calculations for *31*
- kanbans
 - ad hoc *53, 60*
 - ad hoc card *60*
 - adding ad hoc card *60*
 - blanket order release *62*
 - branch/plant *7*
 - completing *47*
 - defining a reorder point *70*

- generating *33, 34*
- interbranch transfer *52*
- inventory *7*
- outside assembly *8*
- overview *7*
- processing by item *47*
- processing consumption by item *47, 55*
- processing supply by item *47, 60*
- receiving purchase orders *55*
- source type *5, 52*
- supplier *7*
- transactions *53*
- understanding transactions *53*
- work center *7*

- kanbans by item
 - processing *47*

L

- Line Scheduling Workbench (P3153) *48*
- Line Sequencing Workbench (P3156) *48*
- Line/Item Relationship Master table (F3109) *10*

M

- Manufacturing Constants program (P3009) *11*
- MPS Regeneration program (R3482) *73*
- MRP Detail Message Review program (P3411) *73*
- MRP/MPS Detail Message Processing program (R3411) *73*
- MRP/MPS Requirements Planning program (R3482) *27*
- multi-tier kanban transactions
 - overview *69*

O

- One-phase kanban diagram *15*
- one-phase kanbans
 - processing *15*
- Order Processing program (R31410) *48*
- outbound transactions
 - electronic data interchange 830 *74*
 - electronic data interchange 862 *74*

P

- P3009 program *11*
- P3016 program
 - ad hoc kanban cards *60*
 - calculation method *24*
 - processing options *20*
 - usage *13, 20*
- P3017 program *14, 23, 24, 31, 31*
- P3018 program *14, 27, 31, 31, 32, 48*
- P3019 program *60*
- P3109 program *17*
- P31113 program *49*
- P31114 program *11, 53, 54*
- P311221 program *49*
- P31123 program *11, 49, 54*
- P3119 program *11*
- P3153 program *48*
- P3156 program *48*
- P3157 program
 - processing options *56*
 - usage *47, 48, 53, 54, 54, 60, 63, 69, 73*

P3160W program
 processing options *64*
 usage *63*

P3411 program *73*

P41001 program *11*

P4101 program
 kanban flags *9*

P41026 program
 kanban flags *9*

P4310 program *51, 63*

P4312 program *55*

P4321 program *74*

P46012 program *69*

phases *8*

pull systems *8*

Purchase Order Inquiry program (P3160W)
 processing options *64*
 usage *63*

purchase order receipt for kanbans *55*

Purchase Order Receipts program (P4312) *55*

Purchase Orders program (P4310) *51, 63*

push systems *8*

R

R30450 program
 processing options *35*
 usage *14, 23, 27, 32, 32, 34, 52, 60, 67*

R30470 program
 processing options *67*
 usage *67, 72*

R31410 program *48*

R3411 program *73*

R34410 program *74*

R3482 program *27, 73*

replenishment source types
 branch/plant *19*
 DFM dual card *19*
 DFM RIP *17*
 inventory *18*
 outside assembly *18*
 subcontract *18*
 supplier *18*
 user-defined codes *14*
 work center *17*

replenishment transactions *53*

Routing Master table (F3003) *9*

S

source module B3003960 *23*

source types
 interbranch transfer *52*

sources *8*

standard equations
 calculating kanban sizes *37*

super backflush *54*

Super Backflush program (P31123) *11, 49, 54*

Supplier Release Schedule Generation program (R34410) *74*

Supplier Schedule Master Revisions program (P4321) *74*

supply by item
 processing kanbans *47*

supplying locations *8*

T

tables used by Kanban Management *9*

terms and concepts for Kanban Management *8*

Two-phase kanban diagram *16*

two-phase kanbans
 processing *15*

U

UDCs user-defined codes *14*

user-defined codes
 replenishment source types *14*

V

Vendor Schedule Quantity table (F3430) *74*

View Kanban Capacity form *71*

W

work order completions *54*

Work Order Completions program (P31114) *11, 53, 54*

Work Order Inventory Issues program (P31113) *49*

Work Order Parts List table (F3111) *10*

Work Order Routing table (F3112) *10*

Work Order Time Entry program (P311221) *49*

Work With Kanban Calculation Methods *25*

Work With Kanban Master form *20, 61*

Work With Kanban Masters form *55, 55, 59, 60*

Work With Kanban Size Calculation form *32*

Work With Open Blanket Orders form *64, 65*

