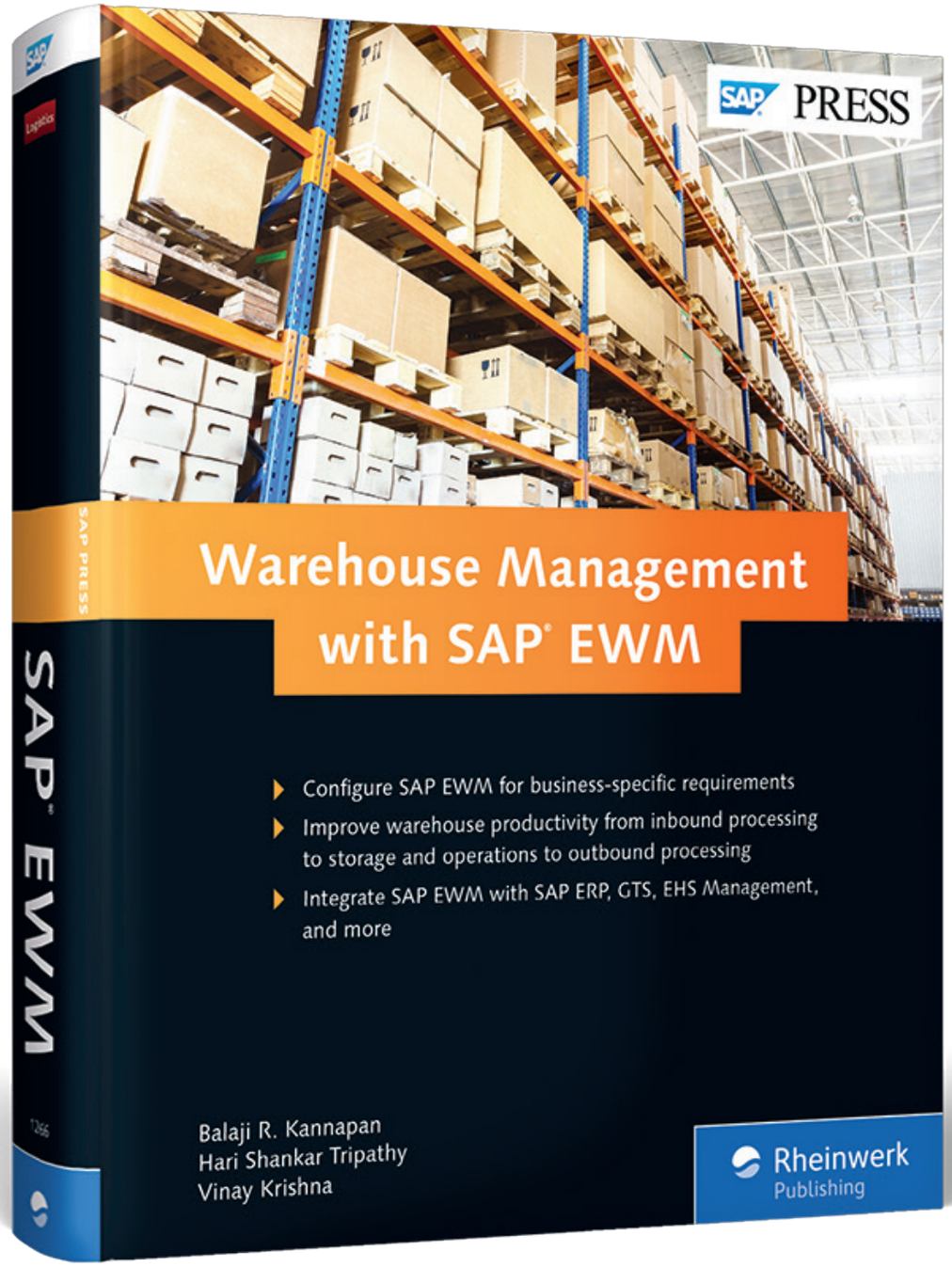

Reading Sample

This sample chapter describes the shipping and receiving provided by SAP EWM, from managing transports in and out of the warehouse to using dock appointments to coordinate with carriers. It also covers yard management and touches upon integration with SAP Transportation Management.

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Warehouse Management with SAP EWM

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A warehouse is that link of a supply chain that stores the goods before being shipped to the ultimate or the next consumption point. Shipping and receiving processes are key to an efficient supply chain and determine how well the supply chain performs with respect to the defined standards.

10 Shipping and Receiving

One of the most challenging tasks in managing a warehouse is controlling the movement of vehicles that carry the goods into or out of the warehouse. Efficiently handling the flow of vehicles is important for shipping and receiving operations of a warehouse, and the warehouse yard plays a key role in shipping and receiving activities being carried out in the warehouse. We'll discuss Yard Management (YM) in detail in this chapter.

With SAP EWM 9.3, a new functionality called Transit Warehousing has been introduced. This feature enables you to integrate warehouse execution with freight forwarding operations using SAP Extended Warehouse Management (SAP EWM) and SAP Transportation Management (TM). We'll discuss this in detail in this chapter as well.

SAP Dock Appointment Scheduling (DAS) is another application aimed at better collaboration between warehouses, thus reducing the idle time of vehicles in the yard. DAS can be integrated with SAP EWM. We'll talk expressly about DAS in Chapter 21.

10.1 Yard Management

A yard can be defined as a location outside or near the warehouse where vehicles bringing inbound and outbound deliveries are maintained after arrival until their departure. The Yard Management (YM) functionality helps you in managing the yard in the SAP EWM system.

In SAP EWM, the YM function is built-in and is closely linked with warehouse operations to exploit the benefits of integrating yard operations with warehouse operations. By virtue of being built-in to the SAP EWM system, YM shares the same structure as the warehouse and thus supports the end-to-end inbound and outbound processes. YM also helps businesses make more accurate decisions by providing stock data contained in the yard to the users.

In this section, we'll discuss various elements of YM. We'll also discuss various activities performed within the yard and the documents involved in carrying out those activities.

Note

The YM functionality of SAP EWM is optional to use and may be left deactivated (by default) based on the needs of the business.

10.1.1 Yard Management Activities

Figure 10.1 illustrates the sequence of activities performed within a yard. After the vehicle that will carry the goods arrives at the arrival gate of the facility, it must be registered in the system by performing check-in activities. Based on the warehouse door availability, the vehicle can be mapped directly to a free door and moved for loading/unloading activities to be performed. Or the vehicle can be made to wait in the yard's parking area, before being mapped to a free door. After the loading/unloading activity is completed, the vehicle may be parked temporarily in the yard's parking area or directly taken to the departure gate of the facility. The check-out activity is carried out after the vehicle leaves the facility.

The smallest loadable unit of a vehicle that is used to transport goods is called a transportation unit (TU). The TU can be a fixed part of the vehicle or units contained within. We'll discuss TUs in detail in subsequent sections of this chapter. At the moment, note that delivery items are linked to vehicle or TU documents using which yard activities are carried out. It's also possible to link one or more TUs to a vehicle document.

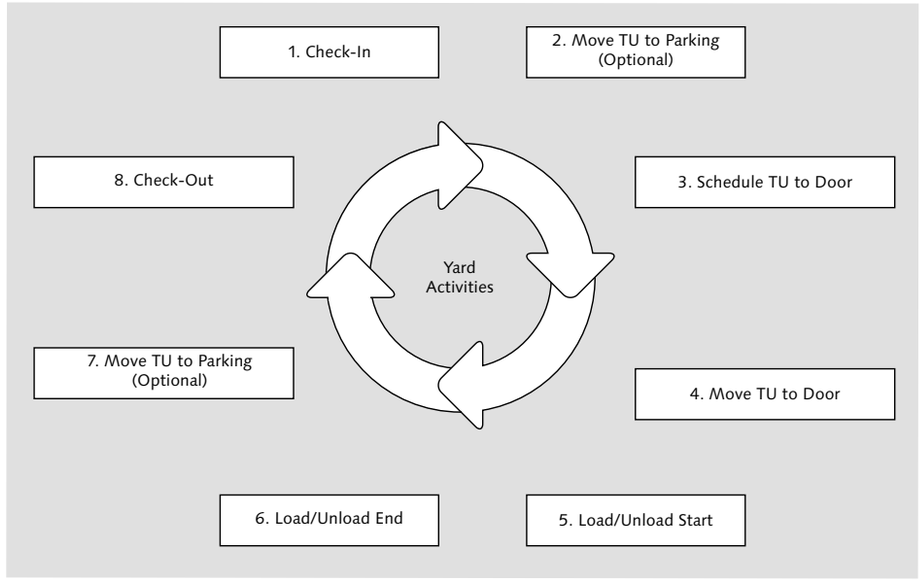

Figure 10.1 Activities Performed in the Yard

10.1.2 Activation of Yard Management

SAP recommends using the YM functionality of SAP EWM to realize the full potential of the software. Activation of YM (Figure 10.2) for a warehouse can be done using the navigation path, SAP EWM IMG • Extended Warehouse Management • Cross-Process Settings • Shipping and Receiving • Yard Management • Activate Yard Management for Warehouse. By selecting the YM Actv. indicator for a warehouse number, YM functionality can be enabled for the warehouse.

Figure 10.2 Yard Management Activation

Note

The discussions in the following sections of the book are based on yard as a storage type. However, when a common yard is used by multiple warehouses, a yard can also be structured as a warehouse.

10.1.3 Yard Structure

Similar to other storage types in the warehouse, the yard storage type is comprised of yard sections and yard bins. Figure 10.3 illustrates the hierarchy of these components within the yard. The highest level in this hierarchy is the yard, which is mapped to the SAP Extended Warehouse Management (EWM) structure as a storage type. Unless, you have a YM structure and definitions, it's not possible to configure a process flow involving the yard.

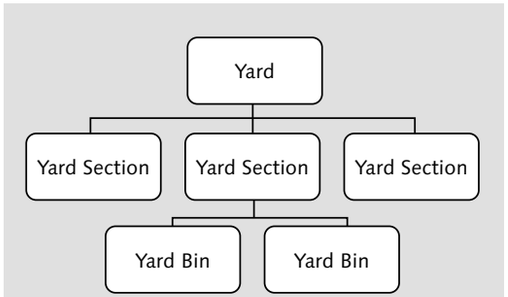

Figure 10.3 Hierarchy of Yard Structure Components

Define Yard Using Storage Type

With the definition of the yard storage type with the role *Yard*, you also need to maintain some important parameters (Figure 10.4) that control the behavior of the yard. The navigation path for defining the yard using the storage type and setting up the parameters is SAP EWM IMG • Extended Warehouse Management • Master Data • Shipping and receiving • Yard Management • Define Yard Using Storage Type.

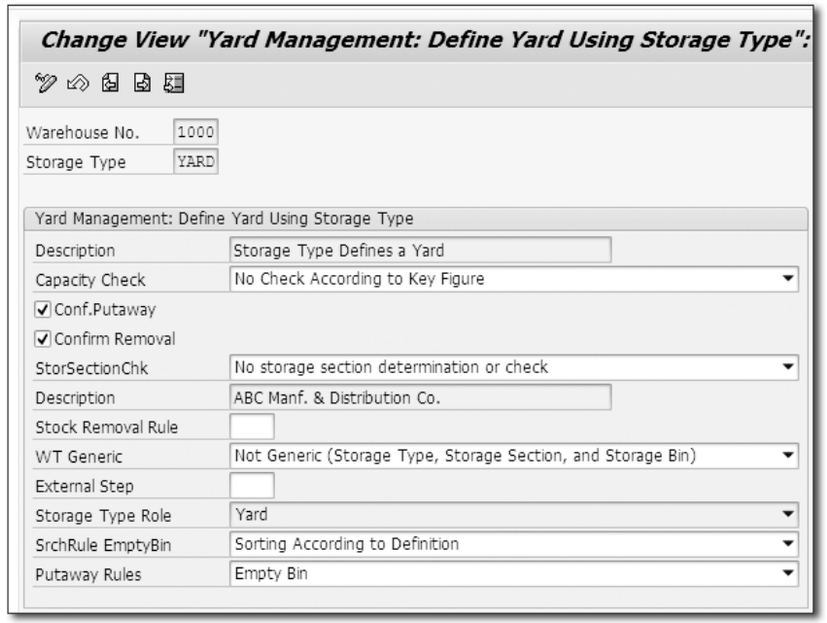

Figure 10.4 Define Yard Using Storage Type Parameters

Structure Yard Using Storage Areas

Yard constitutes the following three storage areas:

- **Checkpoint**
  Vehicles temporarily stay here for some paper verification and so on, after they arrive at the facility or before they leave the facility. Usually there are multiple checkpoints in the warehouse for entry/exit. These checkpoints naturally act as a guard shack for arrival and departure of vehicles/TUs for the YM activity.
- **Parking space**
  Waiting area for the vehicles before they are assigned and moved to a free door for loading/unloading. After loading/unloading is completed, they can again be brought to the parking area so that some paper verification can be performed before they leave the premises.
- **Group of warehouse doors/single door**
  Used for loading or unloading of the goods from the vehicles or TUs.

To maintain these areas of the yard in SAP EWM as shown in Figure 10.5, navigate to the IMG, and choose Extended Warehouse Management • Master Data • Shipping and Receiving • Yard Management • Structure Yard Using Storage Areas.

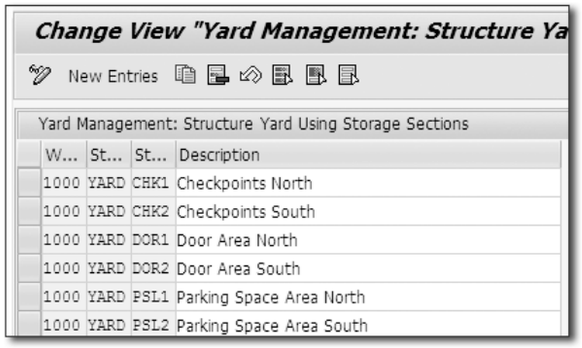

Figure 10.5 Storage Areas in the Yard

This customization allows the yard areas to be structured and mapped to the SAP EWM system. Storage sections are used to clearly mark and segregate areas in a yard. Apart from simplifying the identification of various areas in a yard, this segregation is also important from the warehouse monitoring point of view because appropriate reports can be generated for each storage section of the yard.

Yard Bins

Each of the yard areas (storage sections) is further divided into smaller physical spaces (i.e., a *bin* in SAP EWM terminology) that is the exact position (parking slot) where the vehicles or TUs are parked for check-in/check-out, waiting to be loaded/unloaded for the actual loading/unloading process. The yard bin is the lowest level in the hierarchical YM structure. Figure 10.6 illustrates the various areas within the yard.

You can define these yard bins using Transaction /SCWM/LS01 or by navigating to SAP EWM SAP Easy Access Menu and choosing Extended Warehouse Management • Master Data • Shipping and Receiving • Yard Management • Create Storage Bin.

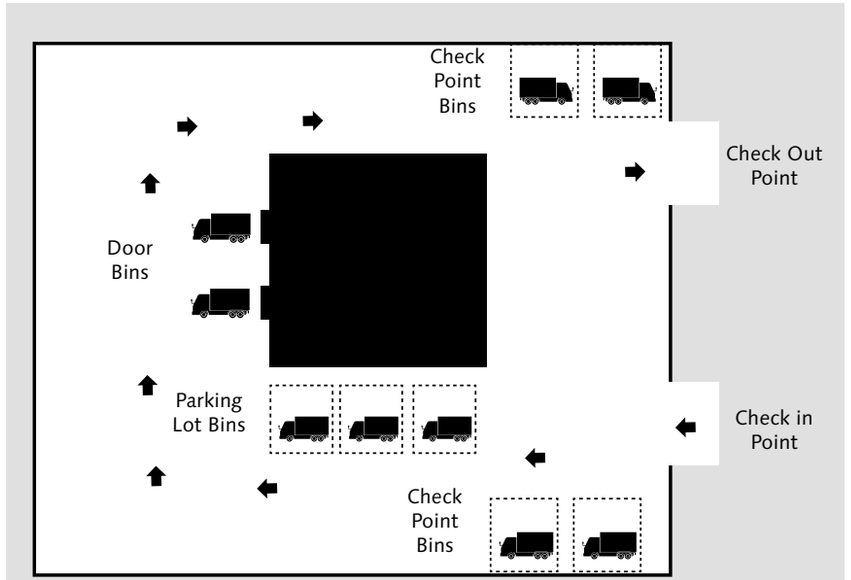

Figure 10.6 Yard with Various Bins

10.1.4 Yard Organizational Units Definition and Bin Assignments

Checkpoint and door are the organizational units used in the YM functions. These organizational units must be linked to the appropriate bin of the yard.

Checkpoint

A checkpoint is a location from where vehicles enter or exit the yard. It can either be a physical gate or a virtual gate from where the date is transmitted electronically or a goods issue or goods receipt office at the yard entrance. At the checkpoint, all the important information about the vehicle and TUs is collected. Defining checkpoints is essential for YM because these checkpoints are used to control the entry/exit from the yard and movement within the yard.

To define a checkpoint as shown in Figure 10.7, navigate to SAP EWM IMG, and choose Extended Warehouse Management • Master Data • Shipping and Receiving • Yard Management • Define Checkpoints.

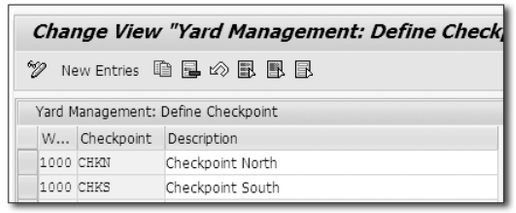

Figure 10.7 Checkpoint Definition

As shown in Figure 10.8, checkpoints can be assigned to yard bins or supply chain units (SCUs) by using Transaction /SCWM/YM_CHKPT_BIN or by navigating to SAP EWM Easy Access Menu and choosing Extended Warehouse Management • Master Data • Shipping and Receiving • Yard Management • Assign Checkpoint to Yard Bin and SCU.

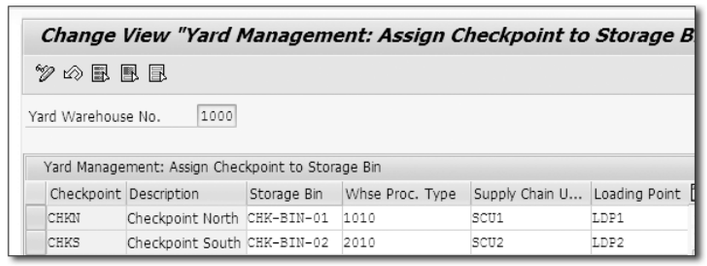

Figure 10.8 Yard Bin Assignment to Checkpoints

Door

A door connects the yard to the warehouse. Goods are issued from or received in a warehouse through a door. Loading and/or unloading of vehicles and TUs takes place at the doors. A door is an organizational unit assigned to a warehouse.

To define a door as shown in Figure 10.9, navigate to SAP EWM IMG, and choose Extended Warehouse Management • Master Data • Warehouse Door • Define Warehouse Door.

While defining a warehouse door, the loading direction can be assigned to it. The loading direction specifies the purpose for which the door is used, that is, whether it's used for unloading (inbound), loading (outbound), or both.

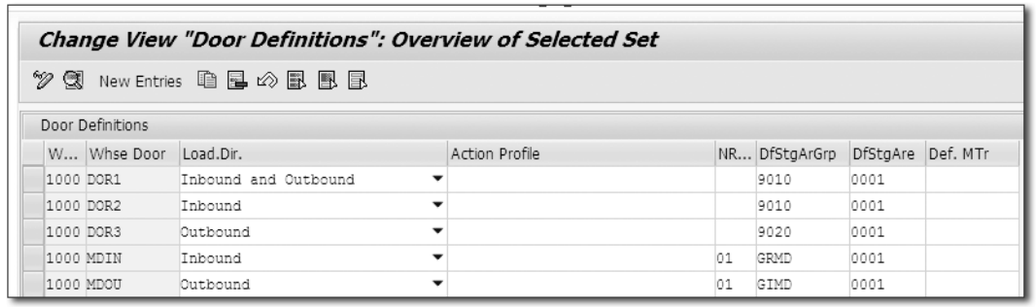

Figure 10.9 Door Definition Screen

As shown in Figure 10.10, the warehouse door can be assigned to a yard bin using Transaction /SCWM/YM_DOOR_BIN or by navigating to in the SAP EWM Easy Access menu and using the path, Extended Warehouse Management • Master Data • Shipping and receiving • Yard Management • Assign Warehouse Door to Yard Bin.

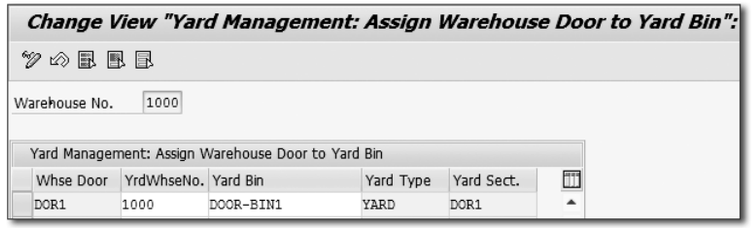

Figure 10.10 Assigning a Door to a Yard Bin

10.1.5 Transportation Unit

As mentioned earlier in the chapter, the TU is the smallest loadable unit of a vehicle that is used to transport goods. For example, a train with four wagons is said to have four TUs. The TU can be a fixed part of the vehicle. To create a TU, use Transaction /SCWM/TU, or go to SAP EWM Easy Access menu and follow the path, Extended Warehouse Management • Shipping and Receiving • Process Transportation Unit.

The same transaction is used to assign deliveries, assign handling units (HUs) or vehicles to TUs, assign doors to TUs, or read or process other information related to TUs.

When creating a TU, the following fields need to be specified:

- TU
  Each TU is assigned an external number that is used to track the TU within the yard. The number must be such that it can be traced to the physical TU.
- Carrier
  A carrier is the logistics service provider and must be defined in SAP EWM as a business partner with the carrier role.
- Standard Carrier Alpha Code (SCAC)
  This is a unique code used to identify carriers on the basis of geography.
- Means of Transport
  This is the class of vehicle used to transport a TU. Truck, for example, is a means of transport in the road mode of transport.
- Packaging Material
  For ease of handling and transportation, a certain quantity of packaged goods are held together to form a pallet, box, crate, and so on. The material used for holding together packaged goods is called packaging material. The most frequently used packaging materials are pallets, boxes, crates, wire baskets, and containers. From the TU point of view, it's necessary to define the packaging material because the capacity of the TU is determined from the packaging material it can carry.
- Route
  Route is the path that a TU will take from the start location to reach the destination location with some stops (called transshipment locations) in between.
- Shipping and Receiving (S&R) Activity direction
  For every TU, it's necessary to define whether it's for inbound or outbound delivery. The direction of transport gets assigned automatically when a TU is assigned to inbound or outbound delivery. This is important because, in some cases, it's not known whether the TU is inbound or outbound at the time of creation, hence the S&R activity direction is left undefined at the time of TU creation.

Apart from the preceding fields, the S&R activity start and end dates and times can also be specified.

It's worth noting that for TUs that regularly take goods in and out of a yard, there is no need to create a new TU every time it's used. The TUs created earlier can be

reused; in this situation, the S&R Activity number creates the unique identity along with the TU number.

10.1.6 Vehicles

A vehicle is a specialized means of transport that is made up of one or more TUs. To create a vehicle, use Transaction /SCWM/VEH, or navigate to SAP EWM Easy Access, and follow the path, Extended Warehouse Management • Shipping and Receiving • Process Vehicle.

For creating a vehicle, the following details need to be specified:

- Vehicle number
- Means of transport
- Carrier
- SCAC
- S&R activity start and end date and time

10.1.7 Check-In and Check-Out

This transaction is used to record the entry and exit of vehicles/TUs at checkpoints. To record check-in/check-out, use Transaction /SCWM/CICO, or navigate to SAP EWM Easy Access menu, and follow the path, Extended Warehouse Management • Shipping and Receiving • Yard Management • Arrival at/Departure from Checkpoint.

During check-in and check-out, if certain additional functions have to be triggered, you can use the post-processing framework. This functionality enables you to schedule certain actions and process them against the document. For example, if you want to trigger the bill of lading (BOL) at the time of check-out, you can configure the Post Processing Framework (PPF) for BOL printing.

For defining the action profile and condition in SAP EWM IMG, navigate to Extended Warehouse Management • Cross-Process Settings • Shipping and Receiving • Message Processing.

In this configuration setting, you can define the action profiles for vehicle (Transaction /SCWM/VEH), TU (Transaction /SCWM/TU), and doors (Transaction /SCWM/DOOR).

10.1.8 Functions of Yard Management

The entire yard process from the entry of a vehicle into the yard to the exit is managed using YM. In a yard, a vehicle or a TU moves from a yard bin to another for either actual loading/unloading or simply to wait for its turn for loading/unloading. Each of these movements of a vehicle or a TU in a yard, called a yard movement, is a warehouse task (WT) in SAP EWM. Thus a vehicle or a TU moving from checkpoint to parking space during entry, from parking space to door for loading/unloading, from door to parking space after loading/unloading, and from parking space to checkpoint for exit, are all called yard movements. A WT is created in the system each time a yard movement takes place.

To create a WT, use Transaction /SCWM/YMOVE, or navigate to SAP EWM Easy Access menu, and follow the path, Extended Warehouse Management • Shipping and Receiving • Yard Management • Create Warehouse Task in Yard.

10.1.9 Yard Monitoring

The activities of a yard can be monitored using the Warehouse Management Monitor screen (Figure 10.11). This is possible because a yard is assigned as a storage type to a warehouse, as described initially in this chapter, and hence it's linked to the warehouse. The monitor allows you to monitor stock in the yard, stock on TUs, availability of parking spaces, status of doors, and so on.

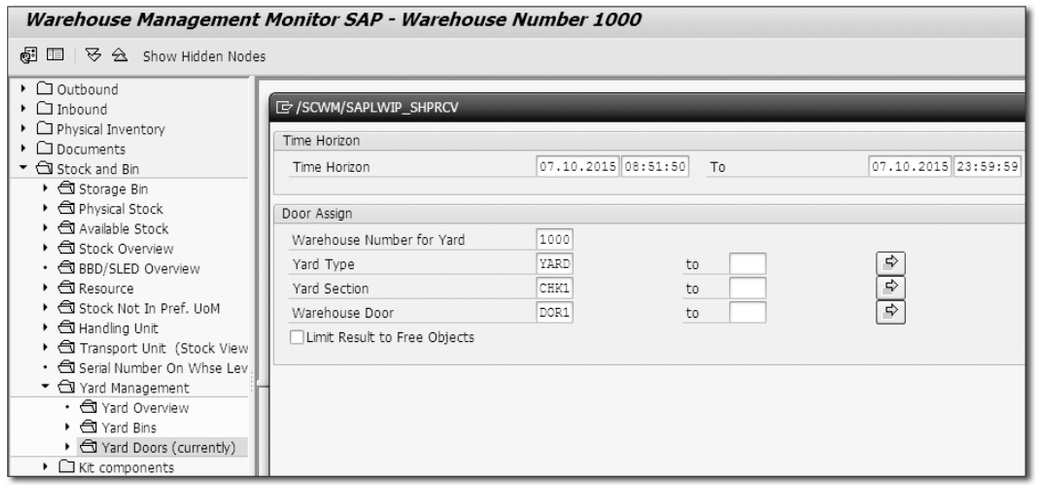

Figure 10.11 Monitoring Yard Bins from Warehouse Monitor

To monitor the yard, use Transaction /SCWM/MON, or go to SAP EWM Easy Access menu, and choose Extended Warehouse Management • Monitoring • Warehouse Management Monitor.

In the Warehouse Management Monitor screen, you can see the yard monitoring under menu path, Stock and Bin • Yard Management. Within Yard Management, it provides visibility on Yard Overview, Yard Bins, and Yard Doors. Yard Doors can give you the distinguishability on occupied doors and free doors available for docking. You can filter the selection for the required time horizon, yard warehouse, yard type, yard section, and door. You can also limit the results against the free object for quick output.

10.1.10 Yard Activity Updates in SAP ERP

SAP EWM is closely integrated with other modules of SAP ERP such as Materials Management (MM), Production Planning (PP), Sales and Distribution (SD), and so on. Any document related to goods movement that is generated in these SAP ERP modules triggers a process in SAP EWM. For example, when an inbound delivery document is generated for a purchase order in MM, a corresponding inbound delivery notification (IDN) specifying details of incoming material is generated in YM. These delivery items are then assigned to a vehicle/TU to complete the process.

This integration of SAP EWM with SAP ERP is important from an organizational perspective because information is readily available to all the concerned stakeholders. It also ensures end-to-end integration of the entire business process of an organization.

10.2 Transportation Units and Vehicles

When performing the YM functions, shipping and receiving uses TU and vehicle documents to perform the YM activities. Without these documents, you can't perform, track, and trace the YM functions.

As the smallest transportable unit of goods, the TU can be handled as a part of a vehicle or independently in the SAP EWM system. A vehicle may be comprised of one or more TUs, as shown in Figure 10.12.

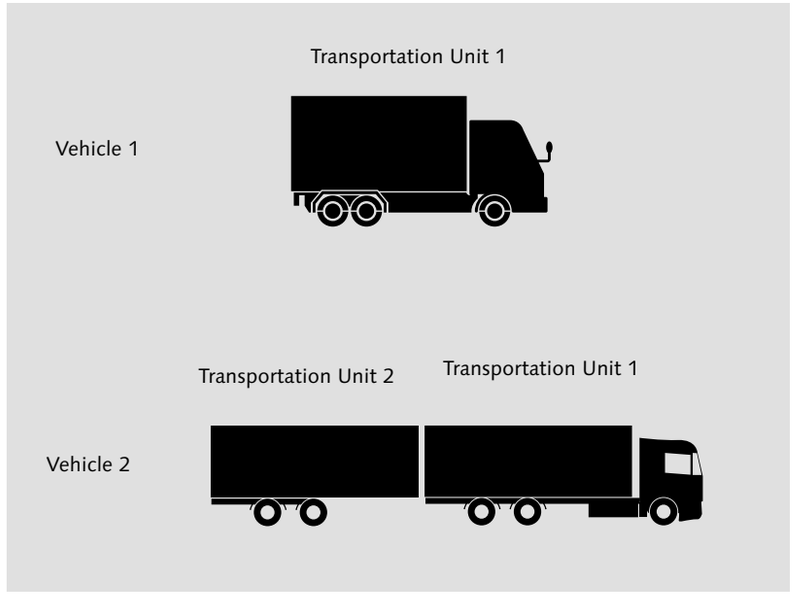

Figure 10.12 Vehicle and TU Relationship

In SAP EWM, you can work without a vehicle if the TU is sufficient for the business need. Packaging material is used to construct a TU in SAP EWM. By linking the packing material with the means of transport, you can define the construction rule in SAP EWM. For this setting, navigate to the menu path in SAP EWM Easy Access menu, and choose Extended Warehouse Management • Settings • Shipping and Receiving • Link between Packaging Material (TU) and Means of Transport. You can define the number of permitted packing materials for the means of transport (Figure 10.13).

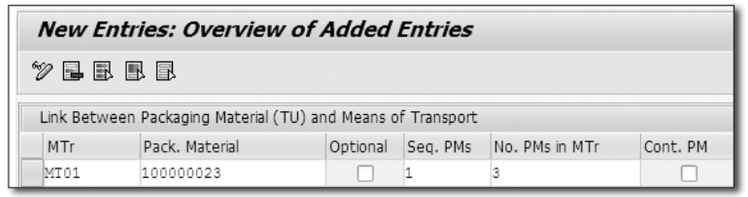

Figure 10.13 Packaging Material for Constructing a TU

When you check-in/check-out using Transaction /SCWM/CICO, you have the option of Arrival at Checkpoint or Dep. from Checkpoint. You can enter a

license plate number and driver information upon check-in. You can do the yard movement as shown in Figure 10.14 after check-in.

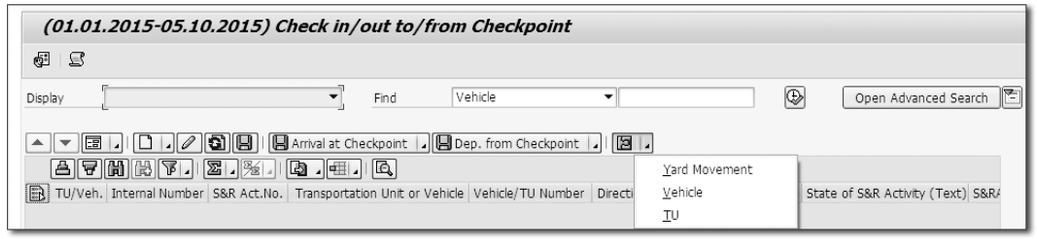

Figure 10.14 Vehicle Check-In/Check-Out

Via yard movements, you can dock to the respective door after check-in/check-out for further processing of the load. Whenever there is a yard movement, the system creates WTs for these movements. Every single yard movement is posted via WTs. BOLs are generated via vehicles in SAP EWM.

Vehicles can be created automatically via PPF, which is especially used for advanced shipping notifications (ASNs) and shipments if coming via the SAP ERP system to SAP EWM. Creation of a vehicle in SAP EWM can initiate shipment creation in the SAP ERP system as well. Creation of a vehicle from a TM freight order is also a possibility. You can specify whether the TU will be optional or obligatory. If it's obligatory, the TUs are fixed assignments to vehicles; you can't assign the obligatory TU to another vehicle.

It's important to understand the distinction between a vehicle and a TU in SAP EWM. So before we proceed to the next section, let's take a quick look at Table 10.1 to see the activities that can be performed at the vehicle level and the TU level to emphasize how they are differentiated in the system.

Functions	Vehicle	Transportation Unit
Assign deliveries	N	Y
View the assigned deliveries	Y	Y
Assign HUs, doors	N	Y
Arrive/depart from door/checkpoint	Y	Y
Create WTs for complex loading/unloading	N	Y

Table 10.1 Comparison of Functions of Vehicle and TU

Functions	Vehicle	Transportation Unit
Perform/reverse simple loading/unloading	Y	Y
Perform/reverse goods issue/receipt for assigned TUs/deliveries	Y	Y
Generate BOL	Y	N

Table 10.1 Comparison of Functions of Vehicle and TU (Cont.)

10.3 Transportation Management Linkage with SAP EWM

SAP Transportation Management (TM) aids all transportation functions in moving the product from the source to the destination location. TM is used to perform an effective transportation planning and execution, to optimize the transportation cost, and to react any eventuality and plan for alternatives. TM helps in performing the following:

- Handling forwarding orders
- Creating freight bookings
- Planning transportation
- Selecting carriers
- Tendering services
- Dispatching and monitoring the transportation
- Calculating transportation charges
- Considering foreign trade
- Regulating dangerous goods

Note

TM is a huge topic in itself. Here we're just referring to TM-specific points that are relevant for your understanding of SAP EWM.

TM provides a comprehensive solution and integrates with SAP ERP, SAP EWM, SAP Event Management (EM), SAP Global Trade Services (GTS), and SAP Customer Relationship Management (SAP CRM). In this chapter, we're providing a glimpse of integration with SAP EWM, which can happen in three ways:

- Integration based on SAP ERP shipments
- Direct integration
- Warehouse billing

Shipment-Based Integration between SAP TM and SAP EWM via SAP ERP

Outbound deliveries form the communication between TM and SAP EWM. The planning results from TM appear as shipments in SAP ERP, and this shipment document is sent to SAP EWM. The SAP ERP shipments are represented in SAP EWM as TUs. These TUs form the basis for warehouse planning and execution in SAP EWM with the associated deliveries. TU in SAP EWM sends the message back to SAP ERP and updates the shipment document. This in turn sends the respective shipment updates to TM.

Direct Integration between SAP TM and SAP EWM

The communication is based on the delivery from SAP ERP to SAP EWM and TM. In contrast to the preceding SAP ERP shipment integration, the planning results from TM are sent directly to SAP EWM. In an identical way, the execution results from SAP EWM TUs are sent directly to TM.

Warehouse Billing

This feature, introduced with SAP EWM 9.3, enables you to do the following:

- Sell warehouse services to customers and bill the customers periodically based the services used for a time period.
- Purchase warehouse services from external service providers and self-bill periodically to pay the service provider based on the warehouse services used for a time period.

You can render services to the customer and bill periodically; similarly, you can take services from the vendor for the warehouse activity and pay periodically. For this, you use agreements, charge calculations, and settlements in TM.

10.3.1 Basics

There are certain prerequisites for using TM, like maintaining the transportation mode, means of transport, and transportation group. Other basic configuration and definitions in SAP EWM are given in the following list. For these settings, go to SAP EWM IMG, and choose Extended Warehouse Management • Goods Issue Process • Transportation Management in EWM • Basics.

- **Activate Transportation Management**
  This is used to activate TM in SAP EWM.
- **Define freight code sets, freight codes, and determination**
  Freight codes are used together with freight code sets of freight forwarders and rail carriers to classify the goods that are to be transported. Freight codes are used for communication with freight forwarders and are specified in the shipping papers. Freight code sets and freight codes are used to classify the goods that are to be transported. Freight codes are used to communicate with freight forwarders. A freight code is determined in two steps. First, the freight code sets are determined based on the following criteria:
  - Transportation service provider
  - Forwarding country
  - Means of transport

  Next, a freight code is determined. Each freight code is defined for a particular freight code set. A freight code can be based on the following criteria:
  - Product freight group
  - Freight code set
- **Define product freight groups**
  Product freight group is used to classify product freight codes and freight classes. These are then used for communication with service providers.

10.3.2 SAP TM Interfaces

Interface-related configurations for TM and SAP EWM communication are defined under the interfaces in SAP EWM IMG. The Navigation Path is Extended Warehouse Management • Goods Issue Process • Transportation Management in EWM • Interfaces. The following definitions are maintained under it.

Define Transportation Planning Point

The transportation planning point is used for planning and processing transportation activities. It's an organizational unit in Logistics Execution (LE). The responsibility of planning shipments and handling freight documents rests with the transportation planning point. Consequently, one and only one transportation planning point is responsible for each shipment and freight document.

Shipment type, mode of transport, regional departments and so on are different types of transportation planning points. For example, a company has two separate groups of shipping employees who plan shipments by rail and shipment by ship. Thus, two transportation planning points are required to be defined in the system.

Assign an External Transportation Planning System to a Transportation Planning Point

When an external transportation planning system (TPS) is already in use, it can be linked to a transportation planning point using this IMG activity. By doing so, shipments planned by a transportation planning point can be sent to the external TPS where they are optimized, and a freight document is generated. This freight document is sent to the transportation planning point for further processing.

The assignment between an external TPS and a transportation planning point is unique; that is, a transportation planning point can be assigned to only one external TPS. However, an external TPS can be assigned to multiple transportation planning points.

Maintain Settings for Determining Transportation Planning Points

By maintaining settings for transportation planning points, the system can automate the process of assigning a transportation planning point on the basis of shipment data. Determination of Planning Point is based on Location ID, Mode of Transportation, Shipping Condition, and Transportation Priority.

10.3.3 Maintain Shipments

In this IMG activity, you define the shipment-related configurations. Go to the SAP EWM IMG, and choose Extended Warehouse Management • Goods Issue Process • Transportation Management in EWM • Shipments.

Define Shipment Type

All the important control parameters for a shipment document are contained in the shipment type:

- Planned shipment/final shipment
- Number ranges
- Document data, for example, status profile, transportation mode, means of transport, transit direction, and an indicator for specifying whether the user interface (UI) changes to the document are allowed
- Archiving settings
- Indicator for change documents

Define Number Range for Shipments

Whenever a shipment is created in the system, a unique number is assigned to it. This number can either be system generated or can be manually assigned. In this IMG activity, the number range for this unique number can be defined.

Define Number Range for External Bill of Lading Numbers

When a BOL is created, a unique number is assigned to it. An external number can be generated in addition to the internal number. The number range for this unique number can be defined in this IMG activity.

Maintain Settings for Determination of Shipment Types

This activity is used to link various shipment documents by defining predecessor shipment types and successor shipment types. By doing so, when a shipment or a BOL is created automatically, the shipment type gets determined automatically.

10.3.4 Maintain Freight Documents

In this IMG activity, you maintain the freight document-related settings. Go to SAP EWM IMG, and choose Extended Warehouse Management • Goods Issue Process • Transportation Management in EWM • Freight Documents.

Define Freight Document Type

Similar to a shipment type, the freight document type contains all the important control parameters for a freight document. The number range and archiving settings need to be defined here (Figure 10.15).

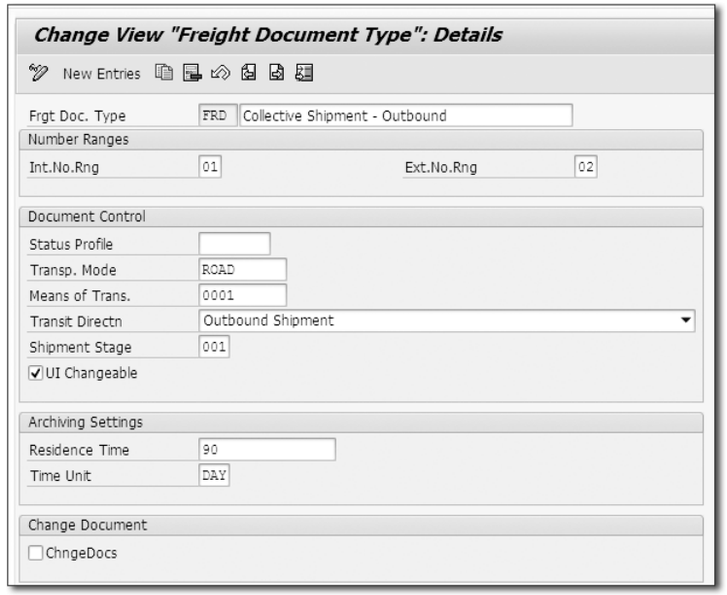

Figure 10.15 Freight Document Type Definition

The other important control parameters are listed here:

- Status Profile
  This is part of a cross-application component with which the user statuses can be defined. In the context of a freight document, defining the status profile means defining the authorization rules for processing a freight document.
- Transp. Mode
  This indicates how a product is transported—by air, rail, or road.

- Means of Trans.
  This indicates the class of vehicle used to transport a product. For example, a truck is a class of vehicle for road as a mode of transport.
- Transit Directn
  This specifies whether the movement of goods is inbound or outbound.
- Shipment Stage
  This is used to specify whether a shipment or freight document is linked to other shipments or freight documents. For example, preliminary leg, main leg, and inland transportation are shipment stages.
- UI Changeable
  By checking this indicator, manual changes are permitted for certain documents.

Define Number Range for Freight Documents

Just as a unique number is generated for a shipment document, a unique number is also generated for a freight document. The number range for this unique number can be defined in this IMG activity.

Maintain Settings for Determining Freight Document Type

By maintaining settings for freight document type, when a freight document is automatically generated, a freight document type is automatically determined by the system based on transportation mode, means of transport, stage code, and transit direction.

10.4 Staging Area and Door Determination (Inbound/Outbound)

In a warehouse, for various reasons, goods need to be stored in an intermediate place before they go to the destination. A staging area is used for such interim storage of goods. For example, in a goods issue process, goods might be required to be kept in a staging area before they are picked for delivery. A staging area is an organizational unit assigned to a warehouse number in a defined hierarchy. A door, on the other hand, is a point where goods enter or leave the warehouse. A door is also an organizational unit assigned to a warehouse. In

staging area and door determination, rules are used to determine the following values:

- Staging area groups (storage type)
- Staging areas (storage section)
- Staging bays (storage bin)
- Doors

These values are required for storage control. This process runs automatically in the background when a delivery is created or changed. This transaction is used to define the determination rules for the listed values. You may use Transaction /SCWM/STADET_IN, or go to SAP EWM Easy Access, and choose Extended Warehouse Management • Settings • Shipping and Receiving • Staging Area and Door Determination (Inbound) (Figure 10.16).

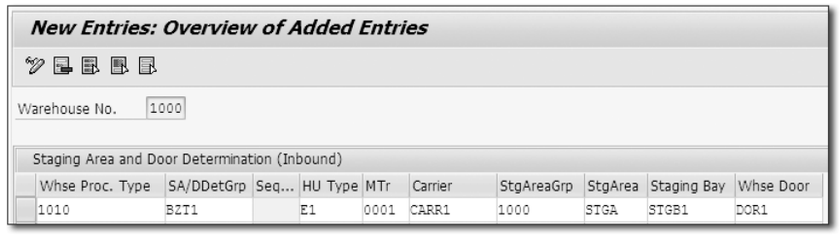

Figure 10.16 Staging Area and Door Determination Table in Inbound

The key fields which need to be populated in screen seen in Figure 10.16 are as follows:

- **Warehouse process type**
  In this field (Whse Proc. Type), you need to define the type of warehouse processes such as goods issue, goods receipt, repacking, and so on. This information is useful during creation of a WT.
- **Staging area/door determination group**
  To differentiate between requirements during loading and unloading at a door or staging area, the staging area/door determination groups are used.
- **Sequence**
  This is a numerical value indicating the order of an object in a specific context. For example, a product may have multiple stops in between the source and the destination in a transportation process.

- **Handling unit type**
  Each type of HU has different requirements for handling during the transportation process, so it's necessary to define the type of HU, such as 1m height pallet, 2m height pallet, and so on.
- **Means of transport**
  The class of vehicle is specified here as truck, rail, airplane, and so on.
- **Carrier**
  Carrier is the logistics service provider defined as a business partner with the carrier role.
- **Staging area group**
  Multiple staging areas can be grouped into a staging area group. A staging area group corresponds to a storage type, whereas a staging area corresponds to a storage section.
- **Staging bay**
  Part of the staging area that allows a correct loading or unloading sequence.

Similarly, for Staging Area and Door Determination (Outbound) as shown in Figure 10.17, use Transaction /SCWM/STADET_OUT, or go to SAP EWM Easy Access, and choose Extended Warehouse Management • Settings • Shipping and Receiving • Staging Area and Door Determination (Outbound).

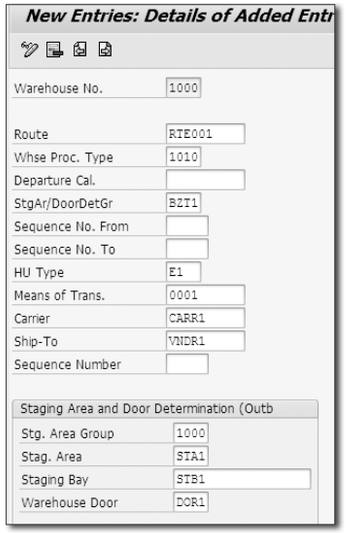

Figure 10.17 Staging Area and Door Determination Table (Outbound)

For the Staging Area and Door Determination (Outbound) section, in addition to the fields described in the preceding list, route, ship-to party details, and departure calendar can also be specified. Routes, which are maintained in TM, can be specified here. The ship-to-party details are fetched from the parties maintained as partners in the system. The departure calendar provides the scheduled departure date for shipment.

10.5 Transit Warehousing

This feature, released with SAP EWM 9.3, enables you to integrate warehouse execution with freight forwarding operations using SAP EWM and TM.

In Transit Warehousing, you receive cargo from shippers based on inbound planning performed in TM. You consolidate cargo with the same destination in your transit warehouse. Then you ship it to the next location in the transportation chain or to the final consignee, based on outbound planning performed in TM.

As cargo received from numerous shippers in a transit warehouse is variable, you don't manage product master data for it. Instead, you manage cargo as HUs and keep cargo information directly in the documents used in the warehouse.

The transit warehouse is structured so that you put away HUs with the same destination country or region in the same storage bin. This means that they are available for shipment to the next location or to the consignee.

HUs with special attributes, such as dangerous goods or high-value cargo, are put away separately.

With the next outbound plan sent by TM, you either load the HUs directly from the staging area used for putaway, or you stage the HUs before loading them onto a vehicle.

During these processes, SAP EWM keeps TM informed about the major steps performed in the transit warehouse, such as arrival at checkpoint, departure from checkpoint, and receiving or loading completion.

The following are the main processes involved in transit warehousing:

- Receive cargo from shippers
- Ship cargo to transit warehouse or consignee

- Receive cargo from the transit warehouse
- Load cargo onto a unit load device (ULD), ready for air freight
- Ship the ULD to the airport
- Receive and unload cargo from the ULD
- Load cargo into a shipping container, ready for ocean freight
- Ship the shipping container to the seaport
- Receive and unload cargo from a shipping container

The following are the main exceptions that Transit Warehousing can handle during the processes:

- Receive unexpected package or HU
- Receive damaged package or HU
- Missing package or HU
- Perform floor check and process found HUs
- Perform floor check for lost HUs
- Load fewer HUs than planned by TM

You can use an HU stock list to perform floor checks, monitor clarification zones, and query specific HUs.

☑ **Note**

To implement Transit Warehousing, the mandatory components are SAP ERP 6.0 EHP 7, SAP EWM 9.3, and SAP TM 9.3.

10.6 Summary

In this chapter, we detailed the YM and TM functionalities available in SAP EWM and described the organizational elements and structure of a yard. Vehicle and TU documents and their functions were also discussed, which is important for smooth functioning of a warehouse in coordination with the yard.

Takeaways ☑

- YM forms an important function in shipping and receiving material in SAP EWM.
- By default, YM isn't active in SAP EWM and has to be activated manually.
- Smallest transportable unit of goods is called a TU.
- The Transit Warehousing functionality, released with SAP EWM 9.3, enables you to integrate warehouse execution with freight forwarding operations using SAP EWM and TM.

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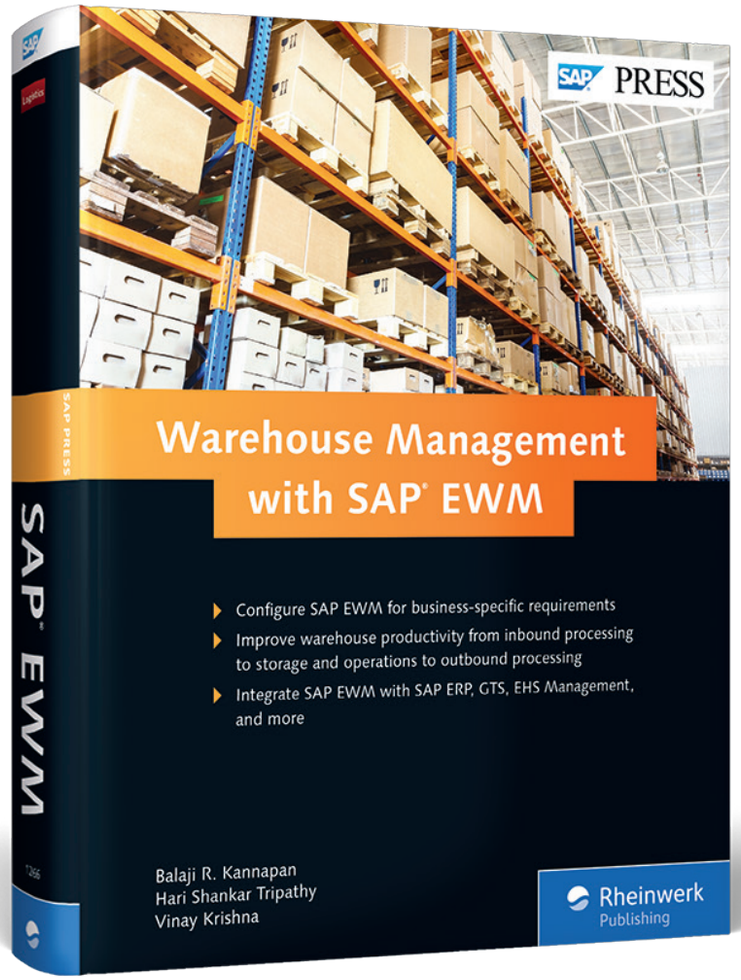

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