

Embedded EWM S/4HANA

Basic vs. Advanced

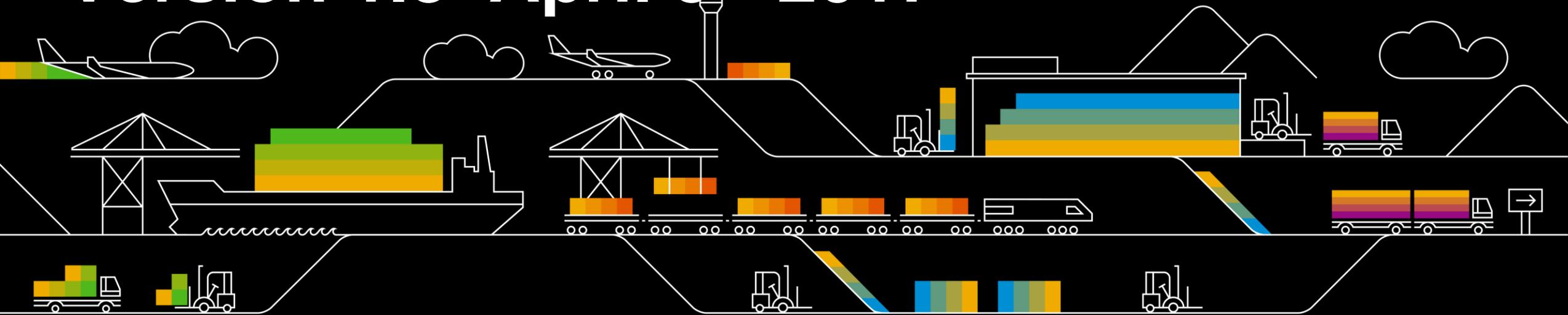
June 2017

CUSTOMER

Basic Principles - Pricing of EWM S/4HANA

- Price EWM in S/4 only when customer uses “advanced” features
- List of “advanced” features
 - Material Flow System (MFS)
 - Wave Management
 - Transportation units / Yard Management
 - Labor Management
 - Value Added Services (VAS)
 - Warehouse Billing
 - Kitting
 - Dock Appointment Scheduling (DAS)
 - Slotting
 - Cartonization planning
 - TM Integration
- Customer to set switch “advanced features usage” on warehouse number level
- **audit report** to check whether system usage complies with actual setting
- Make use of **same pricing metric** as for classic EWM (bundle of 5.000 delivery items)

Warehousing in SAP S/4HANA 1610 - Feature Scope Description Version 1.8 April 5th 2017



Included in license of
S/4HANA Enterprise
Management

Basic Warehouse Management

Basic warehouse management provides support with and real-time transparency into managing and processing material movements flexibly for optimized warehouse operations.

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Basic Key Feature: Warehouse Structure

Basic warehouse management supports you from the very beginning, starting with structuring your warehouse, as follows:

- You define the physical structure of your warehouse or warehouse complex and map this in the system.
- You define the individual storage types, such as high-rack storage area, bulk storage area, or picking storage area, and join them together under one warehouse number.
- You create storage bins for each storage type. Basic warehouse management uses these to manage stock information about all products in the warehouse, at storage bin level.

Basic Key Feature: Inventory Management

You can map your entire warehouse complex in detail in the system, down to storage bin level. This gives you an overview of the total quantity of each product in the warehouse. You can also always see exactly where a specific product is, at any time, in your warehouse complex. You can manage the product quantities in different stock categories on the following levels:

- At storage bin level
- In intermediate locations
- On resources
- In handling units
- In nested handling units

You can also store and manage the following kinds of product in your warehouse:

- Batch-managed products
- Products with serial numbers
- Catch weight products

You can also manage the following special stock in your warehouse:

- Vendor consignment stock
- Project stock
- Customer order stock

Basic Key Feature: Handling Units

A handling unit is a physical unit consisting of packaging materials (load carriers or packing material) and the goods contained in it. A handling unit is always a combination of products and packaging materials. All the information contained in the product items, for example, about batches, is retained in the handling units and is always available. Handling units can be nested, and you can create a new handling unit from several other handling units. A handling unit has a unique, scannable identification number that you can construct according to industry standards such as EAN 128 or SSCC

Basic Key Feature: Inbound Processing

You can receive products from the following sources:

- Vendors
- Production
- Other parts of your company
- Customer returns

You can create and confirm multi-step putaway tasks for the putaway of the products, including the following steps:

- Unloading
- Counting
- Deconsolidation
- Final putaway

You can schedule putaway activities in one of the following ways:

- Automatically during inbound deliveries
- Regularly at specific times
- Manually, using overviews of the daily loads

You can optimize your warehouse capacity and material flow by using putaway strategies. These simplify the search for appropriate storage bins for your incoming products by automatically determining suitable storage bins for the new products. Note that many of these strategies are based on the use of handling units.

Basic Key Feature: Outbound Processing

You can pick products and send them out of your warehouse for the following scenarios:

- Send ordered products to external customers
- Supply products to production
- Return products to vendors
- Supply products to internal consumers, for example, a cost center

You can create and confirm goods issue documents for the delivered products. You can optimize your warehouse capacity and material flow by using stock removal strategies. These simplify the physical process of picking by determining the optimal picking bin for the product.

You can gather warehouse tasks and enable mobile execution and confirmation using radio frequency (RF) transactions. This allows warehouse workers to perform their tasks with greater efficiency and communicate statuses faster, using mobile RF devices.

Basic Key Feature: Physical Inventory

You can plan, conduct and confirm regular counts of actual product quantities in the warehouse and compare the physical stock to the data in the system. Following the count, you can update the accounting data for the stock in the case of differences between the quantity of physical stock and the quantity in the system.

This counting can be performed in the following ways:

- Annual inventory

You record all stocks on a certain day or within a fairly short period (in most cases at the end of the fiscal year). During this time, you can prohibit stock movements.

- Ad-hoc physical inventory

You carry out inventory-taking for certain storage bins or products. You can do this at any time during the fiscal year. For example, an ad hoc physical inventory may become necessary because a product has been damaged or because you have received complaints from a customer about a product.

Basic Key Feature: Physical Inventory continued

- Continuous inventory

You use cycle counting to carry out a physical inventory of your stocks at regular intervals during a fiscal year.

You can specify the intervals or cycles at which you are going to carry out the physical inventory for specific products by allocating these products to different classes. For example, this allows you to inventory fast-moving products in your warehouse more frequently than slow-moving ones.

- Low-stock or zero-stock checks

You can perform low-stock checks during the picking process, based on a limit value for the storage bin and product (usually a number that is easy to check at a glance). During the physical removal of stock from storage, you check whether the storage bin data reflects the actual stock situation. If the limit is set to zero, it is a zero-stock check.

You can trigger a low-stock check manually or the system can trigger it automatically when the stock in the bin falls below the limit.

Basic Key Feature: Physical Inventory continued

- Putaway physical inventory

You can carry out physical inventory for a storage bin at the time of the first putaway in this bin in the fiscal year. During the current fiscal year, no further physical inventory is performed for this storage bin, even if a completely different quant is stored there at the end of the year, or if the bin is empty.

- Recounting

Note! Basic warehouse management does not support sample-based physical inventory. An interface for integration to a partner solution is available.

Basic Key Feature: Reporting

You can use the warehouse management monitor to keep constantly up-to-date as to the current situation in the warehouse, and to initiate appropriate responses to situations that arise. The warehouse management monitor gives you full transparency about the following attributes of your warehouse:

- Warehouse activities
- Stock and bins
- Resources
- Planned movements
- Executed movements
- Inbound deliveries
- Outbound deliveries

The warehouse management monitor also contains alert monitoring capabilities, which highlight actual and potential problematic situations in the warehouse, and provides exception handling tools.

Basic Key Feature: Resource Management

A resource is an entity representing a user or equipment that can perform work in the warehouse.

You can use resource management to maximize the efficiency of your warehouse processes in the following ways:

- Facilitate the management and distribution of work
- Optimize the selection of warehouse orders for resources requesting work This enables effective monitoring and controlling of resources.

Basic Key Feature: Quality Management

You can check whether delivered products and packaging materials satisfy your quality criteria as part of the inbound process.

Basic warehouse management is integrated into Quality Management in Manufacturing using inspection lots of origin 17.

You use inspection rules to determine whether a delivery item is inspection-relevant and to specify the details of the inspection, for example, inspection type, location-independent stock type, or process step performed in the warehouse.

Basic Key Feature: Production Integration

You can integrate the supply of products to production and the receipt of products from production into your warehouse. You can also return unused and unneeded parts back into stock in your warehouse.

Delivery-Based Production Supply

With delivery-based production supply, you can supply products to production based on the following order strategies:

- Production Orders
- Process Orders
- Kanban

You can stage the products required for a production or process order in the following ways:

- The required products are pick parts in the case of individual orders, or release order parts in the case of multiple orders, which you stage in time and in the required quantity based on a production or process order.
- The required products are products that you use continually, which you stage independently of existing orders.
- The required products are materials stored in a crate or container, which you stage independently of

Basic Key Feature: Production Integration continued

- The required products are materials stored in a crate or container, which you stage independently of manufacturing orders using the special method Kanban.

Advanced Production Integration

Advanced production integration optimizes the supply and receipt of products in the following ways:

- You can plan the staging of products for production over a period of time, allowing you to use the space on your production supply area more flexibly.
- You can receive packed products as soon as they arrive from the production line using radio frequency. This allows you to synchronize the material flows between the warehouse and production promptly, and improves inventory visibility.

Advanced production integration is integrated with the manufacturing order processing. It allows you to stage and consume the materials and receive the semi-finished products or finished products in basic warehouse management. You can use advanced production integration for production orders in discrete manufacturing or for process orders in process manufacturing.

Requires additional
license in addition to
S/4HANA Enterprise
Management

Advanced Warehouse Management

Advanced warehouse management provides tools for managing and processing material movements flexibly, to optimize more complex warehouse processes.

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Advanced Key Feature: Inventory Management Optimization

You can optimize the management of product quantities in different stock categories, for example, by using slotting functions to assign the best bin type for a product that is to be put away, based on product characteristics.

During slotting, advanced warehouse management automatically determines a storage concept for a product, based on underlying putaway storage parameters on the basis of master data. These parameters describe the following:

- The storage section in which the product is to be stored
- The properties that the storage bin is to have
- The putaway strategy that is to be used

Advanced Key Feature: Inbound Process Optimization

You can optimize the process of receiving products and putting them away in the warehouse, for example, by planning several inbound deliveries that are arriving in the same transport.

You use transportation units or vehicles to group the deliveries, and perform the warehouse activities for all of the inbound deliveries in the transportation unit or vehicle at the same time.

Advanced Key Feature: Outbound Process Optimization

You can optimize the process of picking products and sending them out of the warehouse, for example, by combining or splitting items from the outbound warehouse requests in waves.

You can combine or split items into waves, on the basis of criteria such as activity area, route, or product.

You can set up wave templates that use the same wave attributes for warehouse request items that fulfil the stated conditions of the template.

Advanced warehouse management can create waves automatically based on wave templates and data in the warehouse request.

You can set advanced warehouse management up to automatically release and re-release waves

Advanced Key Feature: Material Flow Control

You can run and control automated warehouse equipment, as follows:

- Communicate with programmable logic controllers (PLCs) via telegrams to trigger movements and receive status updates
- Subdivide warehouse tasks into smaller tasks and send the tasks to the PLC in step-by-step fashion
- Use an enhanced putaway strategy and stock removal strategy that considers physics and limitations
- Define capacity limits for communication points, conveyor segments, or resources
- Track, evaluate and influence the process of the material flow system
- Monitor the communication between the material flow system and the programmable logic
- Call up logs for exceptions using the alert monitor and link these exceptions with follow-on actions

The material flow system includes the following features:

- Automatic identification of HUs using scanners on the automatic storage retrieval facility
- Automatic diversion of HUs that cannot be stored
- Fully automatic putaway of HUs in the storage bin using any number of interim steps
- Malfunctions reported by the controls taken into account
- Reduction in empty traveling paths for stacker cranes through interleaving
- Goods to man picking principle

Advanced Key Feature: Yard Management

The yard is where you maintain vehicles and transportation units that arrive or depart from your warehouse.

You can use yard management to move transportation units from one yard bin to another inside a yard.

Possible types of yard movement are as follows:

- The transportation unit arrives at the checkpoint and is moved to a parking space or to the door.
- You move a transportation unit from a parking space to the door, or from the door to a parking space.
- You move a transportation unit in the yard from one parking space to another, or from one door to another.

Advanced Key Feature: Labor Management

You can plan labor times and resources in your warehouse, by measuring, planning, simulating, and visualizing the activities in your warehouse.

You can compare and evaluate the performance of your warehouse employees based on engineered labor standards.

After the work has been performed, you can compare the planned and actual times, and trigger incentives such as bonus payments using the HR system.

You can use short-term operational planning to define calculated planning goals, based on the workload, employees in the warehouse, and the calculated measurement service.

Advanced Key Feature: Value Added Services

You can perform and document value-added services in the warehouse, such as assembling products, packing products, labeling, or kitting.

You can perform value-added services in the inbound and outbound delivery processes.

Advanced Key Feature: Kitting

You can create kits in kit to order or kit to stock processes. The following rules apply to the kit to order process:

- A kit is always delivered in full to a customer.
- The kit header and the kit components are always scheduled for the same date.
- All components of a kit must come from the same warehouse.
- The kit header and kit component have a quantity ratio – defined by the kit structure – to each other. This quantity ratio is recalculated as soon as there are changes at kit header level or at kit component level.

In the kit to stock process, the following applies:

- You can trigger kit creation manually or using a value-added service order.
- You can perform reverse kitting to split up a kit back into its components

Advanced Key Feature: Cross-Docking

You can create and confirm tasks to transport products or handling units from goods receipt to goods issue without putaway occurring in between. Using crossdocking enables you to fulfil urgent sales orders, or to reduce processing and storage costs.

You can perform cross-docking in the following ways:

- **Opportunistic cross-docking** Advanced warehouse management can determine the cross-docking relevance of the products after they have physically arrived in the warehouse
- **Merchandise distribution** Advanced warehouse management receives inbound and outbound delivery documents from the system which contain the merchandise distribution process methods and the purchase order item. For the inbound delivery, advanced warehouse management first considers all outbound deliveries that have the same reference number. In addition, advanced warehouse management uses the merchandise distribution process to determine the warehouse process type, and to perform the merchandise distribution crossdocking according to Customizing.

Advanced Key Feature: Warehouse Billing

Warehouse billing allows you to perform the following activities:

- Record the quantity of warehouse services used for services agreed upon in an agreement in a connected SAP Transportation Management (SAP TM) system.
- Send this quantity information back to the SAP TM system for charge calculation and settlement based on the charges you have agreed to in the agreement.

Advanced Key Feature: Cartonization Planning

You can use cartonization planning to improve the creation of shipping handling units (HUs) based on information from product master data and outbound delivery orders, such as quantities, volume, and weight.

Cartonization planning results in the creation of planned shipping handling units (PSHUs) that you can use as templates for creating shipping HUs during picking or packing.

You can create PSHUs manually or automatically in cartonization planning. You can create nested PSHUs for cartonization planning of deliveries where HUs are packed into larger HUs.

Advanced Key Feature: SAP Dock Appointment Scheduling

You can plan vehicle arrivals in your warehouses efficiently, and collaborate with the parties involved in an appointment.

- **Planning for the Warehouse** Planning of vehicle arrivals at the warehouse, and loading and unloading of the vehicles, is important for managing the efficient running of the warehouse, and for balancing the workload across the working day. You can use SAP Dock Appointment Scheduling to schedule loading appointments for loading and unloading vehicles and to get an overview of the workload of a loading point for each day.
- **Planning for the Carrier** For a carrier, planning is important to reduce the amount of time when the vehicles are not available for use, for example, if they are waiting to be unloaded. Carriers with access to the system can plan loading appointments for their own vehicles directly in the system, and update details of their loading appointments.

Advanced Key Feature: Shipping and Receiving

You can use shipping and receiving to manage the following aspects of your warehouse:

- Usage of vehicle and transportation units (TUs) for managing the transports to or from your warehouse
- Loading and unloading, including arriving at and departing from doors
- Yard management

You can use the shipping cockpit to perform the following activities:

- Plan TUs for a given day You can plan the TUs and assign warehouse management outbound deliveries to them.
- Perform and monitor outbound deliveries using TUs With the shipping cockpit, you can monitor the status of deliveries assigned to a TU and trigger related actions for the TU or the deliveries.

Advanced Key Feature: Transit Warehousing

You can use transit warehousing when you are receiving or shipping cargo as part of a longer transportation chain. The cargo is not destined for your warehouse and you do not unpack or put it away in your warehouse as stock. Instead, you receive cargo and store it until it is required for transportation to the next stop in the transportation chain.

The transportation of the cargo is planned in a connected SAP Transportation Management (SAP TM) system, and the plan is transferred to advanced warehouse management. The warehouse processes are performed in advanced warehouse management and the results are sent back to SAP TM.

Thank you.