SAP Extended Warehouse Management

How-To Guide

How to Use PPF in SAP EWM

Applicable Releases:

SAP Extended Warehouse Management 9.0 and higher

Version 1.0

March 2013

Document History

Document Version	Description
1.0	First official release of this guide

Typographic Conventions

Type Style	Description
Example Text	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation
Example text	Emphasized words or phrases in body text, graphic titles, and table titles
`Example text`	File and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
`Example text`	User entry texts. These are words or characters that you enter in the system exactly as they appear in the documentation.
`<Example text>`	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
`EXAMPLE TEXT`	Keys on the keyboard, for example, `F2` or `ENTER`.

Icons

Icon	Description
	Caution
	Important
	Note
	Recommendation or Tip
	Example

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1. Introduction

This document gives an overview of the usage of the Post Processing Framework (PPF) in SAP Extended Warehouse Management (SAP EWM). The intention is to give consultants and power users sufficient insight into the PPF to configure processes in SAP EWM

The PPF is a tool for the generic execution of functions and processes. SAP EWM uses the PPF for the following purposes:

- Printing
- Communication to other systems like SAP ERP or GTS
- Sending XI messages
- Asynchronous updates between business objects within SAP EWM
- Execution of loosely coupled actions into the business process with the goal of having a separate application log
- Generic option to enable customer extensions of SAP EWM processes, especially for asynchronous processes, printing and workflow

This document describes the basics of the PPF and how you can configure the scheduling conditions for SAP-defined actions.

Usually, you will not need to make any changes in the SAP-defined PPF configuration. Nevertheless, this document describes some options for small changes and the impact of some settings that are sometimes changed in implementation projects.

After reading this document, you will be able to do the following:

- Choose a suitable action profile for your business process where the action profile is configurable
- Configure action determination or scheduling
- Make small modifications for an SAP-defined action, like activating or deactivating an action
- Identify actions to provide a list of actions that need monitoring for your administrator

The document does not provide information about development of customer-defined PPF actions or action profiles. You can find this kind of information in the PPF application help and in the SAP Community Network.

2. Prerequisites

This document gives a general overview of the usage of the Post Processing Framework (PPF) in SAP Extended Warehouse Management (SAP EWM). The general explanations are valid for all releases. The examples and detailed descriptions are available with SAP EWM 9.0 or higher unless mentioned otherwise in the respective chapter.

To understand this document, you should be familiar with the SAP EWM business objects and processes in general and have some experience in customizing SAP EWM.

You can find additional information in the following places:

- SAP Library: Post Processing Framework (BC-SRV-GBT) (PPF)
- SAP Community Network: Modeling Guide for Post Processing Framework (PPF) (Article)

3. Background Information PPF

The Post Processing Framework (PPF) provides SAP applications such as SAP Extended Warehouse Management (SAP EWM) with a uniform interface for the condition-dependent generation of actions,

for example, printing delivery notes, or sending messages or faxes. The actions are generated if specific conditions occur for an application document. They are then processed either directly or later.

The PPF is part of the SAP Web Application Server. It is the successor to Message Control and offers a wider functional scope and greater flexibility.

This chapter gives you an overview of the PPF terminology and objects and some hints concerning the PPF in the software lifecycle.

3.1 Structure of the PPF

For this document, you need to know about the following parts of the PPF:

Action Profile

An action profile contains several action definitions, and the settings for all the action definitions in the profile. In SAP EWM, the action profile that is used by the application is either hard-coded or determined via SAP EWM-owned customizing (for example deliveries, see chapter 4.1.1).

There are also profiles known as common profiles. Common profiles contain reusable actions. If you want to use a customer-defined action profile, you can use SAP-provided common profiles. The chapters about PPF usage for specific areas of SAP EWM give you some information about the common profiles available.

Action Definition

The action definition describes the content of an action. It is a function or a process that is scheduled for an application document under specific conditions and is started either immediately or later. An action can be performed in the background by the system, or by a user. The execution can either be started directly after the scheduling of the action or later.

A scheduled action is initially only a management record. The processing generates the desired output format, such as print or fax, or executes some program logic. The types with which the actions of this action definition can be processed, for example, print a smart form, are assigned to the action definition.

An action definition also contains the valid processing times for an action.

Processing Time

The processing of an action can take place at different times. It can be started as soon as an action is scheduled. However, it is also possible for the action to be only scheduled initially. Processing can then be started later.

The PPF framework offers the following processing times:

- Immediate processing
- Processing when saving document
- Processing using selection report

Immediate processing means that the action is executed just after scheduling. When you choose this option, the system executes the action before it continues with processing the current transaction.

You need to choose this processing time to execute an action upon the deletion of a document because only at this time is all data still available.

> ⚠️ **CAUTION**
>
> Immediate processing means that first the action is executed then the program continues.
>
> For example, in the case of printing, this means that the system creates the spool request and the user has to wait until the spool request creation is finished. In addition, the program could detect a situation where it decides that it cannot save the document. As a consequence there could be a printout but no document.

Processing when saving the document means that the action execution starts immediately after saving the document. From the technical point of view this is after the COMMIT statement.

⬆ **Recommendation**

When you want something to happen immediately from a business perspective or user perspective, but asynchronously so that the user does not have to wait for the system to finish the task, this is usually the execution time you need.

➡ **Example**

In the case of printing a delivery note, the system saves the outbound delivery, and prints the delivery note immediately afterwards.

⚠ **CAUTION**

Processing using selection report means that the action is not executed unless you start transaction Process Actions (`SPPFP`) manually or schedule this report regularly. For the selection conditions, see the application help of the report and the field help for the selection fields.

When you use actions that change the delivery data, you can face locking issues under the following conditions:

- Your action profile contains more than one action that changes the delivery document
- The scheduling conditions for these actions are valid at the same time
- The actions are configured for the same processing time, which is any other processing time than *Immediate Processing*

In these cases the actions will start at the same time and one action will lock the document, while the other fails because the document is locked.

If your configuration contains such actions and configurations, you can use the descriptions in SAP Note 1599301 to serialize the actions.

Action Determination or Scheduling

The determination checks whether the conditions for scheduling the actions are valid. SAP EWM uses the scheduling called Business Add-Ins `EVAL_SCHEDCOND_PPF` in the documentation of the PPF framework. That means the action determination or scheduling condition is done according to logic defined by SAP EWM application development. The following chapters provide information about the actual logic for the action determination for the respective actions.

3.2   Support Packages and Upgrade

You can find the definition of action profiles and scheduling conditions in Customizing for *Extended Warehouse Management*. If you want to change the settings provided by SAP, you should be aware that the settings are stored in a control table where SAP and customers have separate namespace (delivery class E). When SAP delivers a new version of an entry, your changes will be overwritten. After a release upgrade, you need to implement your changes again.

SAP avoids shipping changes of existing PPF settings for SAP EWM in support packages. Nevertheless, it might become necessary to make such a correction. So you need to check your settings after implementing a support package.

In general, simple changes of SAP-defined actions are sometimes recommended by SAP (and in this document). For example, SAP recommends some changes, like selecting or deselcting the *Inactive* checkbox for an action for performance reasons.

However, you should never change critical fields of SAP actions, such as the allowed processing time (see above).

3.3 Monitoring PPF

Using transaction Process Actions (**SPPFP**), you can not only process actions but also check their execution.

On the selection screen enter the application. The application names used in SAP EWM are as follows:

- `/SCDL/DELIVERY` for all delivery-related actions
- `/SCWM/SHP_RCV` for transportation units, vehicles, and doors
- `/SCWM/WME` for core processes like warehouse orders, physical inventory, handling units, or value added services
- `/SCTM/FOM` for transportation management in SAP EWM

If you want to select actions for a specific subset, you can also enter the action profile or the application key. This would be the delivery number or TU number, or the warehouse number, plus the number of the handling unit or warehouse order number.

If you want to see failed actions, you select actions with status *Incorrectly Processed* (2) and choose the *Non-Repeated Actions* radio button.

✏️ Note

When you repeat a failed action, the system copies the original actions and processes the copy. The failed action remains with the red status and the system sets the status *Changed*, *Repeated* and *Manual*. So the red entry remains. If you want to see only the failed entries that might still be relevant, use the selection as described above.

In addition you can also check the application logs directly in transaction *Analyze Application Log* (**SLG1**). Use object **PPF** and subobject **PROCESSING** to select the logs.

⬆️ Tip

For the production environment, you can either continue to use **SPPFP** to check for failed PPF actions, or you can use the respective transactions, for example, **/SCWM/MON**, to monitor the business objects via business related selection criteria.

3.4 Archiving

You can use report **RSPPFCLEAN** to delete PPF actions that are no longer required before the actual archiving of the respective business objects.

For the applications logs that are written by the PPF framework, see the *Applications Operations Guide* for your version of SAP EWM.

4. Delivery Processing

The scope of this document is SAP EWM 9.0 and higher. However, most of the mentioned actions are also available on lower versions (SAP EWM 7.0 Including Enhancement Package 01, Support Package 04 or higher).

4.1 Background Usage of PPF for Delivery Processing

For delivery processing, you can configure the action profile you want to use for your business process. You can, for example, use one action profile for a standard outbound delivery process where, among other things, you want to assign your outbound delivery items to waves and print a delivery note at goods issue. You can use another action profile for your consumption for production where you do not have warehouse processing in place and do not need a delivery note, but want to post the goods issue in the background when SAP ERP sends the document. For these purposes, you have two sets of action profiles that you assign to the different document types.

In the customizing for the Post Processing Framework (PPF), you can choose one of the action profiles provided by SAP or create your own action profile. This document does not show you how to create your own action profile. In the customizing for delivery types, you can assign the profile as an action profile.

In the document user interfaces (UIs) for delivery processing, you get an overview of the actions for a document. Choose the *PPF Actions* tab. On this screen, you get a list of the actions, with additional information like creation date and status. You can also display the application log for the action here.

4.1.1 Customizing: Action Profile for Delivery Type

You assign the action profile to the delivery type. You can find the definition of the respective delivery types in Customizing for *Extended Warehouse Management* under the following paths:

- *Extended Warehouse Management → Goods Receipt Process → Inbound Delivery → Manual Settings → Define Document Types for Inbound Delivery Process*

- *Extended Warehouse Management → Goods Receipt Process → Expected Goods Receipt → Manual Settings → Define Document Types for Expected Goods Receipt*

- *Extended Warehouse Management → Goods Issue Process → Outbound Delivery → Manual Settings → Define Document Types for Outbound Delivery Process*

- *Extended Warehouse Management → Internal Warehouse Processes → Posting Changes → Manual Settings → Define Document Types for Posting Change Process*

- *Extended Warehouse Management → Internal Warehouse Processes → Stock Transfers → Manual Settings → Define Document Types for the Stock Transfer Process*

You can see the SAP-defined actions and scheduling conditions, adapt the SAP-defined settings, or create your own settings Customizing for *Extended Warehouse Management* under *Cross Process Settings → Delivery Processing → Actions → Change Actions and Conditions*.

➡ Example

The following example shows the assignment of an action profile to a document type for outbound deliveries (document category `FDO`).

Action profile `/SCWM/FDO_01` is assigned to document type `OUTB`. When you save a document with document type `OUTB` or `FDO`, the system calls the PPF framework to schedule and, if the scheduling condition is fulfilled, execute the actions from the action profile.
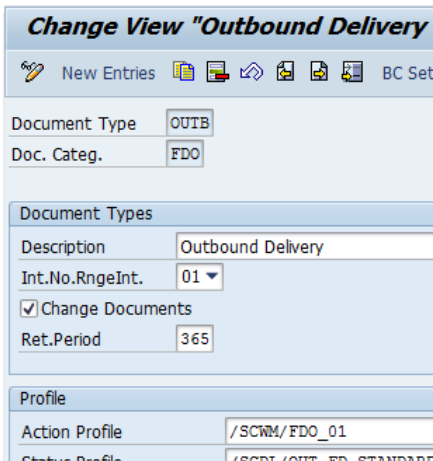
You can see the action profile in Customizing for *Extended Warehouse Management* under *Cross Process Settings* → *Delivery Processing* → *Actions* → *Change Actions and Conditions* → *Define Action Profiles and Actions*:
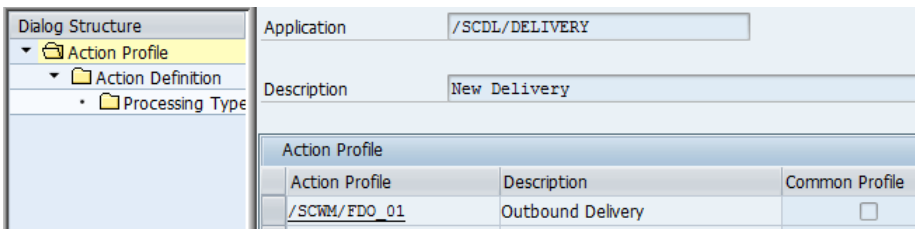
When you double-click on the action profile, the system shows you the details. When the *Used Common Profile* field is filled, the system adds the actions contained in the common profile to the actions of the action profile itself.

In this example, the common profile `/SCWM/FDO_COMMON` is responsible for sending messages to the SAP ERP system. If you want to define your own action profiles, you can use such common profiles to reuse SAP functionality in your own profile.
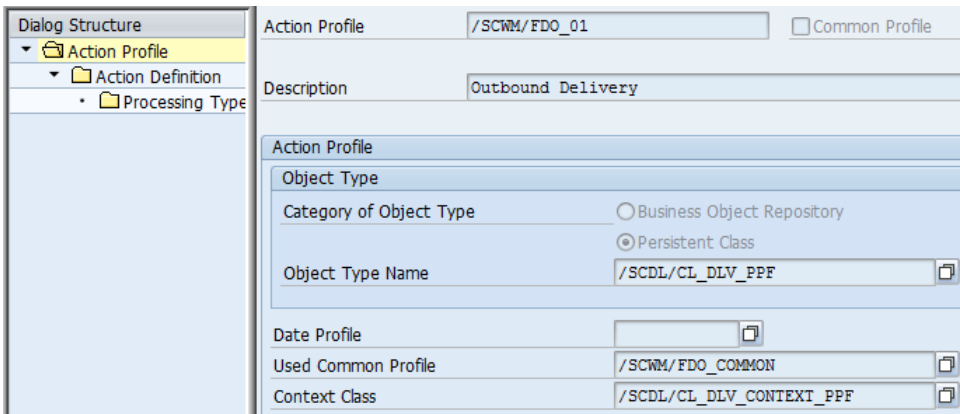
You can navigate to *Action Definition* to see the actions that are assigned to the action profile:
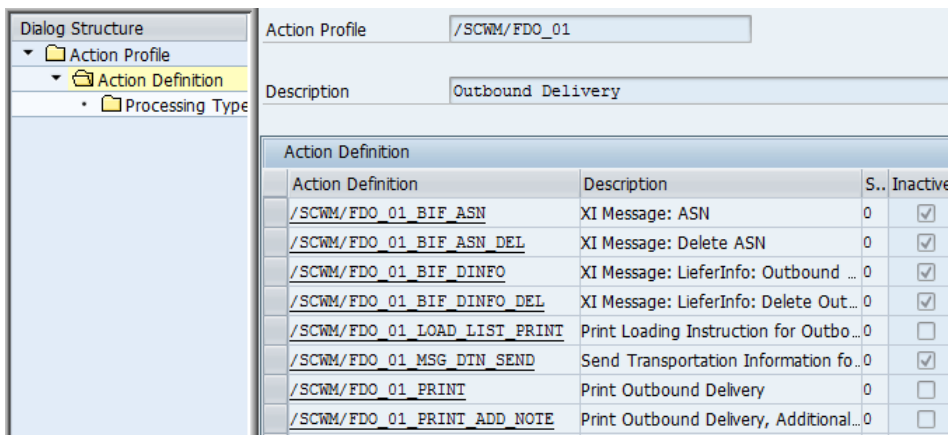
You can also see the scheduling conditions that are defined in Customizing for *Extended Warehouse Management* under *Cross Process Settings → Delivery Processing → Actions → Change Actions and Conditions → Define Conditions*:
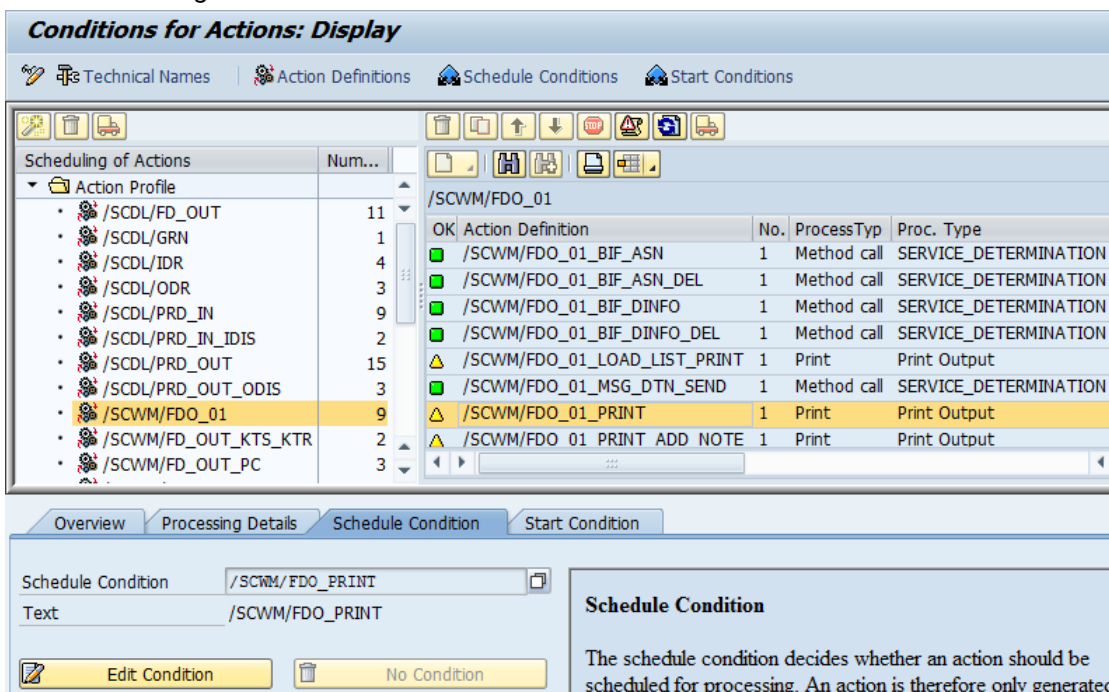
⬆ **Recommendation**

You do not need to change any settings in the Customizing activities shown above. Use one of the action profiles as defined by SAP for the respective document category and configure your business processes according to the descriptions in chapter 4.2.

4.1.2   Overview Action Profiles Provided by SAP

This chapter gives you an overview of the action profiles provided by SAP for the SAP Extended Warehouse Management (SAP EWM) delivery. The tables show you the actions assigned to the most important action profiles.

When the action is marked with ✓, the action is active in the action profile and will be executed when the scheduling condition is fulfilled. When the action is marked with ✗, SAP provides an inactive action. To use it, you need to deselect the *Inactive* checkbox (see chapter 3 Background Information PPF) and to schedule the action.

Example		
Action Profile	**/SCDL/EXAMPLE**	**Comment**
Example active action	✓ /SCDL/EXAMPLE_ACT	Action is active. It will be executed when the scheduling condition is fulfilled. You can find it in action profile /SCDL/EXAMPLE with the technical name /SCDL/EXAMPLE_ACT
Example inactive action	✗ /SCDL/EXAMPLE_INACT	Action is inactive. You need to deselect the *Inactive* checkbox before you can use it

In addition, you can find the technical name of the actions in the table. You will need this action name to maintain some conditions (see chapter 4.2 Step-by-Step Procedures). If you want to modify settings in the PPF, you can use this table to identify the action in the action profiles.

4.1.2.1 Outbound Delivery Request

For outbound delivery requests, SAP provides one standard action profile that contains the actions that are technically required for communicating with the SAP ERP system, and activating the request and creating an outbound delivery order automatically.

Action Profile	/SCDL/ODR	Comment
Send ERP Delivery Messages	✓ /SCWM/MSG_DR_RESPONSE	Required for EWM-ERP consistency, do not change settings
Business Object Transition Service for Outb. Deliv. Request	✓ /SCDL/ODR_TRANSFER	Activation (creation of outbound delivery order)

4.1.2.2 Outbound Delivery Order

The following table gives you an overview of actions available for most outbound processes, like goods issue for sales orders, returns processes, production supply as outbound process, or scrapping.

Action profiles for Outbound Delivery Orders in Standard Processes				
Action Profile	**/SCWM/PDO_01**	**/SCWM/PDO_02**	**/SCDL/PRD_OUT**	**Comment**
Send ERP Delivery Messages	✓	✓	✓	Required for EWM-ERP consistency, do not change settings
		/SCWM/MSG_PRD_SEND		
Create Vehicle	✓	✓	✓	Creates the transportation unit (TU) asynchronously when you enter TU information in transaction `/SCWM/PRDO` or similar UIs, or SAP ERP sends transport information with the delivery message. Do not change settings.
		/SCWM/PRD_CREATE_VEH		
XI Message:	✗	✗	✓	XI communication:

Action profiles for Outbound Delivery Orders in Standard Processes				
Action Profile	**/SCWM/PDO_01**	**/SCWM/PDO_02**	**/SCDL/PRD_OUT**	**Comment**
LieferInfo: Outbound Delivery Order	/SCWM/ PDO_01_BIF_ DINFO_ODO	/SCWM/ PDO_02_BIF_ DINFO_ODO	/SCWM/BIF_ DINFO_ODO	Deselect the *Inactive* checkbox for both actions if you want to send XI messages. Otherwise select the *Inactive* checkbox, for performance reasons
XI Message: LieferInfo: Delete Outbound Delivery Order	✗	✗	✓	
	/SCWM/ PDO_01_BIF_ DINFO_ODO_DEL	/SCWM/ PDO_02_BIF_ DINFO_ODO_DEL	/SCWM/BIF_ DINFO_ODO_DEL	
Create Outbound Delivery	✗	✗	✗	
	/SCWM/PDO_01_ FD_OUT_CREATE	/SCWM/PDO_02_ FD_OUT_CREATE	/SCWM/ FD_OUT_CREATE	
Send Transportation Information	✗	✗	✓	
	/SCWM/PDO_01_ MSG_DTN_SEND	/SCWM/PDO_02_ MSG_DTN_SEND	/SCWM/ MSG_DTN_ PRD_OUT_SEND	
GTS Check Execution			✗	
			/SCWM/PRD_OUT_ GTS_CHECK	
Delete Unnecessary GTS Document			✗	
			/SCWM/PRD_OUT_ GTS_DOC_DELETE	
Print Loading Instruction for Outbound Delivery Order	✓	✓	✓	
	/SCWM/PDO_01_ LOAD_LIST_PRINT	/SCWM/PDO_02_ LOAD_LIST_PRINT	/SCWM/PRD_OUT_ LOAD_LIST_PRINT	
Post Goods Issue	✗	✗	✓	
	/SCWM/PDO_01_ POST_GI	/SCWM/PDO_02_ POST_GI	/SCWM/PRD_OUT_ POST_GI	
Print Outbound Delivery Order	✗	✗	✓	
	/SCWM/PDO_01_ PRINT	/SCWM/PDO_02_ PRINT	/SCWM/PRD_OUT_ PRINT	
Create Warehouse Task for Stock Removal	✗	✓	✓	
	/SCWM/PDO_01_ WT_CREATE	/SCWM/PDO_02_ WT_CREATE	/SCWM/PRD_OUT_ TO_CREATE	
Assign Warehouse Request to Wave	✓	✗	✓	
	/SCWM/PDO_01_ WAVE	/SCWM/PDO_02_ WAVE	/SCWM/PRD_OUT_ WAVE_NEW	

SAP provides three different action profiles for such outbound delivery orders. Profile `/SCDL/PRD_OUT` is the first profile that has been provided, since SAP EWM 5.0. Experience showed that there were some disadvantages with the usage of this single profile:

- The runtime consumption was higher than necessary due to the fact that all actions were active
- The configuration of the scheduling conditions was difficult to understand (see chapter 4.1.3 Scheduling Actions).

To provide new, improved profiles without disrupting existing system installations (see chapter 3.2 Support Packages and Upgrade), the new profiles `/SCWM/PDO_01` and `/SCWM/PDO_02` were created. They contain similar actions. The table above gives you an overview of the technical names for actions with similar functionality.

Actions that were not expected to be used in all customers' systems, like XI communication, are available as inactive actions, so that you can easily use them but avoid runtime consumption if you do not want to use them.

As most cases use either waves or direct warehouse task creation, two profiles have been created which contain one of the respective actions, active or inactive. If you want to use both options for your document type and configure the specific actions in the more detailed settings for warehouse process type and wave, you can deselect the *Inactive* checkbox.

Action Profiles for Processes with Special Requirements

You can assign action profile `/SCWM/PRD_OUT_PC` for outbound delivery orders for consumption posting. A consumption posting is a goods issue posting in SAP EWM that is triggered by a backflush in the SAP ERP production. There is no warehouse processing foreseen and therefore actions for warehouse task creation and wave assignment are not required. What is required, on the other hand, is an automatic goods issue for the components without user interaction. This is available in action `/SCWM/PRD_OUT_POST_GI_PP`. Configuration for detailed settings is provided in the Customizing activity *Extended Warehouse Management → Goods Issue Process → Outbound Delivery → Production Supply → Post Goods Issue for Consumption Posting*.

You can use action profile `/SCWM/PRD_OUT_KTS_KTR` for the process Kit-to-Stock and Reverse Kitting. The actions of the profile are a selection of the actions used for action profile `/SCDL/PRD_OUT`. The scheduling of these actions works as for `/SCDL/PRD_OUT`.

4.1.2.3   Outbound Delivery

Action profiles for Outbound Deliveries in Standard Processes			
Action Profile	**/SCWM/FDO_01**	**/SCDL/FD_OUT**	**Comment**
Send ERP Delivery Messages	✓	✓	Required for EWM-ERP consistency, do not change settings
	/SCWM/FDO_ MSG_SEND	/SCWM/MSG_ FD_OUT_SEND	
XI Message: ASN	✗	✓	XI communication for ASN: Deselect the *Inactive* checkbox for both actions if you want to send XI messages. Otherwise, select the *Inactive* checkbox, for performance reasons
	/SCWM/FDO_01_ BIF_ASN	/SCWM/BIF_ ASN	
XI Message: Delete ASN	✗	✓	
	/SCWM/FDO_01_ BIF_ASN_DEL	/SCWM/BIF_ ASN_DEL	
XI Message: Delivery Info: Outbound Delivery	✗	✓	XI communication: Deselect the *Inactive* checkbox for both actions if you want to send XI messages. Otherwise, select the *Inactive* checkbox, for performance reasons
	/SCWM/FDO_01_ BIF_DINFO	/SCWM/BIF_ DINFO_OD	
XI Message:	✗	✓	

Action profiles for Outbound Deliveries in Standard Processes			
Action Profile	**/SCWM/FDO_01**	**/SCDL/FD_OUT**	**Comment**
Delivery Info: Delete Outbound Delivery	/SCWM/FDO_01_ BIF_DINFO_DEL	/SCWM/BIF_ DINFO_OD_DEL	
Send Transportation Information for Outbound Delivery	✗ /SCWM/FDO_01_ MSG_DTN_SEND	✓ /SCWM/MSG_DTN_ FD_OUT_SEND	Only for Transportation Management in SAP EWM
Delete Unnecessary GTS Document		✓ /SCWM/FD_OUT_ GTS_DOC_DELETE	
Print Outbound Delivery	✓ /SCWM/FDO_01_ PRINT	✓ /SCWM/FD_OUT_ PRINT	
Additional Print for Outbound Delivery	✓ /SCWM/FDO_01_ PRINT_ADD_NOTE		Second action for printing is required to enable different scheduling or printer determinations. You can use this action if you need printouts at different points in time in your business process at different printers
Print Loading Instruction for Outbound Delivery	✓ /SCWM/FDO_01_ LOAD_LIST_PRINT	✓ /SCWM/FD_OUT_ LOAD_LIST_PRINT	

SAP provides two action profiles for outbound deliveries. Profile /SCDL/FD_OUT is the first profile that has been provided, since SAP EWM 5.0. /SCWM/FDO_01 has been created to provide an improved profile – similar to outbound delivery orders – without interrupting customer installations that were using /SCDL/FD_OUT.

When you start working with SAP EWM, use profile /SCWM/FDO_01. As for outbound delivery orders, deselect the *Inactive* checkbox if you want to use XI messages.

Action Profiles for Processes with Special Requirements

You can use action profile /SCWM/FD_OUT_KTS_KTR for the process Kit-to-Stock and Reverse Kitting. It contains the action that is technically required for the SAP ERP integration but no other actions that would cause consumption of runtime. If you do want to use, for example, printing of delivery notes in this process, you can use a profile for standard processes.

4.1.2.4   Inbound Delivery Notification

For inbound delivery notifications, SAP provides one standard action profile that contains the actions that are technically required for the communication with the SAP ERP system, and to activate the request and create an inbound delivery automatically.

Action Profile	**/SCDL/IDR**	**Comment**
Send ERP Delivery Messages	✓ /SCWM/MSG_DR_RESPONSE	Required for EWM-ERP consistency, do not change settings
Business Object	✓	Activation (creation of Inbound Delivery)

Action Profile	/SCDL/IDR	Comment
Transition Service for Inb. Deliv. Notif.	/SCDL/IDR_TRANSFER	
IDR Activation	✖	Activate Inbound Delivery Notification when the original activation failed due to missing master data
	/SCWM/IDR_ACTIVATION	

4.1.2.5   Inbound Delivery

Action Profiles for Inbound Delivery Standard Processes				
Action Profile	**/SCWM/PDI_01**	**/SCWM/PDI_ RECEIVED**	**/SCDL/PRD_IN**	**Comment**
Send ERP Delivery Messages	✓	✓	✓	Required for EWM-ERP consistency, do not change settings
	/SCWM/MSG_PRD_SEND			
Create Vehicle	✓	✓	✓	Creates the TU asynchronously when you enter TU information in transaction `/SCWM/PRDI`, `/SCWM/GRPE` or similar UIs, or SAP ERP sends transport information with the delivery message. Do not change settings.
	/SCWM/PRD_CREATE_VEH			
XI Message: LieferInfo: Inbound Delivery	✖	✖	✓	XI communication: Deselect the *Inactive* checkbox for both actions if you want to send XI messages. Otherwise, select the *Inactive* checkbox, for performance reasons
	/SCWM/PDI_01_ BIF_DINFO	/SCWM/PDI_ RECEIVED_ BIF_DINFO	/SCWM/BIF_ DINFO_ID	
XI Message: LieferInfo: Delete Inbound Delivery	✖	✖	✓	
	/SCWM/PDI_01_ BIF_DINFO_DEL	/SCWM/PDI_REC_ BIF_DINFO_DEL	/SCWM/BIF_ DINFO_ID_DEL	
NCTS Transit Procedure	✖		✓	If you want to integrate your business process with GTS for the transit procedure, deselect the *Inactive* checkbox.
	/SCWM/PDI_01_ NCTS		/SCWM/NCTS	
Print Unloading Instruction for Inbound Delivery	✓		✓	
	/SCWM/PDI_01_ UNLOAD_ LIST_PRINT		/SCWM/PRD_IN_ UNLOAD_ LIST_PRINT	
Create	✓	✓	✓	

Action Profiles for Inbound Delivery Standard Processes				
Action Profile	**/SCWM/PDI_01**	**/SCWM/PDI_ RECEIVED**	**/SCDL/PRD_IN**	**Comment**
Warehouse Task for Putaway	/SCWM/PDI_01 _ WT_CREATE	/SCWM/PDI_ RECEIVED_ WT_CREATE	/SCWM/PRD_IN _ TO_CREATE	
Post Goods Receipt		✓		Post goods receipt automatically. Use the profile containing this action when you create the inbound delivery after you have physically received the stock
		/SCWM/PDI_ RECEIVED_ POST_GR		

SAP provides three different action profiles for inbound deliveries. Profile /SCDL/PRD_IN is the first profile that has been provided, since SAP EWM 5.0. Experience showed that, as for outbound delivery orders, the performance and the configuration of the action scheduling could be improved. To provide a new standard profile without disrupting existing system installations, /SCWM/PDI_01 was created.

Actions that are not expected to be used in all customers' systems, like XI communication or the GTS integration in the NCTS process, are available as inactive actions so that you can easily use them but avoid runtime consumption if you do not want to use them.

Action profile /SCWM/PDI_RECEIVED is a specialized action profile to support business processes where you create an inbound delivery for a product after you have actually received it. It contains an action to post the goods receipt automatically so that there is no user interaction required for this step. Actions that are not required in this case, like printing an unloading list, are not contained.

Action Profiles for Processes with Special Requirements

You can use action profile /SCWM/PRD_IN_KTS_KTR for the kit-to-stock process. It contains only the actions you need for an internal goods receipt from your kitting process, not actions such as sending XI messages.

You can use action profile /SCWM/PRD_IN_RM to post the goods receipt for production if you use repetitive manufacturing in your SAP ERP system. In the case of repetitive manufacturing, you need to post the goods receipt immediately in SAP EWM without any split. If you use the action profile for repetitive manufacturing, you need to configure the scheduling for this action. The profile was created based on /SCDL/PRD_IN, so that the actions for XI communication that are not expected to be used for repetitive manufacturing are active.

4.1.2.6 Expected Goods Receipt Notification

For expected goods receipt notifications, SAP provides one standard action profile that contains the actions that are technically required for the communication with the SAP ERP system, and to activate the request and create an expected goods receipt automatically.

Action Profile	**/SCDL/GRN**	**Comment**
Send ERP Delivery Messages	✓	Required for EWM-ERP consistency, do not change settings
	/SCWM/MSG_DR_RESPONSE	
Business Object Transition Service for Exp. GR Notification	✓	Activation (creation of Expected Goods Receipt)
	/SCDL/GRN_TRANSFER	

4.1.2.7 Expected Goods Receipt

No action profile foreseen in SAP standard.

4.1.2.8   Posting Change Request

Action Profile	/SCWM/POR	Comment
Send ERP Delivery Messages	✓ /SCWM/MSG_DR_RESPONSE	Required for EWM-ERP consistency, do not change settings
Transition Service for Posting Change Request	✓ /SCDL/POR_TRANSFER	Activation (creation of Posting Change)

For posting change requests, SAP provides one standard action profile that contains the actions that are technically required for the communication with the SAP ERP system, and to activate the request and create a posting change automatically.

4.1.2.9   Posting Change

Action Profile	/SCWM/SPC_01	/SCWM/SPC	Comment
Send ERP Delivery Messages	✓ /SCWM/SPC_MSG_SEND	✓ /SCWM/MSG_SPC_SEND	Required for EWM-ERP consistency, do not change settings
Create Warehouse Task for Posting Change	✗ /SCWM/SPC_01_ WT_CREATE	✓ /SCWM/SPC_ TO_CREATE	
Assign Posting Change to Wave	✓ /SCWM/SPC_01_ WAVE	✓ /SCWM/SPC_ WAVE_NEW	
Print Scrapping Form	✓ /SCWM/SPC_01_ PRINT_SCRAP	✓ /SCWM/SPC_ SCRAP_PRINT	

SAP provides two action profiles for posting changes that contain similar actions. The differences are that the action scheduling for /SCWM/SPC_01 follows the principle of requiring scheduling to actually be executed (see chapter 4.1.3). In addition, /SCWM/SPC_01 is based on a common profile for the SAP ERP integration so that reuse for customer defined profiles becomes possible (see chapter 0).

4.1.2.10   Stock Transfer

Action Profile	/SCWM/WMR	Comment
Create Warehouse Task for Stock Transfer	✓ /SCWM/WMR_WT_CREATE	
Assign Warehouse Request to Wave	✓ /SCWM/WMR_WAVE_NEW	

For stock transfers, SAP provides an action profile with actions to assign the items to a wave or to create the warehouse task directly. As stock transfers do not require SAP ERP integration, you can also use a document type without an action profile.

4.1.2.11 Common Profiles

SAP provides some common profiles for the SAP EWM delivery. These profiles are used as includes for the actual action profiles and contain actions that are always required for the respective document categories. If you want to use customer defined action profiles, SAP recommends using these action profiles for your own profiles to ensure the consistency between SAP ERP and SAP EWM.

Document Category	Common Profile
IDR, ODR, POR, GRN	/SCDL/DR_CMMN
PDI, PDO	/SCDL/PRD_CMMN
SPC	/SCWM/SPC_COMMON
FDO	/SCWM/FDO_COMMON

4.1.3 Scheduling Actions/ Action Determination

SAP EWM uses an application-specific logic to schedule actions. Delivery processing does NOT use the determination described as default in the documentation of the PPF framework (workflow).

The logic that is implemented for delivery processing consists of three logical steps:

1. Check that the action makes sense from the business point of view and that all relevant data for an action are available, for example, the following:
   - Schedule warehouse task creation only for items that are relevant for picking or putaway
   - Schedule the creation of a TU only when all the information to create a TU activity is available in the delivery document
2. Evaluate the respective customizing, for example, the following:
   - Schedule automatic wave assignment for an outbound delivery order only when the warehouse process type is relevant for automatic wave assignment
   - Automatic goods issue for production consumption
3. Evaluate condition records. SAP uses condition records to determine actions for delivery processing when decisions about the execution of an action, especially the point of for action execution in a business process, need to be very flexible. For example, printing.

These three steps are the general steps to schedule an action. You do not need to maintain customizing plus the scheduling using condition records for all actions in delivery processing. The following chapter shows some examples of how you can configure actions.

If you want to have a look at the scheduling conditions, see Customizing for *Extended Warehouse Management* under *Cross Process Settings → Delivery Processing → Actions → Change Actions and Conditions.*

✏ Note

The action determination takes place on delivery header level. The statuses that are used are the status on header level (aggregation of the item status where the actual status is on item level). You can find some examples in chapter 4.2.

When the action is executed, the system does not have any information about which item was identified as relevant in the action scheduling. The action execution processes all items.

Condition Records

Behavior Depending on SAP EWM Release of First Shipment for Action Profile

For historic reasons, the system behavior is slightly different for actions when there are no scheduling condition records configured and when the condition records are partly configured.

- In SAP EWM 5.0, condition records are not used. An action is always executed when the hard-coded part of a scheduling condition defined in PPF is fulfilled.
- In SAP EWM 5.1, the usage of condition records is introduced for existing and new actions. To ensure that the system behavior is not changed after an upgrade from SAP EWM 5.0, a special logic is introduced. The scheduling condition is fulfilled when

  - From the business point of view, the action can be executed

  and

  - There is no configuration for condition records configured

  or

  The full access sequence using condition records is available

  When the condition record is partly configured, the action is not executed. You can find an example in chapter 4.2.2.1 Schedule Printing.

- From SAP EWM 7.0 on, condition records are only used for actions in new action profiles when other, more specific, configuration is not available and a configuration option is required.

Fields for Condition Records

When you want to use a status change for your condition records, you need to be aware of the following:

The PPF conditions are using the header status of the delivery document. When the header status is an aggregation of the item status, the value of such a status does not always represent the correct overall status for all items. You have such situations when the system updates single updates of a delivery document. This is, for example, the case when you confirm a warehouse task for picking, in the loading and unloading processes.

⬆ **Tip**

If you want to configure condition records based on such status changes, see SAP Note 1461585 for further details. The SAP Note explains how you can use a combination of scheduling and starting conditions to configure the action determination for complex conditions.

If you want to use status changes that occur only when you do an action for the complete document, the change of the header status values is what you can expect from the item values in a simple case. An example would be the goods issue status for an outbound delivery or the goods receipt status when you post the goods receipt that you post for the whole document in transaction `/SCWM/PRDI`.

4.2 Step-by-Step Procedures

4.2.1 Performance Optimization for PPF

Using suitable settings for actions can optimize the runtime in delivery processing. This is especially relevant when you process a large number of deliveries at a time, for example, when you post a goods issue for a TU with many deliveries assigned. The following options help you to improve the runtime:

- Only use required actions

  Choose an action profile that contains the actions you need but no actions you do not need for your business process. You can set the actions that are neither required for your business process nor for technical reasons to inactive.

- Deactivate application logs

  You can deactivate the application log for delivery PPF actions. Application logs are a useful tool to check the correct execution of PPF actions in the implementation phase. Once the system is running smoothly, you can deactivate the application log for PPF actions.

  On the *SAP Easy Access* screen, choose *Extended Warehouse Management → Delivery Processing → Actions → Deactivate PPF Log Depending on Warehouse and User* (transaction `/SCWM/DLVPPFLOG`)

4.2.2   Printing (Example Delivery Note)

To configure the printing of a delivery note, you have to schedule the PPF action for printing, and define the spool determination and the form determination. Basically these steps are identical for all printouts used for deliveries.

The example shows how to print a delivery note. Depending on how you have set up your system or which processes are already running, some entries might already be available.

4.2.2.1   Schedule Printing

1. Look up the action profile of the document type for your outbound delivery, for example, `OUTB`. For example, the profile might be `/SCWM/FDO_01` (see chapter 4.1.1 Customizing: Action Profile).

2. Look up the action you want to use to print the delivery note, for example, `/SCWM/FDO_01_PRINT` (see chapter 4.1.1 Customizing: Action Profile to check in the system or chapter 4.1.2.3 Outbound Delivery).

3. Assign the determination procedure for the action definition.

   In Customizing for *Extended Warehouse Management*, choose *Cross Process Settings → Delivery Processing → Actions → Configure Action Scheduling → Assign Determination Procedure*.

   In the dialogue structure, choose *Determination Procedure for PPF Action Config.* Enter the following data:

   ### Example

Action Definition	`</SCWM/FDO_01_PRINT>`
Warehouse Number	`<>`
Doc.Cat.	`FDO`
Doc. Type	`<OUTB>`
Det. Proc. Delivery	`0DDNP`
Start Det. Proc	

   Create an entry for your action definition and your document type that you have looked up in step 1 and 2.

   ### Tip

   The determination procedure is not warehouse dependent. Only the actual determination (see next step) is warehouse dependent. If you want to use a completely different determination procedure – that is different fields – that depend on the warehouse number, first navigate to *Determination Procedure Access Seq. for PPF Config.* in this Customizing dialog. Select the *Whse No.* checkbox. Then maintain records for each warehouse in *Determination Procedure for PPF Action Config.*

4. Create condition records.

On the *SAP Easy Access* screen, choose *Extended Warehouse Management → Delivery Processing → Actions → Maintain Condition Records for PPF Schedule Conditions*. On the selection screen enter the following data:

Application	**DPP**
Maintenance Group	**DLVP**

General Condition Maintenance

Application	DPP
MaintenanceGrp	DLVP
Maintenance context	GCM

Press button *Execute* (F8).

Create the following entry:

Example 1: Print Delivery Note at Goods Issue

Condition Type	**0DDN**
Action Definition	**</SCWM/FDO_01_PRINT>**
Doc.Type	**<OUTB>**
GM Sts	**NSFI**
ChgMod	
SH	
WhN	**<W001>**

Condition Records - Process

Status	Sca	CCtC	Action Definition	DocTy.	GM S...	ChgM...	SH	Whse No.
🟢	⊗	0DDN	/SCWM/FDO_01_PRINT	OUTB	NSFI			W001
		0DDN						
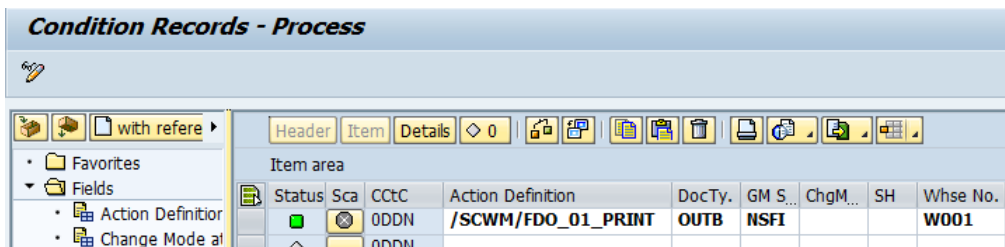
The *GM Status* **NSFI** stands for a change of the goods movement status from 'Not Started' to 'Completed'. The system prints the delivery note when you post goods issue.

Example 2: Print Delivery Note at Creation of Outbound Delivery

Condition Type	**0DDN**
Action Definition	**</SCWM/FDO_01_PRINT>**
Doc.Type	**<OUTB>**
GM Sts	
ChgMod	**I**
SH	
WhN	**<W001>**

Change Mode **I** stands for 'insert' and the change mode is set to *I* once an outbound delivery is created. You can use this setting when you create the outbound delivery early, for example, when you pack the products. Then you can print the delivery note and pack it into the shipping handling unit.

Important

For action profile /SCDL/FD_OUT_PRINT, the system prints a delivery note in the following situations:

- No condition record has been entered and you post the goods issue

- The full set of condition records as described above has been entered and you post the goods issue

The system does not post the goods issue when you have partly created the settings from step 3 and 4.

For background information see chapter 4.1.3 Scheduling Actions

4.2.2.2   Define Spool and Spool Determination

1. Define print profiles:

   In Customizing for *Extended Warehouse Management*, choose *Goods Issue Process →
   Outbound Delivery → Print → Define Print Profiles for Delivery Processing*.
   In *Print Profile Definition*, create the following entry:

Application	**/SCDL/DELIVERY**
Pr.Profile	**DELNOTE**
Description	**Delivery Printing**

   In the dialogue structure, choose *Print Profile Data*.
   Create the following entry:

   📥 **Example**

Application	**/SCDL/DELIVERY**
Print Profile	**DELNOTE**
Action Definition	**</SCWM/FDO_01_PRINT>**
Output Device	**<your spool device>**
Imme.	**<✓>**
Rel.	**<✓>**

   Configure your spool device to define the printing parameters, such as point in time for printing, printer, handling of spool job after printing, text for cover page, etc.

2. Define the print profile determination.

   In Customizing for *Extended Warehouse Management*, choose *Goods Issue Process →
   Outbound Delivery → Print → Define Print Profile Determination for Goods Issue Process.*
   In the dialogue structure, choose *Access Sequence Print Prof. Determ. Outb. Delivery*.
   Create the following entries:

   📥 **Example**

   First Entry:

Seq.No	**1**
Select checkboxes:	Whse.No, Whse Door

   Second Entry:

Seq.No	**2**
Select checkbox	Whse.No

3. In the dialogue structure, choose *Print Profile Determination Outbound. Delivery*. Create the following entry:

Example

ShippOff	
S-Fr.Loc	
Whse.No	**<W001>**
Whse Door	**<DO01>**
Owner	
Entitled	
Print Profile	**DELNOTE**

In this case, the system will determine print profile DELNOTE (the profile you have defined in the previous step) when your delivery is assigned to door <DO01> in warehouse <W001>. For all other profiles in warehouse <W001>, the system will use print profile OTHERPROF (not described here). This print profile might for example use another spool device to print at another printer.

4.2.2.3   Determine Form for Printing

1. In Customizing for *Extended Warehouse Management*, choose *Goods Issue Process →
Outbound Delivery → Print → Define Form Determination for Delivery Note Printing.*

   In the dialogue structure, choose *Access Sequence Form Determination Delivery Note.* Create the following entry:

   ## Example

Seq.No	**1**
Select checkbox:	Whse.No

2. In the dialogue structure, choose *Form Determination Delivery Note.* Create the following entry:

   ## Example

ShippOff	
S-Fr.Loc	
Whse.No	**<W001>**
Owner	
Entitled	
Smart Form	**</SCWM/DLV_NOTE>**
PDF Form	

   In this example, the system determines that the SAP example smart form /SCWM/DLV_NOTE is used to print a delivery note. Usually, customer-defined forms are part of an implementation project. Enter your own form here when you have created it.

✏️ **Note**

You can specify Smart Forms as well as PDF-based forms. To use user-defined forms, you have to create them first (not described in this document). If you want to look at the existing forms, you can see them in the *SAP Easy Access* screen, under the following paths:

Extended Warehouse Management → Tools → Form Printout → Interactive Forms (transaction `SFP`)

Extended Warehouse Management → Tools → Form Printout → Smart Forms (transaction `SMARTFORMS`)

If you do not set a form determination in this Customizing activity, SAP EWM uses the Smart Forms standard form `/SCWM/DLV_NOTE`.

4.2.3   Automatic Wave Assignment

Prerequisites

You have maintained the settings for waves.

Procedure

1. Choose a suitable action profile, for example, `/SCWM/PDO_01` and assign it to your document type for your outbound delivery order, for example, `OUTB/ PDO`.

   ✏️ **Note**

   The item types used for your outbound delivery order must be relevant for picking. That is, the status types and quantity roles for *Planning Picking* and *Picking* have to be active. Item types that SAP provides in BC sets or in the example customizing are usually relevant for picking unless described otherwise.

2. Select the *Automatic Wave Creation* checkbox for the warehouse process type you are using, for example, `P212`, for your item type, for example, `ODLV`.

   You can change the warehouse process type in Customizing for *Extended Warehouse Management* under *Cross-Process Settings → Warehouse Task → Define Warehouse Process Type* or *Goods Issue Process → Wave Management → Set Automatic Wave Generation for Warehouse Process Type*.

   ⬆️ **Tip**

   You can see the warehouse process type that the system determines for your document or item type in Customizing for *Extended Warehouse Management* under *Cross-Process Settings → Warehouse Task → Determine Warehouse Process Type.*

3. Newer action profiles, such as `/SCWM/PDO_01_WAVE`, do not require any settings in the condition technique to schedule the action. The action determination schedules the action when the warehouse process type is relevant for automatic wave generation and there is no warehouse task existing.

   You can influence the wave assignment in more detail in the action execution by maintaining the condition technique for the wave template determination. See the documentation about wave management for further details.

   If you use action `/SCWM/PRD_OUT_WAVE_NEW` for action profile `/SCDL/PRD_OUT`, you need to configure the condition technique similar to that described in chapter 4.2.2.1 Schedule Printing in addition to the settings in the warehouse process type.

Monitoring

In transaction *Maintain Outbound Delivery Order* (`/SCWM/PRDO`), on tab screen *PPF Actions*, or in *PPF: Selection and processing of Actions* (`SPPFP`), you can check if the action was executed successfully. In both transactions, you can navigate to the application log for processing details.

A successful execution of the action means that the system evaluated the conditions of the wave template for all items. The result may be that all, some, or no items are assigned to a wave. If the status is red, it means that there was some error in the action execution. This could, for example, be that the system could not lock the delivery because a user made some change in the document, for example, assigned it to a wave manually.

For the monitoring in your production system, you can monitor delivery items without wave assignment or delivery items without picking warehouse task in the *Warehouse Management Monitor* (transaction `/SCWM/MON`). In node *Outbound → Documents → Outbound Delivery Order → Outbound Delivery Order Item* you can select the following:

- Outbound delivery order items with an initial wave and additional selection criteria like a route that is due
- Outbound delivery order items with status Picking (Plan, Item) 1 or 2 and additional selection criteria as above

If an action has failed, you can execute it again from transaction `/SCWM/PRDO` or `SPPFP`. You can also assign the wave manually from the monitor.

For a root cause analysis, use the application log to adjust your settings.

4.2.4   Automatic Pick Warehouse Task Creation

1. Choose a suitable action profile, for example, `/SCWM/PDO_02`, and assign it to your document type for your outbound delivery order, for example, `OUTS/ PDO`.

   ### 📝 Note

   The item types used for your outbound delivery order must be relevant for picking. That is, the status types and quantity roles for *Planning Picking* and *Picking* have to be active. Item types that SAP provides in BC sets or in the example customizing are usually relevant for picking unless described otherwise.

2. Assign the determination procedure to the action definition. The configuration is similar to that in chapter 4.2.2.1. You can check there for screenshots.

   In Customizing for *Extended Warehouse Management*, choose *Cross Process Settings → Delivery Processing → Actions → Configure Action Scheduling → Assign Determination Procedure.*

   In the dialog structure, choose *Determination Procedure for PPF Action Config.* Enter the following data:

   ### ➡️ Example

Action Definition	**</SCWM/PDO_02_WT_CREATE>**
Warehouse Number	**<W001>**
Doc.Cat.	**PDO**
Doc. Type	**<OUTS>**
Det. Proc. Delivery	**0DWTP**
Start Det. Proc	

   Create an entry for your action definition and your document type that you have chosen in step 1.

3. Create condition records:

On the *SAP Easy Access* screen, choose *Extended Warehouse Management → Delivery Processing → Actions → Maintain Condition Records for PPF Schedule Conditions*. On the selection screen enter the following data:

Application	`DPP`
Maintenance Group	`DLVP`

Press button *Execute* (`F8`).

Create the following entry:

➡️ Example : Create Warehouse Task at Document Creation

Condition Type	`0DWTP`
Action Definition	`</SCWM/PDO_02_WT_CREATE>`
Doc.Type	`<OUTS>`
GM Sts	
ChgMod	`I`
SH	
WhN	`<W001>`

Change Mode 'I' stands for 'insert' and the change mode is set to *I* once an outbound delivery order is created.

For background information, see chapter 4.1.3 Scheduling Actions.

Monitoring

You can check the execution of the action as described for wave assignment in chapter 4.2.3.

If an action fails, you can create the warehouse task manually or restart the action.

For a root cause analysis, use the application log to adjust your settings.

4.2.5 Automatic Putaway Warehouse Task Creation

1. Choose a suitable action profile, for example, `/SCWM/PDI_01`, and assign it to your document type for your inbound delivery, for example, `INB/ PDI`.

   ### 🖊️ Note

   The item types used for your outbound delivery must be relevant for putaway. That is, the status types and quantity roles for *Planning Putaway* and *Putaway* have to be active. Item types that SAP provides in BC sets or in the example customizing are usually relevant for putaway.

2. Assign the determination procedure to action definition. The configuration is similar to chapter 4.2.2.1. You can check there for screenshots.

   In Customizing for *Extended Warehouse Management*, choose *Cross Process Settings → Delivery Processing → Actions → Configure Action Scheduling → Assign Determination Procedure*.

   In the dialogue structure, choose *Determination Procedure for PPF Action Config.* Enter the following entry

   ### ➡️ Example

Action Definition	`</SCWM/PDI_01_WT_CREATE>`
Warehouse Number	`<W001>`
Doc.Cat.	`PDI`
Doc. Type	`<INB>`
Det. Proc. Delivery	`0DWTP`
Start Det. Proc	

Create an entry for your action definition and your document type that you have chosen in step 1.

3. Create the condition records:

On the *SAP Easy Access* screen, choose *Extended Warehouse Management → Delivery Processing → Actions → Maintain Condition Records for PPF Schedule Conditions*. On the selection screen, enter the following data:

Application	**DPP**
Maintenance Group	**DLVP**

Press button *Execute* (F8).

Create the following entry:

➡ Example : Create Warehouse Task at Goods Receipt

Entry 1:

Condition Type	**0DWTP**
Action Definition	**</SCWM/PDI_01_WT_CREATE>**
Doc.Type	**<INB>**
GM Sts	**NSFI**
ChgMod	
WhN	**<W001>**

Entry 2:

Condition Type	**0DWTP**
Action Definition	**</SCWM/PDI_01_WT_CREATE>**
Doc.Type	**<INB>**
GM Sts	**IPFI**
ChgMod	
WhN	**<W001>**

The settings for the goods movement status changes, for example **NSFI** and **IPFI**, mean that the warehouse task creation is scheduled when the *Goods Receipt Status* changes from `Not Started` to `Completed` or from `Partly Completed` to `Completed`.

For background information, see chapter 4.1.3 Scheduling Actions.

Monitoring

See chapter 4.2.4 Automatic Pick Warehouse Task Creation.

5. Processing in Shipping and Receiving

The Shipping and Receiving (S&R) component of SAP Extended Warehouse Management (SAP EWM) uses the Post Processing Framework (PPF) to execute actions on three different types of objects. For each object type, SAP delivers a PPF action profile.

Table: Action Profile for S&R Objects

Application Object	Action Profile
Transportation Unit (TU)	/SCWM/TU
Vehicle	/SCWM/VEH
Door	/SCWM/DOOR

Actions for TUs and vehicles are used for the following functions:

- Printing of road waybills and loading lists for TUs or vehicles
- Subsequent actions in SAP EWM such as delivery synchronization and warehouse task creation
- Communication with SAP ERP shipments
- Communication with Transportation Management in SAP EWM
- Communication with external applications via SAP NetWeaver PI

Actions at door level are only used for communication with external applications via SAP NetWeaver PI. They are not handled in detail in this document.

SAP delivers action profiles and action definitions with default settings as well as default implementations for the action scheduling and execution. For example, SAP delivers an action to print a waybill for a TU using a PDF-based form and the default printer LP01.

In the action configuration, you can configure your own settings for an action. For example, you can replace the PDF-based form with an SAP Smart Forms form, and set your own printer.

S&R does not use condition records for scheduling actions. The action scheduling is based on hard-coded scheduling conditions (SAP EWM-specific implementation of BAdI EVAL_SCHEDCOND_PPF).

The execution of actions with processing type *Method Call* is based on hard-coded processing (SAP EWM-specific implementation of BAdI EXEC_METHODCALL_PPF).

5.1 Action Profile Definition for TUs and Vehicles

You can find the standard action profiles for vehicles and transportation units in Customizing for *Extended Warehouse Management* under *Cross-Process Settings → Shipping and Receiving → Message Processing → Define Action Profiles for Vehicles* or *Define Action Profiles for Transportation Units.*

You make changes to the action profile definition in the following cases only:

- To activate the communication with SAP ERP shipments. For this purpose, select the *Inactive* checkbox for actions /SCWM/SR_SEND_SHIPPL and /SCWM/SR_SEND_SHPMNT in action profile /SCWM/TU.
- To define your own actions (customer development).

    ⬆ **Recommendation**

    If you want to add your own actions to a profile, we recommend using the profiles delivered by SAP in standard instead of creating your own profile, as you cannot assign any standard actions to your own profile. See also chapter Support Packages and Upgrade.

5.2   Action Profile Assignment for TUs and Vehicles

You assign the standard action profile to means of transport used for forming vehicles or transportation units in Customizing for *Extended Warehouse Management* under *Cross-Process Settings → Shipping and Receiving → General Settings → Define Control Parameters for Forming Vehicles/Transportation Units.*
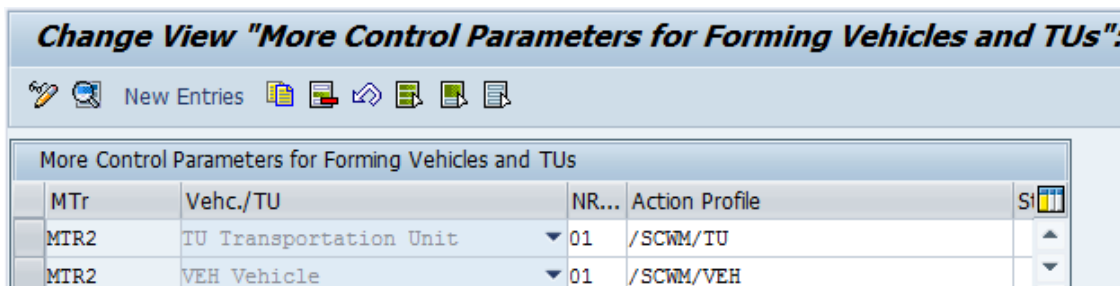
Entries already exist for means of transport MTR2 if you have created your warehouse using the *Implementation Tool for Warehouse Integration*, which is available in Customizing for *Extended Warehouse Management* under *Interfaces → ERP Integration → Tool-Based ERP Integration → Implementation Tool for Warehouse Integration*.

If you use other means of transport for building TUs and vehicles, assign a standard action profile to them too.

5.3   Action Definition for TUs and Vehicles

You can find the standard action definitions in the same Customizing activity as the action profile definition. For standard action definitions, do not change any settings here. Use the action configuration described in the next chapter instead.

In this chapter, you will get an overview of the actions delivered in standard for TUs and vehicles. The overview will help you to find out which actions are relevant for your business processes.

Table: Actions for Printing

Action Definition	Action Profile	Description
/SCWM/SR_PRINT_TU_WAYBILL	/SCWM/TU	Print Road Waybill for TU
/SCWM/SR_PRINT_VEH_WAYBILL	/SCWM/VEH	Print Road Waybill for Vehicle
PRINT_LOADLISTTU	/SCWM/TU	Print Loading List for TU
PRINT_LOADLISTVEH	/SCWM/VEH	Print Loading List for Vehicle

The main print form used in S&R is the road waybill. Loading lists are used for internal purposes only. For road waybills, you can copy and adapt the forms delivered by SAP in standard. For loading lists, we recommend that you create your own form.

Some information about actions related to waybill printing:

- If you use TUs without vehicles, use the action definition from the /SCWM/TU profile.

- If you use a TU and a vehicle to build a truck, it does not matter if you use the waybill print action for the TU or for the vehicle; the printout is the same. However, do not use the waybill print actions for TUs and vehicles at the same time, as you would get two printouts for the same truck.

For more information about waybill print, see the application help for SAP EWM 9.0 (or higher):

- [Print Forms in Shipping and Receiving](#)

- <u>Adapting Print Forms in Shipping and Receiving</u>

Table: Actions for Subsequent Functions in SAP EWM

Action Definition	Action Profile	Description
/SCWM/SR_SET_TU_SYNC_DLV	/SCWM/TU	Synchronize TUs with assigned deliveries
/SCWM/SR_TU_HU_TO_CREATE	/SCWM/TU	Create (un)loading WTs for assigned HUs

Synchronization of TUs with assigned deliveries:

It is usually NOT necessary to use this action, as in most cases, a TU-relevant delivery change or a delivery-relevant TU change (for example, loading finished or GI posted) is updated immediately in the TU or vice versa. Only in exceptional cases, for example, when creating HU warehouse tasks to load a truck without assigning the HUs to the TU in advance, is an update in the delivery not transferred immediately to the TU. This means that some information in the TU, such as the loading weight, is not updated yet. It will be updated upon GI posting or when pressing the check button in transaction /SCWM/TU.

You can use the action definition /SCWM/SR_SET_TU_SYNC_DLV to synchronize the TU and its assigned deliveries before an automatic synchronization is done by the system.

🖉 **Note**

> This action may have a negative impact on performance. Therefore we recommend not using it.

Creation of (un)loading WTs for assigned HUs:

This action can be used only in a business process in which HUs are already assigned to a TU before a warehouse task is created, typically the inbound part of a stock transfer order process. It is more usual to use actions for creating warehouse tasks for deliveries as they do not require HU creation beforehand, or to use waves to create warehouse tasks in outbound processes.

Table: Actions for Communication with SAP ERP Shipments

Action Definition	Action Profile	Description
/SCWM/SR_SEND_SHIPPL_VEH	/SCWM/VEH	An IDOC message is sent to ERP to delete the corresponding ERP shipment.
/SCWM/SR_SEND_SHIPPL	/SCWM/TU	An IDOC message is sent to ERP to delete the corresponding ERP shipment.
/SCWM/SR_SEND_SHPMNT	/SCWM/TU	An IDOC message is sent to ERP to create a shipment or to update an existing shipment.

The actions are used in the following contexts:

- Business processes with SAP ERP shipment integration
- Business processes with SAP TM integration via SAP ERP shipments

An action such as the shipment deletion can be active both at TU and vehicle level at the same time. It will be communicated only once to SAP ERP.

🖉 **Note**

> The action definitions are inactive in standard. If you use the business processes mentioned above, you must activate the action definitions as described in chapter Action Profile Definition for TUs and Vehicles.

For the detailed configuration of these processes, see the configuration documents available in the Solution Manager.

Table: Actions for Communication with Transportation Management in SAP EWM

Action Definition	Action Profile	Description
/SCWM/SR_SEND_VEH	/SCWM/VEH	Loading completed (vehicle)
/SCWM/SR_SEND_TU	/SCWM/TU	TU content changed
/SCWM/SR_SEND_TU_FINAL	/SCWM/TU	Loading completed (TU)
/SCWM/SR_SEND_TU_FINAL_CANCEL	/SCWM/TU	Reversal of loading completed

✏️ **Note**

The actions are NOT used for the integration with SAP Transportation Management. They are used for the integration of S&R with Transportation Management in SAP EWM (using shipments and freight documents in SAP EWM). They are used in outbound processes only.

Actions for Communication via SAP NetWeaver PI

All action definitions beginning with /SCWM/BIF are used in the context of a communication to external applications using SAP NetWeaver PI.

5.4 Action Configuration for TUs and Vehicles

You can find the action configuration in Customizing for *Extended Warehouse Management* under *Cross-Process Settings → Shipping and Receiving → Message Processing → Define Action Conditions for Vehicles* or *Define Action Conditions for Transportation Units.*

In this activity, you can define your own settings for an action. These settings take precedence over the default settings delivered by SAP in the action definition. For example, you can do the following:

- Delete an action from the action profile using pushbutton *Delete Action Template*. This will deactivate the action in the profile and improve the performance.

- Configure the processing of actions used for printing, such as choosing between PDF-based forms and SAP Smart Forms, assigning a form name and a printer, or replacing the standard processing method by your own method (see application help *Adapting Print Forms in Shipping and Receiving*).

- Enter a status value for actions with schedule condition /SCWM/SR_TU_CHECK_STATUS. For this purpose, select an action, switch to change mode, go to tab *Schedule Condition*, choose *Change Value*, double-click < Not Set > and enter a value (for example, **ISR18** for *Goods Issue Posted* or **ISR09** for *Loading Completed*) in the bottom line for the *STATUS* field.
  You can find the list of possible status values in transaction *BS23* (all values starting with ISR).

  ⬆️ **Recommendation**

  We recommend NOT changing the schedule condition, the processing time, and the processing method (except for printing) for actions delivered in standard by SAP.

5.5 BAdI Implementation for Action Scheduling

This chapter is only of interest if you create your own actions (customer development).

S&R does not use condition records for scheduling actions. The action scheduling is based on hard-coded scheduling conditions (SAP EWM-specific implementation of BAdI EVAL_SCHEDCOND_PPF). The schedule condition name in the action definition, for example, /SCWM/SR_SEND_MSG_SHPMNT, is the filter value for the BAdI implementation.

Here is an overview of the S&R classes implementing BAdI EVAL_SCHEDCOND_PPF:

- /SCWM/CL_IM_SR_COND_TUACT for TUs
- /SCWM/CL_IM_SR_COND_VEHACT for vehicles
- /SCWM/CL_IM_SR_COND_DOORAC for doors

When creating your own actions (customer development), you can either reuse the scheduling conditions provided by SAP in standard or create your own BAdI implementation with your own filter value (schedule condition name).

5.6   BAdI Implementation for Action Processing

This chapter is only of interest if you create your own actions (customer development).

The execution of actions with processing type *Method Call* is based on hard-coded processing (SAP EWM-specific implementation of BAdI `EXEC_METHODCALL_PPF`). The method name in the action definition, for example, `/SCWM/SR_SEND_SHPMNT`, is the filter value for the BAdI implementation.

Here is an overview of the S&R classes implementing BAdI `EXEC_METHODCALL_PPF`:

- `/SCWM/CL_IM_SR_ACTIV1_TU` for TUs
- `/SCWM/CL_IM_SR_ACTIV1_VEH` for vehicles
- `/SCWM/CL_IM_SR_ACTIV1_DOOR` for doors

When creating your own actions (customer development), you can either reuse the processing methods provided by SAP in standard or create your own BAdI implementation.

6. Processing in Warehouse Order and Handling Unit Printing

Documents related to warehouse orders (WO) and handling units (HU) are printed using Post Processing Framework (PPF) actions.

The PPF application is same for WO and HU, but with different PPF action profiles.

Table: Action Profile for S&R Objects

Application Object	PPF Application	Action Profile
Warehouse Order	/SCWM/WME	/SCWM/WO
Handling Unit	/SCWM/WME	/SCWM/HU

See application help for additional information:

- Handling Unit
- Warehouse Order

6.1 Action Profiles

You can find the standard action profiles for WO printing in Customizing for *Extended Warehouse Management* under *Cross-Process Settings → Warehouse Order → Print → Define PPF Action Profiles.*

You can find the standard action profiles for HU printing in Customizing for *Extended Warehouse Management* under *Cross-Process Settings → Handling Units → Basics → Print → Define PPF Action Profiles.*

There, you can also find the standard PPF action definitions assigned, by selecting the action profile mentioned above.

In standard, all action definitions are active and have PPF conditions assigned.

Therefore all of them will be evaluated in a standard system. If you do not need all of them, you can set them to inactive.

In standard, all action definitions have the processing type 'Method Call' only. They make no use of the existing processing type 'Smart Forms Print' for printing of Smart Forms or 'External Communication' for printing of Adobe PDF.

🖊 Note

The name of the action definition has no direct relationship to the actual printed form.

➡ Example

PPF action HU_CONTENT can print any form based on the defined interface like an HU label. The form is only defined by the found condition record.

6.2 PPF Conditions

You can find the standard PPF conditions for WO printing in Customizing for *Extended Warehouse Management* under *Cross-Process Settings → Warehouse Order → Print → Define PPF Action Conditions.*

You can find the standard action profiles for HU printing in Customizing for *Extended Warehouse Management* under *Cross-Process Settings → Handling Units → Basics → Print → Define PPF Action Conditions.*

In standard, some of the PPF action definitions have 2 PPF conditions. They differ in the way they are scheduled, as follows:

- PPF condition with a schedule condition and the *Schedule Automatically* checkbox selected is used for automatic printing triggered by a process like WO creation.

- PPF condition without a schedule condition and with the *In the Worklist* checkbox selected is used for the reprint dialog in the monitor. This allows you to trigger a PPF action at any time without checking the standard schedule condition. If you do not want to allow this in your system, you can delete this PPF condition.

> 🖉 **Note**
>
> The action merging of the PPF conditions is set to *Max. 1 Action for Each Definition*. This means that the PPF action for one application object is only scheduled once in its lifetime. Even if the PPF action is executed, the same PPF action is never scheduled again. This is independent of whether a valid condition record is found again. Of course, another PPF action can be scheduled for the application object.
>
> ↪ **Example**
>
> You have set up a condition record to print an HU content label if the HU is created and if the HU is changed, but the merging logic is still *Max. 1 Action for Each Definition*. If you now create HU 4711, a valid condition record is found and the PPF action is scheduled. If you now change the HU, a valid condition record is found but the PPF action is not scheduled because of the action merging rule.

6.3   Schedule Condition

The schedule condition is the most important part, because inside the schedule condition is decided not only if a PPF action should be scheduled (if a condition record is found) but also which form (field *FORMU*), type of form (Smart Form or Adobe PDF, field *RFID*), printer (field *LDEST*) and spool parameter (field *SPOOL*) should be used.

All schedule conditions for WO printing call function module `/SCWM/SCHEDULE_COND_WO` and all schedule conditions for HU printing call function module `/SCWM/SCHEDULE_COND_HU`.

Inside the schedule condition, SAP condition technique is called with application data from the context class of the action profile.

A PPF action is scheduled if a condition record is found with the PPF action name (field `PPFACTDEF`) as returning value.

SAP condition technique is only called for the first PPF action. The found condition records are stored in a persistent class. The next PPF action is checked against records in the persistent class. This saves runtime.

Process Flow:
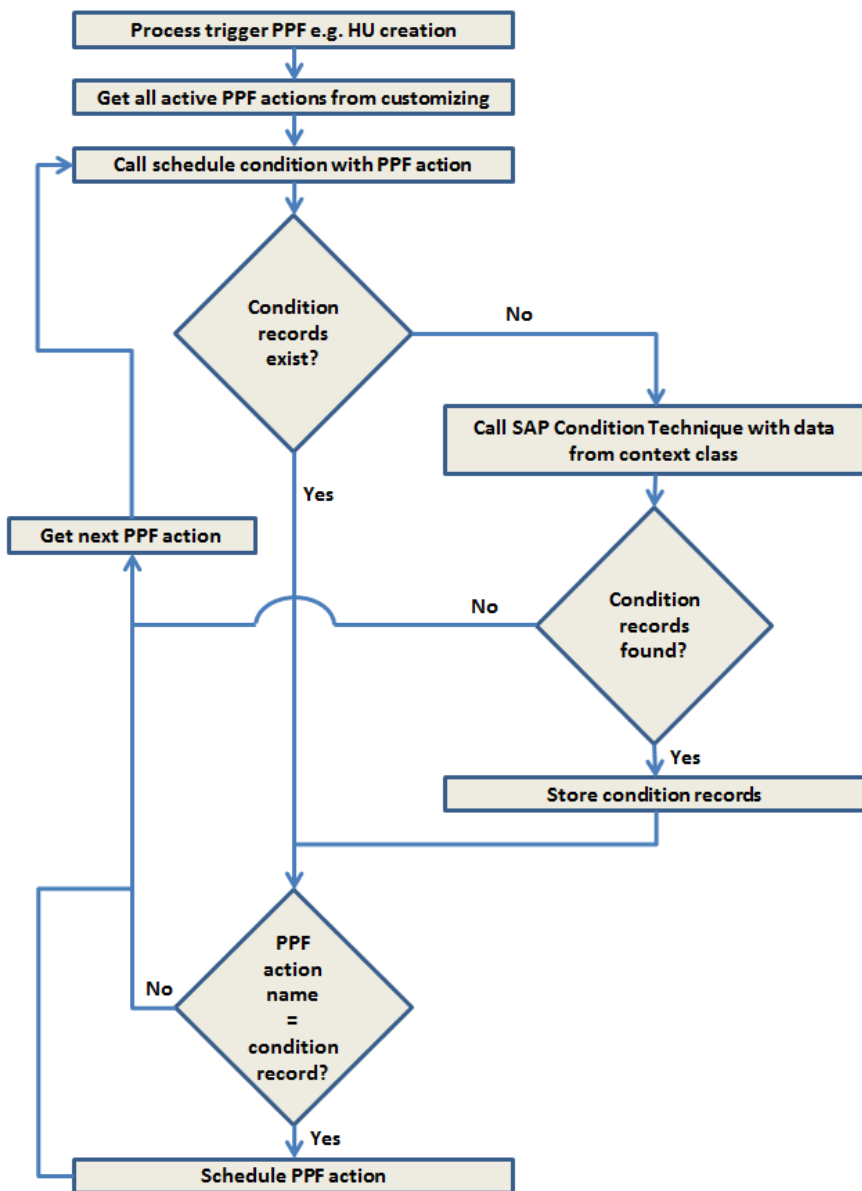
Additional information on PPF and Condition Technique can be found in application help.

> ✏️ **Note**
>
> If no condition records are maintained, no PPF action is scheduled. Setting up the SAP Condition Technique is prerequisite for WO and HU printing.
> Setup is done in Customizing for *Extended Warehouse Management* under *Cross-Process Settings → Handling Units → Basics → Print* or *Cross-Process Settings → Warehouse Order → Print.*
> You maintain the condition record in the *SAP Easy Access* screen under *Extended Warehouse Management → Work Scheduling → Print → Settings → Create Condition Records for Printing.*

6.4 Execution

As mentioned before, all standard action definitions use processing type *Method Call.*

All execution methods for WO printing call function module `/SCWM/EXECUTE_PPF_WO` and all execution methods for HU printing call function module `/SCWM/EXECUTE_PPF_HU`.

Inside the function module is differentiated between Smart Forms printing and Adobe PDF printing.

6.5 Log

The determination log and processing log can be influenced by transaction `/SCWM/WOHULOG`. On the *SAP Easy Access* screen, choose *Extended Warehouse Management → Work Scheduling → Print → Settings → Activate Application Log.*

You can switch the logs on and off on warehouse number level, and warehouse number and user level.

> ➡️ **Example**
>
> You have switched off the logs on warehouse number level, but you switch it on for a certain user for testing purpose.

The logs can be read with transaction `SLG1` for object *PPF* and subobject *DETERMINATION* or *PROCESSING*.

> ➡️ **Note**
>
> The External Identification for the warehouse order is the warehouse number and the warehouse order number, for example, `W0010000004711`.
> The External Identification for the handling unit is the warehouse number and the handling unit number, for example, `W0010000000000800000369`.

> ➡️ **Note**
>
> If you read the log entries of the *DETERMINATION*, you will often read the word 'Condition'. You must be careful, because sometimes 'Condition' means PPF condition, and sometimes 'Condition' means SAP Condition Technique.
> If the message belongs to message class `SPPF_DET`, it means PPF condition.
> If the message belongs to message class `/SCWM/PRINT`, it means SAP Condition Technique.
>
> The External Identification for the warehouse order is the warehouse number and the warehouse order number, for example, `W0010000004711`.
> The External Identification for the handling unit is the warehouse number and the handling unit number, for example, `W0010000000000800000369`.

6.6 Archiving

Archiving the PPF actions will not archive the related application objects. On the other hand, archiving the application data will not archive the PPF data too. After archiving the application objects, warehouse order, and handling unit, you must run report `/SCWM/R_REORG_HU_WO_PRINT`. This report will delete the persistent data of the PPF related to the application objects.

7. Additional Objects using PPF for Printing

In Post Processing Framework (PPF) application `/SCWM/WME`, you find two additional objects which use PPF to trigger document printing.

Application Object	PPF Application	Action Profile
Physical Inventory	`/SCWM/WME`	`/SCWM/PI_COUNT`
VAS-(Value Added Service)-Order	`/SCWM/WME`	`/SCWM/VASORDER`

7.1 Physical Inventory

To set up printing for Physical Inventory, see Customizing for *Extended Warehouse Management* under *Internal Warehouse Processes → Physical Inventory → Print → How to Print Physical Inventory Documents*.

7.2 Value Added Service

The trigger to print documents for Value Added Service (VAS) can be set up directly for the application object VAS order (with action profile `/SCWM/VASORDER`) or indirectly for the application objects warehouse order (with action profile `/SCWM/WO`) or handling unit (with action profile `/SCWM/HU`).

In all cases, the schedule condition makes no use of SAP Condition Technique.

The central point of entry is Customizing for *Extended Warehouse Management* under *Cross-Process Settings → Value-Added Services (VAS) → Print VAS → Define time of Printing*.
Please also read the documentation for this customizing node.

If you set up the printing time to *VAS Printed with Warehouse Order*, you have to enter at least one PPF action from action profile `/SCWM/WO` or `/SCWM/HU`. In the schedule condition of PPF action `/SCWM/PRINT_VAS_FROM_WO` or `/SCWM/PRINT_VAS_FROM_HU`, the system checks if the entered WO or HU PPF action is scheduled or not. If it is scheduled, the VAS PPF action is scheduled also.

> **Note**
> The printing time *VAS Printed with Warehouse Order* is also valid if you want to trigger printing of VAS documents based on HU actions.

> **Note**
> The behavior of the schedule conditions used is documented in the methods used. You can easily jump into the methods from the PPF Conditions maintenance. On the *Schedule Condition* page, press the *Edit Condition* button.

8. Appendix

Appendix A – Important Notes

Number	Component	Short Text
521529	BC-SRV-GBT-PPF	PPF: Setting up dynamic printer determination
788626	BC-SRV-GBT-PPF	PPF: Adjusting the Smart Form documents
876540	BC-SRV-GBT-PPF	PPF: Setting the title of a Smart Form document (mail)
935670	BC-SRV-GBT-PPF	PPF: Sending an SF output with a main document
896858	BC-SRV-GBT-PPF	FAQ: SPPFP - Report RSPPFPROCESS
896175	BC-SRV-GBT-PPF	FAQ: Customizing
896174	BC-SRV-GBT-PPF	FAQ: Addresses and business partners
896173	BC-SRV-GBT-PPF	FAQ: Inconsistencies - Short Dump CX_OS_OBJECT_NOT_FOUND
1510817	SCM-EWM-DLP-BF-PPF	Missing Enhancement Options for Action Profiles
1461585	SCM-EWM-DLP-BF-PPF	Usage of dlv status values in schedule and start conditions
1393635	SCM-EWM-DLP-BF-PPF	Consulting: PPF Merge Logic usage within SAP EWM Delivery
1360471	SCM-EWM-DLP-BF-PPF	Consulting: Handling of locking affected PPF actions
1394143	SCM-EWM-DLP-BF-ARC	PPF actions are not deleted after archiving
1599301	SCM-EWM-DLP-BF-PPF	Locking problem in the PPF Action execution
1606736	SCM-EWM-DLP-BF-PPF	PPF Action short dump

Appendix B – Useful Links

SAP Community Network: Modeling Guide for Post Processing Framework (PPF) (Article)

SAP Community Network: Post Processing Framework (PPF) Guidelines for application developers (Article)

www.sdn.sap.com/irj/sdn/howtoguides