

How-To Guide

SAP Extended Warehouse Management (EWM)

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How To... Queue Content Editing

For ERP inbound queues sent from EWM

Document History

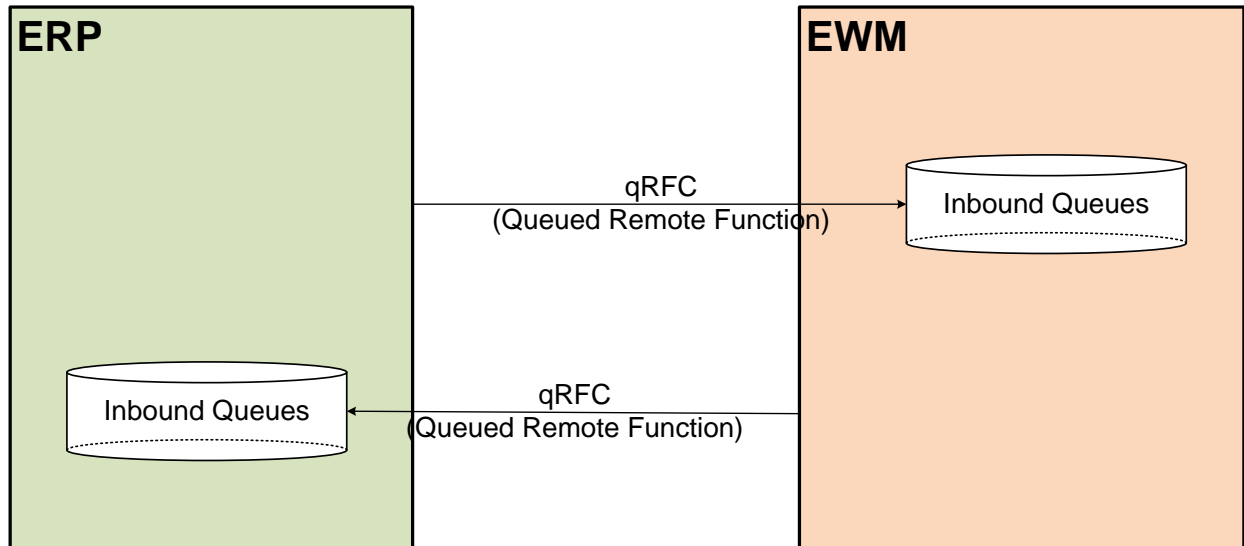
Document Version	Description
1.0	First official release of this guide
1.2	Updated version with information about customer-specific parameters in qRFC functions

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1 Business Scenario

You are using an SAP Extended Warehouse Management (SAP-EWM) that is connected to an SAP-ERP system. For the integration between SAP EWM and SAP ERP, in many cases Queued Remote Function Calls (qRFCs) are used.



Due to various reasons, qRFCs that were sent from SAP EWM to SAP ERP can fail. Such failed queues have to be resolved, either automatically (where possible) or by manual interventions.

A user can monitor such failed queues either in SMQ2 on the SAP ERP side (see Figure 1) or in the warehouse management monitor on the SAP EWM side (see Figure 2). In the example, you can see a queue with the queue name DLWSB7GCLNT5001000055701 in both monitor transactions.

qRFC Monitor (Inbound Queue)

Cl.	User	Function Module	Queue Name	Date	Time	StatusText	TID
001		/SPE/INB_DELIVERY_SAVEREPLICA	DLWSB7GCLNT5001000055701	19.10.2015	14:18:43	Invalid Means of Transport Type 031	0A429EE572175624DF83

Figure 1 Example of an SMQ2 entry in SAP ERP

Warehouse Management Monitor SAP - Warehouse Number BOP1

Status	Directly	Description	Whse No.	Business Object	Business Object Key Value	Message Text
✖	✖	Replicate Inbound Delivery (from EWM)	BOP1	Inbound Delivery	1000055701	Invalid Means of Transport Type 031
✖	✖	Post Goods Movement w. Delivery Reference...	BOP1	Goods Movement (Inbo...	180000716	Enter Batch
✖	✖	Post Goods Movement in ERP (from EWM)	BOP1	Goods Movement	700000300	Deficit of SL Unrestricted-use 4 EA : PROD-L01 BOP1 AF
✖	✖	Post Goods Movement in ERP (from EWM)	BOP1	Goods Movement	700000203	Deficit of SL Unrestricted-use 50 EA : PROD-S02 BOP1 A
✖	✖	HU WT Creation Proc.-Oriented Storage Ctrl	BOP1	Handling Unit	0000000000800000023	Storage type search with template: No entry f. item 0 f
✖	✖	HU WT Creation Proc.-Oriented Storage Ctrl	BOP1	Handling Unit	0000000000800000022	Storage type search with template: No entry f. item 0 f
✖	✖	Follow-Up of WT in Case of Locked Bin	BOP1	Warehouse Request	41000010147	System could not determine source storage bin
✖	✖	Follow-Up of WT in Case of Locked Bin	BOP1	Warehouse Request	41000010109	System could not determine source storage bin
✖	✖	Follow-Up of WT in Case of Locked Bin	BOP1	Warehouse Request	41000010072	System could not determine source storage bin
✖	✖	Follow-Up of WT in Case of Locked Bin	BOP1	Warehouse Request	41000010089	System could not determine source storage bin
✖	✖	Follow-Up of WT in Case of Locked Bin	BOP1	Warehouse Request	41000010040	System could not determine source storage bin
✖	✖	Follow-Up of WT in Case of Locked Bin	BOP1	Warehouse Request	41000010061	System could not determine source storage bin
✖	✖	Follow-Up of WT in Case of Locked Bin	BOP1	Warehouse Request	41000010054	System could not determine source storage bin
✖	✖	Follow-Up of WT in Case of Locked Bin	BOP1	Warehouse Request	41000010077	System could not determine source storage bin

2 Background Information

qRFCs are a standard SAP technology and part of SAP NetWeaver. qRFCs offer background communication and processing. They also offer a “retry” logic, meaning that if an object (for example, an outbound delivery) is locked by another process, the qRFC performs an automatic reprocessing at a later point. Also, in the case of errors (for example, wrong customizing), qRFCs can be also re-executed. For these reasons, they are used in SAP EWM.

General information about qRFCs in SAP NetWeaver can be found on help.sap.com under *Technology Platform* → *SAP NetWeaver* → *SAP NetWeaver 7.4* → *Function-Oriented View* → *Connectivity* → *Components of SAP Communication Technology* → *Classic SAP technologies (ABAP)* → *RFC* → *Background Communication* → *Queued Remote Functions Call (qRFC)*.

3 Prerequisites

For qRFC, processing inbound queues and outbound queues can be used. Partly, you can configure if inbound or outbound queues shall be used for communication to SAP EWM in SAP ERP. (See *Customizing in ERP* under *Integration with Other SAP Components* → *Extended Warehouse Management* → *Basic Settings for EWM Linkage* → *Define Queue for Transfer to SAP EWM*.) As default inbound queues are used. For EWM it is recommended to use inbound queues.

The qRFC editing is only available for SAP ERP inbound queues. Only RFC functions which are delivered by SAP (done with a whitelist concept which is explained later) can be edited. It is not possible to add further qRFC functions or customer specific qRFC functions. It is also not possible to edit qRFC functions which have been enhanced by (customer-specific) additional parameters (see appendix).

CAUTION

Queue editing should only be the last measure to solve failed queue entries.

Before you take queue editing into consideration, check if the queue failures can be resolved by other measures.

Typical reasons for failed queues can, for example, be:

- Missing or faulty customizing
- Missing authorizations
- Deviating validation logic in SAP ERP and SAP EWM
 - Examples are tolerance checks, best before date or shelf life checks, and address validations.
- Missing master data
- Missing SAP notes
- Accounting related messages (For example posting in wrong period)

In the above cases it first should be tried to resolve the queue failure by resolving the root causes. SAP provides a number of consulting notes which offer hints for resolving typical error situations like the above.

CAUTION

Only in cases where the failure cannot be resolved (or not resolved in a timely manner) should you think about queue editing as an option.

Before you start using the queue editing, you should ensure that you are familiar what qRFCs are and with the SAP NetWeaver standard transaction (for example, to register queues and monitor queues). If not, see the background information and have a look at the SAP NetWeaver documentation for qRFC technology.

CAUTION

You must also be familiar with the QRFC messages/functions where you want to edit content and what effects the field changes have in the backend for a certain process. This is very important, as changing queue content to wrong values may cause inconsistencies. It can also be that changing a specific field may be uncritical in one process while in another process it is critical.

In order to use queue editing the following prerequisites have to be fulfilled:

3.1 On the SAP EWM Side

This section is only necessary if you want to use the message queue monitor in transaction /SCWM/MON to display SAP ERP inbound queues.

3.1.1 Necessary Notes

In order to be able to display the queue content of SAP ERP queues from SAP EWM, you must have implemented SAP Note 2226334 or the corresponding support package.

3.1.2 RFC Dialog User

In order to display SAP ERP queue content, a navigation to the SAP ERP system is done from SAP EWM. Therefore, an appropriate RFC destination for the SAP ERP system with a user of type “dialog” has to be defined in SAP EWM.

This RFC destination has to be used as standard dialog destination in transaction BD97 for the corresponding SAP ERP system. This user will then be used for displaying and editing the queue on SAP ERP side.

Note

If an edited queue is also executed again by such a user, this user may also require the appropriate application authorizations. For more information, see the appendix *User Name*.

Depending on your company's authorization concept, you may also not want to use a fixed user in this RFC destination but use the “current user” (which allows a more controlled authorization concept and auditing).

3.1.3 Registration of qRFC Remote Display Program

This step is usually already done by the default customizing. Only if you changed the standard settings or encounter problems during the displaying of the qRFC content, check the following settings:

In transaction SPRO, navigate to *SCM Extended Warehouse Management* → *Extended Warehouse Management* → *Monitoring* → *Message Queue Monitoring* → *Define Message Queue Definitions*.

Here, ensure that the program /SCWM/ERP_DISP_QIN_LOG_EWM is entered in the *Report for Container* field for the queue entries which you want to display (and then edit) in SAP ERP.

3.2 On the SAP ERP Side

3.2.1 Necessary Notes

You must have implemented SAP Note 2225968 or the corresponding support package.

3.2.2 Registration of qRFC Display Program

In transaction SMQE, ensure that display program /SPE/QUEUE_DISPLAY_TOOLS is registered for the following queue name prefixes (you may use wildcards like DLWS*):

- DLWS
- EWM

- WMC
- WMP
- DLWS

The registration can be done in SMQE, in menu *Edit* → *Register Display Program*.

In Figure 3 you can see an example.

qRFC Administration				
Event Registration		Event Deregistration		
Queue Name	Type	Action	Event Function	Display Program
CF*	P			CIFQEV02
DLV*	P			/SPE/QUEUE_DISPLAY_TOOLS
DLW*	P			/SPE/QUEUE_DISPLAY_TOOLS
EWM*	P			/SPE/QUEUE_DISPLAY_TOOLS

Figure 3 Example of SMQE

3.2.3 Whitelist

CAUTION

Editing queue content can have severe consequences (inconsistencies, error messages) if field content or data is changed to wrong or inappropriate values.

To mitigate the risk of the creation of data inconsistencies by queue editing, SAP provides a whitelist concept that controls the editable parameters and fields.

The whitelist contains:

- A list of qRFC functions used for messages from EWM to ERP
- Parameters of these function modules that may be subject of queue editing.
- Fields of these parameters that may be subject to queue editing.

With this whitelist concept you can decide which fields you want your users to be edited.

CAUTION

When you configure the whitelist based on the queue content that may be edited in your system, keep in mind that the content provided by SAP contains parameters and fields which can often be edited. Nevertheless, there are scenarios where editing may lead to subsequent issues. You should test such scenarios before you allow editing of parameters/fields.

Example:

- In certain scenarios it is often uncritical (for non-cross HUs) to delete the HU data and post a goods movement without HU in SAP ERP
- But in some scenarios a later qRFC message will depend on the HU and will fail. This is especially the case for cross HUs.

By default, queue editing is inactive in the system. Queue editing has to be activated using a whitelist. This allows you to control which RFC functions, parameters and fields are open for editing.

As described, SAP delivers certain content for the whitelist. Customers can adapt this content in the two ways:

- As customizing (without modification)
- Emergency Mode

These are explained in detail in the following.

3.2.3.1 Customizing (Without Modification)

Customizing means that you adapt the standard settings that SAP delivers. Typically, you make these settings in your customizing system and then transport it into your productive system. These changes are not modifications and will not be overwritten by later SAP.

Use transaction /SPE/MQWL_CUS.

Here, you can define which RFC functions shall be editable by setting the *Editable* indicator (see Figure 4). Editable means that (if the user has the right authorizations) an edit button will be visible in the qRFC container display (see Figure 5). Configure these settings in accordance with the configuration of your business processes.

It is not possible to add further qRFC message functions in this transaction.

qRFC Function Module	Editable	Short text
/SPE/BATCH_SAVE_REPLICA	<input type="checkbox"/>	RFC for BAPI_BATCH_SAVE_REPLICA (SAP EWM)
/SPE/GOODSMVT_CREATE	<input type="checkbox"/>	SPE: Proxy BAPI for EWM System
/SPE/INB_DELIVERY_CONFIRM_DEC	<input checked="" type="checkbox"/>	BAPI for Inbound Delivery Confirmation from a Decentralized System
/SPE/INB_DELIVERY_REPLACE	<input type="checkbox"/>	Create inbound delivery
/SPE/INB_DELIVERY_RESPONSE	<input type="checkbox"/>	Response for Inbound Delivery BAPIs
/SPE/INB_DELIVERY_SAVEREPLICA	<input type="checkbox"/>	Create inbound delivery
/SPE/INB_DELIVERY_SPLIT	<input type="checkbox"/>	Split Inbound Delivery
/SPE/INSP_MAINTAIN_MULTIPLE	<input type="checkbox"/>	Inspection Outcome: Create/Change Inspection Outcome
/SPE/INSP_RSTO	<input type="checkbox"/>	Inspection results received from EWM for an enhanced rSTO
/SPE/OUTB_DELIVERY_SAVEREPLICA	<input type="checkbox"/>	Create Direct Outbound Deliveries in ERP
/SPE/PO_CREATE	<input type="checkbox"/>	Create Purchase Order
BAPI_BATCH_SAVE_REPLICA	<input type="checkbox"/>	Replicate Batch

Figure 4 Example for Whitelist configuration on qRFC message level

Delivery	Logical time	Short Time Stamp	Time Zone
180000740		20.151.020.074.522	UTC
180000740	ID RECEIVED ON DOCK	20.151.020.074.522	UTC

Figure 5 Example for displaying a queue container with activated edit button

In order for a user to be able to edit certain fields, you must define which fields shall be editable for which parameters.

This can be done by selecting one qRFC message and then clicking on *qRFC Messages: Parameters* in the tree. In this view, you can use the *New Entries* button to add parameters of the qRFC message (see Figure 6). Here, value help (F4) for possible entries is available.

For these parameters you can change the indicators for *Editable* and *Delete*.

- The *Delete* indicator controls whether complete lines can be removed from the queue content for table-level parameters (like *HEADER_DEADLINES* in the example). This indicator is independent of the *Editable* indicator.
- The *Editable* indicator controls whether single fields of a parameters can be edited. (These fields have to be specified as shown below. If the indicator is not set, no fields will be editable for the parameter).

Note

The indicators are only changeable for content that SAP permits to be edited.

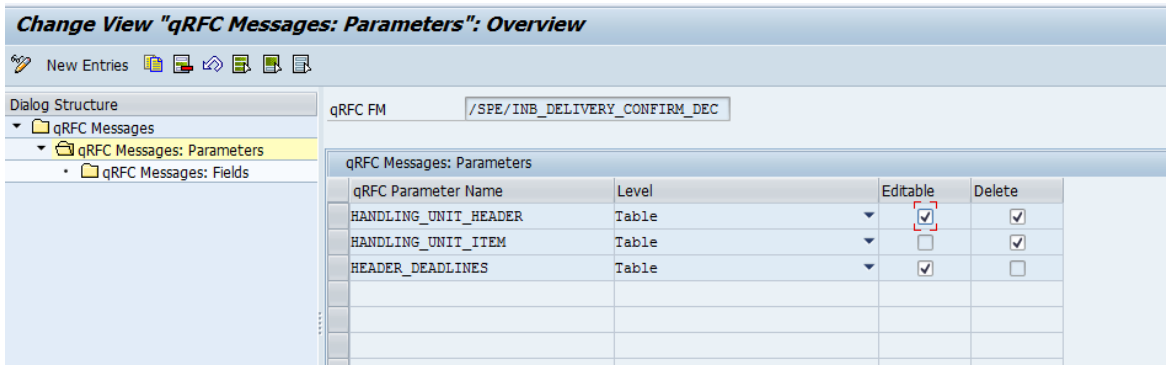


Figure 6 Example for whitelist configuration on parameter level

In order that a single field of a parameter can be edited, it has to be specified. This can be done by selecting a qRFC parameter and then clicking on *qRFC Messages: Fields* in the navigation tree (see Figure 4 for an example of parameter *HEADER_DEADLINES* of qRFC message */SPE/INB_DELIVERY_CONFIRM_DEC*).

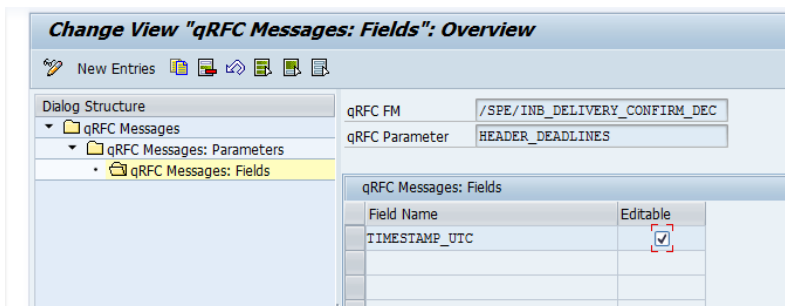


Figure 7 Example for whitelist configuration on field level

In order that a field can be edited, it has to be added to the whitelist by clicking on the *New Entries* button and by setting the indicator for *Editable*. Here, value help (F4) for possible entries is available.

Note

The indicator is only changeable for content that SAP delivered.

3.2.3.2 Emergency Mode

In some cases, it may be necessary to make changes to the whitelist directly in the productive system. The reasons could be that changing the settings in the customizing system and transporting them into the productive system is not possible or would take too long. Other reasons could be that you have an exceptional case where you must edit one queue field which you would normally not edit or that SAP did not foresee the need for it to be edited.

In such a case you have the possibility to overwrite (modify) the SAP configuration.

CAUTION

Note that this is a modification and may be overwritten if you transport whitelist content to your system. Also you must ensure that by editing of fields that SAP did not deliver as editable in the whitelist content you do not cause inconsistencies.

To change the settings, use transaction */SPE/MQWL_APPL*. You will get a warning message that the settings should only be changed in a productive system and that settings can be overwritten.

You now can make changes without the restrictions of the SAP delivered whitelist content. In Figure 8, you can see that, for example, all indicators are changeable compared to Figure 6.

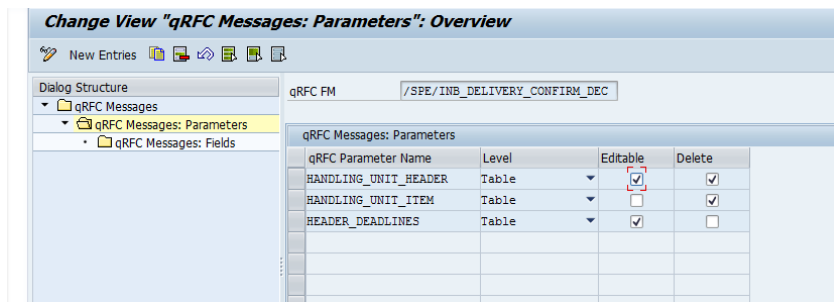


Figure 8 Example for whitelist configuration on parameter level (emergency mode)

3.2.4 Authorizations

For the queue editing, the authorization object /SPE/QEDIT is used. The whitelist configuration declares only in general which fields can be edited. But it can be that you want to specify that different users can edit different queue fields.

Without an assignment of the authorization object, a user will not be able to edit queue content, even if whitelist entries exist.

The authorization object has the following fields. In transaction SU21 you can display the authorization object and also display the authorization object documentation. There, all fields are explained.

Authorization field	Description
ACTVT	Activity. You can define whether the user can just edit a parameter or also delete the parameter (in the case of table parameters) <ul style="list-style-type: none"> • 02 – Change • 06 – Delete • 01 - Create or generate (functionality not available)
/SPE/RFC	qRFC Function Module. You can restrict the authorization of a user to edit only specific qRFC messages from SAP Extended Warehouse Management.
/SPE/PARAM	qRFC Parameter Name. You can restrict the authorization of a user to edit only specific parameters in a qRFC message
/SPE/COMP	Field Name. You can restrict the authorization of a user to edit only specific fields of a parameter in a qRFC message. This option is available for structures and tables in the function module interface. For a single field, the authorization for the parameter is sufficient.

Example

You want a user to be able to edit the posting date for all messages that post a goods movement. You user shall not be able to change any other fields.

- ACTVT: 02
- /SPE/RFC:
 - BAPI_OUTB_DELIVERY_CONFIRM_DEC
 - /SPE/INB_DELIVERY_CONFIRM_DEC
 - /SPE/GOODSMVT_CREATE
- /SPE/PARAM:
 - HEADER_DEADLINES
 - IS_GOODSMVT_HEADER
- /SPE/COMP:

TIMESTAMP_UTC
PSTNG_DATE
DOC_DATE

4 Queue Editing

5 Step-by-Step Procedure

The queue editing can be done in the queue content display. In Figure 9 you can see an overview picture.

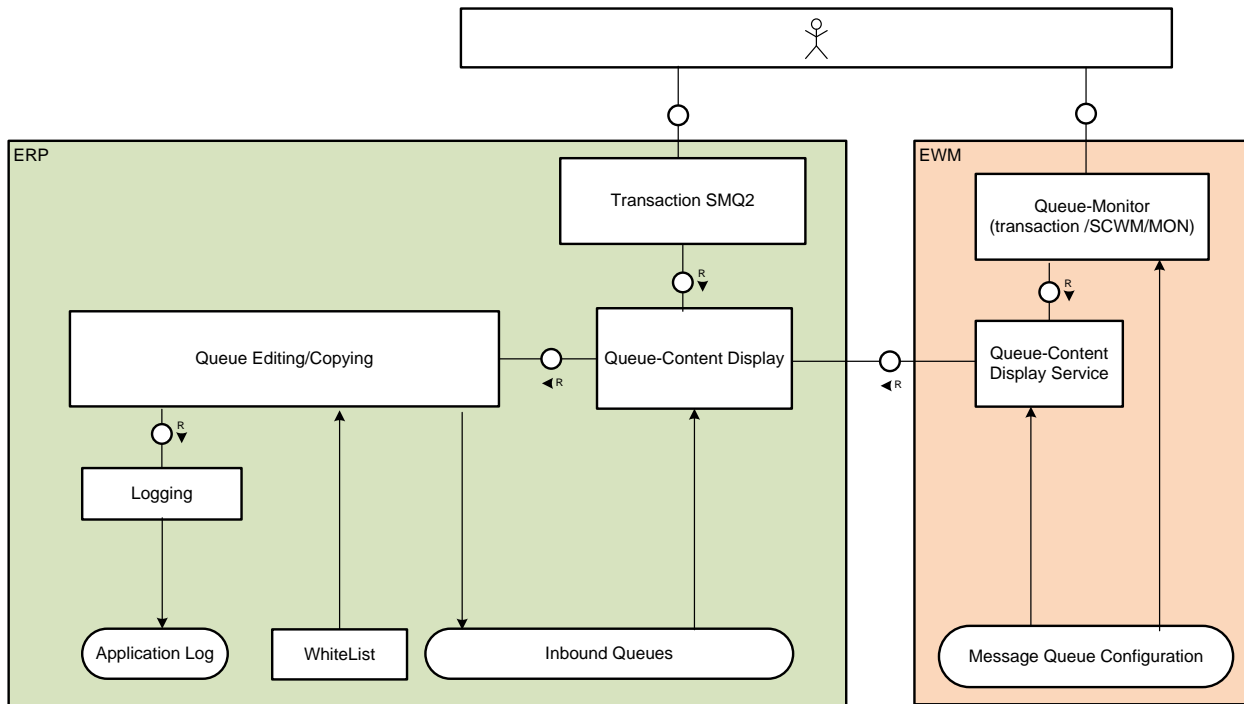



Figure 9 Complete picture of queue editing

5.1 Display Queue Container

In order to navigate from the queue to the queue content, do the following:

- If you are in SAP ERP in SMQ2 (as shown in Figure 1), double click on the queue name.
- If you are in the warehouse management monitor (as shown in Figure 2), mark one queue entry, and click on the button for the data container ().

In Figure 10, you can see an example of how the queue content display looks. If you have the appropriate authorization and whitelist (see prerequisites), then an edit button will be visible.

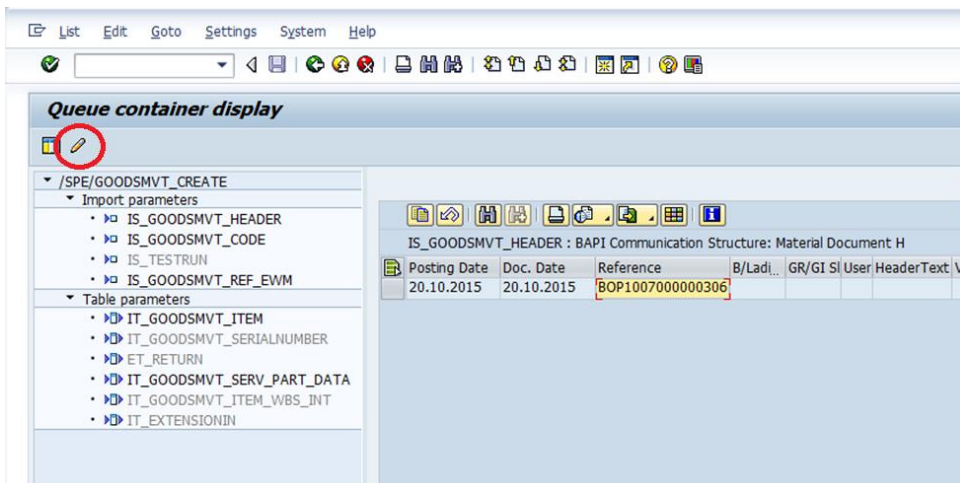


Figure 10 Example of *Queue Container Display*

5.2 Make Changes

Pressing on the edit-button will switch into edit mode (see Figure 11).

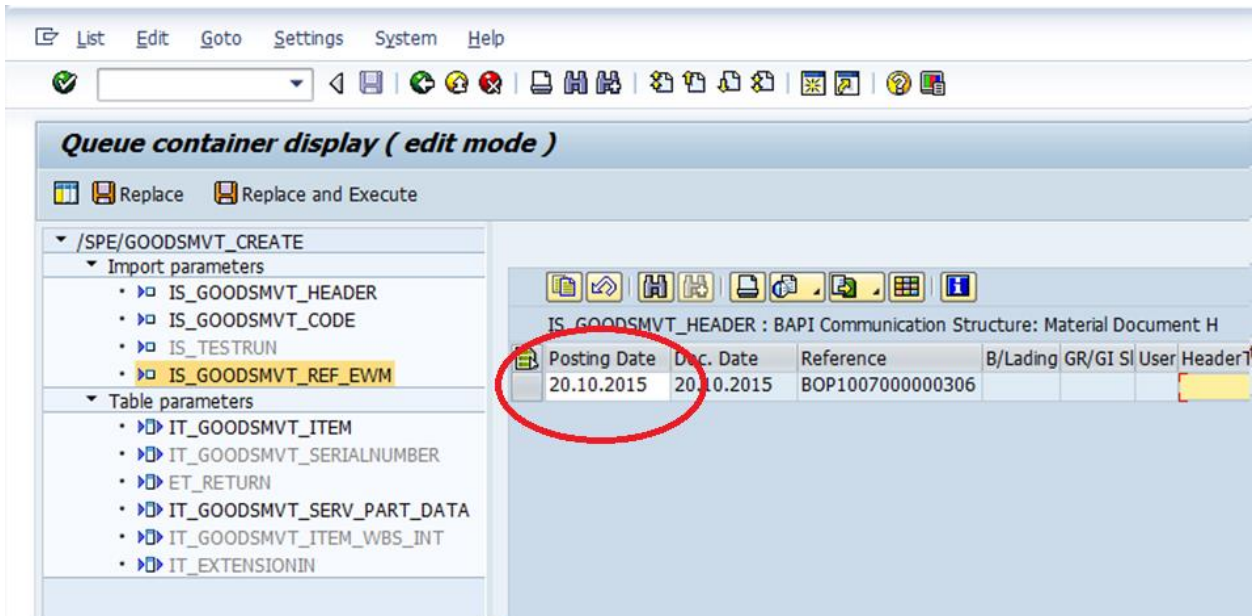


Figure 11 Example of *Queue Container Display (Edit Mode)*

In edit mode, you can change the fields (dependent on your authorization and whitelist). In the example, you can see that the field *Posting Date* in the parameter *IS_GOODSMVT_HEADER* can be changed.

W

When you change values in the edit mode, ensure that you only enter valid values. Also, take care that you enter the right format. For example, dates or times are sometimes stored as timestamps. This means you must know the exact type of data you enter. Usually, you can already see this if you change an existing value (like in the example of the posting date). But, for example, if a field is empty and you want to enter values, ensure upfront that you know what is required to be entered. Note that the user interface is a technical user interface. It performs no checks or only rough checks (for example, if a character string is entered in a number field). There are no business checks. You are responsible that valid values are entered.

5.3 Save or Cancel Changes

Once you have changed data you have the following options.

5.3.1 Cancel changes

If you want to exit without saving the (changed) data, then click on either the back, cancel, or exit button. In this case, the queue entry stays unchanged.

5.3.2 Saving of changes

To save the changes, you have the following options.

1. Button  Replace

The first is to just save the changes. This can be done using button "Replace" (see Figure 11).


If you click on this button, the data is saved. The queue will switch to status NOEXEC (Transaction recorded). In Figure 12, you can see an example of how it will look if you started the queue display from transaction SMQ2

Cl.	User	Function Module	Queue Name	Date	Time	StatusText	TID	Original TID
001	SMITH	/SPE/INB_DELIVERY_SAVEREPLICA	DLWSB7GCLNT5001000055701	29.10.2015	13:37:25	Transaction recorded	0A4C855D5DC0563213050A0A	0A60BDD1BB465625E2D9

Figure 12 Example of queue entry in SMQ2 after editing

If you started the queue display from the warehouse management monitor, then the messages queue list will be shown again (like as in Figure 2). Now as the EWM monitor action to display the data container is not configured with an automatic refresh by default, the queue list will appear unchanged. This means that you will not see the updated status. Therefore you have to click on refresh (in the appendix also an alternative approach is described).

In many cases a typical follow on action would now to re-execute the failed queue entry to see if it now can be executed.

2. Button  **Replace and Execute**

To avoid that a user has to perform two steps (saving of the changes and then manually executing the queue entry), there is the button to save the data and automatically execute it.

If the queue entry can be executed with no errors, it will then disappear from the SMQ2. In the warehouse management monitor, it will still appear as long as no refresh was done.

If during the queue execution, an error still occurs even with the changed data, the queue will show up again with the new error message.

If you did not make any changes, you will be notified that saving is not necessary.

If you did changes, then you will get a success message like in Figure 13 (The exact meaning of this is explained in the appendix).

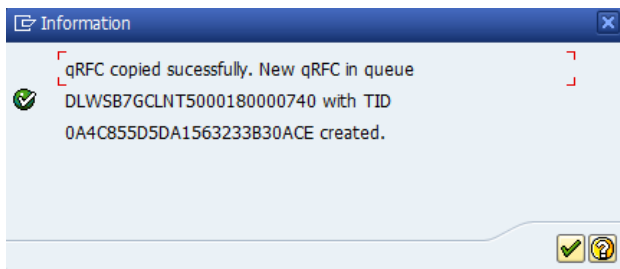


Figure 13 Example of success message to save data changes

5.4 Monitor Data Changes

If queue data was changed by the above mentioned function, this is logged in the application log.

The application log entries can be viewed in transaction SLG1. The application log object that is used is /SPE/QUEUE and the subobject is QUEUE_EDIT.

The logs are written automatically. The expiration time for the log is set to 180 days.

In Figure 14 you can see an example.

In the log, the following information is available (in the log, mark the corresponding message line and click on the details icon to view it):

1. Complete original data content of the original queue.
2. Changed fields, with old and new value (including deletions and insertions of table entries)
3. Technical information about the original and new queue

With this log, you can monitor which changes have been done in the system for which queues later on.

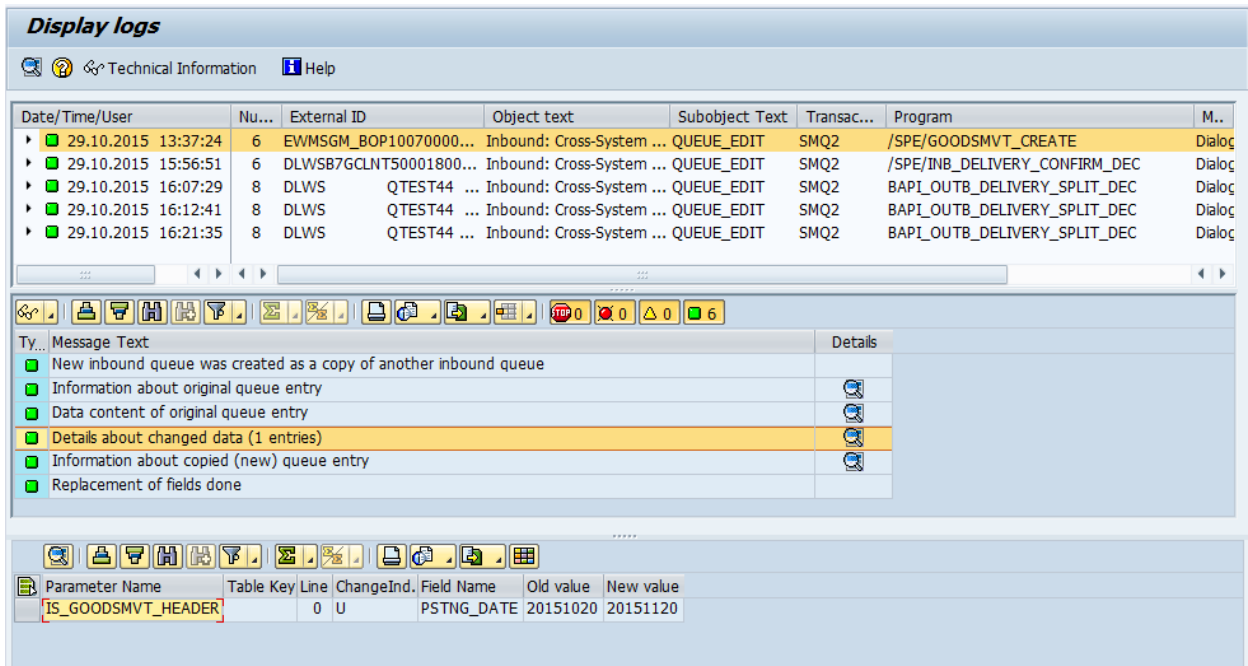


Figure 14 Example of an application log entry for queue editing

Note

In the application log there are entries about the data that was changed during editing. In case of table-like parameters (like parameter HEAER_DEADLINES shown in Figure 16), it is also necessary to identify which entry of the table parameter was changed, deleted or inserted.

The fields *Table Key* and *Line*, that appear in the log entry, are used for this (see Figure 15).

- In the *Table Key* field, the fields which help to identify a certain line in a table parameter (if available) are concatenated. The fields which are concatenated are shown as highlighted in the data container display (see Figure 16 the highlighted fields). Note that these fields also can be changed, if it is configured in the whitelist.
- In the *Line* field, the table line which is effected is mentioned.

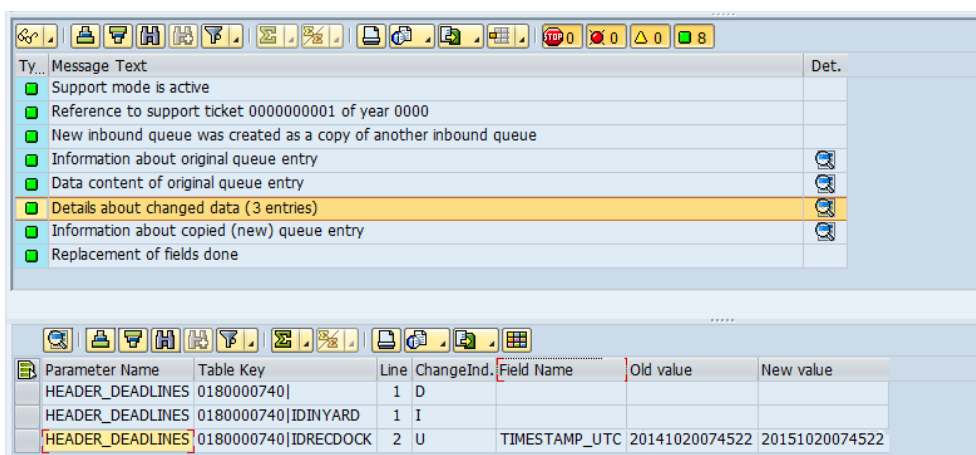


Figure 15 Example: Details about changed data for tables

Queue container display

/SPE/INB_DELIVERY_CONFIRM_DEC

- Import parameters
 - HEADER_DATA
 - HEADER_DATA_SPL
 - HEADER_CONTROL
 - HEADER_CONTROL_SPL
 - DELIVERY
 - TECHN_CONTROL
 - IV_SERVICE_CALL
- Table parameters
 - HEADER_PARTNER
 - HEADER_PARTNER_ADDR
 - HEADER_DEADLINES
 - ITEM_DATA

HEADER_DEADLINES : Delivery Deadlines

Delivery	Logical time	Short Time Stamp	Time Zone
180000740	ID IN YARD	20.141.020.074.522	UTC
180000740	ID RECEIVED ON DOCK	20.151.020.074.522	UTC

Figure 16 Example of table parameter in queue container display

If a complete line is inserted or deleted, then only the information about the insertion or deletion is shown in the field *Change Indicator*, and not all fields of the table line.

What is also of importance is if complete lines are deleted and others (with different keys) are inserted, then they may get the same line numbers. Also for these cases the *Table Key* field can be of importance to provide more information.

6 Appendix

In this section, some important details regarding the queue editing are described. You should read it carefully.

Appendix A – Differences Between Original Queue and Edited Queue

Every queue entry is identified by a unique transaction identifier (TID). You can find this TID in SMQ2 (see Figure 17) or in the warehouse management monitor.

Cl.	User	Function Module	Queue Name	Date	Time	StatusText	TID	Original TID
001	ALEREM	/SFE/INB_DELIVERY_SAVEREPLICA	DLMSB7GCLINT5001000055701	29.10.2015	13:37:25	Transaction recorded	0A4C855D5DC0563213050A0A	0A60BDD1BB465625E2D9

Figure 17 Example of TID

Even if in general the function is called “queue editing”, technically the existing queue entry is not edited or changed.

Instead the original queue entry (identified by its TID) is deleted and a new queue entry with the changed data is created. The new queue entry will get a new TID. Also, as the new queue entry is created by the user who did the editing, the queue entry will get this user’s name.

In the following two figures, you can see the differences. Supposing the queue was edited by user SMITH. The original queue entry was created with user name ALEREM (see Figure 18). The new (copied) queue entry is created with user name SMITH (see Figure 19). Also, you can see that the qRFC Transaction ID differs.

Name of tRFC Queue	User Name	Function Module Name	qRFC Transaction ID (LUW)	Original TID of qRFC	RFC Destination	Counter
EWMSGM_BOP1007000000306	ALEREM	SPE/GOODSMVT_CREATE	0A429EE522C85625E2D90138	0A60BDD1BB465625E2D90002	ldcb7g_B7G_00	00000001

Figure 18 Example: Application log information on original queue entry

Name of tRFC Queue	User Name	Function Module Name	qRFC Transaction ID (LUW)	Original TID of qRFC	RFC Destination	Counter
EWMSGM_BOP1007000000306	SMITH	SPE/GOODSMVT_CREATE	0A4C855D5DC0563213050A0A	0A60BDD1BB465625E2D90002	ldcb7g_B7G_00	00000001

Figure 19 Example: Application log information on new queue entry

This changed user name and TID can have some effects that you should know about and consider:


User Name

If a queue entry is processed, it is processed with the user name stored in the queue entry. This means the authorization checks are done for this user name. Also if, for example, the system writes logs, this user will appear there. If the queue is edited by a different user, then the new queue entry will also be processed using the new user name. You therefore have to ensure that the user has the appropriate (application) authorizations so that the queue can be processed.

Transaction ID

The TID is often used to identify a unique queue entry. This is also the case in transaction SMQ2 or the warehouse management monitor. If the user interface (UI) queue data is changed and saved in the queue container display, the system leaves the UI as is and branches back to either SMQ2 or the warehouse management monitor. There, the queue entries are shown again. But there is no automatic refresh of the data here, so the “old” TIDs are still shown. Now, if a user performs an action on queue entries which have been edited and replaced, the TID will not be found (as the original queue was deleted and replaced by a new queue entry with a new TID).

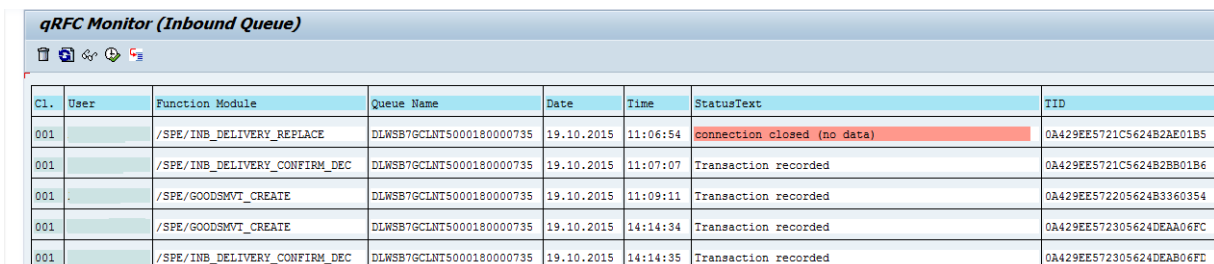
So, depending on if the follow-up action uses the TID, the user gets an error message or the action is not executed. In SMQ2, for example, you will get the following error message if you try to execute or display the queue without a refresh:

 Queue entry with TID 0A4C855D5DA1563233B30ACE does not exist or no longer exists

You also have to consider this behavior if you have your own development or processes that use the TID for any purpose.

Sequence of Queue Entry Within a Queue

As explained above, the original queue entry is deleted and a new queue entry is created. For the same queue (name), multiple queue entries can exist (see Figure 20). If a queue entry (like the one with function module /SPE/INB_DELIVERY_REPLACE in the example) is deleted and a new queue entry is created for it, it has to be ensured that the new queue entry keeps the same sequence number in the list. This is ensured by the queue edit logic. That means that even if the original queue entry is deleted and a new queue entry is created, the sequence is kept.



Cl.	User	Function Module	Queue Name	Date	Time	StatusText	TID
001		/SPE/INB_DELIVERY_REPLACE	DLWSB7GCLNT5000180000735	19.10.2015	11:06:54	connection closed (no data)	0A429EE5721C5624B2AE01B5
001		/SPE/INB_DELIVERY_CONFIRM_DEC	DLWSB7GCLNT5000180000735	19.10.2015	11:07:07	Transaction recorded	0A429EE5721C5624B2BB01B6
001		/SPE/GOODSMVT_CREATE	DLWSB7GCLNT5000180000735	19.10.2015	11:09:11	Transaction recorded	0A429EE572205624B3360354
001		/SPE/GOODSMVT_CREATE	DLWSB7GCLNT5000180000735	19.10.2015	14:14:34	Transaction recorded	0A429EE572305624DEAA06FC
001		/SPE/INB_DELIVERY_CONFIRM_DEC	DLWSB7GCLNT5000180000735	19.10.2015	14:14:35	Transaction recorded	0A429EE572305624DEAB06FE

Figure 20: Example for a queue with multiple entries

Appendix B – Concurrency Handling

When a user edits a queue entry, it may happen that other users or processes try to access the same queue entry or use the same queue name at the same time as the user who is editing the queue.

The system has certain safety measures, for example, it has measures in place to avoid that when a user edits a queue entry that another process or user can execute this queue entry at the same time, or that this does not cause harm.

Stopping of a Queue

When a user starts editing a queue entry, the complete queue is set to status STOP (this is the same as when a user uses the function “lock queue immediately” in SMQ2). In SMQ2, such a queue is shown with status STOP (see Figure 21). In the warehouse management monitor, this is indicated by a lock symbol (see Figure 22). Note that this status is not a special status for the queue editing, but the queue editing uses the standard function to lock a queue.

Cl.	User	Function Module	Queue Name	Date	Time	StatusText	TID
001		STOP	DLWSB7GCLINT5000180000735	30.10.2015	09:58:07	Transaction recorded	QLOCKSIN1111111111111111
001		/SPE/INB_DELIVERY_REPLACE	DLWSB7GCLINT5000180000735	19.10.2015	11:06:54	Vendor BPBOP1V does not exist	0A429EES721C5624B2AE01B5
001		/SPE/INB_DELIVERY_CONFIRM_DEC	DLWSB7GCLINT5000180000735	19.10.2015	11:07:07	Transaction recorded	0A429EES721C5624B2BB01B6
001		/SPE/GOODSMVI_CREATE	DLWSB7GCLINT5000180000735	19.10.2015	11:09:11	Transaction recorded	0A429EES72205624B3360354
001		/SPE/GOODSMVI_CREATE	DLWSB7GCLINT5000180000735	19.10.2015	14:14:34	Transaction recorded	0A429EES72305624DEAA06FC
001		/SPE/INB_DELIVERY_CONFIRM_DEC	DLWSB7GCLINT5000180000735	19.10.2015	14:14:35	Transaction recorded	0A429EES72305624DEAB06FD

Figure 21 Example of stopped queue in SMQ2

Status	Queue State	Directn	Description	WhN	Business Object	BusObj Key	Message Text	Me
	STOP		Replacement of Inbound Delivery (from EWM)	BOP1	Inbound Delivery	180000735	Vendor BPBOP1V does not exist	WY

Figure 22 Example of stopped queue in warehouse management monitor

Such queues cannot be processed or executed by a user or process. The status STOP is revoked when the queue editing has been finished.

⚠ CAUTION

Do not work on queues that are stopped. Do not remove the queue lock (STOP status), execute, debug, or save a queue entry as long as a queue entry is being edited. This can cause inconsistencies or error messages during saving of the edited queue.

Appendix C – Error Handling

STOP Status Remains After Queue Editing

In some cases, it can occur that the STOP status remains even though the queue editing has been finished. This can happen if the queue editing has unexpectedly been closed. Reasons can, for example, be:

- Termination due to short dump or assertion
- Debugging is used and the debugging session is terminated by the user
- Session or process is deleted by an administrator or user

In such cases, the STOP status will remain. The consequence is that the queue will not get processed automatically. In such cases, you can remove the STOP status manually.

To do this, start transaction SMQ2 in SAP ERP or navigate to the SMQ from the warehouse management monitor. There mark the relevant queue and click the *Unlock Action* button (see Figure 23).

Cl.	Queue Name	Entries	Status	Date 1	Time 1	NxtDate	NxtTim	Sende
001	DLWSB7GCLINT5000180000735	6	STOP	30.10.2015	09:58:07	19.10.2015	14:14:35	

Figure 23 Example of how to unlock a queue

Appendix D – Improve Ease of Use

Avoid Manual Refresh

In chapter *Appendix A – Differences Between Original Queue and Edited*, it is described that after changing queue content you may need to do a manual refresh so that you can perform a follow-on action.

If you are using the warehouse management monitor this can be improved in the following way:

The EWM monitor action for displaying the data container does not use an automatic refresh, even though the EWM monitor provides this function. The reason is that you usually do not want to do a refresh if you just displayed data (but did not edit anything).

The alternative would be that you create a new, customer-specific, monitor action for the editing. This action is like the displaying of the data container but has an automatic refresh configured.

This can be done in the following way:

- Get familiar with the SAP EWM monitor concept of how to add new monitor actions.
You can do this by reading the How-to guide "[How to Add Application Content to the Whse. Mgt. Monitor](#)", especially chapter 5. It can be found on [scn.sap.co](#) or [help.sap.com](#) or using the direct link https://websmp107.sap-ag.de/~sapidb/011000358700000046062013E/Appl_Cont_WMM_90v1.pdf.
- Create a copy of the original monitor action for the queue display (object class MQUEUE and method function module /SCWM/MSG_LOG_DISPLAY) to a new, customer-specific monitor method. In this new entry, set the indicator so that an automatic refresh is done.

Appendix E – Frequently asked questions (FAQ)

I do not see the “edit” button or cannot edit a field.

Check if your qRFC message and parameter or fields are maintained in the whitelist settings. Also check if you have assigned your user the authorizations to use the qRFC editing (see chapter 3.2.4.).

Can I edit my own qRFC messages?

No this is not possible. Only the qRFC messages delivered by SAP in the whitelist can be edited. You cannot add own functions.

Can I add my own parameters to qRFC messages/function modules?

Technically the enhancement or modification concept allow allows you to change the interface of a qRFC function module and to add new (customer-specific) parameters.

The qRFC editing does not support this. Your own parameters are not be shown and are not editable. An error message is issued instead.



Do not try to enhance qRFC interfaces that you want to edit. Also do not try to build “workarounds” so that the error messages are not shown. These actions can result in data loss, and that the data of the new enhanced parameters is not taken over in the copied qRFC. This will also happen if the new parameters are shown in the queue editing or if you do not intend to change data of the new parameters.

If you intend to pass your own data to a qRFC message that you want to edit use the standard parameters like IT_EXTENSIONIN, which are available for most of the qRFC functions.

After editing a queue entry, I want to perform a follow-on action (like restart or displaying), but nothing happens or I get an error message.

When queue content data is changed, a new queue entry gets created (see chapter *Transaction ID*). It can be that the old TID is still displayed in your queue list. Click on refresh and then try again.

In the queue display container for tables, there are fields highlighted in green. Why are these fields highlighted and can I edit them?

These fields are only to show which fields identify such a table line. See chapter 5.4 for more information.



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