



How To Use the SAP ME Time-Based Component Tracking Feature

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SAP ME How-To-Guide for Time Based Component Tracking

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Document History

Document Version	Description	Author
1.0	Initial version	Chet Moutrie
1.1	Added information on Potential Problems	Chet Moutrie
1.2	Cleaned up User Scenario and added details	Chet Moutrie
1.3	Added info on warning message handling to the User Scenario	Chet Moutrie

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1 Introduction

1.1 Purpose

The ME How-To-Guide for Time-Based Component Tracking (TBCT) is intended to provide sufficient information to enable the user to easily utilize the SAP ME TBCT feature, making use of available best practices.

1.2 Scope

This information covers all aspects of the SAP ME TBCT feature, also called Time-Based Genealogy. It does not cover Discrete Genealogy, where component parts are individually identified through user interaction during an assembly process.

1.3 Glossary

Hook Activity	An ME activity that can be executed at a hook point .
Hook Point	A trigger point, during ME processing, where a specified activity can be automatically executed.
Location	The position of a specific piece on a panel.
ODS	Operational Data Store
ODS Database	The ME database used to store historical detail and summary operational data, master data audit information and archived WIP data.
Panel	A material that contains a set of manufactured pieces.
Ref Des	Reference Designator – An identifier for the physical location on the material where a component is to be installed.
RMA	Returned Material Authorization
Slot	The physical location on a resource where components are loaded for assembly.
TBCT	Time-Based Component Tracking (Time-Based Genealogy) – the tracking of components, installed into an end-item or sub-assembly, based upon the time at which the installation process occurred at a resource.
WIP	Work In Process
WIP database	The ME transactional database that holds all of the current data regarding the manufacturing execution objects and processes and the ME system status.

2 Time-Based Component Tracking Overview

This overview will provide a high level description of the configuration and use of the SAP ME TBCT feature.

2.1 Description and Applicability

Time Based Component Tracking is typically used in highly automated environments, such as at a pick and place machine. The components are identified and loaded on the machine during the resource setup process. ME then processes SFCs through the resource, but does not immediately record the components assembled into the SFC. ME records the time at which the SFC passed through the resource. Later, ME looks at the time and the history of components that were loaded on the resource and determines which components were assembled into the SFC.

When TBCT is implemented,

- Operator input is not required during assembly
- Assembly information is gathered from set-up information defined for the resource used in the assembly process
- Log files are used to record component traceability information

2.2 Business Purposes / Functions

TBCT can be used to collect, validate, and track data, such as inventory ID, for components assembled at a resource, such as a pick-and-place machine.

TBCT is accomplished through a pre-configured resource. When components are automatically assembled by equipment, the system keeps track of the inventory IDs of the components and all of the SFC numbers of the materials that move through the resource. The data for time-based genealogy is stored in the WIP database at the resource level.

At a later time, the time-based genealogy information can be converted to discrete genealogy for the purpose of as-built history reporting.

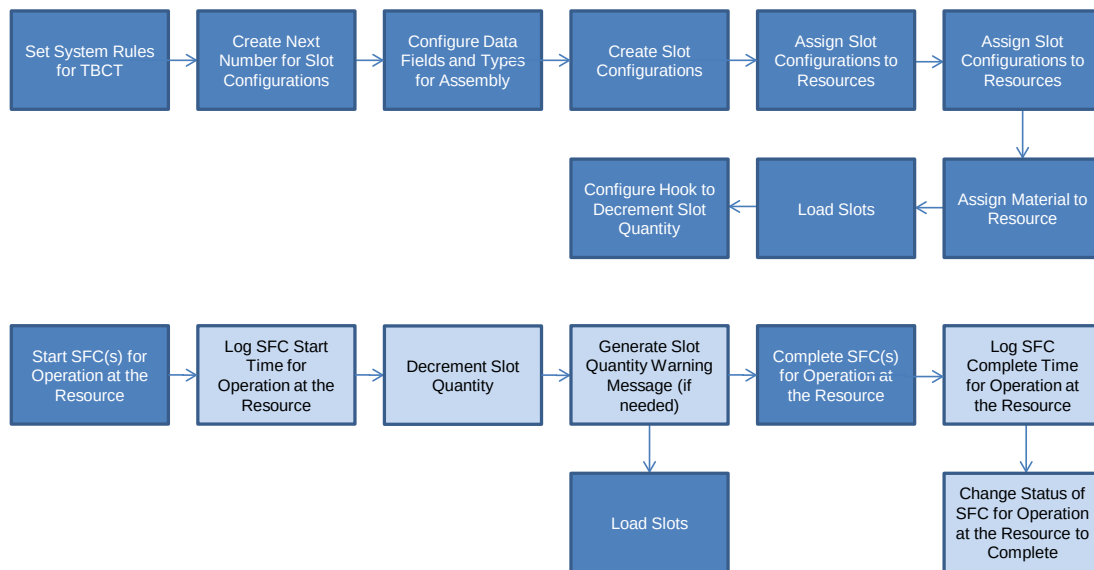
The SAP ME TBCT feature provides the following functions:

- System Configuration
- Time-Based Component Assembly
- Time-Based Genealogy Data Management

These functions are described in more detail in the following sections of this document.

2.3 High-Level Process Flows

This figure illustrates the primary flow of the TBCT process.



3 Time-Based Component Tracking Functions

3.1 Configuration

3.1.1 Description and Applicability

Time-based genealogy configuration includes the following:

- ME system rules are used to control whether discrete or time-based genealogy is used (see [System Rule Maintenance](#))
- Numbering is set up for slot configurations (see [Next Number Maintenance](#))
- Data fields and data types are set up for assembly data tracking (see [Data Field Definition Maintenance](#) and [Data Field Assignment Maintenance](#))
- Component materials are configured with an appropriate data type for time based assembly (see [Component Material Configuration](#))
- Resources slots are configured to manage the tracking of automatically assembled (installed) components (see [Slot Configuration Maintenance](#))
- Resources are configured with the slots for the automatic assembly processes (see [Resource Slot Config Setup](#))
- Resources are set up for the materials, shop orders and tools that will be used (see [Resource Maintenance](#))
- Slots are loaded with information needed for the production process (see [Load Slots](#))
- A hook point activity is used to decrement slot quantity (see [Slot Quantity Decrement](#))
- Real Time Message Display is configured (see [Message Type Maintenance](#))

3.2 Time-Based Component Assembly

3.2.1 Description and Applicability

Time-based component assembly occurs automatically based upon SFCs being started and completed for an operation at a resource configured for time-based component assembly. However, there are some things that need to be handled manually during time-based component assembly (unless they have been automated through equipment integration). These include:

- Starting SFCs for an operation at the resource
- Completing SFCs for the operation at the resource
- Handling messages indicating that a slot is almost empty (see [TBCT Messages](#))
- Handling messages indicating that a slot is empty (see [TBCT Messages](#))
- Loading or replenishing a resource slot when all the pieces for the inventory ID assigned to the slot have been used (see [Load Slots](#))

3.2.2 Time-Based Component Assembly Process

The following describes the time-based component assembly process.

- The user (or implemented equipment integration) starts an SFC for an operation at the time-based resource
- ME logs the SFC start time, for the operation at the resource, in the component time log in the WIP database
- ME decrements the quantity of components available in the slots configured for the operation at the resource
- If necessary, ME generates a message indicating that a slot is nearly empty
- If necessary, ME generates a message indicating that a slot is empty
- The user (or implemented equipment integration) completes the SFC for the operation at the time-based resource
- ME logs the SFC completion time for the operation at the resource
- ME changes the status of the SFC at the operation to Complete

3.2.3 TBCT Messages

The following message types are configured in Message Type Maintenance (MSG_TYPE_MAINT) and are assigned on the Slot Quantity Details tab in Slot Configuration Maintenance (EN040).

If, after decrementing the remaining quantity for a slot, ME determines that the remaining quantity is at or below the minimum quantity for the slot, ME will generate a Minimum Slot Qty message (default is MIN_SLOT_QTY message type).

If, after decrementing the remaining quantity for a slot, ME determines that the remaining quantity is zero, ME will generate a Zero Slot Qty message (default is ZERO_SLOT_QTY message type).

3.2.4 Load Slots

The Load or Replenish (EN531) activity is used before and during a production process to enter data about the actual, physical components loaded into the resource at a given time and to enable the production process to continue (see [Load or Replenish](#)). It is initiated from the Resource Slot Configuration (EN530) activity or from the Activity Manager.

3.2.5 Potential Problems

The following are problems that can occur in time-based component tracking:

- If the Slot Qty data field is not included on the data type that is specified for Assembly, there will not be any error or warning message generated during Load and Replenish or during time-based assembly, but no inventory quantity will be loaded into the slots and no time-based component assembly records will be generated.
- If after specifying a data type, that contains the Slot Qty data field, in Material Maintenance, the Slot Qty field does not appear during Load and Replenish, there is likely a data type without the Slot Qty field specified for the component in the BOM.

3.3 Time-Based Genealogy Data Management

3.3.1 Description and Applicability

Time-based component tracking stores the time-based genealogy data in the WIP COMP_TIME_XXXX database tables (see below). In this form, the component data is associated to the resource and not directly to the individual SFCs into which the components were assembled.

The components can be associated directly to SFCs as a result of converting time-based genealogy data to discrete genealogy data when copying the time-based data to the ODS database. The association of the component data to the SFCs is accomplished through the information in the following WIP tables.

WIP Table	Description
COMP_TIME_ASSY_DATA	Specific component details for the component that was loaded at the resource at the parent slot
COMP_TIME_LOCATION	A single location that the parent slot feeds.
COMP_TIME_LOG	The component lot setup for a single slot on a resource at a given time. This includes the "current" setup and past (historical) setups. This object also contains assembly data and information on which Ref Des's and Locations the component lot is (was) feeding.
COMP_TIME_LOG_STAGING	Records in this table are generated when a slot config is placed in the "PROPOSED" state. Current records from COMP_TIME_LOG are copied to the staging area, and manipulated by the Resource Setup activity. When setup is activated, the current records for the resource in COMP_TIME_LOG are closed, and staging records are moved.
COMP_TIME_REF_DES	A single reference designator that the parent slot feeds.
COMP_TIME_STAGING_ASSY_DATA	Specific component details for the component that was loaded at the resource at the parent slot. The rows that this object may contain depend on the

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	Assembly Data Type for the BOM component.
COMP_TIME_STAGING_LOCATION	A single location that parent slot feeds.
COMP_TIME_STAGING_REF_DES	A single reference designator that parent slot feeds.
PRODUCTION_LOG	A log of the SFC quantities started and completed for an operation at a resource.

4 Integration

Not Applicable

5 Time-Based Component Tracking Setup

5.1 External Configuration

5.1.1 Installation

Not applicable.

5.2 Maintenance Activities

The use of TBCT can be configured using the maintenance activities described in the following sections.

5.2.1 System Rule Maintenance

The following system rules, specific to time-based component tracking can be specified in the System Rule Maintenance (SY100) activity.

System Rule	Setting / Description
Allow Multiple Time-Based Assembly	If set to True , an SFC with time-based components whose entire quantity has been assembled at an assembly operation and time-based resource and then removed using the As Built Configuration (CT510) activity, can be assembled again when the SFC number is processed at the assembly operation and time-based resource again. If set to False , the SFC cannot be assembled again once the entire quantity has been assembled. Can override at: site
Time-Based Resource (Genealogy)	If set to True , resource(s) are time-based resources. If set to False , resource(s) are not time-based resources. Can override at: site, resource

5.2.2 System Setup

The system setup parameter, `rted.polling.period.seconds`, should be set to a number that will ensure that the POD user sees a real-time message, such as “Minimum slot quantity has been reached”, in a timely manner.

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5.2.3 ODS Rule Maintenance

The following ODS rules, specific to time-based component tracking, can be specified in the ODS Rule Maintenance (OD100) activity.

System Rule	Setting / Description
Copy Time-Based Data to ODS	If set to True , time-based genealogy data is copied to the ODS_COMP_TIME_LOG table in the ODS database. If set to False , the data is not copied. Can override at: site
Convert to Discrete	If set to True , and the Copy Time-Based Data to ODS rule is True , the time based genealogy data is converted to discrete genealogy data when it is copied to the ODS database . If set to False , the data is not converted. Can override at: site, resource
ODS Retention Period	The number of days that genealogy data will be kept in the ODS database prior to being deleted.
WIP Retention Period	The number of days that genealogy data will be kept in the WIP database prior to being deleted.

5.2.4 Activity Rules

5.2.4.1 Slot Quantity Decrement

The Slot Quantity Decrement (SLOT_QTY_DECREMENT) hook point activity is used to decrement the Slot Quantity value for the slot for the resource, based on the Assembly Quantity for the component in the BOM for the SFC material. This activity should be configured at the POST_START hook point for an operation, resource, or routing step.

5.2.4.2 Best Practice

We recommend that you configure the Slot Quantity Decrement hook activity at the POST_START hook point for the resource. This does cause a problem if the SFC is started, signed off and then started again at the operation for the resource. In this situation, the Slot Quantity is decremented twice. However, the reason that the hook activity needs to be used at the POST_START hook point is that if it is used at the PRE_COMPLETE hook point it causes problems with ME integration with ECC (MEINT).

5.2.5 Product Configuration

5.2.5.1 Next Number Maintenance

The Next Number Maintenance (EN100) activity can be used to set up automatic resource slot configuration naming / numbering. Select *Slot Configuration* for the *Number Type* and enter data in the other fields as desired.

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Example Slot Configuration Next Number Setup

Next Number Maintenance

Retrieve Save Clear Delete

Next number record saved

* Site: ABCD

Number Type: Slot Configuration

Description:

Prefix: SC

Suffix:

* Number Base: 10

Sequence Length: 3

Min Sequence: 1

Max Sequence: 999

Increment By: 1

* Current Sequence: 1

Warning Threshold:

Reset Sequence Number: Never

Next Number Activity:

☐ Create Continuous SFCs on Import

☐ Commit Next Number Changes Immediately

Sample Next Number: SC001

5.2.5.2 Resource Maintenance

The Resource Maintenance (EN030) activity should be used to ensure that each time-based resource has the *Time-Based Resource (Genealogy)* and *Track Production* system rules are set to *True*.

Resource Maintenance

Retrieve Save Clear Delete

* Site: ABCD

* Resource:

Main Resource Type Measurement Points Activity Hooks Certifications System Rules Custom Data

System Rule	Current Object Value	Site/Global Value
Active Resource Status		1
Allow SFC Pull From Other Work Centers	Use Site/Global Setting	True
Idle Resource Status		2
Ignore Time Stamp in Client Messages	Use Site/Global Setting	True
Maximum SFC In Work		0
Time-Based Resource (Genealogy)	True	False
Track Production	Use Site/Global Setting	True
Track Resource Time	Use Site/Global Setting	Yes-Track Idle Time

5.2.6 System Configuration

5.2.6.1 Data Field Definition Maintenance

The Data Field Definition Maintenance (SY160) activity is used to create and manage ME data fields. ME data fields are assigned to ME data types in Data Field Assignment Maintenance. ME data types are used to collect and store information about ME objects.

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There are numerous pre-defined ME data fields and ME data types. Create new data fields if needed for your time-based component tracking.

Data Field Definition Maintenance

Retrieve Save Clear Delete

Site: ABCD

Data Field: INVENTORY_ID

Main List Details

Type: Text

Description: Inventory ID

Field Label: Inventory ID

Mask Group:

Browse Icon: ☒

Pre-Save Activity:

Data Field Definition Fields

Field	Description
Data Field	Name of the data field for which you want to collect information
Type	The type of the data field (Text, Text Area, Date, Number, Checkbox, List) Text: Text entry field Text Area: Text entry area for larger amount of text Date: Date/time entry field with calendar icon Number: Numeric text entry field Checkbox: Checkbox that can be selected or unselected List: Text entry field with a drop-down list of values to select from
Description	A description of the data field
Field Label	The label to be displayed for the data field in ME production activities
Mask Group	Specifies the masks to be used to validate the information entered in the data field
Browse icon	Specifies that browse can be used for the data field (only available for pre-defined data fields and for List type data fields).
Pre-Save Activity	A custom activity that is used to validate and modify the entered information before saving it for the specific data field

5.2.6.2 Data Field Assignment Maintenance

The Data Field Assignment Maintenance (SY130) activity is used to create and manage ME data types. ME data types are used to collect and store information about ME objects. There are numerous pre-defined ME data types for various categories. Create a new data type if needed for your time-based component tracking. The data type for assembly for TBCT must include the Slot Quantity data field.

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Data Field Assignment Maintenance

Retrieve Save Clear Delete

* Site: ABCD

* Category: Assembly

* Type: INV_TB

Description: Time-Based

Pre-Save Activity:

Insert New Insert Before Insert After Remove Selected Remove All

* Sequence	* Data Field	Details	Required
10	INVENTORY_ID	Q	☒
20	SLOT_QTY	Q	☒

Data Field Assignment Fields

Field	Description
Category	The ME object or process for which the data is collected (Assembly, NC, Packing Container, Packing SFC, RMA SFC, RMA Shop Order, SFC) Assembly: Displays defined fields for the data type, that has been assigned in <i>Material Maintenance</i> or <i>BOM Maintenance</i> , when the operator does one of the following: • Adds or removes components to or from assemblies • Adds materials to floor stock or maintains them • Configures/loads/replenishes resource slots • Places components on hold
Type	Name of a group of ME data fields
Description	Description of the data type
Pre-Save Activity	Custom activity that is used to validate and modify the information for the data field entries in the group before saving it
Sequence	Specifies the order in which the system displays defined fields.
Data Field	Name of a data field included in the data type group
Details	Icon that displays the information for the data field
Required	Specifies that data must be entered in the data field before the data type information can be saved during use of the data type in production activities

5.2.6.3 Message Type Maintenance

For real-time message display, the specific message types to be displayed must have the POD Notification checkbox selected in Message Type Maintenance. For time-based component tracking, the message types MIN_SLOT_QTY and ZERO_SLOT_QTY must have the checkbox selected.

5.2.7 Other Maintenance Activities

5.2.7.1 Component Material Configuration

Each component material must be configured with an Assembly Data Type that contains data fields for the Inventory ID / SFC and the Slot Quantity. The Assembly Data Type is specified on the Build tab in Material Maintenance. It can be overridden on the Main tab of the Component Details screen in BOM Maintenance. The Slot Quantity is the quantity from the Inventory ID that is to be loaded into the slot.

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5.2.7.2 Slot Configuration Maintenance

The Slot Configuration Maintenance (EN040) activity is used to create and manage resource slot configurations. A slot configuration specifies which material is loaded at each slot for a time-based resource.

For a component that is used for multiple ref des values, use separate table entries with the same sequence number and the same slot. These will be automatically combined into one table row.

Slot Configuration Maintenance

Retrieve Save Clear Delete

* Site: ABCD

* Slot Config: SC001

* Version: A

Description: Slot Configuration 001

Status: New

Current Version: ☒

BOM: Version:

Material: Version:

Shop Order:

Assembly Operation:

Sequence	State	Slot	Component	Version	Ref Des	Location	Details
	New						

Slot Configuration Fields

Field	Description
Slot Config	Name / Number of the slot configuration
Version	Version of the slot configuration
Description	Description of the slot configuration
Status	The status of the slot configuration (Frozen, Hold, Hold Consec NC, Hold SPC Viol, Hold SPC Warn, Hold Yield Rate, New, Obsolete, Releasable)
Current Version	Specifies if this is the current version of the slot configuration
BOM Version	Identifier and version of the BOM associated to this slot configuration
Material Version	Identifier and version of the material associated to this slot configuration
Shop Order	Identifier of the shop order associated to this slot configuration
Assembly Operation	Identifier of the assembly operation associated to this slot configuration
Sequence	Sequence in which the slots will be used during Load or Replenish
State	The state of this slot (New, Current, Conflict, Excess, Missing)
Slot	The identifier for the slot
Component	The component assigned to this slot
Version	The version of the component assigned to this slot
Ref Des	The reference designator on the board where this component is to be placed
Location	The location on a panel where this component is to be placed
Details	Icon that displays the following fields
Minimum Slot Qty Threshold	The minimum slot quantity below which a message (Minimum Slot Quantity Message Type) will be created and sent.
Minimum Slot Qty Threshold Message Type	Message type for message that will be created and sent if the slot quantity drops below the Minimum Slot Qty Threshold
Zero Qty Remaining Message Type	Message type for message that will be created and sent if the slot quantity goes to zero

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5.2.7.3 Resource Slot Config Setup

The Resource Slot Configuration Setup (EN530) activity is used to associate slot configurations with a resource and can be used to trigger the Load or Replenish activity for resource slots.

The following table describes rules and settings that you can change for the Resource Slot Config Setup (EN530) activity in Activity Maintenance:

Rule	Setting
ALLOW_SKIP	If set to TRUE , allows the user to skip a component in sequence mode. Default is FALSE .
CONFLICTBOM	If set to TRUE (default), saves the proposed slot configuration even though the slot configuration setup has a conflict with the BOM that was used
DISPLAY_REV_BASIC	If set to TRUE , Displays the required <i>Version</i> field on the <i>Basic Load or Replenish</i> screen. Default is FALSE .
EXCESSBOM	If set to TRUE (default), saves the <i>Proposed</i> slot configuration even though the slot configuration contains a component that does not exist in the BOM that was used
HIDE_LOADED_ASSY_DATA	If set to TRUE , does not display the assembly data field values during replenishment. Default is FALSE .
KEEP_ASSY_DATA	If set to TRUE (default), carries assembly data from a previous resource slot configuration setup forward to a proposed slot configuration
LOAD_OR_REPLENISH_GUI	BASIC : If the user is loading or replenishing selected components, then he or she is immediately taken to a screen that displays the <i>Slot</i> , <i>Component</i> and assembly data fields associated to the component after the user tabs from the field. Upon submitting <i>Done</i> , the component table is displayed. ADVANCED (default): Displays the <i>Advanced</i> screen with the component table, component details and data fields for user entry. Note: this rule must have the same setting for both Resource Slot Config Setup and Load or Replenish.
LOAD_OR_REPLENISH_MODE	CHOOSE (default): Allows operators to load or replenish components for a slot configuration in any order SEQUENCE : Requires the operators to load or replenish components for a slot configuration in the sequence mode; the system supplies the identifier for each slot
MISSINGBOM	If set to TRUE (default), saves the proposed slot configuration even though a component in the BOM that was used is missing from the slot configuration setup

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Resource Slot Config Setup Screen

Resource Slot Config Setup

* Site: ABCD

* Resource: PICK_AND_PLACE_1

Setup State: Open

Slot Config State:

* Slot Config: SC001 * Version: A

Slot Config/Vers.	State	Assy Data	Material/Vers.	Shop Order	BOM/Version	Assembly Operation
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Resource Slot Config Setup Fields

Field / Column	Description
Resource	The resource you are associating with this slot configuration
Setup State	Displays the setup state associated with the resource in Resource Maintenance Open: There is no setup needed for this resource. Breaking Down: The resource is broken. Not Setup: The resource is not set up. Setting Up: The resource is being set up. Setup: The resource is set up and ready for production
Slot Config State	Proposed: This slot configuration is proposed to a resource. A proposed slot configuration is a slot configuration that is being set up to run in the future. The slots may or may not contain assembly data associated to it. Set Up: This slot configuration is attached to the resource, and all of the slots on the resource are loaded with assembly data as required.
Assy Data	Identifies whether the slots have been loaded with assembly data: Empty: No slots have assembly data loaded. Partial: One or more slots are missing assembly data being loaded. Full: All slots have assembly data loaded.
Propose	Assigns a slot configuration to a resource to be run in the future and does not perform a BOM verification. Note: You can propose a slot configuration only if it is in the <i>Releasable</i> state.
Verify and Propose	Assigns a slot configuration to a resource to be run in the future and performs a BOM verification. Note: You can propose a slot configuration only if it is in the <i>Releasable</i> state.
Load or Replenish - All Slots	Displays the <i>Advanced</i> or <i>Basic</i> screen to load assembly data for all the slots
Load or Replenish - Selected Slots	Displays the <i>Advanced</i> or <i>Basic</i> screen to load assembly data for only the selected slots
Activate Selected	Activates a slot configuration in the Proposed state on a resource; both the slot configuration state and resource state update to the Set Up state

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Field / Column	Description
Remove Selected Setup	Removes a slot configuration in the Proposed state from the resource setup Removing a slot configuration in the Setting Up state from a resource causes the resource state to change to <i>Open</i> .
Unload	Unloads the slots that are loaded and all associated assembly data records on the resource from the system, including any records associated with a proposed slot configuration Removes a slot configuration in the <i>Set Up</i> state from the resource and changes the resource state to <i>Open</i>

5.2.7.4 Load or Replenish

The Load or Replenish (EN531) activity is used to enter data about the components being loaded into slots for the resource.

The following table describes rules and settings that you can change for the Load or Replenish activity in Activity Maintenance:

Rule	Setting
ALLOW_SKIP	TRUE: Allows the user to skip a component in sequence mode FALSE (default): Prevents the user from skipping a component in sequence mode; forces all components to be assembled according to the slot sequence
DISPLAY_REV_BASIC	TRUE: Displays the required <i>Version</i> field on the <i>Basic Load or Replenish</i> screen FALSE (default): Does not display the required <i>Version</i> field on the <i>Basic Load or Replenish</i> screen and always uses the current version of the component
HIDE_LOADED_ASSY_DATA	TRUE: Does not display the <i>Assembly Data</i> field values during replenishment FALSE (default): Displays the <i>Assembly Data</i> field values during replenishment
LOAD_OR_REPLENISH_GUI	BASIC: If the user is loading or replenishing selected components, then he or she is immediately taken to a screen that displays the <i>Slot</i> , <i>Component</i> and assembly data fields associated to the component after the user tabs from the field. Upon submitting <i>Done</i> , the component table is displayed. ADVANCED (default): Displays the component table, component details and data fields for user entry. This rule must have the same setting for Slot Configuration Maintenance (EN530)
LOAD_OR_REPLENISH_MODE	CHOOSE: Allows operators to load or replenish components for a slot configuration in any order SEQUENCE (default): Requires the operators to load or replenish components for a slot configuration in the <i>Sequence</i> mode. The system supplies the identifier for each slot.

SAP ME How-To-Guide for Time Based Component Tracking

Load or Replenish Screen

Load Or Replenish ?

MODE : ADVANCED/SEQUENCE

Site: BOBJ
Resource: PICK_AND_PLACE_1
Setup State: Set Up
Slot Config/Vers.: SC001/A
Slot Config State: Set Up

Material/Vers.: PC_BOARD_323/A
Shop Order:
BOM/Version: PCA_BOARD_BOM/A
Assembly Operation: POPULATE_BOARD

Sequence	State	Cum Qty	Slot	Component/Vers.	Ref Des
10	Loaded	7	A1	RESISTOR_25762/A	A1 C5 E6
20	Loaded	8	A2	CAPACITOR_29534/A	B4 D2

< >

COMPONENT DETAILS

Slot: A1
Component: RESISTOR_25762 Version: A
Description: RESISTOR_25762
Ref Des: A1 C5 E6

ASSEMBLY DATA

* Inventory ID : INV0000001
* Slot Qty : 7

Add Close Inventory ID Loaded

Load or Replenish Fields

Field / Column	Description
Primary Fields	
Resource	The resource to be loaded or replenished
Setup State	Current setup state for the resource -
Slot Config/Vers.	The slot number and version being loaded or replenished
Slot Config State	The current state of the slot configuration -
Material/Vers.	The material and version into which components are being assembled
Shop Order	The shop order to which the SFCs belong (or will belong)
BOM/Version	The BOM and version for the material into which components are being assembled
Assembly Operation	The operation being performed at the resource
Table Columns	
Sequence	The sequence number for the assembly process
State	The current state of the slot -
Cum Qty	The cumulative quantity of pieces available for the slot
Slot	The number of the slot
Component/Vers.	The component and version to be installed from the slot
Ref Des	The reference designator where the component is to be installed
Component Details	
Slot	The slot into which the component is to be loaded
Component	The BOM component to be loaded to be installed
Version	The version of the BOM component to be loaded to be installed
Description	The description of the BOM component to be loaded to be installed
Ref Des	The reference designator where the BOM component is to be installed
Assembly Data	
Inventory ID	The inventory ID to be loaded into the slot
Slot Qty	The quantity of the inventory ID to be loaded into the slot

SAP ME How-To-Guide for Time Based Component Tracking

Load or Replenish Buttons

Button	Description
Add	Adds the assembly data record for the slot and component and updates this screen until all empty slots are loaded
Close	Closes the current GUI displayed
Skip	Skips the selected component
Inventory Loaded	Opens the <i>Update Inventory Details</i> screen Note that this button is activated only when a slot row/component has the state Loaded (single or multiple records).

6 Usage Scenario Examples

6.1 Populating Printed Circuit Board

This usage scenario illustrates using time-based component tracking for a pick and place machine that populates a printed circuit assembly board. For brevity, only two components are included in the scenario – a resistor and a capacitor.

Note: Two different sites were used during the creation of the screen captures for this scenario. In reality, all of the scenario would be for the same site.

6.1.1 TBCT Setup Steps

The following are steps that might be used to set up time-based component tracking.

6.1.1.1 Configure the System

1. Set site level system rule for TBCT

The screenshot shows the 'System Rule Maintenance' interface for 'Component Traceability' at site 'ABCD'. It lists several system rules with their current values and whether they are overridable.

System Rule	Site Value	Overridable	Global Value
Allow Assembly Qty As Required	Use Global Setting	☒	FALSE
Allow Multiple Time-Based Assembly	True	☒	FALSE
Allow Non-BOM Components on Add	Use Global Setting	☒	TRUE
Allow Ver Change on Purchased Components	Use Global Setting	☒	TRUE
BOM Name Equals Material Name	Use Global Setting	☒	FALSE

2. Set the ODS rules for TBCT

The screenshot shows the 'ODS Rule Maintenance' interface for 'Time-Based Component Detail' at site 'ABCD'. It lists ODS rules with their current values and global values.

System Rule	Site Value	Global Value
Copy Time-Based Data to ODS	True	FALSE
Convert to Discrete	Use Global Setting	FALSE
ODS Retention Period		365
WIP Retention Period		365

SAP ME How-To-Guide for Time Based Component Tracking

3. Set up slot configuration numbering

Next Number Maintenance

Retrieve Save Clear Delete

☒ Next number record saved

* Site: ABCD

Number Type: Slot Configuration

Description:

Prefix: SC

Suffix:

* Number Base: 10

Sequence Length: 3

Min Sequence: 1

Max Sequence: 999

Increment By: 1

* Current Sequence: 1

Reset Sequence Number: Never

Next Number Activity:

☐ Create Continuous SFCs on Import

☐ Commit Next Number Changes Immediately

Warning Threshold:

Sample Next Number: SC001

4. Set up Inventory ID numbering

Next Number Maintenance

Retrieve Save Clear Delete

☒ Next number record saved

* Site: ABCD

Number Type: Floor Stock Receipt

* Define By: Material

* Version: *

Description:

Prefix: INV

Suffix:

* Number Base: 10

Sequence Length: 7

Min Sequence: 1

Max Sequence:

Increment By: 1

* Current Sequence: 1

Reset Sequence Number: Never

Next Number Activity:

☐ Create Continuous SFCs on Import

☐ Commit Next Number Changes Immediately

Warning Threshold:

Sample Next Number: INV0000001

SAP ME How-To-Guide for Time Based Component Tracking

5. Configure the POD for Real Time Message Display

POD Maintenance

Retrieve Save Clear Delete

* Site: ABCD
* Type: Operation
* POD: OPERATION_DEF

Main Buttons Layout List Options POD Selection Printers Custom Data

Description: Default Operation POD ☐ Sound with Error Messages
* Status: Enabled
* Display Device: Standard
* Display Size: Extra Large
NC Client: LOG_NC
Real-Time Message Display: Icon
Special Instruction Display: Info Message
* Session Timeout (mins): 30

6.1.1.2 Create ME Master Data Objects

6. Create a resource type (PICK_AND_PLACE) for pick and place machines
7. Create a pick and place machine resource (PICK_AND_PLACE_1) of resource type (PICK_AND_PLACE)

Resource Maintenance

Retrieve Save Clear Delete

* Site: ABCD
* Resource: PICK_AND_PLACE_1

Main Resource Type Measurement Points Activity Hooks Certifications System Rules Custom Data

Description: PICK_AND_PLACE_1
Status: Enabled
Setup State: Open
Pending Status:
☐ Process Resource
Default Operation:
Valid From:
Valid To:

8. Select the System Rules tab
9. Set the Time-Based Resource (Genealogy) rule to True

Resource Maintenance

Retrieve Save Clear Delete

* Site: ABCD
* Resource: PICK_AND_PLACE_1

Main Resource Type Measurement Points Activity Hooks Certifications System Rules Custom Data

System Rule	Current Object Value	Site/Global Value
Active Resource Status		1
Allow SFC Pull From Other Work Centers	Use Site/Global Setting	True
Idle Resource Status		2
Ignore Time Stamp in Client Messages	Use Site/Global Setting	True
Maximum SFC In Work		0
Time-Based Resource (Genealogy)	True	False
Track Production	True	True
Track Resource Time	Use Site/Global Setting	Yes-Track Idle Time

10. Select Save

SAP ME How-To-Guide for Time Based Component Tracking

11. Create an operation (POPULATE_BOARD) to populate the printed circuit assembly board at the PICK_AND_PLACE_1 resource

The screenshot shows the SAP Operation Maintenance screen for the operation POPULATE_BOARD. The 'Main' tab is selected. The 'Site' is ABCD and the 'Version' is A. The 'Description' is 'Populate Board'. The 'Status' is 'Releasable' and 'Current Version' is checked. The 'Operation Type' is 'Normal'. The 'Special Operation Routing' is empty. The 'Resource Type' is PICK_AND_PLACE, 'Default Resource' is PICK_AND_PLACE_1, 'NC Client' is empty, 'Default NC Code' is empty, 'Reporting Step' is empty, 'Work Center' is empty, 'Maximum Loop Count' is 0, 'Special Instruction' is empty, and 'Required Time in Process (minutes)' is 0.

12. Select the Activity Hooks tab
13. Select the Post_START hook point
14. Select the SLOT_QTY_DECREMENT activity
15. Select the Enabled checkbox

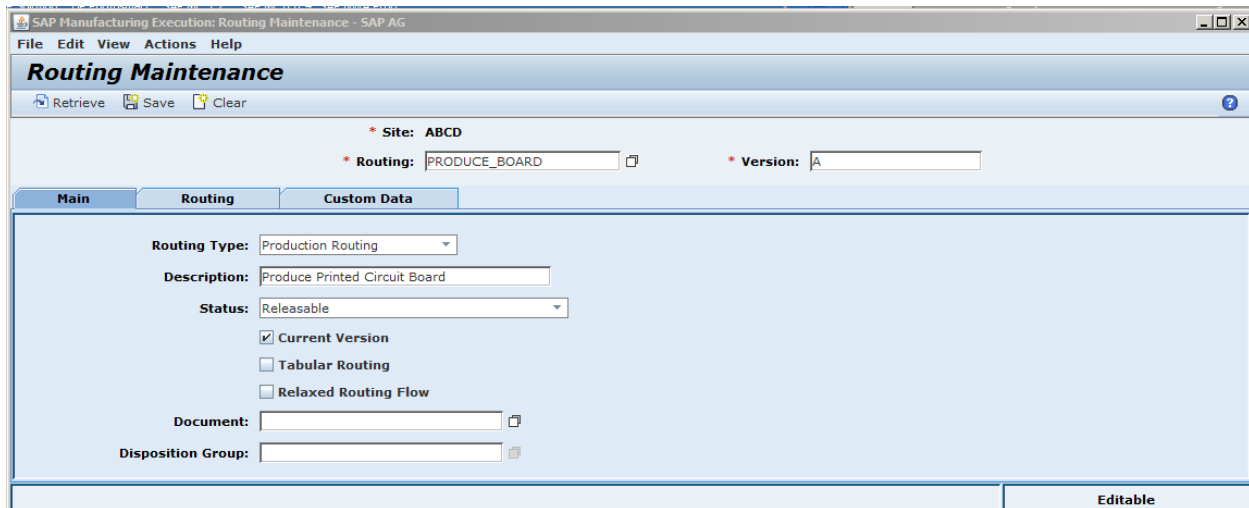
The screenshot shows the SAP Operation Maintenance screen for the operation POPULATE_BOARD, with the 'Activity Hooks' tab selected. The 'Sequence' is 10, 'Hook Point' is POST_START, 'Activity' is SLOT_QTY_DECREMENT, 'Enabled' is checked, and 'User Argument' is empty.

Sequence	Hook Point	Activity	Enabled	User Argument
10	POST_START	SLOT_QTY_DECREMENT	☒	

16. Select Save

SAP ME How-To-Guide for Time Based Component Tracking

17. Create a routing (PRODUCE_BOARD) that includes the operation (POPULATE_BOARD)



SAP Manufacturing Execution: Routing Maintenance - SAP AG

File Edit View Actions Help

Routing Maintenance

Retrieve Save Clear

* Site: ABCD

* Routing: PRODUCE_BOARD * Version: A

Main Routing Custom Data

Routing Type: Production Routing

Description: Produce Printed Circuit Board

Status: Releasable

☒ Current Version

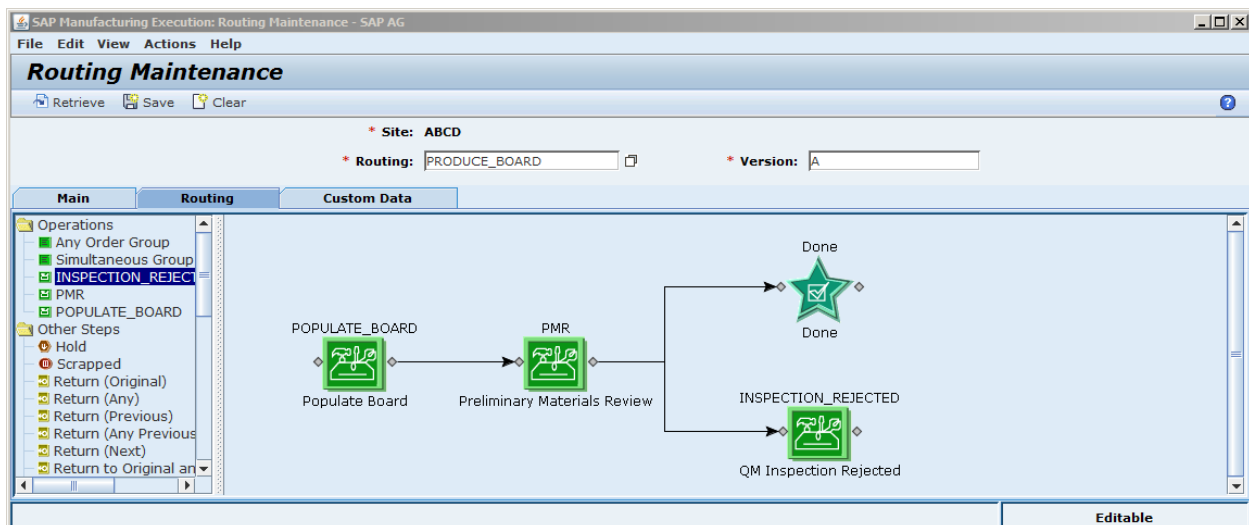
☐ Tabular Routing

☐ Relaxed Routing Flow

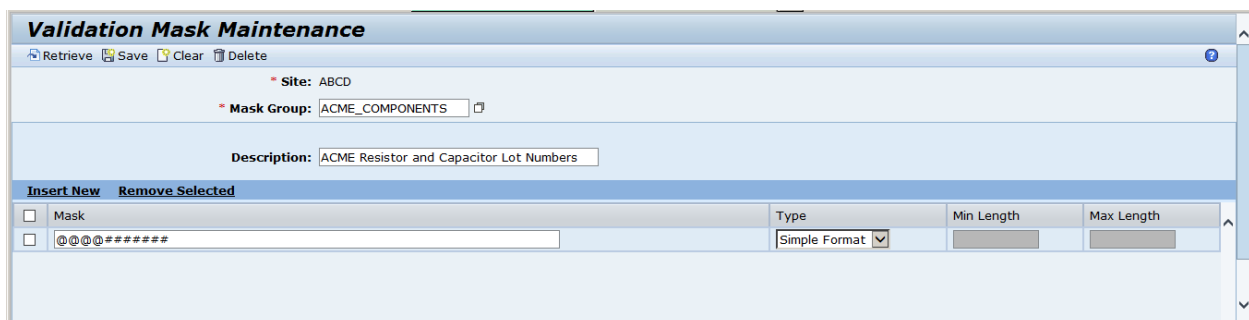
Document:

Disposition Group:

Editable



18. Create a validation mask group for the external lot numbers for the purchased materials (five letters followed by seven numeric digits)



Validation Mask Maintenance

Retrieve Save Clear Delete

* Site: ABCD

* Mask Group: ACME_COMPONENTS

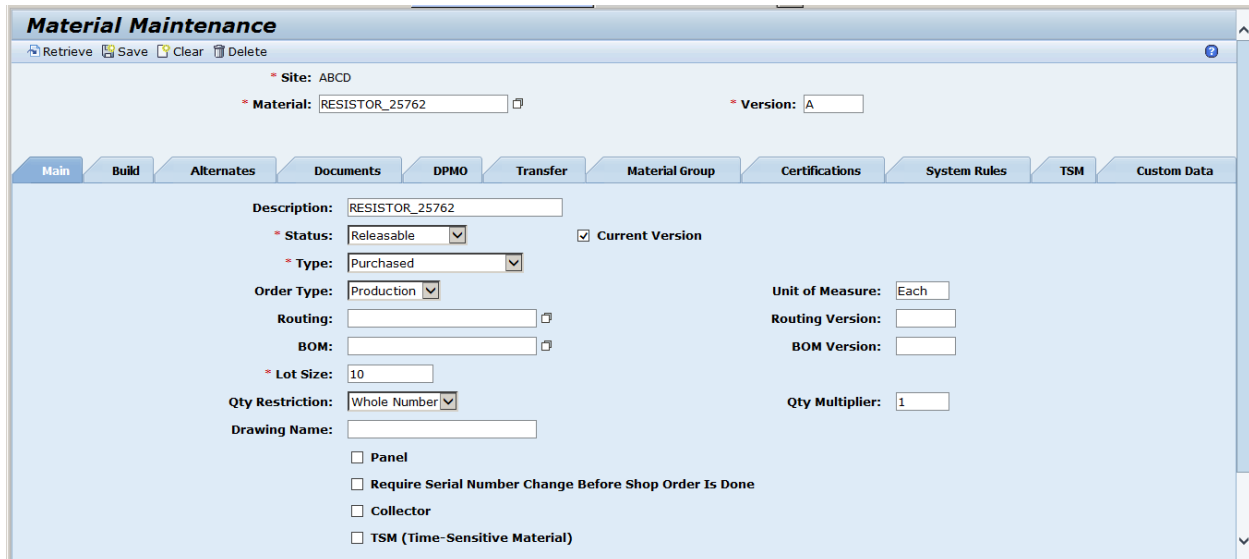
Description: ACME Resistor and Capacitor Lot Numbers

Insert New Remove Selected

Mask	Type	Min Length	Max Length
☐ Mask			
☐ @@@@*****	Simple Format		

SAP ME How-To-Guide for Time Based Component Tracking

19. Create the resistor as a purchased material (lot size is set small to make it easy to illustrate minimum quantity threshold warning). Inventory ID will be recorded on assembly and external lot number will be collected on material receipt. ACME_COMPONENTS mask will be used to validate external lot numbers.



Material Maintenance

Retrieve Save Clear Delete

* Site: ABCD

* Material: RESISTOR_25762 * Version: A

Main Build Alternates Documents DPMO Transfer Material Group Certifications System Rules TSM Custom Data

Description: RESISTOR_25762

* Status: Releasable ☒ Current Version

* Type: Purchased

Order Type: Production Unit of Measure: Each

Routing: Routing Version:

BOM: BOM Version:

* Lot Size: 10 Qty Restriction: Whole Number Qty Multiplier: 1

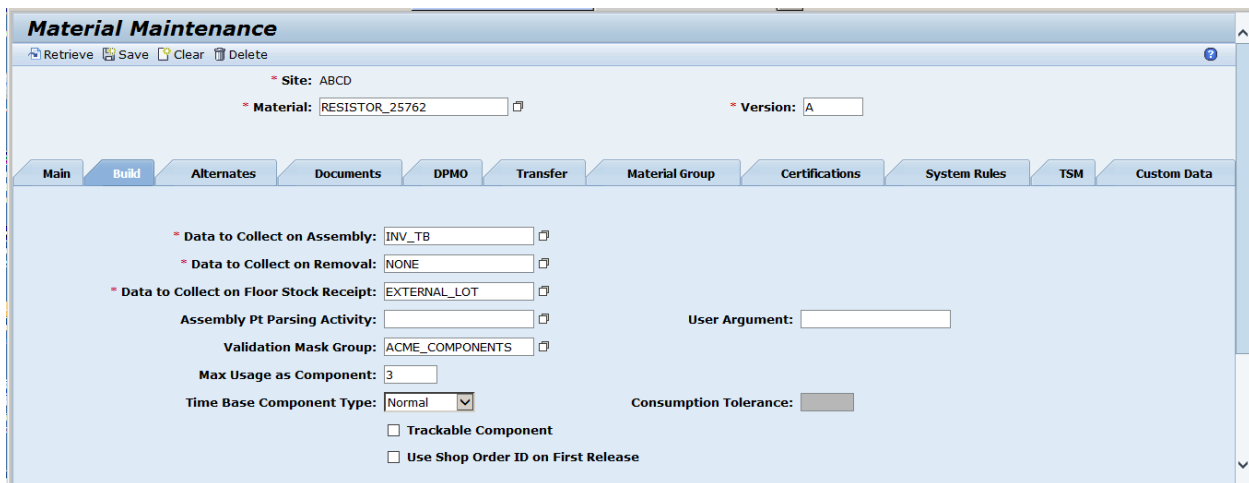
Drawing Name:

☐ Panel

☐ Require Serial Number Change Before Shop Order Is Done

☐ Collector

☐ TSM (Time-Sensitive Material)



Material Maintenance

Retrieve Save Clear Delete

* Site: ABCD

* Material: RESISTOR_25762 * Version: A

Main Build Alternates Documents DPMO Transfer Material Group Certifications System Rules TSM Custom Data

* Data to Collect on Assembly: INV_TB

* Data to Collect on Removal: NONE

* Data to Collect on Floor Stock Receipt: EXTERNAL_LOT

Assembly Pt Parsing Activity: User Argument:

Validation Mask Group: ACME_COMPONENTS

Max Usage as Component: 3

Time Base Component Type: Normal Consumption Tolerance:

☐ Trackable Component

☐ Use Shop Order ID on First Release

SAP ME How-To-Guide for Time Based Component Tracking

20. Create capacitor as a purchased material (similar to the resistor)

Material Maintenance

Retrieve Save Clear Delete

* Site: ABCD

* Material: CAPACITOR_29534 * Version: A

Main Build Alternates Documents DPMO Transfer Material Group Certifications System Rules TSM Custom Data

Description: CAPACITOR_29534

* Status: Releasable ☒ Current Version

* Type: Purchased

Order Type: Production Unit of Measure: Each

Routing: BOM Version: 1

BOM: Qty Multiplier: 1

* Lot Size: 10

Qty Restriction: Whole Number

Drawing Name:

☐ Panel

☐ Require Serial Number Change Before Shop Order Is Done

☐ Collector

☐ TSM (Time-Sensitive Material)

Material Maintenance

Retrieve Save Clear Delete

* Site: ABCD

* Material: CAPACITOR_29534 * Version: A

Main Build Alternates Documents DPMO Transfer Material Group Certifications System Rules TSM Custom Data

* Data to Collect on Assembly: INV_TB

* Data to Collect on Removal: NONE

* Data to Collect on Floor Stock Receipt: EXTERNAL_LOT

Assembly Pt Parsing Activity: User Argument:

Validation Mask Group: ACME_COMPONENTS

Max Usage as Component:

Time Base Component Type: Normal Consumption Tolerance:

☐ Trackable Component

☐ Use Shop Order ID on First Release

SAP ME How-To-Guide for Time Based Component Tracking

21. Create a BOM for the printed circuit assembly board

BOM Maintenance

Retrieve Save Clear Delete More...

* Site: ABCD

BOM Type: Master

* BOM: PCA_BOARD_BOM

* Version: A

Current Version

Description: PCA_BOARD_BOM

BOM Template

Status: Releasable

Filter by Component:

Main Custom Data

Insert New Insert Before Insert After Remove Selected Remove All

Assy Sequence	Component/Vers.	Assy Operation	Ref Des	Assy Qty	Component Type	Details
---------------	-----------------	----------------	---------	----------	----------------	---------

<http://usphvm1003:50000/manufacturing/application/setup/BOMMaintenance>

22. Add the Resistor as a component at ref des A1

Component Details

Component: RESISTOR_25762 BOM/Version: PCA_BOARD_BOM/A Description: PCA_BOARD_BOM

Main Alternates Custom Data

Phantom Component/Version:

Phantom Component Assembly Sequence:

* Assembly Sequence: 10

* Component: RESISTOR_25762

* Version: A

Description: RESISTOR_25762

Assembly Operation: POPULATE_BOARD

Component Type: Normal

Disassembly Operation:

* Assembly Qty: 1

Ref Des: A1

Assembly Data Type: INV_TB

Max Usage as Component:

Max NC for This BOM Component: 0

Trackable Component: Material Default

Add Clear Close

23. Add the resistor at 2 more ref des values and the capacitor at 2 ref des values

BOM Maintenance

Retrieve Save Clear Delete More...

* Site: ABCD

BOM Type: Master

* BOM: PCA_BOARD_BOM

* Version: A

Current Version

Description: PCA_BOARD_BOM

BOM Template

Status: Releasable

Filter by Component:

Main Custom Data

Insert New Insert Before Insert After Remove Selected Remove All

Assy Sequence	Component/Vers.	Assy Operation	Ref Des	Assy Qty	Component Type	Details
☐ 10	RESISTOR_25762/A	POPULATE_BOARD	A1	1	Normal	Q
☐ 20	RESISTOR_25762/A	POPULATE_BOARD	C5	1	Normal	Q
☐ 30	RESISTOR_25762/A	POPULATE_BOARD	E6	1	Normal	Q
☐ 40	CAPACITOR_29534/A	POPULATE_BOARD	B4	1	Normal	Q
☐ 50	CAPACITOR_29534/A	POPULATE_BOARD	D2	1	Normal	Q

SAP ME How-To-Guide for Time Based Component Tracking

24. Create the printed circuit board material

Material Maintenance

Retrieve Save Clear Delete

* Site: ABCD
* Material: PC_BOARD_323 * Version: A

Main Build Alternates Documents DPMO Transfer Material Group Certifications System Rules TSM Custom Data

Description: PC_BOARD_323
* Status: Releasable ☒ Current Version
* Type: Manufactured
Order Type: Production Unit of Measure: Each
Routing: PRODUCE_BOARD Routing Version: A
BOM: PCA_BOARD_BOM BOM Version: A
* Lot Size: 1 Qty Restriction: Only 1.0 Qty Multiplier: 1
Drawing Name:
☐ Panel
☐ Require Serial Number Change Before Shop Order Is Done
☐ Collector
☒ TSM (Time-Sensitive Material)

Main Build Alternates Documents DPMO Transfer Material Group Certifications System Rules TSM Custom Data

* Data to Collect on Assembly: NONE
* Data to Collect on Removal: NONE
* Data to Collect on Floor Stock Receipt: NONE
Assembly Pt Parsing Activity: User Argument:
Validation Mask Group:
Max Usage as Component:
Time Base Component Type: Normal Consumption Tolerance:
☐ Trackable Component
☐ Use Shop Order ID on First Release

25. Select Floor Stock Receipt

26. Select resistor

27. Enter quantity to receive

28. Select Create

Floor Stock Receipt

* Site: ABCD
* Material: RESISTOR_25762 * Version: A
* Receive Qty: 20 Create
Barcode:
* External Lot: ACMER0004231 Data will be applied to all inventory IDs

Insert New Insert Before Insert After Remove Selected Remove All

* Inventory ID	* Qty	Details
☐ INV0000005	10	Q
☐ INV0000006	10	Q

Receive Clear

29. Enter external lot number and select Receive

30. Select Clear

SAP ME How-To-Guide for Time Based Component Tracking

31. Select capacitor
32. Enter quantity to receive
33. Select Create

The screenshot shows the 'Floor Stock Receipt' form in SAP. At the top, there are fields for 'Site: ABCD', 'Material: CAPACITOR_29534', 'Version: A', and 'Receive Qty: 20'. A 'Create' button is next to the quantity field. Below these, there is a 'Barcode' field and an 'External Lot: ACMEC0002723' field. A note states 'Data will be applied to all inventory IDs'. At the bottom, there is a table with columns 'Inventory ID', 'Qty', and 'Details'. The table contains two rows: 'INV0000007' with a quantity of '10' and 'INV0000008' with a quantity of '10'. Below the table are 'Receive' and 'Clear' buttons.

Inventory ID	Qty	Details
INV0000007	10	
INV0000008	10	

34. Enter external lot number and select Receive

6.1.1.3 Configure TBCT

35. Select Slot Configuration Maintenance
36. Select Create Slot Config Number

The screenshot shows the 'Slot Configuration Maintenance' form in SAP. At the top, there are fields for 'Site: ABCD', 'Slot Config: SC001', 'Version: A', and 'Description: Slot Configuration 001'. A 'Create Slot Config Number' button is next to the 'Slot Config' field. Below these, there is a 'Status: New' dropdown menu and a 'Current Version: [checked]' checkbox. A 'Use BOM' button is at the bottom left. On the right side, there are labels for 'BOM:', 'Material:', 'Shop Order:', and 'Assembly Operation:'. At the bottom, there is a table with columns 'Sequence', 'State', 'Slot', 'Component', 'Version', 'Ref Des', 'Location', and 'Details'.

Sequence	State	Slot	Component	Version	Ref Des	Location	Details
----------	-------	------	-----------	---------	---------	----------	---------

37. Select Use BOM
38. Select Material as the BOM Source
39. Select the PCA board
40. Select the assembly operation

The screenshot shows the 'Load BOM' form in SAP. At the top, there are fields for 'Site: ABCD', 'BOM Source: Material', 'PC_BOARD_323', and 'Version: A'. A 'Load BOM' button is next to the 'BOM Source' field. Below these, there is an 'Assembly Operation: POPULATE_BOARD' field and a 'Component Version: [checked]' checkbox. A 'Cancel' button is at the bottom right.

SAP ME How-To-Guide for Time Based Component Tracking

41. Select Load BOM
42. Enter slot and sequence numbers (use same slot and sequence number for all identical components)

Slot Configuration Maintenance

Retrieve Save Clear Delete

Site: ABCD

Slot Config: SC001 Create Slot Config Number

Version: A

Description: Slot Configuration 001

Status: New

Current Version: ☒

Use BOM

BOM: PCA_BOARD_BOM Version: A

Material: PC_BOARD_323 Version: A

Shop Order:

Assembly Operation: POPULATE_BOARD

Sequence	State	Slot	Component	Version	Ref Des	Location	Details
10	Missing	A1	RESISTOR_25762	A	C5		
10	Missing	A1	RESISTOR_25762	A	E6		
10	Missing	A1	RESISTOR_25762	A	A1		
20	Missing	A2	CAPACITOR_29534	A	B4		
20	Missing	A2	CAPACITOR_29534	A	D2		

43. Select Save (rows for the same component will be consolidated)

Slot Configuration Maintenance

Retrieve Save Clear Delete

Site: ABCD

Slot Config: SC001 Create Slot Config Number

Version: A

Description: Slot Configuration 001

Status: New

Current Version: ☒

Use BOM

BOM: PCA_BOARD_BOM Version: A

Material: PC_BOARD_323 Version: A

Shop Order:

Assembly Operation: POPULATE_BOARD

Sequence	State	Slot	Component	Version	Ref Des	Location	Details
10	Current	A1	RESISTOR_25762	A	A1,C5,E6		
20	Current	A2	CAPACITOR_29534	A	B4,D2		

44. Select the Details icon for the Resistor

SAP ME How-To-Guide for Time Based Component Tracking

45. Enter the Minimum Slot Qty Threshold value
46. Select the Message Types

The screenshot shows the 'Slot Quantity Details' SAP screen. At the top, it displays 'Site: ABCD'. Below this, it shows 'Slot: A1', 'Component/Vers: RESISTOR_25762/A', and 'State: Current'. There are three input fields: 'Minimum Slot Qty Threshold' with the value '3', 'Minimum Slot Qty Threshold Message Type' with the value 'MIN_SLOT_QTY', and 'Zero Qty Remaining Message Type' with the value 'ZERO_SLOT_QTY'. At the bottom right, there are 'Apply' and 'Cancel' buttons.

47. Select Apply
48. Repeat steps 44 through 47 for the Capacitor
49. Select Save
50. Select Message Type Maintenance
51. Retrieve the MIN_SLOT_QTY message type
52. Ensure that the POD Notification checkbox is selected

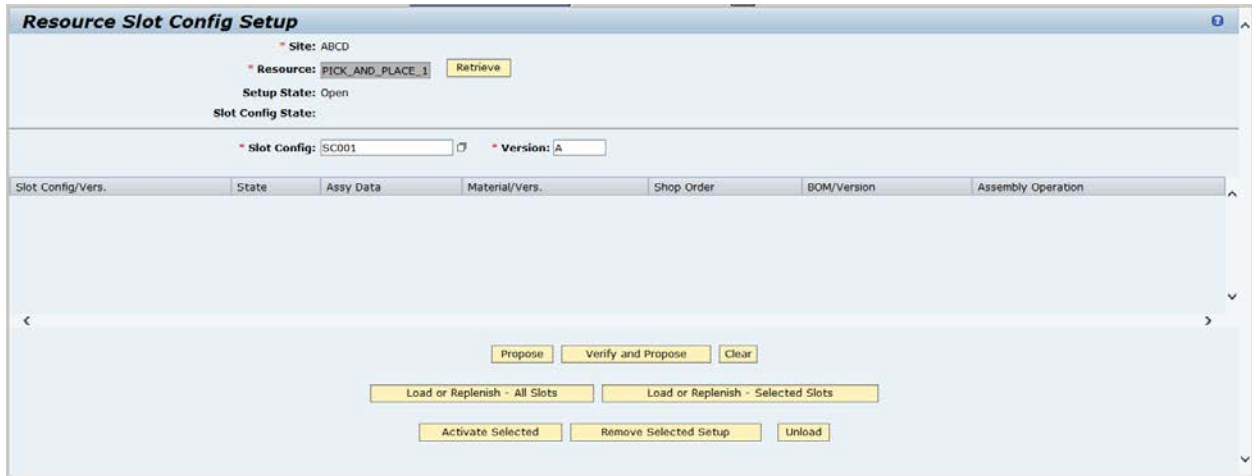
The screenshot shows the 'Message Type Maintenance' SAP screen. At the top, it displays 'Site: ABCD' and 'Message Type: MIN_SLOT_QTY'. Below this, there are three tabs: 'Main', 'User Groups', and 'Notification'. The 'Main' tab is selected. It shows the following fields: 'Description: Default Min Slot Quantity Message', 'Severity: WARNING', 'Process Workflow: SIMPLE', 'Status: Enabled', and 'Message Subject: Minimum Slot Quantity'. The 'Message Body' field contains the text: 'Minimum slot quantity has been reached for component %COMPONENT% in slot % SLOT% on the resource %RESOURCE%'. Below this, there are three checkboxes: 'Auto Close on Process Workflow Completion' (unchecked), 'Use Auto Close Interval' (unchecked), and 'POD Notification' (checked). The 'Use Auto Close Interval' checkbox is followed by a text box containing the value '7' and the unit 'Days'.

53. Repeat steps 51 and 52 for the ZERO_SLOT_QTY message type

SAP ME How-To-Guide for Time Based Component Tracking

54. Select Resource Slot Config Setup

55. Retrieve resource and select slot configuration



Resource Slot Config Setup

Site: ABCD
Resource: PICK_AND_PLACE_1 Retrieve
Setup State: Open
Slot Config State:

Slot Config: SC001 Version: A

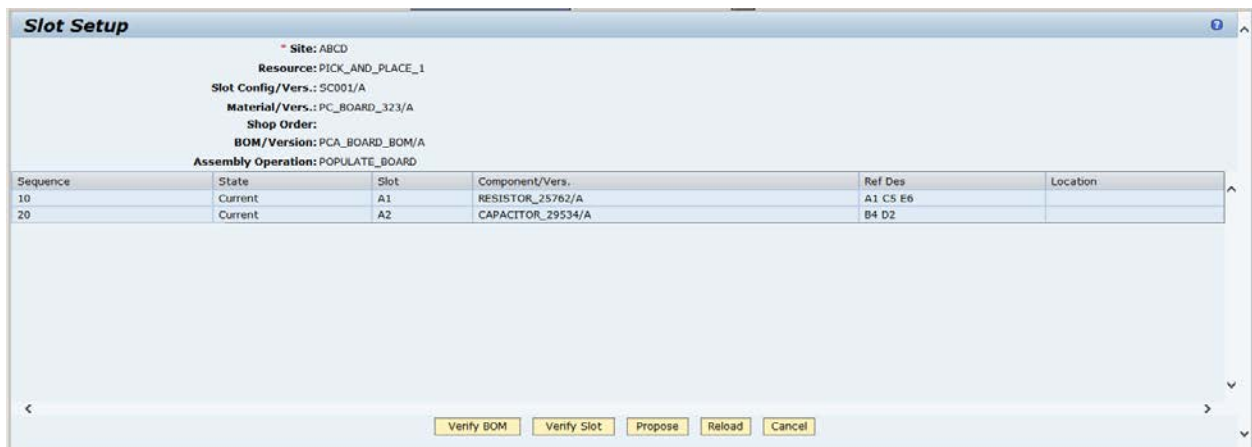
Slot Config/Vers.	State	Assy Data	Material/Vers.	Shop Order	BOM/Version	Assembly Operation
-------------------	-------	-----------	----------------	------------	-------------	--------------------

Propose Verify and Propose Clear

Load or Replenish - All Slots Load or Replenish - Selected Slots

Activate Selected Remove Selected Setup Unload

56. Select Verify and Propose



Slot Setup

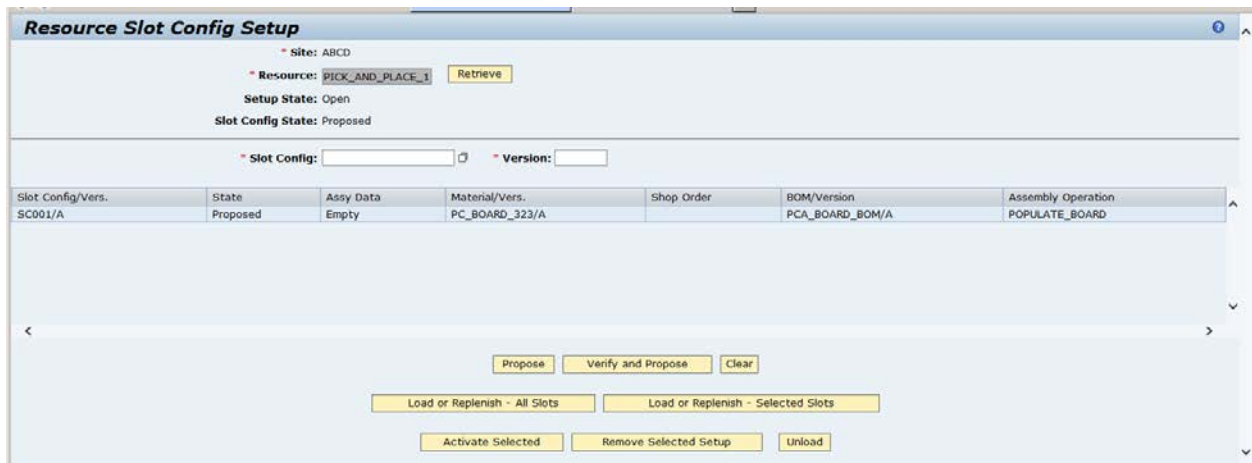
Site: ABCD
Resource: PICK_AND_PLACE_1
Slot Config/Vers.: SC001/A
Material/Vers.: PC_BOARD_323/A
Shop Order:
BOM/Version: PCA_BOARD_BOM/A
Assembly Operation: POPULATE_BOARD

Sequence	State	Slot	Component/Vers.	Ref Des	Location
10	Current	A1	RESISTOR_25762/A	A1 C5 E6	
20	Current	A2	CAPACITOR_29534/A	B4 D2	

Verify BOM Verify Slot Propose Reload Cancel

57. Select Verify Slot or Verify BOM

58. If no problems, select Propose



Resource Slot Config Setup

Site: ABCD
Resource: PICK_AND_PLACE_1 Retrieve
Setup State: Open
Slot Config State: Proposed

Slot Config: Version:

Slot Config/Vers.	State	Assy Data	Material/Vers.	Shop Order	BOM/Version	Assembly Operation
SC001/A	Proposed	Empty	PC_BOARD_323/A		PCA_BOARD_BOM/A	POPULATE_BOARD

Propose Verify and Propose Clear

Load or Replenish - All Slots Load or Replenish - Selected Slots

Activate Selected Remove Selected Setup Unload

SAP ME How-To-Guide for Time Based Component Tracking

59. Select a slot configuration and select Load or Replenish – All Slots

Load Or Replenish

MODE : ADVANCED/SEQUENCE

Site: ABCD
Resource: PICK_AND_PLACE_1
Setup State: Open
Slot Config/Vers.: SC001/A
Slot Config State: Proposed

Material/Vers.: PC_BOARD_323/A
Shop Order:
BOM/Version: PCA_BOARD_BOM/A
Assembly Operation: POPULATE_BOARD

Sequence	State	Cum Qty	Slot	Component/Vers.	Ref Des
10	Empty	0	A1	RESISTOR_25762/A	A1 C5 E6
20	Empty	0	A2	CAPACITOR_29534/A	B4 D2

COMPONENT DETAILS

Slot: A1
Component: RESISTOR_25762 Version: A
Description: RESISTOR_25762
Ref Des: A1 C5 E6

ASSEMBLY DATA

Inventory ID :
Slot Qty :

Add Close

60. Select an inventory ID for the resistor, specify the slot quantity

Load Or Replenish

MODE : ADVANCED/SEQUENCE

Site: ABCD
Resource: PICK_AND_PLACE_1
Setup State: Open
Slot Config/Vers.: SC001/A
Slot Config State: Proposed

Material/Vers.: PC_BOARD_323/A
Shop Order:
BOM/Version: PCA_BOARD_BOM/A
Assembly Operation: POPULATE_BOARD

Sequence	State	Cum Qty	Slot	Component/Vers.	Ref Des
10	Empty	0	A1	RESISTOR_25762/A	A1 C5 E6
20	Empty	0	A2	CAPACITOR_29534/A	B4 D2

COMPONENT DETAILS

Slot: A1
Component: RESISTOR_25762 Version: A
Description: RESISTOR_25762
Ref Des: A1 C5 E6

ASSEMBLY DATA

Inventory ID : INV0000005
Slot Qty : 10

Add Close

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61. Select Add

62. Select an inventory ID for the capacitor and specify the slot quantity

Load Or Replenish MODE : ADVANCED/SEQUENCE

Site: ABCD
Resource: PICK_AND_PLACE_1
Setup State: Open
Slot Config/Vers.: SC001/A
Slot Config State: Proposed

Material/Vers.: PC_BOARD_323/A
Shop Order:
BOM/Version: PCA_BOARD_BOM/A
Assembly Operation: POPULATE_BOARD

Sequence	State	Cum Qty	Slot	Component/Vers.	Ref Des
20	Empty	0	A2	CAPACITOR_29534/A	B4 D2
10	Loaded	10	A1	RESISTOR_25762/A	A1 C5 E6

COMPONENT DETAILS

Slot: A2
Component: CAPACITOR_29534 Version: A
Description: CAPACITOR_29534
Ref Des: B4 D2

ASSEMBLY DATA

* Inventory ID : INV0000007 ☐
* Slot Qty : 10

Add Close

63. Select Add

Load Or Replenish MODE : ADVANCED/SEQUENCE

☒ All slots are now loaded

Site: ABCD
Resource: PICK_AND_PLACE_1
Setup State: Open
Slot Config/Vers.: SC001/A
Slot Config State: Proposed

Material/Vers.: PC_BOARD_323/A
Shop Order:
BOM/Version: PCA_BOARD_BOM/A
Assembly Operation: POPULATE_BOARD

Sequence	State	Cum Qty	Slot	Component/Vers.	Ref Des
10	Loaded	10	A1	RESISTOR_25762/A	A1 C5 E6
20	Loaded	10	A2	CAPACITOR_29534/A	B4 D2

COMPONENT DETAILS

Slot: A1
Component: RESISTOR_25762 Version: A
Description: RESISTOR_25762
Ref Des: A1 C5 E6

ASSEMBLY DATA

* Inventory ID : INV0000005 ☐
* Slot Qty : 10

Add Close Inventory ID Loaded

64. Select Inventory ID Loaded

Update Floor Stock Details

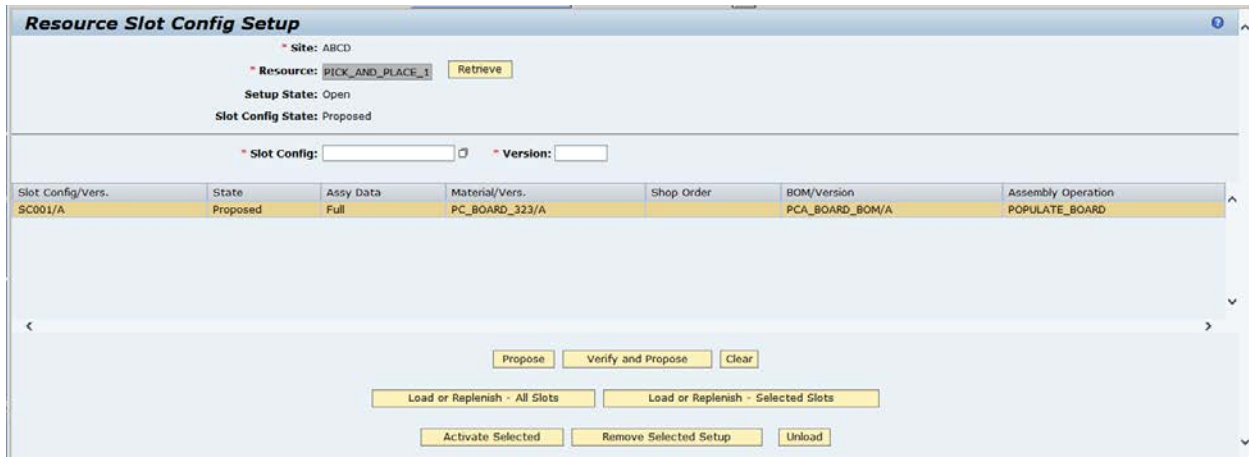
Site: ABCD
Slot: A1
Component/Vers.: RESISTOR_25762/A
State: Loaded

Inventory ID/SFC	Slot Qty	Qty On Hand	Receive Qty
INV0000005	10	0	10

65. Select Close

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66. Select the slot configuration / version



Resource Slot Config Setup

* Site: ABCD
* Resource: PICK_AND_PLACE_1 Retrieve
Setup State: Open
Slot Config State: Proposed

* Slot Config: * Version:

Slot Config/Vers.	State	Assy Data	Material/Vers.	Shop Order	BOM/Version	Assembly Operation
SC001/A	Proposed	Full	PC_BOARD_323/A		PCA_BOARD_BOM/A	POPULATE_BOARD

Propose Verify and Propose Clear
Load or Replenish - All Slots Load or Replenish - Selected Slots
Activate Selected Remove Selected Setup Unload

67. Select Activate Selected



Resource Slot Config Setup

* Site: ABCD
* Resource: PICK_AND_PLACE_1 Retrieve
Setup State: Set Up
Slot Config State: Set Up

* Slot Config: * Version:

Slot Config/Vers.	State	Assy Data	Material/Vers.	Shop Order	BOM/Version	Assembly Operation
SC001/A	Set Up	Full	PC_BOARD_323/A		PCA_BOARD_BOM/A	POPULATE_BOARD

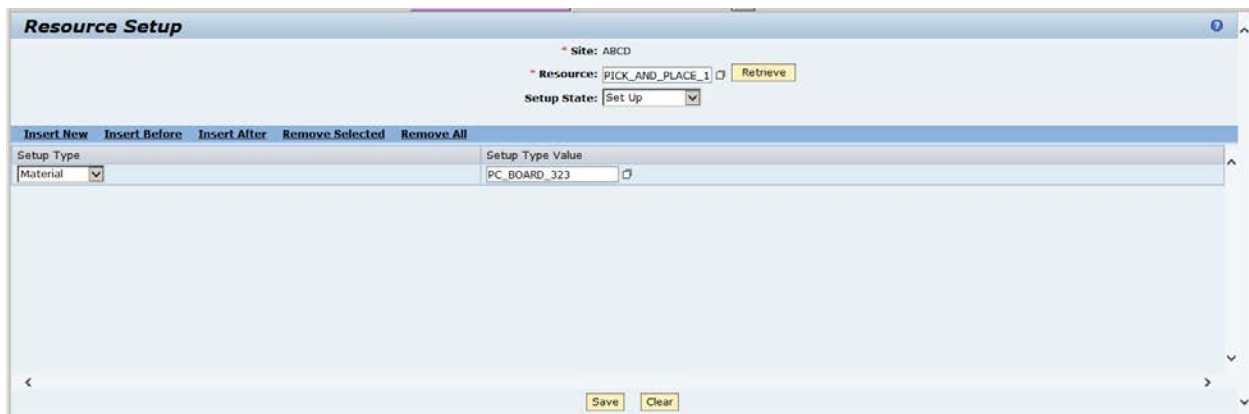
68. Select Resource Setup

69. Select the resource

70. Select Retrieve

71. Select Insert New and leave Material as the Setup Type

72. Select the PC board



Resource Setup

* Site: ABCD
* Resource: PICK_AND_PLACE_1 Retrieve
Setup State: Set Up

Insert New Insert Before Insert After Remove Selected Remove All

Setup Type	Setup Type Value
Material	PC_BOARD_323

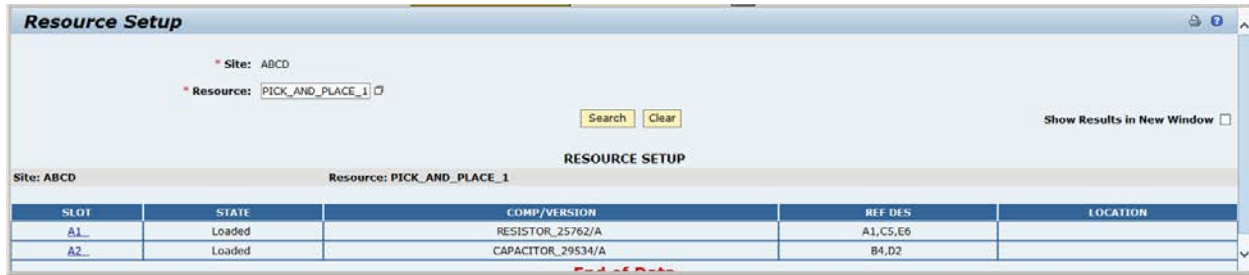
Save Clear

73. Select Save

74. The resource is now set up for producing the PC board

75. Select Resource Setup Report, select the resource and select Search

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Resource Setup

Site: ABCD
Resource: PICK_AND_PLACE_1

Search Clear Show Results in New Window ☐

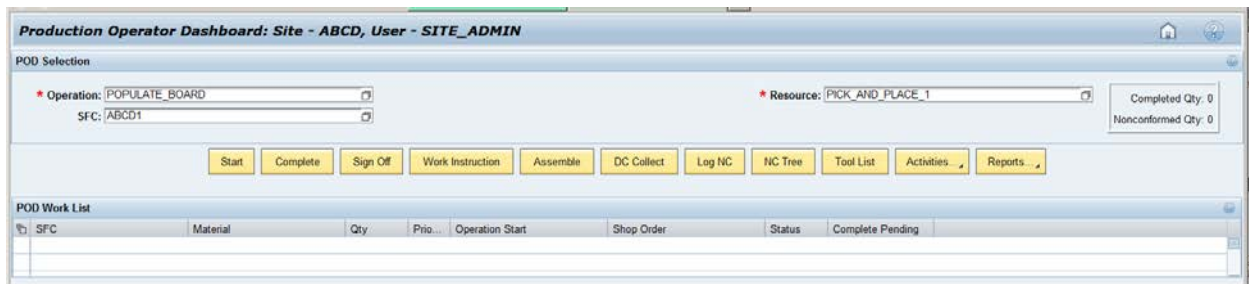
RESOURCE SETUP

Site: ABCD Resource: PICK_AND_PLACE_1

SLOT	STATE	COMP/VERSION	REF DES	LOCATION
A1_	Loaded	RESISTOR_25762/A	A1,C5,E6	
A2_	Loaded	CAPACITOR_29534/A	B4,D2	

6.1.1.4 Utilize TBCT

76. Create and release a shop order for the PCA board
77. Start the Operation POD
78. Select the POPULATE_BOARD operation
79. Select the PICK_AND_PLACE_1 resource
80. Select an SFC for the shop order



Production Operator Dashboard: Site - ABCD, User - SITE_ADMIN

POD Selection

* Operation: POPULATE_BOARD
SFC: ABCD1

* Resource: PICK_AND_PLACE_1

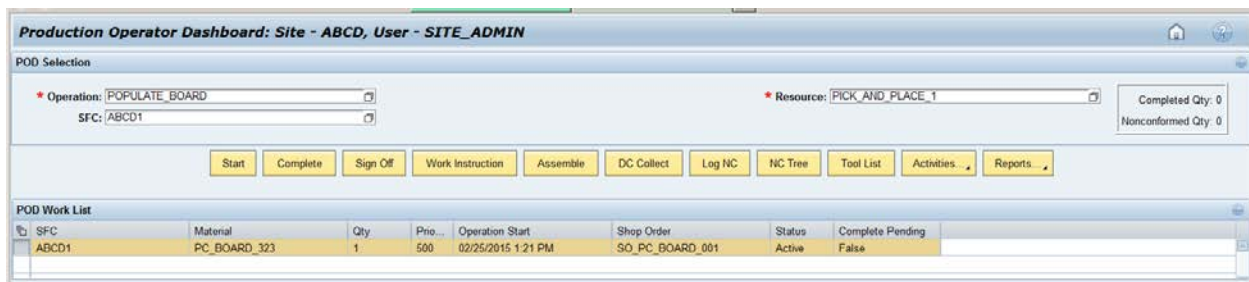
Completed Qty: 0
Nonconformed Qty: 0

Start Complete Sign Off Work Instruction Assemble DC Collect Log NC NC Tree Tool List Activities Reports

POD Work List

SFC	Material	Qty	Prio...	Operation Start	Shop Order	Status	Complete Pending
-----	----------	-----	---------	-----------------	------------	--------	------------------

81. Select Start



Production Operator Dashboard: Site - ABCD, User - SITE_ADMIN

POD Selection

* Operation: POPULATE_BOARD
SFC: ABCD1

* Resource: PICK_AND_PLACE_1

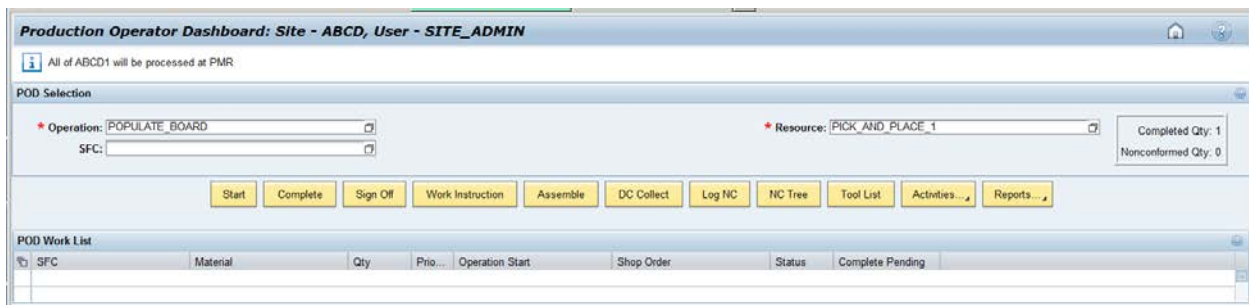
Completed Qty: 0
Nonconformed Qty: 0

Start Complete Sign Off Work Instruction Assemble DC Collect Log NC NC Tree Tool List Activities Reports

POD Work List

SFC	Material	Qty	Prio...	Operation Start	Shop Order	Status	Complete Pending
ABCD1	PC_BOARD_323	1	500	02/25/2015 1:21 PM	SO_PC_BOARD_001	Active	False

82. Select Complete



Production Operator Dashboard: Site - ABCD, User - SITE_ADMIN

All of ABCD1 will be processed at PMR

POD Selection

* Operation: POPULATE_BOARD
SFC:

* Resource: PICK_AND_PLACE_1

Completed Qty: 1
Nonconformed Qty: 0

Start Complete Sign Off Work Instruction Assemble DC Collect Log NC NC Tree Tool List Activities Reports

POD Work List

SFC	Material	Qty	Prio...	Operation Start	Shop Order	Status	Complete Pending
-----	----------	-----	---------	-----------------	------------	--------	------------------

83. Repeat steps 80 through 82 two times

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84. Select the Warning icon on the POD header

The screenshot shows the top header of the SAP ME interface. The title bar reads "Production Operator Dashboard: Site - ABCD, User - SITE_ADMIN". Below this is a "POD Selection" bar. At the bottom of the header, there are two dropdown menus: "Operation: POPULATE BOARD" and "Resource: PICK_AND_PLACE_1". To the right of these dropdowns, there is a yellow warning icon (a triangle with an exclamation mark) and a question mark icon.

85. Select Close in the Messages dialog

The screenshot shows a "Messages" dialog box. It has a table with columns: Message Type, Created Date Time, Created By, Operation, Resource, SFC, Subject, Status, Performed By, Performe..., Sever..., and Details. The first row of data shows: MIN_SLOT_QTY, 02/25/2015 2:42 PM, SITE_ADMIN, PICK_AND_PLACE_1, Minimum Slot Quantity, New, SITE_ADMIN, 02/25/2015..., Warning. Below the table, there are several buttons: Withdraw, Claim, Unclaim, Revoke, Transfer, Comment, Close Message, and Close. The "Close" button is highlighted.

86. Open the Load or Replenish activity

The screenshot shows the "Load Or Replenish" activity screen. It has a header with a question mark icon. Below the header, there are fields for "Site: ABCD", "Resource: " (with a dropdown arrow), and "Retrieve" button. Below these, there are labels for "Setup State:" and "Slot Config State:". The "Retrieve" button is highlighted.

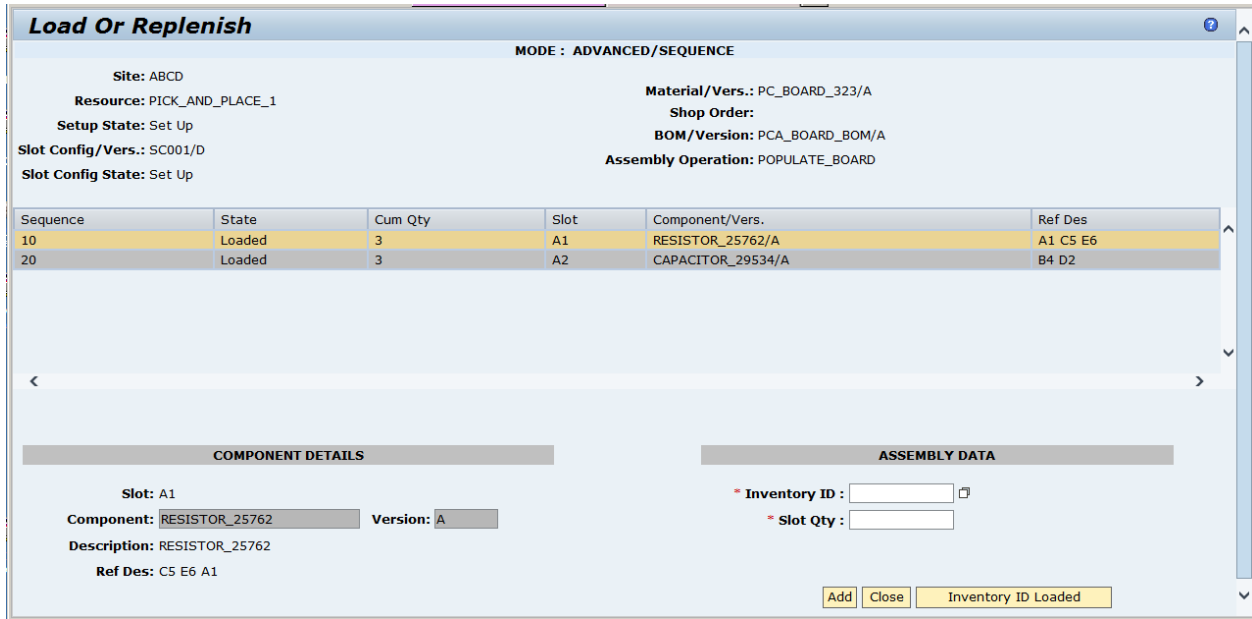
87. Select and retrieve the resource

88. Select the slot configuration and version

The screenshot shows the "Load Or Replenish" activity screen with more data entered. The "Resource" dropdown now shows "PICK_AND_PLACE_1". Below the "Retrieve" button, there are labels for "Setup State: Set Up" and "Slot Config State: Set Up". Below these, there are fields for "Slot Config: " (with a dropdown arrow) and "Version: ". Below these fields, there is a table with columns: Slot Config/Vers., State, Assy Data, Material/Vers., Shop Order, BOM/Version, and Assembly Operation. The first row of data shows: SC001/D, Set Up, Full, PC_BOARD_323/A, Shop Order, PCA_BOARD_BOM/A, POPULATE_BOARD. Below the table, there is a "Clear" button. At the bottom, there are two buttons: "Load or Replenish - All Slots" and "Load or Replenish - Selected Slots". The "Load or Replenish - All Slots" button is highlighted.

89. Select Load or Replenish – All Slots

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Load Or Replenish

MODE : ADVANCED/SEQUENCE

Site: ABCD
Resource: PICK_AND_PLACE_1
Setup State: Set Up
Slot Config/Vers.: SC001/D
Slot Config State: Set Up

Material/Vers.: PC_BOARD_323/A
Shop Order:
BOM/Version: PCA_BOARD_BOM/A
Assembly Operation: POPULATE_BOARD

Sequence	State	Cum Qty	Slot	Component/Vers.	Ref Des
10	Loaded	3	A1	RESISTOR_25762/A	A1 C5 E6
20	Loaded	3	A2	CAPACITOR_29534/A	B4 D2

COMPONENT DETAILS

Slot: A1
Component: RESISTOR_25762 Version: A
Description: RESISTOR_25762
Ref Des: C5 E6 A1

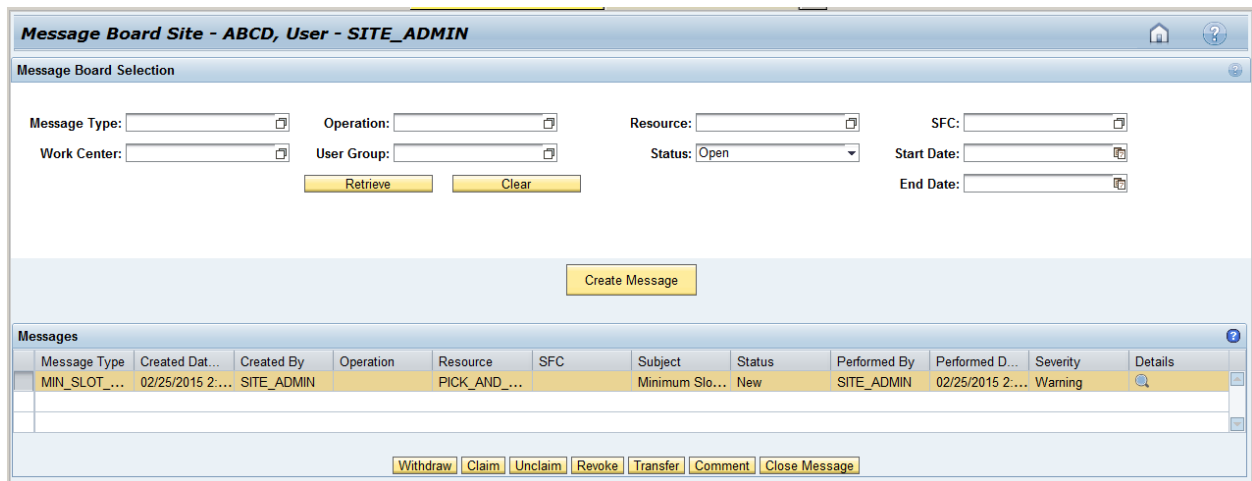
ASSEMBLY DATA

* Inventory ID :
* Slot Qty :

Add Close Inventory ID Loaded

90. Replenish the slots (use Inventory ID Loaded to view the current quantity in a slot)

91. Open the Message Board and select the message



Message Board Site - ABCD, User - SITE_ADMIN

Message Board Selection

Message Type: Operation: Resource: SFC:
Work Center: User Group: Status: Open Start Date: End Date:
Retrieve Clear

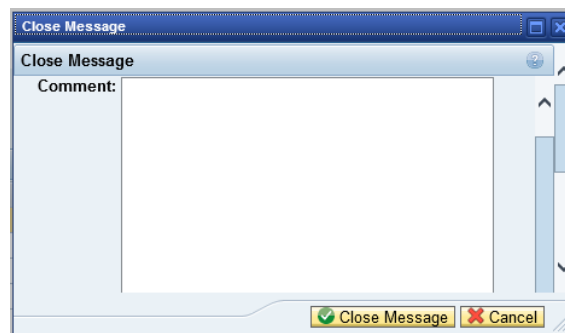
Create Message

Messages

Message Type	Created Dat...	Created By	Operation	Resource	SFC	Subject	Status	Performed By	Performed D...	Severity	Details
MIN_SLOT_...	02/25/2015 2:...	SITE_ADMIN		PICK_AND_...		Minimum Slo...	New	SITE_ADMIN	02/25/2015 2:...	Warning	

Withdraw Claim Unclaim Revoke Transfer Comment Close Message

92. Select the Close Message button



Close Message

Close Message

Comment:

Close Message Cancel

93. Enter a comment and select the Close Message button

7 Links to Additional Information

[SAP Service Marketplace](#)

8 Other Reference Material

[Installation Guides SAP ME](#) – The installation guide for your version of ME can be downloaded from the SAP Support Portal > Release & Upgrade Info > Installation & Upgrade Guides > SAP Business Suite Applications > SAP Manufacturing > SAP Manufacturing Execution

[SAP ME Help](#)

9 Overview of Changes

Not Applicable