Oracle Workforce Management Cloud

WFM User Guide

Release 26C

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2 System Overview

Overview

Oracle Workforce Management (WFM) provides visibility into the operations and the workforce that perform various activities in the facilities. With an easy-to-use configurable browser-based user interface and redwood mobile functionality, WFM helps organizations plan, track and optimize warehouse workforce to improve productivity and operational efficiency.

WFM enables facility managers and supervisors to define productivity goals for activities performed within the facility. It captures the actual time spent on these activities through various methods and provides metrics and reports to evaluate employee productivity against the established goals.

Types of Activities

Multiple activities are performed by users in a facility. These are also known as Work Area Activities in WFM and broadly categorized into three types as described in the following topics.

Related Topics

- *WMS Activities*
- *Non-WMS Activities*
- *Ad hoc Activities*

> **Note:** As of Release 26B, the work area activity types have been renamed to better reflect the activities that are performed by employees.
>
> - System Activity: Renamed to WMS Activity.
> - VAS Activity: Renamed to Non-WMS Activity.
> - Manual Activity: Renamed to Ad hoc Activity.

WMS Activities

Any activity that is performed using Oracle Cloud Warehouse Management System is a WMS activity. WMS activities are interfaced into WFM through a background scheduled job. These activities are productive and therefore goals need to be defined against each WMS activity to determine user productivity.

Non-WMS Activities

Any productive activity that is performed in the facility without the use of WMS is a Non-WMS activity. These are captured directly in Oracle Cloud WFM (using *Clock Data* feature). These are also productive and therefore goals need to be defined against each Non-WMS activity to determine user productivity.

Ad hoc Activities

Ad hoc Activities include maintenance related effort, scheduled meetings and time spent towards unexpected events. These are also captured directly in Oracle Cloud WFM (using *Clock Data* feature). These are non-productive and therefore goals are not required for such activities.

Clock Process

Clocking is the process of recording timestamps to track employee entry and exit from the facility, as well as the time spent on Non-WMS and ad hoc activities, including breaks.

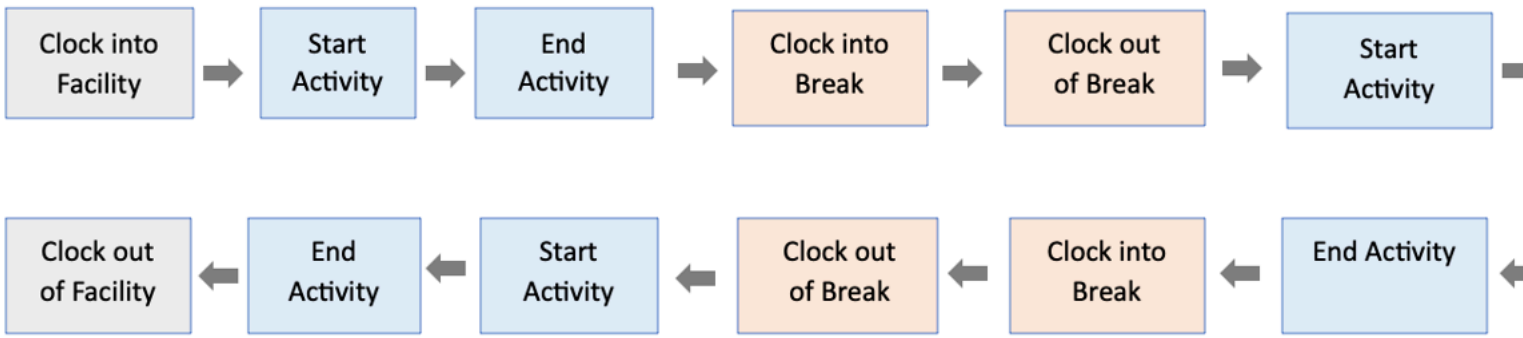
At the start of the workday, each employee must clock in (CI) to the facility (FAC), indicating the beginning of their workday, before performing any warehouse activities. If an employee takes a break, such as lunch or tea, they must clock in and out to record the break duration. At the end of the workday, the employee must Clock Out (CO) of the facility.

For Non-WMS and Ad hoc activities, time is recorded by explicitly clocking into the respective activity. However, for WMS activities, explicit clocking is not required. Each mobile screen in WMS is mapped to a corresponding activity in WFM, and the activity duration is calculated using the start and end timestamps received from WMS.

> **Note:** As of Release 26B, it is no longer required for employees to explicitly clock into Work Areas, instead they can now start their activities directly after clocking into facility. Also, the difference between a facility clock in and clock out for an employee cannot exceed 24 hours. If the duration exceeds 24 hours, the employee must clock out of facility and clock back in.

A Sample Employee Workflow in WFM

As a standard operating procedure, employees are required to follow a specific clock-in/clock out process. The following figure depicts a typical clock-in/out flow.



Legend

Start Activity: Clock into Non-WMS Activity/Ad hoc Activity OR start WMS mobile transaction.

End Activity: Clock out of Non-WMS Activity/Ad hoc Activity OR end WMS mobile transaction.

Mandatory Clock In/Clock Out

For capturing user productivity in WFM, it is essential for a user to clock in and out of entities as described above. Since Non-WMS and Ad hoc activities are captured through clocking, WFM ensures that the users are clocked into facility and activity in the right sequence. However, when users start their workday with WMS activities using WMS mobile transactions, it's possible that a user may forget to clock into the facility before starting the activity. Although this would not impact warehouse operations, it would result in incorrect productivity calculations for the user.

In order to ensure that users do not miss the clocking process when starting the workday with WMS activities, you can enable the facility parameter ***CICO_MANDATORY*** by setting it set to "Yes". When this parameter is enabled, WFM does not allow user to log into mobile transactions, if the user has not clocked into the facility.

Note that even if the facility parameter is enabled, it is only applicable to users with group permission ***Track Record/ Require CICO Validations*** . Mandatory CICO check will not be performed for users that do not have this permission. Also, unlike other permissions, this permission is not enabled for ADMINISTRATOR ROLE, by default.

Employee Location Tracking

In Release 24D, a new feature has been introduced in WFM to enable supervisors to track employee location in the warehouse. Employee's location can be captured based on location scans through WMS mobile screens OR can be interfaced/posted by external systems.

3 WFM – Input Data

Input Data

The following data is used by WFM to generate employee metrics:

- Time spent in the facility, on breaks and ad hoc activities captured through clocks.
- Time spent on non-WMS activities along with quantity and handling attributes, captured through clocks.
- Time spent on WMS activities along with quantity and handling attributes, captured through WMS mobile transactions.
- Time spent traveling between locations captured through location scans using WMS mobile transactions.
- Goals for WMS Activities configured in Prod Goal Line Group.
- Goals for Non-WMS Activities configured in Employee Activity Goals.

Prior to 26B, time for a Non-WMS Activity was captured through clocks, and the related handling attributes (qty, uom, and sku line group) were captured in Daily VAS Track (through the UI, Input Interface, or REST API). Goals for Non-WMS activities were defined in Prod Goal VAS.

As of Release 26B, the following changes have been introduced for Non-WMS Activities in WFM:

- Team clock option has been removed. Employees can be clocked only as individuals into a Non-WMS activity.
- Prod Goal VAS has been deprecated, and Employee Activity Goals has been introduced to define Goals for Non-WMS activities.
- Daily VAS Track has been deprecated and handling attributes for Non-WMS Activities is included as part of clock records.

Handling Attributes for Non-WMS Activities

As of release 26B, the following handling attributes have been introduced in WFM for Non-WMS Activities:

- Handling Entity – This is a mandatory field and describes the entity that was handled by an employee while performing a Non-WMS activity. The handling entity can be an Item, LPN, or Pallet.
- Handling UOM – If the handling entity is an item, UOM must be specified. If the entity is LPN or Pallet, the UOM is defaulted to LPNs and Pallets respectively.
- WFM Item Category - If the handling entity is an item, item category can also be specified (optional).
- LPN Type - If handling entity is LPN or Pallet, LPN Type can be specified (optional).
- Handling Quantity – This is a mandatory field and represents the quantity handled during the activity.

Goals can be defined in Employee Activity Goals view for each Non-WMS activity based on the handling attributes.

> **Note:** SKU Line Group will no longer be used for Non-WMS activities. Instead WFM Item Category can be used when Handling Entity is Item and LPN Type can be used when Handling Entity is LPN or Pallet. Both WFM Item category and LPN Type are optional.

Clock Data

The clock data provides a visibility of the time employees have spent in the facility, on breaks, on Non-WMS and Ad hoc activities. As of Release 26B, clock data also includes information of the *Handling Attributes for Non-WMS Activities*

WFM provides multiple options for clocking employees as listed below:

- *WFM Browser Clock View*: This desktop view can be used by supervisors to clock employees.
- *WFM Mobile Clock Views*: This is an employee self-clock option on mobile.
- *External Systems*: Clock data captured by external time management systems can be interfaced or posted to WFM.
- *Auto Clock In/Clock Out*: This option can be used to automatically clock employees into facility who start the day with WMS activities.

Note: Each option listed above can work in conjunction with other options.

WFM Browser Clock View

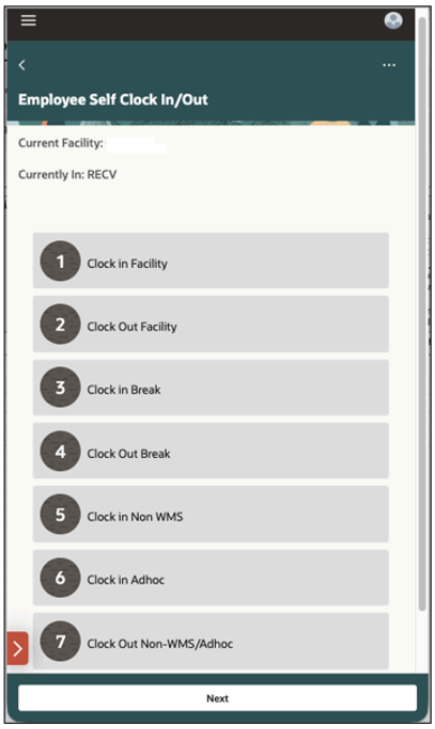
Clock (ClockView) is a browser-based view that can be used by supervisors to clock employees. Supervisors can select the appropriate option from mode drop-down to clock employees into facility, break, Non-WMS or Ad hoc activities. Employees are clocked (in or out) at the current facility time which also shows up as a running timer in the view. Employee clock information can be viewed in Clock Records view. The supervisor who clocks employees using this view shows up as the clocker in the Clock Records.

As of Release 26B the following enhancements have been introduced in this view:

- Work Area clock option has been removed, since it's no longer required for employees to clock into Work Area.
- Non-WMS and Ad hoc activity drop-down now display the Work Area along with the Work Area Activity.
- Supervisors are prompted to enter handling attributes during Non-WMS clock out eliminating the need for a separate entry through Daily VAS Track. The handling attributes are enabled only when the mode is Non-WMS clock-out.
- Supervisor can choose to clock the user out of Non-WMS activity without entering the *Handling Attributes for Non-WMS Activities* which can be updated later through input interface, REST API or clock records view.
- The option to clock as a team into Non-WMS activity has been removed.

WFM Mobile Clock Views

This mobile screen (module: rf.wfm.cwrfcicouser) can be used by employees to clock themselves into entities rather going through the supervisor.

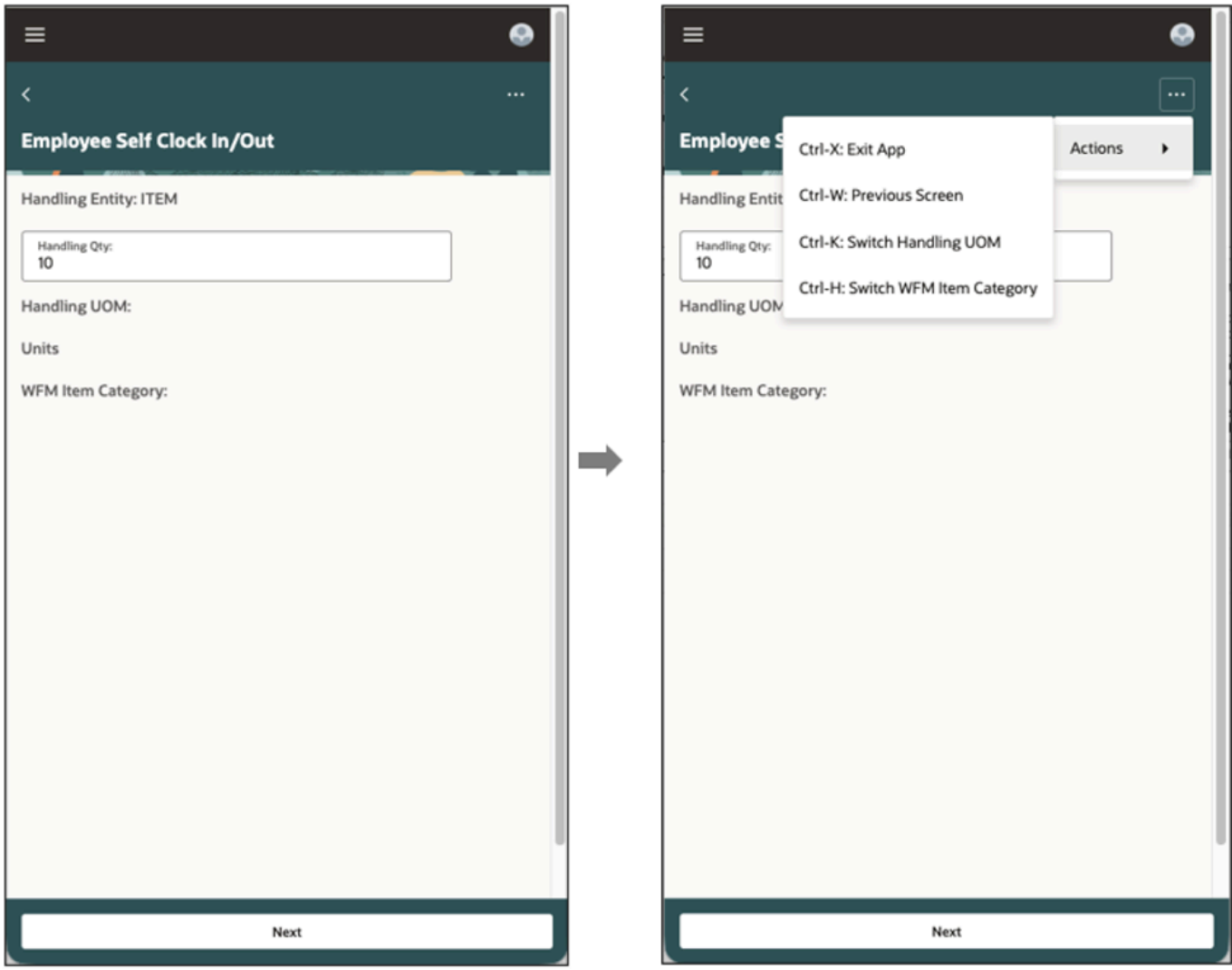


The "Current Facility" and “Currently In” fields provide a visibility of the entities in which the logged in employee is currently clocked in, regardless of how the employee was clocked in (Clock UI, Mobile clock option, Auto CICO, Input Interface, OR REST API). An empty value in these fields indicates that the employee is not clocked into these entities. Employees can select the appropriate option to clock themselves into or out of an entity. Employees are clocked (in or out) at the current facility time, and the clocked information can be viewed in *Clock Record* view. Since this is a self-clock in/out option, clocker is same as the employee.

As of Release 26B, the following changes have been introduced in this screen:

- Work Area clock option has been removed, since it’s no longer required for employees to clock into Work Area.
- Current Work Area field has been removed from main screen.
- Since Work Area clock option has been removed, users are now presented with all activities in the Non-WMS or Ad hoc clock in option. However, the activities are prefixed with Work Area Name to quickly find the activities that they need to clock into.

- The screen flow of Non-WMS Clock out is determined by the "Capture Quantity During Clock Out" flag of the activity which can be configured in the *Work Area Activities* view.
    - If the flag is marked as yes, the employee will be prompted to enter the Handling Attributes of the Non-WMS Activity. The employee cannot clock out of the activity without specifying the handling entity, qty and UOM. Item category and LPN Type are optional and can be provided through ctrl keys.
    - However, if the flag is marked as no, the employee is clocked out without any additional prompts, and the Handling Attributes can be updated later through Clock Record, Input Interface or REST API.



External Systems

If employees' clock data is captured by external time management systems, it can be interfaced into WFM through Clock Input Interface or posted to WFM using Clock REST API.

Details about the clock file and the interface that processes this file is described in the section - *Input Interfaces*.

Clock REST API is described in the section – *REST APIs*.

Auto Clock In/Clock Out

Since Non-WMS and Ad hoc activities are captured through clocking, WFM ensures that the users are clocked into facility and activity in the right sequence. However, if users start their day with WMS mobile transactions, it's possible that a user may forget to clock into facility before starting the activity. Although this would not impact warehouse operations, it would result in incorrect productivity calculations for the user.

The auto clock feature in WFM can be used to automatically clock users into a facility enabling users to focus on performing WMS activities rather than following SOPs for clocking appropriately. The clocking is automatically done by WFM behind the scenes without any manual intervention.

Auto clock feature can be enabled by setting the facility parameter ***AUTO_CICO*** to "Yes". When this parameter is enabled, WFM automatically clocks the user into a facility when the user logs into mobile options.

Note that even if the facility parameter is enabled, it is only applicable to users with group permission ***Track Record/ Require CICO Validations*** . Auto clock in/clock out will not be performed for users that do not have this permission. Also, unlike other permissions, this permission is not enabled for ADMINISTRATOR ROLE by default.

Auto Facility Clock In

When a user logs into mobile, depending on the current state of the user, WFM performs next steps as described in the table below:

Auto Facility Clock In

Current User Status	WFM Response
User is already clocked into the current facility	No further action is taken by WFM.
User is clocked into a different facility	WFM clocks the user out of the other facility before clocking into the current facility. Note that, auto clock feature needs to be enabled in the other facility for WFM to perform auto clock out from the other facility.
User is found to be inactive. A user is considered inactive in the following scenarios: • If the last clock record of the user is more than 1440 mins (24 hours) ago. OR • If there are no clock records or no WMS activity for the user for last **X** number of minutes. The value **X** can be configured in the facility parameter ***CICO_INACTIVITY_ TOLERANCE_MINS*** which can be set between 120 minutes to 1440 mins. Facility Parameter: ***CICO_INACTIVITY_ TOLERANCE_MINS***	User is clocked into the current facility. However, before clocking the user into the facility, WFM checks if the user has any open clock records. If yes, WFM systematically clocks the user out of all such entities in the right sequence. For example, if the user was clocked into a break before becoming inactive, WFM will clock the user out of break and the facility before clocking user into current facility. As of Release 26B, a 24-hour restriction has been introduced between facility clock in and clock out. Depending on the user's last facility clock-in, facility clock-out timestamp for the user will be determined as follows depending on whichever event is latest: • End timestamp of the last WMS Activity that is within 24 hours from user's facility clock in time. • Clock out time of the last closed Non-WMS, Ad hoc or break that is within 24 hours from user's facility clock in time. • Clock out time of the last open Non-WMS, Ad hoc or break that is within 24 hours from user's facility clock in time.

Current User Status	WFM Response
• If the facility parameter is not configured, a default value of 240 minutes will be used. • If the facility parameter configured is less than 120 mins, 120 minutes will be used.	Open break or activity records will be closed with the same timestamp as the clock in timestamp of such records. Any other user activity that is outside the 24-hour window will remain orphaned without any clock records and need to be manually addressed by supervisors.

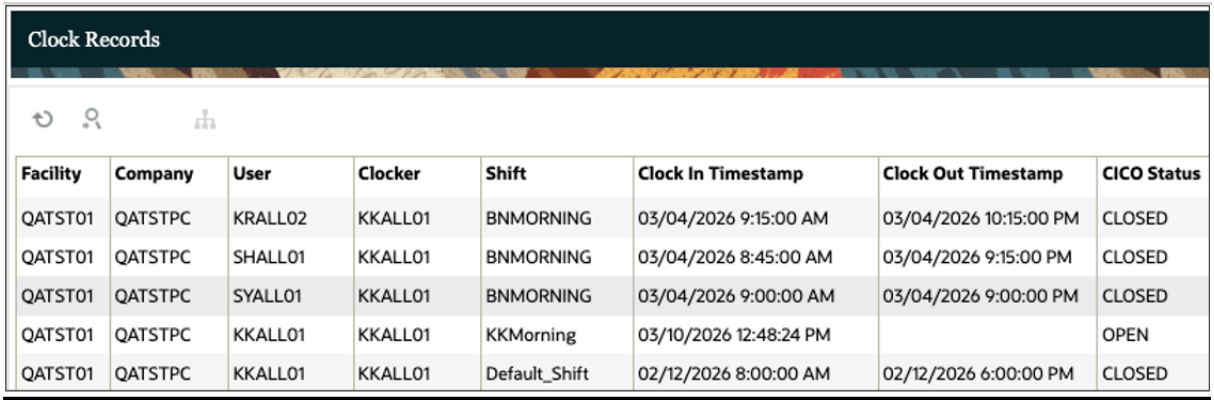
Current User Status	WFM Response
If the facility parameter configured is greater than 1440 mins, 1440 minutes will be used.	**Note:** Auto Clock out from facility is not triggered based on any other action such as mobile log out, UI logout, mobile idle time or UI idle time. It is ONLY triggered when user logs into mobile and is found to have been inactive. **User Inactive Scenarios** **Scenario 1**: Clock Record entry greater than 24 hours; No activity in between • Login to mobile: Nov 3, 7:00 am • Auto FAC-CI: Nov 3, 7:00 am • Login to mobile: Nov 4, 7:05 am • Since Clock Record has exceeded 24 hours, facility parameter CICO_INACTIVTY_TOLERANCE_MINS is ignored. • Auto FAC-CO: Nov 3, 7:00 am; Auto FAC-CI Nov 4, 7:05 am. **Scenario 2**: Clock Record entry greater than 24 hours; Activity in between • Login to mobile: Nov 3, 7:00 am • Auto FAC-CI: Nov 3, 7:00 am • End_ts of WMS Activity: Nov 4, 6:00 am • Login to mobile: Nov 4, 7:05 am • Since Clock Record has exceeded 24 hours, facility parameter CICO_INACTIVTY_TOLERANCE_MINS is ignored. • Auto FAC-CO: Nov 4, 6:00 am; FAC-CI Nov 4, 7:05 am **Scenario 3**: Clock Record entry less than 24 hours; CICO_INACTIVTY_TOLERANCE_MINS = 120 mins • Login to mobile: Nov 3, 7:00 am • Auto FAC-CI: Nov 3, 7:00 am • End_ts of WMS Activity: Nov 3, 9:30 am • Login to mobile: Nov 3, 10:00 am • Since 10:00 am - 9:30 am < CICO_INACTIVTY_TOLERANCE_MINS, no clock records are written • Login to mobile: Nov 3, 1:00 pm • Since 1:00 pm - 9:30 am > CICO_INACTIVTY_TOLERANCE_MINS, user is clocked out of facility and clocked into facility. • Auto FAC-CO: Nov 3, 9:30 am; Auto FAC-CI Nov 3, 1:00 pm.

Current User Status	WFM Response

Note: As of Release 26B auto clock into work area has been removed, since it's no longer required for employees to clock into Work Area.

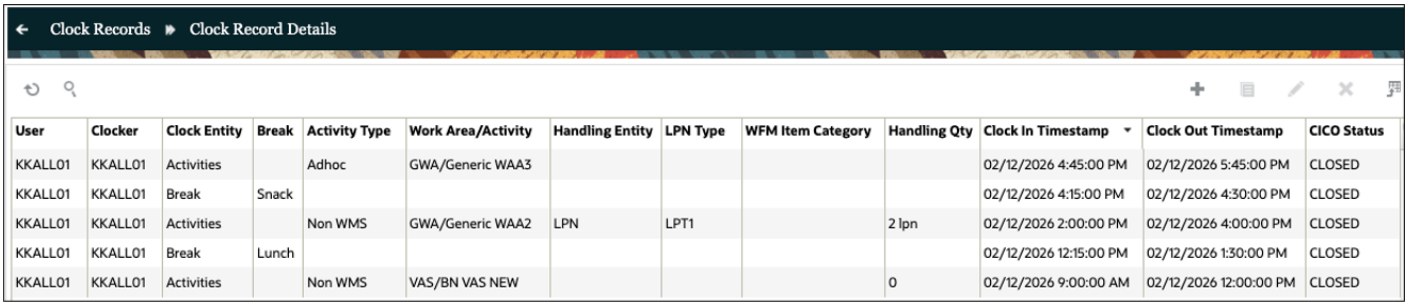
Clock Record View

Employee clock information can be viewed in Clock Record (module: ClockRecordsView).



Clock Records

Facility	Company	User	Clocker	Shift	Clock In Timestamp	Clock Out Timestamp	CICO Status
QATST01	QATSTPC	KRALL02	KKALL01	BNMORNING	03/04/2026 9:15:00 AM	03/04/2026 10:15:00 PM	CLOSED
QATST01	QATSTPC	SHALL01	KKALL01	BNMORNING	03/04/2026 8:45:00 AM	03/04/2026 9:15:00 PM	CLOSED
QATST01	QATSTPC	SYALL01	KKALL01	BNMORNING	03/04/2026 9:00:00 AM	03/04/2026 9:00:00 PM	CLOSED
QATST01	QATSTPC	KKALL01	KKALL01	KKMorning	03/10/2026 12:48:24 PM		OPEN
QATST01	QATSTPC	KKALL01	KKALL01	Default_Shift	02/12/2026 8:00:00 AM	02/12/2026 6:00:00 PM	CLOSED



Clock Records » Clock Record Details

User	Clocker	Clock Entity	Break	Activity Type	Work Area/Activity	Handling Entity	LPN Type	WFM Item Category	Handling Qty	Clock In Timestamp	Clock Out Timestamp	CICO Status
KKALL01	KKALL01	Activities		Adhoc	GWA/Generic WAA3					02/12/2026 4:45:00 PM	02/12/2026 5:45:00 PM	CLOSED
KKALL01	KKALL01	Break	Snack							02/12/2026 4:15:00 PM	02/12/2026 4:30:00 PM	CLOSED
KKALL01	KKALL01	Activities		Non WMS	GWA/Generic WAA2	LPN	LPT1		2 lpn	02/12/2026 2:00:00 PM	02/12/2026 4:00:00 PM	CLOSED
KKALL01	KKALL01	Break	Lunch							02/12/2026 12:15:00 PM	02/12/2026 1:30:00 PM	CLOSED
KKALL01	KKALL01	Activities		Non WMS	VAS/BN VAS NEW				0	02/12/2026 9:00:00 AM	02/12/2026 12:00:00 PM	CLOSED

As of Release 26B, the following changes have been introduced in this view:

- Track Record UI has been redesigned and renamed as Clock Record.
- The redesigned view has header detail structure instead of a flat structure.
- Employee facility clock in/out records are at the header level, Break and activities at detail level.
- Shift appears only at the header level. The *Dynamic Assignment of Shifts* section describes how shifts are determined based on facility clock-in.
- Instead of two separate records for a clock in and clock out, a single record represents both clock in and out.
- A status field on each record indicates if the record is open or closed. Records with only clock in timestamp are marked as open and record with both clock in and clock out timestamp are marked as closed.
- Apart from the edit and delete icons, a permission controlled create icon has been introduced that can be used by supervisors to retroactively clock employees into past dates and times.

- Additional fields have been introduced to hold *Handling Attributes for Non-WMS Activities*
- Existing data from Track Records will be migrated to Clock Records. Facility Records will appear at the header level, Break and Activities at detail level. Work Area records will not be migrated.
- Since Team clock option is removed, there is no placeholder for team in the view.
- Since Work Area clock option is removed, there is no placeholder for Work Area in the view. However, Work Area name is included along with the Activities for visibility.

Managing Clock Records

Clock Records can be edited or deleted. As of release 26B, a create option has been introduced to allow supervisors to retroactively clock users into past dates and times. The create and edit icons are only enabled for users that have "Track Record / Edit Records" permission and the delete icon is enabled only for users that have "Track Record / Delete Records" permission. Users with ADMINISTRATOR role automatically get these permissions.

Header (Facility) Records

- When creating a new facility record in the header view using the Create icon, the following should be noted:
  - New facility records can be created in OPEN or CLOSED status.
  - Clock-in Timestamp is mandatory, and Clock-out Timestamp is optional.
    - If only Clock-in Timestamp is provided, the record will be created in OPEN status.
    - If both Clock-in and Clock-out Timestamp are provided, the record will be created in CLOSED status.
    - The record will not be saved and errors will be thrown.
    - If an attempt is made to create an OPEN record while there is already an OPEN facility record for the user.
    - If an attempt is made to create an OPEN record earlier than other facility records (even if the other records are CLOSED).
    - If an attempt is made to create a record that overlaps with other facility records.
    - If the Clock-out Timestamp is earlier than the Clock-in Timestamp.
    - If the difference between Clock-in and Clock-out Timestamp is greater than 24 hours.

- When editing an existing facility record in the header view using the Edit icon, the following should be noted:
  - OPEN records can be CLOSED and CLOSED records can be OPENED.
  - The record will not be saved and errors will be thrown:
    - If an attempt is made to OPEN a record while there is already an OPEN facility record.
    - If an attempt is made to OPEN a record that is earlier than other facility records (even if the other records are CLOSED).
    - If the Clock-out Timestamp is earlier than the Clock-in Timestamp.
    - If the difference between Clock-in and Clock-out Timestamp is greater than 24 hours.
    - If the Clock-in Timestamp is later than the Clock-in Timestamp of the first detail record.
    - If the Clock-out Timestamp is earlier than the Clock-out Timestamp of the last detail record.
    - If an attempt is made to CLOSE a record while a detail is OPEN.

- When deleting an existing facility record in the header view using the Delete icon, the following should be noted:
  - Both OPEN and CLOSED records can be deleted.
  - If an attempt is made to delete a facility record, the record is deleted along with its details (break and activity records). A warning message is displayed, and record will be deleted only upon supervisor confirmation.

Detail (Break and Activity) Records

- When creating a new break or activity record in the detail view using the Create icon, the following should be noted:
  - New detail record can be created in OPEN or CLOSED status.
  - Clock-in Timestamp is mandatory, and Clock-out Timestamp is optional.
  - If only Clock-in Timestamp is provided, the record will be created in OPEN status.
  - If both Clock-in and Clock-out Timestamp are provided, the record will be created in CLOSED status.
  - The record will not be saved and errors will be thrown:
    - If an attempt is made to create an OPEN record while the header record is closed
    - If an attempt is made to create an OPEN record while there is already an OPEN detail record
    - If an attempt is made to create an OPEN record earlier than other detail records (even if the other detail records are CLOSED)
    - If an attempt is made to create a CLOSED record that overlaps with other detail records
    - If the Clock-out Timestamp is earlier than the Clock-in Timestamp
    - If the Clock-in Timestamp is earlier than the Clock-in Timestamp of the header
    - If the Clock-out Timestamp is later than the Clock-out Timestamp of the header

- When editing an existing break or activity record in the detail view using the Edit icon, the following should be noted:
  - OPEN records can be CLOSED and CLOSED records can be OPENED
  - The record will not be saved and errors will be thrown:
    - If an attempt is made to OPEN a record while the header record is CLOSED.
    - If an attempt is made to OPEN a record that is earlier than other detail records (even if the other records are CLOSED).
    - If the Clock-out Timestamp is earlier than the Clock-in Timestamp.
    - If the Clock-in Timestamp is earlier than the Clock-in Timestamp of the header.
    - If the Clock-out Timestamp is later than the Clock-out Timestamp of the header.
- When deleting an existing break or activity record in the detail view using the Delete icon, the following should be noted:
  - Both OPEN and CLOSED records can be deleted.

Stage Record for Clock

If employees are clocked using the Clock input interface or REST API, the clock information is first written to the Stage Record tab of Clock Input Interface. A background process picks up this data, validates and then moves data to Clock Record.

As of Release 26B, the following changes have been introduced in this view:

- Action buttons “run process” and “run purge” have been removed and replaced with "Reprocess Selected Records", "Reprocess All Failed Records", and "Clear Stage Records" action buttons.
- The three new action buttons function same as other entities in input interfaces dropdown.
- The fields in this view have changed as per changes introduced to the input interface file and REST API payload.
- Enhancements to Clock input interface file and REST API payload:
  - Mandatory field company_code has been included.
  - Optional fields handling_entity, wfm_item_category, lpn_type, handling_qty and handling_uom have been included to hold *Handling Attributes for Non-WMS Activities*.
  - Field cico_ts has been replaced by ci_ts and co_ts.
  - Field originating_system has been renamed to action_code and the field accepts CREATE and UPDATE.
  - Field cico_type has been renamed to cico_entity. The field accepts values FACILITY, BREAK, NONWMS and ADHOC instead of F1 through F10.
  - Fields work_area and team have been removed.
  - In Input Interface file, field employee_external_ref has been replaced by cw_user. In REST API payload, field univ_id_1 has been replaced by cw_user.

Interface and API Level Validations

- cw_user, facility_code, company_code, action_code and cico_entity are mandatory for all records.
- ci_ts is mandatory for all CREATE records.
- co_ts is optional only for BREAK, NONWMS and ADHOC CREATE records.
- co_ts cannot be sent for FACILITY records in CREATE mode.
- co_ts is mandatory for all UPDATE records; ci_ts should NOT be sent.
- cw_break is mandatory only for BREAK cico_entity; If sent for other cico_entities, it will be ignored.
- work_area_activity is mandatory only for NONWMS and ADHOC; If sent for other cico_entities, it will be ignored.
- If handling_entity, item_category, lpn_type, handling_qty or handling_uom are sent for a cico_entity other than NON-WMS they will be ignored. However, if they are sent for NOWMS, they will be validated as described in the next section.

Additional Validations for NON-WMS cico_entity

When cico_entity is NONWMS, handling_entity, item_category, lpn_type, handling_qty or handling_uom are optional. However, if they are sent, the records will be accepted only under the following conditions:

- If sent as a CREATE record that has both ci_ts and co_ts.
- If sent as an UPDATE record that has only co_ts.
- If an UPDATE record is sent that has both ci_ts and co_ts, it is considered a case of exact match where WFM will attempt to find an existing record in Clock records based on work_area_activity, ci_ts and co_ts and update the handling_entity, item_category, lpn_type, handling_qty and handling_uom of the record.
- If an UPDATE record is sent that has both ci_ts and co_ts, fields handling_entity, handling_qty and handling_uom are mandatory.

- handling_entity must be "ITEM", "LPN" or "PALLET".
- handling_uom must be defined in UOMs view.
- wfm_item_category is optional and can be sent only when handing entity is "ITEM". If sent it must be configured in the WFM Item Category view.
- lpn_type is optional and can be sent only if handling_entity is "LPN" or "PALLET". If sent, it must be configured in the LPN Type view.

Functional Validations and Updates

STATUS:

- A CREATE record that is sent with only ci_ts creates new records in Clock Record in OPEN status.
- A CREATE record that is sent with both ci_ts and co_ts creates new records in Clock Record in CLOSED status.
- An UPDATE record with only co_ts updates an OPEN Clock record to CLOSED.
- An UPDATE record with both ci_ts and co_ts (only acceptable for NONWMS) updates the handling_entity, item_category, lpn_type, handling_qty and handling_uom of an existing CLOSED NONWMS record.

FACILITY cico_type (Header):

- A CREATE record will be accepted only if there is no other OPEN FACILITY record and the ci_ts is later than the last FACILITY record for the user.
- An UPDATE record will be accepted only if:
  - There is an OPEN facility record.
  - The co_ts is not earlier than ci_ts of the OPEN FACILITY record.
  - The co_ts is not more than 24 hours compared to the ci_ts of the OPEN record.
  - There are no open detail records.
  - The co_ts is later than the last detail record.

BREAK, NON-WMS, and ADHOC cico_type (Details):

- CREATE records will be accepted only if:
  - There is an OPEN FACILITY record and no other OPEN detail record.
  - The ci_ts is later than the ci_ts of the FACILITY record.
  - The ci_ts is not more than 24 hours compared to the ci_ts of the FACILITY record.
  - The ci_ts is later than all other detail records.
- An UPDATE record will be accepted only if:
  - There is a corresponding OPEN detail record.
  - The co_ts is not earlier than ci_ts of the OPEN detail record.
  - The co_ts is not more than 24 hours compared to the ci_ts of the FACILITY record.

Other Validations

Records for every user will be processed in the ascending order of ci_ts or co_ts (whichever is sent). If a record fails validation, rest of the records for that user will not be processed and marked as cancelled.

WMS Activity Data

User activities performed using Oracle Cloud Warehouse Management System are called WMS Activities. The facility parameter WRITE_WMS_ACTIVITY_RECORDS controls the recording of these activities in WFM. If the facility parameter is to set to “Yes”, all user activities performed using WMS mobile options are recorded in WFM.

As of Release 24D, user activity information can also be posted through the following WMS REST APIs:

- POST .../entity/iblpn/receive/
- POST .../entity/iblpn/modify_item_qty/
- POST .../entity/oblpn/create_from_iblpn/
- POST .../pick_pack/pick_confirm/
- POST .../replenishment/replenish_to_active/
- POST .../repack/pack_inventory/
- POST .../entity/iblpn/split_lpn_for_replen/
- POST .../entity/iblpn/composite_create/
- POST .../entity/location/update_active_inventory/

Three new parameters have been introduced in these APIs – screen_name, begin_ts and end_ts.

- Screen_name can be used to send the name of an app or screen that is used by an external system to capture user activity.
- Begin_ts should mark the beginning of the activity performed by the user.
- End_ts should mark the end of the activity performed by the user.

For more information about these APIs and the new parameters, refer WMS REST API Guide (navigate to *Logistics Cloud Suite* > Oracle Warehouse Management > WMS REST API Guide).

User Activity records captured by WMS mobile transactions and WMS REST APIs contain both the time taken as well as the measure (in terms of UOM, Qty and SKU Line Group) of the activity performed. This data is extracted from WMS at regular intervals by the *Run WMS WFM Interface* scheduled job. Data is consolidated and moved to WMS Activity Track view in WFM.

WMS Activity Track

As a first step “WMS WFM interface” validates the *SKU Line*,*User*, and the *WMS Screens* of each record that is moved from WMS to WFM. If SKU Line and WMS Screen are configured in WFM and the user exists in WMS, the status on the record is marked as “SUCCESS”.

However, if the user has been deleted or the SKU Line/ WMS Screen is not configured in WFM, the record fails, and the appropriate “Unknown” field is populated. For example, if the SKU Line is not configured, the status on the record is marked as “ERROR” and the “Unknown SKU Line” field is populated with the SKU Line that was on the record. The begin and end time stamp capture the total time taken for the user to perform the activity. Nur Pallets, Nbr LPNs and Qty show the total quantity of Pallets, LPNs or Qty handled during the activity. Additional, details such as Pallet Nbr, LPN Nbr, handling UOM and pre-pack can be viewed in the details screen.

WMS Activity Track - WFM

Process WMS Activities

Facility	Unknown Sku Line	SKU Line Group	Unknown User	User	Unmapped WMS Screen	WMS Screen	Stat Code	Nbr Pallets	Nbr LPNs	Qty
QATST01		APPARELS		REALL01		RE Create LPN	SUCCESS	0	4	115
QATST01		JP_SKU_GRO...		JPALL01		JP CREATE LPN	SUCCESS	0	4	50
QATST01		APPARELS		BNALL01		BN RCV	SUCCESS	0	1	5
QATST01		APPARELS		BNALL01		BN RECEIVE ...	SUCCESS	0	1	10
QATST01		Apparel		BNALL01		BN WFM RF C...	SUCCESS	0	1	10
QATST01		APPARELS		BNALL01		BN WFM RF C...	SUCCESS	0	1	12
QATST01		APPARELS		BNALL01		BN NC Active ...	SUCCESS	0	1	2

Note: In order for records created by WMS REST APIs to succeed "Screen Name" validations, the screen_name that is sent over in the WMS REST APIs have to be created as a screen in WMS using an RF module and mapped to an activity in WFM (Refer *WMS Screens* under WFM configuration).

Daily Activity Track

As a second step "WMS WFM Interface", consolidates all the successful records in WMS Activity Track and moves to Daily Activity Track view in WFM. Similar transactions (for example, same user, same SKU Line Group and same WMS Screen) are consolidated per day and written to this view.

Daily Activity Track (3)

User	SKU Line Group	WMS Screen	Date	Nbr Pallets	Nbr LPNs	Qty	Duration (Seconds)	Create Timestamp
REALL01	APPARELS	RE Create LPN	03/06/2024	0	4	115	427	03/06/2024 11:51:38 PM
JPALL01	JP_SKU_GROUP	JP CREATE LPN	03/01/2024	0	4	50	2691	03/05/2024 11:58:28 PM
BNALL01	APPARELS	BN RCV	03/05/2024	0	1	5	94	03/05/2024 11:58:28 PM
BNALL01	APPARELS	BN RECEIVE SHP WFM	02/29/2024	0	1	10	30	02/29/2024 5:10:15 PM
BNALL01	Apparel	BN WFM RF Create LPN	02/29/2024	0	1	10	58	02/29/2024 12:42:17 PM
BNALL01	APPARELS	BN WFM RF Create LPN	02/28/2024	0	1	12	39	02/28/2024 11:56:17 PM
BNALL01	APPARELS	BN NC Active WFM	02/27/2024	0	1	2	12	02/27/2024 8:13:13 PM

Employee Location Track Data

An employee's location in the warehouse can be tracked through various methods such as location scans or devices such as beacons, WiFi, Bluetooth, RFID or other IPS (Indoor Positioning System) devices. There are multiple ways in which this data can be captured in WFM:

- Locations Scans Using WMS Handheld
- Employee Location Track Input Interface
- Employee Location Track REST APIs

Note: This data is captured in WFM only when the facility parameter WRITE_WMS_ACTIVITY_RECORDS is "yes".

Location Scans Using WMS Handled

When a user scans a location while performing an activity using a WMS handheld screen such as Locate LPN, the location scanned along with the time at which the location was scanned, and other relevant information is written to Employee Location Track view.

Employee Location Track

Company	Facility	User	Location Barcode	X Coordinate	Y Coordinate	Z Coordinate	Coordinates UOM	Tracked Timestamp	Previous Lo	Module Name	Screen Name
QATSTPC	QATST01	WJALL02	RSVRZ21				Meter	08/20/2024 1:24:46 PM		rf.outbound.cwrfpacknc...	RF_Pack NC A...
QATSTPC	QATST01	WJALL02	RSVWJ11				Meter	08/20/2024 1:25:36 PM	RSVRZ21	rf.outbound.cwrfpacknc...	RF_Pack NC A...
QATSTPC	QATST01	WJALL02	RSVRZ11				Meter	08/20/2024 1:28:52 PM	RSVWJ11	rf.outbound.cwrfpacknc...	RF_Pack NC A...
QATSTPC	QATST01	BNALL01		400	500	600	Meter	08/20/2024 2:09:00 PM		Input Interface	BNSCREEN5
QATSTPC	QATST01	BNALL01		100	10	5	Meter	08/20/2024 2:10:00 PM		Input Interface	BNSCREEN1
QATSTPC	QATST01	BNALL06	BNDRP0101				Meter	08/20/2024 2:15:00 PM		Input Interface	BNSCREEN3
QATSTPC	QATST01	CJALL01	CJRES03				Meter	08/20/2024 2:20:57 PM		rf.inbound.cwrfcreatelpn	CJ : Create LPN
QATSTPC	QATST01	BNALL01		100	10.12	5.57	Meter	08/20/2024 2:51:00 PM		Input Interface	BNSCREEN7
QATSTPC	QATST01	CJALL01	CJRES01				Meter	08/20/2024 3:01:00 PM		rf.inbound.cwrfcreatelpn	CJ : Create LPN

Some of the key fields that are captured during location scan using WMS handheld is listed below:

- User: Employee that scanned the location.
- Location Barcode: Barcode of the location scanned by the employee.
- Tracked Timestamp: Date and time at which the location was scanned.
- Previous Location Barcode: Barcode of the previous location that was scanned by the user (if any).
- Module Name: Module Name of the WMS handheld screen.
- Screen Name: Name of the WMS Screen that the employee was using when location was tracked.
- Equipment Type:An identifier representing the equipment (if any), that the employee was operatingwhen the location was scanned.
- Task Nbr: Task, if the activity was being performed in tasking mode.

- Task Type Exec Seq Nbr: Execution seq nbr of the task, if the activity was being performed in tasking mode.
- IHT Group Nbr: Group Nbr of the Inventory History transaction if WMS has this information at the time the record is written.
- IHT Sequence Nbr: Sequence Nbr of IHT Group, if WMS has this information at the time the record is written.

Employee Location Track Input Interface

Warehouses that use IPS devices such as beacons, WiFi, Bluetooth, RFID or others to track warehouse employees, can interface employee location track data to WFM using this interface. Data can be uploaded using an xls or pipe delimited flat file as described in the section - *Input Interfaces*.

Employee Location Track REST APIs

Warehouses that use IPS devices such as beacons, WiFi, Bluetooth, RFID or others to track warehouse employees, can also post employee location track data directly to WFM using REST APIs. Two different APIs are offered by WFM as described in the section - *REST APIs*.

Employee location track data is extracted at regular intervals by the *Process Employee location Track* scheduled job. This job consolidates data by employee and screen and moves it to Employee Travel Time. Data is further consolidated by day and moved to Daily Travel Time.

Employee Travel Time

As a first step, the scheduled job “Process Employee location Track” checks the validity of each record in employee location track. If a record has invalid location barcode (not configured in WMS) OR if the both the location barcode and XYZ co-ordinates are missing on the record, such records are marked as "Ignored" and not processed.

Rest of the valid records are grouped by user, screen_name, and equipment_type ensuring that there is no *other user activity* in between the tracked timestamp of the records. Each group is consolidated and written to Employee Travel Time with the First Tracked Timestamp corresponding to the first record in the consolidated set and the Last Tracked Timestamp corresponding to the last record in the consolidated set.

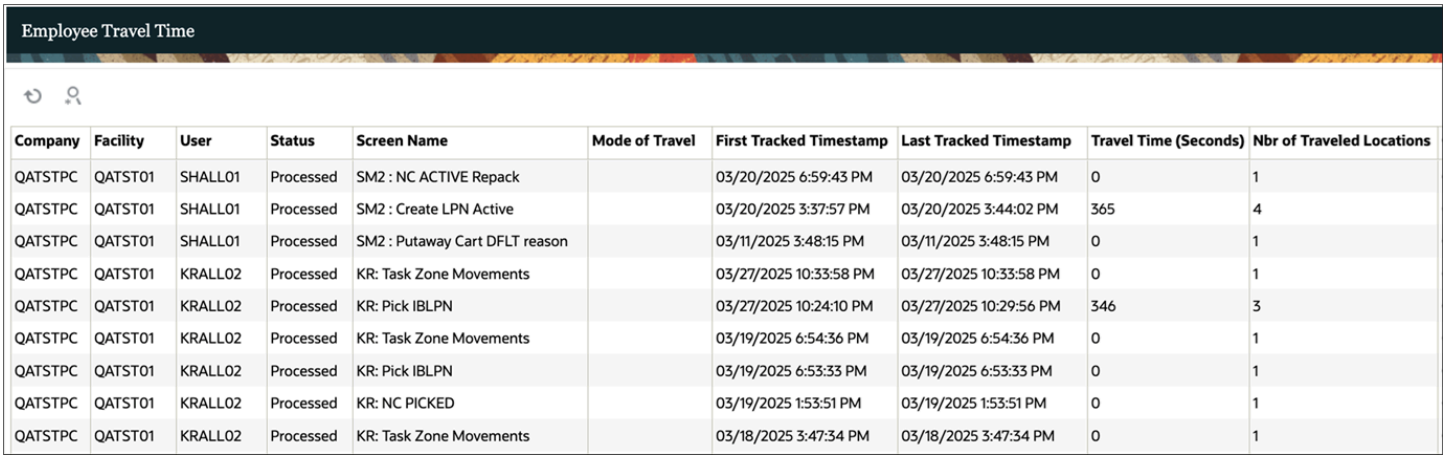
Records that have been successfully consolidated and written to Employee Travel Time are marked as processed in Employee Location Track.

Note that the last set of consecutive records in Employee Location Track are not processed until 24 hours have passed. This is to ensure that no new records that belong to this set are written after the scheduled job has been run.

Other User Activity

An employee is said to have other activity between two consecutive location track records with same screen name and equipment type, if there is any of the following record for the employee between the tracked timestamp of the two records:

- Clock in or clock out activities
- Login or log out of handheld transactions or WMS browser app
- A transaction performed in handheld that is different than the transaction (screen_name) on the employee location track records



Employee Travel Time

Company	Facility	User	Status	Screen Name	Mode of Travel	First Tracked Timestamp	Last Tracked Timestamp	Travel Time (Seconds)	Nbr of Traveled Locations
QATSTPC	QATST01	SHALL01	Processed	SM2 : NC ACTIVE Repack		03/20/2025 6:59:43 PM	03/20/2025 6:59:43 PM	0	1
QATSTPC	QATST01	SHALL01	Processed	SM2 : Create LPN Active		03/20/2025 3:37:57 PM	03/20/2025 3:44:02 PM	365	4
QATSTPC	QATST01	SHALL01	Processed	SM2 : Putaway Cart DFLT reason		03/11/2025 3:48:15 PM	03/11/2025 3:48:15 PM	0	1
QATSTPC	QATST01	KRALL02	Processed	KR: Task Zone Movements		03/27/2025 10:33:58 PM	03/27/2025 10:33:58 PM	0	1
QATSTPC	QATST01	KRALL02	Processed	KR: Pick IBLPN		03/27/2025 10:24:10 PM	03/27/2025 10:29:56 PM	346	3
QATSTPC	QATST01	KRALL02	Processed	KR: Task Zone Movements		03/19/2025 6:54:36 PM	03/19/2025 6:54:36 PM	0	1
QATSTPC	QATST01	KRALL02	Processed	KR: Pick IBLPN		03/19/2025 6:53:33 PM	03/19/2025 6:53:33 PM	0	1
QATSTPC	QATST01	KRALL02	Processed	KR: NC PICKED		03/19/2025 1:53:51 PM	03/19/2025 1:53:51 PM	0	1
QATSTPC	QATST01	KRALL02	Processed	KR: Task Zone Movements		03/18/2025 3:47:34 PM	03/18/2025 3:47:34 PM	0	1

Some of the key fields in this view are listed below:

- User: Employee whose travel time has been calculated for a specific transaction.
- Screen Name: WMS Screen that was used by employee during this travel.
- Mode of Travel: Equipment that was used during travel.
- First Tracked Timestamp: Timestamp when the first location was scanned during transaction.
- Last Tracked Timestamp: Timestamp when the last location was scanned during transaction.
- Travel Time: Total travel time by the employee based on first and last location scan during transaction (Note: If nbr of traveled locations is 1, travel time is 0).
- Nbr of Traveled Locations: Nbr of locations scanned by the employee during the transaction.

Daily Travel Time

As a second step, the scheduled job “Process Employee location Track” groups employee travel time records based on user, screen_name, equipment_type and date, consolidates and writes to Daily Travel Time.

Daily Travel Time (1)

Company	Facility	User	Screen Name	Mode of Travel	Total Travel Time (Seconds)	Date	Total Nbr of Traveled Locations	Create Timestamp	Mod Timestamp
QATSTPC	QATST01	SHALL01	SM2 : NC ACTIVE Repack		0	03/20/2025	1	04/09/2025 6:53:38 PM	04/09/2025 6:53:38 PM
QATSTPC	QATST01	SHALL01	SM2 : Create LPN Active		365	03/20/2025	4	04/09/2025 6:53:38 PM	04/09/2025 6:53:38 PM
QATSTPC	QATST01	SHALL01	SM2 : Putaway Cart DFLT reason		0	03/11/2025	1	04/09/2025 6:53:38 PM	04/09/2025 6:53:38 PM
QATSTPC	QATST01	KRALL02	KR: Task Zone Movements		0	03/27/2025	1	04/09/2025 6:53:38 PM	04/09/2025 6:53:38 PM
QATSTPC	QATST01	KRALL02	KR: Pick IBLPN		346	03/27/2025	3	04/09/2025 6:53:38 PM	04/09/2025 6:53:38 PM
QATSTPC	QATST01	KRALL02	KR: Task Zone Movements		0	03/19/2025	1	04/09/2025 6:53:38 PM	04/09/2025 6:53:38 PM
QATSTPC	QATST01	KRALL02	KR: Pick IBLPN		0	03/19/2025	1	04/09/2025 6:53:38 PM	04/09/2025 6:53:38 PM
QATSTPC	QATST01	KRALL02	KR: NC PICKED		0	03/19/2025	1	04/09/2025 6:53:38 PM	04/09/2025 6:53:38 PM
QATSTPC	QATST01	KRALL02	KR: Task Zone Movements		0	03/18/2025	1	04/09/2025 6:53:38 PM	04/09/2025 6:53:38 PM

Some of the key fields in this view are listed below:

- User: Employee whose travel time has been calculated for a specific transaction in a day.
- Screen Name: WMS Screen that was used by employee during this travel.
- Mode of Travel: Equipment that was used during travel.
- Total Travel Time: The total time traveled by the employee for a specific transaction in a day (Note: If travel time on all transactions in a set is 0 in Employee Travel Time, total travel time for that transaction is 0).
- Total Nbr of Traveled Locations: Total nbr of locations scanned by the employee while using a specific transaction in a day.

Example With Sample Data

Employee Location Track

S.No.	User	Screen Name	Equipment Type	Tracked Timestamp	Notes
1	KKALL01	RF Pick		Jan 9 2025, 9:10:00 am	
2	KKALL01	RF Pick		Jan 9 2025, 9:15:00 am	
3	KKALL01	RF Pick		Jan 9 2025, 9:20:00 am	
4	KKALL01	RF Cycle Count		Jan 9 2025, 9:25:00 am	Change in screen name
5	KKALL01	RF Cycle Count		Jan 9 2025, 9:30:00 am	

6	KKALL01	RF Pick	PLT_JK	Jan 9 2025, 9:35:00 am	Change in screen name and equipment
7	KKALL01	RF Pick	PLT_JK	Jan 9 2025, 9:45:00 am	
8	KKALL01	RF Pick		Jan 9 2025, 9:50:00 am	Change in equipment
9	KKALL01	RF Pick		Jan 9 2025, 9:55:00 am	
10	KKALL01			Jan 9 2025, 10:20:00 am	RF Logout
11	KKALL01			Jan 9 2025, 11:05:00 pm	RF Login
12	KKALL01	RF Pick		Jan 9 2025, 11:55:00 pm	
13	KKALL01	RF Pick		Jan 10 2025, 12:05:00 am	
14	KKALL01			Jan 10 2025, 10:20:00 am	WMS Activity (screen - RF Mod IBLPN)
15	KKALL01	RF Pick		Jan 10 2025, 10:30:00 am	
16	KKALL01	RF Pick		Jan 10 2025, 10:35:00 am	
17					No activity after this. So last two records will not be moved to Employee Travel Time unless 24 hours have passed since Jan 10 2025, 10:35:00 am

Employee Travel Time

S.No.	User	Screen Name	Equipment Type	First Tracked Timestamp	Last Tracked Timestamp	Travel Time	Records Consolidated from the Above Table

							(Employee Location Track)
1	KKALL01	RF Pick		Jan 9 2025, 9:10:00 am	Jan 9 2025, 9:20:00 am	600	1, 2, and 3
2	KKALL01	RF Cycle Count		Jan 9 2025, 9:25:00 am	Jan 9 2025, 9:30:00 am	300	4 and 5
3	KKALL01	RF Pick	PLT_JK	Jan 9 2025, 9:35:00 am	Jan 9 2025, 9:45:00 am	600	6 and 7
4	KKALL01	RF Pick		Jan 9 2025, 9:50:00 am	Jan 9 2025, 9:55:00 am	300	8 and 9
5	KKALL01	RF Pick		Jan 9 2025, 11:55:00 pm	Jan 10 2025, 12:05:00 am	600	12 and 13

Daily Travel Time

User	**Screen Name**	**Equipment Type**	**Date**	**Travel Time**	**Records Consolidated from the Above Table (Employee Travel Time)**
KKALL01	RF Pick		Jan 9 2025	600 + 300 + 600	1, 4, and 5
KKALL01	RF Cycle Count		Jan 9 2025	300	2
KKALL01	RF Pick	PLT_JK	Jan 9 2025	600	3

4 WFM Configuration

Configuration

This section describes the basic configuration that is required in WFM.

> **Note:** The facility parameter **WRITE_WMS_ACTIVITY_RECORDS** must be set as "Yes" to enable WFM. Only customers that have purchased WFM license should enable WFM.

User

Any user created in the WMS application is applicable to WFM as well. For user creation, roles, and permissions, refer to the WMS *Online Help*.

Team

As of Release 26B, since the option to clock as a team into Non-WMS activity has been removed, it is no longer required to configure Teams in WFM.

SKU Line and SKU Line Group

Items in a warehouse are assigned to SKU Lines. Multiple SKU Lines are further grouped into SKU Line Groups. The groups could be determined based on the physical characteristics of the items and the effort required to handle the items. Placing items in different groups helps set the appropriate goal for each SKU Line Group.

For example, appliances and electronic items in a warehouse could be categorized into SKU Lines and SKU Line Groups as shown below:

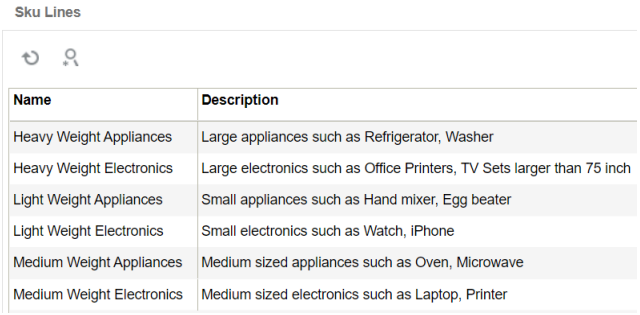
Item	SKU Line	SKU Line Group
Watch	Light Weight Electronics	Light Weight Products
iPhone		
Hand Mixer	Light Weight Appliances	
Egg Beater		
Laptop	Medium Weight Electronics	Medium Weight Products
Microwave		

Item	SKU Line	SKU Line Group
Scanner		
Printer		
TV		
Stove	Medium Weight Appliances	
Oven		
Microwave		
84" Inch TV	Heavy Weight Electronics	Heavy Weight Products
Office Printer		
Refrigerator	Heavy Weight Appliances	
Washer		
Dryer		

In the above example, different goals can be set for each SKU Line Group. For example, it's possible to handle 100 units of Light Weight Products in an hour. However it would probably take about 1 hour to move just 1 unit of a Heavy Weight Product.

SKU Line

SKU Lines are assigned to the items in WMS in the items view. In WMS items view, the ***Item Line*** field contains the SKU Line of an item. The same SKU Lines need to be defined in WFM using the SKU Line view.


Sku Lines

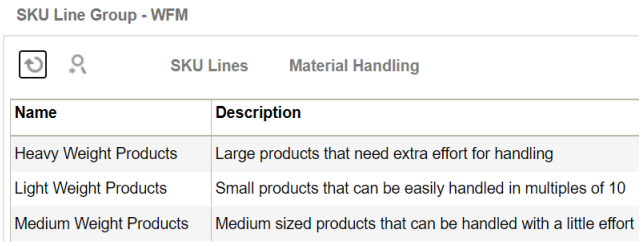
Name	Description
Heavy Weight Appliances	Large appliances such as Refrigerator, Washer
Heavy Weight Electronics	Large electronics such as Office Printers, TV Sets larger than 75 inch
Light Weight Appliances	Small appliances such as Hand mixer, Egg beater
Light Weight Electronics	Small electronics such as Watch, iPhone
Medium Weight Appliances	Medium sized appliances such as Oven, Microwave
Medium Weight Electronics	Medium sized electronics such as Laptop, Printer

Note: WFM is not aware of Items.

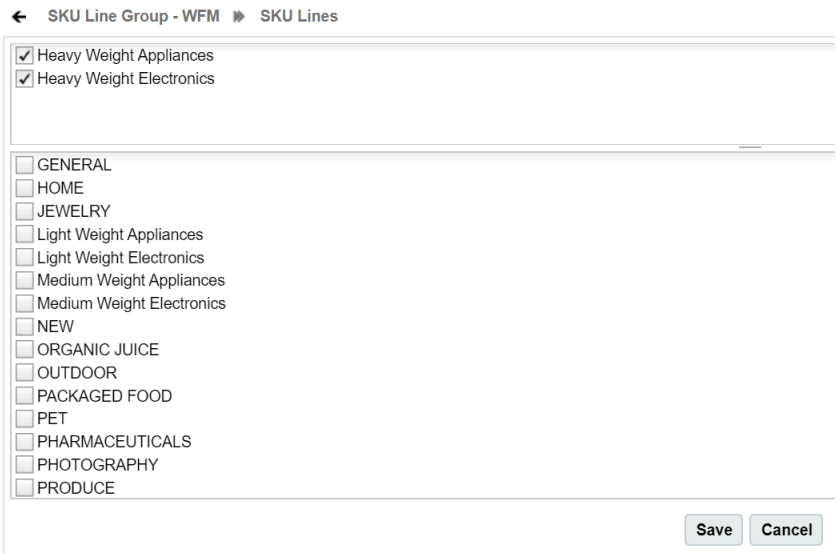
SKU Lines can also be uploaded using the SKU Line interface as described in the section - *Input Interfaces* OR posted using SKU Line REST API as described in the section – *REST APIs*.

SKU Line Group

Each SKU Line is assigned to a SKU Line Group using the SKU Line Group view.



To assign SKU Lines to a SKU Line group, select the SKU Line group, example “Heavy Weight Products” and hit the SKU Line button. This takes you to the next view with two frames that displays a list of all SKU Lines configured in WFM in the lower frame.



Select the SKU Lines that need to be assigned to this SKU Line group. Checking the box moves the selected SKU Line to the frame above. Click **Save**.

As of Release 26B, SKU Line groups will be used only for WMS Activities. For Non-WMS Activities, WFM Item Category has been introduced.

WFM Item Category

A new view “WFM Item Category” has been introduced to define item categories.

- Item categories will replace SKU Line Groups ONLY for Non-WMS activities
- SKU Line Group will continue to be used for WMS activities

> **Note:** In future, Item Categories will replace SKU Line Groups even for WMS activities. Until then, the following new elements on Items UI can be ignored.

- The “WFM Item Category” field.
- The “UPDATE WFM Item Category” action button.
- The “wfm_item_category” field on input interface.

- Even if WFM Item Category is populated on items, it will not have any functional relevance.

Work Area

Work Areas can be created to logically group the activities that employees perform in the facility. A single work area could be created or multiple, depending on your warehouse operations. The view also has an option to assign supervisors to each work area which is informational only.

As of Release 26B, it is no longer required to configure Cost Center and Work Group and will be deprecated in an upcoming release. The Work Group column in Work Area view need not be populated.

Work Area Activities

The three different activities that users could perform in a Work Area are *WMS, Non-WMS, and Ad hoc activities*. These are configured in WFM using the Work Area Activity view (module: WorkAreaActivityWFMView).

You could configure multiple activities in a work area. Activities need to be defined keeping in mind that goals are tied to individual activities as described in the *Goals* section.

In Release 26B, a new flag “Capture Quantity During Clock Out” has been included in the WFM Work Area Activity view for Non-WMS activities. If the flag is checked, WFM prompts employees to enter *Handling Attributes for Non-WMS Activities* in the RF User CICO mobile screen during Non-WMS clock out. If the flag is unchecked, employees are simply clocked out of Non-WMS activity without any additional prompts. Supervisors can update the values later through clock record, input interface or REST API.

Work Area activities can also be uploaded using the Work Area Activity interface as described in the section - *Input Interfaces* OR posted using Work Area Activity REST API as described in the section – *REST APIs*.

The WMS Screens action button on the Work Area Activity view can be used to map a WMS Work Area Activity with one or more WMS Screens. This button will be enabled only if a single activity of Type “WMS” is selected. When clicked on this action button brings the WMS Screens child view.

WMS Screens

Select the WMS Screens that need to be associated with the selected WMS activity. Multiple WMS screens can be mapped to one activity, however one WMS screen cannot be mapped to multiple activities. You can map multiple WMS screens to the same WMS activity if they are performed in the same work area and if the goals for the WMS screens are same.

WMS Screens can also be uploaded using the WAA Screen XREF interface as described in the section - *Input Interfaces* OR posted using WAA Screen XREF REST API as described in the section – *REST APIs*.

Assigning Employees to Work Areas

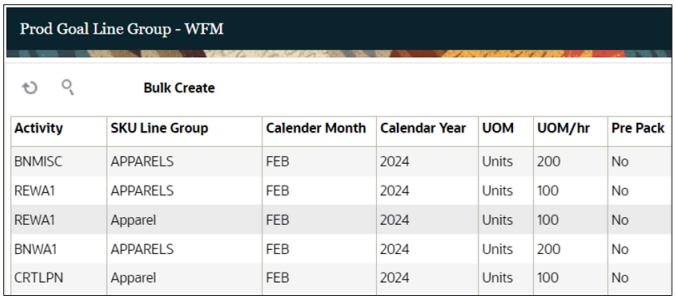
Each employee must be assigned to all work areas associated with the activities they are required to perform. The Work Area action button in the Users view is used to assign employees to work areas.

Goals

Since WMS and Non-WMS Activities are productive, goals must be defined for each WMS and Non-WMS Activity.

Goals for WMS Activities

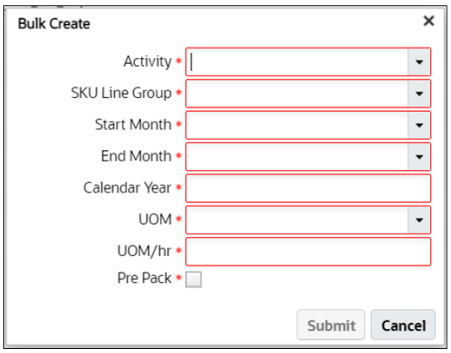
Goals for WMS activities are configured using the Prod Goal Line Group view.



Activity	SKU Line Group	Calender Month	Calendar Year	UOM	UOM/hr	Pre Pack
BNMISC	APPARELS	FEB	2024	Units	200	No
REWA1	APPARELS	FEB	2024	Units	100	No
REWA1	Apparel	FEB	2024	Units	100	No
BNWA1	APPARELS	FEB	2024	Units	200	No
CRTLPN	Apparel	FEB	2024	Units	100	No

Every WMS activity needs to have at least one goal defined for each month of a year. The same activity could have different goals defined based on the SKU Line Group, UOM, Pre Pack or month of a year. As an example, for SKU Line Group, a user could receive 10 units of light weight products such as microwave or laptop in an hour. However, it could take about 1 hour for the user to receive just 1 unit of a heavy weight item such as a refrigerator. Therefore, goals for each activity needs to be defined based on the SKU Line Group. Goals could also change based on seasonality. For example, an activity with same SKU Line Group could have higher goal requirement in high peak season such as Black Friday or Christmas.

To create goals for WMS activities in bulk, use the “Bulk Create” action button.

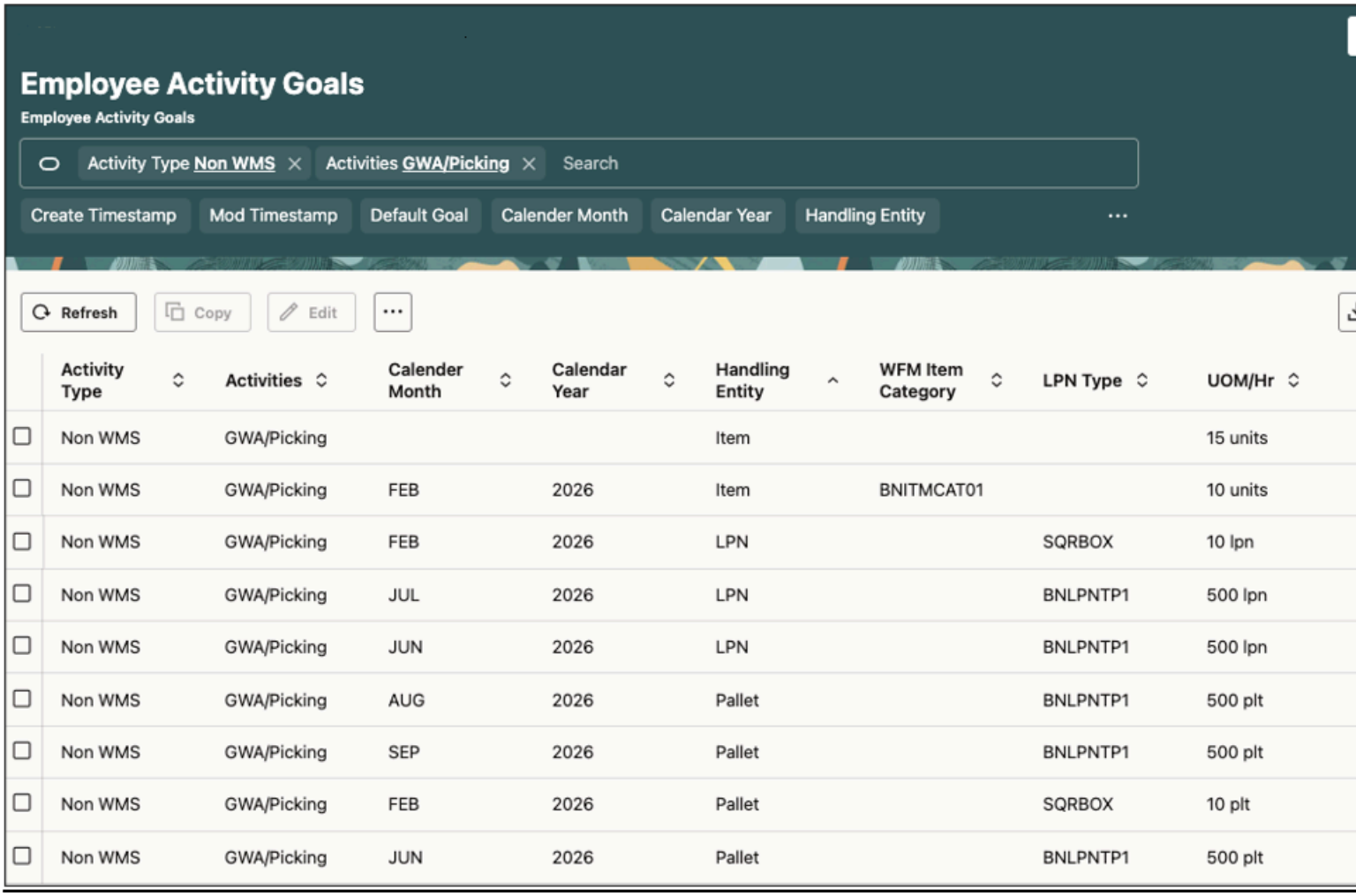


Goals for WMS activities can also be uploaded using the Line Group Goal interface as described in the section - *Input Interfaces* OR posted using Prod Goal Line Group REST API as described in the section – *REST APIs*.

> **Note:** Activities without goals will show up on Performance Metric Reports, however the productivity % will show 0 for the activity.

Goals for Non-WMS Activities

As of Release 26B, Prod Goal VAS view has been deprecated, and a new Employee Activity Goals view has been introduced for Non-WMS Activities.



Activity Type	Activities	Calender Month	Calendar Year	Handling Entity	WFM Item Category	LPN Type	UOM/Hr
Non WMS	GWA/Picking			Item			15 units
Non WMS	GWA/Picking	FEB	2026	Item	BNITMCAT01		10 units
Non WMS	GWA/Picking	FEB	2026	LPN		SQRBOX	10 lpn
Non WMS	GWA/Picking	JUL	2026	LPN		BNLPNTP1	500 lpn
Non WMS	GWA/Picking	JUN	2026	LPN		BNLPNTP1	500 lpn
Non WMS	GWA/Picking	AUG	2026	Pallet		BNLPNTP1	500 plt
Non WMS	GWA/Picking	SEP	2026	Pallet		BNLPNTP1	500 plt
Non WMS	GWA/Picking	FEB	2026	Pallet		SQRBOX	10 plt
Non WMS	GWA/Picking	JUN	2026	Pallet		BNLPNTP1	500 plt

Similar to WMS activity, every Non-WMS activity needs to have at least one goal defined. Employee Activity Goals view has an option to define a default goal and/or specific goals for each activity.

Default Goal

A default goal can be used as a generic goal for an activity that is applicable to any year, any month, any Item Category (or LPN Type).

- Default goals can be defined with Handling Entity and UOM only.
- These are applicable to any month/year and any Item Category (or LPN Type).
- Only one default goal can be configured for each activity.

Specific Goals

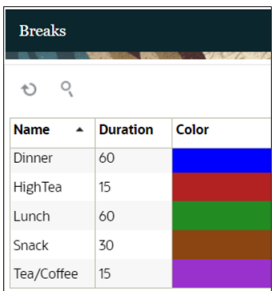
- Specific goals need to be defined with the Year, Month, Handling Entity and UOM.
- Item category (or LPN Type) is not mandatory. Goals without Item Category (or LPN Type) are applicable to any item category (or LPN Type) for activities performed that year/month.
- Specific goals take precedence over default goals. For example, if there is a default goal for an activity and a specific goal for a year/month, the specific goal will be used for productivity calculations of the activities performed that year/month. Default goal will be used for the year(s)/month(s) that do not have a specific goal defined.

Note:

- Goals can be created in bulk for an activity using the Bulk Create action button
- If neither a default goal nor specific goals are defined for an activity, productivity % will show 0 in the reports for that activity.
- Employee Activity Goals view is available only in Redwood
- Although the new Employee Goals view also has an option to configure goals for WMS Activities, it is nonfunctional currently and is for future use.

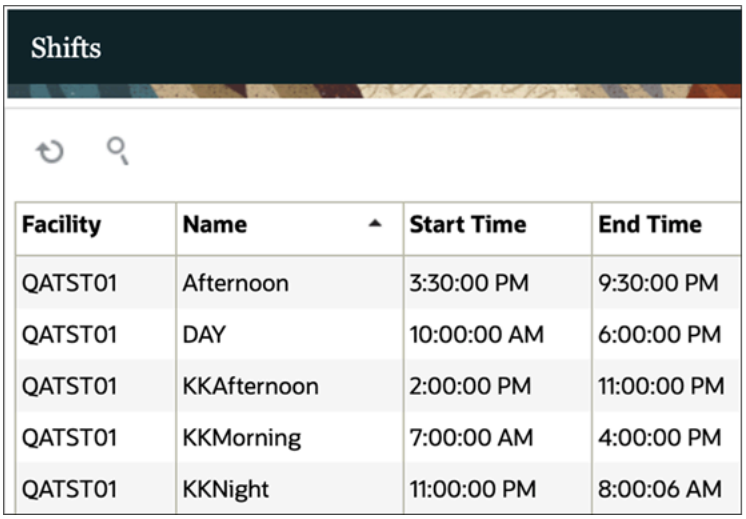
Breaks

Predetermined breaks are configured in WFM using the breaks view. A certain duration (in minutes) is allocated for each break. Users need to clock into the relevant break when they take time off from their activities for a break. This helps WFM calculate the actual time taken for a break versus the time allotted for the break.



Shifts

Predetermined shifts are configured in WFM using the Shits view. The view has provision to provide the Start Time and End Time of each shift in the facility.



Facility	Name	Start Time	End Time
QATST01	Afternoon	3:30:00 PM	9:30:00 PM
QATST01	DAY	10:00:00 AM	6:00:00 PM
QATST01	KKAfternoon	2:00:00 PM	11:00:00 PM
QATST01	KKMorning	7:00:00 AM	4:00:00 PM
QATST01	KKNight	11:00:00 PM	8:00:06 AM

Dynamic Assignment of Shifts

Users are typically assigned to *default shifts* in the User Master. However, it is not mandatory that the user clocks-in to the default shift every day. Depending on the time at which the user clocks into the facility, WFM matches the user's clock-in time with the start-time of all the shifts configured in the system. The user is then assigned to the shift that has closest "start time" compared to the facility clock-in time.

For example, let's say that the following three shifts have been configured in WFM. User1 has a default shift defined as "Afternoon" configured in the User Master.

Shift Name	Start Time (*Ascending*)	End Time
Morning	7:00:00 AM	4:00:00 PM
Afternoon	2:00:00 PM	11:00:00 PM
Night	11:00:00 PM	8:00:00 AM

On day 1, if User1 clocks-in to the facility at 6:00 AM, the shift is determined as "Morning". On day 2, if this user clocks-in to the facility at 8:00 AM, the shift is again determined as "Morning". On day 3, if this user clocks into the facility at 7 PM, the shift is determined as "Night", because 7 PM is closest to the "Start Time" of 11:00 PM" in the table above (Note that 5 hours have already passed since shift "Afternoon" has started).

In other words, although User1's default shift is defined as "Afternoon", the actual shift is determined based on the time at which User 1 clocks into the facility.

Also, once a user's shift has been determined, the same shift is applicable to all other clocks for the user until the user clocks out of the facility. This helps provide a true picture of the shift in which the user worked on a certain day.

Default Shift

When you create a user in WMS through Users view, you can assign a default shift to this user. You will have the option to choose from a list of all shifts configured in WFM. If you save user profile without choosing a shift, a shift called "Default_Shift" is automatically assigned to the user. If such a shift does not exist in Shifts view, a new shift is automatically created and assigned to the user. This shift has the following details and can be viewed in the Shifts view:

- Name = "Default_Shift"
- Start Time = 8:00 am (facility time)
- End Time = 5:00 pm (facility time)

The following table describes the default shift assignment process during various scenarios:

Scenario	Action	Result
There are no records in Shift UI	New user is created without selecting a shift	A shift called "Default Shif assigned "Default Shift"
There are records in Shift UI but none of them are called "Default Shift"	New user is created without selecting a shift	A shift called "Default Shif assigned "Default Shift"
There is only one record called "Default Shift" in Shift UI	New user is created without selecting a shift	The user is assigned "Defa
There are records in Shift UI and one of them is called "Default Shift". Some records have start time earlier than "Default Shift" and some have start time later than "Default Shift"	New user is created without selecting a shift	The user is assigned "Defa
There are records in Shift UI but none of them are called "Default Shift"	New user is created, and a shift is selected from the dropdown	The user is assigned the s
There are records in Shift UI and one of them is called "Default Shift". Some records have start time earlier than "Default Shift" and some have start time later than "Default Shift"	New user is created, and a shift is selected from the dropdown which is not "Default Shift".	The user is assigned the s
There are records in Shift UI and one of them is called "Default Shift". Some records have start time earlier than "Default Shift" and some have start time later than "Default Shift"	New user is created and the "Default Shift" is selected from the dropdown.	The user is assigned "Defa

5 Input Interfaces

Input Interfaces

The Input Interfaces view can be used to upload data for various WFM entities. This view is common and shared with WMS entities.

Input interfaces for the following WFM entities is supported through this view:

- SKU Lines
- Line Group Goal
- Clock
- Work Area Activity
- WAA Screen XREF
- Employee Location Track
- WFM Item Category

Interface Files

The following points need to be kept in mind while creating the input file for any interface as described in the WFM Interface File Formats document (Navigate to the *Oracle WMS Cloud Information Center* > on the top of the page, click on the **Documentation** tab > click the link under **Current Documentation** > refer to the **WFM Interface Specification Formats**).

1. The filename must start with the prefix specified in the document. For example, for sku_line files, the filename must begin with “SKU”.
2. The fields specified as “required” in the document, must be provided in the input file.
3. The fields must appear in the same sequence as specified in the document.

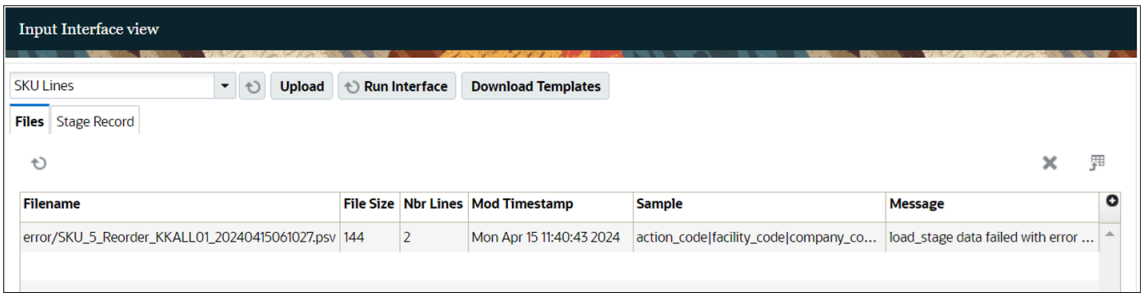
WFM supports xls and psv formats. For more details about the fields and data types in each interface, refer to the WFM Interface File Formats document. The “Download Templates” action button on the Input Interface view can be used to get sample files in both formats for all WFM entities. Column headers marked in red in the xls format indicate mandatory fields.

Uploading Files

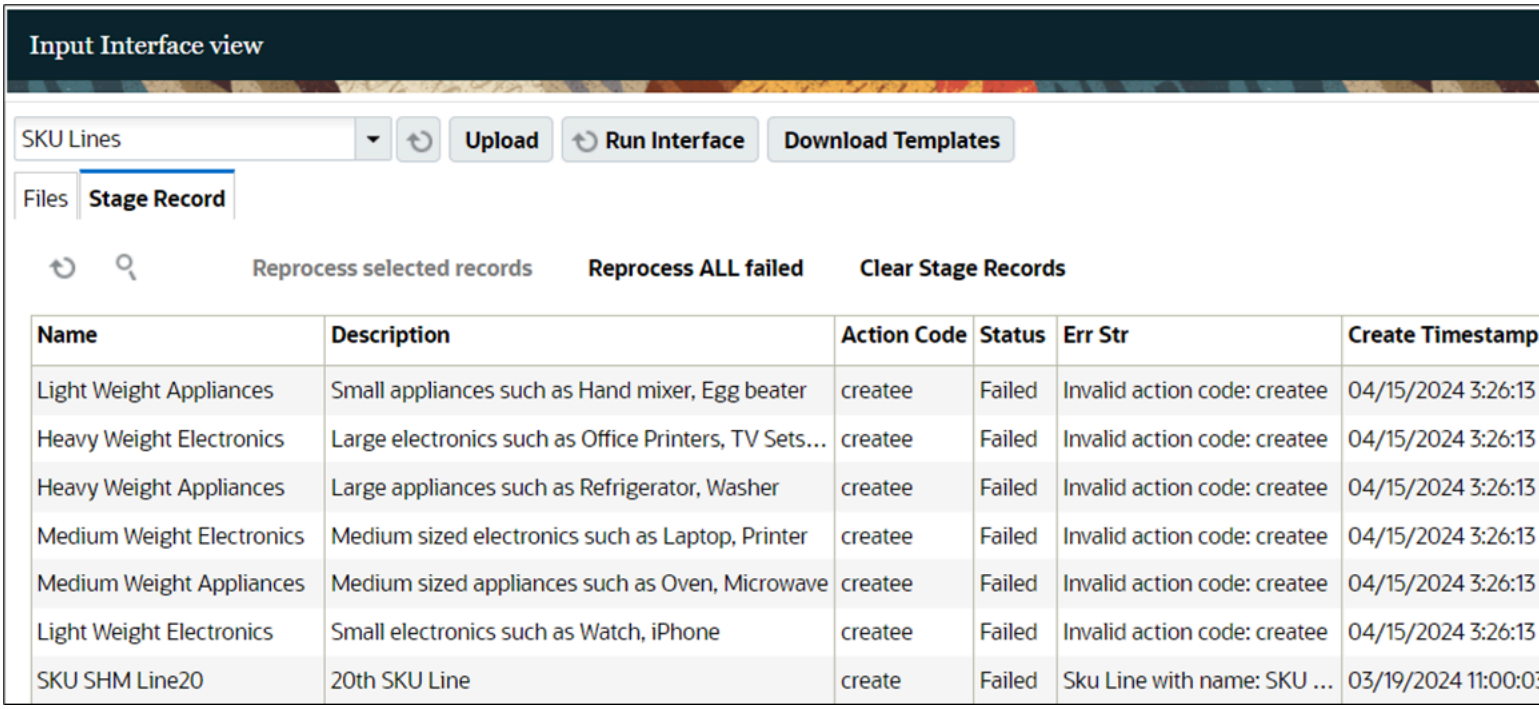
In order to upload a file, say sku_line file, select “SKU Lines” from the dropdown in the Input Interfaces view. Next, hit the “Upload Files” button. This will bring up a pop-up window. Hit on “Choose Files”, select the file from your file explorer and then hit the “Upload” button. Your selected file will now show up under the “Files” tab with the filename suffixed with username and current timestamp. The Message column shows the status of the file as “Unprocessed”. To process this file or all other files that have been uploaded, hit the “Run Interface” button. This triggers the interface that processes all the files under the Files tab marked as “Unprocessed”.

Interface Errors

As a first step, the interface checks for the format of the data in the file. If there are errors in the file structure, the filename is prefixed with error and the relevant error message appears in the “Message” field.



However, if data format is fine, data in the file goes through next step of validations. At this point, data is moved from Files tab to Stage Record tab. Individual fields are now checked to see if they are valid. For example, in a sku_line record if action_code is something other than create or delete, the record is marked as “Failed” and remains in Stage Record tab. The **Err Str** column displays relevant error message.



Reprocessing Failed Records

If the error is configuration related, for example, if a line group goal record fails because of invalid SKU Line Group, then the missing SKU Line Group can be configured in WFM. After the missing configuration has been taken care of, the failed record is selected in Stage Record tab and “Reprocess selected records” button is selected. If configurations

related to all failed records are taken care of, then you could select the button “Reprocess ALL failed” without selecting any record.

Processed Data

Data that is uploaded for different entities using input interfaces and processed successfully can be viewed in the respective views in WFM as shown below:

Input Interface	**View**
SKU Lines	SKU Lines
Line Group Goal	Prod Goal Line Group
Clock	Track Records
Work Area Activity	Work Area Activity (*mo dule: WorkAreaActivityWFMView*)
WAA Screen XREF	“WMS Screens” child view of Work Area Activity
Employee Location Track	Employee Location Track
WFM Item Category	WFM Item Category

6 Scheduled Jobs

Scheduled Jobs

WFM shares Scheduled Jobs view with WMS. The Job Type drop-down in this view offers multiple job types. Following are the four job types that are used in WFM.

- *Run WMS WFM Interface*
- *Purge WMS Activity Track*
- *Clock Users Out of Facility*
- *Purge WMS Activity*
- *Process Employee Location Track*

Run WMS WFM Interface

This job type is used to schedule the process that picks up records from WMS Activity and moves data to WMS Activity Track. As a second step, the process moves data from WMS Activity Track to Daily Activity Track.

The job accepts the following three parameters:

- Username: Needs to be a valid WMS user and should be eligible for the company/facility where the schedule job has been configured.
- Number of Days – Reprocess Error Records: Accepts values between 0 and 60. If no value is provided, it is defaulted to 7.
- Number of Days – Process New Records: Accepts values between 0 and 30.

> **Note:** If the “Username” provided in this job is eligible for multiple facilities, data for all such facilities will be picked up by this job. In such a scenario it is recommended that the scheduled job is configured in only one facility. The alternate option is to dedicate one user per facility and configure this job in all facilities with respective eligible users. **RECOMMENDATION:** *Running the “Run WMS WFM Interface” job during peak business hours is generally not recommended, as it may impact overall system performance in the production environment. If there is a business need to execute the job during this time, we recommend first validating the impact on a non-production environment. This allows you to assess performance and identify any potential issues in a controlled setting. Additionally, you may consider a phased approach—starting with a small number of facilities and gradually increasing the scope—so you can monitor system behavior and ensure stability as you scale.*

Interface Process

The first step of this process moves data from WMS Activity to WMS Activity Track. Only records in WMS Activity that fall in the range between current date and the past " Number of Days – Process New Records " days are picked up for processing. The create_ts field of WMS Activity is used to identify such records.

The next step in the process validates the User, SKU Line and WMS Screen on each record before consolidating and moving the records to Daily Activity Track. If the user has been deleted or if the SKU Line (and the corresponding SKU Line Group) or WMS Screen is not configured in WFM, the record is marked as ERROR and remains in WMS Activity Track.

Reprocessing Records

Records in WMS Activity Track with errors can be reprocessed by ensuring that missing data is first configured in WFM. For example, if a record fails due to missing SKU Line or SKU Line Group, the corresponding Unknown SKU Line field is populated with the SKU Line that is not configured in WFM. This SKU Line and the corresponding SKU Line Group need to be configured in WFM.

> **Note:** Item Line of an item in WMS is referred to as SKU Line in WFM. If the item line is missing on items when WMS Activity records are written, SKU Line on such records will be empty. These records are marked as ERROR in WMS Activity Track and the Unknown SKU Line field is empty on such records. These records cannot be reprocessed unless the SKU Lines are inserted in the Unknown SKU Line field through data fix.

After configuring missing data, there are two ways in which error records can be reprocessed. The first option is to use the “Process WMS Activities” button on WMS Activity Track view. The other option is to just wait for the next scheduled run of the interface. The second step of the interface always tries to re-process error records first before processing new records.

If the reprocessing is triggered due to scheduled interface run, the “Number of Days – Reprocess Error Records” parameter is used to determine how many records should be reprocessed. Only records that fall in the range between current date and past “Number of Days – Reprocess Error Records” days are picked up for reprocessing. An extra day is added to "Number of Days – Reprocess Error Records" to take into account any user transaction that could have occurred over midnight traversing between two days.

For example, if current date is September 21 and "Number of Days – Reprocess Error Records" has been set as 10, the interface reprocesses records that have "Begin time stamp" later than or equal to September 10th (September 21 – (10+1) days).

> **Note:** *:* “Number of Days – Reprocess Error Records” parameter is only used for reprocessing error records. Also, this parameter is only used when the reprocessing is triggered by scheduled job. It is not used when reprocessing is triggered using “Process WMS Activities” button on WMS Activity Track view.

Purge WMS Activity Track

This job type is used to schedule the process that purges old data from WMS Activity Track. This job accepts two parameters, “Username” and “Facility”.

The “Username” parameter needs to be a valid WMS user and should be eligible for the company/facility where the schedule job has been configured.

“Facility” parameter is used to identify the facility for which purge is requested. If no value is provided or if the value provided is invalid (No such facility), then current facility is used.

Purge Process

This process purges data from WMS Activity Track that are older than a specified number of days and are either in SUCCESS or ERROR status.

There are 3 parts to this purge process. The first part mainly focuses on purging records with errors. The following four facility parameters are used for this purge: PURGE_NUMBER_OF_DAYS, PURGE_UNKNOWN_SKU, PURGE_UNKNOWN_TRANSACTION and PURGE_UNKNOWN_USER.

PURGE_NUMBER_OF_DAYS is used to determine how many days worth data needs to be retained in WMS Activity Track Record. PURGE_UNKNOWN_SKU, PURGE_UNKNOWN_TRANSACTION and PURGE_UNKNOWN_USER can accept values Y or N.

- If PURGE_UNKNOWN_SKU is set to Y, then records older than PURGE_NUMBER_OF_DAYS from current date, in ERROR status and a value populated in “Unknown SKU Line” field are purged.
- If PURGE_UNKNOWN_TRANSACTION is set to Y, then records older than PURGE_NUMBER_OF_DAYS from current date, in ERROR status and a value populated in “Unmapped WMS Screen” field are purged.
- If PURGE_UNKNOWN_USER is set to Y, then records older than PURGE_NUMBER_OF_DAYS from current date, in ERROR status and a value populated in “Unknown User” field are purged.

The second part of the purge process focuses on records that moved successfully to Track Record. For this purge, only the PURGE_NUMBER_OF_DAYS facility parameter is used. Records older than PURGE_NUMBER_OF_DAYS from current date and in SUCCESS status are purged.

The third part of purge process focuses on invalid data. Records should either have values in Unknown fields or their counterparts. If a record does not have value in both, it is considered to be invalid data. For example, in the table below, rows 1, 2 and 3 represent valid data. Rows 4, 5 and 6 represent invalid data.

No.	Unknown SKU Line	SKU Line Group	Unknown User	User	Unknown Transaction	WMS Transaction
1		SKG1	BCF			Recv LPN
2	ABC			User1		Create LPN
3		SKG2		User2	XYZ	
4				User3		Move LPN
5		SKG3				Repack OBLPN
6		SKG4		User4		

Such invalid records are purged regardless of their status as long as they are older than PURGE_NUMBER_OF_DAYS from current date.

Note: It's possible such data may never land into WFM, but this step ensures clearing out any bad data in case it somehow lands in WFM)

Note: If the PURGE_NUMBER_OF_DAYS parameter is not provided, the value is defaulted to 30.

Clock Users Out of Facility

This job type is used to schedule the process that clocks inactive users out of facility and all open entities (such as Break, Work Area, and Work Area Activities).

Determination of Inactive Users

1. Users with track records open for more than 24 hours are considered inactive, by default and clocked out of facility and all open entities. Such users are clocked out even if activities such as RF/UI login records, logout records or WMS activity records are found during the 24-hour period.
2. Apart from that, if you have enabled AUTO_CICO, you can also configure custom inactive time which can take any value between 2 hours and 24 hours using the facility parameter *CICO_INACTIVITY_TOLERANCE_MINS* .
    - Users with open track records older than custom inactive time but have activities such as RF/UI login records, logout records or WMS activity records during the custom inactive time are not considered inactive and will not be clocked out.
    - Users with open track records older than custom inactive time and who do not have any RF/UI login or logout records, or any WMS activity records during the custom inactive time are considered inactive and will be clocked out of facility and all open entities.

Facility Parameter CICO_INACTIVITY_TOLERANCE_MINS

- If the facility parameter is not configured, inactive time is defaulted to 4 hours.
- If the facility parameter is configured but less than 2 hours, inactive time is defaulted to 2 hours.
- If the facility parameter is configured but greater than 24 hours, inactive time is defaulted to 24 hours.

Clock Out Process

Depending on the last track record of the user, clock out of open entities is performed as described below:

Last Track Record	Clock Out Process
If the last track record is facility clock-in	The user is clocked out of facility
If the last track record is work area activity clock-in	The user is first clocked out of work area activity then from the facility.
If the last track record is work area activity clock-out	The user is clocked out of the facility.
If the last track record is break clock-in	The user is first clocked out of break and then from the facility.
If the last track record is break clock-out	The user is clocked out of the facility.

As of Release 26B a 24-hour restriction has been introduced between facility clock in and clock out. Depending on the user's last facility clock-in, facility clock-out timestamp for the user will be determined as follows depending on whichever event is latest:

- End timestamp of the last WMS Activity that is within 24 hours from user's facility clock in time
- Clock out time of the last closed Non-WMS or Ad hoc or beak that is within 24 hours from user's facility clock in time
- Clock out time of the last open Non-WMS or Ad hoc or beak that is within 24 hours from user's facility clock in time

Open break or activity records will be closed with the same timestamp as the clock in timestamp of such records

Any other user activity that is outside the 24-hour window will remain orphaned without any clock records and need to be manually addressed by supervisors.

Note:

- The username on the scheduled job is used as the clocker in the clock records.
- Only clock records of the current facility are processed by this job.

Examples

Scenario 1: Latest clock record not FAC-CO and greater than 24 hours; No activity in between

- Last Clock Record (BRK-CO): Sep 2, 7:00 am
- Job run time: Sep 3, 7:05 am
- Action: User is clocked out from FAC
  - FAC-CO: Sep 2, 7:00 am

Scenario 2: Latest clock record not FAC-CO and greater than 24 hours; Activity in between

- Last Clock Record (WAA-CI): Sep 2, 7:00 am
- WMS Activity: Sep 3, 6:00 am
- Job run time: Sep 3, 7:05 am
- Action: User is clocked out of WAA and then from FAC
  - WAA-CO: Sep 3, 6:00 am; FAC-CO: Sep 3, 6:00 am

Scenario 3: AUTO_CICO enabled; CICO_INACTIVTY_TOLERANCE_MINS = 120 mins (2 hours); Latest clock record not FAC-CO and greater than 2 hours; No activity in between

- Last Clock Record (FAC-CI): Sep 2, 7:00 am
- Job run time: Sep 2, 10:00 am
- Action: User is clocked out of FAC
  - FAC-CO: Sep 2, 7:00 am

Scenario 4: AUTO_CICO enabled; CICO_INACTIVTY_TOLERANCE_MINS = 120 mins (2 hours); Latest clock record not FAC-CO and greater than 2 hours; Activity in between

- Last Clock Record (WAA-CI): Sep 2, 7:00 am
- WMS Activity: Sep 2, 9:30 am
- Job run time: Sep 2, 10:00 am
- Action: Since 10:00 am - 9:30 am < 2 hours, no action is taken
- Job run time: Sep 2, 1:00 pm
- Action: Since 1:00 pm - 9:30 am > 2 hours, user is clocked out of open entities
  - WAA-CO: Sep 2, 9:30 am; FAC-CO: Sep 2, 9:30 am

Purge WMS Activity

This job type is used to schedule the process that purges old data from WMS Activity. This job accepts two parameters, “Number of Days” and “WMS Activity Status”.

The “Number of Days” parameter needs to be an integer that represents number of days.

The “WMS Activity Status” parameter needs to be a list of comma-separated values representing wms activity status. The following status values are supported – NOT READY, READY, PROCESSED, and CANCELLED. If no values are provided during job creation, the record will be saved with all 4 values.

Purge Process

This process purges data from WMS Activity that are older than the value specified in “Number of Days” parameter and in one of the statuses specified in “WMS Activity Status” parameter. The create_ts of WMS Activity records is used to identify records older than “Number of Days”.

Process Employee Location Track

This job type is used to schedule the process that picks up data from Employee Location Track, consolidates records and moves to Employee Travel Time and eventually to Daily Travel Time. This job accepts two parameters, “Username” and “Number of Days”.

The “Username” parameter needs to be a valid WMS user and should be eligible for the company/facility where the schedule job has been configured.

The “Number of Days” parameter only accepts values between 0 and 30.

Process

The first step of this process moves data from Employee Location Track to Employee Travel Time. Only records in Employee Location Track that fall in the range between current date and the past "Number of Days" days are picked up for processing. The tracked_timestamp field of Employee Location Track is used to identify such records.

The next step of this process moves data from Employee Travel Time to Daily Travel Time.

7 REST APIs

REST APIs

Apart from the input interfaces, external systems can directly post data to WFM using REST APIs. Posting data through REST APIs is supported for the following entities:

- SKU Lines
- Goals for WMS Activities
- Clock
- Work Area Activity
- WAA Screen XREF
- Employee Location Track
- WFM Item Category

WFM also supports GET APIs for various entities. For more details on WFM supported POST and GET APIs, refer *WFM REST API Guide*.

For more information about REST (Representational State Transfer) APIs in general, refer *WMS REST API Guide*.

8 Redwood Employee Dashboard

Redwood Employee Dashboard

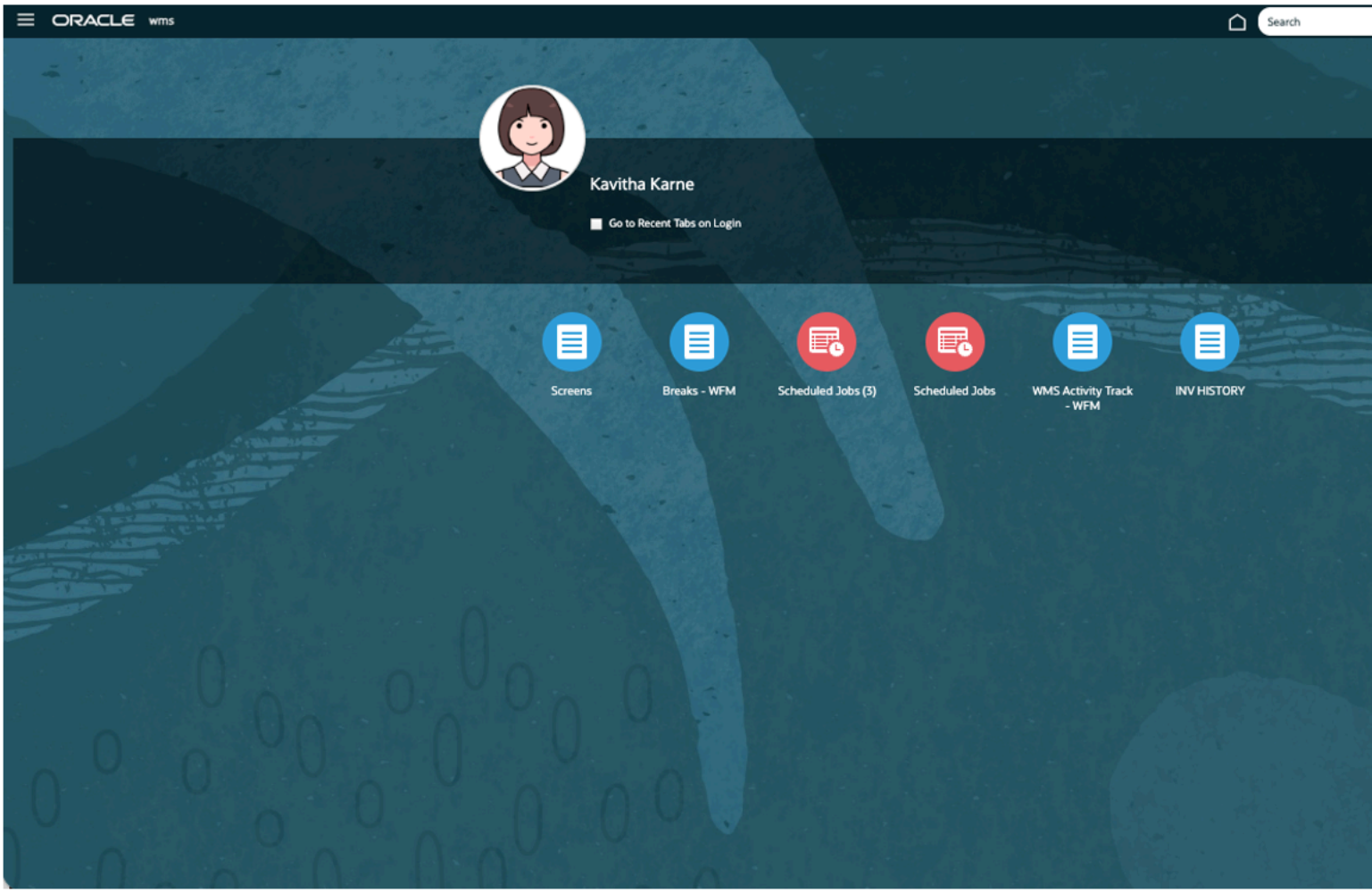
As of Release 26B, the following legacy reports have been deprecated and replaced by equivalent metrics in Redwood Employee Dashboard.

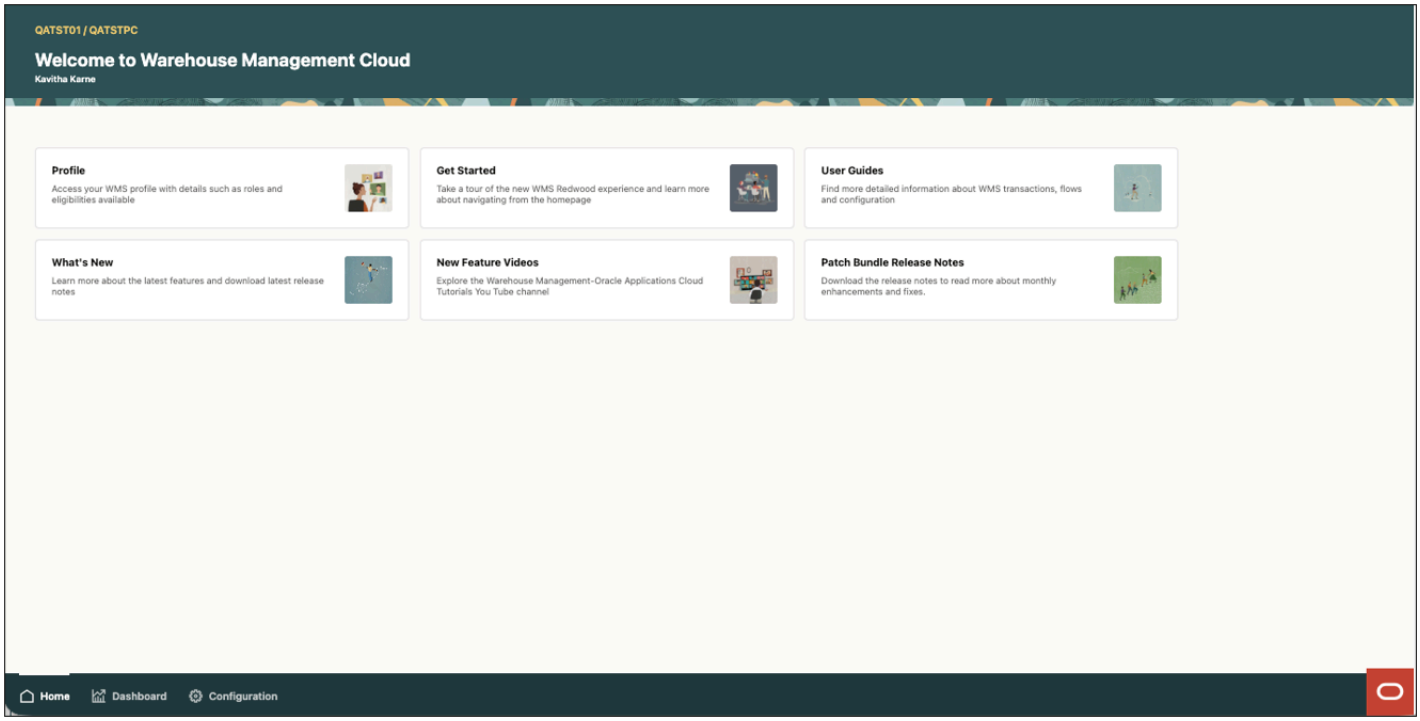
- Legacy Productivity Report has been replaced by Activity Report on Activity Performance Metrics tab.
- Legacy User Productivity Report has been replaced by Employee Report on Employee Performance Metrics tab.
- Legacy Break Report has been replaced by Break Report on Break Metrics tab along with other break metrics.

Apart from that the dashboard includes a tab for Travel Metrics.

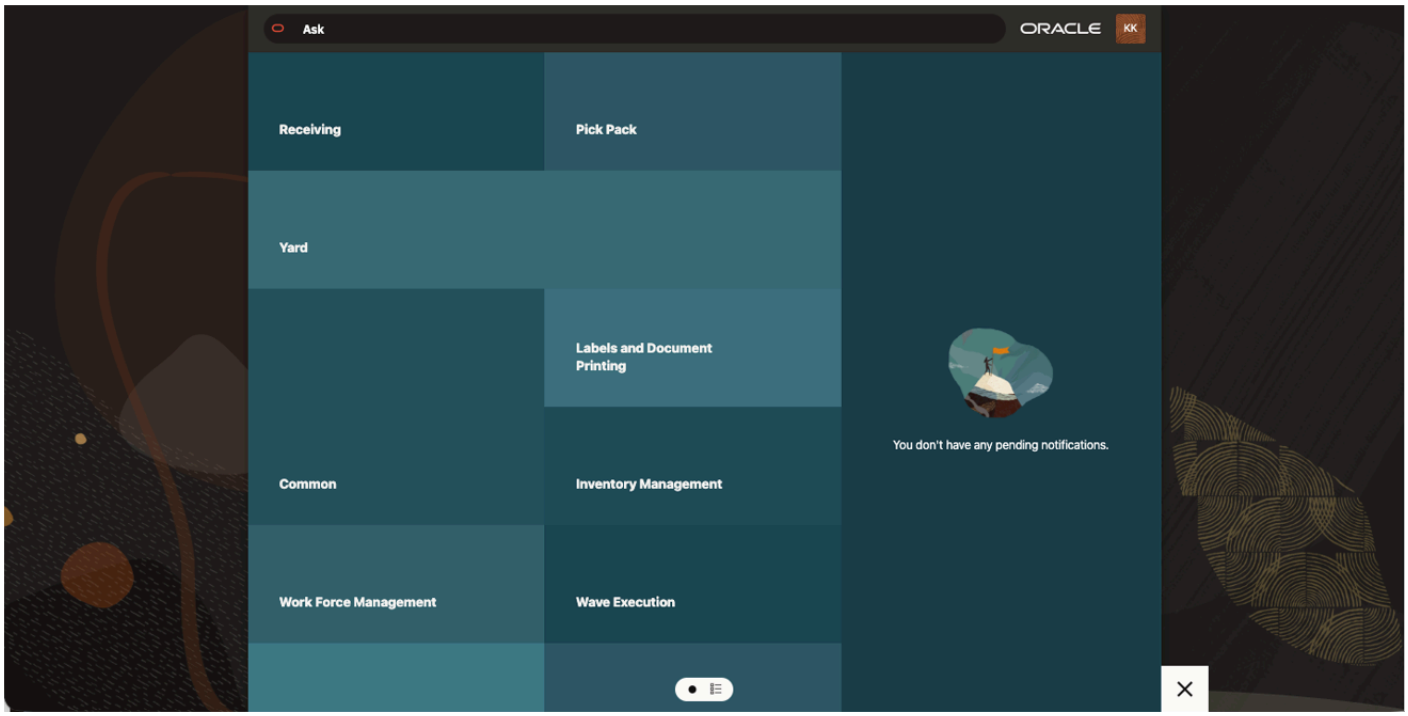
Navigating to Employee Dashboard on Redwood

To access Redwood Desktop, navigate to your name on top right corner of WMS UI and from the drop-down select “Try the new Redwood Experience”. This will open Redwood in a new tab on your browser. For more information about Redwood Desktop, refer the topic “Redwood Desktop” in *WMS User Guide*.

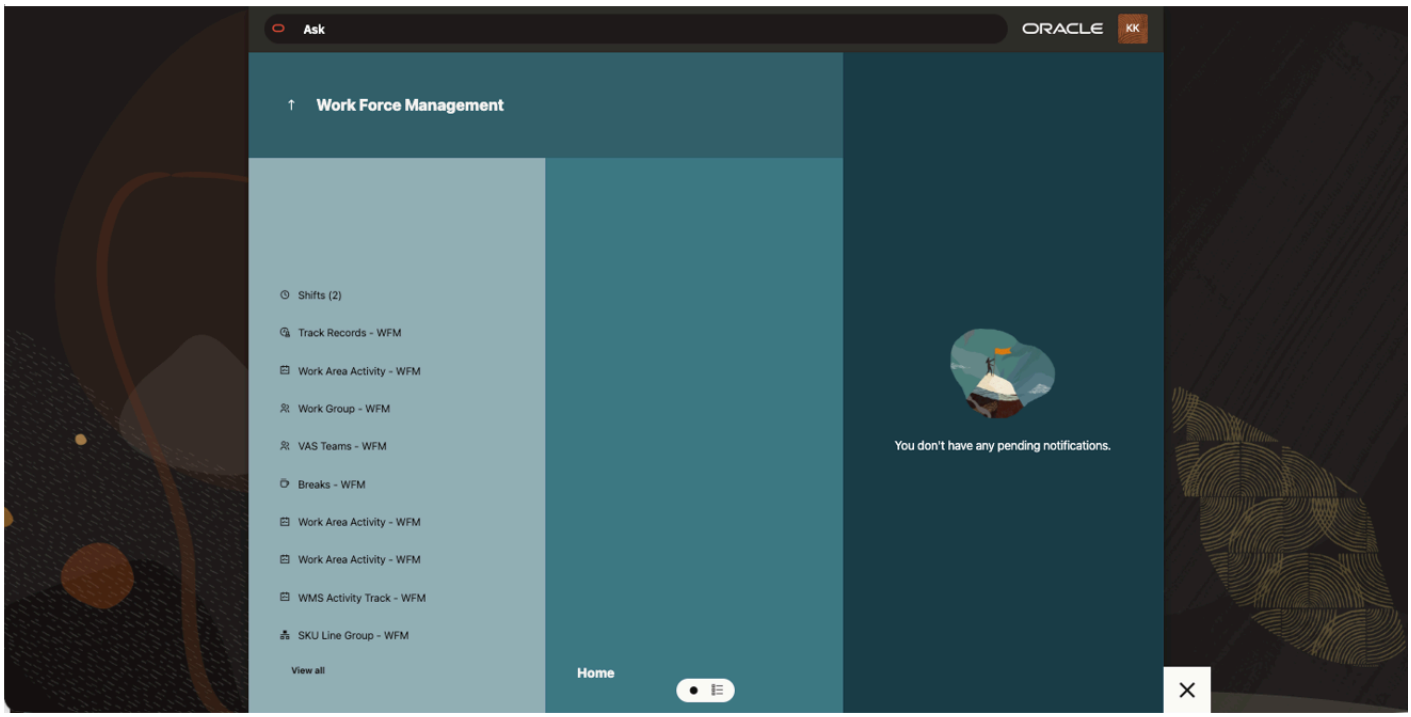

ORACLE wms
Search
Kavitha Karne
Go to Recent Tabs on Login
Screens
Breaks - WFM
Scheduled Jobs (3)
Scheduled Jobs
WMS Activity Track - WFM
INV HISTORY

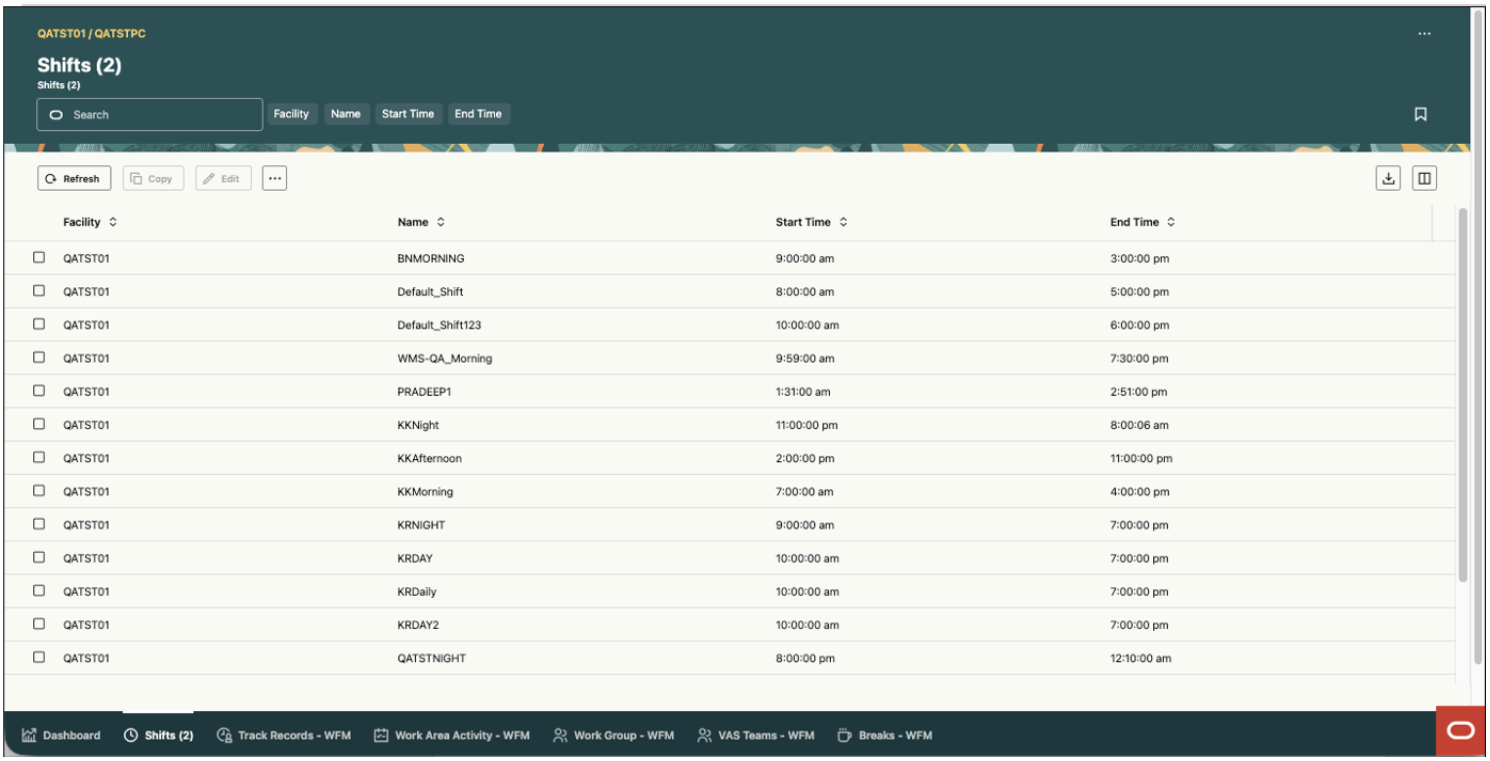


On the bottom right click on the Red “Ask Oracle” icon. This will bring up a product map with different categories.



Select Workforce Management and select one of the WFM screens, example Shifts.

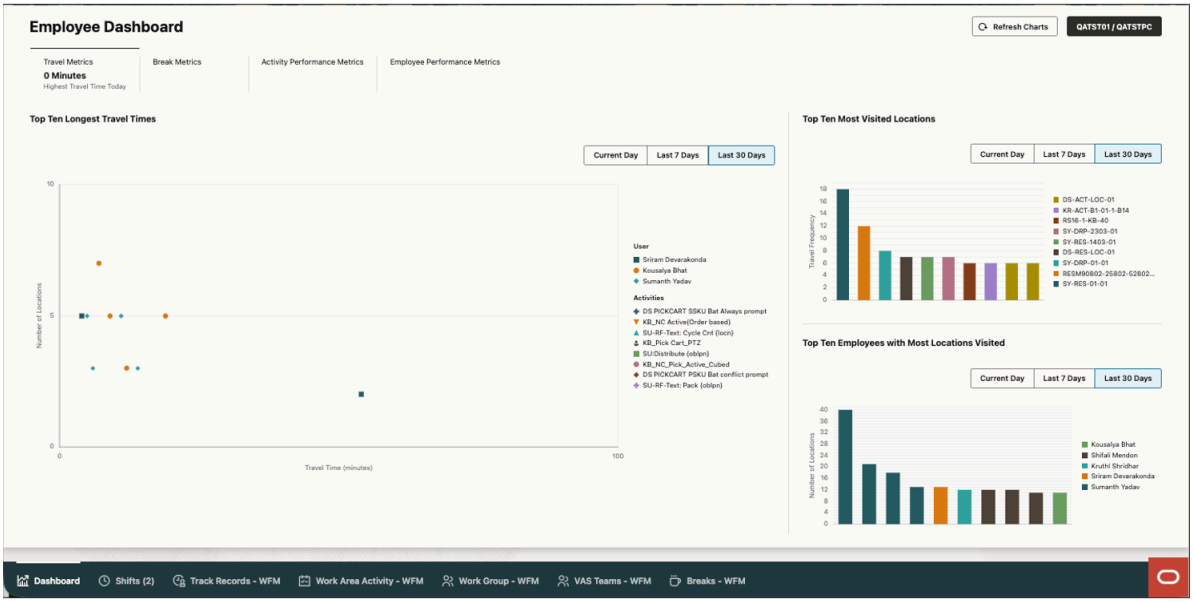




In the navigation bar at the bottom left of the screen, select dashboard. This brings up the Employee Dashboard with various metric in each tab.

Travel Metrics

The travel metrics tab provides deeper insights into employee movement within the warehouse. This tab features three charts with toggle options to view trends by current day, last 7 days or last 30 days



Top Ten Longest Travel Times

This scatter chart highlights the top 10 longest employee travel times during the selected period, helping to quickly identify travel-intensive activities. It also illustrates the correlation between the number of locations (x-axis) and travel time (y-axis). Hovering over data points provides additional details, including the activity performed, the employee, travel time, the number of locations visited and date.

Top Ten Most Visited Locations

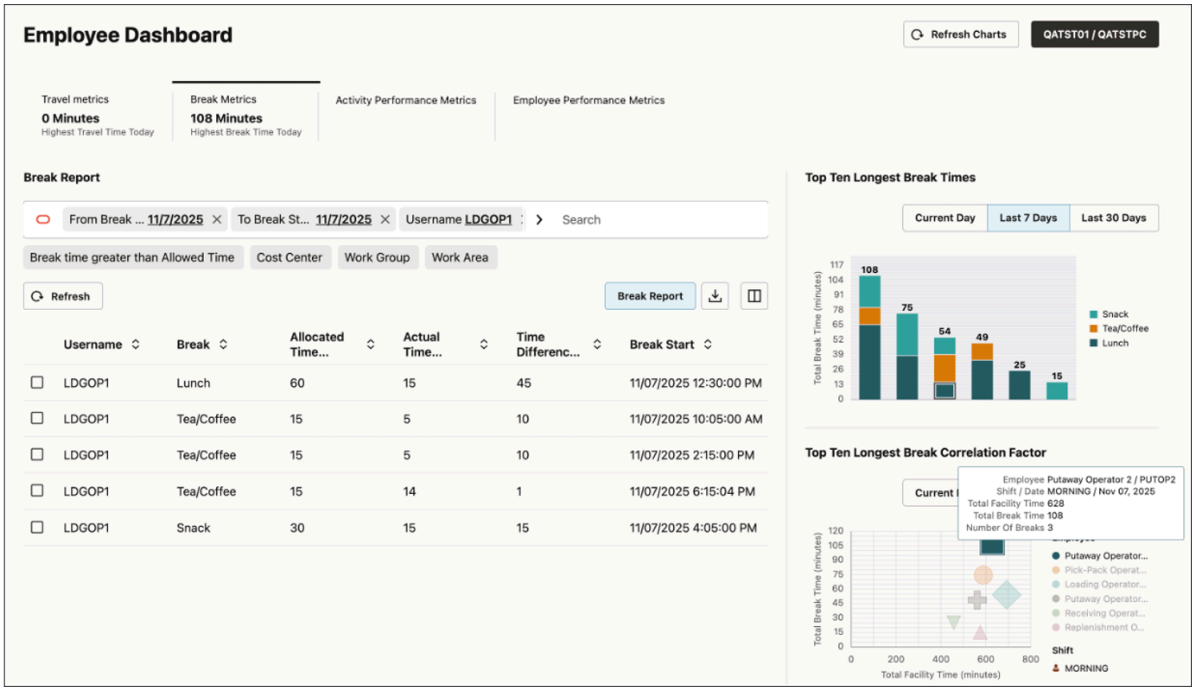
This bar chart displays the top 10 most visited warehouse locations, helping to identify high-traffic areas within the facility. Hovering over the data points provides additional details including the location, travel frequency, and date.

Top Ten Employees with Most Visited Locations

This bar chart showcases the top 10 employees who have visited the highest number of locations enabling quick identification of highly mobile employees and supporting workforce planning. Hovering over the data points provides additional details including the employee, number of locations visited and date.

Break Metrics

This tab presents employee break metrics through visualized data. For warehouse supervisors, it serves as a valuable tool for making informed decisions regarding organizational policies and improving operational efficiency.



Break Report

The tab includes a report in the form of a data grid, allowing you to filter and view break records for individual employees.

Top Ten Longest Break Times

This stacked bar chart highlights the top 10 longest break durations, enabling supervisors to identify patterns such as specific break types contributing to extended break times.

Top Ten Longest break Correlation Factors

This bubble chart provides additional insights by illustrating correlations with factors such as extended work hours or specific shifts that may influence longer break duration.

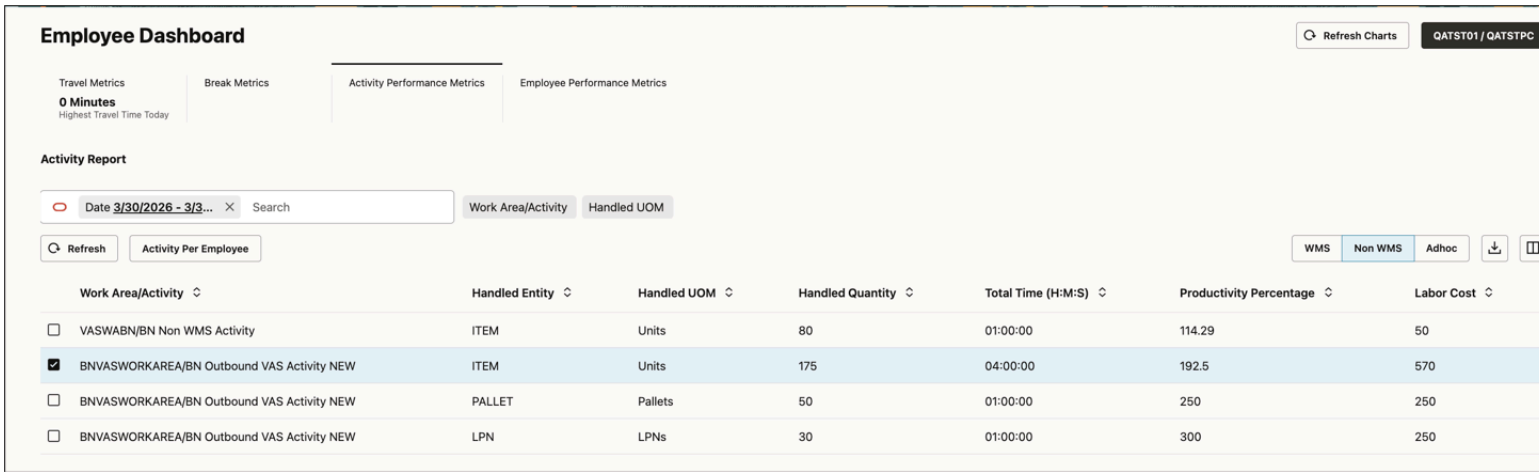
Hovering over data points in either chart reveals additional details about each break. Supervisors can also drill down into a data point, which refreshes the report with detailed break records for the selected employee. Toggle options are available on the charts to compare trends for the current day, as well as the last 7 or 30 days.

Activity Performance Metrics

The legacy Productivity Report in WFM has been deprecated and replaced with Activity Report on Activity Performance Metrics tab.

Activity Report

This report displays the total productivity of employees during the selected date range, organized by activity. It enables supervisors to evaluate performance trends and understand the contribution of each activity to overall productivity. Toggle options are available to view WMS, Non-WMS or Ad hoc activities.



WMS Activities

To view productivity of WMS Activities performed, click the WMS toggle button and select a date range (mandatory) in the search field. Additional filtering can be done based on Activity and UOM.

- In the result set, records are grouped by activity, handled UOM and pre-pack
- Goals are used from Prod Goal Line Group view to calculate productivity percentage. Productivity % = (Total Goal Time/Total Time) * 100 for each group
- Hourly Wage is used from Users view to calculate labor cost. Labor Cost = Sum of labor cost of all employees that performed the activity. Labor cost for each employee = *(*(Total Time *for each employee*/60) * *hourly wage of employee))*

Non-WMS Activities

To view productivity of Non-WMS Activities performed, click the Non-WMS toggle button and select a date range (mandatory) in the search field. Additional filtering can be done based on Activity and UOM.

- In the result set, records are grouped by activity and handled UOM
- Goals are used from Employee Activity Goals view to calculate productivity percentage. Productivity % = *(Total Goal Time/Total Time) * 100* for each group
- Hourly Wage is used from Users view to calculate labor cost. Labor Cost = Sum of labor cost of all employees that performed the activity. Labor cost for each employee = *((Total Time for each employee/60) * hourly wage of employee))*

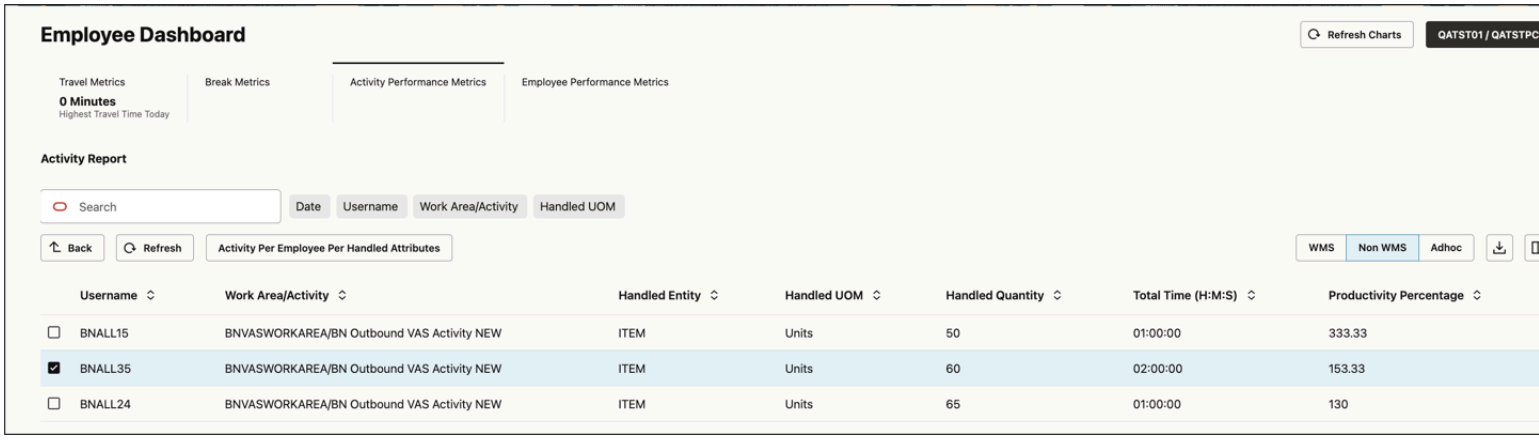
Ad hoc Activities

To view Ad hoc Activities, click the Ad hoc toggle button and select a date range (mandatory) in the search field. Additional filtering can be done based on Activity.

- In the result set, records are grouped by activity
- Hourly Wage is used from Users view to calculate labor cost. Labor Cost = Sum of labor cost of all employees that performed the activity. Labor cost for each employee = *((Total Time for each employee/60) * hourly wage of employee))*.

Activity Per Employee

In each of the above views, to view the list of employees who performed a specific activity, select the activity and click the “Activity Per Employee” action button.



WMS Activities

Additional filtering can be done based on User and UOM. Note that date range and Activity filters are non-functional in this view and will be removed in a future release.

- In the result set, records are grouped by user, activity, handled UOM and pre-pack
- Goals are used from Prod Goal Line Group view to calculate productivity percentage. Productivity % = *(Total Goal Time/Total Time) * 100* for each group

Non-WMS Activities

Additional filtering can be done based on User and UOM. Note that date range and Activity filters are non-functional in this view and will be removed in a future release.

- In the result set, records are grouped by user, activity and handled UOM.
- Goals are used from Employee Activity Goals view to calculate productivity percentage. Productivity % = *(Total Goal Time/Total Time) * 100* for each group.

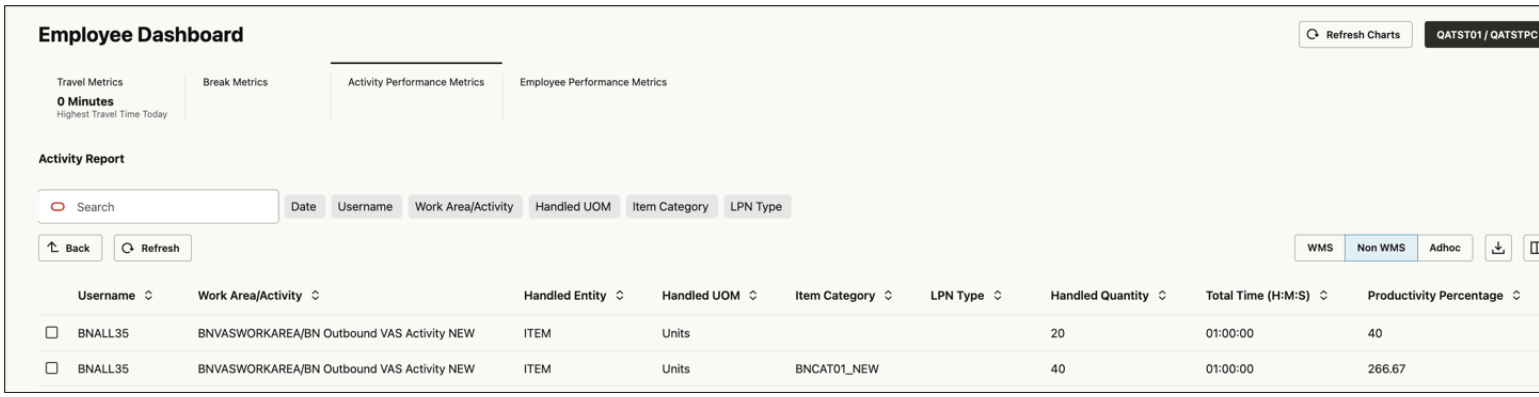
Ad hoc Activities

Additional filtering can be done based on User. Note that date range and Activity filters are non-functional in this view and will be removed in a future release.

- In the result set, records are grouped by user and activity.

Activity Per Employee Per Handled Attributes

In in the Activity Per Employee child view of WMS and Non-WMS, to view the various attributes handled by an employee while performing the activity, select the employee and click the “Activity Per Employee Per Handled Attribute” action button. Note that Ad hoc cannot be drilled down any further.



WMS Activities

Additional filtering can be done based on SKU Line Group and UOM. Note that date range, activity and user filters in this view are non-functional and will be removed in a future release.

- In the result set, records are grouped by user, activity SKU Line Group, handled UOM and pre-pack
- Goals are used from Prod Goal Line Group view to calculate productivity percentage. Productivity % = *(Total Goal Time/Total Time) * 100* for each group

Non-WMS Activities

Additional filtering can be done based on UOM, Item Category and LPN Type. Note that date range, activity and user filters in this view are non-functional and will be removed in a future release.

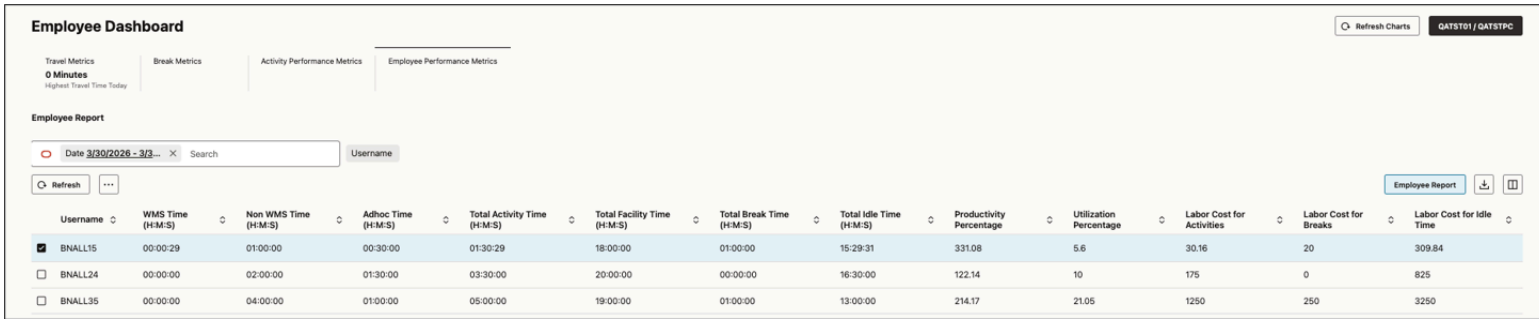
- In the result set, records are grouped by user, activity, handled UOM and (Item Category or LPN Type)
- Goals are used from Employee Activity Goals view to calculate productivity percentage. Productivity % = *(Total Goal Time/Total Time) * 100* for each group.

Employee Performance Metrics

The legacy User Productivity Report in WFM has been deprecated and replaced with Employee Report on Employee Performance Metrics tab.

Employee Report

This report displays the time spent by employees on WMS, Non-WMS and Ad hoc activities during the selected date range.



In addition to time spent across different activity types, the report also displays the following information:

- Total Activity Time: WMS Time + Non-WMS Time + Ad hoc Time
- Total Facility Time: Total clocked time (into facility) during the selected date range
- Total Break Time: Total clocked time (into break) during the selected date range
- Total idle Time: Total Facility Time – (Total Activity Time + Total Break Time)
- Productivity Percentage: *(*Total WMS Goal Time + Total *Non-WMS* Goal Time)/(Total WMS Time+Total *Non-WMS Time*) * 100
- Utilization Percentage:*(Total WMS Time + Total Non-WMS Time)/Total Facility Time * 100*
- Labor Cost for Activities: *(Total Activity Time/60) * hourly wage of employee*
- Labor Cost for Breaks: *(Total Break Time/60) * hourly wage of employee*
- Labor Cost for Idle Time: *(Total Idle Time/60) * hourly wage of employee*

Note:

- To calculate Goal Time for WMS Activities, goals are used from Prod Goal Line Group view.
- To calculate Goal Time for Non-WMS Activities, goals are used from Employee Activity Goals view.
- To calculate labor cost, hourly wage is used from Users view.

WMS Time

In the Employee Report, to view all the WMS activities performed by an employee during the selected date range, select the employee and click the “WMS Time” option in the action button dropdown (…).

Additional filtering can be done based on Activity and UOM. Note that date range and user filters are non-functional in this view and will be removed in a future release.

- In the result set, records are grouped by activity, handled UOM and pre-pack
- Goals are used from Prod Goal Line Group view to calculate productivity percentage. Productivity % = *(Total Goal Time/Total Time) * 100* for each group.

Non-WMS Time

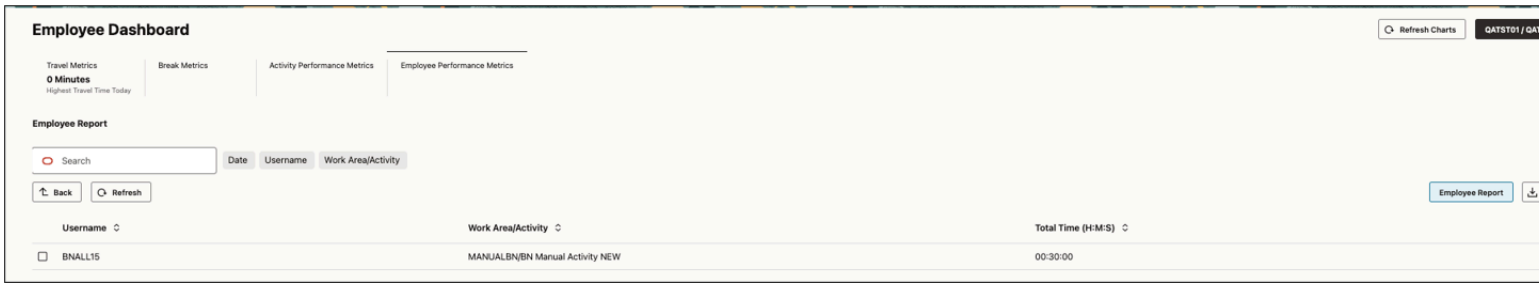
In the Employee Report, to view all the non-WMS activities performed by an employee during the selected date range, select the employee and click the “Non-WMS Time” option in the action button dropdown (…).

Additional filtering can be done based on Activity and UOM. Note that date range and user filters are non-functional in this view and will be removed in a future release.

- In the result set, records are grouped by activity and handled UOM
- Goals are used from Employee Activity Goals view to calculate productivity percentage. Productivity % = *(Total Goal Time/Total Time) * 100* for each group.

Ad hoc Time

In the Employee Report, to view all the Ad hoc activities performed by an employee during the selected date range, select the employee and click the “Ad hoc Time” option in the action button dropdown (…).



Additional filtering can be done based on Activity. Note that date range and user filters are non-functional in this view and will be removed in a future release.

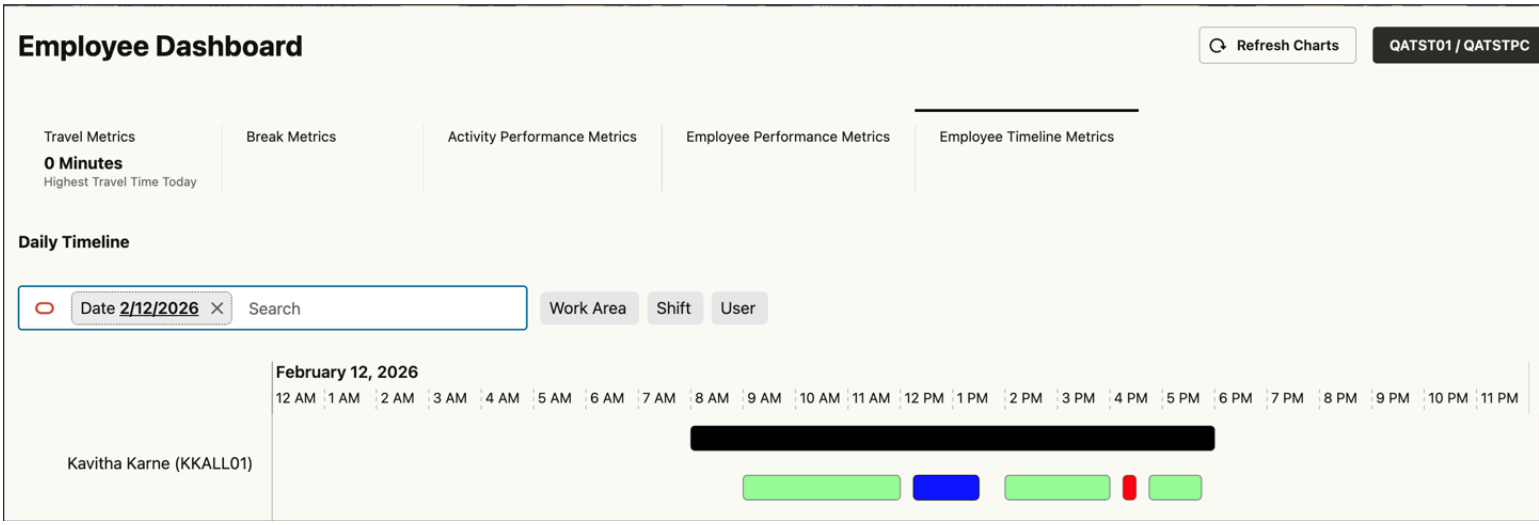
- In the result set, records are grouped by activities.

Employee Timeline Metrics

The legacy Daily Report in WFM has been deprecated and replaced with Daily Timeline on Employee Timeline Metrics tab.

Daily Timeline

This chart provides a visual representation of the number of hours employees have spent in the facility, on breaks, and across different work areas on the selected date.

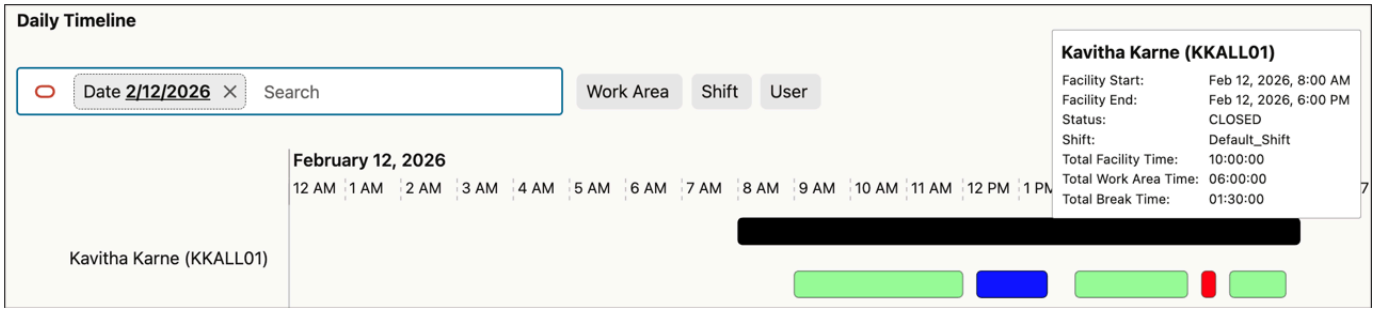


The chart displays horizontal bars for each employee, the top black bar indicating the time spent in facility, and the colored bars indicating time spent in work areas and breaks.

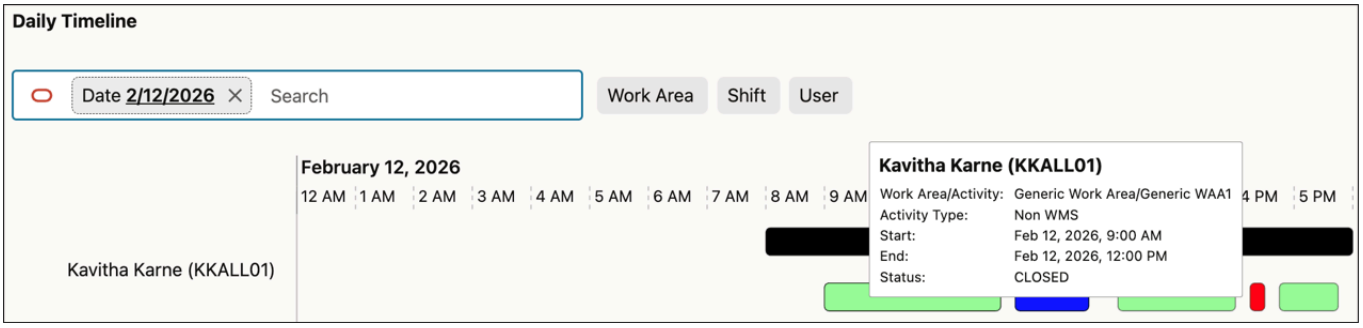
Time spent in facility is represented as a black bar and this color cannot be changed. However, work areas can be configured using different colors in the work area view. This makes it convenient for supervisors to visually interpret this report. Breaks can also be configured using different colors in the break view.

Hovering over each bar provides the exact start and stop times along with the status of the entity. CLOSED indicates that employees have clocked out of such entities and OPEN indicates that employees have not yet clocked out. For OPEN entities the current facility time is used as end time to display bars, however the status of the entity shows as OPEN. Apart from that additional information is displayed depending on each entity as described below.

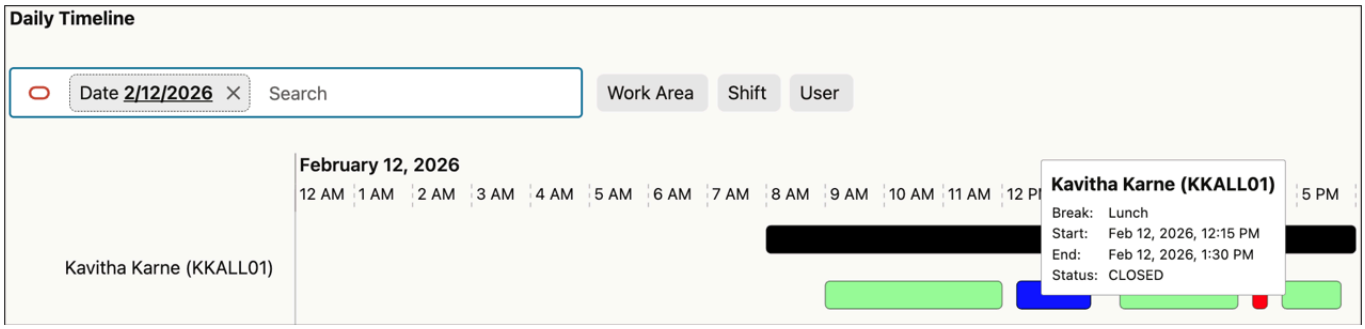
Hovering over the facility bar displays the shift, total facility, break and work area time.



Hovering over the work area bar, displays the activity performed by the employee in that work area along with the type of activity.



Hovering over the break bar, displays the break taken by the employee.



Note: Currently there is a limitation in the search filter which will be addressed in upcoming patch/release. When the daily timeline chart is first loaded, the filter chips are not visible. To get around this issue, type in a random text (such as ‘abc’) inside the search box, select ‘abc’ from dropdown and then click outside the search box. This should bring up the search options. Note that date is a mandatory field and other search criteria are optional. To search by user, use the login IDs displayed in braces next to employee first and last name.

> **Note:** Currently the color for any Work Area that is tied to WMS Activity is always blue. This will be addressed in upcoming patch/release".

9 Configuration Migration Tool

Configuration Migration Tool

WFM offers the feature to export configurations between environments, facilities, and companies. This feature is enabled on all the WFM configuration screens through the “config” () action button

> **Note:** To export WMS activities successfully from the Work Area Activity config screen, the WMS Screens that are mapped to WMS activities should be configured in the destination environment prior to importing Work Area Activity data.

Config Action Button

The “config” action button is visible only if the following conditions are met:

- The user belongs to a group that has the permission "config_import_export".
- The screen in question supports configuration import/ export.

The target environment for importing configurations can be:

- The same Facility/Company in the same environment. This is useful for restoring from a backup.
- A different Facility/Company but in the same environment. This is useful for replicating configurations done for one Facility in another Facility.
- The same Facility/Company in a different environment.
- A different Facility/Company in a different environment.

Click "config" action button to open a drop-down with the options "export_configuration" and "import_configuration".

Export Configuration

By clicking on the "export_configuration" option from the drop-down, you will be prompted to save a configuration file (.cfg file format) which needs to be downloaded in the local file system. You can export configurations for either selected rows or the entirety of the supported screen/entity.

Note:

- Searching for a few rows and then exporting without selecting anything will still export all data (regardless of what was searched).
- The configuration file that will be downloaded when you click on the "export_configuration" is an encrypted text file. So, any attempt to modify the file will corrupt and render it un-importable.
- You may have to enable download permissions on your browser to download and save the export configuration file.

Import Configuration

By clicking on the "import_configuration" option from the drop-down, you can choose the previously exported configuration file via the text box displayed on the screen. Importing configurations can either create new records or update existing records but it does not delete existing records. Importing configurations also depends on the unique field names of the screens.

Note:

- The exported configuration file (.cfg file format) must be unedited manually and it needs to be exported from an environment with a matching major release number (such as 23B or 23C).
- When importing configurations, it is always recommended to export configurations first for backup. Currently, there is no support for automatic backup of the current configuration when an import is done.

Enable Inter Facility/Company Copy Configuration

In Release 26B, a new option, “Copy Configuration to Eligible Facility/Company” is added to the Configuration action button to copy configurations directly from source to the target in a single step without manually downloading and uploading files.

The group permission ConfigImportExportCopy / Import/Export/Copy Configuration” enables the Configuration action button, which provides access to the export, import, and copy configuration options.

- You can copy selected or all records on the relevant screens that support the Configuration action button.
- Once you click “Copy Configuration to Eligible Facility/Company” under the Configuration action button, select the target eligible company and facility combination. After selection, click OK to copy configurations.
- On success, the system creates new records or updates matching records in the target facility/company.

Note: Copy configuration option is currently not supported in Redwood views.

10 Company and Facility Parameters

Company and Facility Parameters

WFM shares the company and facility parameter views with WMS. Although none of the company parameters are currently used by WFM, this section describes the facility parameters that are dedicated to WFM.

Facility Parameters

The following facility parameters are used by WFM. You'll find a reference to these parameters within various sections in this document.

Program Key	Parameter Key	Acceptable Values
FACILITY_PARM	WRITE_WMS_ACTIVITY_RECORDS	Boolean (Y or N)
PURGE_WMS_ACTIVITY_TRACK	PURGE_NUMBER_OF_DAYS	Number
PURGE_WMS_ACTIVITY_TRACK	PURGE_UNKNOWN_SKU	Boolean (Y or N)
PURGE_WMS_ACTIVITY_TRACK	PURGE_UNKNOWN_TRANSACTION	Boolean (Y or N)
PURGE_WMS_ACTIVITY_TRACK	PURGE_UNKNOWN_USER	Boolean (Y or N)
FACILITY_PARM	CICO_MANDATORY	Boolean (Y or N)
FACILITY_PARM	AUTO_CICO	Boolean (Y or N)
FACILITY_PARM	CICO_INACTIVITY_TOLERANCE_MINS	Number