Oracle Workforce Management Cloud

WFM User Guide

Release 25D

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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 radio frequency (RF) functionality, WFM helps reduce labor ineffiencies, raise overall performance, and improve accuracy.

WFM allows facility managers and supervisors to set goals for productive activities that users perform in the facility. Actual times spent on different activities are captured by WFM using various methods. WFM offers different reports that show the productivity of users against set goals.

Types of Activities

Multiple activities are performed by users in a facility. These are broadly categorized into three types as described in the following topics.

Related Topics

- *System Activities*
- *VAS Activities*
- *Manual Activities*

System Activities

Any activity that is performed using Oracle Cloud Warehouse Management System is considered to be a System or 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 system activity to determine user productivity.

VAS Activities

Any Value Added Service or productive activity that is performed in the facility without the use of WMS is considered a VAS activity. These are captured directly in Oracle Cloud WFM as described under *VAS Data*. These are also productive and therefore goals need to be defined against each VAS activity to determine user productivity.

Manual Activities

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

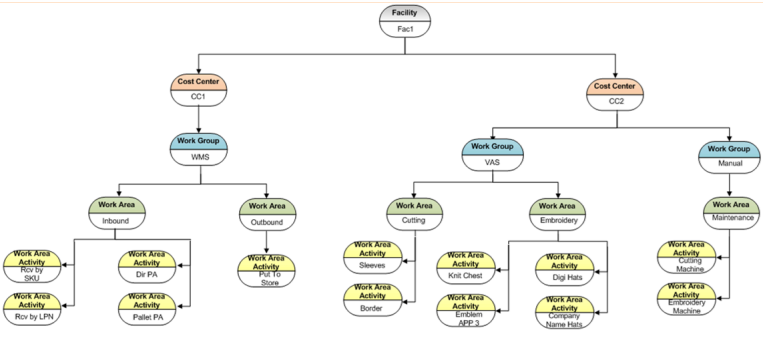
WFM Terminology

The following acronyms represent the logical and physical entities in WFM

- FAC – Represents the FACILITY which is a physical entity. This could be a Distribution Center, Warehouse or a Store. Users have to clock into a facility before starting their activities in the facility. Towards the end of their work day, users have to clock out of the facility.
- CC – Represents a COST CENTER which is a logical entity. Depending on the business, a cost center could represent a department within a facility to which costs can be allocated. The entire facility could fall under a single cost center OR a facility could comprise of multiple cost centers.
- WG – Represents a WORK GROUP which is a logical entity. A cost center comprises of one or more work groups.
- WA – Represents a WORK AREA which could be considered as a physical area in the facility. Users have to clock into a work area before starting their activities. After completing their activities, users need to clock out of that work area . A work group comprises of one or more work areas.
- WAA – Represents WORK AREA ACTIVITY. These are activities that users perform within a work area. The activities performed could be *System Activities*, *VAS Activities* or *Manual Activities.* Multiple activities could be performed in a work area.
- CI – Represents user *Clock In*. Clock-In is used to clock user into the facility, work area, break, VAS activities or manual activities.
- CO – Represents user *Clock Out.* Clock-Out is used to clock user out of the facility, work area, break, VAS activities or manual activities.

A Sample Setup in WFM

Following is an example of how clients could configure WFM to suit their business:



Clock In and Out

Clocking is a process of capturing the time stamp of every user entering and exiting the facility. It also captures the user's entry and exit into Work Areas, VAS activities, Manual activities and Break.

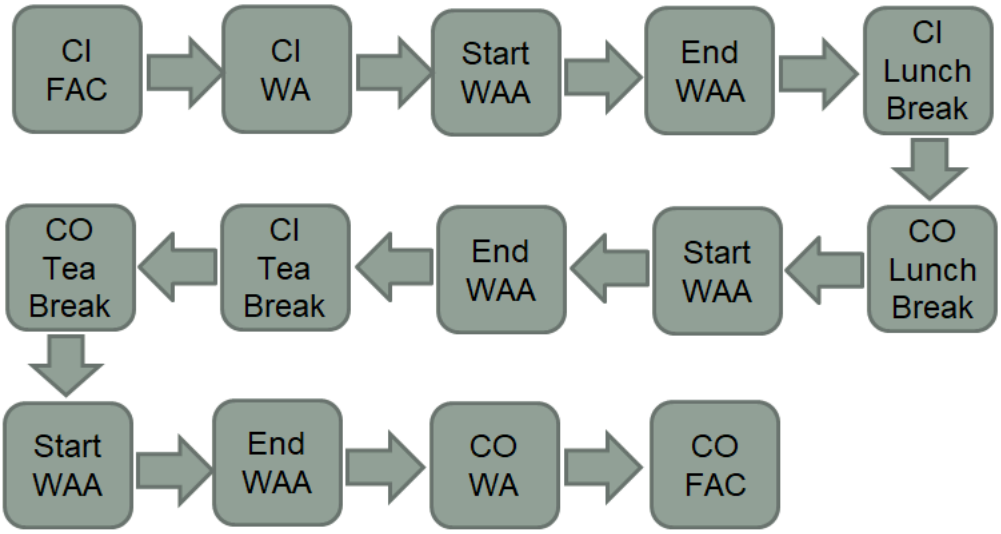
Before start of a workday, every user must clock into (CI) the facility (FAC) which represents user's entry into the warehouse/building. As the next logical step, the user needs to clock into the respective Work Area (WA) before starting

warehouse activities (WAA – Work Area Activities) associated with that work area. If the user needs to step out on a lunch or tea break, user needs to clock in/out to indicate that to WFM. Finally, the user needs to clock (CO) of the Work Area and from the Facility.

The time taken for VAS and manual activities (WAA) is indicated by clocking into the activity (WAA). However, for system (WMS) activities, it is not required to explicitly clock into the activity, Each RF screen in WMS is associated with a system activity (WAA) in WFM. When WMS activity data is interfaced from WMS to WFM, the start and end time in the data is used to determine the time taken for the activity.

A Sample User Workflow in WFM

Users are required to follow a specific clock-in/clock out process. The following figure depicts a typical clock-in/out flow assuming that the user is performing activity in a single work area on this day.



Start WAA: Clock into VAS Activity/Manual Activity OR start WMS RF Transaction

End WAA: Clock out of VAS Activity/Manual Activity OR end WMS RF 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 VAS and Manual activities are captured through clocking, WFM ensures that the users are clocked into each entity, FAC, WA and WAA in the right sequence. However, when users work on System activities using WMS RF Transactions, it's possible that a user may forget to clock into facility and the respective work area before starting the activity. Although this would not impact warehouse operations, it would result in wrong productivity calculations for the user.

In order to ensure that users do not miss the clocking process when working on system 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 RF, if the user has not clocked into the facility. If the user has clocked into the facility but has not clocked into the work area associated with the transaction selected on RF, WFM does not allow the user to proceed with the transaction.

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 locations scans through WMS handheld screens OR can be interfaced/posted by external systems.

3 WFM – Input Data

Input Data

There are two main inputs that go into WFM: User clock information and user activities performed on the warehouse floor. The clock data is used to determine the time the user has spent in a physical or logical area, for example, total time spent in the facility, the time spent in a specific work area, time spent for a specific break or time spent on a VAS or manual work area activity.

User activities provide the task accomplished in terms of quantity, UOM and the SKU Line Group (item category) . This information is required for System and VAS activities to calculate the appropriate productivity of users. Since manual activity is non-productive, no additional information is required except the time spent which is captured through clock.

User clock data along with user activities are used by *Standard Reports* in WFM.

Clock Data

There are multiple ways in which users can be clocked into various entities:

- *WFM Browser Clock View*: Using WFM Clock view from the browser
- *WFM RF Clock Views*: Using WFM clock options on RF hand held device.
- *External Systems*: IInterface or post user clock information captured by external systems.
- *Auto Clock In/Clock Out*: Automatically clock users into facility and work area when working on system activities.

Note that, each option listed above can work in conjunction with other options.

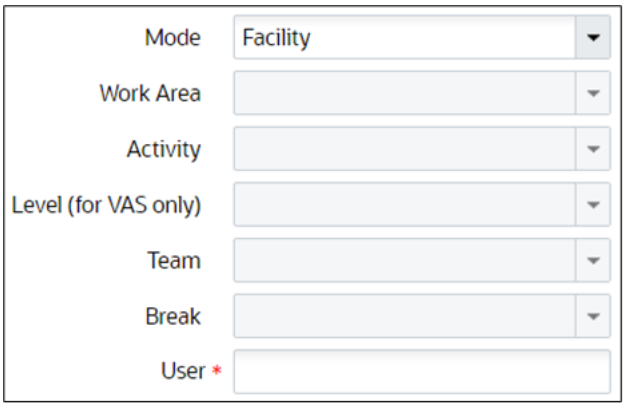
WFM Browser Clock View

Clock is a browser-based view that is typically used by a supervisor to clock users in and out of various entities. The person that has logged into the application and clocks other users is called the clocker. The clocker could either clock oneself or clock other users.

Facility Clocking

In order to clock users into or out of a facility, set **Mode** as “Facility”. Enter the login ID of the user in the **User** field and hit the clock-in or clock-out button as required.

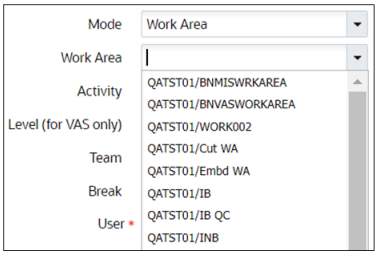
> **Note:** As of Release 24D, the facility dropdown has been removed from this view. When mode is facility, the user specified in the "User" field is clocked in/out from the current logged in facilityof the clocker.



Work Area Clocking

In order to clock users into or out of a Work Area, set **Mode** as “Work Area” and select the Work Area from the **Work Area** drop down. Enter the login ID of the user in the **User** field and hit the clock-in or clock-out button as required.

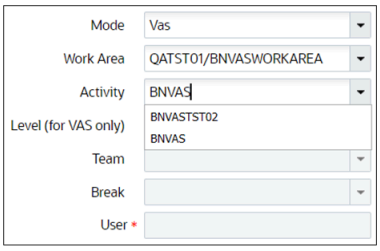
> **Note:** As of Release 24D, since the facility dropdown has been removed, the Work Area dropdown will only list the Work Areas that are configured in the current logged in facility of the clocker.

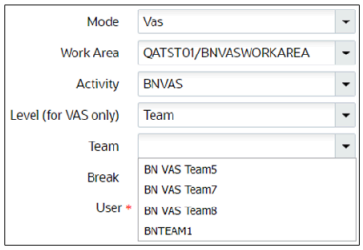


VAS Activities Clocking

When a user or a group of users (team) need to be clocked into or out of a certain VAS activity, set Mode as “VAS”. Select the appropriate Work Area from the **Work Area** drop down. From the **Activity** drop down, Select the activity that the user or team need to work on**.** Select “user” or “team” (as required) from the **Level** drop down. Depending on the **Level** selection, enter either the login ID of the user in the **User** field OR select a team from the **Team** drop down (The team dropdown will list all users configured in the selected work area). Next hit the clock-in or clock-out button as required.

> **Note:** As of Release 24D, when mode is VAS, the Activity dropdown will only list activitiesof type ‘VAS” configured in the selected Work Area.

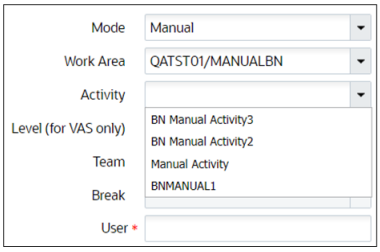




Manual Activities Clocking

In order to clock a user into or out of a manual activity, set Mode as “Manual”. Select the appropriate Work Area from the **Work Area** drop down. From the **Activity** drop down, select the activity that the user would be working on**.** Enter the login ID of the user in the **User** field and hit the clock-in or clock-out button as required.

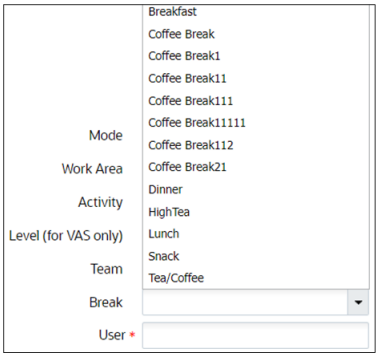
> **Note:** As of Release 24D, when mode is Manual, the Activity dropdown will only list activities of type “Manual” configured in the selected Work Area.



Break Clocking

To clock a user into or out of a break, set Mode as “Break” and select the break from the **Break** drop down.Enter the login ID of the user in the **User** field and press the clock-in or clock-out button as required.

> **Note:** As of Release 24D, since the facility dropdown has been removed, the Break dropdown will only list the Breaks that are configured in the current logged in facility of the clocker.



> **Note:** As of Release 25B, the Clock view has been made more intuitive by introducing the following changes:
>
> - The mode drop-down has been restructured to differentiate between clock-in and clock-out actions. During clock-out supervisors no longer have to remember the entities in which users were clocked-in. If supervisor attempts to clock the user out of an entity, WFM will intelligently clock the user out of the clocked-in entity. For example, if user is currently clocked into the “lunch” break and needs to be clocked out, supervisor can simply choose the option “Break Clock-Out” from the mode dropdown without having to select “lunch” from the “break” drop-down.
> - A new **Submit** button replaces separate **Clock-In** and **Clock-Out** actions.

WFM RF Clock Views

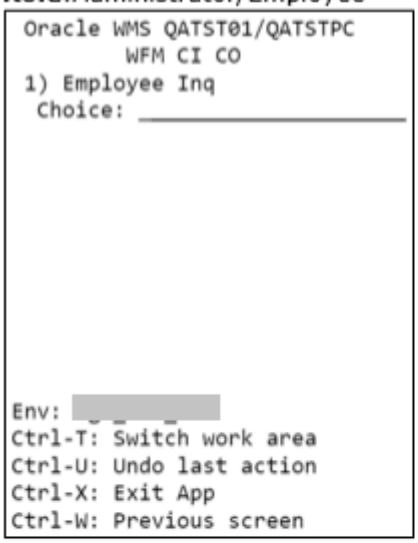
WFM offers multiple RF options for users to clock into and out of various entities while operating on the warehouse floor. The user logged into RF handheld is called the clocker. The clocker could either clock oneself or clock other users.

RF CICO

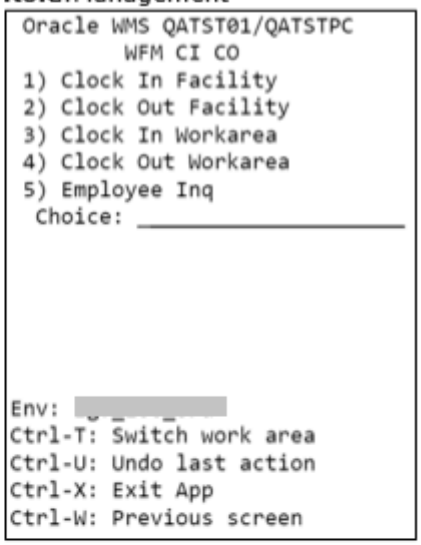
Module: RF-Text: CICO (wfm)

In general, this RF screen provides options for clocking users in facility and work area and also inquire about users. Depending on the role of the user that has logged into RF handheld device, the options presented on selecting this RF screen varies as shown in pictures below:

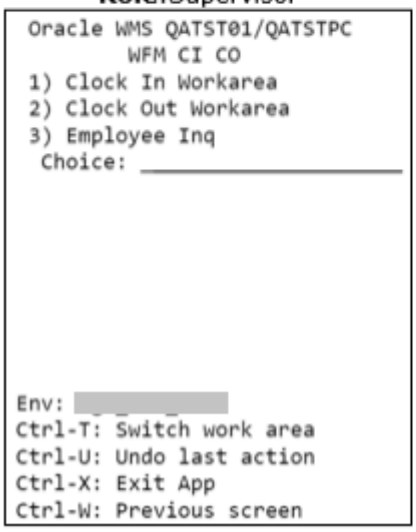
Role:Administrator/Employee



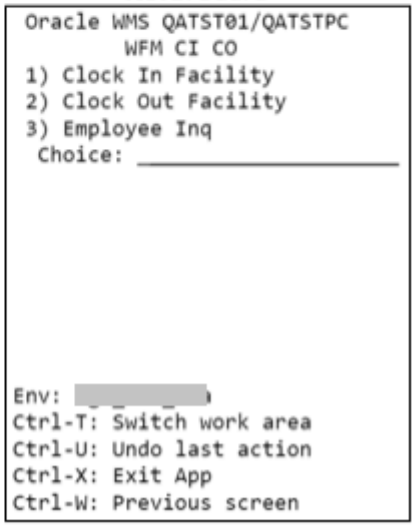
Role:Management



Role:Supervisor

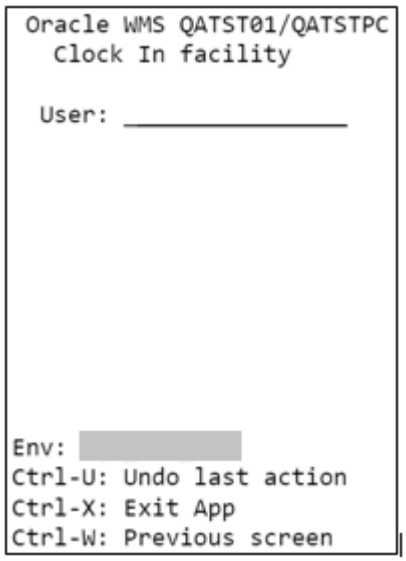


Role:Guard



To summarize, only a user with Management role has access to all the options on this screen. A user with Guard role can only clock users at a facility level. A user with supervisor role can only clock users at a work area level. A user with Administrator or Employee role do not have the option to clock users either at the facility or the work area level. All users (regardless of role) have the option of inquiring about other users using the option **Employee Inq**.

Choosing any of the Clock In/Out options, presents you with the next screen where the user id has to be keyed in. As an example, if the “Clock In Facility” option is selected, the following screen shows up. Here the login id of the user that needs to be clocked into facility is keyed in.



Unlike Clock View in the browser, RF does not provide options for Facilities or Work Area. Instead, the user is clocked into the Facility/Work Area that is marked as a default for the user.

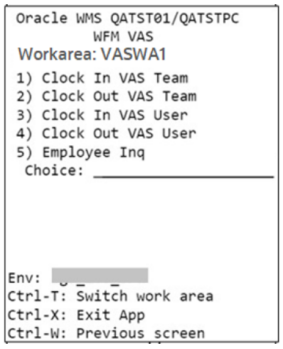
Also, to clock a user into a Work Area, the clocker (logged in user) needs to have the same default Work Area as the user. If the clocker does not have the same default Work Area as the user being clocked in, the following error is encountered.

Ctrl-U: This control key can be used to undo the last action. For example, if a particular user was clocked into facility, hitting Ctrl-U button would mark the user as not clocked into facility.

RF VAS

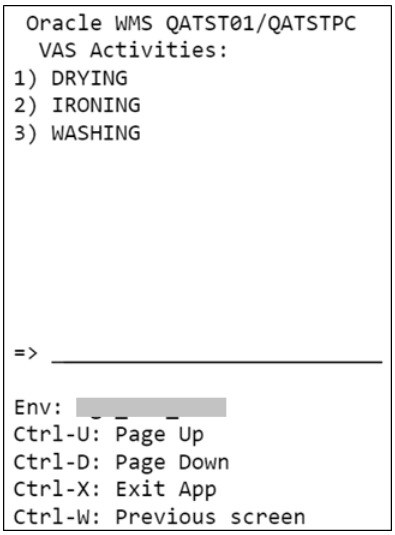
Module: RF-Text: VAS (wfm)

This RF screen provides options to clock users (or a Team) in a VAS activity. Regardless of the role of the logged in user, the following options are presented on selecting this RF screen:

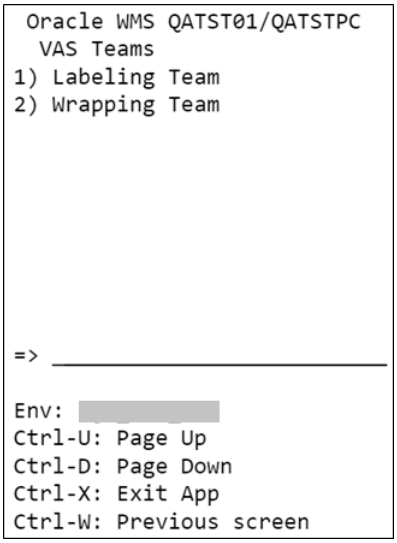


The default work area of the logged in user (clocker) is also displayed on this screen. If the clocker needs to clock a user or team into activities of a different work area, Ctrl+T can be used to switch work area and the selected work area is displayed on the screen.

On selecting “Clock In Vas Team” or “Clock In Vas User”, all the VAS activities that have been configured in the selected Work Area are displayed in the next screen.

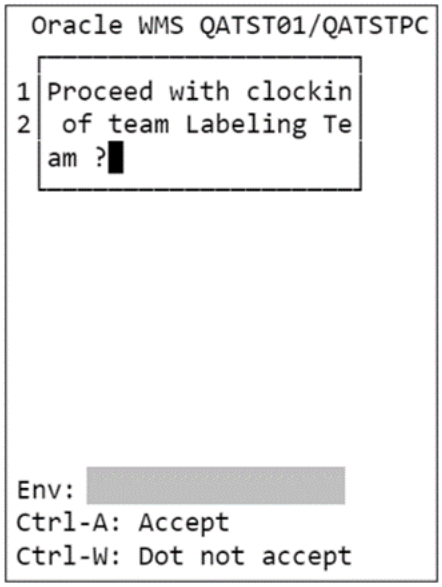


After selecting an activity, the logged in user is taken to the next screen, which shows all the *Teams* that are eligible to operate in this Work Area.

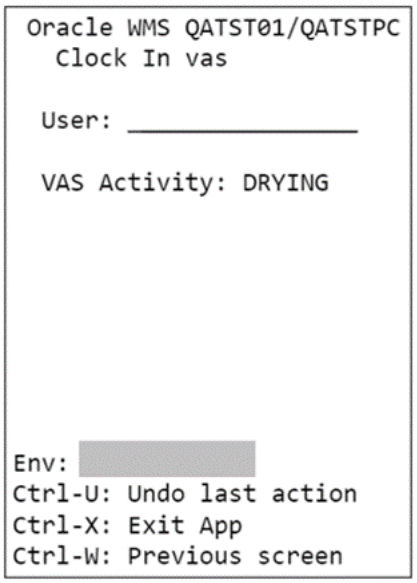


After selecting a team, the next screen varies, depending on the choice made on first screen. If “Clock In Vas Team” was selected, logged in user needs to confirm if the selected team can be clocked in. If “Clock In Vas User” was selected, the logged in user is prompted to enter the id of the user that needs to be clocked in.

Clock In Vas Team



Clock In Vas User



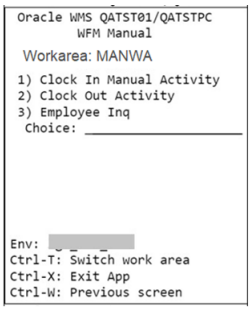
Clocking in a team, clocks all the users of that team into the VAS activity.

If the clock out options are selected on main screen, the logged in user is prompted to enter either the id of the user or the team that needs to be clocked out. Clocking out a team, clocks out all the users of the team from that VAS activity. The team or user is clocked out from the last clocked in VAS activity.

RF Manual

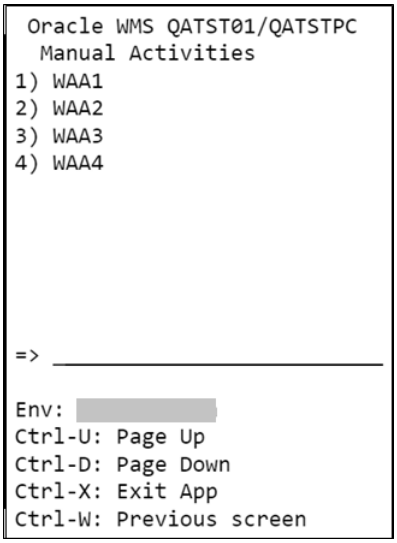
Module: RF-Text: MANUAL (wfm)

This RF screen provides options to clock users in a Manual activity. Regardless of the role of the logged in user, the following options are presented on selecting this RF screen:



The default workarea of the logged in user (clocker) is also displayed on this screen. If the clocker needs to clock a user or team into activities of a different work area, Ctrl+T can be used to switch work area and the selected work area is displayed on the screen.

On selecting “Clock In Manual Activity”, all the manual activities that have been configured in the selected Work Area are displayed in the next screen.



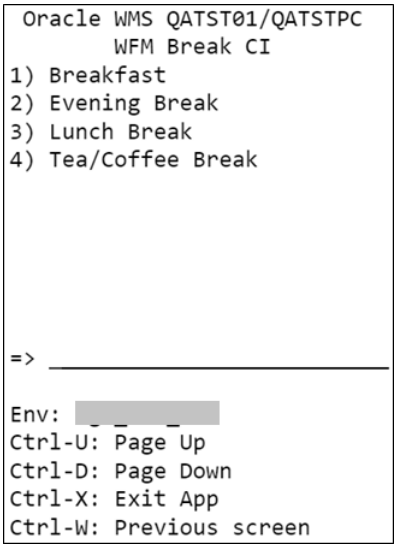
After selecting an activity, on the next screen, the logged in user is prompted to enter the id of the user that needs to be clocked in.

On selecting “Clock Out Activity” on the main screen, the logged in user is prompted to enter the id of the user that needs to be clocked out. The user is clocked out from the last clocked in manual activity.

RF Break CI

Module: RF-Text: Break CI (wfm)

This RF screen can be used for clocking in users into a break. Regardless of the role of the logged in user, the following options are presented on selecting this RF screen:



After selecting a break option, on the next screen the logged in user is prompted to enter the id of the user that needs to be clocked into the selected break.

RF Break CO

Module: RF-Text: Break CO (wfm)

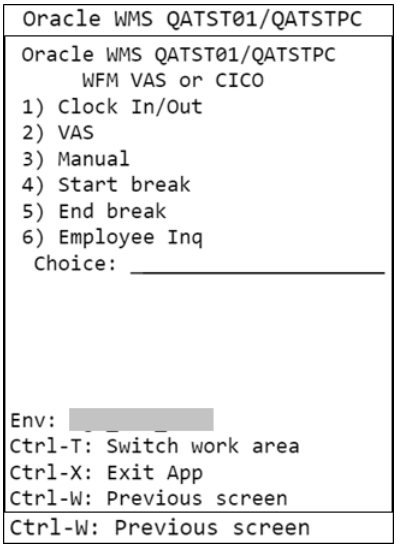
This RF screen can be used for clocking out users from a break. Regardless of the role of the logged in user, the logged in user is prompted to enter the id of the user that needs to be clocked out.

The user is clocked out from the last clocked in break.

RF VAS or CICO

Module: RF-Text: VAS or CICO (wfm)

This RF screen acts as a one-stop screen that provides all the options that have been described in indvidual RF screens above. Regardless of the role of the logged in user, the following options are presented on selecting this screen.



RF VAS or CICO Screen Menu Options

1. **Clock In/Out:** Choosing this option takes you through the same screenflow as RF Cico.
2. **VAS:** Choosing this option takes you through the same screenflow as RF VAS.
3. **Manual:** Choosing this option takes you through the same screenflow as RF Manual.
4. **Start Break:** Choosing this option takes you through the same screenflow as RF Break CI.
5. **End Break:** Choosing this option takes you through the same screenflow as RF Break CO.
6. **Employee Inq:** Choosing this option takes you through the same screenflow as RF Employee Inq.

RF Employee Inq

Module: RF-Text: Employee Inq (wfm)

This RF screen does not provide any clock options but can be used to inquire about any user. The first screen prompts for a user and on keying in the id of a user, the last clock information about the user is displayed.

```
User: test user42
Clock in at vas
Clocker: test user4
Whse: LGF-WAREHOUSE
WA: Shrink Wrapping Area
VAS: IRONING
Team: Wrapping Team
2020-07-13 03:37:00.956957



Env: [redacted].....
Ctrl-X: Exit App
Ctrl-W: Previous screen
```

For example, in the screenshot above, the logged in user has requested information about ***test user42*** . The Employee Inq screen shows that the ***test user42*** was last clocked into the "IRONING" VAS Activity by clocker ***test user 4*** on July 13th at 03:37 am.

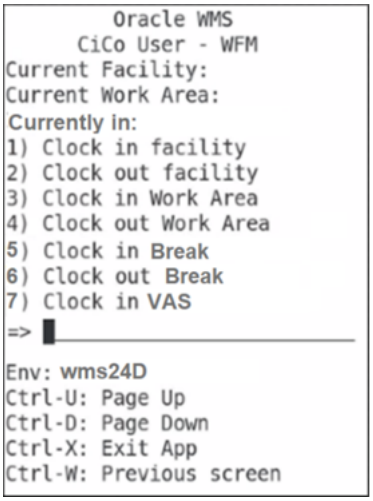
Note: **Employee Inq** is also available as an option in all other clock RF screens except the Break RF screens.

RF CICO User

Module: RF-Text: CiCo User - WFM (wfm)

This RF screen supports only self-clocking unlike other RF clock screens that can be used by supervisors to clock other users. The logged in user is not prompted to enter any user id. Instead, on choosing any option on this screen, the logged in user is clocked into the chosen entity.

This screen can be used by any user regardless of their ROLE, as long it has been added to the user's RF menu. On selecting this screen in RF, the following options are presented to the user:



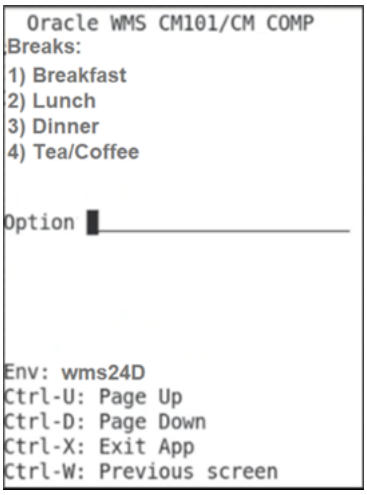
- The "Current Facility", "Current Work Area" and “Currently In” provides a visibility of the entities in which the logged in user is currently clocked in, regardless of how the user was clocked in (Clock UI, RF clock options, Auto CICO, Input Interface, OR REST API) An empty value in these fields indicates that the user is not clocked into these entities.
- Selecting 1 clocks the user into the logged in facility. No message is shown to the user, however the "Current Facility" field is updated.
- Selecting 2 clocks the user out of the facility. If the user is currently clocked into a work area or any other entity such as break, VAS or manual, user is not allowed to clock out of facility.
- Selecting 3 takes the user to the next screen with a list of all work areas assigned to this user. Note that, unlike the existing WFM RF Clock options, this RF clock option, allows the user to clock into a work area even if it is not configured as the user’s default work area.

After a work area has been selected, user is taken back to the main screen and the work area is displayed in the "Current Work Area" field.

- User can also switch between work areas without explicitly clocking out of the current work area. For example, in the above example, user can select 3 and select PACKING, while already in work area VAS. The user will be automatically clocked out of VAS and clocked into PACKING. Note however that, the automatic switch only

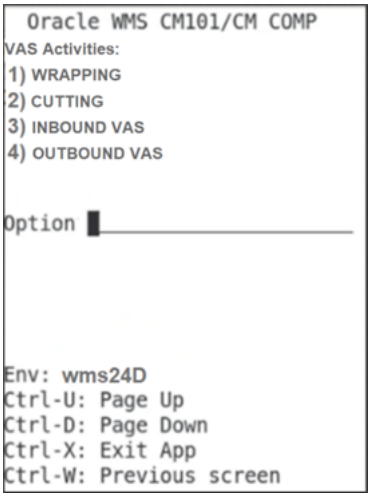
works if user is not clocked into break, VAS activities or manual activities. If user is clocked into any of these entities, then it's required to first clock out of such entities before switching work area.

- Selecting 4 clocks the user out of Work Area. If user is currently clocked into any other entity such as break, VAS or manual, user will not be allowed to clock out of Work Area.
- If user is not currently clocked into a facility or work area and selects option 2 or 4, no action is taken.
- Selecting 5 takes the user to the next screen with all breaks configured in the facility.



After a break has been selected, user is taken back to the main screen and the break is displayed in the “Currently In" field.

- Selecting 7 takes the user to the next screen with all VAS activities configured in the clocked in Work Area.



Note that user can either be in a VAS/Manual activity or in a break but not both. User can only clock into VAS/Manual activity after clocking out of break and vice-versa.

After a VAS activity has been selected, user is taken back to the main screen and the activity is displayed in the “Currently In" field.

- Option 8 (Clock In Manual) functions similar to option 7 (Clock In VAS), except that Manual activities are listed instead of VAS activities.

- Selecting 6 clocks the user out of break and selecting 9 clocks the user out of VAS/Manual activities
- If user is clocked into a certain facility say FAC01, and changes facility through Ctrl+F to FAC02, the “Current Facility’ field will continue to show FAC01. If the user now attempts any clock-in option (work area, break, VAS, or manual activity), msg "User clocked into a different facility. Must clock out of the other facility first" is displayed.
- All clock in and clock out records are written to track record.

Note: The field “Currently In” and clock options 5 through 9 have been introduced in Release 24D.

External Systems

If user's clock data is captured by external 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 VAS and Manual activities are captured through clocking, WFM ensures that the users are clocked into each entity, FAC, WA and WAA in the right sequence. However, when users work on System activities using WMS RF Transactions, it’s possible that a user may forget to clock into facility and the respective work area before starting the activity. Although this would not impact warehouse operations, it would result in wrong productivity calculations for the user.

The auto clock feature in WFM can be used to automatically clock users into a facility and work area enabling users to focus on performing system 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 RF. On selecting a transaction on RF, the user is automatically clocked into the work area that is associated with the WMS RF screen.

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 RF, depending on the current state of the user, WFM performs next steps as described in the table below:

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 track record of the user is more than 1440 mins (24 hours) ago OR • If there are no clock records (track records), no WMS activity, no UI login or RF login (framework/common logs) 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*** • · 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. • If the facility parameter configured is greater than 1440 mins, 1440 minutes will be used.	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. For all clock outs, user's last activity time is used. This could be from track record, WMS activity or Framework/common logs whichever is latest. **Note:** Auto Clock out from facility is not triggered based on any other action such as RFLog out, UI Logout, RF Idletime or UI Idle time. It is ONLY triggered when user logs into RF and is found to have been inactive. **User Inactive Scenarios** **Scenario 1**: Track Record entry greater than 24 hours; No activity in between • Login to RF: Nov 3, 7:00 am • Auto FAC-CI: Nov 3, 7:00 am • Login to RF: Nov 4, 7:05 am • Since Track 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**: Track Record entry greater than 24 hours; Activity in between • Login to RF: Nov 3, 7:00 am • Auto FAC-CI: Nov 3, 7:00 am • Login to UI: Nov 4, 6:00 am • Login to RF: Nov 4, 7:05 am • Since Track 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**: Track Record entry less than 24 hours; CICO_INACTIVTY_TOLERANCE_MINS = 120 mins • Login to RF: Nov 3, 7:00 am • Auto FAC-CI: Nov 3, 7:00 am • WMS Activity: Nov 3, 9:30 am • Login to RF: Nov 3, 10:00 am • Since 10:00 am - 9:30 am < CICO_INACTIVTY_TOLERANCE_MINS, no track records are written, but login time of 10:00 am captured in framework logs • Login to RF: Nov 3, 1:00 pm • Since 1:00 pm - 10:00 am > CICO_INACTIVTY_TOLERANCE_MINS, user clocked out of facility and clocked into facility • Auto FAC-CO: Nov 3, 10:00 am; Auto FAC-CI Nov 3, 1:00 pm

Auto Work Area Clock In

Every WMS RF transaction is tied to a Work Area in WFM (Refer *WMS Screens* under WFM configuration). When a user selects a WMS transaction on RF, the user is automatically clocked into the work area that is associated with the WMS screen.

Before clocking a user into the work area, WFM checks if the user has any open clock records (except facility clock in). 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 attempting to work on a WMS RF transaction, WFM clocks the user out of break before clocking into work area. If the user was clocked into a different work area, WFM clocks the user out of that work area before clocking into current work area.

Track Record

If users are clocked using WFM Browser Clock View, WFM RF Options or Auto clock feature, the clock information is captured and can be viewed directly in the Track Record view in WFM.

Track Records - WFM

User	Clocker	Clock in/out	Action Code	Facility	Shift	Work Area	Activities	Team	Break	Date
test_user2	KKALL01	OUT	0	QATST01	MORNING					08/30/2020 12:16:04 PM
test_user52	KKALL01	IN	2	QATST01	MORNING	Cutting Work Area	Sleeves WAA	Sleeves Team		08/30/2020 11:54:23 AM
test_user51	KKALL01	IN	2	QATST01	MORNING	Cutting Work Area	Sleeves WAA	Sleeves Team		08/30/2020 11:54:23 AM
test_user2	KKALL01	OUT	1	QATST01	MORNING	Cutting Work Area				08/30/2020 11:45:50 AM
test_user2	KKALL01	OUT	3	QATST01	MORNING				Tea/Coffee	08/30/2020 11:30:12 AM
test_user2	KKALL01	IN	3	QATST01	MORNING				Tea/Coffee	08/30/2020 11:15:32 AM
test_user2	KKALL01	OUT	2	QATST01	MORNING	Cutting Work Area	Sleeves WAA			08/30/2020 11:10:02 AM
test_user52	KKALL01	IN	1	QATST01	MORNING	Cutting Work Area				08/30/2020 8:51:16 AM
test_user51	KKALL01	IN	1	QATST01	MORNING	Cutting Work Area				08/30/2020 8:51:07 AM
test_user52	KKALL01	IN	0	QATST01	MORNING					08/30/2020 8:47:29 AM
test_user51	KKALL01	IN	0	QATST01	MORNING					08/30/2020 8:46:50 AM
test_user2	test_user2	IN	2	QATST01	MORNING	Cutting Work Area	Sleeves WAA			08/30/2020 8:34:45 AM
test_user2	test_user2	IN	1	QATST01	MORNING	Cutting Work Area				08/30/2020 8:33:58 AM
test_user2	test_user2	IN	0	QATST01	MORNING					08/30/2020 8:31:44 AM

The fields that appear in this view are described below:

User: User that has been clocked.

Clocker: Personnel that has clocked the user. If the user has clocked oneself or if auto clocked by WFM, this field has same information as the **User** field.

Clock in/out: A value of **IN** indicates that the user has been clocked into the entity. A value of **OUT** indicates that the user has been clocked out of the entity.

Action Code: Indicates the entity in which the user has been clocked. This field supports values 1 through 4.

- 0 – Indicates Facility
- 1 – Indicates Work Area.
- 2 – Indicates Work Area Activity. This could be either a VAS activity or a manual activity.
- 3 – Indicates Break.

Shift: Indicates the shift that corresponds to the time at which user clocks into the facility. The *dynamic assignment of shifts* section describes how the shift of a user is determined.

Work Area: Indicates the Work Area in which user is clocked. This field is populated when Action Code is 1.

Activities: Indicates the Work Area Activities in which user is clocked. The activity could be either a VAS activity or a manual activity. This field is populated when Action Code is 2.

Team: Indicates the team that has been clocked for VAS activity. This field is populated when Action Code is 2 and a team has been clocked into a VAS activity.

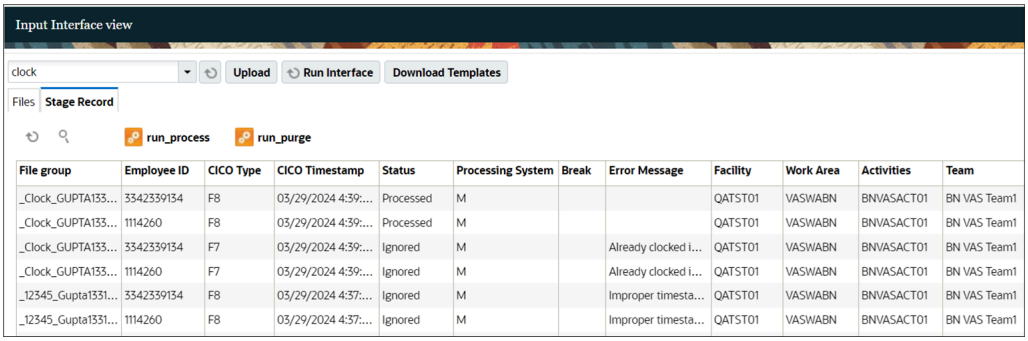
Break: Indicates the Break in which user is clocked. This field is populated when Action Code is 3.

Date: Date and time at which the user is clocked.

This view does not provide a create option, and new clock records cannot be created manually. However, the view provides update and delete options. In order to update or delete a record, you need to login as the clocker of that record. For example, in the picture above, in order to update or delete any record that has clocker as “KKALL01”, you need to login as “KKALL01”.

Stage Record for Clock

If users 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 Track Record. Only records in “Ready” status are picked up for processing. This process is either triggered manually by using the **run_process** button on Stage Record tab OR scheduled through the *Process Stage Track Record* job.



File group	Employee ID	CICO Type	CICO Timestamp	Status	Processing System	Break	Error Message	Facility	Work Area	Activities	Team
_Clock_GUPTA133...	3342339134	F8	03/29/2024 4:39:...	Processed	M			QATST01	VASWABN	BNVASACT01	BN VAS Team1
_Clock_GUPTA133...	1114260	F8	03/29/2024 4:39:...	Processed	M			QATST01	VASWABN	BNVASACT01	BN VAS Team1
_Clock_GUPTA133...	3342339134	F7	03/29/2024 4:39:...	Ignored	M		Already clocked i...	QATST01	VASWABN	BNVASACT01	BN VAS Team1
_Clock_GUPTA133...	1114260	F7	03/29/2024 4:39:...	Ignored	M		Already clocked i...	QATST01	VASWABN	BNVASACT01	BN VAS Team1
_12345_Gupta1331...	3342339134	F8	03/29/2024 4:37:...	Ignored	M		Improper timesta...	QATST01	VASWABN	BNVASACT01	BN VAS Team1
_12345_Gupta1331...	1114260	F8	03/29/2024 4:37:...	Ignored	M		Improper timesta...	QATST01	VASWABN	BNVASACT01	BN VAS Team1

The fields that appear in this view are described below:

Employee ID: Unique ID of the user. This corresponds to the ID in the User view.

CICO Type: Indicates the entity in which the user has been clocked. This field supports the following:

- F1 – Indicates clock-in to a Facility
- F2 – Indicates clock-in to a Break
- F3 – Indicates clock-out of a Break
- F4 – Indicates clock-out of a Facility
- F5 – Indicates clock-in to a WorkArea
- F6 – Indicates clock-out of a WorkArea
- F7 – Indicates clock-in to a VAS Activity

- F8 – Indicates clock-out of a VAS Activity
- F9 – Indicates clock-in to a Manual Activity
- F10 – Indicates clock-out of a Manual Activity

CICO Timestamp: Date and time at which the user is clocked.

Status: The following values are supported:

- Not Ready – Indicates that the record is not ready to be picked up yet by the background process.
- Ready – Indicates that the record is ready to be picked up by the background process.
- Processing – Indicates that the record is currently being processed by the background process.
- Processed – Indicates that the record has been processed sucessfully and moved to Track Record.
- Ignored – Duplicate records are marked as “Ignored”
- Cancelled – A record can be marked as cancelled. Cancelled records are not picked up by the background process
- Failed – Indicates that the record failed validations during processing. Such records have the **Error Message** field populated with the relevant text indicating the reason for failure .

Processing System: The following values are supported:

- M – M is used when new clock data is interfaced to WFM.
- S – S is used when existing clock data in WFM needs to be updated.

Break: This field is populated with the break taken by employee when **CICO Type** is F2 or F3.

Error Message: This field is populated with the appropriate error message when the record fails data validations.

Work Area: This field is populated with the Work Area when **CICO Type** is F5, F6, F7, F8, F9, or F10.

Activities: This field is populated with the VAS work area activity when **CICO Type** is F7 or F8. The field is populated with the Manual work area activity when **CICO Type** is F9 or F10.

Team: This field is populated if a team has clocked in to/out of a VAS activity. It’s populated only when **CICO Type** is F7 or F8. If a single user has clocked into a VAS activity, this field is not populated instead the Employee ID of the user is populated.

run_purge: This button is used to manually trigger the *purge process* which purges old clock data from Stage Record.

User Activity Data

Since System and VAS activities are productive, the time taken to perform these activities and the measure of the activity performed (in terms of qty, UOM and SKU Line Group) is required in WFM.

WMS Data

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

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.

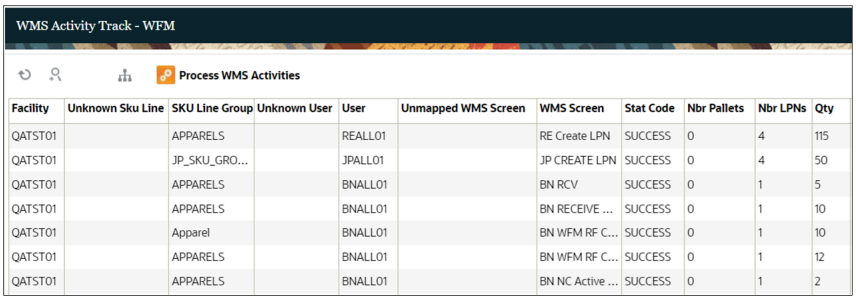
For more information about these APIs and the new parameters, refer *WMS REST API Guide*.

User Activity records captured by WMS RF 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 *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 Screen Name* 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. Nbr 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.

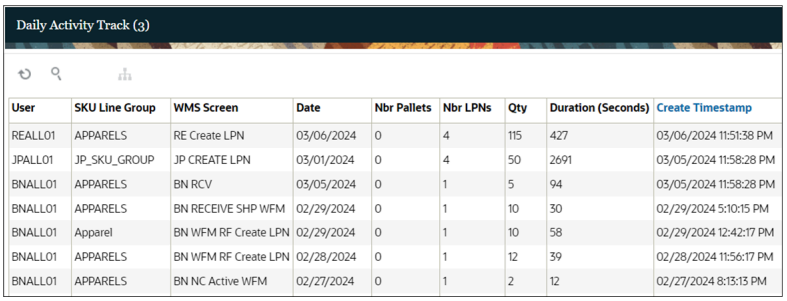


Facility	Unknown Sku Line	SKU Line Group	Unknown User	User	Unmapped WMS Screen	WMS Screen	Stat Code	Nbr Pallets	Nbr LPNs	Qty
QATST01		APPARELS		REALL01		RE Create LPN	SUCCESS	0	4	115
QATST01		JP_SKU_GRO...		JPALL01		JP CREATE LPN	SUCCESS	0	4	50
QATST01		APPARELS		BNALL01		BN RCV	SUCCESS	0	1	5
QATST01		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

VAS Data

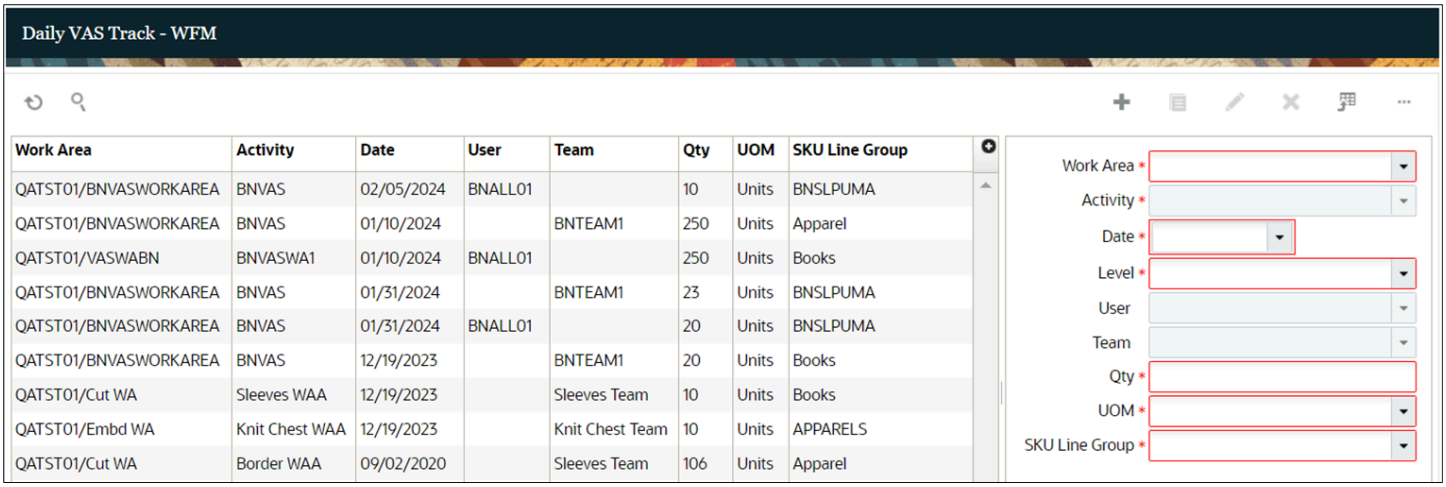
VAS activities are captured as a two-step process in WFM. The first step is to clock the user or *team* in the relevant VAS activity. This records the time taken for the activity. Refer “VAS Activities Clocking” under *WFM Browser Clock View*.

The second step is to capture the qty along with the SKU Line Group and UOM of the item handled during the clocked time period. There are multiple ways in which this information can be captured:

- Daily VAS Track View: This view can be used to enter VAS data manually through the browser.
- Daily VAS Track Input Interface: Upload VAS data from an xls or a flat file.
- Daily VAS Track REST API: Post VAS data using REST API.

Daily VAS Track View

Use the create button on this view to enter details of the VAS activity performed by the user or the team.



Daily VAS Track Input Interface

This interface can be used to upload VAS data from an xls or pipe delimited flat file as described in the section - *Input Interfaces*.

Daily VAS Track REST API

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

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 that 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

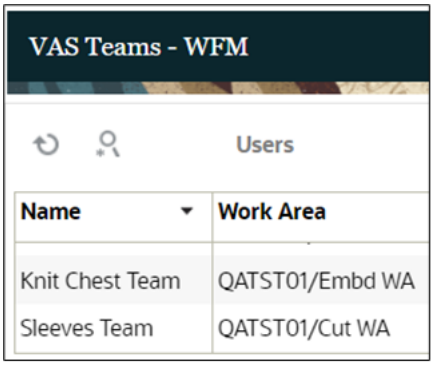
Any user created in the WMS application is applicable to WFM as well. For user creation, roles, and permissions, refer to the WMS *Online Help*.

Team

A group ofusers performing same activities are categorized under a team. Teams are created for VAS activities. A VAS activity can be performed either by a single user or a team of users.

Teams View

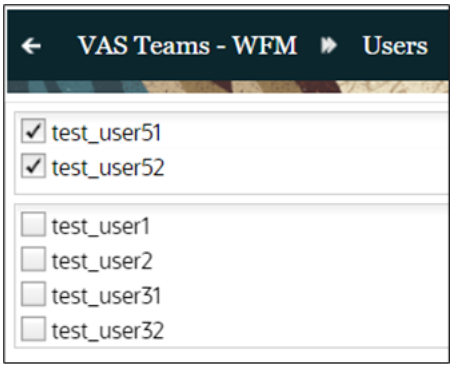
Teams are created using the Teams view and each team is assigned to a Work Area which corresponds to a VAS activity. The same team could be assigned to multiple Work Areas. Also, multiple teams could be assigned to a Work Area.



Assigning Users to a Team

To assign users to a Team, select the Team, example "Sleeves Team" and hit the Users button. This takes you to the next view with two frames that displays a list of all users configured in the application in the lower frame.

Select the users that need to be assigned to this Team. Checking the box moves the selected Team to the frame above. Hit save button.



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:

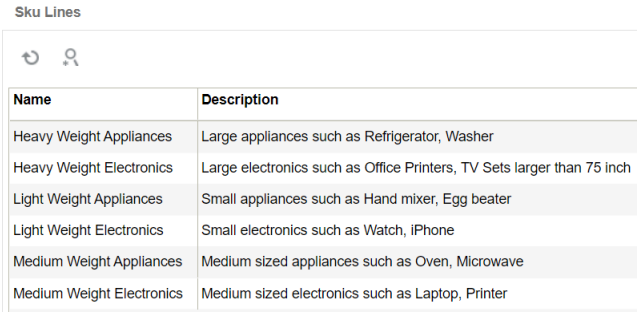
Item	SKU Line	SKU Line Group
Watch	Light Weight Electronics	Light Weight Products
iPhone		
Hand Mixer	Light Weight Appliances	
Egg Beater		
Laptop	Medium Weight Electronics	Medium Weight Products
Microwave		
Scanner		
Printer		
TV		
Stove	Medium Weight Appliances	
Oven		
Microwave		
84" Inch TV	Heavy Weight Electronics	Heavy Weight Products
Office Printer		
Refrigerator	Heavy Weight Appliances	
Washer		

Item	SKU Line	SKU Line Group
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

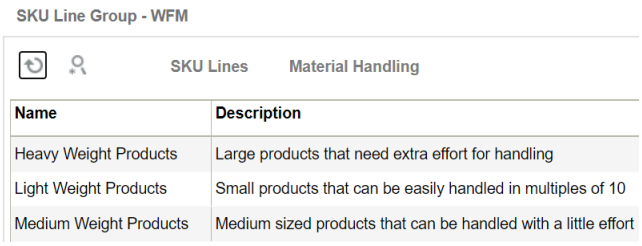
Name	Description
Heavy Weight Appliances	Large appliances such as Refrigerator, Washer
Heavy Weight Electronics	Large electronics such as Office Printers, TV Sets larger than 75 inch
Light Weight Appliances	Small appliances such as Hand mixer, Egg beater
Light Weight Electronics	Small electronics such 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

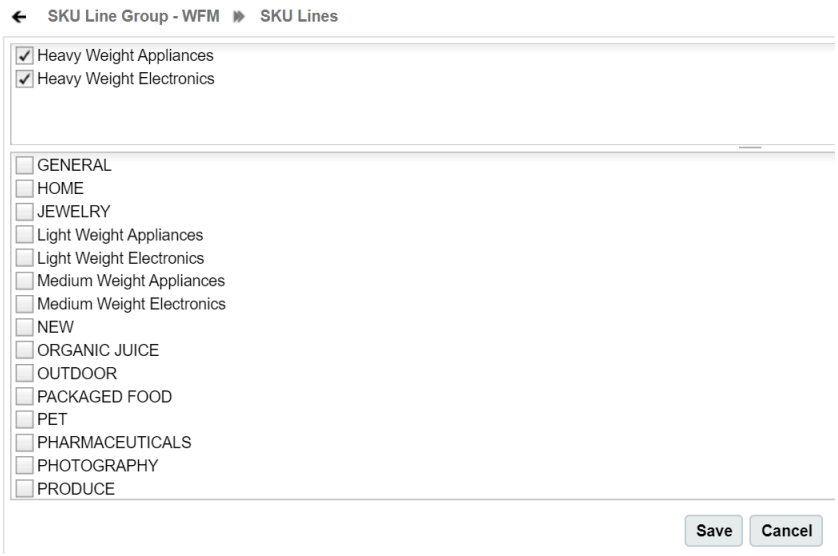
Each SKU Line is assigned to a SKU Line Group using the SKU Line Group view.


SKU Line Group - WFM

SKU Lines Material Handling

Name	Description
Heavy Weight Products	Large products that need extra effort for handling
Light Weight Products	Small products that can be easily handled in multiples of 10
Medium Weight Products	Medium sized products that can be handled with a little effort

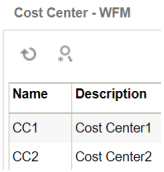
To assign SKU Lines to a SKU Line group, select the SKU Line group, example "Heavy Weight Products" and hit the SKU Line button. This takes you to the next view with two frames that displays a list of all SKU Lines configured in WFM in the lower frame.



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**.

Cost Center

A single cost center or multiple cost centers can be created in a facility using the Cost Center view. As of Release 25C, this configuration is optional. If you do not have multiple business units or cost centers within your warehouse operations, this config can be skipped.



Name	Description
CC1	Cost Center1
CC2	Cost Center2

Work Group

A single work group or multiple work groups can be created within a cost center using the Work Group view. As of Release 25C, this configuration is optional. If you do not have the concept of work groups in your warehouse operations, this config can be skipped. However, if you need to configure Cost Center (To categorize your operations based on business units), you must configure Work Group as well and use the Work Groups in your Work Area configurations, else the configured Cost Centers will be ignoredby WFM.

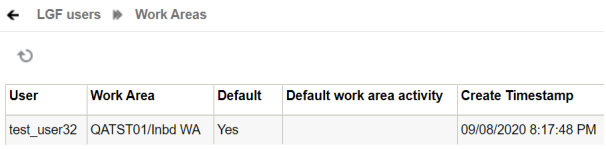
Name	Description	Cost Centre
Manual GRP	Manual Group	CC2
VAS GRP	VAS Group	CC2
WMS GRP	WMS Group	CC1

Work Area

A single work area or multiple work areas can be created within a work group using the Work Area view. A supervisor could also be assigned to each Work Area. If you do not have the concept of Work Groups, you can create Work Areas without Work Groups.

Every user that performs activities on the warehouse floor needs to be assigned to a Work Area. A user can be assigned to multiple Work Areas. Personnel that clock other users using WFM RF option should be assigned to at least one Work Area that is marked as a default. The Work Area button on Users view is used to assign a user to Work Areas.

To mark the Work Area as a default for the user, enable the Default checkbox in the create pane.



Process and Process Type

These entities are deprecated as of Release 24B and are not required to be configured.

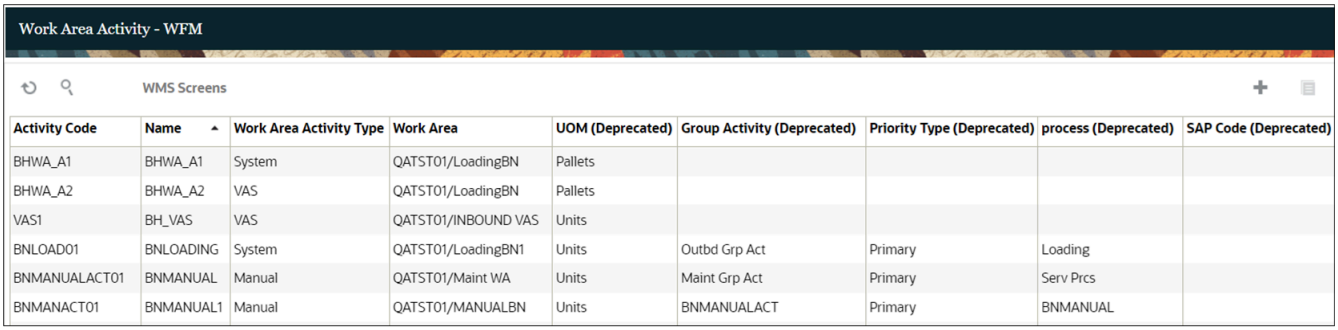
Group Activity

This entity is deprecated as of Release 24B and is not required to be configured.

Work Area Activities

The three different activities that userscould perform in a Work Area are System Activities, VAS Activities and Manual Activities. These are configured in WFM using the Work Area Activity view.

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



Activity Code	Name	Work Area Activity Type	Work Area	UOM (Deprecated)	Group Activity (Deprecated)	Priority Type (Deprecated)	process (Deprecated)	SAP Code (Deprecated)
BHWA_A1	BHWA_A1	System	QATST01/LoadingBN	Pallets				
BHWA_A2	BHWA_A2	VAS	QATST01/LoadingBN	Pallets				
VAS1	BH_VAS	VAS	QATST01/INBOUND VAS	Units				
BNLOAD01	BNLOADING	System	QATST01/LoadingBN1	Units	Outbd Grp Act	Primary	Loading	
BNMANUALACT01	BNMANUAL	Manual	QATST01/Maint WA	Units	Maint Grp Act	Primary	Serv Prcs	
BNMANACT01	BNMANUAL1	Manual	QATST01/MANUALBN	Units	BNMANUALACT	Primary	BNMANUAL	

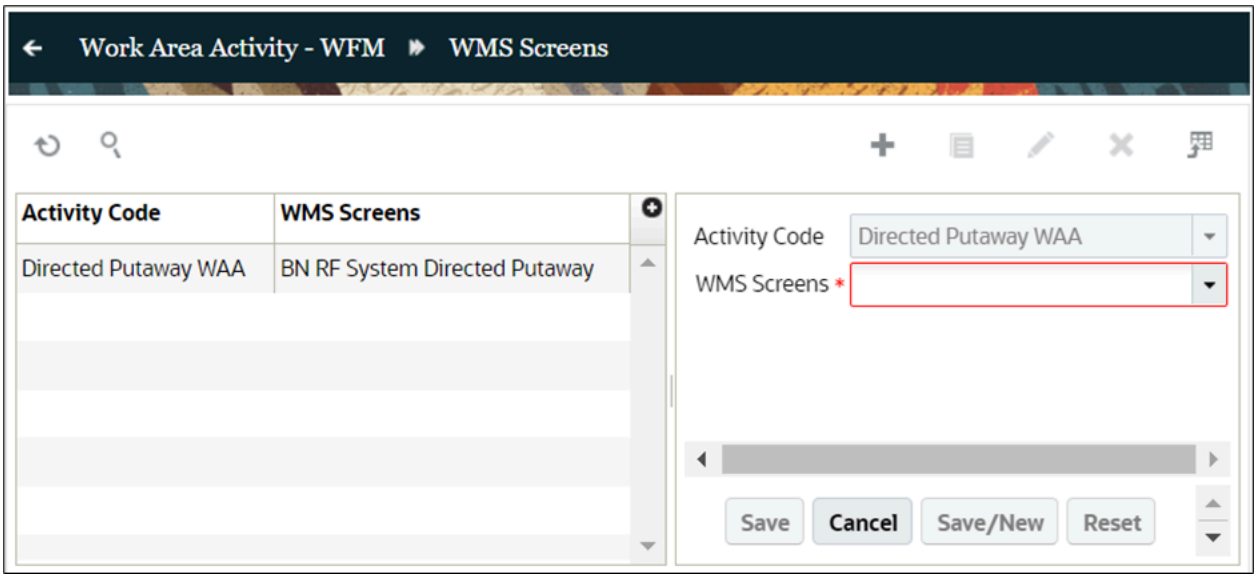
As of Release 24B, UOM, Group Activity, Priority Type, Process and SAP Code fields have been deprecated from this view and are not required to be configured.

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 System Work Area Activity with one or more WMS Screens. This button will be enabled only if a single activity of Type “System” is selected. Clicking on this action button brings the WMS Screens child view.

WMS Screens

Select the WMS Screens that need to be associated with the selected System activity.One WMS Screen cannot be mapped to two different System activities. However, one system activity can be associated with multiple WMS Screens. You can add multiple WMS screens to the same system 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*.

WMS Transaction

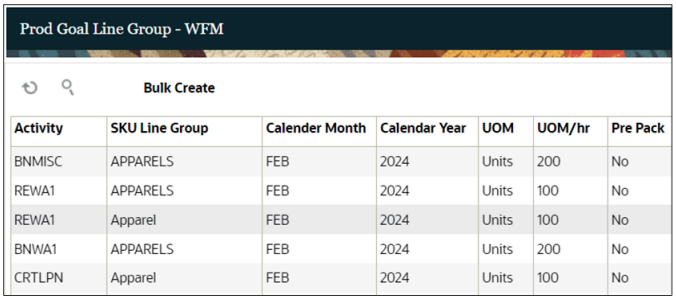
This entity is deprecated as of Release 24B and is not required to be configured. Instead use the WMS Screens child view to associate a WMS screen with a system activity as described in the previous section.

Goals

Since System and VAS Activities are productive, goals must be defined for each System and VAS Activity.

Goals for System Activities

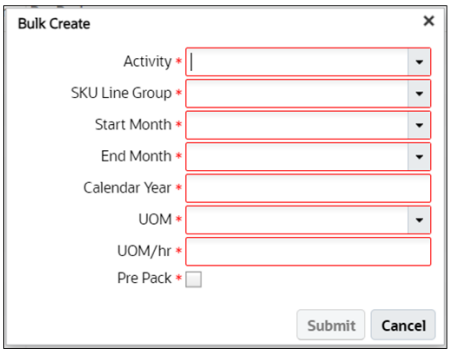
Goals for system activities are configured usingthe Prod Goal Line Group view.



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 system 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.

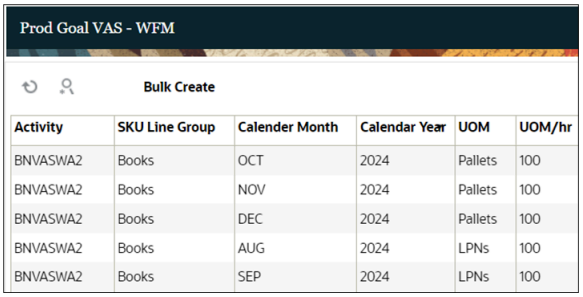
To create goals for system activities in bulk, use the “Bulk Create” action button.



Goals for system 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*.

Goals for VAS Activities

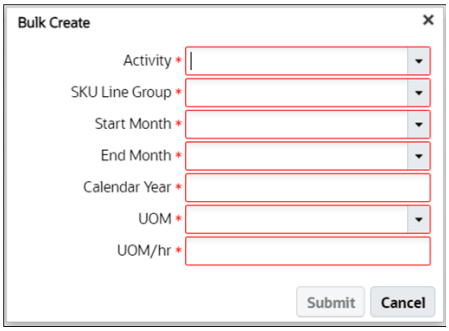
Goals for VAS activities are configured using the Prod Goal VAS view.



Activity	SKU Line Group	Calender Month	Calendar Year	UOM	UOM/hr
BNVASWA2	Books	OCT	2024	Pallets	100
BNVASWA2	Books	NOV	2024	Pallets	100
BNVASWA2	Books	DEC	2024	Pallets	100
BNVASWA2	Books	AUG	2024	LPNs	100
BNVASWA2	Books	SEP	2024	LPNs	100

Similar to system activity, every VAS 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 or month of a year.

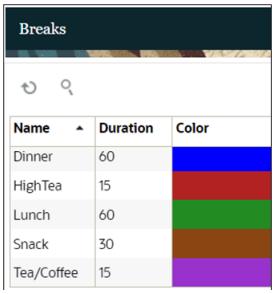
To create goals for VAS activities in bulk, use the “Bulk Create” action button.



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

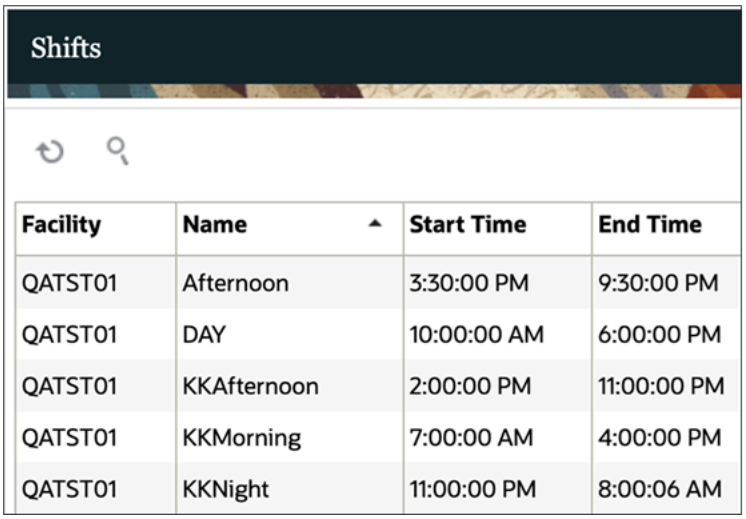
Breaks

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.



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 that day as well as use shift filters appropriately in all the productivity reports.

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:

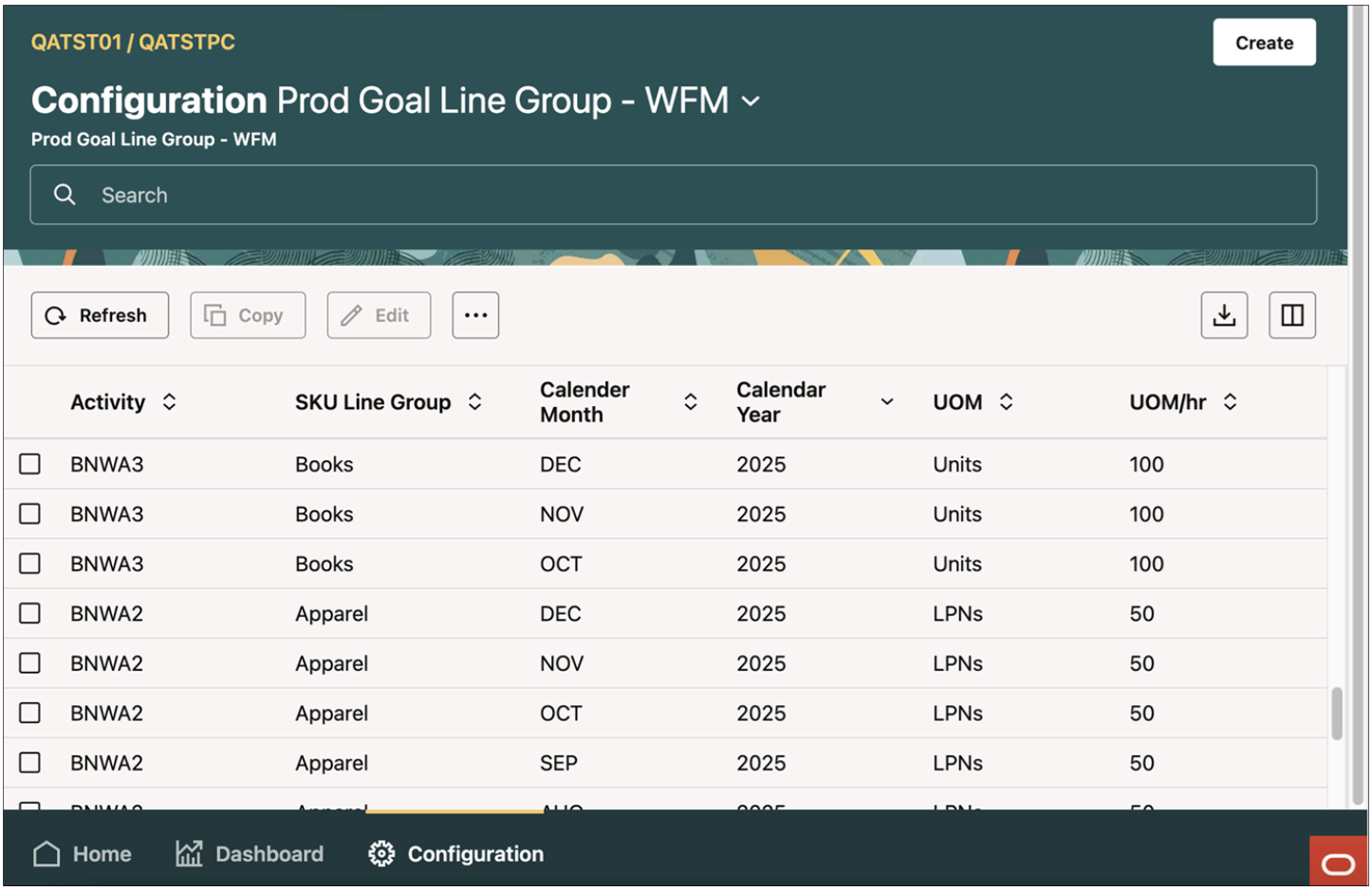
- Name = "Default_Shift"
- Start Time = 8:00 am (facility time)
- End Time = 5:00 pm (facility time)

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 select 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 select 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

Redwood

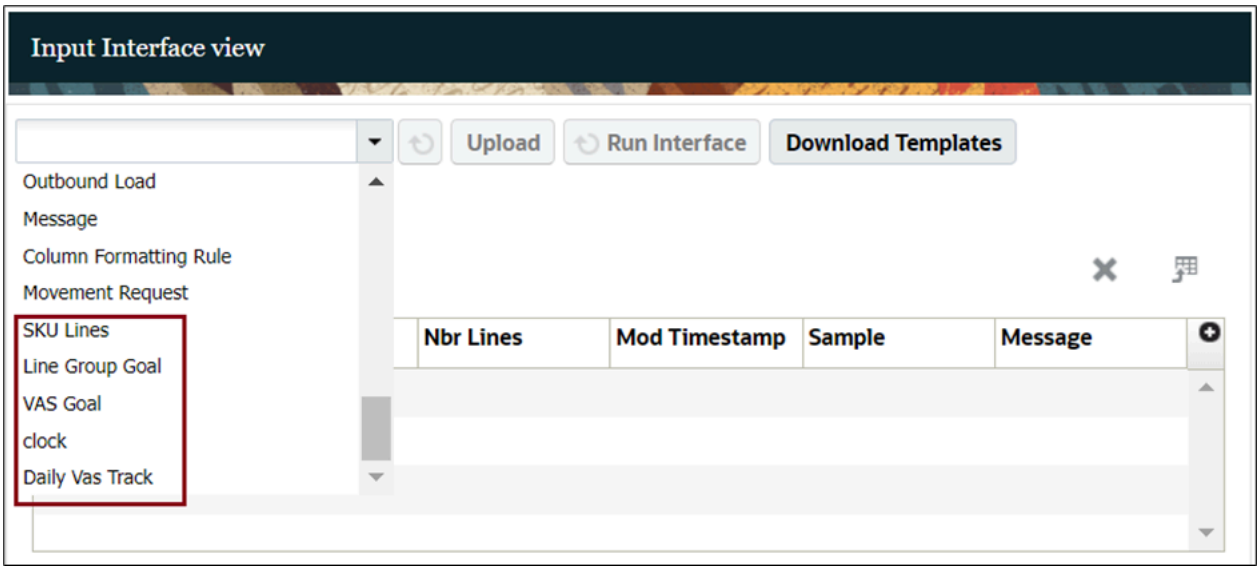
As of Release 25A, all WFM config screens described in the WFM Configuration section are also available in the Redwood Configuration tab, enabling you to view all the config screens in one central location.



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
- VAS Goal
- Clock
- Daily VAS Track
- Work Area Activity
- WAA Screen XREF
- Employee Location Track

Interface Files

The following points need to bekept 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 inputfile.
3. The fields have to appear in the same sequence as specified in the document.

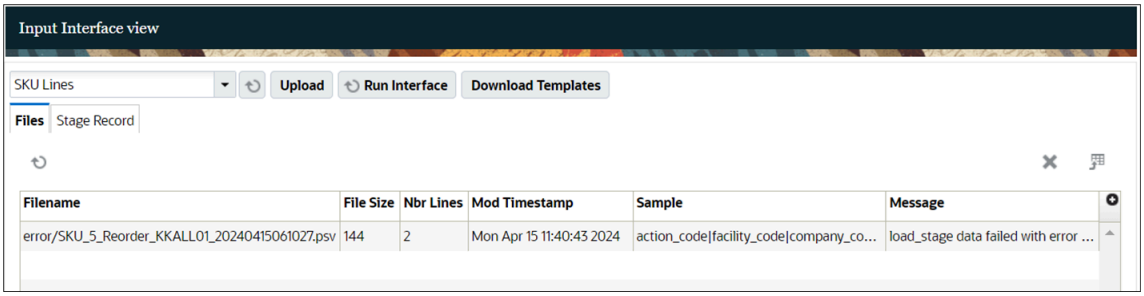
WFM supports xls and psv formats. For more details about the fields and data types in each interface, refer to the WFM Interface File Formatsdocument. The “Download Templates” action button on the Input Interface view can be used to get sample files in both formats for all WFM entities. Column headers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

Uploading Files

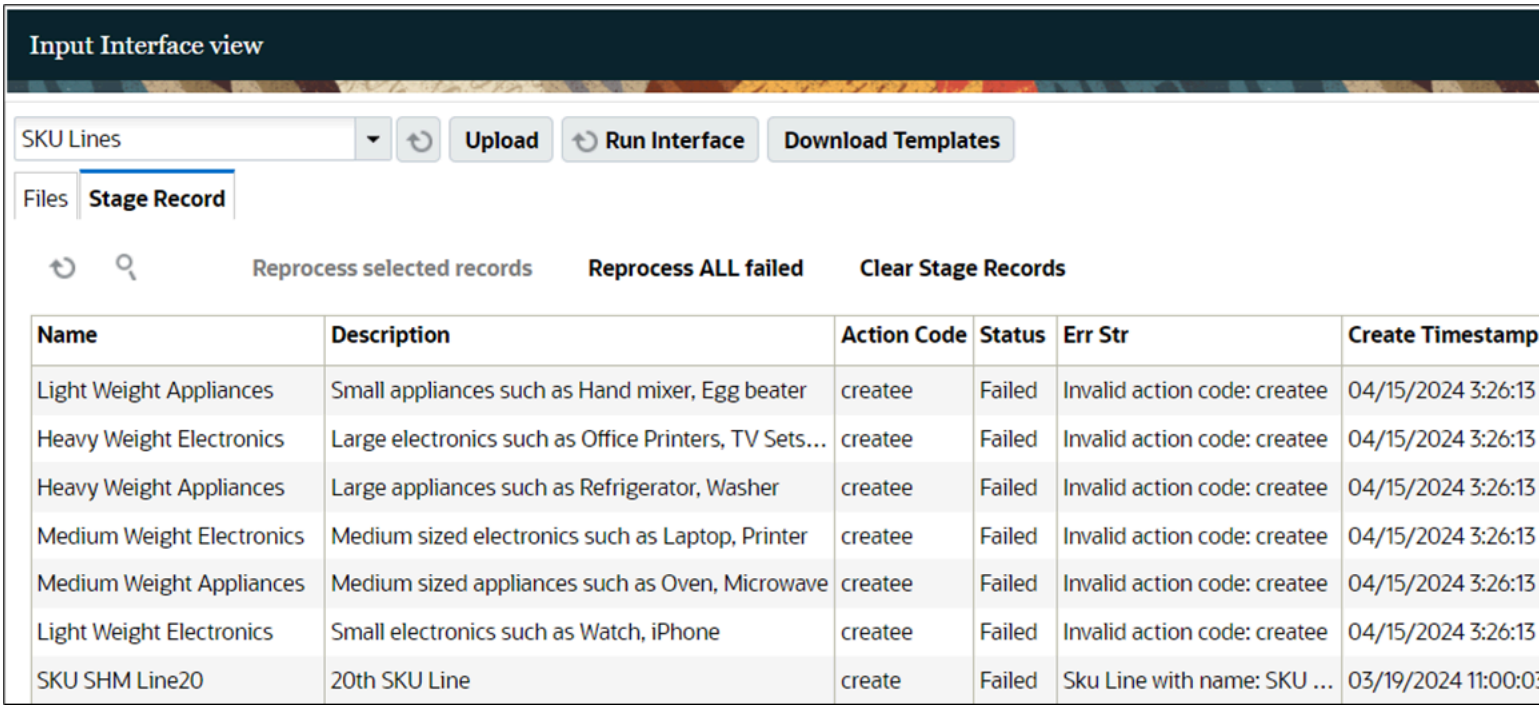
In order to upload a file, say sku_line file, select “SKU Lines” from the dropdown in the Input Interfaces view. Next, hit the “Upload Files” button. This will bring up a pop-up window. Hit on “Choose Files”, select the file from your file explorer and then hit the “Upload” button. Your selected file 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”. In order 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
VAS Goal	Prod Goal VAS
Clock	Track Records
Daily VAS Track	Daily VAS Track

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

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.

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

Process Stage Track Record

This job type is used to schedule the process that picks upclock records from Stage Record tab of Clock Input Interface, validate and move data to Track Record.

> **Note:** If the "User" 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.

Stage Process

This process moves clock data from Stage Record tab of Input Interface to Track Record.

Apart from performing basic field validations, this process also validates if the clock in or the clock out requests for a user are recorded in the correct order as described in the *Clock In and Out* section of this guide. For example, If the CICO Timestamp of a F2 (Break clock-in) is earlier than F1 (Facility clock-in) record for a user, the record is marked as failed.

Since facility clock-in is the first clock-in of the user for the day, if the CICO Type is F1 (facility clock-in), the *shift* is determined based on the CICO Timestamp of F1 record of the user. All other clock-in records for this user inherit shift from the F1 record.

Run WMS WFM Interface

This job type is used to schedule the process that picks up system activities from WMS and move data to WMS Activity Track in WFM. As a second step, the process moves data from WMS Activity Track to Daily Activity Track in WFM. Prior

to Release 25B, this job accepted two parameters, “Username” and “Number of Days”. As of Release 25B, the “Number of Days” parameter has been renamed to “Number of Days – Reprocess Error Records”, and a third parameter called “Number of Days – Process New Records” has been introduced.

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 – Reprocess Error Records” continues to function like “Number of Days” parameter which only accepts values between 0 and 60. If no value is provided, it is defaulted to 7

The “Number of Days – Process New Records” parameter only 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.

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 Stage Track Record

This job type is used to schedule the process that purges old data from Stage Record tab of Clock Input Interface. The job accepts a single job parameter "nbr_of_days".

Purge Process

This process purges clock data from Stage Record that are older than a specified number of days and are either in PROCESSED, FAILED, IGNORED or CANCELLED status. The "nbr_of_days" parameter is used to determine how many days' worth data needs to be retained in Stage Record.

For example, if the nbr_of_days parameter is set to 45 on the job, all records older than 45 days from current day will be purged (as long as they are in one of status mentioned above).

If the nbr_of_days parameter is not provided, the value is defaulted to 30.

> **Note:** The date comparison is made with the mod_ts field which is not visible in Stage Record tab of Clock Input Interface.

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. If the last track record of a user is not a facility clock-out the user is considered to have open track records.

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 clock-in	The user is first clocked out of work area and then from the facility
If the last track record is work area clock-out	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 out of work area and then from the facility
If the last track record is work area activity clock-out	The user is first clocked out of work area and then from the facility
If the last track record is break clock-in	The user is first clocked out of break. If the user is found to have an open track record for work area, then user is first clocked out of work area and then from the facility. (Note that a user can clock in and out of a break while clocked into a work area)
If the last track record is break clock-out	If the user is found to have an open track record for work area, then user is first clocked out of work area and then from the facility. (Note that a user can clock in and out of a break while clocked into a work area)

Note:

- For all clock outs, user's last activity time is used. This could be from track record, WMS activity or user's RF/UI login or logout time, whichever is latest.
- The username on the scheduled job is used as the clocker in the track records.
- Only clock records of the current facility are processed by this job.

Examples

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

- Last Track Record (BRK-CO): Sep 2, 7:00 am
- Job run time: Sep 3, 7:05 am
- There is a WA-CI before BRK-CO for the user
- Action: User isclocked out of WA and then from FAC
  - WA-CO: Sep 2, 7:00 am; FAC-CO: Sep 2, 7:00 am

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

- Last Track Record (WAA-CI): Sep 2, 7:00 am
- User Logs into UI: Sep 3, 6:00 am
- Job run time: Sep 3, 7:05 am
- Action: User is clocked out of WAA, then from WA and then from FAC
  - WAA-CO: Sep 3, 6:00 am; WA-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 track record not FAC-CO and greater than 2 hours; No activity in between

- Last Track 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 track record not FAC-CO and greater than 2 hours; Activity in between

- Last Track Record (WA-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
  - WA-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 System (WMS) Activities
- Goals for VAS Activities
- Clock In/Out
- VAS Activity Data
- Work Area Activity
- WAA Screen XREF
- Employee Location Track

WFM also supports GET APIs for various entities. Refer WFM REST API Guide for details of the POST and GET APIs supported by WFM.

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 Standard Reports

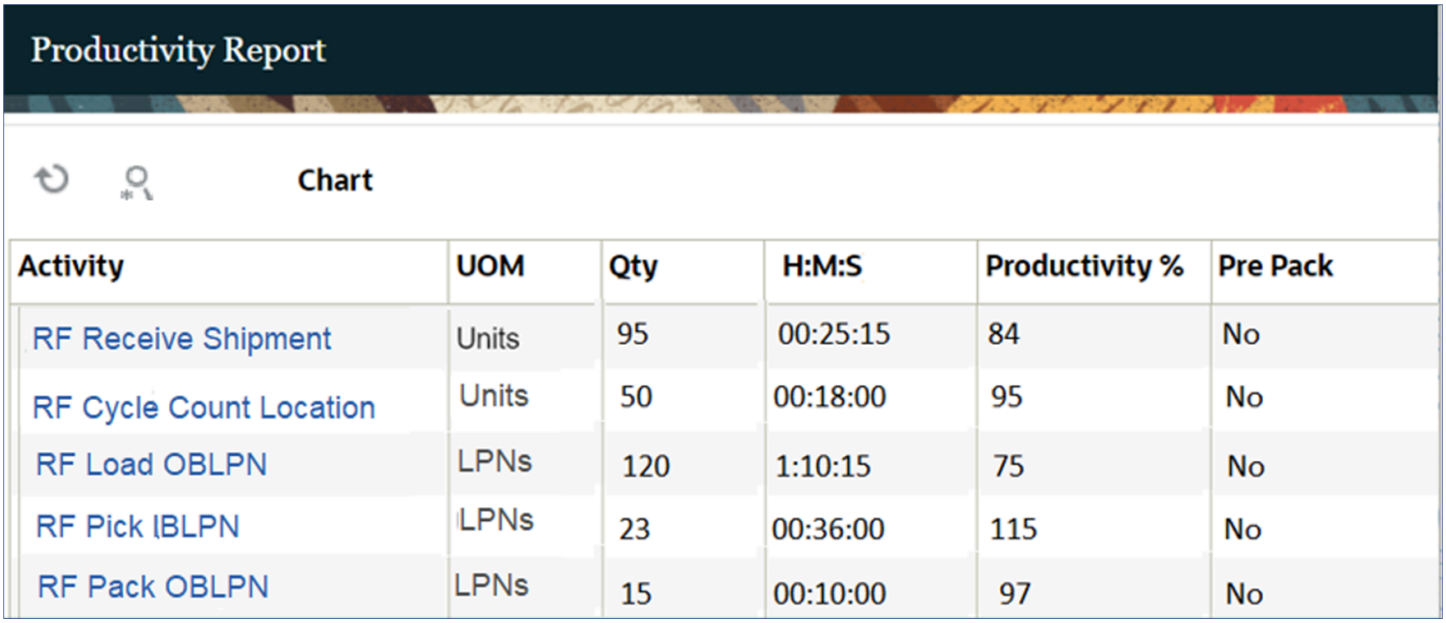
Standard Reports

This section describes the standard reports offered by WFM. Apart from these reports, you can choose to create your own custom reports using the WFM categories exposed in Web Reports. For more information about Web Reports, refer (Web Reports) Business Intelligence Cloud User Guide (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 **(Web Reports) Business Intelligence Cloud User Guide**).

For all the WFM categories exposed in Web Reports, refer Web Report Gen2 Categories (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 **Web Report Gen2 Categories)**.

Productivity Report

This report shows the total productivity of users during the requested time period grouped by different activities. Only system and VAS activities are displayed in this report.This report can consolidate and pull data for a maximum of 6 months.



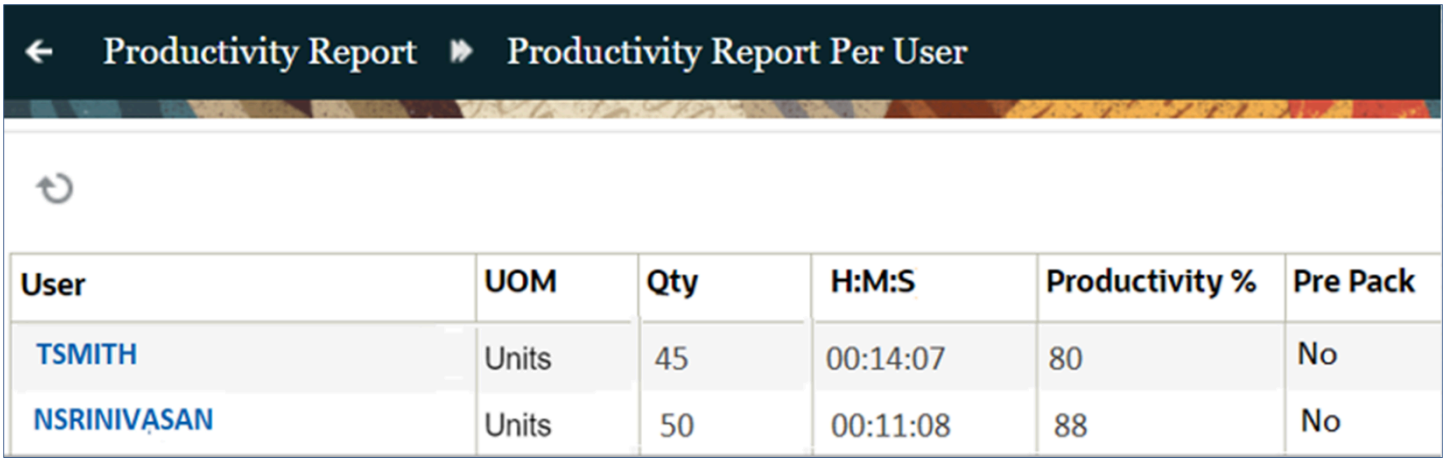
Productivity Report

Chart

Activity	UOM	Qty	H:M:S	Productivity %	Pre Pack
RF Receive Shipment	Units	95	00:25:15	84	No
RF Cycle Count Location	Units	50	00:18:00	95	No
RF Load OBLPN	LPNs	120	1:10:15	75	No
RF Pick lBLPN	LPNs	23	00:36:00	115	No
RF Pack OBLPN	LPNs	15	00:10:00	97	No

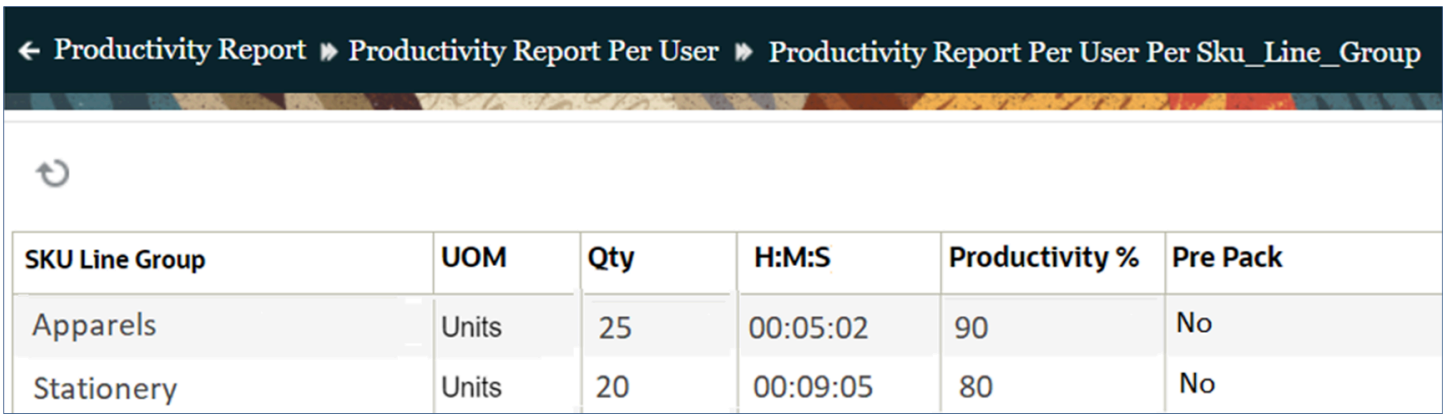
Each activity can be further drilled down to the list of users that performed the activity.

For example, in the screen above, if the hyperlink “RF Receive Shipment” is clicked, it shows that two users performed this activity. The productivity of each user is displayed in this view.



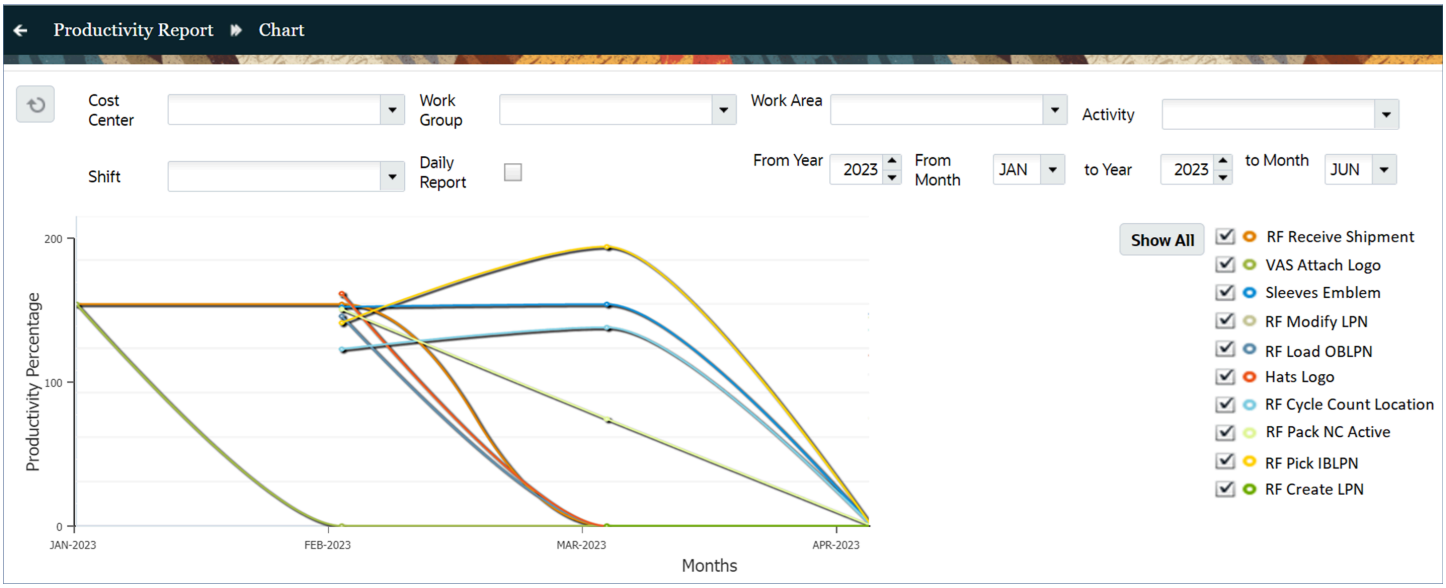
User	UOM	Qty	H:M:S	Productivity %	Pre Pack
TSMITH	Units	45	00:14:07	80	No
NSRINIVASAN	Units	50	00:11:08	88	No

Clicking on the hyperlink of user shows all the the SKU Line Groups (item categories) that was handled by the user during this activity. The productivity in this view is displayed per SKU Line Group. For example, on clicking User “TSMITH”, it shows that Apparels and Stationery were handled by this user during this activity.



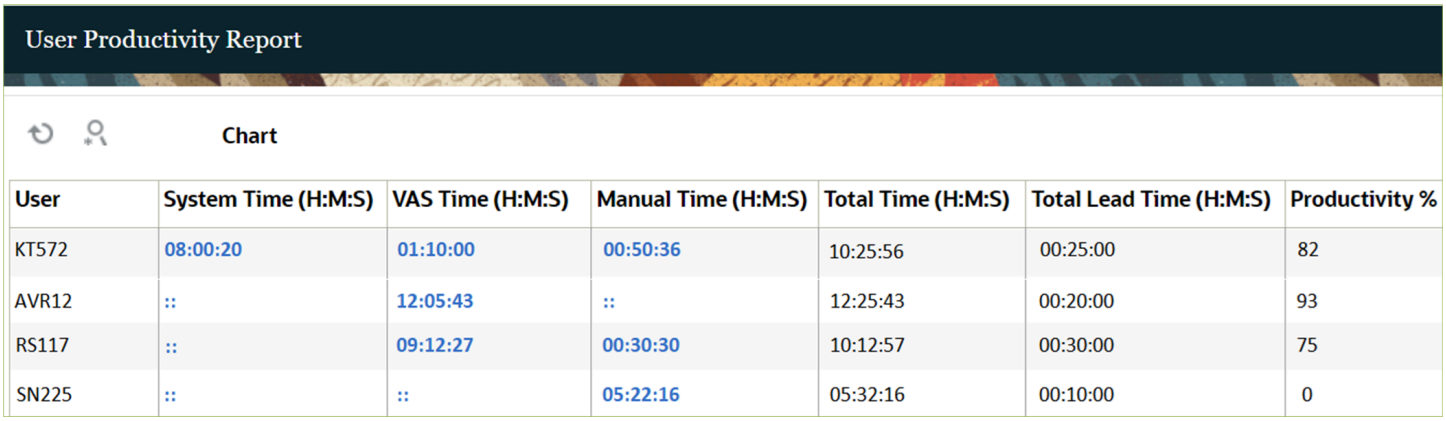
SKU Line Group	UOM	Qty	H:M:S	Productivity %	Pre Pack
Apparels	Units	25	00:05:02	90	No
Stationery	Units	20	00:09:05	80	No

The “Chart” action button on the main view can be used to provide a visual representation in the form of a chart.


Productivity Report
Chart
Cost Center
Work Group
Work Area
Activity
Shift
Daily Report
From Year
2023
From Month
JAN
to Year
2023
to Month
JUN
Show All
RF Receive Shipment
VAS Attach Logo
Sleeves Emblem
RF Modify LPN
RF Load OBLPN
Hats Logo
RF Cycle Count Location
RF Pack NC Active
RF Pick IBLPN
RF Create LPN
Productivity Percentage
200
100
0
JAN-2023
FEB-2023
MAR-2023
APR-2023
Months

User Productivity Report

This report shows the total time spent by users on System (WMS), VAS and Manual activities during the requested time period. This report can consolidate and pull data for a maximum of 6 months. “Total Time” indicates the total time the user spent on WMS, VAS and System activities during the requested time period. “Total Lead Time” indicates the time the user appears to have been in the warehouse but was neither working on any activity nor was in a break.


User Productivity Report

Chart

User	System Time (H:M:S)	VAS Time (H:M:S)	Manual Time (H:M:S)	Total Time (H:M:S)	Total Lead Time (H:M:S)	Productivity %
KT572	08:00:20	01:10:00	00:50:36	10:25:56	00:25:00	82
AVR12	::	12:05:43	::	12:25:43	00:20:00	93
RS117	::	09:12:27	00:30:30	10:12:57	00:30:00	75
SN225	::	::	05:22:16	05:32:16	00:10:00	0

Total Lead Time Calculation

Total Lead Time is calculated as shown below

Total Facility Time - (Total Time + Total Break Time)

where

Total Facility Time = CO-Facility minus CI-Facility

Total Break Time = CO-Break minus CI-Break

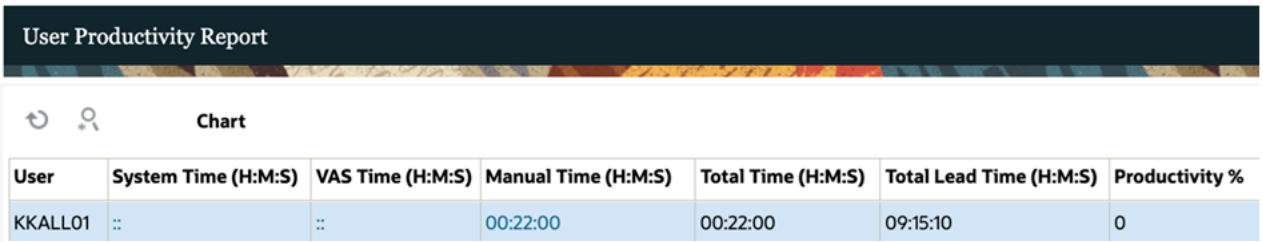
Total Time = Total WMS Time + Total VAS time + Total Manual Time

Example with Sample Data

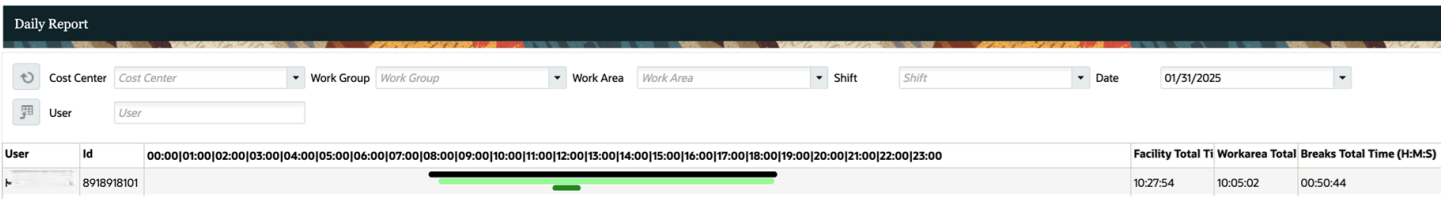
Track Record Data:

User	Clocker	In/Out	Action	Shift	Work Area	Activity	Break	Date							
KKALL01	KKALL01	OUT	0	KRNIGHT				1/31/25 6:55:06 PM		Factity Time (FAC-CO Minus FAC-CI)					
KKALL01	KKALL01	OUT	1	KRNIGHT	QATST01/GWA			1/31/25 6:50:02 PM		10:27:54					
KKALL01	KKALL01	OUT	2	KRNIGHT	QATST01/GWA	Generic WAA3		1/31/25 6:45:00 PM							
KKALL01	KKALL01	IN	2	KRNIGHT	QATST01/GWA	Generic WAA3		1/31/25 6:23:00 PM		Activity Time (WAA-CO Minus WAA-CI)					
KKALL01	KKALL01	OUT	3	KRNIGHT			Lunch	1/31/25 1:01:07 PM		0:22:00					
KKALL01	KKALL01	IN	3	KRNIGHT			Lunch	1/31/25 12:10:23 PM							
KKALL01	KKALL01	IN	1	KRNIGHT	QATST01/GWA			1/31/25 8:45:00 AM		WA Time (WA-CO Minus WA-CI)					
KKALL01	KKALL01	IN	0	KRNIGHT				1/31/25 8:27:12 AM		10:05:02					
										Break Time (BRK CO - BRK-CI)		Total Lead Time (FAC Time - Act Time - Brk Time)			
										0:50:44		9:15:10			

Total Time and Total Lead Time in User Productivity Report:

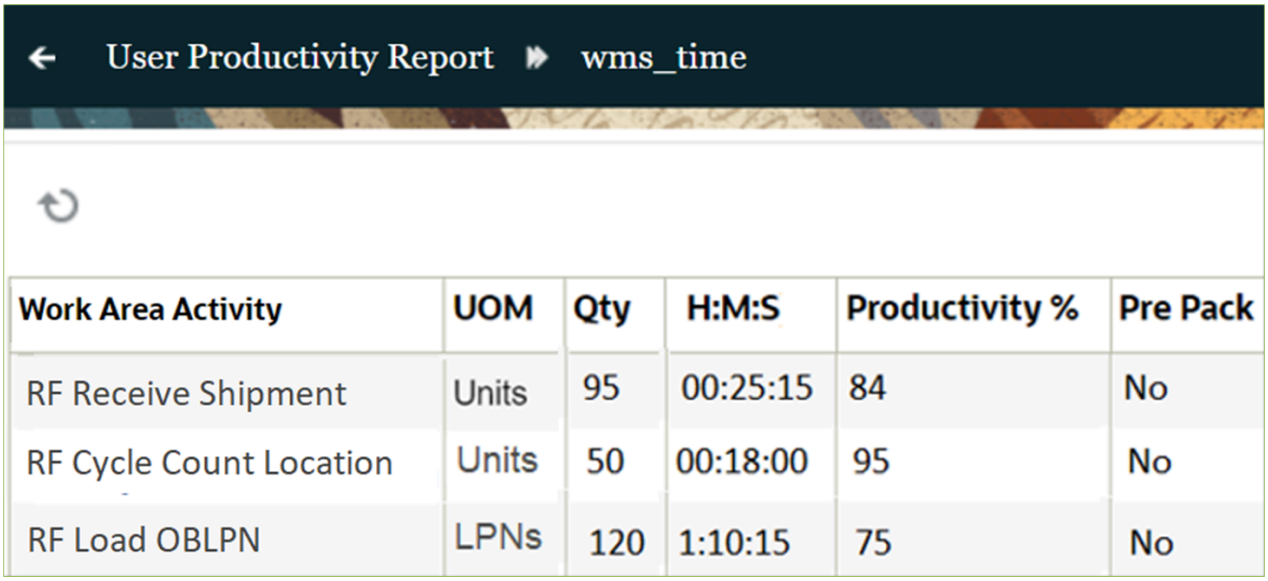


Total Facility Time and Total Break Time in Daily Report:



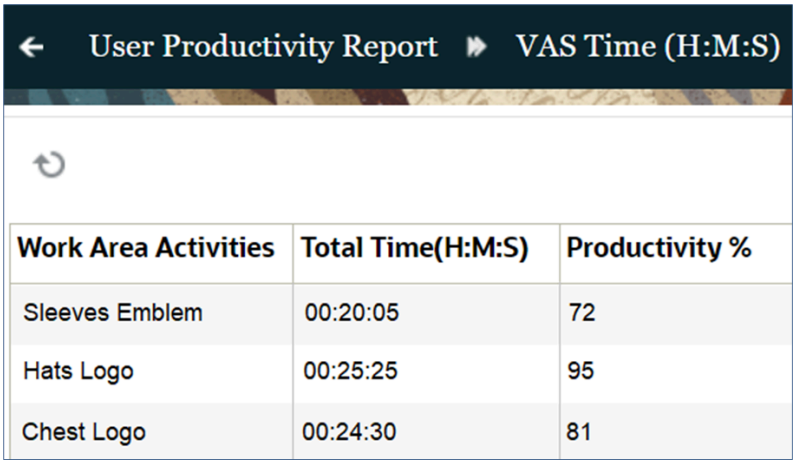
Total time taken by a user on each type of activity can be further drilled down to list all the activities performed by the user.

For example, in the screen above, if the hyperlink for “System Time” is clicked for user KT572, it shows all the WMS activities performed by this user in the requested time period.



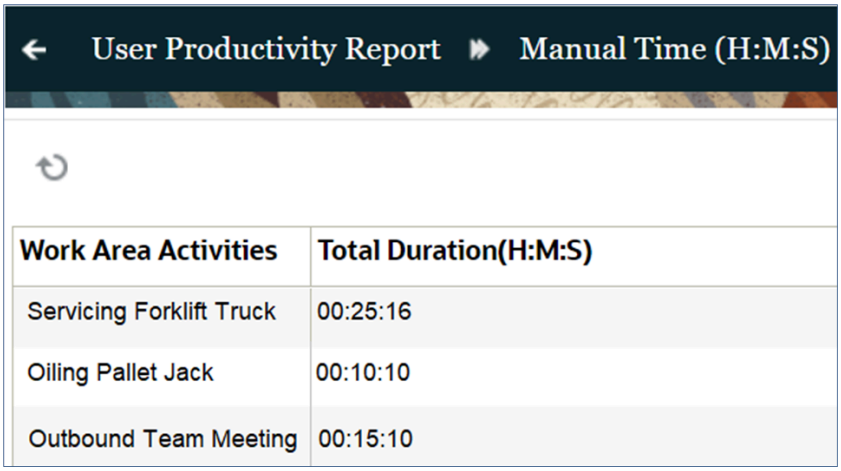
Work Area Activity	UOM	Qty	H:M:S	Productivity %	Pre Pack
RF Receive Shipment	Units	95	00:25:15	84	No
RF Cycle Count Location	Units	50	00:18:00	95	No
RF Load OBLPN	LPNs	120	1:10:15	75	No

If the hyperlink for “VAS Time” is clicked for user KT572 on the main view, it shows all the VAS activities performed by this user in the requested time period.



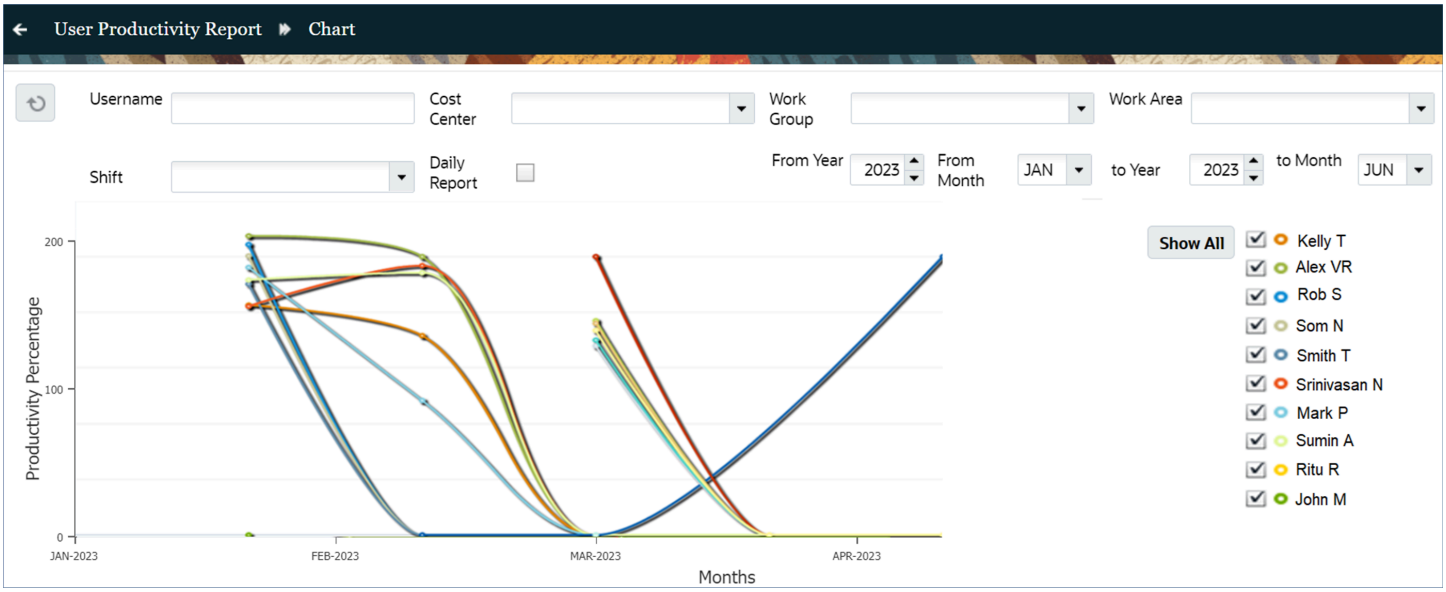
Work Area Activities	Total Time(H:M:S)	Productivity %
Sleeves Emblem	00:20:05	72
Hats Logo	00:25:25	95
Chest Logo	00:24:30	81

If the hyperlink for “Manual Time” is clicked for user KT572 on the main view, it shows all the Manual activities performed by this user in the requested time period. Note that, since manual activities are not productive, there is no productivity % in this view.



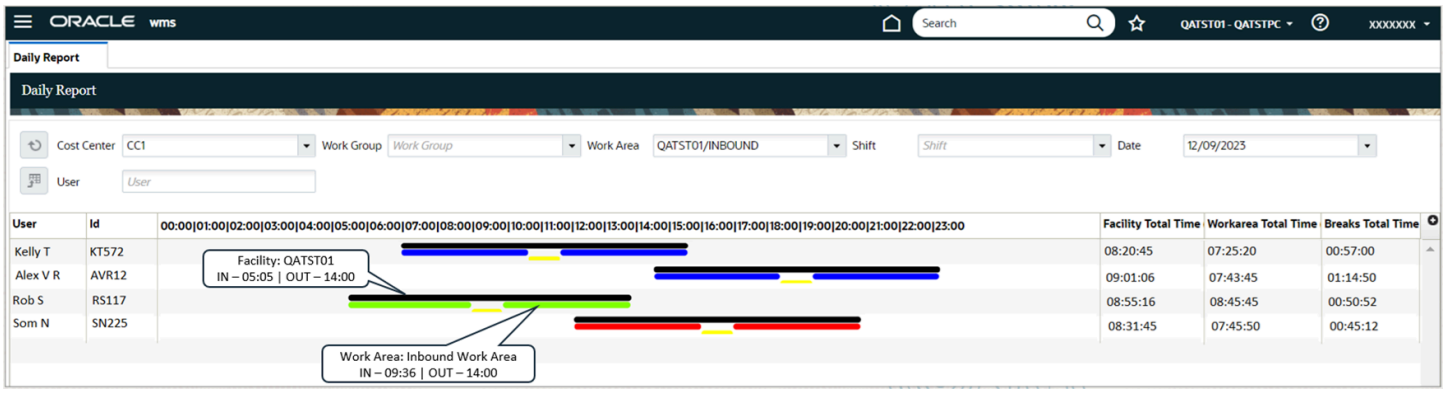
Work Area Activities	Total Duration(H:M:S)
Servicing Forklift Truck	00:25:16
Oiling Pallet Jack	00:10:10
Outbound Team Meeting	00:15:10

The “Chart” action button on the main view can be used to provide a visual representation in the form of a chart.


User Productivity Report
Chart
Username
Cost Center
Work Group
Work Area
Shift
Daily Report
From Year
2023
From Month
JAN
to Year
2023
to Month
JUN
Productivity Percentage
200
100
0
JAN-2023
FEB-2023
MAR-2023
APR-2023
Months
Show All
Kelly T
Alex VR
Rob S
Som N
Smith T
Srinivasan N
Mark P
Sumin A
Ritu R
John M

Daily Report

This report provides a view of user clock information on a requested date.



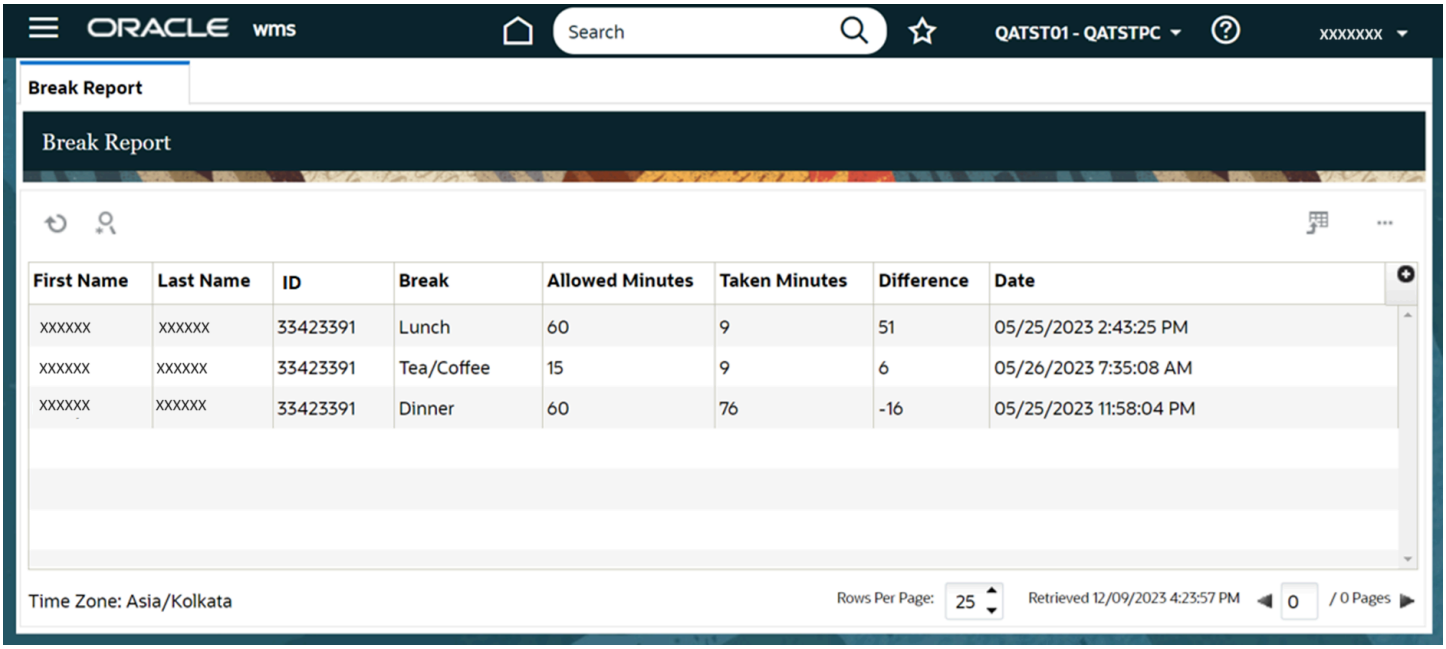
The report displays three bars for each user, the topmost indicating the time spent in facility, the middle bar representing time spent in work areas and the bottom bar representing time spent on breaks.

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 a bar displays the exact clock-in and clock-out time as shown in the picture above.

Break Report

This report shows the time spent by users on different breaks on requested dates. The report also shows if a user has spent more time than allowed for that particular break, which is indicated as a negative value in the “Difference” column.


ORACLE wms
Search
QATST01 - QATSTPC
xxxxxxx
Break Report
Break Report
First Name
Last Name
ID
Break
Allowed Minutes
Taken Minutes
Difference
Date
xxxxxx xxxxxx 33423391 Lunch 60 9 51 05/25/2023 2:43:25 PM
xxxxxx xxxxxx 33423391 Tea/Coffee 15 9 6 05/26/2023 7:35:08 AM
xxxxxx xxxxxx 33423391 Dinner 60 76 -16 05/25/2023 11:58:04 PM
Time Zone: Asia/Kolkata
Rows Per Page: 25
Retrieved 12/09/2023 4:23:57 PM
0
/ 0 Pages

9 Configuration Migration Tool

Configuration Migration Tool

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

) action button:

- Breaks
- Cost Center
- Work Group
- Work Area
- Teams
- SKU Line Groups
- Work Area Activity along with WMS Screens mapped to system activities (**Note**: In order for system activities to be imported successfully in the destination environment, the relevant WMS screens should exist in the screens view prior to importing Work Area Activity data)
- Prod Goal Line Group
- Prod Goal VAS

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 actually 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 on the "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.

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)
STAGE_TRACK_RECORD	MAX_TRIES_FOR_STAGE_TRACK_RECORD	Number
FACILITY_PARM	CICO_MANDATORY	Boolean (Y or N)
FACILITY_PARM	AUTO_CICO	Boolean (Y or N)
FACILITY_PARM	CICO_INACTIVITY_TOLERANCE_MINS	Number

11 Redwood Employee Dashboard

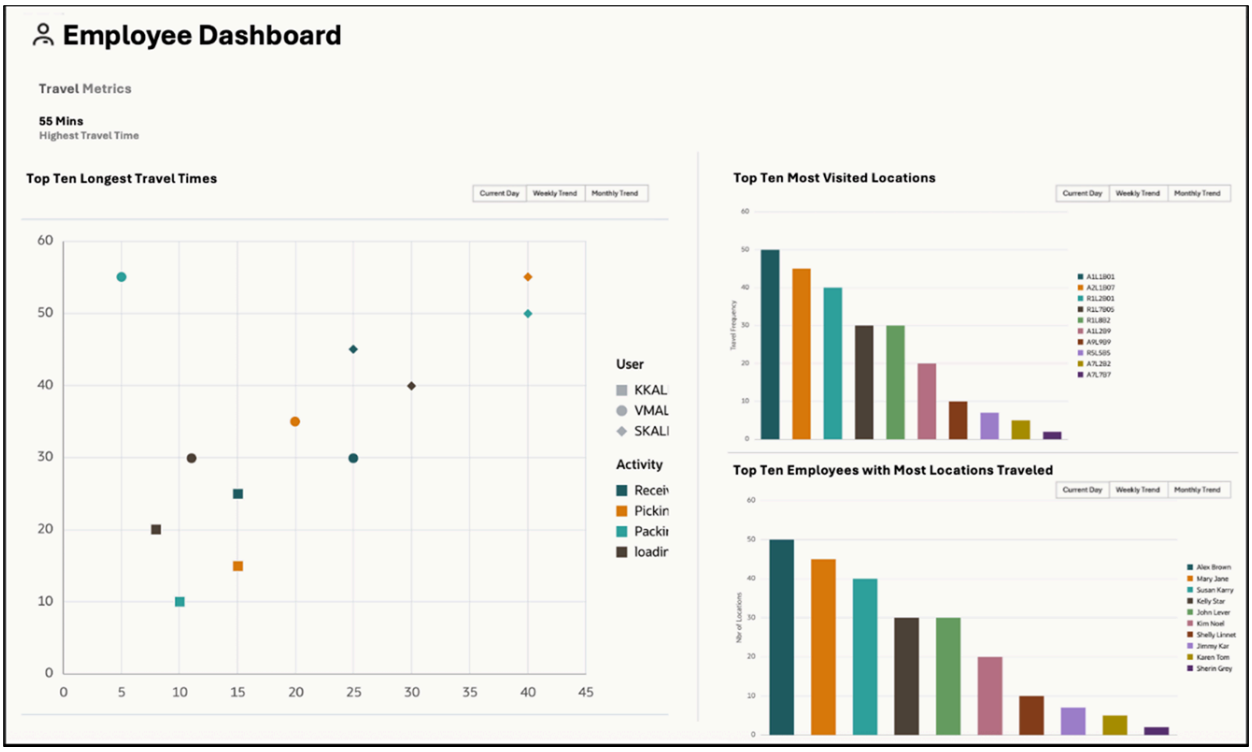
Redwood Employee Dashboard

You can access the Redwood Employee Dashboard by using the following steps:

1. From the WMS Desktop UI, navigate to the user dropdown on the top right corner and select ***Try the new Redwood Experience***
2. On the Redwood page that opens, click the ***Home with Ask Oracle*** button in the bottom right corner.
3. Choose the *Workforce Management* category from the product map and click on Dashboard. If you do not see the dashboard, select one of the WFM screens and you should be able to see the dashboard at the bottom left corner

Employee Travel Metrics

The Travel metrics tab on redwood employee dashboard provides deeper insights into employee travel behavior within the warehouse. This tab show cases three charts with time-based trend analysis to help you in making more informed operational decisions. A toggle button on each chart helps compare trends by current day, past week, or month.



Scatter Chart – Top Ten Longest Travel Times

The scatter chart highlights the top 10 longest employee travel times. This visual allows you to quickly identify travel-intensive activities and can assist in correlatinglong travel timeswith number of locations traveled during a WMS activity.

You can hover over any datapoint to view details such as the name of the employee, activityperformed, travel time, the corresponding date and the number of visited locations.

Bar Chart – Top Ten Most Visited Locations

The bar chart in the top right panel displays the most visited locations while performing WMS activities. This chart helps identify high-traffic zones within the facility. You can hover over the bars for additional information such as the location, travel frequency and the corresponding dates.

Bar Chart – Top Ten Employees with Most Locations Traveled

To monitor employee travel activity further, a second bar chart in the bottom right panel showcases the top 10 employees who have visited the most number of locations. This enables quick identification of highly mobile employees and supports workforce planning. Like the other charts, you can hover over the bars for additional information such as the number of locations and the corresponding dates.