Oracle Fusion Cloud Human Resources

Administering Fast Formulas

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Get Help

There are a number of ways to learn more about your product and interact with Oracle and other users.

Get Help in the Applications

Some application pages have help icons to give you access to contextual help. If you don't see any help icons on your page, click your user image or name in the global header and select Show Help Icons. If the page has contextual help, help icons will appear.

Get Support

You can get support at *My Oracle Support*. For accessible support, visit *Oracle Accessibility Learning and Support*.

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Increase your knowledge of Oracle Cloud by taking courses at *Oracle University*.

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Thanks for helping us improve our user assistance!

1 Overview

Overview of Using Formulas

Oracle Fast Formula is a simple way to write formulas using English words and basic mathematical functions. You can use information from your database in formulas without learning the database structure or a programming language.

Each formula usage summarized in this topic corresponds to one or more formula types, requiring specific formula inputs and outputs.

The formulas delivered in Oracle HCM Cloud contain English language names, but you can write formulas in other languages. You can provide formula names and descriptions in any language. Formula text isn't translated, but can handle non-English user-defined elements, input values, or balances. For example, if you define an element name in Chinese, the base element name is stored in Chinese. If you create a formula, it can have variable names or string values in other languages and character sets like Chinese.

Calculate Payrolls

You can write payroll calculations and skip rules for elements to represent earnings and deductions.

You can do these tasks using fast formulas:

- Control the repetition of a payroll flow.
- Control when elements are processed in a payroll run.
- Define a set of people for payroll processing, data entry, or reporting.
- Validate one or more element entry values. Provide a default value for an element entry value, or calculate entry values based on the user's entries in other entry values.
- Validate entries in user-defined tables.
- Proration formulas control how payroll runs prorate element entries when they encounter an event such as a mid-period change in an element entry value.
- Associate more than one payroll formula with each element to perform different processing for employee assignments with different statuses.
- Transformation formulas convert inbound data into a format that HCM Data Loader understands.
- Configure payment method preferences. For example, you can limit the number and types of payment methods.

Benefits Administration

You can use formulas to structure your benefit plans. Formulas provide a flexible alternative to the delivered business rules. Use formulas to configure:

- Date calculations, such as enrollment start and end dates, rate or coverage start and end dates, waiting periods and enrollment periods, or action item due dates
- Calculations of rate and coverage amount, minimum and maximum, or upper and lower limits
- Certification requirements

- Partial month and proration calculations
- Eligibility and participation evaluation

For example, you can write a formula to calculate benefits eligibility for those cases where the provided eligibility criterion doesn't accommodate your particular requirements.

Note: For more information, see Benefits Fast Formula Reference Guide (1456985.1) on My Oracle Support at https://support.oracle.com.

Define Configuration for Compensation

Here's what you can modify using formulas and add flexibility to existing compensation plan configuration:

- Start and end dates for compensation allocations under individual compensation plans
- Person selection, hierarchy determination, column default values, and currency selection for workforce compensation plans
- The source of items displayed in total compensation statements

Define Formulas to Create Rule Templates for Time and Labor

Use formulas with time repository rule templates to create rules. The formulas contain delivered combinations of rule parameters and output results. You can use one formula with multiple rule templates by varying the template configuration.

When creating a rule template, you select a formula name, and then configure the parameter type and display name of the parameters and variables. You don't have to redo the entire formula statement to determine what details to change to achieve a particular outcome.

Here's what you can use formulas to apply in Time and Labor:

- Logic for processing or calculating time
- Parameters that enable rules to pass values to the formula for use in calculations
- Output variables that the formula uses to return calculation results to the rules

For example, the Period Maximum Hours Template uses the WFM_PERIOD_MAXIMUM_TIME_ENTRY_RULE formula to compare reported time category hours to defined maximum hours.

2 Writing Formulas

Overview of Writing Formulas

Writing fast formulas enables you to perform a wide variety of tasks using English words and basic mathematical functions. There are several techniques that you can use to ensure your formulas are easy to read, use, and understand.

You write fast formulas to validate or calculate data for payroll and other Oracle Fusion applications.

This table lists the key aspects of writing fast formulas.

Key Aspects	Description
Using the expression editor	Use the expression editor with these formula types: • Deduction component groups • Deduction component detail groups • Payroll relationship groups • Work relationship groups Use these formula types when creating dynamic object groups. Object groups define subsets of deduction components or people for processing or reporting.
Using formula text	Most formula types use the text editor to define formulas. The text editor is more flexible than the expression editor. Here's what you can do with the text editor: • Add database items applicable to the formula type • Use functions to manipulate data • Use user-defined global values Database items are read-only variables that you can use to get application data without having knowledge of the underlying data model, and writing queries to get the data. The input values that you have passed and the output values returned depend upon the context in which you're using the formula. The names and types of these values are defined in many scenarios, so refer the appropriate product documentation.
Improving performance	Here's what you can do to improve performance: • Shorten your formulas. • Don't refer to database items until needed. • Use an **ALIAS** instead of assigning a database item to a local variable. • Use input statements instead of database items. • Leave a WHILE loop as early as possible. • Limit use of CHANGE_CONTEXT blocks. • Change as many contexts as possible in one CHANGE_CONTEXTS block instead of having CHANGE_CONTEXTS blocks inside other CHANGE_CONTEXTS blocks.

Key Aspects	Description
	• Don't use CHANGE_CONTEXTS to set contexts that you would reasonably expect to be set already, and aren't going to change. • Use the database item that would retrieve the required data. Some database items are used in reporting, and are unsuitable for use in formulas because they return a lot of inefficient data. Avoid these database items in formulas because they require more complex formulas to get the required data, and they make performance worse.
Avoiding compilation errors	Compile a modified formula before using it. Here's what you can do to avoid common compilation errors: • Look for syntax errors, such as using IF1 instead of IF. • Ensure that the statement order is correct. For example **ALIAS**, **DEFAULT**, or **INPUT** statements come after other statements. • Don't misuse **assignment** statements by assigning a value to a database item. • Don't misuse the **ALIAS** statement. It can only be used for database items. • Don't misuse **DEFAULT** statements. You must specify a **DEFAULT** statement for a variable other than an input or database item. • Look out for missing **DEFAULT** statements. Database items that have a default value specified must contain a **DEFAULT** statement.
Avoiding execution errors	Here's what you can do to avoid common execution errors: • Ensure that variables are initialized. For example, a variable initialized inside an IF block might be initialized when it's used. • Verify that your formula calculations won't end up dividing a number by zero. • Ensure that the formula compiler can find the data. • Ensure that the value that your formula generates doesn't exceed the permissible range.

Improve Formula Performance

Use various approaches to ensure that your formulas are easy to read, use, understand, and processed efficiently.

Variable Names and Aliases

Use concise and meaningful variable names. If the names of database items are long, you can use aliases. The length of database item name doesn't impact the performance or memory usage of a formula.

Inputs Statements

> **Tip:** The best approach is to use **INPUTS** statements rather than database items whenever possible. You don't have to access the database for input variables, which in turn speeds up your payroll run.

Here's an example of a formula without the **INPUTS** statement:

```
SALARY = SALARY_ANNUAL_SALARY / 12
```

```
RETURN SALARY
```

Here's how you can use the INPUTS statement efficiently:

```
INPUTS ARE ANNUAL_SALARY
SALARY = ANNUAL_SALARY / 12
RETURN SALARY
```

CHANGE_CONTEXTS Statement

> **Tip:** The best approach is to use CHANGE_CONTEXTS statement only when required, because CHANGE_CONTEXTS can cause database item values to be fetched again from the database.

You can perform multiple context changes using a single CHANGE_CONTEXTS statement, instead of calling CHANGE_CONTEXTS from other CHANGE_CONTEXTS blocks.

For example, use a single CHANGE_CONTEXTS statement in the first formula, which is efficient than the second formula:

```
CHANGE_CONTEXTS(EFFECTIVE_DATE = l_eff_date, AREA1= 'California')
(
 /*Do something here*/
)

CHANGE_CONTEXTS(EFFECTIVE_DATE = l_eff_date)
(
CHANGE_CONTEXTS(AREA1 = 'California')
 (
 /*Do something here*/
 )
)
```

Don't use the CHANGE_CONTEXTS statement to set contexts that you would reasonably expect to be already set.

For example, the PERSON_ID context is generally already set in a formula that processes person information. If this context isn't set, then GET_CONTEXT doesn't fetch any value. GET_CONTEXT only returns the default value of -1. This code doesn't achieve anything:

```
l_person_id = GET_CONTEXT(PERSON_ID, -1)
l_effective_date = GET_CONTEXT(EFFECTIVE_DATE, '0001-01-01 00:00:00)(DATE))

CHANGE_CONTEXTS(PERSON_ID = l_person_id, EFFECTIVE_DATE = l_effective_date)
(
 /*Do something here*/
)
```

Database Items

> **Tip:** The best approach is to retain only the required database items in a formula. Don't refer to database items in a formula unless it's absolutely required. Sometimes a formula might contain databases that it doesn't need, which causes the formula to make unnecessary database calls. As a result, the efficiency of the formula is impacted.

In this example, the use of database items always causes a database fetch for AGE.

```
S = SALARY
A = AGE
IF S < 20000 THEN
IF A < 20 THEN
```

```
 TRAINING_ALLOWANCE = 30
ELSE
 TRAINING_ALLOWANCE = 0
```

In this example, the use of database items fetches AGE only if salary is less than 20000:

```
IF SALARY < 20000 THEN
IF AGE < 20 THEN
 TRAINING_ALLOWANCE = 30
ELSE
 TRAINING_ALLOWANCE = 0
```

Database Items for HCM Extracts

Some database items are intended only for HCM Extracts reporting. These database items return a high amount of data and retrieve it inefficiently when used in a formula.

For example, an HCM Extracts database item retrieves information for all employees on the application, or complete information of a particular employee since the start of employment. This data retrieval is fine for reporting as reports process lots of data. Formulas usually process small amount of data limited to specific cases. HCM Extracts allow extra conditions to be added to limit the data returned, but formulas don't.

With these database items, more complex formulas are required to get the right data and the performance of the formulas is extremely poor because of the large data volumes. For example, the array database item PER_EXT_ALL_PHONE_AREA_CODE returns all phone area codes as of an effective date. Together with PER_EXT_ALL_PHONE_PERSON_ID, and PER_EXT_ALL_PHONE_TYPE, it's possible to get a person's home phone's area code.

But for a simpler formula and better performance, you can use the PER_PER_HOME_PHONE_AREA_CODE database item to retrieve the home phone's area code. PER_PER_HOME_PHONE_AREA_CODE uses PERSON_ID and EFFECTIVE_DATE contexts to get its data. PER_EXT_ALL_PHONE_AREA_CODE only uses the EFFECTIVE_DATE context.

While Loop

Use an EXIT statement or a change to the loop condition to leave a WHILE loop immediately once you complete your task. For example, don't continue when you have already found a single item that you were looking for.

Formula Logging

Formula logging can help during implementation when developing formulas. It can also help with problem diagnosis. When investigating problems logged through a support service request, Oracle may ask for logging information.

Although logging can be very useful, the logging process may impact performance and slow down processing in general. Other processes waiting on resources utilized by the logging process, may take longer to complete or be delayed in starting.

It is advisable to remove unnecessary logging statements once the purpose is served. If there is a need to retain logging statements for diagnostic purposes then it is suggested that they are executed conditionally, for example:

```
debug = 0
if (debug = 1) then
(
 /* Log statements here. */
)
```

When logging is required, set debug = 1 and recompile the formula.

Note: Don't forget to disable logging when finished.

Formula Compilation Errors

Compilation errors are displayed in the Fast Formulas page after you compile the formula. The compiler stops the compilation process when it encounters an error. Error messages display the line number and the type of error.

Common Compilation Errors

Here's some of the common formula compilation errors.

Formula Compilation Error	Description
Syntax Error	The formula text violates the grammatical rules for the formula language. For example, if you use **IF1** instead of **IF** in an **IF** statement.
Incorrect Statement Order	**ALIAS**, **DEFAULT**, or **INPUT** statements come after other statements.
Misuse of **ASSIGNMENT** Statement	Occurs when any of these conditions exist: • An **ASSIGNMENT** assigns a value to a database item. • A context is assigned a value externally to a **CHANGE_CONTEXTS** statement. • The formula assigns a value to a non-context variable within a **CHANGE_CONTEXTS** statement. You can use CHANGE_CONTEXTS statements in a formula.
Misuse of **ALIAS** Statement	You can use an **ALIAS** statement only for a database item.
Missing **DEFAULT** Statement	A database item that specifies a default value must have a DEFAULT statement.
Misuse of **DEFAULT** Statement	You specify a DEFAULT statement for a variable other than as an input or a database item.
Uninitialized Variable	The compiler detects that a variable is uninitialized when used. The compiler can't do this in all cases. This error often occurs when the formula includes a database item that requires contexts that the formula type doesn't support. The formula treats the database item as a local variable. For example, balance database items require the PAYROLL_REL_ACTION_ID, PAYROLL_ASSIGNMENT_ID and CALC_BREAKDOWN_ID contexts. Typically, you use these statements in formulas of type Oracle Payroll.
Missing Function Call	The compiler doesn't recognize a function call. The combination of return type, function name, and parameter types doesn't match any available function.
Incorrect Operator Usage	An instance of a formula operator use doesn't match the permitted uses of that operator. For example, the + operator has two permitted uses. The operands are both of data type **NUMBER**, or both of data type **TEXT**.
Inconsistent Data Type Usage	The formula uses a formula variable of more than one data type. Or the formula uses a database item or context with the wrong data type.

Formula Compilation Error	Description
	For example, Variable A is assigned a **NUMBER** value at the start of the formula, but is assigned a **TEXT** value later in the formula.
EXIT Statement Not Within **WHILE** Loop	A condition that eventually becomes false or an **EXIT** call for exiting the loop doesn't exist.
Misuse of Context	The formula uses a variable as a context, or a context as a variable. For example, a formula assigns a value to **AREA1** as an ordinary variable, but later uses **AREA1** as a context in a **GET_CONTEXT** call.

Formula Execution Errors

Fast formula execution errors occur when a problem arises while a formula is running. Typically, data-related issues cause these errors either in the formula or in the application database.

Formula Execution Errors

Here's some of the formula execution errors.

Formula Execution Error	Description
Uninitialized Variable	When the formula compiler can't fully determine if a variable or context is initialized, it generates a code to test if the variable is initialized. When the formula runs, the code displays an error if the variable or context isn't initialized.
Divide by Zero	Raised when a numeric value is divided by zero.
No Data Found	Raised when a non-array type database item unexpectedly fails to return any data. If the database item can't return data, then it should provide a default value. You can specify a default value using a **DEFAULT** statement. An error in formula function code can also cause this error message.
Too Many Rows	Raised when a non-array type database item unexpectedly returns more than a single row of data. The cause is an incorrect assumption made about how the data is being accessed. An error in the formula function code can also cause this error message.
NULL Data Found	Raised when a database item unexpectedly returns a **NULL** data value. If the database item can return a **NULL** value, then it provides a default value.

Formula Execution Error	Description
	Note: Some database items can't return a **NULL** value. If the database items can return a **NULL** value, then you can provide a default value for that database item.
Value Exceeded Allowable Range	Raised for a number of reasons, such as exceeding the maximum allowable length of a string.
Invalid Number	Raised when a formula attempts to convert a nonnumeric string to a number.
User Defined Function Error	Raised from within a formula function. The error message text is provided as part of the formula error message.
External Function Call Error	A formula function returns an error, but doesn't provide any additional information to the formula code. The function may have sent error information to the logging destination for the executing code.
Function Returned **NULL** Value	A formula function returns a **NULL** value.
Too Many Iterations	A single **WHILE** loop, or a combination of **WHILE** loops has exceeded the maximum number of permitted iterations. This error is raised to terminate loops that can never end, which indicates a programming error within the formula.
Array Data Value Not Set	The formula tries to access an array index that has no data value. This error occurs in the formula code.
Invalid Type Parameter for **WSA_EXISTS**	You specify an invalid data type in the **WSA_EXISTS** call.
Incorrect Data Type For Stored Item	When retrieving an item using **WSA_GET**, the actual data type doesn't match that of the stored item. This error occurs within the calling formula.
Called Formula Not Found	The called formula isn't found when attempting to call a formula from a formula. This error may occur due to an issue in the calling formula, or because of installation issues.
Recursive Formula Call	An attempt was made to call a formula from itself. The call could be made directly or indirectly from another called formula. Calling a formula in a recursive manner isn't permitted.
Input Data Has Different Types in Called and Calling Formulas	When calling a formula from a formula, the input data type within the called formula doesn't match the data type specified in the calling formula.
Output Has Different Types In Called and Calling Formulas	When calling a formula from a formula, the output data type within the called formula doesn't match the data type specified in the calling formula.
Too Many Formula Calls	When a formula calls another formula in its text, resulting in a hierarchy. The maximum depth of the hierarchy is 10.

Example of Writing a Fast Formula Using Expression Editor

In this example, you create a fast formula that groups executive workers for reporting and processing. All executive workers are in department EXECT_10000.

After you create the formula, you need to add it to the object group parameters, so that only the workers that belong to the EXECT_10000 department are used in processing.

Here are the key decisions when deciding on which formula to create.

Key Decisions	In This Example
Is the formula for a specific legislative data group?	Yes, InVision
What's the formula type for this formula?	Payroll Relationship Group

Creating a Fast Formula Using the Expression Editor

1. On the Home page, click the **Fast Formulas** quick action under the **My Client Groups** tab.
2. Click **Create**.
3. Complete these fields:

Fields for Fast Formula	Values for Fast Formula
Formula Name	Executive Payroll Relationship Group
Type	Payroll Relationship Group
Description	Executive Workers
Legislative Data Group	Vision LDG
Effective As-of Date	1-Jan-2010
Type of Editor	Expression Builder

Fields for Fast Formula	Values for Fast Formula
	Note: For more complex conditions to create a group, you can select Text. However, after you save the formula, you can't change the type of editor.

4. Click **Continue**.
5. In the Formula Details section, click **Add After** to add a row and complete these fields:

Conjunction	Database Item Name	Data Type	Operand	Literal Value
None applicable	DEPARTMENT	Character	=	'EXECT_10000'
And	SELECT_EMP	Character	=	'YES'

6. Click **Compile**.
7. Click **Save**.

Example of Writing a Fast Formula Using Formula Text

In this example, you use the text editor to create a fast formula.

Here are the key decisions when deciding on which formula to create:

Key Decisions	In This Example
Is the formula for a specific legislative data group?	No, this is a global formula that can be used by any legislative data group.
Are there any contexts used in this formula?	No
Are there any database item defaults?	Yes, PER_ASG_JOB_NAME
Are there any input value defaults?	No
What are the return values?	MIN_HOURS, MAX_HOURS, FREQUENCY

Creating a Fast Formula Using the Text Editor to Determine a Manager's Scheduled Hours

1. Search for and select **Fast Formulas** in **My Client Groups**.
2. Click **Create**.
3. Complete these fields:

Fields for the Fast Formula	Values for the Fast Formula
Formula Name	Manager Range of Scheduled Hours
Formula Type	Range of Scheduled Hours
Description	Manager's Range of Hours
Effective Start Date	1-Jan-2010

4. Click **Continue**.
5. Enter these formula details in the Formula Text section:

```
/* DATABASE ITEM DEFAULTS BEGIN */
DEFAULT FOR per_asg_job_name IS ' '
/* DATABASE ITEM DEFAULTS END */
JOB_1 = PER_ASG_JOB_NAME
IF JOB_1 = 'Manager' then
(MIN_HOURS = 25
MAX_HOURS = 40
FREQUENCY = 'H')
else
(MIN_HOURS = 20
MAX_HOURS = 35
FREQUENCY = 'H')
return MIN_HOURS, MAX_HOURS, FREQUENCY
```

6. Click **Compile**.
7. Click **Save**.

Formula Compilation

All fast formulas must be compiled before they can be utilized or executed within the application.

Use the **Submit a Flow** task to submit the Compile Formula process.

1. Navigate to My Client Groups, Payroll, Submit a Flow.
2. Select the Legislative Data Group.
3. Search for the **Compile Formula** flow.
4. Enter/Select values as required:

Name	Values	Description
Payroll Flow	Enter any meaningful name that can be used to monitor the progress of the flow.	NA
Formula (Optional)	Enter the formula name.	Compile a single formula based on the formula name.
Formula Type (Optional)	For example, Oracle Payroll, Rate conversion, User Table Validation etc.	You can compile only those formula defined with a particular Formula Type.
Status	○ Compiled And Not Compiled ○ Not Complied	You can compile only ○ not compiled formula or compile all **not compiled and compiled** formula.
Scope	○ Predefined and User Defined Formula ○ Predefined Formula ○ User Defined Formula by Enterprise and LDG ○ User Defined Formula by LDG ○ User Defined Formula by Legislation	You can determine which formula to compile. This parameter restricts the set of formulas to those selected for compile.
Process Multithreaded	○ No ○ Yes	You can select whether to run multiple threads. Compile Formula process uses its own logic to determine the number of threads when running multi threaded. It does not use the Threads parameter within the Process Configuration Group.

5. Click Submit.
6. Monitor the status of the process.

FAQs for Writing Formulas

When do I run the Compile Formula process?

When you create or update multiple fast formulas simultaneously, run the Compile Formula process on the Submit a Process or Report page.

What's the difference between a formula compilation error and an execution error?

Compilation errors occur on the Fast Formulas page when you compile the formula. An error message explains the nature of the error.

Common compilation errors are syntax errors resulting from typing mistakes. You can view error messages on the dashboard or go to the messages tab directly after the process is run.

Execution errors occur when a problem arises while a formula is running. Typically, data-related issues either in the formula or in the application database cause these errors.

3 Fast Formula Components

Overview of Using Fast Formula Components

When you're developing a fast formula, you must understand the formula language, the rules that the application imposes on the fast formula, and the calculation requirements.

Create fast formulas using these components:

- Assignment statements
- Return statements
- Variables
- Input statements
- Expressions
- Conditions
- Comments

Note: Other topics explain additional components that you can use in fast formulas. These include literals, database items, working storage area, calls to other formulas, functions, and operators.

Let's look at an example to understand how each component is used in a fast formula. Suppose you want to calculate the pay value for the *WAGE*element by multiplying the number of hours an employee works each week by the hourly rate. Here's how you can write the formula in this example:

```
WAGE = HOURS_WORKED * HOURLY_RATE
RETURN WAGE
```

Assignment Statements

An assignment statement assigns a value to the `WAGE` element.

Return Statements

A return statement passes the `WAGE` value back to the payroll run. You can use a return statement to stop the formula execution without passing any values.

Variables

Variables are of these classes:

- Input variables appear in INPUTS statements and bring values into a fast formula.
- Output variables appear in RETURN statements and return values from a fast formula. A variable can be both an input and output.
- Local variables are only used within one formula.

You can change a local variable within the formula by assigning a value to it using an assignment statement. To calculate the WAGE value, the fast formula needs to get the value for the HOURS_WORKED *variable*.

You can use local variables to store data in a fast formula. You might want to hold data temporarily while you perform some other calculations, or pass data back to the application. Here's an example of the ANNUAL_LEAVE variable.

```
/* Formula: Annual Leave Formula */
IF YEARS_SERVICE >= 10
THEN
ANNUAL_LEAVE = 25
ELSE
ANNUAL_LEAVE = 20 + FLOOR (YEARS_SERVICE/2)
RETURN ANNUAL_LEAVE
```

Input Statements

You can use HOURS_WORKED as an input value of the WAGE element. To pass the element input values to the fast formula during processing, define an input statement like this:

```
INPUTS ARE HOURS_WORKED
WAGE = HOURS_WORKED * HOURLY_RATE
RETURN WAGE
```

Note: This is a payroll application example. The name used in the input statement must be the same as the name of the element input value. Multiple words must be joined by underscores. Other input statements that have nothing to do with elements would have their own rules for formula input variables. In this example, the HOURS_WORKED input variable is numeric. If the input variable isn't numeric, you must specify the type. For example,

```
INPUTS ARE START_DATE (DATE)
```

Expressions

Each function or calculation is one expression. You can nest expressions to create more complex calculations. You can use brackets to control the order in which calculations are done.

The formula evaluates expressions within the brackets first. Within nested brackets, evaluation proceeds from the least inclusive set to the most inclusive set. If you don't use brackets, the formula evaluates expression in this order:

- Multiplication, Division
- Addition, Subtraction

Note: For same priority, the formula evaluates the expression from left to right.

Expressions combine constants and variables with operators (+, -, *, /), array methods, and functions to return a value of a certain data type. For example, the expression (3 + 2) returns a value of 5, and is a NUMBER data type. The format of an expression is:

```
SUBEXPRESSION [operator SUBEXPRESSION ...]
```

You can combine a number of sub-expressions into a single expression. For example, you can combine the sub-expressions (3 + 2) and MONTHS_BETWEEN(start_date, end_date) into a single expression as follows:

```
(3 + 2) + MONTHS_BETWEEN(start_date, end_date)
```

You can also use expressions inside functions, such as:

```
salary = GREATEST(minimum_wage, (hourly_rate * hours_worked))
```

Operands in an expression are usually of the same data type, which is the data type of the expression as a whole. Here's an example of an expression in which all the operands are numeric and the expression itself is numeric:

```
GREATEST(MINIMUM_WAGE, (HOURLY_RATE * HOURS_WORKED)) + BONUS
```

`BONUS` is the operand for the above expression. The return value is `GREATEST`. The arguments for `GREATEST` are separate expressions.

Conditions

You can use conditions to process expressions based on whether a certain condition occurs. For example:

```
TRAINING_ALLOWANCE = 0
IF (AGE < 20) THEN
TRAINING_ALLOWANCE = 30
```

This formula checks if the condition (AGE < 20) is true or false. If it's true, the formula processes the statement that follows the word `THEN`. If the condition is false, the formula ignores this statement.

Comments

Use comments to explain all or part of a fast formula. Also, you can change some formula lines into comments until they're ready to be used. You can place comments anywhere within a formula. The beginning of a fast formula should contain these comments:

- The formula title and a short purpose statement.
- A description of the formula inputs.
- A list of variables and literals that may require updating.
- An explanation of the formula's calculation.
- The dates of any modifications, the name of the person modifying the formula, and the reason for the change.

Multi-Line Comments

Multi-line comments are designated by the comment delimiters of /* and */. Anything written inside these delimiters is a comment.

> **Note:** Do not put a multi line comment within a multi line comment, because it causes a syntax error when you compile the formula.

Single Line Comments

Fast formula also supports single line comments. The # character is used for the start of single line comments. The # character itself and any text after it to the end of the line are ignored.

Comments Example:

```
# This line is a single line comment and will be ignored.

/*
 * This is a multi-line comment.
 */
```

```
a = 1 # Ignore the # character and everything after it on the line.

b = '####' # b is the string ####. The remainder of the line is ignored.

return a, b
```

Types of Variables

Formula variables can have values that change frequently. The variable's data type indicates the type of information the variable holds. The fast formula determines how you can use the variable.

For example, if you set a variable to 'J. Smith', the fast formula interprets it as a TEXT variable. The application displays a warning if you try to perform any inconsistent operations, such as trying to add a number to a text string.

Variables can be of the following types:

- *Input* variables appear in `INPUTS` statements and bring values into a fast formula.
- *Output* variables appear in `RETURN` statements and return values from a fast formula. A variable can be both an input and output.
- *Local* variables are only used within one fast formula.

You can change variable values by using an assignment statement and by referencing them within expressions. However, if you reference a variable to which you didn't assign a value, the fast formula returns an error.

Related Topics

- Overview of Using Fast Formula Components
- Array Variables
- Formula Contexts

Formula Statements

You use formula statements to provide instructions that you want your formula to carry out. When working with statements, it's important to have knowledge of the different statement types, the required order, and how to group statements.

Statement Types

Here are the statements that you can use in your formulas to provide instructions.

Statement	Statement Form	Description and Example
`ALIAS`	`ALIAS` name1 AS name2	Provides a different name for a database item or global value. Sometimes the database item names that the application provides are too long to use in a formula.

Statement	Statement Form	Description and Example
		Use the ALIAS statement to shorten the name of a database item. Once the ALIAS is created, use it instead of the database item name. Using an alias is more efficient than assigning the database item to a local variable with a short name. `ALIAS OVERTIME_QUALIFYING_LENGTH_OF_SERVICE AS OT_QLS`

ASSIGNMENT	variable = expression
	
	array[index] = expression
		Assigns an expression value to a variable or an array variable at an index position. A formula evaluates the expression on the right-hand side of the statement. It places its result in the variable you name on the left-hand side. The left side of an assignment statement must always be a local variable because a formula can only change the value of local variables.
		
		Within a "CHANGE_CONTEXTS" statement, assign values only to contexts. Outside a "CHANGE_CONTEXTS" statement, assign values only to input, output, and local variables.
		
		`RATE = HOURLY_RATE + 14`
		`WAGE = HOURS_WORKED * RATE`

CHANGE_CONTEXTS	(context1 = expression1 [,context2 = expression2]	Changes one or more contexts within a formula. Within the "CHANGE_CONTEXTS" statement, use **ASSIGNMENT** statements to assign the new values.
		
		`CHANGE_CONTEXTS(AREA1 = TAX_REPORTING_UNIT_INCOME_TAX_JURISDICTION_GEOGRAPHY_ID)`
		`(`
		`CHANGE_CONTEXTS(DEDUCTION_TYPE = 'SBJ_TO_REGULAR_TAX')`
		`(`
		`L_TAXATION_METHOD = 'NONE'`
		`EXECUTE('TAXABILITY_RULE_EXISTS')`
		`IF GET_OUTPUT('TR_EXISTS', 'N') = 'Y' THEN`
		`L_TAXATION_METHOD = 'REGULAR_TAX'`
		`) /* DEDUCTION_TYPE context change undone here. */`
		`) /* AREA1 context change undone here. */`

DEFAULT	**DEFAULT FOR** variable IS literal **DEFAULT_DATA_VALUE FOR** variable IS literal	The DEFAULT FOR statement provides a value that the formula uses for a formula input or database item in these situations: • The input wasn't assigned a value. • The database item's value couldn't be retrieved from the database. • A non-array database item's value is NULL.

Statement	Statement Form	Description and Example

		The DEFAULT_DATA_VALUE FOR statement provides a value for an array database item where individual data values are NULL.
		
		Some database items are defined to require a default value because they could return no data or NULL values from the database.
		
		`DEFAULT FOR HOURLY_RATE IS 3.00`
		`INPUTS ARE HOURLY_RATE`
		`X = HOURS_WORKED * HOURLY_RATE`

`EXIT`	`EXIT`	Immediately exits from the enclosing `WHILE` loop. You can't use the `EXIT` statement outside of a `WHILE` loop.
		
		`FOUND = -1 /* -1 is not a valid index for A. */`
		`I = A.FIRST(-1)`
		`WHILE (A.EXISTS(I)) LOOP`
		`(`
		`/* EXIT-clause for early exit. */`
		`IF A[I] = KEY THEN`
		`(`
		`FOUND = I`
		`/* Exit the loop. */`
		`EXIT;`
		`)`
		`I = A.NEXT(I,-1)`
		`)`

`FORMULA CALLING FORMULA`	`SET_INPUT(input [,value])`: Set an input or context value in the called formula.
	
	`EXECUTE(formula)`: Execute the called formula.
	
	`GET_OUTPUT(output, default-value)`: Get a value returned from the called formula.
	
	`IS_EXECUTABLE(formula)`: Test whether a formula is executable.
		Calls a formula from another formula. For example, formulas can call a small formula that performs a common calculation. You can use this approach to avoid writing long formulas.
		
		`SET_INPUT('UNIT','Hourly')`
		`EXECUTE('RATE_FORMULA')`
		`HOURLY_RATE = GET_OUTPUT('RATE',0.0)`
		`WAGE = HOURS_WORKED * HOURLY_RATE`
		`RETURN WAGE`

`IF`	`IF` condition `THEN` statements
	
	`IF` condition `THEN` statements `ELSE` statements
		Executes one or more statements if a condition is true. Use the `IF ELSE` statement to specify a set of statements to execute if the condition is false.
		
		`IF (AGE < 20) THEN`
		`TRAINING_ALLOWANCE = 30`
		`ELSETRAINING_ALLOWANCE = 40`

`INPUT`	`INPUTS ARE input1 [,input2]`	Lists the input variables for the formula. There's only one `INPUT statement in a formula`.
		
		`INPUTS ARE HOURS_WORKED`
		`WAGE = HOURS_WORKED * HOURLY_RATE`
		`RETURN WAGE`

Statement	Statement Form	Description and Example

RETURN	**RETURN** [output1] [,output2]	Causes a formula to stop executing immediately. For its value to be returned to the caller, you must enter a formula output variable in the **RETURN** statement that stopped the formula.
		
		You can enter multiple return statements in a formula.
		
		`INPUTS ARE HOURS_WORKED`
		`IF HOURS_WORKED <= 10 THEN(`
		`RETURN`
		`/* This is ignored. */`
		`BONUS = 10`
		`)`
		`/* This is executed if HOURS_WORKED > 10. */`
		`BONUS = 50`
		`RETURN BONUS`

WHILE	**WHILE** condition **LOOP** statements	Executes a number of statements as long as one condition is true.
		
		If the **WHILE** statement loop performs too many iterations, an error occurs to prevent endless looping.
		
		`/* -1234 is not a valid index for A in this instance, so use as default. */`
		`NI = A.FIRST(-1234)`
		`WHILE A.EXISTS(NI) LOOP`
		`VA = A[NI] /* Do some processing with element at index NI. */`
		`NI = A.NEXT(NI,-1234) /`
		`Go to next index. */`
		`)`

WORKING STORAGE	**WSA_DELETE**([item]) - Deletes values from the storage area.
	
	WSA_EXISTS(item[,type]) - Determine if an item exists .
	
	WSA_GET(item, value) - Fetches values from the storage area.
	
	WSA_SET(item, value) - Sets values from the storage area.
		Stores reference data, which you can set, fetch, or delete.
		
		`/* Formula: RATE_SETTER */`
		`WSA_SET('RATE:HOURLY1',3.5)`
		`WSA_SET('RATE:HOURLY2',4.0)`
		`WSA_SET('RATE:HOURLY3',4.5)`
		`WSA_SET('RATE_FLAG','Y') /* Flag to say that the rates have been set. */`

Ordering Statements

Place the statements in this order in the formulas:

1. ALIAS statements, if any
2. DEFAULT statements, if any
3. INPUT statements, if any

4. Other statements

Grouping Statements

If you want to group more than one statement under IF/THEN statements, ELSE clauses, WHILE loops, or CHANGE_CONTEXTS, enclose the group of statements within brackets. In the absence of brackets, the preceding statement applies only to the first statement.

Here's an example of how you can group statements:

```
I = A.FIRST
WHILE (A.EXISTS(I)) LOOP
(
 A[I] = I
 I = A.NEXT(I,-1)
)
```

Here's an example of how you should not group statements::

```
I = A.FIRST
WHILE (A.EXISTS(I)) LOOP
 A[I] = I
 I = A.NEXT(I,-1) /* This is not executed as part of the loop. */
```

Related Topics

- Overview of Calling a Formula from a Formula
- Overview of Working Storage Area

Naming Schemes for Variables

You can use naming schemes for variables when adding them to formulas; however, you must avoid using reserved words as variable names.

Naming Schemes

You can use one of these naming schemes:

- Variable names comprise one or more words, joined by underscores. The words must each start with a letter and can be followed by a combination of letters and digits.
- Variable names begin and end with double quotes ("). Between the quotes, you can use any printable characters, such as "This is a quoted variable name".

> **Note:** Any word consisting of only digits could be mistaken for numbers.

Formulas aren't case sensitive. For example, the variable named EMPLOYEE_NAME is the same as the variable employee_name.

> **Tip:** The maximum length of a variable name is 255 characters.

Reserved Words

Ensure that you don't use these reserved words as variable names:

Source of Reserved Words	Reserved Words
Statements	ALIAS AND ARE AS CHANGE_CONTEXTS DEFAULT DEFAULT_DATA_VALUE DEFAULTED ELSE EXIT FOR IF INPUTS IS LIKE LOOP NEED_CONTEXT NOT OR RETURN THEN USING WAS WHILE
Array Types	EMPTY_DATE_NUMBER EMPTY_NUMBER_NUMBER EMPTY_TEXT_NUMBER EMPTY_DATE_TEXT EMPTY_NUMBER_TEXT EMPTY_TEXT_TEXT
Formula Data Types	DATE DATE_NUMBER DATE_TEXT NUMBER NUMBER_NUMBER NUMBER_TEXT TEXT TEXT_NUMBER TEXT_TEXT
Array Methods	COUNT DELETE EXISTS FIRST LAST NEXT PREVIOUS PRIOR
Built-in Calls	CONTEXT_IS_SET EXECUTE

Source of Reserved Words	Reserved Words
	GET_CONTEXT GET_OUTPUT IS_EXECUTABLE SET_INPUT WSA_DELETE WSA_EXISTS WSA_GET WSA_SET

Related Topics

- Overview of Using Fast Formula Components

Database Items

Database items exist in the application database and have a computer code associated with them. The application uses this code to find data. All database items are read-only variables.

You can't change database item values within a formula. If you try to write a value to a database item, you receive a compilation error.

You can use database items in formulas and HCM extracts.

Database items are of these types:

- Static
- Dynamic

Static Database Items

Static database items are predefined. They include generic information about an employee, such as sex, birth date, and work location. They also include data about other objects, such as the start and end dates of a payroll period.

Dynamic Database Items

The application creates dynamic database items when you create these objects. In the case of flexfields, you must run the Generate Flexfield Database Items process to create the database items.

Object	Description
Elements	The element name is the database item name prefix.
Defined Balances	The balance name followed by the balance dimension name is the database item name.
Formula global values	The global value name is the database item name.
Input values	The element and input value names are the database item name prefix.

Object	Description
Flexfields	The Generate Flexfield Database Items process creates database items for the contexts and segments of your registered HCM flexfields.

Array Database Items

Array database items have an index type of NUMBER with indexes that start at 1 and increment by 1 without gaps. Here's an example:

```
/* 1 is the starting index for an array database item. */
I = 1
WHILE DBI.EXISTS(I) LOOP
(
 V = DBI[I] /* Do some processing with element at index I. */
 I = I + 1 /* Array database items indexes go up in steps of 1. */
)
```

You can use the DEFAULT_DATA_VALUE FOR statement to set a default value in scenarios where an array database item returns a NULL value for an element. There can be only one DEFAULT_DATA_VALUE FOR statement for each array database item and it must appear at the start of the formula.

Here's an example of a DEFAULT_DATA_VALUE FOR statement:

```
DEFAULT_DATA_VALUE FOR A IS 0
INPUTS ARE B, C
```

Here's an example of an array database item usage error:

```
 /* Array database item A. */
A[1] = 1
 A = B
A.DELETE(1)
A.DELETE
```

Related Topics

- Overview of Generating Flexfield Database Items

Overview of Generating Flexfield Database Items

You configure registered HCM flexfields to add contexts and segments for your business requirements.

After you deploy the flexfield, you can generate database items for the flexfield for use in your formulas and extracts by submitting the Generate Flexfield Database Items process from the Payroll Checklist or Payroll Administration work areas.

You can generate database items for the following flexfields:

- Descriptive flexfields
- Extensible flexfields for single and multiple row routes
- Key flexfields

The process generates database items at the enterprise level only. As a best practice, when you submit the process, skip the legislative data group parameter so that the process generates database items for use by any legislative data group.

You can determine which database items to generate by specifying or skipping the flexfield and context parameters as shown in the following table.

Flexfield Parameter	Context Parameter	Result
Specify parameter	Skip parameter	Generate database items for all the contexts and related segments for a specified flexfield
Skip parameter	Skip parameter	Generate database items for all registered flexfields and their contexts.

The process creates database item names with this following structure:

```
de<FLEXFIELD_CODE><CONTEXT_CODE><SEGMENT_CODE>
```

When you include the database item in a formula or extract, the application returns a value for the database item, based on the flexfield context, for the segments column in the underlying flexfield table. After you generate database items, compile any formulas using these database items.

Periodically, you may need to update a flexfield structure, for example to add a segment to capture additional data. If you previously generated database items for a flexfield, submitting the process deletes and regenerates the associated database items. After the process regenerates the database items, be sure to compile any formulas using them.

Related Topics

- Database Items
- Extract Components
- Example of Generating Flexfield Database Items

Example of Generating Flexfield Database Items

Let's look at an example that shows you how to add segments and contexts to a registered HCM flexfield, and how to generate database items for the flexfield for later use in formulas and extracts.

Here are the key decisions when deciding on the HCM flexfields and contexts that require database items.

Decisions to Consider	In this Example
Which registered HCM flexfield requires database items?	Organization Information flexfield
What is the name of the flexfield code?	PER_ORGANIZATION_INFORMATION_EFF

Decisions to Consider	In this Example
How many contexts include segments that require database items?	Two contexts: HCM_CN_PSU_TERMINATION_INFO, HRX_CN_TRU_TERMINATION_INFO
Should I give all legislative data groups access to the generated database items, so that they can use them in their formulas and extracts?	Yes

In this example, Joe plans to create formulas for an implementation in China based on information captured in the organization information flexfield. Joe configures the flexfield to add the contexts and segments. He writes a formula to calculate severance pay that returns results for the leave compensation factor based on the tax reporting unit.

Configure the Flexfield

1. In the Setup and Maintenance work area, navigate to:
    - Offering: Workforce Deployment
    - Functional Area: Organization Structures
    - Task: Manage Extensible Flexfields
2. Search for the Organization Information EFF and click **Edit**.
3. Click **Manage Contexts**.
4. Click **Create** and create two contexts: HCM_CN_TRU_TERMINATION_INFO and HRX_CN_PSU_TERMINATION_INFO.
5. For each context, create two segments: LEAVE_COMPENSATION_FACTOR and MONTHLY_SALARY_PAID_DAYS.
6. Deploy the flexfield.

Submit the Generate Flexfield Database Process

1. In the Payroll Checklists or Payroll Administration work area, select the **Submit a Process or Report** task.
2. Complete the following parameters.
   This table lists which parameters you can skip and those that you can complete, and where the parameter is displayed.

Page	Parameter	Data
Select Flow Pattern	Legislative Data Group	Skip this parameter
Select Flow Pattern	Process or Report	Generate Flexfield Database Items
Enter Parameters	Payroll Flow	Organization flexfield database items
Enter Parameters	Name	PER_ORGANIZATION_INFORMATION_EFF

Page	Parameter	Data
Enter Parameters	Context	Skip this field to generate database items for all contexts.

3. Click **Next** and skip the Enter Interaction page.
4. Click **Next** and skip the Schedule page.
5. Click **Next** and review the submitted parameters on the Review page.
6. Click **Submit** to create the payroll flow.

   The submitted process creates database items for each context for the flexfield segments:

   - PER_ORGANIZATION_INFORMATION_HRX_CN_TRU_TERMINATION_LEAVE_COMPENSATION_FACTOR
   - PER_ORGANIZATION_INFORMATION_HRX_CN_TRU_TERMINATION_MONTHLY_SALARY_PAID_DAYS
   - PER_ORGANIZATION_INFORMATION_HRX_CN_PSU_TERMINATION_LEAVE_COMPENSATION_FACTOR
   - PER_ORGANIZATION_INFORMATION_HRX_CN_PSU_TERMINATION_MONTHLY_SALARY_PAID_DAYS

Create a Formula

1. Create a formula for calculating severance pay that returns a segment for LEAVE_COMPENSATION_FACTOR, if the context code is the one specified for the database item, HRX_CN_TRU_TERMINATION_INFO.

Formula Operators

Formula operators are expressions that can contain arithmetic operators. These operators determine how the formula manipulates variables and literals. For example, the plus operator (+) indicates that two items are added together. You can also use operators to concatenate strings.

Types of Operators

Here's a list of the operator types:

Operator	Description	Example
+	Addition	A = B + 1
+ ||	String concatenation	A = 'Hello ' + 'World' B = 'Hello ' || 'World'
-	Subtraction	A = B - 1
-	Unary minus	A = -B

Operator	Description	Example
*	Multiplication	A = B * C
/	Division	A = B / C

Using Operators

You can use the arithmetic operators, subtraction, multiplication, and division only with numeric operands. You can use the addition operator with numeric or text operands. The operands can be variables, literals, or sub-expressions. A formula error occurs in these scenarios:

- The second operand of a division equals zero
- The result of multiplication is too large
  Whether a number is too large or not is determined by the normal limits in the database. For string concatenation, if the result is longer than 255 characters, a formula error occurs.

Expressions are evaluated in order from left to right. The unary minus has precedence over the other operators because it applies directly to a single sub-expression. The multiplication and division operators take precedence over addition and subtraction. For example, the expression 1 + 2 * 3 evaluates to 7 rather than 9. You can use brackets to change the precedence of the operators. For example, (1 + 2) * 3 evaluates to 9.

Related Topics

- Overview of Using Fast Formula Components

Literals

A literal is a piece of information that you manipulate or use in a formula.

Literals are of these types:

- Numeric
- Text
- Date
- Array

Numeric Literals

Follow these rules when entering numeric literals:

- Don't use quotes to enclose the literal.
- Don't use commas or spaces in the number.
- Don't use exponents and floating point scientific notations.
- You can enter numbers that have a decimal component after a decimal point.

- To enter a negative number, precede it with a minus sign (-).

Here are a few examples of numeric literals:

- 63
- 3.55
- -2.3
- -.033
- -.2
- 10000

Text Literals

When you enter text literals, enclose them in single quotes. Text literals can contain spaces. To enter a single quote character in a text constant, enter two single quotes (for example, 'P O'Donnell'). Note that this isn't the same as the double quotes (").

Here are a few examples of text literals:

- 'J. Smith'
- '1234'
- 'Manager'
- '12 Union Road'
- 'The Bonus this year is 23%'

Date Literals

When you enter a date literal, enclose dates in single quotes and follow immediately with the word date in brackets.

Here are a few examples of date literals:

- '2010-11-04T00:00:00.000Z' (DATE)
- '1989-03-12 00:00:00' (DATE)
- '12-MAR-1989' (DATE)

Array Literals

An array holds multiple values that the formula can access using the corresponding index values. You define array literals only for an empty array of each type.

Array literals are of these types:

- Array of date values indexed by a numeric index (EMPTY_DATE_NUMBER)
- Array of number values indexed by a numeric index (EMPTY_NUMBER_NUMBER)
- Array of text values indexed by a numeric index (EMPTY_TEXT_NUMBER)
- Array of date values indexed by a text index (EMPTY_DATE_TEXT)
- Array of numeric values indexed by a text index (EMPTY_NUMBER_TEXT)
- Array of text values indexed by a text index (EMPTY_TEXT_TEXT)

How Formulas Determine Variable Data Types

Variables can be of these data types: numeric, text or date. The data type determines the type of information the variable holds.

You don't have to specify the variable type. Formulas determine the type based on how you use the variable. For example, if you set a variable to 'J. Smith', the formula interprets it as a text variable.

> **CAUTION:** Inconsistent or incorrect use of variables, such as trying to add a number to a text string, causes formula compilation errors.

Determine Variable Data Types

Formulas process the rules that determine the variable data type in the order listed:

1. The variable can be an input you name in the input statement. For example:

   ```
   INPUTS ARE SALARY_AMOUNT,
   START_DATE (DATE),
   FREQUENCY (TEXT)
   ```

   If you don't specify the variable data type in the statement, the formula assumes it's a number.

   You can use the DEFAULT_FOR statement to determine the variable data type:

   ```
   DEFAULT FOR B IS 0 /* B is a NUMBER variable. */
   ```

   For an array database item, the DEFAULT FOR statement determines the index type and value type:

   ```
   DEFAULT FOR A IS EMPTY_NUMBER_NUMBER /* A is a NUMBER_NUMBER array variable. */
   ```

   You can use the DEFAULT_DATA_VALUE FOR statement to determine the variable data type:

   ```
   DEFAULT_DATA_VALUE FOR A IS 0 /* A could be a NUMBER_NUMBER or NUMBER_TEXT variable. */
   ```

2. The formula searches the list of database items. If the variable is in the list, the data type is known.
3. If the variable appears in a context handling statement, then the formula searches the list of contexts. If the variable is in the list, then the formula knows the data type, otherwise it returns an error.
4. If the variable isn't a database item or a context, then the formula treats it as a local variable and determines the data type based on how you use the variable. For example:

   ```
   A = 'abc' /* A is a TEXT variable. */
   ```

Array Variables

You can use arrays for input, output, and local formula variables. These array variables can store date, number, or text values. Arrays are similar to PL/SQL index-by tables.

Array Indexes

Here are some aspects of array indexes that you should be aware of:

- The index types are either text or number.
- Text indexes are upper case unique.
- Gaps in index value sequences are permitted.
- Number indexes are truncated to remove any fractional part.
- You may iterate an array in an index either forwards or backward.

Array Data Types

You specify array types as DATA_TYPE_INDEX_TYPE. Arrays are of these data types:

- NUMBER_NUMBER
- NUMBER_TEXT
- DATE_NUMBER
- DATE_TEXT
- TEXT_NUMBER
- TEXT_TEXT

Rules for Using Arrays

Formula functions can't return arrays or take array parameters. Contexts can't be array types. If you try to reference an array value at a nonexistent index, the application returns a formula execution error. However, you can delete an array value at a nonexistent index.

Array Methods

Array methods enable you to get the first and last indexes, and to get the next or prior index. These methods return the index data type. You can specify a default value for these methods, if the required indexes don't exist. You can use array methods to determine whether an index exists or not.

> **Note:** The array method syntax doesn't work directly with the array literal values. For example, you can't use a construct such as EMPTY_DATE_NUMBER.COUNT.

Here's a list of the array methods, including their descriptions and usage examples:

Array Method	Description	Usage Example
<name> [<index value>]	Get the value for an index.	V = A[1]
<name> . FIRST(<default value>)	Get the first index for an array. The default value is returned if the array is empty.	I = A.FIRST(-1)
<name> . LAST(<default value>)	Get the last index for an array.	L = B.LAST(' ')
<name> . EXISTS(<index value>)	Conditional checking if a value exists at an index. The default value is returned if the array is empty.	IF A.EXISTS(1) THEN
<name> . NEXT(<index value> , <default index value>)	Get the next index given an index position. The default value is returned if there is no next index.	N = A.NEXT(1)
<name> . PRIOR(<index value> , <default index value>)	Get the prior index given the index position. The default value is returned if there is no prior index.	P = B.PRIOR('Two')
<name> , COUNT	Numeric method to count the array elements.	C = A.COUNT
<name , DELETE(<index value>)	Delete the element at an index position.	B.DELETE('three')
<name> , DELETE()	Delete all elements.	B.DELETE()

Iterating Through an Array

In this example, *A* is an array variable with a NUMBER index. -1234 is known to be an invalid index for *A*, so it's used as a default value when the FIRST and NEXT calls can't find an index.

```
/* -1234 is not a valid index for A in this instance, so use as default. */
NI = A.FIRST(-1234)
WHILE A.EXISTS(NI) LOOP
(
 VA = A[NI] /* Do some processing with element at index NI. */
 NI = A.NEXT(NI,-1234) /* Go to next index. */
)
```

In this example, *B* is an array variable with a TEXT index. -1234 is known to be an invalid index for *B*, so it's used as a default value when the FIRST and NEXT calls can't find an index.

```
/* 'No Index' is not a valid index for A in this instance, so use as default. */
TI = B.FIRST('No Index')
WHILE B.EXISTS(TI) LOOP
(
 VB = B[TI] /* Do some processing with element at index TI. */
 TI = B.NEXT(TI, 'No Index') /* Go to next index. */
)
The following example iterates backwards from through an array C with a NUMBER inde.
/* -1234 is not a valid index for C in this instance, so use as default. */
NI = C.LAST(-1234)
```

```
WHILE C.EXISTS(NI) LOOP
(
 VC = C[NI] /* Do some processing with element at index NI. */
 NI = C.PRIOR(NI,-1234) /* Go to prior index. */)
```

Related Topics

- Overview of Using Fast Formula Components

Formula Contexts

Formulas run within an application-specific execution context, which determines the context variables available to the formula. Context values act as SQL bind values when the formula fetches database item values from the database. Formulas can also pass context values into formula function calls.

Here are some examples of the execution contexts:

- `EFFECTIVE_DATE` : The date on which the formula becomes effective.
- `PAYROLL_ID`: The payroll run for which the formula is processed.
- `PERSON_ID`: The person for whom the formula is processed.

Context Value Setting

The application code that's calling a formula usually sets all the context values. For some complex applications, such as the payroll run, the code sets only the contexts necessary to meet general processing requirements.

Here's how formulas for payroll work:

- A payroll run sets contexts for the legislative data group, date earned, the payroll being processed, the payroll relationship, payroll actions, and the person being processed.
- Additional, country-specific contexts are also available. For example, the jurisdiction area and tax code context values are country-specific.

Formula Context-Handling Statements

If you use a variable in a context-handling statement, the formula searches the list of contexts. The variable must appear in the contexts list; otherwise the formula returns an error. The data type is stored along with the context list entry.

This table describes the formula context-handling statements.

Statement	Purpose of the Statement	Example
`CHANGE_CONTEXTS(assignment [,...])`	Changes context values within the context changing block. Inside this block, the formula function calls, the database items, and the called formulas use the new context values. Outside the block, the formula uses the original values.	`/* * Nested Context changes: DBI1 depends upon SOURCE_ID and SOURCE_TEXT. */ CHANGE_CONTEXTS(SOURCE_TEXT = 'A') ( /* SOURCE_TEXT = 'A' */`

Statement	Purpose of the Statement	Example

	You can nest context changing blocks to apply context changes in stages.	`X = DBI1`
		
		`/* Nesting used to change Contexts in stages. */`
		`CHANGE_CONTEXT(SOURCE_ID = 2)`
		`(`
		`/* SOURCE_TEXT = 'A', SOURCE_ID = 2 */`
		`Y = DBI1`
		
		`/* Overriding a Context change. */`
		`CHANGE_CONTEXTS(SOURCE_TEXT = 'B', SOURCE_ID = 3)`
		`(`
		`/* SOURCE_TEXT = 'B', SOURCE_ID = 3 */`
		`Z = DBI1`
		`)`
		`)`

`CONTEXT_IS_SET(context)`	Tests whether or not a context value is set.	This code tests whether or not the AREA3 context is set. `IF CONTEXT_IS_SET(AREA3) THEN`
`GET_CONTEXT(context, default value)`	Returns a context's value if the context is set, otherwise it returns the default value specified in its second argument.	`/* AREA1 is a context of type TEXT. */` `AREA1_VALUE = GET_CONTEXT(AREA1,' ')`

Overview of Working Storage Area

The working storage area is a mechanism for storing global values across formulas.

Using the different call methods, you can test whether or not an item exists in the storage area, delete an item, set the value for an item, and get a value for an item. You can access the values by name. The names are case-independent.

This table lists the working storage area methods.

Method	Description
`WSA_EXISTS(item [, type])`	Tests whether or not the item called `item` exists in the storage area. If `type` is specified, then the item must be of the same type. These are the valid values for `type`: • `DATE` • `DATE_NUMBER` • `DATE_TEXT` • `NUMBER` • `NUMBER_NUMBER` • `NUMBER_TEXT`

Method	Description
	• TEXT • TEXT_NUMBER, • TEXT_TEXT
WSA_DELETE([item])	Deletes the item called item. If you don't specify a name, then all the storage area data is deleted.
WSA_SET(item, value)	Sets the value for the item called item. Any existing item of the same name is overwritten.
WSA_GET(item, default-value)	Retrieves a value for the item called item. If there is no item called item, then the method returns the default value. The data type of default-value is the expected data type for item.

Overview of Calling a Formula from a Formula

A formula can call another formula. This enables some modularity in formula organization. You specify the called formula name and any formula input or output names as TEXT values. The names are case-independent.

You can call a formula in any of these ways:

- Using a single call
- Using separate calls

As you write your formula, consider these points:

- Validation of the Called Formula
- Passing Contexts
- Call a Formula using any of these methods:
  - Using Separate Calls
  - Using a Single Self-Contained Call
- Use Cases to Compare Methods

Validation of the Called Formula

When a formula runs, it validates whether the called formula can be run, and whether the specified input and output data types are correct. You can use the IS_EXECUTABLE call to determine whether an executable formula with a specified name exists. You must compile the formula to make it available for the specified legislative data group. Also, the formula must be valid on the effective date on which the calling formula runs. In addition, the payroll code imposes extra restrictions based on formula type combinations.

Passing Contexts

Context values are inherited from the calling formula. You can also set or unset the context values explicitly in the nested formula call.

Alternative Methods to Call a Formula

You can call a formula fro within another formula in any of these ways:

- Using a series of separate calls
- Using a single self-contained call

Using Separate Calls

You can use three separate calls:

1. Set the Inputs

   Use the `SET_INPUT` call for each formula input and context that you need to explicitly set for the formula call. You don't need to specify all formula inputs and contexts. To explicitly unset a context value, use the `SET_INPUT` call without passing the optional value parameter. Any extra inputs specified in `SET_INPUT` calls are ignored.
2. Call the Formula

   Use the `EXECUTE` call to call a formula.
3. Get the Formula Outputs

   Use one or more `GET_OUTPUT` calls to fetch outputs from the last formula call.

When the formula runs, it returns an execution error in these scenarios:

- The called formula isn't executable.
- The called formula is already running.
- The data type of an input variable (specified using SET_INPUT) or an output variable (specified using GET_OUTPUT) doesn't match its actual data type within the called formula.

This table summarizes the methods for calling a formula using separate calls.

Method	Use To
`SET_INPUT(input [,value])`	Sets the value of an input or a context to the value specified in the value parameter. The value parameter is optional. If you specify the value parameter, the input is set to this value. If you don't specify the value parameter, the input or context is passed as unset to the formula. The data type of the value is the expected data type for the input. If you use a context in a SET_INPUT call, its value will be set to the value in the calling formula.
`EXECUTE(formula)`	Executes the called `formula`.
`GET_OUTPUT(output, default-value)`	Gets the value of the output parameter after calling a formula. If there is no formula output called 'output' or it's not set, the formula returns the value specified in the default value parameter. The data type of default value is the expected data type for the output.

Note: Formula inputs that are set using `SET_INPUT` persist as long as no `EXECUTE` or `GET_OUTPUT` calls are made. Output values from a called formula persist as long as no `SET_INPUT` or new `EXECUTE` calls are made. When the calling formula exits, the process removes any saved input or output values.

Using a Single Self-Contained Call

Here's what a single self-contained call does:

- Clears the input values at the start to not use prior `SET_INPUT` call values.
- Discards the outputs at the end so that the subsequent `GET_OUTPUT` calls only return the default values.

Here's how you can use the `CALL_FORMULA` method:

```
CALL_FORMULA(formula, [set statement, get statement])
```

A `SET` statement is a `SET_INPUT` call. A `GET` statement assigns the result of a `GET_OUTPUT` call to a variable in the calling formula. The calls execute in this order:

1. SET_INPUT calls
2. EXECUTE call
3. GET_OUTPUT assignments

The compiler generates code to execute in this order, even if SET and GET statements are interspersed.

Related Topics

- Examples of Calling a Formula from a Formula

Examples of Calling a Formula from a Formula

Use these examples to understand how to call a formula from another formula using these methods:

- A series of separate calls
- A single self-contained call

The examples include two versions of a wage formula, and a table comparing the two methods using a few use cases.

The first two examples show different versions of the wage formula. These points apply to both examples:

- The formula calls RATE_FORMULA to get a value for HOURLY_RATE.
- The RATE_FORMULA enters text to call UNIT.
- The formula call sets to enter the UNIT to 'Hourly'.
- The RATE_FORMULA returns the rate in the output variable called RATE.
- The GET_OUTPUT call returns 0.00 if the RATE_FORMULA doesn't return RATE.

Wage Formula Using Separate Calls

This example shows how to call a formula using separate calls.

```
SET_INPUT('UNIT', 'Hourly')
EXECUTE('RATE_FORMULA')
HOURLY_RATE = GET_OUTPUT('RATE',0.0)
WAGE = HOURS_WORKED * HOURLY_RATE
RETURN WAGE
```

Wage Formula Using a Self-Contained Call

This example shows how to call a formula using a self-contained call.

```
CALL_FORMULA
('RATE_FORMULA','Hourly' > 'UNIT'
/* SET_INPUT('UNIT', 'Hourly') */
,HOURLY_RATE < 'RATE' DEFAULT 0.0
/* HOURLY_RATE = GET_OUTPUT('RATE',0.0) */
)
WAGE = HOURS_WORKED * HOURLY_RATE
RETURN RATE
```

Sample Expressions to Compare Methods

Here's what you can do using sample expressions in the two methods:

- Call a formula
- Set inputs and context values
- Unset context values
- Get output values into a variable or array variable
- Provide a default output value

Note: SET_INPUT or > statements have no effect if the calling formula has no formula input or context of the same name.

This table shows a few use cases that compare the two methods using sample expressions.

Use Case	Using Separate Calls	Using a Self-Contained Call
Execute a formula where the formula **GET_RATES** is executed	`EXECUTE('GET_RATES')`	Use within a **CALL_FORMULA** statement `'GET_RATES'`
Set an input value in the called formula where you round off EXTRA_HOURS to 2 decimal places and set the input OVERTIME in the called formula.	`SET_INPUT ('OVERTIME' ,ROUNDUP(EXTRA_HOURS,2) )`	Use within a **CALL_FORMULA** statement `ROUNDUP(EXTRA_HOURS,2) >'OVERTIME'`
Leave a formula input value unset inside the called formula, where **RATE** isn't a formula context.	A SET_INPUTS statement isn't required, but you can this: `SET_INPUT('RATE')`	A SET statement isn't required, but you can use this: `> 'RATE'`
Inherit a context value from the called formula. For example, both the calling formula and the called formula support the AREA1 context. The called formula inherits the AREA1 context value from the calling formula.	No statements are required to do this.	No statements are required to do this.
Set a context value inside a called formula, where the called formula supports the AREA1	`SET_INPUT`	`'London' > 'AREA1'`

Use Case	Using Separate Calls	Using a Self-Contained Call

context and you must set AREA1 to 'London' in the called formula.	`('AREA1'`
	`,'London'`
	`)`	

Call a formula with an unset context value, where the called formula supports the AREA1 context and AREA1 has to be unset in the called formula.	`SET_INPUT('AREA1')`	`> 'AREA1'`

Get a formula output from the called formula.
 	
Get BONUS_RATE output value into the RATE variable using the default value 0.0 if the BONUS_RATE output doesn't exist or wasn't set.
	`RATE =`
	`GET_OUTPUT`
	`('BONUS_RATE'`
	`,0.0`
	`)`
		`RATE <'BONUS_RATE' DEFAULT 0.0`

Get a formula output from a called formula into an array
 	
Get the BONUS_RATE output value into the RATES array variable at index position 'BONUS'. Use the default value 0.0 if the BONUS_RATE output doesn't exist or wasn't set.
	`RATES['BONUS'] =`
	`GET_OUTPUT`
	`('BONUS_RATE'`
	`,0.0`
	`)`
		`RATES['BONUS'] <'BONUS_RATE' DEFAULT 0.0`

4 Fast Formula Functions

Overview of Fast Formula Functions

Fast formula functions manipulate data in different ways and always return a value. Functions are of these data types: date, number, text,and array (date_number, number_number, text_number, date_text, number_text, and text_text). Function operands are of these data types: date, number, and text. A fast formula function is identified by its name, return data type, data types, and usage behavior.

Here's how the general form of a fast formula function looks like:

```
NAME-OF-FUNCTION(operand,operand,...)
```

Operands can be optional or mandatory. You can use operands any number of times in a statement; for example, with the `GREATEST` function. The formula compiler resolves functions by matching function calls against function specifications. You can use multiple functions with the same name within a fast formula, provided that they have different return or data types.

Some fast formula functions return values that are useful in specific formula types, such as absence management, benefits, or compensation. The more generic functions fall into these categories:

Category	Purpose of Functions
Text	Manipulate text data
Number	Manipulate numeric data
Date	Manipulate dates
Data Conversion	Convert data to a different data type
Message Handling	Return messages

Text Formula Functions

Here are the formula functions that you can use to manipulate text data:

CHR(n)

Returns the character having the binary equivalent to a number operand **n** in the ASCII character set.

GREATEST(expr, expr [,expr]....)

Compares the values of all the text string operands. It returns the value of the last string in alphabetic order.

INITCAP(expr)

Returns the expression **expr** with the first letter of each word in uppercase. Delimits the words or characters that aren't alphanumeric by a white space.

INSTR(expr1, expr2 [,n [,m]])

Searches **expr1** beginning with its **n**th character for the **m**th occurrence of **expr2** and returns the character position in **expr1** for the first character of this occurrence. If **n** is negative, **INSTR** counts and searches backward from the end of **expr1**. The value of **m** must be positive. The default values of both **n** and *m* are 1, meaning **INSTR** begins searching at the first character of **expr1** for the first occurrence of **expr2**. The return value is relative to the beginning of **expr1**, regardless of the value of **n**, and is expressed in characters. If the search is unsuccessful (**expr1** doesn't appear **m** times after the **n**th character of **expr1**), the return value is 0.

INSTRB(expr1, expr2 [,n [,m]])

Works in the same way as **INSTR**, except that **n** and the return values are expressed in bytes, rather than in characters. For a single-byte character set, **INSTRB** is equivalent to **INSTR**.

LEAST(expr, expr [,expr]...)

Compares the values of all the text string operands. Returns the first string in alphabetic order from among its operands.

LENGTH(expr)

Returns the number of characters in the text string operand **expr**.

LENGTHB(expr)

Returns the length of **expr** in units of bytes.

LOWER(expr)

Converts a text string to lowercase.

LPAD(expr, n [,pad])

Returns the text string operand **expr** left-padded to length **n** with the sequence of characters in **pad**. The default value for **pad** is a blank. If **expr** is longer than **n**, then **LPAD** returns the portion of **expr** that fits in **n**.

These are a few examples of this expression:

```
/* A is set to 'XYXYXhello' */
A = LPAD ('hello, 10, 'XY')
/* A is set to 'hell' */
A = LPAD ('hello', 4 )
```

LTRIM(expr [,set])

Returns the text string operand **expr** with all the left-most characters that appear in **set** removed. The default for **set** is a blank. If none of the left-most characters of **expr** appear in **set**, then **LTRIM** returns **expr**.

Examples:

```
/* A is set to 'def' */
A = LTRIM ('abcdef','abc')
/* A is set to 'abcdef' *
/A = LTRIM ('abcdef','bc')
```

REPLACE(expr, search [,replacement])

Returns the text string operand **expr** with every occurrence of **search** replaced with **replacement**. If you omit **replacement**, it removes all occurrences of **search**. Use **REPLACE** to substitute one string for another or to remove character strings.

Example:

```
/* Set A to 'BLACK and BLUE'. */
A = REPLACE('JACK and JUE', 'J', BL')
```

RPAD(expr, n [,pad])

Returns the text string operand **expr** right-padded to length **n** with the sequence of characters in **pad**. The default value for **pad** is a blank. If **expr** is longer than **n**, then **RPAD** returns the portion of **expr** that fits in **n**.

Examples:

```
/* A is set to 'helloXYXYX' */
A = RPAD ('hello, 10, 'XY')
/* A is set to 'hell' */
A = RPAD ('hello', 4 )
```

RTRIM(expr [,set])

Returns the text string operand **expr** with all the right-most characters that appear in **set** removed. The default value for **set** is a blank. If none of the right-most characters of **expr** appear in **set**, then **expr** is returned.

Examples:

```
/* A is set to 'abc' */
A = RTRIM ('abcdef','def')
/* A is set to 'abcdef' */
A = RTRIM ('abcdef','de')
```

SUBSTR(expr, m [,n]) or SUBSTRING(expr, m [,n])

SUBSTRING returns a sub string of the text string operand **expr** of length **n** characters beginning at the **m**th character. If **n** is negative, **SUBSTR** counts backward of **expr**. If you omit the **n**, the sub string starts from **m** and finishes at the end of **expr**.

Example:

```
/* Check that the tax code starts with GG */
IF length(Tax_code) <= 2
THEN
(message = 'Tax code is too short'
RETURN message
)IF substr( Tax_code, 1, 2) = 'GG' THEN ...
```

SUBSTRB((expr, m [,n])

The same as SUBSTR, except that the arguments m and n are expressed in bytes, rather than in characters. For a single-byte database character set, SUBSTRB is equivalent to SUBSTR.

TRANSLATE(expr,from,to)

Returns the text string operand expr with all occurrences of each character in from replaced by its corresponding character in to. Characters in expr that aren't in from aren't replaced. The argument from can contain more characters than to. In this case, the extra characters at the end of from have no corresponding characters in to. If these extra characters appear in expr, they're removed from the return value.

TRIM(expr)

Trims leading and trailing spaces from a character string.

UPPER(expr)

Converts a text string to uppercase.

SPLIT FUNCTIONS

These Text Formula Functions return TEXT_NUMBER arrays. The arrays contain the result of splitting the string by a separator.

SPLIT_BY_SPACES

The separator is a sequence of one or more consecutive spaces. Here "space" includes tab character, newline in addition to space ' '.

SPLIT_BY_SPACES(expr)

Here's an example of SPLIT_BY_SPACES:

```
SPLIT_BY_SPACES(' Hello World !! ')
```

The return value is an array containing 'Hello', 'World', '!!' in that order.

SPLIT

SPLIT(expr, separator, default_string)

Splits expr into strings, separated by separator, and returns the strings in a TEXT_NUMBER array. If there is nothing between two consecutive separators then default_string is returned in the array.

SPLIT Example 1:

```
SPLIT('Hello|World', '|', '_')
```

The return value is an array containing 'Hello', 'World' in that order.

SPLIT Example 2 Multiple Character Separator:

```
SPLIT('Hello||World', '||', '_')
```

The return value is an array containing 'Hello', 'World' in that order.

SPLIT Example 3 Showing default string use:

```
SPLIT('|Hello||World|', '|', '_')
```

The return value is an array containing '_', 'Hello', '_', 'World', '_' in that order. The default string, '_', replaces "gaps" between separators i.e. before first '|', after second '|' and before 3rd '|', and after last '|'.

SPLIT Example 4 Input String Without Separator:

```
SPLIT('Hello', '||', '_')
```

The return value is an array just containing 'Hello'.

Numeric Formula Functions

Here are the formula functions that you can use to manipulate numeric data:

ABS(n)

Returns the magnitude of a numeric operand `n` as a positive numeric value. If the value of the operand is positive, its value returns unchanged. If the operand is negative, then the value's sign inverts and the value returns as a positive number.

Example:

```
ABS (-17)
```

It returns 17.

FLOOR(n)

Returns the integer part of a numeric operand `n`. If the value of the operand contains information after the decimal point, `FLOOR` discards that information and returns a whole number.

Example:

```
FLOOR(35.455)
```

It returns 35.

GREATEST(n, n [, n] ...) or GREATEST_OF(n, n [, n] ...)

Compares all the operands and returns the greatest value.

LEAST(n, n [, n] ...) or LEAST_OF(n, n [, n] ...)

Compares all the operands and returns the smallest value.

MOD(m, n)

Returns the remainder after dividing `m` by `n`.

POWER(m, n)

Returns `m` raised to the `n`th power.

ROUND(m [,n])

Rounds `m` to `n` decimal places. The default number of decimal places is 0.

Examples:

```
ROUND(2.3401, 2)
```

It returns 2.34.

```
ROUND (2.3461, 2)
```

It returns 2.35.

ROUNDUP(m [,n]) or ROUND_UP(m [,n])

Rounds off `m` up to `n` decimal places. The default number of places is 0.

Examples:

```
ROUND_UP(2.3401, 2)
```

It returns 2.35.

```
ROUND_UP(2.3400, 2)
```

It returns 2.34.

TRUNC(n [,m]) or TRUNCATE(n [,m])

Truncates `m` down to `n` decimal places. The default number of places is 0.

Examples:

```
TRUNC(2.3401, 2)
```

It returns 2.34.

Date Formula Functions

Here are the formula functions that you can use to manipulate date data:

ADD_DAYS(date, n)

Adds `n` whole days to `date`.

Example:

```
ADD_DAYS ('30-DEC-1990' (date), 6)
```

It returns 5 JAN 1991.

ADD_MONTHS(date, n)

Adds `n` whole months to `date`.

ADD_YEARS(date, n)

Adds `n` whole years to `date`.

DAYS_BETWEEN(date1, date2)

Returns the number of days between `date1` and `date2`. If `date1` is later than `date2`, then the result is a positive number. If `date1` is earlier than `date2`, then the result is a negative number.

Here's an example of this function:

```
DAYS_BETWEEN('1995/06/27 00:00:00' (date), '1995/07/03 00:00:00' (date))
```

It returns - 6.

```
Similarly;
DAYS_BETWEEN('2016/12/31 00:00:00'(DATE), '2017/01/01 00:00:00'(DATE))
```

It return -1.

GET_SYSDATE()

Returns the current system date value according to an internal notion of system date.

LAST_DAY(date)

Returns the last day of the month containing `date`.

LEAST(date, date [, date] ...)

Compares the operands and returns the earliest `date`.

MONTHS_BETWEEN(date1, date2)

Returns the number of months between `date1` and `date2`. If `date1` is later than `date2`, the result is a positive number. If `date1` is earlier than `date2`, the result is a negative number. The return value has a numeric data type that can contain a fraction if the dates don't differ by a whole number of months.

NEW_TIME(date, zone1, zone2)

Returns the date and time in `zone2` when the date and time in `zone1` are `date`.

Here are the standard text strings that you can store in arguments `zone1` and `zone2`:

Time Zone	Description
AST	Atlantic Standard Time

Time Zone	Description
BST	Bering Standard Time
CST or CDT	Central Standard or Daylight Time
EST or EDT	Eastern Standard or Daylight Time
GMT	Greenwich Mean Time
HST or HDT	Alaska-Hawaii Standard Time or Daylight Time
MST or MDT	Mountain Standard or Daylight Time
NST	Newfoundland Standard Time
PST or PDT	Pacific Standard or Daylight Time
YST	Yukon Standard Time

NEXT_DAY(d, `expr`)

Returns the first date following `d` of the weekday named by **`expr`**.

You can specify the week day as a string that has a 3-letter prefix or a number. The prefix is case-independent.

Day	Prefix	Number
Monday	MON	1
Tuesday	TUE	2
Wednesday	WED	3
Thursday	THU	4
Friday	FRI	5
Saturday	SAT	6
Sunday	SUN	7

ROUND(date [,format])

Returns the result of rounding `date` according to `format`. The default format is `DDD`, which represents the nearest day.

TRUNC(date [,format])

Returns the result of truncating `date` according to `format`. The default format is `DDD`, which represents a whole day.

Data Conversion Formula Functions

Here are the formula functions that you can use to perform data conversions:

DATE_TO_TEXT(date [,format]), TO_CHAR(date [,format]), and TO_TEXT(date [,format])

Converts `date` to a character string in the format specified by `format`. The default format is the application canonical format.

NUM_TO_CHAR(n, format)

Converts the number `n` to a character string in the specified format. This function is equivalent to the SQL TO_CHAR function.

TO_CHAR(n) and TO_TEXT(n)

Converts the number `n` to a character string in canonical number format.

TO_DATE (`expr` [, format])

Converts the character string `expr` to a date in the specified format. If no format is specified, then `expr` must be in canonical format.

TO_NUMBER(`expr`) and TO_NUM(`expr`)

Converts the character string `expr` to a number. The character string must be in canonical number format. A period is used for the decimal point; for example, 1.234. Negative numbers are preceded with a minus; for example, -1.234.

Miscellaneous Formula Functions

Here are the formula functions that you can use to manipulate messaging data or retrieve values from user-defined tables:

ESS_LOG_WRITE

ESS_LOG_WRITE(log_message)

Outputs a log message to the Enterprise Scheduler log file.

Refer to **Formula Logging** section in *Improve Formula Performance*, when considering using the ESS_LOG_WRITE function. This function should be used sparingly as it can impact system performance.

GET_LOOKUP_MEANING

GET_LOOKUP_MEANING(lookup_type, lookup_code [, default_meaning])

Returns the lookup meaning for the lookup type and code. The default meaning can be provided to return a value if the lookup type and code combination isn't valid. An error will be raised if the lookup type and code combination isn't valid, and no default meaning is provided.

GET_MESG, GET_FND_MESG

GET_MESG(appname, msgname [, token1, value1] [, token2, value2] [, token3, value3] [, token4, value4] [, token5, value5])

GET_FND_MESG(appname, msgname [, token1, value1] [, token2, value2] [, token3, value3] [, token4, value4] [, token5, value5])

Returns an expanded version of the application message specified using `appname`, `msgname`, and up to five pairs of message tokens and their corresponding values.

GET_RATE

GET_RATE(from_currency, to_currency, rate_type[,default_rate])

Returns the rate between the two currencies for a given conversion date and rate type. The return type is NUMBER.

Contexts: EFFECTIVE_DATE (text) is the conversion date.

Parameters:

- FROM_CURRENCY (text): An example would be USD.
- TO_CURRENCY (text): An example would be GBP.
- RATE_TYPE (text): The source of a currency conversion rate, such as user defined, spot, corporate, or fixed.

  > **Note:** During journal entry, the conversion rate is provided automatically by the General Ledger based on the selected conversion rate type and currency, unless the rate type is user. For user rate types, you must enter the conversion rate. Define additional rate types as needed. Set your most frequently used rate type as the default.

- DEFAULT_RATE (number): The rate that's returned if GET_RATE can’t get a rate. A typical value for this would be 1.0.

GET_RATE calls a General Ledger product API. The API retrieves the rate from the General Ledger daily rates or fixed rates, where appropriate.

GET_TABLE_VALUE

GET_TABLE_VALUE(table_name, column_name, row_value [,default_value])

GET_TABLE_VALUE(table_name, column_name, row_value, effective date)

Returns the value of a cell in a user-defined table on the effective date of the session or process. The first three text operands identify the cell. An optional fourth parameter does one of the following, depending on its data type:

- Text: Returns a text default value if no data is found.
- Date: Returns the value of the cell on the specified date.

Here's an example of this function:

`GET_TABLE_VALUE('WAGE RATES', 'Wage Rate', Rate_Code, 'DEFAULT')`: Returns the row_value for Wage Rate or DEFAULT if it doesn't find a row.

GET_VALUE_SET

GET_VALUE_SET(value_set_code, bind)

Returns the first record of the given value set for the bind passed, whereby the bind needs to be in this format: `<Separator character> <equal character><first parameter name><equal character><value><Separator character><second parameter name><equal character><value><Repeat the same for more bind parameters>`

The return value is up to 100 characters long and is a value set id column value.

GET_VALUE_SET_ID is an alternative name for GET_VALUE_SET.

Here's an example of this function:

`ASG_NUMBER=GET_VALUE_SET('SAMPLE_GET_ASG_NUM', '|=PERSON_ID='''||POSITION3||''''')` Passes data to a fast formula function to retrieve assignment number given PERSON_ID whose value is set from the `position3` variable.

> **Note:** Use the GET_VALUE_SET function to retrieve information when a database item isn't available. This function supports Value Set with Validation Type = Table, Value Data Type = Character and no aliases.

GET_VALUE_SET_VALUE

GET_VALUE_SET_VALUE(value_set_code, bind)

The return value is up to 255 characters long and is a value set value column value. The parameters and value set configuration are the same as for GET_VALUE_SET.

GET_VALUE_SET_IDS

GET_VALUE_SET_IDS(value_set_code, bind)

GET_VALUE_SET_IDS corresponds to GET_VALUE_SET_ID, but returns a TEXT_NUMBER array of values instead of a TEXT value. The parameters and value set configuration are the same as for GET_VALUE_SET.

GET_VALUE_SET_CODES is an alternative name for GET_VALUE_SET_IDS.

GET_VALUE_SET_VALUES

GET_VALUE_SET_VALUES(value_set_code, bind)

GET_VALUE_SET_VALUES corresponds to GET_VALUE_SET_VALUE, but returns a TEXT_NUMBER array of values instead of a TEXT value. The parameters and value set configuration are the same as for GET_VALUE_SET.

GET_VALUE_SET_MEANINGS is an alternative name for GET_VALUE_SET_VALUES.

HR_TRACE(`expr`)

Outputs a trace message.

Note: It's more efficient to use an application-specific logging function than `HR_TRACE`.

5 Formulas for Payroll

Overview of Payroll Formulas

Here are the tasks you can do using payroll formulas in your application:

- Prorate payroll results
- Convert rate periodicities
- Validate element entry values
- Control preferences for payment methods
- Use HR database items in formulas
- Set default organization payment methods
- Return salary amounts
- Restrict the payroll run process to a specific set of employees
- Control when the application submits the current flow
- Return reference values for comparison in balance exception reports
- Control how the application loads a batch from a file

You can copy and edit the predefined formulas or create your own.

This table describes the types of formulas that you can use within your payroll application.

Formula or Type	Description	Example
Proration Formula	Controls how the payroll calculation prorates an element entry. Proration occurs when the formula encounters an event, such as a change to an element entry value.	Return a proration factor or .25 for absences based on an employee type, such as a system analyst on temporary assignment.
Rate Conversion Formula	Creates a formula to convert rates for proration when you require different values for periodicity than the ones used in the predefined formulas.	Specify a different number of working hours to use when converting annual values into hourly rates, such as 2080 annual hours.
Element Input Validation Formula Type	Here's what you can do with this formula: • Validate element entry values • Provide a default value for an element entry value • Calculate entry values based on other entry values	Multiply the pay rate by 1.5 if the employee works more than 40 hours a week. Use this formula at the element or element eligibility level.
User Table Validation Formula Type	Validates entries in user-defined tables.	Return an error message if a user enters a value less than 10 or greater than 50 in the Dues column of the Union Dues user table.

Formula or Type	Description	Example
Flow Schedule Formula Type	Creates a scheduling formula when the scheduling options for submitting a process, report, or flow don't cover your requirements. You can also determine how often the formula submits future instances of the flow.	Load time card batches daily. Or, write a formula to increase the number of batch loads at the end of a payroll period when workers typically submit their time cards.
Payroll User Interface Configuration Formula Type	Create formulas to control preferences for payment methods for the enterprise if you don't want to use the default configuration. After you create your formulas, you attach them to the appropriate rows in the Payroll User Interface Configuration user-defined table.	Set the default organization payment method for each legislative data group.
Payroll Access to HR Formula Type	Calls a payroll formula when your payroll formula requires an HR database item.	Return salary amounts and then use the Payroll Access to HR formula to return a full-time equivalent (FTE) database item for a specific group of employees.
Payroll Relationship Group Formula Type	Returns Yes or No values to indicate whether a person is part of a payroll relationship group.	Restrict the payroll run process to a specific set of employees, based on assignment and person level attributes.
Flow Schedule Formula Type	Controls when the application submits the current flow and how often it submits future instances of the flow.	Create a formula that schedules the frequency with which an extract process checks for new starter details.
Balance Exception Formula Type	Creates formulas to return reference values for comparison in balance exception reports.	Multiply the year-to-date gross earnings by 5 percent and return the value when the balance exception report to which it's associated is run.
Element Skip Formula Type	Uses conditional processing to define when the run should process the element, and when it should skip it. If you specify a skip rule for the element, payroll runs process the element only when the conditions of the formula are met. Otherwise, it skips the element. You select skip rules on the Manage Elements page.	Specify to process the Union Fees element in every run, unless the Union_Fees_Paid balance is greater than 10,000.

Create Conversion Formulas for Proration

The predefined proration formula GLB_EARN_PRORATION controls how the payroll calculation prorates an element entry when it encounters an event. This could happen when there's a change to an element entry value.

You can copy and edit a predefined proration formula to modify the calculation. Then, you can select the user-defined formula as the proration formula for your element.

Create a Formula

You must create a modified rate conversion before you create its related proration conversion rule.

1. Select the formula type **Payroll Run Proration**.
2. Search for and copy the predefined **Rate Conversion Proration** formula.
3. Add the suffix underscore **_PRORATE** to the name.
4. Update these formula inputs:
    - PRORATE_START_DATE (date)
    - PRORATE_END_DATE (date)
    - SOURCE_PERIODICITY (text)
    - DAYS_WORKED (number)
    - RATE_CONV_FORMULA (text)
    - HOURS_WORKED (number)
    - IN_AMOUNT (number)
    - UNIT_TYPE (text)
    - PRORATION_UNIT (text)
5. Add the formula outputs for the element input values.
6. Save, submit, and compile the formula.

Some countries or territories supply predefined proration formulas that you can use as the basis for your modified version.

Related Topics

- Set Up Element Proration
- How Prorated Earnings and Deductions are Calculated
- Periodicity Conversion

Configure Periodicity Conversion Rules

You can use the predefined periodicity conversion formulas when converting rates for hours multiplied by rate calculations of an element run result. You can also use these formulas for rates based on rate definitions and proration unless you specify another proration formula.

The conversion rule applies to the Flat Amount, Hours * Rate, and Days * Rate calculation rules.

Here's what you can do to use a different value instead of the predefined value for periodicity:

- Override the default periodicity for the element definition at the element entry level.
- Create your own periodicity conversion formula.

For example, you can create a formula to specify a different number of working hours when converting annual values into hourly rates.

Note: As a best practice, if you configure a periodicity rate formula, you should also create a related proration formula.

Configure a Formula

Complete these steps to configure a rate conversion formula:

1. On the Home page, click the **Fast Formulas** task under the **My Client Groups** tab to search for formulas with the Rate Conversion formula type.
2. Search for and display the rate conversion formula you want to copy.
3. Create a new formula with the formula type Rate Conversion.
4. Copy the formula text into your new formula.
5. Edit the periodicity values.

   For example, if you create a rate conversion formula that uses 7.5 hours instead of 8 hours for the number of work hours in a day, you would edit the periodicity as follows:

```
else if (out_periodicity = 'WORKHOUR') then
 l_amt = (l_year_amt /260)/ 7.5
```

6. Save, submit, and compile the formula.
7. Use the Elements task to search for the element and identify the formula used to calculate the element.
8. Use the Fast Formulas task to edit the formula.

   Edit the rate converter call, replacing the rate conversion formula name with the name of your new formula.

```
 CALL_FORMULA( 'RATE_CONVERTER',
 l_rate > 'SOURCE_AMOUNT',
 l_source_periodicity > 'SOURCE_PERIODICITY',
 l_target_periodicity > 'TARGET_PERIODICITY',
 'ANNUALIZED RATE CONVERSION' > 'method',
/* replace with the name of new formula*/
 l_actual_amount < 'TARGET_AMOUNT' DEFAULT 0)
```

9. Save, submit, and recompile the formula.

Related Topics

- Overview of Using Formulas
- Periodicity Conversion

Element Input Validation Formula Type

You can use an element input validation formula to validate one or more element entry values. You can also use this formula type to provide a default value for an element entry value.

Also, you can calculate entry values based on the user's entries in other entry values.

You select the formula on the Element Summary page in these fields:

Page Section	Field	Purpose	When Does the Formula Run?
Element Details or Element Eligibility	Validation Formula	Validates one or more entry values for the element based on entries in other entry values.	When you save the element entry.
Element Details or Element Eligibility	Calculation Formula	Provides values for one or more entry values using a calculation formula that takes input from these entry values or other entry values.	When you save the element entry.
Element Details or Element Eligibility	Defaulting Formula	Provides default values for one or more entry values.	When you create the element entry.
Input Value	Validation Formula	Validates one entry value independent of others.	When you enter a value.

Note: A formula at the element eligibility level always overrides an equivalent formula at the element level.

Here are the contexts that are available to all formulas of this type:

- LEGISLATIVE_DATA_GROUP_ID
- DATE_EARNED
- EFFECTIVE_DATE

These contexts are available to formulas only at element or element eligibility level; they aren't available to validation formulas at the input value level:

- PERSON_ID
- PAYROLL_RELATIONSHIP_ID
- PAYROLL_TERM_ID
- PAYROLL_ASSIGNMENT_ID
- HR_RELATIONSHIP_ID
- HR_TERM_ID
- HR_ASSIGNMENT_ID

Here are the input variables that are available to formulas of this type.

Formula Usage	Input Variables	Comments
Validation formula at input value level	`entry_value`	Passes the value to be validated. You must declare the input variable as the appropriate type for the element input value.
Validation formula at element or element eligibility level	Any element input value name that corresponds to an entry value.	Replace spaces in the input value name with underscores in the input variable name. It doesn't matter whether you use uppercase or lowercase for the name.

Formula Usage	Input Variables	Comments
Defaulting formula	None	Use database items or other logic instead.
Calculation formula	Any element input value name of an entry value.	Replace spaces with underscores. You need not provide all the available entry values.

Here are the return values that are available to formulas of this type.

Formula Usage	Return Values	Comments
Validation formula at any level.	`formula_status`	Must be either 'S' (success) or 'E' (error). Required.
Validation formula at any level.	`formula_message`	The text of the message is passed to the user if the validation fails. Optional.
Defaulting formula	Any element input value name of an entry value.	A return value overrides any default value that's provided on the input value in the element or element eligibility record.
Calculation formula	Any element input value name of an entry value.	You don't need to return all the available entry values. You can return the entry values that were passed as input variables or other entry values.

Here are a few sample formula that you can use:

- Validation formula at input value level
- Validation formula at element or element eligibility level
- Calculation formula at element or element eligibility level
- Defaulting formula at element or element eligibility level

Validation formula at input value level:

```
inputs are entry_value(date)
if(entry_value = '01-APR-2008' (date)) then
(
formula_message = 'Valid date'
formula_status = 'S'
)
else(formula_message = 'Invalid date'
formula_status = 'E'
)
return formula_message, formula_status
```

Validation formula at element or element eligibility level:

```
inputs are hours_worked, rate, earning_date(date), comment(text)
if(hours_worked > 80) then
```

```
(
formula_message = 'You are within the working limit.
'formula_status = 'S'
)
else
(
formula_message = 'You have worked too many hours.
'formula_status = 'E'
)
return formula_message, formula_status
```

Calculation formula at element or element eligibility level:

```
inputs are hours_worked, rate, comment(text)
if(hours_worked > 80) then
(
rate = rate * 1.2
comment = 'Your rate has been increased'
)
return rate, comment
```

Defaulting formula at element or element eligibility level:

```
if(CATEGORY = 'S') then
(
rate = 20
)
else
(
rate = 30
)
rate_code = 'B'
return rate, rate_code
```

User Table Validation Formula Type

The User Table Validation formula type validates entries in user-defined tables. When you create or edit user-defined tables, select the formula in the Formula field for the user-defined columns.

You can use this formula type to ensure that entries are:

- Between a specified range
- Don't contain a negative value

You can use the EFFECTIVE_DATE (text) context for formulas of this type.

You must use one input variable called ENTRY_VALUE of data type `text`.

These return values are available to formulas of this type:

Return Value	Data Type	Required	Description
FORMULA_MESSAGE	Text	N	Returns a text message for either or both statuses. The message is displayed on the Create User-Defined Table: User-Defined Table Values page.

Return Value	Data Type	Required	Description
FORMULA_STATUS	Text	Y	Returns the value S (success) or E (error).

This formula checks whether the deduction value entered in the Union A column of the Union Dues table is between 10.00 and 20.00:

```
/* Formula Name: Union A Dues Validation */
/* Formula Type: User Table Validation */
INPUTS ARE entry_value (text)
IF TO_NUMBER(entry_value) < 10.00 OR
TO_NUMBER(entry_value) > 20.00
THEN
(
formula_status = 'e'
formula_message = 'Error: Union A dues must be between $10.00 and $20.00.'
)
ELSE
(
formula_status = 's'
formula_message = ' '
)
RETURN formula_status, formula_message
```

Payroll User Interface Configuration Formula Type

You can use the Payroll User Interface Configuration formula type to control the configurable preferences for payment methods. On the Fast Formulas page, you can create formulas to override the default values by creating new values for these preferences.

After you create your formulas, you can attach them to the appropriate rows in the PAYROLL_USER_INTERFACE_CONFIGURATION user-defined table.

This table lists the configurable preferences, their predefined row name in the user-defined table, purpose, and default values.

User-Defined Row Name	Purpose	Default Value
Default Organization Payment Method	Sets the default organization payment method in the simplified UI for each legislative data group.	(Not applicable)
Execute Personal Payment Method Validation	Validates the customer personal payment method criteria. For example, you can create only one payment method with a specific account type.	No
Maximum Number of Personal Payment Methods	Sets the maximum allowed number of personal payment methods.	No limit

User-Defined Row Name	Purpose	Default Value
Payment Types Available to Workers	Limits the creation of personal payment methods to a specific payment type.	All available organization payment methods
Prevent Edit Personal Payment Method	Prevents employees from modifying any personal payment method details that meet the criteria set in the formula.	No
Show Percentage or Amount	Displays only Amount or Percentage amount types on the Manage Personal Payment Methods page.	Both

Note: Each preference that you configure must have its own formula. You can't combine different preferences into a single formula. For example, you can't create a formula that sets the default organization payment method and also sets the maximum number of allowed personal payment methods.

The Payroll User Interface Configuration formula type doesn't support database items. As with other formula types, to retrieve information when a database item isn't available, use the GET_VALUE_SET function.

Note: When using the GET_VALUE_SET function, ensure that the **Value Attributes Table Alias** field for the value set has no value. The function fails if you provide an alias.

These input values are available to all formulas of the Payroll User Interface Configuration formula type:

Input Variable	Type	Description
EFFECTIVE_DATE	Text	The effective date on which the formula validation will be applied.
LEGISLATIVE_DATA_GROUP_ID	Text	The number that identifies the legislative data group for the variable.
PAYROLL_RELATIONSHIP_ID	Text	The number that identifies the payroll relationship for the variable.

These input values are available to the two personal payment method validation formulas:

Input Variable	Type	Description
AMOUNT	Text	Total amount to be paid to the personal payment method.
BANK_ACCOUNT_NUMBER	Text	Bank account number for the external bank account.

Input Variable	Type	Description
BANK_ACCOUNT_TYPE	Text	Type of the external bank account for the personal payment method.
BANK_NAME	Text	Name of the bank associated with the personal payment method.
BRANCH_NAME	Text	Name of the bank branch associated with the personal payment method.
CURRENCY_CODE	Text	The currency code of the personal payment method.
ORGANIZATION_PAYMENT_METHOD_NAME	Text	Name of the organization payment method.
PAYMENT_AMOUNT_TYPE	Text	Percentage or amount attributed to the personal payment method.
PAYMENT_TYPE_NAME	Text	Payment type, such as check or direct deposit for a particular organization payment method.
PERCENTAGE	Text	The percentage amount attributed to the personal payment method.
PERSONAL_PAYMENT_METHOD_NAME	Text	The name of the personal payment method.
PRIORITY	Text	The priority order of the personal payment method.

This context is available only for formulas mapped to the Default Organization Payment Method row in the user-defined table.

- PAYMENT_TYPE_NAME (text)

  Text representing the payment type in the expected format, for example, EFT or Check.

Unlike other formulas, the return values for the Payroll User Interface Configuration formula type are variables that you declare in your formulas. Refer to the sample formulas for examples.

This sample formula sets default organization payment methods in LDG_A (ID 300100001) based on the payment type. To use this rule, attach your formula to the **Default Organization Payment Method** row in the PAYROLL_USER_INTERFACE_CONFIGURATION user-defined table. In this example, the valid return values for `DEFAULT_OPM` are the exact names of organization payment methods.

```
/*******************************************
FORMULA NAME: Default OPM Formula
FORMULA TYPE: Payroll User Interface Configuration/
*******************************************
/* Configuration */
IF (LEGISLATIVE_DATA_GROUP_ID = '300100001'
AND PAYMENT_TYPE_NAME = 'EFT')
```

```
THEN DEFAULT_OPM = 'NACHA_OPM_A
' ELSE IF (LEGISLATIVE_DATA_GROUP_ID = '300100002
'AND PAYMENT_TYPE_NAME = 'Check')
THEN DEFAULT_OPM = 'CHECK_OPM_A'
ELSE DEFAULT_OPM = 'NODATA'
RETURN DEFAULT_OPM
/* End Formula Text */
```

This sample formula limits personal payment methods to be based only on organization payment methods of EFT (electronic funds transfer) or check payment types. To use this rule, attach your formula to the **Payment Types Available to Workers** row in the PAYROLL_USER_INTERFACE_CONFIGURATION user-defined table. In this example, the valid return values are the base payment type names defined in the table PAY_PAYMENT_TYPES_VL.

```
/*************************************************
FORMULA NAME: Worker Payment Types Formula
FORMULA TYPE: Payroll User Interface Configuration/
*************************************************/
* Configuration */
PAYMENT_TYPE[1] = 'EFT'
PAYMENT_TYPE[2] = 'Check'
RETURN PAYMENT_TYPE
/* End Formula Text */
```

This sample formula limits the number of personal payment methods for employees in LDG_A (ID 300100001) to **3**, and employees in LDG_B (ID 300100002) to **1**. To use this rule, attach your formula to the **Maximum Number of Personal Payment Methods** row in the PAYROLL_USER_INTERFACE_CONFIGURATION user-defined table. In this example, the valid return values for `MAX_NUM_PPMS` are integers.

```
/*************************************************
FORMULA NAME: Maximum PPM Formula
FORMULA TYPE: Payroll User Interface Configuration
*************************************************/
/* Configuration */
IF LEGISLATIVE_DATA_GROUP_ID = '300100001'
THEN MAX_NUM_PPMS = '3'
IF LEGISLATIVE_DATA_GROUP_ID = '300100002'
THEN MAX_NUM_PPMS = '1'
ELSE
MAX_NUM_PPMS = 'NO DATA'
RETURN MAX_NUM_PPMS
/* End Formula Text */
```

This sample formula sets a restriction to display only the Percentage amount type and field on the Manage Personal Payment Methods page. To use this rule, attach your formula to the **Show Percentage or Amount** row in the PAYROLL_USER_INTERFACE_CONFIGURATION user-defined table. In this example, the valid return values for `PAYMENT_AMOUNT_TYPE` are `AMOUNT` or `PERCENTAGE`.

```
/*************************************************
FORMULA NAME: Show Percentage Formula
FORMULA TYPE: Payroll User Interface Configuration
*************************************************/
/* Configuration */
PAYMENT_AMOUNT_TYPE = 'PERCENTAGE'
RETURN PAYMENT_AMOUNT_TYPE
/* End Formula Text */
```

This sample formula validates that the first personal payment method is Pay Card and the payment type is either EFT or IAT. And the account type is Pay Card. This formula ensures that the first personal payment method meets these criteria and that an employee has only one personal payment method of this type.

```
/*************************************************
FORMULA NAME: Execute Personal Payment Method Validation
FORMULA TYPE: Payroll User Interface Configuration
```

```
**************************************************/
 IF (PAGE_NAME = 'DETAILS'){
 //PPM Validation
 //check if there is PPM for PAYROLL_RELATIONSHIP_ID
 COUNT = NUMBER_OF_PPMS

 //This returns the number of PPMs for a payroll
 relationship ID using a value set
 //If this is first PPM
 IF(COUNT==0){
 IF((PAYMENT_TYPE_NAME==EFT OR PAYMENT_TYPE_NAME==IAT)
 AND BANK_ACCOUNT_TYPE==PAYCARD){
 //If first PPM and is of type PAYCARD, PPM can be created
 RETURN_VALUE[1]= 'N'
 }
 ELSE{
 //If first PPM is not PAYCARD, throw error message
 RETURN_VALUE[1]='Y'
 RETURN_VALUE[2]='ANY_VALID_ERROR_MESSAGE'
 }
 }
 //This is not the first PPM.
 ELSE{
 IF((PAYMENT_TYPE_NAME==EFT OR PAYMENT_TYPE_NAME==IAT)

 AND BANK_ACCOUNT_TYPE==PAYCARD){
 //If multiple PAYCARD PPMs, throw error message
 RETURN_VALUE[1]='Y'
 RETURN_VALUE[2]='ANY_VALID_ERROR_MESSAGE'
 }
 ELSE{
 RETURN_VALUE[1]='N'
 }
 }
 }
 //When changing the priority of a PPM
 ELSE IF(PAGE_NAME == 'SUMMARY')
 {
 //Get the highest priority for PAYROLL_RELATIONSHIP_ID
 IF (PRIORITY == HIGHEST_PRIORITY){
 //Gets the highest priority among the PPMs for a particular payroll relationship ID
 //by executing a value set. Change in priority throws error message.
 RETURN_VALUE[1]='Y'
 RETURN_VALUE[2]='ANY_VALID_ERROR_MESSAGE'
 }
 ELSE
 RETURN_VALUE[1]='N'
 }
 }
```

This sample formula prevents a self-service user from editing personal payment methods that are associated with an organization payment method of payment type Check.

```
/*******************************************************************************
FORMULA NAME: Prevent Edit Personal Payment Method
FORMULA TYPE: Payroll User Interface Configuration
Expected Behavior : If value returned is N, no change in functionality
 If value returned is Y, Save/Submit buttons will be disabled in edit flow to prevent the edit of personal
 payment method.
 The Delete buttons will also be disabled for the personal payment methods

Sample Input File Format:
User Interface|Legislative Data Group|Effective Date|Payroll Relationship|Payment Type
*******************************************************************************/

/* inputs */
```

```
INPUTS ARE PAGE_NAME (text), LEGISLATIVE_DATA_GROUP_ID (text), PAYROLL_RELATIONSHIP_ID (text),
 EFFECTIVE_DATE(text), PERSONAL_PAYMENT_METHOD_NAME (text), ORGANIZATION_PAYMENT_METHOD_NAME (text),
 PAYMENT_TYPE_NAME (text), CURRENCY_CODE (text),PAYMENT_AMOUNT_TYPE (text),PERCENTAGE (text),AMOUNT
 (text),PRIORITY (text),BANK_NAME (text),BRANCH_NAME (text),BANK_ACCOUNT_NUMBER (text), BANK_ACCOUNT_TYPE
 (text)

/* Configuration */

IF ORGANIZATION_PAYMENT_METHOD_NAME='Check' THEN
(
OUTPUT_VALUE = 'Y'
)
ELSE
(
OUTPUT_VALUE = 'N'
)

RETURN OUTPUT_VALUE

/* End Formula Text */
```

Related Topics

- Configure Payment Method Preferences

Payroll Access to HR Formula Type

Use the Payroll Access to HR formula type to call a payroll formula when your payroll formula requires an HR database item.

For example, you can use the payroll formula to return the salary amount, and then use the Payroll Access to HR formula to return a full-time equivalent (FTE) database item for a specific group of employees.

These contexts are available to all formulas of this type:

- HR_RELATIONSHIP_ID
- HR_TERM_ID
- GRADE_RATE_ID
- LEGAL_EMPLOYER_ID
- AREA1
- LOCATION_ID
- HR_ASSIGNMENT_ID
- PERSON_ID
- JOB_ID
- GRADE_ID
- ADDRESS_ID
- ADDRESS_TYPE
- ACCRUAL_PLAN_ID
- EFFECTIVE_DATE

- LEGISLATIVE_DATA_GROUP_ID
- ORGANIZATION_ID

These input variables are available to formulas of this type.

Enter Data	Data Type
ACTUAL_END_DATE	Date
ACTUAL_START_DATE	Date
EFF_DATE	Date
END_DATE	Date
ENTRY_LEVEL	Text
HR_ASSG_ID	Number
HR_ASSIGN_ID	Number
HR_EFFECTIVE_DATE	Date
HR_ENTRY_LEVEL	Text
HR_ID	Number
HR_ID2	Number
HR_TRM_ID	Number
MODE	Text
START_DATE	Date
UNIT_TYPE	Text

These return values are available to formulas of this type:

Return Value	Data Type	Description
L_SALARY	Number	Salary ID of employee
L_SALARY_BASIS_CODE	Text	Salary basis of employee

Return Value	Data Type	Description
L_UNITS	Number	Number of units worked
X_OUTPUT	Date	Output date
X_OUTPUT	Text	Output text
X_OUTPUT_NUMBER	Number	Output number
X_OUTPUT_TEXT	Text	Output text

This sample Oracle Payroll formula returns the salary amount for employees based on their full-time equivalent (FTE), which is an HR database item. Because HR database items aren't accessible through Oracle Payroll formulas, you must create a Payroll Access to HR formula to retrieve the database item. And then call the formula that retrieves the database item from the formula that returns the salary amount.

```
/*************************************************************
FORMULA TYPE: Payroll Access to HR
DESCRIPTION: Retrieve FTE DBI
*************************************************************/
/* Default Statement Section */
Default for PER_ASG_FTE_VALUE is 1/
* Calculation Section */
HR_FTE = PER_ASG_FTE_VALUE
/* Return Statement Section */
Return HR_FTE
/*************************************************************
FORMULA NAME: GB Salary by FTE
FORMULA TYPE: Oracle Payroll
DESCRIPTION: Calculate the salary amount for OK employees based on their FTE.
*************************************************************/
/* Alias Statement Section */
ALIAS ANNUAL_SALARY_UK_AMOUNT_ASG_ENTRY_VALUE AS UK_ASG_SAL
/* Default Statement Section */
Default for ASG_HR_ASG_ID is 1
Default for UK_ASG_SAL is 0
Default for Salary_UK is 0
/* Calculation Section */
Salary_UK = UK_ASG_SAL
SET_INPUT('HR_ASSIGNMENT_ID', ASG_HR_ASG_ID)
EXECUTE('Call HR FTE DBI')
FTE = GET_OUTPUT('HR_FTE',1)
l_amount = round((FTE * Salary_UK),2)
Message = 'Salary Value is'||to_Char(l_Amount)
/* Return Statement Section */
RETURN l_Amount,Message
```

Payroll Relationship Group Formula Type

The Payroll Relationship Group formula type returns Yes or No to indicate whether a person is part of a payroll relationship group. The formula contains the criteria that define the group.

You can use these groups to define a set of people for payroll processing, data entry, or reporting. On the Object Groups page, select the formula when creating a payroll relationship group.

For example, you can use the Payroll Relationship Group formula type to restrict the payroll run process to a specific set of employees based on assignment and person-level attributes.

By default, you create formulas of this type using the Expression editor on the Create Fast Formula page. However, you can use the text editor to create more complex formulas, if required.

These contexts are available to all formulas of this type:

- PAYROLL_RELATIONSHIP_ID
- PAYROLL_TERM_ID
- DATE_EARNED
- OBJECT_GROUP_ID
- EFFECTIVE_DATE
- PAYROLL_ASSIGNMENT_ID
- PAYROLL_ID
- LEGISLATIVE_DATA_GROUP_ID

You must have at least one input value called LEVEL_NAME. The data type is text and these are the valid values:

- PAY_REL
- PAY_TERM
- PAY_ASG

This return value is available to the INCLUDE_FLAG formula type. The data type is text.

This formula calls the summary formula for each of the levels in the person group until the membership is established.

```
*/
DEFAULT_DATA_VALUE FOR PERSON_GROUP_LEVEL_SUMMARY_FORMULA_NAME is 'null'
NEED_CONTEXT(PAYROLL_RELATIONSHIP_ID)NEED_CONTEXT(PAYROLL_TERM_ID)
NEED_CONTEXT(PAYROLL_ASSIGNMENT_ID)
NEED_CONTEXT(LEGISLATIVE_DATA_GROUP_ID)
NEED_CONTEXT(PAYROLL_ID)NEED_CONTEXT(DATE_EARNED)
NEED_CONTEXT(EFFECTIVE_DATE)

in_group = 'N'

SET_INPUT('level_name', 'PAY_REL')
EXECUTE (PERSON_GROUP_LEVEL_SUMMARY_FORMULA_NAME[1])
in_group = GET_OUTPUT('INCLUDE_FLAG', 'N')

IF (in_group = 'N') THEN
(
SET_INPUT('level_name', 'PAY_TERM')
EXECUTE (PERSON_GROUP_LEVEL_SUMMARY_FORMULA_NAME[1])
in_group = GET_OUTPUT('INCLUDE_FLAG', 'N')
```

```
)
IF (in_group = 'N') THEN(SET_INPUT('level_name', 'PAY_ASG')
EXECUTE (PERSON_GROUP_LEVEL_SUMMARY_FORMULA_NAME[1])
in_group = GET_OUTPUT('INCLUDE_FLAG', 'N')
)IF in_group = 'Y' THEN
INCLUDE_FLAG = 'Y'

RETURN INCLUDE_FLAG
```

Flow Schedule Formula Type

Use Flow Schedule formulas to control when to submit the current flow and how often to submit future instances of the flow. You create scheduling formulas on the Manage Fast Formulas page when the predefined formulas don't meet your requirements.

Let's say you create a formula that loads time card batches daily, and increases to four times a day at the end of a payroll period when workers typically submit their time cards. You can create a formula that schedules the frequency with which an extract process checks for new starter details.

Here are a few points to consider when creating or updating a scheduling formula:

- Specify a meaningful name to assist the person selecting the formula.
- Review the formula to ensure it doesn't contain negative numbers that might produce an error condition, such as running a process continually.
- After updating the formula, cancel any scheduled flows that use the formula. Resubmit the flow to apply the updated definition.

The SCHEDULED_DATE (scheduled date) context is available to formula of this type.

Here's the list of database items that are available to Flow Schedule formulas.

Database Item	Data Type	Description
FF_ADD_DAYS	Date	Function to add days to a date.
FF_ADD_MONTHS	Date	Function to add months to a date.
NEXT_SCHEDULED_DATE	Date	Calculated value for the date to schedule the next flow.
SCHEDULED_DATE	Date	Date used to schedule the flow.

These are the input variables available to Flow Schedule formulas.

Input Variables	Data Type	Required	Description
SCHEDULED_DATE(DATE)	Date	Y	Date on which to schedule the flow. The date is passed to the formula

Input Variables	Data Type	Required	Description
			when it calculates the next date to schedule the flow.

Use predefined names for return variables. These are the return values available to Flow Schedule formulas.

Return Values	Data Type	Required	Description
NEXT_SCHEDULED_DATE	Date	Y	The date calculated by the formula to schedule the next flow.

This predefined formula schedules a flow so that it's submitted weekly from the date the flow owner initially submitted it.

```
/*************************************************************
FORMULA NAME: Weekly
FORMULA TYPE: Flow Schedule
DESCRIPTION: Formula to return a date time.
Returns NEXT_SCHEDULED_DATE;
Formula Results :
NEXT_SCHEDULED_DATE This is a date time value with yyyy-MM-dd HH:mm:ss format.
*************************************************************/
/* Inputs */
INPUTS ARE SUBMISSION_DATE(DATE), SCHEDULED_DATE(DATE)
/* Calculations */
NEXT_SCHEDULED_DATE = ADD_DAYS(SCHEDULED_DATE,7)
/* Returns */
RETURN NEXT_SCHEDULED_DATE
/* End Formula Text */
```

You can calculate units smaller than a day by replacing the calculation portion of the formula text using a decimal or a fraction. Let's look at some examples of submitting a flow several times a day.

Flow Submission	Formula Text for Calculation
Twice a day	`NEXT_SCHEDULED_DATE =ADD_DAYS(SCHEDULED_DATE,0.5)` **Note:** For accuracy, enter a value with at least ten decimal places. The formula text supports a maximum of 14 decimal places.
Hourly	`NEXT_SCHEDULED_DATE =ADD_DAYS(SCHEDULED_DATE,1/24)`

Balance Exception Formula Type

Use the Balance Exception formula type to create formulas to return reference values for comparison in Balance Exception report.

On the Create Balance Exception page, enter **Formula** in the **Variance Type** field, and then enter the name of the formula that you create using this formula type in the **Formula Name** field.

These contexts are available to all formulas of this type:

- EFFECTIVE_DATE
- PERSON_ID
- HR_ASSIGNMENT_ID
- TAX_UNIT_ID
- PAYROLL_RELATIONSHIP_ID
- PAYROLL_REL_ACTION_ID
- PAYROLL_TERM_ID
- PAYROLL_ASSIGNMENT_ID
- LEGISLATIVE_DATA_GROUP_ID
- PAYROLL_ID
- CALC_BREAKDOWN_ID
- AREA_1
- AREA_2
- AREA_3
- AREA_4
- AREA_5
- AREA_6
- PAYROLL_STAT_UNIT_ID
- INSURANCE_TYPE
- PENSION_TYPE
- DEDUCTION_CARD_ID

You can reference any database item in the fast formula that uses any of the listed contexts.

You can't use input variables for this formula type. This formula is run by the balance exception report for each person record. It returns the reference value for that employee for comparison with the balance value that's configured in the respective balance exception.

These return values are available to formulas of this type:

Return Value	Data Type	Required	Description
REFERENCE_VALUE	Text	Y	Returns a reference value for comparing in the balance exception report.
REFERENCE_INFO	Text	Y	Returns the text that's displayed in the **Reference** field in the balance exception report.

This formula returns 100 as a static value when the balance exception report it's associated with is run.

```
/************************************************************
FORMULA NAME: SAMPLE_BEX_FORMULA_1
FORMULA TYPE: Balance Exception
DESCRIPTION: This is a sample formula that returns a static value.
Formula Results:
reference_value - Reference Value for comparison in the Balance Exception Report.
reference_info - Reference Value for reporting in the Balance Exception Report.
************************************************************/
reference_value = 100
reference_info = 'Ref Info'
RETURN REFERENCE_VALUE,REFERENCE_INFO
/* End Formula Text */
```

This formula multiplies the year-to-date gross earnings by 75 percent and returns the value when the balance exception report it's associated with is run.

```
/*****************************************************
FORMULA NAME: SAMPLE_BEX_FORMULA_3
FORMULA TYPE: Balance Exception
DESCRIPTION: This sample formula returns a Balance Value Formula
Results:
reference_value - Reference Value for comparison in the Balance Exception Report.
reference_info - Reference Value for reporting in the Balance Exception Report.
*****************************************************
ytd_value = GROSS_EARNINGS_ASG_YTD
reference_value = 0.75* ytd_value
reference_info = 'Ref Info'
RETURN REFERENCE_VALUE,REFERENCE_INFO
/* End Formula Text */
```

Related Topics

- Balance Exceptions for the US

Element Skip Formula Type

If your payroll policies require conditional processing of an element, you can write a formula to define when the run should process the element, and when it should skip it.

For example, your formula can specify to process the Union Fees element in every run, unless the Union_Fees_Paid balance is greater than 10,000.

Your skip rule formula must be consistent with other processing rules defined for the element, such as frequency rules, which determine in which period the element is normally processed. A skip rule cannot contravene any other processing rules in place for the element. You can associate only one element skip rule formula with each element. You must write and validate the formula before you define the element, so that you can select the formula from a list on the **Element** window.

Here's how you can write a formula defining a skip rule:

1. Select the **Element Skip** formula type in the **Formulas** window.

   The formula must set and return a local variable of type text, and named as skip_flag.

   The following example of a skip rule formula defines that the Union Fees element isn't processed if the Union_Fees balance is greater than or equal to 10,000:

```
DEFAULT FOR UNION_FEES_REL_NOCB_YTD IS 0

l_amount = 0
l_amount = UNION_FEES_REL_NOCB_YTD

SKIP_FLAG = 'N'
 IF l_amount >= 10000 THEN
 (
 SKIP_FLAG = 'Y'
 )
 RETURN SKIP_FLAG
```

2. Associate this formula to the element in the **Skip Formula** field.

Related Topics

- What's an element's skip rule?

Get the Rate Amount for an Assignment Base Rate

To get the rate amount for a specific rate of the salary, use the GET_SALARY_RATE_DATA function. You can use this function in payroll processing and to interface with other internal and external apps.

For payroll processing, you can use the rates-based ORA_CMP_ASSIGNMENT_SALARY_RATES_UE and ORA_CMP_ASSIGNMENT_SALARY_RATES_RGE_UE user entities to extract rate-based salary components for a particular date or date range.

Parameters

Parameter	Data Type	Comments
P_BASE_RATE_NAME	TEXT	Name of the base rate given in the rate definition, to get the rate amount
P_AMOUNT_TYPE	TEXT	If the input value is null or RATE_AMOUNT, returns the rate amount If the input value is ANNUAL_AMOUNT, returns the annual amount for the rate

Parameter	Data Type	Comments
		If the input value is ANNUAL_FT_AMOUNT, returns the annual full-time amount for the rate If the input value is RATE_FACTOR, returns the factor for the rate

Related Topics

- User Entities for Extracting Rate-Based Salary Components

6 Formulas for Absence Management

Options to Define Qualification Plans

Configure the following rules when you create an absence qualification plan in accordance with the leave policy of your enterprise:

- Plan term
- Plan eligibility
- Enrollment and termination
- Payments

Plan Term

A qualification plan term is an assessment period for which the Evaluate Absence process calculates entitlements for the total absent time recorded in that period. When you create an absence qualification plan, you must select the type of plan term. For example, you can limit the duration of the plan term to the duration of the absence.

Plan Eligibility

Associate an eligibility profile with the qualification plan to determine the set of workers who are eligible to record an absence that belongs to that plan.

Enrollment and Termination

Decide when to enroll workers in the qualification plan. Also, decide whether ongoing payments under this plan must continue if a worker is terminated or loses eligibility for the plan.

Payments

Use an entitlement band matrix to determine the payment percentages that apply for specific time periods during an absence. Decide how you want to calculate the payment rate of a single unit of absence. You can use a rate definition to include the calculation rules, or use a formula. For example, you want workers who have completed a particular tenure to receive specific percentage of pay for a specific absence period.

The following table shows a sample scenario:

Length of Service	Payment Rule
5 to 10 years	75 percent up to 10 absent days.
10 to 20 years	75 percent up to 20 absent days.

Decide how you want to calculate the payment rate of a single unit of absence. You can use a rate definition to include the calculation rules, or use a formula.

Related Topics

- Create a Maternity Plan

Options to Define Accrual Plans

Configure the following rules when you create an absence accrual plan in accordance with the leave policy of your enterprise:

- Plan term
- Plan eligibility
- Enrollment and termination
- Transfer and rollover
- Prior balance reinstatement
- Vesting period
- Plan limits
- Balance Updates
- Payments
- Disbursement
- Donation

Plan Term

An accrual term is a period of time during which workers accrue time. You must specify the type of accrual term to use for the plan. For example, you can define one of these term types:

- An accrual term of one calendar year that restarts on January 1
- An accrual term that starts on the worker's annual hire date and restarts on every anniversary

Plan Eligibility

Associate an eligibility profile with the accrual plan to determine the set of workers who can enroll in that plan.

Enrollment and Termination

Decide when to enroll workers in the accrual plan. Indicate how to handle negative and positive balances where only plan enrollment ends, or both plan enrollment and employment ends.

Transfer, Rollover, and Carryover

Define the limits for transfer of some or all of the accrual balance to a new plan when the existing plan is terminated due to loss of eligibility. The Transfer Rules section is enabled only when you select **Transfer positive balance** in the Balance Disposition section.

Additionally, for year end processing, you can define:

- Rollover limits so that employees can transfer remaining balance to a new plan. Select **Unlimited** if you don't want to define a limit for rollover.
- Carryover limits to determine the maximum unused leave time that employees can take over to the next term for the same plan.

If the unused absence balance at the end of the term is above the defined rollover and carryover limit, you can choose to pay out the remaining balance. If you don't select the **Disburse remaining balance** check box, the unused accrual balance expires.

> **Note:** During the year end processing, the application first processes the rollover, and only then processes the carryover with the leftover balance.

Prior Balance Reinstatement

Configure accrual plans so that when a worker is terminated or loses plan eligibility, the remaining balance can be optionally held for reinstatement upon rehire or return to plan eligibility.

Absence plan setup options allow you to define the balance amount eligible for reinstatement along with the time frame for which the withheld balance can be reinstated. You can configure this option in the Re-enrollment Rules section. You can find this section in the Plan Participation tab when you create or edit an absence plan.

If you select **Allow Prior Balance Reinstatement**, a new row in accruals called "Plan Balance close transaction" is created that deducts the remaining balance on the last day of the employee. This is the transaction that will act as a reference to calculate the reinstated balance if the employee is re-hired within the time frame limit configured in the plan setup.

However, if you select **Allow Prior Balance Reinstatement**, and leave the **Balance Reinstatement Limit** and **Time Frame Limit** fields blank, the entire closing balance can be reinstated any time.

Vesting Period

Define if you want newly enrolled workers to accrue time, but not use it until after a specific amount of time.

Plan Limits

Define rules for the maximum leave time that workers can accrue. For incremental plans, Absence Management applies the limit to each accrual period. When there are accrual transactions such as adjustments, balance transfers, and disbursements, which impact the ceiling or carryover value, then the periodic accrual balance calculation takes precedence and readjusts the balance accordingly.

Balance Updates

You can enable the following types of adjustments that HR specialists can make during maintenance of absence records and entitlements:

- Balance transfer across plans
- Other adjustments
- Elective disbursements

Payments

Decide how you want to calculate payment of accrual balances for the following scenarios:

- When workers must be paid a different rate during the absence period
- When a part of the accrual balance must be disbursed to workers as cash
- When the cost of accrual balance must be calculated to determine employer liability
- When the accrual balance must be paid to workers when their plan participation ends

Disbursement

Determine whether workers are eligible for cash disbursement requests. Decide who can initiate the disbursement. Additionally, define disbursement rules and the number of hours that can be disbursed.

Donation

Define whether workers are eligible to donate accrual balances to a coworker. Decide who can initiate the donation. Additionally, define donation rules and the number of hours that can be donated.

Related Topics

- Create a Vacation Accrual Plan

Formulas for Accrual Plans

Use the Absence Plan page to apply delivered accrual plan rules in the plan. However, if you want to define other special rules to suit your requirement, you can write your own formulas.

Formulas for Accrual Plans

The following table lists the aspects of an accrual plan for which you can write a formula and identifies the formula type for each.

Rule	Description	Formula Type to Use
Enrollment Start	Date when eligible workers are enrolled in the plan. If a worker is already enrolled in an existing accrual plan, you can't use this formula to change the enrollment start date.	Global Absence Plan Enrollment Start
Enrollment End	Date when workers are disenrolled from the plan. This formula works only if there is an eligibility profile associated with the plan.	Global Absence Plan Enrollment End
Conversion Formula	Method to override the default absence plan entry duration.	Global Absence Plan Duration

Rule	Description	Formula Type to Use
	Example: You might have a requirement to consider only whole working days in a vacation absence to update the accrual balance. In such cases, you define logic in a formula to convert the absence duration to a value that excludes partial days.	
Anniversary Event	Method to determine the employment anniversary date on which you want the accrual plan to restart.	Global Absence Plan Period Anniversary Event Date
Accrual Event	Method to capture information about events during a calendar year that affect the accrual band of a worker. Example: An organization has a vacation plan in which enrolled workers accrue a certain number of days every year based on their grade. When the grade of a worker changes in the middle of the calendar year, the organization might want to prorate their total accrual balance. You can configure this proration rule using the global absence accrual event formula to capture the dates when such changes occur. This formula can't be attached to the plan definition at any point. When you create this formula, the formula name needs to be the same as the absence plan name. This automatically links the formula to the plan.	Global Absence Accrual Event
Accrual Vesting	A period during which workers accrue time, but can't use it.	Global Absence Vesting
Accrual Proration	Method to calculate the time workers accrue if they enroll in the middle of an accrual period.	Global Absence Proration
Ceiling	The maximum time that a worker can accrue.	Global Absence Ceiling
Ceiling Proration	Method to return a multiplying factor to prorate the defined ceiling limit.	Global Absence Ceiling Proration
Carryover	The maximum unused time that a worker can transfer to the next accrual term.	Global Absence Carryover
Carryover Proration	Method to return a multiplying factor to prorate the defined carryover amount.	Global Absence Carryover Proration
Accrual Definition	Method to determine the paid time, eligible workers accrue over the course of an accrual term.	Global Absence Accrual

Rule	Description	Formula Type to Use
Accrual Formula	Range of eligibility criteria that identify how much paid time eligible workers accrue over the course of an accrual term. The criteria may be years of service, grades, hours worked, or some other factor that you can define.	Global Absence Accrual Matrix
Partial Accrual Period	Method to determine the prorated accrual amount for workers who enroll or disenroll from a plan during the plan period.	Global Absence Partial Accrual Period Rate
Absence Payment Rate	Method to calculate payment during absence period.	Global Absence Plan Use Rate
Discretionary Disbursement Rate	Method to calculate payment when paying out part of the accrual balance.	Global Absence Plan Use Rate
Disbursement Rule	Method to determine the minimum, maximum, and increment amounts that the worker is eligible for to request a cash disbursement.	Global Absence Discretionary Disbursement Rule
Final Disbursement Rate	Method to calculate payment of accruals when plan participation ends.	Global Absence Plan Use Rate
Liability Rate	Method to calculate cost of accrual balance to determine employer liability.	Global Absence Plan Use Rate

When you schedule an absence for a worker using an accrual plan with formulas defined, the absence doesn't appear in the Absence Records section of the Manage Absences and Entitlements page. Instead, you can view the absence in the Plan Participation section. To view the absence:

1. In the Accrual Plans section, click the accrual plan to open the Accrual Plan Balance dialog box.
2. Enter the **Balance Calculation Date** to view the details of the absence. The details are displayed in the Summary and Details tabs.

Global Absence Accrual Matrix Formula

The Global Absence Accrual Matrix fast formula can be used in conjunction with the accrual matrix to implement requirements such as band change proration, FTE proration' and so on.

An organization might have a vacation plan in which workers enrolled into the plan can accrue days every year based on their grade. If the grade changes mid-period, then the total accrual needs to be prorated based on the amount of time that the worker spends in each band. This can be achieved by defining an accrual matrix that is based on grades and using a combination of accrual event formula and accrual matrix formula.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the **Absence Administration** work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Accruals tab there is a table in the Accrual Matrix section.
6. Select the defined formula in the Accrual Formula column in the table.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number

Context Name	Data Type
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix.
IV_CARRYOVER	Number	Carryover limit received from accrual matrix.
IV_CEILING	Number	Ceiling limit received from the accrual matrix.
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period.
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period.
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year.
IV_CALEDARENDDATE	Date	End date of accrual calendar year.
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment.
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment.
IV_BAND_CHG_DT1*	Date	If the accrual matrix band definition consists of grades or derived factors length of service or age, then this input value fetches the date on which worker has had a change in any of these factors within the period.
IV_BAND_CHG_BEFVAL1*	Number	Accrual value as per the matrix before IV_BAND_CHG_DT1.
IV_BAND_CHG_AFTVAL1*	Number	Accrual value as per the matrix after IV_BAND_CHG_DT1.
IV_EVENT_DATES	Date_Number	Array of dates returned by the Accrual Event formula.
IV_ACCRUAL_VALUES	Number_Number	Array of accrual values fetched from the accrual matrix as of the dates contained in the accrual event dates array.
IV_ACCRUAL_CEILING	Number	Annual accrual limit from the accrual matrix.

Return Variables

Variable Name	Data Type	Description
accrual	Number	Amount of accrual that the worker accrues in the specific period.
ceiling	Number	Maximum time that a worker can accrue.
carryover	Number	Maximum unused time that a worker can transfer to the next accrual term.
adjustmentvalues	Number_Number	Array of balance adjustments that when returned by the formula is applied against the accrual plan enrollment.
adjustmentdates	Date_Number	Array of dates associated with the array of balance adjustment values to specify the dates on which each of the balance adjustments need to be applied.
adjustmenttypes	Text_Number	Array of adjustment reasons used for the balance adjustments.
absvalues	Number_Number	Array of absence accrual usages that can be applied against an accrual plan enrollment. Useful for cases where the absence entry itself is not captured in Global Absence Management, but rather via other modules (such as payroll element entries) or even third party systems and the absence deduction against the accrual plan needs to happen in HCM Cloud. When using this, it should be noted that absence entries should not be made for the same dates.
absdates	Date_Number	Array of dates associated with the absence accrual usages on which the deduction is applied.
accrualCeiling	Number	Maximum time that a worker can accrue

Sample Formula

Requirement: The organization has an accrual plan for Vacation where-in workers accrue a set number of days every year depending on the grade level that they are in. If the worker changes grade within a year, then the accrual needs to be prorated depending on the days spent in each grade. Also, the total accrual value needs to be prorated by FTE and rounded to two decimal places.

Solution: A Global Absence Accrual Matrix formula such as the one below can be used.

FORMULA NAME: ANC_ACCMAT

FORMULA TYPE: Global Absence Accrual Matrix Formula

DESCRIPTION: This formula returns the prorated accrual value for Vacation plan with band change proration.

```
DEFAULT FOR IV_CALEDARSTARTDATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_CALEDARENDDATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_EVENT_DATES IS EMPTY_DATE_NUMBER
DEFAULT FOR IV_ACCRUAL_VALUES IS EMPTY_NUMBER_NUMBER
DEFAULT FOR PER_ASG_FTE_VALUE IS 1

INPUTS ARE IV_ACCRUAL, IV_EVENT_DATES, IV_ACCRUAL_VALUES, IV_CALEDARSTARTDATE (date), IV_CALEDARENDDATE
 (date)

i = 1
j = 2
ln_accrual_total = 0
WHILE IV_EVENT_DATES.EXISTS(j)
LOOP
(
 ln_accrual_total = ln_accrual_total + ( (DAYS_BETWEEN(IV_EVENT_DATES[j], IV_EVENT_DATES[i]) + 1) *
 IV_ACCRUAL_VALUES[i] )
 i = i+1
 j = j+1
)

ln_term_duration = DAYS_BETWEEN(IV_CALEDARENDDATE, IV_CALEDARSTARTDATE) + 1
ln_accrual = PER_ASG_FTE_VALUE * (ln_accrual_total / ln_term_duration)

accrual = ROUND(ln_accrual, 2)

RETURN accrual
```

Global Absences Annual Accrual Limit

The Global Absences Annual Accrual Limit fast formula is used to specify an annual accrual limit for each worker (each enrolment) based on custom criteria.

An organization might have an annual accrual limit rule that generally allows a worker in an accrual plan to accrue a maximum of 30 days. However, the workers in a particular department accrue an additional 5 days due to the nature of their work. In such cases, this logic can be composed into the fast formula so that when the accrual process determines the annual accrual limit, the application dynamically allocates different limits to different workers depending on their department.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Accruals tab Plan Limits section, select **Formula** in the **Annual Accrual Limit Rule** field.

6. Select the defined formula from the **Limit Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix.
IV_CARRYOVER	Number	Carryover limit received from accrual matrix.

Variable Name	Data Type	Description
IV_CEILING	Number	Ceiling limit received from the accrual matrix.
IV_ACCRUAL_CEILING	Number	Annual accrual limit received from the accrual matrix.
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period.
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period.
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year.
IV_CALEDARENDDATE	Date	End date of accrual calendar year.
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment.
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment.

Return Variables

Variable Name	Data Type	Description
ACCRUALCEILING	Number	Maximum time that a worker can accrue in annual year.

Sample Formula

Requirement: The organization has an annual accrual limit rule, which allows workers to accrue up to a maximum of 30 days in an annual year. However, workers belonging to business unit 'OBU1' accrue up to a maximum of 40 days in an annual year.

Solution: A Global Absence Annual Accrual Limit formula such as the one below can be used.

FORMULA NAME: ANC_ANNUALCEIL

FORMULA TYPE: Global Absences Annual Accrual Limit

DESCRIPTION: This formula returns the annual accrual limit for workers enrolled into Vacation plan differentiated based on their business unit

```
DEFAULT FOR PER_ASG_BUSINESS_UNIT_NAME IS ' '

accrualceiling = 30

IF (PER_ASG_BUSINESS_UNIT_NAME = 'OBU1')
THEN
(ACCRUALCEILING = 40)

RETURN accrualceiling
```

Global Absences Annual Accrual Limit Proration

The Global Absence Annual Accrual Limit Proration fast formula can be used in cases where a proration factor (or a multiplication factor) needs to be applied onto the annual accrual limit rule.

An organization has a rule that asks for the annual accrual limit to be prorated based on FTE value of the worker. In such a case, after defining the annual accrual limit rule, the annual accrual limit proration rule can be specified using this formula to return a proration factor, which is multiplied onto the annual accrual limit before returning the final value against the worker's enrollment data.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Accruals tab Plan Limits section, select a value other than **None** in the **Annual Accrual Limit Rule** field.
6. After defining the Annual Accrual Limit Rule as desired, select **Formula** in the **Limit Proration Rule** field.
7. Select the defined formula from the **Limit Proration Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number

Context Name	Data Type
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix
IV_CARRYOVER	Number	Carryover limit received from accrual matrix
IV_CEILING	Number	Ceiling limit received from the accrual matrix
IV_ACCRUAL_CEILING	Number	Annual accrual limit received from the accrual matrix
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year
IV_CALEDARENDDATE	Date	End date of accrual calendar year
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment

Return Variables

Variable Name	Data Type	Description
PRORATIONFACTOR	Number	Multiplication factor for annual accrual ceiling limit

Sample Formula

Requirement: The organization has an annual accrual limit rule, which allows workers to accrue up to a maximum of 35 days. This Annual year accrual limit needs to be prorated by FTE of workers who have the jobs 'Wealth Management' or 'Trade Associate' assigned against their assignment record.

Solution: A Global Absences Annual Accrual Limit Proration fast formula such as the one below can be used.

FORMULA NAME: ANC_ANNUALCEILPRORAT

FORMULA TYPE: Global Absences Annual Accrual Limit Proration

DESCRIPTION: This formula returns the proration factor for the annual accrual ceiling limit for the absence plan

```
DEFAULT FOR PER_ASG_FTE_VALUE IS 1
DEFAULT FOR PER_ASG_JOB_NAME IS ' '

PRORATIONFACTOR = 1

IF (PER_ASG_JOB_NAME = 'Wealth Management Consultant' OR PER_ASG_JOB_NAME = 'Trade Associate')
THEN
 (PRORATIONFACTOR = ROUND(PER_ASG_FTE_VALUE,2))

RETURN PRORATIONFACTOR
```

Global Absence Carryover

The Global Absence Carryover fast formula can be used in cases where a single carryover rule does not apply to the entire population that belongs to the accrual plan.

An organization might have a carryover rule that generally allows a maximum of 5 days to be carried over. However, the workers in a particular department are allowed to carryover an additional 2 days due to the nature of their work. In such cases, this logic can be composed into the fast formula so that when carryover is calculated, the application dynamically allocates different carryover limits to different workers depending on their department.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.

2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Accruals tab Plan Limits section, select **Formula** in the **Carryover Rule** field.
6. Select the defined formula from the Carryover Formula field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix
IV_CARRYOVER	Number	Carryover limit received from accrual matrix
IV_CEILING	Number	Ceiling limit received from the accrual matrix
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year
IV_CALEDARENDDATE	Date	End date of accrual calendar year
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment
IV_ACCRUAL_CEILING	Number	Annual accrual limit from the accrual matrix

Return Variables

Variable Name	Data Type	Description
carryover	Number	Maximum unused time that a worker can transfer to the next accrual

Sample Formula

Requirement: The organization has a carryover rule which allows workers to carry forward only 5 days of their vacation balance into the next year. Workers belonging to business unit 'OBU1' work in shifts and projects which prevent them from being able to utilize all their annual vacation days on time. Hence, as an exception, workers in this BU are allowed to carry forward an additional 2 days on top of the 5 days.

Solution: A Global Absence Carryover formula such as the one below can be used.

FORMULA NAME: ANC_CRRYOVR

FORMULA TYPE: Global Absence Carryover

DESCRIPTION: This formula returns the carryover limit for workers enrolled into Vacation plan differentiated based on their business unit

```
DEFAULT FOR PER_ASG_BUSINESS_UNIT_NAME IS ' '

carryover = 5
```

```
IF (PER_ASG_BUSINESS_UNIT_NAME = 'OBU1')
THEN
 (carryover = 7)

RETURN carryover
```

Global Absence Carryover Proration

The Global Absence Carryover Proration fast formula can be used in cases where a proration factor (or a multiplication factor) needs to be applied onto the maximum carryover limit.

An organization might have a rule which asks for the carryover to be prorated based on FTE or even their job. In such a case, after the carryover rule is defined, the carryover proration rule can be composed to return a proration factor which will be multiplied onto the carryover amount before returning the final value against the worker's enrollment data.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Accruals tab Plan Limits section, select a value other than **None** in the **Carryover Rule** field.
6. After defining the carryover rule as desired, select **Formula** in the **Carryover Proration** field.
7. Select the defined formula from the **Carryover Proration Formula** field

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number

Context Name	Data Type
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix
IV_CARRYOVER	Number	Carryover limit received from accrual matrix
IV_CEILING	Number	Ceiling limit received from the accrual matrix
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year
IV_CALEDARENDDATE	Date	End date of accrual calendar year
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment
IV_ACCRUAL_CEILING	Number	Annual accrual limit from the accrual matrix

Return Variables

Variable Name	Data Type	Description
prorationFactor	Number	Multiplication factor for carryover

Sample Formula

Requirement: The organization has a carryover rule which allows workers to carry forward only 5 days of their vacation balance into the next year. This carryover needs to be prorated by FTE for workers who have the jobs 'Wealth Management' or 'Trade Associate' assigned against their assignment record.

Solution: A Global Absence Carryover Proration formula such as the one below can be used.

FORMULA NAME: ANC_CRRYOVRPRORAT

FORMULA TYPE: Global Absence Carryover Proration

DESCRIPTION: This formula returns the proration factor for the carryover limit for the absence plan

```
DEFAULT FOR PER_ASG_FTE_VALUE IS 1
DEFAULT FOR PER_ASG_JOB_NAME IS ' '

prorationFactor = 1

IF (PER_ASG_JOB_NAME = 'Wealth Management Consultant' OR PER_ASG_JOB_NAME = 'Trade Associate')
THEN
 (prorationFactor = ROUND(PER_ASG_FTE_VALUE,2))

RETURN prorationFactor
```

Global Absence Ceiling

The Global Absence Ceiling fast formula can be used in cases where a single ceiling rule does not apply to the entire population that belongs to the accrual plan.

An organization might have a ceiling rule that generally allows a maximum of 30 days to be accrued by a worker in a plan. However, the workers in a particular department are allowed to accrue an additional 5 days due to the nature of their work. In such cases, this logic can be composed into the fast formula so that when ceiling limit is determined, the application dynamically allocates different limits to different workers depending on their department.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.

3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Accruals tab Plan Limits section, select **Formula** in the **Ceiling Rule** field.
6. Select the defined formula from the **Ceiling Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix

Variable Name	Data Type	Description
IV_CARRYOVER	Number	Carryover limit received from accrual matrix
IV_CEILING	Number	Ceiling limit received from the accrual matrix
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year
IV_CALEDARENDDATE	Date	End date of accrual calendar year
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment
IV_ACCRUAL_CEILING	Number	Annual accrual limit from the accrual matrix

Return Variables

Variable Name	Data Type	Description
ceiling	Number	Maximum time that a worker can accrue

Sample Formula

Requirement: The organization has a ceiling rule which allows workers to accrue up to a maximum of 30 days. Workers belonging to business unit 'OBU1' work in shifts and projects which prevent them from always being able to utilize all their annual vacation days on time. Hence, as an exception, workers in this BU are allowed to accrue up to a maximum of 40 days in total.

Solution: A Global Absence Ceiling formula such as the one below can be used.

FORMULA NAME: ANC_CEIL

FORMULA TYPE: Global Absence Ceiling

DESCRIPTION: This formula returns the ceiling limit for workers enrolled into Vacation plan differentiated based on their business unit

```
DEFAULT FOR PER_ASG_BUSINESS_UNIT_NAME IS ' '

ceiling = 35

IF (PER_ASG_BUSINESS_UNIT_NAME = 'OBU1')
THEN
 (ceiling= 40)

RETURN ceiling
```

Global Absence Ceiling Proration

The Global Absence Ceiling Proration fast formula can be used in cases where a proration factor (or a multiplication factor) needs to be applied onto the maximum ceiling limit.

An organization might have a rule which asks for the ceiling limit to be prorated based on FTE or even their job. In such a case, after the ceiling rule is defined, the ceiling proration rule can be composed to return a proration factor which will be multiplied onto the ceiling limit before returning the final value against the worker's enrollment data.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Accruals tab Plan Limits section, select a value other than **None** in the **Ceiling Rule** field.
6. After defining the ceiling rule as desired, select **Formula** in the **Ceiling Proration** field.
7. Select the defined formula from the **Ceiling Proration Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number

Context Name	Data Type
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix
IV_CARRYOVER	Number	Carryover limit received from accrual matrix
IV_CEILING	Number	Ceiling limit received from the accrual matrix
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year
IV_CALEDARENDDATE	Date	End date of accrual calendar year
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment
IV_ACCRUAL_CEILING	Number	Annual accrual limit from the accrual matrix

Return Variables

Variable Name	Data Type	Description
prorationFactor	Number	Multiplication factor for ceiling

Sample Formula

Requirement: The organization has a ceiling rule which allows workers to accrue upto a maximum of 35 days. This ceiling limit needs to be pro-rated by FTE for workers who have the jobs 'Wealth Management' or 'Trade Associate' assigned against their assignment record.

Solution: A Global Absence Ceiling Proration formula such as the one below can be used.

FORMULA NAME: ANC_CEILPRORAT

FORMULA TYPE: Global Absence Ceiling Proration

DESCRIPTION: This formula returns the proration factor for the ceiling limit for the absence plan

```
DEFAULT FOR PER_ASG_FTE_VALUE IS 1
DEFAULT FOR PER_ASG_JOB_NAME IS ' '

prorationFactor = 1

IF (PER_ASG_JOB_NAME = 'Wealth Management Consultant' OR PER_ASG_JOB_NAME = 'Trade Associate')
THEN
 (prorationFactor = ROUND(PER_ASG_FTE_VALUE,2))

RETURN prorationFactor
```

Global Absence Discretionary Disbursement Rule

This formula type can be used to define the limit of the amount of leave balance that a worker is eligible to request to be disbursed as cash. The formula returns the minimum and maximum amount of leave balance that can be disbursed, and also returns an increment, which limits the disbursement amount to specific values between the minimum and maximum. These attributes are defined as follows.

- The minimum amount of leave balance that the worker is eligible to request a cash disbursement.
- The maximum amount of leave balance that the worker can request, for instances where you want to limit the amount to a certain number of hours.
- An increment to prevent workers from entering decimal places, and thus avoid rounding issues later.

Note that the output should always be in the absence plan's UOM. Returning negative numbers is not recommended because this could lead to unexpected behavior while processing the transaction.

You have the option to enter minimum, maximum and increments as flat amounts. But if the limits vary by certain criteria like the worker's grade, years of service, hours, then this formula type can be used to meet these requirements.

The organization has a vacation plan from which employees can choose to disburse some of the accrued vacation balance as cash. For employees with 5 years of service or less, the maximum amount that can be disbursed is 5 days. For employees that have more than 5 years of service, the maximum amount that can be disbursed increases to 10 days.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page **Entries and Balances** tab **Discretionary Disbursements** section, select **Formula** in the **Disbursement Rule** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number

Context Name	Data Type
START_DATE	Date

Input Values

No input values.

Return Variables

Variable Name	Data Type	Description
MIN	Number	The minimum amount that can be disbursed
MAX	Number	The maximum amount that can be disbursed
INCREMENT	Number	The increments that will be allowed

Sample Formula

Requirement: The organization has a vacation plan from which employees can choose to disburse some of the accrued vacation balance as cash. For employees with 5 years of service or less, the maximum amount that can be disbursed is 5 days. For employees that have more than 5 years of service, the maximum amount that can be disbursed increases to 10 days.

Solution: A Global Absence Discretionary Disbursement Rule formula such as the one below can be used.

FORMULA NAME: ANC_ DISBURSEMENTRULE

FORMULA TYPE: Global Absence Discretionary Disbursement Rule

DESCRIPTION: This formula dictates what minimum / maximum / increments are allowed

```
DEFAULT FOR PER_PERSON_ENTERPRISE_HIRE_DATE IS '0001/01/01 00:00:00' (date)
DEFAULT FOR PER_REL_ORIGINAL_DATE_OF_HIRE IS '0001/01/01 00:00:00' (date)

MIN=1
MAX=5
INCREMENT=1

IF(PER_REL_ORIGINAL_DATE_OF_HIRE WAS DEFAULTED) THEN
 (L_Hire_Date = PER_PERSON_ENTERPRISE_HIRE_DATE)
ELSE
 (L_Hire_Date = PER_REL_ORIGINAL_DATE_OF_HIRE)

L_Eff_Date = GET_CONTEXT(EFFECTIVE_DATE, '4712/12/31 00:00:00' (date))
Length_of_service = DAYS_BETWEEN(L_Eff_Date,L_Hire_Date)/365
IF(Length_of_service > 5) THEN (
 MAX = 10
)

RETURN MIN,MAX,INCREMENT
```

Global Absence Elective Disbursement Evaluation Formula

The Global Absence Elective Disbursement Evaluation formula is used to validate elective disbursements in an accrual plan and set payment percentages for the disbursement. The formula can also be used to override the disbursement amount elected by the worker.

An organization might have a rule such that if an employee's accrual balance as of the election date is below a certain minimum threshold limit, then the disbursement should not be allowed. Whereas, if the balance is between two other threshold values, then the payment percentage should be 75%. In such cases, you can compose a Global Absence Elective Disbursement Evaluation formula and attach it to the accrual plan.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Accruals tab Plan Limits section, select a value other than **None** in the **Carryover Rule field**.
6. After defining the carryover rule as desired, select **Formula** in the **Carryover Proration** field
7. Select the defined formula from the **Carryover Proration Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number

Context Name	Data Type
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix
IV_CARRYOVER	Number	Carryover limit received from accrual matrix
IV_CEILING	Number	Ceiling limit received from the accrual matrix
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year
IV_CALEDARENDDATE	Date	End date of accrual calendar year
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment
IV_BAND_CHG_DT1*	Date	If the accrual matrix band definition consists of grades or derived factors length of service or age, then this input value fetches the date on which worker has had a change in any of these factors within the period.

Variable Name	Data Type	Description
IV_BAND_CHG_BEFVAL1*	Number	Accrual value as per the matrix before IV_BAND_CHG_DT1
IV_BAND_CHG_AFTVAL1*	Number	Accrual value as per the matrix after IV_BAND_CHG_DT1
IV_EVENT_DATES	Date_Number	Array of dates returned by the Accrual Event formula.
IV_ACCRUAL_VALUES	Number_Number	Array of accrual values fetched from the accrual matrix as of the dates contained in the accrual event dates array.
IV_ACCRUAL_CEILING	Number	Annual accrual limit from the accrual matrix
IV_DISB_TYPE	Text	The disbursement type for current record which is being processed. Possible values: CSH / ORA_ANC_CSH_YREND / ORA_ANC_ELECT_DISB
IV_DISB_VALUE	Number	The disbursement value for current record which is being processed
IV_DISB_ELECTED_AMT	Number	Elected amount for the elective disbursement
IV_DISB_ELECTION_DATE	Date	Election date for the elective disbursement
IV_DISB_PROCD_DATE	Date	Exact processed date for the elective disbursement
IV_DISB_ELECT_PENDING	Text	If the elective disbursement is marked as pending or not. "Y" stands for pending, "N" stands for not pending.

Return Variables

Variable Name	Data Type	Description
paymentPercentage	Number	Payment percentage for the elective disbursement value
overrideValue	Number	Override value for elective disbursement

Sample Formula

Requirement: If the current balance of an employee is below 8 hours, then 0 hours are to be disbursed.

Solution: A Global Absence Elective Disbursement Evaluation formula such as the one below can be used.

FORMULA NAME: ANC_ELECTDISBEVAL

FORMULA TYPE: Global Absence Elective Disbursement Evaluation

DESCRIPTION: This formula validates the elective disbursement values for an accrual plan.

```
DEFAULT FOR IV_DISB_TYPE IS 'XX'
DEFAULT FOR IV_DISB_VALUE IS -1
INPUTS ARE IV_DISB_TYPE, IV_DISB_VALUE, IV_ACCRUAL_CEILING

ln_plan_balance = GET_PLAN_BALANCE('Vision Accrual Plan')

paymentPercentage = 100
overrideValue = IV_DISB_VALUE

IF (IV_DISB_TYPE = 'ORA_ANC_ELECT_DISB') THEN
 (
 IF (ln_plan_balance <5) THEN
 (
 paymentPercentage = 0
 overrideValue = 0
 )
 )
RETURN paymentPercentage,overrideValue
```

Global Absence Discretionary Donation Rule

This formula type can be used to define a limit for the amount of leave balance that a worker is eligible to donate to another worker. This formula returns the minimum and maximum amount of leave balance that can be donated, and also returns an increment, which limits the donation amount to specific values between the minimum and maximum. These attributes are defined as follows

- The minimum amount of leave balance that the worker is eligible to donate.
- The maximum amount of leave balance that the worker can donate, for instances where you want to limit the amount to a certain number of hours
- An increment to prevent workers from entering decimal places, and thus avoid rounding issues later

Note that the output should always be in the absence plan's UOM. Returning negative numbers is not recommended because this could lead to unexpected behavior while processing the transaction.

You have the option to enter minimum, maximum and increments as flat amounts. But if the limits vary by certain criteria like the worker's grade, years of service, hours, then this formula type can be used to meet these requirements.

The organization has a vacation plan from which employees can choose to donate some of the accrued vacation balance to another worker who has been enrolled into a donation plan. For employees with 5 years of service or less, the maximum amount that can be donated is 5 days. For employees that have more than 5 years of service, the maximum amount that can be donated increases to 10 days.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page **Entries and Balances** tab **Discretionary Disbursements** section, select **Formula** in the **Disbursement Rule** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number

Context Name	Data Type
START_DATE	Date

Input Values

No input values.

Return Variables

Variable Name	Data Type	Description
MIN	Number	The minimum amount that can be disbursed
MAX	Number	The maximum amount that can be disbursed
INCREMENT	Number	The increments that will be allowed

Sample Formula

Requirement: The organization has a vacation plan from which employees can choose to donate some of the accrued vacation balance to another worker who has been enrolled into a donation plan. For employees with 5 years of service or less, the maximum amount that can be donated is 5 days. For employees that have more than 5 years of service, the maximum amount that can be donated increases to 10 days.

Solution: A Global Absence Discretionary Donation Rule formula such as the one below can be used.

FORMULA NAME: ANC_ DONATIONRULE

FORMULA TYPE: Global Absence Discretionary Donation Rule

DESCRIPTION: This formula dictates what minimum / maximum / increments are allowed

```
DEFAULT FOR PER_PERSON_ENTERPRISE_HIRE_DATE IS '0001/01/01 00:00:00' (date)
DEFAULT FOR PER_REL_ORIGINAL_DATE_OF_HIRE IS '0001/01/01 00:00:00' (date)

MIN=1
MAX=5
INCREMENT=1

IF(PER_REL_ORIGINAL_DATE_OF_HIRE WAS DEFAULTED) THEN
 (L_Hire_Date = PER_PERSON_ENTERPRISE_HIRE_DATE)
ELSE
 (L_Hire_Date = PER_REL_ORIGINAL_DATE_OF_HIRE)

L_Eff_Date = GET_CONTEXT(EFFECTIVE_DATE, '4712/12/31 00:00:00' (date))
Length_of_service = DAYS_BETWEEN(L_Eff_Date,L_Hire_Date)/365
IF(Length_of_service > 5) THEN (
 MAX = 10
)
```

Global Absence Partial Period Accrual Rate

The Global Absence Partial Period Accrual Rate fast formula is where any logic required for proration of accrual balance during enrollment year and disenrollment year needs to be entered.

If the annual accrual that a worker is eligible for every year is 20 days and the worker has enrolled into the plan mid year, the organization would like to grant the worker 10 days for the year of enrollment since the worker is eligible only for half the year. Similarly, if a worker disenrolls from a plan mid year, the total accrual for that year would need to be reduced from 20 to 10 because the worker was enrolled into the plan for only half the year.

This formula is invoked when enrollment or disenrollment dates fall within the repeating period for which the accrual is being processed.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Accruals tab Accrual Attributes section, select the desired formula in the **Partial Accrual Period Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number

Context Name	Data Type
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix
IV_CARRYOVER	Number	Carryover limit received from accrual matrix
IV_CEILING	Number	Ceiling limit received from the accrual matrix
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year
IV_CALEDARENDDATE	Date	End date of accrual calendar year
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment
IV_BAND_CHG_DT1*	Date	If the accrual matrix band definition consists of grades or derived factors length of service or age, then this input value fetches the date on which worker has had a change in any of these factors within the period.
IV_BAND_CHG_BEFVAL1*	Number	Accrual value as per the matrix before IV_BAND_CHG_DT1
IV_BAND_CHG_AFTVAL1*	Number	Accrual value as per the matrix after IV_BAND_CHG_DT1
IV_ACCRUAL_CEILING	Number	Annual accrual limit from the accrual matrix

*the sequence for these input values can be extended to 5.

Return Variables

Variable Name	Data Type	Description
accrual	Number	Partial period prorated accrual value returned for the particular partial repeating period. Value is returned gets added as an accrual line. For processing termination of enrollment for front loaded plans, the variable should return a negative value, to deduct prorated amount from the existing annual accrual value.

Sample Formula

Requirement: The organization has a partial period rule where accruals are prorated based on months enrolled for the plan.

Solution: A Global Absence Partial Period Accrual Rate formula such as the one below can be used.

FORMULA NAME: ANC_PARACC

FORMULA TYPE: Global Absence Partial Period Accrual Rate Formula

DESCRIPTION: This formula returns the accrual for mid period enrollments and unenrollments for Vacation absence plan

```
DEFAULT FOR IV_ACCRUAL IS 0
DEFAULT FOR IV_ACCRUALPERIODSTARTDATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_ACCRUALPERIODENDDATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_CALEDARSTARTDATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_CALEDARENDDATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_PLANENROLLMENTSTARTDATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_PLANENROLLMENTENDDATE IS '4712/12/31 00:00:00' (date)

INPUTS ARE IV_ACCRUAL, IV_ACCRUALPERIODSTARTDATE (date), IV_ACCRUALPERIODENDDATE (date), IV_CALEDARSTARTDATE
 (date), IV_CALEDARENDDATE (date), IV_PLANENROLLMENTSTARTDATE (date), IV_PLANENROLLMENTENDDATE (date)

ln_same_year_duration = 0
lc_first_month_flag = 'N'
ln_first_month_accrual = 0
ln_participation_duration = 0
ln_term_duration = 1 + (TO_NUMBER(TO_CHAR(IV_CALEDARENDDATE, 'yy')) - TO_NUMBER(TO_CHAR(IV_CALEDARSTARTDATE,
 'yy'))) * 12 + (TO_NUMBER(TO_CHAR(IV_CALEDARENDDATE, 'mm')) - TO_NUMBER(TO_CHAR(IV_CALEDARSTARTDATE,
 'mm')))
ld_start_date = GREATEST (IV_PLANENROLLMENTSTARTDATE,IV_CALEDARSTARTDATE)
ld_end_date = LEAST (IV_PLANENROLLMENTENDDATE, IV_CALEDARENDDATE)

/*Calculating the duration for which the enrollment was active*/
ln_participation_duration = (TO_NUMBER(TO_CHAR(ld_end_date, 'yy')) - TO_NUMBER(TO_CHAR(ld_start_date,
 'yy'))) * 12 + (TO_NUMBER(TO_CHAR(ld_end_date, 'mm')) - TO_NUMBER(TO_CHAR(ld_start_date, 'mm'))) + 1

/*Capturing this in case un-enrollment occurred in the same month as calendar start month*/
ln_first_month_accrual = IV_ACCRUAL * (ln_participation_duration / ln_term_duration)

/*Checking if un-enrollment happend before end of calendar year*/
IF IV_PLANENROLLMENTENDDATE < IV_CALEDARENDDATE
THEN
(
```

```
/*Checking if enrollment also happened within the same year as unenrollment*/
IF (IV_PLANENROLLMENTSTARTDATE > IV_CALEDARSTARTDATE)
THEN
 (
 /*If enrollment happened in the same year as the un-enrollment, calculating the duration from calendar
 start date to enrollment start date so that this can be subtracted from total*/
 ln_same_year_duration = (TO_NUMBER(TO_CHAR(IV_PLANENROLLMENTSTARTDATE, 'yy')) -
 TO_NUMBER(TO_CHAR(IV_CALEDARSTARTDATE, 'yy'))) * 12 + (TO_NUMBER(TO_CHAR(IV_PLANENROLLMENTSTARTDATE, 'mm'))
 - TO_NUMBER(TO_CHAR(IV_CALEDARSTARTDATE, 'mm')))
 )
/*The termination pro-ration has to return a negative value - the amount that needs to be subtracted from
 the current balance*/
ln_participation_duration = -1 * (ln_term_duration - ln_participation_duration - ln_same_year_duration)
/*Checking if un-enrollment happened in the first month of the calendar year*/
IF ( (TO_CHAR(IV_CALEDARSTARTDATE, 'mm') = TO_CHAR(IV_PLANENROLLMENTENDDATE, 'mm')) AND
 (TO_CHAR(IV_CALEDARSTARTDATE, 'yyyy') = TO_CHAR(IV_PLANENROLLMENTENDDATE, 'yyyy')) )
THEN
(lc_first_month_flag = 'Y')
)

prorated_accrual = IV_ACCRUAL * (ln_participation_duration / ln_term_duration)
/*If un-enrollment happened in the first month of the calendar year, then return the pro-ration for the
 single month*/
IF (lc_first_month_flag = 'Y')
THEN
(prorated_accrual = ln_first_month_accrual)

accrual = ROUND(prorated_accrual,2)

RETURN accrual
```

Global Absence Plan Duration

The Global Absence Plan Duration fast formula is used to override the default duration calculation logic for daily accrual duration entries against accrual plans. For example, if the accrual deduction to be considered for an absence entry in an accrual plan of an organization depends on the location of the worker, then this formula can be leveraged to specify this dynamic calculation logic. This formula is invoked once for each day of absence. If there are multiple shifts in a day, then the formula is invoked once for each shift. If the shift spans over a day divide, then the shift is split into two and the formula is invoked once for each shift block.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page **Plan Attributes** tab General Attributes section, select the defined formula from the **Conversion Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ABS_START_DATE	Date	Start date: time of absence entry
IV_ABS_END_DATE	Date	End date: time of absence entry
IV_ABS_START_DURATION	Number	Start date duration of absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule

Variable Name	Data Type	Description
IV_ABS_END_DURATION	Number	End date duration of absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_START_DATE	Date	Start date of shift block within absence
IV_END_DATE	Date	End date of shift block within absence
IV_START_DURATION	Number	Start date duration of the shift block within absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_END_DURATION	Number	End date duration of the shift block within absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_START_TIME	Text	Start time on the start date of the shift block within absence entry. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 00:00. If there are no shifts on the day being processed, then absence start time or 00:00 is passed, whichever is greater.
IV_END_TIME	Text	End time on the start date of the shift block within absence entry. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 00:00. If there are no shifts on the day being processed, then absence end time or 00:00 is passed, whichever is greater.
IV_UOM	Text	Unit of measure

Return Variables

Variable Name	Data Type	Description
Duration	Number	Duration of plan entries

Sample Formula

Requirement: The organization has an accrual plan where the accrual usage is only 50% for workers who work in an office whose location is in California, whereas the rest of the workers the accrual usage is same as the absence duration.

Solution: A Global Absence Plan Duration formula such as the one below can be used.

FORMULA NAME: ANC_PLN_DUR

FORMULA TYPE: Global Absence Plan Duration

DESCRIPTION: This formula evaluates the entitlement usage based on worker location

```
DEFAULT FOR IV_START_DATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_END_DATE IS '4712/12/31 00:00:00' (date)
```

```
DEFAULT FOR IV_START_TIME IS '00:00'
DEFAULT FOR IV_END_TIME IS '23:59'
DEFAULT FOR PER_ASG_LOC_REGION2 IS ' XXXXXXXXXX'
INPUTS ARE IV_START_DATE (date), IV_END_DATE (date), IV_START_TIME(text),IV_END_TIME(text)

ln_entry_duration_d = 0
ln_unrounded_duration_d = 0

ld_period_start_date = to_date(to_char(IV_START_DATE,'DD/MM/RRRR')||' '||IV_START_TIME,'DD/MM/RRRR
 HH24:MI:SS')
ld_period_end_date = to_date(to_char(IV_END_DATE,'DD/MM/RRRR')||' '||IV_END_TIME,'DD/MM/RRRR HH24:MI:SS')

ln_entry_duration_d = GET_PAY_AVAILABILITY ('ASSIGN',
 ld_period_start_date,
 ld_period_end_date,
 'Y',
 'Y',
 'Y',
 'Y',
 'D')

IF (PER_ASG_LOC_REGION2 = 'CA')
THEN
(
 ln_entry_duration_d = ln_entry_duration_d * 0.5
)
DURATION = ROUND(ln_entry_duration_d,2)
RETURN DURATION
```

Global Absence Plan Enrollment End

The Global Absence Plan Enrollment End fast formula can be used to over-ride the default enrollment end date rule for the absence plan when workers are being terminated from the organization or when the Update Accrual Plan Enrollments batch job is being run.

In an organization the absence plan un-enrollment rule could be such that for termination, workers have to serve a notice period of one month during which time the worker should not be enrolled into any absence plan. In such a case a Global Absence Plan Enrollment End formula can be composed to derive this alternate enrollment end date.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Participation tab, Termination Rules section, select **Formula** in the **Enrollment End Rule** field.
6. Select the defined formula from the **End Date Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Return Variables

Variable Name	Data Type	Description
enrollmentEndDate	Date	End date of enrollment

Sample Formula

Requirement: Upon entering of termination information, the worker needs to be un-enrolled from the plan, one month before the actual termination date (in this case, the event date).

Solution: A Global Absence Plan Enrollment End formula such as the one below can be used.

FORMULA NAME: ANC_ENRMNTEND

FORMULA TYPE: Global Absence Plan Enrollment End

DESCRIPTION: This formula returns the Enrollment End Date for absence plan enrollments by subtracting 1 month from the termination date

```
enrollmentEndDate = GET_CONTEXT(EFFECTIVE_DATE, '4712/12/31 00:00:00' (date))
enrollmentEndDate = ADD_MONTHS(enrollmentEndDate, -1)
RETURN enrollmentEndDate
```

Global Absence Plan Enrollment Start

The Global Absence Plan Enrollment Start fast formula can be used to override the default enrollment start date rule for the absence plan when workers are being hired into the organization or when the Update Accrual Plan Enrollments batch job is being run.

In an organization the absence plan enrollment rule can be configured such that only workers are allowed to enroll into the plan from the hire date, whereas Interns and Graduates have to complete a waiting period of 1 month before being enrolled into the plan. In such cases, the Plan Enrollment Start formula can be used to derive the alternate enrollment date (one that is different from the hire date or the date passed into the parameter when submitting the Update Accrual Plan Enrollments batch job).

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Participation tab, Enrollment Rules section, select **Formula** in the **Enrollment Start Rule** field.
6. Select the defined formula from the **Start Date Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number

Context Name	Data Type
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Return Variables

Variable Name	Data Type	Description
enrollmentStartDate	Date	Start date of enrollment

Sample Formula

Requirement: All new Interns and Graduates who are hired into the organization should get enrolled into the plan only after one month of employment. All other workers should get enrolled into the plan as of hire date.

Solution: A Global Absence Plan Enrollment Start formula such as the one below can be used.

FORMULA NAME: ANC_ENRMNTSTART

FORMULA TYPE: Global Absence Plan Enrollment Start

DESCRIPTION: This formula returns the Enrollment Start Date for absence plan enrollments by adding 1 month to the event date for Interns and Graduates

```
DEFAULT FOR PER_ASG_USER_PERSON_TYPE IS 'Worker'
```

```
enrollmentStartDate = GET_CONTEXT(EFFECTIVE_DATE, '4712/12/31 00:00:00' (date))

IF (PER_ASG_USER_PERSON_TYPE != 'Worker')
 THEN (enrollmentStartDate = ADD_MONTHS(enrollmentStartDate, 1))
RETURN enrollmentStartDate
```

Global Absence Plan Period Anniversary Event Date

The Global Absence Plan Period Anniversary Event Date fast formula can be used to specify the date to be used as the calendar leave year start date for accrual plans whose term is of type Anniversary year.

If the calendar leave year for a vacation plan in an organization is based on the original hire date of a worker, then a formula of this type can be composed to return the required date to the plan calculations.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Plan Attributes tab, Plan Term section, select **Anniversary year** in the **Type** field.
6. Then select **Formula** in the **Anniversary Event Rule** field.
7. Select the defined formula from the **Anniversary Event Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number

Context Name	Data Type
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Return Variables

Variable Name	Data Type	Description
anniversaryDate	Date	Date used to determine the leave year start date for anniversary based accrual plan term

Sample Formula

Requirement: The organization has an accrual plan term that is based on the anniversary of the worker. If the person is a regular worker, then the leave year is to be based on the earliest start date of the Worker. If the person is an Intern or Graduate, then the leave year is to be based on the latest legal employer hire date.

Solution: A Global Absence Plan Period Anniversary Event Date formula such as the one below can be used.

FORMULA NAME: ANC_PLN_PRD_ANNIV_DATE

FORMULA TYPE: Global Absence Plan Period Anniversary Event Date

DESCRIPTION: This formula returns the calendar leave year start date for Anniversary year based on the person type

```
DEFAULT FOR PER_ASG_USER_PERSON_TYPE IS 'Worker'
DEFAULT FOR PER_PERSON_ENTERPRISE_HIRE_DATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR PER_ASG_REL_DATE_START IS '4712/12/31 00:00:00' (date)

IF (PER_ASG_USER_PERSON_TYPE = 'Worker')
THEN
(
anniversaryDate = PER_PERSON_ENTERPRISE_HIRE_DATE
)
ELSE
(
```

```
anniversaryDate = PER_ASG_REL_DATE_START
)

RETURN anniversaryDate
```

Global Absence Plan Use Rate

The Global Absence Plan Use Rate fast formula can be used to dynamically specify the rate definition associated with the qualification plan depending on custom conditions.

If the rate definition associated with the same qualification plan varies depending on the location of the worker being evaluated, a Global Absence Plan Use Rate can be composed to associate the corresponding rate definition to the Worker.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Qualification**.
4. Click **Continue**.
5. On the Edit Absence Plan page Entries and Balances tab, Rates section, choose **Formula** in the **Absence Payment Rule** field.
6. Select the defined formula in the **Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_CATEGORY_ID	Number
ABSENCE_ENTRY_ID	Number
ABSENCE_MATERNITY_ID	Number
ABSENCE_REASON_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date

Context Name	Data Type
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ATTRIBUTE_CATEGORY	Text	Context of the DFF row for Absence Recordings DFF
IV_ATTRIBUTE_1*	Text	First text segment of the Absence Recordings DFF
IV_ATTRIBUTE_NUMBER1*	Number	First number segment of the Absence Recordings DFF
IV_ATTRIBUTE_DATE1*	Date	First date segment of the Absence Recordings DFF
IV_ATTRIBUTE_ARR	Text_Number	Array of text segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_ARR[1] holds the value of segment ATTRIBUTE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before

Variable Name	Data Type	Description
		using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_ARR.exists(1))
IV_ATTRIBUTE_NUMBER_ARR	Number_Number	Array of number segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_NUMBER_ARR[1] holds the value of segment ATTRIBUTE_NUMBER1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_NUMBER_ARR.exists(1))
IV_ATTRIBUTE_DATE_ARR	Date_Number	Array of date segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_DATE_ARR[1] holds the value of segment ATTRIBUTE_DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_DATE_ARR.exists(1))
IV_INFORMATION_CATEGORY	Text	Context of the DDF row for ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_1*	Text	First text segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_NUMBER1*	Number	First number segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_DATE1*	Date	First date segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_ARR	Text_Number	Array of text segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_ARR[1] holds the value of segment INFORMATION1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value.

Variable Name	Data Type	Description
		This can be done using the “exists” command. Eg: if(IV_INFORMATION_ARR.exists(1))
IV_INFORMATION_NUMBER_ARR	Number_Number	Array of number segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_NUMBER_ARR[1] holds the value of segment INFORMATION_NUMBER1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_NUMBER_ARR.exists(1))
IV_INFORMATION_DATE_ARR	Date_Number	Array of date segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_DATE_ARR[1] holds the value of segment INFORMATION_DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_DATE_ARR.exists(1))
IV_PAYMENT_DTL_BAND	Number	Identifier of the payment band chosen for the absence linked to an agreement
IV_NOTIFICATION_DATE	Date	Date of Illness/Injury notification
IV_MATCHING_DATE	Date	Date on which child is matched with the worker for adoption

**The sequence for this input value can be extended up to 5*

Return Variables

Variable Name	Data Type	Description
RATECODE	Text	Rate code for rate associated with qualification plan

Variable Name	Data Type	Description
DEBUG_MESSAGE	Text	Text passed into this output variable would get logged if application logging is enabled. Useful for debugging

Sample Formula

Requirement: The organization has an absence payment rate rule for the qualification plan that depends on the hourly/salaried nature of the Worker. Separate rate definition rules exist for each category of workers.

Solution: A Global Absence Plan Use Rate formula such as the one below can be used.

FORMULA NAME: ANC_PLN_RATE

FORMULA TYPE: Global Absence Plan Use Rate

DESCRIPTION: This formula returns the rate code for the rate definition that needs to be associated with the qualification plan

```
DEFAULT FOR PER_ASG_HOURLY_SALARIED_CODE IS 'H'

IF (PER_ASG_HOURLY_SALARIED_CODE = 'H')
THEN
(
RATECODE = 'HOURLY_RATE'
)
ELSE
(
RATECODE = 'ANNUAL_RATE'
)

RETURN RATECODE
```

Global Absence Proration

The Global Absence Proration fast formula can be used to apply a proration factor (or a multiplication factor), onto the final accrual calculated and returned by the accrual calculation rules in an accrual based absence plan.

If an organization has an accrual plan where the accrual rate varies based on Worker grades, and on top of that if a multiplication factor such as 0.75 needs to be applied depending on the Worker work location, then the band based on grades can be defined in the accrual matrix and the multiplication factor of 0.75 based on work location can be defined in the Global Absence Proration formula.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.

2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Accruals tab, Accrual Attributes section, select **Formula** in the **Accrual Proration Rule** field.
6. Select the defined formula from the **Accrual Proration Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix
IV_CARRYOVER	Number	Carryover limit received from accrual matrix
IV_CEILING	Number	Ceiling limit received from the accrual matrix
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year
IV_CALEDARENDDATE	Date	End date of accrual calendar year
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment
IV_ACCRUAL_CEILING	Number	Annual accrual limit from the accrual matrix

Return Variables

Variable Name	Data Type	Description
prorationFactor	Number	Multiplication factor used to pro-rate final accrual amount

Sample Formula

Requirement: The organization has an accrual matrix based on grade of Workers. On top of the values defined by the matrix, Workers who belong to jobs 'Wealth Management' or 'Trade Associate' should have their annual accrual amount pro-rated by a factor of 0.75 as they have flexible working arrangements and do not fall under the standard absence accrual benefit policy of the organization.

Solution: Once the accrual rules are defined in the accrual matrix, a Global Absence Proration formula such as the one below can be used.

FORMULA NAME: ANC_PRORAT

FORMULA TYPE: Global Absence Proration

DESCRIPTION: This formula returns the proration factor accrual absence plan

```
DEFAULT FOR PER_ASG_JOB_NAME IS ' '

prorationFactor = 1
```

```
IF (PER_ASG_JOB_NAME = 'Wealth Management Consultant' OR PER_ASG_JOB_NAME = 'Trade Associate')
THEN
 (prorationFactor = 0.75)

RETURN prorationFactor
```

Global Absence Rollover

The Global Absence Rollover fast formula can be used in cases where a single rollover limit rule does not apply to the entire population that belongs to the accrual plan.

An organization might have a rollover rule that generally allows a maximum of 30 days to be rolled over to another plan at the end of plan year. However, the workers in a particular department are allowed to rollover an additional 10 day. In such cases, this logic can be composed into the fast formula so that when rollover limit is determined, the application dynamically allocates different limits to different workers depending on their department.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Accruals tab Year End Processing section, select **Limited by formula** in the **Rollover Rule** field.
6. Select the defined formula from the **Limit Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number

Context Name	Data Type
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix
IV_CARRYOVER	Number	Carryover limit received from accrual matrix
IV_CEILING	Number	Ceiling limit received from the accrual matrix
IV_ACCRUAL_CEILING	Number	Annual accrual limit from the accrual matrix
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year
IV_CALEDARENDDATE	Date	End date of accrual calendar year
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment

Return Variables

Variable Name	Data Type	Description
ROLLOVER	Number	Maximum amount that a worker can rollover at the end of year

Sample Formula

Requirement: The organization has a rollover limit rule, which allows workers to rollover up to a maximum of 30 days to another plan at the end of year. However, workers belonging to business unit 'OBU1' are allowed to rollover up to a maximum of 40 days at the end of year.

Solution: A Global Absence Rollover formula such as the one below can be used.

FORMULA NAME: ANC_ROLLOVER

FORMULA TYPE: Global Absence Rollover

DESCRIPTION: This formula calculates and returns the rollover limit amount for the vacation plan

```
DEFAULT FOR PER_ASG_BUSINESS_UNIT_NAME IS ' '
ROLLOVER=30
IF (PER_ASG_BUSINESS_UNIT_NAME = 'OBU1')
THEN
(ROLLOVER = 40)

RETURN ROLLOVER
```

Global Absence Rollover Proration

The Global Absence Rollover Proration fast formula can be used in cases where a proration factor (or a multiplication factor) needs to be applied onto the rollover limit.

An organization might have a rule that requires the rollover limit to be prorated based on FTE of a worker. In such a case, after the rollover rule is defined, the rollover proration rule can be composed to return a proration factor, which will be multiplied onto the rollover limit before returning the final value against the worker's enrollment data.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.

5. On the Edit Absence Plan page Accruals tab Year End Processing section, select a value other than **Not Applicable** in the **Rollover Rule** field.
6. After defining the ceiling rule as desired, select **Formula** in the **Limit Proration Rule** field.
7. Select the defined formula from the **Limit Proration Formula** field

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix

Variable Name	Data Type	Description
IV_CARRYOVER	Number	Carryover limit received from accrual matrix
IV_CEILING	Number	Ceiling limit received from the accrual matrix
IV_ACCRUAL_CEILING	Number	Annual accrual limit from the accrual matrix
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year
IV_CALEDARENDDATE	Date	End date of accrual calendar year
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment

Return Variables

Variable Name	Data Type	Description
ROLLOVERPRORATIONFACTOR	Number	Multiplication factor for Rollover Limit

Sample Formula

Requirement: The organization has a rollover limit rule at the end of year, which allows workers to rollover to a maximum of 30 days to another plan. This rollover limit needs to be pro-rated by FTE for workers who have the jobs 'Wealth Management' or 'Trade Associate' assigned against their assignment record.

Solution: A Global Absence Rollover formula such as the one below can be used.

FORMULA NAME: ANC_ROLLOVER_PRORATION

FORMULA TYPE: Global Absence Rollover Proration

DESCRIPTION: This formula calculates and returns the rollover amount proration for the vacation plan

```
DEFAULT FOR PER_ASG_FTE_VALUE IS 1
DEFAULT FOR PER_ASG_JOB_NAME IS ' '

ROLLOVERPRORATIONFACTOR = 1
IF (PER_ASG_JOB_NAME = 'Wealth Management Consultant' OR PER_ASG_JOB_NAME = 'Trade Associate')
THEN
(ROLLOVERPRORATIONFACTOR = ROUND(PER_ASG_FTE_VALUE,2))

RETURN ROLLOVERPRORATIONFACTOR
```

Global Absence Target Plan

For automated enrollment transfer feature, same category needs to be set across transfer source plan and target plan. But there is a chance that there are multiple plans using the same category, and employees are eligible for more than one plan. In this case, Global Absence Target Plan fast formula needs to be defined to identify the exact target plan name.

There are 3 plans – Plan A, Plan B and Plan C. These 3 plans belong to same plan category (Category One). Now employee is about to lose eligibility of Plan A, meanwhile employee is enrolled into Plan B and Plan C. If transfer rule is defined, system will not transfer any balance without this particular Absence Target Plan fast formula, because it doesn't know which one to transfer to (Plan B or Plan C).

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Participation tab Transfer Rules section, check the box **Transfer positive balance**, then select a value in the **Limit Rule** field. This is a required field.
6. Select the defined formula from the **Target Plan Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number

Context Name	Data Type
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix
IV_CARRYOVER	Number	Carryover limit received from accrual matrix
IV_CEILING	Number	Ceiling limit received from the accrual matrix
IV_ACCRUAL_CEILING	Number	Annual accrual limit from the accrual matrix
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year
IV_CALEDARENDDATE	Date	End date of accrual calendar year
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment

Return Variables

Variable Name	Data Type	Description
TARGET_PLAN_NAME	Text	Target plan name which a worker can transfer to when loss of plan eligibility happens

Sample Formula

Requirement: The organization has an enrollment transfer rule, and there are multiple plans using same plan category. If employee is about to lose eligibility of Plan_A, meanwhile they will be enrolled for Plan_B and Plan_C that shares same plan category. Now we want to choose different target plan based on different business unit.

Solution: A Global Absence Target Plan formula such as the one below can be used.

FORMULA NAME: ANC_ENRT_TARGET_FF

FORMULA TYPE: Global Absence Rollover

DESCRIPTION: This formula calculates and returns the rollover limit amount for the vacation plan

```
DEFAULT FOR PER_ASG_BUSINESS_UNIT_NAME IS ' '
TARGET_PLAN_NAME='Plan_B'
IF (PER_ASG_BUSINESS_UNIT_NAME = 'OBU1')
THEN
TARGET_PLAN_NAME='Plan_C'
RETURN TARGET_PLAN_NAME
```

Global Absence Transfer

The Global Absence Transfer fast formula can be used in cases where a single automated enrollment transfer rule does not apply to the entire population that belongs to the accrual plan.

An organization might have an enrollment transfer rule that generally allows a maximum of 30 days to be transferred to another plan when current plan loses eligibility. However, the workers in a particular department are allowed to transfer an additional 10 days due to the nature of their work. In such cases, this logic can be composed into the fast formula so that when enrollment transfer limit is determined, the application dynamically allocates different limits to different workers depending on their department.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.

4. Click **Continue**.
5. On the Edit Absence Plan page Participation tab Transfer Rules section, check the box **Transfer positive balance**, then select **Limited byFormula** in the **Limit Rule** field.
6. Select the defined formula from the **Limit Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix
IV_CARRYOVER	Number	Carryover limit received from accrual matrix
IV_CEILING	Number	Ceiling limit received from the accrual matrix
IV_ACCRUAL_CEILING	Number	Annual accrual limit from the accrual matrix
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year
IV_CALEDARENDDATE	Date	End date of accrual calendar year
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment

Return Variables

Variable Name	Data Type	Description
TRANSFER	Number	Maximum amount that a worker can transfer when loss of plan eligibility happens

Sample Formula

Requirement: The organization has an enrollment transfer limit rule, which allows workers to transfer up to a maximum of 30 days when loss of plan eligibility happens. But workers belonging to business unit ‘OBU1’ are allowed to transfer up to a maximum of 40 days when loss of plan eligibility happens.

Solution: A Global Absence Transfer formula such as the one below can be used.

FORMULA NAME: ANC_ENRT_TRANSFER

FORMULA TYPE: Global Absence Transfer

DESCRIPTION: This formula calculates and returns the rollover limit amount for the vacation plan

```
DEFAULT FOR PER_ASG_BUSINESS_UNIT_NAME IS ' '
TRANSFER=30
IF (PER_ASG_BUSINESS_UNIT_NAME = 'OBU1')
THEN
(TRANSFER = 40)
```

```
RETURN TRANSFER
```

Global Absence Transfer Proration

The Global Absence Transfer Proration fast formula can be used in cases where a proration factor (or a multiplication factor) needs to be applied onto the maximum enrollment transfer limit.

An organization might have a rule which asks for the enrollment transfer limit to be prorated based on FTE or even their job. In such a case, after the enrollment transfer rule is defined, the transfer proration rule can be composed to return a proration factor which will be multiplied onto the enrollment transfer limit before returning the final value against the worker's enrollment data.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Participation tab Transfer Rules section, check the box **Transfer positive balance**, then select a value other than **Unlimited** in the **Limit Rule** field.
6. Select the defined formula from the **Limit Proration Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number

Context Name	Data Type
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix
IV_CARRYOVER	Number	Carryover limit received from accrual matrix
IV_CEILING	Number	Ceiling limit received from the accrual matrix
IV_ACCRUAL_CEILING	Number	Annual accrual limit from the accrual matrix
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year
IV_CALEDARENDDATE	Date	End date of accrual calendar year
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment

Return Variables

Variable Name	Data Type	Description
TRANSFERPRORATIONFACTOR	Number	Multiplication factor for Transfer Limit

Sample Formula

Requirement: The organization has an enrollment transfer limit proration rule when loss of plan eligibility happens, which allows workers to transfer to a maximum of 30 days. This transfer limit needs to be pro-rated by FTE for workers who have the jobs 'Wealth Management' or 'Trade Associate' assigned against their assignment record.

Solution: A Global Absence Transfer Proration formula such as the one below can be used.

FORMULA NAME: ANC_ENRT_TRANSFERPRO

FORMULA TYPE: Global Absence Transfer Proration

DESCRIPTION: This formula returns the proration factor for the rollover limit for the absence plan

```
DEFAULT FOR PER_ASG_FTE_VALUE IS 1
DEFAULT FOR PER_ASG_JOB_NAME IS ' '

TRANSFERPRORATIONFACTOR = 1

IF (PER_ASG_JOB_NAME = 'Wealth Management Consultant' OR PER_ASG_JOB_NAME = 'Trade Associate')
THEN
(TRANSFERPRORATIONFACTOR = ROUND(PER_ASG_FTE_VALUE,2))

RETURN TRANSFERPRORATIONFACTOR
```

Global Absence Vesting Period

The Global Absence Vesting Period fast formula can be used to enforce a custom vesting period (a period during which the Worker is enrolled into the plan and accrues balance but cannot use them) logic while defining an absence plan.

An organization might have a vesting period rule for new workers who are hired as Interns or Graduates that they need to complete 30 days of employment before they can use their vacation balance. Here the vesting period formula can be composed to look at the person type to determine the period applicable for the particular enrollment.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Accrual**.
4. Click **Continue**.
5. On the Edit Absence Plan page Accruals tab, Accrual Attributes section, select **Formula** in the **Accrual Vesting Rule** field.
6. Select the defined formula from the **Vesting Period Formula** field

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ACCRUAL	Number	Accrual value received from the accrual matrix
IV_CARRYOVER	Number	Carryover limit received from accrual matrix
IV_CEILING	Number	Ceiling limit received from the accrual matrix

Variable Name	Data Type	Description
IV_ACCRUAL_CEILING	Number	Annual accrual limit from the accrual matrix
IV_ACCRUALPERIODSTARTDATE	Date	Start date of accrual period
IV_ACCRUALPERIODENDDATE	Date	End date of accrual period
IV_CALEDARSTARTDATE	Date	Start date of accrual calendar year
IV_CALEDARENDDATE	Date	End date of accrual calendar year
IV_PLANENROLLMENTSTARTDATE	Date	Start date of enrollment
IV_PLANENROLLMENTENDDATE	Date	End date of enrollment

Return Variables

Variable Name	Data Type	Description
vestingUOM	Text	Unit of measure for the vesting period duration. UoM can be Calendar Days ('C'), Weeks ('W'), Months ('M') or Years ('Y')
vestingUnits	Number	Period for which time-off is accrued, but cannot be used by worker.

Sample Formula

Requirement: The organization has a vesting rule which allows newly joined interns and graduates to avail their vacation balance only after 30 days from enrollment into the plan.

Solution: A Global Absence Vesting Period formula such as the one below can be used.

FORMULA NAME: ANC_VESTPRD

FORMULA TYPE: Global Absence Vesting Period

DESCRIPTION: This formula calculates and returns the vesting period duration for the vacation plan

```
DEFAULT FOR PER_ASG_USER_PERSON_TYPE IS 'Worker'

vestingUOM = 'C'
vestingUnits = 0

IF (PER_ASG_USER_PERSON_TYPE != 'Worker')
THEN
 (
 vestingUOM = 'C'
 vestingUnits=30
 )

RETURN vestingUOM,vestingUnits
```

Formulas for Qualification Plans

Use the Absence Plan page to incorporate qualification plan rules. However, if you want to define other special rules to suit your requirement, you can write your own formulas.

Formulas for Qualification Plan Rules

The following table lists the aspects of a qualification plan for which you can write a formula and identifies the formula type for each.

Rule	Description	Formula Type to Use
Start Rule	When the rolling backward plan term starts. A rolling backward term is a specific time period that precedes the absence start date.	Global Absence Plan Roll Backward End
Qualification Date Rule	Date when eligible workers enroll in the plan.	Global Absence Plan Enrollment Start Date
Conversion Formula	Method to calculate the absence duration differently. Example: You want to consider only whole working days in a sickness absence in the entitlement calculation. In such cases, you define logic in a formula to convert the absence duration to a value that excludes partial working days.	Global Absence Plan Duration
Entitlement Definition Type	Determines payment percentages to apply during the absence period.	Global Absence Entitlement
Entitlement Formula (Qualification Details section)	A level that determines the payment that workers receive for a specific number of days during a long leave of absence based on their length of service.	Global Absence Band Entitlement
Absence Payment Rate Rule	Method to calculate payment during absence period.	Global Absence Plan Use Rate

Global Absence Plan Duration

The Global Absence Plan Duration fast formula can be used to override the default duration calculation logic for daily entitlement duration entries against qualification plans.

If the entitlement to be considered against a qualification plan in an organization depends on the location of the Worker, then this formula can be leveraged to specify this dynamic calculation logic. This formula is invoked once for each day of absence. If there are multiple shifts in a day, then the formula is invoked once for each shift. If the shift spans over a day-divide, then the shift is split into two and the formula is invoked once for each shift block.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition. This is currently available only for plans whose UoM is Days or Hours.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Qualification**.
4. Click **Continue**.
5. On the Edit Absence Plan page Plan Attributes tab General Attributes section, select the defined formula from the **Conversion Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number

Context Name	Data Type
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ABS_START_DATE	Date	Start date–time of absence entry
IV_ABS_END_DATE	Date	End date-time of absence entry
IV_ABS_START_DURATION	Number	Start date duration of absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_ABS_END_DURATION	Number	End date duration of absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_START_DATE	Date	Start date of shift block within absence
IV_END_DATE	Date	End date of shift block within absence
IV_START_DURATION	Number	Start date duration of the shift block within absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_END_DURATION	Number	End date duration of the shift block within absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_START_TIME	Text	Start time on the start date of the shift block within absence entry. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 00:00. If there are no shifts on the day being processed, then absence start time or 00:00 is passed, whichever is greater
IV_END_TIME	Text	End time on the end date of the shift block within absence entry. Applicable when absence entry is being recorded against a Time based

Variable Name	Data Type	Description
		work schedule. For elapsed work schedules it will be 23:59. If there are no shifts on the day being processed, then absence end time or 23:59 is passed, whichever is lesser
IV_UOM	Text	Unit of measure

Return Variables

Variable Name	Data Type	Description
DURATION	Number	Duration of plan entries

Sample Formula

Requirement: The organization has a qualification plan where the entitlement usage is only 50% for workers who work in an office whose location is in California, whereas for the rest of the workers, the entitlement usage is same as the absence duration.

Solution: A Global Absence Plan Duration formula such as the one below can be used.

FORMULA NAME: ANC_PLN_DUR

FORMULA TYPE: Global Absence Plan Duration

DESCRIPTION: This formula evaluates the entitlement usage based on worker location

```
DEFAULT FOR IV_START_DATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_END_DATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_START_TIME IS '00:00'
DEFAULT FOR IV_END_TIME IS '23:59'
DEFAULT FOR PER_ASG_LOC_REGION2 IS ' XXXXXXXXXX'
INPUTS ARE IV_START_DATE (date), IV_END_DATE (date), IV_START_TIME(text),IV_END_TIME(text)

ln_entry_duration_d = 0
ln_unrounded_duration_d = 0

ld_period_start_date = to_date(to_char(IV_START_DATE,'DD/MM/RRRR')||' '||IV_START_TIME,'DD/MM/RRRR
 HH24:MI:SS')
ld_period_end_date = to_date(to_char(IV_END_DATE,'DD/MM/RRRR')||' '||IV_END_TIME,'DD/MM/RRRR HH24:MI:SS')

ln_entry_duration_d = GET_PAY_AVAILABILITY ('ASSIGN',
 ld_period_start_date,
 ld_period_end_date,
 'Y',
 'Y',
'Y',
 'Y',
 'D')

IF (PER_ASG_LOC_REGION2 = 'CA')
THEN
(
```

```
 ln_entry_duration_d = ln_entry_duration_d * 0.5
)
DURATION = ROUND(ln_entry_duration_d,2)
RETURN DURATION
```

Global Absence Band Entitlement

The Global Absence Band Entitlement fast formula can be used to define the bands of entitlement duration and percentage of payment that is applicable against a qualification plan entitlement.

An organization might have a rule that gives workers in a certain location additional fully paid days of maternity entitlement when compared to workers working in any other location.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Qualification**.
4. Click **Continue**.
5. On the Edit Absence Plan page Entitlements tab, Qualification Band Matrix table, create a matrix line by clicking on the **Add** button.
6. With the matrix line selected, in the **Qualification Details** table, click on the **Add** button.
7. Choose the defined formula in the **Entitlement Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number

Context Name	Data Type
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_START_DATE	Date	Start date of absence entry
IV_END_DATE	Date	End date of absence entry
IV_TOTALDURATION	Number	Duration of absence entry
IV_START_DURATION	Number	Start date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_END_DURATION	Number	End date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_START_TIME	Text	Start time on the start date of the absence entry. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 00:00.
IV_END_TIME	Text	End time on the end date for the absence being entered. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 23:59.

Variable Name	Data Type	Description
IV_ACTUALCHILDBIRTHDATE	Date	Actual date of childbirth entered for the absence. Applicable for Childbirth/placement absence pattern
IV_ACTUALSTARTDATE	Date	Actual start date of absence. Applicable for Childbirth/placement absence pattern
IV_ACTUALENDDATE	Date	Actual end date of absence. Applicable for Childbirth/placement absence pattern
IV_EXPECTEDCHILDBIRTHDATE	Date	Expected date of childbirth entered for the absence. Applicable for Childbirth/placement absence pattern
IV_PLANNEDSTARTDATE	Date	Expected start date of absence. Applicable for Childbirth/placement absence pattern
IV_PLANNEDENDDATE	Date	Expected end date of absence. Applicable for Childbirth/placement absence pattern
IV_ABSENCE_REASON	Text	Absence reason in the language of the current session
IV_ATTRIBUTE_CATEGORY	Text	Context of the DFF row for Absence Recordings DFF
IV_ATTRIBUTE_1*	Text	First text segment of the Absence Recordings DFF
IV_ATTRIBUTE_NUMBER1*	Number	First number segment of the Absence Recordings DFF
IV_ATTRIBUTE_DATE1*	Date	First date segment of the Absence Recordings DFF
IV_ATTRIBUTE_ARR	Text_Number	Array of text segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_ARR[1] holds the value of segment ATTRIBUTE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_ARR.exists(1))
IV_ATTRIBUTE_NUMBER_ARR	Number_Number	Array of number segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_NUMBER_ARR[1] holds the value of segment

Variable Name	Data Type	Description
		ATTRIBUTE_NUMBER1 in ANC_PER_ABS_ ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ ATTRIBUTE_NUMBER_ARR.exists(1))
IV_ATTRIBUTE_DATE_ARR	Date_Number	Array of date segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_DATE_ ARR[1] holds the value of segment ATTRIBUTE_ DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_ DATE_ARR.exists(1))
IV_INFORMATION_CATEGORY	Text	Context of the DDF row for ANC_PER_ABS_ ENTRIES DDF
IV_INFORMATION_1*	Text	First text segment of the ANC_PER_ABS_ ENTRIES DDF
IV_INFORMATION_NUMBER1*	Number	First number segment of the ANC_PER_ABS_ ENTRIES DDF
IV_INFORMATION_DATE1*	Date	First date segment of the ANC_PER_ABS_ ENTRIES DDF
IV_INFORMATION_ARR	Text_Number	Array of text segments of the ANC_PER_ABS_ ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_ARR[1] holds the value of segment INFORMATION1 in ANC_ PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_ARR.exists(1))
IV_INFORMATION_NUMBER_ARR	Number_Number	Array of number segments of the ANC_PER_ ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_ NUMBER_ARR[1] holds the value of segment INFORMATION_NUMBER1 in ANC_PER_ABS_

Variable Name	Data Type	Description
		ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_NUMBER_ARR.exists(1))
IV_INFORMATION_DATE_ARR	Date_Number	Array of date segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_DATE_ARR[1] holds the value of segment INFORMATION_DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_DATE_ARR.exists(1))
IV_PAYMENT_DTL_BAND	Number	Identifier of the payment band chosen for the absence linked to an agreement
IV_NOTIFICATION_DATE	Date	Date of Illness/Injury notification
IV_MATCHING_DATE	Date	Date on which child is matched with the worker for adoption

**The sequence for this input value can be extended up to 5*

Return Variables

Variable Name	Data Type	Description
BANDPAYFACTOR	Number	Pay factor for entitlement band value
BANDENTITLEMENT	Number	Entitlement duration that worker is eligible for
DEBUG_MESSAGE	Text	Text passed into this output variable would get logged if application logging is enabled. Useful for debugging.

Sample Formula

Requirement: The organization has an entitlement payment band that is based on the location. Workers belonging to a location such as California receive an additional 10 days of fully paid entitlement for Maternity Leave.

Solution: A Global Absence Band Entitlement formula such as the one below can be used.

FORMULA NAME: ANC_BND_ENTLMNT

FORMULA TYPE: Global Absence Band Entitlement

DESCRIPTION: This formula evaluates the entitlement band based on location of Worker

```
DEFAULT FOR PER_ASG_LOC_REGION2 IS ' XXXXXXXXXX'

IF (PER_ASG_LOC_REGION2 = 'CA')
THEN
(
BANDPAYFACTOR = 100
BANDENTITLEMENT = 130
)
ELSE
(
BANDPAYFACTOR = 100
BANDENTITLEMENT = 120
)

RETURN BANDPAYFACTOR, BANDENTITLEMENT
```

Global Absence Plan Enrollment Start Date

The Global Absence Plan Enrollment Start Date fast formula can be used to specify the Qualification date for the absence plan.

An organization might have a rule for Maternity entitlements according to which the qualification date is on the absence start date if actual dates are entered. If it is not entered, then the qualification date needs to be the event date (actual if available, or else, the planned date). For including such conditional logic to determine the qualification date, formulas of this type can be used.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Qualification**.
4. Click **Continue**.
5. On the Edit Absence Plan page Participations tab, Enrollment Rules section, choose Formula in the **Qualification Date Rule** field.
6. Select the defined formula in the **Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_START_DATE	Date	Start date of absence entry
IV_END_DATE	Date	End date of absence entry
IV_TOTALDURATION	Number	Duration of absence entry
IV_START_DURATION	Number	Start date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule

Variable Name	Data Type	Description
IV_END_DURATION	Number	End date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_START_TIME	Text	Start time on the start date of the absence entry. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 00:00.
IV_END_TIME	Text	End time on the end date for the absence being entered. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 23:59.
IV_ACTUALCHILDBIRTHDATE	Date	Actual date of childbirth entered for the absence. Applicable for Childbirth/placement absence pattern
IV_ACTUALSTARTDATE	Date	Actual start date of absence. Applicable for Childbirth/placement absence pattern
IV_ACTUALENDDATE	Date	Actual end date of absence. Applicable for Childbirth/placement absence pattern
IV_EXPECTEDCHILDBIRTHDATE	Date	Expected date of childbirth entered for the absence. Applicable for Childbirth/placement absence pattern
IV_PLANNEDSTARTDATE	Date	Expected start date of absence. Applicable for Childbirth/placement absence pattern
IV_PLANNEDENDDATE	Date	Expected end date of absence. Applicable for Childbirth/placement absence pattern
IV_ABSENCE_REASON	Text	Absence reason in the language of the current session

Return Variables

Variable Name	Data Type	Description
ENROLLMENTSTARTDATE	Date	Qualification date used by the absence plan

Sample Formula

Requirement: The organization has a rule for Maternity entitlements according to which the qualification date is on the absence start date if actual dates are entered. If this is not provided, then the qualification date needs to be the event date (actual if available, or else, the planned date).

Solution: A Global Absence Enrollment Start Date formula such as the one below can be used.

FORMULA NAME: ANC_ENROLMNT_START

FORMULA TYPE: Global Absence Plan Enrollment Start Date

DESCRIPTION: This formula returns the qualification date as of which participation to qualification plan needs to be terminated

```
DEFAULT FOR IV_ACTUALCHILDBIRTHDATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_ACTUALSTARTDATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_EXPECTEDCHILDBIRTHDATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR PER_ASG_REL_ACTUAL_TERMINATION_DATE IS '4712/12/31 00:00:00' (date)

INPUTS ARE IV_ACTUALCHILDBIRTHDATE (date), IV_ACTUALSTARTDATE (date), IV_EXPECTEDCHILDBIRTHDATE (date)

ld_effective_date = GET_CONTEXT(EFFECTIVE_DATE,'4712/12/31 12:00:00' (date))

IF (IV_ACTUALSTARTDATE WAS NOT DEFAULTED)
THEN
 (
 ENROLLMENTSTARTDATE = IV_ACTUALSTARTDATE
 )
ELSE
 (
 IF (IV_ACTUALCHILDBIRTHDATE WAS NOT DEFAULTED)
 THEN
 (
 ENROLLMENTSTARTDATE = IV_ACTUALCHILDBIRTHDATE
 )
 ELSE
 (
 ENROLLMENTSTARTDATE = IV_EXPECTEDCHILDBIRTHDATE
 )
 )

RETURN ENROLLMENTSTARTDATE
```

Global Absence Plan Entitlement

The Global Absence Plan Entitlement fast formula can be used to define the entire entitlement structure for a qualification plan for cases where matrix architecture does not fit the bill.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.

2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Qualification**.
4. Click **Continue**.
5. On the Edit Absence Plan page Entitlements tab, Entitlement Attributes section, choose **Formula** in the **Entitlement Definition Type** choice button field.
6. Select the defined formula in the **Entitlement Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_CATEGORY_ID	Number
ABSENCE_ENTRY_ID	Number
ABSENCE_MATERNITY_ID	Number
ABSENCE_REASON_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_START_DATE	Date	Start date of absence entry
IV_END_DATE	Date	End date of absence entry
IV_TOTALDURATION	Number	Duration of absence entry
IV_START_DURATION	Number	Start date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_END_DURATION	Number	End date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_START_TIME	Text	Start time on the start date of the absence entry. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 00:00.
IV_END_TIME	Text	End time on the end date for the absence being entered. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 23:59.
IV_ACTUALCHILDBIRTHDATE	Date	Actual date of childbirth entered for the absence. Applicable for Childbirth/placement absence pattern
IV_ACTUALSTARTDATE	Date	Actual start date of absence. Applicable for Childbirth/placement absence pattern
IV_ACTUALENDDATE	Date	Actual end date of absence. Applicable for Childbirth/placement absence pattern
IV_EXPECTEDCHILDBIRTHDATE	Date	Expected date of childbirth entered for the absence. Applicable for Childbirth/placement absence pattern
IV_PLANNEDSTARTDATE	Date	Expected start date of absence. Applicable for Childbirth/placement absence pattern
IV_PLANNEDENDDATE	Date	Expected end date of absence. Applicable for Childbirth/placement absence pattern

Variable Name	Data Type	Description
IV_ABSENCE_REASON	Text	Absence reason in the language of the current session
IV_ATTRIBUTE_CATEGORY	Text	Context of the DFF row for Absence Recordings DFF
IV_ATTRIBUTE_1*	Text	First text segment of the Absence Recordings DFF
IV_ATTRIBUTE_NUMBER1*	Number	First number segment of the Absence Recordings DFF
IV_ATTRIBUTE_DATE1*	Date	First date segment of the Absence Recordings DFF
IV_ATTRIBUTE_ARR	Text_Number	Array of text segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_ARR[1] holds the value of segment ATTRIBUTE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_ARR.exists(1))
IV_ATTRIBUTE_NUMBER_ARR	Number_Number	Array of number segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_NUMBER_ARR[1] holds the value of segment ATTRIBUTE_NUMBER1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_NUMBER_ARR.exists(1))
IV_ATTRIBUTE_DATE_ARR	Date_Number	Array of date segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_DATE_ARR[1] holds the value of segment ATTRIBUTE_DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using

Variable Name	Data Type	Description
		the “exists” command. Eg: if(IV_ATTRIBUTE_DATE_ARR.exists(1))
IV_INFORMATION_CATEGORY	Text	Context of the DDF row for ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_1*	Text	First text segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_NUMBER1*	Number	First number segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_DATE1*	Date	First date segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_ARR	Text_Number	Array of text segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_ARR[1] holds the value of segment INFORMATION1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_ARR.exists(1))
IV_INFORMATION_NUMBER_ARR	Number_Number	Array of number segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_NUMBER_ARR[1] holds the value of segment INFORMATION_NUMBER1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_NUMBER_ARR.exists(1))
IV_INFORMATION_DATE_ARR	Date_Number	Array of date segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_DATE_ARR[1] holds the value of segment INFORMATION_DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using

Variable Name	Data Type	Description
		the “exists” command. Eg: if(IV_INFORMATION_DATE_ARR.exists(1))
IV_PAYMENT_DTL_BAND	Number	Identifier of the payment band chosen for the absence linked to an agreement
IV_NOTIFICATION_DATE	Date	Date of Illness/Injury notification
IV_MATCHING_DATE	Date	Date on which child is matched with the worker for adoption
IV_LNKG_ABS_ID	Number_Number	Array of absence entry identifier for which linkage is created
IV_LNKG_LNKD_ABS_ID	Number_Number	Array of absence entry identifier to which absence is linked
IV_LNKG_LNKD_ABS_START	Date_Number	Array of start date time of absences which are linked
IV_LNKG_LNKD_ABS_END	Date_Number	Array of end date time of absences which are linked
IV_LNKG_REASON	Text_Number	Array of linkage reasons
IV_LNKG_REASON_ID	Number_Number	Array of linkage reason identifiers
IV_LNKG_CHAIN_ID	Number_Number	Array of linkage chain identifiers
IV_UI_PER_CERT_ID	Text	Identifier of the certificate record added to the absence. Applicable for certificates acted up-on by admin.
IV_UI_ABS_CERT_ID	Text	Absence certificate identifier. Applicable for certificates acted up-on by admin.
IV_UI_CERT_TYPE	Text	Certification type. Applicable for certificates acted up-on by admin.
IV_UI_CERT_REVPAYSTART_DATE	Date	Revised pay start date for the certificate. Applicable for certificates acted up-on by admin.
IV_UI_CERT_REVPAYEND_DATE	Date	Revised pay end date for the certificate. Applicable for certificates acted up-on by admin.
IV_UI_CERT_REVPAY_FACTOR	Number	Revised payment percentage for the certificate. Applicable for certificates acted up-on by admin.
IV_UI_CERT_CREATION_TYPE	Text	Certification creation type. Applicable for certificates acted up-on by admin.

Variable Name	Data Type	Description
IV_UI_CERT_STATUS	text	Certification status. Applicable for certificates acted up-on by admin.

**The sequence for this input value can be extended up to 5*

Return Variables

Variable Name	Data Type	Description
BAND1PAYFACTOR	Number	Pay factor for the entitlement BAND1ENTITLEMENT
BAND1ENTITLEMENT	Number	Entitlement duration that the worker is eligible for
BAND1RATEDEFINITION	Number	Identifier of the rate definition to be used for BAND1ENTITLEMENT
BAND1USEDENTITLEMENT	Number	Used entitlement value to be used for BAND1ENTITLEMENT
BAND2PAYFACTOR	Number	Pay factor for the entitlement BAND2ENTITLEMENT
BAND2ENTITLEMENT	Number	Entitlement duration that the worker is eligible for
BAND2RATEDEFINITION	Number	Identifier of the rate definition to be used for BAND2ENTITLEMENT
BAND2USEDENTITLEMENT	Number	Used entitlement value to be used for BAND2ENTITLEMENT
BAND3PAYFACTOR	Number	Pay factor for the entitlement BAND3ENTITLEMENT
BAND3ENTITLEMENT	Number	Entitlement duration that the worker is eligible for
BAND3RATEDEFINITION	Number	Identifier of the rate definition to be used for BAND3ENTITLEMENT
BAND3USEDENTITLEMENT	Number	Used entitlement value to be used for BAND3ENTITLEMENT
BAND4PAYFACTOR	Number	Pay factor for the entitlement BAND4ENTITLEMENT

Variable Name	Data Type	Description
BAND4ENTITLEMENT	Number	Entitlement duration that the worker is eligible for
BAND4RATEDEFINITION	Number	Identifier of the rate definition to be used for BAND4ENTITLEMENT
BAND4USEDENTITLEMENT	Number	Used entitlement value to be used for BAND4ENTITLEMENT
BAND5PAYFACTOR	Number	Pay factor for the entitlement BAND5ENTITLEMENT
BAND5ENTITLEMENT	Number	Entitlement duration that the worker is eligible for
BAND5RATEDEFINITION	Number	Identifier of the rate definition to be used for BAND5ENTITLEMENT
BAND5USEDENTITLEMENT	Number	Used entitlement value to be used for BAND5ENTITLEMENT
CERT_NAMES	Text_Number	Array of certificates (managed by entitlement formula certificates) to be associated with the absence entry
CERT_START_DATES	Date_Number	Array of certification start dates of certificates (managed by entitlement formula certificates) associated with the absence entry
CERT_END_DATES	Date_Number	Array of certification end dates of certificates (managed by entitlement formula certificates) associated with the absence entry
CERT_COMMENTS	Text_Number	Array of certification comments associated with the absence entry
DEBUG_MESSAGE	Text	Text passed into this output variable would get logged if application logging is enabled. Useful for debugging.

Sample Formula

Requirement: The organization has an entitlement payment band structures that is based on the working location of the worker. Workers belonging to a location that is in California follow a different band structure as compared to workers in the rest of the country.

Solution: A Global Absence Plan Entitlement formula such as the one below can be used.

FORMULA NAME: ANC_PLN_ENTLMNT

FORMULA TYPE: Global Absence Plan Entitlement

DESCRIPTION: This formula evaluates the entitlement band based on location of Worker

```
DEFAULT FOR PER_ASG_LOC_REGION2 IS ' XXXXXXXXXX'

IF (PER_ASG_LOC_REGION2 = 'CA')
THEN {
 BAND1PAYFACTOR = 100
 BAND1ENTITLEMENT = 50
 BAND2PAYFACTOR = 75
 BAND2ENTITLEMENT = 50
 BAND3PAYFACTOR = 50
 BAND3ENTITLEMENT = 50
)
ELSE (
 BAND1PAYFACTOR = 100
 BAND1ENTITLEMENT = 40
 BAND2PAYFACTOR = 75
 BAND2ENTITLEMENT = 40
 BAND3PAYFACTOR = 50
 BAND3ENTITLEMENT = 40
)
RETURN BAND1PAYFACTOR, BAND1ENTITLEMENT, BAND2PAYFACTOR, BAND2ENTITLEMENT, BAND3PAYFACTOR, BAND3ENTITLEMENT
```

Global Absence Plan Roll Backward End

The Global Absence Plan Roll Backward End fast formula is to be used to determine the start date of a plan term that uses the Roll Backward term rule.

If the start date for plan term in a roll backward period needs to be 365 days prior to the absence end date, required logic can be composed into this formula and the reference date returned.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Qualification**.
4. Click **Continue**.
5. On the Edit Absence Plan page Plan Attributes tab, Plan Term section, choose **Rolling backward** in the **Type** field.
6. Select **Formula** in the **Start Rule** field.
7. Choose the defined formula in the **Start Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_CATEGORY_ID	Number
ABSENCE_ENTRY_ID	Number
ABSENCE_MATERNITY_ID	Number
ABSENCE_REASON_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_START_DATE	Date	Start date of absence entry
IV_END_DATE	Date	End date of absence entry
IV_TOTALDURATION	Number	Duration of absence entry

Variable Name	Data Type	Description
IV_START_DURATION	Number	Start date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_END_DURATION	Number	End date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_START_TIME	Text	Start time on the start date of the absence entry. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 00:00.
IV_END_TIME	Text	End time on the end date for the absence being entered. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 23:59.
IV_ACTUALCHILDBIRTHDATE	Date	Actual date of childbirth entered for the absence. Applicable for Childbirth/placement absence pattern
IV_ACTUALSTARTDATE	Date	Actual start date of absence. Applicable for Childbirth/placement absence pattern
IV_ACTUALENDDATE	Date	Actual end date of absence. Applicable for Childbirth/placement absence pattern
IV_EXPECTEDCHILDBIRTHDATE	Date	Expected date of childbirth entered for the absence. Applicable for Childbirth/placement absence pattern
IV_PLANNEDSTARTDATE	Date	Expected start date of absence. Applicable for Childbirth/placement absence pattern
IV_PLANNEDENDDATE	Date	Expected end date of absence. Applicable for Childbirth/placement absence pattern
IV_ABSENCE_REASON	Text	Absence reason in the language of the current session
IV_ATTRIBUTE_CATEGORY	Text	Context of the DFF row for Absence Recordings DFF
IV_ATTRIBUTE_1*	Text	First text segment of the Absence Recordings DFF
IV_ATTRIBUTE_NUMBER1*	Number	First number segment of the Absence Recordings DFF

Variable Name	Data Type	Description
IV_ATTRIBUTE_DATE1*	Date	First date segment of the Absence Recordings DFF
IV_ATTRIBUTE_ARR	Text_Number	Array of text segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_ARR[1] holds the value of segment ATTRIBUTE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_ARR.exists(1))
IV_ATTRIBUTE_NUMBER_ARR	Number_Number	Array of number segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_NUMBER_ARR[1] holds the value of segment ATTRIBUTE_NUMBER1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_NUMBER_ARR.exists(1))
IV_ATTRIBUTE_DATE_ARR	Date_Number	Array of date segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_DATE_ARR[1] holds the value of segment ATTRIBUTE_DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_DATE_ARR.exists(1))
IV_INFORMATION_CATEGORY	Text	Context of the DDF row for ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_1*	Text	First text segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_NUMBER1*	Number	First number segment of the ANC_PER_ABS_ENTRIES DDF

Variable Name	Data Type	Description
IV_INFORMATION_DATE1*	Date	First date segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_ARR	Text_Number	Array of text segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_ARR[1] holds the value of segment INFORMATION1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_ARR.exists(1))
IV_INFORMATION_NUMBER_ARR	Number_Number	Array of number segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_NUMBER_ARR[1] holds the value of segment INFORMATION_NUMBER1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_NUMBER_ARR.exists(1))
IV_INFORMATION_DATE_ARR	Date_Number	Array of date segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_DATE_ARR[1] holds the value of segment INFORMATION_DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_DATE_ARR.exists(1))
IV_PAYMENT_DTL_BAND	Number	Identifier of the payment band chosen for the absence linked to an agreement
IV_NOTIFICATION_DATE	Date	Date of Illness/Injury notification
IV_MATCHING_DATE	Date	Date on which child is matched with the worker for adoption

**The sequence for this input value can be extended up to 5*

Return Variables

Variable Name	Data Type	Description
REFERENCEDATE	Date	Start date for the Rolling Backward plan term.
DEBUG_MESSAGE	Text	Text passed into this output variable would get logged if application logging is enabled. Useful for debugging.

Sample Formula

Requirement: The organization has a qualification plan with a rolling backward plan term which starts 365 days prior to the absence end date of the absence entry.

Solution: A Global Absence Plan Roll Backward End formula such as the one below can be used.

FORMULA NAME: ANC_PLN_ROLL_BKWRD_END

FORMULA TYPE: Global Absence Plan Roll Backward End

DESCRIPTION: This formula returns the end date for a Rolling Backward qualification plan term

```
INPUTS ARE IV_START_DATE (date), IV_END_DATE (date)

REFERENCE_DATE = ADD_DAYS(IV_END_DATE, - 365)

RETURN REFERENCEDATE
```

Global Absence Plan Roll Forward Start

The Global Absence Plan Roll Forward Start fast formula returns the reference date till which the existence of a roll forward term is searched for.

If a rolling forward term needs to be searched for 365 days prior to the absence start date, required logic can be composed into this formula and the reference date returned.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Qualification**.
4. Click **Continue**.
5. On the Edit Absence Plan page Plan Attributes tab, Plan Term section, choose **Rolling forward** in the **Type** field.

6. Select **Formula** in the **Start Rule** field.
7. Choose the defined formula in the **Start Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_CATEGORY_ID	Number
ABSENCE_ENTRY_ID	Number
ABSENCE_MATERNITY_ID	Number
ABSENCE_REASON_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_START_DATE	Date	Start date of absence entry
IV_END_DATE	Date	End date of absence entry
IV_TOTALDURATION	Number	Duration of absence entry
IV_START_DURATION	Number	Start date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_END_DURATION	Number	End date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_START_TIME	Text	Start time on the start date of the absence entry. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 00:00.
IV_END_TIME	Text	End time on the end date for the absence being entered. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 23:59.
IV_ACTUALCHILDBIRTHDATE	Date	Actual date of childbirth entered for the absence. Applicable for Childbirth/placement absence pattern
IV_ACTUALSTARTDATE	Date	Actual start date of absence. Applicable for Childbirth/placement absence pattern
IV_ACTUALENDDATE	Date	Actual end date of absence. Applicable for Childbirth/placement absence pattern
IV_EXPECTEDCHILDBIRTHDATE	Date	Expected date of childbirth entered for the absence. Applicable for Childbirth/placement absence pattern
IV_PLANNEDSTARTDATE	Date	Expected start date of absence. Applicable for Childbirth/placement absence pattern
IV_PLANNEDENDDATE	Date	Expected end date of absence. Applicable for Childbirth/placement absence pattern

Variable Name	Data Type	Description
IV_ABSENCE_REASON	Text	Absence reason in the language of the current session
IV_ATTRIBUTE_CATEGORY	Text	Context of the DFF row for Absence Recordings DFF
IV_ATTRIBUTE_1*	Text	First text segment of the Absence Recordings DFF
IV_ATTRIBUTE_NUMBER1*	Number	First number segment of the Absence Recordings DFF
IV_ATTRIBUTE_DATE1*	Date	First date segment of the Absence Recordings DFF
IV_ATTRIBUTE_ARR	Text_Number	Array of text segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_ARR[1] holds the value of segment ATTRIBUTE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_ARR.exists(1))
IV_ATTRIBUTE_NUMBER_ARR	Number_Number	Array of number segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_NUMBER_ARR[1] holds the value of segment ATTRIBUTE_NUMBER1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_NUMBER_ARR.exists(1))
IV_ATTRIBUTE_DATE_ARR	Date_Number	Array of date segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_DATE_ARR[1] holds the value of segment ATTRIBUTE_DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using

Variable Name	Data Type	Description
		the “exists” command. Eg: if(IV_ATTRIBUTE_DATE_ARR.exists(1))
IV_INFORMATION_CATEGORY	Text	Context of the DDF row for ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_1*	Text	First text segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_NUMBER1*	Number	First number segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_DATE1*	Date	First date segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_ARR	Text_Number	Array of text segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_ARR[1] holds the value of segment INFORMATION1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_ARR.exists(1))
IV_INFORMATION_NUMBER_ARR	Number_Number	Array of number segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_NUMBER_ARR[1] holds the value of segment INFORMATION_NUMBER1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_NUMBER_ARR.exists(1))
IV_INFORMATION_DATE_ARR	Date_Number	Array of date segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_DATE_ARR[1] holds the value of segment INFORMATION_DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using

Variable Name	Data Type	Description
		the “exists” command. Eg: if(IV_INFORMATION_DATE_ARR.exists(1))
IV_PAYMENT_DTL_BAND	Number	Identifier of the payment band chosen for the absence linked to an agreement
IV_NOTIFICATION_DATE	Date	Date of Illness/Injury notification
IV_MATCHING_DATE	Date	Date on which child is matched with the worker for adoption

**The sequence for this input value can be extended up to 5*

Return Variables

Variable Name	Data Type	Description
REFERENCEDATE	Date	Date to which a rolling forward term is searched for.

Sample Formula

Requirement: The organization has a qualification plan with a rolling forward plan term which needs to be searched for 365 days prior to the start date of the absence entry.

Solution: A Global Absence Plan Roll Forward Start formula such as the one below can be used.

FORMULA NAME: ANC_PLN_ROLL_FWD_END

FORMULA TYPE: Global Absence Plan Roll Forward Start

DESCRIPTION: This formula returns the reference date to which a Rolling Forward term is searched for

```
INPUTS ARE IV_START_DATE (date), IV_END_DATE (date)

REFERENCE_DATE = ADD_DAYS(IV_START_DATE, - 365)

RETURN REFERENCEDATE
```

Global Absence Plan Use Rate

The Global Absence Plan Use Rate fast formula can be used to dynamically specify the rate definition associated with the qualification plan depending on custom conditions.

If the rate definition associated with the same qualification plan varies depending on the location of the worker being evaluated, a Global Absence Plan Use Rate can be composed to associate the corresponding rate definition to the Worker.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence plan definition.

Navigation

1. In the Absence Administration work area, click **Absence Plans** to open the Absence Plans page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Plan dialog box.
3. In the Plan Type field, select **Qualification**.
4. Click **Continue**.
5. On the Edit Absence Plan page Entries and Balances tab, Rates section, choose **Formula** in the **Absence Payment Rule** field.
6. Select the defined formula in the **Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_CATEGORY_ID	Number
ABSENCE_ENTRY_ID	Number
ABSENCE_MATERNITY_ID	Number
ABSENCE_REASON_ID	Number
ABSENCE_TYPE_ID	Number
ACCRUAL_PLAN_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number

Context Name	Data Type
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_ATTRIBUTE_CATEGORY	Text	Context of the DFF row for Absence Recordings DFF
IV_ATTRIBUTE_1*	Text	First text segment of the Absence Recordings DFF
IV_ATTRIBUTE_NUMBER1*	Number	First number segment of the Absence Recordings DFF
IV_ATTRIBUTE_DATE1*	Date	First date segment of the Absence Recordings DFF
IV_ATTRIBUTE_ARR	Text_Number	Array of text segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_ARR[1] holds the value of segment ATTRIBUTE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_ARR.exists(1))
IV_ATTRIBUTE_NUMBER_ARR	Number_Number	Array of number segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_NUMBER_ARR[1] holds the value of segment ATTRIBUTE_NUMBER1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error.

Variable Name	Data Type	Description
		Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_NUMBER_ARR.exists(1))
IV_ATTRIBUTE_DATE_ARR	Date_Number	Array of date segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_DATE_ARR[1] holds the value of segment ATTRIBUTE_DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_DATE_ARR.exists(1))
IV_INFORMATION_CATEGORY	Text	Context of the DDF row for ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_1*	Text	First text segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_NUMBER1*	Number	First number segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_DATE1*	Date	First date segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_ARR	Text_Number	Array of text segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_ARR[1] holds the value of segment INFORMATION1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_ARR.exists(1))
IV_INFORMATION_NUMBER_ARR	Number_Number	Array of number segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_NUMBER_ARR[1] holds the value of segment INFORMATION_NUMBER1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data

Variable Name	Data Type	Description
		exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_NUMBER_ARR.exists(1))
IV_INFORMATION_DATE_ARR	Date_Number	Array of date segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_DATE_ARR[1] holds the value of segment INFORMATION_DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_DATE_ARR.exists(1))
IV_PAYMENT_DTL_BAND	Number	Identifier of the payment band chosen for the absence linked to an agreement
IV_NOTIFICATION_DATE	Date	Date of Illness/Injury notification
IV_MATCHING_DATE	Date	Date on which child is matched with the worker for adoption

**The sequence for this input value can be extended up to 5*

Return Variables

Variable Name	Data Type	Description
RATECODE	Text	Rate code for rate associated with qualification plan
DEBUG_MESSAGE	Text	Text passed into this output variable would get logged if application logging is enabled. Useful for debugging

Sample Formula

Requirement: The organization has an absence payment rate rule for the qualification plan that depends on the hourly/salaried nature of the Worker. Separate rate definition rules exist for each category of workers.

Solution: A Global Absence Plan Use Rate formula such as the one below can be used.

FORMULA NAME: ANC_PLN_RATE

FORMULA TYPE: Global Absence Plan Use Rate

DESCRIPTION: This formula returns the rate code for the rate definition that needs to be associated with the qualification plan

```
DEFAULT FOR PER_ASG_HOURLY_SALARIED_CODE IS 'H'

IF (PER_ASG_HOURLY_SALARIED_CODE = 'H')
THEN
(
RATECODE = 'HOURLY_RATE'
)
ELSE
(
RATECODE = 'ANNUAL_RATE'
)

RETURN RATECODE
```

Formulas for Absence Type

Use the Absence Types pages to define absence type rules. However, if you want to define other special rules to suit your requirement, you can write your own formulas.

Formulas for Absence Types

The following table lists the aspects of an absence type for which you can write a formula and identifies the formula type for each.

Rule	Description	Formula Type to Use
Conversion	Method to convert the absence duration to other units of measure. For example, your workers' work schedules are in work hours, but you want to display the duration in work days.	Global Absence Type Duration You can use the formula to convert absence duration values that are in work days or work hours only.
Validation	Rules in addition to the ones that you can define on the Absence Types pages to check the validity of the absence.	Global Absence Entry Validation

Global Absence Entry Validation

The Global Absence Entry Validation fast formula can be used in cases where a custom data validation or business rule validation needs to be performed when an absence entry is being made.

An organization might have a rule that allows a worker to record an absence entry of type Maternity Leave – Unpaid, only in sequence with a regular Maternity Leave absence entry. In such a case, a validation formula can be composed

which looks at the Workers absence history to identify if there is a Maternity Leave that is ending on the day just before the absence entry of Maternity Leave - Unpaid.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence type definition.

Navigation

1. In the Absence Administration work area, click **Absence Types** to open the Absence Types page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Type dialog box.
3. Click **Continue**.
4. On the Create Absence Type page Type Attributes tab, General Attributes section, select the defined formula in the **Validation Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_AGREEMENT_ID	Number
ABSENCE_CERTIFICATION_ID	Number
ABSENCE_ENTRY_ID	Number
ABSENCE_REASON_ID	Number
ABSENCE_TYPE_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number

Context Name	Data Type
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_AGREEMENT_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_START_DATE	Date	Start date of absence entry
IV_END_DATE	Date	End date of absence entry
IV_TOTALDURATION	Number	Duration of absence entry
IV_START_DURATION	Number	Start date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_END_DURATION	Number	End date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_START_TIME	Text	Start time on the start date of the absence entry. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 00:00.
IV_END_TIME	Text	End time on the end date for the absence being entered. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 23:59.
IV_ACTUALCHILDBIRTHDATE	Date	Actual date of childbirth entered for the absence. Applicable for Childbirth/placement absence pattern
IV_ACTUALSTARTDATE	Date	Actual start date of absence. Applicable for Childbirth/placement absence pattern
IV_ACTUALENDDATE	Date	Actual end date of absence. Applicable for Childbirth/placement absence pattern

Variable Name	Data Type	Description
IV_EXPECTEDCHILDBIRTHDATE	Date	Expected date of childbirth entered for the absence. Applicable for Childbirth/placement absence pattern
IV_PLANNEDSTARTDATE	Date	Expected start date of absence. Applicable for Childbirth/placement absence pattern
IV_PLANNEDENDDATE	Date	Expected end date of absence. Applicable for Childbirth/placement absence pattern
IV_ABSENCE_REASON	Text	Absence reason in the language of the current session
IV_ATTRIBUTE_CATEGORY	Text	Context of the DFF row for Absence Recordings DFF
IV_ATTRIBUTE_1*	Text	First text segment of the Absence Recordings DFF
IV_ATTRIBUTE_NUMBER1*	Number	First number segment of the Absence Recordings DFF
IV_ATTRIBUTE_DATE1*	Date	First date segment of the Absence Recordings DFF
IV_ATTRIBUTE_ARR	Text_Number	Array of text segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_ARR[1] holds the value of segment ATTRIBUTE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_ARR.exists(1))
IV_ATTRIBUTE_NUMBER_ARR	Number_Number	Array of number segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_NUMBER_ARR[1] holds the value of segment ATTRIBUTE_NUMBER1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_NUMBER_ARR.exists(1))

Variable Name	Data Type	Description
IV_ATTRIBUTE_DATE_ARR	Date_Number	Array of date segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_DATE_ARR[1] holds the value of segment ATTRIBUTE_DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_DATE_ARR.exists(1))
IV_INFORMATION_CATEGORY	Text	Context of the DDF row for ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_1*	Text	First text segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_NUMBER1*	Number	First number segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_DATE1*	Date	First date segment of the ANC_PER_ABS_ENTRIES DDF
IV_INFORMATION_ARR	Text_Number	Array of text segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_ARR[1] holds the value of segment INFORMATION1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_ARR.exists(1))
IV_INFORMATION_NUMBER_ARR	Number_Number	Array of number segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_NUMBER_ARR[1] holds the value of segment INFORMATION_NUMBER1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_NUMBER_ARR.exists(1))

Variable Name	Data Type	Description
IV_INFORMATION_DATE_ARR	Date_Number	Array of date segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_DATE_ARR[1] holds the value of segment INFORMATION_DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_DATE_ARR.exists(1))
IV_PAYMENT_DTL_BAND	Number	Identifier of the payment band chosen for the absence linked to an agreement
IV_NOTIFICATION_DATE	Date	Date of Illness/Injury notification
IV_MATCHING_DATE	Date	Date on which child is matched with the worker for adoption

**The sequence for this input value can be extended up to 5*

Return Variables

Variable Name	Data Type	Description
VALID	Text	Determines validity of absence entry. ‘N’ throws an error message and stops the transaction from being submitted
ERROR_MESSAGE	Text	Custom error message for invalid absence entry. Error message can either be written into the formula or defined via Manage Messages and invoked here.
ERROR_CODE	Text	Identifies if the message is Error or Warning.. Valid values are ‘E’ for Error and ‘W’ for Warning.
TOKEN_NAME	Text_Number	Array of token names, if any, in the message configured via Manage Messages
TOKEN_VALUE	Text_Number	Array of values passed to each token name in the message
DEBUG_MESSAGE	Text	Text passed into this output variable would get logged if application logging is enabled. Useful for debugging.

Sample Formula

Requirement: The organization has a Sickness absence entitlement policy according to which a worker can record a regular sickness absence entry only after the completion of 365 days from their last Unpaid Sickness entry.

Solution: A Global Absence Entry Validation formula such as the one below can be used.

FORMULA NAME: ANC_VALID

FORMULA TYPE: Global Absence Entry Validation

DESCRIPTION: This formula validates the Sickness absence entry

```
DEFAULT FOR IV_START_DATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_END_DATE IS '4712/12/31 00:00:00' (date)
DEFAULT_DATA_VALUE for ANC_PER_ABS_ENTRS_ABSENCE_ENTRY_ID_ARR is 0
DEFAULT FOR ANC_ABS_ENTRS_ABSENCE_TYPE_ID is 0
DEFAULT FOR ANC_ABS_ENTRS_ABSENCE_STATUS_CD IS ' '
DEFAULT FOR ANC_ABS_TYP_NAME IS ' '
DEFAULT FOR ANC_ABS_ENTRS_END_DATE IS '4712/12/31 00:00:00' (date)

INPUTS ARE IV_END_DATE (date), IV_START_DATE (date)

lc_sickness_unpaid_name = 'Sickness - Unpaid'
ld_start_date = TO_DATE('1951-01-01','yyyy-MM-dd')
ld_sickness_end_date = TO_DATE('4712-12-31','yyyy-MM-dd')

i=1

CHANGE_CONTEXTS(START_DATE=ld_start_date, END_DATE=IV_END_DATE)
(
 WHILE ANC_PER_ABS_ENTRS_ABSENCE_ENTRY_ID_ARR.exists(i)
 LOOP
 (
 CHANGE_CONTEXTS (ABSENCE_ENTRY_ID = ANC_PER_ABS_ENTRS_ABSENCE_ENTRY_ID_ARR[i])
 (
 CHANGE_CONTEXTS (ABSENCE_TYPE_ID = ANC_ABS_ENTRS_ABSENCE_TYPE_ID)
 (
 IF (lc_sickness_unpaid_name = ANC_ABS_TYP_NAME AND ANC_ABS_ENTRS_ABSENCE_STATUS_CD = 'SUBMITTED')
 THEN
 (
 IF (365 > DAYS_BETWEEN(TRUNC(IV_START_DATE), ANC_ABS_ENTRS_END_DATE) + 1)
 THEN
 (
 VALID = 'N'
 ERROR_MESSAGE = 'ORA_CUSTOM_ERROR_MESSAGE'
 RETURN VALID, ERROR_MESSAGE
 )
 )
 )
 )
 i=i+1
 )
)
VALID = 'Y'
RETURN VALID
```

Global Absence Linkage Exclusion

The Global Absence Linkage Exclusion fast formula can be used to define rules for skipping absence entry linkages in cases where linkage rules have been defined at the absence type setup level.

An organization might have a linkage rule that links together Sickness absences. However, if the Sickness absence entry is only of a single day duration, the business might wish to exclude the specific absence entry from being linked. In such a case, a linkage exclusion formula can be composed which checks the duration of the entered absence and informs the application whether to exclude the absence entry from a potential linkage.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence type definition.

Navigation

1. In the Absence Administration work area, click **Absence Types** to open the Absence Types page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Type dialog box.
3. Choose Illness or injury in the **Pattern** field and click **Continue**.
4. On the Create Absence Type page Type Attributes tab, **Linkage** section, choose Duration or Chained in the **Linkage Rule** field.
5. Select the defined formula in the **Exclusion Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_REASON_ID	Number
ABSENCE_TYPE_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number

Context Name	Data Type
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_AGREEMENT_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_START_DATE	Date	Start date of absence entry
IV_END_DATE	Date	End date of absence entry
IV_TOTALDURATION	Number	Duration of absence entry
IV_START_DURATION	Number	Start date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_END_DURATION	Number	End date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_START_TIME	Text	Start time on the start date of the absence entry. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 00:00.
IV_END_TIME	Text	End time on the end date for the absence being entered. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 23:59.

Variable Name	Data Type	Description
IV_ACTUALCHILDBIRTHDATE	Date	Actual date of childbirth entered for the absence. Applicable for Childbirth/placement absence pattern
IV_ACTUALSTARTDATE	Date	Actual start date of absence. Applicable for Childbirth/placement absence pattern
IV_ACTUALENDDATE	Date	Actual end date of absence. Applicable for Childbirth/placement absence pattern
IV_EXPECTEDCHILDBIRTHDATE	Date	Expected date of childbirth entered for the absence. Applicable for Childbirth/placement absence pattern
IV_PLANNEDSTARTDATE	Date	Expected start date of absence. Applicable for Childbirth/placement absence pattern
IV_PLANNEDENDDATE	Date	Expected end date of absence. Applicable for Childbirth/placement absence pattern
IV_ABSENCE_REASON	Text	Absence reason in the language of the current session
IV_ATTRIBUTE_CATEGORY	Text	Context of the DFF row for Absence Recordings DFF
IV_ATTRIBUTE_1*	Text	First text segment of the Absence Recordings DFF
IV_ATTRIBUTE_NUMBER1*	Number	First number segment of the Absence Recordings DFF
IV_ATTRIBUTE_DATE1*	Date	First date segment of the Absence Recordings DFF
IV_ATTRIBUTE_ARR	Text_Number	Array of text segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_ARR[1] holds the value of segment ATTRIBUTE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_ARR.exists(1))
IV_ATTRIBUTE_NUMBER_ARR	Number_Number	Array of number segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_NUMBER_ARR[1] holds the value of segment

Variable Name	Data Type	Description
		ATTRIBUTE_NUMBER1 in ANC_PER_ABS_ ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ ATTRIBUTE_NUMBER_ARR.exists(1))
IV_ATTRIBUTE_DATE_ARR	Date_Number	Array of date segments of the Absence Recordings DFF. The index indicates the segment number. Eg: IV_ATTRIBUTE_DATE_ ARR[1] holds the value of segment ATTRIBUTE_ DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_ATTRIBUTE_ DATE_ARR.exists(1))
IV_INFORMATION_CATEGORY	Text	Context of the DDF row for ANC_PER_ABS_ ENTRIES DDF
IV_INFORMATION_1*	Text	First text segment of the ANC_PER_ABS_ ENTRIES DDF
IV_INFORMATION_NUMBER1*	Number	First number segment of the ANC_PER_ABS_ ENTRIES DDF
IV_INFORMATION_DATE1*	Date	First date segment of the ANC_PER_ABS_ ENTRIES DDF
IV_INFORMATION_ARR	Text_Number	Array of text segments of the ANC_PER_ABS_ ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_ARR[1] holds the value of segment INFORMATION1 in ANC_ PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_ARR.exists(1))
IV_INFORMATION_NUMBER_ARR	Number_Number	Array of number segments of the ANC_PER_ ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_ NUMBER_ARR[1] holds the value of segment INFORMATION_NUMBER1 in ANC_PER_ABS_

Variable Name	Data Type	Description
		ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_NUMBER_ARR.exists(1))
IV_INFORMATION_DATE_ARR	Date_Number	Array of date segments of the ANC_PER_ABS_ENTRIES DDF. The index indicates the segment number. Eg: IV_INFORMATION_DATE_ARR[1] holds the value of segment INFORMATION_DATE1 in ANC_PER_ABS_ENTRIES table. The index begins at 1 and ends at 30. If a particular index is used and data does not exist, the application would throw an error. Hence it is a good practice to first check if data exists before using the input value. This can be done using the “exists” command. Eg: if(IV_INFORMATION_DATE_ARR.exists(1))
IV_PAYMENT_DTL_BAND	Number	Identifier of the payment band chosen for the absence linked to an agreement
IV_NOTIFICATION_DATE	Date	Date of Illness/Injury notification
IV_MATCHING_DATE	Date	Date on which child is matched with the worker for adoption

**The sequence for this input value can be extended up to 5*

Return Variables

Variable Name	Data Type	Description
EXCLUDE	Text	Determines whether the absence entry needs to excluded from a linkage. Valid values are ‘Y’ or ‘N’
DEBUG_MESSAGE	Text	Text passed into this output variable would get logged if application logging is enabled. Useful for debugging

Sample Formula

Requirement: The organization has a linkage rule setup for Sickness absence entries. However, the Sickness absence entry needs to be excluded from linkages if the absence reason entered is a specific value.

Solution: A Global Absence Linkage Exclusion formula such as the one below can be used.

FORMULA NAME: ANC_LNKG_EXCL

FORMULA TYPE: Global Absence Linkage Exclusion

DESCRIPTION: This formula determines if the absence entry needs to be excluded from a linkage

```
DEFAULT FOR IV_ABSENCE_REASON IS ' '

INPUTS ARE IV_ABSENCE_REASON (text)
EXCLUDE = 'N'
IF (IV_ABSENCE_REASON = 'OCCUPATIONAL')
 THEN
 (
 EXCLUDE = 'Y'
)
RETURN EXCLUDE
```

Global Absence Type Duration

The Global Absence Type Duration fast formula can be used to override the default calculation logic that the application uses to determine the absence entry duration and accrual plan usage against absence entries.

In an organization when a worker makes an absence entry for an absence type that is measured in Days, there might be a need to have the total duration pro-rated based on the scheduled work hours of the Worker for those days of absence. In such a case, a type duration formula can be composed with the required logic of calculating the pro-rated duration so that it replaces the default duration calculation rules in the application.

The same formula needs to return the required duration when the entry is processed as a single unit (between start date and end date), as well as when processed for each day between the start and end dates.

Configuration Point in HCM Cloud

If you have created this formula, you can attach this formula to the absence type definition. This is currently available only for absence types with UoM as Hours or Days.

Navigation

1. In the Absence Administration work area, click **Absence Types** to open the Absence Types page.
2. On the Search Results section toolbar, click **Create** to open the Create Absence Type dialog box.
3. Click **Continue**.
4. On the Create Absence Type page Type Attributes tab, General Attributes section, select the defined formula in the **Conversion Formula** field.

Contexts

The following contexts are available in this formula type:

Context Name	Data Type
ABSENCE_ENTRY_ID	Number
ABSENCE_TYPE_ID	Number
DATE_EARNED	Date
EFFECTIVE_DATE	Date
END_DATE	Date
ENTERPRISE_ID	Number
HR_ASSIGNMENT_ID	Number
HR_RELATIONSHIP_ID	Number
HR_TERM_ID	Number
JOB_ID	Number
LEGAL_EMPLOYER_ID	Number
LEGISLATIVE_DATA_GROUP_ID	Number
ORGANIZATION_ID	Number
PAYROLL_ASSIGNMENT_ID	Number
PAYROLL_ID	Number
PAYROLL_RELATIONSHIP_ID	Number
PAYROLL_TERM_ID	Number
PERSON_ID	Number
START_DATE	Date

Input Values

Variable Name	Data Type	Description
IV_START_DATE	Date	Start date of absence entry
IV_END_DATE	Date	End date of absence entry
IV_START_DURATION	Number	Start date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule
IV_END_DURATION	Number	End date duration of the absence entry. Applicable when absence entry is being recorded against an Elapsed based work schedule

Variable Name	Data Type	Description
IV_START_TIME	Text	Start time on the start date of the absence entry. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 00:00.
IV_END_TIME	Text	End time on the end date for the absence being entered. Applicable when absence entry is being recorded against a Time based work schedule. For elapsed work schedules it will be 23:59.
IV_UOM	Text	Unit of Measure

Return Variables

Variable Name	Data Type	Description
DURATION	Number	Duration of absence entry

Sample Formula

Requirement: The organization requires that for a particular absence type for which partial day absence recording is not allowed, and the duration is measured in Days, the total duration needs to be pro-rated by multiplying with the FTE value of the Worker.

Solution: A Global Absence Type duration formula such as the one below can be used.

FORMULA NAME: ANC_DURCAL

FORMULA TYPE: Global Absence Type Duration Formula

DESCRIPTION: This formula returns the pro-rated duration for absence entries based on FTE

```
DEFAULT FOR IV_START_DATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_END_DATE IS '4712/12/31 00:00:00' (date)
DEFAULT FOR IV_START_TIME IS '00:00'
DEFAULT FOR IV_END_TIME IS '23:59'
DEFAULT FOR PER_ASG_FTE_VALUE IS 1

INPUTS ARE IV_START_DATE (date), IV_END_DATE (date), IV_START_TIME(text),IV_END_TIME(text)

ln_entry_duration_d = 0
ln_unrounded_duration_d = 0

ld_period_start_date = to_date(to_char(IV_START_DATE,'DD/MM/RRRR')||' '||IV_START_TIME,'DD/MM/RRRR
 HH24:MI:SS')
ld_period_end_date = to_date(to_char(IV_END_DATE,'DD/MM/RRRR')||' '||IV_END_TIME,'DD/MM/RRRR HH24:MI:SS')

ln_entry_duration_d = GET_PAY_AVAILABILITY ('ASSIGN',
 ld_period_start_date,
 ld_period_end_date,
 'Y',
```

```
 'Y',
 'Y',
 'Y',
 'D')

ln_unrounded_duration_d = ln_entry_duration_d * PER_ASG_FTE_VALUE

DURATION = ROUND(ln_unrounded_duration_d,2)

RETURN DURATION
```

Frequently Used Formula Functions

Formula functions are used for complex data fetch routines for which database items are not sufficient. These formula functions usually have input parameters that you can customize within a fast formula to ensure the formula function returns customized data.

GET_PLAN_BALANCE

This formula function can be used to return the accrual balance of an absence plan calculated up until the latest 'Last Balance Calculation Date' which is lesser than or earlier than effective date.

Mandatory Contexts

- HR_ASSIGNMENT_ID
- PERSON_ID
- EFFECTIVE_DATE
- LEGISLATIVE_DATA_GROUP

Parameters

Parameter name	Data Type	Description
p_pl_name	Character	Name of accrual plan

Data Returned

The accrual balance in Number format.

GET_ACCRUAL_BALANCE

This formula function can be used to return the accrual balance of an absence plan calculated up until the latest 'Last Balance Calculation Date' for an enrollment which is active as of the effective date.

Mandatory Contexts

- HR_ASSIGNMENT_ID
- PERSON_ID
- EFFECTIVE_DATE
- ACCRUAL_PLAN_ID

Data Returned

The accrual balance in Number format.

GET_ABSENCE_COUNTS

This formula function can be used to calculate the number of absence entries against a person and return the total durations between a start date and end date passed as parameters.

Mandatory Contexts

This formula function does not require any contexts to return values.

Parameters

Parameter name	Data Type	Description
p_person_id	Number	Person id for whom absence entries durations and occurrences need to be fetched
p_include_type_id	Number	Absence type id to be included
p_exclude_type_id	Number	Absence type id to be excluded
p_include_categor_id	Number	Absence category id to be included
p_exclude_category_id	Number	Absence category id to be excluded
p_include_reason_id	Number	Absence reason to be included
p_exclude_reason_id	Number	Absence reason to be excluded
p_start_date_from	Date	Absences that end on or after this date are included in the calculations
p_start_date_to	Date	Absences that end on or before this date are included in the calculations
p_duration_days	Number	Out parameter – sum of durations of absence entries that were recorded in Days

Parameter name	Data Type	Description
p_duration_hours	Number	Out parameter – sum of durations of absence entries that were recorded in Hours
p_duration_cal	Number	Out parameter – sum of durations of absence entries that were recorded in Calendar Days
p_duration_weeks	Number	Out parameter – sum of durations of absence entries that were recorded in Weeks
p_duration_months	Number	Out parameter – sum of durations of absence entries that were recorded in Months
p_duration_years	Number	Out parameter – sum of durations of absence entries that were recorded in Years
p_occurances	Number	Out parameter – count of absence entries

Data Returned

Apart from the out parameters returned above, the return data for the formula function is a Number value of 0 in all cases.

GET_ABS_MIN_MAX_DATES

This formula function can be used to look at the absence entries against a person and return the earliest start date and the latest end date in a period.

Mandatory Contexts

This formula function does not require any contexts to return values.

Parameters

Parameter name	Data Type	Description
p_person_id	Number	Person id for whom absence entries durations and occurrences need to be fetched
p_include_type_id	Number	Absence type id to be included
p_exclude_type_id	Number	Absence type id to be excluded
p_include_categor_id	Number	Absence category id to be included
p_exclude_category_id	Number	Absence category id to be excluded
p_include_reason_id	Number	Absence reason to be included

Parameter name	Data Type	Description
p_exclude_reason_id	Number	Absence reason to be excluded
p_start_date_from	Date	Absences that end on or after this date are included in the calculations
p_start_date_to	Date	Absences that end on or before this date are included in the calculations
p_min_date	Date	Out parameter - Earliest absence start date in the period
p_max_date	Date	Out parameter – Latest absence end date in the period

Data Returned

Apart from the out parameters returned above, the return data for the formula function is a Number value of 0 in all cases.

GET_BAL_COMP_VAL

This formula function would return the sum of accrual entries of a particular type within a period.

Mandatory Contexts

- PERSON_ID
- HR_ASSIGNMENT_ID
- EFFECTIVE_DATE
- LEGISLATIVE_DATA_GROUP_ID

Parameters

Parameter name	Data Type	Description
p_pl_name	Character	Name of accrual plan
p_start_date	Date	Start date of period for when accrual entry amounts are required
p_end_date	Date	End date of period for which accrual entry amounts are required
p_type	Character	The accrual entry type for which information is required

Parameter name	Data Type	Description
p_adj_reason	Character	If information is required for 'adjustment' type then a specific adjustment reason can also be specified

Data Returned

The sum accrual entries of the particular type between within the period.

GET_BAL_HDR_VAL

This formula function fetches summary level accrual information for the first accrual period after effective date for which accrual has been run.

Mandatory Contexts

- PERSON_ID
- HR_ASSIGNMENT_ID
- EFFECTIVE_DATE
- LEGISLATIVE_DATA_GROUP_ID

Parameters

Parameter name	Data Type	Description
p_pl_name	Character	The name of the accrual plan for which accrual and balance information is required
p_begin_bal	Number	Out parameter - The accrual balance at the start of the repeating period
p_accrued	Number	Out parameter - The amount of time accrued in the repeating period
p_used	Number	Out parameter - The amount of time used during the repeating period
p_end_bal	Number	Out parameter - The final balance as of the end of the repeating period
p_accrual_period	Date	Out parameter - The effective date of the repeating period

Data Returned

The function returns a value '1' if data is found and '0' if no data is found.

GET_ENRT_DTLS

This formula function can be used to fetch information regarding key dates relevant for an accrual plan enrollment whose start date is earlier than the effective date.

Mandatory Contexts

- PERSON_ID
- HR_ASSIGNMENT_ID
- EFFECTIVE_DATE
- LEGISLATIVE_DATA_GROUP_ID

Parameters

Parameter name	Data Type	Description
p_plan_name	Character	The name of the accrual plan for which enrollment information is required
p_enrt_st_dt	Date	Out parameter – Start date of enrollment
p_enrt_end_dt	Date	Out parameter – End date of enrollment
p_last_accrual_run	Date	Out parameter – Last date as of which accrual has been calculated.

Data Returned

The function returns a value '1' if data is found and '0' if no data is found.

GET_ENTITLEMENTS

This formula function returns the number of plan entitlements of a particular band or payment factor consumed by absence entries in a period.

Mandatory Contexts

- PERSON_ID
- LEGISLATIVE_DATA_GROUP_ID

Parameters

Parameter name	Data Type	Description
p_pl_name	Character	The name of the qualification plan for which the entitlement usage needs to be fetched
p_band_name	Character	The entitlement payment band name for within the qualification plan
p_band_percentage	Number	Instead of the entitlement band name, the payment percentage can also be passed. Payment factor takes precedence over band name.
p_start_date	Date	Start of the period for which entitlement usage data needs to be fetched
p_end_date	Date	End of the period for which entitlement usage data needs to be fetched

Data Returned

The entitlement units against the band or pay factor consumed during the specified period.

GET_ABSENCE_DAYS_PER_TYPE

This formula function returns the sum of absence days of a particular type in a period.

Mandatory Contexts

PERSON_ID

Parameters

Parameter name	Data Type	Description
p_absence_type_name	Character	The name of the absence type for which the number of days need to be summed
p_start_date	Date	Start of the period for which absence days need to be summed
p_end_date	Date	End of the period for which absence days need to be summed

Data Returned

The sum of absence days in Number format.

Database Items

In accordance with the fast formula architecture, only database items whose contexts are available within the formula type maybe used in the various absence formulas. Information about the contexts associated with DBIs and the SQL WHERE clause behind the DBI is stored in the HCM Cloud database and can be retrieved using the following SQL query. Replace <ENTER DBI NAME HERE> with the actual DBI name with quotes. This information is to be used to help determine which DBI should be used in a formula.

```
SELECT d.base_user_name DBI_NAME
, d.data_type DBI_DATA_TYPE
, d.definition_text SELECT_CLAUSE
, r.text WHERE_CLAUSE
, (select listagg('<' || rcu.sequence_no || ',' || c.base_context_name || '>', ', ')
 within group (order by rcu.sequence_no)
 from ff_route_context_usages rcu
 , ff_contexts_b c
 where rcu.route_id = r.route_id
 and rcu.context_id = c.context_id) ROUTE_CONTEXT_USAGES
from ff_database_items_b d
, ff_user_entities_b u
, ff_routes_b r
where d.base_user_name = <ENTER DBI NAME HERE>
and d.user_entity_id = u.user_entity_id
and r.route_id = u.route_id;
```

To find all DBIs based on ANC tables use the following query.

```
SELECT d.base_user_name DBI_NAME
, d.data_type DBI_DATA_TYPE
, d.definition_text SELECT_CLAUSE
, r.text WHERE_CLAUSE
, (select listagg('<' || rcu.sequence_no || ',' || c.base_context_name || '>', ', ')
 within group (order by rcu.sequence_no)
 from ff_route_context_usages rcu
 , ff_contexts_b c
 where rcu.route_id = r.route_id
 and rcu.context_id = c.context_id) ROUTE_CONTEXT_USAGES
from ff_database_items_b d
, ff_user_entities_b u
, ff_routes_b r
where UPPER(d.base_user_name) LIKE 'ANC%'
and d.user_entity_id = u.user_entity_id
and r.route_id = u.route_id;
```

7 Formulas for Compensation Plans

Overview of Formulas for Compensation Plans

Use compensation formulas in your application when you perform these actions:

- Specify compensation worksheet default values
- Refresh or process specific employees only
- Define how local currency is determined for a plan component
- Create unique hierarchies for compensation

This table introduces the types of formulas that you use within your compensation application.

Formula Type	Description	Example
Compensation Currency Selection	Confirm the currency associated with a workforce compensation component.	Verify the currency of a plan based on a component ID.
Compensation Default and Override	Alter the default values populated in a column for a workforce compensation plan.	Truncate a salary amount so there are four decimals.
Compensation Hierarchy Determination	Locate the hierarchy for an associated workforce compensation plan.	Find the name of an employee's manager using an assignment ID.
Compensation Person Selection	Verify the person selected for an associated workforce compensation plan.	Check if a person is eligible to be paid by a specific legislative data group.
Total Compensation Item Formula	Access compensation information that isn't stored in the other predefined item source types.	Return multiple variables including a person's ID, their start date, and their end date.

Formula Type Is Compensation Currency Selection

To determine the local currency for a workforce compensation component, you can create formulas using the Compensation Currency Selection formula type.

Here's a comprehensive list of the contexts available to this type of formula:

- DATE_EARNED
- EFFECTIVE_DATE
- END_DATE

- START_DATE
- HR_ASSIGNMENT_ID
- HR_TERM_ID
- JOB_ID
- LEGISLATIVE_DATA_GROUP_ID
- COMPENSATION_RECORD_TYPE
- ORGANIZATION_ID
- PAYROLL_ASSIGNMENT_ID
- PAYROLL_RELATIONSHIP_ID
- PAYROLL_TERM_ID
- PERSON_ID

The database items available for this type of formula are related to Person, Assignment, Salary, Element Entries, Compensation Record, and From and End Dates.

These are the input variables available to this type of formula:

Input Value	Data Type	Required	Description
CMP_IV_PLAN_ID	Number	Y	Plan ID
CMP_IV_ASSIGNMENT_ID	Number	Y	Assignment ID
CMP_IV_PERIOD_ID	Number	Y	Period ID
CMP_IV_COMPONENT_ID	Number	Y	Component ID
CMP_IV_PLAN_START_DATE	Date	Y	Plan Start Date
CMP_IV_PLAN_END_DATE	Date	Y	Plan End Date
CMP_IV_PLAN_EXTRACTION_DATE	Date	Y	Plan Extraction Date
CMP_IV_PLAN_ELIG_DATE	Date	Y	Plan Eligibility Date
CMP_IV_PERFORMANCE_EFF_DATE	Date	Y	Performance Effective Date
CMP_IV_PROMOTION_EFF_DATE	Date	Y	Promotion Effective Date
CMP_IV_XCHG_RATE_DATE	Date	Y	Currency Conversion Date
CMP_IV_ASSIGNMENT_ID	Number	Y	Assignment ID
CMP_IV_PERSON_ID	Number	Y	Worker ID

These are the return variables available to this type of formula:

Return Value	Data Type	Required	Description
L_CURR_CODE	Char	N	Currency code from the formula

This sample formula determines the currency for a plan based on the component ID.

```
/*************************************************************
FORMULA NAME : Compensation Currency Selection Formula
FORMULA TYPE : Compensation Currency Selection
DESCRIPTION: It returns the currency code based on component_id.
*************************************************************/

/*=========== INPUT VALUES DEFAULTS BEGIN ====================*/
INPUTS ARE CMP_IV_ASSIGNMENT_ID (number), CMP_IV_PLAN_ID (number), CMP_IV_PERIOD_ID (number),
 CMP_IV_COMPONENT_ID (number)
/*=========== INPUT VALUES DEFAULTS ENDS======================*/

/*================ FORMULA SECTION BEGIN =====================*/
DEFAULT FOR CMP_IV_COMPONENT_ID IS 0
l_curr_code = 'XXX'
IF (CMP_IV_COMPONENT_ID = 489) THEN
(
l_curr_code = 'USD'
)
ELSE IF (CMP_IV_COMPONENT_ID = 490THEN
(
l_curr_code = 'GBP'
)
RETURN l_curr_code
/*================ FORMULA SECTION END =====================*/
```

Related Topics

- Formula Compilation Errors
- Formula Execution Errors
- When do I run the Compile Formula process?
- Example of Writing a Fast Formula Using Formula Text

Formula Type Is Compensation Default and Override

To determine the default values for a worksheet column in a workforce compensation plan, you can create formulas using the Compensation Default and Override formula type.

Here's a comprehensive list of the contexts available to this type of formula:

- DATE_EARNED
- EFFECTIVE_DATE
- END_DATE
- START_DATE
- HR_ASSIGNMENT_ID
- HR_TERM_ID
- JOB_ID
- LEGISLATIVE_DATA_GROUP_ID
- COMPENSATION_RECORD_TYPE
- ORGANIZATION_ID

- PAYROLL_ASSIGNMENT_ID
- PAYROLL_RELATIONSHIP_ID
- PAYROLL_TERM_ID
- PERSON_ID

The database items available for this type of formula are related to Person, Assignment, Salary, Element Entries, Compensation Record, and From and End Dates.

These are the input variables available to this type of formula:

Input Value	Data Type	Required	Description
CMP_IV_PLAN_ID	Number	Y	Unique numeric identifier for the workforce compensation plan
CMP_IV_PERIOD_ID	Number	Y	Unique numeric identifier for the fiscal calendar period
CMP_IV_COMPONENT_ID	Number	Y	Unique numeric identifier for the workforce compensation plan component
CMP_IV_ITEM_NAME	Char	Y	Name for the workforce compensation plan item
CMP_IV_PERSON_ID	Number	Y	Unique numeric identifier for the individual associated with the workforce compensation plan
CMP_IV_PLAN_START_DATE	Date	Y	Date when the workforce compensation plan becomes active
CMP_IV_PLAN_END_DATE	Date	Y	Date when the workforce compensation plan becomes inactive
CMP_IV_PLAN_ELIG_DATE	Date	Y	Date when the workforce compensation plan becomes eligible
CMP_IV_PERFORMANCE_EFF_DATE	Date	Y	Date to use for compensation performance ratings
CMP_IV_PROMOTION_EFF_DATE	Date	Y	Date on which job, grade, and position changes take effect
CMP_IV_XCHG_RATE_DATE	Date	Y	Date when the **Start Workforce Compensation Cycle** and **Refresh Workforce Compensation Data** processes obtain conversion rates from the general ledger daily rates table.
CMP_IV_ASSIGNMENT_ID	Number	Y	Date to use for assignments

These are the return variables available to this type of formula:

Return Value	Data Type	Required	Description
L_DEFAULT_VALUE	Number/Char/Date	Y	Default value from the formula. The date should be in yyyy/mm/dd format
L_DATA_TYPE	Char	Y	Data type of the column

This sample formula determines the value of a column based on its item name.

```
/************************************************************
FORMULA NAME : Compensation Default and Override Formula
FORMULA TYPE : Compensation Default and Override
DESCRIPTION : Defaults the value of a column based on its item_name
************************************************************/

/*=========== INPUT VALUES DEFAULTS BEGIN ======================*/
INPUTS ARE CMP_IV_PLAN_ID (number), CMP_IV_PERIOD_ID (number), CMP_IV_COMPONENT_ID (number),
 CMP_IV_ITEM_NAME (text)
/*=========== INPUT VALUES DEFAULTS ENDS======================*/

/*================ FORMULA SECTION BEGIN ======================*/

DEFAULT FOR CMP_IV_ITEM_NAME IS 'YYYYYYY'
L_DEFAULT_VALUE = to_char(0)
IF (CMP_IV_ITEM_NAME = 'AmountComp1') THEN
(
L_DEFAULT_VALUE = to_char(3333)
)
ELSE IF (CMP_IV_ITEM_NAME = 'AmountComp2') THEN
(
L_DEFAULT_VALUE = to_char(7777)
)
ELSE
(
L_DEFAULT_VALUE = to_char(-999)
)
RETURN L_DEFAULT_VALUE

/*================ FORMULA SECTION END ======================*/
```

Related Topics

- Formula Compilation Errors
- Formula Execution Errors
- When do I run the Compile Formula process?
- Default Value Properties of Worksheet Columns
- Example of Writing a Fast Formula Using Formula Text

Formula Type Is Compensation Hierarchy Determination

To build your own management or reviewer hierarchy for use in a workforce compensation plan, you can create formulas using the Compensation Hierarchy Determination formula type. You select the formula when you configure hierarchies for the workforce compensation plan.

Here's a comprehensive list of the contexts available to this type of formula:

- DATE_EARNED
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- END_DATE
- START_DATE
- HR_TERM_ID
- JOB_ID
- LEGISLATIVE_DATA_GROUP_ID
- COMPENSATION_RECORD_TYPE
- ORGANIZATION_ID
- PAYROLL_ASSIGNMENT_ID
- PAYROLL_RELATIONSHIP_ID
- PAYROLL_TERM_ID
- PERSON_ID

The database items available for this type of formula are related to Person, Assignment, Salary, Element Entries, Compensation Record, and From and End Dates.

These are the input variables available to this type of formula:

Input Value	Data Type	Required	Description
CMP_IV_ASSIGNMENT_ID	Number	Y	Assignment ID
CMP_IV_PLAN_ID	Number	Y	Plan ID
CMP_IV_PERIOD_ID	Number	Y	Period ID
CMP_IV_COMPONENT_ID	Number	Y	Component ID
CMP_IV_PERSON_ID	Number	Y	Worker ID
CMP_IV_PLAN_START_DATE	Date	Y	Plan Start Date
CMP_IV_PLAN_END_DATE	Date	Y	Plan End Date
CMP_IV_PLAN_EXTRACTION_DATE	Date	Y	Plan Extraction Date

Input Value	Data Type	Required	Description
CMP_IV_PLAN_ELIG_DATE	Date	Y	Plan Eligibility Date
CMP_IV_PERFORMANCE_EFF_DATE	Date	Y	Performance Effective Date
CMP_IV_PROMOTION_EFF_DATE	Date	Y	Promotion Effective Date
CMP_IV_XCHG_RATE_DATE	Date	Y	Currency Conversion Date

These are the return variables available to this type of formula:

Return Value	Data Type	Required	Description
L_PERSON_ID	Number	Y	Person ID of manager
L_ASSIGNMENT_ID	Number	Y	Assignment ID of manager

Or

Return Value	Data Type	Required	Description
L_PERSON_NUMBER	Number	Y	Person number of manager

The **Start Workforce Compensation Cycle** and **Refresh Workforce Compensation Data** processes show this error when they can't find the assignment ID:

- Formula passed in an invalid person number <15465857>. Assignment ID couldn't be obtained.

This sample formula determines the manager of a person when the assignment_id is passed.

```
/************************************************************
FORMULA NAME : Compensation Hierarchy Determination Formula
FORMULA TYPE : Compensation Hierarchy Determination
DESCRIPTION: Hierarchy determination fast formula which is based on assignment_id
************************************************************/

/*=========== INPUT VALUES DEFAULTS BEGIN ======================*/
INPUTS ARE CMP_IV_ASSIGNMENT_ID (number), CMP_IV_PLAN_ID (number), CMP_IV_PERIOD_ID (number)/*===========
 INPUT VALUES DEFAULTS ENDS======================*/

/*================ FORMULA SECTION BEGIN ======================*/
DEFAULT FOR CMP_IV_ASSIGNMENT_ID IS 0
L_PERSON_ID = '0' L_ASSIGNMENT_ID = '0'
 if (CMP_IV_ASSIGNMENT_ID = 100000008154060 ) THEN
(
L_PERSON_ID = to_char(-999) //-999 indicates top level
//Manager.
L_ASSIGNMENT_ID = to_char(-999)
)
ELSE
(
L_PERSON_ID = to_char(100000008153756)
L_ASSIGNMENT_ID = to_char(100000008154060)
)

RETURN L_PERSON_ID , L_ASSIGNMENT_ID
```

```
/*================ FORMULA SECTION END ======================*/
```

Related Topics

- Formula Compilation Errors
- Formula Execution Errors
- When do I run the Compile Formula process?
- Options to Configure Workforce Compensation Plan Hierarchies
- Example of Writing a Fast Formula Using Formula Text

Formula Type Is Compensation Person Selection

To determine the person selected for an associated workforce compensation plan, you can create formulas using the Compensation Person Selection formula type. You select the formula when you run these batch processes:

- Start Workforce Compensation Cycle
- Refresh Workforce Compensation Data
- Transfer Workforce Compensation Data to HR

Here's a comprehensive list of the contexts available to this type of formula:

- DATE_EARNED
- EFFECTIVE_DATE
- END_DATE
- START_DATE
- HR_ASSIGNMENT_ID
- HR_TERM_ID
- JOB_ID
- LEGISLATIVE_DATA_GROUP_ID
- COMPENSATION_RECORD_TYPE
- ORGANIZATION_ID
- PAYROLL_ASSIGNMENT_ID
- PAYROLL_RELATIONSHIP_ID
- PAYROLL_TERM_ID
- PERSON_ID

The database items available for this type of formula are related to Person, Assignment, Salary, Element Entries, Compensation Record, and From and End Dates.

These are the input variables available to this type of formula:

Input Value	Data Type	Required	Description
CMP_IV_PLAN_ID	Number	Y	Plan ID

Input Value	Data Type	Required	Description
CMP_IV_PERIOD_ID	Number	Y	Period ID
CMP_IV_PLAN_START_DATE	Date	Y	Plan Start Date
CMP_IV_PLAN_END_DATE	Date	Y	Plan End Date
CMP_IV_PLAN_ELIG_DATE	Date	Y	Plan Eligibility Date
CMP_IV_PERFORMANCE_EFF_DATE	Date	Y	Performance Effective Date
CMP_IV_PROMOTION_EFF_DATE	Date	Y	Promotion Effective Date
CMP_IV_XCHG_RATE_DATE	Date	Y	Currency Conversion Date
CMP_IV_ASSIGNMENT_ID	Number	Y	Assignment ID
CMP_IV_PERSON_ID	Number	Y	Worker ID

These are the return variables available to this type of formula:

Return Value	Data Type	Required	Description
L_SELECTED	Char	N	Y or N

This sample formula determines if a person is selected for a workforce compensation plan based on their assignment_id.

```
/*****************************************************************
FORMULA NAME : Compensation Selection Formula
FORMULA TYPE : Compensation Person Selection
DESCRIPTION: Assignment_id based selection fast formula
*****************************************************************/

/*=========== INPUT VALUES DEFAULTS BEGIN ======================*/
INPUTS ARE CMP_IV_ASSIGNMENT_ID (number), CMP_IV_PLAN_ID (number)
/*=========== INPUT VALUES DEFAULTS ENDS======================*/

/*================ FORMULA SECTION BEGIN =======================*/
DEFAULT FOR CMP_IV_ASSIGNMENT_ID IS 0
l_selected = 'Y'
/* 100000008154095 - Ariel.Aimar@oracle.com - GBI data*/
if (CMP_IV_ASSIGNMENT_ID = 100000008154095) THEN
(
l_selected = 'N'
)
else
(
l_selected = 'Y'
)
RETURN l_selected
/*================ FORMULA SECTION END =======================*/
```

Related Topics

- Formula Compilation Errors
- Formula Execution Errors
- When do I run the Compile Formula process?
- Example of Writing a Fast Formula Using Formula Text

Formula Type for Total Compensation Item

The Total Compensation Item formula determines compensation information that isn't stored in the other predefined item source types.

You select the formula when you manage compensation items on the Create or Edit Compensation Items page. Click the Validate button to validate your expectations for compensation items before you generate the statements.

The following contexts are available to formulas of this type:

- DATE_EARNED
- EFFECTIVE_DATE
- END_DATE
- START_DATE
- HR_ASSIGNMENT_ID
- HR_TERM_ID
- JOB_ID
- LEGISLATIVE_DATA_GROUP_ID
- COMPENSATION_RECORD_TYPE
- ORGANIZATION_ID
- PAYROLL_ASSIGNMENT_ID
- PAYROLL_RELATIONSHIP_ID
- PAYROLL_TERM_ID
- PERSON_ID

Database items related to Person, Assignment, Salary, Element Entries, Compensation Record, and From and End Dates are available to formulas of this type.

The following input variables are available to formula of this type.

Input Value	Data Type	Required	Description
CMP_IV_PERIOD_ID	Char	Y	Period ID
CMP_IV_PERIOD_START_DATE	Date	Y	Statement Period Start Date
CMP_IV_PERIOD_END_DATE	Date	Y	Statement Period End Date

Input Value	Data Type	Required	Description

The following return variables are available to formula of this type.

Return Value	Data Type	Required	Description
COMPENSATION_DATES	Date	Y	One to 15 transaction dates delimited by semicolon, maximum 250 characters.
VALUES	Char	Y	One to 15 transaction values delimited by semicolon, maximum 250 characters. Must be the same number of values as dates.
ASSIGNMENTS	Char	N	One to 15 transaction assignments delimited by semicolon, maximum 250 characters. Must be the same number of assignments as dates. Can return an empty space with a delimiter (; ;).
LEGALEMPLOYERS	Char	N	One to 15 legal employer IDs delimited by semicolon, maximum 250 characters. Must be the same number of assignments as dates. Can return an empty space with a delimiter (; ;).
UNIT	Char	N	4 optional variables for every value and every variable can have more than one value delimited by ";". Can return currency code from monetary units.
COMPENSATION_DATES1	Date	Y	Second variable for transaction dates from 16 to 30 if limit of 250 characters is exceeded.
VALUES1	Char	Y	Second variable for transaction values from 16 to 30 if limit of 250 characters is exceeded.
ASSIGNMENTS1	Char	N	Second variable for transaction assignments from 16 to 30 if limit of 250 characters is exceeded.
LEGALEMPLOYERS1	Char	N	Second variable for legal employer IDs from 16 to 30 if limit of 250 characters is exceeded.

Return Value	Data Type	Required	Description
UNIT1	Char	N	4 optional variables for every value and every variable can have more than one value delimited by ";". Can return currency code from monetary units.
COMPENSATION_DATES2	Date	Y	Transaction dates from 31 to 45.
VALUES2	Char	Y	Transaction values from 31 to 45.
ASSIGNMENTS2	Char	N	Transaction assignments from 31 to 45.
LEGALEMPLOYERS2	Char	N	Legal employers from 31 to 45.
UNIT2	Char	N	4 optional variables for every value and every variable can have more than one value delimited by ";". Can return currency code from monetary units.
COMPENSATION_DATES3	Dates	Y	Transaction dates from 46 to 60.
VALUES3	Char	Y	Transaction values from 46 to 60.
ASSIGNMENTS3	Char	N	Transaction assignments from 46 to 60.
LEGALEMPLOYERS3	Char	N	Legal employers from 46 to 60.
UNIT3	Char	N	4 optional variables for every value and every variable can have more than one value delimited by ";". Can return currency code from monetary units.

This sample formula returns one date and one value based on the worker ID.

```
/*****************************************************************
FORMULA NAME : Total Compensation Simple Item Formula
FORMULA TYPE : Total Compensation Item
DESCRIPTION : Returns one date and one value.
*****************************************************************/

/*=========== INPUT VALUES DEFAULTS BEGIN ====================*/
INPUTS ARE CMP_IV_PERSON_ID (text), CMP_IV_PERIOD_START_DATE (date), CMP_IV_PERIOD_END_DATE (date)
DEFAULT FOR CMP_IV_PERSON_ID IS '-1'
DEFAULT FOR CMP_IV_PERIOD_START_DATE IS '4712/12/31' (date)
DEFAULT FOR CMP_IV_PERIOD_END_DATE IS '4712/12/31' (date)
/*============ INPUT VALUES DEFAULTS ENDS ====================*/

/*================== FORMULA SECTION BEGIN =================*/
COMPENSATION_DATES = '2005/01/01'
VALUES = '500.00'
```

```
ASSIGNMENTS = to_char(get_context(HR_ASSIGNMENT_ID,-1))

RETURN COMPENSATION_DATES, VALUES, ASSIGNMENTS

/*================ FORMULA SECTION END ======================*/
```

This sample formula returns multiple variables.

```
/*****************************************************************
FORMULA NAME : Total Compensation Multi Item Formula
FORMULA TYPE : Total Compensation Item
DESCRIPTION : Returns multiple variables.
*****************************************************************/

/*=========== INPUT VALUES DEFAULTS BEGIN ====================*/
INPUTS ARE CMP_IV_PERSON_ID (text), CMP_IV_PERIOD_START_DATE (date) , CMP_IV_PERIOD_END_DATE (date)
/*=========== INPUT VALUES DEFAULTS ENDS ====================*/

/*================= FORMULA SECTION BEGIN =================*/

COMPENSATION_DATES = '2009/01/01;2009/02/01;2009/03/01'
COMPENSATION_DATES1 = '2009/07/01;2009/08/01;2009/09/01'
COMPENSATION_DATES2 = '2009/10/01;2009/11/01;2009/12/01'
COMPENSATION_DATES3 = '2009/10/01;2009/11/01;2009/12/01'

VALUES = '200.00;200.00;300.00'
VALUES1 = '300.00;500.00;500.00'
VALUES2 = '500.00;500.00;600.00'
VALUES3 = '600.00;600.00;700.00'

/* Returns only first two assignment */
ASSIGNMENTS = ';1234567890;1234567890'
ASSIGNMENTS1 = '1234567890;1234567890;1234567890'

/* Returns last two assignments */
ASSIGNMENTS2 = ';1234567890;1234567890'
/* Returns first and last assignments */
ASSIGNMENTS3 = '1234567890;;1234567890'


LEGALEMPLOYERS = '0123456789;;0123456789'
LEGALEMPLOYERS1 = '0123456789;0123456789;0123456789'
LEGALEMPLOYERS2 = '0123456789;0123456789;0123456789'
LEGALEMPLOYERS3 = '0123456789;0123456789'

UNIT = 'USD'
UNIT1 = 'EUR'
UNIT2 = 'AUD'
UNIT3 = 'CAD'
RETURN
 COMPENSATION_DATES,VALUES,COMPENSATION_DATES1,VALUES1,COMPENSATION_DATES2,VALUES2,COMPENSATION_DATES3,VALUES3,ASSIG
GALEMPLOYERS,LEGALEMPLOYERS1,LEGALEMPLOYERS2,LEGALEMPLOYERS3,UNIT,UNIT1,UNIT2,UNIT3

/*================ FORMULA SECTION END ======================*/
```

Related Topics

- Formula Compilation Errors
- Formula Execution Errors
- When do I run the Compile Formula process?
- Example of Writing a Fast Formula Using Formula Text

Using Profiles DBI in Fast Formula

Profiles DBI can be reported using HRT_PERSON_GENERIC_CONTENT_TYPE_UE.

You can access the DBI associated with this UE only in the formula type: Generic Formula for Profile Content (HRT_PROFILE_GENERIC_FORMULA_TYPE)

Set these Contexts to create a fast formula using the HRT_PERSON_GENERIC_CONTENT_TYPE_** DBIs.

- EFFECTIVE_DATE
- PERSON_ID
- TALENT_PROFILE_CONTENT_TYPE

Any another formula type which also sets these three Contexts will be able to check the DBI items from the above UE. However among the seeded Formula Types only the Generic Formula for Profile Content requires these 3 contexts. Hence currently we can only use the this Formula Type for formulas based on the Profiles DBIs (HRT_PERSON_GENERIC_CONTENT_TYPE_** , .e.g. HRT_PERSON_GENERIC_CONTENT_TYPE_ITEM_TEXT240_1).

In case you require these DBIs in other formula types, call the Profile formula from within your own Formula (it can be another type e.g. Compensation Default and Override). However you need to set all the required CONTEXTS.

> **Note:** If you are using Enhanced Talent Profiles, when you use the context TALENT_PROFILE_CONTENT_TYPE, you will see data for all the sections that are associated with your specific content type or template. You must loop through the data retrieved and use the attribute SECTION_CONTEXT to find the specific profile section data you are looking for.

Use Profiles DBI in Fast Formula by following these steps:

1. Create a new Fast Formula of the formula type "Generic Formula type for Profile Content".
2. Set the context values: Person Id, Effective Date and TALENT_PROFILE_CONTENT_TYPE. Include the DBI values customer to be used in Compensation Fast Formula in the return statement like HRT_PERSON_GENERIC_CONTENT_TYPE_ITEM_TEXT240_1 etc...
3. Use the above created Fast Formula in Compensation Formula "Default and Override". Set the context values (Person Id, Effective Date and TALENT_PROFILE_CONTENT_TYPE) for the above Profiles Fast Formula created in Step1 before calling the Profiles Fast Formula.
4. Reference the Profiles Fast Formula from Compensation Fast Formula to get the values present in the Return statement of Profiles Fast Formula.
5. Use these Return values in the Compensation Fast Formula.

Example 1: Simple implementation to return the number of Competency items

1. Formula compiled for "Compensation default and override" type:

Sample Formula name: "Sr Test Two"

Sample Formula text:

```
/*------------------------------------------------*/
L_DATA_TYPE = 'TEXT'
```

```
L_DEFAULT_VALUE = '111'
L_PERSON_ID = get_context(person_id, -1)
IF (IS_EXECUTABLE('SR_FORMULA_GENERIC_TWO')) THEN
(
SET_INPUT('PERSON_ID', L_PERSON_ID)
SET_INPUT('TALENT_PROFILE_CONTENT_TYPE', 'COMPETENCY')
EXECUTE('SR_FORMULA_GENERIC_TWO')
)
ELSE(
L_DATA =ESS_LOG_WRITE('SR_FORMULA_GENERIC_TWO is not executable')
)
L_DEFAULT_VALUE = GET_OUTPUT('L_RETURN_VALUE_FROM_PROFILE','NULL')
RETURN L_DATA_TYPE,L_DEFAULT_VALUE
/*-----------------------------------------------*/
```

2. Formula compiled for "Generic Formula type for Profile Content" type:

Sample Formula name: "SR_FORMULA_GENERIC_TWO”

Sample Formula text:

```
/*-----------------------------------------------*/
DEFAULT_DATA_VALUE FOR HRT_PERSON_GENERIC_CONTENT_TYPE_ITEM_TEXT240_1 IS 'NULL'
DEFAULT_DATA_VALUE FOR HRT_PERSON_GENERIC_CONTENT_TYPE_ITEM_TEXT240_2 IS 'NULL'
I=1
L_RETURN_VALUE_FROM_PROFILE = '111'
WHILE HRT_PERSON_GENERIC_CONTENT_TYPE_ITEM_TEXT240_1.EXISTS(I) LOOP
(
I= I+1
)
L_RETURN_VALUE_FROM_PROFILE = TO_CHAR(I)
RETURN L_RETURN_VALUE_FROM_PROFILE
/*-----------------------------------------------*/
```

Example 2: Implementation to return the first Item_Text_240_1

Sample Formula name: "TPC_Override”

Sample Formula text:

```
/*-----------------------------------------------*/
/* TPC_Override formula */
L_VALUE = 'NULL'
SET_INPUT('TALENT_PROFILE_CONTENT_TYPE','COMPETENCY')
L_PERSON_ID = get_context(person_id, -1)
SET_INPUT('PERSON_ID', L_PERSON_ID)
EXECUTE('TPC_Profile')
L_VALUE = GET_OUTPUT('ITEM2401', 'NA')
L_DATA =ESS_LOG_WRITE('TPC executed '||L_VALUE)
RETURN L_VALUE
/*-----------------------------------------------*/
```

2. Formula compiled for "Generic Formula type for Profile Content" type:

Sample Formula name: TPC_Profile

Sample Formula text:

```
/*-----------------------------------------------*/
/*TPC_Profile formula */ -- Generic Profile Content
/* DATABASE ITEM DEFAULTS BEGIN */
DEFAULT_DATA_VALUE FOR HRT_PERSON_GENERIC_CONTENT_TYPE_ITEM_TEXT240_1 IS 'NA'
/* DATABASE ITEM DEFAULTS END */
I = HRT_PERSON_GENERIC_CONTENT_TYPE_ITEM_TEXT240_1.FIRST(-1)
ITEM2401 = = HRT_PERSON_GENERIC_CONTENT_TYPE_ITEM_TEXT240_1[I]
```

```
return ITEM2401
/*-----------------------------------------------*/
```

8 Formulas for Benefits

Overview of Benefits Formulas

Use formulas to configure your plan design to the requirements of your enterprise.

They provide a flexible alternative to delivered business rules for such purposes as:

- Date calculations, such as:
  - Enrollment start and end dates
  - Rate or coverage start and end dates
  - Waiting periods and enrollment periods
  - Action item due dates
- Calculations of rate and coverage amount, minimum and maximum, or upper and lower limits
- Certification requirements
- Partial month and proration calculations
- Eligibility and participation evaluation

For example, you can write a formula to calculate benefits eligibility for those cases where the provided eligibility criteria don't accommodate your particular requirements.

A formula can return more than one value to a calling package. In Benefits, different packages which call the formula expect outputs to be returned differently. Based on the formula type, the number and data types of values to be returned are predefined. Some packages expect the predefined names for output variables; the order of a variable in the return statement does not matter. Some packages expect the return variables to be returned in a certain order; in this case the name of output variable does not matter. If predefined names are expected to be used and the formula does not use the expected names, the process would error out at run time.

Related Topics

- Guidelines to Test Benefits Formulas

Person Change Causes Life Event

This formula type can be used to determine whether to trigger a person life event or not.

Contexts

The following contexts are available to formulas of this type:

- HR_RELATIONSHIP_ID
- HR_TERM_ID
- PAYROLL_RELATIONSHIP_ID

- PAYROLL_TERM_ID
- LEGAL_EMPLOYER_ID
- DATE_EARNED
- HR_ASSIGNMENT_ID
- BUSINESS_GROUP_ID
- PERSON_ID
- JOB_ID
- EFFECTIVE_DATE
- PAYROLL_ASSIGNMENT_ID
- LEGISLATIVE_DATA_GROUP_ID
- ORGANIZATION_ID
- BENEFIT_RELATION_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from the following tables:
  - BEN_CVG_AMT_CALC_MTHD_F
  - BEN_LER_F
  - BEN_OIPL_F
  - BEN_OPT_F
  - BEN_PGM_F
  - BEN_PLIP_F
  - BEN_PL_F
  - BEN_PL_TYP_F
  - BEN_PTIP_F
  - BEN_YR_PERD
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID.

Input Variables

Input variables are available to formulas of this type. Refer to Appendix 2 for list of input value.

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
L_RETURN	Char	N	Returns Y or N

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_TRIGGER_ASG_EVENT FORMULA

TYPE: Person Changes Causes Life Event

DESCRIPTION: When a person's assignment type changes from one specific value to another,the event should get triggered.

```
/*=========== INPUT VALUES DEFAULTS BEGIN ====================*/
Inputs are BEN_ASG_IN_ASSIGNMENT_TYPE (text), BEN_ASG_IO_ASSIGNMENT_TYPE (text)
DEFAULT for BEN_ASG_IN_ASSIGNMENT_TYPE is 'xyz'
DEFAULT for BEN_ASG_IO_ASSIGNMENT_TYPE is 'abc'
/*=========== INPUT VALUES DEFAULTS ENDS====================*/
/*================ FORMULA SECTION BEGIN ======================*/ l_return = 'N'
IF ( BEN_ASG_IN_ASSIGNMENT_TYPE = 'A'
and BEN_ASG_IO_ASSIGNMENT_TYPE= 'B' )
then
(l_return = 'Y')
else
(l_return = 'N')
return l_return
/*================ FORMULA SECTION END ======================*/
```

Sample Formula 2:

FORMULA NAME: BEN_ADDRESS_CHG_EVENT

FORMULA TYPE: Person Changes Causes Life Event

DESCRIPTION: Life event should trigger only for persons based in US or CA.

Note: Needs PERSON_ID context to work.

```
Default for PER_PER_ADD_COUNTRY is 'AA'
l_country = PER_PER_ADD_COUNTRY
l_return = 'N'
IF (l_country = 'US' or l_country = 'CA')
THEN
(l_return = 'Y')
return l_return
```

Sample Formula 3:

FORMULA NAME: TERM_YES_NO

DESCRIPTION: Formula to determine Termination life event

```
/*=========== DATABASE ITEM DEFAULTS BEGIN ====================*/
DEFAULT for PER_ASG_ACTION_CODE is ' '
/*=========== DATABASE ITEM DEFAULTS ENDS====================*/
/*================ FORMULA SECTION BEGIN =====================*/
l_action_code = PER_ASG_ACTION_CODE
l_create_ptnl = 'N'
if NOT PER_ASG_ACTION_CODE was defaulted then (
if (l_action_code='RESIGNATION' or l_action_code='TERMINATION') then (l_create_ptnl = 'Y')
else
(l_create_ptnl = 'N')
)
return l_create_ptnl
```

Sample Formula 4:

FORMULA NAME : BEN_SAL_CHG_TRIG_FF

FORMULA TYPE : Person Changes Causes Life event

DESCRIPTION : Formula to determine when to trigger SAL CHANGE Life event.

```
inputs are BEN_SAL_IN_SALARY_AMOUNT(text), BEN_SAL_IO_SALARY_AMOUNT(text)
default for BEN_SAL_IN_SALARY_AMOUNT is '99999999' default for BEN_SAL_IO_SALARY_AMOUNT is '99999999'
l_create_ptnl = 'N'
If (BEN_SAL_IO_SALARY_AMOUNT = '99999999' or
BEN_SAL_IN_SALARY_AMOUNT = BEN_SAL_IO_SALARY_AMOUNT )
THEN
( l_create_ptnl = 'N' )
ELSE
( l_create_ptnl = 'Y' )
return l_create_ptnl
```

Sample Formula 5:

```
/************************************************
FORMULA NAME : Legal Employer Transfer or New Hire
FORMULA TYPE : Person Changes Causes Life Event
************************************************/
INPUTS are BEN_ASG_IN_ACTION_CODE(text), BEN_ASG_IO_ACTION_CODE(text)
DEFAULT for PER_ASG_ACTION_CODE is 'AA'
l_action_code='XX'
l_old_action_code='YY'
l_action_code = BEN_ASG_IN_ACTION_CODE
l_old_action_code =BEN_ASG_IO_ACTION_CODE
l_return = 'N'
if (l_action_code<>'XX') then
(
if ((l_action_code = 'HIRE' or l_action_code= 'GLB_TRANSFER') and
l_action_code <> l_old_action_code ) then
(
l_return = 'Y'
)
else
(
l_return = 'N'
)
)
return l_return
```

Sample Formula 6:

```
/*****************************************************
FORMULA NAME: BEN_POS_CHG_TRIGGER_FF
```

```
FORMULA TYPE: Person Change Causes Life Event
DESCRIPTION: FF to trigger 'Position Change' life event.
*****************************************************/
INPUTS ARE NEW_VAL (text), OLD_VAL (text), COLUMN (text), PK_ID (text), BEN_ASG_IO_HOURLY_SALARIED_CODE
 (text), BEN_ASG_IN_HOURLY_SALARIED_CODE (text)
DEFAULT FOR OLD_VAL IS 'NONE'
DEFAULT FOR NEW_VAL IS 'NONE'
DEFAULT FOR BEN_ASG_IN_HOURLY_SALARIED_CODE IS 'NONE'
DEFAULT FOR BEN_ASG_IO_HOURLY_SALARIED_CODE IS 'NONE'
DEFAULT FOR PER_ASG_ACTION_CODE IS 'NONE'
DEFAULT for PER_ASG_HOURLY_SALARIED_CODE is 'NONE'
l_hourly_code = PER_ASG_HOURLY_SALARIED_CODE
l_action_code = PER_ASG_ACTION_CODE
l_return = 'N'
/* Check if Action is 'Position Change' OR 'Promotion' */
IF (((l_hourly_code = 'H') AND ((l_action_code = 'POSITION_CHANGE') OR (l_action_code = 'PROMOTION')) AND
 (OLD_VAL <> NEW_VAL))
OR ((l_action_code = 'PROMOTION') AND ((BEN_ASG_IO_HOURLY_SALARIED_CODE = 'H') AND
 (BEN_ASG_IN_HOURLY_SALARIED_CODE = 'S'))))
THEN
(
l_return = 'Y'
)
RETURN l_return
```

Sample Formula 7:

```
/*************************************************
FORMULA TYPE: Person Change Causes Life Event
*************************************************/
INPUTS ARE NEW_VAL (text), OLD_VAL (text), COLUMN (text), PK_ID (text)
DEFAULT FOR OLD_VAL IS 'NONE'
DEFAULT FOR NEW_VAL IS 'NONE'
DEFAULT FOR PER_ASG_ACTION_CODE IS 'NONE'
DEFAULT for PER_ASG_HOURLY_SALARIED_CODE is 'NONE'
l_debug = 'Y'
l_hourly_code = PER_ASG_HOURLY_SALARIED_CODE
l_action_code = PER_ASG_ACTION_CODE
l_return = 'N'
IF ((l_hourly_code = 'H') AND (l_action_code = 'WORK_HOURS_CHANGE') AND (OLD_VAL <> NEW_VAL)) THEN
(
l_return = 'Y'
)
RETURN l_return
```

Sample Formula 8:

FORMULA NAME : New Hire

FORMULA TYPE : Person Changes Causes Life event

DESCRIPTION : Formula to check if there is any assignment change. If the action code is hire, rehire, or global transfer, it returns Yes and then triggers the life event.

```
INPUTS are NEW_VAL(text), OLD_VAL(text), COLUMN(text), PK_ID(text),
BEN_ASG_IN_ACTION_CODE(text), BEN_ASG_IO_ACTION_CODE(text) ,BEN_ASG_IN_ASSIGNMENT_TYPE(text)

default for NEW_VAL is 'XXX'
default for OLD_VAL is 'ZZZ'
default for BEN_ASG_IN_ACTION_CODE is 'XX'
default for BEN_ASG_IO_ACTION_CODE is 'XX'

l_create_ptnl = 'N'
lterm = 'XX'
```

```
l_old_term ='XX'


lterm = BEN_ASG_IN_ACTION_CODE
l_old_term =BEN_ASG_IO_ACTION_CODE
if (ISNULL(lterm)='N' ) then
(
lterm='XX'
)

if (ISNULL(l_old_term)='N' ) then
(
l_old_term='XX'
)


if (lterm<>'XX') then
(

if ((lterm='HIRE' or lterm='REHIRE' or lterm='GLB_TRANSFER' ) AND
 (lterm <> l_old_term) and ,BEN_ASG_IN_ASSIGNMENT_TYPE='E') THEN
 (l_create_ptnl = 'Y')
)
return l_create_ptnl
```

Participation and Rate Eligibility

This formula type can be used to determine whether a person is eligible for an associated compensation object. You select the formula as criteria while defining Eligibility Profiles.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- LER_ID
- OPT_ID
- ORGANIZATION_ID
- PGM_ID
- PL_ID
- PL_TYP_ID
- PERSON_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables:
  - EN_CVG_AMT_CALC_MTHD_F

- BEN_LER_F
- BEN_OIPL_F
- BEN_OPT_F
- BEN_PGM_F
- BEN_PLIP_F
- BEN_PL_F
- BEN_PL_TYP_F
- BEN_PTIP_F
- BEN_YR_PERD

- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID.

Input Variables

Input variables are not available to formulas of this type.

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
ELIGIBLE	Char	N	Returns Y or N

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN as shown below.

The formula BEN_PRTT_FTE_ELIG returned an invalid value.

Sample Formula 1:

FORMULA NAME: BEN_PRTT_FTE_ELIG

FORMULA TYPE: Participation and Rate Eligibility

DESCRIPTION: This sample formula determines if a person is eligible for a compensation object based on the FTE on the assignment.

```
/*=========== DATABASE ITEM DEFAULTS BEGIN ======================*/
Default for PER_ASG_FTE is 0
/*=========== DATABASE ITEM DEFAULTS ENDS======================*/
/*================ FORMULA SECTION BEGIN ======================*/
l_fte = PER_ASG_FTE
ELIGIBLE = 'N'
```

```
IF l_fte = 1 THEN
(ELIGIBLE = 'Y')
return ELIGIBLE
/*================ FORMULA SECTION END ======================*/
```

Sample Formula 2:

FORMULA NAME: BEN_PRTT_ASG_ELIG

FORMULA TYPE: Participation and Rate Eligibility

DESCRIPTION: This sample formula determines if a person is eligible for a compensation object based on his country of residence. Note: Needs PERSON_ID context to work.

```
Default for PER_PER_ADD_COUNTRY is 'X'
l_cntry = PER_PER_ADD_COUNTRY
ELIGIBLE = 'N'
IF (l_cntry = 'US') THEN
(ELIGIBLE = 'Y')
return ELIGIBLE
```

Sample Formula 3:

Formula Type: Participation and Rate Eligibility

Purpose: Return eligible if the participant has a dependent (child) whose age is less than 26 years by using DBI items (when there are custom user roles configured in the system).

```
DEFAULT_DATA_VALUE FOR PER_PER_CONT_REL_CONTACT_PERSON_ID is 0
DEFAULT_DATA_VALUE FOR PER_PER_CONT_REL_CONTACT_TYPE is 'NA'
DEFAULT FOR PER_PER_DATE_OF_BIRTH is '1951/01/01 00:00:00' (date)
l_eff_date = GET_CONTEXT(EFFECTIVE_DATE, to_date('1951/01/01 00:00:00'))
ELIGIBLE='N'
i=1
WHILE PER_PER_CONT_REL_CONTACT_PERSON_ID.EXISTS(i)
loop
(
if ( PER_PER_CONT_REL_CONTACT_TYPE[i]='C' ) then
(
CHANGE_CONTEXTS(PERSON_ID=PER_PER_CONT_REL_CONTACT_PERSON_ID[i])
(
l_dob = PER_PER_DATE_OF_BIRTH
if ( months_between(l_eff_date,l_dob) < 312 ) then
(
/* there is a child whose age is less than 26 years */
ELIGIBLE='Y'
EXIT
)
) /* end change_contexts */
) /* end contact_type = C */
i=i+1
) /* end loop on contacts */
return ELIGIBLE
```

Sample Formula 4:

FORMULA NAME: BEN_TOB_USE_DEP_ELIG_FF

FORMULA TYPE: Participation and Rate Eligibility

DESCRIPTION: Validating Tobacco Usage details for dependent.

DEFAULT for BEN_PHB_TOBACCO_TYPE_USAGE is 'xyz'

DEFAULT_DATA_VALUE for PER_EXT_CONT_PER_PERSON_ID is 0

```
/************FORMULA SECTION BEGIN*************/
ELIGIBLE= 'N'
i = 1
/*Checking for the TOBACCO_USER lookup code as 'Y' corresponding to the meaning as 'ANY'*/
while PER_EXT_CONT_PER_PERSON_ID.exists(i) loop
(
CHANGE_CONTEXTS(PERSON_ID = PER_EXT_CONT_PER_PERSON_ID[i])
(
If BEN_PHB_TOBACCO_TYPE_USAGE = 'Y' THEN
(ELIGIBLE = 'Y' )
i = i + 1
)
)
Return ELIGIBLE
```

Rounding

This formula type can be used to round coverage or rate values.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID

Database items

Use only the following database items that are available to formulas of this type:

- Database items based on person's assignment – HR_ASSIGNMENT_ID

Input Variables

Input variables are not available to formulas of this type.

Input Variables table

Input	Data Type	Required	Description
VALUE	NUMBER	Y	Value to be rounded

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return Value	Data type	Required	Description
L_OUTPUT	Char	N	Returns rounded value

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

The formula BEN_ROUNDING returned an invalid value.

Sample Formula 1:

FORMULA NAME: BEN_ROUNDING

FORMULA TYPE: Rounding

DESCRIPTION: Round up value to 2 decimal places. Ex - (123.17792,2) WOULD result in 123.18

```
INPUTS are VALUE
DEFAULT FOR VALUE IS 0
l_input_val = VALUE
l_output = ROUNDUP(l_input_val,2)
return l_output
```

Sample Formula 2:

FORMULA NAME: BEN_ROUNDING_UP

FORMULA TYPE: Rounding

DESCRIPTION: Round value

```
INPUTS are VALUE
DEFAULT FOR VALUE IS 0
l_input_val = VALUE
l_output = ROUND(l_input_val,2)
return l_output
```

Age Calculation

This formula type can be used to determine age to be used for eligibility, coverage or benefit, and rate calculations.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- ORGANIZATION_ID

- JURISDICTION_CODE
- PGM_ID
- PL_ID
- PL_TYP_ID
- OPT_ID
- LER_ID
- PERSON_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f, ben_pgm_f, ben_pl_f, ben_pl_typ_f, ben_opt_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID

Input Variables

Input	Data Type	Required	Description
PERSON_ID	NUMBER		Person id is passed as input value

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return Value	Data Type	Required	Description
L_OUTPUT	NUMBER	Y	Returns Age

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

The formula BEN_AGE_CALC returned an invalid value.

Sample Formula 1:

FORMULA NAME: BEN_AGE_CALC

FORMULA TYPE: Age Calculation

DESCRIPTION: The formula returns the age of the person as of END OF YEAR.

```
DEFAULT for PER_PER_DATE_OF_BIRTH is '2013/01/01 12:00:00' (date)
l_output = 0
l_date = '2011/01/01 12:00:00'
```

```
l_start_date = PER_PER_DATE_OF_BIRTH
l_effective_date = to_date('2013/01/01 12:00:00')
l_age = months_between(l_effective_date, l_start_date)
l_output = l_age/12
l_output = floor(l_output)
if l_output < 30 then
l_date = '2012/01/01 12:00:00'
else
l_date = '2013/01/01 12:00:00'
return l_date
```

Person Selection

This formula type can be used in most benefits batch processes to determine who should be processed by the batch process.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- LER_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are not available to formulas of this type.

Input variables table

Input	Data Type	Required	Description
BEN_IV_PERSON_ID	Char	N	Person id is passed as input value

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
L_OUTPUT	Char	Y	Returns Y or N

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_PER_SEL_RULE

FORMULA TYPE: Person Selection

DESCRIPTION: The formula selects employees based on marital status, job, and work from home status.

```
/*=========== DATABASE ITEM DEFAULTS BEGIN ====================*/ DEFAULT for PER_PER_MARITAL_STATUS IS 'S'
DEFAULT for PER_ASG_JOB_NAME IS 'Temp'
DEFAULT for PER_ASG_WORK_AT_HOME IS 'N'
/*=========== DATABASE ITEM DEFAULTS ENDS====================*/
/*================ FORMULA SECTION BEGIN ======================*/ l_output = 'N'
l_mar_status = PER_PER_MARITAL_STATUS
l_job_name = PER_ASG_JOB_NAME
l_wrk_home = PER_ASG_WORK_AT_HOME
if ( l_mar_status = 'M'
and ( l_job_name = 'Manager' or l_job_name = 'Consultant' )
and l_wrk_home = 'Y' )
then
( l_output = 'Y' )
return l_output
/*================ FORMULA SECTION END ======================*/
```

Sample Formula 2:

FORMULA NAME: BEN_PER_SEL_RULE2

FORMULA TYPE: Person Selection

DESCRIPTION: The formula selects employees based on person numbers.

```
/*=========== DATABASE ITEM DEFAULTS BEGIN ====================*/ DEFAULT for PER_ASG_PERSON_NUMBER IS '-1'
/*=========== DATABASE ITEM DEFAULTS ENDS====================*/
/*================ FORMULA SECTION BEGIN ======================*/ l_output = 'N'
l_per_number = PER_ASG_PERSON_NUMBER
if ( l_per_number = '1138' OR l_per_number = '1139' OR l_per_number = '1140' OR l_per_number = '1141' OR
 l_per_number = '100023' ) then
( l_output = 'Y' )
return l_output
/*================ FORMULA SECTION END ======================*/
```

Sample Formula 3:

FORMULA NAME: CLOSE_PER_SELECTION_1

FORMULA TYPE: Person Selection

DESCRIPTION: Formula coded assuming 30 day enrollment window and DFLT as benefit relation name. These need to be substituted with appropriate values based on customer setup.

```
l_return='N'
l_eff_date = '1951/01/01 00:00:00'(date)
l_eff_date = GET_CONTEXT(EFFECTIVE_DATE,to_date('1951/01/01 00:00:00') ) l_end_date_char='NA'
l_end_date = '1951/01/01 00:00:00'(date)
l_name ='NA'
l_end_date_char = ben_fn_get_char_value(
'BEN_PER_IN_LER'
,'LF_EVT_OCRD_DT'
,' '
,' '
,'BENEFIT_RELATION_NAME'
,'DFLT'
)
l_name = ben_fn_get_char_value(
'BEN_PER_IN_LER'
,'NAME'
,' '
,' '
,'BENEFIT_RELATION_NAME'
,'DFLT'
)
/* conversion */
if (l_end_date_char <> 'NA' and l_end_date_char <> 'NO_DATA_FOUND') then
(
l_end_date=TO_DATE(l_end_date_char)
)
if ( l_name = 'Conversion' or l_name = 'Admin Maintenance')
then
(
if (l_eff_date > add_days(l_end_date,30)) then
(l_return='Y')
else
(l_return='N')
)
if ( l_name = 'Dependent Age Out' or l_name = 'Change in Day Care')
then
(
if (l_eff_date >= l_end_date) then
(l_return='Y')
else
(l_return='N')
)
return l_return
```

Benefits Extract Custom Data Rule

You can use this formula type to insert 3 extra fields to the delivered output file.

Contexts

The following contexts are available to formulas of this type:

- HR_RELATIONSHIP_ID
- HR_TERM_ID
- LC_DATE_FROM

- LC_DATE_TO
- PAYROLL_RELATIONSHIP_ID
- PAYROLL_TERM_ID
- LEGAL_EMPLOYER_ID
- DATE_EARNED
- HR_ASSIGNMENT_ID BUSINESS_GROUP_ID
- PERSON_ID JOB_ID
- EFFECTIVE_DATE PAYROLL_ASSIGNMENT_ID
- PAYROLL_ID
- LEGISLATIVE_DATA_GROUP_ID
- LER_ID
- OPT_ID
- ORGANIZATION_ID ACTY_BASE_RT_ID
- PGM_ID
- PL_ID
- PL_TYP_ID
- BENEFIT_RELATION_ID
- PER_IN_LER_ID

Database Items

There are no specific DBIs created for this formula type. All contexts that are available for the Participation and Rate Eligibility formula type are available for this extract formula type too.

Input Variables

Input variables aren't available to formulas of this type.

Return Variables

This formula can return a maximum of three values.

Errors

If the formula returns any other output value, then the participation process errors with BEN_91329_FORMULA_RETURN.

Life Event Reason Timeliness

This formula type can be used to determine whether a potential life event should be processed or not.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- LER_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID.

Input Variables

Input variables are not available to formulas of this type.

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
L_LIFEEVENT_VOIDED	Char	Y	Returns Y or N

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_LF_EVT_TMLNS

FORMULA TYPE: Life Event Timeliness

DESCRIPTION: The formula voids specific events where notified date is more than 30 days after event occurred date.

```
DEFAULT for BEN_LER_NAME is 'xyz '
DEFAULT for BEN_PIL_LF_EVT_OCRD_DT is '01-JAN-1951' (date)
DEFAULT for BEN_PIL_NTFN_DT is '01-JAN-1951' (date)
l_event_name = BEN_LER_NAME
L_LIFEEVENT_VOIDED = 'N'
if ( l_event_name = 'Age Changed' or l_event_name = 'Address Changed' ) and
 ( add_days(BEN_PIL_LF_EVT_OCRD_DT,30) < BEN_PIL_NTFN_DT ) then
(L_LIFEEVENT_VOIDED = 'Y' )
```

```
return L_LIFEEVENT_VOIDED
```

Sample Formula 2:

FORMULA NAME: BEN_LF_EVT_TMLNS2

FORMULA TYPE: Life Event Timeliness

DESCRIPTION: The formula voids all events where notified date is more than 90 days after event occurred date. This is to avoid back out of future dated processed events.

```
DEFAULT for BEN_PPL_LF_EVT_OCRD_DT is '1951/01/01 00:00:00'(date)
DEFAULT for BEN_PPL_NTFN_DT is '1951/01/01 00:00:00'(date)
L_LIFEEVENT_VOIDED = 'N'
if ( add_days(BEN_PPL_LF_EVT_OCRD_DT,90) < BEN_PPL_NTFN_DT )
then
(L_LIFEEVENT_VOIDED = 'Y' )
return L_LIFEEVENT_VOIDED
```

Coverage Amount Calculation

This formula type can be used to calculate coverage for a person.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- LER_ID
- ORGANIZATION_ID
- JURISDICTION_CODE
- PGM_ID
- PL_ID
- PL_TYP_ID
- OPT_ID
- LER_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f, ben_pgm_f, ben_pl_f, ben_opt_f, ben_pl_typ_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are not available to formulas of this type.

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
L_CVG	Number	Y	Coverage value

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_CVG_CALC

FORMULA TYPE: Coverage Amount Calculation

DESCRIPTION: Coverage amount is determined based on persons DOB.

```
/ DEFAULT for PER_PER_DATE_OF_BIRTH is '01-Jan-1951' (date)
l_start_date = PER_PER_DATE_OF_BIRTH
l_cvg = 0
if ( l_start_date >= TO_DATE('01-Jan-1961') and l_start_date <= TO_DATE('31-Dec-1974') ) then (l_cvg = 800 )
if ( l_start_date >= TO_DATE('01-Jan-1975') and l_start_date <= TO_DATE('31-Dec-1989') ) then (l_cvg =
 1000 )
if ( l_start_date >= TO_DATE('01-Jan-1990') and l_start_date <= TO_DATE('31-Dec-2010') ) then ( l_cvg =
 1500 )
return l_cvg
```

Sample Formula 2:

FORMULA NAME: BEN_CVG_CALC2

FORMULA TYPE: Coverage Amount Calculation

DESCRIPTION: Formula derives coverage as factor of person's age.

```
Default for PER_PER_DATE_OF_BIRTH is '01-JAN-1901' (date)
l_dob = PER_PER_DATE_OF_BIRTH
l_effective_date = GET_CONTEXT(EFFECTIVE_DATE,to_date('01-JAN-2012'))
if not PER_PER_DATE_OF_BIRTH was defaulted then (
l_age = trunc(ROUNDUP(months_between(l_effective_date , l_dob)/12))
l_cvg = l_age * 2500 )
else
( l_cvg = 10000 )
return l_cvg
```

Sample Formula 3:

FORMULA TYPE: Coverage Amount Calculation

DESCRIPTION: Calculate coverage for retirees based on their retirement period.

```
DEFAULT for CMP_ASSIGNMENT_SALARY_ANNUAL_AMOUNT is 0
DEFAULT for PER_PER_LATEST_TERMINATION_DATE is '1951/01/01 00:00:00' (date)
l_sal = 0
l_yrs = 0
l_fctr = 0
l_val = 0
l_eff_date = GET_CONTEXT(EFFECTIVE_DATE, to_date('1951/01/01 0:00:00'))
IF PER_PER_LATEST_TERMINATION_DATE WAS NOT DEFAULTED
THEN
(
l_term_dt = PER_PER_LATEST_TERMINATION_DATE
l_sal_dt = add_days(l_term_dt,-1)
/* get the salary as of the term date -1 */
CHANGE_CONTEXTS (EFFECTIVE_DATE=l_sal_dt)
(
l_sal = CMP_ASSIGNMENT_SALARY_ANNUAL_AMOUNT
) /* end change contexts */
/* calculate the time passed since the employee retired */
l_yrs = Round(MONTHS_BETWEEN(l_eff_date,l_term_dt)/12)
if (l_yrs>=0 and l_yrs < 5) then
( l_fctr = 1 )
else if (l_yrs >= 5 ) then
( l_fctr = 0.5 )
l_val = ROUND(l_sal * l_fctr)
) /* end defaulted */
return l_val
```

Rate Value Calculation

This formula type can be used to calculate the rate for a benefits object.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- LER_ID
- ORGANIZATION_ID
- JURISDICTION_CODE
- PGM_ID
- PL_ID
- PL_TYP_ID
- OPT_ID

- LER_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f, ben_pgm_f, ben_pl_f, ben_opt_f, ben_pl_typ_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are not available to formulas of this type.

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
L_RATE	Number	Y	Return rate value

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_RT_CALC

FORMULA TYPE: Rate Value Calculation

DESCRIPTION: Rate amount is determined based on number of sons & daughters, and spouse.

```
default for l_sons is 0
default for l_spouse is 0
default for l_daughters is 0
l_rate = 0
l_sons = ben_fn_get_char_value(
' PER_CONTACT_RELSHIPS_F'
, 'SON_COUNT'
,NULL
,NULL
, 'LEGISLATION_CODE' ,'US'
)
l_daughters = ben_fn_get_char_value(
' PER_CONTACT_RELSHIPS_F'
, 'DAUGHTER_COUNT'
,NULL
,NULL
, 'LEGISLATION_CODE' ,'US'
)
l_spouse = ben_fn_get_char_value(
' PER_CONTACT_RELSHIPS_F'
, 'SPOUSE_COUNT'
```

```
,NULL
,NULL
, 'LEGISLATION_CODE' ,'US'
)
if ( l_spouse = 0 and l_sons= 0 and l_daughters = 0 ) then l_rate = 80 )
if (l_spouse = 1 and l_sons= 0 and l_daughters = 0) then (l_rate = 100 )
if (l_spouse = 1 and (l_sons> 0 or l_daughters > 0)) then ( l_rate = 150 )
return l_rate
```

Sample Formula 2:

FORMULA NAME: BEN_RT_CALC2

FORMULA TYPE: Rate Value Calculation

DESCRIPTION: Formula derives rate based on plan design.

```
Default for BEN_PLN_NAME is 'ABC'
Default for BEN_OPT_NAME is 'ABC'
l_pl_name = BEN_PLN_NAME
l_opt_name = BEN_OPT_NAME
l_rate = 0
if ( l_pl_name = 'Aetna PPO' and l_opt_name = 'Employee Only' ) then ( l_rate = 50 )
if ( l_pl_name = 'Aetna PPO' and l_opt_name = 'Employee + Family' ) then ( l_rate = 100 )
if ( l_pl_name = 'Be Healthy HMO' and l_opt_name = 'Employee + Family' ) then ( l_rate = 110 )
if ( l_pl_name = 'Be Healthy HMO' and l_opt_name = 'Employee Only' ) then
( l_rate = 60 )
Else
( l_rate = 90 )
return l_rate
```

Sample Formula 3:

FORMULA Type: Rate Value Calculation

Description: Calculate the rate based on the benefits balance.

```
DEFAULT_DATA_VALUE FOR BEN_PBB_BNFTS_BAL_NAME_TN IS 'XXX'
DEFAULT_DATA_VALUE FOR BEN_PBB_VAL_NN IS 0
Default for BEN_PBB_VAL is 0
l_BEN_PBB_VAL = 0
j=1
l_rate= 1062.32
WHILE (BEN_PBB_BNFTS_BAL_NAME_TN.EXISTS(j)) LOOP
(
IF (BEN_PBB_BNFTS_BAL_NAME_TN[j] = 'HEALTH_BAL') then
( l_BEN_PBB_VAL = BEN_PBB_VAL_NN[j] )
j=j+1
)
if (l_BEN_PBB_VAL = 2)
THEN
(
l_rate = l_rate + 25
)
return l_rate
```

Dependent Eligibility

This formula type can be used to determine whether a contact is eligible to be covered as a dependent in a compensation object.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- LER_ID
- ORGANIZATION_ID
- JURISDICTION_CODE
- PGM_ID
- PL_ID
- PL_TYP_ID
- OPT_ID
- LER_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f, ben_pgm_f, ben_pl_f, ben_opt_f, ben_pl_typ_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are available to formulas of this type.

Input variables table

Input	Data Type	Required	Description
CON_PERSON_ID	Number		Contact person id

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
L_output	Char	Y	Y or N

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_DPNT_ELIG

FORMULA TYPE: Dependent Eligibility

DESCRIPTION: One son or daughter are eligible. This formula relies upon benefits seeded formula function - ben_fn_get_char_value.

```
default for l_sons is 0
default for l_daughters is 0
l_output = 'N'
l_sons_t = ben_fn_get_char_value(
' PER_CONTACT_RELSHIPS_F' ,'SON_COUNT'
,' ' ,' '
,'LEGISLATION_CODE' ,'US'
)
l_sons = to_num(l_sons_t)
l_daughters_t = ben_fn_get_char_value(
'PER_CONTACT_RELSHIPS_F'
,'DAUGHTER_COUNT'
,' '
,' '
,'LEGISLATION_CODE'
,'US'
)
l_daughters = to_num(l_daughters_t)
if ( l_sons <= 1 and l_daughters = 1 ) then
(l_output = 'Y')
if (l_sons= 1 and l_daughters <= 1) then
(l_output = 'Y' )
return l_output
```

Sample Formula 2:

FORMULA NAME: BEN_DPNT_ELIG2

FORMULA TYPE: Dependent Eligibility

DESCRIPTION: Dependents of persons above 60 yrs are ineligible.

```
DEFAULT for PER_PER_DATE_OF_BIRTH is '01-JAN-1951' (date)
l_output = 'N'
l_dob = PER_PER_DATE_OF_BIRTH
l_eff_date = GET_CONTEXT(EFFECTIVE_DATE,to_date('01-JAN-2012'))
if ( add_months (l_dob,720) > l_eff_date ) then
(l_output = 'N')
else
(l_output = 'Y' )
```

```
return l_output
```

Sample Formula 3:

FORMULA NAME: BEN_DPNT_ELIG2

FORMULA TYPE: Dependent Eligibility

DESCRIPTION: Dependents of persons based on age and address, relationship.

```
DEFAULT_DATA_VALUE for PER_EXT_CONT_CONTACT_TYPE is 'NA'
DEFAULT_DATA_VALUE FOR PER_EXT_CONT_DATE_OF_BIRTH IS '1951-01-01' (DATE)
DEFAULT_DATA_VALUE FOR PER_EXT_CONT_PER_PERSON_ID IS 0 DEFAULT FOR PER_ASG_ADD_REGION2 IS 'NA'
INPUTS ARE CON_PERSON_ID
ELIGIBLE = 'N'
l_lf_evt_dt_char = ben_fn_get_char_value('BEN_PER_IN_LER','LF_EVT_OCRD_DT'
,' '
,' '
,'BENEFIT_RELATION_NAME'
,'DFLT')
l_lf_evt_ocrd_dt = TO_DATE(l_lf_evt_dt_char)
i=1
WHILE PER_EXT_CONT_CONTACT_TYPE.exists(i)
LOOP
(
IF (PER_EXT_CONT_PER_PERSON_ID[i] = CON_PERSON_ID) AND
(PER_EXT_CONT_CONTACT_TYPE[i]='SAME_SEX_DOMESTIC_PARTNER_CHIL' OR
PER_EXT_CONT_CONTACT_TYPE[i]='C' OR
PER_EXT_CONT_CONTACT_TYPE[i]='O' OR
PER_EXT_CONT_CONTACT_TYPE[i]='A' OR
PER_EXT_CONT_CONTACT_TYPE[i]='T') AND
(PER_ASG_ADD_REGION2 = 'OH' or upper(PER_ASG_ADD_REGION2) = 'OHIO') AND
(MONTHS_BETWEEN(l_lf_evt_ocrd_dt, PER_EXT_CONT_DATE_OF_BIRTH[i])) < 336 THEN
(
ELIGIBLE = 'Y'
)
i=i+1
)
RETURN ELIGIBLE
```

Age Determination Date

This formula type can be used to determine the date from which age will be calculated for a person.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- LER_ID
- ORGANIZATION_ID

- JURISDICTION_CODE
- PGM_ID
- PL_ID
- PL_TYP_ID
- OPT_ID
- LER_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f, ben_pgm_f, ben_pl_f, ben_opt_f, ben_pl_typ_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are not available to formulas of this type.

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
l_output	Char	Y	Return variable

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_AGE_DET_DT

FORMULA TYPE: Age Determination Date

DESCRIPTION: The Age determination date is the start date of next month.

```
l_effective_date = GET_CONTEXT(EFFECTIVE_DATE, TO_DATE('01-JAN-2012'))
l_last_day = last_day(l_effective_date)
l_output = add_days(l_last_day,1)
return l_output
```

Sample Formula 2:

FORMULA NAME: BEN_AGE_DET_DT

FORMULA TYPE: Age Determination Date

DESCRIPTION: The Age determination date is based on person's job.

```
DEFAULT for PER_ASG_JOB_NAME is 'XYZ'
l_job = PER_ASG_JOB_NAME
l_effective_date = GET_CONTEXT(EFFECTIVE_DATE, TO_DATE('01-JAN-2012'))
l_output = last_day(add_months(l_effective_date,-1))
if l_job = 'Remote Worker' then
( l_output = add_days(l_output,1) )
Else
( l_output = last_day(l_effective_date))
return l_output
```

Enrollment Opportunity

This formula type can be used to determine whether a benefits object should be an electable choice for the person.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- LER_ID
- ORGANIZATION_ID
- JURISDICTION_CODE
- PGM_ID
- PL_ID
- PL_TYP_ID
- OPT_ID
- LER_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f, ben_pgm_f, ben_pl_f, ben_opt_f, ben_pl_typ_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are not available to formulas of this type.

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
L_ENRT_OPP	Char	Y	Y - Yes A - Leave as choice and use elctbl_flag L – Lose only condition, if enrolled, will be de-enrolled N – No

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_ENRT_OPTY

FORMULA TYPE: Enrollment Opportunity

DESCRIPTION: Formula to determine whether a compensation object should be an electable choice for the person.

```
DEFAULT for BEN_LER_NAME is 'ABC'
DEFAULT for BEN_PLN_NAME is 'XYZ'
DEFAULT for BEN_OPT_NAME is 'XYZ'
l_enrt_opp = 'A'
l_ler_name = BEN_LER_NAME
l_pl_name = BEN_PLN_NAME
l_opt_name = BEN_OPT_NAME
If ( l_pl_name = 'Aetna Medical'
and ( l_opt_name = 'Domestic Partner' or l_opt_name = 'Domestic Partner + one')
and ( l_ler_name = 'Open' or l_ler_name = 'New Hire' ) ) then
( l_enrt_opp = 'N' )
If ( l_pl_name = 'Be Healthy HMO'
and ( l_opt_name = 'Employee + family' or l_opt_name = 'Employee + spouse')
and ( l_ler_name <> 'Open' ) ) then
(l_enrt_opp = 'A' )
Return l_enrt_opp
```

Sample Formula 2:

FORMULA NAME: BEN_ENROLLMENT_OPPORTUNITY

FORMULA TYPE: Enrollment Opportunity

```
Default for BEN_PLN_NAME is 'Default'
Default for BEN_LER_NAME is 'Default'
l_return='N'
l_med_wv='N'
l_pt2_p1='N'
l_pt2_p1_opt1='N'
l_pt2_p1_opt2='N'
l_pt2_p1_opt3='N'
l_pt2_p2='N'
l_pt2_p2_opt1='N'
```

```
l_pt2_p2_opt2='N'
l_pt2_p2_opt3='N'
l_pt2_p2='N'
/* Below is a function which returns Y if there is an enrollment */
l_med_wv=ben_fn_get_char_value(
'BEN_PRTT_ENRT_RSLT'
,'ENROLLED'
,'SO_CHANGE_PT2_PLAN_3_WAIVE'
,'NA'
)
if (BEN_PLN_NAME='SO_CHANGE_PT2_PLAN_1') then (
l_pt2_p1_opt1=ben_fn_get_char_value(
'BEN_PRTT_ENRT_RSLT'
,'ENROLLED'
,'SO_CHANGE_PT2_PLAN_1'
,'SO_CHANGE_PT2_PLAN_1_OPT_1'
)
l_pt2_p1_opt2=ben_fn_get_char_value(
'BEN_PRTT_ENRT_RSLT'
,'ENROLLED'
,'SO_CHANGE_PT2_PLAN_1'
,'SO_CHANGE_PT2_PLAN_1_OPT_2'
)
l_pt2_p1_opt3=ben_fn_get_char_value(
'BEN_PRTT_ENRT_RSLT'
,'ENROLLED'
,'SO_CHANGE_PT2_PLAN_1'
,'SO_CHANGE_PT2_PLAN_1_OPT_3'
)
) /* end if for SO_CHANGE_PT2_PLAN_1 */
if (l_pt2_p1_opt1='Y' or l_pt2_p1_opt2='Y' or l_pt2_p1_opt3='Y') then (l_pt2_p1='Y')
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if (BEN_PLN_NAME='SO_CHANGE_PT2_PLAN_2') then (
l_pt2_p2_opt1=ben_fn_get_char_value(
'BEN_PRTT_ENRT_RSLT'
,'ENROLLED'
,'SO_CHANGE_PT2_PLAN_2'
,'SO_CHANGE_PT2_PLAN_2_OPT_1'
)
l_pt2_p2_opt2=ben_fn_get_char_value(
'BEN_PRTT_ENRT_RSLT'
,'ENROLLED'
,'SO_CHANGE_PT2_PLAN_2'
,'SO_CHANGE_PT2_PLAN_2_OPT_2'
)
l_pt2_p2_opt3=ben_fn_get_char_value(
'BEN_PRTT_ENRT_RSLT'
,'ENROLLED'
,'SO_CHANGE_PT2_PLAN_2'
,'SO_CHANGE_PT2_PLAN_2_OPT_3'
)
) /*end if SO_CHANGE_PT2_PLAN_2 */
if (l_pt2_p2_opt1='Y' or l_pt2_p2_opt2='Y' or l_pt2_p2_opt3='Y') then (l_pt2_p2='Y')
if (l_med_wv='Y') then
(
l_return='Y'
)
else if ( (l_med_wv='N') and (BEN_LER_NAME='SO_MARRIAGE_1') ) then
(
if ( (BEN_PLN_NAME='SO_CHANGE_PT2_PLAN_1') and (l_pt2_p1='Y') ) then (l_return='Y')
if ( (BEN_PLN_NAME='SO_CHANGE_PT2_PLAN_2') and (l_pt2_p2='Y') ) then (l_return='Y')
) /*end else if */
return l_return
```

Sample Formula 3:

FORMULA TYPE : Enrollment Opportunity

DESCRIPTION: Provide enrollment opportunity if person is rehired within 30 days of termination.

```
DEFAULT for PER_PER_LATEST_REHIRE_DATE is '1951/01/01 00:00:00' (date)
DEFAULT for PER_PER_LATEST_TERMINATION_DATE is '1951/01/01 00:00:00' (date)
DEFAULT_DATA_VALUE FOR PER_HIST_ASG_ASSIGNMENT_ID is 99
DEFAULT_DATA_VALUE FOR PER_HIST_ASG_EFFECTIVE_START_DATE is '1951/01/01 00:00:00' (date)
DEFAULT_DATA_VALUE FOR PER_HIST_ASG_EFFECTIVE_END_DATE is '1951/01/01 00:00:00' (date)
DEFAULT_DATA_VALUE FOR PER_HIST_ASG_ASSIGNMENT_TYPE is 'NA'
DEFAULT_DATA_VALUE FOR PER_HIST_ASG_STATUS_TYPE is 'NA'
DEFAULT_DATA_VALUE FOR PER_HIST_ASG_EFFECTIVE_LATEST_CHANGE is 'NA'
/* if the person is a first time hire, the PER_PER_LATEST_REHIRE_DATE will return the hire date */
l_hire_dt = PER_PER_LATEST_REHIRE_DATE
l_term_dt = PER_PER_LATEST_TERMINATION_DATE
l_prev_asg_id=9999
l_enrt_opportunity = 'N'
if PER_PER_LATEST_TERMINATION_DATE was not defaulted then
(
if l_hire_dt < add_days(l_term_dt,30)
then
(
/* person is rehired within 30 days */
/* get the assignment_id */
l_prev_asg_dt = add_days(l_term_dt,-1)
i=1
while ( PER_HIST_ASG_ASSIGNMENT_ID.exists(i) ) loop
(
if ( (PER_HIST_ASG_EFFECTIVE_START_DATE[i] < l_prev_asg_dt)
AND (PER_HIST_ASG_EFFECTIVE_END_DATE[i] >= l_prev_asg_dt)
AND (PER_HIST_ASG_ASSIGNMENT_TYPE[i] = 'ET')
AND (PER_HIST_ASG_STATUS_TYPE[i] = 'ACTIVE')
AND (PER_HIST_ASG_EFFECTIVE_LATEST_CHANGE[i] = 'Y' )
)
then
(
l_prev_asg_id = PER_HIST_ASG_ASSIGNMENT_ID[i]
) /* end if */
i=i+1
) /* end while */
/* check if the person is enrolled in any of the medical plan */
CHANGE_CONTEXTS(HR_ASSIGNMENT_ID=l_prev_asg_id, EFFECTIVE_DATE=l_prev_asg_dt)
(
l_med_enroll = ben_fn_get_char_value(
'BEN_PRTT_ENRT_RSLT'
,'ENROLLED'
,'Healthy HMO'
,'NA'
)
if (l_med_enroll = 'Y') then
(
l_enrt_opportunity = 'Y'
)
) /* end change contexts */
) /* < 30 days */
) /* end not defaulted */
return l_enrt_opportunity
```

Sample Formula 4:

FORMULA_NAME: ADD_CHANGE_BENEFICIARY

DESCRIPTION: Provide opportunity only if already enrolled.

```
DEFAULT for BEN_LER_NAME is 'NA'
DEFAULT for BEN_PLN_NAME is 'NA'
DEFAULT for BEN_OPT_NAME is 'NA'
l_opp = 'N'
l_flag = ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','ENROLLED',BEN_PLN_NAME,BEN_OPT_NAME)
IF ( l_flag = 'Y') then
(
l_opp = 'Y'
)
return l_opp
```

Beneficiary Certification Required

This formula type can be used to determine the conditions under which a person must provide certification for his or her designated beneficiaries.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- LER_ID
- ORGANIZATION_ID
- JURISDICTION_CODE
- PGM_ID
- PL_ID
- PL_TYP_ID
- OPT_ID
- LER_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f, ben_pgm_f, ben_pl_f, ben_opt_f, ben_pl_typ_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are not available to formulas of this type.

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
L_OUTPUT	Char	Y	Y or N

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_BNFCR_CERT_REQD

FORMULA TYPE: Beneficiary Certification Required

DESCRIPTION: A Single person need to provide certificates for beneficiary.

```
DEFAULT for PER_PER_MARITAL_STATUS is 'X'
l_output = 'N'
l_mar_status = PER_PER_MARITAL_STATUS
if (l_mar_status = 'S')
then
(l_output = 'Y')
else
(l_output = 'N')
Return l_output
```

Sample Formula 2:

FORMULA NAME: BEN_BNFCR_CERT_REQD

FORMULA TYPE: Beneficiary Certification Required

DESCRIPTION: Person needs to provide certificates for plans which allow minors/trustees and organizations as beneficiaries.

```
DEFAULT for BEN_PLN_BNF_DSGE_MNR_TTEE_RQD_FLAG is 'X'
DEFAULT for BEN_PLN_BNF_MAY_DSGT_ORG_FLAG is 'X'
l_output = 'N'
l_minor_tte = BEN_PLN_BNF_DSGE_MNR_TTEE_RQD_FLAG
l_org_bnf = BEN_PLN_BNF_MAY_DSGT_ORG_FLAG
if (l_minor_tte = 'Y' or l_org_bnf = 'Y' )
then
(l_output = 'Y')
else
(l_output = 'N')
Return l_output
```

Compensation Calculation

This formula type can be used to determine a total compensation amount to be used for eligibility, coverage or benefit, and rate calculations.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- LER_ID
- ORGANIZATION_ID
- JURISDICTION_CODE
- PGM_ID
- PL_ID
- PL_TYP_ID
- OPT_ID
- LER_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f, ben_pgm_f, ben_pl_f, ben_opt_f, ben_pl_typ_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID.

Input Variables

Input variables are available to formulas of this type.

Input variables table

Input	Data Type	Required	Description
PERSON_ID	Number		Person ID as input value

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
L_OUTPUT	Number	Y	Return variable

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_COMP_CALC

FORMULA TYPE: Compensation calculation

DESCRIPTION: Calculate gross annual salary.

```
DEFAULT for CMP_ASSIGNMENT_SALARY_AMOUNT is 0
DEFAULT for CMP_ASSIGNMENT_SALARY_ANNUALIZATION_FACTOR is 0
l_output = 0
l_sal = CMP_ASSIGNMENT_SALARY_AMOUNT
l_ann_fctr = CMP_ASSIGNMENT_SALARY_ANNUALIZATION_FACTOR
l_output = l_sal * l_ann_fctr
Return l_output
```

Sample Formula 2:

FORMULA NAME: BEN_COMP_CALC_BAR_UNIT

FORMULA TYPE: Compensation calculation

DESCRIPTION: Calculate gross annual compensation based on bargaining unit.

```
DEFAULT for CMP_ASSIGNMENT_SALARY_AMOUNT is 0
DEFAULT for CMP_ASSIGNMENT_SALARY_ANNUALIZATION_FACTOR is 0 DEFAULT for PER_ASG_BARGAINING_UNIT_CODE is
 'xyz'
l_output = 0
l_sal = CMP_ASSIGNMENT_SALARY_AMOUNT
l_ann_fctr = CMP_ASSIGNMENT_SALARY_ANNUALIZATION_FACTOR l_unit = PER_ASG_BARGAINING_UNIT_CODE
if (l_unit = 'Technical Unit' or l_unit = 'Service Unit') then l_output = (l_sal * l_ann_fctr ) * 1.1 else
l_output = (l_sal * l_ann_fctr ) * 1.05
Return l_output
```

Sample Formula 3:

FORMULA TYPE: Compensation Calculation

```
DEFAULT FOR PER_ASG_FTE_VALUE IS 0
DEFAULT FOR CMP_ASSIGNMENT_SALARY_ANNUALIZATION_FACTOR IS 0
DEFAULT FOR CMP_ASSIGNMENT_SALARY_AMOUNT IS 0
l_cmp_amt = CMP_ASSIGNMENT_SALARY_AMOUNT
l_ann_sal= 0
l_ann_fctr = CMP_ASSIGNMENT_SALARY_ANNUALIZATION_FACTOR
l_fte = PER_ASG_FTE_VALUE
IF (l_ann_fctr > 1) THEN
(
l_ann_sal=(l_cmp_amt * l_fte * l_ann_fctr)
)
```

```
ELSE
(
l_ann_sal=(l_cmp_amt * l_ann_fctr)
)
RETURN l_ann_sal
```

Sample Formula 4:

FORMULA TYPE: Compensation Calculation

Description: For executives pick the compensation from the benefits balance if already defined.

```
DEFAULT FOR CMP_ASSIGNMENT_SALARY_ANNUAL_AMOUNT IS 0
DEFAULT_DATA_VALUE FOR BEN_PBB_BNFTS_BAL_NAME_TN IS 'NA'
DEFAULT_DATA_VALUE FOR BEN_PBB_VAL_NN IS 0
DEFAULT FOR BEN_PIL_LF_EVT_OCRD_DT IS '1951/01/01 00:00:00' (date)
l_ann_sal = CMP_ASSIGNMENT_SALARY_ANNUAL_AMOUNT
l_lf_evt_ocrd_dt = BEN_PIL_LF_EVT_OCRD_DT
i=1
l_bal = 0
l_val = 0
while BEN_PBB_BNFTS_BAL_NAME_TN.exists(i)
loop
(
IF BEN_PBB_BNFTS_BAL_NAME_TN[i] = 'Executive Salary' THEN
(
l_bal = BEN_PBB_VAL_NN[i]
exit
)
i=i+1
) /* end while */
l_val = l_bal/12
IF l_val = 0 THEN
( l_val = l_ann_sal/12)
RETURN l_val
```

Post Election Edit

This formula type can be used to enforce rules while making enrollments. Example: Enroll in basic life plan when you enroll in spousal or child life plans.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- LER_ID
- ORGANIZATION_ID
- JURISDICTION_CODE
- PGM_ID

- PL_ID
- PL_TYP_ID
- OPT_ID
- LER_ID

Note: OPT_ID is not available if the edit rule is attached at plan or plan type level, and no options exists for corresponding compensation object.

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f, ben_pgm_f, ben_pl_f, ben_opt_f, ben_pl_typ_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are not available to formulas of this type.

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
SUCCESSFUL	Char	Y	Y or N
ERROR_MESSAGE	Char	Y	Error message to be displayed

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_POST_ELEC_EDIT

FORMULA TYPE: Post Election

DESCRIPTION: When a person makes an election to Spousal supplemental, validate the person is also enrolled in plan Basic Life. This formula relies upon benefits seeded formula function - ben_fn_get_char_value.

```
default for l_enrld is 'Y'
default for l_dpnt_enrld1 is 'Y'
default for l_dpnt_enrld2 is 'Y'
SUCCESSFUL = 'Y'
ERROR_MESSAGE=' '
l_enrld = ben_fn_get_char_value(
'BEN_PRTT_ENRT_RSLT'
,'ENROLLED'
```

```
,'Spousal Supplemental'
,'NA'
)
l_dpnt_enrld1 = ben_fn_get_char_value(
'BEN_PRTT_ENRT_RSLT'
,'ENROLLED'
,'Basic_Life'
,'Lifex1'
)
l_dpnt_enrld2 = ben_fn_get_char_value(
'BEN_PRTT_ENRT_RSLT'
,'ENROLLED'
,'Basic_Life'
,'Lifex2'
)
If ( l_enrld = 'Y' and l_dpnt_enrld1='N' and l_dpnt_enrld2='N' ) then (SUCCESSFUL='N'
ERROR_MESSAGE = 'Election to any option within plan Spousal Supplemental, you should also enroll in plan
 Basic_Life.')
return SUCCESSFUL,ERROR_MESSAGE
```

Sample Formula 2:

FORMULA NAME: POSTELECTIONEDIT_GREEN_COMPANY

FORMULA TYPE: Postelection Edit using db array items

DESCRIPTION : When a person makes an election to plan name PPO (Out of Area), validate the person is also enrolled in plan Aetna PPO . If yes, return 'Y' to the post enrollment save edit. If not, return 'N' (error condition).

```
DEFAULT_DATA_VALUE for BEN_PEN_PL_NAME_TN is 'My-Default'
default for l_enrolled is 'N'
default for l_dpnt_enrolled is 'N'
default for i is 1
default for SUCCESSFUL is 'Y'
default for ERROR_MESSAGE is ' '
/*---------------------------------*/
SUCCESSFUL='Y'
ERROR_MESSAGE=' '
i=1
l_enrolled='N'
l_dpnt_enrolled='N'
while BEN_PEN_PL_NAME_TN.exists(i) loop
(
if BEN_PEN_PL_NAME_TN[i]='PPO (Out of Area)' then (l_enrolled='Y')
if BEN_PEN_PL_NAME_TN[i]='Aetna PPO' then
(l_dpnt_enrolled='Y')
i=i+1
)
if l_enrolled='Y' and l_dpnt_enrolled='N' then
(SUCCESSFUL='N'
ERROR_MESSAGE='Election to PPO (Out of Area) requires enrt in Aetna PPO.'
)
return SUCCESSFUL,ERROR_MESSAGE
```

Sample Formula 3:

FORMULA TYPE: Postelection Edit

Description: Ensure that a person gets enrolled either as participant or as a dependent when spouse/domestic partners work in the same organization.

```
DEFAULT_DATA_VALUE FOR PER_PER_CONT_REL_CONTACT_TYPE IS 'NA'
DEFAULT_DATA_VALUE FOR PER_PER_CONT_REL_CONTACT_PERSON_ID IS -99
```

```
DEFAULT_DATA_VALUE FOR BEN_EXT_RSLT_PL_NAME IS 'NA'
l_couple_flag = 'N'
l_sp_dp_id = 0
SUCCESSFUL = 'Y'
ERROR_MESSAGE = ' '
i =1
WHILE (PER_PER_CONT_REL_CONTACT_TYPE.EXISTS(i))
LOOP
(
IF ((PER_PER_CONT_REL_CONTACT_TYPE[i] = 'S') OR (PER_PER_CONT_REL_CONTACT_TYPE[i] = 'DP')) THEN
(
l_sp_dp_id = PER_PER_CONT_REL_CONTACT_PERSON_ID[i]
)
i = i + 1
)
i = 1
CHANGE_CONTEXTS(PERSON_ID = l_sp_dp_id)
(
WHILE(BEN_EXT_RSLT_PL_NAME.EXISTS(i))
LOOP
(
IF ( BEN_EXT_RSLT_PL_NAME[i] = 'Dependent Life Insurance - Spouse/DP' )
THEN
( l_couple_flag = 'Y'
)
/* the dependent has enrolled the participant */
i = i + 1
)
)
IF (l_couple_flag = 'Y')
THEN
(
SUCCESSFUL = 'N'
ERROR_MESSAGE = 'You cannot enroll in Life Insurance as you are already covered in Dependent Life Insurance
 - Spouse/DP under your spouse'
)
RETURN SUCCESSFUL, ERROR_MESSAGE
```

Sample Formula 4:

FORMULA TYPE: Postelection Edit

```
DEFAULT_DATA_VALUE for BEN_PEN_PL_NAME_TN is 'My-Default'
DEFAULT_DATA_VALUE for BEN_PEN_OPT_NAME_TN is 'My-Default'
DEFAULT FOR BEN_PIL_LF_EVT_OCRD_DT is '1950/01/01 00:00:00'(date)
DEFAULT FOR BEN_LER_NAME is 'abc'
SUCCESSFUL='N'
ERROR_MESSAGE=' '
i=1
l_plan1_enrld='N'
l_plan2_enrld='N'
l_new_effective_date = GET_CONTEXT(EFFECTIVE_DATE,to_date('1951/01/0100:00:00') )
l_person_id = GET_CONTEXT(PERSON_ID,0 )
l_last_day = '1950/01/01 00:00:00'(date)
l_ler_name = BEN_LER_NAME
l_lf_evt_ocrd_dt = BEN_PIL_LF_EVT_OCRD_DT
l_new_effective_date = l_lf_evt_ocrd_dt
l_log_data = ESS_LOG_WRITE( 'Effective Date = '||to_char(l_new_effective_date))
ERROR_MESSAGE = to_text(l_new_effective_date)||' : '
CHANGE_CONTEXTS(EFFECTIVE_DATE = l_new_effective_date)
(
while BEN_PEN_PL_NAME_TN.exists(i) loop
(
if (BEN_PEN_PL_NAME_TN[i] = 'Voluntary Child Life' ) then
(
```

```
l_plan1_enrld= 'Y'
ERROR_MESSAGE = 'Vol Life : '
l_log_data = ESS_LOG_WRITE('Employee has elected Voluntary Spouse Life')
)
if (BEN_PEN_PL_NAME_TN[i] = 'Supplemental Employee Life') then
(
l_plan2_enrld= 'Y'
ERROR_MESSAGE = ERROR_MESSAGE||'Supp Life : '
l_log_data = ESS_LOG_WRITE('Employee has elected Supplemental Employee Life')
)
i=i+1
)
)
IF (l_plan1_enrld = 'Y') THEN
(
l_log_data = ESS_LOG_WRITE('Employee has elected Voluntary Child Life')
IF (l_plan2_enrld= 'Y') THEN
(
l_log_data = ESS_LOG_WRITE('Employee has elected Supplemental Employee Life')
SUCCESSFUL='Y'
return SUCCESSFUL,ERROR_MESSAGE
)
ELSE
(
l_log_data = ESS_LOG_WRITE('Employee has NOT elected Supplemental Employee Life')
SUCCESSFUL='N'
ERROR_MESSAGE = ERROR_MESSAGE||'You cannot elected Voluntary Child Life without electing Supplemental
 Employee Life as well '
return SUCCESSFUL,ERROR_MESSAGE
)
)
ELSE
(
SUCCESSFUL='Y'
return SUCCESSFUL,ERROR_MESSAGE
)
```

Sample Formula 5:

Problem statement: Customer is loading participant enrollments using HDL. They have a post-election edit formula which forces workers to enroll dependents in order to submit elections. When loading participant enrollments using HDL, this formula is getting triggered and the enrollments are not getting loaded.

While conversion load is being performed, you can remove the formula from plan design, perform the load for participant and dependents and then add it back.

Other option is to use below formula functions -

- BEN_GET_PROCESS_NAME_SS() is provided for Spreadsheet loader
- BEN_GET_PROCESS_NAME() is provided for HDL Enrollment

When using participant HDL, you can use code like below to skip these validations while loading enrollments -

```
optext= BEN_GET_PROCESS_NAME() if ( optext != 'PARTICIPANT_ENROLLMENT') then ( 'your checks go here' )
```

For other 2 HDL loaders, the values you can use are -

- Dependent Enrollment using HDL - 'DEPENDENT_DESIGNATION'
- Beneficiary Enrollment using HDL - 'BENEFICIARY_DESIGNATION'

FORMULA TYPE: Postelection Edit

Description: Private Health plan requires designation of at least one dependent.

```
DEFAULT_DATA_VALUE for BEN_PEN_PL_NAME_TN is 'My-Default'
DEFAULT_DATA_VALUE for BEN_PEN_OPT_NAME_TN is 'My-Default'
DEFAULT_DATA_VALUE for BEN_EXT_DPNT_PL_NAME IS 'XYZ'
DEFAULT_DATA_VALUE for BEN_EXT_BNF_OPT_NAME IS 'ABC'
DEFAULT FOR BEN_PIL_LF_EVT_OCRD_DT IS '1950/01/01 12:00:00' (date)
SUCCESSFUL='Y'
ERROR_MESSAGE=' '
i=1
j=1
l_family = 'N'
l_count = 1
l_lf_evt_ocrd_dt = BEN_PIL_LF_EVT_OCRD_DT
l_phase = BEN_GET_PROCESS_NAME()
/* skip the rule when loading participant enrollments through HDL */
if (l_phase != 'PARTICIPANT_ENROLLMENT')
then
(
CHANGE_CONTEXTS(EFFECTIVE_DATE = l_lf_evt_ocrd_dt)
(
while BEN_PEN_PL_NAME_TN.exists(i) loop
(
if BEN_PEN_PL_NAME_TN[i] like 'Private Health%' then
(
if BEN_PEN_OPT_NAME_TN[i] like 'Couple%' then
(
l_family = 'Y'
EXIT
)
)
i=i+1
) /* end while */
IF l_family = 'Y' THEN
(
j=1
while BEN_EXT_DPNT_PL_NAME.exists(j)
loop
(
if ( BEN_EXT_DPNT_PL_NAME[i] like 'Private Health%' and BEN_EXT_BNF_OPT_NAME[i] like 'Couple%' )
then
(
l_plan =BEN_EXT_DPNT_PL_NAME[i]
l_option=BEN_EXT_BNF_OPT_NAME[i]
l_count = l_count + 1
exit
)
j=j+1
) /* end loop for checking for dependents */
) /* if l_famlily */
) /* end change contexts */
IF l_family = 'Y' and l_count=1 THEN
(
SUCCESSFUL = 'N'
ERROR_MESSAGE='Designate at least one dependent in your Healthcare plans' ||to_char(i)
)
) /* end l_phase */
RETURN SUCCESSFUL, ERROR_MESSAGE
```

Enrollment Period Start Date

This formula type can be used to determine the date from which the enrollment period starts.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- LER_ID
- ORGANIZATION_ID
- JURISDICTION_CODE
- PGM_ID
- PL_ID
- PL_TYP_ID
- OPT_ID
- LER_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f, ben_pgm_f, ben_pl_f, ben_opt_f, ben_pl_typ_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are not available to formulas of this type.

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
L_start_dt	Date		Return variable

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_ENRT_PERD_START

FORMULA TYPE: Enrollment Period start date

DESCRIPTION: Enrollment period starts MID of next month of marital status change date.

```
default for PER_ASG_MARITAL_STATUS_DATE is '01-JAN-1951'(date)
L_OCRD_DT = PER_ASG_MARITAL_STATUS_DATE
L_EFF_DATE = GET_CONTEXT(EFFECTIVE_DATE, to_date('01-JAN-2012'))
l_start_dt = L_EFF_DATE
if ( L_OCRD_DT < L_EFF_DATE ) then
( l_last_dt = last_day(L_OCRD_DT)
l_start_dt = add_days(l_last_dt,15)
)
else
( l_start_dt = L_EFF_DATE
)
return l_start_dt
```

Same formula using canonical date formats:

```
default for PER_PER_MARITAL_STATUS_DATE is '1951/01/01 00:00:00'(date)
L_OCRD_DT = PER_PER_MARITAL_STATUS_DATE
L_EFF_DATE = GET_CONTEXT(EFFECTIVE_DATE, TO_DATE('1951/01/01
00:00:00','YYYY/MM/DD HH:MI:SS'))
l_start_dt = L_EFF_DATE
if ( L_OCRD_DT <= L_EFF_DATE ) then
( l_last_dt = last_day(L_OCRD_DT)
l_start_dt = add_days(l_last_dt,15)
)
else
( l_start_dt = L_EFF_DATE
)
return l_start_dt
```

Default Enrollment

This formula type can be used to determine whether an option in plan should be assigned to a person as part of the default enrollment process.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID

- LER_ID
- ORGANIZATION_ID
- JURISDICTION_CODE
- PGM_ID
- PL_ID
- PL_TYP_ID
- OPT_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f, ben_pgm_f, ben_pl_f, ben_opt_f, ben_pl_typ_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are available to formulas of this type.

Input variables table

Input	Data Type	Required	Description
NUM_ELIG_DPNT	Number		Number of eligible dependents

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
AUTO_DFLT_VAL	Char	Y	Y or N
CARRY_FORWARD_ELIG_DPNT	Char	Y	CFRRWP - Carry Forward or Reinstate Within Program CFWP - Carry Forward Within Program

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_DFLT_ENRT

FORMULA TYPE: Default Enrollment

DESCRIPTION: Formula to determine whether a compensation object should be an defaulted for the person.

```
INPUTS are NUM_ELIG_DPNT
Default for BEN_OPT_NAME is 'aa'
Default for BEN_PLN_NAME is 'aa'
Default for NUM_ELIG_DPNT is 0
l_pln_name = BEN_PLN_NAME
l_opt_name = BEN_OPT_NAME
l_num_elig_dpnt = NUM_ELIG_DPNT
IF l_pln_name = 'Stay Healthy HMO' then
(
if l_opt_name = 'Employee Only' and l_num_elig_dpnt = 0 then
(
AUTO_DFLT_VAL = 'Y'
CARRY_FORWARD_ELIG_DPNT = 'CFWP'
)
else if l_opt_name = 'Employee Plus One' and l_num_elig_dpnt = 1 then
(
AUTO_DFLT_VAL = 'Y'
CARRY_FORWARD_ELIG_DPNT = 'CFWP'
)
else if l_opt_name = 'Employee Plus Family' and
l_num_elig_dpnt > 1 then
(
AUTO_DFLT_VAL = 'Y'
CARRY_FORWARD_ELIG_DPNT = 'CFWP'
)
else
(AUTO_DFLT_VAL = 'N')
)
else
(AUTO_DFLT_VAL = 'N')
return AUTO_DFLT_VAL, CARRY_FORWARD_ELIG_DPNT
```

Sample Formula 2:

FORMULA TYPE: Default Enrollment

Description: Derive the default plan/option based on the labor union membership.

```
Default for BEN_OPT_NAME is 'NA'
Default for BEN_PLN_NAME is 'NA'
Default for PER_ASG_LABOUR_UNION_MEMBER_FLAG is 'XXX'
DEFAULT_DATA_VALUE for BEN_EPE_PL_NAME_TN is 'NA'
DEFAULT_DATA_VALUE for BEN_EPE_OPT_NAME_TN is 'NA'
DEFAULT FOR PER_ASG_ORG_LEGAL_EMPLOYER_NAME is 'XXX'
l_pln_name = BEN_PLN_NAME
l_opt_name = BEN_OPT_NAME
l_flag = PER_ASG_LABOUR_UNION_MEMBER_FLAG
AUTO_DFLT_VAL = 'N'
l_le_name = 'Vision Corporation'
l_asg_leg_name = PER_ASG_ORG_LEGAL_EMPLOYER_NAME
l_member_plan = 'Healthy HMO'
l_non_plan = 'Healthy HMO (NM)'
l_default_plan = 'NA'
l_default_option = 'Employee Only'
l_epe_created = 'N'
i=1
```

```
WHILE BEN_EPE_PL_NAME_TN.exists(i) LOOP
(
IF ( l_asg_leg_name = l_le_name
AND l_flag = 'Y'
AND BEN_EPE_PL_NAME_TN[i] = l_member_plan
AND BEN_EPE_OPT_NAME_TN[i] = l_default_option) THEN
(
l_epe_created = 'Y'
l_default_plan = l_member_plan
EXIT
)
ELSE IF ( l_asg_leg_name <> l_le_name
AND l_flag = 'N'
AND BEN_EPE_PL_NAME_TN[i] = l_non_plan
AND BEN_EPE_OPT_NAME_TN[i] = l_default_option) THEN
(
l_epe_created = 'Y'
l_default_plan = l_non_plan
EXIT
)
i = i+1
)
IF ( l_epe_created = 'Y' AND l_pln_name = l_default_plan AND l_opt_name = l_default_option) THEN
(
AUTO_DFLT_VAL = 'Y'
CARRY_FORWARD_ELIG_DPNT = 'CFWP'
)
return AUTO_DFLT_VAL, CARRY_FORWARD_ELIG_DPNT
```

Sample Formula 3:

Formula Type : Default Enrollment

Description: Derive the default option when a dependent is aging out.

```
INPUTS ARE NUM_ELIG_DPNT
DEFAULT FOR BEN_OPT_NAME IS 'x'
DEFAULT FOR BEN_PLN_NAME IS 'x'
/* Initialization section */
AUTO_DFLT_VAL = 'N'
CARRY_FORWARD_ELIG_DPNT = 'CWFP'
PREV_PRTT_ENRT_RSLT_ID='0'
l_actual_eff_date='1951/01/01 00:00:00' (date)
l_new_effective_date='1951/01/01 00:00:00' (date)
l_ee_opt_past='N'
l_sp_opt_past='N'
l_waive_opt_past='N'
l_fam_opt_past='N'
l_plan_name=BEN_PLN_NAME
l_opt_name=BEN_OPT_NAME
l_num_elig_dpnt=NUM_ELIG_DPNT
l_dflt_val='N'
l_cfwp='NA'
l_status=123
l_prev_prtt_enrt_rslt_id='123'
l_log='X'
l_log=ess_log_write('Entering R_DFLT_ENRT_DEV_RL')
l_actual_eff_date=GET_CONTEXT(EFFECTIVE_DATE,to_date('1951/01/01 00:00:00'))
l_new_effective_date=ADD_DAYS(l_actual_eff_date,-1)
CHANGE_CONTEXTS(EFFECTIVE_DATE=l_new_effective_date)
(
l_prev_prtt_enrt_rslt_id=ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','PRTT_ENRT_RSLT_ID',l_plan_name, 'NA')
l_ee_opt_past=ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','ENROLLED',l_plan_name, 'KA_MED_HDHP_EMP')
l_sp_opt_past=ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','ENROLLED',l_plan_name, 'KA_MED_HDHP_SP')
l_fam_opt_past=ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','ENROLLED',l_plan_name, 'KA_MED_HDHP_FAM')
```

```
l_waive_opt_past=ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','ENROLLED',l_plan_name, 'KA_MED_HCHP_WAIVE')
)/* end change contexts */
l_status = add_rlog (-1 , -1 , 'R_DFLT_ENRT_DEV_RL l_plan_name='||l_plan_name)
l_status = add_rlog (-1 , -1 , 'R_DFLT_ENRT_DEV_RL l_opt_name='||l_opt_name)
l_status = add_rlog (-1 , -1 , 'R_DFLT_ENRT_DEV_RL l_num_elig_dpnt='||to_char(l_num_elig_dpnt))
l_log=ess_log_write(' l_plan_name='||l_plan_name)
l_log=ess_log_write(' l_opt_name='||l_opt_name)
l_log=ess_log_write(' l_num_elig_dpnt='||to_char(l_num_elig_dpnt))
/* process further only if there is an enrollment in the plan in the previous life event */
if ( l_ee_opt_past = 'Y'
OR l_sp_opt_past = 'Y'
OR l_fam_opt_past = 'Y'
OR l_waive_opt_past = 'Y' ) then
(
if ( l_opt_name = 'KA_MED_HDHP_FAM') then
(
l_status = add_rlog (-1 , -1 , 'R_DFLT_ENRT_DEV_RL KA_MED_HDHP_FAM')
l_log=ess_log_write(' KA_MED_HDHP_FAM ')
/* family will be the default option if
1) the employee is enrolled in the family option in the previous life event and the num_elig_dpnt is greater
 than 2
*/
if ( l_fam_opt_past='Y' and l_num_elig_dpnt>=2 ) then
(
l_dflt_val = 'Y'
l_cfwp = 'CFWP'
)
)
else if (l_opt_name = 'KA_MED_HDHP_SP') then
(
l_status = add_rlog (-1 , -1 , 'R_DFLT_ENRT_DEV_RL KA_MED_HDHP_SP')
l_log=ess_log_write(' KA_MED_HDHP_SP ')
/* spouse will become the default option if
1) the employee is enrolled in spouse in the previous life event
2) the employee is enrolled into family in the previous life event but has only one num_elig_dpnt indicating
 a
depedent has aged out
*/
if ( (l_sp_opt_past = 'Y' and l_num_elig_dpnt=1)
OR ( l_fam_opt_past='Y' and l_num_elig_dpnt=1) ) then
(
l_dflt_val = 'Y'
l_cfwp = 'CFWP'
)
)
else if (l_opt_name = 'KA_MED_HDHP_EMP') then
(
l_status = add_rlog (-1 , -1 , 'R_DFLT_ENRT_DEV_RL KA_MED_HDHP_EMP')
l_log=ess_log_write(' KA_MED_HDHP_EMP ')
/* employee will become the default option if
1) the employee is enrolled in employee-option in the previous life event
2) the employee is enrolled in the spouse option in the previous life event and there is divorce event */
if (l_ee_opt_past='Y') then
(
l_dflt_val = 'Y'
l_cfwp = 'CFWP'
)
else if (l_sp_opt_past = 'Y' and l_num_elig_dpnt=0) then
(
/* the spouse looses eligbility for some reason then emp will be the default*/
l_dflt_val = 'Y'
l_cfwp = 'CFWP'
)
)
else if (l_opt_name = 'KA_MED_HCHP_WAIVE') then
(
```

```
l_status = add_rlog (-1 , -1 , 'R_DFLT_ENRT_DEV_RL KA_MED_HCHP_WAIVE')
l_log=ess_log_write(' KA_MED_HCHP_WAIVE ')
/* waive will become the default option if
1) the employee is enrolled in the waive option in the previous life event */
if ( l_waive_opt_past = 'Y') then
(
l_dflt_val = 'Y'
l_cfwp = 'CFWP'
)
)
) /* end if lee or l_sp or l_fam or l_waive*/
PREV_PRTT_ENRT_RSLT_ID=l_prev_prtt_enrt_rslt_id
l_status = add_rlog (-1 , -1 , 'R_DFLT_ENRT_DEV_RL AUTO_DFLT_VAL='||l_dflt_val)
l_status = add_rlog (-1 , -1 , 'R_DFLT_ENRT_DEV_RL CARRY_FORWARD_ELIG_DPNT='||l_cfwp)
l_log=ess_log_write(' AUTO_DFLT_VAL '||l_dflt_val)
l_log=ess_log_write(' CARRY_FORWARD_ELIG_DPNT '||l_cfwp)
l_log=ess_log_write(' PREV_PRTT_ENRT_RSLT_ID '||l_prev_prtt_enrt_rslt_id)
l_log=ess_log_write('Leaving R_DFLT_ENRT_DEV_RL ')
AUTO_DFLT_VAL=l_dflt_val
CARRY_FORWARD_ELIG_DPNT=l_cfwp
return AUTO_DFLT_VAL, CARRY_FORWARD_ELIG_DPNT, PREV_PRTT_ENRT_RSLT_ID
```

Evaluate Life Event

This formula type can be used to determine whether a life event should be evaluated or not. You could also alter the occurred date based on your use case using this formula.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- ORGANIZATION_ID
- LER_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are available to formulas of this type.

Input variables table

Input	Data Type	Required	Description
BEN_PPL_IV_LF_EVT_OCRD_DT	Date		Life event Occurred Date passed in format YYYY/MM/DD HH24:MI:SS
BEN_PPL_IV_PTNL_LER_FOR_PER_STAT_CD	Char		Potential Life event Status Code
BEN_PPL_IV_NTFN_DT	Date		Notified Date in format YYYY/MM/DD HH24:MI:SS
BEN_PPL_IV_DTCTD_DT	Date		Detected Date in format YYYY/MM/DD HH24:MI:SS

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
LIFE_EVENT_OCCURRED_DATE	Date	N	Replaces the original life event occurred date. Format of return value YYYY/MM/DD HH24:MIS:SS
LIFE_EVENT_HAPPENED	Char	Y	Y or N. If any other value is assigned to this variable, the process raises an error BEN_92143_LIFE_EVENT_HAPPENED
LIFE_EVENT_NOTIFICATION_DATE	Date	N	Notification date
LIFE_EVENT_VOIDED_DATE	Date	N	Voided date
LIFE_EVENT_MANUAL_DATE	Date	N	Manual date
LIFE_EVENT_STATUS_CODE	Char	N	Status of the life event
LIFE_EVENT_DETECTED_DATE	Date	N	Detected date

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_EVAL_EVENT

FORMULA TYPE: Evaluate Life Event

DESCRIPTION: If a life event is notified after 30 days ignore this potential life event.

```
Inputs are BEN_PPL_IV_LF_EVT_OCRD_DT (TEXT),BEN_PPL_IV_PTNL_LER_FOR_STAT_CD (TEXT),BEN_PPL_IV_NTFN_DT (TEXT)
default for BEN_PPL_IV_PTNL_LER_FOR_STAT_CD is 'aaa' default for BEN_PPL_IV_NTFN_DT is '1951/01/01 00:00:00'
default for BEN_PPL_IV_LF_EVT_OCRD_DT is '1951/01/01 00:00:00'
life_event_happened = 'Y'
l_lf_evt_dt = to_date(BEN_PPL_IV_LF_EVT_OCRD_DT, 'YYYY/MM/DD HH24:MI:SS') l_ntfd_dt =
 to_date(BEN_PPL_IV_NTFN_DT, 'YYYY/MM/DD HH24:MI:SS') l_stat_cd = BEN_PPL_IV_PTNL_LER_FOR_STAT_CD
 l_lf_evt_dt_30 = add_days(l_lf_evt_dt, 30)
if ((l_ntfd_dt > l_lf_evt_dt_30) and l_stat_cd = 'DTCTD' )
then life_event_happened = 'N'
return life_event_happened
```

Sample Formula 2:

FORMULA NAME: BEN_EVAL_EVENT2

FORMULA TYPE: Evaluate Life Event

DESCRIPTION: If a life event is notified after 90 days for a set of people, ignore them.

```
Inputs are BEN_PPL_IV_LF_EVT_OCRD_DT (TEXT),
BEN_PPL_IV_PTNL_LER_FOR_PER_STAT_CD (TEXT),
BEN_PPL_IV_NTFN_DT (TEXT)
default for BEN_PPL_IV_PTNL_LER_FOR_PER_STAT_CD is 'AA
` default for BEN_PPL_IV_NTFN_DT is '01-JAN-1951' default for
PER_ASG_BARGAINING_UNIT_CODE is 'XYZ'
l_lf_evt_dt = to_date(BEN_PPL_IV_LF_EVT_OCRD_DT, 'YYYY/MM/DD HH24:MI:SS') l_ntfd_dt =
 to_date(BEN_PPL_IV_NTFN_DT, 'YYYY/MM/DD HH24:MI:SS') l_stat_cd = BEN_PPL_IV_PTNL_LER_FOR_PER_STAT_CD
 l_bar_unit = PER_ASG_BARGAINING_UNIT_CODE
l_lf_evt_dt_90 = add_days(l_lf_evt_dt, 90)
if ((l_ntfd_dt > l_lf_evt_dt_90) and l_stat_cd = 'DTCTD'
and ( l_bar_unit = 'Sales Unit' or l_bar_unit = 'Support Unit' )) then
(life_event_happened = 'N')
else
(life_event_happened = 'Y')
return life_event_happened
```

Sample Formula 3:

FORMULA TYPE : Evaluate Life Event

DESCRIPTION: Trigger a different life event when processing length of service.

```
LIFE_EVENT_REASON_ID=0
LIFE_EVENT_HAPPENED='Y'
l_new_ler_id = 100010026711792
LIFE_EVENT_REASON_ID=l_new_ler_id
/* Return Six Months Complete Life Event instead */
return LIFE_EVENT_REASON_ID,LIFE_EVENT_HAPPENED
```

Waiting Period Value and UOM

Participants need to complete a waiting period before they can gain eligibility to a benefits object. Sometimes employees have to wait for six months to get eligibility to a benefits object. Use the waiting period value formula type if the waiting period varies from employee to employee based on their organization or for rehired employees.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- LER_ID
- ORGANIZATION_ID
- JURISDICTION_CODE
- PGM_ID
- PL_ID
- PL_TYP_ID
- OPT_ID

Database Items

Use only the following database items that are available to formulas of this type:

- All columns except attribute columns from tables: ben_ler_f, ben_pl_f, ben_pgm_f,ben_pl_typ_f
- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are not available to formulas of this type.

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
WAIT_PERD_VAL	Number	Y	Waiting period value
WAIT_PERD_UOM	Char	Y	Return value should be one of the codes: DY, WK, MO, QTR, YR

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_WAIT_VAL_UOM

FORMULA TYPE: Waiting period value and UOM

DESCRIPTION: Determine waiting periods based on org and country of birth.

```
default for PER_ASG_COUNTRY_OF_BIRTH is 'XX' default for PER_ASG_JOB_NAME is 'ABC'
l_cntry = PER_ASG_COUNTRY_OF_BIRTH
l_job = PER_ASG_JOB_NAME
if ( l_cntry <> 'US' and l_job = 'Content Writer' ) then
(WAIT_PERD_VAL = 6
WAIT_PERD_UOM = 'MO' )
Else
(WAIT_PERD_VAL = 1
WAIT_PERD_UOM = 'MO' )
return WAIT_PERD_VAL, WAIT_PERD_UOM
```

Coverage Amount Limit

Use the Coverage amount limit formula type if coverage restrictions have to be applied.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID

Database Items

Use only the following database items that are available to formulas of this type:

- Database items based on person's assignment – HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are not available to formulas of this type.

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Return Value	Data Type	Required	Description
L_MN_CVG_RQD_AMT, L_MX_CVG_ALWD_AMT, L_MX_CVG_WCFN_AMT, L_MX_CVG_INCR_ALWD_AMT, L_MX_CVG_INCR_WCF_ALWD_AMT	Number	Y	Minimum coverage amount Max coverage amount Max with certification amount Max coverage increment Max coverage increment with certification

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: Coverage_Amount_Limit

FORMULA TYPE: Coverage Amount Limit

DESCRIPTION: Determine coverage amount limit values.

```
DEFAULT FOR CMP_ASSIGNMENT_SALARY_AMOUNT IS 0
DEFAULT FOR CMP_ASSIGNMENT_SALARY_ANNUALIZATION_FACTOR IS 0
L_MN_CVG_RQD_AMT = 0
L_MX_CVG_ALWD_AMT = 0
L_MX_CVG_WCFN_AMT = 300000
L_MX_CVG_INCR_ALWD_AMT = 10000
L_MX_CVG_INCR_WCF_ALWD_AMT = 10000
IF ( 3 * CMP_ASSIGNMENT_SALARY_AMOUNT *
CMP_ASSIGNMENT_SALARY_ANNUALIZATION_FACTOR ) > 200000
THEN
( L_MX_CVG_ALWD_AMT = 200000 )
ELSE
( L_MX_CVG_ALWD_AMT = 3 * CMP_ASSIGNMENT_SALARY_AMOUNT *
CMP_ASSIGNMENT_SALARY_ANNUALIZATION_FACTOR )
Return L_MN_CVG_RQD_AMT, L_MX_CVG_ALWD_AMT, L_MX_CVG_WCFN_AMT, L_MX_CVG_INCR_ALWD_AMT,
 L_MX_CVG_INCR_WCF_ALWD_AMT
```

Rate Periodization

This formula gives complete control for users to divide the rate values into periods. User can define their one rule using the contexts and input values available to distribute the rates among defined amounts, annual amounts, and communicated amounts.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- LER_ID
- PGM_ID
- PL_ID
- PL_TYP_ID

Database Items

Use only the following database items that are available to formulas of this type:

- Database items based on person's assignment: HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are available to this formula type.

Input variables table

Name	Data Type	Remarks
BEN_IV_CONVERT_FROM	Char	Possible values are DEFINED, CMCD, and ANNUAL. If BEN_IV_CONVERT_FROM is DEFINED, then the rule needs to compute the annual and communicated values using the input value BEN_IV_CONVERT_FROM_VAL. If BEN_IV_CONVERT_FROM is ANNUAL, then the rule needs to compute the defined and communicated values using the input value BEN_IV_CONVERT_FROM_VAL.
BEN_IV_CONVERT_FROM_VAL	Number	Value passed to the formula

Return Variables

Use predefined names for return variables. The following return variables are available to formulas of this type.

Return variables table

Out Variable name	Data Type	Remarks
DFND_VAL	Number	mandatory out variable
ANN_VAL	Number	mandatory out variable
CMCD_VAL	Number	mandatory out variable

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA Name : RATE_PERIODIZATION_1

FORMULA TYPE : Rate Periodization

```
Inputs are BEN_IV_CONVERT_FROM (text), BEN_IV_CONVERT_FROM_VAL (text)
DEFAULT_DATA_VALUE FOR BEN_PEN_PL_NAME_TN is 'My-Default'
DEFAULT_DATA_VALUE FOR BEN_PEN_ENRT_CVG_STRT_DT_DN is '1951/01/01 0:00:00'(date)
DEFAULT_DATA_VALUE FOR BEN_PEN_ORGNL_ENRT_DT_DN is '1951/01/01 0:00:00'(date)
DEFAULT FOR BEN_YRP_START_DATE is '1951/01/01 0:00:00'(date) DEFAULT_DATA_VALUE FOR BEN_PEN_OPT_NAME_TN is
 'My-Default' DEFAULT_DATA_VALUE FOR BEN_PEN_BNFT_AMT_NN is 0
l_eff_date='1951/01/01 0:00:00' (date)
l_new_eff_date='1951/01/01 0:00:00' (date) l_enrt_cvg_strt_char='NA'
l_enrt_cvg_strt_dt='1951/01/01 0:00:00' (date)
l_ori_enrt_cvg_strt_dt='1951/01/01 0:00:00' (date)
l_chk_date='1951/01/01 0:00:00' (date)
l_yr_perd_st_date='1951/01/01 0:00:00' (date)
l_prev_bnft_amt_chr='N'
l_bnft_amt=0
l_prev_bnft_amt=0
l_prev_cntbn=0
DFND_VAL=0
ANN_VAL=0
CMCD_VAL=0
i=1
j=1
l_total_tp_in_cal_year=1
l_pay_perd_totper_rem=99
l_pay_perd=1
l_pay_cur_perd=1
/* input values */
l_iv_period=BEN_IV_CONVERT_FROM
l_iv_val=to_number(BEN_IV_CONVERT_FROM_VAL)
/* Main () */
j=1
/* change contexts for accommodating waiting periods or future rate, coverage start dates */
 l_eff_date=GET_CONTEXT(EFFECTIVE_DATE, to_date('1951/01/01 0:00:00'))
l_new_eff_date=add_days(l_eff_date,15)
CHANGE_CONTEXTS(EFFECTIVE_DATE=l_new_eff_date)
(/* get the benefit amount and the enrollment coverage start date within this block. Replace plan and option
 names below */
while (BEN_PEN_PL_NAME_TN.exists(j)) loop (
if ((BEN_PEN_PL_NAME_TN[j]='ABC_PT1_PLAN1') and
(BEN_PEN_OPT_NAME_TN[j]='ABC_PT1_PLAN1_OPT1')) then
(
l_bnft_amt=BEN_PEN_BNFT_AMT_NN[j]
```

```
l_enrt_cvg_strt_dt=BEN_PEN_ENRT_CVG_STRT_DT_DN[j] l_ori_enrt_cvg_strt_dt=BEN_PEN_ORGNL_ENRT_DT_DN[j] )
j=j+1
) /*end loop plan option */
) /*end change contexts */
j=1
l_new_eff_date=add_days(l_eff_date,-1)
CHANGE_CONTEXTS(EFFECTIVE_DATE=l_new_eff_date)
(/* get the previous benefit amount within this block. Replace plan and option names below. */
 l_prev_bnft_amt_chr=BEN_FN_GET_CHAR_VALUE( 'BEN_PRTT_ENRT_RSLT'
,'BNFT_AMT'
,'ABC_PT1_PLAN1'
,'ABC_PT1_PLAN1_OPT1'
)
if ( l_prev_bnft_amt_chr <> ' ' and l_prev_bnft_amt_chr <> 'NO_DATA_FOUND' and
l_prev_bnft_amt_chr <> 'N' ) then
(l_prev_bnft_amt=to_number(l_prev_bnft_amt_chr))
) /*end change contexts */
IF (l_bnft_amt = 0 and l_iv_period = 'ANNUAL' ) THEN
(
l_bnft_amt = l_iv_val
)
/* check if enrolled earlier in same year */
IF (l_ori_enrt_cvg_strt_dt <= l_enrt_cvg_strt_dt) THEN
(
l_chk_date = l_ori_enrt_cvg_strt_dt
)
ELSE
(
l_chk_date = l_enrt_cvg_strt_dt
)
/* substitute the program id in below clause to pick year period start date */
CHANGE_CONTEXTS(PGM_ID = 300100083634356,EFFECTIVE_DATE=l_new_eff_date)
(
l_yr_perd_st_date = BEN_YRP_START_DATE
)
/* If enrolled in prior year, use this year period start date */ IF ( l_chk_date < l_yr_perd_st_date ) THEN
 (
l_chk_date = l_yr_perd_st_date
)
l_pay_perd= to_number(BEN_FN_GET_CHAR_VALUE( 'PAY_TIME_PERIODS'
,'PERIOD_NUM'
,' '
,' '
,'START_DATE'
,to_char(l_chk_date)
))
/* Get the current running pay periods by passing the effective date */
l_pay_cur_perd= to_number(BEN_FN_GET_CHAR_VALUE( 'PAY_TIME_PERIODS'
,'PERIOD_NUM'
,' '
,' '
,'START_DATE'
,to_char(l_new_eff_date)
))
l_total_tp_in_cal_year = to_number(BEN_FN_GET_CHAR_VALUE( 'PAY_TIME_PERIODS'
,'TOTAL_TP_IN_CALENDAR_YEAR'
,' '
,' '
,'START_DATE'
,to_char(l_chk_date)
))
l_pay_perd_totper_rem =l_total_tp_in_cal_year - l_pay_cur_perd +1
IF (l_prev_bnft_amt <> 0 ) THEN
(
l_prev_cntbn = (l_prev_bnft_amt/(l_total_tp_in_cal_year-l_pay_perd+1))*(l_pay_cur_perd - l_pay_perd )
)
```

```
ELSE
(
l_prev_cntbn = 0
)
CMCD_VAL = (l_bnft_amt - l_prev_cntbn )/l_pay_perd_totper_rem DFND_VAL = (CMCD_VAL *
 l_pay_perd_totper_rem)/12 ANN_VAL = l_bnft_amt
RETURN DFND_VAL,ANN_VAL,CMCD_VAL
```

Dependent Certification Required

This formula can be used to determine the conditions under which a person must provide certification for his or her designated dependents.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PERSON_ID
- LER_ID
- PGM_ID
- PL_ID
- PL_TYP_ID

Database Items

Use only the following database items that are available to formulas of this type:

- Database items based on person's assignment:HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

The following input variable is available.

Input variables table

Input	Data Type	Required	Description
CON_PERSON_ID	NUMBER	N	Dependent personID

Return Variables

Use predefined names for return variables.

Return variables table

Out Variable name	Data Type	Remarks
L_OUTPUT	Varchar2	Y or N

Errors

If any other output value is returned then the participation process errors with BEN_91329_FORMULA_RETURN.

Sample Formula 1:

FORMULA NAME: BEN_DPNT_CERT

FORMULA TYPE: Dependent Certification Required

Returned Value: Returned l_return is a Y/N value.

```
/
inputs are CON_PERSON_ID(number)
default for BEN_LER_NAME is 'NA'
l_ler_name=BEN_LER_NAME
l_dpnt_id=CON_PERSON_ID
l_return='Y'
l_chk_dpnt_ctfn='N'
l_chk_dpnt_ctfn2='N'
l_eff_date='1951/01/01 00:00:00'(date)
l_context_date='1951/01/01 00:00:00'(date)
l_eff_date = GET_CONTEXT(EFFECTIVE_DATE,to_date('1951/01/01 00:00:00') )
l_context_date=add_days(l_eff_date,-1)
change_contexts(EFFECTIVE_DATE=l_context_date)
(
if (l_ler_name = 'Open') then
(
l_chk_dpnt_ctfn=BEN_FN_GET_CHAR_VALUE(
'BEN_CVRD_DPNT_CTFN_PRVDD'
,'PROVIDED'
,'PlanA'
,'OptionA'
,to_char(l_dpnt_id)
,'Birth certificate'
)
l_chk_dpnt_ctfn2=BEN_FN_GET_CHAR_VALUE(
'BEN_CVRD_DPNT_CTFN_PRVDD'
,'PROVIDED'
,'PlanB'
,'OptionB'
,to_char(l_dpnt_id)
,'Birth certificate'
)
if (l_chk_dpnt_ctfn='Y' or l_chk_dpnt_ctfn2='Y' ) then (l_return='N')
)
)
return l_return
```

Sample Formula 2:

FORMULA TYPE: Dependent Certification Required

```
DEFAULT FOR BEN_LER_NAME is 'Default'
```

```
l_ler_name = BEN_LER_NAME
l_cert_rqrd = 'Y'
/* Do not trigger certifications for Open/Salary Change life events
*/
IF ( l_ler_name = 'Open'
or l_ler_name = 'Salary Change'
)
then
(
l_cert_rqrd = 'N'
)
return l_cert_rqrd
```

Sample Formula 3:

FORMULA TYPE: Dependent Certification Required

```
inputs are CON_PERSON_ID(number)
l_dpnt_id=CON_PERSON_ID
l_return='Y'
l_chk_dpnt_ctfn='N'
/* Check if the certificate is already provided in the past.
Possible values for the certificates are
1. Adoption certificate
2. Birth certificate
3. Domestic partner certificate
4. Legal custody certificate
5. Marriage certificate
*/
l_chk_dpnt_ctfn=BEN_FN_GET_CHAR_VALUE(
'BEN_CVRD_DPNT_CTFN_PRVDD'
,'PROVIDED'
,'NA_CHECK_ONCE'
,'NA'
,to_char(l_dpnt_id)
,'Marriage certificate'
)
if (l_chk_dpnt_ctfn='Y') then
(l_return='N')
return l_return
```

Length of Service Date to Use

This formula type is used to determine the date that will be used in the calculation of length of service.

Contexts

The following contexts are available to formulas of this type:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PGM_ID
- PL_ID
- PER_IN_LER_ID

- LER_ID
- BENEFIT_RELATION_ID
- PL_TYP_ID
- OPT_ID
- ORGANIZATION_ID

Database Items

Use only the following database items that are available to formulas of this type:

- Database items based on person's assignment: HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

The following input variables are available:

Input variables table

Input	Data Type	Required	Description
BEN_IV_PERSON_ID	Number	N	PersonID of the participant
BEN_IV_RT_STRT_DT	Date	N	Rate start date
BEN_IV_CVG_STRT_DT	Date	N	Coverage start date

Return Variables

The following return variables are available to formulas of this type. Any name can be used.

Return variables table

Out Variable Name	Data Type	Remarks
L_OUTPUT	Date	Date to be used while calculating the length of service

Sample Formula 1:

FORMULA TYPE: Length of Service Date to Use

Description: Use the date stored in the Descriptive flex field.

```
DEFAULT FOR PER_ASG_ATTRIBUTE_DATE3 IS '1951/01/01 00:00:00'(DATE)
DEFAULT FOR PER_REL_ORIGINAL_DATE_OF_HIRE IS '1951/01/01 00:00:00'(DATE)
l_return = '1951/01/01 00:00:00'(DATE)
IF (PER_ASG_ATTRIBUTE_DATE3 WAS NOT DEFAULTED) THEN
(
l_return = PER_ASG_ATTRIBUTE_DATE3
)
ELSE
(
```

```
l_return = PER_REL_ORIGINAL_DATE_OF_HIRE
)
RETURN l_return
```

Sample Formula 2:

FORMULA TYPE: Length of Service Date to Use

Description: Use the hire/adjusted service date.

```
DEFAULT FOR ACP_HIRE_DATE IS '1951/01/01 00:00:00' (date)
DEFAULT FOR PER_ASG_REL_ADJUSTED_SVC_DATE IS '1951/01/01 00:00:00' (date)
l_pps_date = ACP_HIRE_DATE
l_return = l_pps_date
IF PER_ASG_REL_ADJUSTED_SVC_DATE WAS NOT DEFAULTED THEN
(
l_adjusted_svc_dt = PER_ASG_REL_ADJUSTED_SVC_DATE
if (l_adjusted_svc_dt < l_pps_date) then
(
l_return = l_adjusted_svc_dt
)
)
RETURN l_return
```

Enrollment Certification Required

This formula type is used to determine if a certification is required for enrollment.

Contexts

The following contexts are available:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PGM_ID
- PL_ID
- PER_IN_LER_ID
- LER_ID
- BENEFIT_RELATION_ID
- PL_TYP_ID
- OPT_ID
- ORGANIZATION_ID
- ELIG_PER_ELCTBL_CHC_ID
- ENRT_CTFN_TYP_CD

Database Items

Use only the following database items that are available to formulas of this type:

- Database items based on person's assignment: HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are not available to formulas of this type.

Return Variables

The following return variables are available to formulas of this type. Any name can be used for the return variable.

Return variables table

Out Variable Name	Data Type	Remarks
L_OUTPUT	Varchar	Y/N

Sample Formula 1:

FORMULA TYPE: Enrollment Certification Required

Description: Trigger certification for self-assigned life events.

```
DEFAULT FOR BEN_PLN_NAME IS 'X'
DEFAULT FOR BEN_OPT_NAME IS 'X'
DEFAULT FOR BEN_LER_NAME is 'XXX'
l_return='Y'
l_emp_enrd='N'
l_lf_evt_ocrd_dt = GET_CONTEXT(EFFECTIVE_DATE,to_date('1951/01/01 00:00:00') )
l_self_assign_event = 'N'
l_first_event = 'N'
l_ler_name = BEN_LER_NAME
l_pl_name = BEN_PLN_NAME
l_opt_name = BEN_OPT_NAME
IF
(
l_ler_name = 'Marriage' OR
l_ler_name = 'Birth' OR
l_ler_name = 'Adoption' OR
l_ler_name = 'Divorce' OR
l_ler_name = 'Change Beneficiary' OR
l_ler_name = 'Death of a Dependent'
) THEN (l_self_assign_event = 'Y')
l_day_before = add_days(l_lf_evt_ocrd_dt,-1)
change_contexts(EFFECTIVE_DATE=l_day_before)
(
l_emp_enrd = ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','ENROLLED',l_pl_name,l_opt_name)
)
if ( (l_emp_enrd = 'Y')
or (l_ler_name like '%System Implementation%')
or (l_self_assign_event = 'N' )
) then
(
l_return = 'N'
)
```

```
return l_return
```

Sample Formula 2:

FORMULA TYPE : Enrollment Certification Required

DESCRIPTION : Do not trigger certification for employee life when participant elects to decrement coverage.

```
DEFAULT FOR BEN_OPT_NAME is 'ABC'
DEFAULT_DATA_VALUE FOR BEN_PIL_LF_EVT_OCRD_DT_TN IS '1951/01/01 00:00:00'(date)
DEFAULT_DATA_VALUE FOR BEN_PIL_PER_IN_LER_STAT_CD_TN IS 'NA'
l_opt_name = BEN_OPT_NAME
i=1
l_cert_reqd ='Y'
l_eff_date = GET_CONTEXT(EFFECTIVE_DATE, to_date('1951/01/01 00:00:00') )
/* get the life date for the started event */
WHILE BEN_PIL_LF_EVT_OCRD_DT_TN.exists(i) LOOP
( IF (BEN_PIL_PER_IN_LER_STAT_CD_TN[i] ='STRTD') THEN
(
l_eff_date = BEN_PIL_LF_EVT_OCRD_DT_TN[i]
EXIT
)
i=i+1
) /* end while */
/* get the enrolled option in the past life event*/
CHANGE_CONTEXTS(EFFECTIVE_DATE=add_days(l_eff_date,-1))
(
l_opt1_prev = ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','ENROLLED','Supplemental Employee Life','1X Annual
 Salary')
l_opt2_prev = ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','ENROLLED','Supplemental Employee Life','2X Annual
 Salary')
l_opt3_prev = ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','ENROLLED','Supplemental Employee Life','3X Annual
 Salary')
l_opt4_prev = ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','ENROLLED','Supplemental Employee Life','4X Annual
 Salary')
l_opt5_prev = ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','ENROLLED','Supplemental Employee Life','5X Annual
 Salary')
) /* end change contexts*/
if (l_opt_name = 'Waive') then
(
l_cert_reqd='N'
)
else if ( l_opt_name = '5X Annual Salary'
and l_opt5_prev = 'Y'
) then
(
l_cert_reqd='N'
)
else if ( l_opt_name = '4X Annual Salary'
and ( l_opt5_prev = 'Y'
OR l_opt4_prev = 'Y'
)
) then
(
l_cert_reqd='N'
)
else if ( l_opt_name = '3X Annual Salary'
and ( l_opt5_prev = 'Y'
OR l_opt4_prev = 'Y'
OR l_opt3_prev = 'Y'
)
) then
(
l_cert_reqd='N'
)
```

```
else if ( l_opt_name = '2X Annual Salary'
and ( l_opt5_prev = 'Y'
OR l_opt4_prev = 'Y'
OR l_opt3_prev = 'Y'
OR l_opt2_prev = 'Y'
)
) then
(
l_cert_reqd='N'
)
else if ( l_opt_name = '1X Annual Salary'
and ( l_opt5_prev = 'Y'
OR l_opt4_prev = 'Y'
OR l_opt3_prev = 'Y'
OR l_opt2_prev = 'Y'
OR l_opt1_prev = 'Y'
)
) then
(
l_cert_reqd='N'
)
RETURN l_cert_reqd
```

Coverage Upper Limit

This formula type determines the upper bound on the benefit amount that a participant can elect as part of a compensation object.

Contexts

The following contexts are available:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PGM_ID
- PL_ID
- PER_IN_LER_ID
- LER_ID
- BENEFIT_RELATION_ID
- PL_TYP_ID
- OPT_ID
- ORGANIZATION_ID
- ELIG_PER_ELCTBL_CHC_ID
- ENRT_CTFN_TYP_CD

Database Items

Use only the following database items that are available to formulas of this type:

- Database items based on person's assignment: HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

The following input variables are available:

Input variables table

Input	Data Type	Required	Description
BEN_IV_RT_STRT_DT	Date	N	Rate start date
BEN_IV_CVG_STRT_DT	Date	N	Coverage start date

Return Variables

The following return variables are available to formulas of this type. Any name can be used for the return variable.

Return variables table

Out Variable Name	Data Type	Remarks
L_OUTPUT	Number	Coverage upper limit

Sample Formula 1:

FORMULA TYPE : Coverage Upper Limit

```
DEFAULT FOR CMP_ASSIGNMENT_SALARY_ANNUAL_AMOUNT is 0
l_sal=CMP_ASSIGNMENT_SALARY_ANNUAL_AMOUNT
L_MX_CVG_ALWD_AMT = LEAST((5*l_sal),2000000)
RETURN L_MX_CVG_ALWD_AMT
```

Rate Start Date

This formula type is used to derive the rate start date for the enrollment into the selected compensation object.

Contexts

The following contexts are available:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE

- HR_ASSIGNMENT_ID
- PGM_ID
- PL_ID
- PER_IN_LER_ID
- PERSON_ID
- LER_ID
- BENEFIT_RELATION_ID
- ELIG_PER_ELCTBL_CHC_ID

Database Items

Use only the following database items that are available to formulas of this type:

- Database items based on person's assignment: HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are not available to formulas of this type.

Return Variables

The following return variables are available to formulas of this type. Any name can be used for the return variable.

Return variables table

Out Variable Name	Data Type	Remarks
L_OUTPUT	Date	Calculated rate start date

Sample Formula 1:

FORMULA TYPE: Rate Start Date

DESCRIPTION: For (New Hire) rate starts first-of-month after the enrollment end.

```
DEFAULT for PER_ASG_REL_ORIGINAL_DATE_OF_HIRE is '1951/01/01 00:00:00'(date)
l_enrt_perd_end = '1951/01/01 00:00:00'(date)
l_rt_strt_dt = '1951/01/01 00:00:00'(date)
l_hire_dt=PER_ASG_REL_ORIGINAL_DATE_OF_HIRE
l_enrt_perd_end = LAST_DAY(ADD_MONTHS(l_hire_dt,1))
l_rt_strt_dt = ADD_DAYS(l_enrt_perd_end,1)
return l_rt_strt_dt
```

Sample Formula 2:

FORMULA TYPE: Rate Start Date

```
DEFAULT for PER_ASG_REL_ACTUAL_TERMINATION_DATE is '1951/01/01 00:00:00' (date)
l_strt_dt = '1951/01/01 00:00:00'(date)
l_fc_dt = '1951/01/01 00:00:00'(date)
l_term_dt = PER_ASG_REL_ACTUAL_TERMINATION_DATE
```

```
l_fc_dt = ADD_DAYS(LAST_DAY(ADD_MONTHS(l_term_dt,1)),1)
RETURN l_fc_dt
```

Enrollment Coverage Start Date

This formula type is used to derive the enrollment coverage start date.

Contexts

The following contexts are available:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PGM_ID
- PL_ID
- PL_TYP_ID
- OPT_ID
- PER_IN_LER_ID
- PERSON_ID
- LER_ID
- BENEFIT_RELATION_ID
- ELIG_PER_ELCTBL_CHC_ID
- ORGANIZATION_ID

Database Items

Use only the following database items that are available to formulas of this type:

- Database items based on person's assignment: HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are not available to formulas of this type.

Return Variables

The following return variables are available to formulas of this type. Any name can be used for the return variable.

Return variables table

Out Variable Name	Data Type	Remarks
L_OUTPUT	Date	Calculated enrollment coverage start date

Sample Formula 1:

Formula Type: Enrollment Coverage Start Date

DESCRIPTION: For (New Hire) hired between 1 and 15 of the month, coverage starts (FONM), and those between 15 and 30/31 coverage starts First of the month following next month

```
l_eff_date =GET_CONTEXT(EFFECTIVE_DATE, to_date('1951/01/01 00:00:00'))
l_rt_start_dt='1951/12/31 00:00:00'(date)
l_day = to_num(to_char(l_eff_date,'DD'))
If l_day >=1 and l_day <=15 THEN
(
l_rt_start_dt = ADD_DAYS(LAST_DAY(l_eff_date),1)
)
ELSE
(
l_rt_start_dt = ADD_MONTHS(ADD_DAYS(LAST_DAY(l_eff_date),1),1)
)
Return l_rt_start_dt
```

Sample Formula 2:

FORMULA TYPE: Enrollment Coverage Start Date

DESCRIPTION: Coverage starts (life date + 1) in a (Death of Dependent) life event.

```
DEFAULT FOR BEN_LER_NAME IS 'NA'
DEFAULT FOR BEN_PIL_LF_DT is '1951/01/01 00:00:00'(date)
l_ler_name = BEN_LER_NAME
l_lf_dt = BEN_PIL_LF_DT
l_cvg_strt_dt = '1951/01/01 00:00:00'(date)
IF l_ler_name = 'Death of Dependent'
THEN
(
l_cvg_strt_dt = ADD_DAYS(l_lf_dt,1)
)
RETURN l_cvg_strt_dt
```

Default to Assign Pending Action

This formula type is used to identify an interim choice in case of a suspension.

Contexts

The following contexts are available:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PGM_ID
- PL_ID
- PL_TYP_ID
- OPT_ID

- PERSON_ID
- LER_ID
- BENEFIT_RELATION_ID
- ELIG_PER_ELCTBL_CHC_ID
- ORGANIZATION_ID

Database Items

Use only the following database items that are available to formulas of this type:

- Database items based on person's assignment: HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are available to formulas of this type.

Input variables table

Input	Data Type	Required	Description
BEN_PEN_IV_PRTT_ENRT_RSLT_ID	Number	N	Result ID of the choice that is suspended

Return Variables

The formula can return either:

- Interim code
- Interim choice
- Amount corresponding to the coverage along with an interim electable choice

Please see samples for illustration.

Return variables table

Out Variable Name	Data Type	Remarks
L_OUTPUT	Character	Interim code which can be used arrive at the interim choice. Possible values are listed below. CDND : Current - default; new - default CDNL : Current - default; new - next lower CDNM : Current - default; new - minimum CDNN : Current - default; new - nothing CLND : Current - next lower; new - default

Out Variable Name	Data Type	Remarks
		CLNL : Current - next lower; new - next lower CLNM : Current - next lower; new - minimum CLNN : Current - next Lower, new - nothing CMND : Current - minimum; new - apply default CMNL : Current - minimum; new - next lower CMNM : Current - minimum; new - minimum CMNN : Current - minimum, new - nothing CNND : Current - nothing; new - default CNNL : Current - nothing; new - next lower CNNM : Current - nothing; new - minimum CNNN : Current - nothing; new - nothing CSND : Current - same; new - default CSNL : Current - same; new - next lower CSNM : Current - same; new - minimum CSNN : Current - same; new – nothing
L_BNFT_AMOUNT	NUMBER	Benefit amount
L_EPE_ID	NUMBER	Electable choice

Sample Formula 1:

Formula Name : STU_DEFAULT_TO_ASSIGN_PENDING_ACTION

Formula Type : Default to Assign Pending Action

```
DEFAULT_DATA_VALUE FOR BEN_EXT_RSLT_BNFT_AMT is 0
DEFAULT_DATA_VALUE FOR BEN_EXT_RSLT_PER_IN_LER_ID is 0
DEFAULT_DATA_VALUE FOR BEN_EXT_RSLT_PRTT_ENRT_RSLT_ID is 0
DEFAULT_DATA_VALUE FOR BEN_EXT_RSLT_PL_NAME is 'NA'
l_eff_dt = GET_CONTEXT(EFFECTIVE_DATE,'1900/01/01 00:00:00'(date))
l_bnft_amt_num_o=0
l_bnft_amt_num_n=0
l_pil_o=0
l_pil_n=0
l_prtt_o=0
l_prtt_n=0
l_pndg_actn='CLNL'
l_debug='NA'
/* main() */
/* get the old benefit amount and pil */
l_eff_dt=add_days(l_eff_dt,-1)
l_debug=ESS_LOG_WRITE(' l_eff_dt: '||to_char(l_eff_dt))
l_debug=ESS_LOG_WRITE(' l_iv_pil: '||to_char(l_iv_pil))
i=1
CHANGE_CONTEXTS(EFFECTIVE_DATE=l_eff_dt)
(
```

```
while (BEN_EXT_RSLT_PL_NAME.exists(i) )
loop
(
if (BEN_EXT_RSLT_PL_NAME[i] = 'STU3_Stuller Supplemental Life - Employee')
then
(
l_bnft_amt_num_o=BEN_EXT_RSLT_BNFT_AMT[i]
l_pil_o=BEN_EXT_RSLT_PER_IN_LER_ID[i]
l_prtt_o=BEN_EXT_RSLT_PRTT_ENRT_RSLT_ID[i]
) /* end if */
i=i+1 /* increment loop counter */
) /* end loop */
) /* end change contexts*/
l_debug=ESS_LOG_WRITE(' l_bnft_amt_num_o: '||to_char(l_bnft_amt_num_o))
l_debug=ESS_LOG_WRITE(' l_pil_o: '||to_char(l_pil_o))
l_debug=ESS_LOG_WRITE(' l_prtt_o: '||to_char(l_prtt_o))
/* get the new benefit amount and pil */
l_eff_dt=add_days(l_eff_dt,90)
l_debug=ESS_LOG_WRITE(' l_eff_dt: '||to_char(l_eff_dt))
i=1
CHANGE_CONTEXTS(EFFECTIVE_DATE=l_eff_dt)
(
while (BEN_EXT_RSLT_PL_NAME.exists(i) )
loop
(
if (BEN_EXT_RSLT_PL_NAME[i] = 'STU3_Stuller Supplemental Life - Employee')
then
(
l_bnft_amt_num_n=BEN_EXT_RSLT_BNFT_AMT[i]
l_pil_n=BEN_EXT_RSLT_PER_IN_LER_ID[i]
l_prtt_n=BEN_EXT_RSLT_PRTT_ENRT_RSLT_ID[i]
) /* end if */
i=i+1 /* increment loop counter */
) /* end loop */
) /* end change contexts*/
l_debug=ESS_LOG_WRITE(' l_bnft_amt_num_n: '||to_char(l_bnft_amt_num_n))
l_debug=ESS_LOG_WRITE(' l_pil_n: '||to_char(l_pil_n))
l_debug=ESS_LOG_WRITE(' l_prtt_n: '||to_char(l_prtt_n))
/* conditional logic */
if ( (l_bnft_amt_num_o > 150000)
and (l_bnft_amt_num_n > 150000)
) then
(
if ( l_pil_o <> l_iv_pil ) then
(l_pndg_actn = 'CLNL')
else
(l_pndg_actn ='CSENLNNL')
)
else if ( (l_bnft_amt_num_o < 150000)
and (l_bnft_amt_num_n > 150000)
) then
(
l_pndg_actn = 'CLNL'
)
return l_pndg_actn
```

Sample Formula 2:

FORMULA Name : MMO_INTERIM_RULE1

FORMULA TYPE : Default to Assign Pending Action

```
DEFAULT_DATA_VALUE FOR BEN_EPE_ELIG_PER_ELCTBL_CHC_ID_NN is 0
DEFAULT_DATA_VALUE FOR BEN_EPE_PL_NAME_TN is 'NA'
DEFAULT_DATA_VALUE FOR BEN_EPE_OPT_NAME_TN is 'NA'
```

```
/* initialization */
L_ELIG_PER_ELCTBL_CHC_ID=345
i=1
/*main()*/
while (BEN_EPE_ELIG_PER_ELCTBL_CHC_ID_NN.exists(i)) loop
(
if ( (BEN_EPE_PL_NAME_TN[i] = 'MMO_SUPP_LIFE_P')
and (BEN_EPE_OPT_NAME_TN[i] = 'MMO_GUARANTEE_ISSUE' )
)
then
( L_ELIG_PER_ELCTBL_CHC_ID = BEN_EPE_ELIG_PER_ELCTBL_CHC_ID_NN[i]
)
/* increment the counter */
i=i+1
) /* end loop */
return L_ELIG_PER_ELCTBL_CHC_ID
```

Sample Formula 3:

FORMULA NAME : AGIOS_SUPP_EMP_LIFE_INTERIM_LIMIT_FF

FORMULA TYPE : Default to Assign Pending Action

DESCRIPTION : Validates the Employee supplemental life increases for Increment without a certification as long as the increase does not exceed the guaranteed issue.

```
DEFAULT FOR BEN_PIL_LF_EVT_OCRD_DT is '1951/01/01 00:00:00'(date)
DEFAULT_DATA_VALUE FOR BEN_EPE_ELIG_PER_ELCTBL_CHC_ID_NN is 0
DEFAULT_DATA_VALUE FOR BEN_EPE_PL_NAME_TN is 'WAIVE'
DEFAULT_DATA_VALUE FOR BEN_EPE_CRNTLY_ENRD_FLAG_TN is 'N'
DEFAULT_DATA_VALUE FOR BEN_EPE_CVRD_FLAG_TN is 'N'
DEFAULT_DATA_VALUE FOR BEN_EPE_INTERIM_FLAG_TN is 'N'
DEFAULT_DATA_VALUE FOR BEN_EPE_OPT_NAME_TN is 'NA'
DEFAULT_DATA_VALUE FOR BEN_EPE_ELCTBL_FLAG_TN is 'NA'
DEFAULT_DATA_VALUE FOR PER_HIST_ASG_ASSIGNMENT_ID is 0
DEFAULT_DATA_VALUE FOR PER_HIST_ASG_EFFECTIVE_START_DATE is '1951/01/01 00:00:00'(date)
DEFAULT_DATA_VALUE FOR PER_HIST_ASG_EFFECTIVE_END_DATE is '1951/01/01 00:00:00'(date)
DEFAULT_DATA_VALUE FOR PER_HIST_ASG_ASSIGNMENT_TYPE is 'NA'
DEFAULT_DATA_VALUE FOR PER_HIST_ASG_STATUS_TYPE is 'NA'
DEFAULT_DATA_VALUE FOR PER_HIST_ASG_PRIMARY_FLAG is 'NA'
DEFAULT_DATA_VALUE FOR PER_HIST_ASG_EFFECTIVE_LATEST_CHANGE is 'NA'
Default for l_sal_amount is 0
Default for l_sal_fctr is 0
Default for l_max is 0
default for l_enrld_flag is 'Y'
L_MN_CVG_RQD_AMT = 0 /*Minimum coverage amount*/
L_MX_CVG_ALWD_AMT = 150000 /*Maximum coverage amount*/
L_MX_CVG_INCR_ALWD_AMT = 50000 /*Maximum coverage increment*/
L_MX_CVG_INCR_WCF_ALWD_AMT = 500000 /*Maximum coverage increment with certification*/
L_MX_CVG_WCFN_AMT = 500000 /*Maximum coverage amount with certification*/
l_prev_enrld_amt = '0'
l_prev_enrld_amt1 = '0'
l_prev_enrld_amt_num1 = 0
l_curr_enrld_amt = '0'
l_curr_enrld_amt_num1 = 0
l_new_effective_date = '1951/01/01 00:00:00'(date)
l_actual_eff_date = '1951/01/01 00:00:00'(date)
l_asg_id=1234
l_sal_amount=0
l_sal_fctr=0
l_max = 500000
l_sal_amount1=BEN_FN_GET_CHAR_VALUE(
'CMP_SALARY'
,'SALARY_AMOUNT'
```

```
)
l_sal_fctr1=BEN_FN_GET_CHAR_VALUE(
'CMP_SALARY'
,'SALARY_ANNUALIZATION_FACTOR'
)
IF l_sal_amount1 <> 'NO_DATA_FOUND' AND l_sal_amount1 <> ' ' AND l_sal_amount1 <> 'N'
THEN
(
l_sal_amount=to_num(l_sal_amount1)
)
ELSE
(
l_sal_amount = 0
)
IF l_sal_fctr1 <> 'NO_DATA_FOUND' AND l_sal_fctr1 <> ' ' AND l_sal_fctr1 <> 'N'
THEN
(
l_sal_fctr=to_num(l_sal_fctr1)
)
ELSE
(
l_sal_fctr=0
)
IF ( 5 * l_sal_amount * l_sal_fctr ) > 500000
THEN
(
L_MX_CVG_ALWD_AMT = 500000
)
ELSE
(
L_MX_CVG_ALWD_AMT = trunc((5*l_sal_amount * l_sal_fctr)/10000)*10000
)
l_actual_eff_date = GET_CONTEXT(EFFECTIVE_DATE, to_date('1951/01/01 00:00:00'))
l_new_effective_date = ADD_DAYS (l_actual_eff_date, - 1)
l_log_data = ESS_LOG_WRITE ('Start of the formula after initial ')
ret = HR_TRACE('Start Debugging AGIOS_SUPP_EMP_LIFE_INTERIM_LIMIT_FF')
/* get Previous Coverage Amount - Change the contexts since coverage is starting as of the processing end
date */
CHANGE_CONTEXTS(EFFECTIVE_DATE = l_new_effective_date )
(
l_enrld_amt1 = ben_fn_get_char_value( 'BEN_PRTT_ENRT_RSLT'
,'BNFT_AMT'
,'Supplemental Employee Life'
,'Elected'
)
l_enrld_flag = ben_fn_get_char_value(
'BEN_PRTT_ENRT_RSLT'
,'ENROLLED'
,'Supplemental Employee Life'
,'Elected')
l_log_data = ESS_LOG_WRITE (' Previous Supp Life Insured Coverage Amount :' ||l_enrld_amt1)
IF (l_enrld_amt1 <> ' ' AND l_enrld_amt1 <> 'NO_DATA_FOUND' AND l_enrld_amt1 <> 'N')
THEN
(
l_prev_enrld_amt_num1 = to_number(l_enrld_amt1)
)
ELSE
(
l_prev_enrld_amt_num1 = 0
)
)
l_log_data = ESS_LOG_WRITE (' Previous Supp Life Insured Coverage Amount l_prev_enrld_amt_num1: ' ||
to_char(l_prev_enrld_amt_num1))
l_new_effective_date = GET_CONTEXT(EFFECTIVE_DATE,to_date('1951/01/01 00:00:00'))
CHANGE_CONTEXTS(EFFECTIVE_DATE = ADD_DAYS(l_new_effective_date,120))
(
```

```
l_curr_enrld_amt1 = ben_fn_get_char_value( 'BEN_PRTT_ENRT_RSLT'
,'BNFT_AMT'
,'Supplemental Employee Life'
,'Elected'
)
l_enrld_flag = ben_fn_get_char_value(
'BEN_PRTT_ENRT_RSLT'
,'ENROLLED'
,'Supplemental Employee Life'
,'Elected')
l_log_data = ESS_LOG_WRITE (' Current Supp Life Insured Coverage Amount :' ||l_curr_enrld_amt1)
IF (l_curr_enrld_amt1 <> ' ' AND l_curr_enrld_amt1 <> 'NO_DATA_FOUND' AND l_curr_enrld_amt1 <> 'N')
THEN
(
l_curr_enrld_amt_num1 = to_number(l_prev_enrld_amt1)
)
ELSE
(
l_curr_enrld_amt_num1 = 0
)
)
/* reasign 1 to i */
i=1
l_asg_id = GET_CONTEXT(HR_ASSIGNMENT_ID,1)
CHANGE_CONTEXTS(HR_ASSIGNMENT_ID=l_asg_id)
(
while (BEN_EPE_ELIG_PER_ELCTBL_CHC_ID_NN.exists(i)) loop
(
if ( (BEN_EPE_PL_NAME_TN[i]='Supplemental Employee Life')
and (BEN_EPE_OPT_NAME_TN[i]='Elected')
and (BEN_EPE_ELCTBL_FLAG_TN[i]='Y')
) then
(
/* this will hold the choice id of the (elected) option */
l_elig_per_elctbl_chc_id = BEN_EPE_ELIG_PER_ELCTBL_CHC_ID_NN[i]
)
i=i+1
)
)
if (l_curr_enrld_amt_num1 > 150000)
then
(
if (l_prev_enrld_amt_num1 < 100000) then
(
l_b_bnft_amt = 150000
)
else if (l_prev_enrld_amt_num1 > 100000) then
(
l_b_bnft_amt = l_prev_enrld_amt_num1
)
)
else if (l_curr_enrld_amt_num1<150000) then
(
if (l_prev_enrld_amt_num1>100000) then
(
l_b_bnft_amt = l_curr_enrld_amt_num1
)
else if (l_prev_enrld_amt_num1<100000) then
(
l_b_bnft_amt = 150000
)
)
return l_b_bnft_amt,l_elig_per_elctbl_chc_id
```

Extra Input

This formula type is used to pass an extra value to the payroll element which is linked to the standard rate.

Contexts

The following contexts are available:

- BUSINESS_GROUP_ID (ENTERPRISE_ID)
- EFFECTIVE_DATE
- HR_ASSIGNMENT_ID
- PGM_ID
- PL_ID
- PL_TYP_ID
- OPT_ID
- PERSON_ID
- LER_ID
- BENEFIT_RELATION_ID
- ACTY_BASE_RT_ID
- ORGANIZATION_ID

Database Items

Use only the following database items that are available to formulas of this type:

- Database items based on person's assignment: HR_ASSIGNMENT_ID AND PERSON_ID

Input Variables

Input variables are not available to formulas of this type.

Return Variables

The following return variables are available to formulas of this type. Any name can be used for the return variable.

Sample Formula 1:

Out Variable Name	Data Type	Remarks
L_OUTPUT	Number/Character	Return a number/character value depending on the data type of the corresponding payroll element's input value

Sample Formula 1:

FORMULA TYPE : Extra Input

DESCRIPTION : Formula to get the Medical Care Reimbursement Coverage amount

```
P_ENRLD_BNFT_AMT = 0
l_bnft_amt_char = '0'
l_lf_evt_dt_char = ben_fn_get_char_value('BEN_PER_IN_LER'
,'LF_EVT_OCRD_DT'
,' '
,' '
,'BENEFIT_RELATION_NAME'
,'DFLT')
l_lf_evt_dt = to_date(l_lf_evt_dt_char)
l_pay_perd_end_date = TO_DATE(BEN_FN_GET_CHAR_VALUE( 'PAY_TIME_PERIODS'
,'END_DATE'
,' '
,' '
,'START_DATE'
,l_lf_evt_dt_char
)
)
CHANGE_CONTEXTS (EFFECTIVE_DATE = l_pay_perd_end_date)
(
l_bnft_amt_char = ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT'
,'BNFT_AMT'
,'Medical Care Reimbursement'
,'Coverage'
)
IF (l_bnft_amt_char <> 'N' AND l_bnft_amt_char <> 'NO_DATA_FOUND' AND l_bnft_amt_char <> ' ')
THEN
(
P_ENRLD_BNFT_AMT = TO_NUMBER(l_bnft_amt_char)
)
)
Return P_ENRLD_BNFT_AMT
```

Sample Formula 2:

FORMULA TYPE: Extra Input

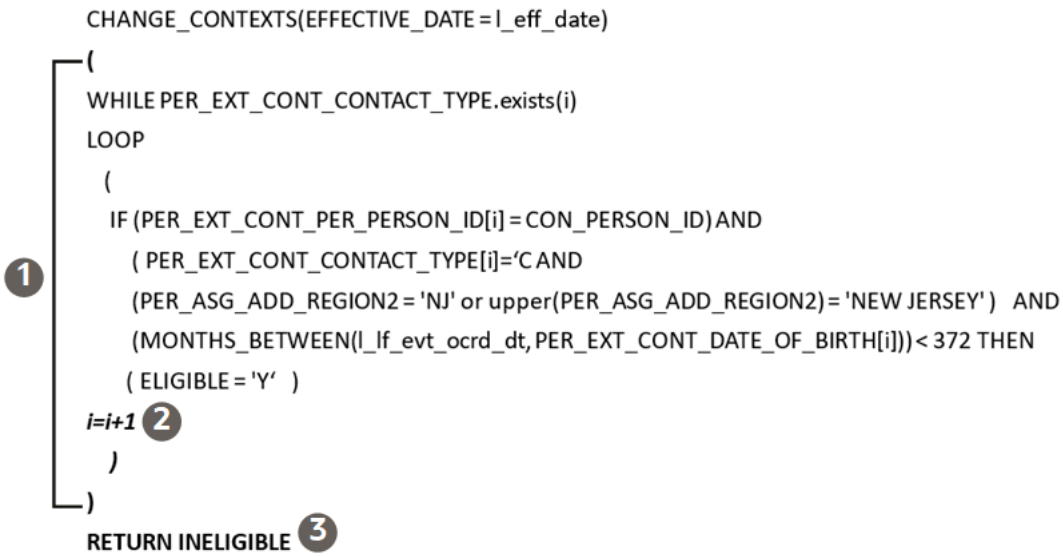
DESCRIPTION : Get HSA Coverage Amount

```
COVERAGE_AMT = 0
l_eff_dt = GET_CONTEXT(EFFECTIVE_DATE, to_date('1951/01/01 00:00:00'))
CHANGE_CONTEXTS(EFFECTIVE_DATE=l_eff_dt)
(
l_cvg_amt_char = ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT'
, 'BNFT_AMT'
, 'Health Savings Account'
, 'Elect')
) /* end change contexts */
if (l_cvg_amt_char <> 'NO_DATA_FOUND' AND l_cvg_amt_char <> 'N' AND l_cvg_amt_char <> ' ')
then
(
COVERAGE_AMT = to_number(l_cvg_amt_char)
)
else
(
COVERAGE_AMT = 0
)
return COVERAGE_AMT
```

Common Mistakes in Formulas

Here are some common mistakes that occur while using formulas:

Sample 1



Mistake description

Callout	Description
1	Ensure that you include all the relevant DB items within the change context scope. Not including them within the changed scope leads to inconsistent results.
2	Ensure that you increment or initialize the index
3	Ensure that you enter correct return variable names for certain formula types instead of specific variable names.

Sample 2

```
DEFAULT FOR l_orgnl_enrt_dt is '2012/03/01 00:00:00'(date)
DEFAULT FOR l_return_value is -9
DEFAULT FOR pay_periods_per_period is 999

l_bnft_amt_number = 0
l_orgnl_enrt_dt_char = 'N'

l_orgnl_enrt_dt_char = ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','ORGNL_ENRT_DT','Health Care FSA',
'Annual Goal Amount')

l_bnft_amt_char = ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','BNFT_AMT','Health Care FSA', 'Annual Goal
Amount')

if l_bnft_amt_char <> 'N' then
( l_bnft_amt_number = to_number(l_bnft_amt_char) )

if ( l_orgnl_enrt_dt_char <> 'N' AND l_orgnl_enrt_dt_char <> ' ' ) then
(  l_orgnl_enrt_dt = to_date(l_orgnl_enrt_dt_char)
)
else
( l_orgnl_enrt_dt = to_date('2012/03/01 00:00:00')
)
```

1

Mistake description

Callout	Description
1	Benefits functions returns amounts and dates in character format. Ensure that you convert values to date and numbers.

Sample 3

```
WHILE BEN_PEN_PL_NAME_TN.exists(i)
LOOP
(
    IF(BEN_PEN_PL_NAME_TN[i] = 'Health Savings Account'
    OR BEN_PEN_PL_NAME_TN[i] = 'Health Care Flexible Spending Account'
    OR BEN_PEN_PL_NAME_TN[i] = 'Dependent Care Flexible Spending Account')
    THEN
    (
        l_orgnl_enrt_dt_char = BEN_FN_GET_CHAR_VALUE('BEN_PRTT_ENRT_RSLT',
                                'ORGNL_ENRT_DT',
                                 BEN_PEN_PL_NAME_TN[i],
                                'ENROLLED')

        l_bnft_amt_char = ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT',
                               'BNFT_AMT',
                                BEN_PEN_PL_NAME_TN[i],
                               'ENROLLED')
 l = l + 1
)
*** Below 3 statements can well fetch you the above details without using the formula functions
l_bnft_amt=BEN_PEN_BNFT_AMT_NN[j]
 l_enrt_cvg_strt_dt=BEN_PEN_ENRT_CVG_STRT_DT_DN[j]
l_ori_enrt_cvg_strt_dt=BEN_PEN_ORGNL_ENRT_DT_DN[j]
```

1

Mistake description

Callout	Description
1	When you use array DB items, you need not use the below functions, as the array DB items allow you to access other enrollment details like original enrollment dates and, benefit amounts.

Sample 4

```
default for PER_ASG_COUNTRY_OF_BIRTH is 'XX'
default for PER_ASG_JOB_NAME is 'ABC'
DEFAULT FOR CMP_ASSIGNMENT_SALARY_AMOUNT IS 0
DEFAULT FOR CMP_ASSIGNMENT_SALARY_ANNUALIZATION_FACTOR IS 0

l_effective_date = GET_CONTEXT(EFFECTIVE_DATE, to_date('1951/01/01 00:00:00'))

l_cntry = PER_ASG_COUNTRY_OF_BIRTH
l_job = PER_ASG_JOB_NAME

if ( l_cntry <> 'US' and l_job = 'Content Writer' ) then
(WAIT_PERD_VAL = 6
WAIT_PERD_UOM = 'MO' )
Else
(WAIT_PERD_VAL = 1
WAIT_PERD_UOM = 'MO' )

return WAIT_PERD_VAL, WAIT_PERD_UOM
```

Mistake description

Callout	Description
1	Ensure that you don't have unused DB items and variables in your formula. They can throw errors at run time, requiring you to recompile formulas.
2	Use canonical date formats while initializing date variables to avoid date format related errors at run time.

Sample 5

```
Formula type = Post election edit rule
============================
WHILE BEN_PEN_PL_NAME_TN.exists(i)
LOOP
(
     IF(BEN_PEN_PL_NAME_TN[i] = 'Health Savings Account‘)
     THEN
     (
     l_bnft_amt=BEN_PEN_BNFT_AMT_NN[j]
      l_enrt_cvg_strt_dt=BEN_PEN_ENRT_CVG_STRT_DT_DN[j]
     l_ori_enrt_cvg_strt_dt=BEN_PEN_ORGNL_ENRT_DT_DN[j]
     )
 l = l + 1
)


l_eff_date = GET_CONTEXT(EFFECTIVE_DATE,to_date('1951/01/01 00:00:00') )

l_context_date=add_days(l_eff_date,30)

change_contexts(EFFECTIVE_DATE=l_context_date)

(

/*  put your while loop here */
)
```

Mistake description

Callout	Description
1	DB items don't return enrolled plan or option names when enrollments begin from a later date in future due to first of next month or other similar coverage codes.
2	Manipulate the effective date as per your needs and enclose the above WHILE loop within the change context call.

Sample 6

```
Formula type = Extract Rule
Formula Name = GET_COMM_VAL
============================
Default for BEN_PBB_VAL is 0
l_val = 0

CHANGE_CONTEXTS(BUSINESS_GROUP_ID  = 1)
(
CHANGE_CONTEXTS(BNFTS_BAL_ID  = 3001)
(
  l_val = BEN_PBB_VAL
)
)
return l_val

Formula type = Coverage Amount Calculation
Formula Name = calc_coverage_val
=================================
l_cvg = 100
l_value = 0

if IS_EXECUTABLE('GET_COMM_VAL')  then
(
SET_INPUT('BUSINESS_GROUP_ID',  1)
SET_INPUT('EFFECTIVE_DATE', GET_CONTEXT(EFFECTIVE_DATE,to_date('2013/01/01
12:00:00','YYYY/MM/DD  HH24:MI:SS'))  )
SET_INPUT('HR_ASSIGNMENT_ID',  GET_CONTEXT(HR_ASSIGNMENT_ID,  -1))
EXECUTE ('GET_COMM_VAL')
l_value = GET_OUTPUT('l_val' , 120)
)
l_cvg = l_cvg + l_value
return l_cvg
```

Mistake description

Callout	Description
1	DB items are available for formulas based on data partitioning and formula context usages. So not all formulas can access all DB items. In this example, BEN_PBB_VAL DB item is not available to coverage calculation formula type. We recommend that you use Enterprise level formulas within Benefits. Don't set LDG while creating formulas.
2	Ensure that the called function is executable before you call the function.
3	Use the extract rule which has access to BEN_PBB_VAL DB item.

Formula Debugging and Troubleshooting

You need to place the following debug statements as necessary:

```
l_log_data = ESS_LOG_WRITE('*************Start ff debug - messages appear in
the batch process log files')
ret = HR_TRACE('*************Start ff debug - messages appear in the PLSQL
trace file')
.
.
.
.
l_log_data = ess_log_write('end ff debug: L_MX_CVG_ALWD_AMT'||to_char(L_MAX_CVG_ALWD_AMT))
ret = HR_TRACE('end ff debug: L_MX_CVG_ALWD_AMT'||to_char(L_MX_CVG_ALWD_AMT))
```

Note: The log files that the benefits batch jobs create will have the above 2 statements printed in the log file which can be accessed from the Monitor requests UI.

Formula Troubleshooting

If the formula doesn't return the correct values or if the end result is not as expected, then here's how you can diagnose the issue:

1. Test with the seeded codes first. You need to remove the formula before testing the seeded functionality.
2. Use hard coded Values and test a simple fast formula.
3. If you used any function, then replace them with hard coded values and test.
4. Trace the formula to gather details of the values passed.
5. If the above steps don't help you resolve the problem, then provide the results of the same for oracle to review.

While troubleshooting the formula, you need to ensure the following:

1. Don't delete a formula which has been attached to benefits plan design, especially after the plan design has been processed, and participants have been found eligible for the plan design.
2. Don't recreate the formula with the same name after deleting. It doesn't reinstate the older behavior. You would face errors at run time. Instead, edit the formula or create a new formula to replace the older one.

Formula – FAQ

The following sections will provide you information about using formulas.

How you use arrays within formulas

FORMULA Name : ELIG1

FORMULA TYPE : Participation and Rate Eligibility

```
Default for LOCATIONS is EMPTY_NUMBER_NUMBER
I=1
ELIGIBLE='N'
LOCATIONS[1]=1625
LOCATIONS[2]=1630
l_job_code=123 /* to be obtained from a database item */
WHILE (LOCATIONS.EXISTS(I)) LOOP
(
if (LOCATIONS[I] = l_job_code) then
(ELIGIBLE='Y'
/* If found eligible you need not iterate */
EXIT
)
/* increment the counter*/
I=I+1
) /* end loop */
Return ELIGIBLE
```

How you use User defined tables within benefits formulas

Formula Name: HRA_ER_CONTRIBUTION

Formula Type: Post Enrollment Rate Calculation

```
er_contribution = 0 hra_single_amt = 0 hra_family_amt = 0
BEN_TABLE = 'ORCL_GLOBAL_VALUES' BEN_TABLE_COLUMN = 'Global_Value' BEN_ROW_VALUE = 'HRA_SINGLE_AMT'
hra_single_amt = to_num(get_table_value ( BEN_TABLE, BEN_TABLE_COLUMN, BEN_ROW_VALUE))
/* determine medical plan option */
EE_only = ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT', 'ENROLLED', 'Medical', 'Employee') EE_Waive =
 ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','ENROLLED', 'Medical', 'Waive') /* Use the option from above
 code to determine the ER contribution */ IF EE_Waive = 'Y' THEN
( er_contribution = 0 )
ELSE
( er_contribution = hra_single_amt )
l_result = er_contribution / 12
Return l_result
```

How you use element entry values within benefits rates

FORMULA NAME: RT_VALUE_CALC

FORMULA TYPE: Rate Value Calculation

```
Default_data_value for ORCL_PP_ELEMENT_2_AMOUNT_ENTRY_VALUE is 0
Default for BEN_OPT_NAME is 'NA'
/* Initialization section */
i=1
l_val=0
```

```
l_ret=0
if (ORCL_PP_ELEMENT_2_AMOUNT_ENTRY_VALUE.exists(i)) then (l_val=ORCL_PP_ELEMENT_2_AMOUNT_ENTRY_VALUE[i])
if (BEN_OPT_NAME='ACT_ZHRX_PLAN_1_EMP') then ( l_ret=750-l_val )
else if (BEN_OPT_NAME='ACT_ZHRX_PLAN_1_FAM' OR BEN_OPT_NAME='ACT_ZHRX_PLAN_1_CHILD') then ( l_ret=1500-
l_val )
if (l_ret<0) then
( l_ret=0 )
return l_ret
```

How you access pay periods within rate periodization rules to compute remaining contributions

FORMULA NAME: RT_PERIOD_CALC

FORMULA TYPE: Rate Periodization Rule

```
Inputs are BEN_IV_CONVERT_FROM (text), BEN_IV_CONVERT_FROM_VAL (text)
DEFAULT_DATA_VALUE FOR BEN_PEN_PL_NAME_TN is 'My-Default'
DEFAULT_DATA_VALUE FOR BEN_PEN_ENRT_CVG_STRT_DT_DN is '1951/01/01 0:00:00'(date)
DEFAULT_DATA_VALUE FOR BEN_PEN_ORGNL_ENRT_DT_DN is '1951/01/01 0:00:00'(date)
DEFAULT FOR BEN_YRP_START_DATE is '1951/01/01 0:00:00'(date) DEFAULT_DATA_VALUE FOR BEN_PEN_OPT_NAME_TN is
 'My-Default' DEFAULT_DATA_VALUE FOR BEN_PEN_BNFT_AMT_NN is 0
l_eff_date='1951/01/01 0:00:00' (date)
l_new_eff_date='1951/01/01 0:00:00' (date)
l_enrt_cvg_strt_dt='1951/01/01 0:00:00' (date)
l_ori_enrt_cvg_strt_dt='1951/01/01 0:00:00' (date)
l_chk_date='1951/01/01 0:00:00' (date)
l_yr_perd_st_date='1951/01/01 0:00:00' (date)
l_bnft_amt=0
l_prev_bnft_amt=0
l_prev_cntbn=0
DFND_VAL=0
ANN_VAL=0
CMCD_VAL=0
i=1
j=1
l_total_tp_in_cal_year=1
l_pay_perd_totper_rem=99
l_pay_cur_perd=1
/* input values */
l_iv_period=BEN_IV_CONVERT_FROM
l_iv_val=to_number(BEN_IV_CONVERT_FROM_VAL)
/* change contexts for accomodating waiting period */
l_eff_date=GET_CONTEXT(EFFECTIVE_DATE, to_date('1951/01/01 0:00:00'))
l_eff_date=add_days(l_eff_date,30)
l_new_eff_date=add_days(last_day(l_eff_date),1)
CHANGE_CONTEXTS(EFFECTIVE_DATE=l_new_eff_date)
(/* get the bnft amount and the enrt cvg strt date within this block */
while (BEN_PEN_PL_NAME_TN.exists(j)) loop
(
if ((BEN_PEN_PL_NAME_TN[j]='Dependent Care FSA') and (BEN_PEN_OPT_NAME_TN[j]='Annual Goal Amount')) then (
l_bnft_amt=BEN_PEN_BNFT_AMT_NN[j]
l_enrt_cvg_strt_dt=BEN_PEN_ENRT_CVG_STRT_DT_DN[j] l_ori_enrt_cvg_strt_dt=BEN_PEN_ORGNL_ENRT_DT_DN[j] )
j=j+1
) /*end loop plan option */
) /*end change contexts */
j=1
CHANGE_CONTEXTS(EFFECTIVE_DATE=l_new_eff_date-1)
(/* get the previous bnft amount within this block */
while (BEN_PEN_PL_NAME_TN.exists(j)) loop
(
if ((BEN_PEN_PL_NAME_TN[j]='Dependent Care FSA') and (BEN_PEN_OPT_NAME_TN[j]='Annual Goal Amount')) then (
l_prev_bnft_amt=BEN_PEN_BNFT_AMT_NN[j]
)
```

```
j=j+1
) /*end loop plan option */
) /*end change contexts */
IF (l_bnft_amt = 0 and l_iv_period = 'ANNUAL' ) THEN ( l_bnft_amt = l_iv_val)
/* check if enrolled earlier in same year */
IF (l_ori_enrt_cvg_strt_dt <= l_enrt_cvg_strt_dt) THEN ( l_chk_date = l_ori_enrt_cvg_strt_dt )
ELSE
( l_chk_date = l_enrt_cvg_strt_dt )
/* substitute the program id in below clause to pick year period start date */ CHANGE_CONTEXTS(PGM_ID =
 202,EFFECTIVE_DATE=l_new_eff_date) (
l_yr_perd_st_date = BEN_YRP_START_DATE
)
/* If enrolled in prior year, use this year period start date */ IF ( l_chk_date < l_yr_perd_st_date ) THEN
 (
l_chk_date = l_yr_perd_st_date
)
l_pay_cur_perd= to_number(BEN_FN_GET_CHAR_VALUE('PAY_TIME_PERIODS','PERIOD_NUM',' ','
 ','START_DATE',to_char(l_chk_date)))
l_total_tp_in_cal_year =
to_number(BEN_FN_GET_CHAR_VALUE('PAY_TIME_PERIODS','TOTAL_TP_IN_CALENDAR_YEAR',' ','
 ','START_DATE',to_char(l_chk_date)))
l_pay_perd_totper_rem =l_total_tp_in_cal_year - l_pay_cur_perd +1
IF (l_prev_bnft_amt <> 0 and l_bnft_amt <> l_prev_bnft_amt ) THEN
(
l_prev_cntbn = (l_prev_bnft_amt/l_total_tp_in_cal_year )*(l_pay_cur_perd - 1)
)
ELSE
(
l_prev_cntbn = 0
)
CMCD_VAL = (l_bnft_amt - l_prev_cntbn )/l_pay_perd_totper_rem DFND_VAL = (CMCD_VAL *
 l_pay_perd_totper_rem)/12 ANN_VAL = l_bnft_amt
RETURN DFND_VAL,ANN_VAL,CMCD_VAL
```

Associating HR actions to benefits life events

FORMULA NAME : New Hire Event

FORMULA TYPE : Person Changes Causes Life Event

```
/*========== DATABASE ITEM DEFAULTS BEGIN ====================*/ DEFAULT for PER_ASG_ACTION_CODE is 'AA'
/*========== DATABASE ITEM DEFAULTS ENDS====================*/ /*=========== INPUT VALUES DEFAULT BEGIN
 ====================*/ /*============== INPUT VALUES DEFAUT ENDS ====================*/
/*================= INPUTS SECTION BEGIN ======================*/
/*================= INPUTS SECTION ENDS ======================*/
/*================ FORMULA SECTION BEGIN ======================*/
l_action_code = PER_ASG_ACTION_CODE
if NOT PER_ASG_ACTION_CODE was defaulted then
(
if ((l_action_code='HIRE') OR (l_action_code='EMPL_REHIRE') )then
(l_create_ptnl = 'Y')
else
(l_create_ptnl = 'N')
)
return l_create_ptnl
/*================ FORMULA SECTION END ======================*/
```

Accessing contacts or family member details to determine eligibility

FORMULA NAME : DPNT_ELIG

FORMULA TYPE : Dependent eligibility

```
DEFAULT_DATA_VALUE for PER_EXT_CONT_CONTACT_TYPE is 'NA'
```

```
DEFAULT_DATA_VALUE FOR PER_EXT_CONT_DATE_OF_BIRTH IS '1951/01/01' (DATE)
DEFAULT_DATA_VALUE FOR PER_EXT_CONTACT_ATTRIBUTE1 IS 'NA' DEFAULT_DATA_VALUE FOR PER_EXT_CONT_SEX IS 'NA'
 ELIGIBLE = 'N'
l_eff_dt = GET_CONTEXT(EFFECTIVE_DATE,to_date('1951/01/01 00:00:00') )
/* S - Spouse(female), 35 yrs age as of event date */
i=1
WHILE PER_EXT_CONT_CONTACT_TYPE.exists(i)
LOOP
(
IF (PER_EXT_CONT_CONTACT_TYPE[i]='S'
AND PER_EXT_CONTACT_ATTRIBUTE1[i] <> 'NA' AND PER_EXT_CONT_SEX[i] = 'F' ) AND (MONTHS_BETWEEN(l_eff_dt,
 PER_EXT_CONT_DATE_OF_BIRTH[i])) < 4200
THEN
( ELIGIBLE = 'Y' )
i=i+1
)
RETURN ELIGIBLE
```

How you access benefits data within HCM extracts

FORMULA NAME : ben_ext_rule

FORMULA TYPE : Extract rule

```
Default for l_Val is 'XX'
DEFAULT_DATA_VALUE for BEN_PBG_BENEFIT_GROUP_NAME_TN is 'aa1'
default for i is 1
i=1
L_BG_ID = GET_CONTEXT(BUSINESS_GROUP_ID, 1)
L_EFF_DATE = GET_CONTEXT(EFFECTIVE_DATE, to_date('1951/01/01 00:00:00'))
L_PERSON_ID = GET_CONTEXT(PERSON_ID, 9999)
CHANGE_CONTEXTS(EFFECTIVE_DATE = L_EFF_DATE, BUSINESS_GROUP_ID = L_BG_ID, PERSON_ID
= L_PERSON_ID )
(
while BEN_PBG_BENEFIT_GROUP_NAME_TN.exists(i) loop
(
l_Val=BEN_PBG_BENEFIT_GROUP_NAME_TN[i] i=i+1
)
)
return l_Val
```

Appendix 1: Contexts

Table below describes the different Benefits formula types available in Oracle Fusion V1, where they can be located in UI, and the various contexts available for each formula type. Please note that a lot of formula types which are available at the plan level would also be available at other levels like program, plan in program etc.

Formula types navigation table

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
Action Type Due Date	Plan Configuration > Benefit Plan Details> Certification train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Age Calculation	Plan Configuration > Manage Derived Factors > Age tab	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Age Determination Date	Plan Configuration > Derived Factors > Age tab	BNFTS_BAL_ID
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Automatic Enrollment Method	Plan Configuration > Benefit Plan Details > Enrollment train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		ELIG_PER_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Beneficiary Certification Required	Plan Configuration > Benefit Plan Details > Dependent/ Beneficiary train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Change Dependent Coverage	Plan Configuration > BenefitPlan Details > Dependent/ Beneficiary train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Compensation Calculation	Plan Configuration > Derived Factors > Compensation tab	BUSINESS_GROUP_ID (ENTERPRISE_ID)

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Compensation Determination Date	Plan Configuration > Derived Factors > Compensation tab	BNFTS_BAL_ID
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PAYROLL_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Compensation Object Selection	Evaluation and Reporting > Processes> Evaluate Life Event Participation > Comp object selection parameter	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Coverage Amount Calculation	Plan Configuration > Benefit Plan coverage	BUSINESS_GROUP_ID (ENTERPRISE_ID)

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Coverage Lower Limit	Plan Configuration > Benefit Plan Coverage	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		PL_TYP_ID
Default Enrollment	Plan Configuration > Benefit Plan Details > Enrollment train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Default to Assign Pending Action	Plan Configuration > Benefit Plan Details > Enrollment train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Dependent Certification Required	Plan Configuration > Benefit Plan Details > Dependent / beneficiary train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		PL_ID
		PL_TYP_ID
Dependent Coverage End Date	Plan Configuration > Benefit Plan Details > Dependent / beneficiary train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Dependent Eligibility	Plan Configuration > Benefit Plan Details > Dependent / beneficiary train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		PL_TYP_ID
Element Type and Input Value Determination	Plan Configuration > Benefit Rates	ACTY_BASE_RT_ID
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Eligibility Access Calculation Rule	Plan Configuration > Eligibility Profiles	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Enrollment Certification Required	Plan Configuration > Benefit Plan Details > Enrollment train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		ENRT_CTFN_TYP_CD
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Enrollment Coverage Start Date	Plan Configuration > Benefit Plan Details > Enrollment train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Enrollment End	Plan Configuration > Benefit Plan Details > Enrollment train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Enrollment Opportunity	Plan Configuration > Benefit Plan Details > Enrollment train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		PGM_ID
		PL_ID
		PL_TYP_ID
Enrollment Period End Date	Plan Configuration > Benefit Plan Details > Enrollment train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Enrollment Period Start Date	Plan Configuration > Benefit Plan Details > Enrollment train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Evaluate Life Event	Plan Configuration > Benefit Life Events	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
Extra Input	Plan Configuration > Manage Rates	ACTY_BASE_RT_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Family Member Determination	Plan Configuration > Benefit Plan Details > Eligibility train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Hours Worked Calculation	Plan Configuration > Derived Factors > Hours worked tab	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Hours Worked Determination Date	Plan Configuration > Derived Factors > Hours worked tab	BNFTS_BAL_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PAYROLL_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Length of Service Calculation	Plan Configuration > Derived Factors > Length of Service tab	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Length of Service Date to Use	Plan Configuration > Derived Factors > Length of Service tab	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
Length of Service Determination Date	Plan Configuration > Derived Factors > Length of Service tab	BNFTS_BAL_ID
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Life Event Reason Timeliness	Plan Configuration > Benefit Life Events	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		PERSON_ID
Maximum Coverage Amount Calculation	Plan Configuration > Benefit Plan Coverage	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Maximum Period of Enrollment	Plan Configuration > Benefit Plan Details > Enrollment train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Maximum Period of Enrollment Determination Date	Plan Configuration > Benefit Plan Details > Enrollment train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Maximum Waiting Period Date to Use	Plan Configuration > Benefit Plan Details > Eligibility train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Minimum Coverage Amount Calculation	Plan Configuration > Benefit Plan Coverage	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Partial Month Effective Date Determination	Plan Configuration > Benefit Rates	ACTY_BASE_RT_ID
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Partial Month Proration Method	Plan Configuration > Benefit Rates	ACTY_BASE_RT_ID
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
Partial Month Proration Rule	Plan Configuration > Manage Rates	ACTY_BASE_RT_ID
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Participation Eligibility End Date	Plan Configuration > Benefit Plan Details > Eligibility train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Participation Eligibility Start	Plan Configuration > Benefit Plan Details > Eligibility train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		PL_TYP_ID
Participation and Rate Eligibility	Plan Configuration > Eligibility Profiles	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		DATE_EARNED
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PAYROLL_ASSIGNMENT_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Payment Schedule	Plan Configuration > Benefit Rates	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Person Change Causes Life Event	Plan Configuration > Benefit Life Events	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		ORGANIZATION_ID
		PERSON_ID
Person Selection	Evaluation and Reporting > Submit any process > Person selection parameter	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		LER_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Postelection Edit	Plan Configuration > Benefit Plans > Enrollment train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		ORGANIZATION_ID
		PERSON_ID
Prorate Annual Election Value	Plan Configuration > Benefit Rates	ACTY_BASE_RT_ID
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Range of Scheduled Hours	Range of Scheduled Hours Profiles	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		PL_ID
		PL_TYP_ID
Rate End Date	Plan Configuration > Benefit Plan Details > Enrollment train stop	ACTY_BASE_RT_ID
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Rate Lower Limit	Plan Configuration > Benefit Rates	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Rate Periodization	Plan Configuration > Benefit Rates	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Rate Start Date	Plan Configuration > Benefit Plan Details > Enrollment train stop	ACTY_BASE_RT_ID
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Rate Upper Limit	Plan Configuration > Benefit Rates	ACTY_BASE_RT_ID
		BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Rate Value Calculation	Plan Configuration > Benefit Rates	ACTY_BASE_RT_ID
		BUSINESS_GROUP_ID (ENTERPRISE_ID)

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		EFFECTIVE_DATE
		ELIG_PER_ELCTBL_CHC_ID
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Related Person Change Causes Life Event	Plan Configuration > Benefit Life Events	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		ORGANIZATION_ID
		PERSON_ID
Required Period of Enrollment	Plan Configuration > Benefit Plan Details > Enrollment train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Waiting Period Value and UOM	Plan Configuration > Benefit Plan Details > Additional Details train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID

FORMULA_TYPE_NAME	NAVIGATION DETAILS	CONTEXT_NAME
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID
Waive Certification Required	Plan Configuration > Benefit Plan Details > Certification train stop	BUSINESS_GROUP_ID (ENTERPRISE_ID)
		EFFECTIVE_DATE
		HR_ASSIGNMENT_ID
		LER_ID
		OPT_ID
		ORGANIZATION_ID
		PERSON_ID
		PGM_ID
		PL_ID
		PL_TYP_ID

Appendix 2: Input Values

Input values are available for Person Changes causes life event formula type. Based on the table on which Person changes are defined, different set of input values are available for use in the formula. Input values NEW_VAL, OLD_VAL, COLUMN, PK_ID are available irrespective of table on which data changes are defined.

Below given example explains what values these input variables contain.
Assume data changes are defined on table PER_PEOPLE_LEGISLATIVE_F and Column MARITAL_STATUS

A person's marital status is changed from S (single) to M (Married) COLUMN input value is set with column name i.e., MARITAL_SATUS. NEW_VAL input value is set with new value for column marital_status.

For the current person record it's value is M. OLD_VAL input value is set with old value for column marital_status for the current person record. Its value will be set to S.

Input variable values table

Table Name	Input Values
CMP_SALARY	BEN_SAL_IN_PERSON_ID, BEN_SAL_IO_PERSON_ID,

Table Name	Input Values
	BEN_SAL_IN_SALARY_AMOUNT, BEN_SAL_IO_SALARY_AMOUNT, BEN_SAL_IN_ACTION_REASON_ID, BEN_SAL_IO_ACTION_REASON_ID, BEN_SAL_IN_SALARY_BASIS_ID, BEN_SAL_IO_SALARY_BASIS_ID, BEN_SAL_IN_ATTRIBUTE1, BEN_SAL_IO_ATTRIBUTE1, BEN_SAL_IN_ATTRIBUTE2, BEN_SAL_IO_ATTRIBUTE2, BEN_SAL_IN_SALARY_REASON_CODE, BEN_SAL_IO_SALARY_REASON_CODE, BEN_SAL_IN_DATE_FROM, BEN_SAL_IO_DATE_FROM, BEN_SAL_IN_DATE_TO, BEN_SAL_IO_DATE_TO, BEN_SAL_IN_ELEMENT_ENTRY_ID, BEN_SAL_IO_ELEMENT_ENTRY_ID, BEN_SAL_IN_FORCED_RANKING, BEN_SAL_IO_FORCED_RANKING, BEN_SAL_IN_PERFORMANCE_RATING, BEN_SAL_IO_PERFORMANCE_RATING, BEN_SAL_IN_PERFORMANCE_REVIEW_ID, BEN_SAL_IO_PERFORMANCE_REVIEW_ID, BEN_SAL_IN_REVIEW_DATE,

Table Name	Input Values
	BEN_SAL_IO_REVIEW_DATE, BEN_SAL_IN_SALARY_APPROVED, BEN_SAL_IO_SALARY_APPROVED
PER_PASSPORTS	BEN_PSS_IN_PERSON_ID, BEN_PSS_IO_PERSON_ID, BEN_PSS_IN_BUSINESS_GROUP_ID, BEN_PSS_IO_BUSINESS_GROUP_ID, BEN_PSS_IN_EXPIRATION_DATE, BEN_PSS_IO_EXPIRATION_DATE, BEN_PSS_IN_ISSUE_DATE, BEN_PSS_IO_ISSUE_DATE, BEN_PSS_IN_ISSUING_AUTHORITY, BEN_PSS_IO_ISSUING_AUTHORITY, BEN_PSS_IN_ISSUING_COUNTRY, BEN_PSS_IO_ISSUING_COUNTRY, BEN_PSS_IN_ISSUING_LOCATION, BEN_PSS_IO_ISSUING_LOCATION, BEN_PSS_IN_LEGISLATION_CODE, BEN_PSS_IO_LEGISLATION_CODE
PER_PERIODS_OF_SERVICE	BEN_PSS_IN_PASSPORT_ID, BEN_PSS_IO_PASSPORT_ID, BEN_PSS_IN_PASSPORT_NUMBER, BEN_PSS_IO_PASSPORT_NUMBER, BEN_PSS_IN_PASSPORT_TYPE,

Table Name	Input Values
	BEN_PSS_IO_PASSPORT_TYPE, BEN_PSS_IN_PERSON_ID, BEN_PSS_IO_PERSON_ID, BEN_PSS_IN_PROFESSION, BEN_PSS_IO_PROFESSION, BEN_PPS_IN_DATE_START, BEN_PPS_IO_DATE_START, BEN_PPS_IN_ACCEPTED_TERMINATION_DATE, BEN_PPS_IO_ACCEPTED_TERMINATION_DATE
PER_PEOPLE_LEGISLATIVE_F	BEN_PPS_IN_ACTION_OCCURRENCE_ID, BEN_PPS_IO_ACTION_OCCURRENCE_ID, BEN_PPS_IN_ACTUAL_TERMINATION_DATE, BEN_PPS_IO_ACTUAL_TERMINATION_DATE, BEN_PPS_IN_ADJUSTED_SVC_DATE, BEN_PPS_IO_ADJUSTED_SVC_DATE, BEN_PPS_IN_DATE_START, BEN_PPS_IO_DATE_START, BEN_PPS_IN_LAST_WORKING_DATE, BEN_PPS_IO_LAST_WORKING_DATE, BEN_PPS_IN_LEGAL_ENTITY_ID, BEN_PPS_IO_LEGAL_ENTITY_ID, BEN_PPS_IN_LEGISLATION_CODE, BEN_PPS_IO_LEGISLATION_CODE, BEN_PPS_IN_NOTIFIED_TERMINATION_DATE, BEN_PPS_IO_NOTIFIED_TERMINATION_DATE,

Table Name	Input Values
	BEN_PPS_IN_ON_MILITARY_SERVICE, BEN_PPS_IO_ON_MILITARY_SERVICE, BEN_PPS_IN_ORIGINAL_DATE_OF_HIRE, BEN_PPS_IO_ORIGINAL_DATE_OF_HIRE, BEN_PPS_IN_PRIMARY_FLAG, BEN_PPS_IO_PRIMARY_FLAG, BEN_PPS_IN_PROJECTED_TERMINATION_DATE, BEN_PPS_IO_PROJECTED_TERMINATION_DATE, BEN_PPS_IN_WORKER_NUMBER, BEN_PPS_IO_WORKER_NUMBER, BEN_PPL_IN_PERSON_ID, BEN_PPL_IO_PERSON_ID, BEN_PPL_IN_BUSINESS_GROUP_ID, BEN_PPL_IO_BUSINESS_GROUP_ID, BEN_PPL_IN_EFFECTIVE_END_DATE, BEN_PPL_IO_EFFECTIVE_END_DATE, BEN_PPL_IN_EFFECTIVE_START_DATE, BEN_PPL_IO_EFFECTIVE_START_DATE, BEN_PPL_IN_HIGHEST_EDUCATION_LEVEL, BEN_PPL_IO_HIGHEST_EDUCATION_LEVEL, BEN_PPL_IN_LEGISLATION_CODE, BEN_PPL_IO_LEGISLATION_CODE
PER_ALL_PEOPLE_F	BEN_PPL_IN_MARITAL_STATUS, BEN_PPL_IO_MARITAL_STATUS, BEN_PPL_IN_MARITAL_STATUS_DATE,

Table Name	Input Values
	BEN_PPL_IO_MARITAL_STATUS_DATE, BEN_PPL_IN_PERSON_ID, BEN_PPL_IO_PERSON_ID, BEN_PPL_IN_PERSON_LEGISLATIVE_ID, BEN_PPL_IO_PERSON_LEGISLATIVE_ID, BEN_PPL_IN_SEX, BEN_PPL_IO_SEX, BEN_PPF_IN_ATTRIBUTE1, BEN_PPF_IO_ATTRIBUTE1, BEN_PPF_IN_ATTRIBUTE2
PER_PERSONS	BEN_PPF_IO_ATTRIBUTE2, BEN_PPF_IN_ATTRIBUTE3, BEN_PPF_IO_ATTRIBUTE3, BEN_PPF_IN_ATTRIBUTE4, BEN_PPF_IO_ATTRIBUTE4, BEN_PPF_IN_ATTRIBUTE5, BEN_PPF_IO_ATTRIBUTE5, BEN_PPF_IN_ATTRIBUTE6, BEN_PPF_IO_ATTRIBUTE6, BEN_PPF_IN_ATTRIBUTE_CATEGORY, BEN_PPF_IO_ATTRIBUTE_CATEGORY, BEN_PPF_IN_MAILING_ADDRESS_ID, BEN_PPF_IO_MAILING_ADDRESS_ID, BEN_PPF_IN_PERSON_NUMBER, BEN_PPF_IO_PERSON_NUMBER,

Table Name	Input Values
	BEN_PPF_IN_PRIMARY_EMAIL_ID, BEN_PPF_IO_PRIMARY_EMAIL_ID, BEN_PPF_IN_PRIMARY_NID_ID, BEN_PPF_IO_PRIMARY_NID_ID, BEN_PPF_IN_PRIMARY_NID_NUMBER, BEN_PPF_IO_PRIMARY_NID_NUMBER, BEN_PPF_IN_PRIMARY_PHONE_ID, BEN_PPF_IO_PRIMARY_PHONE_ID, BEN_PPF_IN_START_DATE, BEN_PPF_IO_START_DATE, BEN_PPE_IN_PERSON_ID, BEN_PPE_IO_PERSON_ID, BEN_PPE_IN_BLOOD_TYPE, BEN_PPE_IO_BLOOD_TYPE, BEN_PPE_IN_BUSINESS_GROUP_ID, BEN_PPE_IO_BUSINESS_GROUP_ID, BEN_PPE_IN_CORRESPONDENCE_LANGUAGE, BEN_PPE_IO_CORRESPONDENCE_LANGUAGE, BEN_PPE_IN_COUNTRY_OF_BIRTH, BEN_PPE_IO_COUNTRY_OF_BIRTH, BEN_PPE_IN_DATE_OF_BIRTH, BEN_PPE_IO_DATE_OF_BIRTH, BEN_PPE_IN_DATE_OF_DEATH, BEN_PPE_IO_DATE_OF_DEATH, BEN_PPE_IN_PARTY_ID,

Table Name	Input Values
	BEN_PPE_IO_PARTY_ID, BEN_PPE_IN_PERSON_ID, BEN_PPE_IO_PERSON_ID, BEN_PPE_IN_REGION_OF_BIRTH, BEN_PPE_IO_REGION_OF_BIRTH, BEN_PPE_IN_START_DATE, BEN_PPE_IO_START_DATE, BEN_PPE_IN_TOWN_OF_BIRTH, BEN_PPE_IO_TOWN_OF_BIRTH, BEN_PPE_IN_USER_GUID, BEN_PPE_IO_USER_GUID
PAY_ELEMENT_ENTRY_VALUES_F	BEN_PEE_IN_PERSON_ID, BEN_PEE_IO_PERSON_ID, BEN_PEE_IN_EFFECTIVE_END_DATE, BEN_PEE_IO_EFFECTIVE_END_DATE, BEN_PEE_IN_EFFECTIVE_START_DATE, BEN_PEE_IO_EFFECTIVE_START_DATE, BEN_PEE_IN_ELEMENT_ENTRY_ID, BEN_PEE_IO_ELEMENT_ENTRY_ID, BEN_PEE_IN_ELEMENT_ENTRY_VALUE_ID, BEN_PEE_IO_ELEMENT_ENTRY_VALUE_ID, BEN_PEE_IN_ENTRY_USAGE_ID, BEN_PEE_IO_ENTRY_USAGE_ID, BEN_PEE_IN_INPUT_VALUE_ID, BEN_PEE_IO_INPUT_VALUE_ID,

Table Name	Input Values
	BEN_PEE_IN_SCREEN_ENTRY_VALUE, BEN_PEE_IO_SCREEN_ENTRY_VALUE
BEN_PER_BNFTS_BAL_F	BEN_PBB_IN_PERSON_ID, BEN_PBB_IO_PERSON_ID, BEN_PBB_IN_EFFECTIVE_START_DATE, BEN_PBB_IO_EFFECTIVE_START_DATE, BEN_PBB_IN_EFFECTIVE_END_DATE, BEN_PBB_IO_EFFECTIVE_END_DATE, BEN_PBB_IN_VAL, BEN_PBB_IO_VAL, BEN_PBB_IN_BNFTS_BAL_ID, BEN_PBB_IO_BNFTS_BAL_ID, BEN_IV_LER_ID
PER_PERSON_ADDR_USAGES_F	BEN_ADD_IN_ADDRESS_ID, BEN_ADD_IO_ADDRESS_ID, BEN_ADD_IN_ADDRESS_TYPE, BEN_ADD_IO_ADDRESS_TYPE, BEN_ADD_IN_BUSINESS_GROUP_ID, BEN_ADD_IO_BUSINESS_GROUP_ID, BEN_ADD_IN_CREATED_BY, BEN_ADD_IO_CREATED_BY, BEN_ADD_IN_EFFECTIVE_END_DATE, BEN_ADD_IO_EFFECTIVE_END_DATE, BEN_ADD_IN_EFFECTIVE_START_DATE, BEN_ADD_IO_EFFECTIVE_START_DATE

Table Name	Input Values
	BEN_ADD_IN_LAST_UPDATED_BY, BEN_ADD_IO_LAST_UPDATED_BY, BEN_ADD_IN_LAST_UPDATE_LOGIN, BEN_ADD_IO_LAST_UPDATE_LOGIN, BEN_ADD_IN_OBJECT_VERSION_NUMBER, BEN_ADD_IO_OBJECT_VERSION_NUMBER, BEN_ADD_IN_PERSON_ADDR_USAGE_ID, BEN_ADD_IO_PERSON_ADDR_USAGE_ID, BEN_ADD_IN_PERSON_ID, BEN_ADD_IO_PERSON_ID
BEN_PER_LE_HABITS_COV_F	BEN_LEH_IN_PERSON_ID, BEN_LEH_IO_PERSON_ID, BEN_LEH_IN_EFFECTIVE_START_DATE, BEN_LEH_IO_EFFECTIVE_START_DATE, BEN_LEH_IN_EFFECTIVE_END_DATE, BEN_LEH_IO_EFFECTIVE_END_DATE, BEN_LEH_IN_LE_HABITS_COV_ID, BEN_LEH_IO_LE_HABITS_COV_ID, BEN_LEH_IN_LEGISLATIVE_DATA_GROUP_ID, BEN_LEH_IO_LEGISLATIVE_DATA_GROUP_ID, BEN_IV_LER_ID
PER_CONTACT_RELATIONSHIPS	BEN_CON_IN_BENEFICIARY_FLAG, BEN_CON_IO_BENEFICIARY_FLAG, BEN_CON_IN_CONTACT_PERSON_ID,

Table Name	Input Values
	BEN_CON_IO_CONTACT_PERSON_ID, BEN_CON_IN_CONTACT_TYPE, BEN_CON_IO_CONTACT_TYPE, BEN_CON_IN_DEPENDENT_FLAG, BEN_CON_IO_DEPENDENT_FLAG, BEN_CON_IN_EFFECTIVE_END_DATE, BEN_CON_IO_EFFECTIVE_END_DATE, BEN_CON_IN_EFFECTIVE_START_DATE, BEN_CON_IO_EFFECTIVE_START_DATE, BEN_CON_IN_EMERGENCY_CONTACT_FLAG, BEN_CON_IO_EMERGENCY_CONTACT_FLAG, BEN_CON_IN_END_LIFE_REASON_ID, BEN_CON_IO_END_LIFE_REASON_ID, BEN_CON_IN_PERSONAL_FLAG, BEN_CON_IO_PERSONAL_FLAG, BEN_CON_IN_PERSON_ID, BEN_CON_IO_PERSON_ID, BEN_CON_IN_PRIMARY_CONTACT_FLAG, BEN_CON_IO_PRIMARY_CONTACT_FLAG, BEN_CON_IN_RLTD_PER_RSDS_W_DSGNTR_FLAG, BEN_CON_IO_RLTD_PER_RSDS_W_DSGNTR_FLAG, BEN_CON_IN_START_LIFE_REASON_ID, BEN_CON_IO_START_LIFE_REASON_ID, BEN_CON_IN_THIRD_PARTY_PAY_FLAG, BEN_CON_IO_THIRD_PARTY_PAY_FLAG

Table Name	Input Values
BEN_BENEFIT_RELATIONS_F	BEN_BRE_IN_PERSON_ID, BEN_BRE_IO_PERSON_ID, BEN_BRE_IN_EFFECTIVE_START_DATE, BEN_BRE_IO_EFFECTIVE_START_DATE, BEN_BRE_IN_EFFECTIVE_END_DATE, BEN_BRE_IO_EFFECTIVE_END_DATE, BEN_BRE_IN_BENEFIT_RELATION_ID, BEN_BRE_IO_BENEFIT_RELATION_ID, BEN_BRE_IN_LEGAL_ENTITY_ID, BEN_BRE_IO_LEGAL_ENTITY_ID, BEN_IV_LER_ID, BEN_IN_UPDATED_SOURCE, BEN_IO_UPDATED_SOURCE, BEN_IN_ORIGINAL_SOURCE, BEN_IO_ORIGINAL_SOURCE
BEN_PER_BENEFIT_GROUP_F	BEN_BBG_IN_PERSON_ID, BEN_BBG_IO_PERSON_ID, BEN_bbg_IN_EFFECTIVE_START_DATE, BEN_bbg_IO_EFFECTIVE_START_DATE, BEN_bbg_IN_EFFECTIVE_END_DATE, BEN_bbg_IO_EFFECTIVE_END_DATE, BEN_bbg_IN_LE_BENEFIT_GROUP_ID, BEN_bbg_IO_BENEFIT_GROUP_ID, BEN_bbg_IN_LEGISLATIVE_DATA_GROUP_ID, BEN_bbg_IO_LEGISLATIVE_DATA_GROUP_ID,

Table Name	Input Values
	BEN_IV_LER_ID
PER_ASSIGN_WORK_MEASURES_F	BEN_AWM_IN_PERSON_ID, BEN_AWM_IO_PERSON_ID, BEN_AWM_IN_ACTION_OCCURRENCE_ID, BEN_AWM_IO_ACTION_OCCURRENCE_ID, BEN_AWM_IN_ADDS_TO_BUDGET, BEN_AWM_IO_ADDS_TO_BUDGET, BEN_AWM_IN_ASSIGNMENT_ID, BEN_AWM_IO_ASSIGNMENT_ID, BEN_AWM_IN_ASSIGN_WORK_MEASURE_ID, BEN_AWM_IO_ASSIGN_WORK_MEASURE_ID, BEN_AWM_IN_BUSINESS_GROUP_ID, BEN_AWM_IO_BUSINESS_GROUP_ID, BEN_AWM_IN_EFFECTIVE_END_DATE, BEN_AWM_IO_EFFECTIVE_END_DATE, BEN_AWM_IN_EFFECTIVE_START_DATE, BEN_AWM_IO_EFFECTIVE_START_DATE, BEN_AWM_IN_UNIT, BEN_AWM_IO_UNIT, BEN_AWM_IN_VALUE, BEN_AWM_IO_VALUE
PER_ALL_ASSIGNMENTS_M	BEN_ASG_IN_EFFECTIVE_START_DATE, BEN_ASG_IO_EFFECTIVE_START_DATE, BEN_ASG_IN_EFFECTIVE_END_DATE,

Table Name	Input Values
	BEN_ASG_IO_EFFECTIVE_END_DATE, BEN_ASG_IN_ORGANIZATION_ID, BEN_ASG_IO_ORGANIZATION_ID, BEN_ASG_IN_GRADE_ID, BEN_ASG_IO_GRADE_ID, BEN_ASG_IN_JOB_ID, BEN_ASG_IO_JOB_ID, BEN_ASG_IN_WORK_TERMS_ASSIGNMENT_ID, BEN_ASG_IO_WORK_TERMS_ASSIGNMENT_ID, BEN_ASG_IN_LOCATION_ID, BEN_ASG_IO_LOCATION_ID, BEN_ASG_IN_ASSIGNMENT_STATUS_TYPE_ID, BEN_ASG_IO_ASSIGNMENT_STATUS_TYPE_ID, BEN_ASG_IN_ASSIGNMENT_TYPE, BEN_ASG_IO_ASSIGNMENT_TYPE, BEN_ASG_IN_PRIMARY_FLAG, BEN_ASG_IO_PRIMARY_FLAG, BEN_ASG_IN_EMPLOYMENT_CATEGORY, BEN_ASG_IO_EMPLOYMENT_CATEGORY, BEN_ASG_IN_BARGAINING_UNIT_CODE, BEN_ASG_IO_BARGAINING_UNIT_CODE, BEN_ASG_IN_HOURLY_SALARIED_CODE, BEN_ASG_IO_HOURLY_SALARIED_CODE, BEN_ASG_IN_NORMAL_HOURS, BEN_ASG_IO_NORMAL_HOURS,

Table Name	Input Values
	BEN_IV_LER_ID
	BEN_ASG_IN_COLLECTIVE_AGREEMENT_ID
	BEN_ASG_IO_COLLECTIVE_AGREEMENT_ID
	BEN_ASG_IN_REASON_CODE
	BEN_ASG_IO_REASON_CODE
	BEN_ASG_IN_ASSIGNMENT_NUMBER
	BEN_ASG_IO_ASSIGNMENT_NUMBER
	BEN_ASG_IN_ASSIGNMENT_SEQUENCE
	BEN_ASG_IO_ASSIGNMENT_SEQUENCE
	BEN_ASG_IN_ACTION_OCCURRENCE_ID
	BEN_ASG_IO_ACTION_OCCURRENCE_ID
	BEN_ASG_IN_CONTRACT_ID
	BEN_ASG_IO_CONTRACT_ID
	BEN_ASG_IN_FULL_PART_TIME
	BEN_ASG_IO_FULL_PART_TIME
	BEN_ASG_IN_GRADE_LADDER_PGM_ID
	BEN_ASG_IO_GRADE_LADDER_PGM_ID
	BEN_ASG_IN_LEGAL_ENTITY_ID
	BEN_ASG_IO_LEGAL_ENTITY_ID
	BEN_ASG_IN_LEGISLATION_CODE
	BEN_ASG_IO_LEGISLATION_CODE
	BEN_ASG_IN_MANAGER_FLAG
	BEN_ASG_IO_MANAGER_FLAG
	BEN_ASG_IN_PERMANENT_TEMPORARY_FLAG
	BEN_ASG_IO_PERMANENT_TEMPORARY_FLAG

Table Name	Input Values
	BEN_ASG_IN_PRIMARY_ASSIGNMENT_FLAG BEN_ASG_IO_PRIMARY_ASSIGNMENT_FLAG BEN_ASG_IN_PRIMARY_WORK_RELATION_FLAG BEN_ASG_IO_PRIMARY_WORK_RELATION_FLAG BEN_ASG_IN_PRIMARY_WORK_TERMS_FLAG BEN_ASG_IO_PRIMARY_WORK_TERMS_FLAG BEN_ASG_IN_RETIREMENT_DATE BEN_ASG_IO_RETIREMENT_DATE BEN_ASG_IN_SYSTEM_PERSON_TYPE BEN_ASG_IO_SYSTEM_PERSON_TYPE BEN_ASG_IN_UNION_ID BEN_ASG_IO_UNION_ID
PER_ADDRESSES_F	BEN_ADD_IN_ADDRESS_ID, BEN_ADD_IO_ADDRESS_ID, BEN_ADD_IN_BUSINESS_GROUP_ID, BEN_ADD_IO_BUSINESS_GROUP_ID, BEN_ADD_IN_EFFECTIVE_END_DATE, BEN_ADD_IO_EFFECTIVE_END_DATE, BEN_ADD_IN_EFFECTIVE_START_DATE, BEN_ADD_IO_EFFECTIVE_START_DATE
PER_ABSENCE_ATTENDANCES	BEN_ABA_IN_SICKNESS_START_DATE BEN_ABA_IN_SICKNESS_END_DATE BEN_ABA_IN_DATE_NOTIFICATION BEN_ABA_IO_DATE_NOTIFICATION BEN_ABA_IN_DATE_PROJECTED_END

Table Name	Input Values
	BEN_ABA_IO_DATE_PROJECTED_END
	BEN_ABA_IN_DATE_PROJECTED_START
	BEN_ABA_IO_DATE_PROJECTED_START
	BEN_ABA_IN_TIME_END
	BEN_ABA_IO_TIME_END
	BEN_ABA_IN_TIME_PROJECTED_END
	BEN_ABA_IO_TIME_PROJECTED_END
	BEN_ABA_IN_TIME_PROJECTED_START
	BEN_ABA_IO_TIME_PROJECTED_START
	BEN_LER_ID
	BEN_ABA_IN_ABS_INFORMATION_CATEGORY
	BEN_ABA_IN_ABS_INFORMATION1
	BEN_ABA_IN_ABS_INFORMATION2
	BEN_ABA_IN_ABS_INFORMATION3
	BEN_ABA_IN_ABS_INFORMATION4
	BEN_ABA_IN_ABS_INFORMATION5
	BEN_ABA_IN_ABS_INFORMATION6
	BEN_ABA_IN_ABS_INFORMATION7
	BEN_ABA_IN_ABS_INFORMATION8
	BEN_ABA_IN_ABS_INFORMATION9
	BEN_ABA_IN_ABS_INFORMATION10
	BEN_ABA_IN_ABS_INFORMATION11
	BEN_ABA_IN_ABS_INFORMATION12
	BEN_ABA_IN_ABS_INFORMATION13
	BEN_ABA_IN_ABS_INFORMATION14

Table Name	Input Values
	BEN_ABA_IN_ABS_INFORMATION15
	BEN_ABA_IN_ABS_INFORMATION16
	BEN_ABA_IN_ABS_INFORMATION17
	BEN_ABA_IN_ABS_INFORMATION18
	BEN_ABA_IN_ABS_INFORMATION19
	BEN_ABA_IN_ABS_INFORMATION20
	BEN_ABA_IN_ABS_INFORMATION21
	BEN_ABA_IN_ABS_INFORMATION22
	BEN_ABA_IN_ABS_INFORMATION23
	BEN_ABA_IN_ABS_INFORMATION24
	BEN_ABA_IN_ABS_INFORMATION25
	BEN_ABA_IN_ABS_INFORMATION26
	BEN_ABA_IN_ABS_INFORMATION27
	BEN_ABA_IN_ABS_INFORMATION28
	BEN_ABA_IN_ABS_INFORMATION29
	BEN_ABA_IN_ABS_INFORMATION30
	BEN_ABA_IN_ATTRIBUTE_CATEGORY
	BEN_ABA_IN_ATTRIBUTE1
	BEN_ABA_IN_ATTRIBUTE2
	BEN_ABA_IN_ATTRIBUTE3
	BEN_ABA_IN_ATTRIBUTE4
	BEN_ABA_IN_ATTRIBUTE5
	BEN_ABA_IN_ATTRIBUTE6
	BEN_ABA_IN_ATTRIBUTE7
	BEN_ABA_IN_ATTRIBUTE8

Table Name	Input Values
	BEN_ABA_IN_ATTRIBUTE9
	BEN_ABA_IN_ATTRIBUTE10
	BEN_ABA_IN_ATTRIBUTE11
	BEN_ABA_IN_ATTRIBUTE12
	BEN_ABA_IN_ATTRIBUTE13
	BEN_ABA_IN_ATTRIBUTE14
	BEN_ABA_IN_ATTRIBUTE15
	BEN_ABA_IN_ATTRIBUTE16
	BEN_ABA_IN_ATTRIBUTE17
	BEN_ABA_IN_ATTRIBUTE18
	BEN_ABA_IN_ATTRIBUTE19
	BEN_ABA_IN_ATTRIBUTE20
	BEN_ABA_IO_ABS_INFORMATION_CATEGORY
	BEN_ABA_IO_ABS_INFORMATION1
	BEN_ABA_IO_ABS_INFORMATION2
	BEN_ABA_IO_ABS_INFORMATION3
	BEN_ABA_IO_ABS_INFORMATION4
	BEN_ABA_IO_ABS_INFORMATION5
	BEN_ABA_IO_ABS_INFORMATION6
	BEN_ABA_IO_ABS_INFORMATION7
	BEN_ABA_IO_ABS_INFORMATION8
	BEN_ABA_IO_ABS_INFORMATION9
	BEN_ABA_IO_ABS_INFORMATION10
	BEN_ABA_IO_ABS_INFORMATION11
	BEN_ABA_IO_ABS_INFORMATION12

Table Name	Input Values
	BEN_ABA_IO_ABS_INFORMATION13
	BEN_ABA_IO_ABS_INFORMATION14
	BEN_ABA_IO_ABS_INFORMATION15
	BEN_ABA_IO_ABS_INFORMATION16
	BEN_ABA_IO_ABS_INFORMATION17
	BEN_ABA_IO_ABS_INFORMATION18
	BEN_ABA_IO_ABS_INFORMATION19
	BEN_ABA_IO_ABS_INFORMATION20
	BEN_ABA_IO_ABS_INFORMATION21
	BEN_ABA_IO_ABS_INFORMATION22
	BEN_ABA_IO_ABS_INFORMATION23
	BEN_ABA_IO_ABS_INFORMATION24
	BEN_ABA_IO_ABS_INFORMATION25
	BEN_ABA_IO_ABS_INFORMATION26
	BEN_ABA_IO_ABS_INFORMATION27
	BEN_ABA_IO_ABS_INFORMATION28
	BEN_ABA_IO_ABS_INFORMATION29
	BEN_ABA_IO_ABS_INFORMATION30
	BEN_ABA_IO_ATTRIBUTE_CATEGORY
	BEN_ABA_IO_ATTRIBUTE1
	BEN_ABA_IO_ATTRIBUTE2
	BEN_ABA_IO_ATTRIBUTE3
	BEN_ABA_IO_ATTRIBUTE4
	BEN_ABA_IO_ATTRIBUTE5
	BEN_ABA_IO_ATTRIBUTE6

Table Name	Input Values
	BEN_ABA_IO_ATTRIBUTE7 BEN_ABA_IO_ATTRIBUTE8 BEN_ABA_IO_ATTRIBUTE9 BEN_ABA_IO_ATTRIBUTE10 BEN_ABA_IO_ATTRIBUTE11 BEN_ABA_IO_ATTRIBUTE12 BEN_ABA_IO_ATTRIBUTE13 BEN_ABA_IO_ATTRIBUTE14 BEN_ABA_IO_ATTRIBUTE15 BEN_ABA_IO_ATTRIBUTE16 BEN_ABA_IO_ATTRIBUTE17 BEN_ABA_IO_ATTRIBUTE18 BEN_ABA_IO_ATTRIBUTE19 BEN_ABA_IO_ATTRIBUTE20

Appendix 3: Formula Function

Here's how you use the BEN_ FN_GET_CHAR_VALUE formula function.

Mandatory Contexts:

- HR_ASSIGNMENT_ID
- EFFECTIVE_DATE
- BUSINESS_GROUP_ID

Input Parameters:

Data type is Char for all parameters:

- TABLE_NAME

- COLUMN_NAME
- PLAN_NAME
- OPTION_NAME
- ADD_KEY_NAME
- ADD_KEY_VALUE

The ADD_KEY_NAME and ADD_KEY_VALUE parameters are conditionally supported for limited use cases. Refer to example 3.

Return Variables

Variable name could be anything. Data type is CHAR.

Sample Function Call:

Example 1 : ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT', 'ENROLLED', 'Medical', 'Employee')

Example 2 : l_if_pl_enrolled = ben_fn_get_char_value('BEN_PRTT_ENRT_RSLT','ENROLLED','med_plan','NA')

Example 3:
l_dpnt_ctfn=BEN_FN_GET_CHAR_VALUE('BEN_CVRD_DPNT_CTFN_PRVDD','PROVIDED','PlanA','OptionA',to_char(l_dpnt_id),'Bir
certificate')

Table And Columns Supported By This Function

Table and columns supported by BEN_FN_GET_CHAR_VALUE

Table Name	Column Name	Usage
PER_JOB_EXTRA_INFO_F	JEI_ATTRIBUTE1, JEI_ATTRIBUTE2, JEI_ATTRIBUTE3, JEI_ATTRIBUTE4, JEI_ATTRIBUTE5, JEI_ATTRIBUTE6, JEI_ATTRIBUTE7, JEI_ATTRIBUTE8, JEI_ATTRIBUTE9, JEI_ATTRIBUTE10, JEI_ATTRIBUTE11,	BEN_FN_GET_CHAR_VALUE('PER_JOB_EXTRA_INFO_F','JEI_ATTRIBUTE1') This function call returns the value stored in JEI_ATTRIBUTE1 of the table PER_JOB_EXTRA_INFO_F.

Table Name	Column Name	Usage
	JEI_ATTRIBUTE12,	
	JEI_ATTRIBUTE13,	
	JEI_ATTRIBUTE14,	
	JEI_ATTRIBUTE15,	
	JEI_ATTRIBUTE16,	
	JEI_ATTRIBUTE17,	
	JEI_ATTRIBUTE18,	
	JEI_ATTRIBUTE19,	
	JEI_ATTRIBUTE20,	
	JEI_ATTRIBUTE21,	
	JEI_ATTRIBUTE22,	
	JEI_ATTRIBUTE23,	
	JEI_ATTRIBUTE24,	
	JEI_ATTRIBUTE25,	
	JEI_ATTRIBUTE26,	
	JEI_ATTRIBUTE27,	
	JEI_ATTRIBUTE28,	
	JEI_ATTRIBUTE29,	
	JEI_ATTRIBUTE30,	
	JEI_INFORMATION1,	
	JEI_INFORMATION2,	
	JEI_INFORMATION3,	
	JEI_INFORMATION4,	
	JEI_INFORMATION5,	
	JEI_INFORMATION6,	

Table Name	Column Name	Usage
	JEI_INFORMATION7, JEI_INFORMATION8, JEI_INFORMATION9, JEI_INFORMATION10, JEI_INFORMATION11, JEI_INFORMATION12, JEI_INFORMATION13, JEI_INFORMATION14, JEI_INFORMATION15, JEI_INFORMATION16, JEI_INFORMATION17, JEI_INFORMATION18, JEI_INFORMATION19, JEI_INFORMATION20, JEI_INFORMATION21, JEI_INFORMATION22, JEI_INFORMATION23, JEI_INFORMATION24, JEI_INFORMATION25, JEI_INFORMATION26, JEI_INFORMATION27, JEI_INFORMATION28, JEI_INFORMATION29, JEI_INFORMATION30	

Table Name	Column Name	Usage
BEN_PRTT_ENRT_RSLT	ADMIN_CATEGORY_CD, BNFT_AMT, BNFT_NNMNTRY_UOM, BNFT_TYP_CD, COMP_LVL_CD, ENROLLED, ENRT_CVG_STRT_DT, ENRT_CVG_THRU_DT, IMPTD_INCM_CALC_CD, PRTT_ENRT_RSLT_ID, RPLCS_SSPNDD_RSLT_ID, SS_CATEGORY_CD, SSPNDD_FLAG, SVNGS_PLN_FLAG, UOM,ORGNL_ENRT_DT, ERLST_DEENRT_DT, ENRT_OVRID_THRU_DT, INTERIM_FLAG, ENRT_OVRIDN_FLAG, ENRT_MTHD_CD	BEN_FN_GET_CHAR_VALUE('BEN_PRTT_ENRT_RSLT','ENROLLED','Healthy HMO' /* plan name */,'Employee Only' /* option name */) This function call will return Y if the participant is enrolled in the plan (Healthy HMO) and option (Employee Only). If the participant is not enrolled then 'N' will be the return value.
BEN_ELIG_CVRD_DPNT	ENROLLED, CVG_STRT_DT, CVG_THRU_DT, DPNT_PERSON_ID, RLNSHP_CD	BEN_FN_GET_CHAR_VALUE('BEN_ELIG_CVRD_DPNT','ENROLLED','Employee Basic Life' /* Plan Name */,'$50,000' /* Option Name */, 'DEPENDENT_FULL_NAME' /* Key name */, 'Jones, Fred' /* dependent name (value) */) This function call returns 'Y' if the dependent is enrolled by the participant in the plan (Employee Basic Life) and in option ($50,

Table Name	Column Name	Usage
		000). If there is no enrollment found then 'N' is returned.
BEN_ELIG_DPNT	CVRD_FLAG, DPNT_INELIG_FLAG, RLNSHP_CD, ELIG_STRT_DT, ELIG_THRU_DT, OVRDN_FLAG, INELG_RSN_CD, ELIG_PER_ELCTBL_CHC_ID, PER_IN_LER_ID, ELIG_CVRD_DPNT_ID, INELG_RSN_CD, DPNT_PERSON_ID, CTFN_REQD_FLAG, PCP_DSGN_CD	BEN_FN_GET_CHAR_VALUE('BEN_ELIG_DPNT','CVRD_FLAG','Employee Basic Life' /* Plan Name */,'$50,000' /* Option Name */, 'DEPENDENT_FULL_NAME' /* Key name */, 'Jones, Fred' /* dependent name (value) */) This function call returns 'Y' if the dependent is eligible to participate in plan (Employee Basic Life) and option ($50,000). If there is no eligible dependent record found then 'N' is returned.
BEN_CVRD_DPNT_CTFN_PRVDD	PROVIDED	BEN_FN_GET_CHAR_VALUE('BEN_CVRD_DPNT_CTFN_PRVDD','PROVIDED','Healthy HMO' /* Plan Name */,'Employee + children' /* Option Name. Pass 'NA' if the plan is not associated with any option */,to_char(l_dpnt_id) /* personId of the dependent */,'Legal custody certificate' /* certification type */) This function call returns 'Y' if a certification of type (Legal custody certificate) is provided by the participant for the dependent identified by personId. Possible certification types are: • Adoption certificate • Birth certificate • Domestic partner certificate

Table Name	Column Name	Usage
		• Legal custody certificate • Marriage certificate Alternatively, the following parameters can be used to check if the certification was provided in a previous life event for the dependent. The determinant NA_CHECK_ONCE should be passed as the plan name. BEN_FN_GET_CHAR_VALUE('BEN_CVRD_DPNT_CTFN_PRVDD','PROVIDED','NA_CHECK_ONCE' /* determinant */,' ' /* space */,to_char(l_dpnt_id) /* personId of the dependent */,'Legal custody certificate' /* certification type */)
BEN_PRTT_ENRT_CTFN_PRVDD	ENRT_CTFN_RECD_DT, ENRT_CTFN_DND_DT	BEN_FN_GET_CHAR_VALUE('BEN_PRTT_ENRT_CTFN_PRVDD','ENRT_CTFN_RECD_DT', 'Employee Supplemental Life' /* Plan Name */, 'NA' /* you want to check against any option within the plan */,'Proof of good health' /* certification type */) This function call returns the certification received date (of the participant) for the plan (Employee Supplemental Life) and any option under it. Possible certification types that can be checked for are: • Domestic partner affidavit • Proof of external coverage • Proof of good health • Proof of other coverage
PER_CONTACT_RELSHIPS_F	DAUGHTER_COUNT, OTHERS_COUNT, SON_COUNT, SPOUSE_COUNT, DP_COUNT, DP_MALE_COUNT, DP_FEMALE_COUNT,	BEN_FN_GET_CHAR_VALUE('PER_CONTACT_RELSHIPS_F','DAUGHTER_COUNT',' ' /* space (not used) */,' ' /* space (not used) */, 'LEGISLATION_CODE' /* key */,'US' /* Pass the legislation code of the participant */) This function call returns the aggregate counts of the dependents based on the contact type.

Table Name	Column Name	Usage
	ADOPTED_CHILD_COUNT, STEP_CHILD_COUNT, FOSTER_CHILD_COUNT	
BEN_PER_IN_LER	PER_IN_LER_ID, BENEFIT_RELATION_ID, LF_EVT_OCRD_DT, PROCD_DT, STRTD_DT, VOIDD_DT, PERSON_ID, BCKT_DT, CLSD_DT, NTFN_DT, LEGAL_ENTITY_ID, BENEFIT_REL_SYSTEM_CD, PRIMARY_REL, REL_PRMRY_ASG_ID, NAME, LER_ID	BEN_FN_GET_CHAR_VALUE('BEN_PER_IN_LER','LF_EVT_OCRD_DT',' ' /* space (not used) */,' ' /* space (not used) */,'BENEFIT_RELATION_NAME' /* key */,'Default' /* benefit relation name as seen in the UI */) This function call returns life event date of the started event corresponding to the benefit relation name which is passed as a parameter.
PAY_ELEMENT_ENTRIES_F	AGGREGATE	BEN_FN_GET_CHAR_VALUE('PAY_ELEMENT_ENTRIES_F','ER' /* element name */,'VAL' /* input value name */,'2014/01/01' /* from date */,'2014/12/31' /* to date */) This function call returns the aggregate of the element entry values for an element for the date range specified by from and to dates.

Table Name	Column Name	Usage
BEN_PRTT_RT_VAL	AGG_RT_VAL, AGG_CMCD_RT_VAL	BEN_FN_GET_CHAR_VALUE('BEN_PRTT_RT_VAL','AGG_RT_VAL','Healthy HMO' /* plan name */,'Employee Only' /* option name */, '2014/01/01' /* from date */,'2014/12/31' /* to date */) This function call returns the aggregate of the rates for the enrollment in Healthy HMO:Employee Only for the date range specified by from and to dates. All rates including primary/secondary/others will be considered.
BEN_PRTT_RT_VAL	AGG_RT_VAL, AGG_CMCD_RT_VAL	BEN_FN_GET_CHAR_VALUE('BEN_PRTT_RT_VAL','AGG_RT_VAL','ACTIVITY_BASE_RATE' /* determinant to indicate that only a single rate should be summed up */,'Healthy_HMO_Employee_only_Vision' /* rate name */, '2014/01/01' /* from date */,'2014/12/31' /* to date */) This function call returns the aggregate of the rate specified by the activity base rate name for the date range specified by from and to dates.
PAY_TIME_PERIODS	PAYROLL_ID, PAYROLL_TYPE, PERIOD_NUM, PERIOD_NAME, START_DATE, END_DATE, CUT_OFF_DATE, DEFAULT_PAYDATE, TOTAL_TP_IN_CALENDAR_YEAR	BEN_FN_GET_CHAR_VALUE('PAY_TIME_PERIODS','DEFAULT_PAYDATE',' ' /* space (not used) */,' ' /* space (not used) */,'START_TIME' /* key */,'2014/12/05' /* date used to identify the pay period */) This function call returns the pay date of the corresponding participant's payroll. The value for the START_TIME identifies the date which is used to identify the pay period. For example if the START_TIME 2014/12/05 and the participant is on a monthly payroll, then the default pay date for the December time period is returned.

Appendix 4: Formula Errors: Compile time

Here are the descriptions of the various formula errors during the compile time:

Formula errors table

Formula Error	Description
Syntax Error	The formula text violates the grammatical rules for the formula language. Example: Using IF1 instead of IF for an IF statement.
Incorrect Statement Order	ALIAS, DEFAULT, or INPUT statements appear after other statements.
Misuse of ASSIGNMENT Statement	An ASSIGNMENT assigns a value to a database item. A context is assigned a value externally to a CHANGE-CONTEXTS statement. A non-context variable is assigned a value within a CHANGE-CONTEXTS statement.
Misuse of ALIAS Statement	An ALIAS statement may only be used for a database item.
Missing DEFAULT Statement	A database item with defaulting specified must have a DEFAULT statement.
Misuse of DEFAULT Statement	A DEFAULT statement is specified for a variable other than an input or database item.
Uninitialized Variable	The compiler detects that a variable is uninitialized when used. The compiler cannot do in all cases. This error often occurs when the intention is to use a database item, but the database item is not available to the formula (it does not exist, or partitioning restrictions mean it's not available to the formula).
Missing Function Call	A function call is not recognized. The combination of return type, function name, and parameter types does not match any available function.
Incorrect Operator Usage	An instance of formula operator use does not match the permitted uses of that operator. Example: The + operator has two permitted uses. The operands are both of data type NUMBER, or both of data type TEXT.
Inconsistent Data Type Usage	A formula variable is being used as if it is of more than one data type. Example: Variable A is assigned a NUMBER value at the start of the formula, but a TEXT value later in the formula. A database item or context is being used with the wrong data type.
EXIT Statement Not Within WHILE Loop	
Mixed Use of Context	A variable is later used as a context or vice versa. Example: AREA1 is assigned a value so it's used as an ordinary variable, but later AREA1 is used as a context in a GET_CONTEXT call.

Appendix 5: Formula Errors: Run time

Here are the descriptions of the various formula errors during the run time:

Formula errors table

Formula Error	Description
Uninitialized Context	A context is not set when required for a database item or function call.
Uninitialized Variable	Where the formula compiler cannot fully determine whether or not a variable or context is initialized when used, it generates code to test whether or not the variable is initialized. When the formula executes and the variable or context is not initialized an error is raised.
Divide by Zero	This error is raised when a numeric value is divided by zero.
No Data Found	This error is raised when a database item of a non-array type unexpectedly fails to return any data. If the database item can return no data then it should allow defaulting. This error can also be raised from within a formula function. The cause is an error in the formula function code.
Too Many Rows	This error is raised when a database item of a non-array type unexpectedly returns more than a single row of data. The cause is an incorrect assumption made about the data being accessed. This error can also be raised from within a formula function. The cause is an error in the formula function code.
NULL Data Found	This error is raised when a database item unexpectedly returns a NULL data value. If the database item can return a NULL value then it should allow defaulting.
Value Exceeded Allowable Range	This error is raised for a variety of reasons such as exceeding the maximum allowable length of a string.
Invalid Number	This error is raised when an attempt is made to convert a non-numeric string to a number.
User Defined Function Error	This error is raised from within a formula function. The error message text is output as part of the formula error message.
External Function Call Error	A formula function returned an error, but did not provide any additional information to the formula code. The function might have output error information to the logging destination for the executing code.
Function Returned NULL Value	A formula function returned a NULL value.
Too Many Iterations	A single WHILE loop, or a combination of WHILE loops, has exceeded the maximum number of permitted iterations. The error is raised to terminate loops that could go on forever. This indicates a programming error within the formula.
Array Data Value Not Set	The formula attempted to access an array index that has no data value. This is an error in the formula code.
Invalid Type Parameter for WSA_EXISTS	An invalid data type was specified in the WSA_EXISTS call.
Incorrect Data Type For Stored Item	When retrieving an item using WSA_GET, the item's actual data type does not match that of the stored item. This is an error within the calling formula.

Formula Error	Description
Called Formula Not Found	The called formula could not be resolved when attempting to call a formula from a formula. This could be due to an error in the calling formula, or because of installation issues.
Recursive Formula Call	An attempt was made to call a formula from itself. The call could be directly or indirectly via another called formula. Recursive formula calling is not permitted.
Input Has Different Types In Called and Calling Formulas	When calling a formula from a formula, the actual formula input data type within the called formula does not match the data type specified from the calling formula.
Output Has Different Types In Called and Calling Formulas	When calling a formula from a formula, the actual formula output data type within the called formula does not match the data type specified from the calling formula.
Too Many Formula Calls	There are two many formula from formula calls. This is a problem with the formulas.

Appendix 6: Database Items

The following table lists newly created database items that can be used in release 21A onward.

Database items table

User Entity	Required Contexts	Array Database Item	Database Item Name
BEN_ELIG_PER_ELCTBL_CHC_TN_UE	HR_ASSIGNMENT_ID, BUSINESS_GROUP_ID, EFFECTIVE_DATE	Yes	BEN_EPE_INTERIM_FLAG_TN BEN_EPE_LER_CHG_DPNT_CVG_CD_TN BEN_EPE_MNDTRY_FLAG_TN BEN_EPE_MUST_ENRL_ANTHR_PL_ID_NN BEN_EPE_OIPL_ID_NN BEN_EPE_PER_IN_LER_ID_NN BEN_EPE_PGM_ID_NN BEN_EPE_PIL_ELCTBL_CHC_POPL_ID_NN BEN_EPE_PLIP_ID_NN BEN_EPE_PL_ID_NN BEN_EPE_PL_TYP_ID_NN BEN_EPE_PROCG_END_DT_DN BEN_EPE_PRTT_ENRT_RSLT_ID_NN BEN_EPE_PTIP_ID_NN BEN_EPE_ROLL_CRS_FLAG_TN

User Entity	Required Contexts	Array Database Item	Database Item Name
			BEN_EPE_SPCL_RT_OIPL_ID_NN
			BEN_EPE_SPCL_RT_PL_ID_NN
			BEN_EPE_YR_PERD_ID_NN
			BEN_EPE_ALWS_DPNT_DSGN_FLAG_TN
			BEN_EPE_APPROVAL_STATUS_CD_TN
			BEN_EPE_AUTO_ENRT_FLAG_TN
			BEN_EPE_BNFT_PRVDR_POOL_ID_NN
			BEN_EPE_BNF_DSGN_CD_TN
			BEN_EPE_BUSINESS_GROUP_ID_NN
			BEN_EPE_CMBN_PLIP_ID_NN
			BEN_EPE_CMBN_PTIP_ID_NN
			BEN_EPE_CMBN_PTIP_OPT_ID_NN
			BEN_EPE_COMP_LVL_CD_TN
			BEN_EPE_CRNTLY_ENRD_FLAG_TN
			BEN_EPE_CTFN_RQD_FLAG_TN
			BEN_EPE_CVRD_FLAG_TN
			BEN_EPE_DFLT_FLAG_TN
			BEN_EPE_DPNT_CVG_STRT_DT_CD_TN
			BEN_EPE_DPNT_CVG_STRT_DT_RL_NN
			BEN_EPE_DPNT_DSGN_CD_TN
			BEN_EPE_ELCTBL_FLAG_TN
			BEN_EPE_ELIG_FLAG_TN
			BEN_EPE_ELIG_PER_ELCTBL_CHC_ID_NN
			BEN_EPE_ENRT_CVG_STRT_DT_CD_TN
			BEN_EPE_ENRT_CVG_STRT_DT_DN
			BEN_EPE_ENRT_CVG_STRT_DT_RL_NN

User Entity	Required Contexts	Array Database Item	Database Item Name
			BEN_EPE_ERLST_DEENRT_DT_DN
			BEN_EPE_INELIG_RSN_CD_TN
			BEN_EPE_LER_NAME_TN
			BEN_EPE_LER_INSTRUCTION_TEXT_TN
			BEN_EPE_LER_ID_NN
			BEN_EPE_LER_GLOBAL_FLAG_TN
			BEN_EPE_LER_DESC_TXT_TN
			BEN_EPE_LER_QUALG_EVT_FLAG_TN
			BEN_EPE_LER_SELF_ASSIGNED_EVENT_FLAG_TN
			BEN_EPE_LER_SHORT_CODE_TN
			BEN_EPE_LER_SHORT_NAME_TN
			BEN_EPE_LER_SLCTBL_SLF_SVC_CD_TN
			BEN_EPE_LER_TYP_CD_TN
			BEN_EPE_OPT_NAME_TN
			BEN_EPE_PGM_NAME_TN
			BEN_EPE_PGM_GLOBAL_FLAG_TN
			BEN_EPE_PGM_EFFECTIVE_START_DATE_DN
			BEN_EPE_PGM_EFFECTIVE_END_DATE_DN
			BEN_EPE_PGM_ALWS_UNRSTRCTD_ENRT_FLAG_TN
			BEN_EPE_PGM_SHORT_CODE_TN
			BEN_EPE_PGM_RATE_LEVEL_TN
			BEN_EPE_PGM_STAT_CD_TN
			BEN_EPE_PGM_SHORT_NAME_TN
			BEN_EPE_PL_NAME_TN
			BEN_EPE_PL_RATE_LEVEL_TN
			BEN_EPE_PL_ALWS_UNRSTRCTD_ENRT_FLAG_TN
			BEN_EPE_PL_GLOBAL_FLAG_TN

User Entity	Required Contexts	Array Database Item	Database Item Name
			BEN_EPE_PL_EFFECTIVE_START_DATE_DN BEN_EPE_PL_SHORT_NAME_TN BEN_EPE_PL_STAT_CD_TN BEN_EPE_PL_FUNCTION_CODE_TN BEN_EPE_PL_EFFECTIVE_END_DATE_DN BEN_EPE_PL_SHORT_CODE_TN BEN_EPE_PTP_SS_CATEGORY_CD_TN BEN_EPE_PTP_NAME_TN BEN_EPE_PTP_GLOBAL_FLAG_TN BEN_EPE_PTP_CARRIER_PLAN_TYPE_NAME_TN BEN_EPE_PTP_ADMIN_CATEGORY_CD_TN
BEN_PRTT_LEG_DISCMR_ACTN_TN	PERSON_ID, PER_IN_LER_ID, BUSINESS_GROUP_ID, EFFECTIVE_DATE	Yes	BEN_PLD_ACTION_TIME_DN BEN_PLD_STATUS_TN BEN_PLD_BENEFIT_RELATION_NAME_TN BEN_PLD_LEGAL_DISCLAIMER_DESC_TN BEN_PLD_LER_NAME_TN
BEN_PER_BNFTS_BAL_F_TN	EFFECTIVE_DATE, BUSINESS_GROUP_ID, PERSON_ID	Yes	BEN_PBB_BNFTS_BAL_NAME_TN BEN_PBB_BUSINESS_GROUP_ID_NN BEN_PBB_VAL_NN BEN_PBB_EFFECTIVE_START_DATE_DN BEN_PBB_PERSON_ID_NN BEN_PBB_PER_BNFTS_BAL_ID_NN BEN_PBB_BNFTS_BAL_ID_NN BEN_PBB_EFFECTIVE_END_DATE_DN

User Entity	Required Contexts	Array Database Item	Database Item Name
BEN_PER_LE_HABITS_COV_F	PERSON_ID, BUSINESS_GROUP_ID, EFFECTIVE_DATE	No	BEN_PHB_COORD_MED_CVG_END_DT BEN_PHB_TOBACCO_TYPE_USAGE BEN_PHB_COORD_MED_EXT_ER BEN_PHB_COORD_MED_INSR_CRR_IDENT BEN_PHB_COORD_MED_INSR_CRR_NAM BEN_PHB_COORD_MED_PLN_NO BEN_PHB_COORD_MED_PL_NAME BEN_PHB_COORD_NO_CVG_FLAG BEN_PHB_CVRD_IN_ANTHR_PL BEN_PHB_DISABILITY_STATUS BEN_PHB_DPDNT_ADOPTION_DATE BEN_PHB_DPDNT_VLNTRY_SVCE_FLAG BEN_PHB_EFFECTIVE_END_DATE BEN_PHB_EFFECTIVE_START_DATE BEN_PHB_ON_MILITARY_SERVICE BEN_PHB_RECEIPT_OF_DEATH_CERT_DATE BEN_PHB_REGISTERED_DISABLED_FLAG BEN_PHB_STUDENT_STATUS BEN_PHB_COORD_MED_CVG_STRT_DT
BEN_PER_BNF_ORG_TN	PERSON_ID, BUSINESS_GROUP_ID, EFFECTIVE_DATE	Yes	BEN_PBO_BNF_ORGANIZATION_NAME_TN BEN_PBO_END_DATE_DN BEN_PBO_START_DATE_DN BEN_PBO_TRUSTEE_ORG_REG_CD_TN BEN_PBO_TRUSTEE_EXECUTOR_NAME_TN

User Entity	Required Contexts	Array Database Item	Database Item Name
			BEN_PBO_TRUSTEE_ORG_DESCRIPTION_TN BEN_PBO_TRUSTEE_ORG_NAME_TN BEN_PBO_BNF_TYP_CD_TN BEN_PBO_TRUSTEE_ADDL_DETAILS_TN
BEN_PER_BENEFIT_GROUP_F_TN	PERSON_ID, BUSINESS_GROUP_ID, EFFECTIVE_DATE	Yes	EN_PBG_BENEFIT_GROUP_NAME_TN
BEN_EXT_HIST_PLD	PERSON_ID, EFFECTIVE_DATE	Yes	BEN_EXT_HIST_PLD_ACTION_TIME_DN BEN_EXT_HIST_PLD_STATUS_TN BEN_EXT_HIST_PLD_BENEFIT_RELATION_ID_NN BEN_EXT_HIST_PLD_PRTT_LEG_DISCMR_ACTN_ID_NN BEN_EXT_HIST_PLD_PL_ID_NN BEN_EXT_HIST_PLD_PGM_ID_NN BEN_EXT_HIST_PLD_PER_IN_LER_ID_NN BEN_EXT_HIST_PLD_PERSON_ID_NN BEN_EXT_HIST_PLD_LER_ID_NN BEN_EXT_HIST_PLD_LEGAL_ENTITY_ID_NN BEN_EXT_HIST_PLD_LEGAL_DISCLAIMER_ID_NN BEN_EXT_HIST_PLD_LAST_UPDATE_LOGIN_TN BEN_EXT_HIST_PLD_LAST_UPDATE_DATE_DN BEN_EXT_HIST_PLD_LAST_UPDATED_BY_TN BEN_EXT_HIST_PLD_CREATION_DATE_DN BEN_EXT_HIST_PLD_CREATED_BY_TN

User Entity	Required Contexts	Array Database Item	Database Item Name
			BEN_EXT_HIST_PLD_BRN_BENEFIT_REL_SYSTEM_CD_TN BEN_EXT_HIST_PLD_BRN_STATUS_TN BEN_EXT_HIST_PLD_BENEFIT_RELATION_NAME_TN BEN_EXT_HIST_PLD_LEG_DESCRIPTION_TN BEN_EXT_HIST_PLD_LEGAL_ENTITY_NAME_TN BEN_EXT_HIST_PLD_LER_SHORT_CODE_TN BEN_EXT_HIST_PLD_LER_TYP_CD_TN BEN_EXT_HIST_PLD_LER_GLOBAL_FLAG_TN BEN_EXT_HIST_PLD_LER_SLCTBL_SLF_SVC_CD_TN BEN_EXT_HIST_PLD_LER_SHORT_NAME_TN BEN_EXT_HIST_PLD_LER_LER_NAME_TN BEN_EXT_HIST_PLD_PERSON_NAME_TN BEN_EXT_HIST_PLD_PGM_NAME_TN BEN_EXT_HIST_PLD_PGM_SHORT_NAME_TN BEN_EXT_HIST_PLD_PGM_SHORT_CODE_TN BEN_EXT_HIST_PLD_PIL_LF_EVT_OCRD_DT_DN BEN_EXT_HIST_PLD_PIL_PER_IN_LER_STAT_CD_TN BEN_EXT_HIST_PLD_PL_NAME_TN BEN_EXT_HIST_PLD_PL_SHORT_NAME_TN BEN_EXT_HIST_PLD_PL_SHORT_CODE_TN
BEN_EXT_HIST_PTNL_LER_FOR_PER	PERSON_ID,	Yes	BEN_EXT_HIST_PTNL_BRN_BENEFIT_RELATION_NAME_TN

User Entity	Required Contexts	Array Database Item	Database Item Name
	EFFECTIVE_DATE		BEN_EXT_HIST_PTNL_BRN_BENEFIT_REL_SYSTEM_CD_TN BEN_EXT_HIST_PTNL_BRN_EFFECTIVE_END_DATE_DN BEN_EXT_HIST_PTNL_BRN_EFFECTIVE_START_DATE_DN BEN_EXT_HIST_PTNL_BRN_PRIMARY_REL_TN BEN_EXT_HIST_PTNL_BRN_REL_PRMRY_ASG_ID_NN BEN_EXT_HIST_PTNL_BRN_STATUS_TN BEN_EXT_HIST_PTNL_LEGAL_ENTITY_NAME_TN BEN_EXT_HIST_PTNL_LER_LF_EVT_OPER_CD_TN BEN_EXT_HIST_PTNL_LER_TMLNS_PERD_CD_TN BEN_EXT_HIST_PTNL_LER_TMLNS_EVAL_CD_TN BEN_EXT_HIST_PTNL_LER_TMLNS_DYS_NUM_NN BEN_EXT_HIST_PTNL_LER_SLCTBL_SLF_SVC_CD_TN BEN_EXT_HIST_PTNL_LER_SHORT_NAME_TN BEN_EXT_HIST_PTNL_LER_SHORT_CODE_TN BEN_EXT_HIST_PTNL_LER_PTNL_LER_TRTMT_CD_TN BEN_EXT_HIST_PTNL_LER_OVRIDG_LE_FLAG_TN BEN_EXT_HIST_PTNL_LER_OCRD_DT_DET_CD_TN BEN_EXT_HIST_PTNL_LER_NAME_TN BEN_EXT_HIST_PTNL_LER_GLOBAL_FLAG_TN BEN_EXT_HIST_PTNL_PERSON_NAME_TN BEN_EXT_HIST_PTNL_CREATED_BY_TN

User Entity	Required Contexts	Array Database Item	Database Item Name
			BEN_EXT_HIST_PTNL_LF_EVT_OCRD_DT_DN BEN_EXT_HIST_PTNL_MNL_DT_DN BEN_EXT_HIST_PTNL_NTFN_DT_DN BEN_EXT_HIST_PTNL_PERSON_ID_NN BEN_EXT_HIST_PTNL_PROCD_DT_DN BEN_EXT_HIST_PTNL_VOIDD_DT_DN BEN_EXT_HIST_PTNL_LER_ID_NN BEN_EXT_HIST_PTNL_PTNL_LER_FOR_PER_ID_NN BEN_EXT_HIST_PTNL_LER_FOR_PER_STAT_CD_TN BEN_EXT_HIST_PTNL_BENEFIT_RELATION_ID_NN BEN_EXT_HIST_PTNL_LEGAL_ENTITY_ID_NN BEN_EXT_HIST_PTNL_LAST_UPDATE_LOGIN_TN BEN_EXT_HIST_PTNL_LAST_UPDATE_DATE_DN BEN_EXT_HIST_PTNL_LAST_UPDATED_BY_TN BEN_EXT_HIST_PTNL_DTCTD_DT_DN BEN_EXT_HIST_PTNL_CREATION_DATE_DN BEN_EXT_HIST_PTNL_UNPROCD_DT_DN BEN_EXT_HIST_PTNL_LER_TYP_CD_TN
BEN_EXT_HIST_PCP	PERSON_ID, EFFECTIVE_DATE	Yes	BEN_EXT_HIST_PCP_DPNT_FULL_NAME_TN BEN_EXT_HIST_PCP_PRTTPCP_TN BEN_EXT_HIST_PCP_LEGAL_ENTITY_NAME_TN

User Entity	Required Contexts	Array Database Item	Database Item Name
			BEN_EXT_HIST_PCP_LER_SHORT_CODE_TN BEN_EXT_HIST_PCP_LER_ID_NN BEN_EXT_HIST_PCP_LER_NAME_TN BEN_EXT_HIST_PCP_LER_GLOBAL_FLAG_TN BEN_EXT_HIST_PCP_LER_SHORT_NAME_TN BEN_EXT_HIST_PCP_LER_TYP_CD_TN BEN_EXT_HIST_PCP_OPT_NAME_TN BEN_EXT_HIST_PCP_OPT_SHORT_NAME_TN BEN_EXT_HIST_PCP_OPT_SHORT_CODE_TN BEN_EXT_HIST_PCP_DPNT_RLNSHP_CD_TN BEN_EXT_HIST_PCP_DPNT_PERSON_ID_NN BEN_EXT_HIST_PCP_ENRT_MTHD_CD_TN BEN_EXT_HIST_PCP_ENRT_CVG_THRU_DT_DN BEN_EXT_HIST_PCP_ENRT_CVG_STRT_DT_DN BEN_EXT_HIST_PCP_ELECTION_DATE_DN BEN_EXT_HIST_PCP_COMP_LVL_CD_TN BEN_EXT_HIST_PCP_PL_TYP_ID_NN BEN_EXT_HIST_PCP_PL_ID_NN BEN_EXT_HIST_PCP_PGM_ID_NN BEN_EXT_HIST_PCP_ORGNL_ENRT_DT_DN BEN_EXT_HIST_PCP_SSPNDD_FLAG_TN BEN_EXT_HIST_PCP_PRTT_ENRT_RSLT_STAT_CD_TN

User Entity	Required Contexts	Array Database Item	Database Item Name
			BEN_EXT_HIST_PCP_OPT_ID_NN BEN_EXT_HIST_PCP_LEGAL_ENTITY_ID_NN BEN_EXT_HIST_PCP_PERSON_FULL_NAME_TN BEN_EXT_HIST_PCP_PGM_SHORT_NAME_TN BEN_EXT_HIST_PCP_PGM_NAME_TN BEN_EXT_HIST_PCP_PGM_SHORT_CODE_TN BEN_EXT_HIST_PCP_BENEFIT_RELATION_ID_NN BEN_EXT_HIST_PCP_LF_EVT_OCRD_DT_DN BEN_EXT_HIST_PCP_PER_IN_LER_ID_NN BEN_EXT_HIST_PCP_PER_IN_LER_STAT_CD_TN BEN_EXT_HIST_PCP_PERSON_ID_NN BEN_EXT_HIST_PCP_PL_SHORT_CODE_TN BEN_EXT_HIST_PCP_PL_NAME_TN BEN_EXT_HIST_PCP_PL_SHORT_NAME_TN BEN_EXT_HIST_PCP_PL_TYP_NAME_TN BEN_EXT_HIST_PCP_LAST_UPDATE_LOGIN_TN BEN_EXT_HIST_PCP_LAST_UPDATE_DATE_DN BEN_EXT_HIST_PCP_EXT_IDENT_TN BEN_EXT_HIST_PCP_ELIG_PER_ELCTBL_CHC_ID_NN BEN_EXT_HIST_PCP_ELIG_DPNT_ID_NN BEN_EXT_HIST_PCP_ELIG_CVRD_DPNT_ID_NN

User Entity	Required Contexts	Array Database Item	Database Item Name
			BEN_EXT_HIST_PCP_CVRD_FLAG_TN BEN_EXT_HIST_PCP_PRTT_ENRT_RSLT_ID_NN BEN_EXT_HIST_PCP_PRMRY_CARE_PRVDR_ID_NN BEN_EXT_HIST_PCP_PRMRY_CARE_PRVDR_TYP_CD_TN BEN_EXT_HIST_PCP_CREATED_BY_TN BEN_EXT_HIST_PCP_CREATION_DATE_DN BEN_EXT_HIST_PCP_NAME_TN BEN_EXT_HIST_PCP_LAST_UPDATED_BY_TN BEN_EXT_HIST_PCP_CVG_THRU_DT_DN BEN_EXT_HIST_PCP_CVG_STRT_DT_DN
BEN_EXT_HIST_PBB	PERSON_ID, EFFECTIVE_DATE	Yes	BEN_EXT_HIST_PBB_BNB_BNFTS_BAL_DESC_TN BEN_EXT_HIST_PBB_BNB_BNFTS_BAL_NAME_TN BEN_EXT_HIST_PBB_BNB_BNFTS_BAL_USG_CD_TN BEN_EXT_HIST_PBB_BNB_NNMNTRY_UOM_TN BEN_EXT_HIST_PBB_BRN_BRN_STATUS_TN BEN_EXT_HIST_PBB_BRN_BENEFIT_RELATION_NAME_TN BEN_EXT_HIST_PBB_BRN_BENEFIT_REL_SYSTEM_CD_TN BEN_EXT_HIST_PBB_BRN_BRN_PRIMARY_REL_TN BEN_EXT_HIST_PBB_LEGAL_ENTITY_NAME_TN BEN_EXT_HIST_PBB_PERSON_ID_NN BEN_EXT_HIST_PBB_LEGAL_ENTITY_ID_NN

User Entity	Required Contexts	Array Database Item	Database Item Name
			BEN_EXT_HIST_PBB_LAST_UPDATE_LOGIN_TN BEN_EXT_HIST_PBB_LAST_UPDATE_DATE_DN BEN_EXT_HIST_PBB_LAST_UPDATED_BY_TN BEN_EXT_HIST_PBB_CREATION_DATE_DN BEN_EXT_HIST_PBB_CREATED_BY_TN BEN_EXT_HIST_PBB_BNFTS_BAL_ID_NN BEN_EXT_HIST_PBB_VAL_NN BEN_EXT_HIST_PBB_ASSIGNMENT_ID_NN BEN_EXT_HIST_PBB_BENEFIT_RELATION_ID_NN BEN_EXT_HIST_PBB_PER_BNFTS_BAL_ID_NN BEN_EXT_HIST_PBB_UOM_TN BEN_EXT_HIST_PBB_PERSON_NAME_TN
BEN_EXT_HIST_FLEX_CRDT_LDGR	PERSON_ID, EFFECTIVE_DATE	Yes	BEN_EXT_HIST_FCL_CHILD_POOL_NAME_TN BEN_EXT_HIST_FCL_PRNT_POOL_NAME_TN BEN_EXT_HIST_FCL_POOL_LEGAL_ENTITY_NAME_TN BEN_EXT_HIST_FCL_POOL_LDG_NAME_TN BEN_EXT_HIST_FCL_ACTY_REF_PERD_CD_TN BEN_EXT_HIST_FCL_ANN_CASH_RECD_VAL_NN BEN_EXT_HIST_FCL_ANN_DONATED_TO_PRNT_VAL_NN BEN_EXT_HIST_FCL_ANN_FRFTD_VAL_NN BEN_EXT_HIST_FCL_ANN_PRVDD_VAL_NN

User Entity	Required Contexts	Array Database Item	Database Item Name
			BEN_EXT_HIST_FCL_ANN_RECD_FROM_CHLD_VAL_NN BEN_EXT_HIST_FCL_ANN_RLD_UP_VAL_NN BEN_EXT_HIST_FCL_ANN_USED_VAL_NN BEN_EXT_HIST_FCL_CASH_RECD_VAL_NN BEN_EXT_HIST_FCL_CMCD_CASH_RECD_VAL_NN BEN_EXT_HIST_FCL_CMCD_DONATED_TO_PRNT_VAL_NN BEN_EXT_HIST_FCL_CMCD_FRFTD_VAL_NN BEN_EXT_HIST_FCL_CMCD_PRVDD_VAL_NN BEN_EXT_HIST_FCL_CMCD_RECD_FROM_CHLD_VAL_NN BEN_EXT_HIST_FCL_CMCD_REF_PERD_CD_TN BEN_EXT_HIST_FCL_CMCD_RLD_UP_VAL_NN BEN_EXT_HIST_FCL_CMCD_USED_VAL_NN BEN_EXT_HIST_FCL_CREATED_BY_TN BEN_EXT_HIST_FCL_CREATION_DATE_DN BEN_EXT_HIST_FCL_DONATED_TO_PRNT_POOL_VAL_NN BEN_EXT_HIST_FCL_FLEX_CRDT_LDGR_ID_NN BEN_EXT_HIST_FCL_FRFTD_VAL_NN BEN_EXT_HIST_FCL_LAST_UPDATED_BY_TN BEN_EXT_HIST_FCL_LAST_UPDATE_DATE_DN BEN_EXT_HIST_FCL_LAST_UPDATE_LOGIN_TN BEN_EXT_HIST_FCL_LDGR_CLASS_TN

User Entity	Required Contexts	Array Database Item	Database Item Name
			BEN_EXT_HIST_FCL_LDGR_END_DT_DN BEN_EXT_HIST_FCL_LDGR_STRT_DT_DN BEN_EXT_HIST_FCL_PRVDD_VAL_NN BEN_EXT_HIST_FCL_RECD_FROM_CHLD_POOL_VAL_NN BEN_EXT_HIST_FCL_RLD_UP_VAL_NN BEN_EXT_HIST_FCL_USED_VAL_NN BEN_EXT_HIST_FCL_LER_SHORT_NAME_TN BEN_EXT_HIST_FCL_LER_ID_NN BEN_EXT_HIST_FCL_LER_GLOBAL_FLAG_TN BEN_EXT_HIST_FCL_LER_TYP_CD_TN BEN_EXT_HIST_FCL_LER_NAME_TN BEN_EXT_HIST_FCL_LER_SHORT_CODE_TN BEN_EXT_HIST_FCL_OPT_SHORT_NAME_TN BEN_EXT_HIST_FCL_OPT_NAME_TN BEN_EXT_HIST_FCL_OPT_SHORT_CODE_TN BEN_EXT_HIST_FCL_PRTT_ENRT_RSLT_ID_NN BEN_EXT_HIST_FCL_ENRT_MTHD_CD_TN BEN_EXT_HIST_FCL_ENRT_CVG_THRU_DT_DN BEN_EXT_HIST_FCL_ENRT_CVG_STRT_DT_DN BEN_EXT_HIST_FCL_ELECTION_DATE_DN BEN_EXT_HIST_FCL_PRTT_ENRT_RSLT_STAT_CD_TN

User Entity	Required Contexts	Array Database Item	Database Item Name
			BEN_EXT_HIST_FCL_COMP_LVL_CD_TN BEN_EXT_HIST_FCL_ORGNL_ENRT_DT_DN BEN_EXT_HIST_FCL_PERSON_FULL_NAME_TN BEN_EXT_HIST_FCL_PGM_RATE_LEVEL_TN BEN_EXT_HIST_FCL_PGM_SHORT_NAME_TN BEN_EXT_HIST_FCL_PGM_SHORT_CODE_TN BEN_EXT_HIST_FCL_PGM_NAME_TN BEN_EXT_HIST_FCL_PER_IN_LER_ID_NN BEN_EXT_HIST_FCL_PERSON_ID_NN BEN_EXT_HIST_FCL_BENEFIT_RELATION_ID_NN BEN_EXT_HIST_FCL_LF_EVT_OCRD_DT_DN BEN_EXT_HIST_FCL_PER_IN_LER_STAT_CD_TN BEN_EXT_HIST_FCL_PL_SHORT_CODE_TN BEN_EXT_HIST_FCL_PL_NAME_TN BEN_EXT_HIST_FCL_PL_SHORT_NAME_TN BEN_EXT_HIST_FCL_POOL_LEVEL_TN BEN_EXT_HIST_FCL_POOL_NAME_TN BEN_EXT_HIST_FCL_POOL_LDG_ID_NN BEN_EXT_HIST_FCL_POOL_LEGAL_ENTITY_ID_NN BEN_EXT_HIST_FCL_PROVIDER_OPTION_SHORT_NAME_TN BEN_EXT_HIST_FCL_PROVIDER_OPTION_NAME_TN

User Entity	Required Contexts	Array Database Item	Database Item Name
			BEN_EXT_HIST_FCL_PROVIDER_OPTION_SHORT_CODE_TN BEN_EXT_HIST_FCL_PROVIDER_PLAN_SHORT_NAME_TN BEN_EXT_HIST_FCL_PROVIDER_PLAN_NAME_TN BEN_EXT_HIST_FCL_PROVIDER_PLAN_SHORT_CODE_TN BEN_EXT_HIST_FCL_PRV_RATE_STRT_DT_DN BEN_EXT_HIST_FCL_PRV_MLT_CD_TN BEN_EXT_HIST_FCL_PRV_RATE_END_DT_DN BEN_EXT_HIST_FCL_PRV_RCRRG_FLAG_TN BEN_EXT_HIST_FCL_PRV_RATE_NAME_TN

9 Formulas for Performance Management

How You Use Fast Formulas in Performance Documents

You can configure fast formulas to calculate section ratings for workers in a performance document.

Fast Formulas and Database Items

Fast formulas contain the items and rules used to calculate the section rating, and can be based on ratings provided on the items by workers, managers, and participants. You create the fast formulas using the Performance Rating Calculation type. To the fast formula you add Database Items (DBI). These items can calculate ratings on attributes besides the overall item rating. For example, you can use DBIs to rate other attributes on a goal, such as the measurement attributes, rather than the overall goal. You create fast formulas using the Manage Fast Formulas task in the Setup and Maintenance work area.

For more information, see the Complete List of HRA Database Items for Calculated Ratings (Doc ID 2444793.1) on My Oracle Support at http://support.oracle.com.

Calculated Rating Setup in the Performance Template Section and Performance Template

You configure the sections of the performance document to use fast formulas. Fast formulas can calculate ratings for the Overall Summary, Profile Content (Competencies), Performance Goals, and Development Goals sections. You can set up any, or all, these sections in a performance document to calculate ratings.

In the section, you must select the fast formula calculation rule. In addition, you select the fast formula rule. To use calculated ratings, you must also select the option to use calculated ratings on the Process tab of the performance template. You also must select which roles can see calculated ratings.

10 Formula Types, Contexts, Functions, and Input Attributes for Workforce Management

Rule Templates, Rules, and Rule Sets for Time and Labor

You configure time validations, processing, and compliance using fast formula, rule templates, rules, and rule sets.

Rule Templates

Rule templates make it easy to adapt a formula for use with different rules. The formula parameters and outputs are easy to identify and configure in a template. You don't have to work with the whole formula statement to figure out what details you must change to achieve a particular result.

The rule template makes sure that you satisfy these conditions:

- The parameters are of the correct parameter type.
- The output uses only specific time attributes.
- The correct number of outputs is associated with the formula results.

Rules

When you create a rule, you select a template to use rather than a formula. The template automatically populates the description of all outputs and helps you enter correct parameter values. You can create multiple rules from a single template, varying the parameter and output values of each rule. For example, you create two rules using a time entry rule template for maximum period. The defined maximum limit of the rules is 36 and 40 hours, respectively.

Rule Type	Description	Rule Use Example
Advanced time category	Defines advanced conditions that you then associate with a time category.	Create time interaction rules to find time events or time entries that don't match published schedule times.
Time calculation	Creates or updates time card entries and uses the data to create calculated results based on formula logic.	Handle overtime or premium pay by updating reported time or creating other calculated time.
Time device	Evaluates time events imported from time collection devices and creates time entry exceptions.	Create time entry exceptions for entries affected by time reported outside the specified grace period.
Time entry	Validates time card entries and generates a message with a defined severity.	When reported time exceeds a specified weekly maximum, display the specified message.
Time submission	Identifies when to automatically save and submit time card entries created with time events imported from time collection devices.	Automatically save a time card after each Out application event.

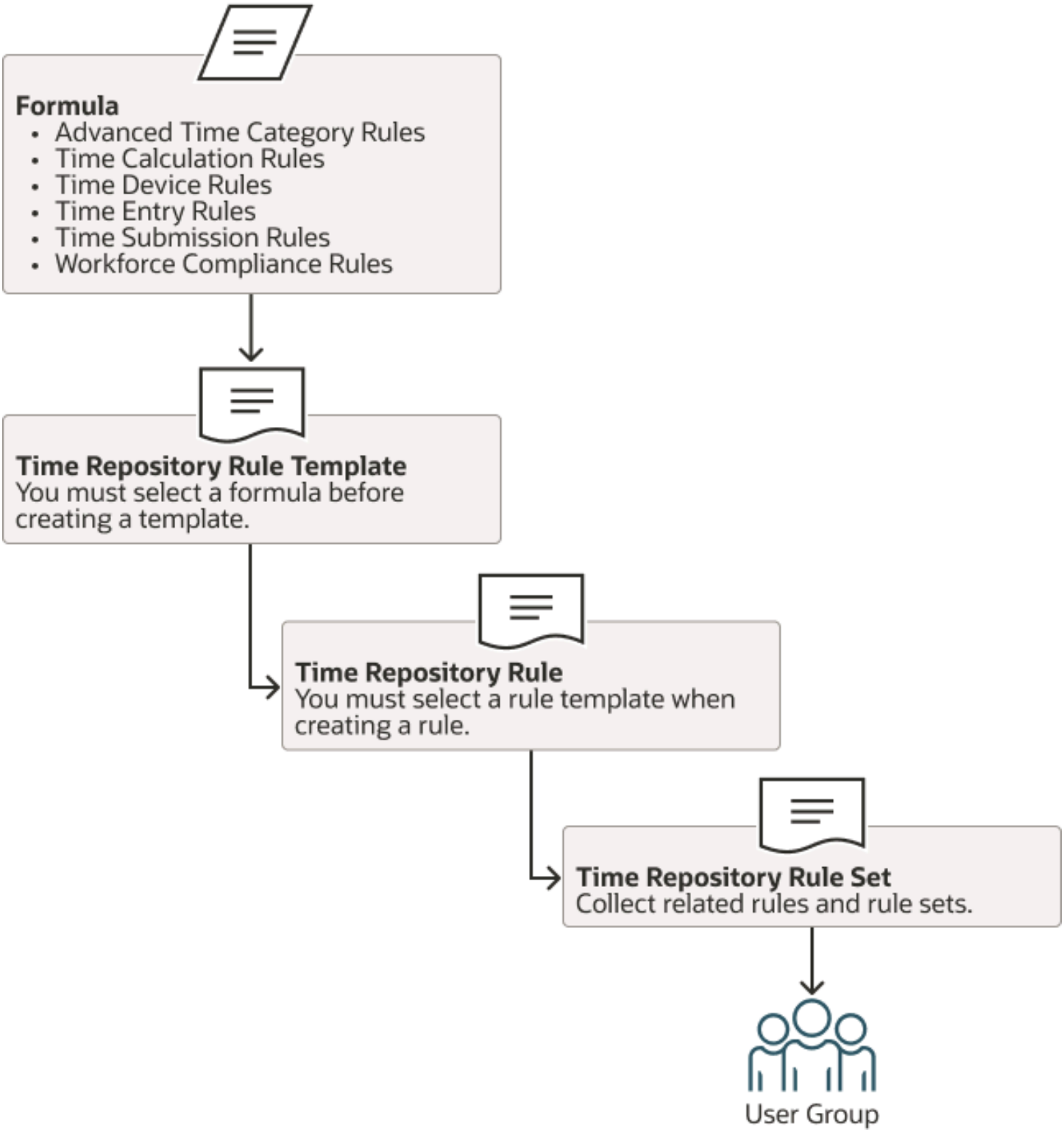
Rule Type	Description	Rule Use Example
Workforce compliance	Identifies upcoming compliance exceptions by reviewing time card data and unprocessed time events to help you prevent or quickly fix any exceptions.	Notify managers when young people are approaching mandated worked time limits.

Rule Sets

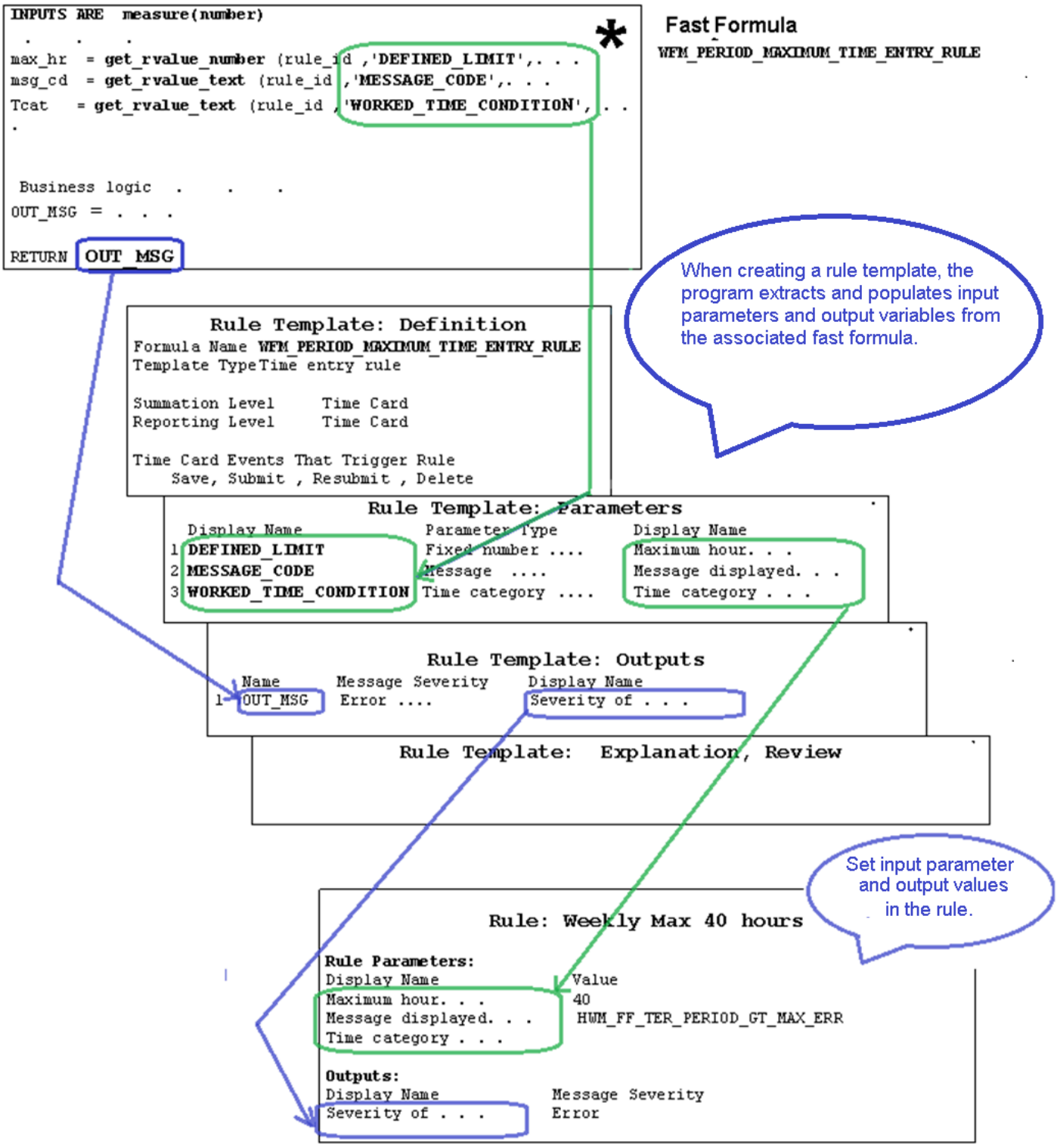
A rule set is a date-effective collection of rules or rule sets of the same type. Effective dates enable you to add, delete, and edit rules and embedded rule sets within the rule set. You associate rule sets to groups of workers with similar time validations or processing requirements with time processing profiles.

Associations Among Formulas, Rule Templates, Rules, and Rule Sets

This high-level flow shows the association among formulas, rule templates, rules, and rule sets.



This more detailed example follows the Defined_Limit parameter, used to set the maximum number of work hours. You see the parameter in the time entry rule formula associated with the rule template. It appears on the parameters page of the rule template, and then in the parameters section of the rule.


INPUTS ARE measure(number)
max_hr = get_rvalue_number (rule_id ,'DEFINED_LIMIT',. . .
msg_cd = get_rvalue_text (rule_id ,'MESSAGE_CODE',. . .
Tcat = get_rvalue_text (rule_id ,'WORKED_TIME_CONDITION',. . .
Business logic . . .
OUT_MSG = . . .
RETURN OUT_MSG
Fast Formula
WFM_PERIOD_MAXIMUM_TIME_ENTRY_RULE
When creating a rule template, the program extracts and populates input parameters and output variables from the associated fast formula.
Rule Template: Definition
Formula Name WFM_PERIOD_MAXIMUM_TIME_ENTRY_RULE
Template TypeTime entry rule
Summation Level Time Card
Reporting Level Time Card
Time Card Events That Trigger Rule
Save, Submit , Resubmit , Delete
Rule Template: Parameters
Display Name
1 DEFINED_LIMIT
2 MESSAGE_CODE
3 WORKED_TIME_CONDITION
Parameter Type
Fixed number ....
Message ....
Time category ....
Display Name
Maximum hour. . .
Message displayed. . .
Time category . . .
Rule Template: Outputs
Name
1 OUT_MSG
Message Severity
Error ....
Display Name
Severity of . . .
Rule Template: Explanation, Review
Set input parameter and output values in the rule.
Rule: Weekly Max 40 hours
Rule Parameters:
Display Name
Maximum hour. . .
Message displayed. . .
Time category . . .
Value
40
HWM_FF_TER_PERIOD_GT_MAX_ERR
Outputs:
Display Name
Severity of . . .
Message Severity
Error

Formula Types for Workforce and Time Rule Templates

These are the available formula types for workforce and time rule templates:

- WORKFORCE_MANAGEMENT_TIME_ADVANCED_CATEGORY_RULES
- WORKFORCE_MANAGEMENT_TIME_CALCULATION_RULES
- WORKFORCE_MANAGEMENT_TIME_DEVICE_RULES
- WORKFORCE_MANAGEMENT_TIME_ENTRY_RULES
- WORKFORCE_MANAGEMENT_TIME_SUBMISSION_RULES
- WORKFORCE_MANAGEMENT_WORKFORCE_COMPLIANCE_RULES

Delivered formulas created from these formula types have the WFM designation in the name.

Other WFM formula types available for WFM formulas but not for rule templates are:

- WORKFORCE_MANAGEMENT_SUBROUTINE
- WORKFORCE_MANAGEMENT_ UTILITY

Reference

For information about array processing versus normal fast formulas, including delivered equivalent formulas with annotations, see *Array Processing Formulas*. You can also access a spreadsheet with the Workforce Management database items.

WORKFORCE_MANAGEMENT_TIME_ADVANCED_CATEGORY Formula Type

To create formulas that identify time events and entries using complex logic not available for time categories, use the advanced time category formula type. You can select only formulas of this type when you create advanced time category rule templates.

WORKFORCE_MANAGEMENT_TIME_CALCULATION_RULES Formula Type

To create formulas that create or update time entries, use the time calculation rule formula type. The formulas also use relevant time data to create calculated time results.

You can select only formulas with this formula type when creating time calculation rule templates.

Header Indicator	Description
Rule Classification	Choice list with the values applicable to time calculation rules
Rule Execution Type	Specify whether rules must create more hours or update existing hours. This indicator displays only for time calculation rule templates when the associated formula includes this indicator. Examples: • **Create**: Rule processing creates total calculated time of 12 hours, which is 2 hours more than the reported time. This keeps the 10 hours of Regular time at the regular hourly rate. It also creates 2 hours of Premium time at .5 times the regular hourly rate. Calculation example: `(10 hours * 10 USD) + (2 hours * 5 USD) = 110 USD` • **Update**: Rule processing creates total calculated time of 10 hours, which matches the reported time. Processing adjusts the pay rate for 2 of the 10 reported hours. It does this with 8 hours of Regular time at the regular hourly rate, and 2 hours of Overtime at 1.5 times the regular hourly rate Calculation example: `(8 hours * 10 USD) + (2 hours * 15 USD) = 110 USD`
Summation Level	Specify at what level the rule applies. This indicator displays only when the associated formula includes this indicator. • **Details**: Process the rule against all time entries that match the time category condition. • **Day**: Process the rule against hours entered for the entire day that match the time category conditions. • **Time Card**: Process the rule against hours entered for the entire period that match the time category conditions.

WORKFORCE_MANAGEMENT_TIME_DEVICE_RULES Formula Type

To create formulas that evaluate time device events, use the time device rule formula type. Also create time entry exceptions, when appropriate. You can select only formulas with this formula type when you create time device rule templates.

Header Indicator	Description
Rule Classification	Choice list with the values applicable to time calculation rules
Summation Level	Specify at what level the rule applies. This indicator displays only when the associated formula includes this indicator. • **Details**: Process the rule against all time entries that match the time category condition. • **Day**: Process the rule against hours entered for the entire day that match the time category conditions. • **Time Card**: Process the rule against hours entered for the entire period that match the time category conditions.

Header Indicator	Description
Reporting Level	Specify at what level to display the rule message results. This indicator displays only when the associated formula includes this indicator. • **Details**: Display rule results for all time entries that match the time category condition. • **Day**: Display rule results for the hours reported for the entire day that match the time category conditions. • **Time Card**: Display rule results for the hours reported for the entire period that match the time category conditions.
Suppress Duplicate messages Display	Specify how to handle the generation of repeated messages by selecting one of these two values: • **Yes**: Display the message just once. • **No**: Display the message every time that the message generation event occurs.

WORKFORCE_MANAGEMENT_TIME_ENTRY_RULES Formula Type

To create formulas that validate time card entries and generate messages with the specified severity when appropriate, use the time entry rule formula type. You can select only formulas with this formula type when you create time entry rule templates.

Header Indicator	Description
Rule Classification	Choice list with the values applicable to time calculation rules
Summation Level	Specify at what level the rule applies. This indicator displays only when the associated formula includes this indicator. • **Details**: Process the rule against all time entries that match the time category condition. • **Day**: Process the rule against hours entered for the entire day that match the time category conditions. • **Time Card**: Process the rule against hours entered for the entire period that match the time category conditions.
Reporting Level	Specify at what level to display the rule message results. This indicator displays only when the associated formula includes this indicator. • **Details**: Display rule results for all time entries that match the time category condition. • **Day**: Display rule results for the hours reported for the entire day that match the time category conditions. • **Time Card**: Display rule results for the hours reported for the entire period that match the time category conditions.
Suppress Duplicate messages Display	Specify how to handle the generation of repeated messages by selecting one of these two values: • **Yes**: Display the message just once.

Header Indicator	Description
	• **No**: Display the message every time that the message generation event occurs.
Process Empty Time Card	Specify whether to process time card days with no time entry values. If you select **Yes**, then the rule processes all entries, not just those with hours. Example: A worker reports these time entries: • Day 1: 8 hours • Day 2: 8 hours • Day 3: No reported hours • Day 4: 4 hours • Day 5: 8 hours • Day 6: No reported hours • Day 7: No reported hours If you select **Yes**, the rule with this formula type generates error messages for days 3, 4, 6, and 7. If you select **No**, the rule generates a message for day 4 only.

WORKFORCE_MANAGEMENT_TIME_SUBMISSION_RULES Formula Type

To create formulas that identify when to automatically save and submit time card entries created from time device events, use the time submission rule formula type.

You can select only formulas with this formula type when you create time submission rule templates.

Header Indicator	Description
Rule Classification	Choice list with the values applicable to time calculation rules
Summation Level	Specify at what level the rule applies. This indicator displays only when the associated formula includes this indicator. • **Details**: Process the rule against all time entries that match the time category condition. • **Day**: Process the rule against hours entered for the entire day that match the time category conditions. • **Time Card**: Process the rule against hours entered for the entire period that match the time category conditions.

WORKFORCE_MANAGEMENT_WORKFORCE_COMPLIANCE_ Formula Type

To create formulas that identify potential or actual noncompliance with organizational and regulatory policies, use the workforce compliance rule formula type. You can select only formulas with this formula type when you create workforce compliance rule templates.

You must create your compliance formulas and then the rule templates, rules, and rule sets that use those formulas.

Header Indicator	Description
Rule Classification	Choice list with the values applicable to time calculation rules
Summation Level	Specify at what level the rule applies. This indicator displays only when the associated formula includes this indicator. • **Details**: Process the rule against all time entries that match the time category condition. • **Day**: Process the rule against hours entered for the entire day that match the time category conditions. • **Time Card**: Process the rule against hours entered for the entire period that match the time category conditions.
Reporting Level	Specify at what level to display the rule message results. This indicator displays only when the associated formula includes this indicator. • **Details**: Display rule results for all time entries that match the time category condition. • **Day**: Display rule results for the hours reported for the entire day that match the time category conditions. • **Time Card**: Display rule results for the hours reported for the entire period that match the time category conditions.
Suppress Duplicate messages Display	Specify how to handle the generation of repeated messages by selecting one of these two values: • **Yes**: Display the message just once. • **No**: Display the message every time that the message generation event occurs.

WORKFORCE_MANAGEMENT_SUBROUTINE Formula Type

Fast formulas have many limitations, including that you can't create functions or procedures inside the formula. This formula type is a workaround for that limitation. You use this formula type to create formulas that provide specific functionality for parent formulas.

Because this formula type isn't associated with any rule template type, you can't select it when you create rule templates. You can call this formula in formulas of other formula types.

WORKFORCE_MANAGEMENT_UTILITY Formula Type

This formula type has functionality that's very similar to the WORKFORCE_MANAGEMENT_SUBROUTINE formula type. You can use the WORKFORCE_MANAGEMENT_SUBROUTINE and WORKFORCE_MANAGEMENT_ UTILITY formula types interchangeably.

When you use the most appropriate type, people can more easily identify which formulas are function-specific and which formulas are general utility for all formulas.

Formula Contexts for Workforce Management

Formula contexts of different types define the formula's application-specific execution context. Control this context by setting context values for the formula. These contexts affect database item and formula function values. Usually, you set context values immediately before calling a formula.

You can now include context values in formula expressions, so you no longer have to set context values on entering a formula. You can test whether a context value is set, and modify the execution context of a formula in the formula.

<table>
<tr><th>Context</th><th>Description</th></tr>
<tr><td>HWM_FFS_ID</td><td>Most workforce management functions use the unique fast formula session ID and rule ID as a key identifier for logs and work area related record processing.

For more details, see the next topic on Workforce Management functions.</td></tr>
<tr><td>HWM_SUMMATION_LEVEL</td><td>The summation level comes from the rule template page and indicates how to summarize time cards. This table describes the valid values.

<table><tr><th>Valid Value</th><th>Description</th></tr><tr><td>DETAIL</td><td>Process each record individually. Usually no summation is required.</td></tr><tr><td>DAY</td><td>Sum and calculate values on a daily basis.</td></tr><tr><td>TIMECARD</td><td>Sum and calculate values for the entire time card period.</td></tr></table></td></tr>
<tr><td>HWM_RECORD_POSITION</td><td>The record position value indicates the type of record getting processed. This table describes the valid values.</td></tr>
</table>

<table>
<tr><th>Context</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><th>Valid Value</th><th>Description</th></tr>
<tr><td>DETAIL</td><td>Detail record</td></tr>
<tr><td>END_DAY</td><td>End of day record; enables day summation calculation</td></tr>
<tr><td>END_PERIOD</td><td>End period record; the last record for the time card</td></tr>
</table>
The fast formula gets the time card records in this sequence, repeating the steps for each day of the time card period:

Detail records for the time card day, sorted in a predefined order.
End of day record for the day.

The end period record for the time card is the final record that the formula gets from the time card.
Note: Applies to nonAP formulas only. For AP formulas, use HWM_CTXARY_RECORD_POSITIONS in the 'Inputs Are...' parameter instead of HWM_RECORD_POSITION context.
</td></tr>
<tr><td>HWM_RULE_ID</td><td>The rule ID is the key for the rule currently getting processed. This key is used to get parameter values set in the rule and, along with HWM_FFS_ID, to store and retrieve work area values.</td></tr>
<tr><td>HWM_PROJECT_ID</td><td>The project ID associated with the time card record currently getting processed.</td></tr>
<tr><td>HWM_RESOURCE_ID</td><td>The resource ID or person ID associated with the time card record currently getting processed.</td></tr>
<tr><td>HWM_CTX_SEARCH_END_DATE</td><td>The end date used to search for the relevant records to process.</td></tr>
<tr><td>HWM_CTX_SEARCH_START_DATE</td><td>The start date used to search for the relevant records to process.</td></tr>
<tr><td>HWM_MEASURE_DAY</td><td>The total measure for the time card day to use when processing records. Measure is a quantity, typically of hours, but it can also be units.</td></tr>
<tr><td>HWM_MEASURE_PERIOD</td><td>The total measure for the time card period to use when processing records. Measure is a quantity, typically of hours, but it can also be units.</td></tr>
<tr><td>HWM_SUBRESOURCE_ID</td><td>The subresource ID or assignment ID associated with the time card record currently getting processed.</td></tr>
<tr><td>HWM_CTX_PERIOD_END_DATE</td><td>Date identifying the end of the time card period used to process records.</td></tr>
<tr><td>HWM_CTX_PERIOD_START_DATE</td><td>Date identifying the start of the time card period used to process records.</td></tr>
<tr><td>HWM_ALLOCATION_DATA_LEVEL</td><td>The summation level comes from the allocation page and indicates how to summarize time entries for the allocation. This table describes the valid values.
<table>
<tr><th>Valid Value</th><th>Description</th></tr>
<tr><td>DAY</td><td>Sum and calculate values on a daily basis.</td></tr>
<tr><td>TIMECARD</td><td>Sum and calculate values for the entire time card period.</td></tr>
</table>
</td></tr>
<tr><td>HWM_ALLOCATION_ID</td><td>The allocation ID is the key for the allocation currently getting processed.</td></tr>
</table>

Context	Description
HWM_ALLOCATION_RULE_ID	The allocation rule ID is the key for the time calculation rule currently getting processed. This key is used to get parameter values set in the rule and allocation. It's also used with HWM_FFS_ID to store and retrieve work area values. This ID is different from the normal rule ID because it refers to different conditions in the allocation definition. Each source that makes up an allocation has a different rule and rule ID.
HWM_ALLOCATION_START_DATE	The date when the allocation becomes effective and the time calculation rule can use it.
GRP_TYPE_ID	The ID for the group type associated with the worker time processing profile containing the rule that's currently processing time card records.
HWM_REPEATING_TM_PERIOD_ID	The ID for the repeating period associated with the worker time processing profile containing the rule that's currently processing time card records.

Workforce Management Functions

Fast formula methods work only between fast formula calls. Workforce Management passes records from Java programs and these values must be stored during the call, so you must use these workforce management functions to store and retrieve values between calls.

Don't use fast formula working storage area methods, such as WSA_GET and WSA_SET.

Function	Description

`SET_WRK_NUM(`
`P_FFS_ID ,`
`P_PARM_NAME ,`
`P_PARM_SEQ ,`
`P_PARM_VALUE )`
	Set the numeric value for the item called P_PARM_NAME. Any existing item with the same name is overwritten.
	
	Parameters:
	
	• **P_FFS_ID**: Use the HWM_FFS_ID context (see Appendix 2: Contexts).
	• **P_PARM_NAME**: Any alphanumeric name.
	• **P_PARM_SEQ**: Set to 0 unless storing multiple values with the same PARM_NAME.
	• **P_PARM_VALUE**: Numeric value.

`SET_WRK_DATE(`
`P_FFS_ID ,`
`P_PARM_NAME ,`
`P_PARM_SEQ ,`
`P_PARM_VALUE )`
	Same as SET_WRK_NUM, except it's used to store date values.
	
	Parameters:
	
	• **P_FFS_ID**: Use the HWM_FFS_ID context (see Appendix 2: Contexts).
	• **P_PARM_NAME**: Any alphanumeric name.
	• **P_PARM_SEQ**: Set to 0 unless storing multiple values with the same PARM_NAME.
	• **P_PARM_VALUE**: Date value.

`SET_WRK_TEXT(`
`P_FFS_ID ,`
`P_PARM_NAME ,`
`P_PARM_SEQ ,`
	Same as SET_WRK_NUM, except it's used to store string values.
	
	Parameters:

Function	Description
`P_PARM_VALUE )`	• **P_FFS_ID**: Use the HWM_FFS_ID context (see Appendix 2: Contexts). • **P_PARM_NAME**: Any alphanumeric name. • **P_PARM_SEQ**: Set to 0 unless storing multiple values with the same PARM_NAME. • **P_PARM_VALUE**: String value.
`GET_WRK_TEXT( P_FFS_ID , P_PARM_NAME , P_PARM_SEQ , DEFVAL ) RETURN VARCHAR2`	Get the stored value for the item called P_PARM_NAME. If there's no item called P_PARM_NAME, then return the default-value. The data type of the default value is the expected data type for the item. Parameters: • **P_FFS_ID**: Use the HWM_FFS_ID context (see Appendix 2: Contexts). • **P_PARM_NAME**: Any alphanumeric name. • **P_PARM_SEQ**: Set to 0 unless storing multiple values with the same PARM_NAME. • **DEFVAL**: Default value VARCHAR2 • **RETURN VARCHAR2**: Return a varchar value
`GET_WRK_NUM( P_FFS_ID , P_PARM_NAME , P_PARM_SEQ , DEFVAL ) RETURN NUMBER`	Same as GET_WRK_TEXT, except it's used to return numeric values. Parameters: • **P_FFS_ID**: Use the HWM_FFS_ID context (see Appendix 2: Contexts). • **P_PARM_NAME**: Any alphanumeric name. • **P_PARM_SEQ**: Set to 0 unless storing multiple values with the same PARM_NAME. • **DEFVAL**: Default value NUMBER • **RETURN VARCHAR2**: Return a NUMBER value
`GET_WRK_DATE( P_FFS_ID , P_PARM_NAME , P_PARM_SEQ , DEFVAL ) RETURN DATE`	Same as GET_WRK_TEXT, except it's used to return date values. Parameters: • **P_FFS_ID**: Use the HWM_FFS_ID context (see Appendix 2: Contexts). • **P_PARM_NAME**: Any alphanumeric name. • **P_PARM_SEQ**: Set to 0 unless storing multiple values with the same PARM_NAME. • **DEFVAL**: Default value DATE • **RETURN VARCHAR2**: Return a DATE value

Rule Parameter and Header Values Functions

Use these workforce management functions to get rule header and parameter values. Any names used in a rule parameter function appear as input parameter values on the rule template Parameters page.

Function	Description
`GET_HDR_TEXT( P_RULE_ID , P_COLUMN_NAME , DEFVAL )`	Use this function to get these text field values, which are set in the basic information section of the rule template definition page. Parameters:

<table>
<tr><th>Function</th><th>Description</th></tr>
<tr><td>RETURN VARCHAR2</td><td>

P_RULE_ID: Use HWM_RULE_ID context (see Appendix 3: Contexts)
P_COLUMN_NAME: Use one of these valid column names.

<table>
<tr><th>Column Name</th><th>Description</th><th>Possible Return Values</th></tr>
<tr><td>RUN_TBB_LEVEL</td><td>Reporting level</td><td>DAY, DETAIL, TIMECARD</td></tr>
<tr><td>RULE_EXEC_TYPE</td><td>Rule execution type</td><td>CREATE, UPDATE</td></tr>
<tr><td>SUPPRESS_DUP_MSGS</td><td>Suppress duplicate messages display</td><td>Y, N</td></tr>
<tr><td>INCLUDE_EMPTY_TC</td><td>Process empty time cards</td><td>Y, N</td></tr>
</table>

DEFVAL: Default value
RETURN VARCHAR2: Return varchar value

</td></tr>
<tr><td>FUNCTION get_hdr_num(
P_rule_Id In Number, p_column_
name IN VARCHAR2,
defval IN Number)
RETURN Number;</td><td>Use this function to get the numeric field value set in the basic information section of the rule or rule template definition page.

Parameters:

P_RULE_ID: Use HWM_RULE_ID context (see Appendix 3: Contexts)
P_COLUMN_NAME: Use this valid column name.

<table>
<tr><th>Column Name</th><th>Description</th><th>Possible Return Values</th></tr>
<tr><td>RUN_TBB_LEVEL</td><td>Reporting level</td><td>DAY, DETAIL, TIMECARD</td></tr>
</table>

DEFVAL: Default value
RETURN Number: Return numeric value

</td></tr>
<tr><td>GET_RVALUE_NUMBER(
P_RULE_ID ,
P_VALUE_NAME ,
DEFVAL)
RETURN NUMBER</td><td>Use this function to get numeric values; set in the Rule Parameters section of the rule.

Note: A rule template uses the name from P_VALUE_NAME to populate the Parameters section of the rule template.

Parameters:

P_RULE_ID: Use the HWM_RULE_ID context (see Appendix 2: Contexts).
P_VALUE_NAME: Use only upper case alpha characters and underscores. The rule template uses this name to populate the Formula Parameter Name section of the Parameter page.
DEFVAL: Default value
RETURN NUMBER: Return numeric value

</td></tr>
<tr><td>GET_RVALUE_TEXT(
P_RULE_ID ,
P_VALUE_NAME ,</td><td>Same as GET_RVALUE_NUMBER, except it returns string values.

Parameters:</td></tr>
</table>

Function	Description
DEFVAL) RETURN VARCHAR2	• **P_RULE_ID**: Use the HWM_RULE_ID context (see Appendix 2: Contexts). • **P_VALUE_NAME**: Use only upper case alpha characters and underscores. The rule template uses this name to populate the Formula Parameter Name section of the Parameter page. • **DEFVAL**: Default value • **RETURN NUMBER**: Return varchar value
GET_RVALUE_DATE(P_RULE_ID , P_VALUE_NAME , DEFVAL) RETURN DATE	Same as GET_RVALUE_NUMBER, except it returns date values. Parameters: • **P_RULE_ID**: Use the HWM_RULE_ID context (see Appendix 2: Contexts). • **P_VALUE_NAME**: Use only upper case alpha characters and underscores. The rule template uses this name to populate the Formula Parameter Name section of the Parameter page. • **DEFVAL**: Default value • **RETURN NUMBER**: Return date value

Miscellaneous Functions

Function	Description
ADD_RLOG(P_FFS_ID , P_RULE_ID , P_LOG_TEXT)	Create a log for tracing and debug. All logs with this function appear on the Analyze Rule Processing Details page of the Time Management work area. They're in the Rule Processing Log column of the Processing Results section. Parameters: • **P_FFS_ID**: Use the HWM_FFS_ID context (see Appendix 2: Contexts). • **P_RULE_ID**: Use the HWM_RULE_ID context (see Appendix 2: Contexts). • **P_LOG_TEXT**: Any string for log or debug purposes.
GET_OUTPUT_MSG1(P_APP_SHORT_NAME, P_MESSAGE_NAME , TOKEN1_NAME , TOKEN1_VALUE) RETURN VARCHAR2	In time entry rule formulas, use this function to format the data repository message for output. **Note:** Any message that's passed as output for the data repository MUST use the appropriate GET_OUTPUT_MSG function for proper formatting. Use this function for the message code with a single token. It creates a single message string with one token for the output, formatted for use in workforce management. Parameters: • **P_APP_SHORT_NAME**: 3-character application short name, usually FND • **P_MESSAGE_NAME**: The message code as defined in the FND_MESSAGES table • **TOKEN1_NAME**: The token name as defined in the FND_MESSAGES table • **TOKEN1_VALUE**: The token Value • **RETURN VARCHAR2**: Formatted message ready for output Example:

Function	Description
	message_name: 'HWM_FF_TER_PERIOD_GT_MAX_WRN' message_text : The hours entered for the period exceed the maximum limit {DEF_LIMIT} defined for the time card. from fnd_messages P_MESSAGE_NAME: HWM_FF_TER_PERIOD_GT_MAX_WRN TOKEN1_NAME: 'DEF_LIMIT' TOKEN1_VALUE: 8 OUT_MSG = get_output_msg1 ('HWM' , P_MESSAGE_NAME, TOKEN1_NAME , TOKEN1_VALUE)
GET_OUTPUT_MSG2(P_APP_SHORT_NAME, P_MESSAGE_NAME , TOKEN1_NAME , TOKEN1_VALUE , TOKEN2_NAME , TOKEN2_VALUE) RETURN VARCHAR2	In time entry rule formulas, use this function to format the data repository message for output. Same as GET_OUTPUT_MSG1, except for messages that use two tokens.
GET_OUTPUT_MSG(P_APP_SHORT_NAME , P_MESSAGE_NAME) RETURN VARCHAR2	In time entry rule formulas, use this function to format the data repository message for output. Same as GET_OUTPUT_MSG1, except for messages with no tokens.
get_msg_tags p_msg_tags IN VARCHAR2) RETURN VARCHAR2	Used only with workforce compliance rules. Add comma-separated tags to the message. Sample: pTagVals = ' tag1, tag2, Compliance ' tm = get_msg_tags(pTagVals) || get_output_msg1 ('FND' ,pMsgCd ,tkn , val)
FUNCTION time_hhmm_to_dec(time_dec IN NUMBER) RETURN NUMBER;	This function converts time to decimal, for example, 2.59 hhmm to 2.983 dec.
FUNCTION raise_error(p_ffs_id IN NUMBER , p_rule_id IN NUMBER , p_message_text IN varchar2) return number ;	Stop processing and raise an application error.
FUNCTION get_measure_from_time(start_time IN date, stop_time IN date) RETURN NUMBER;	Calculate duration (measure) using the start and stop date_time stamps.
FUNCTION get_date_day_of_Week(p_in_date IN date) RETURN VARCHAR2;	Return the short (3 character), upper case day of week from the date, such as MON and TUE.
FUNCTION get_is_date_same_as_dow(	Compare the date with the string day of week and return YES or No.

Function	Description
p_in_date IN date , p_in_day_of_week IN VARCHAR2) RETURN VARCHAR2;	
FUNCTION is_date_between(compare_date IN date, start_time IN date, stop_time IN date) RETURN number;	Verify if compare_date is between the start_time and stop_time. • If the date time is between the start and stop dates, the function returns 1. • If the date time isn't between the start and stop dates, the function returns 0.
FUNCTION get_current_date RETURN date;	Return the current server date and time. The date time isn't based on user Time zone.
FUNCTION get_current_time (o_staus_log varchar2, o_current_time date, resource_id NUMBER, zone_type IN varchar2, zone_code IN varchar2, gmt_offset IN number,) RETURN O_STATUS VARCHAR2;	Get the current time stamp for the given resource, time zone type, and so on. Input: resource_id: if resource Id provided function will return current time based on resource (person) time zone. If Resource ID is not provided or to get current time for specific time zone: zone_type - valid Values ' ZONE' , ' OFFSET' zone_code Zone code, if Zone type set to 'Zone' gmt_offset gmt Offset, if zone type is set to ' OFFSET' Outputs o_current_time : current time for specified user/time zone, If Status is ''SUCCESS' Return O_STATUS ('SUCCESS', 'FAILED') - Status o_staus_log: If Status is Failed, information for failure
FUNCTION get_duration_start_to_now (o_staus_log varchar2, o_calculated_Hours number, resource_id IN NUMBER, start_Time IN date, start_zone_type IN varchar2, start_zone_code IN varchar2, start_gmt_offset IN number) RETURN O_STATUS VARCHAR2;	Calculate the duration from start_time to current time based on the user's time zone or the supplied zone and offset. Input: resource_id: if resource Id provided function will return current time based on resource (person) time zone. start_Time: Start Date time, of duration to current time If Resource ID is not provided or to get current time for specific time zone: zone_type - valid Values ' ZONE' , ' OFFSET' zone_code Zone code, if Zone type set to 'Zone' gmt_offset gmt Offset, if zone type is set to ' OFFSET' Outputs o_calculated_Hours: Calculated duration(hours) time for specified user/time zone, If Status is ''SUCCESS' Return O_STATUS ('SUCCESS', 'FAILED') - Status o_staus_log: If Status is Failed, information for failure
get_unprocessed_event_set (staus_log out varchar2, row_count out number, event_rs_key out varchar2, resource_id IN NUMBER, start_date IN date, end_date IN date)	Select unprocessed events for a given resource and date range, similar to (executeQuery). The function caches the identified data. Use the get_unprocessed_event_rec function to loop through and retrieve each row. STATUS TEXT Output. Request status, possible values are: • 'NO_REC_FOUND'

Function	Description

`RETURN STATUS VARCHAR2;`	• 'SUCCESS'
	• 'FAILED'
	status_log TEXT The output log file containing detailed information related to the 'FAILED' status and corresponding process data.
	
	`row_count NUMBER Number of rows selected`
	`event_rs_key Text - Output row set key required for get_unprocessed_event_rec function`
	`resource_id NUMBER Input Resource Id used to select records`
	`start_date date Start Date for row selection`
	`end_date date End date for row selection`

`get_unprocessed_event_rec (staus_log out varchar2, Event_Type out varchar2, Event_Time out date, Event_InOut out varchar2, event_rs_key IN VARCHAR2 , row_index IN NUMBER ) RETURN STATUS VARCHAR2;`	Get individual rows selected by the get_unprocessed_event_set function.
	
	STATUS TEXT Output. Request status, possible values are:
	• 'NO_REC_FOUND'
	• 'SUCCESS'
	• 'FAILED'
	staus_log TEXT The output log file containing detailed information related to the 'FAILED' status and corresponding process data.
	
	`Event output information: Event_Type, Event_Time, Event_InOut`
	`event_rs_key Text - Input row set key from get_unprocessed_event_set function`
	
	`row_index use index from 0 to row_count from get_unprocessed_event_set function to loop through and select rows`

`get_null_ff_text() RETURN VARCHAR2;`	Get the time rule or formula null value. The returned value is text.
`get_null_ff_num () RETURN NUMBER ;`	Get the time rule or formula null value. The returned value is numeric.
`get_null_ff_date () RETURN date;`	Get the time rule or formula null value. The returned value is a date.

Data Access View Entry (DAVE) Functions

These functions let you filter and summarize time repository data that aren't available in the current time card period. The details for each DAVE function are included in DAVE Functions for Workforce Management Fast Formulas chapter.

Input Attributes for Workforce Management Fast Formulas

You can use these input attributes from the HWM_TM_ATRB_FLDS_VL table and elsewhere in workforce management fast formulas.

INPUT (ATTRIBUTE NAME)	Description	Data Type
LayerGroupType	Type of time card Value is either 'REPORTED_TIME_CARD_ MISSING' or Null	Text
OraHwmHeaderComment	Header comment	Text
OraHwmTcRowStatus	Indicates whether the row was changed or not. Valid values are 'MODIFIED' or Null	Text

You can use any attribute listed in the HWM_TM_ATRB_FLDS_VL table as an input for fast formula. To get a complete list from your time repository data dictionary, use this SQL: `(SELECT NAME,DISPLAY_NAME, ATTRIBUTE_TYPE FROM HWM_TM_ATRB_FLDS_VL)`

INPUT (ATTRIBUTE NAME)	Display Name	Description
Measure	Hours	Time duration in Hours
StartTime	Start Time	Time that the entry started
StopTime	Stop Time	Time that the entry ended
UnitOfMeasure	Unit Of Measure	Unit of measure for the time entry, either Hours or Units
StartGmtOffset	Start GMT Offset	Number of hours to add to GMT to match the zone of the start time for the entry
StartTimeZoneCode	Start TimeZone Code	Zone code for the time that the entry ended
ZoneType	Zone Type	Time Zone Type (Time zone code or Offset)
TimeRecordType	Record Type	Type of Record 'RANGE' (Start/stop time was used to calculate time duration) or 'MEASURE' (Time duration was entered without start/stop time
CostSegment	Cost Segment	Payroll cost segment associated with the time entry
LDG_ID	Legislative Data Group	Identifier for partitioned payroll and related data
PJC_PROJECT_ID	Project	Project time attribute associated with the time entry
PJC_TASK_ID	Task	Task time attribute associated with the time entry
PayrollTimeType	Payroll Time Type	Payroll time type attribute associated with the time entry
Location	State	Top level of the geographical hierarchy of state, county, and city in the United States

11 DAVE Functions for Workforce Management Fast Formulas

DAVE_FIND_TIME_GAP Function

To look back at previous time cards and find the specified gap between time entries based on the start or stop time of each time entry, use the DAVE find time gap function.

Parameters

Parameter	Data Type	Comments
resource_id	NUMBER	Resource ID (Person ID) is available as a context value for current time card: GET_CONTEXT(HWM_RESOURCE_ID, 0)
max_lookback_days	NUMBER	The number of days that the function looks back to find the gap. The number must be more than 0 and less than 91. Valid values: (1 to 90)
gap_date_compare_type	TEXT	Indicates which dates are compared to identify the gap. Valid values: (START_START, START_STOP, STOP_START, STOP_STOP) • **START_START**: Compares the start time of one time entry to the start time of another time entry • **START_ STOP**: Compares the start time of one time entry to the stop time of another time entry • **STOP_START**: Compares the stop time of one time entry to the start time of another time entry • **STOP_STOP**: Compares the stop time of one time entry to the stop time of another time entry.
gap_limit_minutes	NUMBER	The number of minutes between 2 time entries.
first_detail_start	DATE	The start date and time of the current time card entry that the function uses as the point to begin looking back for the gap. The function begins with the time card that includes the date and start time, and looks back through older time cards until if finds the gap or reaches the maximum days to look back.
first_detail_stop	DATE	The stop date and time of the current time card entry that the function uses as the point to

Parameter	Data Type	Comments
		begin looking back for the gap. The function begins with the time card that includes the date and stop time, and looks back through older time cards until if finds the gap or reaches the maximum days to look back.
rec_grp_type	TEXT	For the record group select reported or calculated values Values: (REPORTED, CALCULATED)
time_card_ui_type	TEXT	In memory processing Time values: (REPORTED, CALCULATED)
time_card_status	TEXT	The time card status could include one or more of these values, separated by comma: (SUBMITTED, APPROVED, SAVED) A Null or blank status means select all values
time_Category_id	TEXT	Filter selection results by the time category ID: • Use the category ID selected for the main rule using the parameter type "Time category" (TIME_CATEGORY), or • Select a specific time category for this function using the parameter type "Function time category" (ORA_HWM_FF_CAT), or • Include all time card entries (no filter by time category) by setting this parameter to Null
assignment_Ids_Filter	TEXT	Filter selection results by one or more assignment IDs (subresource ID): • To include all assignments (no filter by assignment), set this parameter to Null • To filter by more than one assignment ID, use a comma to separate values • The current assignment ID is available from the formula input **`HWM_CTXARY_SUBRESOURCE_ID [idx]`**

Outputs

Parameter	Data Type	Comments
Status	TEXT	Request status, possible values are: • 'NO_REC_FOUND'

Parameter	Data Type	Comments
		• 'SUCCESS' • 'FAILED'
status_log	TEXT	The log file containing detailed information related to the 'FAILED' status and corresponding process data.
gap_found_in_minutes	NUMBER	Values: • Less than zero (-1): No gap found • Greater than zero: Number of minutes between Gap_before_...and gap_after_ ...dates, based on gap_date_compare_ type.
gap_before_start	DATE	Start date and time of the time entry before the gap
gap_before_stop	DATE	Stop date and time of the time entry before the gap
gap_after_start	DATE	Start date and time of the time entry after the gap
gap_after_stop	DATE	Stop date and time of the time entry after the gap

Example

Sample input parameters:

```
MAX_LOOKBACK_DAYS = 30
GAP_DATE_COMPARE_TYPE = STOP_START
GAP_LIMIT_MINUTES = 1440 Minutes (24 hours * 60)
FIRST_DETAIL_START = 4/22/18 8:00 AM
FIRST_DETAIL_STOP = 4/22/18 5:00 PM
```

Using the sample input parameters, the DAVE_FIND_TIME_GAP function returns these values:

```
GAP_FOUND_IN_MINUTES = 1620 Minutes (27 hours * 60)
GAP_BEFORE_START = 4/6/18 7:00 AM
GAP_BEFORE_STOP = 4/6/18 4:00 PM
GAP_AFTER_START = 4/7/18 7:00 PM
GAP_AFTER_STOP = 4/7/18 10:00 PM
```

The values

			Gap in Hours			
Date	**Start Time**	**Stop Time**	**START_START**	**START_STOP**	**STOP_START**	**STOP_START**
Mon, Apr 02, 2018	4/2/18 8:00 AM	4/2/18 11:00 AM	NA	NA	NA	NA
Tue, Apr 03, 2018	4/3/18 9:30 AM	4/3/18 11:20 AM	25.50	27.33	22.50	24.33
Wed, Apr 04, 2018	4/4/18 7:00 PM	4/4/18 10:00 PM	33.50	36.50	31.67	34.67

			Gap in Hours			
Date	**Start Time**	**Stop Time**	**START_START**	**START_STOP**	**STOP_START**	**STOP_START**
Thu, Apr 05, 2018	4/5/18 8:00 AM	4/5/18 5:00 PM	13.00	22.00	10.00	19.00
Fri, Apr 06, 2018	**4/6/18 7:00 AM**	**4/6/18 4:00 PM**	23.00	32.00	14.00	23.00
Sat, Apr 07, 2018	**4/7/18 7:00 PM**	**4/7/18 10:00 PM**	36.00	39.00	27.00	30.00
Sun, Apr 08, 2018	4/8/18 8:00 AM	4/8/18 5:00 PM	13.00	22.00	10.00	19.00
Mon, Apr 09, 2018	4/9/18 4:00 PM	4/9/18 10:00 PM	32.00	38.00	23.00	29.00
Tue, Apr 10, 2018	4/10/18 10:00 AM	4/10/18 7:00 PM	18.00	27.00	12.00	21.00
Wed, Apr 11, 2018	4/11/18 3:00 PM	4/11/18 9:00 PM	29.00	35.00	20.00	26.00
Thu, Apr 12, 2018	4/12/18 5:00 AM	4/12/18 4:00 PM	14.0	25.00	8.00	19.00
Fri, Apr 13, 2018	4/13/18 3:00 PM	4/13/18 7:00 PM	34.00	38.00	23.00	27.00
Sat, Apr 14, 2018	4/14/18 6:00 PM	4/14/18 10:00 PM	27.00	31.00	23.00	27.00
Sun, Apr 15, 2018	4/15/18 7:00 PM	4/15/18 10:00 PM	25.00	28.00	21.00	24.00
Mon, Apr 16, 2018	4/16/18 8:00 AM	4/16/18 4:00 PM	13.00	21.00	10.00	18.00
Tue, Apr 17, 2018	4/17/18 1:00 PM	4/17/18 6:00 PM	NA	NA	NA	NA
Tue, Apr 17, 2018	4/17/18 1:00 PM	4/17/18 6:00 PM	NA	NA	NA	NA
Tue, Apr 17, 2018	4/17/18 1:00 PM	4/17/18 6:00 PM	NA	NA	NA	NA
Tue, Apr 17, 2018	4/17/18 1:00 PM	4/17/18 6:00 PM	NA	NA	NA	NA
Tue, Apr 17, 2018	4/17/18 1:00 PM	4/17/18 6:00 PM	NA	NA	NA	NA
Tue, Apr 17, 2018	4/17/18 1:00 PM	4/17/18 6:00 PM	NA	NA	NA	NA

DAVE_TIME_SCAN_SET Function

The DAVE time scan set function is the first function that you include in relevant formulas. Use this function to select and prepare data for processing similar to (vo.executeQuery).

The function caches the identified data so that all later calls to these DAVE functions are free. That's they don't involve database queries or selections: DAVE_TIME_SCAN_REC_DAY, DAVE_TIME_SCAN_REC_DTL, and DAVE_TIME_SCAN_REC_TOTAL.

Parameters

Parameter	Data Type	Comments
resource_id	NUMBER	Resource ID (Person ID) is available as a context value for current time card: GET_CONTEXT(HWM_RESOURCE_ID, 0).
start_date	DATE	The start date of the time card data. The scan gets the entire time card though. For example, if the time card period is October 2 to 8, and you enter a start date of October 5 and an end date of October 10, the scan gets two time cards. One time card for the period October 2 to 8 and another for the period October 9 to 15.
end_date	DATE	The end date of the time card data. The scan gets the entire time card though. For example, if the time card period is October 2 to 8, and you enter a start date of October 5 and an end date of October 10, the scan gets two time cards. One time card for the period October 2 to 8 and another for the period October 9 to 15.
rec_grp_type	TEXT	For the record group, select reported or calculated values. Values: (REPORTED, CALCULATED)
time_card_ui_type	TEXT	In memory processing. Time values: (REPORTED, CALCULATED)
time_card_status	TEXT	The time card status could include one or more of these values, separated by comma: (SUBMITTED, APPROVED, SAVED). A Null or blank status means select all values.
time_Category_id	TEXT	Filter selection results by the time category ID: • Use the category ID selected for the main rule using the parameter type "Time category" (TIME_CATEGORY), or • Select a specific time category for this function using the parameter type "Function time category" (ORA_HWM_FF_CAT), or • Include all time card entries (no filter by time category) by setting this parameter to Null.
assignment_Ids_Filter	TEXT	Filter selection results by one or more assignment IDs (subresource ID): • To include all assignments (no filter by assignment), set this parameter to Null.

Parameter	Data Type	Comments
		• To filter by more than one assignment ID, use a comma to separate values. • The current assignment ID is available from the formula input **`HWM_CTXARY_SUBRESOURCE_ID [idx]`**.

Outputs

Output	Data Type	Comments
status	TEXT	Request status, possible values are: • 'NO_REC_FOUND' • 'SUCCESS' • 'FAILED'
status_log	TEXT	The log file containing detailed information related to the 'FAILED' status and corresponding process data.
row_count_day	NUMBER	The quantity of detail records selected.
row_count_dtl	NUMBER	The quantity of detail records selected.
rpt_start_date	DATE	The actual start date for the report, which might differ from the requested start date, based on the time card period. The report start and end dates include the start and end dates of the time card period, for requested time.
rpt_end_date	DATE	The actual end date for the report, which might differ from the requested end date, based on the time card period. The report start and end dates include the start and end dates of the time card period, for requested time.
rpt_rs_key	TEXT	All later DAVE operations, such as these, require the row set key: • DAVE_TIME_SCAN_REC_DAY • DAVE_TIME_SCAN_REC_DTL • DAVE_TIME_SCAN_REC_TOTAL

DAVE_TIME_SCAN_RESET_INDEX Function

To loop through all the rows without an index (vo.first), set the row pointer to the first row in the DAVE time scan reset index function.

Parameter

Parameter	Data Type	Comments
rpt_rs_key	TEXT	The row set key provided as an output by the DAVE_TIME_SCAN_SET function.

Output

Output	Data Type	Comments
status	TEXT	Request status, possible values are: • 'SUCCESS' • 'FAILED'

DAVE_TIME_SCAN_REC_DAY Function

To get the day total for one day (SUM_DAY) or the interval to date (SUM_ITD), use the DAVE time scan record day function.

Parameters

Parameter	Data Type	Comments
rpt_rs_key	TEXT	The row set key provided as an output by the DAVE_TIME_SCAN_SET function.
eff_date	DATE	Get the time totals for a specific date. The row index must be null or -2
is_sum_itd	TEXT	Indicate whether to sum time for the day or interval to date (ITD). Valid values are: • 'Y' = Sum ITD • 'No' = Sum Day Sum ITD sums all the daily time totals from the start of the period to the requested date (eff_date parameter). Sum Day returns a summed time total for just the requested day (eff_date parameter).
is_use_day_type	TEXT	Indicate whether the day total should use the reported time card date, overtime date, or earned date.

Parameter	Data Type	Comments
		Valid values: • Y, REFERENCE, OVERTIME: Use reference date or overtime days • N, TIMECARD, or leave blank: Use time card date • EARNED: Use Earned date
period_id (optional)	NUMBER	If the period start date is different from the time card start date, for ITD time totals select period start dates using the period ID. If the value is 0 or Null (this parameter is optional), the function uses the time card period to calculate ITD time totals. There are three ways to obtain the period ID. • Use GET_REPEATING_PERIOD_ID to retrieve the overtime period ID associated with the person assignment or, if not there, then the person profile, by person ID. • Use GET_PERIOD_ID_BY_BAL_DIM_NAME to retrieve the period ID associated with the balance definition, by balance dimension name. • Use the parameter type "Time period" (ORA_HWM_PERIOD), to pass the period ID using the rule parameter.
row_index (optional)	NUMBER	This parameter is optional if eff_date is used. Use the row index to loop through by index or select a specific row by index. Values: • 0 to row_count_day where row_count_day is the number of days provided as an output by the DAVE_TIME_SCAN_SET function • 1 (negative one) for next record, similar to vo.next; no need to use the row index • -2 (negative two) or don't use this parameter if selecting by eff_date and the date is not Null; row index is ignored

Outputs

Output	Data Type	Comments
status	TEXT	Request status, possible values are:

Output	Data Type	Comments
		• 'SUCCESS' • 'FAILED'
status_log	TEXT	The log file containing detailed information related to the 'FAILED' status and corresponding process data.
tc_date	DATE	The actual date retrieved. The tc_date matches the eff_date parameter when the function uses the parameter.
measure	NUMBER	The summed time totals for the day or ITD.
PrdStDate	DATE	Period start date

DAVE_TIME_SCAN_REC_TOTAL Function

To get the time total for the requested date range, use the DAVE time scan record total function.

Parameters

Parameter	Data Type	Comments
rpt_rs_key	TEXT	The row set key provided as an output by the DAVE_TIME_SCAN_SET function.
is_use_day_type	TEXT	Indicate whether the day total should use the reported time card date, overtime date, or earned date. Valid values: • Y, REFERENCE, OVERTIME: Use reference date or overtime days • N, TIMECARD, or leave blank: Use time card date • EARNED: Use Earned date
start_date	DATE	Start date for the period total (optional). Both the start and end dates are required for a specific period total, otherwise the total returns the row set period total.
stop_date	DATE	End date for the period total (optional). Both the start and end dates are required for a specific period total, otherwise the total returns the row set period total.

Outputs

Output	Data Type	Comments
status	TEXT	Request status, possible values are: • 'NO_REC_FOUND' • 'SUCCESS' • 'FAILED'
status_log	TEXT	The log file containing detailed information related to the 'FAILED' status and corresponding process data.
measure	NUMBER	The summed time totals for the date range specified by the start and end dates.

GET_REPEATING_PERIOD_ID Function

To get the overtime repeating period ID associated with the person profile by resource ID (person ID), use the DAVE get repeating period ID function.

Parameters

Parameter	Data Type	Comments
resource_id	NUMBER	The resource ID (person ID) is available as a context value for the current time card: GET_CONTEXT(HWM_RESOURCE_ID, 0)
start_date	DATE	The start date of the time card.

Outputs

Output	Data Type	Comments
status_log	TEXT	The log file containing detailed information related to the 'FAILED' status and corresponding process data.
period_id	NUMBER	The period ID for the overtime repeating period. A 0 value means that the function didn't find a period ID. Check the log file for more details.

DAVE_TIME_SCAN_REC_DTL2 Function

To get detailed information for the selected time card rows, Use the DAVE time scan record DTL2 function.

Parameters

Parameter	Data Type	Comments
rpt_rs_key	TEXT	The row set key provided as an output by the DAVE_TIME_SCAN_SET function.
row_index	NUMBER	This parameter is optional. Use the row index to loop through by index or select a specific row by index. Values: • 0 to **`row_count_ dtl`**, where **`row_count_ dtl`** is the number of detail records from DAVE_TIME_SCAN_SET output. • Use negative one (-1) for next record, similar to vo.next. You don't need to use index.

Outputs

Output	Data Type	Comments
status_log	TEXT	Request status, possible values are: • 'NO_REC_FOUND' • 'SUCCESS' • 'FAILED'
status_log	TEXT	The log file containing detailed information related to the 'FAILED' status and corresponding process data.
tc_date	DATE	The actual date retrieved. The tc_date matches the eff_date parameter when the function uses the parameter.
is_use_day_type	TEXT	Indicate whether the day total should use the reported time card date, overtime date, or earned date. Valid values:

Output	Data Type	Comments
		• Y, REFERENCE, OVERTIME: Use reference date or overtime days • N, TIMECARD, or leave blank: Use time card date • EARNED: Use Earned date
Overtime_Date	DATE	Date to use for the time entry when calculating overtime
Earned_Date	DATE	Date to use when processing the time entry for payment
measure	NUMBER	The summed time totals for the selected rows.
uom	TEXT	Unit of measure for the time date in the selected rows, valid values are Hours and Units.
start_time	DATE	The start time of the time entry.
stop_time	DATE	The end time of the time entry.
abs_type	TEXT	The absence type time attribute, which Oracle Fusion Absence Management provides.
pay_type	TEXT	The payroll time type attribute, which Oracle Fusion Global Payroll provides.
time_data_type	TEXT	The type of time data, valid values are: MEASURE and RANGE • MEASURE: The time entry value is a duration rather than a combination of start and end times. • RANGE: The time entry value is composed of start and end times rather than a duration.
zone_type	TEXT	The zone type to use when offsetting start and end dates and times.
start_time_zone_code	TEXT	The zone code to use when offsetting the start date and time.
stop_time_zone_code	TEXT	The zone code to use when offsetting the stop date and time.
start_gmt_offset	NUMBER	The Greenwich Mean Time (GMT) to use when offsetting the start date and time.
stop_gmt_offset	NUMBER	The Greenwich Mean Time (GMT) to use when offsetting the stop date and time.

GET_PERIOD_ID_BY_BAL_DIM_NAME Function (NonJava)

To get the ID for the overtime repeating period associated with the balance dimension, Use the DAVE get period ID by balance dimension name function.

Parameter

Parameter	Data Type	Comments
base_dimension_name	TEXT	The name of the balance dimension that includes the overtime repeating period.

Outputs

Output	Data Type	Comments
status_log	TEXT	The log file containing detailed information related to the 'FAILED' status and corresponding process data.
period_id	NUMBER	The period ID for the overtime repeating period. A 0 value means that the function didn't find a period ID. Check the log file for more details.

12 Advanced Time Category Rule Fast Formulas

ORA_WFM_ACR_ENTRY_AND_NO_SCHEDULE_AP Formula

Identify whether a person is scheduled to work that day using this fast formula. For example, use it to show an attestation that warns the person that they weren't scheduled to work today.

This formula uses an array to process time card data. It isn't associated with any delivered advanced time category rule templates.

Example

A time category includes the formula as an advanced condition. An attestation set with an attestation that appears when a person reports time on a day they aren't scheduled to work includes the time category.

The person reporting time is scheduled to work the Regular shift (8:00a to 2:00p) on days 1, 2, 4, and 5. They aren't scheduled to work on day 3.

Day	Web Clock Events	Time Entry	Output	Attestation
1	In: 8:02a Out: 2:01p	8:02a to 2:01p	False	None
2	In: 8:03a Out: 1:58p	8:03a to 1:58p	False	None
3 (current day)	In: 8:01a	8:01a	True	A question about working extra hours appears.

ORA_WFM_ACR_VALIDATE_SCHEDULE_DEVIATION_AP Formula

Identify whether the reported In or Out time is before or after the scheduled time, plus or minus the grace period using this fast formula. For example, use it to display an attestation that warns of a schedule deviation.

This formula uses an array to process time card data. It isn't associated with any delivered advanced time category rule templates.

Parameter

Name	Type	Description
PAYTYPES_TO_VALIDATE	Fixed text	List of comma-separated payroll time types that identify the reported time to compare with the schedule. If blank or equal to null, the formula uses all payroll time types.

Function

The formula output is True if the reported time doesn't match the scheduled time and is outside the grace period.

Example

A time category includes the formula as an advanced condition. An attestation set with an attestation that appears when the formula finds a schedule deviation includes the time category.

The person reporting time is scheduled to work the Morning shift (6a to 11a), which has these limits:

- Grace period: 5 minutes
- Start early and late, and end early and late periods: 30 minutes

Day	Web Clock Events	Time Entry	Output	Attestation
1	In: 6:02a Out: 11:05a	6:02a to 11:05a	False	None
2	In: 6:11a Out: 11:05a	6:11a to 11:05a	True	A question about schedule deviation appears because the start time is after the scheduled start plus the grace period.
3	In: 6:05a Out: 11:15a	6:05a to 11:15a	True	A question about schedule deviation appears because the end time is after the scheduled end plus the grace period.
4	In: 5:13a Out: 11:01a	5:13a to 11:05a	True	A question about schedule deviation appears because the start time is before the scheduled start minus the grace period and the start early period.
5	In: 5:50a Out: 11:05a	5:50a to 11:05a	True	A question about schedule deviation appears because the start time is before the

Day	Web Clock Events	Time Entry	Output	Attestation
				scheduled start minus the grace period.

13 Time Calculation Rule Fast Formula

ORA_WFM_TCR_ACCESS_ATTESTATION_ANSWERS_AP Fast Formula

Check the specified attestation to see if the person submitted an answer that requires the formula to generate another time entry. For example, generate a penalty when the person didn't take a meal break for business reasons.

This formula uses an array to process time card data. It isn't associated with any delivered time calculation rule templates.

Parameters

Name	Data Type	Description
QUESTION_CODE	Fixed text	Code of the question asked in the attestation.
ANSWER_CODE	Fixed number	Code of the answer that the worker submitted in the attestation.
GENERATED_QUANTITY	Fixed number	Quantity of the time entry that the formula generates.

Outputs

Name	Output Group	Time Attribute	Description
GRP1_MEASURE	1	Measure	Original quantity
GRP1_START_TIME	1	StartTime	Original start time
GRP1_STOP_TIME	1	StopTime	Original start time
GRP2_QUANTITY	2	Measure	Quantity, in hours or units, of the time entry that the formula generates according to the answer code.

Function

Generate a time entry with the specified quantity when both of these conditions get met:

- The question code is equal to the specified value of the Question code parameter
- The answer code is equal to the specified value of the Answer code parameter

Example

The person has an attestation set that includes a meal break attestation. The attestation time category from this attestation set helps identify a clock out more than 5 hours after the previous clock in. Because the elapsed duration is more than 5 hours, the meal break attestation appears. When the person confirms that they didn't take a meal break, they get asked why--personal or business reasons? If it was for business reasons, the formula generates the specified payroll time entry.

Day	Web Clock Events	Time Entry	Elapsed Duration Between In and Out	Meal Break	Attestation	Generated Time Entry
1	In: 8:02a Out: 1:01p	8:02a to 1:01p	4h 59m	0	None because the elapsed duration is less than 5h.	None
2	In: 8:03a Out: 1:58p	8:03a to 1:58p	5h 55m	0	A question about the meal break appears because the elapsed duration is more than 5h. The person answers that they didn't take their meal break for business reasons.	1 credit The payroll time type is measure in Units.
3	In: 8:01a	8:01a	8:01a	0	None because the person didn't clock out, and it's this action that causes the attestation to appear.	NA
4	In: 8:03a Out: 1:58p	8:03a to 1:58p	7h 55m	0	A question about the meal break appears because the elapsed duration is more than 5h. The person answers that they did take their meal break. They need to report it or ask their manager to do so.	None
5	In: 7:58a Out: 1:58p	7:58a to 1:58p	6h 00m	0	A question about the meal break appears because the elapsed duration is more than 5h. The person answers that they didn't take their meal break for personal reasons.	None

ORA_WFM_TCR_ALLOCATION_TIME_AP Fast Formula

This fast formula is associated with the delivered rule template Time Allocation Template. If the person has a time allocation assigned by the Manage Allocation Assignments task, then the formula uses this allocation. Otherwise, it uses the allocation selected in the rule configuration. In both cases, the allocation formula uses either reported or calculated time, depending on the processing sequence of the allocation rule in the rule set. The formula allocates the time identified by the source time category across the output time attributes. This formula uses an array to process time data.

If you want the review page of the time card to show the cost segment outputs configured in the time allocation, complete these tasks:

1. Configure the time review layouts for workers and managers accordingly.
2. Associate the appropriate layout set with the worker time entry profiles.

Parameter

Name	Type	Description
ASSIGN_FRACTION_TO_LAST_ROW	Yes or No	Indicates whether to adjust the last row of the time allocation output so that total allocated hours match the number of hours identified by the allocation rule. The time allocations that use this parameter have either the type Percent or Equally.

Outputs

This formula has no output variables. It uses the outputs configured for the time allocation assigned to the person when the rule runs.

Examples of Percentage Allocations

Example 1: The reported time doesn't include any conflicts with the person's assigned allocation.

Day	Worked Time	Department	Reported Time	Calculated Time
Mon thru Fri	Regular	Cardiac Care Intensive Care	8a to 4p	4h 4h
	Daily Totals	Regular:	8h	0h
		Regular, Cardiac Care:	0h	4h
		Regular, Intensive Care:	0h	4h
		Total	8h	8h

Day	Worked Time	Department	Reported Time	Calculated Time
	Weekly Totals	Regular:	40h	0h
		Regular, Cardiac Care:	0h	20h
		Regular, Intensive Care:	0h	20h
		Total:	40h	40h

Example 2: The reported time includes conflicts with the person's assigned allocation.

Day	Worked Time	Department	Reported Time	Calculated Time
Mon	Regular	Cardiac Care Intensive Care	8a to 4p	4h 4h
	On-Call	Intensive Care	2p to 4p	2h
		Daily Total:	8h	8h
Tue	Regular	Cardiac Care Intensive Care	8a to 12p	2h 2h
	Regular	Emergency	8a to 4p	8h
		Daily Total:	8h	8h
Wed	Regular	Cardiac Care Intensive Care	8a to 4p	4h 4h
		Daily Total:	8h	8h
Thu	Regular	Emergency	8a to 4p	8h
		Daily Total:	8h	8h
Fri	Regular	Cardiac Care Intensive Care	8a to 12p	2h 2h
		Daily Total:	4h	4h
Sat	Regular	Emergency	1p to 5p	4h
		Daily Total:	4h	4h
	Weekly Totals	Regular:	22h	0h

Day	Worked Time	Department	Reported Time	Calculated Time
		Regular, Cardiac Care:	0h	11h
		Regular, Intensive Care:	0h	11h
		On-Call, Intensive Care:	2h	2h
		Regular, Emergency:	16h	16h
		Total:	40h	40h

Examples of Quantity Allocations

Allocation configuration: These next four allocation examples distribute the first 20 hours of reported regular time to Cardiac Care. They distribute the next 20 hours to Intensive Care.

Example 1: The total for the time card period equals the defined allocation quantity.

Day	Worked Time	Department	Reported Time	Calculated Time
Mon	Regular	Cardiac Care	8a to 4p	8h
		Daily Total:	8h	8h
Tue	Regular	Cardiac Care	8a to 4p	8h
		Daily Total:	8h	8h
Wed	Regular	Cardiac Care Intensive Care	8a to 4p	4h 4h
		Daily Total:	8h	8h
Thu	Regular	Intensive Care	8a to 4p	8h
		Daily Total:	8h	8h
Fri	Regular	Intensive Care	8a to 4p	8h
		Daily Total:	8h	8h
	Weekly Totals	Regular:	40h	0h
		Regular, Cardiac Care:	0h	20h
		Regular, Intensive Care:	0h	20h

Day	Worked Time	Department	Reported Time	Calculated Time
		Total:	40h	40h

Example 2: The total for the time card period is less than the defined allocation quantity.

Day	Worked Time	Department	Reported Time	Calculated Time
Mon	Regular	Cardiac Care	8a to 12p	4h
		Daily Total:	4h	4h
Tue	Regular	Cardiac Care	8a to 4p	8h
		Daily Total:	8h	8h
Wed	Regular	Cardiac Care	8a to 4p	8h
		Daily Total:	8h	8h
Thu	Regular	Intensive Care	8a to 4p	8h
		Daily Total:	8h	8h
Fri	Regular	Intensive Care	1p to 5p	4p
		Daily Total:	4h	4h
	Weekly Totals	Regular:	32h	0h
		Regular, Cardiac Care:	0h	20h
		Regular, Intensive Care:	0h	12h
		Total:	32h	32h

Example 3: The total for the time card period is more than the defined allocation quantity.

Day	Worked Time	Department	Reported Time	Calculated Time
Mon	Regular	Cardiac Care	8a to 4p	8h
		Daily Total:	8h	8h
Tue	Regular		8a to 6p	

Day	Worked Time	Department	Reported Time	Calculated Time
		Cardiac Care		10h
			Daily Total: 10h	10h
Wed	Regular	Cardiac Care Intensive Care	8a to 4p	2h 6h
			Daily Total: 8h	8h
Thu	Regular	Intensive Care	8a to 4p	8h
			Daily Total: 8h	8h
Fri	Regular	Intensive Care	8a to 4p	2h 6h
			Daily Total: 8h	8h
Sat	Regular		8a to 4p	8h
			Daily Total: 8h	8h
	Weekly Totals	Regular:	50h	10h
		Regular, Cardiac Care:	0h	20h
		Regular, Intensive Care:	0h	20h
		Total:	50h	50h

Example 4: The total for the time card period is more than the defined allocation quantity. Also, the reported time includes conflicts with the person's assigned allocation.

Day	Worked Time	Department	Reported Time	Calculated Time
Mon	Regular	Cardiac Care	8a to 2p	6h
	On-Call	Intensive Care	2p to 4p	2h
			Daily Total: 8h	8h
Tue	Regular	Cardiac Care	8a to 12p	4h
	Regular	Emergency	1p to 5p	4h

Day	Worked Time	Department	Reported Time	Calculated Time
		Daily Total:	10h	10h
Wed	Regular	Cardiac Care	8a to 4p	8h
		Daily Total:	8h	8h
Thu	Regular	Emergency	8a to 4p	8h
		Daily Total:	8h	8h
Fri	Regular	Cardiac Care Intensive Care	8a to 12p	2h 2h
	On-Call	Intensive Care	1p to 5p	4h
		Daily Total:	8h	8h
Sat	Regular	Intensive Care	8a to 12p	4h
		Daily Total:	4h	4h
Sun	Regular	Emergency	8a to 12p	4h
		Daily Total:	4h	4h
	Weekly Totals:	Regular:	26h	0h
		Regular, Cardiac Care:	0h	20h
		Regular, Intensive Care:	0h	6h
		On-Call, Intensive Care:	6h	6h
		Regular, Emergency:	16h	16h
		Total:	48h	48h

Allocation configuration: This allocation example distributes reported regular time as shown here. Also, the reported time includes conflicts with the person's assigned allocation.

Priority	Allocation Type Quantity	Department
5	20	Cardiac Care
10	20	Intensive Care
15	Balance	Operation

Day	Worked Time	Department	Reported Time	Calculated Time
Mon	Regular	Cardiac Care	8a to 4p	8h
		Daily Total:	8h	8h
Tue	Regular	Cardiac Care	1p to 5p	4h
	Regular	Emergency	1p to 5p	4h
		Daily Total:	12h	12h
Wed	Regular	Cardiac Care Intensive Care	8a to 4p	6h 2h
		Daily Total:	8h	8h
Thu	Regular	Intensive Care Operation	8a to 4p	6h 2h
	Regular	Emergency	8a to 4p	8h
		Daily Total:	16h	16h
Fri	Regular	Operation	8a to 12p	4h
		Daily Total:	4h	4h
Sat	On-Call	Emergency	8a to 12p	4h
		Daily Total:	4h	4h
Sun	Regular	Emergency	8a to 4p	8h
		Daily Total:	8h	8h
	Weekly Totals	Regular:	36h	0h
		Regular, Cardiac Care:	0h	20h
		Regular, Intensive Care:	0h	10h
		Regular, Operation:	0h	6h
		Regular, Emergency:	20h	20h
		On-Call Emergency:	4h	4h
		Totals:	60h	60h

Examples of Quantity Allocations

Allocation configuration: These next four allocation examples distribute the first 20 hours of reported regular time to Cardiac Care. They distribute the next 20 hours to Intensive Care.

Example 1: The total for the time card period equals the defined allocation quantity.

Day	Worked Time	Department	Reported Time	Calculated Time
Mon	Regular	Cardiac Care	8a to 4p	8h
		Daily Total:	8h	8h
Tue	Regular	Cardiac Care	8a to 4p	8h
		Daily Total:	8h	8h
Wed	Regular	Cardiac Care Intensive Care	8a to 4p	4h 4h
		Daily Total:	8h	8h
Thu	Regular	Intensive Care	8a to 4p	8h
		Daily Total:	8h	8h
Fri	Regular	Intensive Care	8a to 4p	8h
		Daily Total:	8h	8h
	Weekly Totals	Regular:	40h	0h
		Regular, Cardiac Care:	0h	20h
		Regular, Intensive Care:	0h	20h
		Total:	40h	40h

Example 2: The total for the time card period is less than the defined allocation quantity.

Day	Worked Time	Department	Reported Time	Calculated Time
Mon	Regular	Cardiac Care	8a to 12p	4h
		Daily Total:	4h	4h

Day	Worked Time	Department	Reported Time	Calculated Time
Tue	Regular	Cardiac Care	8a to 4p	8h
		Daily Total:	8h	8h
Wed	Regular	Cardiac Care	8a to 4p	8h
		Daily Total:	8h	8h
Thu	Regular	Intensive Care	8a to 4p	8h
		Daily Total:	8h	8h
Fri	Regular	Intensive Care	1p to 5p	4h
		Daily Total:	4h	4h
	Weekly Totals	Regular:	32h	0h
		Regular, Cardiac Care:	0h	20h
		Regular, Intensive Care:	0h	12h
		Total	32h	32h

Example 3: The total for the time card period is more than the defined allocation quantity.

Day	Worked Time	Department	Reported Time	Calculated Time
Mon	Regular	Cardiac Care	8a to 4p	8h
		Daily Total:	8h	8h
Tue	Regular	Cardiac Care	8a to 6p	10h
		Daily Total:	10h	10h
Wed	Regular	Cardiac Care Intensive Care	8a to 4p	2h 6h
		Daily Total:	8h	8h
Thu	Regular	Intensive Care	8a to 4p	8h

Day	Worked Time	Department	Reported Time	Calculated Time
		Daily Total:	8h	8h
Fri	Regular	Intensive Care	8a to 4p	2h 6h
		Daily Total:	8h	8h
Sat	Regular		8a to 4p	8h
		Daily Total:	8h	8h
	Weekly Totals	Regular:	50h	10h
		Regular, Cardiac Care:	0h	20h
		Regular, Intensive Care:	0h	20h
		Total	50h	50h

Example 4: The total for the time card period is more than the defined allocation quantity. Also, the reported time includes conflicts with the person's assigned allocation.

Day	Worked Time	Department	Reported Time	Calculated Time
Mon	Regular	Cardiac Care	8a to 2p	6h
	On-Call	Intensive Care	2p to 4p	2h
		Daily Total:	8h	8h
Tue	Regular	Cardiac Care	8a to 12p	4h
	Regular	Emergency	1p to 5p	4h
		Daily Total:	10h	10h
Wed	Regular	Cardiac Care	8a to 4p	8h
		Daily Total:	8h	8h
Thu	Regular	Emergency	8a to 4p	8h
		Daily Total:	8h	8h
Fri	Regular	Cardiac Care	8a to 12p	2h

Day	Worked Time	Department	Reported Time	Calculated Time
		Intensive Care		2h
	On-Call	Intensive Care	1p to 5p	4h
		Daily Total:	8h	8h
Sat	Regular	Intensive Care	8a to 12p	4h
		Daily Total:	4h	4h
Sun	Regular	Emergency	8a to 12p	4h
		Daily Total:	4h	4h
	Weekly Totals	Regular:	26h	0h
		Regular, Cardiac Care:	0h	20h
		Regular, Intensive Care:	0h	6h
		On-Call, Intensive Care:	6h	6h
		Regular, Emergency:	16h	16h
		Total	48h	48h

Allocation configuration: This allocation example distributes reported regular time as shown here. Also, the reported time includes conflicts with the person's assigned allocation.

Priority	Allocation Type Quantity	Department
5	20	Cardiac Care
10	20	Intensive Care
15	Balance	Operation

Day	Worked Time	Department	Reported Time	Calculated Time
Mon	Regular	Cardiac Care	8a to 4p	8h
		Daily Total:	8h	8h
Tue	Regular	Cardiac Care	8a to 4p	8h
	Regular	Emergency	1p to 5p	4h
		Daily Total:	12h	12h

Day	Worked Time	Department	Reported Time	Calculated Time
Wed	Regular	Cardiac Care Intensive Care	8a to 4p	6h 2h
		Daily Total:	8h	8h
Thu	Regular	Intensive Care Operation	8a to 4p	6h 2h
	Regular	Emergency	8a to 4p	8h
		Daily Total:	16h	16h
Fri	Regular	Operation	8a to 12p	4h
		Daily Total:	4h	4h
Sat	On-Call	Emergency	8a to 12p	4h
		Daily Total:	4h	4h
Sun	Regular	Emergency	8a to 4p	8h
		Daily Total:	8h	8h
	Weekly Totals	Regular:	36h	0h
		Regular, Cardiac Care:	0h	20h
		Regular, Intensive Care:	0h	10h
		Regular, Operation:	0h	6
		Regular, Emergency:	20h	20h
		On-Call, Emergency:	4h	4h
		Total:	60h	60h

Examples of Equally Distributed Allocations

Allocation configuration: These next two allocation examples distribute reported regular time equally across these departments: Cardiac Care, Intensive Care, and Emergency.

Example 1: The reported time doesn't include any conflicts with the person's assigned allocation.

Day	Worked Time	Department	Reported Time	Calculated Time
Mon thru Fri	Regular	Cardiac Care	8a to 40	2.66h

Day	Worked Time	Department	Reported Time	Calculated Time
		Intensive Care Emergency		2.66h 2.66h
	Daily Totals	Regular:	8h	0h
		Regular, Cardiac Care:	0h	2.66h
		Regular, Intensive Care:	0h	2.66h
		Regular, Emergency:	0h	2.66h
		Total:	8h	7.98h
	Weekly Totals	Regular:	40h	0h
		Regular, Cardiac Care:	0h	13.3h
		Regular, Intensive Care:	0h	13.3h
		Regular, Emergency:	0h	13.3h
		Total:	40h	39.9h

Example 2: The reported time includes conflicts with the person's assigned allocation.

Day	Worked Time	Department	Reported Time	Calculated Time
Mon	Regular	Cardiac Care Intensive Care Emergency	8a to 2p	2h 2h 2h
	On-Call	Intensive Care	2p to 4p	2h
		Daily Total:	8h	8h
Tue	Regular	Cardiac Care Intensive Care Emergency	8a to 12p	1.33h 1.33h 1.33h
	Regular	Emergency	1p to 5p	4h
		Daily Total:	8h	7.99h
Wed	Regular	Cardiac Care Intensive Care	8a to 4p	2.66h 2.66h

Day	Worked Time	Department	Reported Time	Calculated Time
		Emergency		2.66
		Daily Total:	8h	7.98h
Thu	Regular	Emergency	8a to 4p	8h
		Daily Total:	8h	8h
Fri	Regular	Cardiac Care Intensive Care Emergency	8a to 12p	1.33h 1.33h 1.33h
		Daily Total:	4h	3.99h
Sat	On-Call	Intensive Care	1p to 5p	4h
		Daily Total:	4h	4h
	Weekly Totals	Regular:	22h	0h
		Regular, Cardiac Care:	0h	7.32h
		Regular, Intensive Care:	0h	7.32h
		Regular, Emergency:	12h	12h
		On-Call, Intensive Care:	6h	6h
		Total:	40h	39.96h

Examples of Daily Overtime Calculations and Percentage Allocations

Allocation configuration: These next two allocation examples distribute 50 percent of the reported and calculated time to Cardiac Care and the other 50 percent to Intensive Care.

Example 1: The reported time doesn't include any conflicts with the person's assigned allocation.

Day	Worked Time	Department	Reported Time	Calculated Time
Mon	Regular	Cardiac Care Intensive Care	8a to 6p	4h 4h
	Overtime	Cardiac Care Intensive Care		1h 1h
		Daily Total:	10h	10h

Day	Worked Time	Department	Reported Time	Calculated Time
Tue	Regular	Cardiac Care Intensive Care	8a to 4p	4h 4h
		Daily Total:	8h	7.99h
Wed	Regular	Cardiac Care Intensive Care	8a to 4:30p	4h 4h
	Overtime	Cardiac Care Intensive Care		.25h .25h
		Daily Total:	8.5h	8.5h
Thu	Regular	Cardiac Care Intensive Care	8a to 4p	4h 4h
		Daily Total:	8h	8h
Fri	Regular	Cardiac Care Intensive Care	8a to 5p	4h 4h
	Overtime	Cardiac Care Intensive Care		.5h .5h
		Daily Total:	9h	9h
	Weekly Totals	Regular:	43.5h	0h
		Regular, Cardiac Care:	0h	20h
		Regular, Intensive Care:	0h	20h
		Overtime, Cardiac Care:	0h	1.75h
		Overtime, Intensive Care:	0h	1.75h
		Total:	43.5h	43.5h

Example 2: The reported time includes conflicts with the person's assigned allocation.

Day	Worked Time	Department	Reported Time	Calculated Time
Mon	Regular	Cardiac Care	7a to 12p	2.5h

Day	Worked Time	Department	Reported Time	Calculated Time
		Intensive Care		2.5h
	Regular	Emergency	1p to 4p	3h
	On-Call	Intensive Care	4p to 6p	
	Overtime	Intensive Care		2h
			Daily Total: 10h	10h
Tue	Regular	Emergency	8a to 5p	8h
	Overtime	Emergency		1h
			Daily Total: 9h	9h
Wed	On-Call	Intensive Care	8a to 4:30p	8h
	Overtime	Intensive Care		.5h
			Daily Total: 8.5h	8.5h
Thu	Regular	Cardiac Care Intensive Care	8a to 5p	4h 4h
	Overtime	Cardiac Care Intensive Care		.5h .5h
			Daily Total: 9h	9h
Fri	Regular	Cardiac Care Intensive Care	8a to 5p	4h 4h
	Overtime	Cardiac Care Intensive Care		.5h .5h
			Daily Total: 9h	9h
	Weekly Totals	Regular:	23.5h	0h
		Regular, Cardiac Care:	0h	10.5h
		Regular, Intensive Care:	0h	10.5h
		Regular, Emergency:	12h	11h
		On-Call, Intensive Care:	10.5h	8h
		Overtime, Emergency	0h	1h

Day	Worked Time	Department	Reported Time	Calculated Time
		Overtime, Cardiac Care:	0h	1h
		Overtime, Intensive Care:	0h	3.5h
		Total:	45.5h	45.5h

Examples of Daily Overtime Calculations and Quantity Allocations

Allocation configuration: This allocation example distributes the first 20 hours of reported and calculated time to Cardiac Care. They distribute the next 20 hours to Intensive care.

Example: The reported time includes conflicts with the person's assigned allocation. The total for the time card period is more than the defined allocation quantity.

Day	Worked Time	Department	Reported Time	Calculated Time, No Daily OT	Calculated Time, Daily OT
Mon	Regular	Cardiac Care	8a to 2p	6h	6h
	On-Call	Intensive Care	2p to 4p	2h	2h
	Regular	Emergency	4p to 6p	2h	
	Overtime	Emergency		2h	2h
		Daily Total:	10h	10h	10h
Tue	Regular	Cardiac Care	8a to 12p	4h	4h
	Regular	Emergency	1p to 5p	4h	4h
		Daily Total:	8h	8h	8h
Wed	Regular	Cardiac Care	7a to 12p	5h	5h
	On-Call	Intensive Care	1p to 4p	3h	3h
	Regular	Emergency	4p to 6p	2h	
	Overtime	Emergency			2h
		Daily Total:	10h	10h	10h
Thu	Regular	Emergency	8a to 4p	8h	8h
		Daily Total:	8h	8h	8h
Fri	Regular	Cardiac Care	8a to 12p	4h	4h
	On-Call	Intensive Care	1p to 5p	4h	4h

Day	Worked Time	Department	Reported Time	Calculated Time, No Daily OT	Calculated Time, Daily OT
		Daily Total:	8h	8h	8h
Sat	Regular	Cardiac Care Intensive Care	8a to 12p	1h 3h	1h 3h
		Daily Total:	4h	4h	4h
Sun	Regular	Emergency	8a to 12p	4h	4h
		Daily Total:	4h	4h	4h
	Weekly Totals	Regular:	23h	0h	0h
		Regular, Cardiac Care:	0h	20h	20h
		Regular, Intensive Care:	0h	3h	3h
		Regular, Emergency:	20h	20h	16h
		On-Call, Intensive Care:	9h	9h	9h
		Overtime, Emergency	0h	0h	4h
		Total:	52h	52h	52h

Allocation configuration: This allocation example distributes reported and calculated time as shown here:

Priority	Allocation Type Quantity	Department
5	20	Cardiac Care
10	20	Intensive Care
15	Balance	Operation

Example: The reported time includes conflicts with the person's assigned allocation.

Day	Worked Time	Department	Reported Time	Calculated Time, No Daily OT	Calculated Time, Daily OT
Mon	Regular	Cardiac Care	8a to 6p	10h	8h
	Overtime	Cardiac Care			2h
		Daily Total:	10h	10h	10h

Day	Worked Time	Department	Reported Time	Calculated Time, No Daily OT	Calculated Time, Daily OT
Tue	Regular	Cardiac Care	7a to 4p	9h	8h
	Overtime	Cardiac Care			1h
		Daily Total:	9h	9h	9h
Wed	Regular	Cardiac Care Intensive Care	8a to 4p	1h 7h	1h 7h
		Daily Total:	8h	8h	8h
Thu	Regular	Intensive Care Operation	8a to 4p	3h 5h	3h 5h
	On-Call	Emergency	4p to 6p	2h	
	Overtime	Emergency			2h
		Daily Total:	10h	10h	10h
Fri	Regular	Operation	8a to 5p	9h	8h
	Overtime	Operation	NA	0h	1h
		Daily Total:	9h	9h	9h
Sat	On-Call	Emergency	8a to 12p	4h	4h
		Daily Total:	4h	4h	4h
Sun	On-Call	Emergency	8a to 12p	4h	4h
		Daily Total:	8h	8h	8h
Weekly Totals		Regular:	44h	0h	0h
		Regular, Cardiac Care:		20h	17h
		Regular, Intensive Care:	0h	10h	10h
		Regular, Operation:	0h	14h	13h
		On-Call, Emergency:	14h	14h	12h
		Overtime, Cardiac Care	0h	0h	3h
		Overtime, Emergency	0h	0h	2h

Day	Worked Time	Department	Reported Time	Calculated Time, No Daily OT	Calculated Time, Daily OT
		Overtime, Operations	0h	0h	1h
		Total:	58h	58h	58h

ORA_WFM_TCR_OT_EARNED_DAYS_FOR_ENTRIES_THAT_S Fast Formula

This fast formula is associated with the delivered rule template Time Entries That Span Overtime and Earned Days AP. It identifies whether time entries span days. If they do, the formula identifies these days:

- The day to use in calculations that include reported time entries that span days
- The earned day for reported time entries that span days

By default, the formula uses rule parameter values. When the rule doesn't pass any values, the formula uses the values of the person's workday definition. This formula uses an array to process time card data.

Parameters

Name	Type	Description
OVERTIME_DAY_START_TIME	Time HH:MM	Time in hours and minutes that marks the start of the day to use in time calculation rules that calculate overtime.
EARNED_RESOLVE_SPAN_RULE	Fixed text	Rule to use to identify the earned day for reported time entries that span days. Valid values are: • START_DAY: Time calculation rules should treat time entries as being entirely on the start day. • STOP_DAY: Time calculation rules should treat time entries as being entirely on the stop day. • SPLIT_AT_DAY_START: Time calculation rules should split time entries at the time where one day ends and the other starts.
EARNED_GROUPING_THRESHOLD	Fixed number	Threshold, in minutes, used to group reported time entries on one or another of the multiple days.
ORA_HWM_FF_DAY_BREAKER_FLAG	Exclude	Internal indicator to split the day. Doesn't show on the rule pages.

Outputs

This formula has no outputs shown on the rule template or rule.

Function

The function specifies to resolve time entries that span days using the rule {EARNED_RESOLVE_SPAN_RULE} for earned day. It automatically uses the rule SPLIT_AT_DAY_START for overtime. For this rule, the day start time is midnight and the threshold for grouping time entries on one day or the other is {EARNED_GROUPING_THRESHOLD} minutes. When identifying the overtime day, the day start time is {OVERTIME_DAY_START_TIME}.

ORA_WFM_TCR_THRESHOLD_WITH_EVENT_CHANGES_MSI Fast Formula

This sample fast formula decides whether daily reported time should be updated to include an overtime entry. If it does, the formula updates the existing reported time to the value stored on the assignment record.

In this formula's case, the assignment value is a descriptive flexfield named OT Hours Threshold. OT Hours Threshold maps to Assignment Attribute2, which gets the initial value from the PER_ASG_ATTRIBUTE2 database item and the event from ASS_ATTRIBUTE2. The formula also adds an overtime entry with the remaining reported time. If the stored value changes in the middle of the time card period, the formula uses the new stored value to calculate overtime for the remaining days. To check whether the stored overtime value changed, the event database items use the person ID for the time card individual, the time card period, and the assignment OT Hours Threshold field. This formula uses an array to process time data.

Parameters

Name	Type	Description
WORKED_TIME_CONDITION	Time category	Time category that identifies the time entries to use to decide the hours below and over the thresholds
DEFAULT_HOURS_BEFORE_OVERTIME	Fixed number	Default hours limit, which is used if the initial assignment and event threshold values are Null.

Outputs

Name	Output Group	Time Attribute	Description
OUT_GRP1_MEASURE_UNDER	1	Measure	Calculated hours below the daily threshold
OUT_GRP1_START_TIME_UNDER	1	StartTime	Start time below the daily threshold
OUT_GRP1_STOP_TIME_UNDER	1	StopTime	Stop time below the daily threshold

Name	Output Group	Time Attribute	Description
OUT_GRP2_MEASURE_OVER	2	Measure	Calculated hours over the daily threshold
OUT_GRP2_START_TIME_OVER	2	StartTime	Start time over the daily threshold
OUT_GRP2_STOP_TIME_OVER	2	StopTime	Stop time over the daily threshold

Function

This formula calculates daily overtime using rule input values stored on the assignment record. The input values can change over the time card period, so you use this formula to get the correct value for each day. This way the daily overtime calculation results are always correct.

This formula sums the daily time entries identified by the WORKED_TIME_CONDITION and uses the specified overtime threshold to calculate daily overtime.

- If the assignment OT Hours Threshold descriptive flexfield is Null, the formula uses the DEFAULT_HOURS_BEFORE_OVERTIME value.
- If the flexfield value isn't Null, the formula uses the PER_ASG_ATTRIBUTE2 database item value of PER_ASG_ASSIGNMENT_DETAILS Route (PER_ALL_ASSIGNMENTS_M table), for the overtime threshold.

  To get any changes to the OT Hours Threshold field from the events table, the formula uses the ORA_HWM_PROCESS_EVENTS_CHG_RN route database items.

Example

Scenario: You store people's overtime thresholds on the OT Hours Threshold descriptive flexfield. The initial threshold value for Chris, who works 40 hours a week is 8, but changes on Wednesday to 10.

Example: You create a rule with your template where the default daily threshold is 8 hours. The time category is All Payroll Time Types and the payroll time type for calculated hours over the threshold is Overtime.

Day	Payroll Time Type	Reported Time	Calculated time
Mon	Regular	10h	8h
	Overtime	0h	2h
Tue	Regular	10h	8h
	Overtime	0h	2h
Wed	Regular	10h	8h 2h
Thu	Regular	12h	10h
	Overtime	0h	2h

ORA_WFM_TCR_UNIT_CALC_PAYTYPE_AP Fast Formula

This fast formula identifies unit quantities for reported time based on specific time attributes. It generates a unit time attribute for the day, if the reported time category hours on that day include the specified time attributes.

This formula uses an array to process time card data. It isn't associated with any delivered time calculation rule templates.

Parameters

Name	Type	Description
WORKED_TIME_CONDITION	Time category	Time category of reported hours that include the specified time attributes used to decide whether to generate a units time attribute.
NUMBER_OF_UNITS	Fixed number	Numeric value for the number of units with UN unit of measure to allocate for each detail found.

Outputs

Name	Output Group	Time Attribute	Description
CALC_START_TIME	1	StartTime	Original start time
CALC_STOP_TIME	1	StopTime	Original stop time
MEASURE_UNITS	2	Measure	Number of units
UOM_UNITS	2	UnitOfMeasure	UN unit of measure
RATE_AMOUNT	2	Rate_Amount	Sets the rate amount to Null
PERIODICITY	2	Periodicity	Sets the periodicity of the rate amount to Null
UNITS_PAYTYPE	2	PayrollTimeType	Payroll time type to associate with the units

Note that for start and stop times, the formula resets the rate amount and periodicity values in the generated units time entry to empty values.

Function

For each detail time card record found, depending on the time category, add the number of units specified in NUMBER_OF_UNITS to the time card. The unit amount is 'UN' (Units).

Example

When the person breaks for a meal, they're paid a meal allowance if the time category identifies the Meal payroll time type.

Day	Payroll Time Type	Reported Time	Calculated Time
1 thru 4	Regular	8a to 12p 1p to 4p	4h 3h
	Meal	12p to 1p	1h
	Meal Allowance	NA	1 unit
5	Regular	8a to 12p	4

ORA_WFM_TCR_UNIT_CALC_TIME_RANGE_AP Fast Formula

This fast formula identifies unit quantities for reported time that spans a specific time range. It generates a unit time attribute for the day, if the reported time category hours span the specified range.

This formula uses an array to process time card data. It isn't associated with any delivered time calculation rule templates.

Parameters

Name	Type	Description
WORKED_TIME_CONDITION	Time category	Time category of reported hours that include the specified time attributes used to decide whether to generate a units time attribute.
NUMBER_OF_UNITS	Fixed number	Numeric value for the number of units with UN unit of measure to allocate for each detail found.
START_TIME_HHMM24	Time HH:MM	Start of time range to allocate units for.
STOP_TIME_HHMM24	Time HH:MM	End of time range to allocate units for.

Both start and stop time parameters must have a value in every rule associated with this formula. These parameters indicate to generate the specified unit of measure, if reported time during that range included time entries identified by the specified time category.

Outputs

Name	Output Group	Time Attribute	Description
CALC_START_TIME	1	StartTime	Original start time
CALC_STOP_TIME	1	StopTime	Original stop time
MEASURE_UNITS	2	Measure	Number of units
UOM_UNITS	2	UnitOfMeasure	UN unit of measure
RATE_AMOUNT	2	Rate_Amount	Sets the rate amount to Null
PERIODICITY	2	Periodicity	Sets the periodicity of the rate amount to Null
UNITS_PAYTYPE	2	PayrollTimeType	Payroll time type to associate with the units

Function

For each detail time card record found, depending on the time category, if the time card start time is between START_TIME_HHMM24 and STOP_TIME_HHMM24, add the number of units specified in NUMBER_OF_UNITS to the time card. The unit amount is 'UN' (Units).

Example

When the person works from 6:00 PM to midnight, they receive a night shift stipend.

Day	Payroll Time Type	Reported Time	Calculated Time
1	Regular	10a to 5p	8h
2	Regular	8p to11p	3h
	Night Shift Stipend	NA	1 unit
3	Regular	10a to 5p	8h
4	Regular	8p to 11p	8h
	Night Shift Stipend	NA	1 unit
5	Regular	10a to 5p	8h

ORA_WFM_TCR_UNIT_CALC_WEEKEND_AP Fast Formula

This fast formula identifies unit quantity for reported weekend time. It generates a unit time attribute for the day if the reported time category hours occur on a weekend day.

This formula uses an array to process time card data. It isn't associated with any delivered time calculation rule templates.

Parameters

Name	Type	Description
WORKED_TIME_CONDITION	Time category	Time category of reported hours that include the specified time attributes used to decide whether to generate a units time attribute.
NUMBER_OF_UNITS	Fixed number	If Yes, generate the number of units when the person associated with a rule using this formula works any day defined as weekend day. If No, generate the number of units only when the person associated with a rule using this formula works all days defined as weekend days.
IS_MON_WEEKEND	Yes or No	Indicate if Monday is a weekend day.
IS_TUE_WEEKEND	Yes or No	Indicate if Tuesday is a weekend day.
IS_WED_WEEKEND	Yes or No	Indicate if Wednesday is a weekend day.
IS_THU_WEEKEND	Yes or No	Indicate if Thursday is a weekend day.
IS_FRI_WEEKEND	Yes or No	Indicate if Friday is a weekend day.
IS_SAT_WEEKEND	Yes or No	Indicate if Saturday is a weekend day.
IS_SUN_WEEKEND	Yes or No	Indicate if Sunday is a weekend day.

Outputs

Name	Output Group	Time Attribute	Description
CALC_START_TIME	1	StartTime	Original start time
CALC_STOP_TIME	1	StopTime	Original stop time
MEASURE_UNITS	2	Measure	Number of units

Name	Output Group	Time Attribute	Description
UOM_UNITS	2	UnitOfMeasure	UN unit of measure
RATE_AMOUNT	2	Rate_Amount	Sets the rate amount to Null
PERIODICITY	2	Periodicity	Sets the periodicity of the rate amount to Null
UNITS_PAYTYPE	2	PayrollTimeType	Payroll time type to associate with the units

Function

For each detail time card record found for the time category, if the function finds any time entry for days specified as weekend day (IS_MON_WEEKEND...), select WORK_ANY_WEEKEND_DAY.

WORK_ANY_WEEKEND_DAY SETTING	What Happens
Yes	Add the number of units specified in NUMBER_OF_UNITS to the time card with a unit amount of UN (Units). It doesn't matter if the person worked only one or every day defined as a weekend day.
No	Add the number of units specified in NUMBER_OF_UNITS to the time card with a unit amount of UN (Units), only if the person worked every day defined as weekend days.

Examples of WORK_ANY_WEEKEND_DAY is Yes

For these examples, the weekend days are Saturday and Sunday.

Day	Payroll Time Type	Reported Time	Calculated Time
Wed thru Fri	Regular	8h	8h
Sat	Regular	2h	2h
Sun	Regular	9h	9h
	Weekend Allowance	NA	1 unit

Day	Payroll Time Type	Reported Time	Calculated Time
Wed thru Fri	Regular	8h	8h
Sat	Regular	2h	2h
	Weekend Allowance	NA	1 unit

Day	Payroll Time Type	Reported Time	Calculated Time
Wed thru Fri	Regular	8h	8h

Day	Payroll Time Type	Reported Time	Calculated Time
Sun	Regular	9h	9h
	Weekend Allowance	NA	1 unit

Examples of WORK_ANY_WEEKEND_DAY is No

For these examples, the weekend days are Saturday and Sunday.

Day	Payroll Time Type	Reported Time	Calculated Time
Wed thru Fri	Regular	8h	8h
Sat	Regular	2h	2h

Day	Payroll Time Type	Reported Time	Calculated Time
Wed thru Fri	Regular	8h	8h
Sun	Regular	9h	9h

WFM_TCR_INSUFFICIENT_REST_PERIOD_PREMIUM_AP Fast Formula

This fast formula is associated with the delivered rule template Insufficient Rest Premium Template. It compares the end and start times of consecutive reported time entries identified by the time category of the rest period.

If the interim time is less than the defined rest period, it generates another, premium time entry. The premium entry is for all the reported hours for the second shift. Or it's only the reported hours until the rest period is met. This formula uses an array processing formula.

Parameters

Name	Type	Description
WORKED_TIME_CONDITION	Time category	Time category that identifies the time entries to use to decide whether the minimum rest period was met for the two shifts
REST_PERIOD_IN_MINUTES	Fixed number	Minimum nonworked time, in minutes, required between consecutive time entries
IS_ENTIRE_SHIFT_PREMIUM	Yes or No	Specify to pay all the reported hours for the second shift at the premium rate. Or pay only those hours reported in the second shift before the rest period is met at the premium rate.

Outputs

Name	Output Group	Time Attribute	Description
MEASURE_UNDER	1	Measure	Calculated nonpremium hours, which are outside the rest period
MEASURE_OVER	2	Measure	Calculated premium hours, which are within the rest period

Examples

Scenario: The interim 6 hours between the end time on Monday and the start time on Tuesday is less than the minimum rest period of 8 hours.

Example 1: You pay a premium for the entire shift.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon	Regular	11a to 10p	11h
Tue	Regular	4a to 10a	
	Premium	NA	6h

Example 2: You pay a premium for only the time worked in the second shift until the rest period is met.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon	Regular	11a to 10p	11h
Tue	Regular	4a to 10a	4h
	Premium	NA	2h

WFM_SHIFT_PREMIUM_CALCULATION Fast Formula

This fast formula is associated with the delivered rule template Shift Premium Template. It compares the total daily or period hours identified by the time category with the threshold value.

It converts hours over the threshold to a single payroll time type. It leaves hours below the threshold as the same payroll time type or converts them to a new, single payroll time type.

Parameters

Name	Type	Description
PREM_START_TIME	Time HH:MM	Start time of the premium shift in a 24-hour format, such as 18:00 instead of 6:00p
PREM_STOP_TIME	Time HH:MM	End time of the premium shift in a 24-hour format, such as 23:30 instead of 11:30p
WORKED_TIME_CONDITION	Time category	Time category that identifies the time entries to use to decide the hours that qualify for premium pay

Outputs

Name	Output Group	Time Attribute	Description
OUT_MEASURE_UNDER	1	Measure	Calculated based hours
OUT_MEASURE_OVER	2	Measure	Calculated premium hours

Function

Compares the start and end time for the detailed entries identified by the time category that are within the defined time range. Time entries that fall within the defined time range get another time attribute. This formula requires start and end time entries. The calculation splits hours entries that span midnight and the calculated hours appear separately on each day. The summation level is set to Detailed.

Examples

Scenario: You don't include a payroll time type for calculated hours below the threshold because you want to use those of the reported time entries. You add a payroll time type output for calculated hours over the threshold to use instead of the reported time type. You create a rule with your template where the premium shift starts at 6:00 PM, ends at 12:00 AM, with a time category of All Payroll Time Types.

Example1: The person doesn't work any evening hours, so doesn't qualify for the shift premium.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon thru Fri	Regular	8a to 4p	8h

Example 2: The person works evening hours that qualify for the shift premium.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon	Regular	4p to 12a	8h
	Premium	NA	6h

Day	Payroll Time Type	Reported Time	Calculated Time
Tue	Regular	2p to 10p	8h
	Premium	NA	4h
Wed	Regular	10a to 6p	8h
Thu	NA	NA	NA
Fri	Regular	9p to 5a	8h
	Premium	NA	3h

WFM_TCR_HOLIDAY_THRESHOLD_PREMIUM_AP Fast Formula

This fast formula compares the reported time with a specific category of public holidays attached to the person's assigned schedule.

If the reported time is on a qualifying holiday, then the person gets a holiday premium payroll time type. This template uses an array processing formula. It isn't associated with any delivered time calculation rule templates.

If the person should also receive a premium for hours worked over some defined threshold value, you must use a separate threshold premium rule.

Parameters

Name	Type	Description
WORKED_TIME_CONDITION	Time category	Time category that identifies the time entries to compare with the public holiday category of entries associated with the person's schedule
OVRD_PUB_HOLIDAY_CATEGORY	Value set	Category of public holiday entries associated with the person's schedule to compare with the time entries identified by the specified time category

Outputs

Name	Output Group	Time Attribute	Description
OUT_MEASURE_ARY_below	1	Measure	Calculated hours that aren't on a public holiday
OUT_MEASURE_ARY_OVER	2	Measure	Calculated hours that are on a public holiday

Function

This formula gets a list of holidays for the given public holiday category and time card period. It assigns all time entries that don't match a public holiday date to the OUT_MEASURE_ARY_UNDER measure. It assigns any time entries that do match to the measure OUT_MEASURE_ARY_OVER measure.

Example

Scenario: You don't include a payroll time type for calculated hours below the threshold because you want to use those of the reported time entries. You add a payroll time type output for calculated hours over the threshold to use instead of the reported time type.

Example: You create a rule with your template where the time category is All Pay Time Types. For calculated hours over the threshold, the payroll time type is Overtime. Thursday and Friday are public holidays (PH).

Day	Payroll Time Type	Reported Time	Calculated Time
Mon	Regular	8h	8h
Tue	Regular	8h	8h
Wed	Regular	9h	8h
	Overtime	NA	1h
Thu (PH)	Regular	8h	0h
	Overtime	NA	8h
Fri (PH)	Regular	8h	0h
	Overtime	NA	8h
Sat	Regular	8h	8h

WFM_TCR_THRESHOLD_TWO_TIER_SEVEN_DAY_AP Fast Formula

This fast formula is associated with the delivered rule template Day Periods and Seventh Day Threshold Template. It compares the total daily, period, or seventh consecutive day hours identified by the time category the corresponding threshold values.

It converts hours over the threshold to a single payroll time type. It leaves hours below the threshold as the same payroll time type or converts them to a new payroll time type. This formula uses an array processing formula.

Parameters

Name	Type	Description
WORKED_TIME_CONDITION	Time category	Time category that identifies the time entries to use to decide the hours below and over the thresholds
DAILY_THRESHOLD_1	Fixed number	Number of hours marking the threshold for the first day
DAILY_THRESHOLD_2	Fixed number	Number of hours marking the second threshold for the first day
SEVENT_DAY_THRESHOLD	Fixed number	Number of hours marking the threshold for the seventh day
WEEKLY_THRESHOLD	Fixed number	Number of hours marking the threshold for the weekly time card

Outputs

Name	Output Group	Time Attribute	Description
OUT_MEASURE_ARY_UNDER	1	Measure	Calculated hours below the first daily threshold
OUT_MEASURE_OVER_1	2	Measure	Calculated hours between the first and second daily thresholds
OUT_MEASURE_OVER_2	3	Measure	Calculated hours over the second daily threshold

Function

The general overtime provision requires that people get 1.5 times their regular pay rate when they work more than X hours a day or more than Y hours a week. People can work more than X hours a day or more than 6 days a week if they get overtime pay according to these tiers.

- The first overtime tier includes all hours worked beyond X hours, up to and including X2 hours in a day. It also includes the first X hours worked on the seventh consecutive day of the week.
- The second overtime tier includes all hours worked beyond X2 hours in a day. It also includes all hours worked in excess of X on the seventh consecutive day of the week.

Daily Rule:

- Overtime is based on 2 threshold values or parameters.
- Hours worked below the first threshold get paid at the regular rate.
- Hours worked over the first threshold and below the second threshold get paid at an overtime rate of 1.5 times the regular rate.
- Hours worked over the second threshold get paid at an overtime rate of 2 times the regular rate.

Weekly Rule:

- Overtime is based on 1 threshold value or parameter.
- Hours worked below the first threshold get paid at the regular rate.
- Hours worked over the first threshold get paid at an overtime rate of 1.5 times the regular rate.

Assumption in processing order:

1. The rule that checks for and processes any seventh day worked hours runs first. Typically, US rules use a threshold of 8 hours and calculate hours below the threshold as overtime and over it as double time.
2. The daily rules that check thresholds and process any worked hours run next. Typically, US rules have these configurations:
    - Daily double time rule (X2): The daily threshold is 12 hours with calculated hours below the threshold as regular and over it as double time.
    - Daily overtime rule (X): The daily threshold is 8 hours with calculated hours below the threshold as regular and over it as overtime.
3. The weekly rule that checks the threshold and processes any worked hours runs last. Typically, US rules use a threshold of 40 hours and calculate hours below the threshold as regular and over it as overtime.

Examples

Scenario: The person's rule set includes the following four rules, created with this formula.

Processing Sequence	Rule	Parameter Configuration	Output Configuration
1	Seventh Day DT and OT	SEVENT_DAY_THRESHOLD = 8	PAY _TYPE_UNDER = Overtime PAY _TYPE_OVER_1 = Double Time
2	Daily Over 12 DT and RT	DAILY_THRESHOLD_2 = 12	PAY _TYPE_UNDER = Regular PAY _TYPE_OVER_2 = Double Time
3	Daily Over 8 OT and RT	DAILY_THRESHOLD_1 = 8	PAY _TYPE_UNDER = Regular PAY _TYPE_OVER_1 = Overtime
4	Weekly OT and RT	WEEKLY_THRESHOLD = 40	PAY _TYPE_UNDER = Regular PAY _TYPE_OVER_1 = Overtime

Example 1: The seventh day and both daily rules don't run, but the weekly overtime rule does.

Day	Payroll Time Type	Reported Time	Calculated Time
1 thru 5	Regular	8h	8h
6	Regular	8h	0h
	Overtime	NA	8h

Example 2: The seventh day and daily double time rules don't run, but the daily and weekly overtime rules do.

Day	Payroll Time Type	Reported Time	Calculated Time
1 thru 3	Regular	6h	6h
4 thru 5	Regular	12h	8h
	Overtime	NA	4h
6	Regular	10h	6h
	Overtime	NA	4h

Example 3: The seventh day rule doesn't run, but both daily rules and the weekly overtime rules do.

Day	Payroll Time Type	Reported Time	Calculated Time
1	Regular	13h	8h
	Overtime	NA	4h
	Double Time	NA	1h
2	Regular	6h	6h
3 thru 5	Regular	13h	8h
	Overtime	NA	4h
	Double Time	NA	1h
6	Regular	10h	2h
	Overtime	NA	8h

Example 4: The seventh day, both daily, and the weekly overtime rules all run.

Day	Payroll Time Type	Reported Time	Calculated Time
1	Regular	4h	4h
2	Regular	8h	8h
3	Regular	12h	8h
	Overtime	NA	4h
4 thru 5	Regular	8h	8h
6	Regular	3h	3h
7	Regular	3h	
	Overtime	NA	3h

Example 5: The seventh day, both daily, and the weekly overtime rules all run.

Day	Payroll Time Type	Reported Time	Calculated Time
1 thru 3	Regular	4h	4h
4	Regular	13h	8h
	Overtime	NA	4h
	Double Time	NA	1h
5	Regular	8h	8h
6	Regular	4h	4h
7	Regular	9h	0h
	Overtime	NA	8h
	Double Time	NA	1h

Example 6: The seventh day and weekly overtime rules run, but both daily rules don't.

Day	Payroll Time Type	Reported Time	Calculated Time
1 thru 5	Regular	8h	8h
6	Regular	8h	0h
	Overtime	NA	8h
7	Regular	4h	0h
	Overtime	NA	4h

Example 7: The seventh day, daily double time, and weekly overtime rules run, but the daily overtime rule doesn't.

Day	Payroll Time Type	Reported Time	Calculated Time
1 thru 5	Regular	8h	8h
6	Regular	12h	0h
	Overtime	NA	8h
	Double Time	NA	4h
7	Regular	13h	0h
	Overtime	NA	8h
	Double Time	NA	5h

Example 8: The seventh day rule runs, but both daily rules and the weekly overtime rule don't.

Day	Payroll Time Type	Reported Time	Calculated Time
1 thru 6	Regular	4h	4h
7	Regular	4h	0h
	Overtime	NA	4h

Example 9: The seventh day and daily double time rules don't run, but the daily and weekly overtime rules do.

Day	Payroll Time Type	Reported Time	Calculated Time
2 thru 6	Regular	10h	8h
	Overtime	NA	2h
7	Regular	7h	0h
	Overtime	NA	7h

Example 10: The seventh day and weekly rules run, but both daily rules don't.

Day	Payroll Time Type	Reported Time	Calculated Time
1	Regular	2h	2h
2 thru 5	Regular	8h	8h
6	Regular	8h	6h
	Overtime	NA	2h
7	Regular	5h	0h
	Overtime	NA	5h

WFM_THRESHOLD_TIME_CALCULATION_RULE Fast Formula

This fast formula is associated with the delivered rule templates Daily Threshold Template and Weekly Threshold Template. It compares the total daily or period hours identified by the time category with the threshold value.

It converts hours over the threshold to a single payroll time type. It leaves hours below the threshold as the same payroll time type or converts them to a new, single payroll time type.

Parameters

Name	Type	Description
WORKED_TIME_CONDITION	Time category	Time category of reported hours that include the specified time attributes to convert and copy to payroll cost segments.
DEFINED_LIMIT	Fixed Number	Number of hours marking the daily or weekly threshold

Outputs

\Name	Output Group	Time Attribute	Description
OUT_MEASURE_ARY_UNDER	1	Measure	Calculated hours below the daily or weekly threshold
OUT_MEASURE_ARY_OVER	2	Measure	Calculated hours over the daily or weekly threshold

Function

This formula sums time entries for each day and the entire time card. If the total hours worked exceed the defined limit for the selected summation level, it splits the totaled time between the measures OUT_MEASURE_ARY_UNDER and OUT_MEASURE_ARY_OVER.

Examples

Scenario: You don't include a payroll time type for calculated hours below the threshold because you want to use those of the reported time entries. You add a payroll time type output for calculated hours over the threshold to use instead of the reported time type. Also, Sick and Jury Duty are pay time attributes instead of absence time attributes.

Example 1: You create a rule with your template where the daily threshold is 8 hours. The time category is All Payroll Time Types and the payroll time type for calculated hours over the threshold is Overtime.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon	Regular	7h	7h
	Sick	1h	1h
Tue	Regular	8h	8h
Wed	Regular	9h	8h
	Overtime	NA	1h
Thu	Regular	10h	8h
	Overtime	NA	2h

Day	Payroll Time Type	Reported Time	Calculated Time
Fri	Jury Duty	8h	8h
	Regular	NA	8h

Example 2: You create a rule with your template where the weekly threshold is 40 hours. The time category is All Payroll Time Types, and the payroll time type for calculated hours over the threshold is Overtime.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon	Regular	7h	7h
	Sick	1h	1h
Tue	Regular	8h	8h
Wed	Regular	9h	9h
Thu	Regular	10h	10h
Fri	Jury Duty	8h	5h
	Overtime	NA	3h

Scenario: You add a payroll time type output for calculated hours both below and over the threshold to use instead of the reported time types. Also, Sick and Jury Duty are pay time attributes instead of absence time attributes.

Example 3: You create a rule with your template where the daily threshold is 8 hours and the time category is All Payroll Time Types. The payroll time type for calculated hours below the threshold is Straight Time and over the threshold is Overtime.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon	Regular	7h	
	Sick	1h	
	Straight Time	NA	8h
Tue	Regular	8h	
	Straight Time	NA	8h
Wed	Regular	9h	
	Straight Time	NA	8h
	Overtime	NA	1
Thu	Regular	10h	0h
	Straight Time	NA	8h
	Overtime	NA	2h
Fri	Jury Duty	8h	

Day	Payroll Time Type	Reported Time	Calculated Time
	Straight Time	NA	8h

Example 4: You create a rule with your template where the weekly threshold is 40 hours and the time category is All Payroll Time Types. The payroll time type for calculated hours below the threshold is Straight Time and over the threshold is Overtime.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon	Regular	7h	
	Sick	1h	
	Straight Time	NA	8h
Tue	Regular	8h	0h
	Straight Time	NA	8h
Wed	Regular	9h	0h
	Straight Time	NA	9h
Thu	Regular	10h	0h
	Straight Time	NA	8h
	Overtime	NA	2h
Fri	Jury Duty	8h	0h
	Straight Time	NA	5h
	Overtime	NA	3h

WFM_THRESHOLD_TIME_CALCULATION_RULE_AP Fast Formula

This fast formula is associated with the delivered rule templates Daily Threshold AP Template and Weekly Threshold AP Template. It compares the total daily or period hours identified by the time category with the threshold value.

It converts hours over the threshold to a single payroll time type. It leaves hours below the threshold as the same payroll time type or converts them to a new payroll time type. This template uses an array processing formula.

Parameters

Name	Type	Description
WORKED_TIME_CONDITION	Time category	Time category that identifies the time entries to use to decide the hours below and over the thresholds
DEFINED_LIMIT	Fixed number	Number of hours marking the detail, daily or weekly threshold

Outputs

Name	Output Group	Time Attribute	Description
OUT_MEASURE_ARY_UNDER	1	Measure	Calculated hours below the daily or weekly threshold
OUT_MEASURE_ARY_OVER	2	Measure	Calculated hours over the daily or weekly threshold

Function

This formula sums time entries for each day and the entire time card. It splits the totaled time between the measures OUT_MEASURE_ARY_UNDER and OUT_MEASURE_ARY_OVER, if the total hours worked exceed the defined limit for the selected summation level.

Examples

Scenario: You don't include a payroll time type for calculated hours below the threshold because you want to use those of the reported time entries. You add a payroll time type output for calculated hours over the threshold to use instead of the reported time type. Also, Sick and Jury Duty are payroll time attributes instead of absence time attributes.

Example 1: You create a rule with your template where the daily threshold is 8 hours and the time category is All Pay Time Types. For calculated hours over the threshold, the payroll time type is Overtime.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon	Regular	7h	7h
	Sick	1h	1h
Tue	Regular	8h	8h
Wed	Regular	9h	8h
	Overtime	NA	1h
Thu	Regular	10h	8h
	Overtime	NA	2h

Day	Payroll Time Type	Reported Time	Calculated Time
Fri	Jury Duty	8h	8h

Example 2: You create a rule with your template where the weekly threshold is 40 hours and the time category is All Pay Time Types. For calculated hours over the threshold, the payroll time type is Overtime.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon	Regular	7h	7h
	Sick	1h	1h
Tue	Regular	8h	8h
Wed	Regular	9h	9h
Thu	Regular	10h	10h
Fri	Jury Duty	8h	5h
	Overtime	NA	3h

Scenario: You add a payroll time type output for calculated hours both below and over the threshold to use instead of the reported time type. Also, Sick and Jury Duty are payroll time attributes instead of absence time attributes.

Example 3: You create a rule with your template where the daily threshold is 8 hours and the time category is All Pay Time Types. For calculated hours below the threshold, the payroll time type is Straight Time. For calculated hours over the threshold, it's Overtime.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon	Regular	7h	0h
	Sick	1h	0h
	Straight Time	NA	8h
Tue	Regular	8h	0h
	Straight Time	NA	8h
Wed	Regular	9h	0h
	Straight Time	NA	8h
	Overtime	NA	1h
Thu	Regular	10h	0h
	Straight Time	NA	8h
	Overtime	NA	2h
Fri	Jury Duty	8h	0h
	Straight Time	NA	8h

Example 4: You create a rule with your template where the weekly threshold is 40 hours and the time category is All Pay Time Types. For calculated hours below the threshold, the payroll time type is Straight Time. For calculated hours over the threshold, it's Overtime.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon	Regular	7h	0h
	Sick	1h	0h
	Straight Time	NA	8h
Tue	Regular	8h	0h
	Straight Time	NA	8h
Wed	Regular	9h	0h
	Straight Time	NA	9h
Thu	Regular	10h	0h
	Straight Time	NA	10h
Fri	Jury Duty	8h	0h
	Straight Time	NA	5h
	Overtime	NA	3h

WFM_THRESHOLD_W_ABS_TIME_CALCULATION_RULE_AP Fast Formula

This time calculation rule fast formula is associated with the delivered rule templates Daily Threshold with Absences AP Template and Weekly Threshold with Absences AP Template.

It compares the total daily or period hours identified by the time category, which might include absence time, with the threshold value. It converts hours over the threshold to a single payroll time type. It leaves hours below the threshold as the same payroll time type or converts them to a new, single payroll time type. This formula uses an array to process time data.

Parameters

Name	Type	Description
WORKED_TIME_CONDITION	Time category	Time category that identifies the time entries to use to decide the hours below and over the thresholds
DEFINED_LIMIT	Fixed number	Number of hours marking the daily or weekly threshold

Name	Type	Description
RESTRICTED_ABSENCE_TYPE1	Fixed text	First absence type attribute to identify
RESTRICTED_ABSENCE_TYPE2	Fixed text	Optional second absence type attribute to identify
RESTRICTED_ABSENCE_TYPE3	Fixed text	Optional third absence type attribute to identify
RESTRICTED_ALL_ABSENCE_Y	Fixed text	Maintain all absence entries

Outputs

Name	Output Group	Time Attribute	Description
MEASURE_ UNDER	1	Measure	Calculated hours below the daily or weekly threshold
MEASURE_ OVER	2	Measure	Calculated hours over the daily or weekly threshold

Function

Compares the total hours identified by the time category, which might include absence time, for the day or with the threshold value. The function converts hours over the threshold to a single payroll time type attribute. For hours below the threshold, it either keeps the attribute or converts the attribute to a new payroll time type attribute.

Examples

Scenario: You don't include a payroll time type for calculated hours below the threshold because you want to use those of the reported time entries. You add a payroll time type output for calculated hours over the threshold to use instead of the reported time type. Also, Sick and Jury Duty are payroll time attributes instead of absence time attributes.

You create a rule with your template where the weekly threshold is 40 hours and the time category is All Payroll Time Types. Calculations include the vacation absence type and the payroll time type for calculated hours over the threshold is Overtime.

Example 1: The person's hours total to 48 for the time card period when it includes absence time.

- If your rule execution type is Update, then on Friday, the rule splits the calculated hours. It keeps the hours below the 40-hour threshold associated with the reported payroll time type. It associates the calculated hours over the threshold with the Overtime payroll time type.
- If your rule execution type is Create, the rule keeps all calculated hours associated with the existing payroll time types. It then creates a new time entry for the hours over the threshold and associates it with the Overtime payroll time type.

Day	Payroll Time Type	Reported Time	Calculated (Update)	Calculated (Create)
Mon	Vacation	8h	8h	8h
Tue thru Thu	Regular	10h	10h	10h

Day	Payroll Time Type	Reported Time	Calculated (Update)	Calculated (Create)
Fri	Regular	10h	2h	10h
	Overtime	NA	8h	0h
	OT Differential	NA	0h	8h

Example 2: The person's hours total to 48 for the time card period when it includes absence time.

- If your rule execution type is Update, the rule splits the calculated hours. It keeps the hours below the 40-hour threshold associated with the reported payroll time type. It associates the calculated hours over the threshold with the Overtime payroll time type. Because update calculation rules can only create other overtime entries on nonabsence days, the rule enters the calculated overtime on Thursday.
- If your rule execution type is Create, the rule keeps all calculated hours associated with the existing payroll time types. It then creates a new time entry for the hours over the threshold and associates it with the Overtime payroll time type.

Day	Payroll Time Type	Reported Time	Calculated (Update)	Calculated (Create)
Mon thru Wed	Regular	10h	10h	10h
Thu	Regular	10h	2h	10h
	Overtime	NA	8h	0h
Fri	Vacation	8h	8h	8h
	OT Differential	NA	0h	8h

WFM_VARIABLE_DAY_START_TIME_CALCULATION Fast Formula

This fast formula is associated with the delivered rule template Variable Day Threshold Template. It compares the total hours identified by the time category for the variable day with the threshold value.

It converts hours over the threshold to a single payroll time type. It leaves hours below the threshold as the same payroll time type or converts them to a new, single payroll time type.

Parameters

Name	Type	Description
SHIFT_START_TIME	Time HH:MM	Start time of the first shift of the variable day in a 24-hour format
BREAK_LENGTH_MIN	Fixed number	Minimum nonworked time, in minutes, between consecutive entries

Name	Type	Description
DEFINED_LIMIT	Fixed number	Number of hours marking the threshold for the variable day
WORKED_TIME_CONDITION	Time category	Time category that identifies the time entries to total for the variable and compare with the defined limit

Outputs

Name	Output Group	Time Attribute	Description
OUT_MEASURE_UNDER	1	Measure	Calculated based hours
OUT_MEASURE_OVER	2	Measure	Calculated premium hours

Function

The function compares the total variable day hours identified by the time category with the threshold value. It coverts hours over the threshold to a single payroll time type attribute. For hours below the threshold, it either keeps the attribute or converts the attribute to a new payroll time type attribute. The function defines the variable day by the start time of the first entry after a specified time. The day calculation considers all entries from the first time entry time until just before the same time on the next day, unless the person got an insufficient break during the variable day. If the person did get an insufficient break, the function includes entries after the same time on the next day, in the overtime calculation for the first day. This formula requires start and end time entries. The calculation splits hours entries that span midnight and the calculated hours appear separately on each day. The summation level is Detailed.

Examples

Scenario: You don't include a payroll time type for calculated hours below the threshold because you want to use those of the reported time entries. You add a payroll time type output for calculated hours over the threshold to use instead of the reported time type. Also, Sick and Jury Duty are payroll time attributes instead of absence time attributes. You create a rule with your template with these parameters:

- The new day starts with a time entry at or after 10:00p.
- The break length minimum is 3 hours.
- The threshold is 8 hours.
- The time category is All Payroll Time Types.

Example 1: The time entries have more than 3 hours between them and no time entry starts before the shift start time.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon thru Fri	Regular	6a to 2p	8h

Example 2: The person works an extra shift that starts an hour before the usual shift start time. This start causes the entire shift to count as part of the same variable day, thus qualifying the person for overtime.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon	Regular	6a to 2p 9p to 11p	8h
	Overtime	NA	2h
Tue thru Fri	Regular	6a to 2p	8h

Example 3: The person works an extra shift on Tuesday. The rule considers the shift above the threshold even though it starts after the shift start time. It does this because the reported start time is only 2.5 hours after the reported end time of the previous shift.

Day	Payroll Time Type	Reported Time	Calculated Time
Mon	Regular	2p to 10p	8h
	Overtime	NA	3.5h
Tue	Regular	12:30a to 4a 12p to 8p	8h
Wed thru Fri	Regular	12p to 8p	8h

Example 4: The person works a second shift on Tuesday that starts earlier than the shift start time. The rule adds these extra 3 hours to the 6 hours reported earlier in the day and calculates 1 hour of over time. Then, on Wednesday, the person's shift starts less than 3 hours after the end of the previous shift. So even though this is a new day, the rule calculates these hours on Tuesday, as overtime.

Day	Payroll Time Type	Reported Time	Calculate Time
Mon	Regular	12p to 8p	8h
Tue	Regular	8a to 2p 8p to 11p	8h
	Overtime	NA	8h
Wed	Regular	1a to 8a	0h
Thu	NA	NA	NA

14 Workday Definition and Time Calculation Rule Fast Formula

Workday Definition Example

This example shows the differences between the earned day definition (ActualDate) and overtime day definition (RefDate).

The earned day definition(ActualDate) has the spanning days rule as Start day and the grouping threshold as 180 minutes.

- For any time entry that crosses midnight, the ActualDate is the date of the entry StartTime. For example, if the StartTime is 2019-Nov-10 07:00, then the ActualDate is 2019-Nov-10.
- For any time entry that starts less than 180 minutes after the previous entry stops, the ActualDate is the date of the previous entry's StartTime.

The overtime day definition has the day start time as 5:00p of the current day. For any time entry between 5:00p today and 5:00p tomorrow, the RefDate is today's date. For example, the RefDate for the entry 2019-Nov-12 13:00 to 2019-Nov-12 16:00 is 2019-Nov-11.

For any time entry that starts before and stops after 5:00p, the entry is split between the previous and current days, or yesterday and today. For example, the entry 2019-Nov-12 15:00 to 2019-Nov-12 19:00 is split into 2 entries: 2019-Nov-12 15:00 to 2019-Nov-12 17:00 and 2019-Nov-12 17:00 to 2019-Nov-12 19:00 The RefDate is 2019-Nov-11 for the first entry and 2019-Nov-12 for the second entry.

Sample Time Cards

The time card period for this time card is November 4 through 10, 2019. The person reported time for only Sunday, 10 November.

Day	Payroll Time Type	Start Time	Stop Time
Sun, Nov 10	Regular	7:00a 6:00p	4:00p 3:00a

The time card period for this time card is November 11 through 17, 2019. The person reported time for Monday through Wednesday, November 11 through 13.

Day	Payroll Time Type	Start Time	Stop Time
Mon to Tue Nov 11 to 12	Regular	5:00a 1:00p 6:00p	7:00a 5:00p 3:00a

Day	Payroll Time Type	Start Time	Stop Time
Wed, Nov 13	Regular	5:00a	7:00a

Generated ActualDates and RefDates

These generated ActualDates and RefDates are passed to time calculation formulas for processing. The ActualDates and RefDates in bold are both the same as the date of the start time, even though the date of the stop time is the next day. The measure (also known as quantity) is the duration between entry start and stop times.

Start Time	Stop Time	Measure	Payroll Time Type	ActualDate	RefDate
2019-Nov-10 07:00	2019-Nov-10 16:00	9h	Regular	2019-Nov-10	2019-Nov-9
2019-Nov-10 18:00	2019-Nov-11 03:00	9h	Regular	**2019-Nov-10**	**2019-Nov-10**
2019-Nov-11 05:00	2019-Nov-11 07:00	2h	Regular	2019-Nov-11	2019-Nov-10
2019-Nov-11 13:00	2019-Nov-11 17:00	4h	Regular	2019-Nov-11	2019-Nov-10
2019-Nov-11 18:00	2019-Nov-12 03:00	9h	Regular	**2019-Nov-11**	**2019-Nov-11**
2019-Nov-12 05:00	2019-Nov-12 07:00	2h	Regular	2019-Nov-11	2019-Nov-11
2019-Nov-12 13:00	2019-Nov-12 17:00	4h	Regular	**2019-Nov-12**	**2019-Nov-11**
2019-Nov-12 18:00	2019-Nov-13 03:00	9h	Regular	2019-Nov-12	2019-Nov-12

Delivered Time Calculation Rule Threshold Formulas Use StartTime

Delivered formulas summarize at the day and time card levels, depending on the date of the start time. They don't use the ActualDate or RefDate generated from the person's workday definition.

Here are detailed results for the sample November 11 through 17, 2019 time card. The person reported time for Monday through Wednesday, November 11 through 13. Any time that they worked above an 8-hour daily threshold is overtime.

Day	Payroll Time Type	Start Time	Stop Time
Mon to Tue Nov 11 to 12	Regular	5:00a 1:00p 6:00p	7:00a 5:00p 3:00a
Wed, Nov 13	Regular	5:00a	7:00a

For example, if someone works 10 hours in a day, 8 hours is calculated as regular time and 2 hours as overtime. Hours over and below the threshold are identified using StartTime and the overtime workday--5:00p to 5:00p. The delivered threshold formulas find that the person worked 15 hours on November 11 because all 3 entries start on that day. The ActualDate for all 9 hours of the third entry on November 11 is the same as the date for the start time. The RefDate is also the same, because the start and stop times of that entry are within the 5:00p to 5:00p workday. The ActualDate for the first time entry on 2019-Nov-12 is 2019-Nov-11 because there's less than 180 minutes between when it starts and the 2019-Nov-12 03:00 entry stops.

Start Time	Stop Time	Measure	Payroll Time Type	ActualDate	RefDate
2019-Nov-11 05:00	2019-Nov-11 07:00	2h	Regular	2019-Nov-11	2019-Nov-10
2019-Nov-11 13:00	2019-Nov-11 17:00	4h	Regular	2019-Nov-11	2019-Nov-10
2019-Nov-11 18:00	2019-Nov-12 03:00	9h	Regular	2019-Nov-11	2019-Nov-11
	Daily total:	15h			
2019-Nov-12 05:00	2019-Nov-12 07:00	2h	Regular	2019-Nov-11	2019-Nov-11
2019-Nov-12 13:00	2019-Nov-12 17:00	4h	Regular	2019-Nov-12	2019-Nov-11
2019-Nov-12 18:00	2019-Nov-13 03:00	9h	Regular	2019-Nov-12	2019-Nov-12
	Daily total:	15h			
2019-Nov-13 05:00	2019-Nov-13 07:00	2h	Regular	2019-Nov-12	2019-Nov-12
	Daily total:	2h			

Start Time	Stop Time	Measure	Payroll Time Type	ActualDate	RefDate
2019-Nov-11 05:00	2019-Nov-11 07:00	2h	Regular	2019-Nov-11	2019-Nov-10
2019-Nov-11 13:00	2019-Nov-11 17:00	4h	Regular	2019-Nov-11	2019-Nov-10
2019-Nov-11 18:00	2019-Nov-11 20:00	2h	Regular	2019-Nov-11	2019-Nov-11
2019-Nov-11 20:00	2019-Nov-12 03:00	7h	Overtime	2019-Nov-11	2019-Nov-11
2019-Nov-12 05:00	2019-Nov-12 07:00	2h	Regular	2019-Nov-11	2019-Nov-11
2019-Nov-12 13:00	2019-Nov-12 17:00	4h	Regular	2019-Nov-12	2019-Nov-11
2019-Nov-11 18:00	2019-Nov-11 20:00	2h	Regular	2019-Nov-12	2019-Nov-12
2019-Nov-11 20:00	2019-Nov-12 03:00	7h	Overtime	2019-Nov-12	2019-Nov-12
2019-Nov-13 05:00	2019-Nov-13 07:00	2h	Regular	2019-Nov-12	2019-Nov-12

Here's the pseudo code for the delivered threshold fast formula.

```
INPUTS ARE
 HWM_CTXARY_RECORD_POSITIONS,
 HWM_CTXARY_HWM_MEASURE_DAY,
 Measure,
 StartTime,
 StopTime,
```

```
….

wkTotalHrsDay = 0
nidx = 0
WHILE (nidx < wMaAry ) LOOP (
 nidx = nidx + 1
 tcMeasure = 0
 tcMeasureDay = 0
 tcStartTime = nullDate

 aiRecPosition = HWM_CTXARY_RECORD_POSITIONS[nidx]
 if (MEASURE.exists(nidx) ) then ( tcMeasure = MEASURE[nidx] )
 if (StartTime.exists(nidx) ) then ( tcStartTime = StartTime [nidx] )

if (recPosition = RecPositoinEoDay ) then (
 /* trunc(tcStartTime) is different last trunc(tcStartTime )
 wkTotalHrsDay = tcMeasure
) else (
 wkTotalHrsDay = wkTotalHrsDay + tcMeasure
)

If (wkTotalHrsDay > p threshold (
 /* create overtime … */
)
…
```

Custom Threshold Formula That Uses Either the ActualDate or RefDate

To calculate daily totals using either the earned day (ActualDate) or overtime day (RefDate) from the person's workday definition, create a custom threshold formula.

Here are detailed results for the sample November 11 through 17, 2019 time card. The person reported time for Monday through Wednesday, November 11 through 13.

Day	Payroll Time Type	Start Time	Stop Time
Mon to Tue Nov 11 to 12	Regular	5:00a 1:00p 6:00p	7:00a 5:00p 3:00a
Wed, Nov 13	Regular	5:00a	7:00a

The daily total is calculated using either the ActualDate or RefDate instead of the start time. Both dates still use the overtime workday. Time worked above the 8-hour daily ActualDate or RefDate threshold is overtime. The explanations for ActualDate and RefDate both use November 11, because both daily totals have ActualDates and RefDates for November 11. Only RefDate has entries for November 10.

- Daily Totals by ActualDate: The custom threshold formula finds that the person worked 17 hours on November 11 because all the first three entries start on that day. The ActualDate for the first time entry on 2019-Nov-12 is

2019-Nov-11 because there's less than 180 minutes between when it starts and the 2019-Nov-12 03:00 entry stops.

Start Time	Stop Time	Measure	Payroll Time Type	ActualDate	RefDate
2019-Nov-11 05:00	2019-Nov-11 07:00	2h	Regular	**2019-Nov-11**	2019-Nov-10
2019-Nov-11 13:00	2019-Nov-11 17:00	4h	Regular	**2019-Nov-11**	2019-Nov-10
2019-Nov-11 18:00	2019-Nov-12 03:00	9h	Regular	**2019-Nov-11**	2019-Nov-11
2019-Nov-12 05:00	2019-Nov-12 07:00	2h	Regular	**2019-Nov-11**	2019-Nov-11
	Daily total:	17h			
2019-Nov-12 13:00	2019-Nov-12 17:00	4h	Regular	**2019-Nov-12**	2019-Nov-11
2019-Nov-12 18:00	2019-Nov-13 03:00	9h	Regular	**2019-Nov-12**	2019-Nov-12
2019-Nov-13 05:00	2019-Nov-13 07:00	2h	Regular	**2019-Nov-12**	2019-Nov-12
	Daily total:	15h			

- Daily Totals by RefDate. The custom threshold formula finds that the person worked 15 hours on November 11 because all three entries are within the workday defined as 5:00p to 5:00p.

Start Time	Stop Time	Measure	Payroll Time Type	ActualDate	RefDate
2019-Nov-11 05:00	2019-Nov-11 07:00	2h	Regular	2019-Nov-11	**2019-Nov-10**
2019-Nov-11 13:00	2019-Nov-11 17:00	4h	Regular	2019-Nov-11	**2019-Nov-10**
	Daily total:	6h			
2019-Nov-11 18:00	2019-Nov-12 03:00	9h	Regular	2019-Nov-11	**2019-Nov-11**
2019-Nov-12 05:00	2019-Nov-12 07:00	2h	Regular	2019-Nov-11	**2019-Nov-11**
2019-Nov-12 13:00	2019-Nov-12 17:00	4h	Regular	2019-Nov-12	**2019-Nov-11**
	Daily total:	15h			
2019-Nov-12 18:00	2019-Nov-13 03:00	9h	Regular	2019-Nov-12	**2019-Nov-12**
2019-Nov-13 05:00	2019-Nov-13 07:00	2h	Regular	2019-Nov-12	**2019-Nov-12**
	Daily total:	11h			

- Calculated Overtime by ActualDate: Because the threshold is 8 hours, the formula splits the 2019-Nov-11 18:00 to 2019-Nov-12 03:00 entry into these two entries:
  - The regular 2019-Nov-11 18:00 to 2019-Nov-11 20:00 entry
  - The overtime 2019-Nov-11 20:00 – 2019-Nov-12 03:00 entry

  But the overtime entry spans working days. So the formula splits it into 2 overtime entries: 2019-Nov-11 20:00 to 2019-Nov-12 00:00 and 2019-Nov-12 00:00 to 2019-Nov-12 03:00. Because the 2019-Nov-12 05:00 entry starts less than 180 minutes after the end of the previous entry, it too is included in the overtime calculation for November 11.

Start Time	Stop Time	Measure	Payroll Time Type	ActualDate	RefDate
2019-Nov-11 05:00	2019-Nov-11 07:00	2h	Regular	**2019-Nov-11**	2019-Nov-10
2019-Nov-11 13:00	2019-Nov-11 17:00	4h	Regular	**2019-Nov-11**	2019-Nov-10
2019-Nov-11 18:00	2019-Nov-11 20:00	2h	Regular	**2019-Nov-11**	2019-Nov-11
2019-Nov-11 20:00	2019-Nov-12 03:00	7h	Overtime	**2019-Nov-11**	2019-Nov-11
2019-Nov-12 05:00	2019-Nov-12 07:00	2h	Overtime	**2019-Nov-11**	2019-Nov-11
2019-Nov-12 13:00	2019-Nov-12 17:00	4h	Regular	2019-Nov-12	2019-Nov-11
2019-Nov-11 18:00	2019-Nov-11 20:00	2h	Regular	**2019-Nov-12**	2019-Nov-12
2019-Nov-11 20:00	2019-Nov-11 22 00	2h	Regular	**2019-Nov-12**	2019-Nov-12
2019-Nov-11 22:00	2019-Nov-12 03:00	5h	Overtime	**2019-Nov-12**	2019-Nov-12
2019-Nov-13 05:00	2019-Nov-13 07:00	2h	Overtime	**2019-Nov-12**	2019-Nov-12

- Calculated Overtime by RefDate: Because the threshold is 8 hours, the formula splits the 2019-Nov-11 18:00 to 2019-Nov-12 03:00 entry into these two entries:
  - The regular 2019-Nov-11 18:00 to 2019-Nov-12 02:00 entry
  - The overtime 2019-Nov-12 02:00 to 2019-Nov-12 03:00 entry

  The remaining entries starting on November 12 all stop before day's end at 5:00p, so they're calculated as overtime.

Start Time	Stop Time	Measure	Payroll Time Type	ActualDate	RefDate
2019-Nov-11 05:00	2019-Nov-11 07:00	2h	Regular	2019-Nov-11	**2019-Nov-10**
2019-Nov-11 13:00	2019-Nov-11 17:00	4h	Regular	2019-Nov-11	**2019-Nov-10**
2019-Nov-11 18:00	2019-Nov-12 02:00	8h	Regular	2019-Nov-11	**2019-Nov-11**
2019-Nov-12 02:00	2019-Nov-12 03:00	1h	Overtime	2019-Nov-11	**2019-Nov-11**

Start Time	Stop Time	Measure	Payroll Time Type	ActualDate	RefDate
2019-Nov-12 05:00	2019-Nov-12 07:00	2h	Overtime	2019-Nov-11	**2019-Nov-11**
2019-Nov-12 13:00	2019-Nov-12 17:00	4h	Overtime	2019-Nov-12	**2019-Nov-11**
2019-Nov-11 18:00	2019-Nov-11 02:00	8h	Regular	2019-Nov-12	**2019-Nov-12**
2019-Nov-12 02:00	2019-Nov-12 03:00	1h	Overtime	2019-Nov-12	**2019-Nov-12**
2019-Nov-13 05:00	2019-Nov-13 07:00	2h	Overtime	2019-Nov-12	**2019-Nov-12**

Here's the pseudo code that you can use to create threshold formulas that calculate overtime using the earned day as the ActualDate.

```
…... .

INPUTS ARE
 HWM_CTXARY_RECORD_POSITIONS,
 HWM_CTXARY_HWM_MEASURE_DAY,
 Measure,
 StartTime,
 StopTime,
 ActualDate


….

wkTotalHrsDay = 0
lastActualDate= nulldate
nidx = 0
WHILE (nidx < wMaAry ) LOOP (
 nidx = nidx + 1
 tcMeasure = 0
 tcMeasureDay = 0
 tcActualDate = nullDate

 aiRecPosition = HWM_CTXARY_RECORD_POSITIONS[nidx]
 if (MEASURE.exists(nidx) ) then ( tcMeasure = MEASURE[nidx] )
 if (ActualDate.exists(nidx) ) then (tcActualDate = StartTime [nidx] )

if (lastActualDate <> tcActualDate) then (
 / lastActualDate = tcActualDate
 wkTotalHrsDay = tcMeasure
) else (
 wkTotalHrsDay = wkTotalHrsDay + tcMeasure
)

If (wkTotalHrsDay > p threshold (
 /* create overtime … */
)
…
```

The logic to use the overtime day as the RefDate is the same. Just replace all instances of ActualDate in the preceding pseudo code with RefDate.

15 Time Device Rule Fast Formula

WFM_TDR_VALIDATE_REST_PERIOD_DURATION_AP Fast Formula

This fast formula is associated with the delivered rule template Compare Rest Between Time Events Template. It compares the end and start times of consecutive reported time entries identified by the time category of the rest period.

If the interim time is less than the defined rest period, the corresponding defined message appears. If no message is defined, the default message appears. The message severity is an output value associated with the displayed message. This template uses an array processing formula.

Parameters

Name	Data Type	Description
WORKED_TIME_CONDITION	Time category	Time category that identifies the time entries to use to decide whether the minimum rest period was met for the two shifts.
REST_PERIOD_IN_MINUTES	Fixed number	Minimum nonworked time, in minutes, required between consecutive end and start time entries.
OVERRIDE_MESSAGE_CODE	Message	Message that appears when the time between the end of one shift and start of the next shift is less than the defined rest period.

Outputs

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error

Example

Scenario: The rule parameter REST_PERIOD_IN_MINUTES has the value 480 minutes.

Day	Payroll Time Type	Mon	Output
Mon	Regular	11a to 10p	None

Day	Payroll Time Type	Mon	Output
Tue	Regular	4a to 10a	The message appears because the rest period is less than 480 minutes (8 hours).

WFM_TDR_VALIDATE_SCHEDULE_DEVIATION_AP Fast Formula

This fast formula is associated with the delivered rule template Validate Schedule Deviation Template. It compares reported shift start and end times to the assigned schedule and shift limits.

If the reported time entries don't match the scheduled time, a message appears. The formula validates the start time, end time, and scheduled duration with different messages appearing for early or late entries. If no message is defined, the default message appears. The message severity is an output value associated with the displayed message. This template uses an array processing formula.

Parameters

Name	Type	Description
WORKED_TIME_CONDITION	Time category	Time category that identifies the reported time entries to use to find whether the start and end times or durations were within shift limit deviations
VALIDATE_SCHEDULED_IN_TIME	Yes or No	Specify whether to validate the reported start time against the scheduled start time. Default value is Yes
VALIDATE_SCHEDULED_OUT_TIME	Yes or No	Specify whether to validate the reported end time against the scheduled end time. Default value is Yes
VALIDATE_SCHEDULED_DURATION	Yes or No	Specify whether to validate the reported duration against the scheduled duration. Default value is Yes
OVERD_MSG_IN_TIME_LATE	Message	Message that appears when the reported start time is after the scheduled start time
OVERD_MSG_IN_TIME_EARLY	Message	Message that appears when the reported start time is before the scheduled start time
OVERD_MSG_OUT_TIME_LATE	Message	Message that appears when the reported end time is after the scheduled end time
OVERD_MSG_OUT_TIME_EARLY	Message	Message that appears when the reported end time is before the scheduled end time
OVERD_MSG_DURATON_LONG	Message	Message that appears when the reported duration is longer than the scheduled duration

Name	Type	Description
OVERD_MSG_DURATON_SHORT	Message	Message that appears when the reported duration is shorter than the scheduled duration

Output

Name	Message Severity
OUT_MSG_DURATION	Specify whether the output message related to the duration is informational, warning, or error
OUT_MSG_START_TIME	Specify whether the output message related to the start time is informational, warning, or error
OUT_MSG_STOP_TIME	Specify whether the output message related to the end time is informational, warning, or error

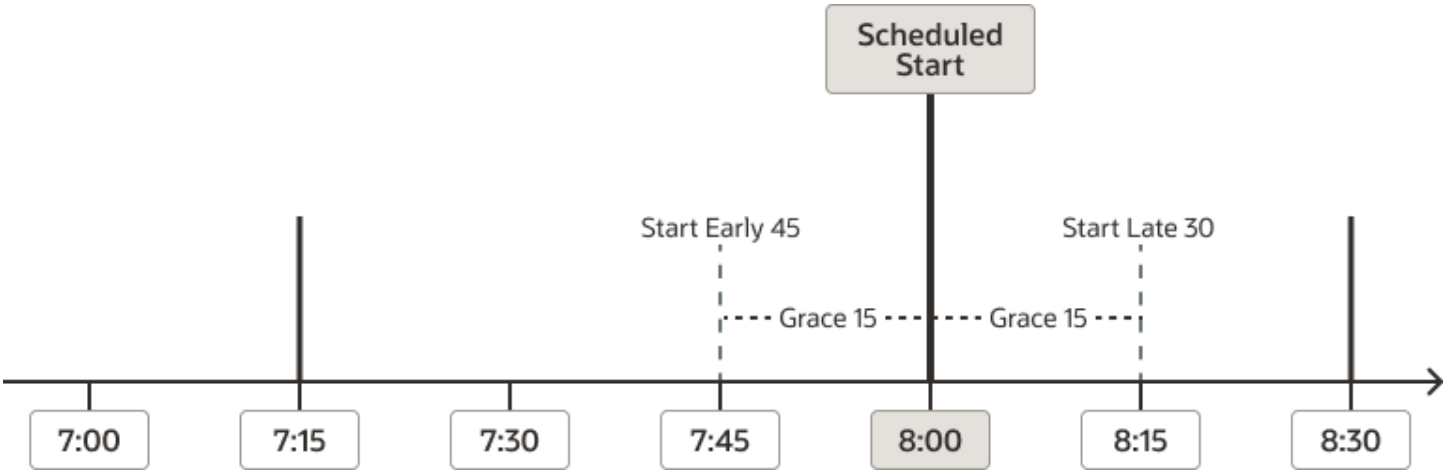
Function

The following scenarios explain this formula best.

Check the In

In this scenario, the scheduled shift starts at 8:00a and has these limits:

- Grace period: 15 minutes before and after the start time (7:45a to 8:00a and 8:00a to 8:15a)
- Start early: 45 minutes, including the grace period (7:15a to 8:00a)
- Start late: 30 minutes, including the grace period (8:00a to 8:30a)



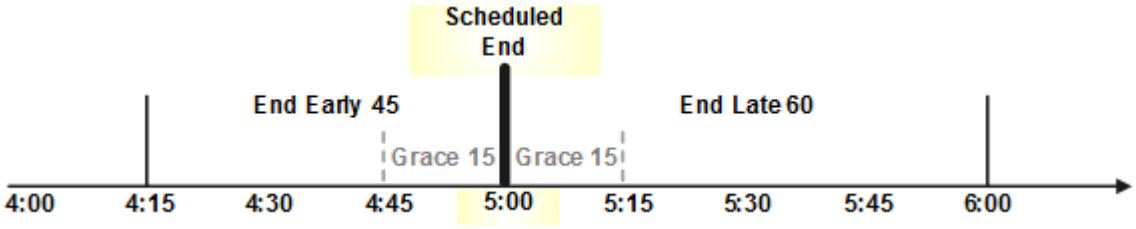
The formula uses the scheduled time and limits to check the reported start time against shift limits in this order:

1. If it's between 7:15a and 7:45a, the formula displays the default start early error message HWM_FF_TDR_EARLY_IN_ERR and the corresponding error type Shift START_EARLY_ERR_TYPE. If it exists, the error type is the violation type set for the start early shift limit. Otherwise, it's the message severity set in the rule.
2. Else if it's between 8:15a and 8:30a, the formula displays the default start late error message HWM_FF_TDR_LATE_IN_ERR and the corresponding error type Shift START_LATE_ERR_TYPE. If it exists, the error type is the violation type set for the start early shift limit. Otherwise, it's the message severity set in the rule.
3. Else if it's before 7:15a or after 8:30a, the formula displays the default error message HWM_FF_TDR_INVALID_IN_ERR. It also displays the corresponding error type of the message severity set in the rule.

Check the Out

In this scenario, the scheduled shift ends at 5:00p and has these shift limits:

- Grace period: 15 minutes before and after the end time (4:45p to 5:00p and 5:00p to 5:15p)
- End early: 45 minutes, including the grace period (4:15p to 5:00p)
- End late: 60 minutes, including the grace period (5:00p to 6:00p)



The formula uses the scheduled time and limits to check the reported end time against shift limits in this order:

1. If it's between 4:15p and 4:45p, the formula displays the default end early error message HWM_FF_TDR_EARLY_OUT_ERR and the corresponding error type Shift END_EARLY_ERR_TYPE. If it exists, the error type is the violation type set for the start early shift limit. Otherwise, it's the message severity set in the rule.
2. Else if it's between 5:15p and 6:00p, the formula displays the default end late message HWM_FF_TDR_LATE_OUT_ERR and the corresponding error type Shift END_LATE_ERR_TYPE. If it exists, the error type is the violation type set for the start early shift limit. Otherwise, it's the message severity set in the rule.
3. Else if it's before 4:15p or after 6:00p, the formula displays the default error message HWM_FF_TDR_INVALID_OUT_ERR. It also displays the corresponding error type of the message severity set in the rule.

Check the Duration

1. If the reported duration is less than the short duration, the formula displays the default message HWM_FF_TDR_SHORT_DURATION_ERR. It also displays the corresponding error type of the message severity set in the rule.
2. Else if the reported duration is more than the long duration, the formula displays the default message HWM_FF_TDR_LONG_DURATION_ERR. It also displays the corresponding error type of the message severity set in the rule.

Examples

Example 1: The scheduled shift is 8:00a – 5:00p. The early start and end limits are 10 minutes. The late start and end limits are 15 minutes.

Day	Payroll Time Type	Mon	Output
1	Regular	8a to 5p	No message appears because the reported start and end times match the scheduled times.
2	Regular	7:52a to 4:45p	The start early message for the violation type of the start early shift limit, if any, appears. If no violation type exists, the message for the message severity in the rule appears. The end early message appears because the reported time is before the scheduled time and end early shift limit.
3	Regular	8:13a to 5:13p	The start late and end late messages specified by the violation type of each late shift limit, if any, appear. If no violation type exists, the messages for the message severities in the rule appear.
4	Regular	7:45a to 4:52	The start early rule message for the message severity appears because the reported time is before the scheduled time and start early shift limit. The end early message for the violation type of the end early shift limit, appears. If no violation type exists, the rule message for the message severity appears.
5	Regular	8:20a to 5:20p	The start late and end late rule messages for the message severities appear because the reported time is before the scheduled time and late shift limits.

Example 2: The scheduled shift duration is 8 hours. The end early limit is 10 minutes and the end late limit is 15 minutes.

Day	Payroll Time Type	Reported Time	Output
1	Regular	8h	No message appears because the reported duration matches the scheduled duration.
2	Regular	7h 51m	The short duration message for the violation type of the end early

Day	Payroll Time Type	Reported Time	Output
			shift limit appears. If no violation type exists, the rule message for the message severity appears.
3	Regular	7h 48m	The short duration rule message for the message severity appears because the reported duration is shorter than the scheduled duration and end early shift limit.
4	Regular	8h 13m	The long duration message for the violation type of the end late shift limit appears. If no violation type exists, the rule message for the message severity appears.
5	Regular	8h 17m	The long duration rule message for the message severity appears because the reported duration is longer than the scheduled duration and end late shift limit.

WFM_TDR_VALIDATE_SUPPLIER_EVENT_AP Fast Formula

This fast formula is associated with the delivered rule template Validate Time Event Template. It evaluates events imported from time collection devices to identify the specified events that the device automatically generated.

If the event is one of up to three specified automatically generated events, a message appears. If no message is defined, the default message appears. The message severity is an output value associated with the displayed message. This template uses an array processing formula.

Parameters

Name	Type	Description
WORKED_TIME_CONDITION	Time category	Time category that identifies the time entries made of the events to compare with the specified automatically generated event.
SUPPLIER_EVENT_OUT_EXCEPTION_1	Fixed text	First automatically generated time event to identify.
SUPPLIER_EVENT_OUT_EXCEPTION_2	Fixed text	Optional second automatically generated time event to identify.
SUPPLIER_EVENT_OUT_EXCEPTION_3	Fixed text	Optional third automatically generated time event to identify.
OVERRIDE_MESSAGE_CODE	Message	Message that appears when the reported duration is shorter than the scheduled duration.

Output

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error

Function

This formula compares the SupplierEventOut attribute to the input parameters SUPPLIER_EVENT_OUT_EXCEPTION_1, SUPPLIER_EVENT_OUT_EXCEPTION_2, and SUPPLIER_EVENT_OUT_EXCEPTION_3. If the SupplierEventOut attribute matches any of the parameter values, it generates a message.

Example

Scenario: You create a rule with your template where SUPPLIER_EVENT_OUT_EXCEPTION_1 is AUTO_CHECK_OUT.

Day	Payroll Time Type	Reported Event Time	Output
Mon	Check In	8a	None
	AUTO_CHECK_OUT	5p	The rule message for the message severity appears.
Tue	Check In	8a	None
	Check Out	4p	None
Wed	Check In	10a	None
	Check Out	5p	None

16 Time Entry Rule Fast Formula

ORA_WFM_TER_MIN_MAX_PAYTYPE_UNITS_AP Fast Formula

This fast formula identifies whether reported units time entries for the units time category are below or over the defined minimum and maximum unit quantities. It compares the reported time category quantity to the defined minimum and maximum unit quantities.

If the reported unit quantities are below or over the defined limits, the corresponding defined message appears. If no message is defined, the default message appears. The message severity is an output associated with the displayed message. This formula uses an array to process time card data. It isn't associated with any delivered time entry rule templates.

Parameters

Name	Data Type	Description
WORKED_TIME_CONDITION	Time category	Time category of reported units to sum and compare with the defined minimum and maximum unit quantities.
MIN_HOURS	Fixed number	Minimum hours required for the worker associated with the rule that uses this formula to qualify for units.
MIN_UNITS	Fixed number	Minimum units required.
MAX_UNITS	Fixed number	Maximum units allowed.
OVERRIDE_MSG_CD_MIN_QTY	Message	Message that overrides the default message that appears if the summed units value is less than the minimum units required.
OVERRIDE_MSG_CD_MAX_QTY	Message	Message that overrides the default message that appears if the summed units value exceeds the maximum units allowed.
OVERRIDE_MSG_CD_MIN_HRS	Message	Message that overrides the default message that appears if the minimum number of required reported hours wasn’t reached.

Output

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error

Example Error Messages

The bold items in each row identify where the reported hours or units don't match the applicable rule parameter.

			Rule Parameters			
Regular (hours)	**Meal (hours)**	**Meal Allowance (units)**	**MIN_HOURS**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
7	1	1	1	1	1	No errors
7	2	**0**	1	1	**1**	The quantity of the {UNITS_TIME_ATTR} time attributes for the period is less than the {MIN_UNITS} minimum limit defined for the time card.
7	3	**2**	1	1	**1**	The quantity of the {UNITS_TIME_ATTR} time attributes for the period exceeds the {MIN_UNITS} maximum limit defined for the time card.
7	**3**	1	**4**	1	1	The {UNITS_TIME_ATTR} time attribute was reported, although the minimum number of reported hours wasn't reached.
7	4	**1**	3	**2**	4	The quantity of the {UNITS_TIME_ATTR} time attribute for the period is less than the {MIN_UNITS} minimum limit defined for the time card.
7	1	**5**	6	2	**4**	The quantity of the {UNITS_TIME_ATTR} time attribute for the period exceeds the {MAX_UNITS} maximum limit defined for the time card. The {UNITS_TIME_ATTR}

			Rule Parameters			
Regular (hours)	**Meal (hours)**	**Meal Allowance (units)**	**MIN_HOURS**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
						time attributes were reported, although the minimum number of reported hours wasn't reached.

ORA_WFM_TER_PERIOD_MAX_WITH_MSG_MEASURE_FORM Fast Formula

This fast formula identifies whether reported time entries for the time category exceed the specified maximum hours. If they do exceed the maximum, the defined message appears.

The message includes the specified maximum and the reported hours in one of these formats:

- Decimal format, such as 10.30
- Hours and minutes separated by a colon, such as 10:30
- Hours and minutes separate by a space, such as 10h 30m

If you don't specify a message, the default message HWM_FF_TER_PER_GT_MAX_MSG_ERR appears. The message severity is an output value associated with rule settings. This formula uses an array to process time card data. It isn't associated with any delivered time entry rule templates.

Parameters

Name	Type	Description
WORKED_TIME_CONDITION	Time category	Time category of reported hours that include the specified time attributes used to decide whether to generate a units time attribute.
OVERRIDE_MSG_CD	Message	Code of the message that overrides the code of the default message that appears if the attribute values are invalid.
DEC_HRS_COLON_HRS_SPACE	Text	Specify how the specified message shows the hours and minutes: • 'DEC' shows time in HH.ddd (10.30) • HRS_COLON shows time in HH:MM (10:30) • HRS_SPACE shows time in ##h ##m (10h 30m)

Output

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error

Examples

'DEC' message format: The reported time, 10.30, for the period exceeds the 7 maximum allowed for the time card.

'HRS_COLON' message format: The reported time, 10:30, for the period exceeds the 7 maximum allowed for the time card.

'HRS_SPACE' message format: The reported time, 10h 30m, for the period exceeds the 7 maximum allowed for the time card.

ORA_WFM_TER_RESUBMIT_VALIDATION_AP Fast Formula

This fast formula identifies whether the time attribute values are still valid for the new assignment and time profiles. It calls an API to complete the validation.

For any attribute values it finds that are invalid, it displays the specified warning message. The message severity is defined as an output associated with the displayed message. This formula uses an array to process time card data. It isn't associated with any delivered time entry rule templates.

Parameters

Name	Type	Description
WORKED_TIME_CONDITION	Time category	Time category of reported hours that include the specified time attributes used to decide whether to generate a units time attribute.
OVERRIDE_MSG_CD	Message	Code of the message that overrides the code of the default message that appears if the attribute values are invalid.

Output

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error

Examples

Scenario: Today's date is November 2. The person has an existing time card with a time card period of October 1 – 7. The person also has a retroactive assignment change for October 4. Because of this retro-change, the person changed group membership. The new group has a different time entry profile and layout set.

Day	Payroll Time Type	State Worked	Reported Time
Oct 1	Regular	CA	8h
Oct 2	Regular	NV	8h
Oct 3 thru 7	Regular	NA	8h

Example 1: The new layout set requires an entry that was optional on the previous layout set.

Day	Payroll Time Type	State Worked	Reported Time
Oct 1	Regular	CA	8h
Oct 2	Regular	NV	8h
Oct 3	Regular	NA	8h

Day	Payroll Time Type	State Worked	Reported Time	Message
Oct 4 thru 7	Regular	NA	8h	Required field, State Worked, not populated

Example 2: The Payroll Time Type choice list in new layout set has Time Worked instead of Regular. The person is still eligible for the Regular pay. But it doesn't appear on the time card because the value isn't in the new layout.

Day	Payroll Time Type	State Worked	Reported Time
Oct 1	Regular	CA	8h
Oct 2	Regular	NV	8h
Oct 3	Regular	NA	8h

Day	Payroll Time Type	State Worked	Reported Time	Message
Oct 4 thru 7	NA	NA	8h	You must provide a value for the Payroll Time Type attribute.

ORA_WFM_TER_WEEKEND_UNITS_AP Fast Formula

This fast formula determines whether reported units time entries for the Units time category are under or over the defined minimum and maximum unit quantities. It compares the reported time category quantity to the defined minimum and maximum unit quantities.

If the reported unit quantities are under or over the defined limits, the corresponding defined message appears. If no message is defined, the default message appears. The message severity is defined as an output associated with the displayed message. This formula uses an array to process time card data. It isn't associated with any delivered time entry rule templates.

Parameters

Name	Data Type	Description
WORKED_TIME_CONDITION	Time category	Time category of reported units to sum and compare with the defined minimum and maximum unit quantities.
MIN_UNITS	Fixed number	Minimum units required.
MAX_UNITS	Fixed number	Maximum units allowed.
WORK_ANY_WEEKEND_DAY	Yes or No	If Yes, generate the number of units when the worker associated with a rule using this formula works any day defined as weekend day. If No, generate the number of units only when the worker associated with a rule using this formula works all days defined as weekend days.
IS_MON_WEEKEND	Yes or No	Indicate if Monday is a weekend day.
IS_TUE_WEEKEND	Yes or No	Indicate if Tuesday is a weekend day.
IS_WED_WEEKEND	Yes or No	Indicate if Wednesday is a weekend day.
IS_THU_WEEKEND	Yes or No	Indicate if Thursday is a weekend day.
IS_FRI_WEEKEND	Yes or No	Indicate if Friday is a weekend day.
IS_SAT_WEEKEND	Yes or No	Indicate if Saturday is a weekend day.
IS_SUN_WEEKEND	Yes or No	Indicate if Sunday is a weekend day.
OVERRIDE_MSG_CD_MIN_QTY	Message	Message that overrides the default message that appears if the summed units value is less than the minimum units required.
OVERRIDE_MSG_CD_MAX_QTY	Message	Message that overrides the default message that appears if the summed units value exceeds the maximum units allowed.

Name	Data Type	Description
OVERRIDE_MSG_CD_MIN_HRS	Message	Message that overrides the default message that appears if the minimum number of required reported hours wasn't reached.

Output

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error

Examples of WORK_ANY_WEEKEND_DAY Is Yes

For these examples, the weekend days are Saturday and Sunday.

			Rule Parameters		
Day	**Regular (hours)**	**Weekend Allowance (units)**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
Sat	2	0	NA	NA	No error
Sun	7	1	1	1	No error

			Rule Parameters		
Day	**Regular (hours)**	**Weekend Allowance (units)**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
Sat	0	0	NA	NA	No error
Sun	7	1	1	1	No error

			Rule Parameters		
Day	**Regular (hours)**	**Weekend Allowance (units)**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
Sat	3	1	1	1	No error
Sun	0	0	NA	NA	No error

			Rule Parameters		
Day	**Regular (hours)**	**Weekend Allowance (units)**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
Sat	3	4	1	3	The quantity of {UNITS_TIME_ATTR} time attributes for the weekend period exceeds the {MAX_UNITS} maximum limit defined for the time card.
Sun	0	0	NA	NA	No error

			Rule Parameters		
Day	**Regular (hours)**	**Weekend Allowance (units)**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
Sat	3	1	2	3	The quantity of {UNITS_TIME_ATTR} time attributes for the weekend period is less than the {MIN_UNITS} minimum limit defined for the time card.
Sun	0	0	NA	NA	No error

Examples of WORK_ANY_WEEKEND_DAY Is No

			Rule Parameters		
Day	**Regular (hours)**	**Weekend Allowance (units)**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
Sat	7	1	1	1	No error
Sun	7	1	1	1	No error

			Rule Parameters		
Day	**Regular (hours)**	**Weekend Allowance (units)**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
Sat	7	1	1	1	No error
Sun	7	0	1	1	The quantity of {UNITS_TIME_ATTR} time attributes for the weekend period is less

			Rule Parameters		
Day	**Regular (hours)**	**Weekend Allowance (units)**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
					than the {MIN_UNITS} minimum limit defined for the time card.

			Rule Parameters		
Day	**Regular (hours)**	**Weekend Allowance (units)**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
Sat	7	0	NA	NA	No error
Sun	7	3	1	1	The quantity of {UNITS_TIME_ATTR} time attributes for the weekend period exceeds the {MAX_ UNITS} maximum limit defined for the time card.

			Rule Parameters		
Day	**Regular (hours)**	**Weekend Allowance (units)**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
Sat	7	0	NA	NA	No error
Sun	7	3	1	1	The quantity of {UNITS_TIME_ATTR} time attributes for the weekend period exceeds the {MAX_ UNITS} maximum limit defined for the time card.

			Rule Parameters		
Day	**Regular (hours)**	**Weekend Allowance (units)**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
Sat	0	0	NA	NA	No error
Sun	7	1	1	1	The {UNITS_TIME_ ATTR} time attributes were reported, although all weekend days weren't worked.

			Rule parameters		
Day	**Regular (hours)**	**Weekend Allowance (units)**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
Sat	2	0	NA	NA	No error
Sun	7	1	1	1	No error

			Rule Parameters		
Day	**Regular (hours)**	**Weekend Allowance (units)**	**MIN_UNITS**	**MAX_UNITS**	**Error Status**
Sat	3	1	1	1	The {UNITS_TIME_ATTR} time attributes were reported, although all weekend days weren't worked.
Sun	0	0	NA	NA	No error

WFM_COMPARE_WRKR_SCHEDULE_TO_REPORTED_HOURS Fast Formula

This fast formula is associated with the delivered rule template Compare Schedule to Reported Hours Template. It compares the total reported time for the day or period with either the published workforce management schedule or the HR employment schedule.

The formula first checks whether the published schedule exists in the time repository. If the published schedule doesn't exist, the formula compares the reported hours with the HR employment schedule using a PL/SQL availability API. If the total reported hours aren't within the scheduled hours plus or minus the defined variance, the defined message appears. If no message is defined, the default message appears. The message severity is an output value associated with the displayed message.

Parameters

Name	Data Type	Description
VARIANCE_THRESHOLD_IN_MIN	Fixed number	Allowable variance, in minutes, between scheduled and reported hours
MESSAGE_CODE	Message	Message overriding the default one that appears if time entries matching the time category conditions total to less or more than the scheduled hours, minus or plus the variance
WORKED_TIME_CONDITION	Time category	Time category that identifies the reported time entries to use to decide whether the total

Name	Data Type	Description
		hours match the scheduled hours or within the allowed variance

Output

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error

Example

You created a rule with your template that has a variance threshold of plus or minus 10 minutes. It also has the time category All Payroll Time Types. The person has an assigned 9-hour work schedule that includes a 1-hour break, Monday through Friday.

Day	Payroll Time Type	Reported Time	Output
Mon	Regular	7:55a to 4:55p	None
Tue	Regular	8a to 5p	None
Wed	Regular	8:05a to 5:05p	None
Thu	Regular	7:49a to 5p	The rule message for the message severity appears because the total reported hours are less than the scheduled hours minus the variance.
Fri	Regular	8a to 5:12p	The rule message for the message severity appears because the total reported hours are greater than the scheduled hours plus the variance.

WFM_PERIOD_MAXIMUM_TIME_ENTRY_RULE Fast Formula

This time entry rule fast formula is associated with the delivered rule template Period Maximum Hours Template. It compares the total daily or period hours identified by the time category with the defined maximum limit.

If the total hours are greater than the maximum limit, the defined message appears. If no message is defined, the default message appears. The message severity is an output value associated with the displayed message.

Parameters

Name	Data Type	Description
DEFINED_LIMIT	Fixed number	Maximum total hours expected for the day or time card period
MESSAGE_CODE	Message	Message that appears when the total hours for the day or time card period exceed the defined maximum limit
WORKED_TIME_CONDITION	Time category	Time category that identifies the reported time entries to total for the day or time card period and compare with the defined maximum limit

Output

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error

Examples

Example 1: You created a rule with your template that has a daily maximum of 8 hours and the time category All Payroll Time Types.

Day	Payroll Time Type	Reported Time	Output
Mon thru Wed	Regular	8h	None
Thu	Regular	6h	None
	Jury Duty	4h	The message appears because the daily total of payroll hours exceeds the maximum limit of 8.
Fri	Regular	8h	None

Example 2: You created a rule with your template that has a weekly maximum of 40 hours and the time category All Payroll Time Types.

Day	Payroll Time Type	Reported Time	Output
Mon thru Wed	Regular	8h	None
Thu	Regular	6h	None
	Jury Duty	4h	None

Day	Payroll Time Type	Reported Time	Output
Fri	Regular	8h	The message appears because the weekly total of payroll hours exceeds the maximum limit of 40.

WFM_PERIOD_MINIMUM_TIME_ENTRY_RULE Fast Formula

This fast formula is associated with the delivered rule template Period Minimum Hours Template. It compares the total daily or period hours identified by the time category with the defined minimum limit.

If the total hours are less than the minimum limit, the defined message appears. If no message is defined, the default message appears. The message severity is an output value associated with the displayed message.

Parameters

Name	Data Type	Description
DEFINED_LIMIT	Fixed number	Maximum total hours expected for the day or time card period
MESSAGE_CODE	Message	Message that appears when the total hours for the day or time card period are less than the defined minimum limit
WORKED_TIME_CONDITION	Time category	Time category that identifies the reported time entries to total for the day or time card period and compare with the defined minimum limit

Output

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error

Examples

Example 1: You created a rule with your template that has a daily minimum of 8 hours and the time category All Payroll Time Types.

Day	Payroll Time Type	Reported Time	Output
Mon thru Wed	Regular	8h	None

Day	Payroll Time Type	Reported Time	Output
Thu	Jury Duty	4h	The message appears because the daily total of payroll hours is less than the minimum limit of 8.
Fri	Regular	8h	None

Example 2: You created a rule with your template that has a weekly minimum of 36 hours and the time category All Payroll Time Types.

Day	Payroll Time Type	Reported Time	Output
Mon thru Thu	Regular	8h	None
Fri	Jury Duty	3h	The message appears because the weekly total payroll hours are less than the minimum limit of 36.

WFM_TER_COMPARE_WRKR_HOLIDAY_TO_REPORTED_HOU Fast Formula

This fast formula is associated with the delivered rule template Holiday Reported Hours Template. It compares the person's assigned public holidays to the reported time entries for the day that the time category identified.

If the reported time is on a public holiday, the defined message appears. If no message is defined, the default message appears. The message severity is an output value associated with the displayed message. This template uses an array processing formula.

Parameters

Name	Data Type	Description
WORKED_TIME_CONDITION	Time category	Time category that identifies the reported time entries to compare with the public holiday
OVERRIDE_MESSAGE_CODE	Message	Message overriding the default one that appears if time entries matching the time category conditions are reported on the public holiday
OVRD_PUBLIC_HOLIDAY_CATEGORY	Fixed text	Optional holiday classification to compare with the reported time entries

Output

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error

Function

This formula compares the person's assigned public holiday defined in the lookup type PER_CAL_EVENT_CATEGORY to the reported time for the day that matches the time category conditions. If the reported time is on a public holiday, the defined message appears. If no message is defined, the default message appears.

Example

The rule compares Regular time entries for each day with the person's assigned public holidays.

Day	Payroll Time Type	Reported Time	Output
1	Regular	8a to 5p	None
2	Regular	8a to 5p	None
3	Regular	8a to 5p	The rule message for the message severity appears because this day is a public holiday for the worker.
4	Regular	8a to 5p	None
5	Regular	8a to 5p	None

WFM_TER_VALIDATE_REST_PERIOD_DURATION_AP Fast Formula

This time entry rule fast formula is associated with the delivered rule template Compare Rest Between Shifts Template. It compares the reported end and start times for consecutive shifts.

If the rest period between the two shifts is less than the defined rest period, it displays the configured message. This formula uses an array to process time data.

Parameters

Name	Data Type	Description
WORKED_TIME_CONDITION	Time category	Time category of reported time entries to compare with the defined rest period.

Name	Data Type	Description
REST_PERIOD_IN_MINUTES	Fixed number	Minimum nonworked time, in minutes, that workers must have between consecutive shifts.
OVERRIDE_MESSAGE_CODE	Message	Message that appears when the time between the end of one shift and start of the next shift is less than the defined rest period.

Output

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error

Example

Scenario: The rule parameter REST_PERIOD_IN_MINUTES has the value 30 minutes.

Day	Payroll Time Type	Reported Time	Output
Mon	Regular	8a to 1p 1:15p to 6p	The message appears because the rest period is less than 30 minutes
Tue	Regular	8a to 1p 1:30p to 6p	No message appears because the rest period equals the minimum required 30 minutes
Thu	Regular	8a to 1p 2p to 6p	No message appears because the rest period exceeds the minimum required 30 minutes

17 Time Submission Rule Fast Formula

WFM_TSR_SUBMIT_OR_SAVE_ON_NUMBER_OF_DEVICE_EV Fast Formula

This fast formula is associated with the delivered rule template Number of Time Entries Template. It compares the imported Out device events that match the conditions of the specified time category with the minimum entries defined for the Submit action.

If the number of reported Out events is the minimum or more, the formula submits the time card. Otherwise, it compares the Out events with the minimum entries defined for the Save action. If the number of Out events is the minimum or more, it saves the time card. If neither condition is met, the formula sets the time card status to Entered. This template uses an array processing formula.

Parameters

Name	Data Type	Description
WORKED_TIME_CONDITION	Time category	Time category that identifies the reported time entries to use to decide whether to save or submit the time card.
MIN_ENTRY_SUBMIT	Fixed number	Minimum reported Out events required to automatically submit the time card.
MIN_ENTRY_SAVE	Fixed number	Minimum reported Out events required to automatically save the time card.

Output

Name	Message Severity
OUT_MSG	Time card action automatically started

Example

Your people clock out and in when taking their breaks (2 per workday), and meal. They also clock out just before leaving for the day, for a total of 4 clock outs in a standard workday. The time card period is weekly. You create a rule with this formula that automatically completes the appropriate action:

1. If the total reported Out events are 35 hours or more, submit the time card.
2. Else, if the total reported Out events are 7 hours or more, save the time card.
3. Else, set the time card status to Entered.

Device Event	Payroll Time Type	Day 1	Day 2	Day 3	Day 4	Day 5
In	Regular	8:00a	8:00a	8:00a	8:00a	8:00a
Out and In	Break	10:00a	10:00a	10:00a	10:00a	10:00a
Out and In	Regular	10:15a	10:15a	10:15a	10:15a	10:15a
Out and In	Lunch	12:00p	12:00p	12:00p	12:00p	12:00p
Out and In	Regular	1:00p	1:00p	1:00p	1:00p	1:00p
Out and In	Break	3:00p	3:00p	3:00p	3:00p	3:00p
Out and In	Regular	3:15p	3:15p	3:15p	3:15p	3:15p
Out	Regular	5:00p	5:00p	5:00p	5:00p	5:00p
	Output	Save time card	Save time card	Save time card	Save time card	Submit time card

WFM_TSR_SUBMIT_OR_SAVE_ON_NUMBER_OF_HOURS_AP Fast Formula

This fast formula is associated with the delivered rule template Number of Hours Submission Template. It compares the imported time device events that match the conditions of the specified time category with the minimum hours defined for the Submit action.

If the total hours are the minimum or more, it submits the time card. Otherwise, it compares the total hours with the minimum defined for the Save action. If the total hours are the defined minimum or more, it saves the time card. If neither condition is met, it sets the time card status to Entered. This template uses an array processing formula.

Parameters

Name	Data Type	Description
WORKED_TIME_CONDITION	Time category	Time category that identifies the reported time entries to use to decide whether to save or submit the time card.
MIN_HOURS_SUBMIT	Fixed number	Minimum total reported hours required to automatically submit the time card.
MIN_HOURS_SAVE	Fixed number	Minimum total reported hours required to automatically save the time card.

Output

Name	Message Severity
OUT_MSG	Time card action automatically started

Example

Your people typically work 8 Regular hours per day and 5 days per week, which is the time card period. You create a rule with this formula that automatically completes the appropriate action:

1. If the total Regular hours are 40 hours or more, submit the time card.
2. Else, if the total Regular hours are 8 hours or more, save the time card.
3. Else, set the time card status to Entered.

Day	Payroll Time Type	Reported Time	Output
1 thru 4	Regular	8a to 12p 1p to 5p	Save time card
5	Regular	8a to 12p 1p to 5p	Submit time card

WFM_TSR_SUBMIT_OR_SAVE_ON_SPECIFIC_DAY_AP Fast Formula

This fast formula is associated with the delivered rule template Specific Day Submission Template. It compares the imported time device events that match the conditions of the specified time category with the minimum hours defined for the Submit action.

If the total hours are the minimum or more, it submits the time card. Otherwise, it compares the total hours with the minimum defined for the Save action. If the total hours are the defined minimum or more, it saves the time card. If neither condition is met, it sets the time card status to Entered. This template uses an array processing formula.

Parameters

Name	Data Type	Description
WORKED_TIME_CONDITION	Time category	Time category that identifies the reported time entries to use to decide whether to save or submit the time card.

Name	Data Type	Description
SAVE_SUBMIT_ON_MON	Fixed text	Submit or save time cards with time entries on or after Monday. Valid values are Save and Submit.
SAVE_SUBMIT_ON_TUE	Fixed text	Submit or save time cards with time entries on or after Tuesday. Valid values are Save and Submit.
SAVE_SUBMIT_ON_WED	Fixed text	Submit or save time cards with time entries on or after Tuesday. Valid values are Save and Submit.
SAVE_SUBMIT_ON_THU	Fixed text	Submit or save time cards with time entries on or after Thursday. Valid values are Save and Submit.
SAVE_SUBMIT_ON_FRI	Fixed text	Submit or save time cards with time entries on or after Friday. Valid values are Save and Submit.
SAVE_SUBMIT_ON_SAT	Fixed text	Submit or save time cards with time entries on or after Saturday. Valid values are Save and Submit.
SAVE_SUBMIT_ON_SUN	Fixed text	Submit or save time cards with time entries on or after Sunday. Valid values are Save and Submit.

Output

Name	Message Severity
OUT_MSG	Time card action automatically started

Example

Your people typically work 8 Regular hours per day and 5 days per week, which is the time card period. You create a rule with this formula that automatically completes the appropriate action:

1. If any time entries match the time category condition on Monday, save the time card.
2. Else if any time entries match the time category condition on Tuesday, save the time card.
3. Else if any time entries match the time category condition on Wednesday, save the time card.
4. Else if any time entries match the time category condition on Thursday, save the time card.
5. Else if any time entries match the time category condition on Friday, submit the time card.
6. Else if any time entries match the time category condition on Saturday, submit the time card.
7. Else if any time entries match the time category condition on Sunday, submit the time card.

Day	Payroll Time Type	Reported Time	Output
1 thru 4	Regular	8a to 12p 1p to 5p	Save time card

Day	Payroll Time Type	Reported Time	Output
5	Regular	8a to 12p 1p to 5p	Submit time card

WFM_TSR_SUBMIT_OR_SAVE_ON_WORK_SCHEDULE_AP Fast Formula

This fast formula is associated with the delivered rule template Work Schedule Submission Template. It compares the imported Out device events that match the conditions of the time category with the submit range.

It calculates the submit range using the defined threshold, last scheduled workday, and time. If the Out event is in that range, it submits the time card. Otherwise, the formula compares the reported Out event with the save range. If the Out event is in that range, it saves the time card. If neither condition is met, it sets the time card status to Entered. This template uses an array processing formula.

Parameters

Name	Data Type	Description
WORKED_TIME_CONDITION	Time category	Time category that identifies the reported time entries to use to decide whether to save or submit the time card.
SUBMIT_THRESHOLD_IN_MINUTES	Fixed number	Minutes used with last scheduled workday and reported time entries to decide whether to submit the time card.
SAVE_THRESHOLD_IN_MINUTES	Fixed number	Minutes used with last schedule day and reported time entries to decide whether to save the time card.

Output

Name	Message Severity
OUT_MSG	Time card action automatically started

Examples

Scenario: Your people typically work 8 Regular hours per day and 5 days per week, which is the time card period. You create a rule with this formula that compares the total day and weekly hours to the scheduled total of 40 hours. The submit threshold is 4 and the save threshold is 9. If the formula can't find the schedule or the total hours equals 0, then submit the time card.

Example1: The total reported payroll hours equal 30 hours. This total is less than both the 36 submit and 31 save threshold hours so the formula sets the time card status to Entered.

Day	Payroll Time Type	Reported Time	Output
1	Regular	5h 3h	8h
2	Regular	8h	8h
3	Regular	2h 6h	8h
4	Regular	5h 1h	6h
		Total reported payroll hours:	30h

Example 2: The total reported payroll hours equal 32 hours. Because this total is between the 36 submit and 31 save threshold hours, the formula saves the time card.

Day	Payroll Time Type	Reported Time	Output
1	Regular	5h 3h	8h
2	Regular	8h	8h
3	Regular	2h 6h	8h
4	Regular	5h 3h	8h
		Total reported payroll hours:	32h

Example 3: The total reported payroll hours equal 38 hours, which is over the 36 submit threshold hours so the formula submits the time card.

Day	Payroll Time Type	Reported Time	Output
1	Regular	5h 3h	8h

Day	Payroll Time Type	Reported Time	Output
2	Regular	8h	8h
3	Regular	2h 6h	8h
4	Regular	5h 3h	8h
5		6h	6h
		Total reported payroll hours:	38h

18 Workforce Compliance Fast Formula

ORA_WFM_WCR_APPR_REMIND_ESCALATE_AP Fast Formula

This fast formula identifies whether the individual, their manager, or both approved the time card. If not, it sends the specified approval reminder and escalation messages.

Before generating the messages, the formula checks whether the individual is on the manually maintained exclusion list. If yes, then the process doesn't generate or send reminder and escalation notifications.

Depending on your time approval configuration, individuals might need to approve their time cards to indicate they consider the time card data to be correct. And, managers approve submitted time cards as part of the approval workflows. The formula continues to send reminders if the approval statuses for the time card don't change. This formula uses an array to process time card data. It isn't associated with any delivered workforce compliance rule templates.

Parameters

Name	Data Type	Description
APPROVAL_TYPE	Fixed text	Specify who gets the reminders. You can configure worker reminders with different parameters than the manager reminders and escalations. The formula has different escalation and delegation options. The formula doesn't differentiate between payroll and project managers. It just looks at who the approver is. Valid values: Worker, Manager, or Both Default and NULL values: Manager The Worker type looks at the worker approval status. The Manager type looks at the time card status.
ESCL_TO_LEVEL	Fixed Number	The formula compares the value on the process with the value set in the rule. If the process value is less, the formula sends an escalation reminder. If the process value is more, it doesn't send an escalation message. Valid values are Arabic numerals. Default and NULL values: 0
ENABLE_DELEGATION	Yes or No	Valid values: Yes or No Default and NULL values: No

Name	Data Type	Description
REM_UNITS_AFTER_END_DATE	Fixed Number	Number of units after the end date for the time card period when the process and rule run and generate the reminder message. If today is on or after the end date + this number, then the rule can send the reminder message. Otherwise, it doesn't send the message. The parameter assumes Days if the selected UOM is D, Hours if it's H, and Minutes if it's M. Valid values are Arabic numerals. Default and NULL values: 7
ESCL_UNITS_AFTER_END_DATE	Fixed Number	Number of units after the end date of the time card period when the process and rule run and generate the escalation message. If today is on or after the end date + this number, the rule can send the escalation message to the appropriate manager in the hierarchy. Otherwise, it doesn't send the message. The parameter assumes Days if the selected UOM is D, Hours if it's H, and Minutes if it's M. Valid values are Arabic numerals. Default and NULL values: 10
ESCALATION_CADENCE	Fixed Number	Identifies how long after the first escalation to send the escalation notification to the next management level. For example, If escalation cadence = 7, the management level increases every 7 units. The unit comes from the UOM parameter. Valid values are Arabic numerals. Default and NULL values: 7
UOM	Fixed Text	Used to define what the number of units is after the end date of the time card period. If D, for days, then the parameter for start reminder and escalations is measured in days. If H, then the parameter is measured in number of hours. If M, then the parameter is measured in number of minutes. Valid Values: D (Days), H (Hours), M (Minutes) Default and NULL values: D (Days)
OVERRIDE_WRKR_REM_MSG	Message	Reminder message for missing worker approval. The default message is HWM_FF_WCR_WRKR_APPR_RMDR

Name	Data Type	Description
OVERRIDE_MGR_REM_MSG	Message	Reminder message for missing manager approval. The default message is HWM_FF_WCR_MGR_APPR_RMDR
OVERRIDE_WRKR_ESCL_MSG	Message	Escalation message for missing worker approval. The default message is HWM_FF_WCR_WRKR_APPR_ESCL
OVERRIDE_MGR_ESCL_MSG	Message	Escalation message for missing manager approval. The default message is HWM_FF_WCR_MGR_APPR_ESCL

Output

Name	Message Severity
OUT_MSG	The message generated by the rule and sent to the worker's email and worklist notification. Three message templates were delivered (two for reminders and one for escalations). You can reference them using the Alerts Composer tool and the Event Alert: HWM Time Approval Reminders and Escalations alert template. To change the content of the message, you can edit the alert template body.

Example

Parameter	Setting	Comments
APPROVAL_TYPE	Both	Send reminders and escalations for both the time card and worker approval tasks
UOM	D	Days
REM_UNITS_AFTER_END_DATE	0	NA
ESCL_UNITS_AFTER_END_DATE	1	NA
ESCL_TO_LEVEL	5	NA
ESCALATION_CADENCE	1	NA
ENABLE_DELEGATION	No	NA
Override messages	NA	Using the default messages

Scenario: The 07/21/20 to 07/27/20 time card was submitted on 07/26/20 and approval notifications were immediately sent to the worker and manager. Neither the individual nor their manager approved the time card on 7/26/20 or the next day. The manager is a first-level manager, M1. In this example, the Generate Time Exceptions from Compliance Rules process runs daily.

Results:

1. The first day after the end of the time card period is 07/28/20. The process sends reminder notifications to both the individual and the manager because they haven't approved the time card.
2. If the individual and manager still haven't approve the time card when the process runs on 07/29/20, it sends them both second reminders. It also sends escalation notifications. A notification goes to the individual's manager to let the manager know the individual hasn't approved their time card. Another notification goes to the manager's manager to let them know that the individual's direct manager hasn't approved the time card.
3. If the individual and manager still haven't approved the time card, when the process runs on 07/30/20, it sends them both third reminders. It sends second escalation notifications to the manager and the manager's manager. It also sends escalation notifications to the second-level and third-level managers to let them know that the first-level manager hasn't approved the time card.

The reminders and escalations continue until the individual and their manager approve the time card. The escalation level continues until the process notifies the fifth-level manager. At that point, the reminders and escalations continue to go to the same people.

ORA_WFM_WCR_ATTESTATION_ANSWER_NOTIFY_MGR_AP Fast Formula

This fast formula determines whether the attestation answer requires the formula notify the manager. The message severity is an output associated with the generated message.

This formula uses an array to process time card data. It isn't associated with any delivered workforce compliance rule templates.

Parameters

Name	Data Type	Description
QUESTION_CODE	Fixed text	Code of the question asked in the attestation.
ANSWER_CODE	Fixed text	Code of the answer submitted in the attestation.
OVERRIDE_MSG_CODE	Message	Code of the message that overrides the code of the delivered default message ORA_WFM_WCR_ATTESTATION_ANSWER_NOTIFY_MGR_AP, which is HWM_FF_WCR_ACCESS_ATTN_RESP
Tag Values	Fixed text	Optional, comma-separated tags

Output

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error.

Function

If the question code equals the specified Question code parameter value and the answer code equals the specified Answer code parameter value, generate an exception. Depending on the setup, also send a notification to the manager.

Example

The attestation set that includes a meal break attestation. The attestation time category from this attestation set helps identify a clock out done more than 5 hours after the previous clock in. Because the elapsed duration is more than 5 hours, the meal break attestation appears. When the person confirms they didn't take a meal break, they're asked why, personal or business reasons? If it was for business reasons, their manager is notified because organizational policy requires that the manager grant a penalty.

	Day 1	Day 2	Day 3	Day 4	Day 5
Web Clock events	In: 8:02a Out: 1:01p	In: 8:03a Out: 1:58p	In: 8:01a	In: 8:03a Out: 1:58p	In: 7:58a Out: 1:58p
Time entry	8:02a to 1:01p	8:03a to 1:58p	8:01a	8:03a to 1:58p	7:58a to 1:58p
Elapsed duration between In and Out	4h 59m	5h 55m	NA	5h 55m	6h 00m
Meal break	0	0	0	0	0
Attestation	None because the elapsed duration is less than 5h.	A question about the meal break appears because the elapsed duration is more than 5h. The person answers that they didn't take their meal break for business reasons.	None because the person didn't clock out, and it's this action that causes the attestation to appear.	A question about the meal break appears because the elapsed duration is more than 5h. The person answers that they did take their meal break. They need to report it or ask their manager to do so.	A question about the meal break appears because the elapsed duration is more than 5h. The person answers that they didn't take their meal break for personal reasons.

ORA_WFM_WCR_MISSING_TIME_CARD_AP Fast Formula

This fast formula identifies whether a time card exists. If the formula doesn't find one, the corresponding defined message is generated. The message severity is an output associated with the generated message.

This formula uses an array to process time card data. It isn't associated with any delivered workforce compliance rule templates.

Parameters

Name	Type	Description
OVERRIDE_MSG_CODE	Message	Code of the message that overrides the code of delivered default code, which is HWM_FF_WCR_MISSING_TIME_CARD
TAGS_COMMA_SEPARATOR	Fixed text	Comma-separated tags

Output

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error.

ORA_WFM_WCR_MISSING_DAY_TIME_ENTRIES_AP Fast Formula

This fast formula identifies whether the person is scheduled to work the current day. If yes, it identifies whether time entries exist for the current day.

If the formula doesn't find any entries, it generates the corresponding defined message. The message severity is an output associated with the generated message. This formula uses an array to process time card data. It isn't associated with any delivered workforce compliance rule templates.

Parameters

Name	Data Type	Description
OVERRIDE_MSG_CODE	Message	Code of the message that overrides the code of the delivered default message, which is HWM_FF_WCR_MISSING_DAY_ENTRIES
TAGS_COMMA_SEPARATOR	Fixed text	Comma-separated tags

Output

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error.

Examples

For these examples, the current day is Wednesday, March 4, 2020.

Example 1: The formula generates a missing day exception for Tuesday and Wednesday because the person is scheduled to work and no entry exists.

Start and End Times	Mon 2 Mar 2020	Tue 3 Mar 2020	Wed 4 Mar 2020	Thu 5 Mar 2020	Fri 6 Mar 2020	Sat 7 Mar 2020	Sun 8 Mar 2020
Schedule	8:00 to 16:00	8:00 to 16:00	8:00 to 16:00	8:00 to 16:00	8:00 to 16:00	NA	NA
Reported	8:00 to 16:00	NA	NA	NA	NA	NA	NA

Example 2: The formula doesn't generate an exception because the person is scheduled to work and an entry exist.

Start and End Times	Mon 2 Mar 2020	Tue 3 Mar 2020	Wed 4 Mar 2020	Thu 5 Mar 2020	Fri 6 Mar 2020	Sat 7 Mar 2020	Sun 8 Mar 2020
Schedule	8:00 to 16:00	8:00 to 16:00	8:00 to 16:00	8:00 to 16:00	8:00 to 16:00	NA	NA
Reported	8:00 to 16:00	8:00 to 16:00	9:00 to 14:00	NA	NA	NA	NA

Example 3: The formula doesn't generate an exception because the person isn't scheduled to work and no entry exists.

Start and End Times	Mon 2 Mar 2020	Tue 3 Mar 2020	Wed 4 Mar 2020	Thu 5 Mar 2020	Fri 6 Mar 2020	Sat 7 Mar 2020	Sun 8 Mar 2020
Schedule	8:00 to 16:00	8:00 to 16:00	NA	8:00 to 16:00	8:00 to 16:00	NA	NA
Reported	8:00 to 16:00	8:00 to 16:00	NA	NA	NA	NA	NA

Example 4: The formula doesn't generate an exception because the person has an absence and no entry exists.

Start and End Times	Mon 2 Mar 2020	Tue 3 Mar 2020	Wed 4 Mar 2020	Thu 5 Mar 2020	Fri 6 Mar 2020	Sat 7 Mar 2020	Sun 8 Mar 2020
Schedule	8:00 to 16:00	8:00 to 16:00	Sick	8:00 to 16:00	8:00 to 16:00	NA	NA
Reported	8:00 to 16:00	8:00 to 16:00	NA	NA	NA	NA	NA

ORA_WFM_WCR_IN_OUT_DANGLERS_AP Fast Formula

This fast formula identifies whether time entries are incomplete, meaning that either the start or end time is missing. If the formula finds an incomplete entry, it generates the corresponding defined message.

The message severity is an output associated with the generated message. This formula uses an array to process time card data. It isn't associated with any delivered workforce compliance rule templates.

Parameters

Name	Data Type	Description
TAGS_COMMA_SEPARATOR	Fixed text	Comma-separated tags
MESSAGE_CODE_START	Message	Code of the message that overrides the code of the delivered default message for entries missing the start time, which is HWM_FF_WCR_MISSING_START_TIME
MESSAGE_CODE_END	Message	Code of the message that overrides the code of the delivered default message for entries missing the end time, which is HWM_FF_WCR_MISSING_STOP_TIME

Output

Name	Message Severity
OUT_MSG	Specify whether the output message is informational, warning, or error.

Function

Because workforce compliance rules don't account for incomplete entries, the default logic sets missing start time entries to 12:00a and a duration of 0. It sets missing end time entries to 23.59.59 and a duration of 0.

- The formula generates a missing start message if the time entry start time is 12:00a and the duration is 0.
- The formula generates a missing end message if the time entry stop time is 23.59.59 and the duration is 0.

Example

The formula generates a missing start exception on Tuesday, March 6, 2018. It generates a missing end exception on Wednesday, March 8, 2018.

Start and End Times	Mon 2 Mar 2020	Tue 3 Mar 2020	Wed 4 Mar 2020	Thu 5 Mar 2020	Fri 6 Mar 2020
Start and End Times Imported from Time Collection Device	8:00 to 16:00	0:00 to 17:00	9:00 to 23:59	8:00 to 16:00	21:59 to 23:59
Start and End Times Shown in the Application	8:00 to 16:00	__ to 17:00	NA	NA	NA
Duration Imported from Time Collection Device	8	0	0	NA	2

Start and End Times	Mon 2 Mar 2020	Tue 3 Mar 2020	Wed 4 Mar 2020	Thu 5 Mar 2020	Fri 6 Mar 2020
Duration Shown in the Application	8	–	–	NA	2