

Leave Calculation Methods

Topics Overview of leave setting Features/Settings related to leave calculation Illustrated examples

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1) Overview of leave setting

For individual employee, as their join date and length of service may differ, we need to determine (especially for Annual Leave):

- a) how to calculate his leave entitlement in each calendar year
- **b)** how to calculate his leave entitlement in each calendar month.

And in general, we also need to set:

c) the company's policy of Leave Entitlement (for Annual Leave, Sick Leave...)

2) Features/Settings related to leave calculation

a) Tools > Company Profile > Basic Information > Leave Information

This setting will determine total leave entitlement for an employee in each calendar year.

Example: According to ABC Company policy of Annual Leave entitlement,

1st year of service will entitle for: 12 days

2nd year of service will entitle for: 14 days

3rd year of service will entitle for: 16 days (and subsequent years)

Mr. Peter join the company on 1 April 2019

His annual leave entitlement according to calendar year need to be determined:

Year 2019: ? Days Year 2020: ? Days Year 2021: ? Days Year 2022: ? Days

| Feature | Purpose | Options | Effects |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Leave Cutoff Day | To determine if the month of join date to be included. Applicable only when Leave Calculation Method is Month Inclusive. | 0 – 31 | When 15 is assigned: when join date is on or before 15th then that month will be included as one full month; when join date is after 15th then that month will be excluded. |
| Leave's Roundup | Minimum unit of measurement for leave entitlement in each calendar year. | Hourly Half Day Full Day | The final figure (in 5 decimal points) will be rounded up as follow: Hourly: 8.41235 days will be expressed as 8 Days and 3 Hours (assuming 8 working hours per day: 0.41235 x 8 = 3.2988 hour) Half Day: 8.10000 ~ 8.59999 will round up to 8.5 Days. 8.60000 ~ 9.09999 will round up to 9.0 Days. Full Day: 8.50001 ~ 9.50000 will round up to 9.0 Days |

cloud payroll Course Book Additional Reading / References

| Feature | Purpose | Options | Effects |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Leave Calculation Method | To calculate total leave entitlement in each calendar year | Days Month Inclusive Month Proportion | General Formula: is tied to length of service. So usually leave entitlement in each calendar year is the total of 2 parts. Part 1 is leave entitlement before join date (LEb) and part 2 is leave entitlement after join date (LEa). For example: Peter join on 1 Apr 2019, his first year of service will be crossing 2019 and 2020 (1/4/2019 ~ 31/3/2020) For 2019: LEb = 0 LEa = 1 st part of his 1 st year entitlement. For 2020: LEb = 2 nd part of his 1 st year entitlement LEa = 1 st part of his 2 nd year entitlement |
| | | | So, formula for leave entitlement of a calendar year (LE): LE = LEb + LEa Days: To calculate LEb and LEa based on number of days respectively. |
| | | | Example: Join date is 1/4/2019 For 2019: LEb = 0 LEa = 275/365 x 1 st year entitlement. |
| | | | For 2020: LEb = $91/366 \times 1^{st}$ year entitlement. LEa = $275/366 \times 2^{nd}$ year entitlement |
| | | | Month Inclusive: To calculate LEb and LEa based on number of months (full month, no decimal point) respectively. Example: Join date is 10/4/2019 For 2019: LEb = 0 LEa = 9/12 x 1 st year entitlement. |
| | | | For 2020: LEb = $3/12 \times 1^{st}$ year entitlement. LEa = $9/12 \times 2^{nd}$ year entitlement |
| | | | Month Proportion: To calculate LEb and LEa based on number of months (with 2 decimal points) respectively. Example: Join date is 10/4/2019 1~9 Apr = 9 days = 9/30 = 0.3 month 10~30 Apr = 21 days = 21/30 = 0.7 month For 2019: LEb = 0 LEa = 9.70/12 x 1 st year entitlement. |
| | | | For 2020: LEb = $3.30/12 \times 1^{st}$ year entitlement. LEa = $9.70/12 \times 2^{nd}$ year entitlement |
| Calculate Year of Service By | To determine length of service according to employee's join/confirm date. Applicable only for those Leave Type whose Entitlement Calculation Method is 'by Employee's Join/Confirm Date'. Not applicable for those Leave Type whose Entitlement Calculation Method is 'by Calendar Year'. | Join Date Confirm Date | a) Be cautious when choose to base on Confirm Date as any period before confirmation date will be counted. b) In the following illustrations, all examples will base on Join Date. However its calculation method is also applicable to 'base on Confirm Date' as the difference is only on the date. c) For those Leave Type whose Entitlement Calculation Method is 'by Calendar Year', the Join Date is assumed to be on 1st January (means enjoying full year entitlement) |



Illustrated Example (calculation of leave entitlement for calendar years 2019 and 2020)

Join Date: 15 March 2019

Company annual leave entitlement policy: 1^{st} year of service = 12 days. 2^{nd} year of service = 14 days

Working hour per day = 8 hours

| Leave Calculation Method | Calculate Year of servic | e by: Join Date (15 March) | Calculate Year of service by: Calendar Year (1st Jan) | |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Leave Calculation Method | Year 2019 (365 Days) | Year 2020 (366 Days) | Year 2019 (365 Days) | Year 2020 (366 Days) |
| Days | LEb = 0 day LEa = $292 / 365 * 12 = 9.60000$ daysLEb = $74 / 366 * 12 = 2.42623$ days LEa = $292 / 366 * 14 = 11.16940$ days LE Total 13.59563 daysRound up Hourly = 9 days 5 hours Round up Half Day = 10.0 days Round up Full Day = 10 daysRound up Hourly = 13 days 5 hours Round up Half Day = 13.5 days Round up Full Day = 14 days | | LEb = 0 day LEa = 365 / 365 * 12 = 12 days Round up Hourly = 12 days 0 hours Round up Half Day = 12.0 days Round up Full Day = 12 days | LEb = 0 day LEa = 366 / 366 * 14 = 14 days Round up Hourly = 14 days 0 hours Round up Half Day = 14.0 days Round up Full Day = 14 days |
| Month Inclusive (Cutoff day = 15) Thus March is counted as one full month. | LEb = 0 day LEa =10 / 12 * 12 = 10.00000 days Round up Hourly = 10 days 0 hours Round up Half Day = 10.0 days Round up Full Day = 10 days | LEb = 2 / 12 * 12 = 2.00000 days LEa =10 / 12 * 14 = 11.66667 days LE Total 13.66667 days Round up Hourly = 13 days 5 hours Round up Half Day = 14.0 days Round up Full Day = 14 days | LEb = 0 day LEa = 12 / 12 * 12 = 12 days Round up Hourly = 12 days 0 hours Round up Half Day = 12.0 days Round up Full Day = 12 days | LEb = 0 day LEa = 12 / 12 * 14 = 14 days Round up Hourly = 14 days 0 hours Round up Half Day = 14.0 days Round up Full Day = 14 days |
| Month Proportion | LEb = 0 day LEa = (9 + 17/31) / 12 * 12 = 9.55 / 12 * 12 = 9.55 days Round up Hourly = 9 days 4 hours Round up Half Day = 9.5 days Round up Full Day = 10 days | LEb = (2 + 14/31) / 12 * 12 = 2.45 / 12 * 12 = 2.45 days LEa = (9 + 17/31) / 12 * 14 = 9.55 / 12 * 14 = 11.14167 days LE Total 13.59167 days Round up Hourly = 13 days 5 hours Round up Half Day = 13.5 days Round up Full Day = 14 days | LEb = 0 day LEa = 12.00 / 12 * 12 = 12 days Round up Hourly = 12 days 0 hours Round up Half Day = 12.0 days Round up Full Day = 12 days | LEb = 0 day LEa = 12.00 / 12 * 14 = 14 days Round up Hourly = 14 days 0 hours Round up Half Day = 14.0 days Round up Full Day = 14 days |

b) Tools > General Maintenance > Leave Type

To create different types of leave (Annual Leave, Sick Leave, Maternity Leave...) and determine how to calculate leave entitlement for each calendar month.

Note: the following example use Leave Calculation Method = Days, and Rounding to Half Day (refer to Illustrated Example in part 2a.)

| Feature | Purpose | Options | Effects / Example |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Entitlement | To determine how to calculate leave entitlement for each calendar month Rounding method is 'Round Down': Rounding to: <u>Hourly:</u> | • Yearly Leave by Employee's Join/Confirm Date | Number of leave (days) can be taken is not limited by calendar month. The employee can utilize all leave entitlement for that calendar year in any month. (The calculation of total leave entitlement for each calendar year is to base on Join/Confirm date as per Employee Maintenance.) <u>Example:</u> Join Date = 15 March 2019 LE 2019 = 10.0 Days LE 2020 = 13.5 Days <u>Jan'19 Feb'19 Mar'19 Apr'19 May'19 Jun'19 Jul'19 Aug'19 Sep'19 Oct'19 Nov'19 Dec'19</u> 0 0 10.0 days <u>Jan'20 Feb'20 Mar'20 Apr'20 May'20 Jun'20 Jul'20 Aug'20 Sep'20 Oct'20 Nov'20 Dec'20</u> 13.5 days |
| Method | Calculation Method 1.12345 Day will round to 1 Day 0 Hour * 1 Day + (0.12345*8) Hour Half Day: 1.00000~1.49999 will round to 1.0 Day. 1.50000~1.99999 will round to 1.5 Days Full Day: 1.00000~1.99999 will round to 1 Day. 2.00000~2.99999 will round to 2 Days | • Yearly Leave by Calendar Year Recommended for Sick Leave | Number of leave (days) can be taken is not limited by calendar month. The employee can utilize all leave entitlement for that calendar year in any month. (Enjoy full entitlement as calculation of total leave entitlement for each calendar year is to base on Join/Confirm date = 1 st Jan.) Example: Join Date (is taken to be on 1 st Jan) LE 2019 = 12.0 Days LE 2020 = 14.0 Days $\boxed{\frac{Jan'19}{0} \frac{Feb'19}{120} \frac{Mar'19}{120} \frac{Apr'19}{120} \frac{May'19}{120} \frac{Jun'19}{120} \frac{Jun'20}{120} \frac{Sep'19}{120} \frac{Oct'20}{14.0 \text{ days}} \frac{Oct'20}{14.0 \text{ days}}$ |

| Feature | Purpose | Options | Effects / Example |
|---------|---------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | • Earn Leave by Employee's Join/Confirm Date | Number of accumulative leave (days) can be taken is limited by calendar month (delayed by 1 month). The employee can only utilize accumulative leave entitlement as at current calendar month. (The calculation of total leave entitlement for each calendar year is to base on Join/Confirm date as per Employee Maintenance.) Example: Join Date = 15 March 2019 LE 2019 = 10.0 Days LE 2020 = 13.5 Days $ Jan'19 \ Feb'19 \ Mar'19 \ Apr'19 \ May'19 \ Jun'19 \ Jun'19 \ Jun'19 \ Sep'19 \ Oct'19 \ Nov'19 \ Dec'19 \ Jan'20 \ 0 \ 0 \ 0 \ 0.00 \ 1.0 \ 2.0 \ 3.0 \ 4.0 \ 5.0 \ 6.0 \ 7.0 \ 8.0 \ 9.0 \ ** \ 1.0 \ 2.0 \ 3.0 \ 4.5 \ 5.5 \ 6.5 \ 7.5 \ 9.0 \ 10.0 \ 11.0 \ 12.0 \ ** \ 1.0 \ 12.0 \ ** \ 1.0 \ 12.0 \ ** \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ ** \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 12.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 \ 1.0 $ |
| | | • Earn Leave by Calendar Year | Number of accumulative leave (days) can be taken is limited by calendar month (delayed by 1 month). The employee can only utilize accumulative leave entitlement as at current calendar month. (Enjoy full entitlement as calculation of total leave entitlement for each calendar year is to base on Join/Confirm date = 1 st Jan.) Example: Join Date (is taken to be on 1 st Jan) LE 2019 = 12.0 Days LE 2020 = 14.0 Days $\boxed{\frac{Jan'19}{0} + \frac{Feb'19}{10} + \frac{Mar'19}{10} + \frac{Mar'19}{10} + \frac{Jun'19}{10} + \frac{Jul'19}{10} + \frac{Aug'19}{10} + \frac{Sep'19}{10} + \frac{Oct'19}{10} + \frac{Nov'19}{10.5} + \frac{Dec'19}{10.5} + \frac{Jan'20}{10.5} + Jan$ |

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| Feature | Purpose | Options | Effects / Example |
|---------|---------|------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | • Advanced Earn Leave by Employee's Join/Confirm Date Recommended for Annual Leave | Number of accumulative leave (days) can be taken is limited by calendar month. The employee can only utilize accumulative leave entitlement as at current calendar month. (The calculation of total leave entitlement for each calendar year is to base on Join/Confirm date as per Employee Maintenance.) Example: Join Date = 15 March 2019 LE 2019 = 10.0 Days LE 2020 = 13.5 Days $\boxed{Jan'19 \ Feb'19 \ Mar'19 \ Apr'19 \ May'19 \ Jun'19 \ Jun'19 \ Aug'19 \ Sep'19 \ Oct'19 \ Nov'19 \ Dec'19 \ Oct'19 \ Nov'19 \ Dec'19 \ Oct'20 \ Nov'20 \ Dec'20 \ 1.0 \ 2.0 \ 3.0 \ 4.5 \ 5.5 \ 6.5 \ 7.5 \ 9.0 \ 10.0 \ 11.0 \ 12.0 \ 13.5}$ Calculation = No of accumulated month / Total effective month * LE For July 2019 = 5 / 10 * 10 = 5.0 days For Mar 2020 = 3 / 12 * 13.5 = $3.375 = 3.0$ Days • Round down to Half Day: 1.00000~1.49999 will round to 1.0 Day. 1.50000~1.99999 will round to 1.5 Days |
| | | • Advanced Earn Leave by Calendar Year | Number of accumulative leave (days) can be taken is limited by calendar month. The employee can only utilize accumulative leave entitlement as at current calendar month. (Enjoy full entitlement as calculation of total leave entitlement for each calendar year is to base on Join/Confirm date = 1 st Jan.) Example: Join Date (is taken to be on 1 st Jan) LE 2019 = 12.0 Days LE 2020 = 14.0 Days Jan'19 Feb'19 Mar'19 Apr'19 May'19 Jun'19 Jul'19 Aug'19 Sep'19 Oct'19 Nov'19 Dec'19 Dec'19 Dec'19 Dec'19 Dec'19 Dec'19 Dec'19 Dec'19 Dec'19 Dec'20 Dec'20 |

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c) Tools > General Maintenance > Employee Group > Add New

To create Employee Group and set company's policy on leave entitlement:

Example 1: According to ABC Company policy of **Annual Leave** entitlement, 1st year of service will entitle for: 12 days 2nd year of service will entitle for: 14 days 3rd year of service (and subsequent years) will entitle for: 16 days

Example 2: According to ABC Company policy of **Sick Leave** entitlement, 1st & 2nd year of service will entitle for: 14 days each calendar year 3rd to 5th year of service will entitle for: 18 days each calendar year 6th year of service (and onwards) will entitle for: 22 days each calendar year



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