



Backpay Calculator Guide

Smartly's Backpay Calculator works through the employee's historical pay one pay period and pay component at a time.

A screenshot of the Smartly Backpay Calculator interface, overlaid on a light green background. The interface consists of two main panels. The top panel, titled 'Create pay change', contains two dropdown menus: 'Pay change name' with 'Mid-year pay increase' selected, and 'Pay group' with 'Monthly Staff' selected. At the bottom of this panel are 'Cancel' and 'Create' buttons. The bottom panel, titled 'Approve & process changes?', displays the text 'Total backpay of \$4,649.69 will be included in the next pay run.' and has 'Cancel' and 'Approve & Process' buttons. A dotted arrow points from the 'Create' button in the top panel to the 'Approve & Process' button in the bottom panel.

This guide explains how Smartly calculates an employee's backpay when a Pay Rate Change takes effect in a previously closed pay period.

It focuses on answering:

How was this employee's backpay amount calculated?

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How Smartly calculates backpay

A simple calculation such as:

Total hours × difference between the old and new hourly rates

may produce the correct result where the employee received only ordinary hours across fully included pay periods.

However, it may not account for:

- an Effective Date part-way through a pay period
- overtime or other multiplier-based rates
- rates overridden in a historical pay
- leave payments at rates other than their base hourly rate
- excluded pay components
- previous backpay for an overlapping period

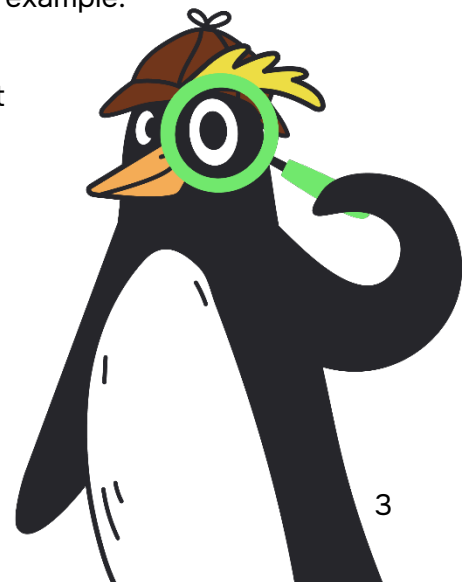
1. Determine the backpay period

Smartly first compares the employee's **Effective Date** with the pay group's **Last Closed Pay Period End Date**.

Effective Date	Result
On or before the Last Closed Pay Period End Date	Smartly reviews eligible historical pay and calculates backpay where a positive difference exists.
After the Last Closed Pay Period End Date	There is no closed historical pay to recalculate, so no backpay is calculated.

The employee's backpay period:

- begins on their Effective Date; and
- ends at the latest closed pay period included when the calculation is performed.
 - Employees in the same Pay Rate Change can have different backpay periods because their Effective Dates may differ.
 - A historical Effective Date does not guarantee that backpay will be payable. The result may still be zero where, for example:
- no eligible components were paid
- the recalculated amount is no higher than the original amount
- only excluded components were paid
- an Included Duration has not yet been confirmed
- previous backpay already covers the amount owed



Which pay periods are included?

Smartly reviews each closed pay period that overlaps the employee's backpay period.

A pay period may be:

- **Fully included** – the entire period falls on or after the Effective Date.
- **Partially included** – the Effective Date falls part-way through the period.
- **Excluded** – the period falls before the Effective Date.

Only processed historical pay is used. An unprocessed or unauthorised pay is not treated as closed historical pay.

Until the Pay Rate Change is processed, Smartly may refresh the calculation when newer eligible pay periods close. Once processed, the stored calculation represents the amount used for that Pay Rate Change.

2. Identify the historical payments

Smartly starts from what the employee was **actually paid**.

This includes the historical:

- pay packets
- pay components
- paid durations
- rates
- amounts
- leave payment information
- manual overrides

If multiple valid pay packets or component records exist for the same pay period, Smartly keeps them separate. This can produce several rows with the same pay component and pay-period end date in the detailed report.

These rows are not necessarily duplicates—they may represent separate historical payments.

Where historical pay was reversed and replaced before the backpay calculation:

- the original pay is excluded;
- the reversal is excluded; and
- the valid replacement pay is used as the historical source.

3. Confirm the Included Duration

Included Duration is the portion of a historical payment treated as occurring on or after the employee's Effective Date.

For fully included pay periods, Smartly can normally include the full eligible duration.

Where the Effective Date falls part-way through a pay period, Smartly may not know which hours or leave occurred before and after that date. The employee is then marked **Action Required**, and the payroll user must enter the Included Duration.

Smartly does not determine this split from the employee's work pattern or timesheets.



A blank Included Duration is treated as zero. The affected component does not contribute to the initial backpay amount until the eligible duration is entered and saved.

Example: Effective Date part-way through a pay period

An employee's fortnightly pay period runs from **1 June to 14 June**. Their new rate is effective from **8 June**.

The employee was paid 80 ordinary hours during the period, of which 40 were worked from 8 June onward.

Paid Duration = 80 hours
Included Duration = 40 hours
Excluded Duration = 40 hours

Only the confirmed 40 hours are recalculated.

The Included Duration changes the quantity used in the backpay calculation. It does not change the original historical pay.

4. Identify the eligible pay components

Different pay components follow different calculation rules.

Pay component	How Smartly treats it
Ordinary hours	Recalculated using the employee's new base rate for the Included Duration.
Historical overridden ordinary rate	The amount actually paid is used as the original position and compared with the new rate.
Genuine multiplier-based additional rates	Recalculated using the new base rate multiplied by the applicable multiplier.
Public Holiday Worked paid at a multiplier	Recalculated using the payment method and earnings rules applicable to the public holiday payment.
Eligible leave payments	Recalculated using the employee's current payment method for that leave type.
Pay component	How Smartly treats it

The following components are not directly recalculated as backpay:

- Allowances, including commissions or earnings-based allowance payments
- One Off Payments
- Fixed-dollar or ingenuine multiplier-based additional pay rates
- Section 34 closedown payments
- Historical Leave Earnings entered through Opening Balances
- Percentage-based deductions or benefits



Commissions and earnings-based allowances

Commissions are not recalculated as backpay where they were paid as an Allowance or One Off Payment. This includes commissions or allowance-style payments that were calculated by the employer as a percentage of the employee's earnings at the time of payment.

Smartly does not recalculate these payments because the system cannot reliably determine from payroll data whether an allowance or one-off payment represented a commission, an additional pay rate, or an earnings-based calculation. Any required correction to these amounts must be reviewed and calculated separately.

A component is not included merely because it was paid during the backpay period, or because the employer originally calculated it by reference to the employee's earnings. It must be a supported component type that Smartly can recalculate from the stored payroll data.

5. Recalculate each eligible component

Ordinary hours

1. For ordinary hours, Smartly compares:
 - the amount actually paid for the Included Duration; and
 - the amount payable using the employee's new base rate.

Recalculated Amount = Included Duration × New Rate

Initial Difference = Recalculated Amount - Original Amount

Historical rate overrides

If an ordinary rate was manually overridden in the historical pay, Smartly uses the overridden amount actually paid as its starting point.

It does not assume that the employee's standard configured rate was used.

Example

- Employee's standard old rate: **\$30.00**
- Historical rate actually paid: **\$35.00**
- New rate: **\$40.00**
- Included Duration: **4 hours**

Original Amount = $4 \times \$35.00 = \140.00 Recalculated Amount = $4 \times \$40.00 = \160.00
Backpay = \$20.00

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A manual calculation based on the employee's standard old rate would produce \$40.00, but the employee had already received \$35.00 per hour. The correct remaining difference is therefore \$20.00.

Multiplier-based additional rates

A multiplier-based additional rate is recalculated only where:

- the employee's Employment Contract Group defines the rate using a multiplier; and
- the employee's additional rate genuinely represents their base hourly rate multiplied by that multiplier.

For example, if the new base rate is \$22.00 and the configured multiplier is 1.5, the recalculated additional rate is \$33.00.

If the employee's rate has been manually overridden and no longer matches the multiplier calculation, Smartly treats it as a fixed-dollar rate and does not recalculate it as base-rate-derived backpay.

Leave payments

Leave is not necessarily paid at the employee's base hourly rate. Depending on the leave type and employee configuration, leave may use methods such as:

- Ordinary Weekly Pay
- Ordinary Weekly Pay based on a four-week average
- Average Weekly Earnings
- Relevant Daily Pay (Normal Hourly Rate)
- Average Daily Pay (Last 52 Week Average)

Smartly recalculates eligible leave using the employee's **current payment method for that leave type**.

This may differ from the payment method used when the leave was originally paid.

For example, if an employee's Annual Leave was originally paid using:

Higher of OWP (four-week average) or AWE

but the employee is currently configured to use:

Higher of OWP or AWE

Smartly recalculates the historical leave using the higher of OWP or AWE. The four-week average method is not considered in the recalculation.

Annual Leave originally paid at a **Parental Leave rate** is also recalculated. It continues to follow the applicable parental-leave-rate treatment.

Where the current payment method for a leave type is **Specified Hourly Rate**, that leave is excluded from the backpay calculation.

Average-based leave rates may also be affected by backpay attributed to earlier pay periods. Smartly processes the periods chronologically so corrected earlier earnings can contribute to a later leave calculation within the backpay period.

This is why leave-related backpay may not match a calculation based only on:

Leave hours × base-rate difference

6. Deduct backpay already paid

A later Pay Rate Change may overlap a period covered by an earlier backpay payment.

Where qualifying backpay has already been paid for the same historical component and attributed pay period, Smartly deducts it so the employee is not paid twice.

Payable Backpay

- = Recalculated Amount
- Original Amount
- Previously Paid Backpay

The result cannot be less than zero.

Example

An employee originally earned \$25.00 per hour.

A first Pay Rate Change increased the historical rate to \$27.00 and paid \$80.00 backpay for 40 hours.

A later overlapping change corrects the rate to \$28.00.

Total corrected entitlement = $40 \times (\$28.00 - \$25.00) = \$120.00$

Backpay already paid = \$80.00

Remaining Backpay payable = \$40.00

The **Backpay Calculation Detail Report** displays the resulting \$40.00 payable amount. It does not display the previous \$80.00 deduction as a separate field.

To investigate this scenario, compare the calculation with earlier Pay Rate Changes covering the same component and historical period.

7. Add the payable amounts together

Smartly adds the positive payable amount for each eligible component and pay period.

Employee Backpay Total

- = Period 1 component amounts
- + Period 2 component amounts
- + Period 3 component amounts
- + ...

Negative component results are capped at zero. Pay Rate Changes do not recover historical overpayments or create negative backpay.

Small rounding differences may occur because Smartly calculates and rounds individual component rows before adding them together.

The most reliable way to reconcile the employee total is to add the final **Backpay Amount** values from the detailed report, rather than recalculating the total from rounded summary rates.



End-to-end example

An employee's base hourly rate increases from **\$20.00 to \$22.00**, effective part-way through a fortnightly pay period.

The backpay period contains two historical pay periods.

Pay period 1 – partially included

The employee was paid:

- 80 ordinary hours, with 40 hours occurring on or after the Effective Date; and
- 10 overtime hours at time-and-a-half, with 5 hours occurring on or after the Effective Date.

Ordinary Backpay

$$\begin{aligned} &= 40 \times (\$22.00 - \$20.00) \\ &= \$80.00 \end{aligned}$$

Old Overtime Rate

$$\begin{aligned} &= \$20.00 \times 1.5 \\ &= \$30.00 \end{aligned}$$

New Overtime Rate

$$\begin{aligned} &= \$22.00 \times 1.5 \\ &= \$33.00 \end{aligned}$$

Overtime Backpay

$$\begin{aligned} &= 5 \times (\$33.00 - \$30.00) \\ &= \$15.00 \end{aligned}$$

Pay period 1 backpay is **\$95.00**.

Pay period 2 – fully included

The employee was paid:

- 80 ordinary hours; and
- 4 overtime hours at time-and-a-half.

Ordinary Backpay = $80 \times (\$22.00 - \$20.00) = \$160.00$

Overtime Backpay = $4 \times (\$33.00 - \$30.00) = \$12.00$

Pay period 2 backpay is **\$172.00**.

Employee total

Pay period 1 = \$95.00

Pay period 2 = \$172.00

Total Backpay = \$267.00

The employee receives one \$267.00 Backpay payment, while the detailed report retains four calculation rows:

Historical period	Component	Backpay
Pay period 1	Main Pay Rate	\$80.00
Pay period 1	Overtime 1.5x	\$15.00
Pay period 2	Main Pay Rate	\$160.00
Pay period 2	Overtime 1.5x	\$12.00
	Employee total	\$267.00

Understanding the Backpay Breakdown

The **Backpay Breakdown** is available from the employee list within the Pay Rate Change.

It provides a summary of the calculated backpay by pay component and can be used to review the employee's total before the Pay Rate Change is processed.

Use it to identify:

- which pay components contributed to backpay;
- whether the employee requires an Included Duration;
- the backpay amount for each component; and
- the employee's overall backpay total.

Henry Hughes (HH) Ready to process ×

Backpay

Rate changes

Backpay period 01 Apr 2025 – 31 May 2026

TYPE	DURATION	TOTAL
Main pay rate hours	465	\$1,627.50
All other paid leave hours	22.5	\$78.75
Total Backpay		\$1,706.25

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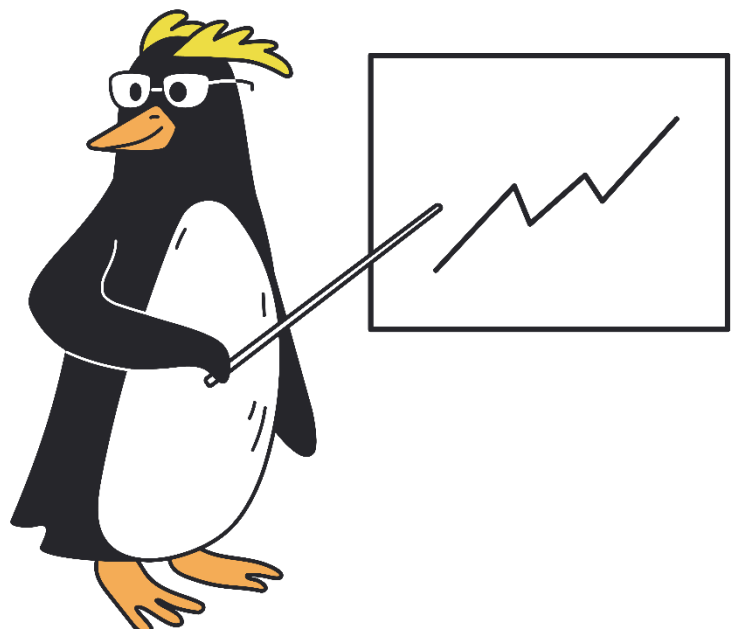
Understanding the Backpay Calculation Detail Report

For a more detailed investigation, generate the **Backpay Calculation Detail Report** from the **Report Generator**.

The report explains how the employee's backpay was constructed across historical pay periods and components.

Each row includes:

- employee;
- related Pay Rate Change;
- historical pay-period end date;
- pay component;
- original Paid Duration;
- Included Duration;
- Original Rate;
- Original Amount;
- New Rate;
- New Amount; and
- Backpay Amount.



Reading the main values

Report value	Meaning
Paid Duration	The duration recorded against the original historical payment.
Included Duration	The portion of that duration included from the Effective Date onward.
Original Amount	The amount originally paid for the included component or portion.
New Amount	The recalculated amount after applying the new rate and applicable component rules.
Backpay Amount	The final amount payable.

Several rows with the same component and pay-period end date do not necessarily indicate duplication. Compare their source payment, durations, rates and amounts to determine whether they represent separate historical records.



If a draft calculation has become outdated, open the Pay Rate Change so Smartly can refresh the calculation before generating the report again.

Payment and reporting

Backpay has two different period concepts.

Period	Meaning
Payment Period	The current pay period in which the backpay lump sum is paid.
Attributed Period	The historical pay period and component that the calculated amount relates to.

The employee is paid once. Attribution does not reopen or repay the historical pay packets. Instead, it allows supported leave, holiday-pay and termination calculations to use corrected historical earnings.

When backpay is paid

Once the Pay Rate Change is processed, Smartly adds the backpay to the next pay packet created for the employee. This may be a **Normal Pay** or **Manual Pay**.

Backpay cannot be edited or removed directly from the pay packet. If an issue is identified before the backpay is paid, refer to the Pay Rate Changes feature guide for removing a Processed employee and cancelling their outstanding backpay.

Payslips and payroll reports

The backpay lump sum appears as a separate payment in the pay period in which it is paid.

It appears separately on outputs including:

- the employee's payslip
- Payroll Register
- pay run and comparison reports
- Employee Pay – Detailed CSV
- costing reports

Backpay is treated as a **One Off Payment** and taxed under New Zealand extra-pay rules.

Most payroll reports show the amount in the Payment Period. The Backpay Calculation Detail Report shows how that amount relates to the historical Attributed Periods.

Limitations and unsupported scenarios

The following limitations may be relevant when investigating an unexpected amount.

Historical 8% Holiday Pay

Historical 8% Holiday Pay is not recalculated as a separate backpay component.

If the employee is still configured to receive 8% Holiday Pay when the backpay lump sum is paid, Smartly calculates 8% Holiday Pay on the lump sum in the Payment Period.

Historical Leave Earnings from Opening Balances

Backpay is not calculated on Historical Leave Earnings entered through Opening Balances because these balances do not contain the component-level detail required to reconstruct the original payments.

Any required correction to these historical earnings must be calculated separately.

Section 34 closedown payments

Section 34 closedown payments are not recalculated as part of the backpay calculation and may need to be reviewed separately.

Percentage-based deductions and benefits

Percentage-based deductions and benefits (e.g. KiwiSaver) are not retrospectively recalculated across the historical backpay period.

Where they are active when backpay is paid, their normal configuration may apply to the backpay lump sum in the Payment Period.

Reversals and Replacements

Smartly can use a valid Replacement Pay as the historical source where the reversal and replacement occurred before the backpay calculation.

However:

- replacing historical pay after backpay has already been processed does not automatically recalculate the processed backpay;
- reversing and replacing a pay packet containing backpay recreates the stored backpay amount;
- the backpay amount cannot be individually edited or selectively removed through Reversal and Replacement; and
- Reversal and Replacement cannot be used to correct an incorrect processed backpay calculation.

These scenarios should be escalated to Smartly Support before making a manual correction.

Salary and standard-hours changes

For salaried employees, Smartly uses the employee's current standard hours when deriving an equivalent hourly rate.

Where standard hours changed during the backpay period, some calculations may not reflect the employee's historical standard hours.

Historical overpayments

Pay Rate Changes calculate additional amounts owed to an employee. They do not calculate negative backpay or recover historical overpayments.

Investigating an unexpected amount

When an amount does not match your expected calculation, review it in this order:

1. Confirm the employee's **Effective Date**.
2. Confirm the first and last closed pay periods included.
3. Check which historical pay packets were used.
4. Check whether the first period required an **Included Duration**.
5. Confirm that any Included Duration was entered and saved.
6. Review which pay components were included.
7. Compare the report's Original Amount with what was actually paid.
8. Confirm whether additional rates were genuine multipliers or fixed-dollar rates.
9. Confirm the employee's current leave payment method.
10. Check whether earlier overlapping backpay was deducted.
11. Add the report's final Backpay Amount rows.
12. Allow for component-level rounding.
13. Confirm whether the report is showing the Payment Period or Attributed Period.
14. Check whether a documented limitation applies.

The most common reasons for a difference are:

- a partial first pay period
- a blank or incorrect Included Duration
- leave recalculated using its current payment method
- a fixed-dollar additional rate being excluded
- previously paid overlapping backpay

If the result still cannot be explained, provide Smartly Support with:

- employee and pay group
- Pay Rate Change name
- Effective Date
- affected pay periods
- original historical pay values
- Included Duration entered
- expected calculation and why it was expected
- screenshots or exports of the Backpay Breakdown and Backpay Calculation Detail Report.

Further reading

See the information about [Help Centre](#)

Back Pay - Learn how to calculate and enter back pay for employees who received a pay increase or were set up with an incorrect pay rate, for accurate payroll adjustments.

Incorrect Pay - Find out what to do if there's an error in your payroll, such as incorrectly entered leave, and how to correct it quickly for accurate payments and compliance.

Running a Pay - This guide walks you through the entire pay run process, from setting up pays in advance to emailing payslips to employees, ensuring a smooth payroll system.

Manual Pay - If you need to make a payment outside of your regular pay run, follow these simple instructions to process a manual pay quickly, accurately, and with ease.

Employee Pay Rates - Learn how to change an employees pay rate or salary and how to set up an additional pay rate.

Or [contact us](#) for any other questions. We love making the complex simple for you.

We're here to help

Whether you're after some information, or you've got something niggly or urgent that you want to chat through with an expert – we've got you!

Our customer support team can be reached on 0800 10 10 38, Monday to Friday, excluding public holidays.

