

ProVal version 3.13 introduces tools for managing large libraries, smarter client merging with fewer duplicates, performance enhancements and many additional features listed below.

Managing Large Libraries

New tools help you organize, group and control large libraries for complex cases.

- ◆ **Tags.** You can now tag library entries, effectively organizing them into groups. For example, you might tag 5 Valuations as "2019", another 5 Valuations as "2018", then sort by tag to easily select the relevant Valuations for output, gain/loss analysis, Valuation Sets, etc. Tags have numerous uses – like initialing entries with the person responsible for updating them or marking the status of entries in the do/review cycle. Tagging is low touch – it does not modify the date last modified, erase results, etc.

Valuations - U.S. Qualified Pension

Name	Tag	Val Date	Modified	Size
Group A closed tier 2018	2018	1/01/2019	2/28/2019 8:50 AM	2 KB
Group A inactives 2018	2018	1/01/2019	2/28/2019 8:50 AM	2 KB
Group A open tier 2018	2018	1/01/2019	2/28/2019 8:50 AM	2 KB
Group B inactives 2018	2018	1/01/2019	2/28/2019 8:50 AM	2 KB
Group B open tier 2018	2018	1/01/2019	2/28/2019 8:50 AM	2 KB
Group A closed tier 2019	2019	1/01/2019	2/28/2019 8:50 AM	2 KB
Group A inactives 2019	2019	1/01/2019	2/28/2019 8:50 AM	2 KB
Group A open tier 2019	2019	1/01/2019	2/28/2019 8:50 AM	2 KB
Group B inactives 2019	2019	1/01/2019	2/28/2019 8:50 AM	2 KB
Group B open tier 2019	2019	1/01/2019	2/28/2019 8:50 AM	2 KB

- ◆ **Additional columns for benefits.** You can now view additional columns in Benefit Definition, Benefit Formula Component, Accrual Basis Component, Inactive Benefit and German Benefit Promise libraries. For example, you can display the eligibility conditions and normal form for benefits. These settings are stored separately for each user, client and library.

Benefit Definitions Library - Pension

Type	Name	Tag	Modified	Refs by Plans	Eligibility conditions	Normal form
Dth	Pre-retirement Death		4/26/2013 1:59 PM	14	10 years of service	Def to 55 SLA
Ret	Retirement		4/26/2013 1:57 PM	14	Age 55 + 10 years of service, or Age 65	Immediate SLA
Trm	Termination		4/26/2013 1:57 PM	13	5 years of service	Def to 65 SLA

- ◆ **Search.** You can now filter a library by searching entry names or using a more advanced search on other characteristics or with multiple criteria. For example, you could search for benefits that contain "Age 65" in the Eligibility Conditions.

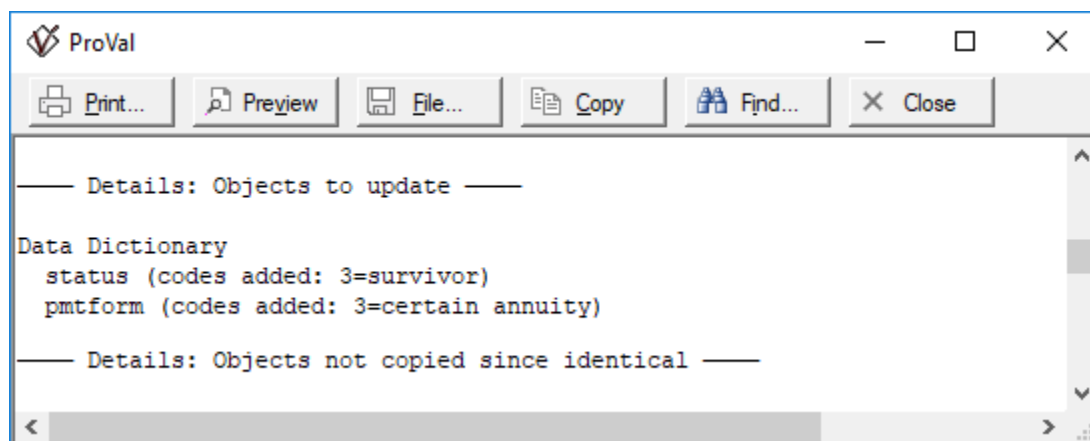
Valuations - U.S. Qualified Pension

Search Library (Ctrl+F) [Search Icon] [More Icon]

Import from Client & Client Merge

- ◆ **Smarter imports with fewer duplicates.**

- Coded fields with compatible codes will be merged rather than creating a duplicate field (_2). The target client will include the superset of codes from the two clients, as long as there is no conflict (e.g., 12=active vs 12=retired).
- ProVal will now avoid making duplicates of objects (#2) that are logically equivalent, even if not identical. For example, it will ignore changes in date created, date last modified, descriptions and change history.



Processing Speed

- ◆ **Faster subtotals.** When using grid processing, Valuations and Core Projections with subtotals are faster in the “aggregating results” phase of the run.
- ◆ **No job too small.** When using grid processing, ProVal now tries to use grid agent servers whenever there are more cases to run. That is, ProVal no longer deems some runs as “small jobs” that don’t get grid agent help. For example, you’ll likely see this speed up Core Projections with a modest number of new entrant records.
- ◆ Sped up processing of plans with numerous lump sum factors that use generational mortality.

Database

- ◆ **Live database statistics.** ProVal now displays live statistics for the cells you’ve selected. This makes it easy, for example, to get a total for a field by clicking on its column title.

RecID	ID	Salary
1	XXX-XX-4069	44,784.82
2	XXX-XX-5871	42,839.83
3	XXX-XX-6620	43,312.96
4	XXX-XX-4442	44,952.55
5	XXX-XX-1193	42,346.70
6	XXX-XX-6390	45,568.34
7	XXX-XX-2712	151,422.18
8	XXX-XX-0553	57,668.83
9	XXX-XX-5036	147,015.17

845 records by 2 fields | 4 cells selected | Sum: 173,452.04 Count: 4 Avg: 43,363.01 Min: 42,346.7 Max: 44,952.55

- ◆ **Smarter modified dates.** A database’s date last modified shown within ProVal is now based on the last change to the data, rather than the file itself. For example, if you pack a database, run an Expression Set but don’t save the results, or modify the database’s notes, the last modified date shown within ProVal will not change even though the file’s date (e.g., shown in File Explorer) does.

- ◆ In Screen Data, the grid for illogical status is now easier to modify, with check boxes that require only a single click, instead of dropdowns that require two clicks.

Output

- ◆ **Grouped benefit output.** Valuation and Core Projection output by benefit can now be grouped, avoiding the need to save the results to Excel for that purpose. For example, you might group OPEB benefits into “dental” and “medical”, or pension benefits into “cash balance” and “final average”.

Benefit detail

	Group	Benefit Definition
<input checked="" type="checkbox"/>	Dental	Active Dental Plan 1
<input checked="" type="checkbox"/>	Dental	Active Dental Plan 2
<input checked="" type="checkbox"/>	Dental	Active Dental Plan 3
<input checked="" type="checkbox"/>	Life	Active Life Insurance 1
<input checked="" type="checkbox"/>	Life	Active Life Insurance 2
<input checked="" type="checkbox"/>	Life	Active Life Insurance 3
<input checked="" type="checkbox"/>	Medical	Active Medical Plan 1
<input checked="" type="checkbox"/>	Medical	Active Medical Plan 2
<input checked="" type="checkbox"/>	Medical	Active Medical Plan 3

Variables	Grouped output
APBO (Active)	42,999,809
APBO (Active) (Dental)	2,328,449
APBO (Active) (Life)	3,880,748
APBO (Active) (Medical)	36,790,613

- ◆ Valuation Set and Deterministic Forecast output can be written directly to an access database. This eliminates the two-step process of first viewing exhibits and then writing the details to an access database.

Interface

- ◆ **User friendly key fields.** The key fields you’ve selected now appear at the top of the list, so you don’t have to scroll through (a potentially long) list to find them. Saving even more time, ProVal now remembers the key fields you last used for this client and uses them as the default when creating new library entries. Key fields appear in a lot of places, including gain/loss analysis, individual results, experience studies, screen data, etc.
- ◆ **Copy and paste for dropdowns.** You can now copy and paste items in dropdown lists. For example, you can copy an active mortality decrement assumption to the inactive mortality decrement assumptions.

Compare

- ◆ **Improved comparison of optional form assumptions.** Optional form assumptions in Valuation Assumptions are now listed in a consistent order, so that comparing two Valuation Assumptions will compare settings for form A to those of form A, rather than those of form B.

Pension Plans

- ◆ **Inactive benefit mapping.** In Census Specifications > Inactive Data, Inactive Benefit Definitions can be mapped to a coded database field. This mapping works as if a Selection Expression were applied to each benefit. For example, benefit A applies to groups 1 and 2, benefit B applies to group 3, etc.

Map Inactive Benefit Definitions

Value Inactive Benefits only for mapped database codes

Coded database field:

Check the box to map a code to an Inactive Benefit Definition

	REA	Retiree Benefit	Vested Term Benefit
Active	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Beneficiary	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Death w/o beneficiary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Retired	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Terminated vested	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- ◆ **Inactive payment forms interface.** In Inactive Benefit Definitions, additional details about each payment form are displayed (commencement age, temporary period, etc.) to give you a sense of how things are set up, without having to click into each one.

Payment form

Payment form varies by field:

Same for all records

Code	Payment form
Deferred to 65 SLA	Life Annuity, commences at age 65
J&S 50%	Joint Life Annuity, 0.5 to beneficiary
Life Annuity	Life Annuity

- ◆ **Cash balance pay credit timing.** Cash balance components can now apply pay credits at the beginning of the period, rather than at the end. This is useful for variable annuity pension plans.
- ◆ **COLA timing overrides.** COLA timing can now be specified separately for each COLA override.
- ◆ **Easier selection of accrued benefit individual results.** Individual results for accrued benefit by decrement (e.g., zCurrBft_Ret) now save the normal form amount, ignoring any optional forms. This lets you get the desired result with one click, avoiding having to select the corresponding individual results for the specific benefits / normal forms and supply custom field names.
- ◆ **Minimum liability.** A new option in Plan Definitions now lets you specify a minimum liability for each participant. This is useful for plans that have a guaranteed account balance.

OPEB Plans

- ◆ **Lapse assumptions.** An explicit lapse assumption can now be applied to active and inactive Benefit Definitions, so you no longer have to code them into the benefit formula. A check box in the Benefit Definition specifies if a lapse assumption applies. If so, specify the lapse assumption in Valuation Assumptions and Projection Assumptions. These assumptions can vary by age and/or duration from decrement.
- ◆ **Spending account credit options.** To facilitate modeling of Health Reimbursement Accounts, two new options have been added to Limits and Spending Accounts. For spending accounts, the annual increase can now be:
 - Specified by database field, rather than a constant for all records.

- Granted at the beginning of the year, rather than the end of the year.

U.S. Public Pension Plans

- ◆ For GASB Valuation Sets, assumption and plan changes at the end of year are now supported.
- ◆ For GASB Valuation Sets, liabilities in end of year events will be rolled forward from the valuation date used in the end of year event valuations to the end of year measurement date. Additionally, the benefit payments used to roll forward the liabilities in the end of year Valuations can reflect an override.
- ◆ Deterministic Assumptions can now vary by group. If selected, additional contributions and first year asset overrides can be varied.

US Qualified Pension Plans

- ◆ **Deterministic Contribution Schedule.** PPA Deterministic Assumptions can now reflect a contribution schedule to override the plan's contribution policy for some forecast years. If a contribution schedule is reflected, ProVal will ignore the plan's contribution policy, including any additional contributions, end of year additional contributions, or contribution constraints through the last plan year a contribution is entered in the schedule. The only exception is that ProVal will add any necessary contribution, 8.5 months after the end of the plan year, to meet the minimum required contribution. For plan years after the last contribution is entered, ProVal will resume following the plan's contribution policy.

Canadian Pension Plans

- ◆ **Quebec funding rules.** ProVal now supports Quebec Bill 57. To apply these provisions, simply check the box in your Asset & Funding Policy > Minimum Funding Amortization Bases.
- ◆ A new #CANMAX custom operator type gives you control over the Canadian Maximum Benefit's service multiplier. To apply to a benefit, use the custom operator in your benefit formula, as in "benefit #min #canmaxcustom". This avoids having to manually reproduce the Canadian Maximum Benefit calculation within the benefit formula.
- ◆ Amortization bases are now tracked individually under the hood, making it possible to handle fractional bases much better in a forecast.

German Pension Plans

- ◆ **EU Mobility Directive.** ProVal now directly supports indexation under the EU Mobility Directive with a new option in Valuation Assumptions > COLAs that lets you automatically apply the deferral period COLA to the portion of the benefit earned after 1/1/2018. This option is available for COLA overrides as well as the base COLA and applies to both current and future vested terms. The portion of the benefit earned after 1/1/2018 is determined using the vesting service.
- ◆ **Modified Teilwert.** A new option has been added to accounting Valuation Assumptions to let you calculate the Modified Teilwert liability for clients electing this method instead of PUC.
- ◆ **Rounding to full Euros.** A new option in Valuation Assumptions > Other Valuation Parameters lets you round liabilities in Valuations & Core Projections to the nearest 1 for each record, and accrued benefits and benefit inforce amounts to the nearest 0.01.
- ◆ **Divorce offsets.** A new option in Benefit Definitions lets you apply a divorce offset to selected benefits. The offset amounts are specified in Census Specifications > Active Data and Terminated Vested Data.
- ◆ **Simpler entry of 3-year COLAs.** New options in Valuation Assumptions > COLAs let you directly enter 3-year COLAs without having to use a COLA expression.
- ◆ **State pension for benefits after termination.** The #SVR operator now calculates state pension for benefits after termination, incorporating projection of earnings points to second decrement, projection to age 60 for disability, and application of the pro rata temporis fraction.

All Plans

- ◆ **Contribution holidays.** A new Asset & Funding Policy > Contribution Policy option allows a plan to not contribute if a funded ratio is greater than a threshold.

No contribution if funded ratio is greater than:

Constant: %

Variable:

From	To	Funded Ratio %
-		

Funded Ratio:

Liability:

Asset Value: Market Value
 Actuarial Value

- ◆ Under middle of year decrement timing, the first year expected benefit payment will now exactly match the first year of the projected benefit payments. Previously, these values could differ slightly because of the methodology used to calculate each. The same methodology has also been applied to experience benefit payments in a Core Projection, to make it consistent with these other values.
- ◆ Expected benefit payments are now displayed on the summary sample life report.

Gain/Loss Analysis

- ◆ **Continuing inactive gain/loss.** Continuing inactive (same status as prior year) gain/loss can now be run on selected database fields to determine the gain/loss due to COLAs, data changes, and even cash balance accounts (for vested valued as inactive). In many cases, this can bring the unreconciled gain/loss for continuing inactives down to zero, saving time when analyzing results. This feature can also be used in lieu of Data Corrections for changes in fields such as date of birth, date of retirement, sex, etc. Note however, that the results will not be identical because data corrections measure the difference between using original vs. corrected beginning of period data, rather than expected vs. actual end of period data.

XRA calculation

- ◆ **XRA checking details.** Details of the XRA calculation can now be saved to the database file when running the U.S. PBGC XRA Calculations tool, making the results easier to check. The details include the unreduced retirement age, the early retirement age, the year the participant reaches unreduced retirement age and the XRA category.

Administration factors

- ◆ New options in life insurance payment forms support:
 - first to die and last to die life insurance
 - decreasing life insurance

Forecasting

- ◆ A new custom variable is available for the PBGC flat dollar premium. It is available in Deterministic Forecasts, Stochastic Forecasts and Stochastic Trial Detail.

- ◆ The limit on the number of trials in Capital Market Simulations and Stochastic Forecasts has been increased to 25,000 trials from 10,000 trials.

System

- ◆ "Post-decrement probabilities" have been renamed "election probabilities" to better describe what they are used for and reduce confusion about how they are applied – that is, one time at decrement, not ongoing year after year.
- ◆ Known explanations for system errors now appear in plain text rather than as an error code, as in "Unable to open file: *The system cannot find the file specified.*"
- ◆ You can now track completed runs in a log file, shared by all users at your company. The log records the user, client and job, and includes elapsed time, local processor usage and grid processor usage where applicable. This log can help answer questions like: What kinds of runs are being run? What has grid usage been? To start tracking, specify the [Config] RunLogFile=filename parameter in your proval.ini file. For more information, see Help > Help Topics > FAQ > System > PROVAL INI settings.

ProVal API

- ◆ The existing function **GetValResults** can now optionally return subtotal results from Valuations. To facilitate this, additional elements have been added to its return value, so be sure to update any programs that use this function.
- ◆ A new function **GetCoreResults** lets you get results from Core Projections, including subtotals.
- ◆ The new functions **RunValSet**, **RunCore** and **RunDetFore** let you run Valuation Sets, Core Projections and Deterministic Forecasts.
- ◆ A 64-bit version of the ProVal API dll is now available. This is useful, for example, when calling the ProVal API from a 64-bit version of Microsoft Excel.

Changes Log

- ◆ Be sure to read the changes log (see the "changes log.doc" file in the ProVal directory) about updates to certain calculations that may change results.



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