

What's New!

ProVal®

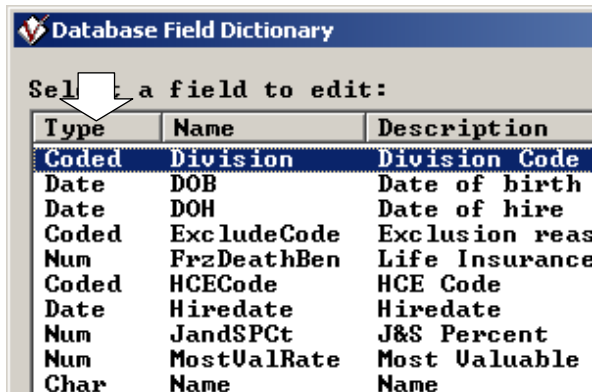
ProVal version 2.25

June 2006

ProVal version 2.25 introduces **enhanced performance** as well as the ability to **rename fields**, **delete unused codes**, and **project pension benefits (accrual definitions)** to a fixed age. You'll find details about these and other enhancements below.

System

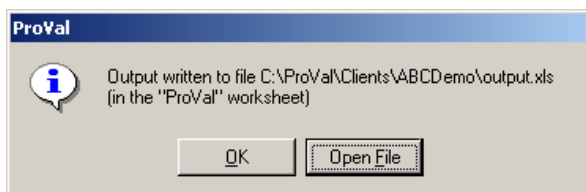
- ◆ Valuations (but not core projections) now run faster, some up to 30% faster.
- ◆ The performance penalty for using selection expressions in eligibility requirements has been eliminated. Now, only the benefits that apply to each participant will be valued. It no longer matters whether you run subgroups in separate runs or in a single combined run.
- ◆ Data Dictionary fields, benefit formula components, accrual basis components, and custom operators can now be renamed. All references to the item are changed automatically.
- ◆ The data dictionary, benefit formula component and accrual basis component libraries now show the type of item along with the name and description.



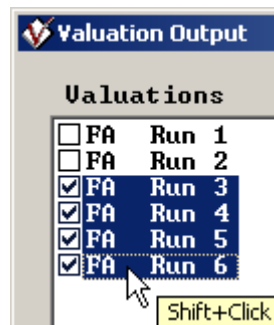
The screenshot shows a dialog box titled "Database Field Dictionary" with the instruction "Select a field to edit:". Below the instruction is a table with three columns: Type, Name, and Description. The "Coded" row is highlighted.

Type	Name	Description
Coded	Division	Division Code
Date	DOB	Date of birth
Date	DOH	Date of hire
Coded	ExcludeCode	Exclusion reas
Num	FrzDeathBen	Life Insurance
Coded	HCECode	HCE Code
Date	Hiredate	Hiredate
Num	JandSPct	J&S Percent
Num	MostValRate	Most Valuable
Char	Name	Name

- ◆ After saving output to a file, you can now press the "Open File" button to open it rather than browsing to find it.



- ◆ You can now select multiple items in checkbox lists by (a) clicking the first item and then (b) holding down the shift key while clicking the last item.

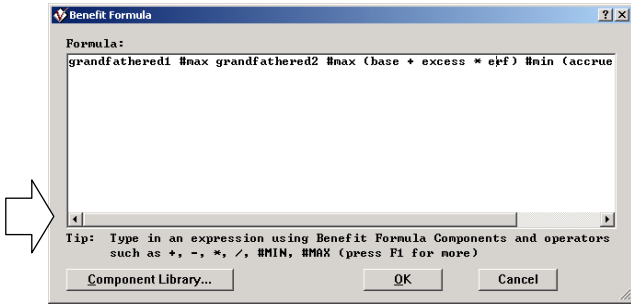


- ◆ Import from Client now behaves more like the old Client to Client Copy for database fields and output styles.
 - Now, fields with the same name, type and codes/labels are considered a match.
 - ProVal no longer imports objects referenced by styles in the Output, Frequency Tables, Descriptive Statistics, Print Data and Spreadsheet Edit libraries.

(This was actually released as a special update to version 2.24 but is mentioned here in case you missed it.)

	Page
WinTech's Virtual Back Office	5
New Members of the ProVal Team	5
New Options for Entry Age Normal	6
ITA Maximum Benefit	8
PBGC Premium Calculation Enhancements	13
Social Security Number Encryption	16

- ◆ In expressions, a horizontal scroll bar will now appear when the formula is wider than what is visible.



- ◆ ProVal can now be used on a secondary monitor.
- ◆ For users outside the U.S., delimited files (.csv) saved from ProVal will now follow your Windows regional settings (e.g., numbers formatted as “1.234,56”, dates as “dd/mm/yyyy”, and separated by “;”). This makes it possible, for example, to open Print Data .csv files in Excel. Your chosen numeric format will also be recognized when importing data, previously an obstacle when importing .csv and fixed width files created with Excel.

- ◆ Checks, checkboxes, and line drawing characters now display correctly on Korean computers.
- ◆ The ProVal License Server (PVLS) can now be installed as a Windows Service on Windows NT/2000/XP machines.

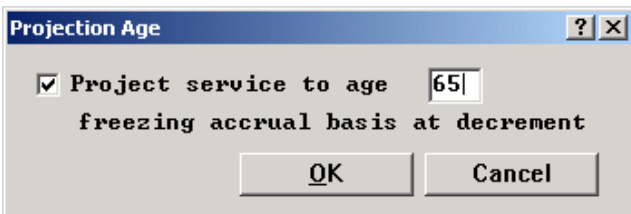
For more information, see “License Server Installation Guide.pdf” in the ProVal folder.

- ◆ A programmatic interface allows ProVal to be operated under program control. For example, a Visual Basic program can be written to start ProVal and save the contents of the Data Dictionary to a specified file.

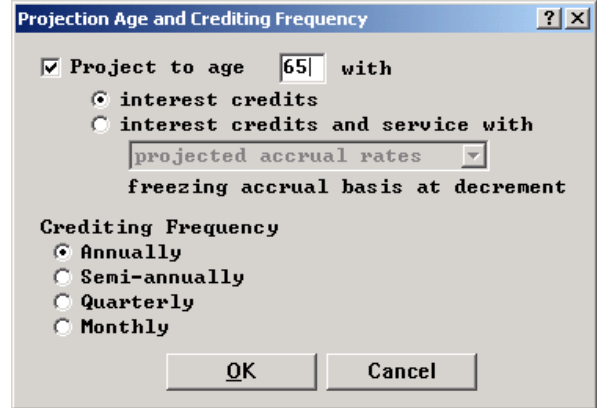
For more information, see “ProVal API Users Guide.pdf” in the ProVal folder.

Pension Plans

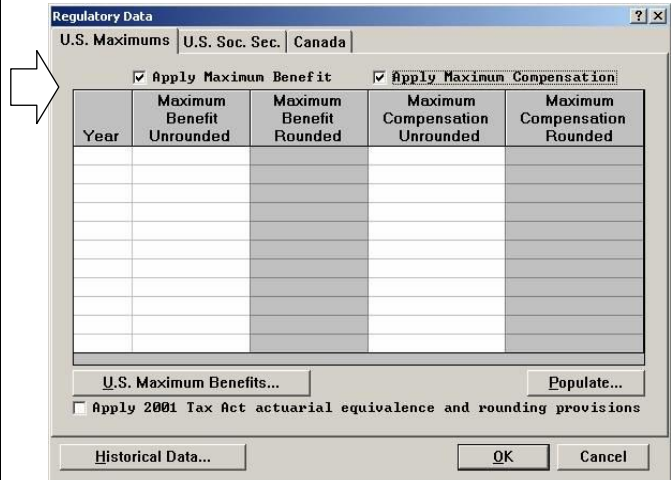
- ◆ Final average and career average accrual definitions have been enhanced to let you project service to a fixed age.



- ◆ Cash balance accrual definitions have been enhanced to let you:
 - Project to a fixed age with interest only or interest and future accruals.
 - Control the crediting frequency of interest and pay credits.



- ◆ There is a new switch in valuation assumptions to directly turn maximum benefit and compensation limits on and off.



- ◆ The “Entry Age Normal with replacement” cost method is now available. This allows a separate formula to be specified for the normal cost and present value of future normal cost under the entry age normal cost method. Usually, the alternative benefit formula would reflect only current plan provisions applicable to new employees so the actuarial liability completely reflects past amendments or grandfathered formulas.

[See New Options for Entry Age Normal, page 6](#)

- ◆ The average Entry Age Normal cost method, popular in Korea, is now available in SERP mode. Under this method, the normal cost percentage or dollar amount is determined for

one participant and then used for all plan participants.

[See New Options for Entry Age Normal, page 6](#)

- ◆ Valuation pay will now always be calculated even if the Entry Age Normal cost method is not run.

Canadian Pension Plans

- ◆ The ITA Maximum pension is now handled automatically in Canadian Mode. In addition, there is a new operator, #CANMAX, to apply the maximum pension to benefit formulas.

[See ITA Maximum Benefit, page 8](#)

- ◆ The solvency amortization rate can now be specified in the Asset & Funding Policy directly if it differs from the solvency discount rate(s) used in the valuation.

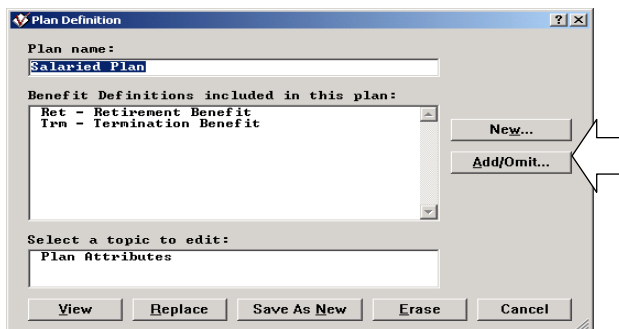
(This was actually released as a special update to version 2.24 but is mentioned here in case you missed it.)

OPEB Plans

- ◆ In sample lives, the details for accrual definitions are now shown in OPEB mode.

All Plans

- ◆ If your data contains missing values, there is now a simple way to use data defaults to zero out missing values in all numeric fields (except for salaries).
- ◆ If your data is zero-filled, defaults can now be applied to missing values and zeroes, rather than to just missing values.
- ◆ Multiple benefit definitions can now be omitted from (or added to) a plan definition at once.

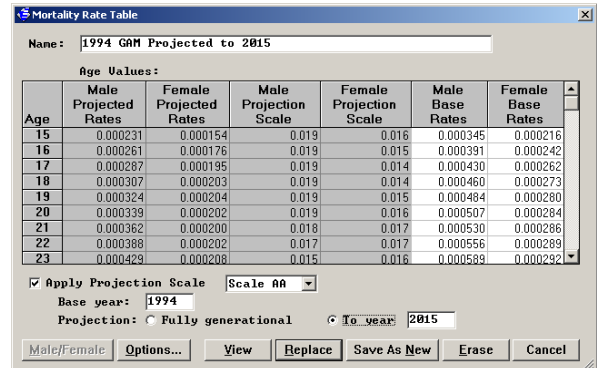


- ◆ FAS, IAS and CICA expense calculations now consistently use compound interest rather than

simple interest for the interest on expected benefit payments, employer contributions and 420 transfers. This avoids spurious gains and losses rolling forward liabilities, e.g., for end of year disclosure.

(This was actually released as a special update to version 2.24 but is mentioned here in case you missed it.)

- ◆ Mortality tables have been enhanced to add more projection options. Specifically, mortality projection scales can be specified by name and tables can be projected to a fixed year.



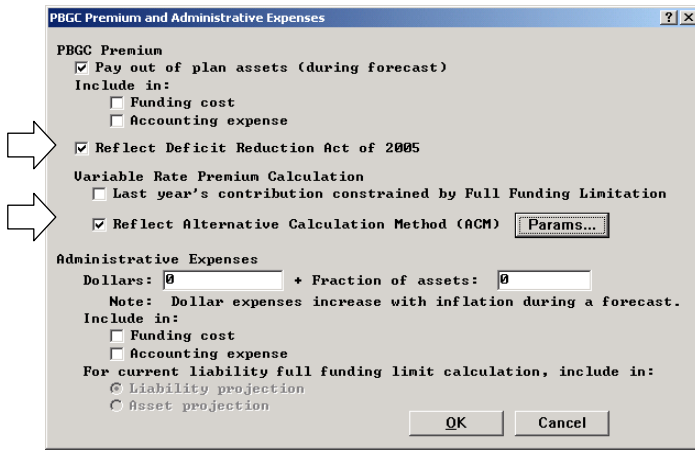
- ◆ Sample lives will continue running if more than 20 records are selected. Only the first 20 selected will be displayed.

Valuation Sets, Deterministic & Stochastic Forecasts

- ◆ In U.S. Qualified mode, the funding amortization payments will now remain constant from one year to the next unless the funding rate changes. ProVal will use the optional “amortization amount”, as long as it is within the rounding amount of the amortization amount that ProVal calculates.
- ◆ If a contribution schedule is provided, the credit balance and reconciliation account will now be updated during a roll forward.
- ◆ The flat-rate PBGC premium calculation now follows increases in the National Average Wage to comply with the Deficit Reduction Act of 2005.

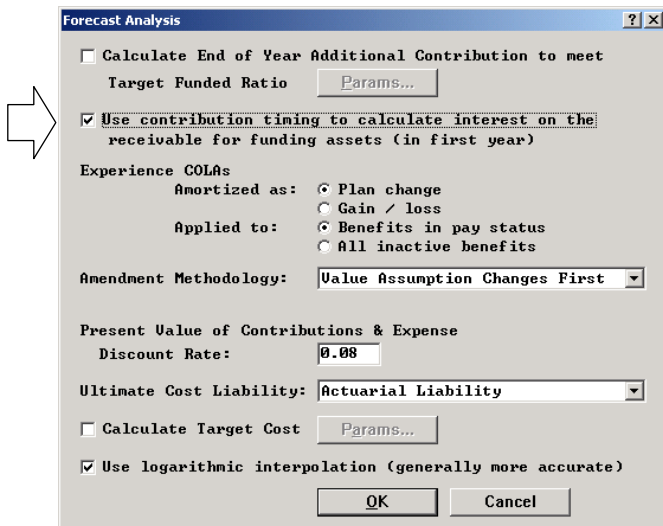
[See PBGC Premium Calculation Enhancements, page 13](#)

- ◆ You can now reflect the alternative calculation method to calculate the variable-rate PBGC premium.



[See PBGC Premium Calculation Enhancements, page 13](#)

- ◆ A new option allows you to calculate interest on the contribution receivable from the date that it is paid, instead of the beginning of the plan year, for funding assets. With this option, ProVal will generally produce the same funding and accounting asset values at the end of the year.



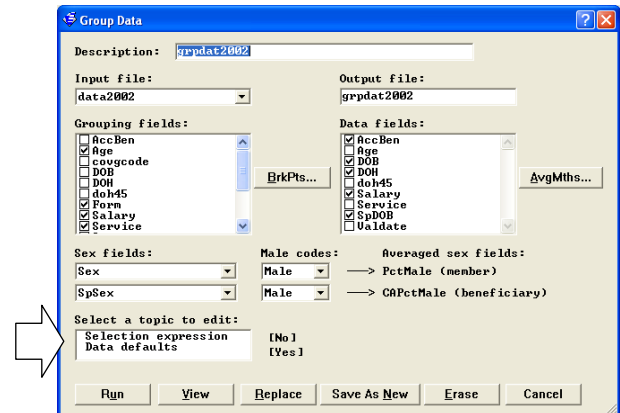
- ◆ In U.S. Qualified mode, if administrative expenses are included in the funding cost, the current liability full funding limit can either include expenses in the current liability normal cost (the pre-Version 2.25 treatment), or expenses can offset the end of year assets.
- ◆ In the Prior Year Values screen, you can now specify different benefits paid for the change in projected benefit obligation and the change in present value of accrued plan benefits exhibits.

Census Data

- ◆ It is now possible to delete unneeded values from coded fields. The code can be deleted if it

does not exist on any databases and the field is not referenced in a data default.

- ◆ You can now apply data defaults when grouping data.



- ◆ You can now encrypt/decrypt Social Security Numbers through a .bat file.

[See Social Security Number Encryption, page 16](#)

- ◆ Now, you can always match on case for character fields, wherever matching of key fields is required.

Tools

- ◆ Gain/Loss Analysis results can now be saved to an Access database for report writing.

Training & Manuals

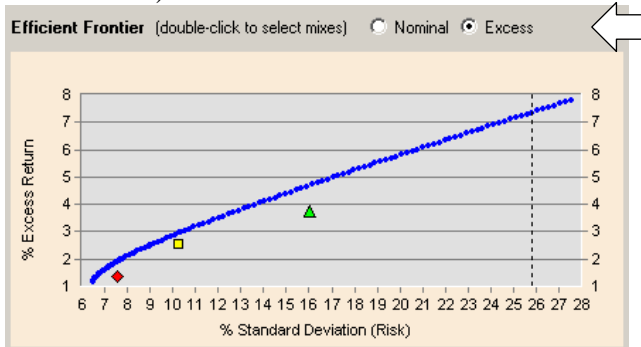
- ◆ The Getting Started Manual, accessible through help, has been expanded to include step-by-step instructions on forecasting.

ProVal^{ps}

ProVal PS, a desktop toolkit for the financial management of pension and retiree medical plans, continues to be developed parallel to ProVal. The following new feature has been added to ProVal PS with this release of ProVal:

Asset Allocation

- ◆ ProVal PS files populated with an excess efficient frontier can now display the efficient frontier on an excess return basis, or optionally, on a nominal return basis (the previous behavior).



(The ProVal PS updates are available by using Options > Download Program Updates within ProVal PS.)

New Members of the ProVal Team

Scott Slora recently joined the ProVal team. He is an experienced consulting actuary and will be programming actuarial features for ProVal and helping in WinTech's Virtual Back Office (see sidebar below). Be sure to say hello to him if you reach him at ProVal support.

Rosanne Zaccagnino recently joined the ProVal team as an administrative assistant. Among other responsibilities, she will be handling ProVal keys and billing. If you need additional ProVal keys, need a ProVal CD, or have billing questions, Rosanne will be happy to take your call.

WinTech's Virtual Back Office

Need help bringing up new clients, converting cases, or experienced help in a ProVal area that's new to you? Why not call upon WinTech's experienced actuaries to fill in? Contact **Hank Freeman** at (203) 861-5526 for details or to request a quote.

WinTech

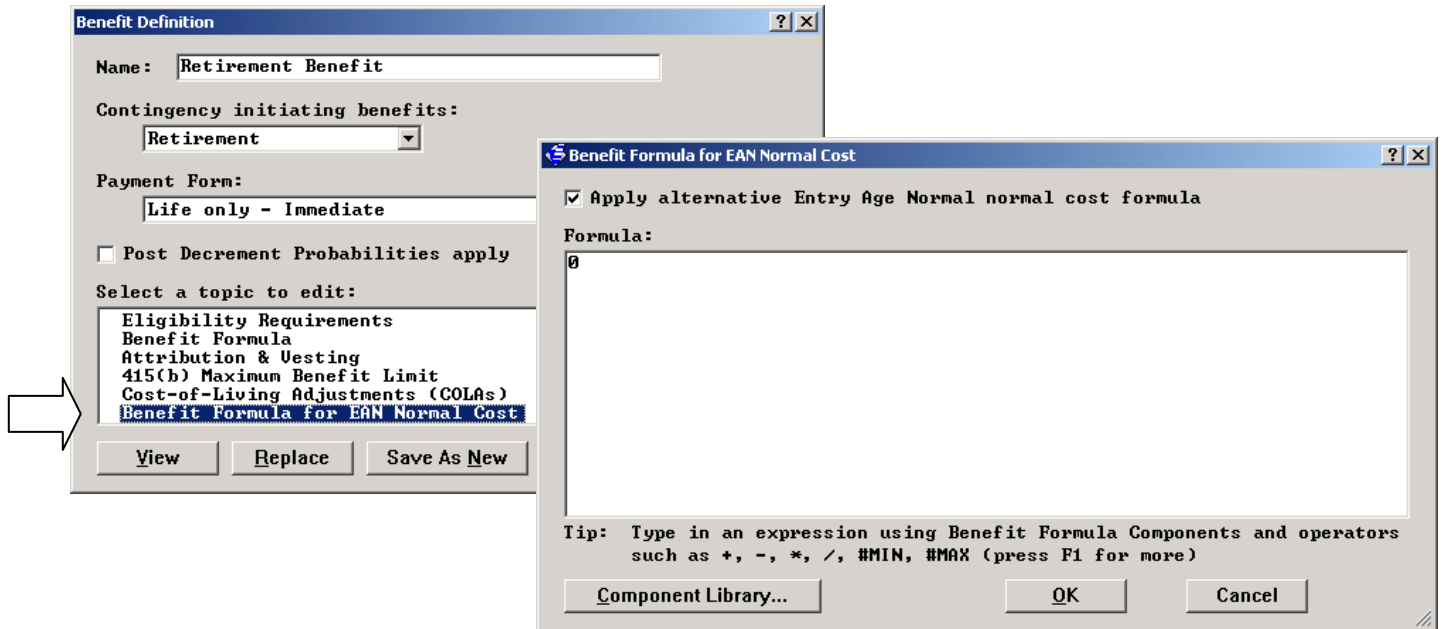
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New Options for Entry Age Normal

Alternative Benefit Formula for EAN Normal Cost

In all pension modes, greater flexibility is now available for determining how Present Value of Future Benefits (PVFB) is allocated between past and future benefit accrual (i.e., actuarial liability and normal cost) for Entry Age Normal (EAN) purposes. This enhancement allows you to ensure that the liability reflects the value of benefits accrued in the past, while the present value of future normal cost represents the value of benefits that will accrue in the future. This flexibility has been achieved by adding a second benefit formula to each benefit definition.



The Benefit Formula topic will now be used only for the calculation of PVFB. The alternative formula, “Benefit Formula for EAN Normal Cost,” will be used for calculating normal cost and the present value future normal cost.

If, for example, it is desired to fully reflect grandfathered benefits in the liability, the EAN normal cost formula should be one that applies to new entrants hired today. In this way, the grandfathering will have no impact on normal cost or future normal cost, and will be totally recognized in the liability.

Prior to the availability of this feature, it was impossible to generate a zero EAN normal cost for frozen plans having no future accruals. This can now be accomplished by simply specifying an EAN normal cost benefit formula of zero. Then, the entire liability will be considered to have accrued in the past, and the EAN liability will equal the PVFB.

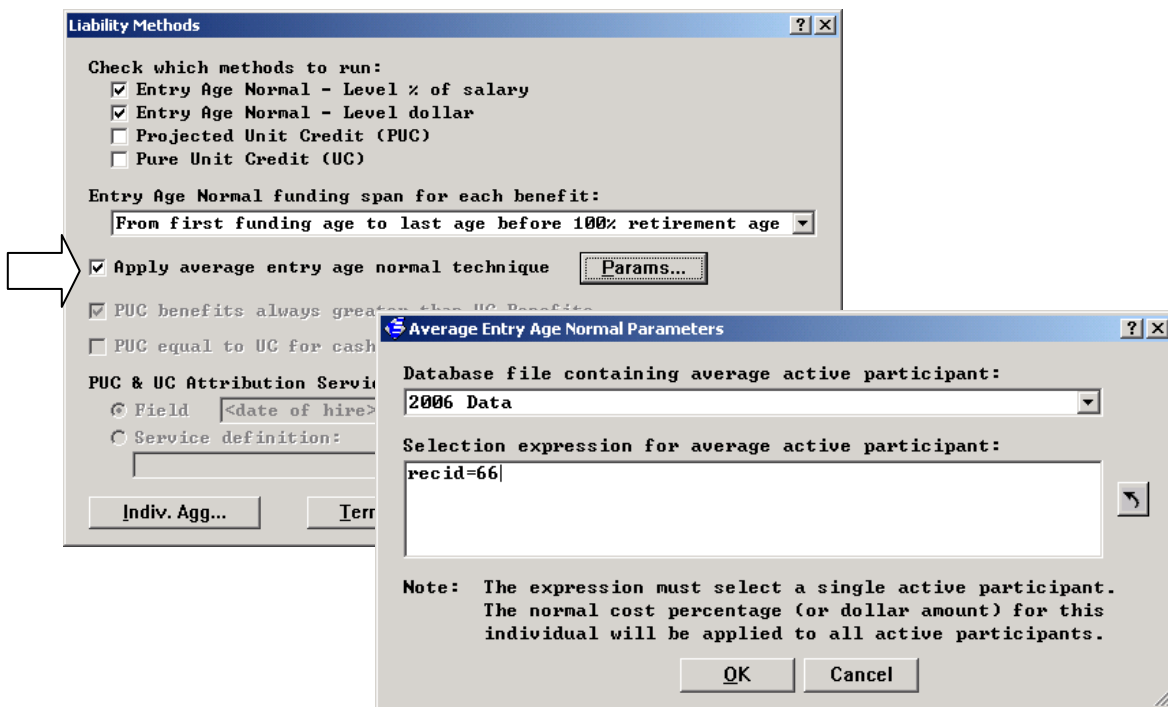
Sample lives have been modified to assist in checking results with this new feature. For the benefit definition display, in addition to documenting the calculation of the standard benefit, the calculation of any alternative EAN normal cost basis benefit is shown as well. Also, for the EAN liability and normal cost report, the “PV of benefits at funding age” is now based on the alternative formula which may no longer be identical to the formula used for “PV benefits”.

The Average Entry Age Normal technique

This variation of EAN, popular in some countries, is now available in SERP Pension mode. Under this approach, all participants with a normal cost will have their normal cost (rate or dollar amount) equal to that of a single designated participant.

“Average EAN technique” can be found under the Liability Methods topic in Valuation Assumptions (funding basis). A database file and a selection expression that results in the selection of a single record must be entered. To assist in checking results when using this technique, the EAN normal cost development in sample lives is based on the record specified in the valuation assumptions.

In a Core Projection, the unique normal cost rate (or dollar amount) will be used in all years. It will remain unchanged even if there are plan amendments.



Canadian ITA Maximum Pension Limit

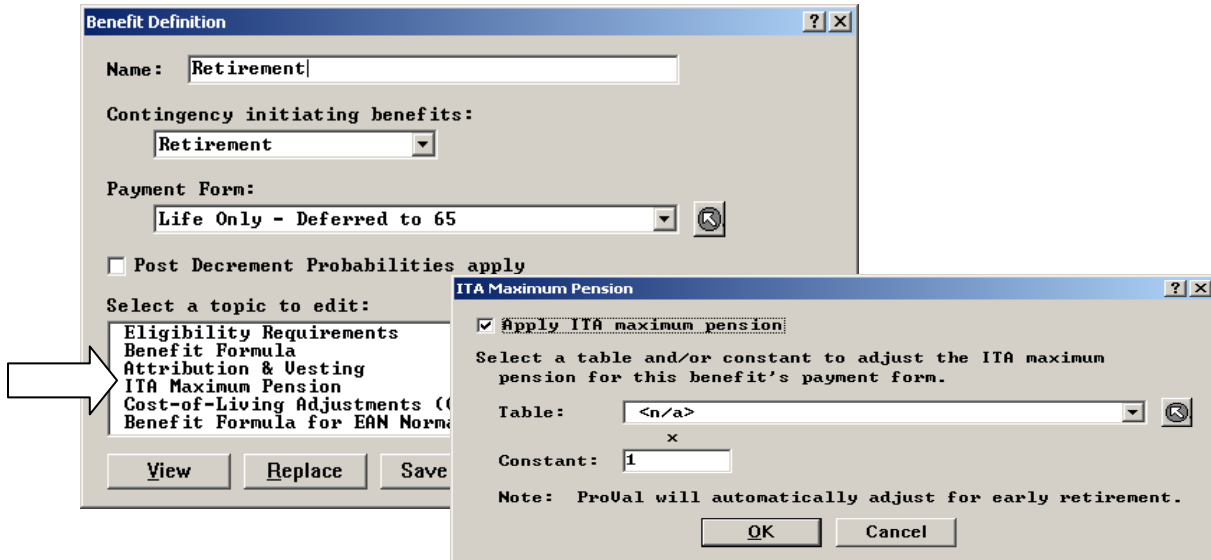
ProVal now can automatically handle the Canadian Income Tax Act (ITA) maximum pension limit of a dollar amount (\$1,722.22 before recent legislation) multiplied by years of service and adjusted for early retirement.

Enhancements to ProVal include:

- A new topic, “ITA Maximum Pension”, in Canadian benefit definitions
- A new operator, #CANMAX, available in all modes
- Sample life detail of the ITA maximum pension limit calculation
- Evaluation of the ITA maximum pension limit as a source of gain and loss in a gain/loss analysis

Benefit Definitions

In Canadian mode, Benefit Definitions now include a topic for the ITA Maximum Pension.



If a new Benefit Definition is created, the default is to apply the ITA maximum pension to the benefit formula. If a registered pension plan offers a generous payment form that requires the ITA maximum pension to be adjusted, a table and/or constant can be selected to adjust the maximum pension.

#CANMAX

In addition to applying the ITA Maximum pension to the entire benefit definition, a new operator, #CANMAX, is now available for use in benefit formulas and accrual basis formulas in all of ProVal's computation modes.

#CANMAX accepts one or two arguments. The right argument is the deferral age (where 0 equals immediate, or no deferral) and is required. The left argument is service and is optional. A 0 or missing left argument indicates all service, 1 is post-reform service only and 2 is pre-reform service only.

For example, in lieu of applying the ITA maximum pension to the benefit definition, you may want to compare the normal retirement benefit to the ITA maximum pension before reducing for early retirement. This could be specified as:

$$(\text{NRB } \# \text{MIN } (\# \text{CANMAX } 60)) * \text{ERF}$$

Additionally, the pre- and post-reform service options of #CANMAX should be useful for Canadian Plans that value the return of employee contributions. For example, this formula finds the excess, if any, of the pre-reform benefit over employee contributions with interest:

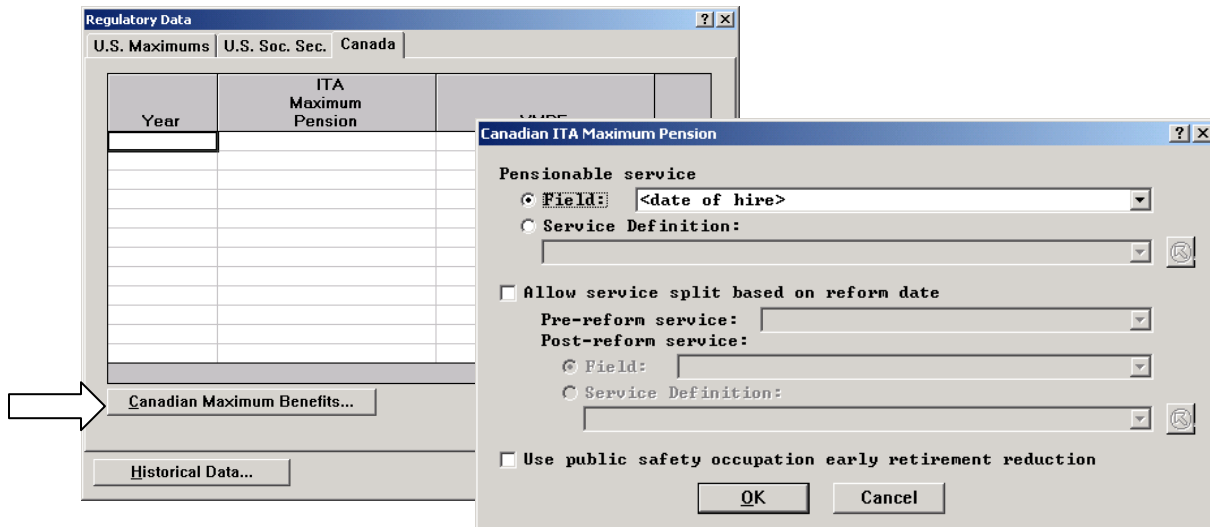
[(PreNRB #min (2 #CANMAX 60)) *LSFact] #zminus EECWI

Note that the right argument of 60 on #CANMAX causes the operator to return the maximum benefit unreduced for early retirement.

Valuation Assumptions

The parameters for calculating the Canadian ITA Maximum Pension are specified under the Regulatory Data and Increase & Crediting Rates topics of Valuation Assumptions. Within the Regulatory Data topic, you may:

- Override the historical regulatory data values,
- View the historical regulatory data,
- Specify pensionable service (where the default is <date of hire> from Census Specifications) for the ITA Maximum,
- Specify pre- and post-reform service for the #CANMAX operator, if desired, and
- Reflect public safety occupation early retirement reductions if desired.



Service

Under the Regulatory Data > Canadian Maximum Benefits button, pensionable service for the ITA Maximum pension defaults to service from hire as defined in the Census Specifications. Alternatively, you may specify a database field or a Service Definition. Similarly, post-reform service may be specified as either a database field or a Service Definition. Since pre-reform service is frozen by definition, it can only be specified as a database field. Note that as the maximum pension under the #CANMAX operator is calculated over time, ProVal will define pre-reform service as the lesser of pensionable service and the specified pre-reform service amount. However, post-reform service is taken literally, although ProVal will provide a warning if it is greater than total pensionable service.

Early Retirement Factors

The ITA maximum pension early retirement reduction factors are 3% per year prior to the earliest of age 60, 30 years of service, and 80 points (age plus service), but not more than 45%. If you check the box to “Use public safety occupation early reduction factor”, ProVal will instead reduce the maximum pension 3% per year prior to the earliest of age 55, 25 years of service and 75 points. The early retirement factors used always reflect total service even if the operator is based on just pre-reform or post-reform service.

Dollar Limit

The Regulatory Data > Historical Data... button allows you to view the default dollar amounts used to calculate the ITA maximum pension limit, where the current Canadian amounts are shown in the table on the right. Pension plans that have not been amended to take advantage of the increased ITA maximum pension may override these dollar amounts with the 'old' limits as shown in the dialog box below.

Year	ITA Maximum Pension	YMPE
2004	1,722.22	
2005	1,722.22	
2006	1,722.22	

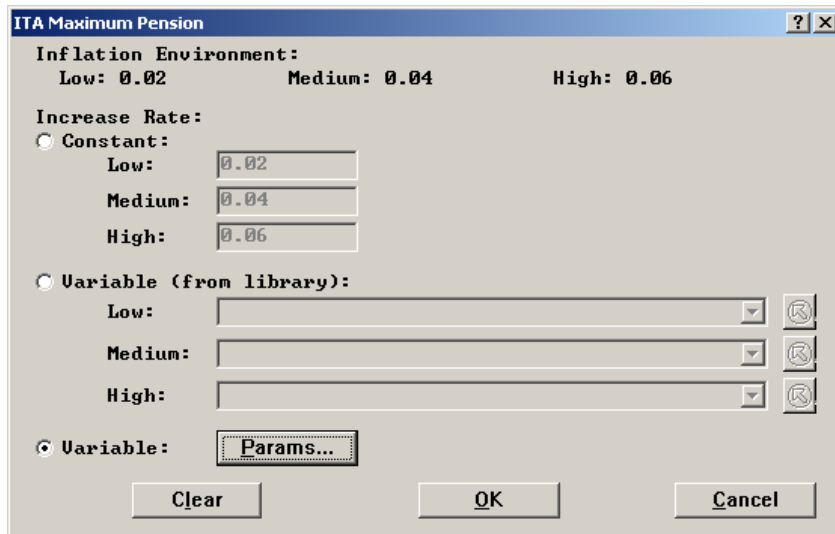
Year	ITA maximum Pension	YMPE
1935	1,722.22	0
1936	1,722.22	0
1937	1,722.22	0
...
2003	1,722.22	39,900
2004	1,833.33	40,500
2005	2,000.00	41,100
2006	2,111.11	42,100
2007	2,222.22	
2008	2,333.33	
2009	2,444.44	

The Regulatory Data topic applies to historical data prior to the valuation date. The Increase & Crediting Rates topic is where increase rates after the valuation date on the ITA dollar maximum are specified. These increase rates increase the dollar limit from the valuation year amount to each future calendar year. For pension plans that wish to reflect future maximum benefit limits as specified in the February 2005 Canadian Federal Budget (see values and years in the table above), variable (i.e., calendar year-dependent) ITA Maximum Pension increase rates must be specified under Increase & Crediting Rates to achieve the limits during a valuation.

From	To	Rate
-	2004	0.09091
2005	2005	0.05556
2006	2006	0.05263
2007	2007	0.05000
2008	2008	0.04762
2009	-	0.04000

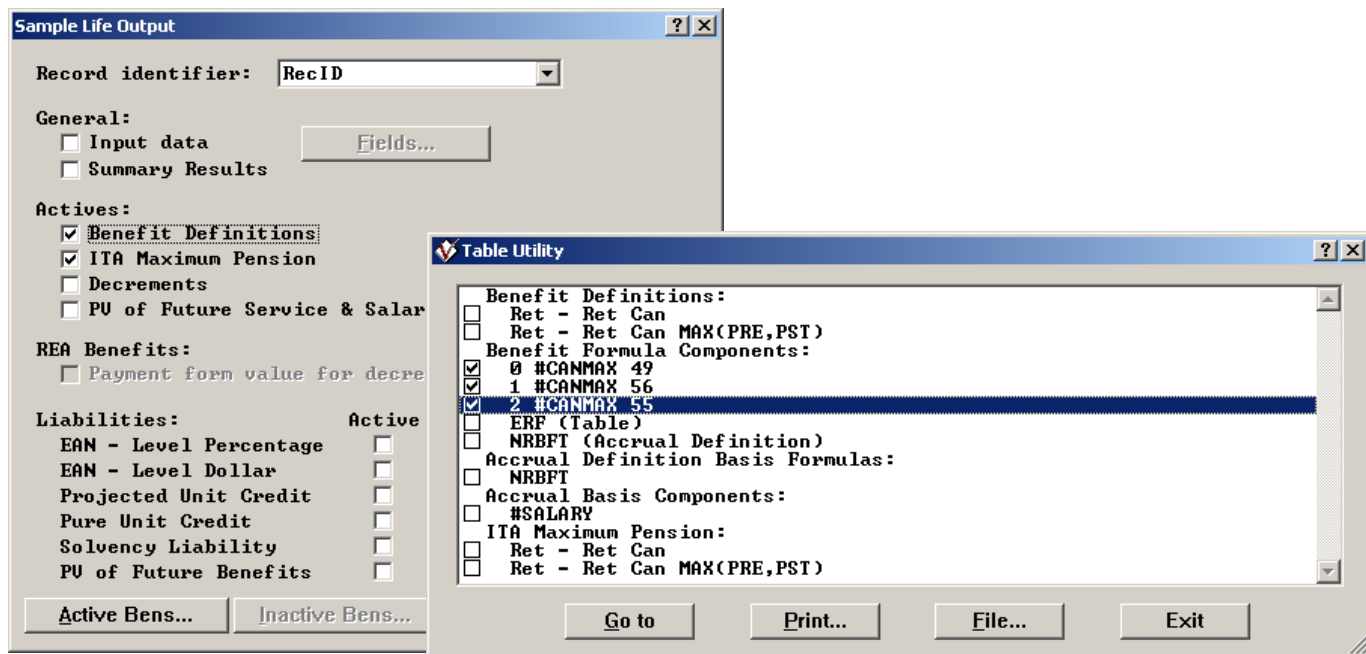
Projection Assumptions

For a forecast, the annual experience increase rates for the ITA maximum pension are specified under Projection Assumptions > Increase & Crediting rates > Salary/Regulatory Items > ITA maximum pension topic. Similar to other crediting rates, they are specified separately for each inflation environment and may be a constant, a calendar-year dependent table from the library or a hand-entered calendar year-dependent table.



Sample life output

Sample life output has been created for the operator #CANMAX and the ITA Maximum Pension calculation.



Here is an example of the ITA Maximum Pension sample life report:

Sample Life Output 17 of 18

ITA Maximum Pension
Benefit: Ret - Retirement benefit w/ max

RecID: 34

Year	Member Age	Dollar Maximum	Pensionable Service	Early Retirement Factor	Commencement Age Maximum	Payment Form Factor	Maximum Benefit Payable	PUC/UC Maximum b.o.y.*	PUC/UC Maximum e.o.y.*
1992	48	1,722.22	0.7377	0.6400	813.11	1.000000	813.11		
1993	49	1,722.22	1.7377	0.6700	2,005.12	1.000000	2,005.12		
1994	50	1,722.22	2.7377	0.7000	3,300.45	1.000000	3,300.45		
1995	51	1,722.22	3.7377	0.7300	4,699.12	1.000000	4,699.12		
1996	52	1,722.22	4.7377	0.7600	6,201.12	1.000000	6,201.12		
1997	53	1,722.22	5.7377	0.7900	7,806.46	1.000000	7,806.46		
1998	54	1,722.22	6.7377	0.8200	9,515.12	1.000000	9,515.12		
1999	55	1,722.22	7.7377	0.8500	11,327.13	1.000000	11,327.13		
2000	56	1,722.22	8.7377	0.8800	13,242.46	1.000000	13,242.46		
2001	57	1,722.22	9.7377	0.9100	15,261.13	1.000000	15,261.13		
2002	58	1,722.22	10.7377	0.9400	17,383.13	1.000000	17,383.13		
2003	59	1,722.22	11.7377	0.9700	19,608.46	1.000000	19,608.46		
2004	60	1,833.33	12.7377	1.0000	23,352.42	1.000000	23,352.42		
2005	61	2,000.00	13.7377	1.0000	27,475.41	1.000000	27,475.41		
2006	62	2,111.11	14.7377	1.0000	31,112.92	1.000000	31,112.92	31,112.92	
2007	63	2,222.22	15.7377	1.0000	34,972.64	1.000000	34,972.64	32,750.42	34,972.64
2008	64	2,333.33	16.7377	1.0000	39,054.59	1.000000	39,054.59	34,387.93	36,721.26
2009	65	2,444.44	17.7377	1.0000	43,358.76	1.000000	43,358.76	36,025.44	38,469.88

* Reflects current pensionable service.

Gain/Loss Analysis

The ITA Maximum Pension can now be evaluated as a source of gain and loss in a gain/loss analysis.

Continuing Actives

Sources to analyze:

- Salary Definitions**
- * <Valuation salary>
- Regulatory Items**
- 1 ITA Maximum Pension
- * YMPE
- * U.S. Maximum Benefit
- * U.S. Maximum Compensation
- * U.S. Soc. Sec. National Average Wage
- * U.S. Social Security CPI (PIA only)

* = source number not specified

Add'l Params... Sources... OK Cancel

PBGC Premium Calculation Enhancements

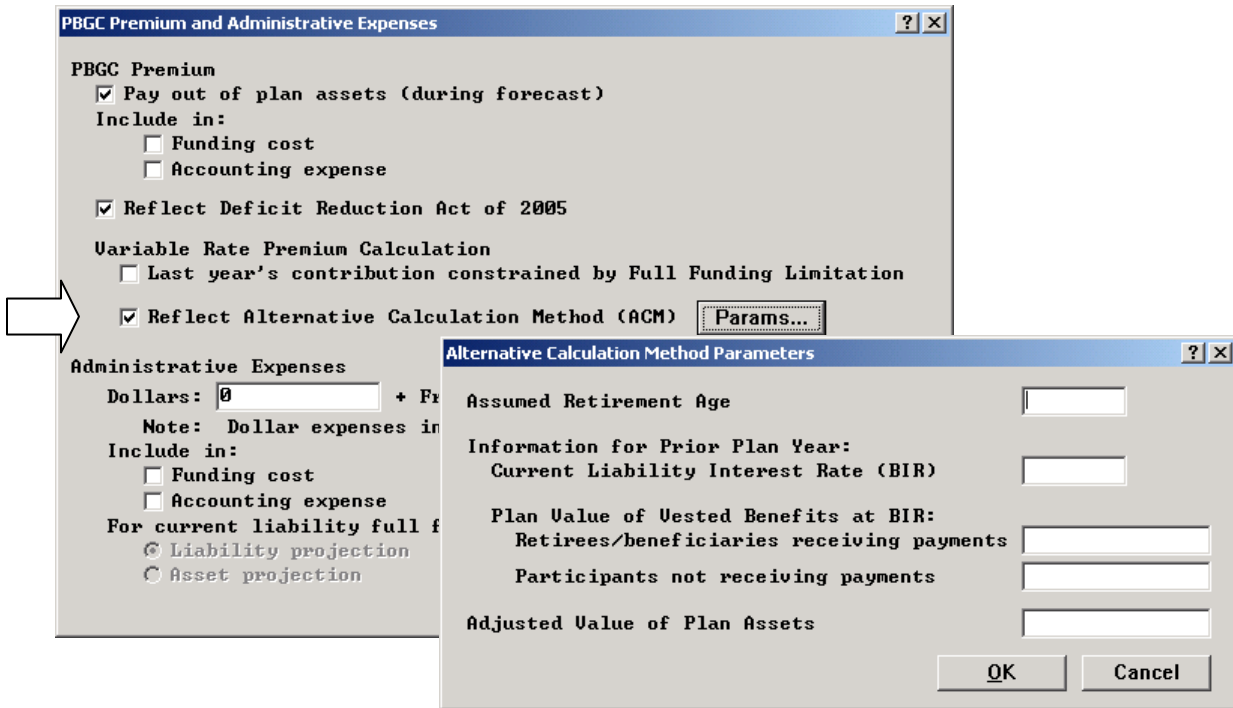
ProVal Version 2.25 significantly enhances the PBGC Premium calculation and Schedule A government forms extract and includes a new “Development of PBGC Premium” exhibit.

Flat-rate premium calculation

The Deficit Reduction Act of 2005 changed the flat-rate PBGC premium to be \$30 (\$8 for multi-employer plans) in 2006, increasing in the future with changes in the National Average Wage. This modification is now incorporated into ProVal. For a forecast, ProVal will project the National Average wage using the Projection Assumptions increase in the National Average Wage if available and consistent among all core projections in the forecast. Otherwise, the National Average Wage is assumed to increase with inflation.

Variable-rate premium calculation

ProVal Version 2.25 will calculate the variable-rate premium under the Alternative Calculation Method (ACM) and use the lesser of the General Method and the ACM variable rate premium. If the ACM is selected in the Asset & Funding Policy, the necessary information for the prior plan year must be provided. In addition, the assumed retirement age must be provided and will be used for all years of a forecast. In future years, the current liability interest rate and the plan value of vested benefits will be updated in an Asset & Funding Policy update as long as the prior year is a full plan year.



Output

A new exhibit, shown below, has been developed to detail the PBGC premium calculation.

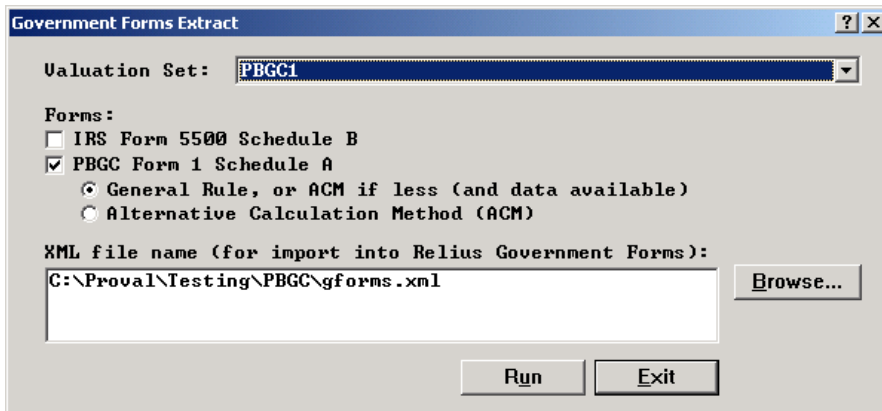
Development of PBGC Premium

1. Flat-rate premium	
(a) National Average Wage, 2 years prior	\$35,648.55
(b) Flat-rate: \$30 x (a)/\$35,648.55, rounded	30
(c) Participant count	816
(d) Flat-rate premium: (b)x(c)	\$24,480
2. Exempt from variable-rate premium	No
3. General Rule	
(a) Value of vested benefits, January 1, 2006	
(i) At rate	4.73%
(ii) Retirees and benef. receiving payments	7,354,398
(iii) Participants not receiving payments	46,794,941
(iv) Total: (ii)+(iii)	\$54,149,339
(b) Value of plan assets	
(i) Value of plan assets, January 1, 2006	35,029,663
(ii) Contribution receivables included in (i)	313,143
(iii) Discounted paid contributions	307,891
(iv) Adjusted value of plan assets: (i)-(ii)+(iii)	\$35,024,411
(c) Unfunded vested benefits: (a)(iv)-(b)(iv), min zero, rounded up to \$1,000	19,125,000
(d) General Rule variable-rate premium: .009x(c), or zero if exempt	\$172,125
4. Alternative Calculation Method (ACM)	
(a) Assumed Retirement Age (ARA)	63
(b) Value of vested benefits, prior year	
(i) At rate	6.00%
(ii) Retirees and benef. receiving payments	5,103,289
(iii) Participants not receiving payments	40,326,587
(iv) Total: (ii)+(iii)	\$45,429,876
(c) Adjusted value of vested benefits	
(i) Required Interest Rate (RIR)	4.73
(ii) Base Interest Rate (BIR)	6.00
(iii) Retirees and benef. receiving payments: .94*(RIR-BIR)x(b)(ii)	5,520,492
(iv) Participants not receiving payments: 1.07x.94*(RIR-BIR)x(b)(iii)x [(100+BIR)/(100+RIR)]*(ARA-50)	54,595,239
(v) Total: (iii)+(iv)	\$60,115,731
(d) Value of plan assets	
(i) Value of plan assets, prior year	N/A
(ii) Contribution receivables included in (i)	N/A
(iii) Discounted paid contributions	N/A
(iv) Adjusted value of plan assets: (i)-(ii)+(iii)	\$31,998,645
(e) Unfunded vested benefits: [(c)(v)-(d)(iv)]x [1+(3)(a)(i)], min zero, rounded up to \$1,000	29,448,000
(f) ACM variable-rate premium: .009x(e), or zero if exempt	\$265,032
5. PBGC Premium: (1)(d) + lesser of (3)(d) or (4)(f)	\$196,605

Government Forms Extract

The Government Forms Extract incorporates the PBGC premium enhancements. If you select “General Rule, or ACM if less (and data available)”, ProVal will determine which calculation produces the smaller PBGC variable-rate premium (assuming the Alternative Calculation Method was selected in the Asset & Funding Policy) and export the appropriate available information to XML for import into Relius Government Forms 5500. (Relius Government Forms 5500 is a SunGard product. See www.sungardcorbel.com for more information.) If a contribution schedule is provided in the Asset & Funding policy, ProVal will calculate and export the discounted paid contributions and adjusted value of plan assets under the general method, if applicable.

If you select “Alternative Calculation Method (ACM)”, ProVal will assume that you are referencing last year’s Valuation Set and export the current liability values and interest rates from the Valuation Set to be imported as the Plan Value of Vested Benefits in the Schedule A.



The screenshot shows a dialog box titled "Government Forms Extract". It contains the following elements:

- Valuation Set:** A dropdown menu with "PBGC1" selected.
- Forms:**
 - IRS Form 5500 Schedule B
 - PBGC Form 1 Schedule A
 - General Rule, or ACM if less (and data available)
 - Alternative Calculation Method (ACM)
- XML file name (for import into Relius Government Forms):** A text box containing "C:\Proval\Testing\PBGC\gforms.xml" and a "Browse..." button to its right.
- Buttons:** "Run" and "Exit" buttons at the bottom.

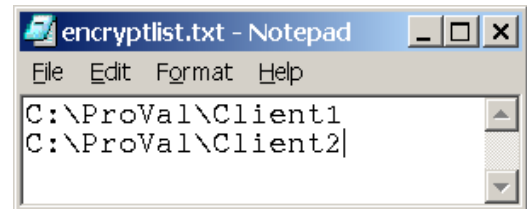
Social Security Number Encryption Tool

ProVal now offers a way to encrypt Social Security Numbers (SSNs) within ProVal database files. The encryption will protect SSNs while maintaining the ability to match SSNs to merge files, run gain/loss analysis, check for duplicate keys, etc. This new tool is invoked from outside the normal ProVal interface. For the purpose of this tool, SSNs are defined as those fields in a database with a data type of Social Security Number.

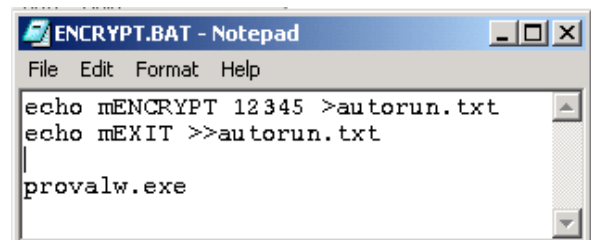
The new encryption tool should be considered only a component of an organization's data security process. The tool is most applicable when more than one person will be handling the ProVal client files and there's a data security policy which protects the distribution of SSNs (e.g., a U.S. client manager and an overseas back shop).

Steps to encrypt SSNs

1. Create the ENCRYPTLIST.TXT file. This file contains a list of ProVal client folders to be submitted to the encryption tool. This file should reside in the ProVal application folder.

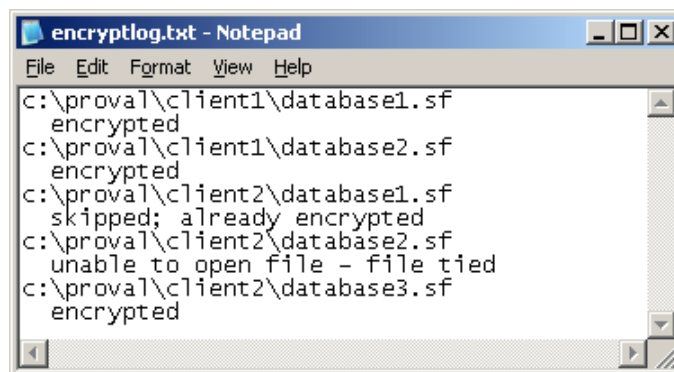


2. Create the ENCRYPT.BAT file. This file will be used to initiate the encryption process and includes the encryption key. This file should also reside in the ProVal application folder.



The right argument to mENCRYPT (above) of 12345 is the encryption key. This value will be used as a seed in the encryption algorithm. The key will also be used to decrypt the database files.

3. To run the encryption tool, double click on the ENCRYPT.BAT file. A summary of the results of the encryption job are written to the ENCRYPTLOG.TXT file.

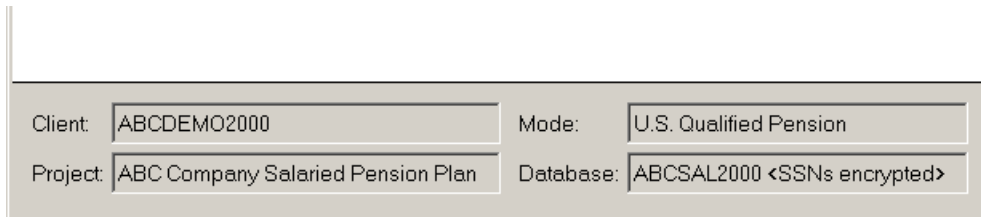


Decrypting Social Security Numbers

A parallel process is used to decrypt SSNs. Open the ENCRYPT.BAT file and change mENCRYPT to mDECRYPT. Be sure to use the same encryption key as was used when the files were encrypted.

Other interesting notes

- The user can determine if the database is encrypted by the suffix “<SSNs encrypted>” in the Database window on the bottom of the main ProVal dialog.



The screenshot shows a dialog box with four input fields arranged in a 2x2 grid. The top-left field is labeled 'Client:' and contains the text 'ABCDEMO2000'. The top-right field is labeled 'Mode:' and contains the text 'U.S. Qualified Pension'. The bottom-left field is labeled 'Project:' and contains the text 'ABC Company Salaried Pension Plan'. The bottom-right field is labeled 'Database:' and contains the text 'ABCSAL2000 <SSNs encrypted>'. The dialog box has a light gray background and a thin black border.

- Importing data into an encrypted database is not allowed. The database must first be decrypted.
- Security around the encryption methodology is limited to knowledge of the ENCRYPT.BAT files and the encryption key.
- As an extra security measure, the ProVal encryption algorithm will not be shared with any users. This should not limit the user in any way; all tasks can be performed (e.g., matching to prior year’s data) without any knowledge of the encryption algorithm.
- Only encrypted SSNs are stored in ProVal databases; the original SSNs aren’t stored anywhere.