ProAdmin

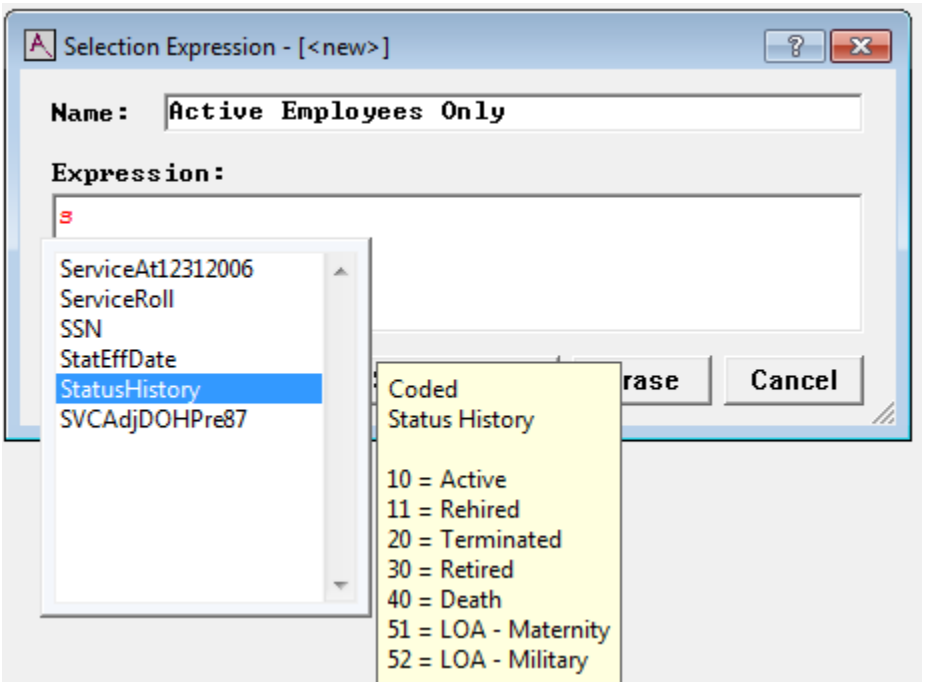
What's New in version 3.07 April 2015

ProAdmin version 3.07 introduces a richer expression interface, new payment forms, relative value for partial lump sum payments, enhanced run/re-run calculation features, the ability to calculate dates prior to running the benefit calculation, and many other features listed below.

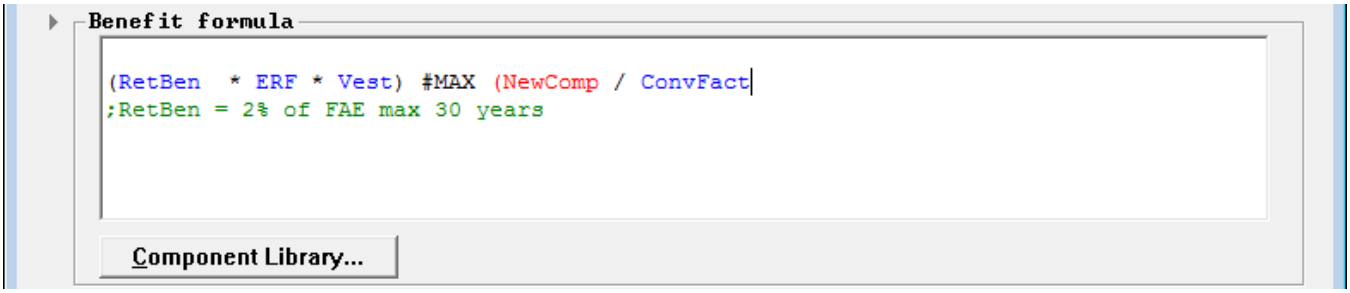
Expressions

Entering an expression in ProAdmin – whether a selection expression or benefit formula – has been transformed by a collection of new features. AutoComplete, syntax coloring, and parenthesis bolding help you with the syntax so you can focus on the logic. Double-click-to-edit and term tooltips bring the details closer to the surface, making ProAdmin feel flatter.

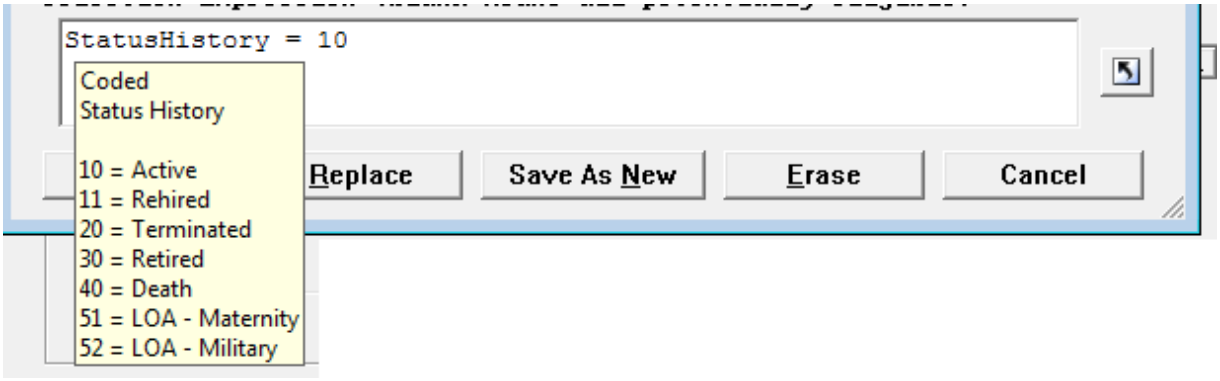
- **AutoComplete.** As you type an expression, ProAdmin displays a list of valid operators and fields (or components) that match what you've typed so far. To help you pick the right one, a brief description is shown for the selected item in the list, including codes and labels for coded fields. You can insert the selected item into the expression by pressing Enter or Tab. You may never use F1 again!



- **Syntax coloring.** To help you see syntax errors as you type, unknown terms and unbalanced parentheses appear in red. Editable terms appear in blue (see double-click-to-edit below) and comments appear in green.

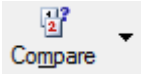


- **Double-click-to-edit.** In benefit formulas and accrual basis formulas, you can double-click on a blue component to edit it (e.g., RetBen in the formula above) or double-click on a red component to create a new one (e.g., NewComp the formula above). This works for custom operators too!
- **Parenthesis bolding.** When you type a closing parenthesis or position the cursor next to any parenthesis, the matching pair are temporarily highlighted in bold.
- **Term tooltips.** As you hover your mouse over a term, a tooltip will show the same brief description that appears during AutoComplete. This is a great way to review someone else's work or to quickly check what "Status = 10" means.



Running & Comparing Calculations

- The 

button on the tool bar for Estimated, Final and Dates/Age/Service calculations has been greatly enhanced to facilitate testing. The split button now enables:
  - Running multiple calculations at once,
  - Re-running one or more calculation(s) and creating a comparison of results to the previously saved results in either the current Client files or those on another Client, and
  - Specifying a text file identifying the calculations to be run rather than requiring individual selection each time.
- The 

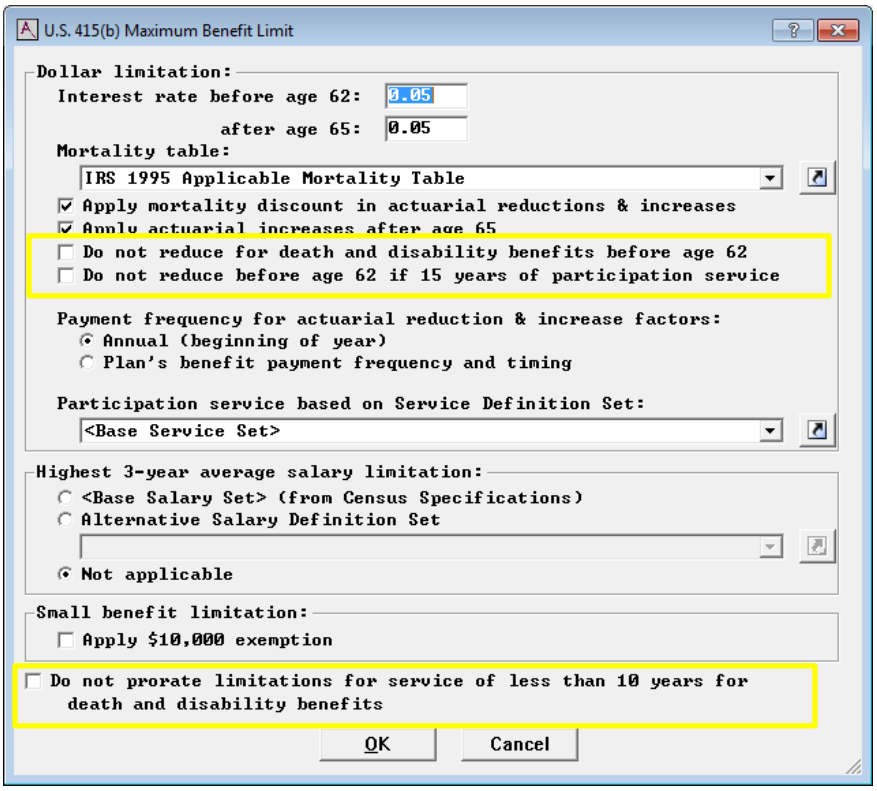
button on the tool bar for Estimated, Final and Dates/Age/Service calculations has also been greatly enhanced to facilitate testing. The split button now enables:
  - Comparing library entries (the only option previously available, and the same default option available for all other library types),
  - Comparing saved results (such as for comparing the difference between two slightly different sets of test data), and
  - Comparing to saved results on another Client. This last option can be done by specifying a text file that identifies the calculations to be run rather than requiring individual selection.
- For more details, see Run and/or Compare on page 23.

Relative Value Calculations

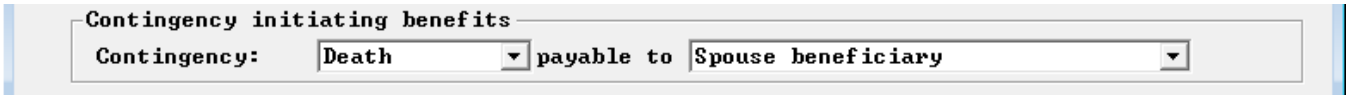
- **Reflect partial payments.** You can now pair up benefits to get the correct numerator for determining the relative value when a plan has partial payments such as a lump sum paired with a residual annuity.
- **Sum benefits for total normal form.** You can now pair up benefits to get the correct total value of the plan's normal form benefit for the denominator when determining the relative value. This is useful for partial month payments or certain grandfather benefits that need to be valued in their own Benefit Definition..
- Relative value calculations are now their own topic in Plan Definitions. Previously they were encompassed under the "Plan Attributes" topic.
- For more details see Relative Value for Partial Payments on page 18.

Plan and Benefit Definitions

- Calculated dates. A new Calculated Dates topic allows you to compute various dates that can then be used throughout the benefit calculation. These dates are calculated after the participant data has been loaded, defaulted and validated, but before any benefits are calculated. For more details see Calculated Dates on page 21.
- **Additional 415 maximum benefit options**.
  - In Benefit Definitions (in the Maximum Pension section), plan early retirement reduction factors can now be entered so that ProAdmin can reduce the 415 limit by the greater of the IRS and plan reductions. For more, see Applying the 415(b) Limit on page 28.
  - In Plan Definitions > Regulatory Data > U.S. Maximum Benefits, the following options, specifically designed for U.S. public plans, are available:
    - For death and disability benefits, you can turn off the reduction for pre-62 commencement. You can also turn off the service proration if less than 10 years.
    - You can turn off the reduction for pre-62 commencement if 15 years of participation service. This is useful if valuing benefits for police, firefighters, or US armed forces.



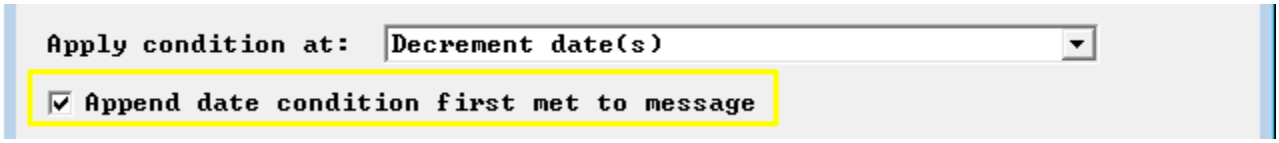
- Benefit Definitions for the "death" contingency have been enhanced to clarify to whom the benefit is payable. The applicable choices are now "Everyone", "Spouse Beneficiary", or "Non-Spouse or No spouse beneficiary." These beneficiary choices correspond to the Census Specifications > Beneficiary Data ProAdmin beneficiary types.



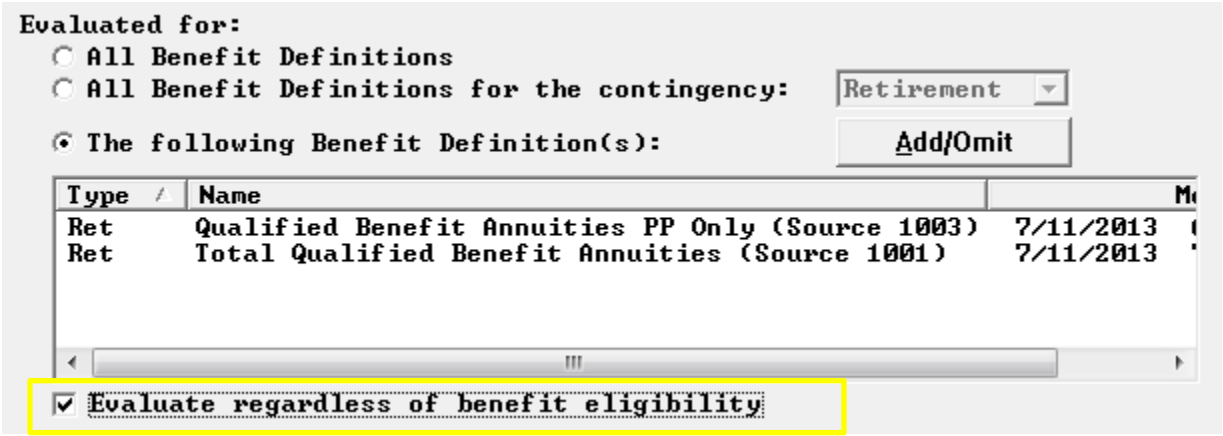
- The #GETTABVAL operator now works with space delimited TXT files as well as CSV files. With this change it is possible to reference the default historical regulatory data files, if necessary, for a transformation expression in a Salary or Service Definition.
- If a Custom Regulatory Table file is specified without a path, the default search paths are now used to find it (before using the internal copy or saying that the file does not exist). Previously ProAdmin only searched for the file in server mode.

User-Defined Error/Warning Messages

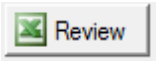
- The condition first met parenthetical detail can now be omitted from Benefits Error/Warning Messages by unchecking the default setting box on the dialog box.



- Benefits Error/Warning Messages can now be returned from benefits for which the member is not eligible. This facilitates returning a "not vested" message without creating a special benefit with no eligibility.



Benefits Review

The popular 

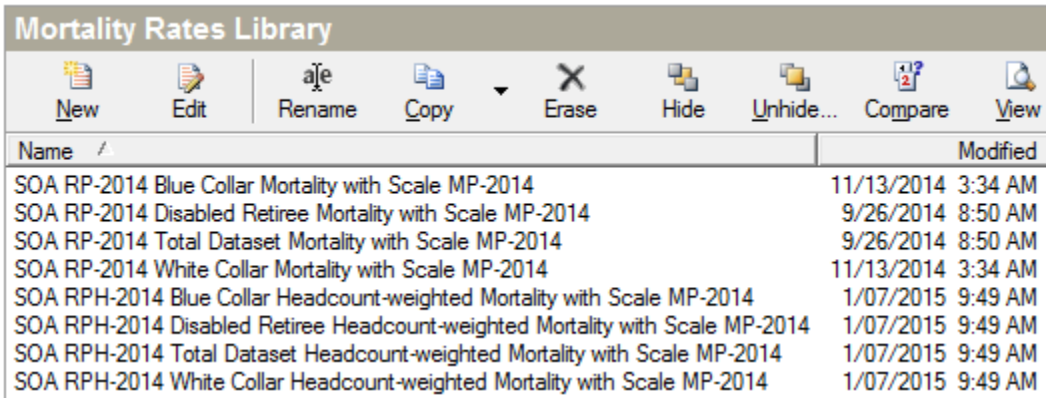
feature has been expanded and refined.

- **Component review.** Benefit formula components and accrual basis components have been moved onto their own sheets (by type) so you can review them in the same tabular format as benefits.

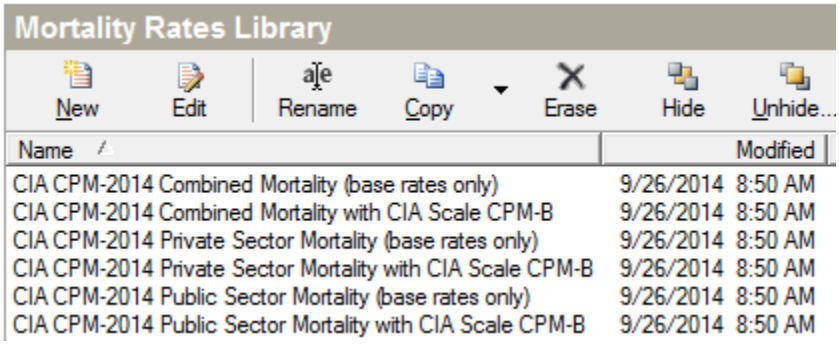
- The format of expressions has been improved so they look more like they do in ProAdmin.

Mortality Tables

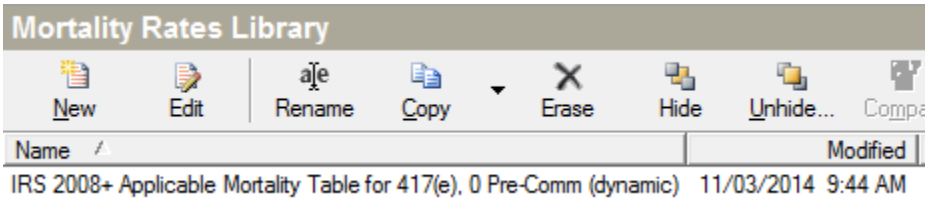
- **SOA RP-2014 mortality tables and MP-2014 mortality improvement scale** have been added to ProAdmin's mortality library.



- **CIA CPM-2014 mortality tables and CMP-B improvement scale** have been added to ProAdmin's mortality library. Mortality rate linkage parameters have been enhanced to allow size adjustment factors to be coded directly into the mortality table.



- **IRS 2008+ Applicable Mortality Table for 417(e), 0 Pre-Comm (dynamic)** mortality has been added to ProAdmin's mortality library for those plans that use applicable lump sum mortality but assume none pre-commencement.

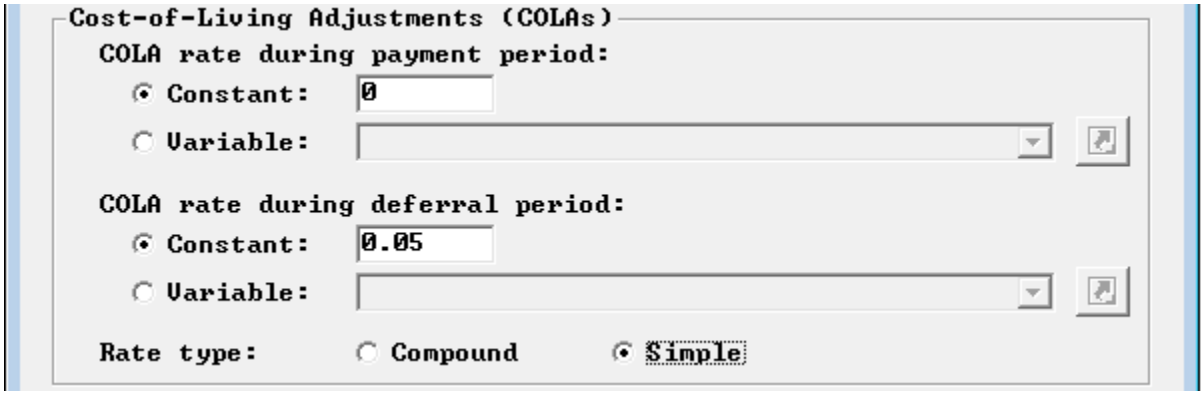


- **Easier sorting of tables.** For clarity and ease of sorting, all of ProAdmin's built-in mortality tables have been renamed to begin with a three-letter prefix indicating their source of origin: CIA for the Canadian Institute of Actuaries, SOA for the Society of Actuaries, or IRS for the Internal Revenue Service.
- Generational mortality and 2D mortality improvement scales are now permitted for actuarial equivalence, interest factor component and annuity factor component mortality tables. Age by year of birth mortality tables are also permitted for actuarial equivalence.

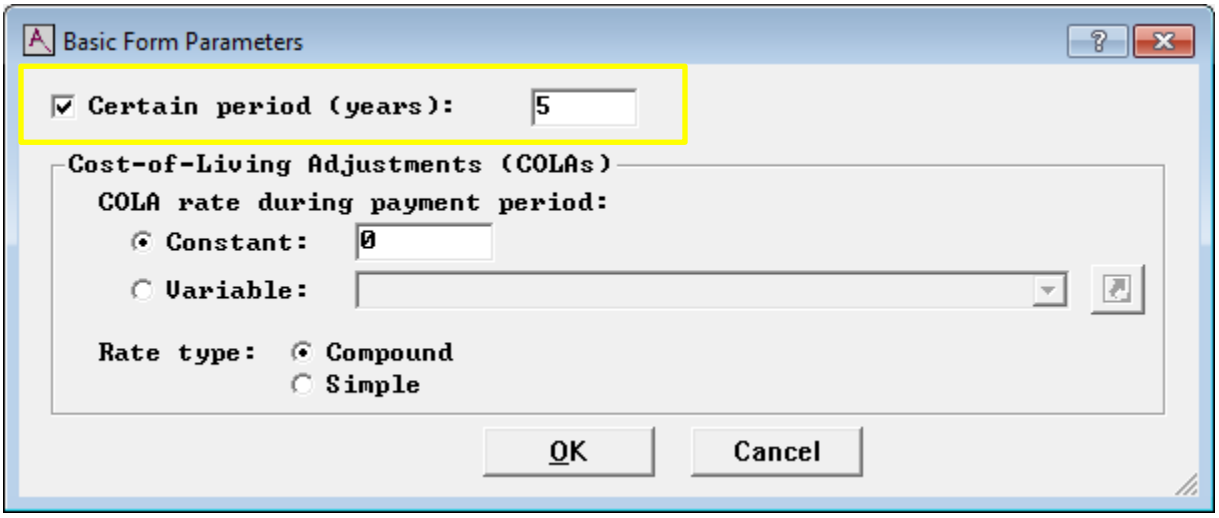
Payment Forms

- Significant flexibility has been added for defining cost-of-living adjustments for all payment forms that previously supported constant COLAs:
  - A new COLA Rate Tables library is available that enables the definition of COLA rates that vary by age, sex, and/or duration from commencement.

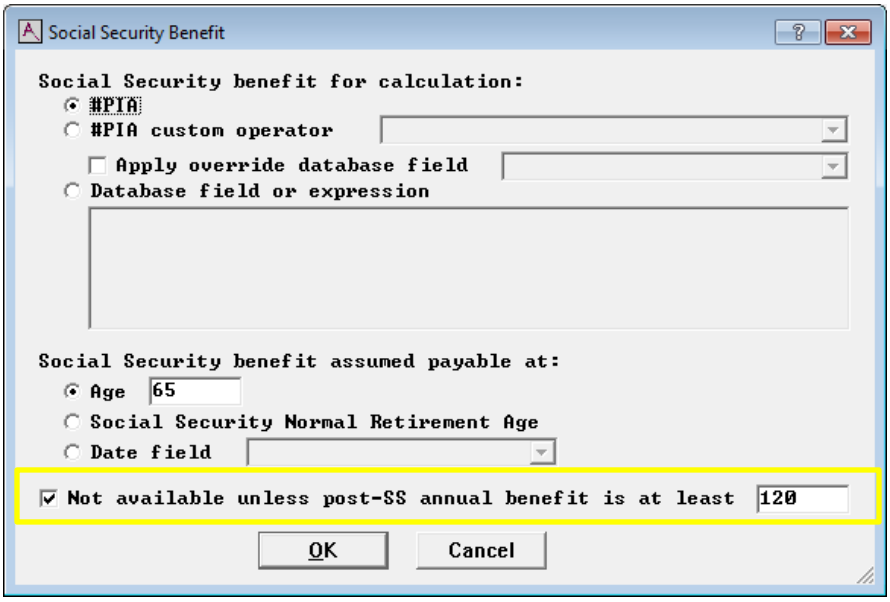
- A separate table of COLA rates can be specified for the deferral period than is applicable during the payment period for payment forms that are deferred.
- Simple COLAs are now supported. Previously all COLAs were assumed to be compound.



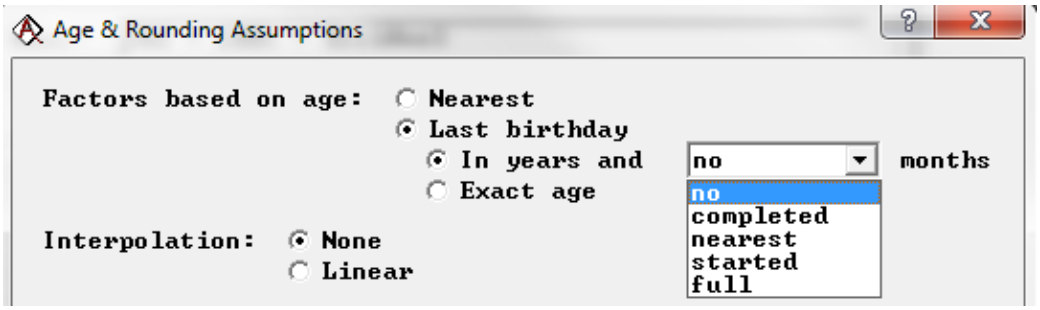
- The Social Security level income payment form can now have a (years) certain period. It is specified under the standard Social Security Level Income payment form Basic Form Parameters topic.



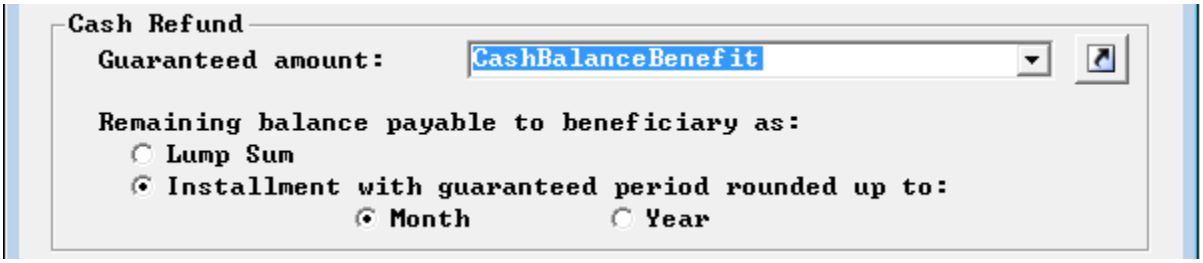
- A Social Security level income option can now be defined as "unavailable" if the post-Social Security annual benefit is less than a specified amount.



- Payment form conversion factors from tables, particularly age difference tables, can now be determined based on integral age last birthday by specifying age in years and "no" months.



- A Refund Annuity payment form type has been added for contributory plans. When you select this type of payment, the Basic Form Parameters will have a section that allows you to reference a Benefit Formula Component (presumably of the cash balance type) that calculates the accumulated contributions with interest at each applicable date. You also specify whether, at the member's death, the remaining balance, if any, is payable as a lump sum (a classic refund annuity) or in installments (generally referred to as a modified cash refund annuity).



If the remaining balance is payable in installments:

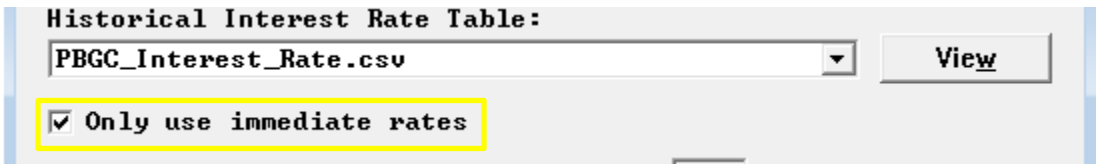
  - The certain period end date will be included in the Output Definition results and in any Access output. This certain period end date will also be provided for any payment form with a certain period.
  - The calculated "certain period" for each commencement date will be included in any XML output at the "Units" tag (if it was selected in the XML Output Linkage to be part of the payment form detail).

- The actuarial equivalence calculation for a payment forms can now, optionally, be made based on the spouse/beneficiary's age and sex rather than the member's. This facilitates calculating death benefits where the lump sum value of the member's pension is payable over the beneficiary's lifetime.

For more information about how to use this parameter, consult the ProAdmin Help article Using beneficiary's date of birth to compute optional forms of payment.

Interest Rate Tables

- When using PBGC based interest rate tables, a new check box allows you to indicate that only the immediate rate is used. When this box is checked, the PBGC immediate rates can be used in annuity and interest factor components without the need of creating an additional external table.

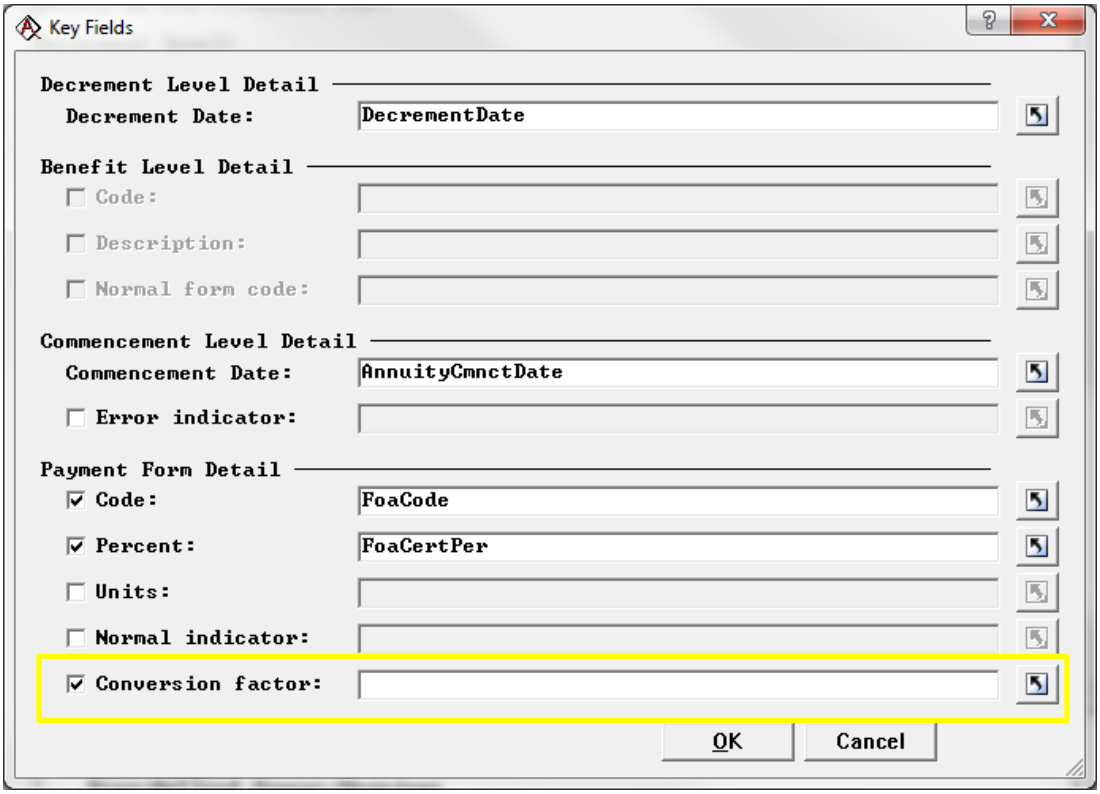


- The Interest Rate Tables topic under Projection Assumptions has a new feature for using known rates. Previously the "Last known rate" selection would use the most recent empirical rate based on the lookback and stability periods used to define the rate. Thus, if there was a year stability period and 11 months of known monthly rates since that time, the last stabilized rate would be used with no adjustment for recent trends.

  There are now two (2) choices with respect to known rates: "Last applicable rate" and "Last available rate." Choosing "Last applicable rate" will produce the prior default behavior. Choosing "Last available rate" will use the last know available rate (or rates) from the table. This is defined as the most recent historical interest rate adjusted for each of the Interest Rate Table parameters *except* the lookback and stability period. Instead, a monthly stability period and a 0 month lookback period are used to create the most recent applicable rate.

Output

- Payment form conversion factors are now automatically included in payment form Output Definition results. A new key field option in the XML Output Linkage allows the conversion factors to also be included in XML output.



- The Final Average Salary (FAS) details are now correct when the final average salary calculation includes salaries recognized after decrement. The detailed results tables also provide better documentation of the effective date of the high FAS calculation when freezes or post-decrement salaries are involved.
- The Summary Results exhibit will now suppress the display of payment form detail columns where the results for the applicable payment forms are all N/A. For example, if none of the payment forms available for a member have an "other" benefit amount or a change date, the exhibit would have previously shown those columns with an N/A; now those columns will be suppressed from the exhibit.
- Now no attempt is made to calculate joint & survivor forms when there is no beneficiary. Besides saving time, this results in less warning messages being issued, and there is now no detailed results output for these n/a forms.
- Payment form warning messages now include the name of the payment form rather than an index number.
- If relative value is calculated, the Summary Results exhibit now includes the lump sum equivalence in addition to the relative value.

  Under 3.06

Annual payment form values at Commencement Date(s):

Benefit Definition: Ret - Retirement Benefit Frozen at 12/31/2009

	Primary Bft	Benef. Bft	Other Bft	Benef. Bft 2	Chg. Date	Comm. Date	Rel. Val.
Commencement date: 4/1/2011							
Attained age: 57y 7m							
Life Annuity	18,146.64	N/A	N/A	N/A			1.0000
10 yr C&L	17,404.80	N/A	N/A	N/A			0.9864
50% J&S	15,826.68	7,913.40	N/A	N/A			0.9961
75% J&S	14,875.80	11,156.88	N/A	N/A			0.9944
100% J&S	14,032.68	14,032.68	N/A	N/A			0.9930

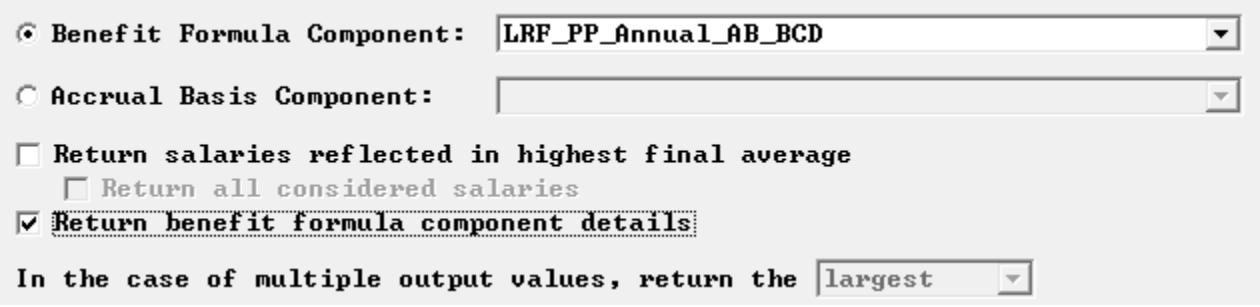
  Under 3.07

Annual payment form values at Commencement Date(s):

Benefit Definition: Ret - Retirement Benefit Frozen at 12/31/2009

	Primary Bft	Bene. Bft	LS Equiv.	Rel. Val.
Commencement date: 4/1/2011				
Attained age: 57y 7m (Beneficiary attained age: 47y 8m)				
Life Annuity	18,146.64	N/A	212,817	1.0000
10 yr C&L	17,404.80	N/A	209,915	0.9864
50% J&S	15,826.68	7,913.40	211,979	0.9961
75% J&S	14,875.80	11,156.88	211,635	0.9944
100% J&S	14,032.68	14,032.68	211,330	0.9930

- The Output Definition results, including the XML output from ProAdmin Server, can now include the details of ProAdmin's Late Retirement Benefit Formula Component calculation. This output is set up in the same manner as for career average and cash balance components: in the Output Definition Benefit Detail, select the benefit formula component that calculates the late retirement benefit, and then check the box to "Return benefit formula component details."



The new table will appear in the output definition results will look like this:

```
Name:  LRB
Type:  Late retirement
Code:  14
Value at decrement:  132,640.77
```

Date	MemberAge	AccrdBenefit	BenefitChange	InterestRate	ImmedAnnNRD	DefAnnFromNRD	IncrLateRetFact	BFCResult
9/1/2018	65.0000	102,726.82	4,531.93	0.070000	10.077008	10.077008	1.000000	102,726.82
12/31/2018	65.2500	104,664.13	1,937.31	0.070000	10.077008	9.835529	1.024552	105,248.95
12/31/2019	66.2500	109,604.64	4,940.50	0.070000	10.077008	8.887665	1.106649	116,473.69
12/31/2020	67.2500	112,865.37	3,260.74	0.070000	10.077008	8.010886	1.109448	129,221.55
3/31/2021	67.5000	113,688.49	823.11	0.070000	10.077008	7.804381	1.026460	132,640.77
4/1/2021	67.5833	113,688.49	0.00	0.070000	10.077008	7.735546	1.035594	133,821.08
12/31/2021	68.2500	113,688.49	0.00	0.070000	10.077008	7.200724	1.112511	143,760.42
12/31/2022	69.2500	113,688.49	0.00	0.070000	10.077008	6.628785	1.086281	156,164.22

To have the late retirement details table appear in the XML, you will need to add the following reserved elements to your XML schema in the ProAdminBFCDetails\ProAdminBFC\Details node:

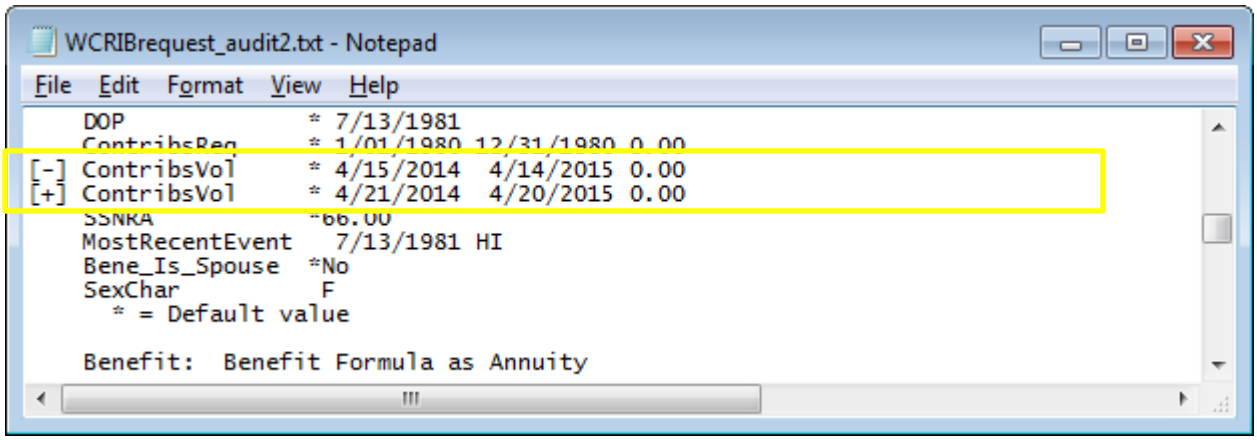
```
<xsd:element name="AccrdBenefit" type="xsd:decimal" minOccurs="0"/>
<xsd:element name="BenefitChange" type="xsd:decimal" minOccurs="0"/>
<xsd:element name="ImmedAnnuityNRD" type="xsd:decimal" minOccurs="0"/>
<xsd:element name="DefAnnuityFromNRD" type="xsd:decimal" minOccurs="0"/>
<xsd:element name="CumLateRetFact" type="xsd:decimal" minOccurs="0"/>
<xsd:element name="IncrLateRetFact" type="xsd:decimal" minOccurs="0"/>
```

For more information on reserved elements in the XML schema, consult the ProAdmin Help article Reserved XML Elements.

- A new comment indicating the computer/server name that executed a calculation has been added to the comments section of the XML output created by ProAdmin Server and ProAdmin Desktop Calculator testing. This new comment will look like the following:

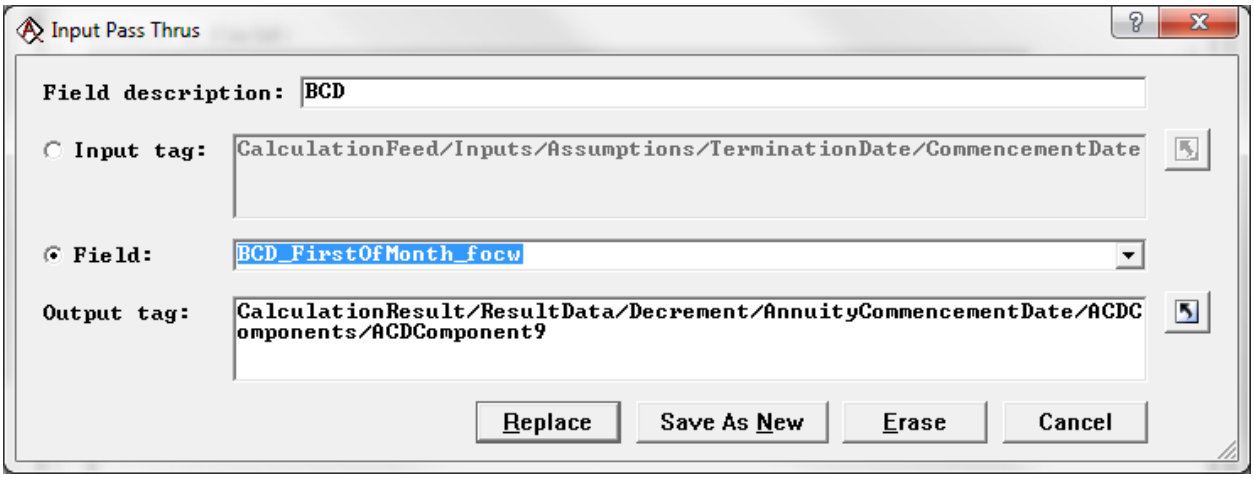
```
<!-- Computer/Server name: MyComputerName -->
```

- The Calculator Testing feature of ProAdmin Desktop has been enhanced with regard to the text documents produced when it encounters a difference between the baseline XML or Audit Report file as part of the compare process. Previously a new file would be created with a 2 and you would have to compare the original and the new file to determine what had changed. Now the new file will use the WinTech's standard + - notation to show you the original file entry and the changed file entry in the file.



- Repository File Maintenance will no longer update the recent clients list with clients opened and updated as part of the Manage | Update Clients process.

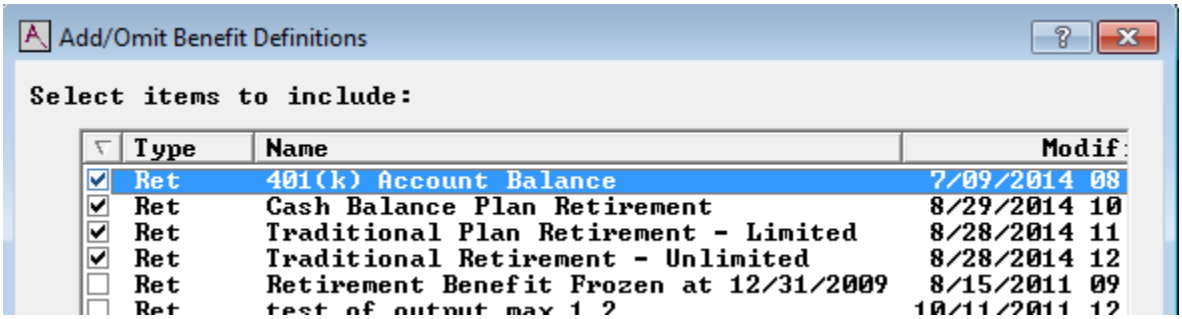
- Input Pass Thru items referenced in an XML Output Linkage can now point to a Data Dictionary field rather than directly to the XML Database Linkage. This allows outputting calculation data after it has been adjusted through the Census Specifications Data Defaults feature.



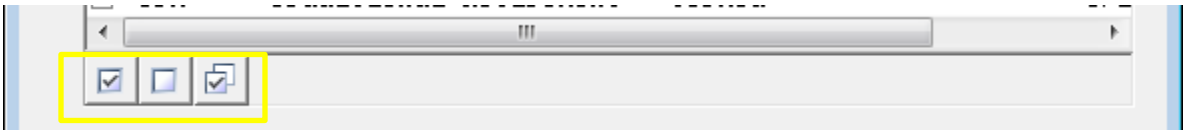
System & Interface

- ProAdmin's help is now browser-based and hosted online for more reliable access (as compared with local .chm files which were increasingly blocked by security updates). The content has been greatly enhanced with many more internal links for easy reference, and it has been reformatted with a modern font for better readability.

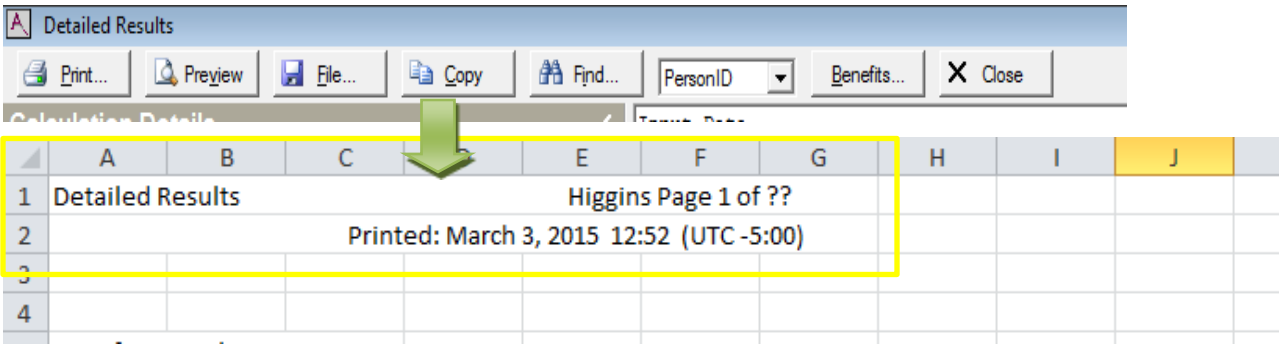
- For add/omit (e.g., benefits in a plan, payment forms in a Benefit Definition, etc.), ProAdmin now displays all of the library's columns (type, name, modified date, etc.) and lets you sort by them to make it easier to pick the right entries in the list.



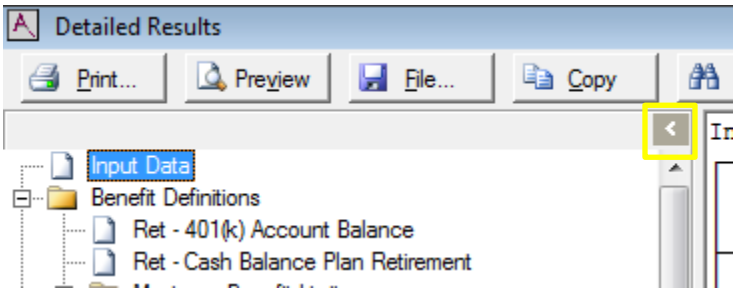
Three options are included on the bottom of the add/omit dialog that allow you to check all entries, uncheck all entries, and toggle (check/uncheck) entries.



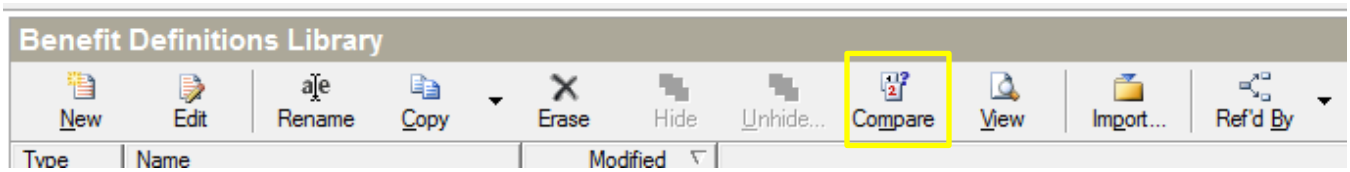
- When using the Copy button to paste output into Excel, the user/timestamp header info is now included for better documentation. This also makes using the Copy button equivalent to using the File button.



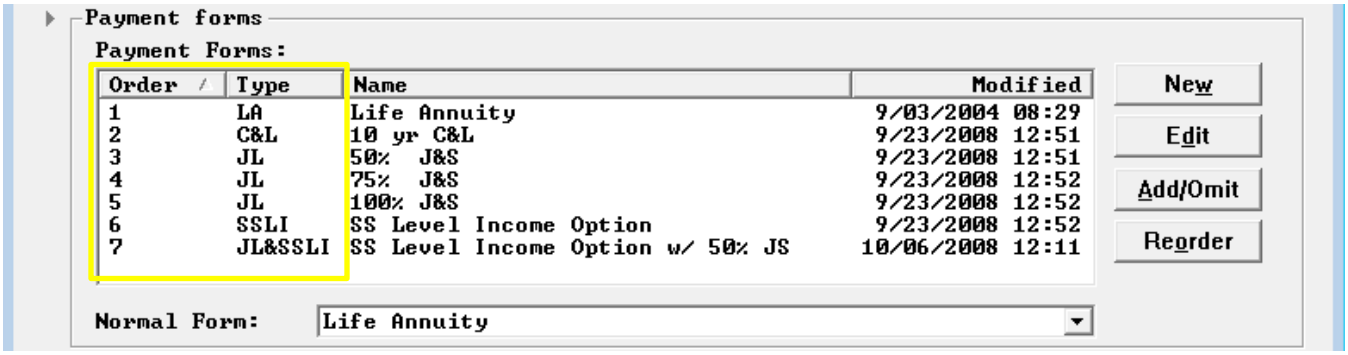
- In detailed results, you can hide the tree list to maximize the room available for displaying the report.



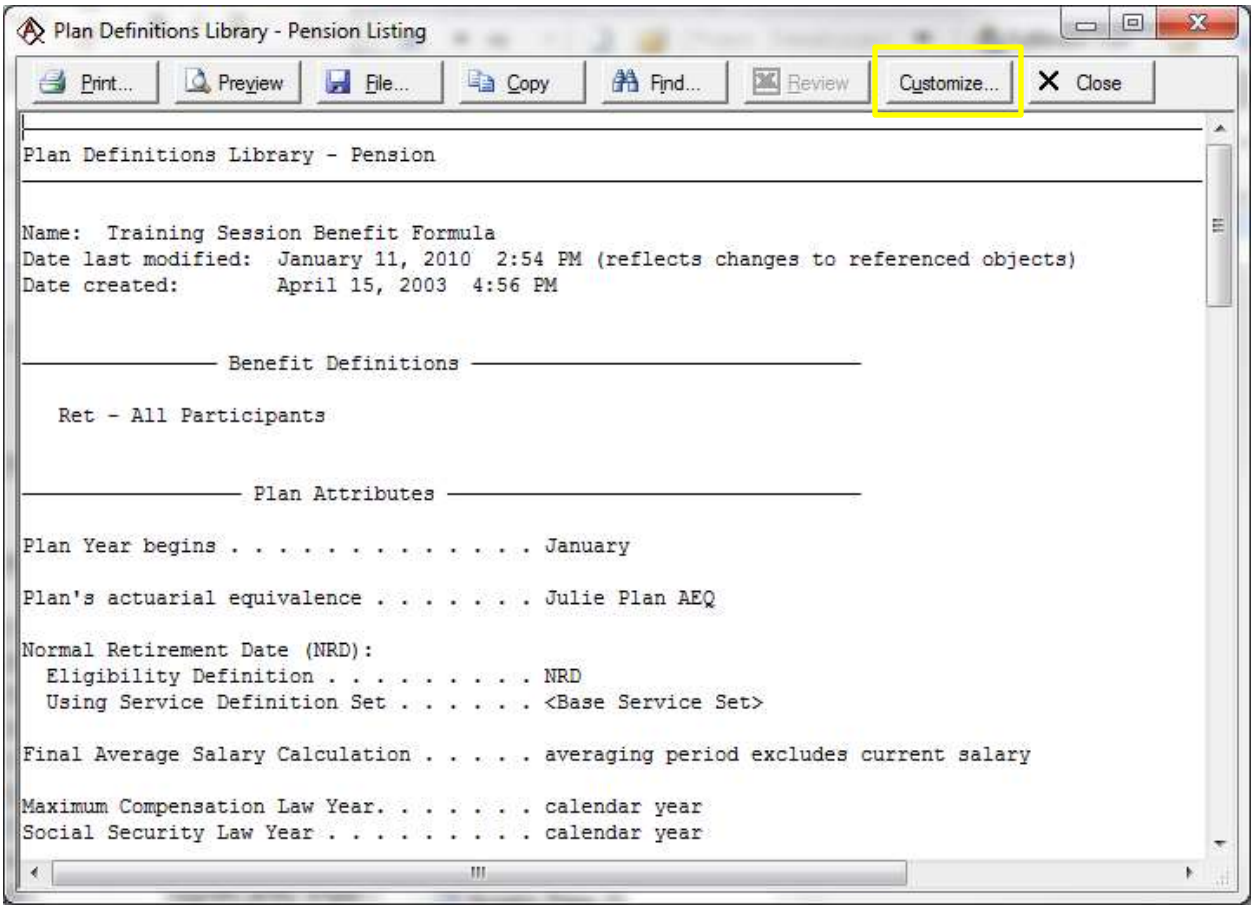
- You can now compare up to 62 items, up from the previous limit of 10.



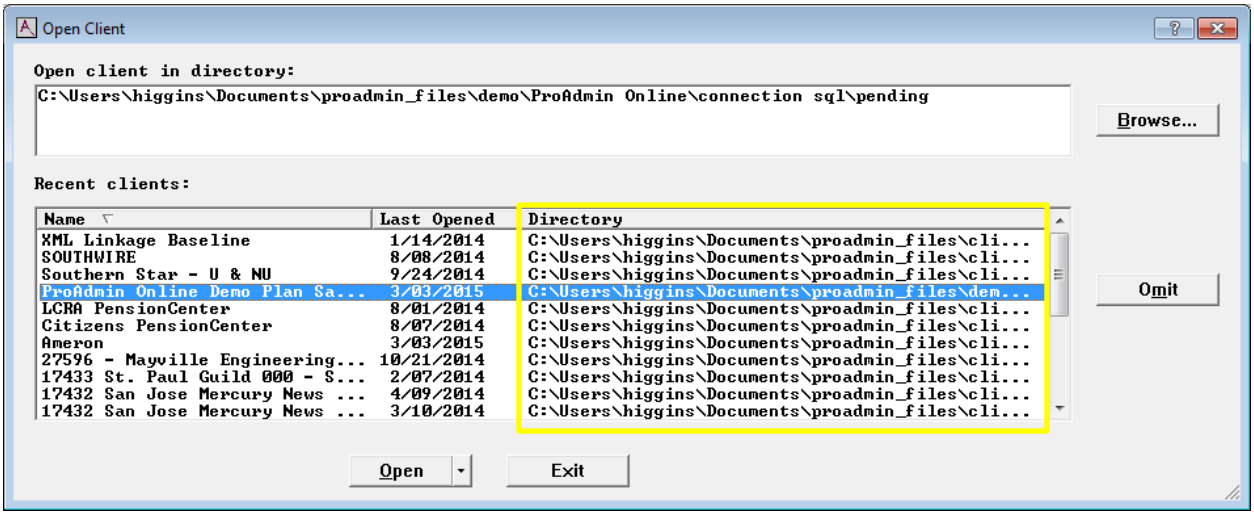
- A new setting, RegPath= has been added to the ProAdmin.ini file to define the default location for historical regulatory data files. This allows a single source of files to be used for local and server calculations.
- The payment form section of the benefit definition dialog box has been enhanced to include the type and order.



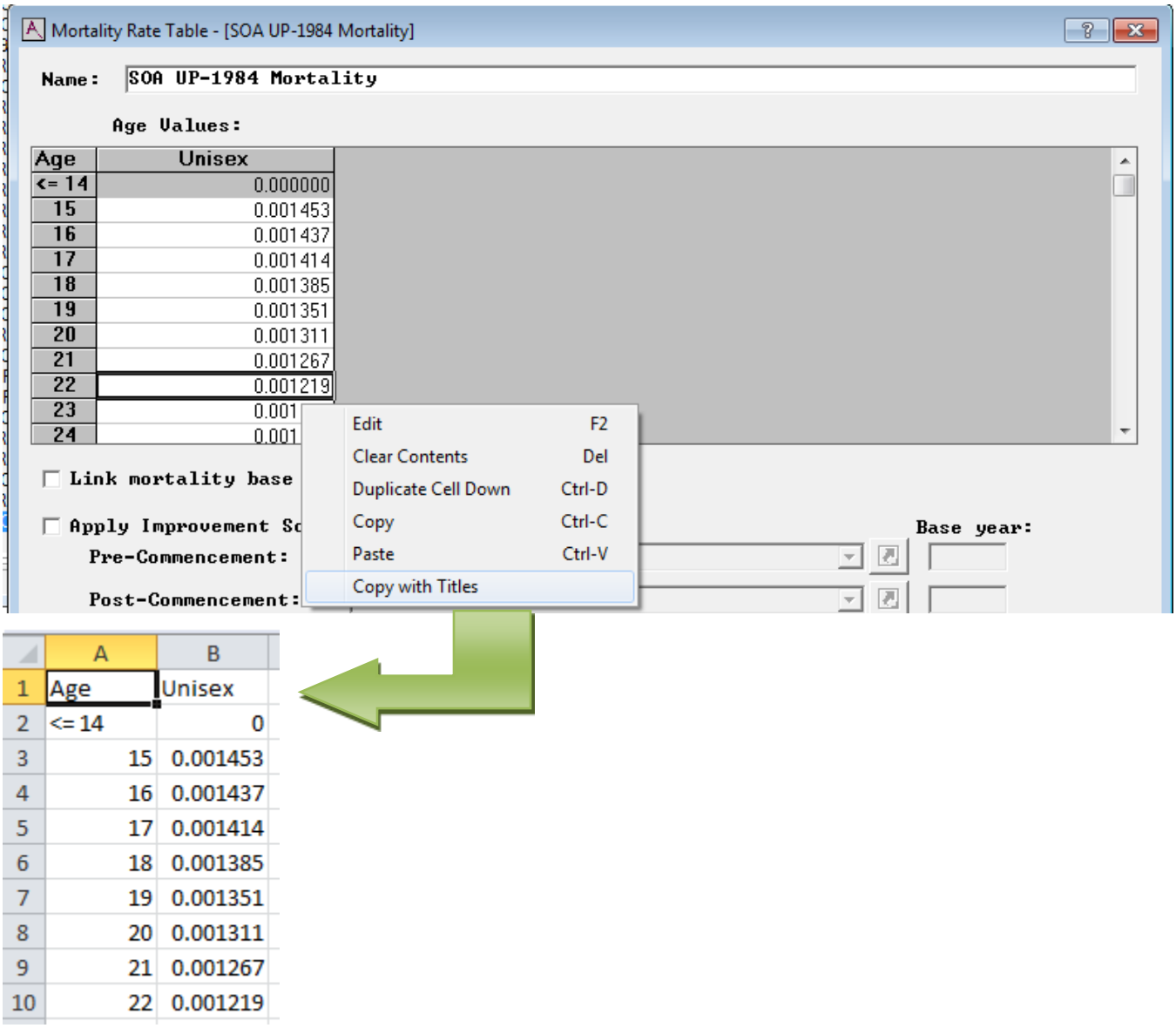
- Viewing the Inputs of a Plan Definition is now significantly faster. Instead of starting with the entire tree of inputs, ProAdmin now starts with the only the Plan Definition view and makes the Customize button available to select further detail.



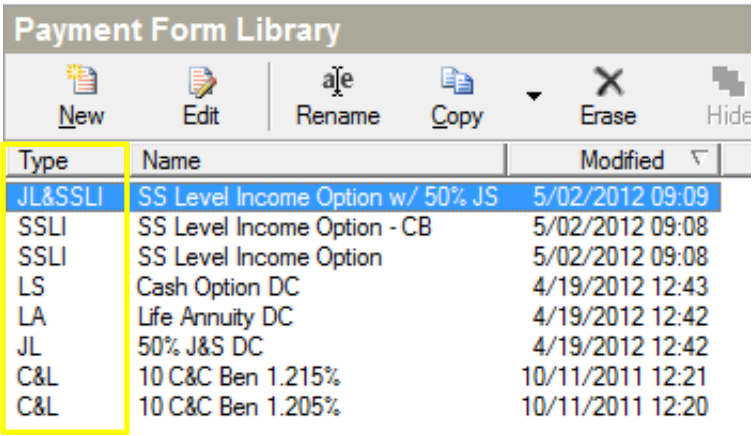
- The client path is now included in Open Client and Update Clients to help distinguish between clients with the same name.



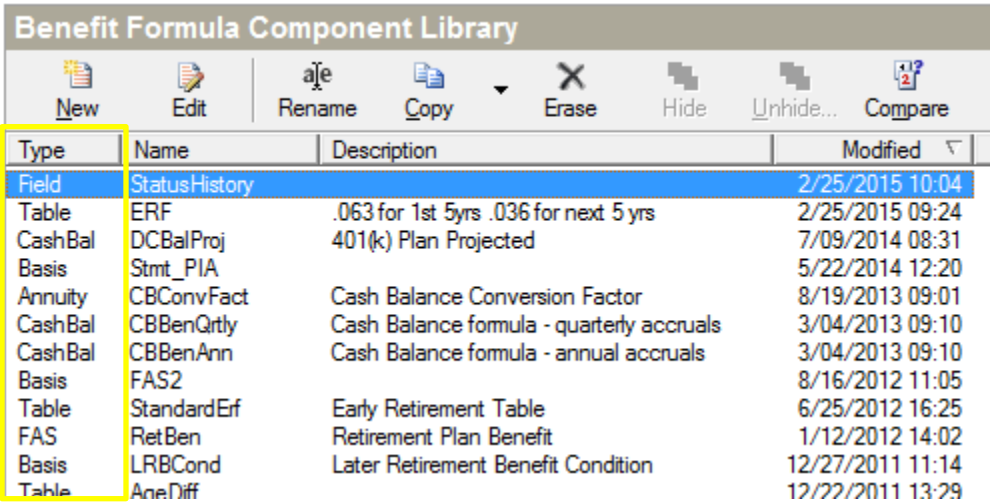
- In tables (and other inputs presented in a grid such as mortality rates), a new "Copy with titles" right-click option lets you include the row and column headings on the clipboard. This saves you from having to label the data after pasting.



- The payment form library now displays a Type column.



- The Type column displayed in the Benefit Formula Component library now distinguishes between types of Accrual Definitions.



Type	Name	Description	Modified
Field	StatusHistory		2/25/2015 10:04
Table	ERF	.063 for 1st 5yrs .036 for next 5 yrs	2/25/2015 09:24
CashBal	DCBalProj	401(k) Plan Projected	7/09/2014 08:31
Basis	Stmt_PIA		5/22/2014 12:20
Annuity	CBConvFact	Cash Balance Conversion Factor	8/19/2013 09:01
CashBal	CBBenQrtly	Cash Balance formula - quarterly accruals	3/04/2013 09:10
CashBal	CBBenAnn	Cash Balance formula - annual accruals	3/04/2013 09:10
Basis	FAS2		8/16/2012 11:05
Table	StandardErf	Early Retirement Table	6/25/2012 16:25
FAS	RetBen	Retirement Plan Benefit	1/12/2012 14:02
Basis	LRBCond	Later Retirement Benefit Condition	12/27/2011 11:14
Table	AgeDiff		12/22/2011 13:29

- A time zone issue has been resolved that prevented you from viewing saved calculation results run by a user in a time zone ahead of you until your clock catches up to theirs at the time of the run.
- The user-specific settings stored in pvcom.sf have been moved to proadmin.ini. Proamin.ini is now the single source for user-specific settings. Existing pvcom.sf files can be deleted after running version 3.07 for the first time.
- The FILE FULL limit of 4 GB is now harder to hit because ProAdmin compresses calculation results run and saved. (This enhancement was released in a 3.06 patch.) Here is a calculation that took 2,359 KB of space in 3.06 but only 257 KB in 3.07.

	Name	User ID	Modified	Size
D	111-11-1122 * higgins * 1		4/06/2012 09:37	9 KB
	Jones - NEW	Higgins	3/04/2015 16:15	257 KB
	Jones - OLD	Higgins	3/04/2015 16:05	2,359 KB

- A size column has been added to Estimated, Final and Dates/Age/Service libraries to make it easier for you to see which runs are big.
- A column has been added to the Estimated, Final and Dates/Age/Service libraries that indicates whether a calculation has saved data. Entries preceded by an asterisk (*) contain no data, entries preceded by a "D" have saved data but no results, and entries preceded by a blank have saved data and results.

	Name	User ID	Modified	Size
	Jones - 306	Higgins	3/04/2015 09:12	319 KB
D	111-11-1122 * higgins * 1		4/06/2012 09:37	9 KB
D	Jones - test of output mapping		4/06/2012 09:37	7 KB
D	Jones - not in data		4/06/2012 09:36	9 KB
D	Jones - frozen		4/06/2012 09:36	6 KB
D	Smith		4/06/2012 09:36	8 KB
*	no match		4/06/2012 09:36	1 KB

- ProAdmin can now utilize MSXML 6.0. It also now requires at least version 4.0.

Administration Factors

- Payment Forms can now specify variable COLA rates.

Changes Log

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

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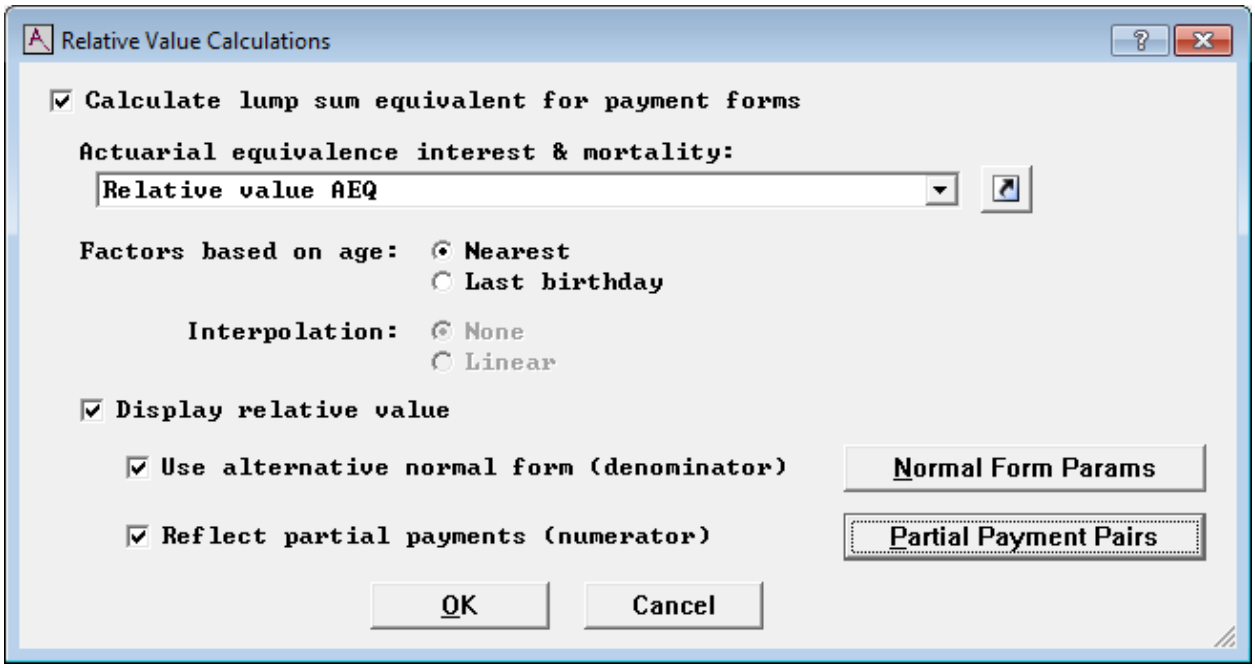
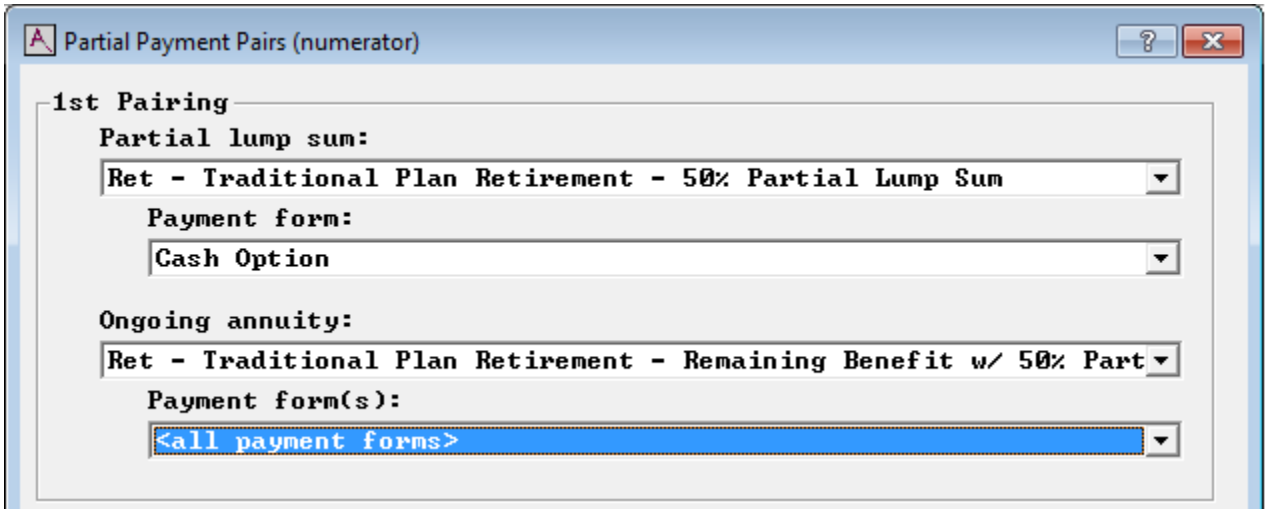
Relative Value for Partial Payments

In ProAdmin 3.07 you can now pair up benefits to correctly build the numerator for payments where part of the benefit has been paid out in a lump sum.



The **Reflect partial payments (numerator)** check box is available for relative value calculations when the **Use alternative normal form (denominator)** box is also checked. The two boxes are dependent on each other because: if a plan has partial payments that must be combined for the numerator, those partial payments must require an alternative denominator as well in order to calculate a reasonable relative value. The **Reflect partial payments (numerator)** check box, when checked, indicates that the numerator of the relative value calculation -- the total value of the optional form of payment -- should be something more than just the value of the optional form of payment in the current Benefit Definition. This is typically used for partial lump sum payments which may or may not be related to benefit restrictions under the Pension Protection Act of 2006 (PPA).

Click on the **Partial Payment Pairs** button to define the appropriate numerator.



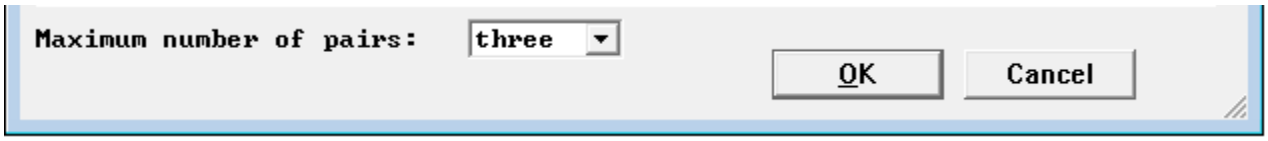
The Partial Payment Pairs (numerator) dialog box displays either 3 or 6 "payment form pairings, each in its own frame. For the 1st Pairing, and also for any subsequent pairings:

1. Choose the Benefit Definition containing the **Partial lump sum** whose value should be added to one or more other Benefit Definitions in order to define the value of a single total optional form of payment under the plan. For example, if the plan has an option to take 25% of the benefit as a lump sum and the other 75% as an annuity, choose the Benefit Definition that calculates the 25% lump sum. The summary results will not display relative values for payment forms specified as partial lump sums; instead, their value will be included in the relative value displayed for the ongoing annuity(ies) specified below.
2. Select the **Payment form** that represents the desired partial lump sum from those associated with the Benefit Definition selected in step 1 above. If the Benefit Definition has only one payment form, that form will be chosen for you.
3. Choose the Benefit Definition containing the **Ongoing annuity** to which the value of the partial lump sum should be added. For example, if the plan has an option to take 25% of the benefit as a lump sum and the other 75% as an annuity, choose the Benefit Definition that calculates the 75% annuity form(s) of payment.
4. Select the **Payment form(s)**, from those associated with the Benefit Definition selected in step 3 above, to which the value of the partial lump sum should be added for the relative value calculation. If the value of the lump sum can be added to all of Benefit's payment forms, select "<all payment forms>." If the actuarial equivalence methodology requires that a different "partial lump sum" be added to each optional form of payment, then a separate "pairing" must be defined for each combination.

When you first enter the dialog box, the 1st Pairing will indicate that the **Partial lump sum** is "<not applicable>" and the rest of the dialog box will be ghosted. Selecting a Benefit Definition for the **Partial lump sum** for the 1st Pairing will cause the rest of that pairing to become available and will cause the 2nd Pairing to become partially available, but its **Partial lump sum** will be specified as "<not applicable>."

Multiple pairings

If you require more than three (3) partial payment pairings, the Maximum number of pairs on the bottom of the dialog allows you to choose six pairing and will re-size the dialog box accordingly. When you later re-open the Plan Definition, ProAdmin will choose either the three or the six dialog, depending on the number of pairs defined. To remove a pair from the list, choose "<not applicable>" from the choices for the **Partial lump sum** pair.



While the dialog box cannot currently handle more than six pairings, the underlying mechanics of ProAdmin can. If you require more than six pairings, please contact ProAdmin Support. You will need to send your client files and describe your requirements. We will update your files and return them, and the Plan Definition view listing will show that all of your desired pairings are included.

Output

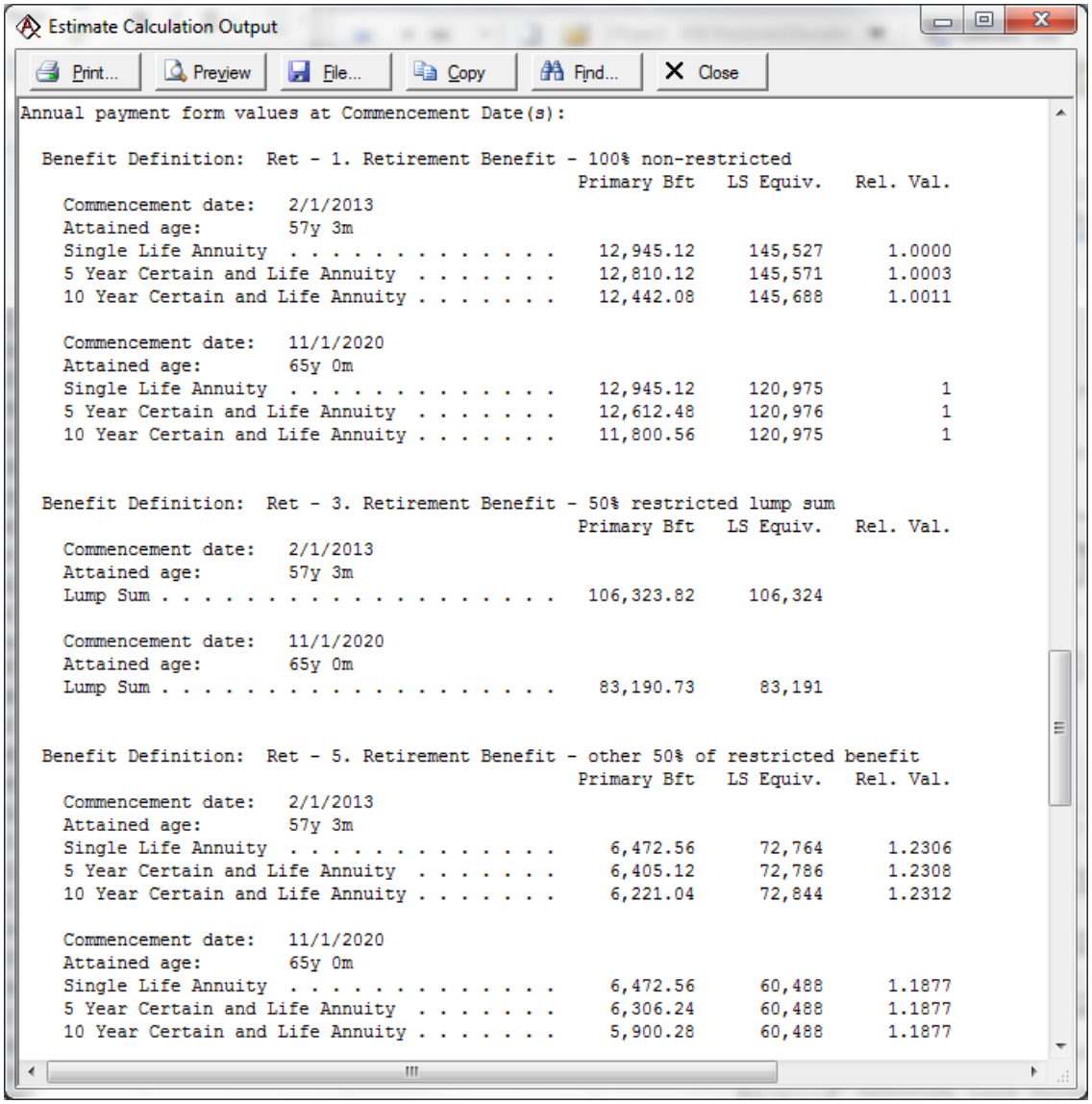
If you reflect partial payments, the Detailed Results for partial payment payment forms will include a footnote indicating that the payment form "is a partial lump sum included elsewhere for relative value purposes," and the payment form details for ongoing annuities will include an "additional lump sum" column totaling the amount to be added to the form's lump sum equivalence in order to calculate the relative value.

PersonID: 111-11-1111

Commence Date	Elig-ible?	Actual Member Age	Form Member Age	Interest Rate	Form Value (a)	Normal Form (b)	Conversion Factor (b)/(a)	Normal Form Benefit	Member Benefit	LSQ Basis Form Value	Lump Sum Equiv	Add'l Partial Lump Sum	LS Equiv Relative Value
4/01/2016	Yes	62y 7m	63.000	0.070000	10.845202	10.521449	0.970148	39,542.31	38,361.84	12.272251	470,787	501,185	1.0231

Lump Sum Equivalence Relative Value:
  Interest rate = 0.06
  at 4/1/2016
  This is a partial lump sum included elsewhere for relative value purposes

The Summary Results will include both the lump sum equivalence value (for all payment forms) and the relative value (for those payment forms not defined as a "partial lump sum").



Annual payment form values at Commencement Date(s):

Benefit Definition: Ret - 1. Retirement Benefit - 100% non-restricted

	Primary Bft	LS Equiv.	Rel. Val.
Commencement date: 2/1/2013			
Attained age: 57y 3m			
Single Life Annuity	12,945.12	145,527	1.0000
5 Year Certain and Life Annuity	12,810.12	145,571	1.0003
10 Year Certain and Life Annuity	12,442.08	145,688	1.0011
Commencement date: 11/1/2020			
Attained age: 65y 0m			
Single Life Annuity	12,945.12	120,975	1
5 Year Certain and Life Annuity	12,612.48	120,976	1
10 Year Certain and Life Annuity	11,800.56	120,975	1

Benefit Definition: Ret - 3. Retirement Benefit - 50% restricted lump sum

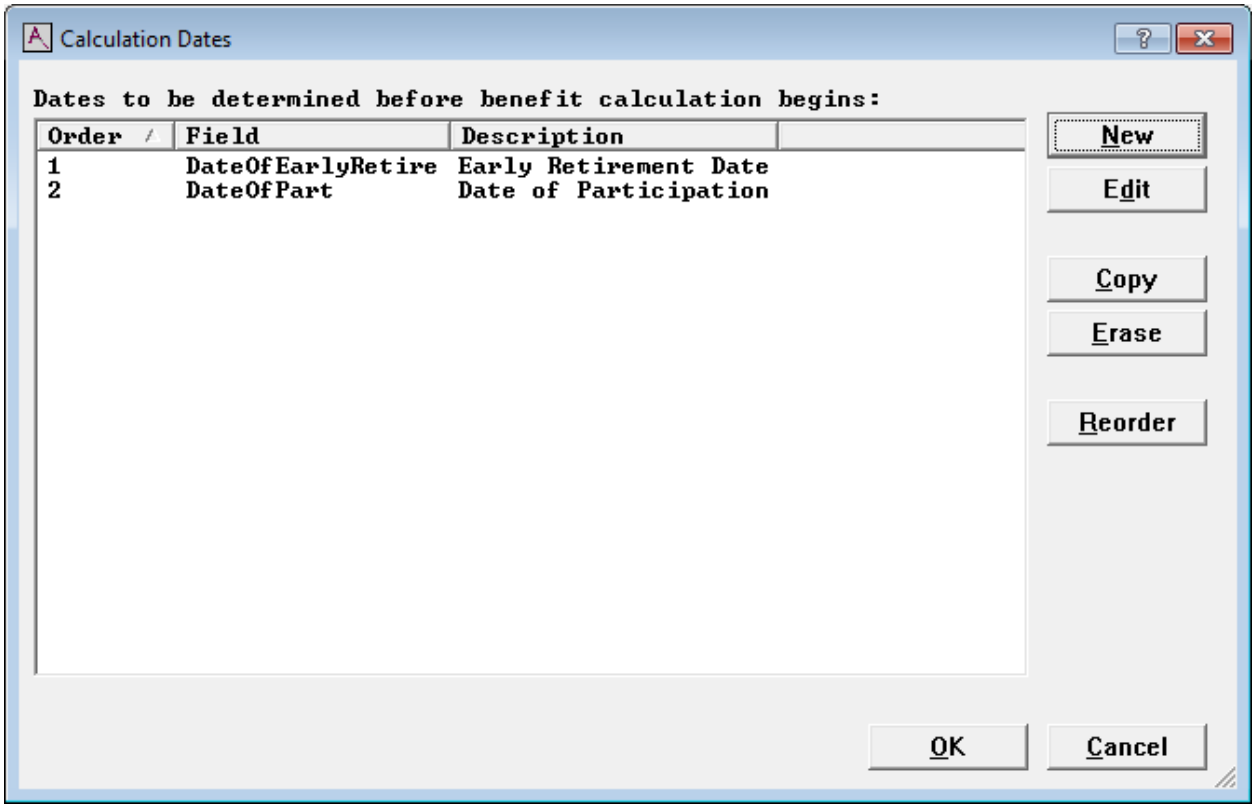
	Primary Bft	LS Equiv.	Rel. Val.
Commencement date: 2/1/2013			
Attained age: 57y 3m			
Lump Sum	106,323.82	106,324	
Commencement date: 11/1/2020			
Attained age: 65y 0m			
Lump Sum	83,190.73	83,191	

Benefit Definition: Ret - 5. Retirement Benefit - other 50% of restricted benefit

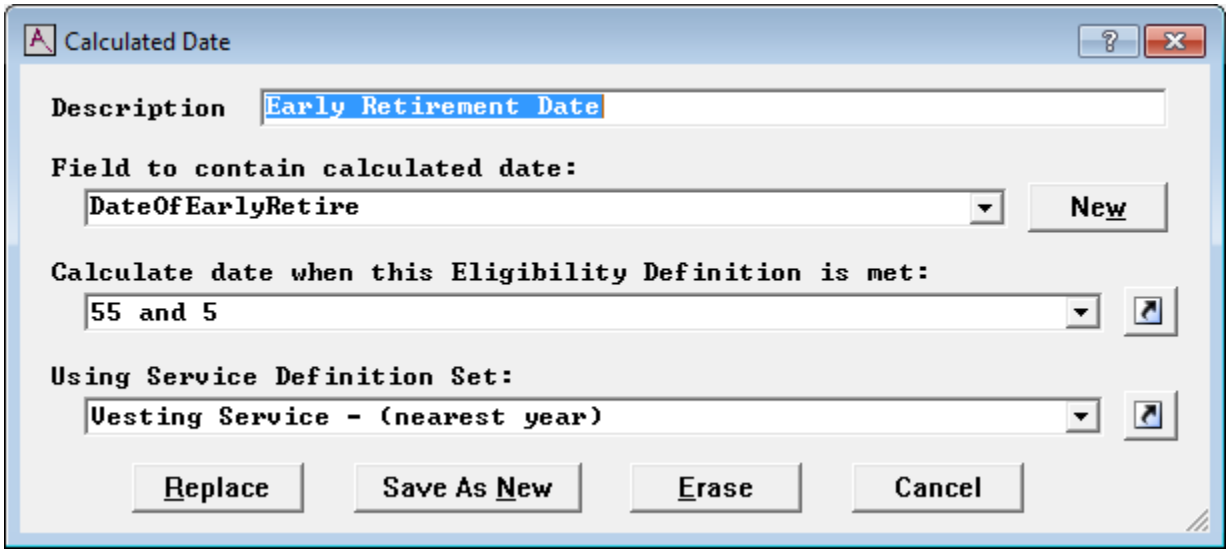
	Primary Bft	LS Equiv.	Rel. Val.
Commencement date: 2/1/2013			
Attained age: 57y 3m			
Single Life Annuity	6,472.56	72,764	1.2306
5 Year Certain and Life Annuity	6,405.12	72,786	1.2308
10 Year Certain and Life Annuity	6,221.04	72,844	1.2312
Commencement date: 11/1/2020			
Attained age: 65y 0m			
Single Life Annuity	6,472.56	60,488	1.1877
5 Year Certain and Life Annuity	6,306.24	60,488	1.1877
10 Year Certain and Life Annuity	5,900.28	60,488	1.1877

Calculated Dates

The new Calculated Dates topic within Plan Definitions allows you to compute various dates that can then be used throughout the benefit calculation. These dates are calculated after the participant data has been loaded, defaulted and validated, but before any benefits are calculated. You could, for example, calculate the date of participation or an early retirement date, and then use it in any expression (except Data Default expressions) to control the benefit calculation. All Calculated Dates are added to the set of calculation dates (i.e. the left date column of detailed results exhibits).



The Calculation Dates dialog presents a summary of the date calculations, including the **Order**, Data Dictionary **Field** name and **Description**. Similar to standard ProAdmin libraries, the right side of the dialog has New, Edit, Copy and Erase buttons to manage the date definitions. There is also a **Reorder** button to control the order when there are multiple definitions for the same field. ProAdmin will automatically check dependencies and insure that if, for example, the date of participation is needed to calculate the normal retirement date, that date of participation is calculated first.



To define a Calculated Date, you need to specify:

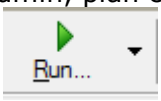
1. A **Description** of the calculation (e.g., date of participation)
2. A Data Dictionary scalar date **Field to contain the calculated date**. The Data Dictionary field should not have a Database or XML Input linkage (i.e., you should not be intending to read the field as part of the input data), nor should it be included in the Data Defaults.
3. An Eligibility Definition to **Calculate** the **date when this Eligibility Definition is met**.
4. A **Service Definition Set** that can be used to evaluate the Eligibility Definition.

If desired, multiple specifications for the same date field may be defined. For example, there may a typical definition of date of participation, and then alternatives that apply to certain subgroups of the plan. Once a date has been affirmatively defined, ProAdmin will ignore any subsequent calculations for which either the member is excluded based on the Eligibility Definition Selection Expression, or which otherwise produce a "never eligible" result. The Calculation Summary results will include the description of the "winning" date calculation definition.

You can put a Calculated Date in an Output Definition by defining an Input Pass Thru that retrieves its value from the Data Dictionary field holding its calculated value.

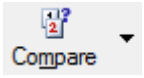
Run and/or Compare

The new run and compare features introduced with ProAdmin 3.07 will allow you to easily validate new versions of ProAdmin, plan changes, and other tasks related to checking your coding.

The **Run** split button 

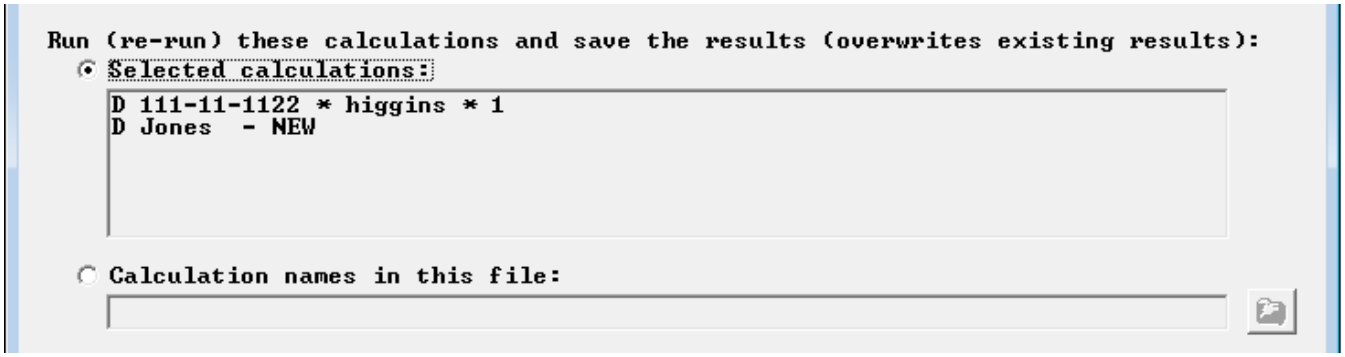
has the following choices:

1. **Run...** allows you to specify the desired details and then run one or more calculations, saving the new calculation results (overwriting any existing results).
2. **Re-run and compare to saved results...** allows you to specify the desired details and then re-runs one or more calculations and returns a summary of any differences between the new results and the prior results, but does not overwrite the existing results.
3. **Run and compare to saved results in another Client...** allows you to specify the desired details and then runs one or more calculations, saving the new results, and returns a summary of any differences between the new results and the existing results on a different client.

The **Compare** split button 

has the following choices:

1. **Compare library entries** is the same default option available for all other library types.
2. **Compare saved results...** allows you to compare the saved results of two selected calculations (such as for comparing the difference between two slightly different sets of test data).
3. **Compare to saved results in another Client...** allows you to specify the desired details and then compares one or more calculations and returns a summary of any differences between the current results and the existing results on a different client.



Regardless of the **Run** split button or the **Compare to saved results in another Client...** selection, there are two alternative ways to specify the calculations to be run/compared:

- **Selected calculations:** displays the calculations that were selected from the current calculation library just prior to clicking on a run or compare option. Calculations that were selected but do not have saved results are indicated by an asterisk (*) prefix if there is no saved data, or D if there is saved data.

  Calculation names in this file: allows you to specify a text file that contains names of the calculations you want to execute. The file you create must contain the name of one of the calculations in the library. It ignores case. If the name doesn't match it is ignored.

  If you are running entries form the Estimated Benefit Calculations library, then [ESTIMATES] must appear in a line above the names. You can have more than one kind of

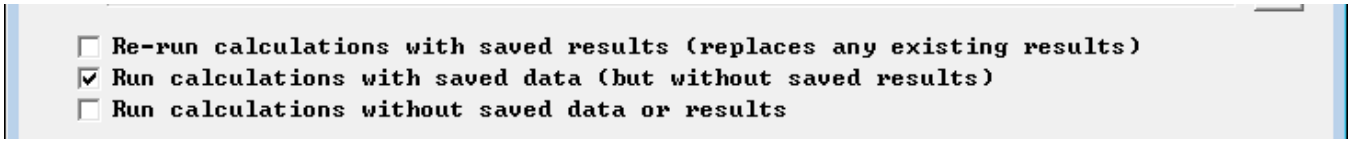
Benefit Calculation type in the file, but the names must be grouped, and each section must be preceded by a header: [ESTIMATES], [FINALS], or [DAS] for estimated benefit calculations, final benefit calculations and dates/age/service calculations, respectively. The order of the groups is irrelevant, but the calculations in each group are processed in the order you have established.

This is an example of a calculation list file that contains the name of Estimated Benefit Calculations and Final Benefit Calculations:

```
[ESTIMATES]
Frank Capra
Steven Spielberg
Martin Scorsese
Alfred Hitchcock

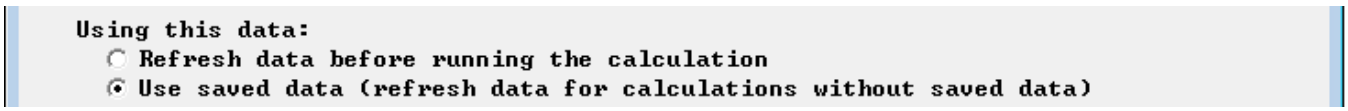
[FINALS]
Captain Kidd
Henry Morgan
Black Bart
Dread Pirate Roberts
Inigo Montoya
```

Even if you only have the names of one type of calculation in the file, a header is required. For example, if you are running Estimates then the [ESTIMATES] section head should precede the names.



When running calculations using either the **Run...** or the **Run and compare to saved results on another Client...** split button choices, you may initially choose a broader list of calculations than you really want to process, and then narrow them down through selection of one or more of the following check-boxes on the dialog:

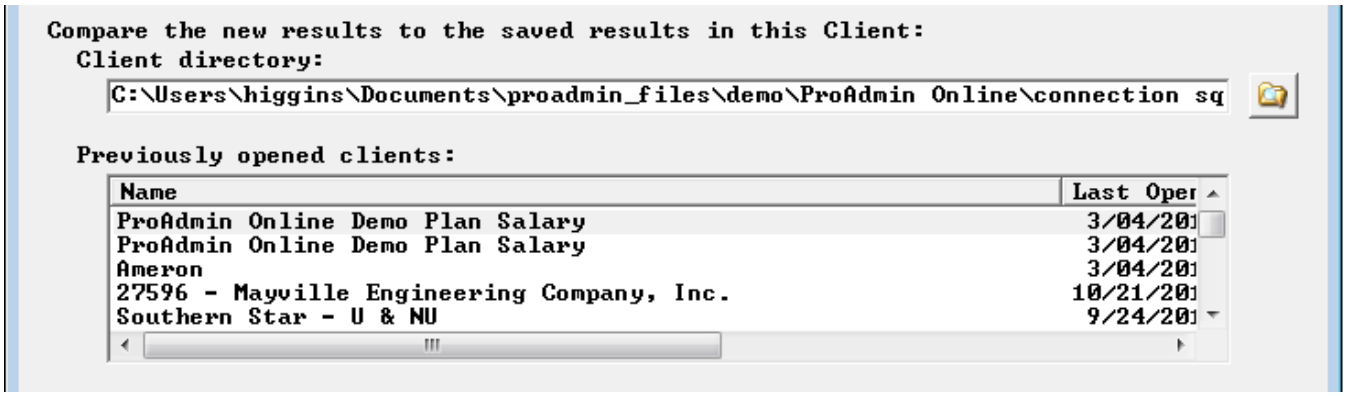
- **Re-run calculations with saved results (replace existing results)** allows you to include only calculations with saved results.
- **Run calculations with saved data (but without saved results)** allows you to include calculations with saved data but with no saved results. Calculations of this type are prefixed with a "D" in the calculations library.
- **Run calculations without saved data or results** allows you to include calculations that have been defined but not run and do not have saved data. Calculations of this type are prefixed with an asterisk (*) in the calculation library.



When running calculations using any of the three (3) **Run...** split button choices, specify the desired option for data by setting the choice under **Using this data:**

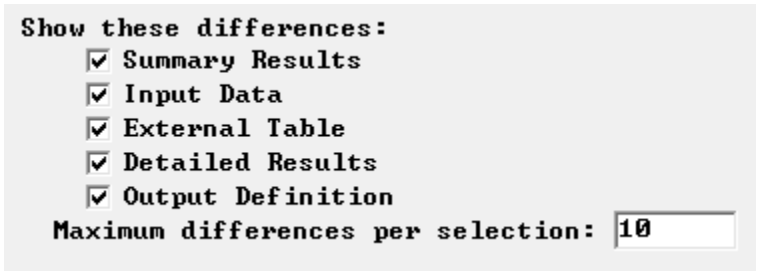
- **Refresh data before running the calculation** reads in new data from the data source (either a Database Linkage or an XML file) specified in the underlying calculation library entry.

- **Use saved data (refresh data for calculations without saved data)** uses the data already saved with each calculation library entry, reading in new data only for those calculation library entries without saved data.



When executing the **Compare to saved results in another Client…** or **Run and compare to saved results in another Client…,** the following dialog box controls help specify the location of the ProAdmin client files that contain the prior calculation results:

- **Client directory:** indicates the path to the directory containing the ProAdmin client files with the prior calculation results. This file will automatically be populated with the location of the directory most recently used for this purpose.
- **Previously opened clients:** allows you to select the **Client directory** by clicking on the name of a client file in the list.



When comparing calculation results under the **Compare saved results…**, **Compare to saved results in another Client…**, **Re-run and compare to saved results…**, or **Run and compare to saved results in another Client…**, the dialog box has controls that allow you to set what differences to look for and how many differences to show. The **Show these differences:** selections control the amount of detail to be displayed:

- **Summary Results** displays differences between what ProAdmin considers to be all of the material calculation results, as shown in the Summary Results.
- **Input Data** displays any differences between the new and old input data. This is the information shown in the Detailed Results Input Data exhibit.
- **External Table** compares the file time stamps of all external tables used and lists any differences.
- **Detailed Results** provides summary information about differences between the underlying Detailed Results exhibits. It does not compare the exhibits directly.
- **Output Definition** displays differences among the output items contained in the Output Definition exhibit.
- **Maximum differences per selection** controls the number of differences shown for each category selected.

Run and/or Compare Report

The report produced by the run and/or compare process summarizes all of the calculations selected and processed, and then provides a detailed comparison of any differences.

The first section of the report, "Summary of the calculations processed", displays an overview of the calculations processed.

```
Summary of calculations processed:
   3 calculations selected
   3 calculations run
      0 aborted
      3 ran and had saved results on other client
   3 calculations compared
      2 had no differences
      1 had differences
```

Below is a list of all of the possible statistics that are kept. As with all ProAdmin exhibits, what actually appears is dependent on what you have chosen to do. For example, if you are using the calculations you selected, then you won't see any of the calculation list file rows. If you're only comparing results, then you won't see any rows pertaining to running a calculation.

nn calculations selected
nn names in calculation list file
nn unmatched names in calculation list file
nn calculations dropped because they had saved results
nn calculations dropped because they had saved data
nn calculations dropped because they had neither saved data nor saved results
nn calculations dropped because their names didn't match a name on the other client
nn calculations aborted and had no saved results
nn calculations aborted and had saved results
nn calculations ran but had no saved results
nn calculations ran (with saved results)
nn calculations had no saved results on either client
nn calculations only had saved results on the other client
nn calculations only had saved results on this client
nn calculations compared and had no differences
nn calculations compared and had differences

The "Details for calculations processed" section of the report displays the names of each calculation processed, any error message associated with a calculation abort, and, if comparing results, the detailed differences between the "new" and "old" results for each calculation.

```
Details for calculations processed:

  Calculations compared and had no differences (2):
    Jones - frozen
    Jones - test of output mapping

  Calculations compared and had differences - details (1):

    -[OLD] Other client:    C:\Users\higgins\Documents\proadmin_files\demo\ProAdmin Online\connection sql\305
    +[NEW] Current client:  C:\Users\higgins\Documents\proadmin_files\demo\ProAdmin Online\connection sql\pending

    Jones
      -[OLD] Last Mod: 3/4/2015 15:47
      +[NEW] Last Mod: 3/5/2015 11:13
```

```
Input Data differences:
   Following (old) fields were deleted or renamed:
      DateOfPart
   Name                OLD         NEW
   ________________    _________   _________

   DateOfEarlyRetire   9/01/2008
   DateOfHire          7/14/1989   8/14/1963

Summary Result differences:
   -[8]   CALCULATED DATES:
   +[8]   BENEFIT DEFINITION VALUES AS OF PRIOR PLAN YEAR END (12/31/2015):
   -[9]     EARLY RETIREMENT DATE (DATEOFEARLYRETIRE) . . . . . . . . . . . . . . . . . . . . . 9/1/2008
   +[9]     RET - TRADITIONAL PLAN RETIREMENT - 50% PARTIAL LUMP SUM  . . . . . . . . . . . .
   -[10]    DATE OF PARTICIPATION (DATEOFPART)  . . . . . . . . . . . . . . . . . . . . . . . 1/1/1990
   +[10]        496,812.5311
   -[12]  BENEFIT DEFINITION VALUES AS OF PRIOR PLAN YEAR END (12/31/2019):
   +[12]        76,633.0922
   +[13]    RET - TRADITIONAL PLAN RETIREMENT - REMAINING BENEFIT W/ 50% PARTIAL LUMP SUM .
   -[14]        109,604.6366
   +[14]        38,316.5500
   -[16]        109,604.6366
   +[16]        76,633.0922
   -[19]    DECREMENT DATE  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 3/31/2020
   +[19]    DECREMENT DATE  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 3/31/2016
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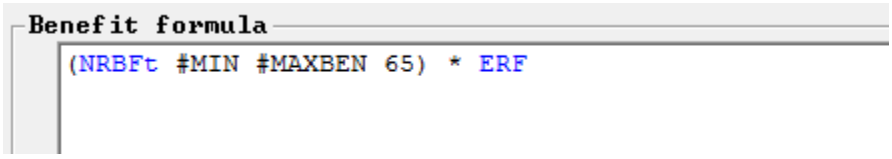
Applying the 415(b) Limit

Prior to 2013, most practitioners applied the 415 limit by comparing the benefit payable at commencement (after the application of reduction factors) to the 415 limit determined at the commencement age. 2013 Gray Book Question #6 and 2014 Gray Book Question #32 surprised many when they indicated that the plan's accrued benefit (prior to application of reduction factors) must also be limited to the 415(b) limit determined at the plan's normal retirement age. The effect of this is that the plan's benefit is compared to 415(b) twice: at normal retirement age; and again at the actual commencement age.

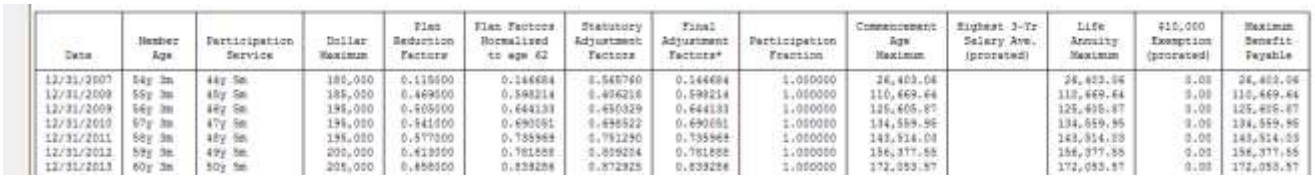
The two comparisons are handled differently in ProAdmin. To apply the comparison at normal retirement age, use the #MAXBEN operator in the Benefit Definition. The benefit formula might look something like this:



In this formula, the normal retirement benefit is compared to the 415(b) limit determined at age 65 and then multiplied by the plan's early retirement reductions.

The comparison at commencement age is handled by the new maximum pension settings at the bottom of the Benefit Definition dialog box. Prior to ProAdmin 3.07, the 415(b) limit was only reduced by the statutory reduction factors. In ProAdmin 3.07, plan reduction factors may be input under the table drop down and the 415 limit will be reduced by the greater of the plan and statutory reduction factors.

The 415 sample life report has been enhanced to show the comparison of statutory and plan factors. Note that the plan factors are normalized to age 62 since there is no reduction in the 415(b) limit for ages 62 and greater.



Date	Member Age	Participation Service	Dollar Maximum	Plan Reduction Factors	Plan Factors Normalized to age 62	Statutory Adjustment Factors	Final Adjustment Factors*	Participation Fraction	Commencement Age Maximum	Highest 3-Yr Salary Ave. (prorated)	Life Annuity Maximum	$10,000 Exemption (prorated)	Maximum Benefit Payable
12/31/2007	54y 3m	44y 5m	180,000	0.115000	0.144684	0.568760	0.144684	1.000000	26,403.06		26,403.06	0.00	26,403.06
12/31/2008	55y 3m	45y 5m	185,000	0.469000	0.590214	0.406216	0.590214	1.000000	110,669.64		110,669.64	0.00	110,669.64
12/31/2009	56y 3m	46y 5m	195,000	0.605000	0.644183	0.650329	0.644183	1.000000	125,605.87		125,605.87	0.00	125,605.87
12/31/2010	57y 3m	47y 5m	195,000	0.541000	0.690681	0.696522	0.690681	1.000000	134,589.96		134,589.96	0.00	134,589.96
12/31/2011	58y 3m	48y 5m	195,000	0.577000	0.735969	0.781290	0.735969	1.000000	143,514.03		143,514.03	0.00	143,514.03
12/31/2012	59y 3m	49y 5m	200,000	0.613000	0.781888	0.859234	0.781888	1.000000	156,377.55		156,377.55	0.00	156,377.55
12/31/2013	60y 3m	50y 5m	205,000	0.656000	0.839286	0.872925	0.839286	1.000000	172,053.57		172,053.57	0.00	172,053.57