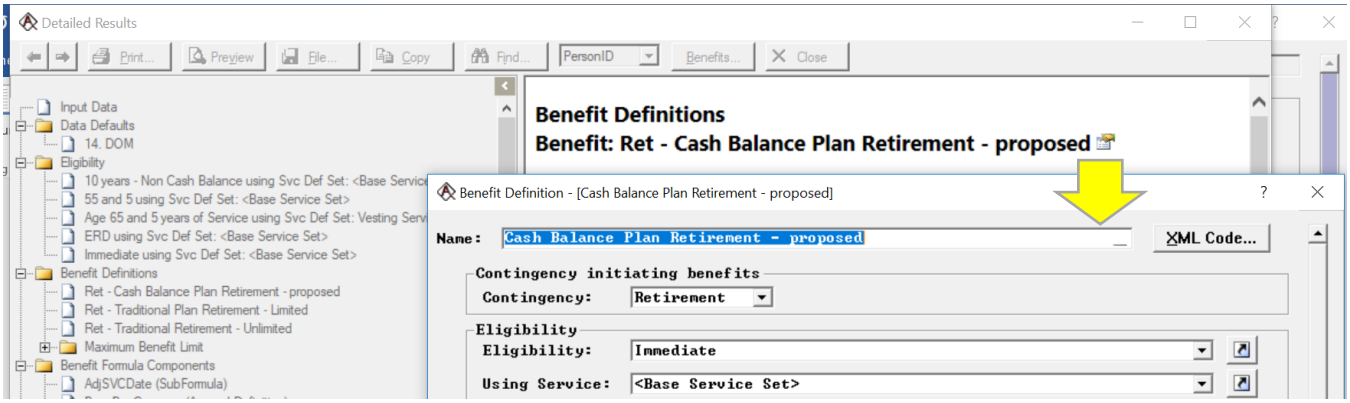
What's New in version 3.11 February 2018

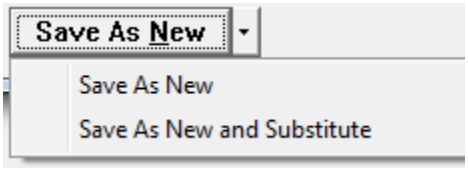
Please note that several of these features (denoted with *) were released in 3.10 patches, but are included here in case you missed them.

Interface

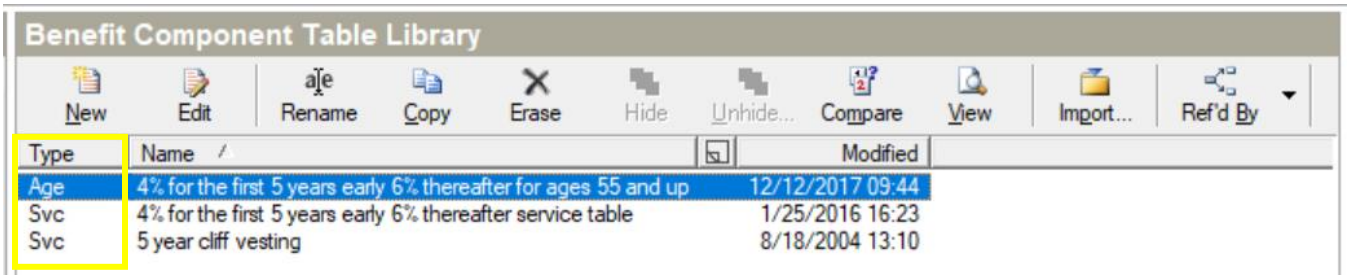
- **Sample life go-to buttons.** New buttons found in detailed results let you open benefits, and components read-only. This lets you easily see how you parameterized the calculation without having to leave the detailed results.



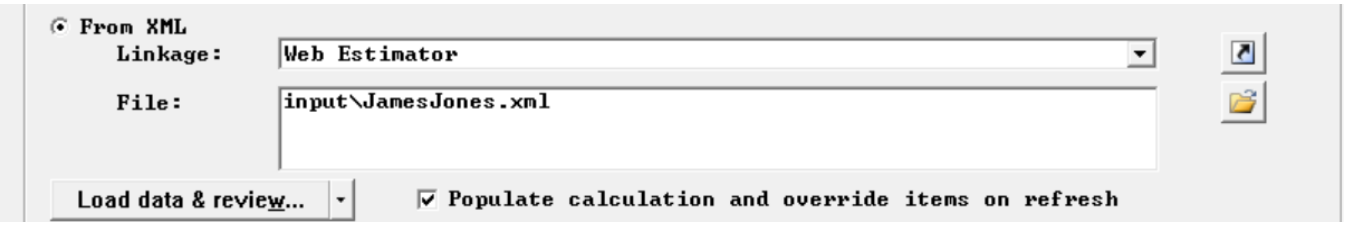
- **Save as New and Substitute.** When editing a benefit definition from within a plan definition, the 'Save As New' button is now a split button with an option to 'Save As New and Substitute'. That is, omit the original benefit from the plan and add the new benefit, effectively exchanging the original benefit for the new benefit.



- A **Type** column was added to the benefit component tables and conversion tables libraries.

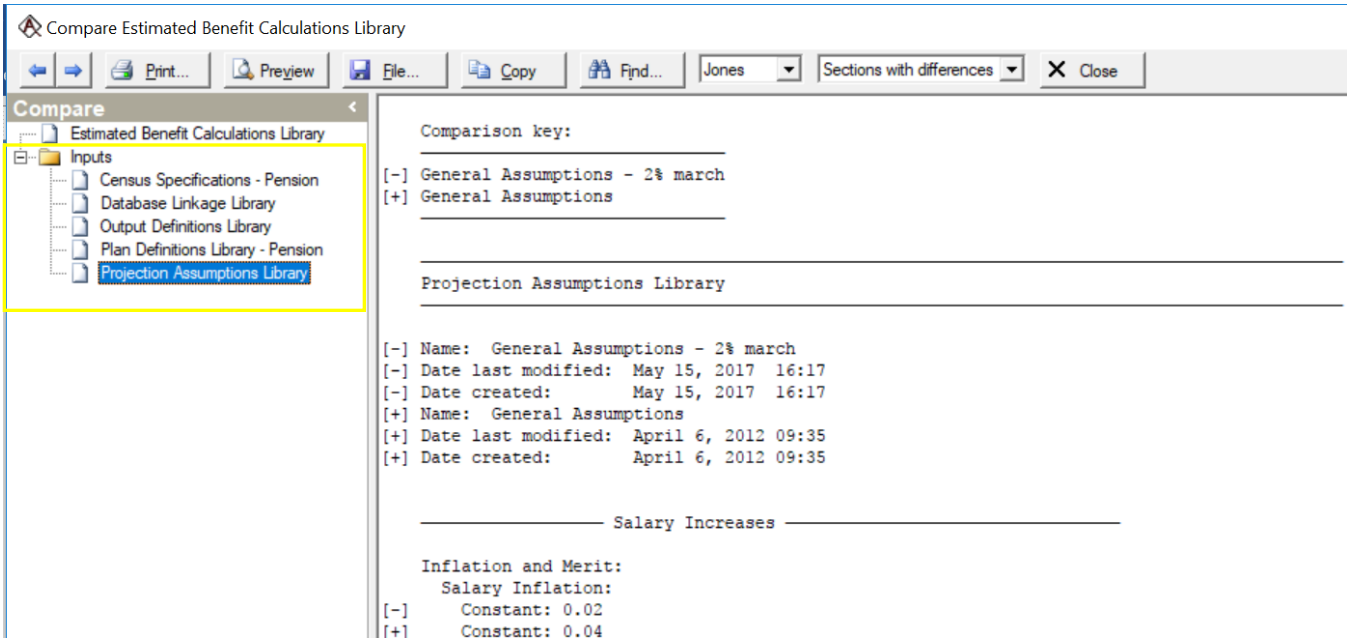


- A **Relative path** construct is now used within a client when displaying and storing library entries, so you will no longer need to manually change the path when copying and moving client files from one machine to another. For example, if you have a folder within the client called Input that contains XML input records for the client, you will now see this when viewing the Estimated Benefit Calculation Library:



Previously the whole path would have been stored and displayed and, if you copied the client to a new folder, the original references would have been used.

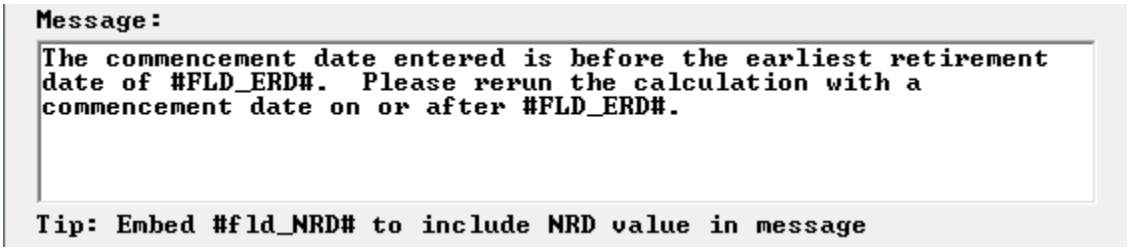
- **Deep compare.** When comparing calculations (finals or estimates), ProAdmin will additionally automatically compare the inputs. For example, if you compare two estimates and notice that they reference different projection assumptions, you can simply click on projection assumptions on the left side to see how they differ.



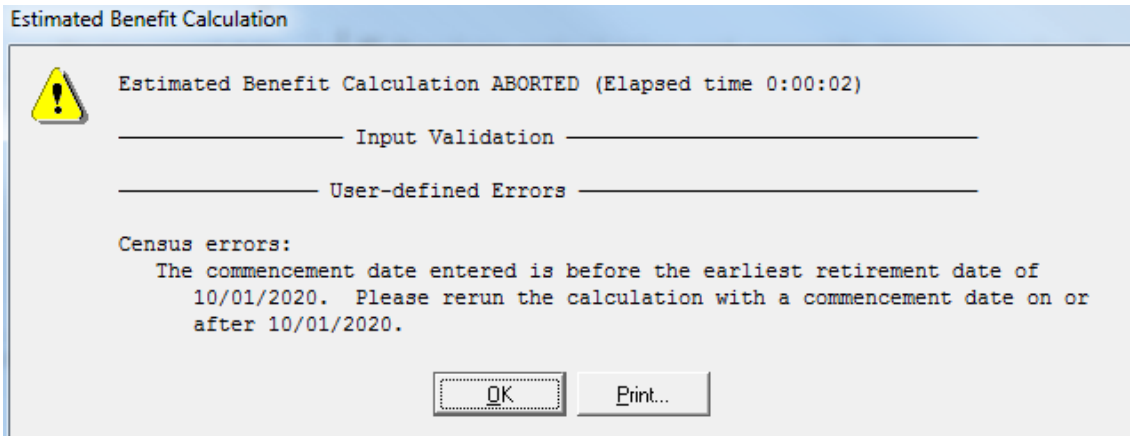
- If you widen a column in a library (e.g., because you have really long names), ProAdmin will remember the setting for the current session within the current client.

User Defined Messages

- **Embedded Field references** can now be used within the text of a Message Definition to allow you to create a link to a field from the data dictionary. Simply include the syntax #FLD_FieldName# in your message, with the name of the data dictionary field replacing FieldName. For example, the message:



will generate the following user-defined error if conditions are met:



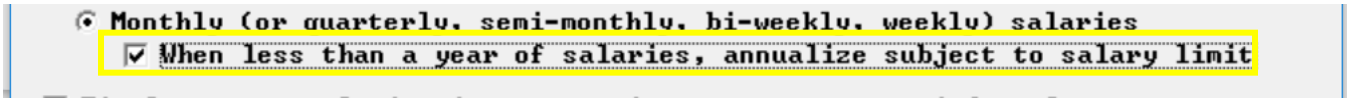
Relative Value

- You can now specify an alternative relative value actuarial equivalence basis for payment forms subject to the rules of IRC §417(e)(3). With this feature, it is generally possible to indicate that all optional forms are roughly equivalent when the non-lump sum payment forms are converted on a fixed basis but the plan also offers lump sums.

  For more details, see **Relative Value** on **page 12.**

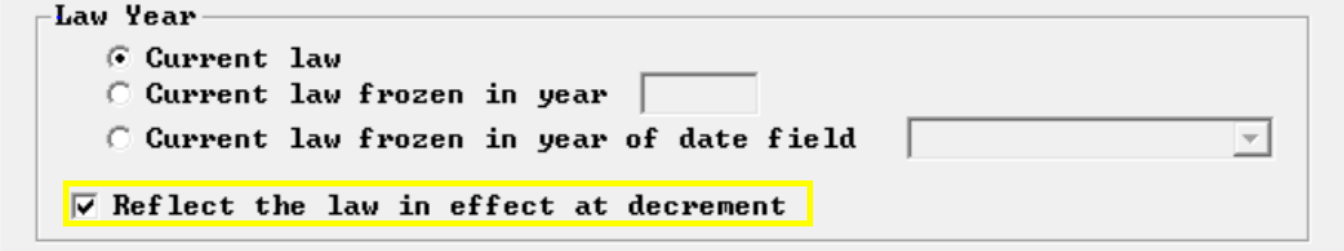
Custom Operators

- **Short service FAS**. An annualization check box, applicable when the number of salaries averaged is less than a full year (i.e., 12 for monthly), has been added to the Final Average Salary (#FAS) custom operator under the Salaries & Basis topic. In this short service scenario, when unchecked, the sum of the salaries is returned. When checked, the salaries are annualized and then compared to the annual limit as defined by the parameters under the Limits topic. By default, this box will be checked when creating new operators.



- **PIA based on law at commencement**. A new option has been added to the U.S. Social Security Primary Insurance Amount (#PIA) custom operator, under the Computation Age & Law Year topic, to allow reflection of the law in effect at commencement. When checked, the PIA is calculated using ProAdmin's default behavior which determines the Social Security law at the decrement date (or calculation date if earlier). When unchecked, the PIA will be calculated based on the Social Security law at commencement. While inappropriate for determining accrued benefits, this option is useful for valuing level income payment forms.

  For example, in determining the PIA for leveling, suppose that decrement is in 2010, but benefit commencement is in 2017. When checked, the current law year would stop at 2010. This means that the 2010 Wage Base, 2008 National Average Wage, and 2009 CPI would be used. When unchecked, 2017 would be used as the law year. This means that the 2017 Wage Base, 2015 National Average Wage, and 2016 CPI would be used.

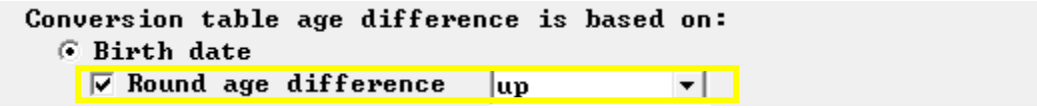


#GETASOF Array Operator

- The #GETASOF array operator can now be used to return the value of its right argument as of the previous or next date. If #GETASOF is used with a left argument of 'P', the previous value is returned; if used with a left argument of 'N', the next value is returned. The previous value of the first item in the right argument, and the next value of the last item in the right argument, is always zero.*
- Expressions are now uniformly allowed as the left argument to #GETASOF.*
- A scalar date (e.g., 12/31/2016) is now a valid left argument to #GETASOF in transformation expressions and data defaults. (This was previously only available to benefit formula components.)*

Payment Forms

- A new rounding feature was added for joint and survivor payment forms when using **age difference** tables based on birth date and age last birthday without interpolation. You can now round up the age difference where previously only rounding to the nearest integer was available.*



Output Definitions

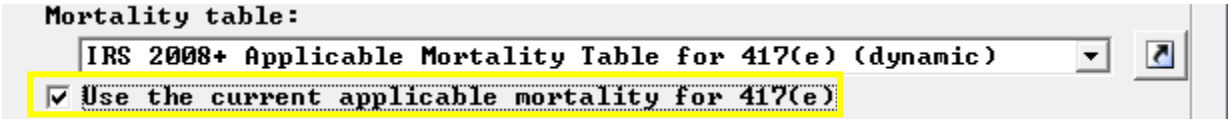
- **Description field.** XML Schemas can now reference new field types PADate, PADecimal, and PAString. When an element is set up with one of these types, the output will include the user's description as an attribute named PADescription. With this feature, standard output can be named, for example, "Comp1", "Comp2" and "Comp3", with the XML returning the user's description of the output mapped to that field, such as "frozen benefit", "cash balance", etc.

  For more details, see XML Output on page 9.

- Added a warning message when saving XML types with final average salary details, benefit formula component details, or interest rate details and the tags for the requested objects are missing in the XML Output Linkage.*

Mortality

- **IRS 2018+ dynamic mortality tables** have been added to ProAdmin's Mortality library.* The "IRS 2018+ Applicable Mortality Table for 417(e) (dynamic)", when used for the 2018 plan year, is the 2018 table for distributions subject to 417(e)(3) published in IRS Notice 2017-60.
- **IRS 2018-2019+(MP16-17) hybrid dynamic mortality tables** have been added to ProAdmin's Mortality library. The "IRS 2018-2019+(MP16-17) Applicable Mortality for 417(e) (dynamic)", when used with the 2018 plan year is the Notice 2017-60 417(e)(3) table, and when used with the 2019 plan year is the Notice 2018-02 417(e)(3) table.
- **SOA mortality improvement scales MP-2016*** and **MP-2017** have been added to ProAdmin's Mortality Improvement Scales library.
- **Use the current applicable mortality for 417(e).** A checkbox has been added to Actuarial Equivalence library entries, Annuity Factor formula components, and Plan Definition | Regulatory Data | U.S. 415(b) Maximum Benefit Limit to use the current applicable mortality for 417(e) when "IRS 2008+ Applicable Mortality Table for 417(e) (dynamic)", "IRS 2018+ Applicable Mortality Table for 417(e) (dynamic)", "IRS 2018-2019+(MP16-17) Applicable Mortality for 417(e) (dynamic)", or any later successor table is the selected mortality table.*

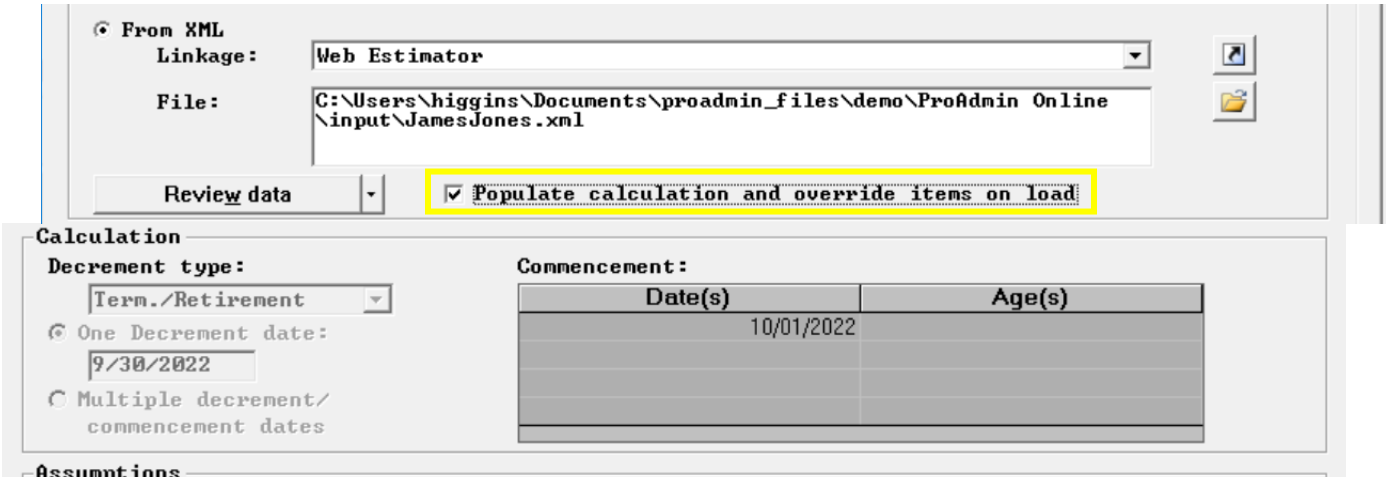


This box defaults to checked for all existing client files with a relevant mortality table selected so that post-2017 417(e) calculations will reflect the new hybrid table "IRS 2018-2019+(MP16-17) Applicable Mortality for 417(e) (dynamic)" when appropriate without the need for users to directly modify the client files other than to update them to this release. When "Use the current applicable mortality for 417(e)" is checked, benefit commencement dates:

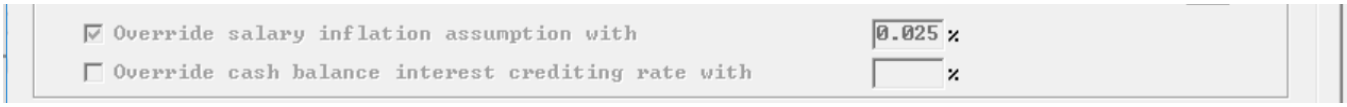
  - prior to 2018 use the "IRS 2008+ Applicable Mortality Table for 417(e) (dynamic)" mortality table,
  - in 2018 use the "2018 Table for Distributions Subject to 417(e)(3)" published in Notice 2017-60 (based on the IRS 2018+ applicable mortality table and Scale MP-2016),
  - in 2019 use the "2019 Table for Distributions Subject to 417(e)(3)" published in Notice 2018-02 (based on the IRS 2018+ applicable mortality table and Scale MP-2017), and
  - after 2019 use the dynamic table applicable to the commencement date based on the 2018+ methodology for creating the 417(e)(3) applicable mortality table, the 2018+ mortality, and Scale MP-2017.

Calculations

- **Populate calculation from XML file.** You can now populate the calculation parameters, including any override items, for estimate, final and date age service calculations when using an XML record as the data source. When you check the box "Populate calculation and override items on load", the calculation section of the dialog box will be unavailable (ghosted), and the appropriate information (decrement date, commencement date, decrement type, etc.) from the XML file will populate that section (after a data load is requested).



For an estimate, the appropriate overrides will be set as well.



This same populate functionality has also been added to the Calculator mode.

- In Calculator mode, the Run split button is now ghosted, with only the View and Save buttons available, after successfully processing a calculation.*
- Batch Estimates have been modified to always use current regulatory and custom regulatory data when it differs from old data without prompting the user. Due to the introduction of grid processing to batch calculations, all calculations would otherwise return an error when trying to display the decision dialog box.*

Output

- Data Default exhibits now use the table format introduced in version 3.10. A 'Label' column has also been added when viewing coded field data defaults.*
- Eligibility exhibits now include the description of any Output Definition reference items for each combination of eligibility and service.*
- Benefit formula components detailed results exhibits for table components now display service consistent with the component definition when truncated service is selected.*
- The name of referenced mortality tables is now included in payment form detailed results footnotes.*
- ProAdmin will now abort if a user-defined error or warning message is parameterized to apply to specific Benefit Definitions but no valid Benefit Definitions are selected.*
- When saving Output Definition results to an Access database, the "Replace File" button is now disabled for users not designated as "superusers." *

Database Linkage

- The database connection is now checked prior to any additional data field link validation. Previously a message indicating that the connection was valid may have been erroneously returned.*
- Messages now clarify that the person ID tests are not completed until after all the data links have been tested.*
- It is no longer necessary to specify the connection string when using an Access accdb file. ProAdmin will now generate a default accdb connection string using the specified file name and path.*
- Messages now clarify that only basic tests for syntax can be performed on a SQL Override statement prior to attempting to read from the database.*
- The name of the field with a problem is now shown in the error or warning message.*

ProAdmin Server

- The ProAdmin version number, date and client update level, as well as System Plan Keys, are now included in the comments section in ProAdmin Server XML output for calculations that completed successfully.*
- The XML output header comments section now includes the processing time of the calculation in total, and broken by initialization, calculation and output for calculations that completed successfully.*

Repository File Maintenance

- Most XML Linkages can now be effectively compared even though they have different Client Update Levels. In addition, the labels used in the comparison have been clarified to reference what's currently in the Repository versus what's currently in the client files.*
- The display of keys for System Plans is now wrapped rather than truncated.*

Fulfillment Tool

- **Integration of Fulfilment Tool.** The Fulfillment Tool is no longer a separate application. This change means that there is no longer a need for a separate ini file for the tool.
- A query/view of a table based on the BFC_detail table can now use its own VarNames. The first 6 columns in the table or view must correspond to 'RunID' 'VarName' 'Name' 'Type' 'Code' 'ValueAtDec'. Previously a BFC_detail type table or view had to use the exact same VarNames as the standard BFC_detail table.*

System

- When ProAdmin is installed in a "Program Files (x86)" folder, user settings (e.g., proadmin.ini) are now saved in the user's appdata folder. This avoids issues with ProAdmin obtaining write access to the "Program Files (x86)" folder, or alternatively relying on the presence of a compatibility (VirtualStore) folder. By default, if ProAdmin is installed to "Program Files (x86)\WinTech\ProAdmin", then the user settings can be found in "C:\Users*USERNAME*\AppData\Roaming\Wintech\ProAdmin". Please see the ProAdmin Installation Guide (readme.doc) for more information.
- Sped up the "rename" functionality for Data Dictionary field names and Benefit Formula Components. This will impact large clients with lots of library entries (in particular, the situation where a lot of calculation results are saved).
- There is a new "Edit INI File" button in the Help/About ProAdmin command.
- Sped up validation of calculations with a lot of cash balance accrual definitions that credit more frequent than monthly.*

- Changed the default memory merge setting for ProAdmin Server. The prior linear merge algorithm can be slower for deeply nested primitive operations.*
- Clarify error message to identify interest rate table problems when running calculations with the grid. *
- Change the grid to no longer cache network files locally and to fix the suppression of error messages while agents are still running. *
- Modify grid delete function to handle files with very long path names (>259 characters). *

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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XML Output

To facilitate more descriptive output when using XML, we have created three (3) data types that can be referenced in an XML Schema Document (XSD): PADate, PADecimal, and PAString. When an element in the XSD has one of these types, ProAdmin Desktop and ProAdmin Server will include the applicable description when writing the output.

For example, suppose you are writing the annual accrued benefit, $12,345.67 at decrement, to the node OutputData/ResultData/Decrement/Component1. It would look something like this:

```
<OutputData>
    <Results>
        <Decrement>
            <Component1>12345.67</Component1>
        </Decrement>
    </Results>
</OutputData>
```

If you change the type of the Component1 node to PADecimal, then ProAdmin outputs the description that you assigned to this item in the Output Definition as an attribute:

```
<OutputData>
    <Results>
        <Decrement>
            <Component1 PADescription="Annual Accrued Benefit">12345.67</Component1>
        </Decrement>
    </Results>
</OutputData>
```

Schema

To allow these data types to be used in your XSD, you will need to add them after your schema element and before the first declarative element as illustrated below.

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- edited with XML Spy v4.4 U (http://www.xmlspy.com) by WinTech -->
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema" elementFormDefault="qualified">
    <xsd:complexType name="PADecimal">
        <xsd:simpleContent>
            <xsd:extension base="xsd:decimal">
                <xsd:attribute name="PADescription" type="xsd:string"/>
            </xsd:extension>
        </xsd:simpleContent>
    </xsd:complexType>
    <xsd:complexType name="PAString">
        <xsd:simpleContent>
            <xsd:extension base="xsd:string">
                <xsd:attribute name="PADescription" type="xsd:string"/>
            </xsd:extension>
        </xsd:simpleContent>
    </xsd:complexType>
    <xsd:complexType name="PADate">
        <xsd:simpleContent>
            <xsd:extension base="xsd:date">
                <xsd:attribute name="PADescription" type="xsd:string"/>
            </xsd:extension>
        </xsd:simpleContent>
    </xsd:complexType>
    <xsd:element name="OutputData">
```

Once you have the new data types in your schema, you can reference them as a type for the elements that you create. For example, here are three (3) elements that allow you to map back parts of a benefit calculation using the new types PADate and PADecimal:

```
<xsd:element name="BenefitComponent1" type="PADate" minOccurs="0"/>
<xsd:element name="BenefitComponent2" type="PADecimal" minOccurs="0"/>
<xsd:element name="BenefitComponent3" type="PADecimal" minOccurs="0"/>
```

XML Output Linkage

After you import the schema with the new data types into your XML Output Linkage, the Plan Dependent, Input Pass Thru and Standard tabs dialog boxes indicate which fields will include the PADescription attribute by displaying the @ symbol in front of the field name. For example, here is an excerpt from the Plan Dependent tab:

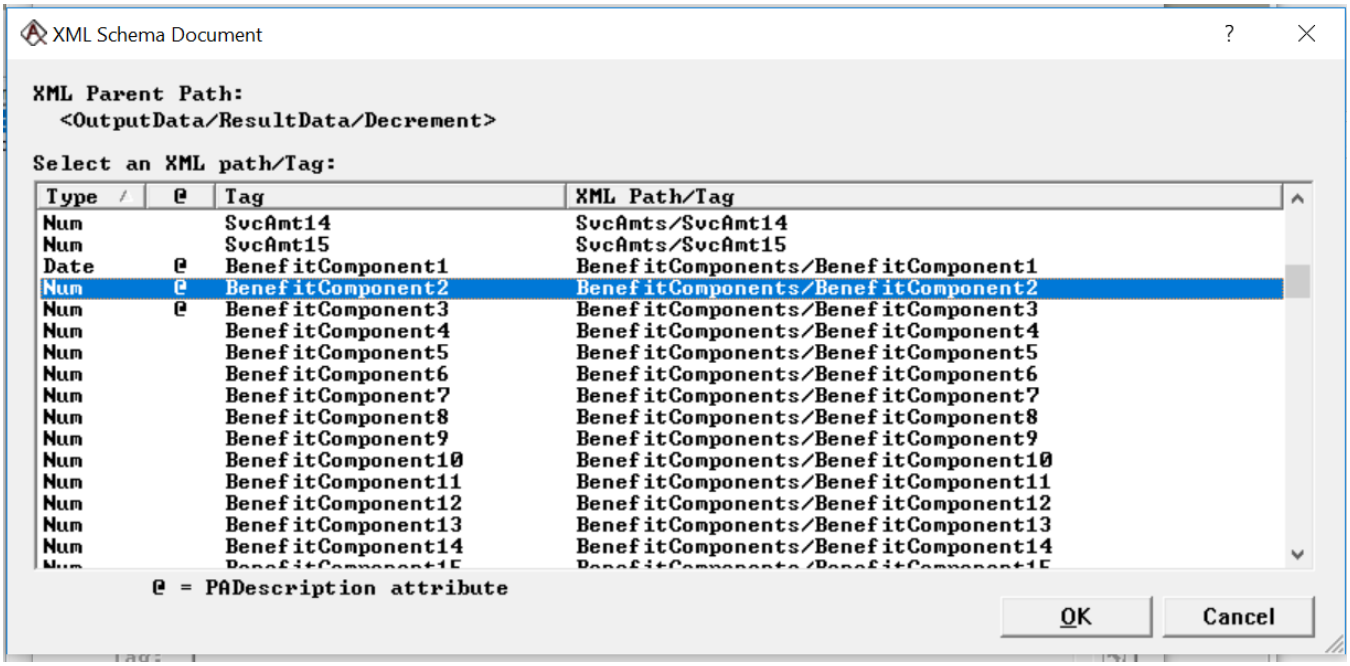
```
@ Decrement Component 1
  Decrement Component 10
@ Decrement Component 2
@ Decrement Component 3
```

You can see that Decrement Components 1,2 and 3 reference one of the new field types while Decrement Component 10 does not.

When you edit an item the tag data type note now reflects the new field type.

```
Container:
  <OutputData/ResultData/Decrement>

Tag:  BenefitComponents/BenefitComponent1
      Tag data type: Numeric with PADescription attribute
```

When you click on the backdoor button to select a tab for a new output item, if the new data types are referenced in your schema, there is a column labeled @ with the @ indicator for each tag that will include the PADescription attribute.

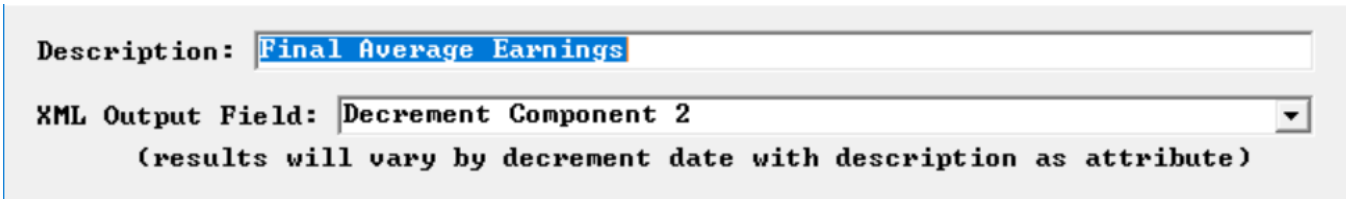


Output Definition

The @ identification for output with the PADescription attribute has also been extended to the Output Definition library.

```
DAS -   Earliest Retirement Date
BEN -   FAS Details
BEN -   FAS Details_Highest
BEN - @ Final Average Earnings
BEN -   Final Average Earnings - SF Test
```

You can see above that the Final Average Earnings is mapped to an XML output field that uses one of the new types. When you edit the field, the dialog box will continue to display at what level the results will vary, and now also, if applicable, that the element will have the description as an attribute.



When ProAdmin writes out the XML record it will look like this.

```
<BenefitComponent2 PADescription="Final Average Earnings">203701.352320709</BenefitComponent2>
<BenefitComponent3 PADescription="Accrued Benefit">72110.28</BenefitComponent3>
<BenefitComponent4>122220.811392425</BenefitComponent4>
```

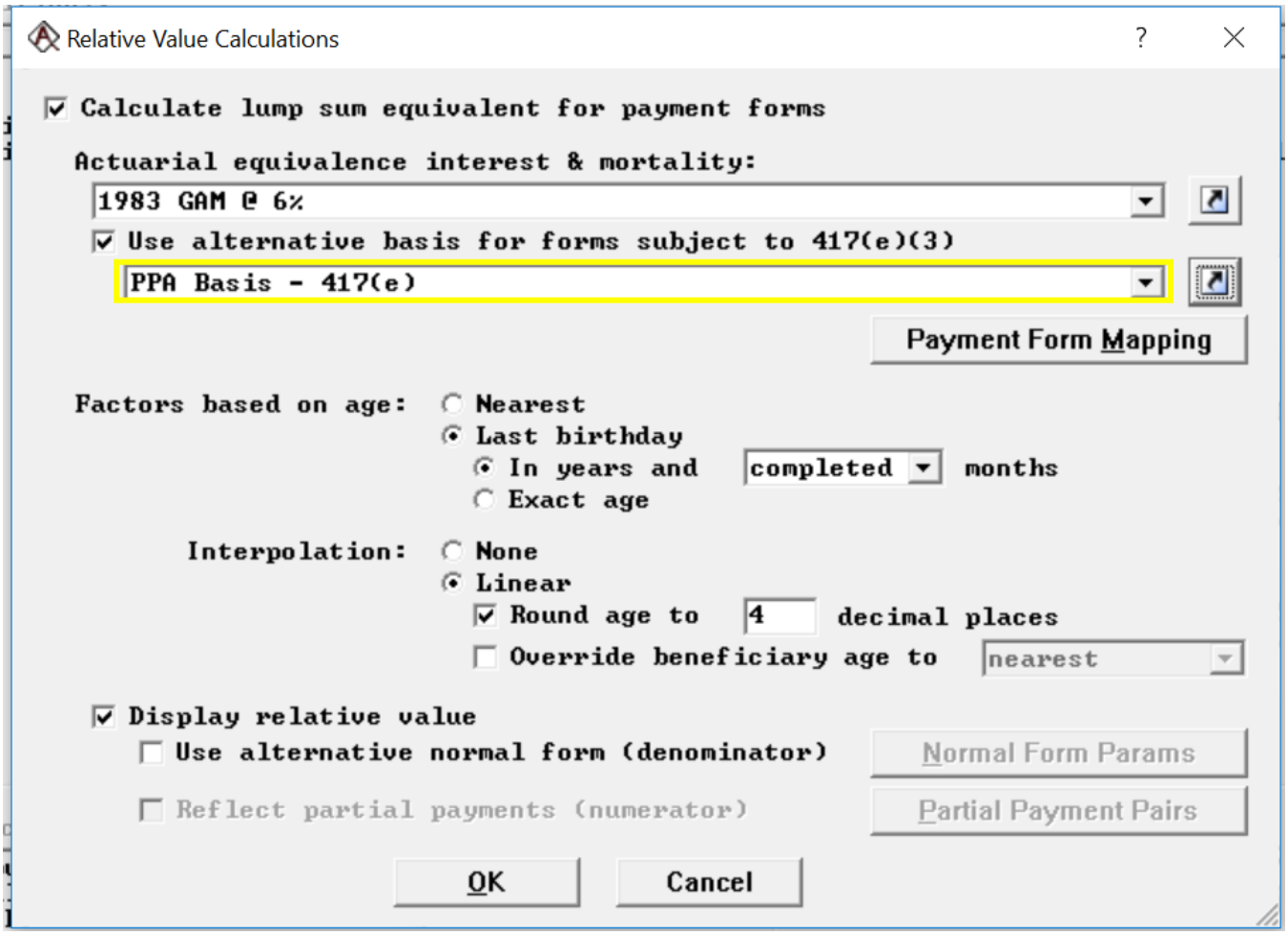
Please note that these new data types are available for most, but not all, scalar outputs. They are available for scalar plan dependent, input pass thru and standard output, except for data written to the payment form level. They are not available for array output including payment form data and array input pass thru's.

If you should need any assistance please don't hesitate to contact WinTech Support at (203) 861-5530.

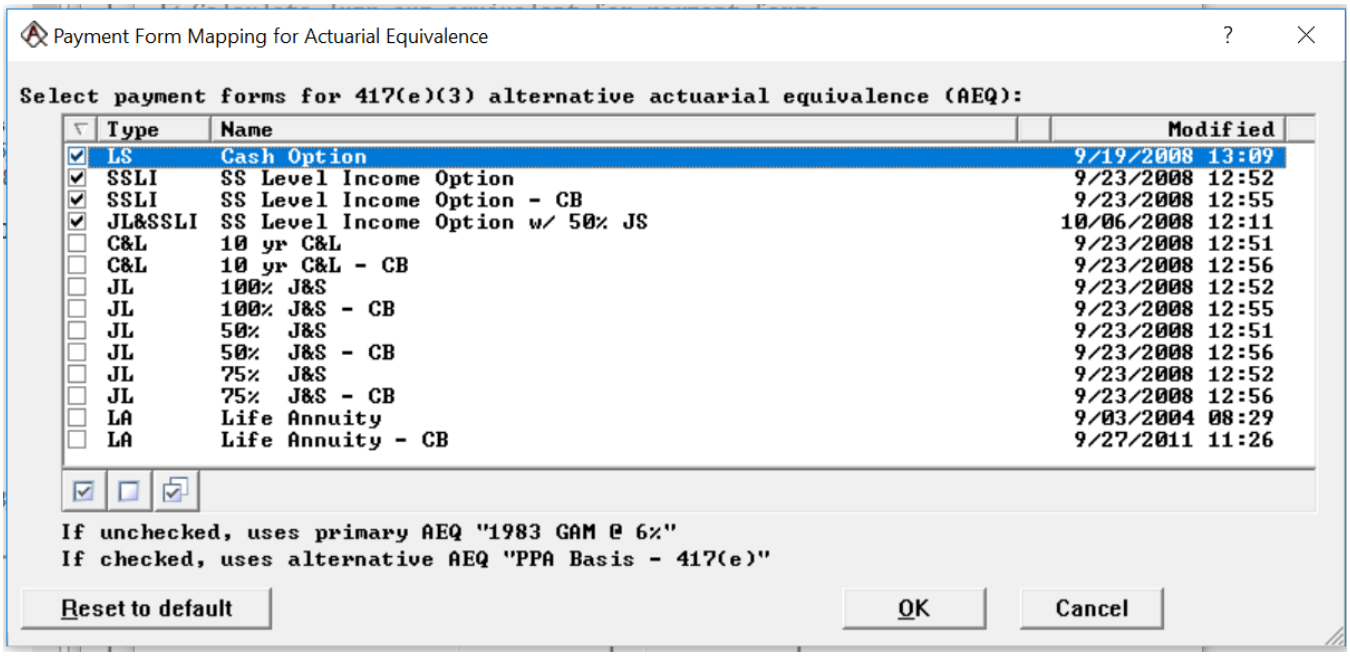
Relative Value

ProAdmin now supports two simultaneous actuarial bases for relative value calculations. Typically using two bases makes it possible to say that all forms of payment are roughly equivalent even though the lump sum is valued on a different basis than the other optional forms.

The relative value calculation assumptions are specified under the Relative Value Calculations topic of the Plan Definition. While which payment forms are in each of the two categories of actuarial equivalence is technically irrelevant, for convenience we name the buckets and give an indication if a payment form seems to be in the wrong bucket. The primary basis (**Actuarial equivalence interest & mortality** in the dialog box illustrated below) defaults to the "plan basis", and the alternative basis, if the **Use alternative basis for forms subject to 417(e)(3)** box is checked, is expected to be the 417(e)(3) basis.



When you check the box, the drop-down selection and **Payment Form Mapping** button become available (unghosted). In the drop-down selection, specify the 417(e)(3) basis actuarial equivalence. When you click on the Payment Form Mapping button, by default the payment forms that are subject to 417(e)(3), that is, the payment forms with decreasing payouts over a participant's lifetime, will be checked. These forms are lump sums, certain-only annuities and social security level income annuities.



ProAdmin does not automatically include temporary annuities; if one or more exist and should be included for a particular plan's calculations, it can be included manually by checking the box in front of the payment form on the dialog box. Any payment forms left unchecked will continue to use the primary actuarial equivalence basis.

If you want to use two relative value bases, you must choose to **Display relative value** because the relative value is always correct but the lump sum equivalence output is ambiguous. (This is because the lump sum equivalence is reported on a consistent basis for all payment forms and may or may not be the basis used for the relative value calculation. This issue is discussed in more detail below.)

Detailed Results

The footnotes on the payment form exhibits detail the relative value lump sum equivalence assumptions used for that form. For example, below are exhibits for the normal form of payment (a life annuity), a certain and life payment form and a social security level income payment form in the same run but with two relative value bases. Note that the normal form exhibit includes both lump sum bases, while the optional forms only include their relevant basis.

PersonID: 111-11-1111

Commence Date	Eligible?	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 Member Age	LSQ Basis Form Value Member Age+1	Primary LSQ Basis Form Value	Primary Lump Sum Equiv	Altern. LSQ Basis Form Value	Altern. Lump Sum Equiv	LS Equiv Relative Value
10/01/2022	Yes	59y 0m	59.000	0.070000	10.030709	10.030709	1.000000	99,780.05	99,780.00	11.491046	11.246140	11.491046	1,146,577	15.585044	1,555,076	1.0000

```
Unreduced (so conversion factor = 1)
Plan Actuarial Equivalence
  Mortality                    =  SOA 1971 Group Annuity Mortality
  Interest Rate type           =  Constant
Normal form                    =  <same>
Member Sex                     =  Male
Age                            =  nearest years
Factor rounding                =  none

Eligibility: 55 and 5 using Svc Def Set: <Base Service Set>

Primary Lump Sum Equivalence (LSQ) Relative Value:
  Mortality                    =  IRS 1983 GAM per Rev. Rul. 95-28
  Interest rate                =  0.06
                                     at 10/1/2022
  Age                          =  years and completed months, rounded to 4 decimals

Alternative LSQ Relative Value for 417(e)(3) forms:
  Mortality                    =  IRS 2008+ Applicable Mortality Table for 417(e) (dynamic)
  Interest rate                =    0 0.0179
                                    5 0.038
                                   20 0.0471
                                     at 10/1/2022
```

Payment form: 10 yr C&L

PersonID: 111-11-1111

Commence Date	Eligible?	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 Member Age	LSQ Basis Form Value Member Age+1	LSQ Basis Form Value	Lump Sum Equiv	LS Equiv Relative Value
10/01/2022	Yes	59y 0m	59.000	0.070000	10.509417	10.030709	0.954450	99,780.05	95,235.00	11.858482	11.653108	11.858482	1,129,343	0.9850

```
Plan Actuarial Equivalence
  Mortality                    =  SOA 1971 Group Annuity Mortality
  Interest Rate type           =  Constant
Normal form                    =  Life Annuity
Member Sex                     =  Male
Age                            =  nearest years
Factor rounding                =  none

Eligibility: 55 and 5 using Svc Def Set: <Base Service Set>

Lump Sum Equivalence (LSQ) Relative Value:
  Mortality                    =  IRS 1983 GAM per Rev. Rul. 95-28
  Interest rate                =  0.06
                                     at 10/1/2022
  Age                          =  years and completed months, rounded to 4 decimals

Estimate:   Jones - Access Results
Client:     ProAdmin Online Demo Plan Salary
Project:    Online Template
```

Payment form: SS Level Income Option

PersonID: 111-11-1111

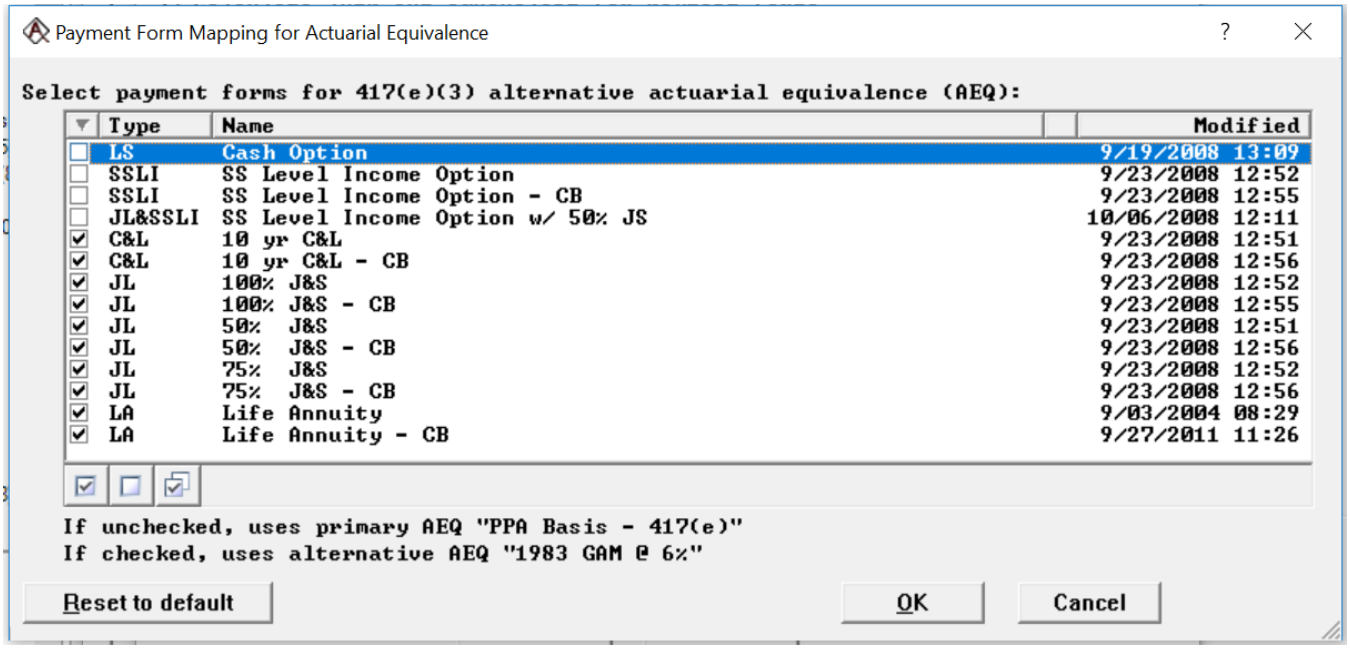
Commence Date	Eligible?	Actual Member Age	Form Member Age	Interest Rate	Payment Change Date	Normal Form Benefit	Normal Form Value	PIA	Temporary Annuity	Life Annuity	Temporary Benefit	Deferred Benefit	LSQ Basis Temp Life Annuity	LSQ Basis Life Annuity	Lump Sum Equiv	LS Equiv Relative Value
10/01/2022	Yes	59y 0m	59.000	0.070000	10/01/2028	99,780.05	1,000,864.71	36,816.00	4.763797	10.030709	119,111.40	82,295.40	5.530971	15.585044	1,486,206	0.9557

```
Plan Actuarial Equivalence
  Mortality                    =  SOA 1971 Group Annuity Mortality
  Interest Rate type           =  Constant
Normal form                    =  Life Annuity
Member Sex                     =  Male
PIA commencement age           =  65
Minimum Post-SS annual benefit =  N/A
Deferred Benefit               =  (Normal Form Value - (PIA x ax:n))/ax, min 0
Temporary Benefit              =  Deferred Benefit + PIA, or
                                  Normal Form Value / ax:n, if Deferred Benefit = 0
Age                            =  nearest years
Factor rounding                =  none

Eligibility: 55 and 5 using Svc Def Set: <Base Service Set>

Lump Sum Equivalence (LSQ) Relative Value:
  Mortality                    =  IRS 2008+ Applicable Mortality Table for 417(e) (dynamic)
  Interest rate                =    0 0.0179
                                    5 0.038
                                   20 0.0471
                                     at 10/1/2022
  Age                          =  years and completed months, rounded to 4 decimals
```

Summary and Output Definition Results

ProAdmin reports relative value and lump sum equivalence output in the Summary Results and, if requested, the Output Definition results. For several reasons, the lump sum equivalence output is always reported consistently on a single basis and that basis is the primary relative value actuarial equivalence basis. In other words, in the case where there are two actuarial equivalence bases coded in the default manner, the summary results and the output definition will report all lump sum equivalence values on the plan basis. The "lump sum equivalence rate" standard output item is also reported on the primary relative value basis.

If it would be useful and convenient to report all lump sum equivalence values, and the lump sum equivalence rate, on the 417(e)(3) basis, users have the option of reversing the standard definition of the two actuarial equivalence bases by setting the 417(e) basis as the primary basis and the plan basis as the alternative. This approach would also require adjusting the payment form mapping to the opposite of the default by opening it and clicking the "toggle checked/unchecked" box  .



If you should have any additional questions or need any assistance please don't hesitate to contact WinTech Support at (203) 861-5530.