

Oracle Insurance IBRU SoftRater for WebSphere Reference Guide

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Oracle Insurance Insbridge Rating and Underwriting SoftRater for WebSphere Reference Guide

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Preface

Welcome to the *Oracle Insurance Insbridge Rating and Underwriting SoftRater for WebSphere User Guide*. This guide describes the concepts and requirements of SoftRater for IBM WebSphere. It provides a reference for developers to properly interact with the SoftRater Engine either through SOAP, POST Web Services Interface (WSI) or Direct EJB Interfacing.

Audience

This guide is intended for SoftRater system administrators who are tasked with administering SoftRater. Readers of this guide should be familiar with XML, HTTP.

System Requirements

System requirements for the Oracle Insurance Insbridge Rating and Underwriting system can be found in the Oracle Insurance Insbridge Rating and Underwriting Recommended Operating Environments for Hardware and Software Guide available from Oracle Insurance Support or Oracle Insurance Sales Representative.

Manual History

New editions incorporate any updates issued since the previous edition.

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Concept Diagram

The diagram below shows the high level interaction between the client application and the Oracle Insurance Insbridge Rating and Underwriting SoftRater (SoftRater) system. The SoftRater instance is responsible for all rating & underwriting processing. The basic functionality of the SoftRater system is demonstrated below. Input data is sent to the SoftRater instance, processed and output data is returned.

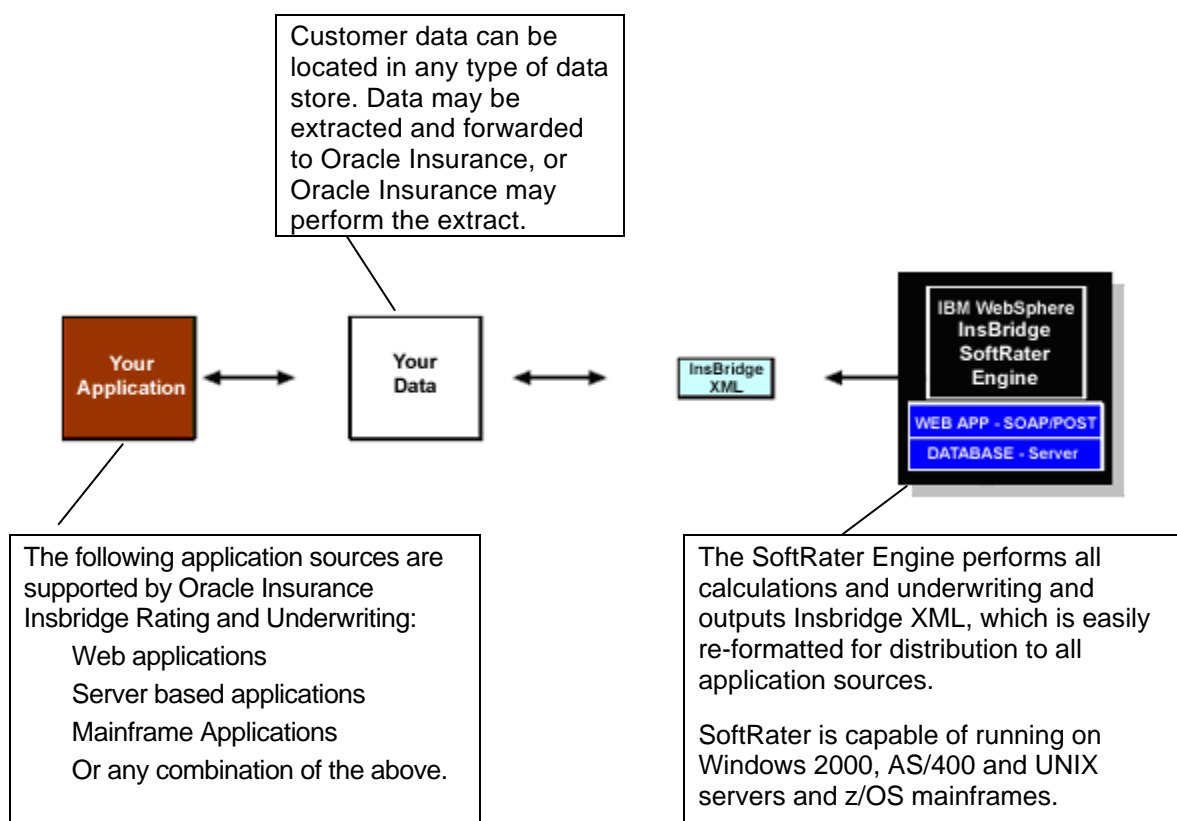


Figure 1 Concept Diagram

Software Integration

SoftRater is an EJB component hosted in the IBM WebSphere Application Server and accessible through the following software integration methods.

1. HTTP SOAP Proxy – SoftRater Web Service – WSDL documents are included in the installation of the EJB component. From them, proxy classes can be generated to communicate with the installed SoftRater instance. The SoftRater Web Service WSDL should be located at the following URL:
<http://<yourserver>:9080/IBSS/wsdl/com/insbridge/sofrater/SoftRaterService.wsdl>

Also included is a sample SoftRater SOAP proxy class instance along with the java file. They are located in the installation directory under integration.

Whether the sample SoftRaterProxy class is used or a new one is generated from the WSDL interface, the integrating application must call the ([setEndPoint](#)) method to set the target hosting URL for the Insbridge SoftRater instance. The target URL should be the following:

<http://<yourserver>:9080/IBSS/servlet/rpcrouter>";

2. HTTP POST – A lite weight Web Service Interface JSP page is provided as an interface for clients with just web form POST abilities.

The URL to the POST interface should be the following

<http://<yourserver>:9080/IBSS/sofrater/lwsi/RateBase.jsp>

The Boolean rating arguments can be provided (optionally) as URL query string arguments for example:

<http://<yourserver>:9080/IBSS/sofrater/lwsi/RateBase.jsp?addinputs=true&addroot=true>;

The lists of available URL arguments are the standard rating arguments provided through all SoftRater interfaces.

```
addinputs=true
addroot=true
addheading=true
addresultdesc=true
addresultempty=true
doinXSL=true
```

3. EJB – Direct JNDI interfacing.

The EJB interfaces for creating service clients, which creates SoftRater instances.

Typical JNDI Path – [ejb/com/insbridge/sofrater/SoftRaterHome](#)

Target JAR – [SoftRaterEJB.jar](#) is part of the [Insbridge.Fwk.APP.EAR](#) containing the following standard EJB 2.0 interface files.

SoftRater – Remote interface for Enterprise Bean
SoftRaterBean – Bean implementation class for Enterprise Bean
SoftRaterHome – Home interface for Enterprise Bean

Typical JNDI Path – [ejb/com/insbridge/sofrater/SoftRaterHome](#)

Interface Example:

```
package com.insbridge.sofrater;
import java.rmi.RemoteException;

/**
 * Remote interface for Enterprise Bean: SoftRater
 */
public interface SoftRater extends javax.ejb.EJBObject
{
    public String ProcessIB(
        final String XMLInputs,
        final boolean AddRootNode,
        final boolean AddInputsNode,
        final boolean AddHeadingNode,
        final boolean AddResultDesc,
        final boolean AddResultThatAreEmpty,
        final boolean DoInStyle,
        final boolean DoDebugOutput
    )

    throws RemoteException;

    public boolean ResetPackageCache( ) throws RemoteException;

    public void ResetConfigInfo( ) throws RemoteException;

    public String QueryAvailableEnvironments( ) throws RemoteException;

    public String getVersion( ) throws RemoteException;

    public String getErrorMessage( ) throws RemoteException;

    public String getDefaultPath() throws RemoteException;
}
```

Rating Arguments

The SoftRater engine rating arguments control the handling of XML data out of the system. Rating arguments are optional. For optimal performance, use the following arguments for your rating integration.

Add Root Node (Use default – False) – If submitting multiple rate request documents, this option is typically set to true to make the result document a valid XML document.

Add Inputs (Use default – False) – When set to true, the full request Insbridge.XML document is returned in the result Insbridge.XML document making the XML document much larger than normal.

Add Heading (Use default – False) – When set to true, the program name description information is returned in the result XML also.

Add Result Descriptions (Use default – False) – When set to true each result item includes the RateManager variable result name along with the result id and value. Making the result XML much larger. Typically, most integration operates on the result IDs and descriptions are not needed when building an automated system.

Add Empty Results (Use default – False) – When set to true, a defined result item, whose value is empty (i.e. blank), is still created and returned blank in the resulting Insbridge.XML. If your program design requires a number of optional results, you could have blank results items in your XML.

Debug Output (Use default – False) – When set to false, no debug report will be issued. Set to true if you would like a debug report.

EnvRef (Use default – blank) – When left blank, the default environment defined in setup will be used. To specifically define an environment, enter in the environment name.

If no arguments are sent, the default values will be used. Default values are defined in setup. If using SoftRater Server, see Submit Insbridge XML.

Insbridge.XML

XML is the primary data exchange mechanism used by Oracle Insurance Insbridge Rating and Underwriting system to import/export data and to communicate information electronically with external and internal software systems. XML provides a clean, readable, self-validating way to exchange data and is quickly becoming (or possibly already is) the data exchange standard.

Insbridge's rating request input XML is designed to be flexible and efficient. It allows for single or multiple rate requests to be submitted via one input XML document. The rate requests embedded in this single document can be targeted to multiple states and/or multiple lines of business. Multiple versions of a rating package also can be targeted in a single rate request document.

The rating request response XML is also streamlined to present all the results to the various request methods, described above, in a single output XML document.

Insbridge.XML Request Format

The following is an example of an Insbridge rate request XML document:

```
<rate lob="2" tracking_attribute="" env_def="">
  <heading>
    <program parent_id="700" tiering_id="" program_id="24" program_ver="1"/>
  </heading>
  <c i="0" desc="Policy">
    <m i="1086" n="PackageDisclnd" v=""/>
    <m i="1094" n="RenewalRetentionCreditInd" v=""/>
    <m i="1157" n="CompanyCode" v=""/>
    <m i="1212" n="Eff_Date" v=""/>
    <m i="1214" n="PrimInsuredAge" v=""/>
    <m i="1215" n="SecInsuredAge" v=""/>
    <m i="1222" n="RenewalInd" v=""/>
  <c i="5" desc="Home">
    <m i="1083" n="TerritoryCode" v=""/>
    <m i="1084" n="ResidenceType" v=""/>
    <m i="1087" n="ProtectionClass" v=""/>
    <m i="1095" n="Wood/Tile/SlateRoofType" v=""/>
    <m i="1096" n="HomeDeductible" v=""/>
    <m i="1098" n="WindstormOrHailDeductible" v=""/>
    <m i="1100" n="CentralStationFireAlarmInd" v=""/>
    <m i="1101" n="CentralStationBurglarAlarmInd" v=""/>
  <c i="8" desc="Coverage">
    <m i="1204" n="CovCd" v=""/>
    <m i="1205" n="CovLimit" v=""/>
    <m i="1207" n="CovEff_Date" v=""/>
  </c>
</c>
```

```

        <c i="9" desc="Endorsement">
            <m i="1181" n="EndorCd" v=""/>
            <m i="1182" n="EndorRateInd" v=""/>
            <m i="1190" n="EndorEff_Date" v=""/>
            <m i="1191" n="Parm5" v=""/>
        </c>
    </c>
</c>
</rate>

```

<rate> Node

The <rate> node marks the beginning of a rate request for a specific line of business. Accordingly, this node has the required attribute, “lob”, which identifies the “line of business” for the request. In the following example, the lob attribute is set to “2” which represents “Home” insurance according to the Insbridge standard line of business mappings (see Oracle Insurance Insbridge Rating and Underwriting RateManager User Guide). The rate node attributes are defined as follows:

lob	- line of business indicator per Insbridge standard lob codes (Required)
env_def	- rating environment indicator per Insbridge Framework Administrator (Optional)
renc	- SoftRater can encode XML characters, in the result XML, that are not considered valid XML characters. These characters are the ampersand (&), the less than sign (<), the greater than sign (>), double quotation marks (") and the single quotation mark ('). For example, the ampersand will be encoded as &. To have SoftRater encode the results, set the renc attribute value to one. (renc="1"). The default setting is zero. (No encoding)

As an optional feature, all other attributes provided on the <rate> node are collected as tracking attributes to be returned in the result XML document as attributes in the <result> node. This allows the original rate request to be uniquely tracked with its result XML document by any identification elements available to the calling subsystem. In the example below, the “policyId='A1206' ” attribute value pair would be mirrored on the <result> node of the resulting output XML.

Example:
 <rate lob="2" policyId="A1206">

This rate request may be targeted to one or more rating logic instances based on what is found in the <heading> node (described) next.

<heading> Node

The <heading> node serves only as a container for <program> nodes and has no attributes. If multiple <program> nodes are found in the heading node, then rating is performed for each node, if possible, and appropriate results are generated in the output XML.

Example:

```

<heading>
  <program parent_id="700" tiering_id="" program_id="24"
    program_ver="1"/>
  <program parent_id="700" tiering_id="" program_id="22"
    program_ver="1"/>
</heading>

```

<program> Node

The <program> node specifies a specific SoftRater Package (rating engine logic instance) to run this rate request against. A program typically represents rating logic for a particular State and line of business (e.g.: Texas Auto insurance, California Home insurance). The program node attributes are defined as follows:

- parent_id - Insbridge identifier typically assigned to a carrier for database lookup purposes (Required)
- program_id - Insbridge identifier assigned to a program (rating engine logic instance) which represent the rating rules necessary to generate a quote. (Optional)
- program_ver - A particular version of a program. Each version may have different rating rules, inputs, outputs, etc. (Optional)
- tiering_id - Insbridge identifier specifying which tier to use within a program. (Optional/Required)

Attribute requirement rules:

1. If the [tiering_id](#) is provided then the [program_ver](#) value is required and is used to select a tiering program version to be processed against the source XML.
Example: <program parent_id="100" tiering_id="20" ver="1"/>
2. If the [program_id](#) is provided then the version [program_ver](#) value is used to select a program version to be processed against the source XML.
Example: <program parent_id="100" program_id="100" ver="3"/>
3. If the [program_id](#) is provided and the [program_ver](#) is not, the version selection rules for the program, identified by program_id, are used to select the program version to be processed against the source XML.
Example: <program parent_id="100" program_id="100" />

The <program> node allows mapped input overrides to be specified for a specific program in a multi-program (or multi-state) rate request. See Multiple Rate Requests below for more details.

<c> Node

The <c> (category) node marks the beginning of input data for a specific category of information (i.e.: home, car, driver, policy, etc). It has the following attributes:

- i - identifier. Zero always indicates "Policy" level inputs, other categories are user definable. (Required)
- desc - description of category (Optional)

Example:
<c i="0" desc="Policy">

The “Policy” category is always a direct child of the <rate> node, except for overrides in the <program> node (described later). It is also the top-level category node. The Policy category node typically has an ID of zero (i.e.: i=“0”). Item level categories are nested under the Policy category node.

For example:

```
<c i="0" desc="Policy">
  <m i="1212" n="Eff_Date" v="" />
  <m i="1214" n="PrimInsuredAge" v="" />
  <m i="1215" n="SecInsuredAge" v="" />
  <c i="5" desc="Home">
    ....
    <c i="7" desc="Scheduled Property">
      ....
    </c>
  </c>
  <c i="5" desc="Home">
    ....
  </c>
</c>
```

<m> Node

The <m> (map) node represents an individual attribute-value pair mapped for a specific SoftRater Package hosted by SoftRater. In the input case, it identifies an input attribute recognized by the SoftRater Package (or Packages) listed in the <heading> node, and its associated value. The <m> node’s attributes are defined as follows:

- i - input identifier (Required)
- n - name, description of input (Optional)
- v- value of input (Required)

The <m> node is always a child of a <c> (category) node and is an attribute-value pair for that specific category instance (see the Policy category example above).

Insbridge.XML Result Format

The following is an example of an Insbridge rate request result XML document. As you can see the result XML very similar to the input XML format.

```
<result lob="2" st="6" gen_date="2/19/2008 1:55:32 PM">
  <program parent_id="900" program_id="1" program_ver="1" status="PASS">
    <c i="5">
      <m i="Dwelling_1" v="640"/>
      <m i="Dwelling_3" v="0"/>
      <m i="Dwelling_5" v="0"/>
      <m i="replcc" v="0"/>
      <m i="COV Replacement Cost Contents" v="0"/>
      <m i="COV Mortgage Payment" v="0"/>
    </c>
  </program>
</result>
```

```

    <m i="Dwelling_10" v="0"/>
    <m i="Dwelling_11" v="34"/>
    <m i="COV Replacement Cost - Dwelling" v="0"/>
    <m i="Dwelling_13" v="0"/>
    <m i="Dwelling_13" v="674"/>
    <m i="COV Business Pursuits" v="0"/>
    <m i="COV Permitted Incidental Occupancies" v="0"/>
    <m i="COV Personal Injury" v="0"/>
    <m i="Dwelling_17" v="0.02"/>
    <m i="Dwelling_18" v="0"/>
    <m i="Dwelling_19" v="0"/>
    <m i="CREDIT Multi Policy Discount" v="0"/>
    <m i="CREDIT Neighborhood Watch" v="0"/>
    <m i="CREDIT New Home" v="0.20"/>
    <m i="CREDIT New Loan" v="0.10"/>
    <m i="CREDIT Protective Devices" v="0.020000000"/>
    <m i="Dwelling_25" v="0"/>
    <m i="SEC_I C. Personal Property" v="213500"/>
    <m i="SEC_I D. Loss of Use" v="122000"/>
    <m i="SEC_I A. Dwelling" v="305000"/>
    <m i="SEC_II Personal Liability Each Occurrence" v="500000"/>
    <m i="SEC_II Medical Payments Each Person" v="2000"/>
    <m i="SEC_I B. Other Structures" v="30500"/>
    <m i="Total Annual Premium" v="674"/>
    <m i="DED Standard Deductible" v="1000"/>
    <m i="COV Replacement Cost Comp" v="1"/>
    <m i="Total Earthquake Annual Prem" v="0"/>
    <m i="EQ Loss of Use" v="25000"/>
    <m i="EQ Personal Property" v="152500"/>
    <m i="EQ Dwelling Limit" v="305000"/>
    <m i="DED Earthquake Deductible" v="30500"/>
  </c>
  <c i="0">
    <m i="SELECTED_TEIR" v="SPECIAL"/>
    <m i="Total Policy Premium" v="674"/> </c>
</program>
</result>

```

The same nodes are present in the output XML as were found in the input XML, however their meanings are slightly different. The following sections describe how to interpret the output XML.

<result> Node

The <result> node marks the beginning of a rate request result. There is a one-to-one correspondence between <rate> nodes in the request XML to <result> nodes in the response XML. The result node attributes are defined as follows:

lob - line of business indicator corresponding to the <rate> request nodes lob attribute.
 gen_date - server creation timestamp indicating when this response was created.

As described previously, tracking attributes on the <rate> node are returned in the result XML document as attributes in the <result> node.

Example:

```
<rate lob="2" policyId="A1206" gen_date=""2/9/2008 1:50:31 PM">
```

<program> Node

The result <program> node provides an XML envelope containing all of the formatted data, setup in the RateManager application as output results for the program. There can be (1-N) <program> node groups based on (1-N) program node groups requested in the input <rate> XML document. If the original <rate> request contained a tiering selection, each program version located during tiering execution will generate a <program> node in the result data. The result XML program node attributes are defined as follows:

parent_id	- Parent or Insbridge Company Identifier	(available by default)
program_id	- Selected Program Identifier	(available by default)
ver	- Selected Program Version Identifier	(available by default)
Status	- Status of program rate request	(available by default)
company_nm	- Parent Corporate name	(with AddHeading request option)
program_nm	- Program name	(with AddHeading request option)
version_nm	- Version name	(with AddHeading request option)
rating	- Program Rating	(with AddHeading request option)
logo	- Company Logo	(with AddHeading request option)
site	- Company Website	(with AddHeading request option)

Example base:

```
<program parent_id='500' program_id='3' ver='2' status='PASS'>
```

Example with "AddHeading" option requested:

```
<program parent_id='200' program_id='32' ver='4' company_nm='NewCo Mutual'  
program_nm='Texas 6 Month' ver_nm='Performance' rating='A++' logo='newco.jpg'  
site='www.newco.com' status='PASS'>
```

<c> Node

The <c> (category) node marks the beginning of output data for a specific category of information (i.e.: home, car, driver, policy, etc). It has the following attributes:

- i - identifier. Zero always indicates "Policy" level inputs, other categories are user defined. (available by default)
- d - description of category (with AddResultDesc request option)

Example:

```
<c i="0" d="Policy">
```

The "Policy" category is always a direct child of the <program> node. It is also typically the top level category node. The Policy category node typically has an ID of zero (i.e.: i="0"). Item level (user defined) categories are nested under the Policy category node.

For example:

```
<c i="0">
  <m i="SELECTED_TEIR" v="SPECIAL"/>
  <m i="Total Policy Premium" v="674"/>
  <c i="5">
    <m i="Dwelling_1" v="640"/>
    <m i="Dwelling_3" v="0"/>
    <m i="Dwelling_5" v="0"/>
    <m i="SEC_II Personal Liability Each Occurrence" v="500000"/>
    <m i="SEC_II Medical Payments Each Person" v="2000"/>
  </c>
</c>
```

<m> Node

The <m> (map) node represents an individual attribute-value pair mapped for a specific SoftRater Package hosted by SoftRater. In the output case, it identifies an output attribute as defined in the SoftRater Package (represented by the <program> node) and its associated value. The <m> node's attributes are defined as follows:

i	- output identifier	(available by default)
n	- (name) description of output	(with AddResultDesc request option)
v	- value of output	(available by default)

The <m> node is always a child of a <c> (category) node and is an attribute-value pair for that specific category instance (see the category example above).

<input> Node

The <input> node is optional. When the rate request is issued with the "AddInputs" option, this node is returned in the result XML document. It includes the full input rate request document that was used to generate the rate result document.

Example:

```
<result lob="1" policyId="ABC1234-AUTO" gen_date="7/9/2008 1:50:31 PM">
  <inputs>
    <rate policyId="ABC1234-AUTO">
      ....
    </rate>
  </inputs>
  ...
</result>
```

Input Overrides

By specifying input values in the <program> node within the <header> section of the input XML, those values will be used for that program when it is processed by SoftRater, regardless of whether those values are present in the body of the XML request. This allows each program

found in the <header> to use the common set of inputs provided in the rate request body, and either provide additional inputs that are relevant only to that program, or provide overriding inputs values to ones found in the body, for use during rating.

Example:

```
<rate lob="1">
  <heading>
    <program parent_id="2" program_id="1" program_ver="3.00">
      <c i="0" d="Policy">
        <m i="11" n="Policy Program Specific Something " v="1029"/>
        <m i="12" n="Custom Question 1" v="XYZ"/>

        <c i="3" d="driver">
          <m i="2" n="gender" v="Female"/>
          <m i="3" n="Custom Driver Question 1" v="ABC"/>
        </c>
      </c>
    </program>
    <program parent_id="2" program_id="7" program_ver="3.00">
  </heading>
  <c i="0" d="Policy">
    <m i="11" n="Policy Program Specific Something " v="5000"/>
    <c i="3" d="driver">
      <m i="3" n="Custom Driver Question 1" v="DEF"/>
    </c>
  </c>
</rate>
```

Time Statistics

By enabling the time tracking statistics from the SoftRater for WebSphere Administrative system (see SoftRater for WebSphere Installation), the following node segment will be included in the Insbridge Response XML document returned from the engine.

Example:

```
<stats>
  <start_time>12/06/2008 04:25:35:0280 PM</start_time>
  <stop_time>12/06/2008 04:25:35:0316 PM</stop_time>
  <running_time>36</running_time>
</stats>
```

<start_time>

The <start_time> is the internal system tracking time from the just before the SoftRaterEJB engine starts any processing, parsing or any manipulation of the Insbridge XML Request but after the XML payload has been marshaled from the integrate client to the SoftRaterEJB system.

<stop_time>

The <stop_time> is the internal system tracking time after all program execution and just before the SoftRaterEJB engine closes the Insbridge Response XML document which will be marshaled back to the integrating client.

<running_time>

The <running_time> is the different (in Milliseconds) from the <start_time> and <stop_time>. It represents the transactional duration of the program processing the request.

Examples

Single Rate Request

See Insbridge.XML Request Format and Insbridge.XML Result Format above.

Multiple Rate Requests in a Single XML Document

It is possible to request several rates from a single XML document. These can be rates on different lines of business, across different states, and/or different SoftRater Package versions.

This simple way to do this is to combine multiple <rate> request nodes in one single root node, and submit it for rating. The root node can be anything, however in the WSI call it is always <ibdoc>.

Multiple <rate> nodes

This request XML:

```
<ibdoc>
  <rate> ... </rate>
  <rate> ... </rate>
</ibdoc>
```

...will produce this result XML:

```
<ibdoc>
  <result> ... </result>
  <result> ... </result>
</ibdoc>
```

The root node is not returned in the result XML automatically. It must be specified in the call using the "AddRoot" attribute.

Multiple <program> nodes

This request XML:

```
<ibdoc>
  <rate>
    <heading>
      <program> ... </program>
      <program> ... </program>
    </heading>
    <c>...</c>
  </rate>
</ibdoc>
```

...will produce this result XML:

```
<ibdoc>
  <result>
    <program>
      <c>...</c>
    </program>
    <program>
      <c>...</c>
    </program>
  </result>
</ibdoc>
```

Multi - State Request

To rate against multiple states using one request XML document, it is recommended to follow the "Multiple <program> nodes" request model. In the following example, we are targeting two Auto programs for rating. A program typically represents a State for a specific line of business. In this example we will assume CA="21" and TX="41". As discussed earlier in Input Overrides, each program entry can specify input values to be used for that particular program.

This rate request XML:

```
<ibdoc>
  <rate lob="1">
    <heading>
      <program parent_id="2" program_id="21"> ... </program>
      <program parent_id="2" program_id="41"> ... </program>
    </heading>
    <c>...</c>
  </rate>
</ibdoc>
```

... will produce this result XML:

```
<ibdoc>
  <result lob="1" gen_date="2/9/2008 1:50:31 PM">
    <program parent_id="2" program_id="21"> ← Results for CA
      <c>...</c>
    </program>
    <program parent_id="2" program_id="41"> ← Results for TX
      <c>...</c>
    </program>
  </result>
</ibdoc>
```

Multi - Line of Business Request

To rate against multiple lines of business using one request XML document, it is recommended to follow the "Multiple <rate> nodes" request model. In the following example, we are targeting two lines of business for rating, Auto and Home. The "lob" attribute in the <rate> node signifies which line of business will be rated against.

This rate request XML:

```
<ibdoc>
  <rate lob="1" > ... </rate>
  <rate lob="2" > ... </rate>
</ibdoc>
```

...will produce this result XML:

```
<ibdoc>
  <result lob="1" gen_date="2/9/2008 1:50:31 PM"> ... </result>
  <result lob="2" gen_date="2/9/2008 1:50:45 PM"> ... </result>
</ibdoc>
```

Results for Auto

Results for Home

If during the installation or configuration of the Insbridge Rating and Underwriting Solution you receive an error or need a question answered, please contact Support at support-skywire_ww@oracle.com.

Address any additional inquiries to:

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