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Preface

This Preface contains the following sections:

- Purpose
- Audience
- Organization
- Using this manual
- Public and private APIs
- Typographical conventions
- OpenEdge messages
- Third party acknowledgements
Purpose

This manual provides a basic reference to the APIs that a developer uses to make calls to the Progress Dynamics® environment managers. Progress Dynamics is the Progress® OpenEdge® commercialization of the ongoing Internet Component Framework (ICF) project of the Progress Open Source Software Exchange (Progress POSSE, www.possemnet.org).

Audience

This reference is intended for developers who design applications with Progress Dynamics.

Organization

This reference is organized as follows:

Chapter 1, “Configuration File Manager”

Describes the Configuration File Manager and its APIs.

Chapter 2, “Connection and Service Type Managers”

Describes the Connection and Service Type Managers and their APIs.

Chapter 3, “Customization Manager”

Describes the Customization Manager and its APIs.

Chapter 4, “General Manager”

Describes the General Manager and its APIs.

Chapter 5, “Localization Manager”

Describes the Localization Manager and its APIs.

Chapter 6, “Profile Manager”

Describes the Profile Manager and its APIs.

Chapter 7, “Referential Integrity Manager”

Describes the Referential Integrity Manager and its APIs.

Chapter 8, “Repository Managers”

Describes the Repository and Repository Design Managers and their APIs.
Chapter 9, “Security Manager”

Describes the Security Manager and its APIs.

Chapter 10, “Session Manager”

Describes the Session Manager and its APIs.

Chapter 11, “User Interface Manager”

Describes the User Interface Manager and its APIs.

Chapter 12, “Web Request Manager”

Describes the Web Request Manager and its APIs.

Using this manual

This reference discusses the application program interface (API) for the Progress Dynamics environment managers. Each chapter discusses a manager or group of related managers. Each chapter provides a general description of the manager, the temp-tables it uses, and the APIs that your applications should use to interact with the manager.

Because most of the files referenced are under the dynamics directory, most of the paths are relative to DLC\src\dynamics. The paths for files that are not under the dynamics directory are given relative to DLC\src.

OpenEdge provides a special purpose programming language for building business applications. In the documentation, the formal name for this language is ABL (Advanced Business Language). With few exceptions, all keywords of the language appear in all UPPERCASE, using a font that is appropriate to the context. All other alphabetic language content appears in mixed case.

For the latest documentation updates see the OpenEdge Product Documentation category on PSDN http://www.psdn.com/library/kbcategory.jspa?categoryID=129.

References to ABL compiler and run-time features

ABL is both a compiled and interpreted language that executes in a run-time engine that the documentation refers to as the ABL Virtual Machine (AVM). When documentation refers to ABL source code compilation, it specifies ABL or the compiler as the actor that manages compile-time features of the language. When documentation refers to run-time behavior in an executing ABL program, it specifies the AVM as the actor that manages the specified run-time behavior in the program.

For example, these sentences refer to the ABL compiler’s allowance for parameter passing and the AVM’s possible response to that parameter passing at run time: “ABL allows you to pass a dynamic temp-table handle as a static temp-table parameter of a method. However, if at run time the passed dynamic temp-table schema does not match the schema of the static temp-table parameter, the AVM raises an error.” The following sentence refers to run-time actions that the AVM can perform using a particular ABL feature: “The ABL socket object handle allows the AVM to connect with other ABL and non-ABL sessions using TCP/IP sockets.”


References to ABL data types

ABL provides built-in data types, pre-defined class data types, and user-defined class data types. References to built-in data types follow these rules:

- Like most other keywords, references to specific built-in data types appear in all UPPERCASE, using a font that is appropriate to the context. No uppercase reference ever includes or implies any data type other than itself.
- Wherever integer appears, this is a reference to the INTEGER or INT64 data type.
- Wherever decimal appears, this is a reference to the DECIMAL data type.
- Wherever numeric appears, this is a reference to the INTEGER, INT64, or DECIMAL data type.

References to pre-defined class data types appear in mixed case with initial caps, for example, Progress.Lang.Object. References to user-defined class data types appear in mixed case, as specified for a given application example.

Public and private APIs

The Progress Dynamics Managers contain many internal procedures and functions, but only a subset of them should be directly accessed by your applications. To differentiate between APIs that should be accessed and those that should not be accessed, the header comment for each API will include one of the following lines:

```
ACCESS_LEVEL=PUBLIC
```

or

```
ACCESS_LEVEL=PRIVATE
```

APIs marked PUBLIC are subject to a formal deprecation policy. APIs marked PRIVATE are intended solely to support the framework’s operation. They might be radically restructured or removed at any time to improve the framework’s performance. There will be no formal notification of changes to PRIVATE APIs. APIs that have not been marked as either PUBLIC or PRIVATE are being evaluated. They will be marked in future releases.
Typographical conventions

This manual uses the following typographical conventions:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bold</td>
<td>Bold typeface indicates commands or characters the user types, provides emphasis, or the names of user interface elements.</td>
</tr>
<tr>
<td><em>Italic</em></td>
<td>Italic typeface indicates the title of a document, or signifies new terms.</td>
</tr>
<tr>
<td><strong>SMALL, BOLD CAPITAL LETTERS</strong></td>
<td>Small, bold capital letters indicate OpenEdge key functions and generic keyboard keys; for example, GET and CTRL.</td>
</tr>
<tr>
<td><strong>KEY1+KEY2</strong></td>
<td>A plus sign between key names indicates a <em>simultaneous</em> key sequence: you press and hold down the first key while pressing the second key. For example, <strong>CTRL+X</strong>.</td>
</tr>
<tr>
<td><strong>KEY1 KEY2</strong></td>
<td>A space between key names indicates a <em>sequential</em> key sequence: you press and release the first key, then press another key. For example, <strong>ESCAPE H</strong>.</td>
</tr>
</tbody>
</table>

**Syntax:**

| Fixed width                  | A fixed-width font is used in syntax statements, code examples, system output, and filenames. |
| Fixed-width italics          | Fixed-width italics indicate variables in syntax statements. |
| Fixed-width bold             | Fixed-width bold indicates variables with special emphasis. |
| UPPERCASE fixed width        | Uppercase words are ABL keywords. Although these are always shown in uppercase, you can type them in either uppercase or lowercase in a procedure. |

OpenEdge messages

OpenEdge displays several types of messages to inform you of routine and unusual occurrences:

- **Execution messages** inform you of errors encountered while OpenEdge is running a procedure; for example, if OpenEdge cannot find a record with a specified index field value.

- **Compile messages** inform you of errors found while OpenEdge is reading and analyzing a procedure before running it; for example, if a procedure references a table name that is not defined in the database.

- **Startup messages** inform you of unusual conditions detected while OpenEdge is getting ready to execute; for example, if you entered an invalid startup parameter.
After displaying a message, OpenEdge proceeds in one of several ways:

- Continues execution, subject to the error-processing actions that you specify or that are assumed as part of the procedure. This is the most common action taken after execution messages.
- Returns to the Progress Procedure Editor, so you can correct an error in a procedure. This is the usual action taken after compiler messages.
- Halts processing of a procedure and returns immediately to the Progress Procedure Editor. This does not happen often.
- Terminates the current session.

OpenEdge messages end with a message number in parentheses. In this example, the message number is 200:

```** Unknown table name table. (200)```

If you encounter an error that terminates OpenEdge, note the message number before restarting.

### Obtaining more information about OpenEdge messages

In Windows platforms, use OpenEdge online help to obtain more information about OpenEdge messages. Many OpenEdge tools include the following Help menu options to provide information about messages:

- Choose Help→Recent Messages to display detailed descriptions of the most recent OpenEdge message and all other messages returned in the current session.
- Choose Help→Messages and then enter the message number to display a description of a specific OpenEdge message.
- In the Procedure Editor, press the HELP key or F1.

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The Configuration File Manager handles the initial startup of the Progress Dynamics® environment, as described in the following sections:

- Overview
- Temp-tables used by Configuration File Manager
- Configuration File Manager APIs
Overview

The Configuration File Manager is a server-side procedure. It is the first procedure started in the Progress Dynamics environment and initializes the startup environment. It scans the configuration file, *icfconfig.xml*, for the definition of the configuration that is starting. Using the information from that definition, it starts the Connection Manager, any specified Service Type Managers, and the Session Manager.

The Configuration File Manager is not a configurable manager. Because it is responsible for starting the Progress Dynamics environment, you should never alter its behavior.

You can retrieve the handle of the Configuration File Manager by running the following code:

```
ASSIGN hConfigFileManager =
    DYNAMIC-FUNCTION("getManagerHandle":U, INPUT "ConfigFileManager":U).
```

Table 1–1 shows the files that contain the Configuration File Manager’s code.

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td>NA</td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td>NA</td>
</tr>
<tr>
<td>Main code</td>
<td>af\app\afxmlcfgp.p</td>
</tr>
<tr>
<td>Included files</td>
<td>adecomm\adetool.i</td>
</tr>
<tr>
<td></td>
<td>adm2\globals.i</td>
</tr>
<tr>
<td></td>
<td>af\sup2\aficfcheck.i</td>
</tr>
<tr>
<td></td>
<td>af\sup2\afttnode.i</td>
</tr>
<tr>
<td></td>
<td>af\sup2\afxmlcfgtt.i</td>
</tr>
<tr>
<td></td>
<td>af\sup2\afxmlreplctrl.i</td>
</tr>
<tr>
<td></td>
<td>ry\app\ryplipmain.i</td>
</tr>
<tr>
<td></td>
<td>ry\app\ryplipkill.i</td>
</tr>
<tr>
<td></td>
<td>ry\app\ryplipsetu.i</td>
</tr>
<tr>
<td></td>
<td>ry\app\ryplipshut.i</td>
</tr>
</tbody>
</table>

For more information on this Manager, see the chapter on using the Progress Dynamics Managers in *OpenEdge Development: Progress Dynamics Advanced Development*. 
Temp-tables used by Configuration File Manager

The Configuration File Manager uses several temp-tables to store information used in starting the framework.

Table 1–2 describes the temp-tables defined in `afxmlcfgtt.i`. The preprocessors included in the names of certain tables allow you to easily incorporate temp-tables for custom managers.

**Table 1–2: Temp-tables defined in afsup2\afxmlcfgtt.i**

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>ttManager{&amp;ttManagerExt}</code></td>
<td>cSessionType (Character) iOrder (Integer) cManagerName (Character) cFileName (Character) cHandleName (Character) cSuperOf (Character) hHandle (Handle) iUniqueID (Integer) iDBOrder (Integer) iCFGOrder (Integer) lUpdated (Logical) lDelete (Logical)</td>
</tr>
<tr>
<td><code>ttParam</code></td>
<td>cOption (Character) cValue (Character) cDispValue (Character)</td>
</tr>
<tr>
<td><code>ttProperty</code></td>
<td>cSessionType (Character) cProperty (Character) cValue (Character) lUpdated (Logical) lDelete (Logical)</td>
</tr>
<tr>
<td><code>ttService{&amp;ttServiceExt}</code></td>
<td>cSessionType (Character) iOrder (Integer) cServiceType (Character) cServiceName (Character) cPhysicalService (Character) cConnectParams (Character) lDefaultService (Logical) lConnectAtStartup (Logical) lCanRunLocal (Logical) iStartOrder (Integer) iDBOrder (Integer) iCFGOrder (Integer) lUpdated (Logical) lDelete (Logical)</td>
</tr>
<tr>
<td><code>ttSession{&amp;ttSessionExt}</code></td>
<td>cSessionType (Character) {&amp;session-table-fields}</td>
</tr>
</tbody>
</table>
The Configuration File Manager uses the temp-table described in Table 1–3 to store information about the nodes in the configuration file, icfconfig.xml.

### Table 1–3: Temp-table defined in af\sup2\afttnode.i

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttNode</td>
<td>cNode (Character)</td>
</tr>
<tr>
<td></td>
<td>cValue (Character)</td>
</tr>
<tr>
<td></td>
<td>iNodeLevel (Integer)</td>
</tr>
<tr>
<td></td>
<td>lDelete (Logical)</td>
</tr>
</tbody>
</table>

### Configuration File Manager APIs

This section lists the APIs that you can use with the Configuration File Manager.

#### detectFileType

This function determines the type of file from the filename. The valid file types are:

- **U** = URL.
- **N** = UNC Filename (\Machine\share\directory\file).
- **D** = DOS\Windows (D:\directory\file).
- **X** = UNIX Filename.

**Location:** af\app\afxmlcfgp.p

**Parameters:**

INPUT pcFileName AS CHARACTER

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the validateConfigFile procedure in af\app\afxmlcfggp.p.
**expandTokens**

This function replaces tokens in the string with the values from the session parameters. Tokens in the string are in the form: #<token>#. The replacement values are derived from the getSessionParam function.

**Location:**  
af\app\afxmlcfgp.p

**Parameters:**

INPUT pcString AS CHARACTER

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the propertyExpander procedure in af\app\afxmlcfgp.p.

**findFile**

This function takes a filename and tries to find the file on disk using the _start_in_dir and _framework directories.

**Location:**  
af\app\afxmlcfgp.p

**Parameters:**

INPUT pcFileName AS CHARACTER

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the applyUpdates procedure in install\prc\insessupdp.p.

**getCodePath**

This function returns a string containing the path for a passed-in file.

**Location:**  
af\app\afxmlcfgp.p

**Parameters:**

INPUT pcFileName AS CHARACTER

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the startProcedure procedure in af\app\afxmlcfgp.p.
**getExpandablePropertyValue**

This function obtains the value of an expandable property.

**Location:** af\app\afxxmlcfgp.p

**Parameters:**

INPUT pcProperty AS CHARACTER

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the propertyExpander procedure in af\app\afxxmlcfgp.p.

**getManagerHandle**

This function gets the handle of an already started manager. It returns an Unknown value (?) if the manager has not been started.

**Location:** af\app\afxxmlcfgp.p

**Parameters:**

INPUT pcManagerName AS CHARACTER

**Returns:** HANDLE

**Notes:** None

**Examples:** See the sessionShutdown procedure in af\app\afxxmlcfgp.p.

**getPhysicalSessionType**

This function determines the session’s physical session type. If the value has not previously been set as a parameter, it is set here.

**Location:** af\app\afxxmlcfgp.p

**Parameters:** None

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the initializeSession procedure in af\app\afxxmlcfgp.p.
getProcedureHandle

This function determines the handle to a running procedure (if it is running) and returns the handle. It returns an Unknown value (?) if the handle cannot be determined.

Location: af\app\afxmlcfgp.p
Parameters:
   INPUT pcFileName AS CHARACTER
Returns: HANDLE
Notes: This function assumes that there is only one running copy of the procedure.
Examples: See the startProcedure procedure in af\app\afxmlcfgp.p.

getSessionParam

This function returns the value associated with an option.

Location: af\app\afxmlcfgp.p
Parameters:
   INPUT pcOption AS CHARACTER
Returns: CHARACTER
Notes: None
Examples: See the main block in af\app\afxmlcfgp.p.

initializeSession

This procedure controls setting all the global environment settings.

Location: af\app\afxmlcfgp.p
Parameters:
   INPUT pcICFParam AS CHARACTER
Notes: None
Examples: See the main block in dynamics\icfstart.p.
isConfigManRunning

This function checks if the Configuration Manager is running. If it is, the function returns a value of TRUE. This allows users to find out if the Configuration File Manager is running without having to obtain its handle. Users can simply call it using a DYNAMIC-FUNCTION call.

Location: af\app\afxmlcfgp.p
Parameters: None
Returns: LOGICAL
Notes: None
Examples: See the start-super-proc procedure in af\sup2\afsrvtype.i.

isICFRunning

This function checks if the Progress Dynamics environment is established and running. It returns a value of TRUE if the environment is running.

If the global variable glICFIsRunning is unknown, this function checks the values of the global variables that contain the essential Progress Dynamics managers. If glICFIsRunning is not unknown, this function returns the value of that variable. This enables the user to override the standard definition of what constitutes a running Progress Dynamics session.

Location: af\app\afxmlcfgp.p
Parameters: None
Returns: LOGICAL
Notes: This function assumes that opaque handles are switched on.
Examples: See the main block in dynamics\icfstart.p.

obtainCFMTables

This procedure returns the handles to all the temp-tables that the Connection File Manager has populated after reading the configuration file.

Location: af\app\afxmlcfgp.p
Parameters:
OUTPUT phParam AS HANDLE
OUTPUT phManager AS HANDLE
Notes: This procedure deliberately does not return all the temp-tables as some of them are working tables that should not have their values displayed.
Examples: See the getHandles procedure in af\cod2\afsessinfo.w.
obtainRegistryKeys

This procedure parses the RegistryKeys property to find the properties that contain registry keys that need to be loaded. It then parses each of those keys and loads the key values.

**Location:** af\app\afxmlcfgp.p  
**Parameters:** None  
**Notes:** None  
**Examples:** See the initializeSession procedure in af\app\afxmlcfgp.p.

parseConfig

This procedure takes the handle to icfconfig.xml and retrieves the contents of the requested session types into the configuration temp-tables.

**Location:** af\app\afxmlcfgp.p  
**Parameters:**  
INPUT phXDoc AS HANDLE  
Handle to the X Document that has the info.  
INPUT pcSessType AS CHARACTER  
Session Type to read in. A blank value retrieves all the data.  
**Notes:** None  
**Examples:** See the initializeSession procedure in af\app\afxmlcfgp.p.

propertyExpander

This procedure expands all the properties in the expand list using the appropriate method.

**Location:** af\app\afxmlcfgp.p  
**Parameters:** None  
**Notes:** None  
**Examples:** See the initializeSession procedure in af\app\afxmlcfgp.p.
**sessionShutdown**

This procedure cleans up the session and ensures that all the managers are properly closed down.

**Location:** af\app\afxmlcfgp.p  
**Parameters:** None  
**Notes:** None  
**Examples:** See the main block in af\app\afxmlcfgp.p.

**setIcfIsRunning**

This function exposes the glICFIsRunning variable to other procedures. This enables the variable to be set and retrieved to determine if the Progress Dynamics environment has been properly established.

**Location:** af\app\afxmlcfgp.p  
**Parameters:**  
INPUT p1Running AS LOGICAL  
**Returns:** LOGICAL  
**Notes:** None

**setSessionParam**

This function sets the value of a parameter in the ttParam table.

**Location:** af\app\afxmlcfgp.p  
**Parameters:**  
INPUT pcOption AS CHARACTER  
INPUT pcValue AS CHARACTER  
**Returns:** LOGICAL  
**Notes:** None  
**Examples:** See the initializeSession procedure in af\app\afxmlcfgp.p.
subscribeAll

This procedure subscribes a procedure to the events that must be trapped from the Configuration File Manager startup.

**Location:**  
af\app\afxm1cfgp.p

**Parameters:**

INPUT phSourceProc AS HANDLE

INPUT phTargetProc AS HANDLE

**Notes:**  
None

**Examples:**  
See the main block in dynamics\icfstart.p.
The Connection and Service Type Managers handle the connections to databases, AppServers™ for OpenEdge applications, and other services for the Progress Dynamics® environment, as outlined in the following sections:

- **Overview**
- **Temp-tables used by Connection and Service Type Managers**
- **Connection Manager APIs**
- **AppServer Connection Manager APIs**
- **Database Connection Manager APIs**
- **WebService Service Type Manager APIs**
Connection and Service Type Managers

Overview

The Connection and Service Type Managers work together to establish and maintain connections to services in the Progress Dynamics environment, such as AppServers and databases. The Connection Manager uses the Service Type Manager for a service type as a device driver to handle the details of connections to all services of that type. All these managers run on the server-side of the environment.

At session start, the Configuration File Manager retrieves the session type data from the configuration file. The Connection Manager is always the next manager started. After it has started, any necessary Service Type Managers start. The precedence for starting the Service Type Managers is generally AppServer, Database, and then any other.

You can retrieve the handle of these Managers by running code like the following example for the Connection Manager:

```assign
hConnectionManager = DYNAMIC-FUNCTION("getManagerHandle":U, INPUT "ConnectionManager":U).
```

Table 2–1 shows the files that contain the Connection Manager’s code.

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td>NA</td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td>NA</td>
</tr>
<tr>
<td>Main code</td>
<td><code>af\app\afconmgrp.p</code></td>
</tr>
<tr>
<td>Included files</td>
<td><code>af\sup2\afglocals.i</code></td>
</tr>
<tr>
<td></td>
<td><code>af\app\afconttdef.i</code></td>
</tr>
</tbody>
</table>

The Progress Dynamics framework comes with prebuilt Service Type Managers for AppServers, databases, and Web services. In the configuration file, these managers are referred to as the AppServer Connection Manager, Database Connection Manager, and WebService Connection Manager.

You can also create custom Service Type Managers to handle other services. You can find a template for new Service Type Managers in `af\app\afsvrconmgrp.p`. 
Table 2–2 shows the files that contain the AppServer Connection Manager’s code.

**Table 2–2: AppServer Connection Manager files**

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td>NA</td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td>NA</td>
</tr>
<tr>
<td>Main code</td>
<td>af\app\afasconmgrp.p</td>
</tr>
<tr>
<td>Included files</td>
<td>adecomm_adetool.i</td>
</tr>
<tr>
<td></td>
<td>adecomm\appsrvtt.i</td>
</tr>
<tr>
<td></td>
<td>af\sup2\aficfcheck.i</td>
</tr>
<tr>
<td></td>
<td>af\sup2\afsrvtype.i</td>
</tr>
<tr>
<td>Other important files</td>
<td>af\app\afservicetype.p</td>
</tr>
</tbody>
</table>

Table 2–3 shows the files that contain the Database Connection Manager’s code.

**Table 2–3: Database Connection Manager files**

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td>NA</td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td>NA</td>
</tr>
<tr>
<td>Main code</td>
<td>af\app\afdbconmgrp.p</td>
</tr>
<tr>
<td>Included files</td>
<td>af\sup2\aficfcheck.i</td>
</tr>
<tr>
<td></td>
<td>af\sup2\afsrvtype.i</td>
</tr>
<tr>
<td>Other important files</td>
<td>af\app\afservicetype.p</td>
</tr>
</tbody>
</table>

Table 2–4 shows the files that contain the WebService Service Type Manager’s code.

**Table 2–4: WebService Service Type Manager files**

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td>NA</td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td>NA</td>
</tr>
<tr>
<td>Main code</td>
<td>af\app\afwebconmgrp.p</td>
</tr>
<tr>
<td>Included files</td>
<td>af\sup2\afsrvtype.i</td>
</tr>
<tr>
<td>Other important files</td>
<td>af\app\afservicetype.p</td>
</tr>
</tbody>
</table>

For more information on these Managers, see the chapter on using the Progress Dynamics Managers in *OpenEdge Development: Progress Dynamics Advanced Development*. 
Temp-tables used by Connection and Service Type Managers

The managers use the temp-tables to store information about services and service types. The temp-tables use the general form described in Table 2–5.

Table 2–5: Temp-tables defined in af\app\afconttdef.i

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>tt{&amp;ttPrefix}Service</td>
<td>cServiceName (Character) cPhysicalService (Character)</td>
</tr>
<tr>
<td></td>
<td>cServiceType (Character) cConnectParams (Character)</td>
</tr>
<tr>
<td></td>
<td>lDefaultService (Logical)</td>
</tr>
<tr>
<td>tt{&amp;ttPrefix}ServiceType</td>
<td>cServiceType (Character) cSTProcName (Character)</td>
</tr>
<tr>
<td></td>
<td>hSTManager (Handle) lUseHandle (Logical)</td>
</tr>
<tr>
<td></td>
<td>lConnectAtStartup (Logical)</td>
</tr>
</tbody>
</table>

Note: The preprocessor inserted in the temp-table name allows you to define separate Service and Service Type temp-tables for different managers by passing in different values to the definition statements in af\app\afconttdef.i.

The managers also use the temp-table described in Table 2–6.

Table 2–6: Temp-tables defined in af\sup2\afsrvtype.i

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttService</td>
<td>cServiceName (Character) cPhysicalService (Character)</td>
</tr>
<tr>
<td></td>
<td>cConnectParams (Character) cServiceHandle (Character)</td>
</tr>
<tr>
<td></td>
<td>lDefaultService (Logical) lConnectAtStartup (Logical)</td>
</tr>
<tr>
<td></td>
<td>{&amp;ServiceTypeFields}</td>
</tr>
</tbody>
</table>
Connection Manager APIs

This section lists the APIs that you can use with the Connection Manager.

**connectService**

This procedure establishes the connection to the required physical service.

**Location:** af\app\afconmgrp.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

OUTPUT pcHandle AS CHARACTER

**Notes:** This is a wrapper procedure that calls connectServiceWithParams supplying blank values for the pcParameterList and pcSubstitutionList parameters.

**Examples:** See the initializeServices procedure in af\app\afconmgrp.p.

**connectServiceWithParams**

This procedure establishes the connection to the required physical service. The procedure accepts the substitute parameter list.

**Location:** af\app\afconmgrp.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

INPUT pcParameterList AS CHARACTER

INPUT pcSubstitutionList AS CHARACTER

OUTPUT pcHandle AS CHARACTER

**Notes:** None
disconnectService

This procedure disconnects a physical service.

Location: af\app\afconmgrp.p
Parameters:
  INPUT pcServiceName AS CHARACTER
Notes: None
Examples: See the processDB procedure in install\prc\inuiutilp.p.

getConnectionParams

This function returns the connection parameters for a logical service.

Location: af\app\afconmgrp.p
Parameters:
  INPUT pcServiceName AS CHARACTER
Returns: CHARACTER
Notes: None
Examples: See the getConnectionString function in af\app\afservicetype.p.

getConnectionString

This function retrieves the connection string for a logical service.

Location: af\app\afconmgrp.p
Parameters:
  INPUT pcServiceName AS CHARACTER
Returns: CHARACTER
Notes: None

getPhysicalService

This function returns the physical service associated with a logical service name.

Location: af\app\afconmgrp.p
Parameters:
  INPUT pcServiceName AS CHARACTER
Returns: CHARACTER
Notes: None
**getServiceImpl**

This function gets the handle to a specific service.

**Location:** af\app\afconmgrp.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

**Returns:** CHARACTER

**Notes:** None

**getServiceImpl**

This function dynamically runs the getServiceList function for the procedure that should make the current connection.

**Location:** af\app\afconmgrp.p

**Parameters:**

INPUT pcServiceType AS CHARACTER

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the initializeObject procedure in af\obj2\afgendatov.w.

**getServiceSTManager**

This function returns the Service Type Manager handle for a specified service name.

**Location:** af\app\afconmgrp.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

**Returns:** HANDLE

**Notes:** None

**Examples:** See the isConnected function in af\app\afconmgrp.p.

**getServiceType**

This function returns the service type of a known service.

**Location:** af\app\afconmgrp.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

**Returns:** CHARACTER

**Notes:** None
**getServiceTypeManager**

This function determines the handle to the procedure that manages a particular service.

**Location:** af\app\afconmgrp.p

**Parameters:**

INPUT pcServiceType AS CHARACTER

**Returns:** HANDLE

**Notes:** None

**Examples:** See the isConnected function in af\app\afconmgrp.p.

**initializeServices**

This procedure reads the contents of the table passed using the temp-table. It then buffer-copies the contents to the ttService table.

**Location:** af\app\afconmgrp.p

**Parameters:**

INPUT phService AS HANDLE

INPUT plConnect AS LOGICAL

**Notes:** None

**Examples:** See the initializeSession procedure in af\app\afxmlcfgp.p.

**isConnected**

This function determines whether or not a specific service is connected.

**Location:** af\app\afconmgrp.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

**Returns:** LOGICAL

**Notes:** None

**Examples:** See the registerService procedure in af\app\afconmgrp.p.
**isServiceRegistered**

This function determines whether or not a specific service is registered.

**Location:** af\app\afconmgrp.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

**Returns:** LOGICAL

**Notes:** None

**Examples:** See the registerService procedure in af\app\afconmgrp.p.

---

**obtainConnectionTables**

This procedure retrieves the handles for the temp-tables that hold the data from the Connection Manager and Service Manager.

**Location:** af\app\afconmgrp.p

**Parameters:**

OUTPUT phServiceType AS HANDLE

  The handle of ttServiceType.

OUTPUT phService AS HANDLE

  The handle of ttService.

**Notes:** None

**Examples:** See the main block in af\app\afapppingp.p.

---

**plipShutdown**

This procedure runs on shutdown of the manager to ensure everything closes properly.

**Location:** af\app\afconmgrp.p

**Parameters:** None

**Notes:** None
reconnectService

This procedure attempts to reconnect a service after it fails.

**Location:** af\app\afconmgrp.p

**Parameters:**

INPUT pcServiceName AS CHARACTER
OUTPUT pcHandle AS CHARACTER

**Notes:** None

registerService

This procedure registers a service with the Connection Manager and the appropriate Service Type Manager.

**Location:** af\app\afconmgrp.p

**Parameters:**

INPUT phService AS HANDLE

**Notes:** None

**Examples:** See the initializeServices procedure in af\app\afconmgrp.p.

setServiceTypeManager

This function creates a record in the service type temp-table that registers the persistent procedure responsible for managing each service type.

**Location:** af\app\afconmgrp.p

**Parameters:**

INPUT phServiceProc AS HANDLE

**Returns:** LOGICAL

**Notes:** None

**Examples:** See the initializeSession procedure in af\app\afxmlcfgp.p.
AppServer Connection Manager APIs

This section lists the APIs that you can use with the AppServer Connection Manager.

**appServerConnect**

This procedure used to be called in the *as-utils*. It is here for backward compatibility.

*Location:* \(\text{af\app\afasconmgrp.p}\)

*Parameters:*

- **INPUT partition_name** AS CHARACTER
- **INPUT security_prompt** AS LOGICAL
- **INPUT app_server_info** AS CHARACTER
- **OUTPUT conn-hdl** AS HANDLE

*Notes:* None

**appServerDisconnect**

This procedure used to be called in the *as-utils*. It is here for backward compatibility.

*Location:* \(\text{af\app\afasconmgrp.p}\)

*Parameters:*

- **INPUT partition_name** AS CHARACTER

*Notes:* The AppServer should only be disconnected with `disconnectService`.

**connectService**

This procedure connects a physical service for a given service name. This procedure is a required entry point for the Connection Manager.

*Location:* \(\text{af\app\afasconmgrp.p}\)

*Parameters:*

- **INPUT pcServiceName** AS CHARACTER
- **OUTPUT pcHandle** AS CHARACTER

*Notes:* This is a wrapper procedure that calls `connectServiceWithParams` supplying blank values for the `pcParameterList` and `pcSubstitutionList` parameters.

*Examples:* See the appServerConnect procedure in \(\text{af\app\afasconmgrp.p}\).
### connectServiceWithParams

This procedure establishes the connection to the required physical service. The procedure accepts the substitute parameter list.

**Location:** af\app\afconmgrp.p  
**Parameters:**  
- INPUT pcServiceName AS CHARACTER  
- INPUT pcParameterList AS CHARACTER  
- INPUT pcSubstituteList AS CHARACTER  
- OUTPUT pcHandle AS CHARACTER  
**Notes:** None

### definedPartitions

This function used to be called in the as-utils. It is here for backward compatibility.

**Location:** af\app\afasconmgrp.p  
**Parameters:** None  
**Returns:** CHARACTER  
**Notes:** None

### disconnectService

This procedure disconnects a physical service. This procedure is a required entry point for the Connection Manager.

**Location:** af\app\afasconmgrp.p  
**Parameters:**  
- INPUT pcServiceName AS CHARACTER  
**Notes:** None  
**Examples:** See the plipShutdown procedure in af\app\afasconmgrp.p.
findServiceRecord

This function finds the service record for a specific service name.

**Location:** af\app\afservicetype.p  
**Parameters:**

INPUT pcServiceName AS CHARACTER

    The service name.

INPUT pcLock AS CHARACTER

**Returns:** HANDLE  
**Notes:** None

getAsConnectString

This function used to be called in the as-utils. It is here for backward compatibility.

**Location:** af\app\afasconmgrp.p  
**Parameters:**

BUFFER bAppSrvTT FOR AppSrv-TT

**Returns:** CHARACTER  
**Notes:** None

getConnectionParams

This function returns the connection parameter field associated with a logical service name.

**Location:** af\app\afservicetype.p  
**Parameters:**

INPUT pcServiceName AS CHARACTER

    The logical service name.

**Returns:** CHARACTER  
**Notes:** None
getConnectionString

This function returns the connection string used to connect to a logical service name.

Location: af\app\afservicetype.p
Parameters:
  INPUT pcServiceName AS CHARACTER
  The logical service name.
Returns: CHARACTER
Notes: None

getJMSPartitions

This function used to be called in the as-utils. It is here for backward compatibility.

Location: af\app\afasconmgrp.p
Parameters: None
Returns: CHARACTER
Notes: None

getJMSPtnInfo

This function used to be called in the as-utils. It is here for backward compatibility.

Location: af\app\afasconmgrp.p
Parameters:
  INPUT cPartition AS CHARACTER
Returns: CHARACTER
Notes: None

getPartitionsByType

This function used to be called in the as-utils. It is here for backward compatibility.

Location: af\app\afasconmgrp.p
Parameters:
  INPUT cType AS CHARACTER
Returns: CHARACTER
Notes: None
Examples: See the definedPartitions function in af\app\afasconmgrp.p.
**getPhysicalService**

This function returns the name of a physical service associated with a logical service name.

**Location:** `af\app\afservicetype.p`

**Parameters:**

INPUT `pcServiceName` AS CHARACTER

The logical service name.

**Returns:** CHARACTER

**Notes:** None

**getServiceField**

This function obtains a handle to a field on the `ttService` table.

**Location:** `af\app\afservicetype.p`

**Parameters:**

INPUT `pcServiceName` AS CHARACTER

The logical service name.

INPUT `pcFieldName` AS CHARACTER

The name of the field.

**Returns:** HANDLE

**Notes:** None

**getServiceHandle**

This function returns the handle to a the specific service name.

**Location:** `af\app\afservicetype.p`

**Parameters:**

INPUT `pcServiceName` AS CHARACTER

The logical service name.

**Returns:** CHARACTER

**Notes:** None
**getServiceList**

This function returns a CHR(3)-delimited list of logical service names from the ttServiceType temp-table.

**Location:** af\app\afservicetype.p  
**Parameters:** None  
**Returns:** CHARACTER  
**Notes:** None

**initializeSelf**

This procedure gets the handle of af\app\afasconmgrp.p, starting it persistently if necessary.

**Location:** af\app\afasconmgrp.p  
**Parameters:** None  
**Notes:** None  
**Examples:** See the main block in af\app\afasconmgrp.p.

**isConnected**

This function determines whether the requested service type is connected.

**Location:** af\app\afasconmgrp.p  
**Parameters:**  
**INPUT** pcServiceName AS CHARACTER  
**Returns:** LOGICAL  
**Notes:** None  
**Examples:** See the connectService procedure in af\app\afasconmgrp.p.

**isDefaultService**

This function determines if a logical service is a default service.

**Location:** af\app\afservicetype.p  
**Parameters:**  
**INPUT** pcServiceName AS CHARACTER  
**The logical service name.**  
**Returns:** LOGICAL  
**Notes:** None
loadPartitionInfo
This procedure used to be called in the as-utils. It is here for backward compatibility.

Location: af\app\afasconmgrp.p
Parameters: None
Notes: None

parseConnectionParams
This function parses the pcParams variable and returns the connection string.

Location: af\app\afasconmgrp.p
Parameters:

INPUT pcParams AS CHARACTER

Returns: CHARACTER
Notes: None
Examples: See the registerService procedure in af\app\afasconmgrp.p.

plipShutdown
This procedure cleans up the AppServer connections when the AppServer Connection Manager shuts down.

Location: af\app\afasconmgrp.p
Parameters: None
Notes: None

reconnectService
This procedure attempts to reconnect a session after it fails.

Location: af\app\afasconmgrp.p
Parameters:

INPUT pcServiceName AS CHARACTER

OUTPUT pcHandle AS CHARACTER
Notes: None
**registerService**

This procedure takes a buffer containing a service and creates an entry in the local service temp-table if necessary. Otherwise, it attempts to disconnect the connected service and resets the service data. This procedure is a required entry point for the Connection Manager.

**Location:** af\app\afservicetype.p

**Parameters:**

INPUT phServiceBuff AS HANDLE

The handle of the buffer that contains the service.

**Notes:** None

**savePartitionInfo**

This procedure used to be called in the as-utils. It is here for backward compatibility.

**Location:** af\app\afasconmgrp.p

**Parameters:** None

**Notes:** None

**security_prompt**

This procedure used to be called in the as-utils. It is here for backward compatibility.

**Location:** af\app\afasconmgrp.p

**Parameters:**

OUTPUT lCancel AS LOGICAL

**Notes:** None

**setServiceHandle**

This function sets the value of a particular service handle.

**Location:** af\app\afservicetype.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

The logical service name.

INPUT pcServiceHandle AS CHARACTER

The service handle.

**Returns:** LOGICAL

**Notes:** None
Database Connection Manager APIs

This section lists the APIs that you can use with the Database Connection Manager.

connectService

This procedure connects a physical service for a given service name. This procedure is a required entry point for the Connection Manager.

Location:  af\app\afdbconmgrp.p
Parameters:

INPUT pcServiceName AS CHARACTER
OUTPUT pcHandle AS CHARACTER

Notes: This is a wrapper procedure that calls connectServiceWithParams supplying blank values for the pcParameterList and pcSubstitutionList parameters.

connectServiceWithParams

This procedure establishes the connection to the required physical service. The procedure accepts the substitute parameter list.

Location:  af\app\afdbconmgrp.p
Parameters:

INPUT pcServiceName AS CHARACTER
INPUT pcParameterList AS CHARACTER
INPUT pcSubstitutionList AS CHARACTER
OUTPUT pcHandle AS CHARACTER

Notes: None

disconnectService

This procedure disconnects a physical service. This procedure is a required entry point for the Connection Manager.

Location:  af\app\afdbconmgrp.p
Parameters:

INPUT pcServiceName AS CHARACTER

Notes: None
**findServiceRecord**

This function finds the service record for a specific service name.

**Location:** af\app\afservicetype.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

The service name.

INPUT pcLock AS CHARACTER

**Returns:** HANDLE

**Notes:** None

**getConnectionParams**

This function returns the connection parameter field associated with a logical service name.

**Location:** af\app\afservicetype.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

The logical service name.

**Returns:** CHARACTER

**Notes:** None

**getConnectionString**

This function overrides the super procedure to ensure that the input string starts with the Logical Database Name startup parameter (-ld).

**Location:** af\app\afdbconmgrp.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

The logical service name.

**Returns:** CHARACTER

**Notes:** None
getPhysicalService

This function returns the name of a physical service associated with a logical service name.

Location:    af\app\afservicetype.p
Parameters:

INPUT pcServiceName AS CHARACTER

The logical service name.

Returns:    CHARACTER
Notes:      None

getServiceField

This function obtains a handle to a field on the ttService table.

Location:    af\app\afservicetype.p
Parameters:

INPUT pcServiceName AS CHARACTER

The logical service name.

INPUT pcFieldName AS CHARACTER

The name of the field.

Returns:    HANDLE
Notes:      None

getServiceHandle

This function returns the handle to a the specific service name.

Location:    af\app\afservicetype.p
Parameters:

INPUT pcServiceName AS CHARACTER

The logical service name.

Returns:    CHARACTER
Notes:      None
**getServiceList**

This function returns a CHR(3)-delimited list of logical service names from the ttServiceType temp-table.

- **Location:** af\app\afservicetype.p
- **Parameters:** None
- **Returns:** CHARACTER
- **Notes:** None

**isConnected**

This function determines whether the requested service type is connected.

- **Location:** af\app\afdbconmgrp.p
- **Parameters:**
  - INPUT pcServiceName AS CHARACTER
- **Returns:** LOGICAL
- **Notes:** None
- **Examples:** See the connectService procedure in af\app\afdbconmgrp.p.

**isDefaultService**

This function determines if a logical service is a default service.

- **Location:** af\app\afservicetype.p
- **Parameters:**
  - INPUT pcServiceName AS CHARACTER
    - The logical service name.
- **Returns:** LOGICAL
- **Notes:** None
parseConnectionParams

This function parses pcParams and returns the connection string.

Location: af\app\afdbconmgrp.p
Parameters:

INPUT pcParams AS CHARACTER

Returns: CHARACTER
Notes: None
Examples: See the getConnectionString procedure in af\app\afservicetype.p.

plipShutdown

This procedure cleans up the database connections when the Database Connection Manager shuts down.

Location: af\app\afdbconmgrp.p
Parameters: None
Notes: None

registerService

This procedure takes a buffer containing a service and creates an entry in the local service temp-table if necessary. Otherwise, it attempts to disconnect the connected service and resets the service data. This procedure is a required entry point for the Connection Manager.

Location: af\app\afservicetype.p
Parameters:

INPUT phServiceBuff AS HANDLE

    The handle of the buffer that contains the service.

Notes: None
**setServiceHandle**

This function sets the value of a particular service handle.

**Location:** af\app\afservicetype.p

**Parameters:**

<table>
<thead>
<tr>
<th>INPUT pcServiceName AS CHARACTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>The logical service name.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INPUT pcServiceHandle AS CHARACTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>The service handle.</td>
</tr>
</tbody>
</table>

**Returns:** LOGICAL

**Notes:** None

---

**WebService Service Type Manager APIs**

This section lists the APIs that you can use with the WebService Service Type Manager.

**connectService**

This procedure connects a physical service for a given service name. This procedure is a required entry point for the Connection Manager.

**Location:** af\app\afwebcommgrp.p

**Parameters:**

<table>
<thead>
<tr>
<th>INPUT pcServiceName AS CHARACTER</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>OUTPUT pcHandle AS CHARACTER</th>
</tr>
</thead>
</table>

**Notes:** This is a wrapper procedure that calls connectServiceWithParams supplying blank values for the pcParameterList and pcSubstitutionList parameters.
**connectServiceWithParams**

This procedure connects a physical service for a given service name. This procedure is a required entry point for the Connection Manager.

The procedure retrieves the connection string and appends anything in the parameter list to the end of the connection string. It then invokes `substituteParam` in the target procedure to substitute arguments in the connection string with values from the substitution list. Finally it binds to the Web service using the updated connection string and returns the server object handle.

**Location:** af\app\afwebconmgrp.p

**Parameters:**

INPUT `pcServiceName` AS CHARACTER  
INPUT `pcParameterList` AS CHARACTER  
INPUT `pcSubstitutionList` AS CHARACTER  
OUTPUT `pcHandle` AS CHARACTER

**Notes:** None

**Examples:** See the `connectService` procedure in af\app\afwebconmgrp.p.

**disconnectService**

This procedure disconnects a physical service. This procedure is a required entry point for the Connection Manager.

**Location:** af\app\afwebconmgrp.p

**Parameters:**

INPUT `pcServiceName` AS CHARACTER

**Notes:** None

**Examples:** See the `plipShutdown` procedure in af\app\afwebconmgrp.p.
findServiceRecord

This function finds the service record for a specific service name.

**Location:** af\app\afservicetype.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

The service name.

INPUT pcLock AS CHARACTER

**Returns:** HANDLE

**Notes:** None

getConnectionParams

This function returns the connection parameter field associated with a logical service name.

**Location:** af\app\afservicetype.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

The logical service name.

**Returns:** CHARACTER

**Notes:** None

getConnectionString

This function returns the connection string used to connect to a logical service name.

**Location:** af\app\afservicetype.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

The logical service name.

**Returns:** CHARACTER

**Notes:** None
**getPhysicalService**

This function returns the name of a physical service associated with a logical service name.

**Location:** af\app\afservicetype.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

  The logical service name.

**Returns:** CHARACTER

**Notes:** None

**getServiceField**

This function obtains a handle to a field on the ttService table.

**Location:** af\app\afservicetype.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

  The logical service name.

INPUT pcFieldName AS CHARACTER

  The name of the field.

**Returns:** HANDLE

**Notes:** None

**getServiceHandle**

This function returns the handle to a specific service name.

**Location:** af\app\afservicetype.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

  The logical service name.

**Returns:** CHARACTER

**Notes:** None
**getServiceList**

This function returns a CHR(3)-delimited list of logical service names from the ttServiceType temp-table.

*Location:* af\app\afservicetype.p  
*Parameters:* None  
*Returns:* CHARACTER  
*Notes:* None

**isConnected**

This function determines whether the requested Web service is bound.

*Location:* af\app\afwebconmgrp.p  
*Parameters:*  
  - INPUT pcServiceName AS CHARACTER  
*Returns:* LOGICAL  
*Notes:* None  
*Examples:* See the connectServiceWithParams procedure in af\app\afwebconmgrp.p.

**isDefaultService**

This function determines if a logical service is a default service.

*Location:* af\app\afservicetype.p  
*Parameters:*  
  - INPUT pcServiceName AS CHARACTER  
  - The logical service name.  
*Returns:* LOGICAL  
*Notes:* None

**parseConnectionParams**

This function parses the pcParams variable and returns the connection string.

*Location:* af\app\afwebconmgrp.p  
*Parameters:*  
  - INPUT pcParams AS CHARACTER  
*Returns:* CHARACTER  
*Notes:* None
plipShutdown

This procedure cleans up the Web service connections when the WebService Service Type Manager shuts down.

Location:  af\app\afwebconmgrp.p
Parameters: None
Notes: None

reconnectService

This procedure attempts to reconnect a Web service after the connection fails.

Location:  af\app\afwebconmgrp.p
Parameters:
INPUT pcServiceName AS CHARACTER
OUTPUT pcHandle AS CHARACTER
Notes: This is a wrapper procedure that calls reconnectServiceWithParams supplying blank values for the pcParameterList and pcSubstitutionList parameters.

reconnectServiceWithParams

This procedure attempts to reconnect a Web service after the connection fails. It first calls disconnectService to ensure that the service is fully disconnected. It then calls reconnectServiceWithParams to reconnect to the service.

Location:  af\app\afwebconmgrp.p
Parameters:
INPUT pcServiceName AS CHARACTER
INPUT pcParameterList AS CHARACTER
INPUT pcSubstitutionList AS CHARACTER
OUTPUT pcHandle AS CHARACTER
Notes: None
setServiceHandle

This function sets the value of a particular service handle.

**Location:** af\app\afservicetype.p

**Parameters:**

INPUT pcServiceName AS CHARACTER

The logical service name.

INPUT pcServiceHandle AS CHARACTER

The service handle.

**Returns:** LOGICAL

**Notes:** None
Customization Manager

The Customization Manager determines what customizations should be applied to the user interface (UI) in a given situation, as outlined in the following sections:

- Overview
- Customization Manager APIs
Overview

The Customization Manager coordinates the application of UI customizations to your application. The manager retrieves a priority list for the session and uses it to determine the order in which customizations should be applied. It then builds and caches a set of customization codes that apply to the current client session. When the client requests information from the Repository Manager, the customization codes are used to retrieve and properly display the correct objects.

In a distributed environment, the Customization Manager is started on both the client and server sides. There is a wrapper program for each side that sets the global variable, server-side, to either YES for the server-side version or NO for the client-side version. Both programs then include the main code of the manager from the `ry\app\rycusmngp.i` include file. The differences in how the manager operates on each side are triggered by checking the value of the server-side variable.

You can retrieve the handle of the Customization Manager by running the following code:

```
ASSIGN hCustomizationManager =
    DYNAMIC-FUNCTION("getManagerHandle":U, INPUT "CustomizationManager":U).
```

Table 3–1 shows the files that contain the Customization Manager’s code.

**Table 3–1: Customization Manager files**

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td><code>ry\app\rycusclntp.p</code></td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td><code>ry\app\rycussrvrp.p</code></td>
</tr>
<tr>
<td>Main code</td>
<td><code>ry\app\rycusmngp.i</code></td>
</tr>
<tr>
<td>Included files</td>
<td><code>adm2\globals.i</code></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><code>ry\app\rydefrescd.i</code></td>
</tr>
</tbody>
</table>

For more information on this Manager, see the chapter on using the Progress Dynamics Managers in *OpenEdge Development: Progress Dynamics Advanced Development*. 
Customization Manager APIs

This section lists the APIs that you can use with the Customization Manager.

**getClientResultCodes**

This function returns result codes for the client session. When running on the AppServer, it retrieves the result codes for the currently connected client. When running on the client, it returns the session result codes.

- **Location:** `ry\app\rycusmngrp.i`
- **Parameters:** None
- **Returns:** CHARACTER
- **Notes:** None
- **Examples:** See the main block in `ry\app\rygetmensp.p`.

**getCustomisationTypesPrioritised**

This function returns the prioritized customization types for a session.

- **Location:** `ry\app\rycusmngrp.i`
- **Parameters:** None
- **Returns:** CHARACTER
- **Notes:** None
- **Examples:** See the main block in `af\app\apppingp.p`.

**getReferenceLanguage**

This function returns the current reference for the language.

- **Location:** `ry\app\rycusmngrp.i`
- **Parameters:** None
- **Returns:** CHARACTER
- **Notes:** None
**getReferenceLoginCompany**

This function returns the current reference for the login company. The reference is the login company code.

- **Location:** ry\app\rycusmngrp.i
- **Parameters:** None
- **Returns:** CHARACTER
- **Notes:** None

**getReferenceSystem**

This function returns the current reference for the system.

- **Location:** ry\app\rycusmngrp.i
- **Parameters:** None
- **Returns:** CHARACTER
- **Notes:** None

**getReferenceUIType**

This function returns the current reference for the session UI type.

- **Location:** ry\app\rycusmngrp.i
- **Parameters:** None
- **Returns:** CHARACTER
- **Notes:** None

**getReferenceUser**

This function returns the current reference for the user.

- **Location:** ry\app\rycusmngrp.i
- **Parameters:** None
- **Returns:** CHARACTER
- **Notes:** None
**getReferenceUserCategory**

This function returns the current reference for the user category.

- **Location:** `ry\app\rycusmngrp.i`
- **Parameters:** None
- **Returns:** CHARACTER
- **Notes:** Since the information is only available on the server, this call cannot run on the client.

**getSessionCustomisationReferences**

This function returns the session customization references.

- **Location:** `ry\app\rycusmngrp.i`
- **Parameters:** None
- **Returns:** CHARACTER
- **Notes:** None
- **Examples:** See the main block in `af\app\appngp.p`.

**getSessionResultCodes**

This function returns the result codes currently applicable for a session.

- **Location:** `ry\app\rycusmngrp.i`
- **Parameters:** None
- **Returns:** CHARACTER
- **Notes:** None
- **Examples:** See the main block in `af\app\appngp.p`.

**InitializeObject**

This procedure subscribes the Customization Manager to the ICFCM_LoginComplete event.

- **Location:** `ry\app\rycusmngrp.i`
- **Parameters:** None
- **Notes:** None
**PlipShutdown**

This procedure closes any super procedures of the Customization Manager.

**Location:** `ry\app\rycusmngp.i`

**Parameters:** None

**Notes:** None

**setClientResultCodes**

This procedure is used to set client result codes for the session. If running on the AppServer, only the `clientSessionResultCodes` parameter is set for the session. If running on the client, `sessionResultCodes` is set in the session parameter table, and the `clientSessionResultCodes` session property is set.

**Location:** `ry\app\rycusmngp.i`

**Parameters:**

- `INPUT pcResultCodes AS CHARACTER`
- `INPUT plSetOnAppserver AS LOGICAL`

**Notes:**

- `plSetOnAppserver` should always be YES. The only situation where a NO would be passed is when it has been set on the AppServer already and is positively known to be correct.

**Examples:** See the `setSessionResultCodes` procedure in `ry\app\rycusmngp.i`.

**setSessionResultCodes**

This procedure sets the result codes for the current session. If run on the client, the AppServer must be synchronized as well. To take care of this, the procedure runs `setClientResultCodes`.

**Location:** `ry\app\rycusmngp.i`

**Parameters:**

- `INPUT pcResultCodes AS CHARACTER`
- `INPUT plSetOnAppserver AS LOGICAL`

**Notes:**

- `plSetOnAppserver` only applies when running in a client session. By default, it should be set to YES to ensure the AppServer is synchronized when the client result codes change. However, if the result codes have already been set on the AppServer and are known to be in sync with what is being set, a NO can be passed to avoid an AppServer hit to synchronize them.

**Examples:** See the `ICFCFM_LoginComplete` procedure in `ry\app\rycusmngp.i`. 
General Manager

The General Manager manages information that is needed on both the client and the server for a Progress Dynamics application running in a distributed environment, as outlined in the following sections:

- Overview
- Temp-tables used by General Manager
- General Manager APIs
Overview

The General Manager manages information that your business logic needs whether it is running on the client or server side of the Progress Dynamics environment. Procedures defined in this manager are referenced extensively by applications. Packaging these procedures in a persistent procedure significantly improves performance on both the client and the server, in comparison to referencing them individually as external procedures.

In a distributed environment, the General Manager is started on both the client and server sides. There is a wrapper program for each side that sets the global variable, server-side, to either YES for the server-side version or NO for the client-side version. Both programs then include the main code of the manager from the af\app\afgenmgrp.i include file. The differences in how the manager operates on each side are triggered by checking the value of the server-side variable.

The General Manager’s handle is stored in the global shared variable, gshGenManager.

Table 4–1 shows the files that contain the General Manager’s code.

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td>af\app\afgenclntp.p</td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td>af\app\afgensrvrp.p</td>
</tr>
<tr>
<td>Main code</td>
<td>af\app\afgenmgrp.i</td>
</tr>
<tr>
<td>Included files</td>
<td>af\app\afgencchentmapp.i</td>
</tr>
<tr>
<td></td>
<td>af\app\afengsgetemnpp.i</td>
</tr>
<tr>
<td></td>
<td>af\app\afengsgetgscedp.i</td>
</tr>
<tr>
<td></td>
<td>af\app\gsmsstttcch.i</td>
</tr>
<tr>
<td></td>
<td>af\app\gsttenmn.i</td>
</tr>
<tr>
<td></td>
<td>af\sup2\afcheckerr.i</td>
</tr>
<tr>
<td></td>
<td>af\sup2\aferrortxt.i</td>
</tr>
<tr>
<td></td>
<td>af\sup2\afrun2.i</td>
</tr>
</tbody>
</table>

For more information on this Manager, see the chapter on using the Progress Dynamics Managers in *OpenEdge Development: Progress Dynamics Advanced Development*. 
Temp-tables used by General Manager

The General Manager uses several temp-tables to cache frequently needed information.

The General Manager uses the temp-tables described in Table 4–2 to cache information about users and filter sets. The \texttt{ttUser} temp-table is a copy of the Repository \texttt{gsm_user} table.

Table 4–2: Temp-table defined in af\app\afgenmngrp.i

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>\texttt{ttUser}</td>
<td>user_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>user_category_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>user_full_name (Character)</td>
</tr>
<tr>
<td></td>
<td>user_login_name (Character)</td>
</tr>
<tr>
<td></td>
<td>user_creation_date (Date)</td>
</tr>
<tr>
<td></td>
<td>user_creation_time (Integer)</td>
</tr>
<tr>
<td></td>
<td>profile_user (Logical)</td>
</tr>
<tr>
<td></td>
<td>created_from_profile_user_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>external_userid (Integer)</td>
</tr>
<tr>
<td></td>
<td>user_password (Character)</td>
</tr>
<tr>
<td></td>
<td>password_minimum_length (Integer)</td>
</tr>
<tr>
<td></td>
<td>password_preexpired (Logical)</td>
</tr>
<tr>
<td></td>
<td>password_fail_count (Integer)</td>
</tr>
<tr>
<td></td>
<td>password_fail_date (Date)</td>
</tr>
<tr>
<td></td>
<td>password_fail_time (Integer)</td>
</tr>
<tr>
<td></td>
<td>password_creation_date (Date)</td>
</tr>
<tr>
<td></td>
<td>password_creation_time (Integer)</td>
</tr>
<tr>
<td></td>
<td>password_expiry_date (Date)</td>
</tr>
<tr>
<td></td>
<td>password_expiry_time (Integer)</td>
</tr>
<tr>
<td></td>
<td>update_password_history (Logical)</td>
</tr>
<tr>
<td></td>
<td>check_password_history (Logical)</td>
</tr>
<tr>
<td></td>
<td>last_login_date (Date)</td>
</tr>
<tr>
<td></td>
<td>last_login_time (Integer)</td>
</tr>
<tr>
<td></td>
<td>disabled (Logical)</td>
</tr>
<tr>
<td></td>
<td>language_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>password_expiry_days (Integer)</td>
</tr>
<tr>
<td></td>
<td>maintain_system_data (Logical)</td>
</tr>
<tr>
<td></td>
<td>default_login_company_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>user_email_address (Character)</td>
</tr>
<tr>
<td></td>
<td>development_user (Logical)</td>
</tr>
<tr>
<td></td>
<td>security_group (Logical)</td>
</tr>
<tr>
<td></td>
<td>default_security_group (Logical)</td>
</tr>
<tr>
<td>\texttt{ttFilterSetClause}</td>
<td>filter_set_code (Character)</td>
</tr>
<tr>
<td></td>
<td>entity_list (Character)</td>
</tr>
<tr>
<td></td>
<td>buffer_list (Character)</td>
</tr>
<tr>
<td></td>
<td>additional_arguments (Character)</td>
</tr>
<tr>
<td></td>
<td>filter_set_clause (Character)</td>
</tr>
</tbody>
</table>
The General Manager also uses the temp-tables described in Table 4–3 to store information about entity display fields and entity mnemonics. These temp-tables are defined, respectively, like the Repository’s gsc_entity_display_field and gsc_entity_mnemonic tables with additional fields. The ttEntityMap temp-table is a copy of the ttEntityMnemonic temp-table.

Table 4–3: Temp-table defined in af\app\gsttenmn.i

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttEntityDisplayField</td>
<td>entity_display_field_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>entity_mnemonic (Character)</td>
</tr>
<tr>
<td></td>
<td>display_field_name (Character)</td>
</tr>
<tr>
<td></td>
<td>display_field_order (Integer)</td>
</tr>
<tr>
<td></td>
<td>display_field_label (Character)</td>
</tr>
<tr>
<td></td>
<td>display_field_column_label (Character)</td>
</tr>
<tr>
<td></td>
<td>display_field_format (Character)</td>
</tr>
<tr>
<td></td>
<td>display_field_datatype (Character)</td>
</tr>
<tr>
<td>ttEntityMnemonic &amp;</td>
<td>entity_mnemonic (Character)</td>
</tr>
<tr>
<td>ttEntityMap</td>
<td>entity_mnemonic_short_desc (Character)</td>
</tr>
<tr>
<td></td>
<td>entity_mnemonic_description (Character)</td>
</tr>
<tr>
<td></td>
<td>auto_properform_strings (Logical)</td>
</tr>
<tr>
<td></td>
<td>entity_mnemonic_label_prefix (Character)</td>
</tr>
<tr>
<td></td>
<td>entity_mnemonic_obj (Character)</td>
</tr>
<tr>
<td></td>
<td>entity_description_field (Character)</td>
</tr>
<tr>
<td></td>
<td>entity_description_procedure (Character)</td>
</tr>
<tr>
<td></td>
<td>entity_narration (Character)</td>
</tr>
<tr>
<td></td>
<td>entity_object_field (Character)</td>
</tr>
<tr>
<td></td>
<td>table_has_object_field (Logical)</td>
</tr>
<tr>
<td></td>
<td>entity_key_field (Character)</td>
</tr>
<tr>
<td></td>
<td>table_prefix_length (Integer)</td>
</tr>
<tr>
<td></td>
<td>field_name_separator (Character)</td>
</tr>
<tr>
<td></td>
<td>auditing_enabled (Logical)</td>
</tr>
<tr>
<td></td>
<td>version_data (Logical)</td>
</tr>
<tr>
<td></td>
<td>deploy_data (Logical)</td>
</tr>
<tr>
<td></td>
<td>entity_dbname (Character)</td>
</tr>
<tr>
<td></td>
<td>replicate_entity_mnemonic (Character)</td>
</tr>
<tr>
<td></td>
<td>replicate_key (Character)</td>
</tr>
<tr>
<td></td>
<td>scm_field_name (Character)</td>
</tr>
<tr>
<td></td>
<td>reuse_deleted_keys (Logical)</td>
</tr>
<tr>
<td></td>
<td>hasAudit (Logical)</td>
</tr>
<tr>
<td></td>
<td>hasComment (Logical)</td>
</tr>
<tr>
<td></td>
<td>hasAutoComment (Logical)</td>
</tr>
</tbody>
</table>
Table 4–4 describes the temp-table defined in `af\app\gsmstttcch.i`, which is used to cache status information.

### Table 4–4: Temp-table defined in `af\app\gsmstttcch.i`

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttStatusCache</td>
<td>tStatusObj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>tCategoryType (Character)</td>
</tr>
<tr>
<td></td>
<td>tCategoryGroup (Character)</td>
</tr>
<tr>
<td></td>
<td>tCategorySubGroup (Character)</td>
</tr>
<tr>
<td></td>
<td>tStatusShortDesc (Character)</td>
</tr>
<tr>
<td></td>
<td>tStatusDescription (Character)</td>
</tr>
<tr>
<td></td>
<td>tStatusTLA (Character)</td>
</tr>
</tbody>
</table>

## General Manager APIs

This section lists the APIs that you can use with the General Manager.

### checkIfOverlaps

This procedure checks if any record in a specified table exists that would overlap with a specified date range.

**Location:** `af\app\afgenmngrp.i`

**Parameters:**

- **INPUT pcTable AS CHARACTER**
  
  Name of table to do search on.

- **INPUT pcKeyField AS CHARACTER**
  
  Name of the keyfield to use in search. (Most probably foreign-key.)

- **INPUT pcFromField AS CHARACTER**
  
  Name of the 'from field', that is, from_date \ admission_date.

- **INPUT pcToField AS CHARACTER**
  
  Name of the 'to field', that is, to_date \ discharge_date.

- **INPUT pdCurrentRecordObj AS DECIMAL**
  
  Obj value of current record, just to ensure that you do not compare values to the same record when modifying.

- **INPUT pdKeyValue AS DECIMAL**
  
  Value of the keyfield, generally the obj number.
INPUT ptFromValue AS DATE

Value to compare from.

INPUT ptToValue AS DATE

Value to compare to.

INPUT pcAdditionalWhere AS CHARACTER

Additional WHERE clause that can be added to the query if needed.

**Note:** It creates a buffer for pcTable. Thus if you passed in gsm_person, the created buffer will be bgsm_person. In pcAdditionalWhere remember to use the prefixed 'b' in your criteria specification.

OUTPUT p1Overlap AS LOGICAL

Logical value specifying if overlapping was found.

OUTPUT ptOverlapFrom AS DATE

Null(?) if no overlapping, otherwise from date of overlapping record.

OUTPUT ptOverlapTo AS DATE

Null(?) if no overlapping, otherwise to date of overlapping record.

**Notes:** None

**Examples:** See the main block in af\app\afgenchkifovr1pp.p.

### convertTimeToInteger

This function takes a character string and converts it into an integer value.

**Location:** af\app\afgenmngrp.i

**Parameters:**

INPUT pcTime AS CHARACTER

Can be specified as HH:MM, HH:MM:SS, or HHMMSS.

**Returns:** INTEGER

**Notes:** None

**Examples:** See the getDataValue function in ry\tem\rytemtimesdf.w.
createFolder

This function creates a folder if it does not exist.

**Location:**  
`af\app\afgenmngrp.i`

**Parameters:**

- **INPUT** `pcFolderName` AS CHARACTER

**Returns:**  
LOGICAL

**Notes:**  
None

**Examples:**  
See the main block in `af\app\afgendlogp.p`.

formatPersonDetails

This function formats the details for a specified person in a useful string to represent the data similarly with viewers in the system.

**Location:**  
`af\app\afgenmngrp.i`

**Parameters:**

- **INPUT** `pcLastName` AS CHARACTER
- **INPUT** `pcFirstName` AS CHARACTER
- **INPUT** `pcInitials` AS CHARACTER

**Returns:**  
CHARACTER

**Notes:**  
None

getDBsForImportedEntities

This procedure scans through the entity mnemonic table and returns a comma-delimited list of all databases for which entities have been imported. This API is for cases where you want the names of all databases for which entities have been imported, rather than just the connected databases.

**Location:**  
`af\app\afgenmngrp.i`

**Parameters:**

- **INPUT** `plOnlyUseCache` AS LOGICAL
  
  This parameter is redundant.

- **OUTPUT** `pcDBList` AS CHARACTER
  
  The list of databases for which entities have been imported.
INPUT-OUTPUT pcAdditionalInfo AS CHARACTER

This parameter is for future use. It serves no function in the current version.

Notes: None
Examples: See the main block in af\app\afgenmntdbfrimplnt.p.

**getDBVersion**

This procedure returns the database version number from the database sequence initial value. The sequence name must match the naming convention, seq_<dblogical>_dbversion, for example, seq_icfdb_dbversion. If a sequence with this name is not found for a passed-in database, the version number is returned as 000000.

The ERwin model has a UDP, called DBVersion, that causes this sequence to be created and updated with the correct value when a delta file is generated.

Location: af\app\afgenmntgrp.i
Parameters:

INPUT pcLogicalNames AS CHARACTER

A comma-delimited list of logical database names.

OUTPUT pcVersions AS CHARACTER

The database version as a string, for example, 020005.

Notes: This is used by the install and the help about window.
Examples: See the main block in af\app\afapppingp.p.

**getDumpName**

This procedure checks if a specified table exists in a database.

Location: af\app\afgenmntgrp.i
Parameters:

INPUT pcQuery AS CHARACTER

The database name and table name, delimited by a pipe, |.

OUTPUT pcTableDumpName AS CHARACTER

Notes: None
Examples: See the getTableDumpName function in af\app\afgenmntgrp.i.
**getEntityCacheBuffer**

This function returns the buffer handle of the temp-table used to store the cached entity mnemonic buffer.

**Location:** af\app\afgenmngrp.i

**Parameters:**
- INPUT pcEntity AS CHARACTER
- INPUT pcTableName AS CHARACTER

**Returns:** HANDLE

**Notes:** None

**Examples:** See the deletePostTransValidate procedure in af\obj2\gsmcmlogcp.p.

**getEntityDescription**

This procedure returns the reference number, -code parameter, or similar description field for an entity.

**Location:** af\app\afgenmngrp.i

**Parameters:**
- INPUT pcEntityMnemonic AS CHARACTER
- INPUT pdEntityObj AS DECIMAL
- INPUT pcFieldName AS CHARACTER

**OUTPUT pcEntityDescriptor AS CHARACTER

**Notes:** None

**Examples:** See the getOEMCode function in af\app\afgenmngrp.i.
**getEntityDetail**

This procedure returns information about an entity.

**Location:** \( \text{af\app\afgenmngp.i} \)

**Parameters:**

**INPUT** pcEntity AS CHARACTER

The entity mnemonic.

**OUTPUT** pcEntityFields AS CHARACTER

A CHR(1)-delimited list of the entity mnemonic field names.

**OUTPUT** pcEntityValues AS CHARACTER

A CHR(1)-delimited list of the values of the entity fields.

**Returns:** See Notes.

**Notes:**

This function uses the cached gsc_entity_mnemonic Repository table. If no record exists in the cache, then the return values are blank.

**Examples:** See the initializeObject procedure in af\obj2\gsmcmfullo.w.

**getEntityDisplayField**

This procedure returns the value defined in the entity_description_field using the pcOwningValue passed in for the fields in either entity_object_field or entity_key_field.

**Location:** \( \text{af\app\afgenmngp.i} \)

**Parameters:**

**INPUT** pcEntityMnemonic AS CHARACTER

**INPUT** pcOwningValue AS CHARACTER

**OUTPUT** pcEntityLabel AS CHARACTER

**OUTPUT** pcEntityDescriptor AS CHARACTER

**Notes:** None

**Examples:** See the entityUpdateDetail procedure in af\obj2\gsmcmviewv.w.
**getEntityExists**

This procedure checks that the specified record exists.

**Location:**  
`af\app\afgenmngrp.i`

**Parameters:**

- INPUT `pcTableName` AS CHARACTER
- INPUT `pdTableObj` AS DECIMAL
- OUTPUT `plExists` AS LOGICAL
- OUTPUT `pcRejection` AS CHARACTER

**Notes:**  
None

**Examples:**  
See the main block in `af\app\afgengtentexstp.p`.

**getEntityFieldCacheBuffer**

This function returns the buffer handle of the temp-table used to store the cached entity display field buffer.

**Location:**  
`af\app\afgenmngrp.i`

**Parameters:**

- INPUT `pcEntity` AS CHARACTER
- INPUT `pcTableName` AS CHARACTER

**Returns:**  
HANDLE

**Notes:**  
None

**Examples:**  
See the main block in `ry\inc\rygenogtji.i`.

**getEntityTableName**

This procedure returns the table name based on an entity.

**Location:**  
`af\app\afgenmngrp.i`

**Parameters:**

- INPUT `pcEntityMnemonic` AS CHARACTER
- INPUT `pcLogicalDBName` AS CHARACTER
- OUTPUT `pcEntityTablename` AS CHARACTER

**Notes:**  
None

**Examples:**  
See the `buildQuery` procedure in `af\app\secgetdata.p`. 
**getHighKey**

This function returns the character key with the highest sort rank for the given collation.

You can use this character to make a high key. For example, to search all customer names from “A” to “B,” inclusive, you can use the following:

```sql
ASSIGN low = "A"
  high = "B" + getHighKey(session:cpcoll).
FOR EACH customer WHERE custname >= low AND custname <= high.
```

If you are preparing to use the `COMPARE` statement or `COLLATE` phrase with a specified collation table name, then you can supply that table name to this function to get the high key for that collation.

**Location:** af\app\afgenmngp.i

**Parameters:**

- INPUT pcCollationTableName AS CHARACTER

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the `applyFilter` procedure in af\sup2\afsdofiltw.w.

**getInternalEntries**

This function passes back internal entries of an SDO, since internal entries cannot be accessed for remote proxy procedures.

**Location:** af\app\afgenmngp.i

**Parameters:** None

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the `getInternalEntryExists` in af\app\afsesmngp.i.

**getKeyField**

This function retrieves the key field from a cached record in the `ttEntityMnemonic` temp-table.

**Location:** af\app\afgenmngp.i

**Parameters:**

- INPUT pcEntityMnemonic AS CHARACTER

  The entity mnemonic to look up on the temp-table.

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the `getTableInfo` procedure in af\app\afgenmngp.i.
getLanguageText

This procedure retrieves the language text in the specified language. If a specific text TLA is not specified, then all values for the specified language are returned as a pipe (|)-delimited list. If the language is not specified, then the current login language is used.

**Location:** af\app\afgenmngrp.i

**Parameters:**

- INPUT pcCategoryType AS CHARACTER
- INPUT pcCategoryGroup AS CHARACTER
- INPUT pcSubGroup AS CHARACTER
- INPUT pcTextTla AS CHARACTER
  
  If no value is passed in for this optional parameter, all are used.

- INPUT pdLanguageObj AS DECIMAL
  
  If no value is passed in for this optional parameter, defaults to login language.

- INPUT pdOwningObj AS DECIMAL
  
  An optional parameter, might not be applicable.

- INPUT pcSubstitute AS CHARACTER
  
  An optional parameter, a pipe (|)-delimited list when used.

**OUTPUT pcLanguageText AS CHARACTER**

If multiple values, list is pipe (|) delimited.

**OUTPUT pcFileName AS CHARACTER**

If multiple values, list is pipe (|) delimited.

**Notes:**

- If substitutions are passed in, the substitutions are made everywhere a placeholder is found in the text, for example, {1}. They should be passed in as pipe (|)-delimited lists.

- If the contents are empty, then the Unknown value (?) is returned.

- If the filename is empty, then the Unknown value (?) is returned.

**Examples:** See the main block in af\app\afgenxlingtxt.p.
**getNextSequenceValue**

This function returns the next sequence value for a given sequence.

**Location:** af\app\afgenmngrp.i

**Parameters:**

- INPUT pdCompanyObj AS DECIMAL
- INPUT pcEntityMnemonic AS CHARACTER
- INPUT pcSequenceTLA AS CHARACTER

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the beginTransactionValidate procedure in af\obj2\gsmmfullo.w.

**getObjField**

This function retrieves the field that serves as the object (_obj) field from a cached record in the ttEntityMnemonic temp-table.

The function uses the following rules:

1. If no record exists in the ttEntityMnemonic table or the value of ttEntityMnemonicCache.Table_has_object_field is "NO", it returns "" (blank).
2. If ttEntityMnemonicCache.Entity_object_field is not "" (blank), it returns that value.

**Location:** af\app\afgenmngrp.i

**Parameters:**

- INPUT pcEntityMnemonic AS CHARACTER

   The entity mnemonic to look up on the temp-table.

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the checkIfOverlaps procedure in af\app\afgenmngrp.i.
**getOEMCode**

This function returns the reference number, -code, or similar key field.

**Location:** `af\app\afgenmngrp.i`

**Parameters:**

- `pcEntityMnemonic` AS CHARACTER
- `pdEntityObj` AS DECIMAL

**Returns:** CHARACTER

**Notes:** Use the `getOEMDescription` function for a name or description field.

**getOEMDescription**

This function returns a name or similar description field.

**Location:** `af\app\afgenmngrp.i`

**Parameters:**

- `pcEntityMnemonic` AS CHARACTER
- `pdEntityObj` AS DECIMAL

**Returns:** CHARACTER

**Notes:** Use the `getOEMCode` function for a reference number, -code, and similar values.

**getPropertyFromList**

This function returns the value of a specified property in a specified property list.

**Location:** `af\app\afgenmngrp.i`

**Parameters:**

- `pcPropertyList` AS CHARACTER
- `pcPropertyName` AS CHARACTER

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the `constructObject` procedure in `af\obj2\gsmcviewv.w`. 
getRecordCheckAudit

This procedure checks whether an audit record exists for a specific record.

**Location:** af\app\afgenmngp.i

**Parameters:**

- **INPUT pcEntityMnemonic AS CHARACTER**
  
  The entity mnemonic.

- **INPUT pcEntityObjField AS CHARACTER**
  
  The entity mnemonic object field as a string.

- **INPUT pcEntityObjValue AS CHARACTER**
  
  The entity mnemonic object field value as a string.

- **OUTPUT plRowAuditExist AS LOGICAL**
  
  If an audit record exists for the record, this is set to YES.

**Notes:** None

getRecordCheckComment

This procedure checks whether a comment record exists for a specific record.

**Location:** af\app\afgenmngp.i

**Parameters:**

- **INPUT pcEntityMnemonic AS CHARACTER**
  
  The entity mnemonic.

- **INPUT pcEntityObjField AS CHARACTER**
  
  The entity mnemonic object field as a string.

- **INPUT pcEntityObjValue AS CHARACTER**
  
  The entity mnemonic object field value as a string.

- **OUTPUT plRowCommentExist AS LOGICAL**
  
  If an audit record exists for the record, this is set to YES.

- **OUTPUT pcRowCommentAuto AS CHARACTER**

**Notes:** None
**getRecordDetail**

This procedure returns the details of the first record found for a specified query.

**Location:** af\app\afgenmngrp.i

**Parameters:**

INPUT pcQuery AS CHARACTER

A valid FOR EACH query.

OUTPUT pcFieldList AS CHARACTER

A CHR(3)-delimited list of all fields in the query and their values.

**Notes:** None

**Examples:** See the setChangedState procedure in af\obj2\gsmcmvieww.w.

**getRecordUserProp**

This procedure determines if audit or comment records exist for a user.

**Location:** af\app\afgenmngrp.i

**Parameters:**

INPUT pcEntityMnemonic AS CHARACTER

INPUT pcEntityFields AS CHARACTER

INPUT pcEntityObjValue AS CHARACTER

OUTPUT pcRowUserProp AS CHARACTER

**Notes:** None

**Examples:** See the main block in af\app\afgengtrecusrprpp.p.

**getSequenceConfirmation**

This function checks whether a specified sequence is valid.

**Location:** af\app\afgenmngrp.i

**Parameters:**

INPUT pdCompanyObj AS DECIMAL

INPUT pcEntityMnemonic AS CHARACTER

INPUT pcSequenceTLA AS CHARACTER

**Returns:** LOGICAL

**Notes:** None
getSequenceExist

This procedure determines whether a sequence or reference exists.

Location: af\app\afgenmngp.i

Parameters:

INPUT pdCompanyObj AS DECIMAL
INPUT pcEntityMnemonic AS CHARACTER
INPUT pcSequenceTLA AS CHARACTER
OUTPUT plSuccess AS LOGICAL

Notes: None

Examples: See the getSequenceConfirmation function in af\app\afgenmngp.i.

getSequenceMask

This procedure builds a format mask for a sequence. This format mask is used to format integers. It calculates the number of digits to display based on the number between the brackets, [ ]. If there is no value, it defaults to eight characters.

Location: af\app\afgenmngp.i

Parameters:

INPUT pcSequenceFormat AS CHARACTER
OUTPUT pcQuantityIndicator AS CHARACTER
OUTPUT pcSequenceMask AS CHARACTER

Notes: None

Examples: See the getSequenceValue procedure in af\app\afgenmngp.i.

getSiteNumber

This procedure determines the current Repository database site number from the ICFDB database sequence.

Location: af\app\afgenmngp.i

Parameters:

OUTPUT piSite AS INTEGER

The current site number.

Notes: None

Examples: See the getSequenceValue procedure in af\app\afgenmngp.i.
getStatusObj

This function returns a status object number to a calling procedure.

**Location:** af\app\afgenmngrp.i

**Parameters:**

INPUT pcCategoryType AS CHARACTER

INPUT pcCategoryGroup AS CHARACTER

INPUT pcCategorySubGroup AS CHARACTER

**Returns:** DECIMAL

**Notes:** This is a wrapper function that returns the object number. The getStatusRecord procedure maintains the cached status records.

getStatusShortDesc

This function returns a status short description to a calling procedure.

**Location:** af\app\afgenmngrp.i

**Parameters:**

INPUT pdStatusObj AS DECIMAL

**Returns:** CHARACTER

**Notes:** This is a wrapper function that returns the object number. The getStatusRecord procedure maintains the cached status records.

getStatusTLA

This function returns the status TLA to a calling procedure.

**Location:** af\app\afgenmngrp.i

**Parameters:**

INPUT pdStatusObj AS DECIMAL

**Returns:** CHARACTER

**Notes:** This is a wrapper function that returns the object number. The getStatusRecord procedure maintains the cached status records.
**getTableDumpName**

This function checks if a specified table exists in a database.

**Location:** af\app\afgenmngrp.i

**Parameters:**

INPUT pcQuery AS CHARACTER

The database name and table name as a pipe (|)-delimited pair.

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the getTableInfo procedure in af\app\afgenmngrp.i.

---

**getTableInfo**

This procedure returns a CHR(4)-delimited list of the owning entity mnemonic, table name, and table key field for an updateable table in the supplied data source. The procedure returns the information in the following format:

```
<owning entity mnemonic> CHR(4) <table name> CHR(4) <table's key field>
```

**Note:** A table’s key field is not necessarily the object (_obj) field.

**Location:** af\app\afgenmngrp.i

**Parameters:**

INPUT pcUpdatableTable AS CHARACTER

OUTPUT pcReturnValue AS CHARACTER

**Notes:** None

**Examples:** See the getUpdatableTableInfo function in af\app\afgenmngrp.i.
**getTableInfoObj**

This procedure returns information about the updateable table in the supplied data source in a CHR(4)-delimited list of the following order: owning entity mnemonic, table name, and obj field of table.

Location: af\app\afgenmmgrp.i

Parameters:

INPUT pcUpdatableTable AS CHARACTER

OUTPUT pcReturnValue AS CHARACTER

Notes: This procedure differs from getTableInfo only in that it returns an obj field for the third entry in the return value.

Examples: See the getUpdatableTableInfoObj function in af\app\afgenmmgrp.i.

**getUpdatableTableInfo**

This function returns a CHR(4)-delimited list of the owning entity mnemonic, table name, and table key field for an updateable table in the supplied data source. The procedure returns the information in the following format:

```
<owning entity mnemonic> CHR(4) <table name> CHR(4) <table's key field>
```

Note: A table’s key field is not necessarily the object (_obj) field.

Location: af\app\afgenmmgrp.i

Parameters:

INPUT phDataSource AS WIDGET-HANDLE

The handle of an SDO for which you want to retrieve data.

Returns: CHARACTER

Notes: None

Examples: See the getComboQuery procedure in af\obj2\gsmcad3sfv.w.
**getUpdatableTableInfoObj**

This function returns information about the updateable table in the supplied data source in a `CHR(4)`-delimited list of the following order: owning entity mnemonic, table name, and obj field of table.

**Location:**  
`af\app\afgenmngrp.i`  

**Parameters:**  

- **INPUT** `phDataSource` AS `WIDGET-HANDLE`  
  
  The handle of an SDO that you want to retrieve data for.

**Returns:**  
`CHARACTER`

**Notes:**  
This function only differs from `getUpdatableTableInfo` in that it returns an obj field for the third entry in the list.

**getUserSourceLanguage**

This procedure returns the source language for a user.

**Location:**  
`af\app\afgenmngrp.i`  

**Parameters:**  

- **INPUT** `pdUserObj` AS `DECIMAL`
- **OUTPUT** `pdSourceLanguageObj` AS `DECIMAL`

**Notes:**  
This function only runs on the AppServer or a DB-aware client.

**Examples:**  
See the `addRecord` procedure in `af\obj2\gsmmview.w`.

**haveOutstandingUpdates**

This function checks the `ryt_dbupdate_status` record for any outstanding updates.

**Location:**  
`af\app\afgenmngrp.i`  

**Parameters:**  
None

**Returns:**  
`LOGICAL`

**Notes:**  
None

**Examples:**  
See `initializeSession` in `af\app\afxmlcfgp.p`. 
**listLookup**

This function returns the value of an element in `pcTarget` as indicated by the position for `pcElement` in `pcSource`.

**Location:** `af\app\afgenmngrp.i`

**Parameters:**

- `pcElement` AS CHARACTER
- `pcSource` AS CHARACTER
- `pcTarget` AS CHARACTER
- `pcDelimiter` AS CHARACTER

Defaults to commas.

**Returns:** CHARACTER

**Notes:** None

**plipShutdown**

This procedure is part of the standard Manager template. It runs on close of the procedure.

**Location:** `af\app\afgenmngrp.i`

**Parameters:** None

**Notes:** This procedure currently contains no active code.

**refreshMnemonicsCache**

This procedure loads the latest set of entity mnemonic and entity display field records into the cache.

**Location:** `af\app\afgenmngrp.i`

**Parameters:** None

**Notes:** None

**Examples:** See the `validateEntityMnemonic` procedure in `af\app\afgenmngrp.i`. 
setPropertyValueInList

This function finds a property in the property list. Then, depending on the specified action, the function adds or replaces the property with the specified property value.

**Location:** af\app\afgenmmgrp.i

**Parameters:**

- INPUT pcPropertyList AS CHARACTER
- INPUT pcPropertyName AS CHARACTER
- INPUT pcPropertyValue AS CHARACTER
- INPUT pcAction AS CHARACTER

Should be either "ADD":U or "REPLACE":U. If blank or unknown, it defaults to REPLACE.

**Returns:** CHARACTER

**Notes:** None

**Examples:** See the updateProperties procedure in af\obj2\gsmcmlogcp.p.

setWidgetAttribute

This function sets an attribute value for the passed-in widget handle. If desired, the CREATE CALL statement can be made externally, to improve performance.

**Location:** af\app\afgenmmgrp.i

**Parameters:**

- INPUT phWidget AS HANDLE
- INPUT pcAttributeName AS CHARACTER
- INPUT pcAttributeValue AS CHARACTER
- INPUT pcAttributeDataType AS CHARACTER
- INPUT phExternalCall AS HANDLE

**Returns:** LOGICAL

**Notes:** None
updateTableViaSDO

This procedure updates the database through the relevant SDO.

Location: a\app\afgenmngpr.i

Parameters:

INPUT pcSdoName AS CHARACTER

The filename of the SDO used in the update.

INPUT pcSdoDescription AS CHARACTER

The description of the SDO.

INPUT pcExtraProperties AS CHARACTER

A CHR(3)-delimited string of additional properties to set in the SDO (see Notes).

INPUT pcUserProperties AS CHARACTER

A CHR(3)-delimited string of additional user properties to set in the SDO (see Notes).

INPUT-OUTPUT TABLE-HANDLE phRowObjUpd

The rowObjUpd table containing records for update.

Returns: See Notes

Notes:

• Because this procedure always attempts to run the SDO on the ICF AppServer, no distinction is made between the client and server when running this procedure. If the calling procedure is already running on the server, the value of the gshAstraAppserver handle is that of the SESSION to avoid problems.

• This procedure starts the SDO, updates the database, and destroys the SDO after any updates. Any errors are reported back to the calling procedure using the RETURN-VALUE.

• The ERROR-STATUS error condition is raised; you should not run this procedure with the NO-ERROR option.

• The table handle is returned to the calling procedure in case there are further actions to be performed on it, or post-update data is required. For example, a status that is determined in the SDO.

• The extra properties string is a CHR(3)-delimited label, value string. These properties are set in the SDO after initialization.

Examples: See the deletePreTransValidate procedure in ry\obj\rycoilog3p.p.
validateEntityMnemonic

This procedure validates a given entity mnemonic. It runs against the Repository's gsc_entity_mnemonic table first. If the entity mnemonic can be found in the gsc_entity_mnemonic table, then this procedure forces a refresh of the cache. If the entity mnemonic cannot be found in the database or the cache, then a blank value is returned. This procedure does not attempt to create an entity mnemonic record.

**Location:** af\app\afgenmngrp.i

**Parameters:**

- **INPUT pcEntityMnemonic AS CHARACTER**
  
  The entity mnemonic to be checked.

- **OUTPUT pcResult AS CHARACTER**
  
  The results of the validation.

**Notes:** None
The Localization Manager handles run-time translations of your user interface (UI), as outlined in the following sections:

- Overview
- Temp-tables used by Localization Manager
- Localization Manager APIs
Overview

The Localization Manager supports the run-time translation of all the elements in the context of an application screen. This includes such items as window titles, labels, and messages. This aids your deployment of an application that must run in many different languages.

In a distributed environment, the Localization Manager is started on both the client and server sides. There is a wrapper program for each side that sets the global variable, server-side, to either YES for the server-side version or NO for the client-side version. Both programs then include the main code of the manager from the af\app\aftrnmngrp.i include file. The differences in how the manager operates on each side are triggered by checking the value of the server-side variable.

The Localization Manager’s handle is stored in the global shared variable, gshTranslationManager.

Table 5–1 shows the files that contain the Localization Manager’s code.

Table 5–1: Localization Manager files

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td>af\app\aftrnclntp.p</td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td>af\app\aftrnsrvrp.p</td>
</tr>
<tr>
<td>Main code</td>
<td>af\app\aftrnmngrp.i</td>
</tr>
<tr>
<td>Included files</td>
<td>adm2\tttranslate.i</td>
</tr>
<tr>
<td></td>
<td>af\app\aftrnbldtrncp.i</td>
</tr>
<tr>
<td></td>
<td>af\app\aftrngetmtrnp.i</td>
</tr>
<tr>
<td></td>
<td>af\app\aftrnupdmtrnp.i</td>
</tr>
<tr>
<td></td>
<td>af\app\aftttranslation.i</td>
</tr>
<tr>
<td></td>
<td>af\sup2\afcheckerr.i</td>
</tr>
<tr>
<td></td>
<td>af\sup2\afglobals.i</td>
</tr>
</tbody>
</table>

For more information on this Manager, see the chapter on using the Progress Dynamics Managers in OpenEdge Development: Progress Dynamics Advanced Development.
Temp-tables used by Localization Manager

The Localization Manager uses the temp-table described in Table 5–2, a copy of the Repository gsm_translation table, to cache information about translations on the local client.

**Table 5–2: Temp-tables defined in af\app\aftttranslation.i**

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttTranslation</td>
<td>translation_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>language_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>object_filename (Character)</td>
</tr>
<tr>
<td></td>
<td>widget_type (Character)</td>
</tr>
<tr>
<td></td>
<td>widget_name (Character)</td>
</tr>
<tr>
<td></td>
<td>widget_entry (Integer)</td>
</tr>
<tr>
<td></td>
<td>original_label (Character)</td>
</tr>
<tr>
<td></td>
<td>translation_label (Character)</td>
</tr>
<tr>
<td></td>
<td>original_tooltip (Character)</td>
</tr>
<tr>
<td></td>
<td>translation_tooltip (Character)</td>
</tr>
<tr>
<td></td>
<td>source_language_obj (Decimal)</td>
</tr>
</tbody>
</table>

The Localization Manager also uses the temp-table described in Table 5–3 to store information about translations.

**Table 5–3: Temp-tables defined in adm2\tttranslate.i**

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttTranslate</td>
<td>dLanguageObj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>dSourceLanguageObj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>cLanguageName (Character)</td>
</tr>
<tr>
<td></td>
<td>cObjectName (Character)</td>
</tr>
<tr>
<td></td>
<td>lGlobal (Logical)</td>
</tr>
<tr>
<td></td>
<td>lExtractedGlobal (Logical)</td>
</tr>
<tr>
<td></td>
<td>cWidgetType (Character)</td>
</tr>
<tr>
<td></td>
<td>cWidgetName (Character)</td>
</tr>
<tr>
<td></td>
<td>hWidgetHandle (Handle)</td>
</tr>
<tr>
<td></td>
<td>iWidgetEntry (Integer)</td>
</tr>
<tr>
<td></td>
<td>lDelete (Logical)</td>
</tr>
<tr>
<td></td>
<td>cTranslatedLabel (Character)</td>
</tr>
<tr>
<td></td>
<td>cOriginalLabel (Character)</td>
</tr>
<tr>
<td></td>
<td>cTranslatedTooltip (Character)</td>
</tr>
<tr>
<td></td>
<td>cOriginalTooltip (Character)</td>
</tr>
</tbody>
</table>
Localization Manager APIs

This section lists the APIs that you can use with the Localization Manager.

**buildClientCache**

This procedure loads the local client cache temp-table, `ttTranslation`, for the current logged language.

*Location:* `af\app\aftrnmngrp.i`

*Parameters:*

INPUT `pdLanguageObj` AS `DECIMAL`

The language obj, or 0 for all.

*Notes:*

- Clear out the temp-table before running this procedure.
- If a language is specified, this procedure is run at application startup for maximum performance.

*Examples:* See the `ICFCFM_Login` procedure in `dynamics\icfstart.p`.

**buildWidgetTable**

This procedure builds a temp-table of widgets that might require translation by walking the widget tree for the given frame handle. It does not actually do the translation. The temp-table must then be passed to the `translateWidgetTable` procedure for subsequent translation.

If the window handle is known and passed in, then an entry is created in the temp-table for the window translation. If the object name is passed in as blank, then only translations for the objects in the window are retrieved.

*Location:* `af\app\aftrnmngrp.i`

*Parameters:*

INPUT `pcObjectName` AS `CHARACTER`

The object name, with path stripped if passed in. Blank = all.

INPUT `pdLanguageObj` AS `DECIMAL`

The language object number, or 0 for the login language.

INPUT `phWindow` AS `HANDLE`

The window handle (`CURRENT-WINDOW`), if title translation required.

INPUT `phFrame` AS `HANDLE`

The frame handle (`FRAME {&FRAME-NAME}:HANDLE`).
OUTPUT TABLE FOR ttTranslate

The temp-table of widgets for translation.

Notes: Since the frame handle is not available on the server, this procedure is only valid when run on the client.

Examples: See the buildTranslations procedure in af\cod2\aftemlognw.w.

clearClientCache

This procedure ensures up-to-date information is retrieved from the database by emptying the client cache temp-table, ttTranslation. This procedure might be called when Repository maintenance programs have run. By using this procedure, you can avoid logging off and starting a new session to use new Repository data settings.

Location: af\app\aftrnmngrp.i
Parameters: None
Notes: None

getTranslation

This procedure checks if any translations exist for the passed-in details.

If a language is not passed in, the procedure uses the specified login language. If the object passed in is a specific object, the procedure first looks for a translation for that specific object. If none exists, it looks for a translation for all objects (blank object name). The procedure can handle title, browse, fill-in, radio set, text, button, toggle box, combo box, slider, and editor widgets.

Location: af\app\aftrnmngrp.i
Parameters:

INPUT pdLanguageObj AS DECIMAL

The language object number, or 0 for the login language.

INPUT pcObjectName AS CHARACTER

The object name for which to get the translation, or blank for all.

INPUT pcWidgetType AS CHARACTER

The widget type.

INPUT pcWidgetsName AS CHARACTER

The widget name (LABEL) or, if it is a text widget, the text to translate.

INPUT pcWidgetsEntry AS INTEGER

The widget entry, used for radio sets and similar widgets.
OUTPUT pcOriginalLabel AS CHARACTER

The original untranslated label.

OUTPUT pcTranslatedLabel AS CHARACTER

The translated label.

OUTPUT pcOriginalTooltip AS CHARACTER

The original untranslated ToolTip.

OUTPUT pcTranslatedTooltip AS CHARACTER

The translated ToolTip.

Notes:

- A window title translation is a special case that uses “title” as the value for both widget type and widget name.
- Column label translations use a widget type of “browse” and a widget name of the column label.
- ToolTip translations are ignored for text widgets.
- For a procedure running client-side, if the cachedTranslationsOnly property is set to YES in the Session Manager, then the database is not checked for translations that are not in the cache.

Examples: See the translatePhrase function in af\app\aftrnmngrp.i.

multiTranslation

This procedure performs multiple translations in one pass. It then stores the results of the translations in a temp-table, ttTranslate, for later use by the caller. The generated temp-table contains the widget type and handle for all the translated objects, so using the translated values is a simple process.

When the flag is set to translate all languages, extra records are created in the temp-table for each available language. The temp-table must initially contain entries with a language obj of 0. These entries are deleted following the translation into each language.

Location: af\app\aftrnmngrp.i

Parameters:

INPUT plAllLanguages AS LOGICAL

Set to YES to translate for all languages.

INPUT-OUTPUT TABLE FOR ttTranslate

The temp-table of translations.
Notes:

- The all languages option works by accessing the database. It cannot run off cached information.
- Dynamic toolbars only support global translations.
- Window titles and tabs only support specific object translations.

Examples: See the `translateWidgets` procedure in `af\app\afsesmngrp.i`.

**plipShutdown**

This procedure is a part of the standard Progress Dynamics Manager template. It runs on close of the procedure.

Location: `af\app\aftrnmngrp.i`

Parameters: None

Notes: This procedure currently contains no active code.

**receiveCacheClient**

This procedure sets the global variable, `gdCachedLanguageObj`, to the current language.

Location: `af\app\aftrnmngrp.i`

Parameters:

- Input table for `ttTranslation`
- Input `pdLanguageObj` as DECIMAL

Notes: None

Examples: See the `loginCacheAfter` procedure in `af\app\afsesmngrp.i`. 
**translatePhrase**

This function translates a text phrase into the given language. The function returns the translated text. If no translation is found, it returns the original text.

**Location:**  
af\app\aftrnmngrp.i

**Parameters:**

- **INPUT pcText AS CHARACTER**  
The text to translate.
- **INPUT pdLanguageObj AS DECIMAL**  
The language into which to translate the phrase, defaulting to the login language.

**Returns:**  
CHARACTER

**Notes:**  
None

**Examples:**  
See the main block in af\app\afmessagep.p.

**translateSingleObject**

This procedure returns the translated labels and ToolTips for a single object. This procedure is called from the Repository object retrieval process. It avoids the overhead of creating table entries, performing translations, reading through the translations, and then applying them to the object being retrieved.

**Location:**  
af\app\aftrnmngrp.i

**Parameters:**

- **INPUT pdLanguageObj AS DECIMAL**  
The passed in language_obj is assumed to be valid.
- **INPUT pcObjectName AS CHARACTER**  
- **INPUT pcWidgetName AS CHARACTER**  
- **INPUT pcWidgetType AS CHARACTER**  
- **INPUT piWidgetEntries AS INTEGER**  
- **OUTPUT pcLabels AS CHARACTER**  
- **OUTPUT pcTooltips AS CHARACTER**

**Notes:**  
The passed in language_obj is assumed to be valid.

**Examples:**  
See the setFolderDetails procedure in ry\app\ryrepmgprp.i.
translateWidgetTable

This procedure translates the widgets temp-table, ttTranslate, from the buildWidgetTable procedure. The procedure uses the multiTranslation procedure, if it has not already been run.

The plTranslated flag allows the multiTranslation procedure to run prior to this procedure so that all languages can be translated in one pass if required. The table of widgets can therefore contain entries for each language. The procedure uses the entries for the passed-in language or the login language. The temp-table might only have entries for the login language, in which case the language obj is 0.

**Location:** af\app\aftrnmngrp.i

**Parameters:**

INPUT plTranslated AS LOGICAL

   If the multiTranslation procedure has run, set to YES.

INPUT pdLanguageObj AS DECIMAL

   The translation language object number to use. Use 0 for the login language.

INPUT TABLE FOR ttTranslate

   The temp-table of widgets to translate.

**Notes:** This procedure can only run on the client because the handles are not valid on the server.

**Examples:** See the doTranslations procedure in af\cod2\aftemcpasw.w.

updateTranslations

This procedure updates translations to the database and the client cache, if appropriate.

**Location:** af\app\aftrnmngrp.i

**Parameters:**

INPUT TABLE FOR ttTranslate

   The temp-table of translations.

**Notes:** None

**Examples:** See the updateRecord procedure in ry\obj\rydyntranv.w.
Profile Manager

The Profile Manager handles access to information on user preferences for the Progress Dynamics framework, as outlined in the following sections:

- Overview
- Temp-tables used by Profile Manager
- Profile Manager APIs
Overview

The Profile Manager encapsulates all user profile access supported by the framework. User profile data includes such run-time information as the user’s preferences for window positions and sizes, browser filter settings, and report filter settings. It also includes systemwide information, such as ToolTips enabled and similar UI options. The Profile Manager stores all of these settings by user. The user can decided to save the settings only for the current session or save them permanently in the Repository for consistency between client sessions.

In a distributed environment, the Profile Manager is started on both the client and server sides. There is a wrapper program for each side that sets the global variable, server-side, to either YES for the server-side version or NO for the client-side version. Both programs then include the main code of the manager from the af\app\afpromngrp.i include file. The differences in how the manager operates on each side are triggered by checking the value of the server-side variable.

The Profile Manager’s handle is stored in the global shared variable, gshProfileManager.

Table 6–1 shows the files that contain the Profile Manager’s code.

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td>af\sup2\afproclntp.p</td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td>af\app\afprosrvrp.p</td>
</tr>
<tr>
<td>Main code</td>
<td>af\app\afpromngrp.i</td>
</tr>
<tr>
<td>Included files</td>
<td></td>
</tr>
<tr>
<td></td>
<td>af\app\afbldcltp.p</td>
</tr>
<tr>
<td></td>
<td>af\app\afpromngcp.p</td>
</tr>
<tr>
<td></td>
<td>af\app\afpromngcadbp.i</td>
</tr>
</tbody>
</table>

For more information on this Manager, see the chapter on using the Progress Dynamics Managers in *OpenEdge Development: Progress Dynamics Advanced Development*. 
Temp-tables used by Profile Manager

The Profile Manager uses the temp-table described in Table 6–2, a copy of the Repository gsm_profile_data table with some extra fields, to cache the user’s profile information.

**Table 6–2: Temp-table defined in af\app\afttprofiledata.i**

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttProfileData</td>
<td>user_obj (Decimal) profile_type_obj (Decimal) profile_code_obj (Decimal) profile_data_key (Character) context_id (Character) profile_data_value (Character) profile_data_obj (Decimal) cProfileTypeCode (Character) cProfileCode (Character) cAction (Character)</td>
</tr>
</tbody>
</table>

Profile Manager APIs

This section lists the APIs that you can use with the Profile Manager.

**buildClientCache**

This procedure loads the local client cache temp-table for the current logged-in user. It loads only permanent profile data. Permanent data has a context id value of blank. A nonblank context id indicates that the profile data is specific to a given session. The procedure only loads data into the cache for profiles that are client-side-only data.

**Location:** af\app\afpromngrp.i

**Parameters:**

INPUT pcProfileTypeCodes AS CHARACTER

A comma-delimited list of specific profile type codes (blank = all).

**Notes:**

- This procedure clears out the temp-table before reading profile data from the Repository.
- This procedure is run at application start-up for maximum performance.
- If this procedure runs after application start-up, it clears out the existing temp-table.

**Examples:** See the relologon procedure in af\app\afsesmngrp.i.
checkProfileDataExists

This procedure checks whether profile data exists for the current logged-in user for the specified profile type, code, or key. This procedure supports the passing of partial information, for example, only the profile type, or the type and code.

Location: af\app\afpromngrp.i

Parameters:

INPUT pcProfileTypeCode AS CHARACTER

The profile type code.

INPUT pcProfileCode AS CHARACTER

The profile code.

INPUT pcProfileDataKey AS CHARACTER

The profile data key.

INPUT plCheckPermanentOnly AS LOGICAL

Check permanent data only flag, default = YES.

INPUT plCheckCacheOnly AS LOGICAL

Check client cache only, default = NO.

OUTPUT plExists AS LOGICAL

Does the profile data exist.

Notes:

- If the plCheckPermanentOnly flag is set to NO and there are database entries that exist for the session only, then the procedure returns TRUE.
- If the plCheckCacheOnly is set to YES, then the procedure checks the temp-table, rather than checking both the temp-table and the database.

Examples: See the initializeObject procedure in ry\obj\rydynprf1v.w.

clearClientCache

This procedure ensures up-to-date information is retrieved from the database by emptying the client cache temp-tables. This might be called when maintenance programs have been run that change profile data. Using this procedure enables you to avoid logging off and starting a new session in order to use the new profile data settings.

Location: af\app\afpromngrp.i

Parameters: None

Notes: When this procedure runs, any profile changes made within the session and not already committed to the database are lost.

Examples: See the relogon procedure in af\app\afsesmgrp.i.
**deleteSessionProfile**

This procedure deletes session-specific profile data. It is run from `dynamics\as_disconnect.p` when a client disconnects from an agent.

User profile data can be permanent or scoped to a specific session. Permanent data is stored between sessions and has a blank `context_id`. Session-specific data is not stored between sessions and has a nonblank `context_id`.

**Location:** af\app\afpromngr\i

**Parameters:** None

**Notes:** This procedure must use the actual `SESSION:SERVER-CONNECTION-ID` and not the `gscSessionId`. The `gscSessionId` might have been set to null by the time this procedure runs.

**Examples:** See the main block in `dynamics\as_disconnect.p`.

**getProfileData**

This procedure returns profile data value for a specified profile for the current user for the current session. If the procedure is running on the client side, it first looks in the client cache for the profile data value. If the profile data value is not there, the procedure looks in the database.

If a rowid is passed in, then the rowid is used to find the record. For a client-only profile type, the rowid for the temp-table is used. Otherwise, the rowid of the database record is used. A profile type must be passed in to determine whether the rowid is from the temp-table or the database. If a rowid is passed in, it takes precedence over any other input parameters.

If the `plNextRecordFlag` flag is set to `YES`, then a FIND NEXT is done to retrieve the record after the passed-in record. If the record is cached on the client, the rowid of the temp-table is returned. Otherwise, the rowid of the database record is returned. The rowid is useful when reading through sets of profile data using the next functionality.

**Location:** af\app\afpromngr\i

**Parameters:**

- **pcProfileTypeCode** (AS CHARACTER)
  The profile type code.
  
- **pcProfileCode** (AS CHARACTER)
  The profile code.

- **pcProfileDataKey** (AS CHARACTER)
  The profile data key.

- **plNextRecordFlag** (AS LOGICAL)
  The next flag, `YES` = get next value.
INPUT-OUTPUT prRowid AS ROWID

The rowid of the profile data.

OUTPUT pcProfileDataValue AS CHARACTER

The profile data value.

Notes: Always check for session data first, and then for permanent data.

Examples: See the getUserSourceLanguage procedure in af\app\afgenmngp.i.

getProfileTTHandle

This function returns the handle of the ttProfileData temp-table.

Location: af\app\afpromngp.i
Parameters: None
Returns: HANDLE
Notes: None
Examples: See the resetSesPerFlag procedure in af\sup2\afsdfiltw.w.

plipShutdown

This procedure is a part of the standard Progress Dynamics Manager template. On close of the procedure, if the session is not a remote session, it runs the updateCacheToDb procedure.

Location: af\app\afpromngp.i
Parameters: None
Notes: None

receiveProfileCache

This procedure takes an existing set of profiling records that have been populated and populates them with the profile information set on the Repository.

This procedure supplements the profile cache with information from an external source. The login process uses it to add to the profile cache. It is also used when launching a container.

Location: af\app\afpromngp.i
Parameters:

INPUT TABLE FOR ttProfileData APPEND.

Notes: This procedure should only be run on the server.
Examples: See the LoginCacheAfter procedure in af\app\afsesmngp.i.
setProfileData

This procedure sets profile data values for the specified profile for the current user in the current session. You can use this procedure to set values or to delete a single record. Alternately, by using blank as the value for the pcProfileCode and pcProfileDataKey parameters, you can set a value for all records or delete all records.

If a rowid is passed in, then the record to set is found using the rowid, rather than using the individual profile fields. The record must already exist to be set in this way. For a client-only profile type, the rowid of the temp-table is used. Otherwise, the rowid of the database record is used. A profile type is passed in with the rowid to indicate whether it is from the temp-table of the database. If a rowid is passed in, it takes precedence over any other input parameters.

When the client cache is updated, the build cache external procedure must be run to fully build the temp-table with entries for this profile type for the current user. This ensures that entries are either updated fully into the cache or the database. This behavior also ensures that a record exists for the user for every profile code in the profile type. In this way, all the information needed to create new records in the cache is available, for example, the object numbers.

Location: af\app\afpromngrp.i

Parameters:

INPUT pcProfileTypeCode AS CHARACTER
The profile type code.

INPUT pcProfileCode AS CHARACTER
The profile code, (blank = all).

INPUT pcProfileDataKey AS CHARACTER
The profile data key, (blank = all).

INPUT prRowid AS ROWID
The rowid of profile data, if known.

INPUT pcProfileDataValue AS CHARACTER
The profile data value.

INPUT plDeleteFlag AS LOGICAL
The delete flag (YES = delete profile data).

INPUT pcSaveFlag AS CHARACTER
The save flag (SES = Session only, PER = Permanent).

Notes:

- If the procedure runs on the client and the profile type is client-only, the procedure only updates the client cache with the new data value. The database is updated at session end or can be manually updated using updateCacheToDb.

- If the procedure runs on the server or the profile type is server, the procedure updates the database immediately with the new profile data value.
• If the `pcSaveFlag` flag is set to `session`, the procedure stores the session ID in the context ID field. Leaving the field blank indicates a permanent value.

• If the `plDeleteFlag` flag is set to `YES` and client caching is valid, the procedure marks the data value for deletion in the temp-table. Otherwise, the data value is deleted directly from the database table.

**Examples:** See the `setUserProfile` procedure in `af\cod\afsvwizdw.w`.

### updateCacheToDb

This procedure updates the modified details from the client cache temp-table into the database. It then resets the action flag on the updated temp-tables to `NON` to ensure they are not updated again.

This procedure is run by the `plipShutdown` procedure when the session ends. You might also run it manually at any stage to reflect maintenance changes.

**Location:** `af\app\afpromngrp.i`

**Parameters:**

`INPUT pcProfileTypeCodes AS CHARACTER`

A comma-delimited list of specific profile type codes, (blank = all).

**Notes:** None

**Examples:** See the `relogon` procedure in `af\app\afsesmngp.i`. 
The Referential Integrity Manager handles data versioning and supports the reuse of unique keys, as outlined in the following sections:

- Overview
- Temp-tables used by Referential Integrity Manager
- Referential Integrity Manager API
Overview

The Referential Integrity Manager provides support for data versioning and the reuse of unique keys. This manager does not record the modifications made to records in the Repository. It only records that the record has changed.

This manager should only be accessed through the `versionData` procedure.

To prevent clashes on unique key information, the Referential Integrity Manager checks the Repository `gst_record_version` table for information about old keys. If you attempt to re-create a record with its old keys, the manager checks this table for a record of the old key information. If the record is found, the manager sets the object ID of the new record as the old object ID.

The Referential Integrity Manager’s handle is stored in the global shared variable, `gshRIManager`.

Table 7–1 shows the files that contain the Referential Integrity Manager’s code.

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td>NA</td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td>NA</td>
</tr>
<tr>
<td>Main code</td>
<td><code>ry\app\ryrisrvrp.p</code></td>
</tr>
<tr>
<td>Included files</td>
<td><code>adm2\globals.i</code></td>
</tr>
<tr>
<td></td>
<td><code>af\sup2\afcheckerr.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\app\ryplipkill.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\app\ryplipmain.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\app\ryplipsetu.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\app\ryplipshut.i</code></td>
</tr>
</tbody>
</table>

For more information on this Manager, see the chapter on using the Progress Dynamics Managers in *OpenEdge Development: Progress Dynamics Advanced Development*. 
Temp-tables used by Referential Integrity Manager

The Referential Integrity Manager uses the temp-tables described in Table 7–2 to store information about Repository tables and their relationships.

Table 7–2: Temp-tables defined in ry\app\ryrisrvrp.p

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttEntity1</td>
<td>entity_mnemonic (Character)</td>
</tr>
<tr>
<td></td>
<td>entity_mnemonic_short_desc (Character)</td>
</tr>
<tr>
<td></td>
<td>entity_mnemonic_description (Character)</td>
</tr>
<tr>
<td></td>
<td>auto_properform_strings (Logical)</td>
</tr>
<tr>
<td></td>
<td>entity_mnemonic_label_prefix (Character)</td>
</tr>
<tr>
<td></td>
<td>entity_mnemonic_obj (Character)</td>
</tr>
<tr>
<td></td>
<td>entity_description_field (Character)</td>
</tr>
<tr>
<td></td>
<td>entity_description_procedure (Character)</td>
</tr>
<tr>
<td></td>
<td>entity_narration (Character)</td>
</tr>
<tr>
<td></td>
<td>entity_object_field (Character)</td>
</tr>
<tr>
<td></td>
<td>table_has_object_field (Logical)</td>
</tr>
<tr>
<td></td>
<td>entity_key_field (Character)</td>
</tr>
<tr>
<td></td>
<td>table_prefix_length (Integer)</td>
</tr>
<tr>
<td></td>
<td>field_name_separator (Character)</td>
</tr>
<tr>
<td></td>
<td>auditing_enabled (Logical)</td>
</tr>
<tr>
<td></td>
<td>version_data (Logical)</td>
</tr>
<tr>
<td></td>
<td>deploy_data (Logical)</td>
</tr>
<tr>
<td></td>
<td>entity_dbname (Character)</td>
</tr>
<tr>
<td></td>
<td>replicate_entity_mnemonic (Character)</td>
</tr>
<tr>
<td></td>
<td>replicate_key (Character)</td>
</tr>
<tr>
<td></td>
<td>scm_field_name (Character)</td>
</tr>
<tr>
<td></td>
<td>reuse_deleted_keys (Logical)</td>
</tr>
<tr>
<td>ttDSEntity2</td>
<td>dataset_entity_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>deploy_dataset_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>entity_sequence (Integer)</td>
</tr>
<tr>
<td></td>
<td>entity_mnemonic (Character)</td>
</tr>
<tr>
<td></td>
<td>primary_entity (Logical)</td>
</tr>
<tr>
<td></td>
<td>join_entity_mnemonic (Character)</td>
</tr>
<tr>
<td></td>
<td>join_field_list (Character)</td>
</tr>
<tr>
<td></td>
<td>filter_where_clause (Character)</td>
</tr>
<tr>
<td></td>
<td>delete_related_records (Logical)</td>
</tr>
<tr>
<td></td>
<td>overwrite_records (Logical)</td>
</tr>
<tr>
<td></td>
<td>keep_own_site_data (Logical)</td>
</tr>
<tr>
<td></td>
<td>use_relationship (Logical)</td>
</tr>
<tr>
<td></td>
<td>relationship_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>deletion_action (Character)</td>
</tr>
<tr>
<td></td>
<td>exclude_field_list (Character)</td>
</tr>
<tr>
<td></td>
<td>cParentJoinString (Character)</td>
</tr>
<tr>
<td></td>
<td>cChildJoinString (Character)</td>
</tr>
<tr>
<td></td>
<td>cParentJoinFields (Character)</td>
</tr>
<tr>
<td></td>
<td>cChildJoinFields (Character)</td>
</tr>
<tr>
<td></td>
<td>cParentReplace (Character)</td>
</tr>
<tr>
<td></td>
<td>cChildReplace (Character)</td>
</tr>
</tbody>
</table>

1 This temp-table is a copy of the Repository’s gsc_entity_mnemonic table.
2 This temp-table is a copy of the Repository’s gsc_dataset_entity table with some added fields.
Referential Integrity Manager API

The following API is the only public entry point for the Referential Integrity Manager.

versionData

This procedure coordinates versioning the data to be deployed.

**Location:**  ry\app\ryrisrvrp.p

**Parameters:**

- INPUT phBuffer AS HANDLE
- INPUT pcFLA AS CHARACTER
- INPUT pcAction AS CHARACTER

**Notes:** None

**Examples:** See the main block in af\app\afversionp.p.
Repository Managers

The Repository Managers handle the moving and caching of data between the Repository and a calling procedure, as outlined in the following sections:

- Overview
- Temp-tables used by Repository Managers
- Repository Manager APIs
- Repository Design Manager APIs
Overview

The Repository Managers encapsulate all Repository-based access for building dynamic objects in the Progress Dynamics environment. They are used to access the data for the user interface (UI) and the objects that make up an application. The Managers coordinate the moving and caching of data between the Repository and a calling procedure. Examples of the Repository data transported include such items as object property (attribute) values, toolbar bands, and toolbar actions.

There are two Repository Managers, one that handles development tasks and another to handle run-time tasks. The Repository Manager handles data transport for running applications. It is designed to efficiently return object definitions to applications at run time. The Repository Design Manager manages Repository access during application development tasks. It is designed to efficiently work with the AppBuilder, the Object Generator, and the other tools you use to create a Progress Dynamics application.

In a distributed environment, the Repository Managers are started on both the client and server sides. There is a wrapper program for each side that sets the global variable, server-side, to either YES for the server-side version or NO for the client-side version. Each program then includes the main code of the manager from the appropriate include file. The differences in how the managers operate on each side are triggered by checking the value of the server-side variable.

The Repository Manager’s handle is stored in the global shared variable, gshRepositoryManager.

You can retrieve the handle of the Repository Design Manager by running code like the following example:

```
ASSIGN hRepositoryDesignManager = DYNAMIC-FUNCTION("getManagerHandle":U, INPUT "RepositoryDesignManager":U).
```
Table 8–1 shows the files that contain the Repository Manager’s code.

Table 8–1: Repository Manager files

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td><code>ry\app\ryrepclntp</code></td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td><code>ry\app\ryrepsrvrp.p</code></td>
</tr>
<tr>
<td>Main code</td>
<td><code>ry\app\ryrepmngrp.i</code></td>
</tr>
<tr>
<td>Included files</td>
<td><code>adm2\calltables.i</code></td>
</tr>
<tr>
<td></td>
<td><code>adm2\ttaction.i</code></td>
</tr>
<tr>
<td></td>
<td><code>adm2\tttoolbar.i</code></td>
</tr>
<tr>
<td></td>
<td><code>af\app\afdatatypi.i</code></td>
</tr>
<tr>
<td></td>
<td><code>af\app\afttsecurityctrl.i</code></td>
</tr>
<tr>
<td></td>
<td><code>af\app\aftttranslate.i</code></td>
</tr>
<tr>
<td></td>
<td><code>af\sup2\aferrortxt.i</code></td>
</tr>
<tr>
<td></td>
<td><code>af\sup2\afglobals.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\app\rydefrescd.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\app\rygetitem.p</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\app\rygetmenzp.p</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\app\rymenunfunc.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\inc\ryattstori.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\inc\ryattfunc.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\inc\ryrepset.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\inc\ryrepfunc.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\inc\ryrepgid.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\app\rygenomngp.p</code></td>
</tr>
</tbody>
</table>

Table 8–2 shows the files that contain the Repository Design Manager’s code.

Table 8–2: Repository Design Manager files

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td><code>ry\app\rydesclntp.p</code></td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td><code>ry\app\rydssrvrp.p</code></td>
</tr>
<tr>
<td>Main code</td>
<td><code>ry\app\rydesmgrp.i</code></td>
</tr>
<tr>
<td>Included files</td>
<td><code>adm2\calltables.i</code></td>
</tr>
<tr>
<td></td>
<td><code>adm2\globals.i</code></td>
</tr>
<tr>
<td></td>
<td><code>af\app\afdatatypi.i</code></td>
</tr>
<tr>
<td></td>
<td><code>af\sup2\afcheckerr.i</code></td>
</tr>
<tr>
<td></td>
<td><code>af\sup2\aferrortxt.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\app\rydefrescd.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\inc\rydestdefi.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\inc\ryrepset.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\inc\ryrepfunc.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\inc\ryrepgid.i</code></td>
</tr>
<tr>
<td></td>
<td><code>ry\app\rygenomngp.p</code></td>
</tr>
</tbody>
</table>

For more information on these Managers, see the chapter on using the Progress Dynamics Managers in *OpenEdge Development: Progress Dynamics Advanced Development.*
Temp-tables used by Repository Managers

Because the Repository Managers coordinate data for the entire framework, they make extensive use of temp-tables. They reference several temp-tables defined elsewhere in the OpenEdge application development environment, including those in the following files:

- adm2\calltables.i
- adm2\ttaction.i
- adm2\tttoolbar.i
- adm2\tttranslate.i

Temp-tables used by Repository Manager

The Repository Manager uses the temp-tables described in Table 8–3 for object retrieval in the run-time environment. The transportClass temp-table is defined like the ttClass temp-table.

Table 8–3: Temp-tables defined in ry\inc\getobject.i

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttClass</td>
<td>ClassName (Character)</td>
</tr>
<tr>
<td>AND</td>
<td>ClassObj (Decimal)</td>
</tr>
<tr>
<td>transportClass</td>
<td>ClassTableName (Character)</td>
</tr>
<tr>
<td></td>
<td>ClassBufferHandle (Handle)</td>
</tr>
<tr>
<td></td>
<td>InheritsFromClass (Character)</td>
</tr>
<tr>
<td></td>
<td>SuperProcedures (Character)</td>
</tr>
<tr>
<td></td>
<td>SuperProcedureModes (Character)</td>
</tr>
<tr>
<td></td>
<td>SuperHandles (Character)</td>
</tr>
<tr>
<td></td>
<td>InstanceBufferHandle (Handle)</td>
</tr>
<tr>
<td></td>
<td>EventTableName (Character)</td>
</tr>
<tr>
<td></td>
<td>EventBufferHandle (Handle)</td>
</tr>
<tr>
<td></td>
<td>SetList (Character)</td>
</tr>
<tr>
<td></td>
<td>GetList (Character)</td>
</tr>
<tr>
<td></td>
<td>RuntimeList (Character)</td>
</tr>
<tr>
<td>ttEntity</td>
<td>EntityName (Character)</td>
</tr>
<tr>
<td></td>
<td>EntityTableName (Character)</td>
</tr>
<tr>
<td></td>
<td>EntityBufferHandle (Handle)</td>
</tr>
<tr>
<td></td>
<td>LanguageCode (Character)</td>
</tr>
<tr>
<td>Temp-table</td>
<td>Fields (data types)</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| cacheObject      | ObjectName (Character)  
                    InstanceId (Decimal)  
                    ContainerInstanceId (Decimal)  
                    ClassName (Character)  
                    AttrOrdinals (Character)  
                    AttrValues (Character)  
                    Order (Integer)  
                    PageNumber (Integer)  
                    EventNames (Character)  
                    EventActions (Character)  
                    ObjectTranslated (Logical)  
                    ObjectSecured (Logical)                                                                 |
| cachePage        | InstanceId (Decimal)  
                    PageNumber (Integer)  
                    PageLabel (Character)  
                    LayoutCode (Character)  
                    SecurityToken (Character)  
                    TOC (Character)  
                    PageReference (Character) |
| cacheLink        | InstanceId (Decimal)  
                    SourceInstanceName (Character)  
                    TargetInstanceName (Character)  
                    LinkName (Character)  
                    SourcePage (Integer)  
                    TargetPage (Integer) |
| ttEntityDump     | tEntityName (Character)  
                    tFieldName (Character)  
                    tDataType (Character)  
                    tFormat (Character)  
                    tLabel (Character)  
                    tColLabel (Character)  
                    tHelp (Character)  
                    tInitial (Character) |
The Repository Manager uses the temp-tables described in Table 8–4 to cache attribute information.

**Table 8–4: Temp-tables defined in ry\inc\ryrepset.i**

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttStoreAttribute</td>
<td>tAttributeParent (Character) tAttributeParentObj (Decimal) tAttributeLabel (Character) tConstantValue (Logical) tCharacterValue (Character) tDecimalValue (Decimal) tIntegerValue (Integer) tDateValue (Date) tRawValue (Raw) tLogicalValue (Logical)</td>
</tr>
</tbody>
</table>

The Repository Manager uses the temp-table described in Table 8–5 to cache information about toolbar bands.

**Table 8–5: Temp-tables defined in ry\app\rymenufunc.i**

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttBandToExtract</td>
<td>parent_menu_structure_code (Character) menu_structure_type (Character) menu_structure_obj (Decimal) menu_structure_code (Character) extract_sequence (Integer) disabled (Logical) under_development (Logical) menu_item_obj (Decimal) control_spacing (Integer) control_padding (Integer)</td>
</tr>
</tbody>
</table>
Because the Repository Manager coordinates data for the other Managers during a session, it makes use of the other Managers’ temp-tables. Table 8–6 lists these temp-tables and where they are described in this reference manual.

**Table 8–6: Other temp-tables used by the Repository Manager**

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Described in</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttTranslate</td>
<td>The “Temp-tables used by Localization Manager” section on page 5–3.</td>
</tr>
<tr>
<td>ttUser</td>
<td>The “Temp-tables used by General Manager” section on page 4–3.</td>
</tr>
</tbody>
</table>

**Temp-tables used by Repository Design Manager**

The Repository Design Manager makes extensive use of temp-tables. It uses the temp-tables described in Table 8–4. It also uses the ttEntityMnemonic temp-table described in the “Temp-tables used by General Manager” section on page 4–3.

The Repository Design Manager uses the temp-table described in Table 8–7 to cache information about Progress SmartLinks™.

**Table 8–7: Temp-tables defined in ry\inc\ryrepInsSet.i**

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttSmartLink</td>
<td>tContainerObj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>tLinkName (Character)</td>
</tr>
<tr>
<td></td>
<td>tUserLinkName (Character)</td>
</tr>
<tr>
<td></td>
<td>tSourceObj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>tTargetObj (Decimal)</td>
</tr>
</tbody>
</table>
The Repository Design Manager APIs use the temp-tables described in Table 8–8 for generating objects.

### Table 8–8: Temp-tables defined in rylapp\rygenomngp.p

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
</table>
| ttDeleteAttribute¹ | tAttributeParent (Character)  
tAttributeParentObj (Decimal)  
tAttributeLabel (Character)  
tConstantValue (Logical)  
tCharacterValue (Character)  
tDecimalValue (Decimal)  
tIntegerValue (Integer)  
tDateValue (Date)  
tRawValue (Raw)  
tLogicalValue (Logical) |
| ttDataObjectField   | tDatabaseName (Character)  
tTableName (Character)  
tDumpName (Character)  
tFieldName (Character)  
tFieldOrder (Character)  
tKeepField (Logical)  
tIsTableObjField (Logical)  
tFieldUpdatable (Logical) |
| ttTableColumn       | tDatabaseName (Character)  
tTableName (Character)  
tDataColumns (Character)  
tUpdatableColumns (Character)  
tWhereClause (Character)  
tOrder (Integer) |
| ttRelate            | cOwnerTable (Character)  
cDataBaseName (Character)  
cRelatedTable (Character)  
cLinkFieldName (Character)  
cIndexName (Character) |
| ttTableField        | LIKE _field²  
tDatabaseName (Character)  
tTableName (Character)  
tTableDumpName (Character)  
KeyField (Logical)  
EntityObjectField (Logical) |
Table 8–8: Temp-tables defined in ry\appl\rygenomngp.p

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttFrameField</td>
<td>tFieldName (Character)</td>
</tr>
<tr>
<td></td>
<td>tDBFieldName (Character)</td>
</tr>
<tr>
<td></td>
<td>tFieldLength (Decimal)</td>
</tr>
<tr>
<td></td>
<td>tLabelLength (Decimal)</td>
</tr>
<tr>
<td></td>
<td>tLabelChars (Decimal)</td>
</tr>
<tr>
<td></td>
<td>tLabel (Character)</td>
</tr>
<tr>
<td></td>
<td>tTotalFieldWidth (Decimal)</td>
</tr>
<tr>
<td></td>
<td>tColumn (Decimal)</td>
</tr>
<tr>
<td></td>
<td>tRow (Decimal)</td>
</tr>
<tr>
<td></td>
<td>tOrder (Integer)</td>
</tr>
<tr>
<td></td>
<td>tFieldHandle (Handle)</td>
</tr>
<tr>
<td></td>
<td>tLabelHandle (Handle)</td>
</tr>
<tr>
<td></td>
<td>tViewAs (Character)</td>
</tr>
<tr>
<td></td>
<td>tEnabled (Logical)</td>
</tr>
<tr>
<td></td>
<td>tDataType (Character)</td>
</tr>
<tr>
<td></td>
<td>tFormat (Character)</td>
</tr>
<tr>
<td></td>
<td>TableName (Character)</td>
</tr>
<tr>
<td></td>
<td>tTableDumpName (Character)</td>
</tr>
<tr>
<td></td>
<td>tSortOrder (Character)</td>
</tr>
<tr>
<td></td>
<td>tHelp (Character)</td>
</tr>
<tr>
<td></td>
<td>tDefaultValue (Character)</td>
</tr>
<tr>
<td></td>
<td>tSdoOverrides (Character)</td>
</tr>
<tr>
<td></td>
<td>tKeyField (Logical)</td>
</tr>
<tr>
<td></td>
<td>tEntityObjectField (Logical)</td>
</tr>
</tbody>
</table>

1. This temp-table is defined like the ttStoreAttribute temp-table.
2. This temp-table starts with a list of the fields for a particular Repository table and adds these extra fields. Its structure depends on the Repository table for which an object is being generated.
The Repository Design Manager APIs use the temp-tables described in Table 8–9 for generating objects.

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttDeleteAttribute¹</td>
<td>tAttributeParent (Character) tAttributeParentObj (Decimal) tAttributeLabel (Character) tConstantValue (Logical) tCharacterValue (Character) tDecimalValue (Decimal) tIntegerValue (Integer) tDateValue (Date) tRawValue (Raw) tLogicalValue (Logical)</td>
</tr>
<tr>
<td>ttTableField</td>
<td>LIKE _field² tDataBaseName (Character) tTableName (Character) tTableDumpName (Character) tKeyField (Logical) tEntityObjectField (Logical)</td>
</tr>
<tr>
<td>ttXref</td>
<td>tElementType (Character) tSourceData (Character) tTargetData (Character)</td>
</tr>
</tbody>
</table>

¹ This temp-table is defined like the ttStoreAttribute temp-table.

² This temp-table starts with a list of the fields for a particular Repository table and adds these extra fields. Its structure depends on the Repository table for which an object is being generated.
Repository Manager APIs

This section lists the APIs that you can use with the Repository Manager.

**calculateObject Paths**

This procedure is the standard mechanism for finding the paths associated with an object or product module. Use this procedure to calculate relative paths for new objects, existing objects, and associated files for objects, such as a DynSDO’s include file.

If an object name is supplied, the procedure looks for its `ryc_smartobject.smartobject_obj` value. If the `smartobject_obj` value is known, the object name is not needed. For general path enquiries on a product module, only the product module name is needed.

**Location:**  
`ry\app\ryrepmngp.i`

**Parameters:**

INPUT `pcObjectName` AS CHARACTER  
The name of the object to be parsed.

INPUT `pcObjectObj` AS DECIMAL  
The `smartobject_obj` of the object being parsed.

INPUT `pcObjectType` AS CHARACTER  
The `gsc_object_type.object_type_code` for the object. (optional)

INPUT `pcProductModule` AS CHARACTER  
The name of the product module for the object being parsed. This must be a valid `gsc_product_module.product_module_code` value. If a valid object name or `smartobject_obj` is passed in, the product module under which the object is registered is used instead of any passed-in value. If only the product module is passed in, the relative path information for the product module is returned.

INPUT `pcObjectparameter` AS CHARACTER  
This field is normally left blank for parsing objects directly. If set to "include", the procedure calculates the filename for an include file associated with the object being parsed. If set to "clientProxy", the procedure calculates the `_cl client proxy` filename for the object being parsed.

INPUT `pcNameSpace` AS CHARACTER  
Reserved for future use.

OUTPUT `pcRootDirectory` AS CHARACTER  
The calculated root directory for the current session.

OUTPUT `pcRelativeDirectory` AS CHARACTER  
The calculated relative directory based on the product module.
OUTPUT pcSCMRelativeDirectory AS CHARACTER

The calculated SCM relative directory based on the product module. If an SCM tool is being used and SCM checks are in place, the relative path information is retrieved from the currently used SCM tool.

OUTPUT pcFullPathName AS CHARACTER

The calculated full pathname for creating or accessing physical files. The full path does not include the object name. It includes the root directory and either the relative path from the SCM tool if this is valid or the relative directory from the gsc_product_module table.

OUTPUT pcOutputObjectName AS CHARACTER

The validated object name. If the object exists, this returns the repository name of the object, ryc_smartobject.object_filename, in the Repository. If the object does not exist, this parameter contains the pcObjectName value without any relative path information.

OUTPUT pcFileName AS CHARACTER

The calculated physical filename based on the used input parameters. This can be used to create or access the physical filenames of the object being parsed or the associated file for the object.

OUTPUT pcError AS CHARACTER

Any errors encountered during processing that must be returned, such as invalid pcObjectName values.

Notes: The pcObjectType parameter is not used currently. It is included to allow for future development needs.

Examples: See the getClientCacheDir procedure in ry\app\ryrepmngp.i.

classHasAttribute

This function checks whether or not a specified attribute or event exists for a class.

Location: ry\app\ryrepmngp.i

Parameters:

INPUT pcClassName AS CHARACTER

INPUT pcAttributeName AS CHARACTER

INPUT plAttributeIsEvent AS LOGICAL

Returns: LOGICAL

Notes: None

Examples: See the rowObjectValidate procedure in ry\obj\rycavlog3p.p.
**classIsA**

This function checks whether or not a specific class inherits from another specified class.

**Location:** ry\app\ryrepmngrp.i

**Parameters:**

INPUT pcClassName AS CHARACTER

INPUT pcInheritsFromClass AS CHARACTER

**Returns:** LOGICAL

**Notes:** None

**Examples:** See the generateCalculatedField procedure in ry\app\rygenomngp.p.

**clearClientCache**

This procedure ensures up-to-date information is retrieved from the database by emptying the client cache temp-tables. This procedure might be called when Repository maintenance programs have run. By using this procedure, you can avoid having to log off and start a new session in order to use the new Repository data settings.

**Location:** ry\app\ryrepmngrp.i

**Parameters:** None

**Notes:** None

**Examples:** See the cacheObjectOnClient function in ry\app\ryrepmngrp.i.

**createClassCache**

This procedure caches class attributes and UI events.

**Location:** ry\app\ryrepmngrp.i

**Parameters:**

INPUT pcClassName AS CHARACTER

A comma-delimited list of class codes (object types), or an asterisk (*) for all.

**Notes:** If this procedure uses the retrieveClassCache procedure instead of the buildClassCache to populate the ttClass temp-table, the UI event table is always the first table returned.

**Examples:** See the getCacheClassBuffer function in ry\app\ryrepmngrp.i.
**destroyClassCache**

This procedure destroys the temp-tables that make up the class cache, rather than emptying them as `clearClientCache` does.

**Location:** `ry\app\ryrepmngr.i`

**Parameters:** None

**Notes:** This is a separate API because in a run-time environment the class attributes are unlikely to change much.

**Examples:** See the `saveEntitiesToClientCache` procedure in `ry\app\ryrepmngr.i`.

---

**extractRootFile**

This procedure extracts the root filename from a path. It returns both the filename and the filename with an extension, if there is one.

**Location:** `ry\app\ryrepmngr.i`

**Parameters:**

- INPUT `pcFileName` AS CHARACTER
  
  The filename to parse.

- OUTPUT `pcRootFile` AS CHARACTER
  
  The root filename without its extension.

- OUTPUT `pcRootFileExt` AS CHARACTER
  
  The root filename with its extension, if any.

**Notes:** None

**Examples:** See the `insertObjectMaster` procedure in `ry\app\rydesmgrp.i`.

---

**getCacheClassBuffer**

This function returns the buffer handle of the table used to store the cached class buffers.

**Location:** `ry\app\ryrepmngr.i`

**Parameters:**

- INPUT `pcClassName` AS CHARACTER
  
  A class name, a comma-delimited list of class names, or an asterisk (*) for all.

**Returns:** HANDLE

**Notes:** If a nonblank and non-null class name is passed in, the `ttClass` temp-table is repositioned to that record. However, if a list of class names or the wild card is passed in, the record might not be correctly repositioned.

**Examples:** See the `classHasAttribute` function in `ry\app\ryrepmngr.i`.
getCacheLinkBuffer

This function returns the buffer handle of the table used to cache Repository object links.

Location: \ry\app\ryrepmngp.i
Parameters: None
Returns: HANDLE
Notes: None
Examples: See the fetchUI procedure in \ry\app\ryui\msrvp.p.

getCacheObjectBuffer

This function returns the buffer handle of the table used to cache Repository objects. It attempts to find the record specified in pdInstanceID. That value corresponds to the tRecordIdentifier, which is unique for each cache_Object record.

Location: \ry\app\ryrepmngp.i
Parameters:
INPUT pdInstanceID AS DECIMAL
Returns: HANDLE
Notes: If a null (?) is passed in, the find is ignored.
Examples: See the prepareInstance function in \ry\app\ryrepmngp.i.

getCachePageBuffer

This function returns the buffer handle of the table used to cache Repository object pages.

Location: \ry\app\ryrepmngp.i
Parameters: None
Returns: HANDLE
Notes: None
Examples: See the fetchUI procedure in \ry\app\ryui\msrvp.p.
getClassChildren

This function returns a comma-delimited list of the class names that are children of the passed-in class name. It retrieves the information from the cache in the ttClass temp-table.

Location: ry\app\ryrepmngrp.i

Parameters:

INPUT pcClassName AS CHARACTER

Returns: CHARACTER

Notes: If a class has not been cached, it will not show up in the return list from this function. The getClassChildrenFromDB function performs a similar task, but retrieves the information directly from the Repository.

Examples: See the getOpenObjectFilter function in af\cod2\afemwizow.w.

getClassFromInstance

This function returns the class name of a known object buffer instance.

Location: ry\app\ryrepmngrp.i

Parameters:

INPUT pdInstance AS DECIMAL

The object’s Instance ID in the cache buffer.

Returns: CHARACTER

Notes: None

ggetClientCacheDir

This procedure finds the full absolute path to the client cache directory, based on the input product module. The procedure first checks the client_cache_directory session parameter and, if found, returns the session parameter value.

Location: ry\app\ryrepmngrp.i

Parameters:

INPUT pcProductModule AS CHARACTER

The product module.

OUTPUT pcFullPathName AS CHARACTER

The full pathname to the directory.

Notes: None

Examples: See the createClassCache procedure in ry\app\ryrepmngrp.i.
getCurrentLogicalName

This function returns the name of the object being launched. The prepareInstance function does a call-back to this function to determine the name of the logical object that is being launched.

Location: ry\app\ryrepmngrp.i
Parameters: None
Returns: CHARACTER
Notes: The value of the gcCurrentLogicalName variable is set in the startDataObject procedure.
Examples: See the prepareInstance function in ry\app\ryrepmngrp.i.

getMappedFilename

This function returns the name of the generated file for a logical object name.

The generated file must exist in the 'gen' subdirectory of the directory specified by the client_cache_directory session property, if available. If the file cannot be found, the Unknown value (?) is returned.

Location: ry\app\ryrepmngrp.i
Parameters:
INPUT pcObjectName AS CHARACTER
Returns: CHARACTER
Notes: Only the names of r-code files are returned.
Examples: See the startDataObject procedure in ry\app\ryrepmngrp.i.
**getObjectNames**

This procedure finds the physical name and logical name of a given object.

**Location:** ry\app\ryrepmngrp.i

**Parameters:**

- **INPUT pcObjectName AS CHARACTER**
  
  The object name.

- **INPUT pcRunAttribute AS CHARACTER**
  
  The run attribute for the object.

- **OUTPUT pcPhysicalName AS CHARACTER**
  
  The object’s physical name.

- **OUTPUT pcLogicalName AS CHARACTER**
  
  The object’s logical name.

**Notes:** None

**Examples:** See the `launchContainer` procedure in af\app\afsesmngrp.i.

---

**getObjectSuperProcedure**

This procedure returns an object’s custom super procedure to a caller.

**Location:** ry\app\ryrepmngrp.i

**Parameters:**

- **INPUT pcObjectName AS CHARACTER**
  
  The object name.

- **INPUT pcRunAttribute AS CHARACTER**
  
  The run attribute for the object.

- **OUTPUT pcCustomSuperProc AS CHARACTER**
  
  The name of the custom super procedure.

**Notes:** None

**Examples:** See the `launchContainer` procedure in af\app\afsesmngrp.i.
**getToolbarBandActions**

This procedure returns temp-tables of selected bands and actions to the caller.

**Location:**  
ry\app\ryrepmngrp.i

**Parameters:**

- **INPUT pcToolbar** AS CHARACTER
- **INPUT pcObjectList** AS CHARACTER
- **INPUT pcBandList** AS CHARACTER
  
  A comma-delimited list of band names.

**OUTPUT TABLE FOR** ttToolbarBand

**OUTPUT TABLE FOR** ttObjectBand

**OUTPUT TABLE FOR** ttBand

**OUTPUT TABLE FOR** ttBandAction

**OUTPUT TABLE FOR** ttAction

**OUTPUT TABLE FOR** ttCategory

**Notes:**  
These band actions are not cached into a temp-table here because they are cached by the toolbar super procedure, toolbarcustom.p, for the current session.

**Examples:**  
See the doToolbar procedure in ry\app\ryuimsrvrp.p.

---

**IsA**

This function checks whether a class inherits from a particular class, based on the class name.

**Location:**  
ry\app\ryrepmngrp.i

**Parameters:**

- **INPUT pdInstanceId** AS DECIMAL
- **INPUT pcClassName** AS CHARACTER

**Returns:**  
LOGICAL

**Notes:**  
It returns the null value if the object cannot be found in the cache. An object’s class cannot be determined if the object is not in the cache.

**Examples:**  
See the doViewer procedure in ry\app\ryuimsrvrp.p.
**plipShutdown**

This procedure is a standard part of the Progress Dynamics Manager template. It runs on close of the procedure.

**Location:** ry\app\ryrepmngrgrp.i

**Parameters:** None

**Notes:** This procedure currently contains no active code.

**resolveResultCodes**

This procedure resolves the result code string. The procedure ensures that the result code string contains valid result codes, including the default result code.

**Location:** ry\app\ryrepmngrgrp.i

**Parameters:**

INPUT p1DesignMode AS LOGICAL

INPUT-OUTPUT pcResultCodes AS CHARACTER

**Notes:** None

**Examples:** See the ICFCFM_LoginComplete procedure in ry\app\afcusmngrgrp.i.

**saveEntitiesToClientCache**

This procedure saves cached entities to the disk. This procedure is called from the cache client generation tool as well as the session shutdown event.

**Location:** ry\app\ryrepmngrgrp.i

**Parameters:**

INPUT pcEntities AS CHARACTER

A comma-delimited list of entities to save to the Repository. If the value is blank, then all the currently cached entities are saved.

OUTPUT pcStatus AS CHARACTER

Status of the entity dump process. This is mainly required for the cache client tool.

**Notes:** None

**Examples:** See the ICFCFM_StartSessionShutdown procedure in ry\app\ryrepmngrgrp.i.
**startDataObject**

This procedure fetches the specified DataObject from the Repository and starts the object on the client.

**Location:**  
`ry\app\ryrepmngrp.i`

**Parameters:**

- **INPUT pcDataObject AS CHARACTER**
  
  Name of the Data Object.

- **OUTPUT phSDO AS HANDLE**
  
  Handle of the started SDO.

**Notes:**

- If the DataObject is a dynamic SDO, the procedure constructs the necessary attributes.

**Examples:**

See the `generateDataFields` procedure in `ry\app\rydesmngrp.i`.

---

**storeAttributeValue**

This procedure checks that the passed-in attributes are allowed to be updated and then stores attribute values.

**Location:**  
`ry\app\ryrepmngrp.i`

**Parameters:**

- **INPUT phAttributeValueBuffer AS HANDLE**

- **INPUT TABLE-HANDLE phAttributeValueTable**

**Notes:**

- This procedure does not allow the addition of attribute values to object instances that are contained by abstract classes.

- It is now possible to add and update attribute values for attributes marked as run time against a class.

**Examples:**

See the `registerSdoFields` procedure in `ry\app\rydesmngrp.i`. 
Repository Design Manager APIs

This section lists the APIs that you can use with the Repository Design Manager.

**changeObjectInstance**

This procedure changes the object instance.

**Location:** \ry\app\rydesmgp\i

**Parameters:**

INPUT pcNameContainer AS CHARACTER

The container name. Takes a valid container name or a value of ALL for all containers.

INPUT pcResultCode AS CHARACTER

Takes a valid result code, the name of a Master container, or ? (Unknown) for ALL.

INPUT pcNameObjectInstance AS CHARACTER

INPUT pcNameObjectSource AS CHARACTER

The name of the source object to be replaced with the target object. Takes a valid object name.

INPUT pcNameObjectTarget AS CHARACTER

The name of the target object to replace the source object. Takes a valid object name.

INPUT plDeleteObjectSource AS LOGICAL

Deletes the source object if all instances have been changed and there are no other instance allocations.

INPUT plRemoveDefaultAttributes AS LOGICAL

Removes default attributes set for the object instances.

INPUT plRemoveUnusedAttributes AS LOGICAL

Removes unused attributes set for the object instances.

OUTPUT piReplacementCount AS INTEGER
Notes:

- If both the source and target objects are valid objects and exist within the same class hierarchy, the instance and its attribute values are updated accordingly.

- Unless you specify a container name, the procedure works for all containers. If you specify a container name, it works only for the relevant container.

- If the object exists on a container multiple times, all instances are changed unless a specific object instance name is given.

- All the attribute values contained in the attribute value table that are set against the INSTANCE owner are set against this object.

Examples: See the trgbuReplace procedure in ry\prc\ryreplinstvp.p.

changeObjectType

This procedure changes the object type of an object to another object type.

Location: ry\app\rydesmngp.i

Parameters:

INPUT pcObjectName AS CHARACTER

The object's filename.

INPUT pcObjectTypeCode AS CHARACTER

The new object type code.

INPUT plRemoveDefaultAttr AS LOGICAL

If YES, remove attribute values stored against the object that have the same values as the attribute stored against the object’s class anywhere in the class hierarchy.

INPUT plRemoveNonOTAttr AS LOGICAL

If YES, remove attribute values stored against the object that are not stored against the object’s class anywhere in the class hierarchy.

Notes: None

Examples: See the changeObjectType procedure in ry\app\ryrepmngp.i.
classHasAttribute

This function checks whether or not a specified attribute or event exists for a class.

Location: ry\app\rydesmngrp.i

Parameters:

INPUT pcClassName AS CHARACTER

The class name.

INPUT pcAttributeOrEventName AS CHARACTER

The name of the attribute or event to be checked.

INPUT plAttributeIsEvent AS LOGICAL

Whether or not pcAttributeOrEventName is an event.

Returns: LOGICAL

Notes: There is also a classHasAttribute function in Repository Manager. But that function only checks for run-time attributes. Use this function in tools that must check design-time attributes.

Examples: See the generateCalculatedField procedure in ry\app\rygenomngp.p.

clearDesignCache

This procedure empties the ttClassExtinformation temp-table.

Location: ry\app\rydesmngrp.i

Parameters: None

Notes: None

Examples: See the main block in ry\app\rydesmngrp.i.
copyObjectMaster

This procedure creates a deep copy of an object. This procedure can be used for "Save as . . ." functionality.

**Location:**  
ry\app\rydesmngrp.i

**Parameters:**

**INPUT** pcSourceObjectName AS CHARACTER

The original object’s name.

**INPUT** pcSourceResultCode AS CHARACTER

The original object’s result code, if any.

**INPUT** pcTargetObjectName AS CHARACTER

The new object’s name.

**INPUT** pcTargetClass AS CHARACTER

The new object’s class.

**INPUT** pcTargetProductModule AS CHARACTER

The product module in which to save the new object.

**INPUT** pcTargetRelativePath AS CHARACTER

The relative path for the new object’s product module.

**OUTPUT** pdSmartObjectObj AS DECIMAL

The smartobject_obj value for the new object.

**Notes:** If a non-default result code is specified, then the procedure ensures that a record exists for the DEFAULT-RESULT-CODE and the specified result code. This ensures that the newly created object is a complete object on its own.
**generateCalculatedField**

This procedure creates a calculated field.

**Location:**  
ry\app\rydesmngrp.i

**Parameters:**

- INPUT pcCalcFieldName AS CHARACTER
- INPUT pcDataType AS CHARACTER
- INPUT pcFieldFormat AS CHARACTER
- INPUT pcFieldLabel AS CHARACTER
- INPUT pcFieldHelp AS CHARACTER
- INPUT pcProductModuleCode AS CHARACTER
- INPUT pcResultCode AS CHARACTER
- INPUT pcObjectTypeCode AS CHARACTER

**Notes:**  
None

**Examples:**  
See the main block in ry\app\rydesgecfp.p.

---

**generateClassCache**

This procedure outputs the class cache to the disk.

**Location:**  
ry\app\rydesmngrp.i

**Parameters:**

- INPUT pcClassList AS CHARACTER  
  A comma-delimited list of classes to output.
- OUTPUT pcStatus AS CHARACTER  
  The status of the class cache.

**Returns:**  
None

**Examples:**  
See the generateCache procedure in ry\obj\ryclcrunv.w.
generateDataFields

This procedure creates DataField records for a table. This procedure creates a SmartDataField for each field in the table.

You can pass in a list of tables for which to generate fields. This means that you can exclude certain tables, instead of having to specify all tables. For example, if all tables except one are to be generated, a string like "!SomeTable," can be passed into the procedure.

**Location:** ry\app\rydesmngrp.i

**Parameters:**

- **INPUT pcDataBaseName** AS CHARACTER
- **INPUT pcTableName** AS CHARACTER
  - A comma-separated list of tables, in CAN-DO ( ) format, that are to have fields generated.
- **INPUT pcProductModuleCode** AS CHARACTER
- **INPUT pcResultCode** AS CHARACTER
- **INPUT plGenerateFromDataObject** AS LOGICAL
- **INPUT pcDataObjectFieldList** AS CHARACTER
- **INPUT pcSdoObjectName** AS CHARACTER
- **INPUT pcObjectTypeCode** AS CHARACTER
- **INPUT pcOverrideAttributes** AS CHARACTER
- **INPUT pcFieldNames** AS CHARACTER

**Notes:** None

**Examples:** See the main block in af\app\afgengenob.i.
**generateDataLogicObject**

This procedure generates a DataLogic object procedure.

**Location:**  
ry\app\rydesmngp.i

**Parameters:**

- **INPUT** pcDatabaseName AS CHARACTER
- **INPUT** pcTableName AS CHARACTER
- **INPUT** pcDumpName AS CHARACTER
- **INPUT** pcDataObjectName AS CHARACTER
- **INPUT** pcProductModule AS CHARACTER
- **INPUT** pcResultCode AS CHARACTER
- **INPUT** plSuppressValidation AS LOGICAL
- **INPUT** pcLogicProcedureName AS CHARACTER
- **INPUT** pcLogicObjectType AS CHARACTER
- **INPUT** pcLogicProcedureTemplate AS CHARACTER
- **INPUT** pcDataObjectRelativePath AS CHARACTER
- **INPUT** pcDataLogicRelativePath AS CHARACTER
- **INPUT** pcRootFolder AS CHARACTER
- **INPUT** pcFolderIndicator AS CHARACTER
- **INPUT** plCreateMissingFolder AS LOGICAL

**Notes:**  
None

**Examples:**  
See the main block in af\app\afgengenob.i.
generateDataObject

This procedure generates SDOs and other data objects.

**Location:**   ry\app\rydesmngrp.i

**Parameters:**

- INPUT pcDatabaseName AS CHARACTER
- INPUT pcTableName AS CHARACTER
- INPUT pcDumpName AS CHARACTER
- INPUT pcObjectName AS CHARACTER
- INPUT pcObjectTypeCode AS CHARACTER
- INPUT pcProductModule AS CHARACTER
- INPUT pcResultCode AS CHARACTER
- INPUT plCreateSDODataFields AS LOGICAL
- INPUT plSdoDeleteInstances AS LOGICAL
- INPUT plSuppressValidation AS LOGICAL
- INPUT plFollowJoins AS LOGICAL
- INPUT piFollowDepth AS INTEGER
- INPUT pcFieldSequence AS CHARACTER
- INPUT pcLogicProcedureName AS CHARACTER
- INPUT pcObjectNameRelativePath AS CHARACTER
- INPUT pcDataLogicRelativePath AS CHARACTER
- INPUT pcRootFolder AS CHARACTER
- INPUT plCreateMissingFolder AS LOGICAL
- INPUT pcAppServerPartition AS CHARACTER

**Notes:**   The main code for this procedure is in the include file, ry\app\rydesmgdo.i.

**Examples:**   See the main block in af\app\afgenob.i.
**generateDynamicBrowse**

This procedure generates a dynamic browse based on the information obtained from the object generator.

**Location:** `ry\app\rydesmgnp.i`

**Parameters:**

- `INPUT pcObjectTypeCode AS CHARACTER`
- `INPUT pcObjectName AS CHARACTER`
- `INPUT pcObjectDescription AS CHARACTER`
- `INPUT pcProductModuleCode AS CHARACTER`
- `INPUT pcResultCode AS CHARACTER`
- `INPUT pcSdoObjectName AS CHARACTER`
- `INPUT plDeleteExistingInstances AS LOGICAL`
- `INPUT pcDisplayedDatabases AS CHARACTER`
- `INPUT pcEnabledDatabases AS CHARACTER`
- `INPUT pcDisplayedTables AS CHARACTER`
- `INPUT pcEnabledTables AS CHARACTER`
- `INPUT pcDisplayedFields AS CHARACTER`
- `INPUT pcEnabledFields AS CHARACTER`
- `INPUT piMaxFieldsPerColumn AS INTEGER`
- `INPUT pcDataObjectFieldSequence AS CHARACTER`
- `INPUT pcDataObjectFieldList AS CHARACTER`

**OUTPUT pdVisualObjectObj AS DECIMAL**

**Notes:** None

**Examples:** See the main block in `ry\app\rydesgedbp.p`. 
**generateDynamicSDF**

This procedure generates a dynamic OpenEdge SmartDataField™ (SDF) based on the information obtained from the SDF Maintenance Tool.

**Location:**  
ry\app\rydesmngrp.i

**Parameters:**

- INPUT pcObjectName AS CHARACTER
- INPUT pcObjectDescription AS CHARACTER
- INPUT pcProductModuleCode AS CHARACTER
- INPUT pcResultCode AS CHARACTER
- INPUT plDeleteExistingInstances AS LOGICAL
- INPUT pcSDFType AS CHARACTER
  
  Acceptable values are DynCombo or DynLookup.
- INPUT pcSuperProcedure AS CHARACTER
  
  The name of the super procedure.
- INPUT pcAttributeLabels AS CHARACTER
  
  A CHR(1)-delimited list of attribute names.
- INPUT pcAttributeValue AS CHARACTER
  
  A CHR(1)-delimited list of attribute values corresponding to attribute names from pcAttributeLabels.
- INPUT pcAttributeDataType AS CHARACTER
  
  A CHR(1)-delimited list of attribute data type corresponding to attribute names from pcAttributeLabels, as specified in af\app\afdatatypi.i.

**OUTPUT pdSDFObjectObj AS DECIMAL**

**Notes:**  
None

**Examples:**  
See the saveComboDetails procedure in ry\obj\rydynsdfmv.w.
**generateDynamicViewer**

This procedure generates a dynamic viewer based on the information obtained from the object generator.

**Location:** ry\app\rydesmngp.i

**Parameters:**

INPUT pcObjectTypeCode AS CHARACTER
INPUT pcObjectName AS CHARACTER
INPUT pcObjectDescription AS CHARACTER
INPUT pcProductModuleCode AS CHARACTER
INPUT pcResultCode AS CHARACTER
INPUT pcSdoObjectName AS CHARACTER
INPUT plDeleteExistingInstances AS LOGICAL
INPUT pcDisplayedDatabases AS CHARACTER
INPUT pcEnabledDatabases AS CHARACTER
INPUT pcDisplayedTables AS CHARACTER
INPUT pcEnabledTables AS CHARACTER
INPUT pcDisplayedFields AS CHARACTER
INPUT pcEnabledFields AS CHARACTER
INPUT piMaxFieldsPerColumn AS INTEGER
INPUT pcDataObjectFieldSequence AS CHARACTER
INPUT pcDataObjectFieldList AS CHARACTER
 OUTPUT pdVisualObjectObj AS DECIMAL

**Notes:** The main code for this procedure is in the include file, ry\app\rydesmgdv.i.

**Examples:** See the main block in ry\app\rydesgedvp.p.
generateEntityInstances

This procedure associates DataFields and other master objects with an entity.

Location:  \texttt{ry\\app\rydesmngp.i}

Parameters:

INPUT \texttt{pcEntityObjectName} AS CHARACTER

The entity object name, which is the same as the entity mnemonic.

INPUT \texttt{pcFieldList} AS CHARACTER

A \texttt{CHR(3)}-delimited list of fields in the order they should be added to the entity.

INPUT \texttt{plDeleteExistingInstances} AS LOGICAL

Whether to remove any existing instances before adding those specified here.

Notes:

- Entities cannot be customized, so they have no result code.
- Because the objects to be associated with the fields are not bound to the schema and passing in a table name limits this API, the field list is used as passed in without performing any calculations. The caller should determine which master objects (dataField or other) to make instances of the entity.

Examples:  See the main block in \texttt{ry\\app\rydesgeeip.p}.
**generateEntityObject**

This procedure generates an object for an entity, using a table in the database.

**Location:** `ry\app\rydesmgpr.i`

**Parameters:**

INPUT `pcTableNames` AS CHARACTER

A list of databases and tables from which to generate objects. The list is in the following format:

```
<database name> CHR(3) <first tablename>,<next tablename>,...<last tablename> CHR(3)
<next database name> ...
```

INPUT `pcEntityObjectType` AS CHARACTER

The class name of the Entity object. It must be descended from the Entity class.

INPUT `pcEntityProductModule` AS CHARACTER

The product module into which to create the Entity object.

INPUT `plAutoProPerform` AS LOGICAL

INPUT `piPrefixLength` AS INTEGER

INPUT `pcSeparator` AS CHARACTER

Valid values are Upper, blank, or a printable character.

INPUT `pcAuditingEnabled` AS CHARACTER

Valid values are (Y)es, (N)o, or (I)gnore.

INPUT `pcDescFieldQualifiers` AS CHARACTER

The criteria used to search for the entity description field. If blank, uses the defaults.

INPUT `pcKeyFieldQualifiers` AS CHARACTER

Determines the criteria used to search for the entity key field. If blank, uses the defaults.

INPUT `pcObjFieldQualifiers` AS CHARACTER

Determines the criteria used to search for the entity object field. If blank, uses the defaults.

INPUT `plDeployData` AS LOGICAL

INPUT `plVersionData` AS LOGICAL

INPUT `plReuseDeletedKeys` AS LOGICAL
INPUT plAssociateDataFields AS LOGICAL

Whether to automatically associate DataFields with the entity.

**Notes:** If plAssociateDataFields is set to YES, then all existing datafield instances are first removed.

**generateSBODataLogicObject**

This procedure generates the Data Logic Procedure (DLP) for the SBO and its client proxy, compiles the files, and registers the DLP in the Repository.

**Location:** ry\app\rydesmngp.i

**Parameters:**

INPUT pcDatabaseName AS CHARACTER

The database name. This parameter is not used.

INPUT pcTableList AS CHARACTER

A comma-delimited list of supported tables.

INPUT pcDumpName AS CHARACTER

This parameter is not used.

INPUT pcDataObjectName AS CHARACTER

The name of the SBO object.

INPUT pcProductModule AS CHARACTER

The product module of DLP.

INPUT pcResultCode AS CHARACTER

The result code. If blank, uses the default result code.

INPUT pcLogicProcedureName AS CHARACTER

The name of the new logic procedure to be created.

INPUT pcLogicObjectType AS CHARACTER

The logic type of the new procedure, such as DLCProc.

INPUT pcLogicProcedureTemplate AS CHARACTER

The template file on which to base DLP.

INPUT pcDataLogicRelativePath AS CHARACTER

The relative path of the object to be saved.

INPUT pcRootFolder AS CHARACTER

The root directory, for example, "C:\workarea".
Repository Managers

INPUT pcIncludeFileList AS CHARACTER

A comma-delimited list of include files of the SBO including relative path. This must
match the list in pcTableList.

INPUT plCreateMissingFolder AS LOGICAL

If YES, create a new directory if the relative directory specified does not exist.

Notes: None
Examples: See the main block in ry\app\rydesgsdlp.p.

**generateSDOInstances**

This procedure associates datafield instances with a given SDO object.

Location: ry\app\rydesmngrp.i

Parameters:

INPUT pcSdoObjectName AS CHARACTER

INPUT pcResultCode AS CHARACTER

INPUT plDeleteExistingInstances AS LOGICAL

INPUT pcTableList AS CHARACTER

Notes: Only the Enabled attribute is set here. Because the SDO .i fields are created
with the LIKE option, all other attributes are inherited from the schema.

Examples: See the createNewSDO procedure in af\cod2\fullobjcw.w.
**generateVisualObject**

This procedure creates a dynamic browse, based on a table, SDO, or table and SDO. This procedure is the starting point to create both dynamic browses and viewers from the Object Generator.

**Location:**  
ry\app\rydesngngrp.i

**Parameters:**

- INPUT pcObjectType AS CHARACTER
- INPUT pcObjectName AS CHARACTER
- INPUT pcProductModuleCode AS CHARACTER
- INPUT pcResultCode AS CHARACTER
- INPUT pcSdoObjectName AS CHARACTER
- INPUT pcTableName AS CHARACTER
- INPUT pcDataBaseName AS CHARACTER
- INPUT piMaxObjectFields AS INTEGER
- INPUT piMaxFieldsPerColumn AS INTEGER
- INPUT plGenerateFromDataObject AS LOGICAL
- INPUT pcDataObjectFieldList AS CHARACTER
- INPUT plDeleteExistingInstances AS LOGICAL
- INPUT pcDataObjectFieldSequence AS CHARACTER
- INPUT plUseSDOFieldOrder AS LOGICAL
- OUTPUT pdVisualObjectObj AS DECIMAL

**Notes:**  
None

**Examples:**  
See the main block in af\app\afgenob.i.
**getBufferDbName**

This function returns the database name for a given table.

**Location:**  
ry\app\rydesmgrp.i

**Parameters:**

INPUT pcTableName AS CHARACTER

**Returns:**  
CHARACTER

**Notes:**  
None

**Examples:**  
See the generateVisualObject procedure in ry\app\rydesmgrp.i.

---

**getProductModuleList**

This function returns a list-item-pairs list of product module information for use in product module combo boxes. The default delimiter is CHR(3). For example, the following code:

```plaintext
getProductModuleList(INPUT 'product_module_code',  
                      INPUT 'product_module_code,product_module_description,relative_path'  
                      INPUT '&1 // &2 (&3) '  
                      INPUT CHR(3) ).
```

Returns the following result:

```
"af-aaa // ICF Root Directory (af/aaa)|af-aaa..."
```

**Location:**  
ry\app\rydesmgrp.i

**Parameters:**

INPUT pcValueField AS CHARACTER  

The field from the product_module table used as the value field in the LIST-ITEM-PAIRS.

INPUT pcDescFields AS CHARACTER  

A comma-delimited list of product module fields to display in the label portion of the LIST-ITEM-PAIRS. This can be a maximum of three fields.

INPUT pcDescFormat AS CHARACTER  

A base string containing substitution parameters of the form &N used to substitute the description fields.

INPUT pcDelimiter AS CHARACTER  

A delimiter used to build the LIST-ITEM-PAIRS. The default is CHR(3).

**Returns:**  
CHARACTER
Notes:

- The Query String Filter Set for the session is used to determine whether or not to show Repository modules.

- This function replaces the deprecated `productModuleList` function.

Examples: See the `buildComboBoxes` procedure in `af\cod\afsvwizdw.w`.

**getSchemaQueryHandle**

This function creates a query for the metaschema.

**Location:** `ry\app\rydesmngrp.i`

**Parameters:**

- `pcDatabaseName` AS CHARACTER
- `pcTableNames` AS CHARACTER
- `pcWidgetPoolName` AS CHARACTER

**Returns:** HANDLE

**Notes:** None

**Examples:** See the `buildSchemaFieldTable` procedure in `ry\app\rydesmngrp.i`.

**getWidgetSizeFromFormat**

This function returns the height and width of a FILL-IN widget, based on the format.

**Location:** `ry\app\rydesmngrp.i`

**Parameters:**

- `pcFormatMask` AS CHARACTER
- `pcUnit` AS CHARACTER

  The allowed values are `CHARACTER` or `PIXEL`. `CHARACTER` is the default.

- `pdHeight` AS DECIMAL

**Returns:** DECIMAL

**Notes:** None

**Examples:** See the `registerSdoFields` procedure in `ry\app\rydesmngrp.i`. 

insertClass

This procedure adds a class to the Repository or modifies an existing class.

**Location:**  
ry\app\rydesmgrp.p

**Parameters:**

**INPUT pcClassName AS CHARACTER**

The unique class name. This is a mandatory parameter. Blanks are not allowed. If the class passed in is not found, it is created in the Repository.

**INPUT pcClassDescription AS CHARACTER**

A description of the class. Blanks are not allowed.

**INPUT pcExtendsClassName AS CHARACTER**

The name of the class extended by the class given in pcClassName. Blank clears the value. The class specified must already exist in the Repository.

**INPUT pcCustomClassName AS CHARACTER**

The name of the class that customizes the class given in pcClassName. The custom class cannot inherit from the same class that pcClassName does. Blank clears the value. The class specified must already exist in the Repository.

**INPUT plClassDisabled AS LOGICAL**

Whether or not the class is disabled.

**INPUT plLayoutSupported AS LOGICAL**

Whether or not layouts are supported for this class.

**INPUT pcDeploymentType AS CHARACTER**

The default deployment types for objects of this class. Can be one or more of the following: “Cli” for client, “Srv” for server, “Web,” or blank.

**INPUT plStaticObject AS LOGICAL**

Whether or not the class contains static objects.

**INPUT plCacheOnClient AS LOGICAL**

Whether or not procedure code can be generated and deployed onto a client.

**INPUT pcClassObjectName AS CHARACTER**

This parameter is not used.

**OUTPUT pdClassObj AS DECIMAL**

The obj field of the class being maintained.
Notes:

- Unless otherwise specified in the parameter description, all parameters are nonmandatory, blank values are allowed, and an Unknown value (?) keeps the existing value in the Repository.

- This procedure does not update attributes, UI events, and supported links for a class. They are updated through other APIs.

**insertObjectInstance**

This procedure adds or updates an object instance on a container. If the object already exists on the container, the instance and its attribute values are updated accordingly. Otherwise, the instance is created.

Because an object can exist multiple times on a container, this procedure determines whether the object exists based on the object instance name. If the `plForceCreateNew` flag is set, a new object instance is created even if one already exists.

If an attribute value is contained in the attribute value table and is set against the instance owner, the attribute value is set against the object.

**Location:** `ry\app\rydesmngp.i`

**Parameters:**

- INPUT `pdContainerObjectObj` AS DECIMAL
- INPUT `pcObjectName` AS CHARACTER
- INPUT `pcResultCode` AS CHARACTER
- INPUT `pcInstanceName` AS CHARACTER
- INPUT `pcInstanceDescription` AS CHARACTER
- INPUT `pcLayoutPosition` AS CHARACTER
- INPUT `piPageNumber` AS INTEGER
- INPUT `piPageSequence` AS INTEGER
- INPUT `plForceCreateNew` AS LOGICAL
- INPUT `phAttributeValueBuffer` AS HANDLE
- INPUT TABLE-HANDLE `phAttributeValueTable`
- OUTPUT `pdSmartObjectObj` AS DECIMAL
- OUTPUT `pdObjectInstanceObj` AS DECIMAL

**Notes:** None

**Examples:** See the `registerSdoFields` procedure in `ry\app\rydesmngp.i`. 
insertObjectLinks

This procedure adds or updates an object’s links.

**Location:** ry\app\rydesmngp.i

**Parameters:**

INPUT dContainerObjObjectObj AS DECIMAL

This parameter has been deprecated. It remains in the API signature for compatibility reasons.

INPUT phSmartLinkBuffer AS HANDLE

INPUT TABLE-HANDLE phSmartLinkTable

**Notes:** None

**Examples:** See the main block in ry\app\rydescpmoi.i.

insertObjectMaster

This procedure creates or updates records on the Repository’s ryc_smartobject table for the passed-in dynamic or static object.

If an attribute value is contained in the attribute value table and is set against the master owner, the attribute value is set against the object.

**Location:** ry\app\rydesmngp.i

**Parameters:**

INPUT pcObjectName AS CHARACTER

The name of the object to be stored.

INPUT pcResultCode AS CHARACTER

The result code for which to store this object. A blank result code defaults to the DEFAULT-RESULT-CODE. This is an optional parameter.

INPUT pcProductModuleCode AS CHARACTER

The product module in which to store the object.

INPUT pcObjectTypeCode AS CHARACTER

The object type (class) of this object.

INPUT pcObjectDescription AS CHARACTER

A description of the object.

INPUT pcObjectPath AS CHARACTER

The relative path of this object. If this is blank, then the product module determines the relative path of the object. This is an optional parameter.
INPUT pcSdoObjectName AS CHARACTER

The name of an SDO associated with this object. This is an optional parameter.

INPUT pcSuperProcedureName AS CHARACTER

The name of a super procedure associated with this object. This is an optional parameter.

INPUT plIsTemplate AS LOGICAL

Is this object a template?

INPUT plIsStatic AS LOGICAL

Is this a static object?

INPUT pcPhysicalObjectName AS CHARACTER

The name of the physical object associated with this object. Except for static objects, a physical object must be supplied. If none is passed in, a default is used. This is an optional parameter.

INPUT plRunPersistent AS LOGICAL

Whether or not the object must run persistently.

INPUT pcTooltipText AS CHARACTER

The ToolTip text for the object. If this is blank, the object description is used.

INPUT pcRequiredDBList AS CHARACTER

The databases required to run this object.

INPUT pcLayoutCode AS CHARACTER

The layout code for this object. This is an optional parameter.

INPUT phAttributeValueBuffer AS HANDLE

Pointers to the attribute value temp-table.

INPUT TABLE-HANDLE phAttributeValueTab1

OUTPUT pdSmartObjectObj AS DECIMAL

The smartobject_obj of the updated object.

Notes: If the object type of the object has the “layout supported” flag set to YES, the layout defaults to RELATIVE if none is specified.

Examples: See the generateDataFields procedure in ry\app\rydesmngrp.i.
**insertObjectPage**

This procedure creates and updates an object page.

**Location:**  
`ry\app\rydesmngrp.i`

**Parameters:**

- **INPUT pcContainerObjectName AS CHARACTER**
  
The object name of the container to which the page belongs.

- **INPUT pcContainerResultCode AS CHARACTER**
  
The container’s result code, if any.

- **INPUT pcPageLabel AS CHARACTER**
  
The page label.

- **INPUT pcSecurityToken AS CHARACTER**
  
The page’s security token.

- **INPUT pcPageReference AS CHARACTER**
  
The page’s reference.

- **INPUT piPageSequence AS INTEGER**
  
The page’s sequence.

- **INPUT pcLayoutCode AS CHARACTER**
  
The page layout code.

- **INPUT pcEnableOn AS CHARACTER**
  
A CAN-DO style list, which must be able to resolve VIEW, MODIFY, and CREATE.

**OUTPUT pdPageObj AS DECIMAL**

The `page_obj` value for the new page.

**Notes:** None

**Examples:** See the main block in `ry\app\rydescpmoi.i`.
insertSupportedLink

This procedure adds or updates a supported link record for a class.

**Location:**  
ry\app\rydesmgrp.p

**Parameters:**

INPUT pcClassName AS CHARACTER

The name of the class for which the link is supported. This is a mandatory parameter. Blanks and Unknown value (?) are not allowed.

INPUT pcLinkName AS CHARACTER

The name of the link being added. Only valid links from the `smartlink_type` table are allowed. This is a mandatory parameter. Blanks and Unknown value (?) are not allowed.

INPUT plDeactivateOnHide AS LOGICAL

Whether or not this type of link is automatically deactivated when the object is hidden. If YES, the link is deactivated when the object is hidden, and activated when the object is viewed. The Unknown value (?) keeps the existing value.

INPUT plIsLinkSource AS LOGICAL

Whether or not this type of object can be a source for the specified link. If YES, the object can be the source for the link. The Unknown value (?) keeps the existing value.

INPUT plIsLinkTarget AS LOGICAL

Whether or not this type of object can be a target for the specified link. If YES, the object can be the target for the link. The Unknown value (?) keeps the existing value.

OUTPUT pdSupportedLinkObj AS DECIMAL

The object id of the updated record.

**Notes:**  
None
**insertUiEvents**

This procedure stores UI events.

**Location:**  
ry\app\rydesmngrp.i

**Parameters:**

INPUT phUiEventBuffer AS HANDLE

INPUT TABLE-HANDLE phUiEventTable

**Notes:**

• The buffer used in this procedure is based on the ttStoreUiEvent temp-table defined in ry\inc\ryrepaset.i.

• This procedure does not allow the addition of UI events for object instances that are contained by abstract classes.

**Examples:**  
See the main block in ry\app\rydescpmoi.i.

**ObjectExists**

This function checks if a given object name exists in the Repository.

**Location:**  
ry\app\rydesmngrp.i

**Parameters:**

INPUT pcObjectName AS CHARACTER

**Returns:**  
LOGICAL

**Notes:**  
None

**Examples:**  
See the main block in ry\inc\rygenogtji.i.

**plipShutdown**

This procedure is a standard part of the manager template. It runs on close of the procedure.

**Location:**  
ry\app\rydesmngrp.i

**Parameters:**  
None

**Notes:**  
This procedure currently contains no active code.
**prepareObjectName**

This function enforces naming standards when creating new dynamic objects and writing them to the Repository. All saves pass through this function.

You can create a customized version of this function using the prescribed method of customizing managers.

**Location:**  
\`\`\`\  \ry\app\rydesmngrp.i

**Parameters:**

INPUT pcObjectName AS CHARACTER  

The suggested base name of the object, required if `pcAction` is `SAVE`.

INPUT pcActionCode AS CHARACTER  

The result code for a customized object.

INPUT pcObjectNameString AS CHARACTER  

An optional string that can pass additional info. Reserved for future use.

INPUT pcActionCode AS CHARACTER  

The type of action requested. `SAVE` means the object name is being saved to the Repository. `DEFAULT` means that a default object name is requested.

INPUT pcObjectType AS CHARACTER  

The object type being saved.

INPUT pcEntityName AS CHARACTER  

The object's entity mnemonic, required if `pcAction` is `DEFAULT`.

INPUT pcProductModule AS CHARACTER  

The product module for the object, required if `pcAction` is `SAVE`.

OUTPUT pcNewObjectName AS CHARACTER  

The new object name. This field must be unique, nonblank, and not null.

OUTPUT pcNewObjectExt AS CHARACTER  

The object extension, if required.

**Returns:**  
CHARACTER
Notes: The InsertObjectMaster procedure calls this function using pcAction = 'Save'. The ObjectGenerator calls this function using pcAction = 'Default'. The AppBuilder Save dialog box calls this function using pcAction = 'Default'.

Examples: See the insertObjectMaster procedure in ry\app\rydesmngp.i.

removeAttributeValues

This procedure removes attribute values.

Location: ry\app\rydesmngp.i

Parameters:

INPUT phAttributeValueBuffer AS HANDLE
INPUT TABLE-HANDLE phAttributeValueTable

Notes: The buffer used in this procedure is based on the ttStoreAttribute temp-table defined in ry\inc\ryrepset.i.

Examples: See the propertyChangedAttribute procedure in af\cod2\afmenumaintw.w.

removeObject

This procedure removes an object from the Repository. The ryc_smartobject delete trigger deletes the following records associated with the object:

- attribute values
- menu items
- valid object partitions
- toolbar menu structures
- object menu structures
- smartlinks
- comments
- user allocations
- multi-media

Location: ry\app\rydesmngp.i

Parameters:

INPUT pcObjectName AS CHARACTER
INPUT pcResultCode AS CHARACTER
Notes: When an object instance is deleted, the attribute values and UI events for that object instance are deleted by the delete triggers.

Examples: See the deleteObject procedure in ry\obj\bopendialog.w.

**removeObjectPage**

This procedure removes a page from an object. You can specify the page to remove with the page reference or the page sequence. The page reference takes precedence if both are supplied.

**Location:** ry\app\rydesmgntg.i

**Parameters:**

**INPUT pcContainerObjectName AS CHARACTER**

The object name of the container in which the page exists.

**INPUT pcContainerResultCode AS CHARACTER**

The container result code, if any.

**INPUT pcPageReference AS CHARACTER**

The page reference. An asterisk(*) indicates all pages should be removed.

**INPUT piPageSequence AS INTEGER**

The page sequence.

**INPUT plRemoveObjectInstances AS LOGICAL**

If YES, remove the object instance record. If NO, only remove the record linking the object instance to a particular page.

**Notes:** None
removePageInstance

This procedure removes a page object record.

**Location:** ry\app\rydesmgrp.i

**Parameters:**

INPUT pcContainerObjectName AS CHARACTER

The object name of the container in which the page exists.

INPUT pcContainerResultCode AS CHARACTER

The container result code, if any.

INPUT pcPageReference AS CHARACTER

The page reference.

INPUT pcInstanceName AS CHARACTER

The instance name.

INPUT plDeleteObjectInstance AS LOGICAL

If YES, also remove the ryc_object_instance record.

**Notes:** The procedure assumes a one-to-one relationship is assumed between then ryc_object_instance and ryc_page_object records.

**Examples:** See the removeObjectPage procedure in ry\app\rydesmgrp.i.

removeSupportedLink

This procedure removes a supported link record for a class.

**Location:** ry\app\rydesmgrp.p

**Parameters:**

INPUT pcClassName AS CHARACTER

The name of the class for which the link is supported. This is a mandatory parameter.
Blanks and Unknown value (?) are not allowed.

INPUT pcLinkName AS CHARACTER

The name of the link being removed. Only valid links from the smartlink_type table are allowed. This is a mandatory parameter. Blanks and Unknown value (?) are not allowed.

**Notes:** None
removeUIEvents

This procedure removes UI Events.

**Location:** `ry\app\rydesmngrp.i`

**Parameters:**

- **INPUT** `phUiEventBuffer` AS HANDLE
- **INPUT** TABLE-HANDLE `phUiEventTable`

**Notes:** The buffer used in this procedure is based on the `ttStoreUiEvent` temp-table defined in `ry\inc\ryrepatset.i`.

**Examples:** See the `writeFieldLevelObjects` procedure in `ry\prc\rygendynp.p`.

setQualifiedTableName

This function sets the flag that indicates whether or not tables should be qualified with a logical database name.

**Location:** `ry\app\rydesmngrp.i`

**Parameters:**

- **INPUT** `plSuppressDbName` AS LOGICAL

**Returns:** LOGICAL

**Notes:** None
The Security Manager handles retrieving and applying security information from the Repository, as outlined in the following sections:

- Overview
- Temp-Tables used by Security Manager
- Security Manager APIs
Security Manager

Overview

The Security Manager aids in the definition of security allocations and in applying those allocations at run time. Security allocations are grants or restrictions of privileges for specific users. Security allocations can be defined on:

- Actions, which restrict access to UI controls such as toolbar buttons and tabs in a tab folder.
- Restricted entities and fields in a database, including calculated fields.
- Restricted ranges of data values in a particular field.
- Restricted database records filtered in any way.
- Restricted containers, menu structures, menu items, and login companies.

In a distributed environment, the Security Manager is started on both the client and server sides. There is a wrapper program for each side that sets the global variable, server-side, to either YES for the server-side version or NO for the client-side version. Both programs then include the main code of the manager from the af\app\afsecmngrp.i include file. The differences in how the manager operates on each side are triggered by checking the value of the server-side variable.

The Security Manager’s handle is stored in the global shared variable, gshSecurityManager.

Table 9–1 shows the files that contain the Security Manager’s code.

Table 9–1: Security Manager files

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td>af\sup2\afsecclntp.p</td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td>af\app\afsecsrvp.p</td>
</tr>
<tr>
<td>Main code</td>
<td>af\app\afsecmngrp.i</td>
</tr>
</tbody>
</table>
| Included files        | af\app\afsecgtsecctr1p.i
                        | af\app\afsecttddef.i   |
                        | af\app\afttsecurityctr1.i|
                        | af\app\afsecupusrallocp.i|
                        | af\app\usrSecChck.i     |
                        | af\sup2\aferrortxt.i    |
                        | af\sup2\afglobals.i     |

For more information on this Manager, see the chapter on using the Progress Dynamics Managers in *OpenEdge Development: Progress Dynamics Advanced Development*.

Temp-Tables used by Security Manager

The Security Manager uses several temp-tables to control the security allocations. Table 9–2 describes the temp-tables used to cache security information.
**Table 9–2: Temp-tables defined in af\app\afsecmngrp.i**

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttUserSecurityCheck</td>
<td>dUserObj (Decimal) dOrganisationObj (Decimal) cOwningEntityMnemonic (Character)</td>
</tr>
<tr>
<td></td>
<td>dOwningObj (Decimal) lSecurityCleared (Logical) CSecurityValue1 (Character)</td>
</tr>
<tr>
<td></td>
<td>CSecurityValue2 (Character)</td>
</tr>
<tr>
<td>ttFieldSecurityCheck</td>
<td>cObjectName (Character) cAttributeCode (Character) cSecurityOptions (Character)</td>
</tr>
<tr>
<td>ttTokenSecurityCheck</td>
<td>cObjectName (Character) cAttributeCode (Character) cSecurityOptions (Character)</td>
</tr>
<tr>
<td>ttTableSecurityCheck</td>
<td>cOwningEntityMnemonic (Character) cEntityFieldName (Character) cValidValues (Character)</td>
</tr>
<tr>
<td>ttRangeSecurityCheck</td>
<td>cRangeCode (Character) cObjectName (Character) cAttributeCode (Character) cRangeFrom (Character) cRangeTo (Character)</td>
</tr>
<tr>
<td>ttObjectSecurityCheck</td>
<td>cObjectName (Character) dObjectObj (Decimal) lRestricted (Logical)</td>
</tr>
<tr>
<td>ttMenuSecurity</td>
<td>cName (Character) cMenuType (Character) cSecurityOptions (Character)</td>
</tr>
<tr>
<td>ttUser</td>
<td>userObj (Decimal)</td>
</tr>
<tr>
<td>ttGlobalSecurityStructure</td>
<td>product_module_obj (Decimal) owning_entity_mnemonic (Character) owning_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>security_structure_obj (Decimal) security_object_name (Character) restricted (Logical)</td>
</tr>
<tr>
<td></td>
<td>user_allocation_value1 (Character) user_allocation_value2 (Character)</td>
</tr>
<tr>
<td>ttGlobalSecurityAllocation</td>
<td>login_organisation_obj (Decimal) owning_entity_mnemonic (Character) owning_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>user_allocation_value1 (Character) user_allocation_value2 (Character)</td>
</tr>
</tbody>
</table>
The Security Manager uses the temp-table described in Table 9–3 to cache security setting information.

### Table 9–3: Temp-table defined in af\app\afsecttdef.i

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttUpdatedAllocations</td>
<td>lDeleteAll (Logical)</td>
</tr>
<tr>
<td></td>
<td>lDelete (Logical)</td>
</tr>
<tr>
<td></td>
<td>lUpdateValue1AndValue2 (Logical)</td>
</tr>
<tr>
<td></td>
<td>owning_entity_mnemonic (Character)</td>
</tr>
<tr>
<td></td>
<td>owning_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>user_allocation_value1 (Character)</td>
</tr>
<tr>
<td></td>
<td>user_allocation_value2 (Character)</td>
</tr>
</tbody>
</table>

The Security Manager uses the temp-table described in Table 9–4, a copy of the Repository gsc_security_control table, to cache security setting information.

### Table 9–4: Temp-table defined in af\app\afttsecurityctrl.i

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttSecurityControl</td>
<td>security_control_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>password_max_retries (Integer)</td>
</tr>
<tr>
<td></td>
<td>password_history_life_time (Integer)</td>
</tr>
<tr>
<td></td>
<td>full_access_by_default (Logical)</td>
</tr>
<tr>
<td></td>
<td>security_enabled (Logical)</td>
</tr>
<tr>
<td></td>
<td>help_writer_enabled (Logical)</td>
</tr>
<tr>
<td></td>
<td>build_top_menus_only (Logical)</td>
</tr>
<tr>
<td></td>
<td>default_help_filename (Character)</td>
</tr>
<tr>
<td></td>
<td>error_log_filename (Character)</td>
</tr>
<tr>
<td></td>
<td>translation_enabled (Logical)</td>
</tr>
<tr>
<td></td>
<td>login_filename (Character)</td>
</tr>
<tr>
<td></td>
<td>multi_user_check (Logical)</td>
</tr>
<tr>
<td></td>
<td>program_access_check (Logical)</td>
</tr>
<tr>
<td></td>
<td>minimise_siblings (Logical)</td>
</tr>
<tr>
<td></td>
<td>enable_window_positioning (Logical)</td>
</tr>
<tr>
<td></td>
<td>force_unique_password (Logical)</td>
</tr>
<tr>
<td></td>
<td>company_logo_filename (Character)</td>
</tr>
<tr>
<td></td>
<td>system_icon_filename (Character)</td>
</tr>
<tr>
<td></td>
<td>small_icon_filename (Character)</td>
</tr>
<tr>
<td></td>
<td>product_logo_filename (Character)</td>
</tr>
<tr>
<td></td>
<td>scm_checks_on (Logical)</td>
</tr>
<tr>
<td></td>
<td>scm_tool_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>user_context_expiry_period (Decimal)</td>
</tr>
</tbody>
</table>
Security Manager APIs

This section lists the APIs that you can use with the Security Manager.

**areFieldsCached**

This function indicates if security fields for a specific object have been cached.

- **Location:** af\app\afsecmngp.i
- **Parameters:**
  - INPUT pcObjectName AS CHARACTER
  - INPUT pcRunAttribute AS CHARACTER
- **Returns:** LOGICAL
- **Notes:** None
- **Examples:** See the containerCacheUpfront procedure in af\app\afsesmngp.i.

**areTokensCached**

This function indicates if security tokens for a specific object have been cached.

- **Location:** af\app\afsecmngp.i
- **Parameters:**
  - INPUT pcObjectName AS CHARACTER
  - INPUT pcRunAttribute AS CHARACTER
- **Returns:** LOGICAL
- **Notes:** None
- **Examples:** See the containerCacheUpfront procedure in af\app\afsesmngp.i.
**authenticateUser**

This procedure authenticates users. This procedure verifies that a user exists in the database and that the password provided is legitimate. It does not establish any permissions.

**Location:** af\app\afsecmngp.i  
**Parameters:**

- **INPUT** pcUserName AS CHARACTER  
  The user name from the login.  
- **INPUT** pcPassword AS CHARACTER  
  The password from the login.  
- **OUTPUT** pcError AS CHARACTER  
  The error message if the login fails.  

**Notes:** None  
**Examples:** See the main block in dynamics\as_connect.p.

**cacheGlobalSecurityAllocations**

This procedure populates the ttGlobalSecurityAllocation temp-table with data from the Repository's gsm_user_allocation table.

**Location:** af\app\afsecmngp.i  
**Parameters:** None  
**Notes:** None  
**Examples:** See the clearClientCache procedure in af\app\afsecmngp.i.

**cacheGlobalSecurityStructures**

This procedure caches all global security structures at session startup. The cached data can then be used instead of repeatedly reading these records from the Repository.

**Location:** af\app\afsecmngp.i  
**Parameters:** None  
**Notes:** None  
**Examples:** See the clearClientCache procedure in af\app\afsecmngp.i.
**changePassword**

This procedure changes a user’s password, making all the relevant checks to the password.

This procedure first checks that the passed-in user is valid and not disabled (either on the user record or the user category record). The procedure then validates that the old password is correct, similar to the `checkUser` procedure, and returns an error if it is not valid.

Providing the old password is OK, the new password is then validated according to the rules set up on the system or user record. It checks password minimum length and the password history if enabled. If everything is correct, the new password is saved for the user and the appropriate user details updated. If the password was expired, the expiration details are reset.

**Location:**  
`af\app\afsecmngrp.i`

**Parameters:**

- **INPUT pdUserObj AS DECIMAL**  
  The user object number, if known.
- **INPUT pcLoginName AS CHARACTER**  
  The user login name, if known.
- **INPUT pcOldPassword AS CHARACTER**  
  The old password (encoded).
- **INPUT pcNewPassword AS CHARACTER**  
  The new password (encoded).
- **INPUT plExpired AS LOGICAL**  
  The password expired flag.
- **INPUT piLength AS INTEGER**  
  The number of password characters entered in the new password.

**OUTPUT pcError AS CHARACTER**  
Any failure reason (standard Dynamics-formatted error).

**Notes:**  
None

**Examples:**  
See the main block in `af\cod2\afemcpasw.w`. 
checkUser

This procedure authenticates the passed-in user or company identities.

Because you always want to use the latest information to authenticate the user who is trying to log in, this procedure does not cache. The following checks are made:

1. Checks if the user is valid and, if it is not, returns an error stating that an invalid login name was specified.
2. Checks if the account has been disabled and, if it has, returns an error.
3. Checks if the category of user has been disabled and, if it has, returns an error.
4. If a password was entered, checks that the password is valid for the user. If the password is not valid, then the fail count is updated on the user record. If this exceeds the maximum retries, the account is additionally disabled and the retries reset back to 0.
5. If a valid password is entered, the fail count is reset, and the login details updated on the user.
6. If the user password has expired, then this fact is returned to the login window. The login window should prompt for a new password before proceeding with the login. If this fails, the login is aborted.

Location: \af\app\afsecmngrp\i

Parameters:

INPUT pcLoginName AS CHARACTER
The user login name.

INPUT pcPassword AS CHARACTER
The encoded user password.

INPUT pdCompanyObj AS DECIMAL
The login company obj specified.

INPUT pdLanguageObj AS DECIMAL
The language obj specified.

OUTPUT pdUserObj AS DECIMAL
The login user object number.

OUTPUT pcUserName AS CHARACTER
The user full name.

OUTPUT pcUserEmail AS CHARACTER
The user e-mail.

OUTPUT pcOrganisationCode AS CHARACTER
The organization code.
OUTPUT pcOrganisationName AS CHARACTER
   The organization name.

OUTPUT pcOrganisationShort AS CHARACTER
   The organization short name.

OUTPUT pcLanguageName AS CHARACTER
   The language name.

OUTPUT pcError AS CHARACTER
   Any failure reason (standard Progress Dynamics-formatted error).

Notes: None
Examples: See the authenticateUser function in ry\app\ryreqsrvrp.p.

clearClientCache

This procedure ensures that up-to-date information is retrieved from the database by emptying
the client cache temp-tables. This procedure might be called when security maintenance
programs have run. By using this procedure, you can avoid having to log off and start a new
session in order to use the new security settings.

Location: af\app\afsecmngrp.i
Parameters: None
Notes: None
Examples: See the relogon procedure in af\app\afsesmngrp.i.

createGroupAllocation

This procedure adds a group allocation for a user.

Location: af\app\afsecmngrp.i
Parameters:

INPUT pdUserObj AS DECIMAL
   The user’s unique key field.

INPUT pdGroupObj AS DECIMAL
   The group’s unique key field.

Notes: None
Examples: See the createGroupFromUser procedure in af\app\afsecmngrp.i.
createGroupFromUser

This procedure creates a security group based on a specific user's allocations.

If the user is a profile user, only the common security allocations for all users based off that profile are copied. Allocations that are not common among the users are excluded from the new group's allocations. The procedure also links all users based on the profile user to the new security group.

**Location:** af\app\afsecmngrp.i

**Parameters:**

INPUT pdUserObj AS DECIMAL

The user's unique key field.

INPUT pcSecurityGroupName AS CHARACTER

The name of the security group to create.

**Notes:** None

**Examples:** See the processSecurity procedure in af\obj2\securgrpp.p.

fieldandtokenSecurityCheck

This procedure does both a field and token security check for the specified object simultaneously, retrieving the information in one AppServer hit.

**Location:** af\app\afsecmngrp.i

**Parameters:**

INPUT pcObjectName AS CHARACTER

The current program object for security check.

INPUT pcAttributeCode AS CHARACTER

The current instance attribute posted to program.

INPUT plCheckFieldSecurity AS LOGICAL

Whether or not to extract field security.

INPUT plCheckTokenSecurity AS LOGICAL

Whether or not to extract token security.

OUTPUT pcFieldSecurity AS CHARACTER

A comma-delimited list of secured fields. Each field is described by two entries in the list. The first entry is the field name qualified with the table name. The second entry is either "hidden" or "read-only", depending on the security for the particular field.
OUTPUT pcTokenSecurity AS CHARACTER

A comma-delimited list of security tokens. The tokens represent objects, such as toolbar buttons and folder pages, for which the user does not have proper security clearance.

Notes: None
Examples: See the widgetWalk procedure in af\app\afsesmngrp.i.

fieldSecurityCheck

This procedure checks what fields a user is permitted to access.

Location: af\app\afsecmngrp.i
Parameters:

INPUT pcObjectName AS CHARACTER

The current program object for security check.

INPUT pcAttributeCode AS CHARACTER

The current instance attribute posted to the program.

OUTPUT pcSecurityOptions AS CHARACTER

The security options as a comma-delimited list of secured fields, each with two entries. Entry 1 = table.fieldname, Entry 2 = hidden/view.

Notes: None
Examples: See the widgetWalk procedure in af\app\afsesmngrp.i.

fieldSecurityGet

This procedure checks fields secured for the passed-in object. If a valid procedure handle is passed in and the object has already been secured by the Repository Manager, the security stored in the object is used. If the security is not found in the object, the applicable security is fetched from the database or AppServer by running the fieldSecurityCheck procedure.

Location: af\app\afsecmngrp.i
Parameters:

INPUT phObject AS HANDLE

The handle to the object being checked. If not specified, a standard security check is done using the object name (optional).

INPUT pcObjectName AS CHARACTER

The name of the object being checked (mandatory).

INPUT pcAttributeCode AS CHARACTER

The attribute code of the object being checked (mandatory).
OUTPUT pcSecurityOptions AS CHARACTER

The list of secured fields.

Notes: None

Examples: See the widgetWalk procedure in af\app\afsesmngrp.i.

getContainerIcons

This procedure returns the icons to load for each launched window.

Location: af\app\afsecmngrp.i

Parameters:

OUTPUT pcSystemIcon AS CHARACTER

The relative path to the icon.

OUTPUT pcSmallSystemIcon AS CHARACTER

The relative path to the small icon.

Notes: None

Examples: See the main block in af\sup2\aficonload.i.

getFieldSecurity

This procedure checks a list of field names and returns how the fields are secured.

Location: af\app\afsecmngrp.i

Parameters:

INPUT pcFieldList AS CHARACTER

The fields to check as a CHR(1)-delimited list.

OUTPUT pcSecurityList AS CHARACTER

The list of security as a comma-delimited list in the same order that the fields were passed in.

Notes: This API is meant to check field security for audit trails specifically, because the framework cannot determine from which object or container the field was updated. The API checks if the field has been secured anywhere and applies the most restrictive security if set up.

Examples: See the buildTempTable procedure in af\obj2\gstadvievw.w.
**getMandatoryTables**

This procedure checks a field to discover on what tables it is mandatory.

The procedure checks through all the locally connected databases. If it is running in an AppServer environment, it then runs itself on the AppServer checking databases connected to the AppServer.

**Location:** af\app\afsecmngrp.i

**Parameters:**

- INPUT PARAMETER pcFieldName AS CHARACTER
  
  The field to be checked.

- INPUT-OUTPUT PARAMETER pcTableList AS CHARACTER
  
  The list of tables on which the field is mandatory.

**Notes:** None

**Examples:** See the updateRecord procedure in af\obj2\gsmffviewv.w.

---

**getSecurityControl**

This procedure returns the security control details in a temp-table.

**Location:** af\app\afsecmngrp.i

**Parameters:**

- OUTPUT TABLE FOR ttSecurityControl
  
  A temp-table containing a single security control record.

**Notes:**

- If the temp-table is empty, the procedure first reads the details on the AppServer and populates the temp-table. If any security control settings are changed in a session, the clear cache procedure should be run so that this procedure picks up the new details.

- When running on the server, the procedure always accesses the database to get the latest security information.

**Examples:** See the helpContents procedure in af\app\afsesmngrp.i.
menuItemSecurityCheck

This procedure checks whether menu items (actions) are secured.

**Location:** af\app\afsecrngrp.i

**Parameters:**

INPUT pcItem AS CHARACTER

The menu item (action) to check.

OUTPUT plItemHidden AS LOGICAL

Whether or not the item is hidden for security.

OUTPUT plItemDisabled AS LOGICAL

Whether the item is disabled, either as a result of security or because of user or menu item settings.

**Notes:** Any errors are returned by raising the ERROR status and placing error text in the RETURN-VALUE.

menuStructureSecurityCheck

This procedure checks whether menu structures (bands) are secured.

**Location:** af\app\afsecrngrp.i

**Parameters:**

INPUT pcStructure AS CHARACTER

The menu structures (bands) to check.

OUTPUT plStructureHidden AS LOGICAL

Whether or not the structure is hidden for security.

**Notes:** Any errors are returned by raising the ERROR status and placing error text in the RETURN-VALUE.
objectSecurityCheck

This procedure checks a user’s security for the objects the user is permitted to run.

**Location:** af\app\afsecmngrp.i

**Parameters:**

- INPUT-OUTPUT pcObjectName AS CHARACTER
  
  The current program object for security check.

- INPUT-OUTPUT pdObjectObj AS DECIMAL
  
  The current instance attribute posted to program.

- OUTPUT plSecurityRestricted AS LOGICAL
  
  The security options as a comma-delimited list of security tokens for which the user does not have security clearance.

**Notes:**

This is currently used in toolbar panel views to disable buttons, and in folder windows to disable folder pages.

**Examples:** See the processRequest procedure in ry\app\ryreqsrvrp.p.

plipShutdown

This procedure is a part of the standard manager template. It runs on close of the procedure. It is available to allow customizing the framework.

**Location:** af\app\afsecmngrp.i

**Parameters:** None

**Notes:** This procedure currently contains no active code.
rangeSecurityCheck

This procedure checks a user’s security for the passed-in range code.

**Location:**  af\app\afsecmngrp.i

**Parameters:**

INPUT pcRangeCode  AS  CHARACTER
   The range code to check for a user security clearance.

INPUT pcObjectName  AS  CHARACTER
   The current program object for a security check.

INPUT pcAttributeCode  AS  CHARACTER
   The instance attribute posted to the program.

OUTPUT pcRangeFrom  AS  CHARACTER
   The FROM value permitted for a user, blank for all.

OUTPUT pcRangeTo  AS  CHARACTER
   The TO value permitted for a user, blank for all.

**Notes:** None

receiveCacheSessionSecurity

This procedure receives the initial session security cache.

**Location:**  af\app\afsecmngrp.i

**Parameters:**

INPUT TABLE FOR ttSecurityControl

**Notes:** None

**Examples:** See the loginCacheAfter procedure in af\app\afsesmngrp.i.
tableSecurityCheck

This procedure checks a user’s security for the table field values to which the user is permitted access.

**Location:** af\app\afsecmngp.i

**Parameters:**

- **INPUT pcOwningEntityMnemonc AS CHARACTER**
  - The table FLA for which to check a user security clearance.

- **INPUT pcEntityFieldName AS CHARACTER**
  - The field name with no table prefix.

- **OUTPUT pcValidValues AS CHARACTER**
  - A comma-separated list of valid values, blank for all.

**Notes:** None

tokenSecurityCheck

This procedure checks a user’s security for the tokens to which the user is permitted access.

**Location:** af\app\afsecmngp.i

**Parameters:**

- **INPUT pcObjectName AS CHARACTER**
  - The current program object for security check.

- **INPUT pcAttributeCode AS CHARACTER**
  - The current instance attribute posted to the program.

- **OUTPUT pcSecurityOptions AS CHARACTER**
  - The security options as a comma-delimited list of security tokens for which the user does not have security clearance.

**Notes:** This is currently used in toolbar panel views to disable buttons, and in folder windows to disable folder pages.

**Examples:** See the widgetWalk procedure in af\app\afsecmngp.i.
tokenSecurityGet

This procedure checks tokens secured for the passed-in object. If a valid procedure handle is passed in and the object has already been secured by the Repository Manager, the security stored in the object is used. If the security is not found in the object, the applicable security is fetched from the database or AppServer by running the tokenSecurityCheck procedure.

**Location:** af\app\afsecmggrp.i

**Parameters:**

- **INPUT phObject AS HANDLE**
  
  The handle to the object being checked. If not specified, a standard security check is done using the object name (optional).

- **INPUT pcObjectName AS CHARACTER**
  
  The name of the object being checked (mandatory).

- **INPUT pcAttributeCode AS CHARACTER**
  
  The attribute code of the object being checked (mandatory).

- **OUTPUT pcSecurityOptions AS CHARACTER**
  
  The list of secured tokens and their security settings.

**Notes:**

None

**Examples:**

See the widgetWalk procedure in af\app\afsesmggrp.i.
**updateUserAllocations**

This procedure creates user security allocations in the Repository.

**Location:** af\app\afsecmngrp.i  
**Parameters:**  
INPUT pdUserObj AS DECIMAL  
   The user obj number or 0 for all.  
INPUT pdOrganisationObj AS DECIMAL  
   The login organization obj or 0 for all.  
INPUT TABLE FOR ttUpdatedAllocations  
   Temp-table of user allocations to update.  
**Notes:** None  
**Examples:** See the updateForAll procedure in af\obj2\grpcomsupr.p.

**userLoginOrganisations**

This procedure checks which organizations a user can access.

**Location:** af\app\afsecmngrp.i  
**Parameters:**  
INPUT pdUserObj AS DECIMAL  
   The user_obj.  
OUTPUT pcOrganisations AS CHARACTER  
   A comma-delimited list of list pairs. The organization obj is the first entry, and the name of the organization is the second entry.  
**Notes:** This procedure is included to support backward compatibility only.
**userSecurityCheck**

This procedure checks a user’s security allocation for the passed-in company and security option. The types of security checks that could be made include checks for access to tokens, fields, data, data ranges, and menu items. The type of security check depends on the passed-in entity mnemonic and `obj`.

**Location:** `af\app\afsecmngrp.i`

**Parameters:**

- **INPUT pdUserObj** AS DECIMAL
  - The user being checked.

- **INPUT pdOrganisationObj** AS DECIMAL
  - The company the user is logged in to.

- **INPUT pcOwningEntityMnemonic** AS CHARACTER
  - The security table being checked.

- **INPUT pdOwningObj** AS DECIMAL
  - The security table object being checked.

- **INPUT plReturnValues** AS LOGICAL
  - Whether or not to return security values.

**OUTPUT plSecurityRestricted** AS LOGICAL
- Returns YES if security check is passed.

**OUTPUT pcSecurityValue1** AS CHARACTER
- Returns any specific security data.

**OUTPUT pcSecurityValue2** AS CHARACTER
- Returns any specific security data.

**Notes:** None

**Examples:** See the main block in `af\app\afchkuserp.p`. 
Session Manager

The Session Manager handles starting and stopping application components in a distributed environment, as outlined in the following sections:

- Overview
- Temp-tables used by Session Manager
- Session Manager APIs
Overview

The Session Manager controls the starting and stopping of application components in a distributed environment. It passes client requests to execute server-side business logic to the appropriate procedures, wherever they are running. It also manages client context for the stateless execution of all server-side components. It also supports the following application services:

- Context management.
- Persistent procedure management.
- Session property management.
- Error and message handling.
- Online help.

After all the necessary connections have been established by the Connection Manager, the Session Manager starts to handle the actual running of the session. It is responsible for coordinating the activities of the various other Managers used in the session.

In a distributed environment, the Session Manager is started on both the client and server sides. There is a wrapper program for each side that sets the global variable, server-side, to either YES for the server-side version or NO for the client-side version. Both programs then include the main code of the manager from the af\app\afsesmgrp.i include file. The differences in how the manager operates on each side are triggered by checking the value of the server-side variable.

The Session Manager’s handle is stored in the global shared variable, gshSessionManager.
Table 10–1 shows the files that contain the Session Manager’s code.

### Table 10–1: Session Manager files

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td><code>af\sup2\afsesclntp.p</code></td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td><code>af\app\afsessrvrp.p</code></td>
</tr>
<tr>
<td>Main code</td>
<td><code>af\app\afsesmgrp.i</code></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Included files</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>adecomm\appsrvtt.i</code></td>
</tr>
<tr>
<td><code>adecomm\appserv.i</code></td>
</tr>
<tr>
<td><code>adm2\calltables.i</code></td>
</tr>
<tr>
<td><code>adm2\callttparam.i</code></td>
</tr>
<tr>
<td><code>adm2\globals.i</code></td>
</tr>
<tr>
<td><code>adm2\ttaction.i</code></td>
</tr>
<tr>
<td><code>adm2\tttoolbar.i</code></td>
</tr>
<tr>
<td><code>af\app\afsesgetglcp.i</code></td>
</tr>
<tr>
<td><code>af\app\afttgblctrl.i</code></td>
</tr>
<tr>
<td><code>af\app\afttpersist.i</code></td>
</tr>
<tr>
<td><code>af\app\afttprofiledata.i</code></td>
</tr>
<tr>
<td><code>af\app\afttsecurityctrl.i</code></td>
</tr>
<tr>
<td><code>af\app\aftttranslate.i</code></td>
</tr>
<tr>
<td><code>af\app\afttttranslation.i</code></td>
</tr>
<tr>
<td><code>af\app\gsttenmn.i</code></td>
</tr>
<tr>
<td><code>af\app\logintt.i</code></td>
</tr>
<tr>
<td><code>af\sup\windows.i</code></td>
</tr>
<tr>
<td><code>af\sup2\afcheckerr.i</code></td>
</tr>
<tr>
<td><code>af\sup2\aferrortxt.i</code></td>
</tr>
<tr>
<td><code>af\sup2\aflaunch.i</code></td>
</tr>
<tr>
<td><code>af\sup2\afttcombo.i</code></td>
</tr>
<tr>
<td><code>ry\app\rydefrescd.i</code></td>
</tr>
</tbody>
</table>

For more information on this Manager, see the chapter on using the Progress Dynamics Managers in *OpenEdge Development: Progress Dynamics Advanced Development.*
Temp-tables used by Session Manager

Because the Session Manager coordinates so much of what is happening in the Progress Dynamics framework, it makes extensive use of temp-tables. It references several temp-tables defined elsewhere in the OpenEdge application development environment, including those in the following files:

- adenccom\appsrvtt.i
- adm2\calltables.i
- adm2\callttparam.i
- adm2\ttaction.i
- adm2\tttoolbar.i
- adm2\tttranslate.i

The Session Manager uses the temp-tables described in Table 10–2 to cache session and context management information.

Table 10–2: Temp-tables defined in af\appl\afsesmngrp.i

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttProperty</td>
<td>propertyName (Character)</td>
</tr>
<tr>
<td></td>
<td>propertyValue (Character)</td>
</tr>
<tr>
<td>ttPersistProc</td>
<td>hProc (Handle)</td>
</tr>
<tr>
<td>ttActionUnderway</td>
<td>action_underway_origin (Character)</td>
</tr>
<tr>
<td></td>
<td>action_table_fla (Character)</td>
</tr>
<tr>
<td></td>
<td>action_type (Character)</td>
</tr>
<tr>
<td></td>
<td>action_primary_key (Character)</td>
</tr>
<tr>
<td></td>
<td>action_scn_object_name (Character)</td>
</tr>
<tr>
<td>ttViewerCol</td>
<td>dColumn (Decimal)</td>
</tr>
<tr>
<td></td>
<td>dColWidth (Decimal)</td>
</tr>
<tr>
<td></td>
<td>dMaxLabel (Decimal)</td>
</tr>
<tr>
<td></td>
<td>dNewCol (Decimal)</td>
</tr>
</tbody>
</table>
The Session Manager uses the temp-table described in Table 10–3 to cache login information.

**Table 10–3: Temp-table defined in afapp\logintt.i**

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttLoginUser</td>
<td>encoded_user_name (Character)</td>
</tr>
<tr>
<td></td>
<td>default_organisation_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>language_obj (Decimal)</td>
</tr>
</tbody>
</table>

The Session Manager uses the temp-table described in Table 10–4, a copy of the Repository gsc_global_control table, to cache information about system-wide defaults.

**Table 10–4: Temp-table defined in afapp\afttglobalctrl.i**

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttGlobalControl</td>
<td>global_control_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>default_country_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>default_nationality_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>default_language_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>default_currency_obj (Decimal)</td>
</tr>
<tr>
<td></td>
<td>date_format (Character)</td>
</tr>
<tr>
<td></td>
<td>date_format_mask (Character)</td>
</tr>
<tr>
<td></td>
<td>repository_site_number (Integer)</td>
</tr>
</tbody>
</table>

The Session Manager uses the temp-tables described in Table 10–5 to cache information about persistently running procedures in the current session.

**Table 10–5: Temp-tables defined in afapp\afttpersist.i**

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Fields (data types)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttPersistentProc</td>
<td>physicalName (Character)</td>
</tr>
<tr>
<td></td>
<td>logicalName (Character)</td>
</tr>
<tr>
<td></td>
<td>runAttribute (Character)</td>
</tr>
<tr>
<td></td>
<td>childDataKey (Character)</td>
</tr>
<tr>
<td></td>
<td>onAppserver (Logical)</td>
</tr>
<tr>
<td></td>
<td>procedureType (Character)</td>
</tr>
<tr>
<td></td>
<td>procedureHandle (Handle)</td>
</tr>
<tr>
<td></td>
<td>runPermanent (Logical)</td>
</tr>
<tr>
<td></td>
<td>multiInstanceSupported (Logical)</td>
</tr>
<tr>
<td></td>
<td>currentOperation (Character)</td>
</tr>
<tr>
<td></td>
<td>uniqueId (Integer)</td>
</tr>
<tr>
<td></td>
<td>startDate (Date)</td>
</tr>
<tr>
<td></td>
<td>startTime (Integer)</td>
</tr>
<tr>
<td></td>
<td>procedureVersion (Character)</td>
</tr>
<tr>
<td></td>
<td>procedureNarration (Character)</td>
</tr>
<tr>
<td></td>
<td>internalEntries (Character)</td>
</tr>
</tbody>
</table>

| ttProcDependancy | parentProcedureHandle (Handle)                               |
|                 | childProcedureHandle (Handle)                                 |
|                 | parentType (Character)                                        |
|                 | childType (Character)                                         |
Because the Session Manager coordinates the activities of all the other Managers once a session has started, it makes use of most of the other Managers’ temp-tables. Table 10–6 lists these temp-tables and where they are described in this reference manual.

Table 10–6: Other temp-tables used by the Session Manager

<table>
<thead>
<tr>
<th>Temp-table</th>
<th>Described in</th>
</tr>
</thead>
<tbody>
<tr>
<td>ttEntityMnemonic</td>
<td>The “Temp-tables used by General Manager” section on page 4–3.</td>
</tr>
<tr>
<td>ttProfileData</td>
<td>The “Temp-tables used by Profile Manager” section on page 6–3.</td>
</tr>
<tr>
<td>ttTranslation</td>
<td>The “Temp-tables used by Localization Manager” section on page 5–3.</td>
</tr>
<tr>
<td>ttUser</td>
<td>The “Temp-tables used by General Manager” section on page 4–3.</td>
</tr>
</tbody>
</table>

**Session Manager APIs**

This section lists the APIs that you can use with the Session Manager.

**activateSession**

This procedure sets up the record for a remote session in the Repository’s `gst_session` table.

**Location:** `af\app\afsesmngrp.i`

**Parameters:**

- INPUT `pcOldSessionID` AS CHARACTER
- INPUT `pcNewSessionID` AS CHARACTER
- INPUT `pcSessType` AS CHARACTER
- INPUT `pcNumFormat` AS CHARACTER
- INPUT `pcDateFormat` AS CHARACTER
- INPUT `plReactivate` AS LOGICAL
- INPUT `plConfirmExpired` AS LOGICAL

**Notes:** This procedure’s calls set the appropriate session parameters. It then calls the `establishSession` procedure, which actually reactivates the session.

**Examples:** See the main block in `dynamics\as_activate.p`. 
addAsSuperProcedure

This function adds a procedure and all of its super procedures to a specified target procedure.

Location:       af\app\afsesmngrp.i

Parameters:

INPUT phSuperProcedure AS HANDLE

The procedure to be added as a super procedure.

INPUT phProcedure AS HANDLE

The target procedure.

Returns:       LOGICAL

Notes:         None

Examples:      See the launchContainer procedure in af\app\afsesmngrp.i.

askQuestion

This procedure handles the display of all question message types and supports any button combination. The default button list is “OK,CANCEL”. If OK is passed in, the default label to return is OK. Otherwise, the label is the first button in the list. If available, the default cancel button is CANCEL. Otherwise, the first entry in the list is used. The default title is “Question”.

If running server-side, the messages cannot be displayed and must be written to the message log. Because there is no user interface on the server side, the procedure always returns the default button label and answer.

If running client-side, the messages are displayed in a dialog window. The procedure checks the suppressDisplay property in the Session Manager. If the property is set to YES, the procedure does not display the message. It passes the message to the log. This is useful when running take-on procedures on the client side.

The messages are passed to the procedure, af\app\afmessagep.p, on the AppServer for interpretation. This procedure performs the necessary tasks to return the formatted messages. This might include the following tasks:

• Formatting the messages appropriately.
• Reading the text from the Progress Dynamics message file.
• Interpreting the carrot-delimited lists that come back from triggers.
• Dealing with ADM2 CHR(4)-delimited messages.
• Translating the message if required.

Once the messages are formatted, a client-side message displays using the standard Progress Dynamics message dialog box. On the server-side, the Progress Dynamics error log is updated with the error and, if possible, an e-mail is sent to the currently logged-in user to notify them. This process also occurs if the error log flag is set to YES or message display suppression is enabled.
**Session Manager**

**Location:** af\app\afsesmngrp.i

**Parameters:**

- INPUT pcMessageList AS CHARACTER
- INPUT pcButtonList AS CHARACTER
- INPUT pcDefaultButton AS CHARACTER
- INPUT pcCancelButton AS CHARACTER
- INPUT pcMessageTitle AS CHARACTER
- INPUT pcDataType AS CHARACTER
- INPUT pcFormat AS CHARACTER
- INPUT-OUTPUT pcAnswer AS CHARACTER
- OUTPUT pcButtonPressed AS CHARACTER

**Notes:** When running client-side, the procedure returns the untranslated button text of the pressed button. When running server-side, the untranslated button text of the default button is returned.

**Examples:** See the logMessage procedure in af\cod2\fulloobjcw.w.

---

**contextHelp**

This procedure serves as the context help launcher to aid in the Progress Dynamics context help integration.

**Location:** af\app\afsesmngrp.i

**Parameters:**

- INPUT phObject AS HANDLE
  
The handle of the object containing the widget (THIS-PROCEDURE).
- INPUT phWidget AS HANDLE
  
The handle of the widget that has focus (FOCUS).

**Notes:** There is an event in visualcustom.i that runs this procedure on a help event anywhere in the frame.

**Examples:** See the main block in af\cod2\gstrvdilgd.w.
createLinks
This procedure aids in creating links between objects.

Location: \af\app\afsesmngtrp.i
Parameters:
INPUT pcPhysicalName AS CHARACTER
INPUT phProcedureHandle AS HANDLE
INPUT phObjectProcedure AS HANDLE
INPUT plAlreadyRunning AS LOGICAL

Notes: None
Examples: See the launchContainer procedure in af\app\afsesmngtrp.i.

deletePersistentProc
This procedure deletes persistent procedures started since the Session Manager started.

Location: \af\app\afsesmngtrp.i
Parameters: None
Notes: None
Examples: See the plipShutdown procedure in af\app\afsesmngtrp.i.

deleteSession
This procedure deletes a session and all its context from the Repository.

Location: \af\app\afsesmngtrp.i
Parameters:
INPUT pcSessionID AS CHARACTER

The session ID to delete.

Notes: None
Examples: See the authenticateUser function in ry\app\ryreqsrvrp.p.
establishSession

This procedure is an update to the activateSession procedure. Before this procedure is called, the following session properties should have been set, either by a call to the storeAppServerInfo procedure or manually:

- client_DynamicsVersion
- client_PhysicalSessType
- client_NumericSeparator
- client_DecimalPoint
- client_DateFormat
- client_YearOffset
- client_SessionType
- client_OldSessionID
- client_NewSessionID

Location: af\app\afsesmngp.i

Parameters:

INPUT plReactivate AS LOGICAL

INPUT plConfirmExpired S LOGICAL

Notes: None

Examples: See the activateSession procedure in af\app\afsesmngp.i.
**getActionUnderway**

This procedure gets the values for fields in the `ttActionUnderway` temp-table for the passed-in record.

**Location:** af\app\afsesmngrp.i  
**Parameters:**

- INPUT `pcActionUnderwayOrigin` AS CHARACTER  
- INPUT `pcActionType` AS CHARACTER  
- INPUT `pcActionScmObjectName` AS CHARACTER  
- INPUT `pcActionTablePrimaryFla` AS CHARACTER  
- INPUT `pcActionPrimaryKeyValues` AS CHARACTER  
- INPUT `plActionUnderwayRemove` AS LOGICAL  
- OUTPUT `plActionUnderway` AS LOGICAL  

**Notes:** None

**Examples:** See the `createNewSDO` procedure in af\cod2\fullobjcw.w.

---

**getCurrentLogicalName**

This function returns the value of the `gcLogicalContainerName` variable set in the Session Manager's `launchContainer` procedure.

**Location:** af\app\afsesmngrp.i  
**Parameters:** None  
**Returns:** CHARACTER  
**Notes:** None
**getGlobalControl**

This procedure returns the global control details in the form of a temp-table, ttGlobalControl. If the temp-table is empty, then it first goes to the AppServer to read the details and populate the temp-table. On the server, the database is always accessed to get the information.

**Location:**  
af\app\afsesmgrp.i

**Parameters:**

OUTPUT TABLE FOR ttGlobalControl

Temp-table containing a single latest global control record.

**Notes:**  
None

**Examples:**  
See the getGlobalControlObj function in af\obj2\gscddimpv.w.

**getHelp**

This procedure returns a temp-table of widgets for a passed-in object. It populates the temp-table with the help context already stored on the database.

**Location:**  
af\app\afsesmgrp.i

**Parameters:**

INPUT-OUTPUT TABLE-HANDLE hHelpTable

**Notes:**  
None

**Examples:**  
See the buildTempTable procedure in ry\obj\rydynhelpv.w.
**getInternalEntryExists**

This function checks whether a procedure or function exists for a given handle.

**Location:** af\app\afsesmngp.i

**Parameters:**

INPUT phProcedure AS HANDLE

INPUT pcProcedureName AS CHARACTER

**Returns:** LOGICAL

**Notes:**
- If the procedure handle is a proxy handle for a persistent procedure running remotely in the context of an OpenEdge AppServer, the :PROXY attribute is TRUE. If not, it is FALSE.
- This function is used because you cannot read the :INTERNAL-ENTRIES attribute of procedures that are running remotely.

**Examples:** See the killPlips procedure in af\app\afsesmngp.i.

---

**getLoginUserInfo**

This procedure returns user information used by the login process. It returns the encoded user name, the default login company, and the default language.

**Location:** af\app\afsesmngp.i

**Parameters:**

OUTPUT TABLE FOR ttLoginUser

**Notes:** None

**Examples:** See the main block in af\app\cachelogin.p.

---

**getPersistentProcs**

This procedure retrieves a temp-table, ttPersistentProc, of running persistent procedures. The temp-table is used to make the information available for display in a browser outside the Session Manager.

**Location:** af\app\afsesmngp.i

**Parameters:**

OUTPUT TABLE FOR ttPersistentProc

The temp-table of persistent procedures.

**Notes:** None
getPropertyList

This function retrieves properties from either the local temp-table or the Repository through the server-side Session Manager.

The function returns a CHR(3)-delimited list of corresponding property values.

**Location:** af\app\afsesmngp.i

**Parameters:**

**INPUT** pcPropertyList AS CHARACTER

A comma-delimited list of properties for which to retrieve values.

**INPUT** plSessionOnly AS LOGICAL

Indicates how to retrieve the properties. If YES, retrieve the value from the client session. If NO, retrieve the value from the client session if available, otherwise retrieve from the server. If unknown (?), retrieve from the server only.

**Returns:** CHARACTER

**Notes:**

- The returned list of properties always has as many entries as pcPropertyList. If a property in pcPropertyList does not have a value, the procedure returns a blank value for that property.

- If plSessionOnly is set to YES, the Repository is never checked. Unless the property value is set in the cache, a blank is returned even if a server value exists for the property.

- If plSessionOnly is set to NO, the cache value is returned, if possible. If no cache value exists, the server value is retrieved and returned. If no value exists in the server, a blank is returned as the value of the property.

- If plSessionOnly is set to Unknown value (?), the cache is never checked and the value is read from the server. If no server value has been set, a blank is returned as the value of the property, even if there is a client cache value.

**Examples:** See the askQuestion procedure in af\app\afsesmngp.i.
**getSessionList**

This procedure retrieves a comma-delimited list of all the session types in the Repository.

**Location:** af\app\afsesmngrp.i

**Parameters:**

**INPUT** pcTypes AS CHARACTER

This parameter is reserved for future use.

**OUTPUT** pcSessionList AS CHARACTER

A comma-delimited list of session types.

**Notes:** None

**Examples:** See the populateSelectionList procedure in af\obj2\gsmsesbconv.w.

**getSessTypeOverrideInfo**

This procedure gets the session type override information from the Repository.

**Location:** af\app\afsesmngrp.i

**Parameters:**

**OUTPUT** plConfigDefault AS LOGICAL

Can the session types in the Repository be overridden?

**OUTPUT** plAllowUnregistered AS LOGICAL

Can users start sessions with unregistered session types?

**OUTPUT** pcPermittedUnregistered AS CHARACTER

A comma-delimited list of session types that are not defined in the Repository that are allowed to access the Repository.

**Notes:** This procedure wrapping the getSessTypeOverrideInfo procedure in af/app/afsesstypecachep.p.

**Examples:** See the initializeObject procedure in af\obj2\gsmsectlw.v.w.
helpAbout

This procedure displays the “About” help message. The procedure uses an ADM showMessage call using the passed-in container so that all the object names and versions are shown in the system information.

**Location:**  
af\app\afsesmngrp.i

**Parameters:**

INPUT phContainer AS HANDLE

The container procedure handle.

**Notes:**  
None

**Examples:**  
See the buildMenus procedure in af\cod2\afmenumaintw.w.

helpContents

This procedure displays the help contents from the help file.

**Location:**  
af\app\afsesmngrp.i

**Parameters:**

INPUT phContainer AS HANDLE

The container procedure handle.

**Notes:**  
None

**Examples:**  
See the buildMenus procedure in af\cod2\afmenumaintw.w.

helpHelp

This procedure displays the help contents from the help file.

**Location:**  
af\app\afsesmngrp.i

**Parameters:**

INPUT phContainer AS HANDLE

The container procedure handle.

**Notes:**  
None

**Examples:**  
See the buildMenus procedure in af\cod2\afmenumaintw.w.
helpTopics

This procedure displays the help contents from the help file.

Location:  af\app\afsesmngrp.i

Parameters:

INPUT phContainer AS HANDLE

The container procedure handle.

Notes:  None

Examples:  See the buildMenus procedure in af\cod2\afmenumaintw.w.

htmlHelpKeywords

This procedure displays the help topics using keyword lookup from an HTML help file.

Location:  af\app\afsesmngrp.i

Parameters:

INPUT phParent AS HANDLE

The parent handle (frame) or the Unknown value (?).

INPUT pcHelpFile AS CHARACTER

The help file.

INPUT pcHelpKeywords AS CHARACTER

The help keywords.

Notes:  None
htmlHelpTopic

This procedure displays a specific help topic in an HTML help file.

Location:    af\app\afsesmngrp.i

Parameters:

INPUT phParent AS HANDLE
    The parent handle (frame) or the Unknown value (?).

INPUT pcHelpFile AS CHARACTER
    The help file.

INPUT pcHelpTopic AS CHARACTER
    The help topic.

Notes:    None

Examples:    See the helpContents procedure in af\app\afsesmngrp.i.

increaseFrameforPopup

This procedure increases the width of a frame for a pop-up window. If necessary, it also increases the window width.

Location:    af\app\afsesmngrp.i

Parameters:

INPUT phObject AS HANDLE

INPUT phFrame AS HANDLE

INPUT phLookup AS HANDLE

INPUT phWidget AS HANDLE

Notes:    Replaces increaseFrameWidth procedure.
**isObjQuoted**

This function checks the object number in the query string to determine whether or not it is wrapped in quotes. This is important when an application runs in European numerical format, because the object number must be treated differently when it is enclosed in quotes.

When using European numerical format, an object number enclosed in quotes must retain the comma inside the quotes in order to convert properly. If it is not enclosed in quotes, then the comma must be replaced with a decimal point to ensure that the query resolves properly.

**Location:** af\app\afsesmngp.i

**Parameters:**

- INPUT pcQueryString AS CHARACTER
  
  The query being examined.

- INPUT piPosition AS INTEGER

**Returns:** LOGICAL

**Notes:** None

**killPlips**

This procedure shuts down PLIPs cleanly, forcing the correct update of the running procedure’s temp-table.

**Location:** af\app\afsesmngp.i

**Parameters:**

- INPUT pcPlipNames AS CHARACTER
  
  A CHR(3)-delimited list of PLIP names to kill.

- INPUT pcPlipHandles AS CHARACTER
  
  A CHR(3)-delimited list of PLIP handles to kill.

**Notes:**

- Only one of the parameters is required, depending on whether the PLIP name or the PLIP handle is known. A combination can be passed in if required.

- If PLIP names are used, the full PLIP name must be specified, including relative path and .p extension must be specified, as it was specified when the PLIP was launched.

**Examples:** See the PlipShutdown procedure in ry\app\rycusmngp.i.
**killProcedure**

This procedure removes a procedure from the temp-table of running procedures, `ttPersistentProc`. This is used to remove all types of procedures from the temp-table, as launched by the `launchContainer` and `launchProcedure` procedures.

**Location:** af\app\afsesmngrp.i

**Parameters:**

- **pcPhysicalName AS CHARACTER**
  - The physical object filename, with path and extension.
- **pcLogicalName AS CHARACTER**
  - The logical object name, if applicable and known.
- **pcChildDataKey AS CHARACTER**
  - The child data key, if applicable.
- **pcRunAttribute AS CHARACTER**
  - The run attribute, if required to post into the container run.
- **plOnAppserver AS LOGICAL**
  - If running on the AppServer, set to YES.

**Notes:** None

**Examples:** See the main block in ry\app\ryplipshut.i.
launchContainer

This procedure launches a Progress Dynamics container object. It determines if the object is already running and whether the existing instance should be replaced or a new instance run. The procedure then updates the temp-table of running persistent procedures, ttPersistentProc, with the appropriate details.

**Location:** af\app\afsesngrp.i

**Parameters:**

- **INPUT pcObjectFileName AS CHARACTER**
  
  The object filename. If it is not known, the physical name or the physical and logical names together can be used.

- **INPUT pcPhysicalName AS CHARACTER**
  
  The physical object name, with path and extension, if known.

- **INPUT pcLogicalName AS CHARACTER**
  
  The logical object name, if applicable and known.

- **INPUT plOnceOnly AS LOGICAL**
  
  If YES, then the procedure checks for an already running instance and uses it, if possible.

- **INPUT pcInstanceAttributes AS CHARACTER**
  
  The instance attributes to pass to the container.

- **INPUT pcChildDataKey AS CHARACTER**
  
  The child data key, if applicable.

- **INPUT pcRunAttribute AS CHARACTER**
  
  The run attribute, if required to post into the container run.

- **INPUT pcContainerMode AS CHARACTER**
  
  The container mode, for example, modify, view, add, or copy.

- **INPUT phParentWindow AS HANDLE**
  
  The parent (caller) window handle, if known. (Container window handle.)

- **INPUT phParentProcedure AS HANDLE**
  
  The parent (caller) procedure handle, if known. (Container procedure handle.)

- **INPUT phObjectProcedure AS HANDLE**
  
  The parent (caller) object handle, if known. This is the handle at the end of the toolbar link, for example, a browser.
OUTPUT phProcedureHandle AS HANDLE

The procedure handle of object to run or the running object.

OUTPUT pcProcedureType AS CHARACTER

The procedure type, for example, ADM1, ADM2, ICF, or "."

Notes: None
Examples: See the main block in af\app\xmlcfgp.p.

LaunchExternalProcess

This procedure launches an external process.

Location: af\app\afsesmngrp.i

Parameters:

INPUT pcCommandLine AS CHARACTER

The command line, for example, "notepad.exe".

INPUT pcCurrentDirectory AS CHARACTER

The default directory for the process.

INPUT piShowWindow AS INTEGER

The show window flag accepts the following values:

• 0 (Hidden)
• 1 (Normal)
• 2 (Minimized)
• 3 (Maximized)

OUTPUT piResult AS INTEGER

Returns 0 if it fails, or the handle of the new process.

Notes: This procedure uses the createProcess function from af\sup\windows.i.
launchProcedure

This procedure launches a business logic procedure or manager procedure. It determines if the procedure is already running and whether the existing instance should be replaced or a new instance run. If required, the procedure also connects to the AppServer partition. The procedure then updates the temp-table of running persistent procedures with the appropriate details.

Location:  af\app\afsesmngrp.i

Parameters:

INPUT pcPhysicalName AS CHARACTER

The physical object filename, with path and extension.

INPUT plOnceOnly AS LOGICAL

If YES, then the procedure checks for an already running instance and uses it, if possible.

INPUT pcOnAppserver AS CHARACTER

Accepts values of YES, NO, or APPSERVER.

INPUT pcAppserverPartition AS CHARACTER

The AppServer partition name to run on.

INPUT plRunPermanent AS LOGICAL

The default is NO.

OUTPUT phProcedureHandle AS HANDLE

The procedure handle of object run.

Notes:

• If the plRunPermanent flag is set to YES, then this procedure is not automatically killed when an AppServer agent is deactivated. Ordinarily this flag should be NO, and all procedures left running should be deleted at the end of an AppServer request by the deactivation routine. When procedures are closed down correctly, they are removed from the temp-table and deleted. This behavior tidies up any procedures started outside of this control procedure or shut down incorrectly for some reason.
• If the `pcOnAppserver` flag is set to `APPSERVER`, then this procedure can only be run on AppServer. If the flag is `YES` and no AppServer partition is passed in, then it defaults to the AstraAppServer and the session handle, `gshAstraAppserver` handle, is used for the AppServer. If any other partition is passed in and the flag is not `NO`, then the partition is connected if required. Any partitions connected in this manner are disconnected by the shutdown procedure, `af\sup2\afshutdwnp.p`.

• Generally, you do not need to run this procedure for most of the Progress Dynamics Managers because their handles are available through the systemwide global shared variables. However, in order to add the Managers to the temp-table of running persistent procedures, this procedure is used for the Managers when they are first run.

**Examples:** See the `launchClassObject` function in `ry\app\ryrepmngrp.i`.

### notifyUser

This procedure notifies the user of some message by some means, for example, e-mail.

**Location:** `af\app\afsesmngrp.i`

**Parameters:**

- **INPUT pdUserObj AS DECIMAL**
  
  The object number of the user record to notify.

- **INPUT pcUserName AS CHARACTER**
  
  The user name of the user record to notify. This is used only when the `pdUserObj` is 0.

- **INPUT pcAction AS CHARACTER**
  
  The action used to notify the user, for example, “e-mail.”

- **INPUT pcSubject AS CHARACTER**
  
  The subject of the message.

- **INPUT pcMessage AS CHARACTER**
  
  The message text.

- **OUTPUT pcFailedReason AS CHARACTER**
  
  The reason for any failure.

**Notes:** None

**Examples:** See the `askQuestion` procedure in `af\app\afsesmngrp.i`. 
plipShutdown

This procedure is a part of the standard Progress Dynamics Manager template. On close of the procedure, it runs the deletePersistentProc procedure.

You should not directly launch this procedure. The Session Manager should only be shut down by the Configuration File Manager’s sessionShutdown procedure. However, for any custom tasks that occur when the Session Manager shuts down, you can add code to this procedure.

**Location:** af\app\afsesmngrp.i

**Parameters:** None

**Notes:** None

resizeLookupFrame

This procedure resizes a lookup SDF frame to fit new labels.

**Location:** af\app\afsesmngrp.i

**Parameters:**

INPUT phObject AS HANDLE

The object handle.

INPUT phFrame AS HANDLE

The SDF frame handle.

INPUT pdAddCol AS DECIMAL

The number to add to all columns.

**Notes:** None

**Examples:** See the translateWidgets procedure in af\app\afsesmngrp.i.
**resizeNormalFrame**

This procedure resizes a standard frame to fit new labels. SDF frames do not use this procedure.

**Location:** af\app\afsesmngrp.i

**Parameters:**

- INPUT phObject AS HANDLE
  
  The object handle.

- INPUT phFrame AS HANDLE
  
  The frame handle.

- INPUT pdNewWidth AS DECIMAL
  
  The new column width.

**Notes:** None

**Examples:** See the translateWidgets procedure in af\app\afsesmngrp.i.

**resizeSDFFrame**

This procedure resizes an SDF frame to fit new labels.

**Location:** af\app\afsesmngrp.i

**Parameters:**

- INPUT phObject AS HANDLE
  
  The object handle.

- INPUT phFrame AS HANDLE
  
  The frame handle.

- INPUT pdAddCol AS DECIMAL
  
  The number to add to all columns.

**Notes:** None

**Examples:** See the translateWidgets procedure in af\app\afsesmngrp.i.
runLookup

This procedure launches a lookup window for a widget. If the data type is a date, then a pop-up calendar is displayed. If the data type is an integer or decimal, then a pop-up calculator is displayed.

Location: \af\app\afsesmngrp.i

Parameters:

INPUT phFocus AS HANDLE

The handle of the focused widget.

Notes: None

Examples: See the widgetWalk procedure in \af\app\afsesmngrp.i.

sendEmail

This procedure sends an e-mail message. This procedure is similar to notifyUser, but is more flexible and has additional options specific to sending an e-mail message. Most of the parameters are optional and can be left blank, as appropriate. The procedure allows multiple file attachments to be sent using comma-delimited lists. Because this procedure uses MAPI for client e-mail, it works with whatever e-mail is installed on the client PC sending the e-mail. On the server, it uses sendmail, and some options might not be supported.

Location: \af\app\afsesmngrp.i

Parameters:

INPUT cEmailProfile AS CHARACTER

The mail profile to use, for example, Microsoft Outlook.

INPUT cToEmail AS CHARACTER

A comma-delimited list of e-mail addresses to which the message is sent.

INPUT cCcEmail AS CHARACTER

A comma-delimited list of e-mail addresses to which the message is copied.

INPUT cSubject AS CHARACTER

The subject of the message.

INPUT cMessage AS CHARACTER

The message text.

INPUT cAttachmentName AS CHARACTER

A comma-delimited list of attachment filenames.

INPUT cAttachmentFPath AS CHARACTER

A comma-delimited list of attachment filenames with full path.
INPUT lDisplayDialog AS LOGICAL

If set to YES, the message is displayed in a dialog box for modification before sending. If set to NO, then the message is sent immediately.

INPUT iImportance AS INTEGER

The accepted values are: 0 = low, 1 = medium, 2 = high.

INPUT lReadReceipt AS LOGICAL

YES = return a read receipt.

INPUT lDeliveryReceipt AS LOGICAL

YES = return a delivery receipt.

INPUT cOptions AS CHARACTER

Not currently used, set aside for future settings. It can contain a comma-delimited list of setting-value pairs of other settings.

OUTPUT cFailedReason AS CHARACTER

If the procedure failed, returns the reason why. Otherwise, returns blank, "".

Notes: None
Examples: See the notifyUser procedure in af\app\afsesmngp.i.

setActionUnderway

This procedure sets the values in the ttActionUnderway temp-table for the passed-in record.

Location: af\app\afsesmngp.i

Parameters:

INPUT pcActionUnderwayOrigin AS CHARACTER

SCM or DYN.

INPUT pcActionType AS CHARACTER

ASS, DEL, MOV, or ADD.

INPUT pcActionScmObjectName AS CHARACTER

INPUT pcActionTablePrimaryFla AS CHARACTER

INPUT pcActionPrimaryKeyValues AS CHARACTER

Notes: None
Examples: See the createNewSDO procedure in af\cod2\fulloobjcw.w.
**setAttributesInObject**

This procedure sets instance attributes in an object. It is run from the launch container to pass instance attributes into an object.

The instance attribute list is in the same format as returned to the instancePropertyList function:

1. CHR(3) between entries.
2. CHR(4) between the property name and its value in each entry.

**Location:** af\app\afsesmngrp.i

**Parameters:**

- **INPUT phObject AS HANDLE**
  - The object handle.
- **INPUT pcPropList AS CHARACTER**
  - The instance attribute list.

**Notes:** None

**Examples:** See the launchContainer procedure in af\app\afsesmngrp.i.

---

**setPropertyList**

This function sets properties in the local temp-table, ttProperty, if available. It then uses the server-side Session Manager procedure to set the properties in the context database.

**Location:** af\app\afsesmngrp.i

**Parameters:**

- **INPUT pcPropertyList AS CHARACTER**
  - A comma-delimited list of property names for which to set values.
- **INPUT pcPropertyValues AS CHARACTER**
  - A CHR(3)-delimited list of corresponding property values.
- **INPUT plSessionOnly AS LOGICAL**
  - If set to YES, the function creates only a local temp-table record.

**Returns:** LOGICAL

**Notes:** None

**Examples:** See the relogon procedure in af\app\afsesmngrp.i.
**setReturnValue**

This procedure returns whatever was sent in to set the required RETURN-VALUE.

**Location:** af\app\afsesmngrp.i  

**Parameters:**  
INPUT pcReturnValue AS CHARACTER  
    The required return value.

**Notes:** None

**setSecurityForDynObjects**

This function sets security properties for Dynamic Lookups and Dynamic Combos.

**Location:** af\app\afsesmngrp.i  

**Parameters:**  
INPUT phWidget AS HANDLE  
INPUT pcSecuredFields AS CHARACTER  
INPUT pcDisplayedFields AS CHARACTER  
INPUT pcFieldSecurity AS CHARACTER  
INPUT phViewer AS HANDLE  

**Returns:** CHARACTER  

**Notes:** None  

**Examples:** See the widgetWalk procedure in af\app\afsesmngrp.i.

**setSessTypeOverrideInfo**

This procedure sets the session type override information from the Repository.

**Location:** af\app\afsesmngrp.i  

**Parameters:**  
OUTPUT plConfigDefault AS LOGICAL  
    Can the session types in the Repository be overridden?  
OUTPUT plAllowUnregistered AS LOGICAL  
    Can users start sessions with unregistered session types?  
OUTPUT pcPermittedUnregistered AS CHARACTER  
    A comma-delimited list of session types that are not defined in the Repository that are allowed to access the Repository.
Notes: This procedure verifies whether a user is connected with a valid session type and sets these values only if the type is valid.

Examples: See the applyChanges procedure in af\obj2\gsmsctrlv.w.

**showMessages**

This is the central procedure for the displaying all message types including Message (MES), Information (INF), Warnings (WAR), Errors (ERR), Serious Halt Errors (HAL), and About Window (ABO). Any button combination is supported.

The default message type is ERR. The default button list is OK. The default label to return is OK, if OK exists. Otherwise, the default is the first button in the list. The default cancel button is also OK, or the first entry in the button list. The default title depends on the message type.

If running server side, the messages cannot be displayed and can only be written to the message log. Because there is no user interface on the server side, the default button label is returned.

If running client side, the messages are displayed in a dialog window. The procedure checks the suppressDisplay property in the Session Manager. If it is set to YES, the procedure does not display the message. The message is passed to the log. This is useful when running take-on procedures client side.

The messages are passed to the procedure, af\app\afmessagep.p, on the AppServer for interpretation. This procedure performs the necessary tasks to return the formatted messages. This might include the following tasks:

- Formatting the messages appropriately.
- Reading the text from the Dynamics message file.
- Interpreting the carrot(^)-delimited lists that come back from triggers.
- Dealing with ADM CHR(4)-delimited messages.
- Translating the message, if required.

Once the messages have been formatted, a client-side message is displayed using the standard Dynamics message dialog box, af\cod2\afmessaged.w. On the server side, the Dynamics error log is updated with the error and, if possible, an e-mail is sent to the currently logged-in user to notify them of the error. This process is also followed if the error log flag is set to YES or message display suppression is enabled.

**Location:** af\app\afsesmngp.i
**Parameters:**

INPUT pcMessageList AS CHARACTER

INPUT pcMessageType AS CHARACTER

INPUT pcButtonList AS CHARACTER

INPUT pcDefaultButton AS CHARACTER

INPUT pcCancelButton AS CHARACTER

INPUT pcMessageTitle AS CHARACTER

INPUT plDisplayEmpty AS LOGICAL

INPUT phContainer AS HANDLE

OUTPUT pcButtonPressed AS CHARACTER

**Notes:** When running client side, the procedure returns the untranslated button text of the pressed button. When running server side, the untranslated button text of the default button is returned.

**Examples:** See the main block in a\cod2\afemlognw.w.

**showWarningMessages**

This procedure issues a warning to a user without generating an input-blocking statement in the process.

**Location:**     af\app\afsesmngrp.i

**Parameters:**

INPUT pcMessageList AS CHARACTER

One or more messages using the standard formatting from aerror\rtxt.i.

INPUT pcMessageType AS CHARACTER

For example, ERR (Error) or INF (Information).

INPUT pcMessageTitle AS CHARACTER

The title of the message dialog box.

**Notes:** None
**translateWidgets**

This procedure translates widget labels. It is called from the `widgetWalk` procedure.

**Location:** af\app\afsesmngrp.i

**Parameters:**

- **INPUT phObject AS HANDLE**
  
  The object handle.

- **INPUT phFrame AS HANDLE**
  
  The frame handle.

- **INPUT TABLE FOR ttTranslate**

**Notes:**

None

**Examples:** See the `widgetWalk` procedure in af\app\afsesmngrp.i.

**updateErrorLog**

This procedure updates the messages into the error log database table.

**Location:** af\app\afsesmngrp.i

**Parameters:**

- **INPUT pcSummaryList AS CHARACTER**
  
  A CHR(3)-delimited list of summary messages.

- **INPUT pcFullList AS CHARACTER**
  
  A CHR(3)-delimited list of full messages.

**Notes:**

None

**Examples:** See the `askQuestion` and `showMessages` procedures in af\app\afsesmngrp.i.

**updateHelp**

This procedure updates the help table with the supplied temp-table.

**Location:** af\app\afsesmngrp.i

**Parameters:**

- **INPUT TABLE-HANDLE hHelpTable**

**Notes:**

None

**Examples:** See the `updateRecord` procedure in ry\obj\rydynhelpv.w.
**widgetWalk**

This procedure walks the widget tree for the passed-in frame.

**Location:** af\app\afsesmngrp.i

**Parameters:**

- **INPUT phContainer AS HANDLE**
  The container handle.

- **INPUT phObject AS HANDLE**
  The object handle.

- **INPUT phFrame AS HANDLE**
  The frame or window handle.

- **INPUT pcAction AS CHARACTER**
  The action code, for example, setup.

- **INPUT plPopupsInFields AS LOGICAL**
  Determines where calendar and calculator pop-up buttons are placed. If YES, the button is placed inside the field on the right-hand side. If NO, extra space is made for the button, and the button is placed in this extra space.

**Notes:** This procedure no longer appends the pop-up handle to the widget’s PRIVATE-DATA for static objects.
User Interface Manager

The User Interface Manager handles the processing needed to create and return the DHTML to fulfill client requests received by the Web Request Manager, as outlined in the following sections:

- Overview
- User Interface Manager APIs
Overview

The User Interface (UI) Manager generates the DHTML to satisfy a client request received by the Web Request Manager. The UI Manager is a server-side component of the framework. It delivers all user interface and application data to the client.

The UI Manager first retrieves session data from the Session Manager and layout data from the Repository Manager. It then generates and sends the DHTML to the client. The UI Manager then fetches the necessary application data and sends it to the client. That is, the UI Manager sends HTML script and data separately.

This manager should only be accessed through the escapeData and setClientAction procedures.

You can retrieve the handle of the UI Manager by running code like the following example:

```
ASSIGN hUserInterfaceManager =
DYNAMIC-FUNCTION("getManagerHandle":U, INPUT "UserInterfaceManager":U).
```

Table 11–1 shows the files that contain the User Interface Manager’s code.

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
</tr>
</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
<td>NA</td>
</tr>
<tr>
<td>Server-side wrapper</td>
<td>NA</td>
</tr>
<tr>
<td>Main code</td>
<td><code>ry\app\ryuimsrvrp.p</code></td>
</tr>
</tbody>
</table>

Included files

<table>
<thead>
<tr>
<th>File</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>adm2\ttaction.i</code></td>
</tr>
<tr>
<td><code>adm2\tttoolbar.i</code></td>
</tr>
<tr>
<td><code>adm2\treettdef.i</code></td>
</tr>
<tr>
<td><code>af\sup\afghplipdf.i</code></td>
</tr>
<tr>
<td><code>af\sup2\afglobals.i</code></td>
</tr>
<tr>
<td><code>ry\app\rydefrescd.i</code></td>
</tr>
<tr>
<td><code>ry\app\ryobjretri.i</code></td>
</tr>
<tr>
<td><code>ry\app\ryuimbl.i</code></td>
</tr>
<tr>
<td><code>ry\inc\lval.i</code></td>
</tr>
<tr>
<td><code>web2\wrap-cgi.i</code></td>
</tr>
<tr>
<td><code>wrappers\lognote.i</code></td>
</tr>
</tbody>
</table>

For more information on this Manager, see the chapter on using the Progress Dynamics Managers in *OpenEdge Development: Progress Dynamics Advanced Development*. 
User Interface Manager APIs

This section lists the APIs that you can use with the User Interface Manager.

escapeData

This function will escape data line single quote, new line, and carriage return characters.

Location:   ry\app\ryuimbl.i
Parameters:
pcData AS CHARACTER
Returns:    CHARACTER
Notes:      None
Examples:   See the outputConflictData function in ry\app\ryuimbl.i.

setClientAction

This procedure applies changes to the DHTML client in response to server-side business logic. Client actions are queued during a Web request and sent together to the DHTML client at the end of the response stream.

The action is passed with the following syntax:

<dataobject>.<field name>.<action name>

The field name is not required for all actions.

Location:   ry\app\ryuimbl.i
Parameters:
INPUT cAction AS CHARACTER
The action to apply.
Notes:      None
Examples:   See the setMessage procedure in ry\app\ryuimbl.i.
Web Request Manager

The Web Request Manager is the single point of entry for all Web requests, as outlined in the following sections:

- Overview
- Web Request Manager API
Overview

The Web Request Manager is the single point of entry for all Web requests. It then calls the other Dynamics managers that apply security, generate or retrieve session information, interact with databases, and create the DHTML.

This manager should only be accessed through the processRequest procedure.

The Web Request Manager’s handle is stored in the global shared variable, gshWebManager.

Table 12–1 shows the files that contain the Web Request Manager’s code.

<table>
<thead>
<tr>
<th>Type</th>
<th>Path</th>
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</thead>
<tbody>
<tr>
<td>Client-side wrapper</td>
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<td>NA</td>
</tr>
<tr>
<td>Main code</td>
<td>ry\app\ryreqsrvrp.p</td>
</tr>
</tbody>
</table>
| Included files        | af\app\afttsecurityctrl.i  
                       | af\sup\afghplpdf.i        
                       | af\sup2\afglobals.i       
                       | web2\wrap-cgi.i           
                       | wrappers\lognote.i        |

For more information on this Manager, see the chapter on using the Progress Dynamics Managers in *OpenEdge Development: Progress Dynamics Advanced Development*.

Web Request Manager API

The following API is the only public entry point for the Web Request Manager.

processRequest

This procedure processes a request based on the client type.

**Location:** ry\app\ryreqsrvrp.p

**Parameters:**

**INPUT** pcAppProgram AS CHARACTER

The Repository object name.

**Notes:** None

**Examples:** See the run-web-object procedure in ry\app\ryreqsrvrp.p.
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