RAMP-NL Guide

Rapid Application Modernization Process for newlook Guide

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- Tutorials
- Scripting
- Screen Wrappers
- Programming Techniques
- Multilingual RAMP Applications
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- Frequently Asked Questions
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Please send your comments and suggestions to LANSÃ Support at: lansasupport@lansa.com.au.

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Edition Number EPC130100
How to Get Started with RAMP

This is the recommended 6 step plan for getting started with RAMP:

1. Review the introductory movie What is RAMP? - 9 minutes

2. Comprehend how modernization will change the nature of a 5250 application by reviewing these movies:
   - 5250 Application before using RAMP - 2 minutes
   - 5250 Application after using RAMP - 4 minutes

3. Comprehend how the modernization process is performed by reviewing these movies:
   - Stage 1: Creating a Modernization Framework - 8 minutes
   - Stage 2: Snapping the 5250 Application in the Framework - 11 minutes
   - Stage 3: Enrichment and Re-engineering - 5 minutes

4. Install and Configure RAMP and newlook software (see Installation and Configuration).

5. Complete this essential RAMP Tutorial:
   - Modernizing a Complete Application

6. If you have time, complete this optional RAMP tutorial that deals with a different way to use RAMP for application modernization:
   - Modernizing Application Navigation

Once you have completed these steps you should be well positioned to start to plan and implement your own modernization project using RAMP.

Also see Prerequisite Skills.
Prerequisite Skills
To use RAMP you need to have some basic knowledge of how LANSA and the Visual LANSA Framework are used for application development. You may want to review some of these tutorials (these links are to other guides):

- Framework tutorials
- Visual LANSA tutorials - you will need to know how to create, compile and check programs into your System i server using the Visual LANSA editor.

Subject Matter Expertise
To modernize applications with RAMP you need to have access to someone who has an in-depth knowledge of the business application being modernized and the industry in which the application runs. This person should also know what your business is wanting to achieve as a modernized output.

Without access to a subject matter expert you are unlikely to be able to successfully modernize any application using any tool because:

- Nobody would know how the existing functionality is used (as opposed to just understanding how it works, which is different)
- Nobody would be able to envision how the modernized version would be used (as opposed to how it should work).
What is RAMP? - 9 minutes

Play Movie to see what RAMP is.
5250 Application before using RAMP - 2 minutes

Play Movie to see the user view of a 5250 application before it is modernized with RAMP.
5250 Application after using RAMP - 4 minutes

Play Movie to see the same 5250 ERP application after it is modernized with RAMP.
Stage 1: Creating a Modernization Framework - 8 minutes

Play Movie to learn how to start modernizing your application by creating a working prototype for it.
Stage 2: Snapping the 5250 Application in the Framework - 11 minutes

Play Movie to learn how to integrate your 5250 application to the Windows navigation framework.
Stage 3: Enrichment and Re-engineering - 5 minutes

Play Movie to learn about the optional stage 3 of RAMP modernization during which you enrich and re-engineer your application. (5 minutes)
What's New

This section outlines new features in EPC868 version of RAMP-NL:

**More Information is Now Accessible in In RAMP-TS and RAMP-NL Scripts**

The `objCommand` object now contains details about the optional arguments associated with the current command and the reason that the command is being executed (ie: you can now distinguish between a command execution and a command activation). Refer to the `objCommand` definition for more details.

To review new features in previous RAMP versions, see:

New features in EPC 831 Version of RAMP
New features in EPC 831 Version of RAMP

This section outlines features that were introduced in EPC 831 version RAMP:

**Dynamic Naming of Newlook screens and fields**

It is no longer necessary to use Newlook Designer to identify the relevant screens and fields to Newlook prior to using the RAMP tools. Instead you can use Dynamic Naming of Newlook Screens and Fields from within the RAMP tools environment.

Note that newlook licensing features may limit the use of this option in some RAMP environments. Please contact your product vendor for further information.

**Web applications can override RAMP profile and password**

In the Web signon IIP it is now possible to override the user profile and password used to start a RAMP session specified.

The shipped version of this is function UF_SYSBR/UFU0001. See the source code of UFU0001 for more details.

**Developers’ Workbench**

You can use the new Developers’ Workbench to create your RAMP applications.

**New Scripting Functions**

**SETKEYENABLED Function** enables or disables buttons and/or function keys that were enabled or disabled when defining the destination.

**SETFOCUS Function**- Set the focus to a field on the current screen

**GETFOCUS Function** - Get the name of the field with focus on the current screen

**COPYTOCLIPBOARD Function**-

**New newlook Server Property**

**Use INI file**

Use the **Use INI File** property to associate a Newlook server to a Newlook ini file.

**RAMP application running in a browser now displays scroll bars by default**

Up until now, when the size of a Destination screen exceeded the size of its container no scroll bars were shown and part of the Destination screen was hidden. The only option for users to see the hidden part was to resize the command and/or the entire browser container.

Now scroll bars are
Copy a string to the user's clipboard automatically shown.

**MAKE_SUBFILEINTOSTRING Function** - Return a DataGrid as a string

**SET_UNKNOWN_LOCKING Function** - Override Session lock property

**FATAL_MESSAGE_TYPE Function** – Stop the Framework shutting down when a fatal navigation error occurs

**New deployment options**

You can now specify the **Update File** and **Codebase** values in the server definition instead of modifying the **VF_SY120.js** file.

Alternatively you can specify them as as URL parameters when starting your application:

```
+NLCODEBASE=
+NLUPDATEFILE=
```

**Optional command arguments accessible in RAMP scripts**

It is now possible to reference the two alphanumeric and two numeric optional command arguments in RAMP scripts. Use the context menu (right click) Current Command to paste the values into your script. For example:

```
objCommand.uAlphaArg1
objCommand.uNumArg2
```
Dynamic Naming of Newlook Screens and Fields

Previously you were required to use newlook Designer to identify the screens and the fields in your application before you could start modernizing it using RAMP. Now the new Dynamic Naming feature allows you to set the name of newlook screens and fields in the RAMP Tools window itself:

This means that if you use dynamic naming, it is no longer necessary to start newlook outside RAMP, provided that the default screen IDs created by newlook uniquely identify the screens in your application.

Before you start naming the screens, you may want to use the Identify function in newlook tools to ensure that your screens have unique Screen IDs. If they do not, you will not be able to give them unique names.

Note that newlook licensing features may limit the use of this option in some RAMP environments. Please contact your product vendor for further
information.

Using Dynamic Naming
Dynamic Naming Dialog Details
Frequently Asked Questions
Backing Up Screen Definitions
New IIPs for Windows
Using Dynamic Naming

Before choreographing the navigation in your application, you need to name all the screens in your application.

Using RAMP tools, start newlook and connect to your newlook session. When a screen is displayed in the newlook window, the Dynamic Naming button is shown under the RAMP messages area:

When you click the Dynamic Naming button, the Dynamic Naming dialog is displayed. If the current screen has not been named previously, the dialog looks like this:
Type in the RAMP Screen (Name). Define any Input or Output fields on the screen.

Save the screen details by clicking on the Save button.

When you have saved a screen with a name, the Dynamic Naming dialog shows when the screen was named and the user that named it:
You should name all the screens in your application before you start tracking the navigation.
### Dynamic Naming Dialog Details

<table>
<thead>
<tr>
<th>RAMP Screen Name</th>
<th>This is the programmatic name that RAMP uses to uniquely identify this screen as a destination, a junction or a special screen. It is stored in the (Name) property of the screen inside newlook. This is why it is displayed in brackets. Usually every newlook Host Screen Name has a unique RAMP (Name) associated with it. Sometimes, in situations where multiple newlook Host Screens are very similar, they are all assigned the same RAMP Screen (Name) to reduce the amount of scripting required. Refer to the guide for more details about this special programming technique.</th>
</tr>
</thead>
</table>
| Input Controls   | The input controls tab sheet shows the list with all the input controls found in the Newlook screen currently showing. Note that input controls are not only input fields. Use the *Current (Name) Assigned* column to modify or set a name for a control. Notice two things when you focus on a cell in this column:  
- The background of the control in the Newlook screen corresponding to the cell being focused on becomes pink to provide visual feedback as to which field will be named.  
- The cell’s content is pre-filled with a default prefix. It allows you to standardise the field names should your application use a certain naming convention. You can modify the default behaviour in the Windows IIP (UF_SYSTM unless you have created your own). See New IIPs for Windows. |
| Output Controls  | The output controls tab sheet shows the list of output controls found in the current Newlook screen. You normally do not need to name output |
| **Last Saved** | Shows the date and time when this screen was last saved using Dynamic Naming. If this was the first time Dynamic Naming was used for this screen you would see a message indicating so. |
| **User Profile** | Shows the User profile that last saved this screen using Dynamic Naming. |
Frequently Asked Questions

When should I use newlook Designer to manually name screens instead of using Dynamic Naming?

For troubleshooting purposes it is important that you understand how the screens are named in newlook. However, you would normally identify your screens using RAMP dynamic naming because it is quicker and easier.

I navigate to a screen which I have not named yet, but RAMP shows it with a name of another screen I have already named?

Newlook has assigned this screen the same Screen Id as another screen. You need to start newlook and use the Identify function to change the Screen Ids so that they are unique.
Backing Up Screen Definitions
You may want to keep backup copies of your screen definitions as a precaution before you use Dynamic Naming.
To do this, select the option *Keep newlook sid file versions (RAMP only)* in the Framework Details tab in Framework Properties:

![Keep Newlook SID file versions dialog box]

When this option is selected, you will be prompted to save the definitions when you start newlook in RAMP tools:
New IIPs for Windows

New IIPs have been made available to support Dynamic Naming:

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AvMakeFormName</td>
<td>This method is called when a form has yet to be named using Dynamic Naming.</td>
</tr>
<tr>
<td>AvMakeControlName</td>
<td>This method is called each time a cell in the Input/Output control grid in Dynamic Naming interface receives the focus. It allows you to standardise the screen’s field names should your application use a certain naming convention.</td>
</tr>
<tr>
<td>AvValidateFormName</td>
<td>Validate the name given to a Newlook screen.</td>
</tr>
<tr>
<td>AvValidateControlName</td>
<td>Validate the name given to a Newlook screen’s control.</td>
</tr>
</tbody>
</table>

Example

You can modify the default behaviour of the Dynamic Naming dialog in the Windows IIP (by default UF_SYSTM).

This example sets the prefix for all newlook controls XXX:

```plaintext
... * This method is called by the dynamic naming tool to set a default value to give to an unnamed Newlook form. * Here you can specify a value based on some naming standard to give to all Newlook forms. The default value returned by the ancestor * is blank. * To specify your own, comment out or delete the Invoke Method(#COm_Ancestor.avMakeFormName) Formprefix(#FormPrefix) command * and insert your own logic. Return the value in the output parameter #FormPrefix. 

Mthroutine Name(avMakeFormName) Options(*REDEFINE) * Define_Map For(*output) Class(#vf_eltxtm) Name(#FormPrefix) Desc('Prefix
```
to apply to unnamed forms ')

Invoke Method(#Com_Ancestor.avMakeFormName) Formprefix(#FormPrefix)

Endroutine

* This method is called by the dynamic naming tool when the focus is set into a cell in the grid that shows
  * all the *controls in the Newlook form that is showing. Here you can specify a value perhaps based on some
  * naming standard to give to all defined Newlook controls. The default value returned by the ancestor blank.
* To specify your own, comment out or delete the Invoke Method(#COM_Ancestor.avMakeControlName) Controlprefix(#ControlPrefix) command
  * and insert your own logic. Return the value in the output parameter #ControlPrefix.

Mthroutine Name(avMakeControlName) Options(*REDEFINE)
* Define_Map For(*output) Class(#vf_elctln) Name(#ControlPrefix) Desc('Prefix to apply to unnamed controls ')

* Invoke Method(#COM_Ancestor.avMakeControlName)
Controlprefix(#ControlPrefix)

set com(#Controlprefix) value(xxx)

Endroutine

* Use this method to validate the name given to a Form using the Dynamic Naming tool. The default behaviour is to return OK
  * except when the form name is equal to the value set in method avMakeFormName:
* If Cond('#FormName = *blanks')
  * Set Com(#ReturnCode) Value(ER)
* Set Com(#ErrorMessage) Value(*MTXTVF_UM701_014)
* Else
  * Set Com(#ReturnCode) Value(OK)
  * Endif
Mthroutine Name(avnValidateFormName) Options(*REDEFINE)
* Define_Map For(*input) Class(#vf_eltxtm) Name(#FormName) Desc('Form name to be validated')
* Define_Map For(*output) Class(#vf_elretc) Name(#ReturnCode) Desc('OK or ER')
* Define_Map For(*output) Class(#vf_elmsg) Name(#ErrorMessage) Desc('Returned message in case of error')

Invoke Method(#COM_Ancestor.avValidateFormName)
Formname(#FormName) Returncode(#ReturnCode)
Errormessage(#ErrorMessage)
Endroutine

* Use this method to validate the name given to a Newlook control using the Dynamic Naming tool. The default behaviour is
* to return OK except when the control name is equal to the value set in method avMakeControlName:
* If Cond('#ControlName = *blanks')
* Set Com(#ReturnCode) Value(ER)
* Set Com(#ErrorMessage) Value(*MTXTVF_UM701_013)
* Else
* Set Com(#ReturnCode) Value(OK)
* Endif

Mthroutine Name(avnValidateControlNam) Options(*REDEFINE)
* Define_Map For(*input) Class(#vf_elctln) Name(#ControlName) Desc('Control name to be validated')
* Define_Map For(*output) Class(#vf_elretc) Name(#ReturnCode) Desc('OK or ER')
* Define_Map For(*output) Class(#vf_elmsg) Name(#ErrorMessage) Desc('Returned message in case of error')

Invoke Method(#COM_Ancestor.avValidateControlNam)
Controlname(#ControlName) Returncode(#ReturnCode)
Errormessage(#ErrorMessage)
Endroutine

...
New features in EPC 826 Version of RAMP

This section outlines new features in EPC 826 version RAMP:

**New Subfile Accessor properties for faster scripting**

For subfiles that use markers such as "+", "More..", "Bottom":

- The new *EndofFileMarker* property indicates the subfile end marker. The default is "Bottom".
- Scrolling stops when either no marker is found, or when the marker exactly matches *EndofFileMarker*.

For subfiles that issue a message when attempting to scroll past the end:

- If the subfile has no marker at all, set the new *UseMarker* property to False and *EndofFileMarker* to text that can be found somewhere in the message that appears when attempting to scroll past end. For example *EndofFileMarker* = "made to scroll past end"

See the Properties table in SUBFILE_ACCESSOR Object

**Add your own options to the scripting pop-up menu by creating an xml file**

See Adding Your Own Options to the Scripting Pop-Up Menu.

**Set Command Handler Caption from RAMP Scripts**

The captions for command handlers can now be changed from RAMP scripts using the new *SET_HANDLER_CAPTION* Function.

**Turn off recursion checking for RAMP scripts**

You can use the new global property *GLOBAL_flagRecursionCheck* to turn off recursion checking. See Switching Off Recursion Checking.

**Easier liteclient license configuration**

Newlook liteclient licenses can now be used without having to manually modify any HTML file.

**newlook Version**

This version of RAMP requires newlook Version 8.0.2.11391 dated July 18 2007 (or later).
New features in EPC 804 Version of RAMP

This section outlines new features in EPC 804 version RAMP:

**Wrappers for 5250 screens**
Using RAMP Screen Wrappers you can present a good looking, easy to use, high GUI veneer over 5250 screens without having to analyze and rewrite all the business logic imbedded inside them.

**newlook Version 8**
This version of RAMP requires newlook Version 8.0.1.10669 dated March 14, 2007 (or later).

**newlook function key bar**
The newlook function key bar may now be optionally displayed on RAMP screens using the OVERRIDE_BUTTONS_UNDEFINEDSCREENS Function.
This is most commonly done in pop-up windows.

**Set multilingual function**
The captions show on RAMP now can be changed to be multilingual using the OVERRIDE_KEY_CAPTION_SCREEN Function and OVERRIDE_KEY_CAPTION_ALL Function.

**Virtual Clipboard Access**
Information placed onto the virtual clipboard by VLF filters and command handlers can now be read and updated from RAMP scripts using the AVSAVEVALUE Function and the AVRESTOREAVALUE and AVRESTORENVALUE Function. This significantly improves the ability for RAMP scripts and filters and command handlers to exchange information.
Available in VLF web or windows based applications.

**Scripts**
Commonly used script logic can be placed into a common JavaScript file for better reuse.
Script names may now be changed.
Creating a Script Naming Convention sometimes necessary when many developers work on the same application.
Also see xxxxxxx is an orphan script and should be deleted.

**User-defined lock message**
The message that appears when a user attempts a RAMP navigation from an unknown screen has been improved.
The message presented is now different for designers and end-users. Additionally the message text may now be changed from a RAMP script to

**Handling undefined screen**
Often unknown screens are displayed by users, causing the screen lock message to be displayed when they attempt to navigate somewhere else. Now you can instruct Windows RAMP applications...
exactly what any site requires using the SET_LOCK_MESSAGE Function.

Deployment

Visual LANSA Framework and RAMP check lists for deployment are available. The detailed check lists guide the user in planning the deployment, packaging the material and installing the package.

Handling Pop-ups

A new section Handling Pop-Ups describes how to handle pop-up windows in RAMP. The new FORCE_POPUP_REFRESH Function displays hidden pop-ups.

‘guess’ what it might do to make an unknown screen go away using the ADDUNKNOWN_FUNCTION, so that the user request can be handled correctly.

Change Date/Time/Use

The RAMP tool now displays the last changed date-time-user for all screens and scripts to make script management easier. List of objects in the session tree may be sorted by their date and time.

Advanced Prompting

Information is provided on how to handle the additional information that can be passed to or retrieved from a prompter form using the HANDLE PROMPT Function.
New features in EPC 793 Version of RAMP

This section outlines new features in EPC 793 version RAMP:

**Performance**

The start-up times for Framework applications (including RAMP) have been substantially improved in this version. For more information see What's New in the Framework Guide.

**Instance Lists**

RAMP-specific instance list information is now provided. See Advanced Instance List Processing.

To review new features in previous Framework versions, see:

New features in EPC 785 Version of RAMP
New features in EPC 785 Version of RAMP

RAMP in the Browser
RAMP applications can now be executed in the browser version of the Visual LANSA Framework.
You can use both Webevent and WAM filters in your application.
See Starting the Framework on the Web

Merge Tool
Framework and RAMP applications can now be merged together When Many Developers Work on the Same Application.

New Choreographing Features
You can use the Snapshot button while choreographing to capture the 5250 screens as a bitmaps.
You can use the screen images to give your prototype a realistic look, as a memory jogger or for documentation purposes during POC exercises.
Also, a new Refresh button is available to force the RAMP choreographer to re-examine the current 5250 screen. This is useful in situations involving 5250 flash screens

Internet Explorer (IE) 7 is now supported as a browser in VLF end-user applications
Note that at this date IE7 is still a Microsoft beta product and it is not yet supported by the Visual LANSA IDE for developers.

Scripting
New functions:
GET_MENU_OPTION_NUMBER Function
STRIP_LEADING_NUMBERS Function
ADD_STRING Function

Subfile Handling Enhancements
Subfile access from scripts has been improved. A new SUBFILE_ACCESSOR object is provided and simpler scripting is now possible.
See Subfiles/Browselists for
STRING Function

The automated generation of scripts has been improved, with better explanations in cases when a script cannot be generated automatically.

Also see Javascript Essentials documentation and the Movie Index for new scripting movies.

Run-Time RAMP Performance Improvements

Business Object instance list processing is faster in all Visual LANSA Framework Windows applications.

RAMP application start-up performance has been improved, particularly when executing in end-user mode.

Changes To Trace and Messaging

Application Tracing and message handling have been improved, including the ability to save trace details to a file.

Buttons to turn application level tracing off or on are now presented directly on RAMP screens when working as a developer as continual reminder that this is the primary script debugging aid.

The 5250 Home key is now handled in RAMP applications

User Interface Improvements

The newlook 5250 session height, width, location and masking areas can now be set for individual 5250 forms to override the session level defaults in Destination Screen Details.
## Licensing Requirements

### Developer Quick Check List

If you are RAMP developer then use this quick check list:

<table>
<thead>
<tr>
<th>Checked</th>
<th>Type of License</th>
<th>What does it allow you to do</th>
<th>How to check it</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VL-IDE dongle or Softkey license</td>
<td>To develop Visual LANSA applications</td>
<td>Can you create, compile and execute Visual LANSA (VL) applications and check them into your System i server?</td>
</tr>
<tr>
<td></td>
<td>RAMP choreographer license</td>
<td>To choreograph RAMP screens</td>
<td>Use LANSA REQUEST(LICENSE) on your System i server and look for a valid &quot;AXX&quot; or &quot;Ann&quot; license.</td>
</tr>
<tr>
<td></td>
<td>newlook Professional Edition (PE) or Centric license</td>
<td>To identify and enhance screens using the newlook Designer.</td>
<td>Use WRKLICINF PRDID(0NWLOOK) on your System i server.</td>
</tr>
<tr>
<td></td>
<td>newlook smartclient or liteclient license</td>
<td>To execute 5250 applications inside newlook.</td>
<td>WRKLICINF PRDID(0NWLOOK) on your System i server.</td>
</tr>
<tr>
<td></td>
<td>Lansa Super Server license</td>
<td>To access remote data and programs on your System i via non-5250 interfaces</td>
<td>Use LANSA REQUEST(LICENSE) on your System i server and look for a valid &quot;LXX&quot; or &quot;Xnn&quot; license.</td>
</tr>
</tbody>
</table>

To obtain any type of license contact your LANSA product vendor.

If you need to understand the detailed licensing requirements for both
developers and end users, refer to Complete Licensing Details. More About Newlook Licensing describes newlook licensing.
## Complete Licensing Details

<table>
<thead>
<tr>
<th>License Type</th>
<th>RAMP license</th>
<th>Visual LANSA Development license</th>
<th>newlook Professional Edition (PE) or Centric license</th>
<th>Newlook smartclient or liteclient license</th>
<th>LANSA Super Server license</th>
</tr>
</thead>
<tbody>
<tr>
<td>License Purpose</td>
<td>To choreograph RAMP screens</td>
<td>To develop Visual LANSA applications</td>
<td>To identify and enhance screens in newlook</td>
<td>To execute RAMP applications</td>
<td>To access remote data on your System via non-5250 interfaces</td>
</tr>
</tbody>
</table>

*Required by RAMP application developer*
- Visual - See Note 1
- v - See Note 2
- v - See Note 3

*Required by RAMP application end-user*
- v - See Note 3

Notes:
1: Visual LANSA Development licenses are dongles or soft keys that are bound to a specific developer workstation. All other licenses are slot-based (licensed per server by number of concurrent developers).
2: Visual LANSA Development licenses may include a Super-Server license. Entitlements may vary.
3: RAMP applications may be designed and developed in a restricted manner so that they do not require LANSA Super Server licenses.
**Visual LANSA Version**
Visual LANSA version 12.0 with EPC 859 and patch EPC859HF-101005 applied, or later.

**newlook Version**
You need to use newlook Version 8.0.5.14769 (or later).

**About the RAMP License**
The RAMP license is only required to use RAMP tools during application development. It may be an AXX (unlimited) or an Ann (limited to nn concurrent developers) license.
Install it on the System i server that you use for application development.
If you do not have a license to use the RAMP tools you need to:
- Obtain a RAMP license from LANSA.
- Input the license code on your System i server using the LANSA REQUEST(LICENSE) command followed by the *Insert a Permanent License Code* menu option. Key in the License Type (AXX or Ann) and the License Code assigned to you by LANSA and press Enter. This method of license installation is the same as for all other licensed LANSA products.
- When you start the Visual LANSA Framework and need to use the RAMP tools, use should use super-server mode and connect to your System i server so that your license can be checked, so a Super Server license is also required.

**About the newlook Licenses**
- Developers designing and enhancing newlook screens also require use of a newlook execution license (smartclient or liteclient).
- newlook liteclient licenses restrict the range of newlook execution time facilities available.
More About Newlook Licensing

VLF.RAMP starts newlook in two different ways:

- In RAMP tools to support developer choreographing
- On command handler tabs as part of executing an VLF application.

How a LiteClient License is Determined

When newlook is started, this VLF server definition setting is checked:

In RAMP tools â If any server definition has ‘Use liteclient license’ ticked, newlook is requested to start up using a liteclient license.

On command handler tabs â If the connected server has ‘Use liteclient license’ ticked, newlook is requested to start up using a liteclient license.

Other Types of Newlook Licenses

If a liteclient license is not to be used, then VLF_RAMP starts newlook without specifying a license type. *This means that newlook will use its own logic to determine what type of license should be used.* It will do this based on how your newlook environment is configured, which is usually determined by you when you installed or upgraded newlook.

Checking the Type of Newlook Licence(s) you have

To verify the type of license used by a client PC you have to check the value of Edition in the following registry key:

```
HKEY_CURRENT_USER\Software\looksoftware\newlook\8.0
```

If set to **Host** the client will request a license from the host.

If set to blank the client will has been set to use a **Local** license. A Local licence will usually override all other settings and requests.
To check your Host licences use the WRKLICINF PRDID(0NWLOOK) command.

All different license types are listed for the appropriate version but that doesn’t mean you the host has a real license. For example, you might see something like this:

<table>
<thead>
<tr>
<th>Product</th>
<th>Term</th>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0NWLOOK</td>
<td>V8R0</td>
<td>5001</td>
<td>smartclient</td>
</tr>
<tr>
<td>0NWLOOK</td>
<td>V8R0</td>
<td>5002</td>
<td>newlook</td>
</tr>
<tr>
<td>0NWLOOK</td>
<td>V8R0</td>
<td>5003</td>
<td>centric</td>
</tr>
<tr>
<td>0NWLOOK</td>
<td>V8R0</td>
<td>5004</td>
<td>soarchitect</td>
</tr>
<tr>
<td>0NWLOOK</td>
<td>V8R0</td>
<td>5005</td>
<td>liteclient</td>
</tr>
<tr>
<td>0NWLOOK</td>
<td>V8R0</td>
<td>5010</td>
<td>lookdirect</td>
</tr>
</tbody>
</table>

To find out which of the license types the machine is licensed to, press F11. You will then see something like this:

<table>
<thead>
<tr>
<th>Product</th>
<th>Term</th>
<th>Feature</th>
<th>Limit</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>0NWLOOK</td>
<td>V8R0</td>
<td>5001</td>
<td>0</td>
<td>.00</td>
</tr>
<tr>
<td>0NWLOOK</td>
<td>V8R0</td>
<td>5002</td>
<td>3</td>
<td>1.00</td>
</tr>
<tr>
<td>0NWLOOK</td>
<td>V8R0</td>
<td>5003</td>
<td>0</td>
<td>.00</td>
</tr>
<tr>
<td>0NWLOOK</td>
<td>V8R0</td>
<td>5004</td>
<td>0</td>
<td>.00</td>
</tr>
<tr>
<td>0NWLOOK</td>
<td>V8R0</td>
<td>5005</td>
<td>8</td>
<td>.00</td>
</tr>
</tbody>
</table>

The Limit column tells you total number of license seats and the Count column how many seats are currently in use.

**Forcing Newlook to start using a specific licence type**

Provided that you are not using a local license, you can do this by modifying VLF JavaScript files VF_UM703.JS (used by RAMP Tools) and/or VF_SY120.JS (used to execute newlook on command handler tabs).

In both these files you will find a section of code like this:

```javascript
if (flagLiteclient)
{
```
The first section is used to specify a newlook liteclient licence when starting. You need to add a `<param name='license' value='smartclient'>` string into the code section to indicate what type of license you want to force newlook to use. The second section assembles the HTML tag used to start newlook with a default license. *This is the code section you need to modify*.
Installation and Configuration

Installation
Configuration
Starting the Framework on the Web
When Many Developers Work on the Same Application
Installation

Install RAMP
Install newlook
Install RAMP

See the Framework Guide for detailed instructions for installing the Framework. You need to:

- **Install the Framework software** on the System i Server. Note that you only need to perform this step and none of the other steps described in the Framework Guide because you are not installing LANSA for the Web.
- **Install and Configure the Framework on Visual LANSA Workstations.**
Install newlook

You need to use newlook Version 8.0.5.14769 (or later).
We recommend that if you have an earlier newlook 8 version installed on the machine, you uninstall it and reboot before installing the new version.
During the installation choose the Typical setup.
Next, if you have a newlook license, select the request host license option.
Configuration

Verify newlook Installation
Verify Internet Explorer Security Settings
Configure newlook
Configure RAMP
Verify newlook Installation

Start newlook in the looksoftware suite program folder. Select option newlook 8.0.

Then select the Connect option in the Session menu.

In the Connect dialog click on the Wizard On toggle button to turn it off. Then use the Add button to add the server that has the application you are going to modernize to newlook.
Click Next. Then specify a name for the connection:

Click next. Then select the connection type:
Click Next. Then specify the internet address. Do not select Secure connection.

Click Next. Accept the default session type:
Click Next. You do not have to specify a *device name*. Do not select *Connect using lookdirect*.

Click Next. Select the *locale*: 
Click Next. Select the sign-on options for obtaining the newlook license from the System i:

- In most situations we recommend you select the *Specify the username and password* option so that the information required for obtaining the license is stored in the newlook.sid file. In this way later on you will be able to deploy a generic profile with your application and the end-user will not be prompted for the username and password. (If you choose the option *Use the common username and password*, newlook uses the profile stored in the HKEY_CURRENT_USER\Software\looksoftware\newlook\8.0\Sign On registry key on the PC.)

- Make sure that the Automatically signon to display sessions option is NOT selected in any RAMP applications:
Click Next. Specify the username and password used to obtain a valid profile so that newlook can retrieve a newlook license from the System i. It is recommended you use a profile that never expires.

Then click Finish.
When your connection is defined, click on the Connect button. Enter the username and password to sign on to your server:

The newlook version of your server's 5250 sign-on screen is displayed:
You have now verified newlook has been installed.
Verify Internet Explorer Security Settings

Verify that the internet security setting *Allow active content to run files on my computer* is selected:

- Open Internet Explorer
- Select the *Internet Options* option in the Tools menu
- Display the *Advanced* Tab
- Locate the *Security* group
- Ensure the *Allow active content to run files on my computer* option is selected.

Depending on the version of Internet Explorer you have, this option may not be present. If it is not present, just ignore this step.
Configure newlook

Merge Shipped Macros into newlook
Configure newlook for a Windows Look and Feel
Merge Shipped Macros into newlook

Merge VF_XP.nlgl
Merge VF_MACRO.sid
VF_XP.nlgs

Using Windows Explorer, copy the files of type **VF_XP*.nlg** (VF_XP.nlg, VF_XP_2007BLUE.nlg, VF_XP_2003BLUE.nlg etc):

- **From** the Execute directory of the Lansa partition you will be using (for example C:\Program Files\LANSA\X_WIN95\X_LANSA\x_dem\execute)
- **To** the newlook directory (for example C:\Program Files\looksoftware 8.0)
VF_MACRO.sid

Merge the VF_MACRO.sid file into newlook:

- Start looksoftware suite 8.0 then newlook 8.0
- In the Tools menu select Merge Repository

The Browsing for Dynamic Recognition Repository dialog is displayed.

- Use this dialog to locate VF_MACRO.sid in your LANSAta partition execute directory (for example C:\Program Files\LANSA\X_WIN95\X_LANSA\x_dem\execute):
Click Open.
Display the Macros tab. Select VF_MACRO from the list of macros. Then click on the Merge button:

The Framework macros should now have now been merged into newlook.
This is confirmed by a Merge Summary screen like this:
Configure newlook for a Windows Look and Feel

To optimize the appearance of your RAMP screens, you need to make some changes to newlook options. To do this Start newlook by clicking on the newlook Designer button in the RAMP Tools window and then:

- Change the Scheme
- Change the Background
- Ensure newlook uses the Windows Themes
- Suppress newlook Sounds
Change the Scheme

To change the newlook scheme to XP, select the Tools menu and then the Settings option in the newlook window:

To change the scheme of your RAMP screens, select the Display tab and click on the Settings button in the Appearance area:
In the Graphical tab of the Appearance dialog change the Scheme to VF_XP if your framework application does not use Visual Themes. If your framework application uses a Visual theme, select the matching VF_XP_* value. See the Framework property Overall Theme.
Click OK.
Change the Background

By default newlook uses a background image on the modernized screens which you may prefer remove. To do this, click on the Settings button in the Background area in the Display tab. The Background dialog is displayed. Blank out the Picture field to remove the background graphic:

Click OK.

Close the newlook Settings dialog by clicking OK.
Ensure newlook uses the Windows Themes

You need to ensure that newlook is set up to use Windows themes and visual styles in order to enable visual effects such as mouseovers. To do this select the Rules option in the Tools menu.

The newlook Rules dialog is displayed:

Display the Categories tab and then click on the Advanced button:
The Advanced Categories dialog is displayed:
Select the Use Windows themes and visual styles option. Then click OK to close the dialog. Close the newlook rules dialog by clicking OK.
Suppress newlook Sounds

By default newlook automatically plays sounds in some situations, for example when a host screen is received. To suppress these sounds:

- Start newlook
- Display the Tools menu and select the Settings option
- Display the Preferences tab in the newlook Settings window and uncheck the Enable Sounds option:

- Click OK
Configure RAMP

Perform these steps to define a newlook server in the Framework:

Specify Server Details
Set up Super-Server Session
Optionally Set up Framework Users and Security
Optionally Configure newlook User Profile and Password in the Framework
Specify Server Details

- Start the Framework.
- In the Administration menu of the Framework select the Servers option.
- In the Server Details tab, select LANSAn for System i + newlook as the Server Type. (If your System i and newlook servers have different IP addresses even though they might be the same physical server, choose the newlook Only option.)
- Enter the name of the newlook connection as defined in the newlook Connection Properties panel in the Server Name property. You can leave the name blank in which case the IP address and Port Number will be used.
- If you are using a newlook liteclient license, select the Use 'liteclient' license check box.
- If you leave also the IP Address and Port Number blank, the newlook connection panel will be displayed when the Framework is trying to establish a connection.
Set up Super-Server Session

When using RAMP you need a super-server session to sign on to the System i server. To specify the sign-on option:

- Start the Framework.
- Display the Framework menu and select the Properties option.
- In the Framework Properties, select the User Administration Settings tab.
- Select the *Users Sign on to a Remote Server to Use the Framework* option in *Sign on Settings*.
- Close the dialog and save the Framework.
Optionally Set up Framework Users and Security

You can optionally use Framework users and security:

- Display Framework properties. In the User Administration Settings tab select the *Use Framework Users and Authority* option. Also select the option *Store Users in DBMS tables VFPPF06/07*. Save and restart the Framework.

- In the Administration menu select the Users option.

- Specify the user profile details and their authorities. For more information use the context-sensitive help by pressing F1.
Optionally Configure newlook User Profile and Password in the Framework

Most commonly the newlook user profile and password are the same as the the user profile and password used for the Framework superserver connection. In this case do not specify the newlook user id and password because RAMP will default to these values when starting a newlook session.

However, if you are using Framework Users and Security and if the newlook user profile and password are different from the Framework user profile and password, you can specify your newlook User Profile and newlook Password in the Framework. Alternatively you can specify these details when connecting to newlook.

If you want to specify these details in the Framework:

- Start the Framework.
- In the Administration menu select the Users option to display the User Details tab.
- Select your user profile.
- In the newlook User and newlook Password fields, define the user profile and password you use to connect from newlook to your System i server, or use the special value *PROMPT in both fields.
- Close the dialog and save the Framework.
<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Profile</td>
<td>DCXUSER</td>
</tr>
<tr>
<td>New Password</td>
<td></td>
</tr>
<tr>
<td>Caption</td>
<td>UserProfile</td>
</tr>
<tr>
<td>NewLook User</td>
<td>DCXUSER</td>
</tr>
<tr>
<td>NewLook Password</td>
<td>===========</td>
</tr>
<tr>
<td>Temporary Directory</td>
<td>C:\DOCUME<del>1\user1\LOCALS</del>1\Temp\</td>
</tr>
<tr>
<td>Email Address</td>
<td></td>
</tr>
<tr>
<td>Inactivity Log on</td>
<td></td>
</tr>
<tr>
<td>Inactivity Log off</td>
<td></td>
</tr>
<tr>
<td>Administrative User</td>
<td></td>
</tr>
<tr>
<td>User is Disabled</td>
<td></td>
</tr>
<tr>
<td>Groups this user</td>
<td></td>
</tr>
</tbody>
</table>
Starting the Framework on the Web

There are RAMP-specific options when starting the Framework on the web. See this section in the Framework guide: Web Application Start Options.
When Many Developers Work on the Same Application

When modernizing large applications, it may be necessary that several developers share the work.

Handle Multiple Framework Versions
Multiple Developers Using newlook
Script Naming Convention
Handle Multiple Framework Versions

See Framework Versions.
Multiple Developers Using newlook

When multiple developers are identifying screens and fields in newlook, it is recommended that the developers work from local copies of the SID file with updates being merged into a central repository. The merge process should be performed by a single developer who is responsible for managing potential conflicts.

However, it is also possible to have multiple developers working on the same SID file via the network. You should note that working on a SID via a network is not as fast as working on a SID file locally and, as with all shared databases, there is always the risk of data corruption due to PC lockups or power outages.

To work on a shared .sid file:

- Copy the newlook.sid (or whatever your shared dynamic repository is named) to a shared folder.
- In newlook choose the Settings option from the Tools menu, then click the Settings button in the Dynamic Recognition Repository section.
- In the Shared field specify the newlook.sid file on the shared folder.

Repeat the last two steps for all developers who want to work on the repository. Many developers can simultaneously work on the same newlook.sid file. If developer A makes some customizations to a screen and saves the changes, developer B will see those customizations instantly. If two developers try to change the same object (i.e. screen, macro, etc) at the same time, newlook tells the second developer that the relevant object is currently locked by another developer.
Script Naming Convention

RAMP scripts are assigned names like INVOKE_SCRIPT_2, BUTTON_SCRIPT_7, etc.

The name reflects their purpose and the numerical suffix makes them unique within the current Framework, but they have no real programmatic purpose.

Where multiple developers are working on independent Frameworks with an intention to merge their work together at some later date, the possibility of duplicated script names exists. While this situation does not present a technical problem for RAMP, it can be confusing for developers trying to identify unique scripts.

Developers can change the names of the scripts in the Script Details area. The recommend way to do this is to append a short suffix to the generated script name, possibly relating to the 5250 screen or application that the script is associated with.

Also see xxxxxxx is an orphan script and should be deleted.
Starting RAMP

This section summarizes how you start LANSA and the features inside LANSA you will need when modernizing an application.

Start LANSA
Start the Framework
Start RAMP
Start newlook
Start the Instant Prototyping Assistant
Start the Program Coding Assistant
Start LANSA

To start LANSA:

- Use the Start menu and display the Programs folder.
- Select LANSA.
- Select the Development Environment option

The LANSA development environment is displayed
Start the Framework

You start the Framework from the LANSAn development environment:

- Display the Tools menu.
- Select the VL Framework - as Designer option.
Start RAMP
You start RAMP from the Framework window:

- Display the Framework menu.
- Select the RAMP Tools... option.

The RAMP and newlook Tools window is displayed.
Start newlook

- You start newlook in the RAMP Window. There are two different ways you use newlook:

Identifying Screens

To identify 5250 screens, click on the newlook Designer button on the bottom of the RAMP and newlook tools window:

The newlook window is displayed:
Use the Session menu to establish a connection to the newlook server.

**Defining Screens**

After you have identified the screens using newlook Tools, you need to define the screens in the Framework and track the navigation between them.

To do this, start the newlook emulator session by clicking on the message newlook has not been started in the message area:

```
Click on any messages below to see available actions.

⚠️ Newlook is not started. Click on this line to start Newlook.
```

The newlook Emulator Session is started in the RAMP window. Use the Session menu to connect to the server.
Start the Instant Prototyping Assistant

The tutorial movie Create a prototype of your application - 3 minutes shows how to use the Instant Prototyping Assistant.

Use the Instant Prototyping Assistant to quickly prototype your application or to modify an existing prototype.

To start the Instant Prototyping Assistant, use the Instant Prototyping Assistant... option in the Framework menu.

Alternatively, select the New Application or New Business Object options from the popup menu in the navigation pane:
And then respond Yes to the message that appears:

The Instant Prototyping Assistant is displayed:
What actions can users do with "business objects"?

**Step 2. Enter the names of all the actions below: (separated by commas)**

Windows design use the **Object -> Action** approach.
- (i.e. select the object you want to work with, and then choose what you want to do with it.)
  The actions should be described in end user terms, not in IT terms.

Very concise words are used to describe "actions", because the object being worked with is already known.
- if you select an object in MS-Powerpoint and use the right mouse there is a context menu option "Copy".
- it does not say "Copy this text box to the Clipboard".
  Short verbs tend to be used to describe actions.
- (e.g. Copy, New, Edit, Print, Approve, Transfer, Reply, Renew)
  Short nouns are also used to refer to things that directly relate to the business object.
  (e.g. Details, History, Charges, Claims, Attachments, Schedule, Contacts, Documents, Expenses)

For example: If there is a "business object" called Customers, you could do these things with a Customer:
- Edit, Print, Delete, Accounts, Recent Transactions, Correspondence, Verify,

**Actions:** Details, New, Notes,

**Step 3. Drag and drop the actions from the list below, onto all the appropriate business objects in the list on the right**

The same action can be used with many business objects.

- Details
- New
- Notes
Start the Program Coding Assistant

The tutorial movie Create a filter and snap it in - 4 minutes shows how to use the Program Coding Assistant.

Use the Program Coding Assistant to quickly create the code for Framework filters and RAMP screens.

To start it, use the Program Coding Assistant option in the Framework menu:
Concepts

Steps Involved in Using RAMP
Framework Window
RAMP Window
Types of Screens
OBJECT-ACTION User Interfaces
## Steps Involved in Using RAMP

You need to complete these steps:

<table>
<thead>
<tr>
<th>Step</th>
<th>Comments</th>
<th>Navigation Modernization</th>
<th>Application Modernization</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Create a prototype of your application.</td>
<td>The prototype will evolve into the final application. You need access to the subject matter expert at least during this stage.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Identify the 5250 screens in the existing application.</td>
<td>You use the newlook Designer for this.</td>
<td>Identify only entry point 5250 screens</td>
<td>Identify all 5250 screens that need to be modernized as well as significant fields</td>
</tr>
<tr>
<td>3. Record the 5250 entry point screens and snap them into the Framework.</td>
<td>The Framework needs to know how to access and display the screens.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Create the</td>
<td>Using</td>
<td>Not necessary.</td>
<td></td>
</tr>
<tr>
<td>required Framework filters</td>
<td>powerful filters is the basis of reusing the 5250 screens in new modernized ways.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Optionally add new features making use of Windows functionality</td>
<td>For example, you may want to add advanced screens for, for instance, email, video, graphing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Deploy</td>
<td>Deploy your application</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Framework Window

**Navigation Pane**
Use this area to move between applications and business objects.

**Filters**
Use filters to specify selection criteria for the objects to work with.

**Instance List**
This list shows the objects that meet the filtering criteria. Select from it the object you want to work with.

**Command Handlers**
The programs you use to work with objects. They can be RAMP iSeries screens or L ANSA components.
RAMP Window

Message Area
Screen Tracking Area
newlook Emulator Session
Screen and Script List
Details Area
Message Area

The RAMP message area shows messages about where you are and what you should be doing.

When newlook is running, messages are shown for the screen selected in the Screen Tracking Area.

If messages have a message icon, click on it to see what actions are available.

The message area has buttons you can use when tracking screens:

<table>
<thead>
<tr>
<th>Probe</th>
<th>Use the Probe button to examine the layout of the current 5250 screen and produce an online report. It is used for problem analysis and to determine the rows and columns used in a subfile.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snapshot</td>
<td>Use the SnapShot button to take a snapshot of the current 5250 form in GUI or 5250 mode and save it as bitmap. These images:</td>
</tr>
</tbody>
</table>
- Can be dragged and dropped onto RAD-PAD prototype command tabs to enhance communications during design sessions with other developers or end-users.
- Are useful for producing system documentation
- Are an aid to remembering exactly what 5250 screen is associated with a junction, destination or special screen.

The (nnn x nnn) numbers on the button indicate the pixel size of the snapshot that will be saved. These numbers will change as you change the layout of the RAMP Tools window.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Restart</td>
<td>Use the Restart button to erase the tracking information and restart tracking.</td>
</tr>
<tr>
<td>Refresh</td>
<td>Use the Refresh button to force the RAMP choreographer to re-examine the current 5250 screen. This is useful in situations involving 5250 flash screens.</td>
</tr>
</tbody>
</table>
## Screen Tracking Area

<table>
<thead>
<tr>
<th>RAMP Window</th>
<th>Message Area</th>
<th>newlook Emulator Session</th>
<th>Screen and Script List</th>
<th>Details Area</th>
</tr>
</thead>
</table>

The Tracking area displays the screens you have displayed in the current newlook 5250 emulator session. When you end the newlook session, the tracking information is cleared.

Colors used in the Tracking area for screens indicate their status and type you have assigned to the screen:

<table>
<thead>
<tr>
<th>Screen</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown Form</td>
<td>The screen has not been identified in newlook. Before using RAMP tools, you must identify the screens of your application using newlook.</td>
</tr>
</tbody>
</table>
| wrkoutq       | The screen has been identified in newlook, but it has not been defined in RAMP. You need to define the screens in your application according to their purpose:  
  - Destination screens are screens where the end-user works  
  - Junction screens are used for navigation only  
  - Special screens are used for messages etc.  
  To define a screen, click on the message saying that the form has not been defined. |
| usignon       | The screen is a junction screen.                                              |
| Display System Messages | The screen is a special screen.                                                   |
| wrjjobq       | The screen is a destination screen.                                            |
newlook Emulator Session

You use the newlook emulator session to run the application you are modernizing.

When newlook has not been started, the message newlook has not been started is shown in the message area:

Click on any messages below to see available actions.

⚠️ Newlook is not started. Click on this line to start Newlook.

Click on the message to start newlook. Then use the newlook Session menu to connect to the server:
The screen and script list shows all the 5250 screens defined in the Framework and the associated scripts:

Select the screens and scripts you want to work with.
You can use the Find field on the top of the list to locate screens and scripts. If you want to search the contents of scripts, tick the In Scripts check box.
There are two ways you can save your changes to the Framework in the RAMP window:

| Full Save | Performs a full Framework save including the generation of all scripts for execution in end-user mode and the uploading of web server details. |
| Partial Save | Performs a partial Framework save so that your work is fully recoverable, but does not generate run-time scripts or upload server details. You will need to do a full Framework save to deploy your application or execute it in end-user mode. |
You can use the New 5250 Application Session button to organize screens and scripts into distinct 5250 Application Sessions (see Organizing Screens and Scripts).

The newlook Designer button starts a newlook client session you need to use when identifying screens.
Organizing Screens and Scripts

If your applications are large and complex, you may want to divide the screens and the associated scripts into separate groups along application lines. You can do this by creating separate 5250 application sessions for them in the RAMP window.

Developing applications with hundreds of screens becomes increasingly complex to manage because of the number of objects they contain. Also, the initial start up time of an application increases in a linear manner according to the number of objects it contains.

In this example three application sessions have been created in addition to the Default Session (5250 Application Session, Personnel Application and Invoice Processing Application):

![Application Session Window]

Note that the 5250 application sessions are completely independent of each other and have no knowledge of each other's existence. This means that a script in one session cannot navigate to an object in another application session and that you will most likely have to duplicate some common scripts such as logon and logoff and messages.

A separate newlook session will be started for each 5250 Application Session. To create a new grouping, click on the New 5250 Application Session button in the RAMP window. You can edit its caption in the Session Details area.

Only one 5250 Application Session can be active at any time. To change the application session, simply display the tab for that session. All screens that you define and scripts you create are stored in the current 5250 Application Session.
<table>
<thead>
<tr>
<th>Details Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session Details</td>
</tr>
<tr>
<td>Destination Screen Details</td>
</tr>
<tr>
<td>Script Details</td>
</tr>
</tbody>
</table>
Session Details

Use the Session Details to specify various settings for your 5250 Application Session:

<table>
<thead>
<tr>
<th>RAMP Window</th>
<th>Message Area</th>
<th>Screen Tracking Area</th>
<th>newlook Emulator Session</th>
<th>Screen and Script List</th>
</tr>
</thead>
</table>

- **Caption**
  - The caption of the RAMP 5250 Application Session.

- **Height**
  - The default height of 5250 screens when displayed in the Framework.

- **Width**
  - The default width of 5250 screens when displayed in the Framework.

- **Top**
  - The default distance between the top of the RAMP screen tab and the 5250 screen.
<table>
<thead>
<tr>
<th><strong>Left</strong></th>
<th>The default left indentation of the 5250 screen when displayed in the Framework.</th>
</tr>
</thead>
</table>
| **Top Mask Height** | The default height of a mask you can use to hide the top of the 5250 screen.  
You can use this option to Hide screen titles in RAMP Screens  
This option is not applicable to RAMP Web. |
| **Bottom Mask Height** | The default height of a mask you can use to hide the bottom of the 5250 screen. |
| **RAMP Screen Layout Style** | If RAMP Screen Layout Style is set to *Flow*, RAMP screens will be automatically resized to fit into the space available to display them.  
If *Flow* is used:  
• Specific positioning and sizing of screens is not supported,  
• Top and bottom masking of screen areas cannot be used to hide screen content.  
• You cannot use or show the function key blue bar.  
• Display Horizontal Scroll Bars and Display Vertical Scroll Bars options cannot be used for the obvious reasons.  
*Fixed* means the RAMP screens are not resized to fit into the space available to display them.  
Note that you can override this setting for individual destination screens. |
| **Scroll Bars** | If the *Display Horizontal Scroll Bars* option is checked, VLF.WIN applications will display horizontal scroll bars when a Fixed size 5250 screen will not fit in the display area. VLF-WEB/NET applications always act as if the *Display Horizontal Scroll Bars* option is checked.  
If the *Display Vertical Scroll Bars* option is checked, VLF.WIN applications will display vertical scroll bars when a Fixed sized 5250 screen will not fit in the display area. VLF-WEB/NET... |
| **Lock Framework when unknown 5250 form is displayed** | This option applies a lock to the Framework when an unknown 5250 screen is encountered. When a lock is applied, the user cannot move around within the Framework until they navigate to a defined 5250 screen. They can exit from (for example, shut down) the Framework when such a lock has been applied. Typically this option is used to trap unknown and/or unexpected 5250 screens. In highly defined and managed sessions, where every 5250 screen should have been defined to RAMP, set this option on. In unmanaged sessions always set this option off. |
| **Reuse existing connections user profile and/or password** | Use this option to indicate that when this 5250 application session needs to connect to a server it should reuse the same user profile and/or password details as were used to establish the last successful server connection. This option may be used to prevent the user from being prompted to input their user profile and/or password repeatedly for each new 5250 application session that needs to be started. Typically they are only prompted for the first application session they establish. This option may be automatically overridden by individual user profile options or by super-server connection values. The Framework remembers the last user profile and/or password used to establish a server connection only until the user exits from the Framework, at which point the details are lost. |
| **Always link this session to a server with User Object Name / Type** | Normally when a user needs to connect a 5250 application session they will be asked to choose which server they want to connect to. Use this option to prevent the user from having to, or being allowed to, making this server connection choice. Using it unconditionally links a 5250 application session with a server. |
To use this option first assign an unique *User Object Name / Type* to the server.

Use the Framework Administration menu Servers option to do this.

For example, this server has been assigned the User Object Name / Type SERVER_2.

Next, set the 5150 application session to use the same name (eg: SERVER_2).

Now the 5250 application session and the server with user object name/type SERVER_2 are *unconditionally linked*.

The user can no longer choose which server to associate the 5250 application session with.

To remove this option from a session set it back to the default value of blank.

| Special Field Handling | Advanced prompting facility for fields. You specify the name of the field to be prompted, the function key to be used and the Visual LANSAs form that is used as the prompter. For more information refer to Advanced Prompting |
Hide screen titles in RAMP Screens

In most cases 5250 screen titles are redundant in RAMP screens because the navigation elements in the Framework Window clearly indicate the object being worked with and the command being executed:

Therefore RAMP screens look more natural without titles in the Framework:
There are Two Ways to Hide the Title.
Two Ways to Hide the Title

You can hide the screen title either by moving the RAMP screen up so that the title is hidden or by applying a mask on the title to hide it.

You set the RAMP screen position and mask in the Session details of the Default Session in the RAMP Tools window:

You can override these settings for individual destination screens by changing the Layout Dimensions in the Destination Screen Details.

Moving the Screen

To move the screen up so that the title is hidden, set the Top property to a negative value:
Masking the Title

To mask the title, set the Top Mask Height property to a height that covers the title:
Destination Screen Details

<table>
<thead>
<tr>
<th>RAMP Window</th>
<th>Message Area</th>
<th>Screen Tracking Area</th>
<th>newlook Emulator Session</th>
<th>Screen and Script List</th>
</tr>
</thead>
</table>

When a **Destination Screen** is selected in the **Screen and Script List**, the details of the destination screen are shown:

You can specify these details for the destination screen:

**Grouping**

Optionally type a grouping name for this screen.

You can use this option to enter the same grouping name to related screens so that they can be sorted together in the **Screen and Script List**.
For more fundamental organization of screens and scripts, see *Organizing Screens and Scripts*.

<table>
<thead>
<tr>
<th>Default RAMP Layout Dimensions</th>
<th>Use these properties if you want to permanently override the default layout dimensions set in Session Details for this screen.</th>
</tr>
</thead>
</table>
| RAMP Screen Layout Style      | If RAMP Screen Layout Style is set to *Flow*, this screen will be automatically resized to fit into the space available to display it.  
If *Flow* is used:  
• Specific positioning and sizing of the screen is not supported,  
• Top and bottom masking of the screen area cannot be used to hide screen content.  
• You cannot use or show the function key blue bar.  
• Display Horizontal Scroll Bars and Display Vertical Scroll Bars options cannot be used for the obvious reasons.  
*Fixed* means the RAMP screen is not resized to fit into the space available to display it.  
*Session* means the value is inherited from the Session's properties. |
| Function Key Enablement       | This is a list of all the available function keys in 5250 screens.  
You can use the list to enable or disable function keys in the 5250 screen and also to enable or disable the runtime appearance of push buttons in the RAMP screen that have the same functionality as the corresponding function key.  
By default, when a screen is defined as a destination, all function keys are disabled and |
the corresponding buttons are enabled. This means that when the screen appears, pressing the function key will have no effect, but a corresponding button will appear on the RAMP screen which is functionally equivalent the function key in the original 5250 screen.

Note that function key enabling is only valid for those function keys already present in the 5250 screen.

For example, if a 5250 screen is designed to have function keys F1, F3, F6 and F12, enabling the F10 key will have no effect in the application since that key has no functionality in the original screen. However, you can still enable the F10 in the RAMP screen if you add your own script for it in the button script of the destination screen.

- To enable a function key, tick the check box in the Enable 5250 column.
- To display the function key as a button, tick the check box in the Enable VLF column.
- The captions of the buttons can be changed in the Caption column.

<table>
<thead>
<tr>
<th>Associated Command Handlers</th>
<th>The command handler tab where the RAMP screen will be attached. The command handler tabs are created when you prototype your application.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session</td>
<td>Specifies what System i 5250 session (ie: job) should be started for the screen. <em>AUTO</em>: is the default value and indicates that the Framework should manage the required 5250 session(s) automatically. This type of session is a managed session. It is</td>
</tr>
</tbody>
</table>
fully integrated with the Framework, applications, business objects and instance lists and all scripting facilities are available.

SESSION_A -> SESSION_Z: allow you to specify that an unmanaged session is to be started for the command handler or tab. Unmanaged sessions are primarily used to log the user on and then drive them to a specific starting point. From that point forward the user can move around inside the 5250 application in an unmanaged way. Since the session is unmanaged only very limited scripting capabilities exist. For example, a script in an unmanaged session can not access the business object instance list. Equally, when a user returns to an active command handler / tab that uses an unmanaged session it is simply redisplayed as it was when they last left it. No attempt to navigate them or execute any scripts is attempted (because it is unmanaged).

Unmanaged sessions are useful because they allow large pieces of an existing application to be reused in the Framework very rapidly. For example, an unmanaged session might be used as the only command associated with a business object named "System Tables". When the user clicks on "System Tables" in the Framework menu, a full screen 5250 session appears that logs the user on and then drives them to the 5250 menu that manages the maintenance of 50 (say) system tables. The entire "System Tables" facility composed of hundreds of 5250 screens (say) are now accessible in an unmanaged fashion, without the need to identify and enroll them in the Framework. If the users goes away from the "System Tables" tab and then come back
again later the current 5250 session screen, whatever it is, is just redisplayed. No attempt is made to navigate the screen (ie: manage it) because in all likelihood they will have left it on an undefined or unknown 5250 screen.

*In short, you should always use *AUTO .... unless you have a specific need to log a user on, drive them a defined starting point in the application, and then allow them to move around wherever they like within the 5250 application area.*

NOTE: When changing the session option ensure that you select associated command handler by clicking on it.

This command handler is not correctly selected:

☑ Email  Employees

and changes to the session will be ignored.

This command handler is correctly selected:

☑ Email  Employees

and changes to the session will be recorded.

You need to do this because sometimes a single destination screen is associated with multiple command handlers which can have different sessions, so you need to positively indicate the one you wish to work with.
Script Details

| RAMP Window | Message Area | Screen Tracking Area | newlook Emulator Session | Screen and Script List |

The Details area shows the details of the script selected in the Screen and Script List.

The scripts are most often generated automatically as you trace your application. Sometimes it is necessary to edit the scripts.

You can use the Using the Scripting Pop-up Menu to help you to format and edit your scripts.
Types of Screens

Classifying the screens in your 5250 application is the starting point in modernizing your application:

- A **Destination Screen** is the 5250 screen where the end-user performs actual work. These screens are snapped into the Visual LANSA Framework without any modification.
- A **Junction Screen** is used for navigation only. They are hidden in your modernized application.
- A **Special Screen** is a messages or other similar screen that does not fit the above two categories.
Destination Screen

A destination screen is a screen in which the end-user works with an object.

Destination screens can be reused without any modification in RAMP applications:
### Staff Management

**Employee**

<table>
<thead>
<tr>
<th>Employee Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1020</td>
<td>DOUGLAS ADAM PETER</td>
</tr>
<tr>
<td>A1234</td>
<td>JACKSON STEPHEN</td>
</tr>
<tr>
<td>A1001</td>
<td>JONES BEN</td>
</tr>
</tbody>
</table>

**Employee: Edit (A1234-JACKSON STEPHEN)**

<table>
<thead>
<tr>
<th>Employee Number</th>
<th>A1234</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee Surname</td>
<td>JACKSON</td>
</tr>
<tr>
<td>Given Name(s)</td>
<td>MICHAEL</td>
</tr>
<tr>
<td>Street No and Name</td>
<td>6 Melissa Place</td>
</tr>
<tr>
<td>Suburb or Town</td>
<td>West Pennant Hills</td>
</tr>
<tr>
<td>State and Country</td>
<td>NSW Australia</td>
</tr>
<tr>
<td>Home Phone Number</td>
<td>071-7773</td>
</tr>
<tr>
<td>Department Code</td>
<td>ADM</td>
</tr>
<tr>
<td>Section Code</td>
<td>04</td>
</tr>
<tr>
<td>Start Date (DDMMYY)</td>
<td>01/01/51</td>
</tr>
<tr>
<td>Termination Date (DDMMYY)</td>
<td>08/06/09</td>
</tr>
</tbody>
</table>

**Skill Code Details**

<table>
<thead>
<tr>
<th>Date Skill Acquired</th>
<th>Skill Code</th>
<th>Skill Description</th>
<th>Comments</th>
<th>Grs</th>
</tr>
</thead>
<tbody>
<tr>
<td>03/30/88</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>08/30/88</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Junction Screen
The end-user uses a junction screen to move to destination screens.

These navigation-only 5250 screens become invisible to the end-user in a RAMP application.
Typical junctions are:

- 5250 menus
- 5250 "work with" style screens, which are really just data driven menus.
- Most 5250 screens where keys such as order numbers, customer numbers, product numbers etc. are entered to display or action detailed information.
Special Screen

Special screens are message and other screens that do not fit in the category of either navigation or destination screens. These screens may appear unexpectedly at anytime in a 5250 screen flow. For example:

- The 5250 display message screen that appears at sign-on time
- The 5250 break message screen that may appear at any time
- Fatal error message screen(s) in your own applications.
- The 5250 resume interactive session screen.

Special screens usually have a script associated with them. The script is called an elimination script because this type of script usually sends a key or performs an action so as to eliminate the screen from the 5250 screen flow.

See Types of Scripts in RAMP for more information about elimination scripts.
**OBJECT-ACTION User Interfaces**

System i and Windows applications, including the Framework, share the same basic design for user interaction: Object-Action interfaces.

In these interfaces the user first selects and object and then the action to be performed on the object, as opposed to Action-Object interfaces (such as command line applications) where the command is specified first and its target object second.

Because of this fundamental similarity, System i applications fit naturally in the Framework model:

The navigation screens of a System i application are replaced by graphical elements in the Framework, such filters and instance lists, which the user can use to quickly locate the object they want to work with.

The options and associated screens in a typical Work with screen become a set of command tabs.

In the Framework the Object-Action model is expressed as a powerful graphical user interface (GUI).

**System i and Framework Applications Share the Basic Model**

The basic Framework concepts of business objects, filters and command handlers (screens) can be visualized in a System i application like this:
Here you have a:

<table>
<thead>
<tr>
<th>Filter</th>
<th>Where the Work with... command provides you with options to filter the list of objects that are displayed. (Many &quot;Work with xxxx&quot; interfaces allow you to filter inside the main display as well).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Object Instance List</td>
<td>The list of links that match your filter's search criteria. These links are your business objects.</td>
</tr>
<tr>
<td>Business Object Commands</td>
<td>The Options such as 2=Edit, 7=Rename, 8=Display that you can execute against an individual business object.</td>
</tr>
<tr>
<td>Command Handlers</td>
<td>The programs that execute when you execute a command (7=Rename or 8=Display attributes examples are shown).</td>
</tr>
</tbody>
</table>

In the Framework, the same concepts are visualized as a graphical user interface
(GUI) like this:
Modernization Issues

The most important and complex 5250 program in an application can become a modernization trap

How long will it take to RAMP my application?
The most important and complex 5250 program in an application can become a modernization trap

The biggest and meanest modernization trap involves the most important and usually most complex 5250 program in an application. In an ERP application this program handles Order Entry, in an Insurance application it is the Policy Master Update.

Every 5250 application has at least one of these big and mean 5250 programs. It is attractive and logical to involve this type 5250 program in any modernization proof-of-concept exercise on the simple basis that "if RAMP can handle this program then it can handle anything".

As a result a lot of time may be spent understanding the peculiarities of this program and scripting for them. This okay … unless handling it consumes excessive amounts of time and diverts all attentions away from the hundreds (or thousands) of other important 5250 programs that also need to be modernized. In this case it can become a trap.

- **An ISV site should consider**: Which program would be the very first one you would change to a new Visual LANSA component so as to best show off your modernized product to potential customers?

- **An in-house development site should consider**: Which program would the end-users gain the highest productivity and usability improvements from if it was changed to a new Visual LANSA component? What program, if it was replaced by something better, would garner the most management and end-user support for the modernization project?

The answer in both cases is quite probably the biggest and meanest 5250 program.

Why not consider replacing it with something better?

If this is true, then the next question should be: "Why are we spending all this time and effort trying to reuse it, instead of just starting to replace it with something better?"

The reason is obviously to avoid the time and cost involved in replacing it. However, if the commercial reality is that for various marketing, business and political reasons it will need to be replaced sooner rather than later, you should seriously consider doing it now, instead of spending an unreasonable amount of time trying to reuse it and allowing it to become the complete center of attention.
to the detriment of all the other 5250 programs that also need to be modernized.
How long will it take to RAMP my application?

Important Note: This answer refers to RAMP stage 2 only - reusing your existing 5250 screens. It has **nothing to do with RAMP stage 3** - replacing your 5250 screens with Visual LANSA components.

It depends on the approach you use. Imagine a simple 5250 application made up of four menus (or some other common access points) and 36 other screens like this:

We recommend you use this approach:

1. **Initially Perform a Rapid Navigation Modernization**
   
   In this example you would identify and define the four menus (or access points) A, B, C and D only, and snap them into RAMP as full screen destinations. The entire 5250 application, with its modernized navigation, **could now be deployed to your end users**.

   Normally you would also fully modernize at least some part of the application itself, to add more value to it.

   At this stage answering the question "**How long will it take to RAMP my application?**" is easy: Allow 15 minutes per menu (or common access point). So for this example, allow 4 x 15 minutes = **1 hour**.

2. **Now Perform Selective and Incremental Application Modernization**

   Now assess application areas A, B, C and D:
• How frequently are they used?
• Will full modernization increase end user productivity? How? What needs to be done?
• Will full modernization improve the end user experience? How? What needs to be done?
• Will full modernization aid the demonstration and marketing of your product? How? What needs to be done?

Based on these assessments you might decide to:
• Modernize application area A and deliver it to your users as an initial release.
• Later modernize 60% of application area C and deliver it to your users as a new version.
• Not fully modernize application area D at all, because it does not add business value.
• Finally, modernize 25% of application area B and deliver a final version to your users.

So answering the question "How long will it take to RAMP my application?" depends upon how you approach this step.

The question cannot be answered until you decide what parts need to be fully modernized, how much work needs to be done, and in what order.

**Key Points**

• Navigation modernization is very rapid.
• Application modernization takes longer, but adds significantly more value.
• You can deliver a modernized 5250 application incrementally. You don't have to do it all in one go.
• You are not forced to fully modernize all of a 5250 application just to use it in RAMP.
• Some parts of an application may never be fully modernized before they are replaced with new Visual LANSA components instead.
Tutorials

There are two very different ways of modernizing an application with RAMP:

- The steps described in the tutorial Modernizing a Complete Application is the most appropriate way of modernizing most applications.

- The alternative way is Modernizing Application Navigation. This approach is fast, but the resulting application does not make use of all the powerful features provided by the Framework user interface.

Scripting Tutorials show you how to manage your 5250 screens in the modernized application.
Modernizing a Complete Application

This tutorial introduces the key concepts required to modernize a complete application.

Modernizing a complete application is more complex and takes longer than just modernizing it's navigation.

The example chosen is taken from a simple personnel management system:

Application before Modernization - 2.5 minutes
Modernized Application - 2 minutes

This tutorial has these steps:

Identify your business objects - 1 minute
Create a prototype of your application - 3 minutes
Create a filter and snap it in - 4 minutes
Make a plan of the 5250 screens you will need to use - 2.5 minutes
Identify the relevant screens and fields to newlook - 4 minutes
Define the screens to the VLF and build a navigation script (New Employee) - 7.5 minutes
Define the screens to the VLF and build a navigation script (Employee Details) - 5 minutes
Link the Selected Employee in the Instance List with the Display Employee Screen - 4 minutes
Make Function Keys Go Somewhere Different - 4.5 minutes
Handle Unexpected Stops in Navigation and Messages - 3 minutes
Update the Instance List from 5250 Screens - 4 minutes

This tutorial is presented as a series of movies showing each step in the RAMP process. It is recommended that at the end of each movie you complete the outlined steps. This will reinforce the concepts and provide hands-on experience with RAMP. Some individuals may find it convenient to use a second machine or an extended desktop to view the movie while completing the tutorial.
Application before Modernization - 2.5 minutes

Play Movie to review the application before it was modernized or read the Movie Summary.
Movie Summary

For movie Application before Modernization - 2.5 minutes.
This movie shows a simple 5250 application for maintaining the details of employees which we are going to modernize.
It also introduces the concepts of Junction Screen and Destination Screen.
Modernized Application - 2 minutes

Play Movie to review the final output of this tutorial or read the Movie Summary.
**Movie Summary**

For movie *Modernized Application - 2 minutes*.

This movie shows how the modernized application we will create in the tutorial works:
Identify your business objects - 1 minute

Play Movie to learn how to identify your business objects or read the Movie Summary.
Movie Summary

For movie Identify your business objects - 1 minute

This movie shows how to work out what the business objects are for an application:

- See what words the end users use to describe what the system works with. These words are often reflected in the application menus and screen titles.
- In our sample application the users work with the details of Employees, so we decide we will create an Employees business object.
Create a prototype of your application - 3 minutes

Play Movie to learn how to create a prototype of your application or read the Movie Summary.
Movie Summary

For movie Create a prototype of your application - 3 minutes.
This movie shows how to create a prototype of the modernized application:

- Start the Instant Prototyping Assistant
- Create business object _Employees
- Create two actions New and Details
- Associated the actions with _Employees
- Create a subsystem called Personnel and put the _Employees business object in it

See Also:
Start the Instant Prototyping Assistant
Create a filter and snap it in - 4 minutes

Play Movie to learn how to create a filter and snap it in or read the Movie Summary.
**Movie Summary**

For movie *Create a filter and snap it in - 4 minutes*

This movie shows how to create a filter that locates employees:

**Create code for filter**

- Start the Program Coding Assistant
- Choose *Filter that searches by all logical views*
- Enter the name of the physical file that most resembles the business object: *PSLMST*
- The code assistant generates the code for the filter program
- Use the Copy to Clipboard button

**Create filter reusable part**

- Open the Visual LANSA development environment and:
- Create a new reusable part, call it by any unique name and give it a description
- Paste the generated code from the clipboard into the Source tab for the reusable part
- Compile it

**Snap in the filter**

- Return to the Visual LANSA Framework
- Close the Coding Assistant window
- Bring up the properties of the _Employees business object
- Go to the Filters tab and select the filter for this business object and snap in a real filter choosing the reusable part we just created
- Close the properties window, and save the Framework

You now have a real working filter. If you enter a value, all the matching employees will be loaded into the instance list.
See Also:

Start the Program Coding Assistant
Make a plan of the 5250 screens you will need to use - 2.5 minutes

Play Movie to learn how to make a plan of the 5250 screens you will need to use or read the Movie Summary.
Movie Summary

For movie Make a plan of the 5250 screens you will need to use - 2.5 minutes. This movie shows how to make a plan of the screens that will be used:

- Draw a diagram of all the screens that you want to use
- Create a naming standard for screens and keep the names less than 32 characters.
- Assign a unique name to all the screens to be used as the form name in newlook (newlook must be able to differentiate all these screens, even though some have the same title)
- Decide which fields have data added to them as part of the navigation process and give these fields a name that is unique within the screen.

You now have a diagram that sets out what you have to define in newlook:
Identify the relevant screens and fields to newlook - 4 minutes

Play Movie to learn how to identify the relevant screens and fields to newlook, or read the Movie Summary.
Movie Summary

For movie Identify the relevant screens and fields to newlook - 4 minutes.
This movie shows how to identify the screens and fields in newlook. Use the diagram created in the previous step for naming (see Movie Summary):

Start newlook Client

• And then do the following for every screen:

Identify the screen

• Choose the Identify option in the Tools menu
• Check that the newlook screen identification area adequately identifies the screen (If the current recognition area is not sufficient to distinguish this screen, select a larger area, and use the pop-up menu to mark it as Screen Id.
• Save using the form name

Name the screen

• Choose the Designer option in the Tools menu
• Name the screen (form). The easiest way to do this is to double-click on an unused area of the screen, and edit the Name property of the form object. Note that names are case-sensitive, can be maximum 256 characters and do not allow trailing blank spaces.
• Right-click all fields on the form that are used for navigation (if any) to display their properties.
• Use the name property of the fields to identify them. For example on the Sign-on screen name the User field utxtProfile and the Password field utxtPassword.

Use the diagram in this Movie Summary to see which screens and which fields on the screens you need to identify.
Repeat these steps for each screen.
Define the screens to the VLF and build a navigation script (New Employee) - 7.5 minutes

Play Movie to learn how to define the screens to the VLF and build a navigation script (New Employee) or read the Movie Summary.
Movie Summary
For movie Define the screens to the VLF and build a navigation script (New Employee) - 7.5 minutes.
This movie shows you how to define screens and track navigation to the New Employee screen.

Track navigation to New Employee screen
- Start RAMP Tools and start newlook.
- Connect to newlook server and sign on
- Display the Personnel Menu by typing this command on the command line on the IBM i Main menu screen:

```
lansa run plsys partition(dem)
```

- Select the New Employee option
- Once in the New Employee screen cancel back to Sign Off so that the Framework can track the navigation

Remember to choose menu options by typing in the number and pressing Enter (if you click on a menu option with the keystroke tracking can't follow this).

Define screens
- The sign-on screen and all menu screens as Junction Screens
- The uDisplayMessages as a Special Screen
- The uNewEmployee as a Destination Screen

Generate scripts
- For every screen, use the pop-up menu options to generate scripts based on the tracking information

Specify the command tab where the screen is displayed
- Select the uNewEmployee destination screen and locate and check Employees - New on the list of commands for all the business objects on the right-hand panel
- Save the Framework using the Save Framework button
Close and restart the Framework

- You will see the New Employee screen snapped in the Framework

Also See

Screen Tracking Area
Destination Screen Details
Define the screens to the VLF and build a navigation script (Employee Details) - 5 minutes

Play Movie to learn how to define the screens to RAMP and build a navigation script to the Display Employee screen, or read the Movie Summary.
Movie Summary
For movie Define the screens to the VLF and build a navigation script (Employee Details) - 5 minutes.
This movie shows you to define screens and track navigation to the Display Employee screen.

Track navigation to Employee Details screen

- Start the RAMP tools and connect to newlook
- On the Personnel Menu type 3 to select Display Employee option
- Enter the identifier of any employee on the Find Employee Screen
- The destination screen uDisplayEmployee is displayed
- Go back along the pathway of screens so the Framework can track the navigation
- Notice F12 has taken us back from uDisplayEmployee directly to uPersonnelMenu, bypassing Find Employee. We need to go to Find Employee and use F12 from there to show the Framework how to get back from uFindEmployee

Define screens

- uFindEmployee as a Junction
- uDisplayEmployee as a Destination

Generate scripts

- Use the pop-up menu to automatically generate scripts based on the tracking information

Specify the command tab where the screen is displayed

- Associate the Employee Details screen with the Details command for the Employees business object.

Start the screen in edit mode

After closing and restarting, the Employee Details screen is working. However, to change an employee's details you have to first click on the Change button.
In Windows screens are usually shown in edit mode. To do this:

- Start RAMP Tools
- Locate the Invoke script for uDisplayEmployee destination
- Find the last line in the script, and add an instruction to automatically press F21. That will put it into edit mode:

```plaintext
/* Send the key required to navigate to uDisplayEmployee
SENDKEY(KeyEnter);

/* Send the key required to navigate to put the screen into edit mode
SENDKEY(KeyF21);
```

Now, when the user clicks on an employee, they can edit the details straight away.

Also see:

Invoke Script
Link the Selected Employee in the Instance List with the Display Employee Screen - 4 minutes

Play Movie to learn how to link the selected employee in the instance list with the Display Employee screen, or read the Movie Summary
Movie Summary

For movie Link the Selected Employee in the Instance List with the Display Employee Screen - 4 minutes.

This movie shows how to display the details of the employee selected in the instance list.

If we select an employee and the Details command, the invoke script of the screen executes and RAMP navigates through a number of junction screens and then shows us the uDisplayEmployee screen.

However, regardless of which employee we click on in the instance list, the details one and the same employee are shown. This is because the invoke script contains the hard coded number of the employee we chose when tracking navigation.

Change the Invoke script to display details for current employee

To change the script so it shows the details of the currently selected employee:

- Start RAMP tools
- Locate the invoke script for the uDisplayEmployee destination screen

Here is the line where the hard coded value for the employee identifier is entered into the Employee Code field:

```
SETVALUE("utxtEmployeeCode", "A1004");
```

To substitute the employee identifier with the currently selected entry:

- Select "A1004" including the quotes
- Right-click and choose Current Instance List entry
- Select Alpha Key 1 from the submenu

This replaces the hard coded value with a special value that will contain the identifier of the employee that the user has selected:

```
SETVALUE("utxtEmployeeCode", objListManager.AKey1[0]);
```

Save the changes to the script. The Display Employee screen now shows the details of the employee selected in the instance list.
Also See

Replacing Hardcoded Employee Number with Current Instance List Entry
Invoke Script
SETVALUE Function
Make Function Keys Go Somewhere Different - 4.5 minutes

Play Movie to learn how to make function keys go somewhere different or read the Movie Summary.
Movie Summary
For movie Make Function Keys Go Somewhere Different - 4.5 minutes.
This movie shows how to automatically redisplay the Display Employee screen after the user has made a change and pressed Enter. It also shows how to hide function keys and buttons which are not required.

Automatically redisplay the screen
When the user edits an employee and presses Enter, they return to the Find Employee screen. We want to change this so that the Display Employee screen is redisplayed (this is how Windows typically works).
To redisplay the edit screen we locate the Button Script for the Display Employee destination and change it so that when the user presses Enter:

- First we tell RAMP to press Enter to go to the Find Employee screen
- Then we set the value of the employee code field on the Find Employee screen in the same way as in the previous tutorial
- And then press Enter to go to the Display Employees screen
- Lastly to start edit mode we add a script instruction to press F21
This is the code:

```plaintext
... 
Case KeyEnter: 
    SENDKEY(KeyEnter);
    SETVALUE("utxtEmployeeCode", objListManager.AKey1[0]);
    SENDKEY(KeyEnter);
    SENDKEY(KeyF21);
... 
```

Hide function keys and buttons
We also hide most of the buttons that are displayed on Display Employee because they are not required:

- Display the Destination Screen Details for Display Employee
- Disable and hide all buttons except Enter
- Change the caption of the Enter button to Save
Now save your changes and restart the Framework.
If you now change some employee details to valid values and press Save, the Display Employee screen is redisplayed.
Handle Unexpected Stops in Navigation and Messages - 3 minutes

Play Movie to learn how to handle unexpected stops in navigation and messages or read the Movie Summary.
Movie Summary

For movie Handle Unexpected Stops in Navigation and Messages - 3 minutes.
This movie shows how to handle unexpected stops in the navigation and how to issue messages.

Handle unexpected stops

If the employee details entered by the user are invalid, the user stays on the Display Employee screen instead of going to the Find Employee screen, and consequently our script instructions for handling the Enter key will be wrong. We need to change the script so that if it detects that the user did not get to the Find Employee screen, it stops and takes no further action. To do this:

Go to the Button Script for the uDisplayEmployee Destinations and locate the SENDKEY(EnterKey) statement which takes us to the Find Employee screen.
Add this line under the SENDKEY statement to check if we actually got to the Find Employee screen and to end the script with a return if we did not:

```
if ( CURRENT_FORM() != "uFindEmployee" ) return;
```

Issue a message

If we get past this line, we can assume that the employee details were successfully saved and issue a message. To do this add this line after the if statement:

```
ALERT_MESSAGE("Employee ", objListManager.AKey1[0] , " has been saved.");
```

Commit your script changes and then save and restart the Framework.
Now, if we attempt to save an employee with invalid data, the script stops and the Display Employee screen is redisplayed.
If we abandon changes for that employee, click on another employee and successfully save the details, we get the message we created and the script continues on around to the Display Employee screen again.
Update the Instance List from 5250 Screens - 4 minutes

Play Movie to learn how to update the instance list from 5250 screens or read the Movie Summary.
Movie Summary

For movie Update the Instance List from 5250 Screens - 4 minutes.
See topic Updating the Instance List from RAMP screens which summarizes the information in this movie.
Modernizing Application Navigation

This tutorial introduces the key concepts and steps required to modernize the navigation of an existing 5250 application.

This is the simplest and most rapid way to modernize an application and must be distinguished from modernizing a complete application, which is a more complex task.

However, it should be noted that in many cases modernizing a complete application yields better modernization results because it introduces more powerful means of organizing and accessing information.

The examples used in this tutorial are from the I5/OS operating system. These I5/OS objects are used:

- Job Queues
- Output Queues
- IFS Folders
- System Jobs

These objects were chosen because all System i users are familiar with them. Note however that the concepts in this tutorial apply equally to commercial business objects like Products, Orders, Customers, Invoices, Policies, etc.

To review the final output of this tutorial see Modernized Navigation - 5 minutes.

This tutorial has these steps:

Create a Prototype of Your Application - 9.5 minutes
Identify Your 5250 Entry Point Screens Using newlook - 13 minutes
Script the Screens and Snap them in the Framework - 16 minutes
Modernized Navigation - 5 minutes

Play Movie to review the final output of this tutorial or read the Movie Summary.
Movie Summary

For movie Modernized Navigation - 5 minutes.

This movie shows the modernized application we will create in the tutorial:
Create a Prototype of Your Application - 9.5 minutes

Play Movie to learn how to prototype your application or read the Movie Summary.
Movie Summary

For movie Create a Prototype of Your Application - 9.5 minutes.
This movie shows how to create a prototype of the modernized application.

Create a prototype application

- Start the Instant Prototyping Assistant
- Create business objects Job Queues, Output Queues, IFS Folders and System Jobs
- Create action Work With
- Associate Work With with all the four new business objects
- Create application iSeries Server and add the four business objects to it

Remove Filters

The Program Coding Assistant automatically creates filters for new business objects. In this tutorial we do not need them.
To remove the filters perform these steps for all the four business objects:

- Display the properties of the business object
- On the Filters tab select and delete the filter
- On the Commands Enabled tab change the Work with command to be a Business Object Command
- On the Command Display tab change the Object Command Presentation option to Use All Of The Window
- Save and restart the Framework

Execute your application prototype. Optionally type in text and insert images to the prototype screens so you can explain your proposed design to others.
Identify Your 5250 Entry Point Screens Using newlook - 13 minutes

Play Movie to learn how identify your 5250 entry point screens or read the Movie Summary.
Movie Summary

For movie Identify Your 5250 Entry Point Screens Using newlook - 13 minutes.

This movie shows how to identify 5250 screens and fields on them so that we can reference them in the Visual LANS Framework.

In this tutorial you identify these screens and fields:

<table>
<thead>
<tr>
<th>Screen</th>
<th>Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sign On</td>
<td>User profile and password</td>
</tr>
<tr>
<td>Attempt Recovery</td>
<td>Menu option</td>
</tr>
<tr>
<td>Sign Off</td>
<td></td>
</tr>
<tr>
<td>Display Messages</td>
<td></td>
</tr>
<tr>
<td>I5/OS Main Menu</td>
<td>Command to execute</td>
</tr>
<tr>
<td>WRKJOBQ</td>
<td></td>
</tr>
<tr>
<td>WRKOUTQ</td>
<td></td>
</tr>
<tr>
<td>WRKLNK</td>
<td></td>
</tr>
<tr>
<td>WRKACTJOB</td>
<td></td>
</tr>
</tbody>
</table>

Identify the screens

- Start newlook 8.0

Then for every 5250 screen:

- Navigate to the screen
- Select the Designer option in the Tools menu
- Double-click the screen and assign a name to it (using the Form Name property) and when required, also for the fields on the screen
- Close the Designer using the File menu
- Specify a name for the screen and save
• Proceed to the next screen

You can do the naming at any time in any order and you don't have to name all the forms and fields in a single session.

Also See

Start newlook
Script the Screens and Snap them in the Framework - 16 minutes

[Play Movie] to learn how to script screen navigation and snap screens in the Framework or read the Movie Summary.
Movie Summary

For movie Script the Screens and Snap them in the Framework - 16 minutes

This movie shows how to script the 5250 screens and snap them to the Framework.

- (It first shows a quick tour of the RAMP Window)

Track Navigation

- Start newlook in the RAMP window
- Connect to the System i server
- Demonstrate to RAMP the navigation from the I5/OS main menu to WRKLNK, WRKJOBQ, WRKOUTQ and WRKACTJOB and back
- Sign off from the System i server

Define screens

- For every screen, click on the message that says the screen is unknown
- Define the Sign-on screen and the Main menu as Junction Screens
- Define WRKLNK, WRKJOBQ, WRKOUTQ and WRKACTJOB as Destination Screens
- Define Display Messages as a Special Screen

Create scripts

- Use the pop-up menu to automatically create scripts for all the screens

Enable Function Keys

- Select the WRKLNK screen in the Screen and Script List
- In the Destination Screen Details check Page Up and Page Down in the Enable for NL column in the Function Key Enablement Group so that the user can use these keys from the keyboard.
• Repeat this step for the other three destination screens

**Specify the command tab where the screen is displayed**
• In the *Associated Command Handlers* list associate the screens with the command tab:

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WRKJOBQ</td>
<td>Job Queues - Work With</td>
</tr>
<tr>
<td>WRKOUTQ</td>
<td>Output Queues - Work With</td>
</tr>
<tr>
<td>WRKLINK</td>
<td>IFS Folders - Work With</td>
</tr>
<tr>
<td>WRKACTJOB</td>
<td>System Jobs - Work With</td>
</tr>
</tbody>
</table>

**Specify a different Session Option for every screen**
To execute the destination screens in separate sessions select the *Session* options SESSION_A, SESSION_B, SESSION_C and SESSION_D for the four destination screens respectively (normally the default value *AUTO is used which means the Framework will automatically determine the correct session)

Note that in addition to selecting the checkbox in front of the associated command handler you also need to click its name so that it is highlighted when you specify the Session Option.

**Save and Restart the Framework**
Open the System i Server application and click on any of the four business objects to start a new 5250 session to the System i server and display the modernized 5250 screen.
Scripting Tutorials

General
  Introduction to Scripts - 6.5 minutes
  Reading, Writing and Storing Values in Scripts - 4 minutes
  Debug and Diagnostics - 2.5 minutes

Subfile Handling
  Not Using a Datagrid Control - 1 minute
  Using Subfile Accessor - 5 minutes
  Subfile Direct Access - 2 minutes
Scripting

RAMP manages the 5250 screens in the modernized application with scripts.

Learning
Using
Debugging
Learning

The movie Introduction to Scripts - 6.5 minutes shows you how to learn scripting basics.

Types of Scripts in RAMP introduces you to RAMP scripts.

You also need to know how to Generate Scripts Automatically because this is how most scripts are created.

The movie Reading, Writing and Storing Values in Scripts - 4 minutes shows how to pass values to and from your screens.

Javascript Essentials teaches you some basic techniques you will often use when writing scripts.
Introduction to Scripts - 6.5 minutes

Play Movie to learn scripting basics or read the Movie Summary.
**Movie Summary**

For movie *Introduction to Scripts - 6.5 minutes*

Scripts are usually created automatically in RAMP, but to deal with them confidently you need to understand some scripting basics. This movie introduces Javascript, the types of scripts in RAMP and tracing:

**Basic Javascript syntax**

- Comments are marked with /* */
- Lines are ended with a semicolon (;)
- Literals are enclosed in double-quotes ("")
- There are Framework Objects that Scripts Can Refer To
- The structure of the conditional switch statement is:

```javascript
switch(n)
{
    case 1:
        execute code block 1
        break
    case 2:
        execute code block 2
        break
    default:
        code to be executed if n is different from case 1 and 2
}
```

**Types of scripts in RAMP**

The movies shows:

- The interaction between Invoke Scripts and Return Scripts
- Button Script
- Eliminate Script

**Application level tracing**

- Use the Tracing option in the Framework menu to start Application Level
Tracing
## Types of Scripts in RAMP

There are different types of RAMP scripts for different types of screens:

| Destination Screens | An **Invoke Script** indicates how the destination screen should be invoked (or accessed). This script is the key to how the Framework manages screen navigation.  
|                     | A **Return Script** indicates how to cancel the screen and get back to the nearest junction screen.  
|                     | A **Button Script** indicates how buttons clicked by the user should be handled. |
| Junction Screens    | A **Navigate Script** indicates how to navigate from one screen to another |
| Special Screens     | An **Eliminate Script** indicates how to hide them. |

For a basic scripting example, also see [Scripts in a Classic Details Display](#).
Scripts in a Classic Details Display

This example shows how two very simple 5250 screens are modernized in RAMP.

The first screen GETORDER asks for an order number to be input and the second screen SHOWORDER displays the order details:

The user repeats order inquiries by using the F12 function key.

Modernized Version

To modernize the application we identify the 5250 screens and script their interaction to RAMP:

- The GETORDER screen becomes a junction screen. It will not be displayed.
- The SHOWORDER screen becomes a destination screen.
In the modernized application the user selects orders from the instance list and the SHOWORDER screen shows the details of the selected order.

SHOWORDER has three scripts:

- The **Invoke Script** which displays the SHOWORDER screen.
- A **Return Script** which contains a single executable line to cancel out of the SHOWORDER screen.
- A **Button Script** which will not be executed for SHOWORDER because all function keys are hidden and disabled in this screen (the user just clicks on different orders up in the instance list to display the details of a different order.)

Every time a user clicks on an order in the instance list, the SHOWORDER's return script is executed to return to the navigation network. Once there, the invoke script is executed to display the SHOWORDERS screen with the details of the selected order.
Invoke Script

Every Destination Screen has an invoke script which controls how it is displayed. Here is an example of a script that invokes a SHOWORDER screen when an order is selected in the instance list:

```
/* Navigate to the nearest junction - GETORDER */
NAVIGATE_TO_JUNCTION("GETORDER");
/* Check for correct arrival at GETORDER. */
if ( !(CHECK_CURRENT_FORM("GETORDER", "Unable to navigate to form GETORDER")) ) return;
/* Set the order number field on GETORDER*/
SETVALUE("ORDERNUMBER", objListManager.AKey1[0] );
/* Send the key required to display screen SHOWORDER*/
SENDKEY(KeyEnter);
/* Check for correct arrival at SHOWORDER*/
if ( !(CHECK_CURRENT_FORM("SHOWORDER", "Unable to display order number in SHOWORDER")) ) return;
```

First the script navigates to the 5250 junction screen GETORDER which is used to select which order is to be shown:

```
NAVIGATE_TO_JUNCTION("GETORDER");
```

It then makes sure that we get to the GETORDER screen. If this check fails an error message is shown:

```
if ( !(CHECK_CURRENT_FORM("GETORDER", "Unable to navigate to form GETORDER")) ) return;
```

Next the script retrieves the current order number from the instance list to the GETORDER screen. Typically you need to edit this part of the script (see Replacing Hardcoded Employee Number with Current Instance List Entry):
SETVALUE("ORDERNUMBER", objListManager.AKey1[0]);

And then presses the Enter key to process the GETORDER screen:

SENDKEY(KeyEnter);

Finally the script makes sure that screen SHOWORDER has arrived back from the System i and is ready to be displayed. If this check fails, an error message is shown:

if ( !(CHECK_CURRENT_FORM("SHOWORDER", "Unable to display order number " + objListManager.AKey1[0] )) ) return;

Also See:

NAVIGATE_TO_JUNCTION Function
CHECK_CURRENT_FORM Function
SETVALUE Function
SENDKEY Function
Return Script

Every Destination Screen has a return script which indicates how to exit the destination screen:

```
/* Navigate back to the nearest junction GETORDER */

SENDKEY(KeyF12);  
```

The return script shows how to go back to the nearest junction and onto the navigation system. It probably contains just a single executable line:

```
SENDKEY(KeyF12);  
```

The return script does not necessarily have to go back via the junction where it was originally invoked from, but typically it does.

Also See:
SENDKEY Function
**Button Script**

Every **Destination Screen** has a button script which indicates how the function keys the user presses or the buttons the user clicks should be handled:

```c
/* Handle function keys and buttons for wrkjobq */
switch (objScriptInstance.FunctionKeyUsed)
{
    case KeyEnter:
        SENDKEY(KeyEnter);
        break;
    case KeyF3:
        SENDKEY(KeyF3);
        break;
    case KeyF4:
        SENDKEY(KeyF4);
        break;
    case KeyF5:
        SENDKEY(KeyF5);
        break;
    case KeyF12:
        SENDKEY(KeyF12);
        break;
    case KeyF24:
        SENDKEY(KeyF24);
        break;
    default:
        SENDKEY(objScriptInstance.FunctionKeyUsed);
        break;
}
```

When you generate a button script from tracking information, every key present on the screen is handled in a series of SENDKEY functions in the script.

...  
```c
    case KeyEnter:  
        SENDKEY(KeyEnter);  
    ...  
```

If you disable a key in the **Destination Screen Details** the script for it does not get executed.

In most situations navigational 5250 function keys like F12=Cancel and F3=Exit should be disabled and not shown because they are not required in
Windows navigation and tend to just confuse users.
You can also add buttons or function keys which are entirely processed on the client system and never sent back to the server. To do this you enable them in the Destination Screen Details and then add handling for them in the button script.
Also See:
SENDKEY Function
Navigate Script

Junction Screens control application navigation but are never shown to the user. These screens have navigate scripts associated with them which control the navigation to and from the junction screen.

This example script selects menu option 3 on a menu, emulates the pressing of the enter key and checks that the correct screen is displayed:

```
// Set up data fields on form PersonnelSystemMainMenu */
SETVALUE("uTXTMenuOption","3");
// Send the key required to navigate to uSelectEmployee */
SENDKEY(KeyEnter);
// check for arrival at uSelectEmployee */
if ( !(CHECK_CURRENT_FORM("uSelectEmployee","Unable to display form uSelectEmployee")) )
```

Typically there are one or more scripts navigating away from a junction screen towards other junctions and one or more scripts navigating towards it from other junctions.

Collectively these scripts define a navigation network between junctions.

Also See:

- SETVALUE Function
- SENDKEY Function
- CHECK_CURRENT_FORM Function
**Eliminate Script**

*Special Screens* have an eliminate script associated with them. These scripts define what is to happen whenever a special screen appears so as to eliminate it from the 5250 data stream and make it invisible to other scripts.

This script eliminates the display of the system messages screen:

```
/* */
SENDKEY(keyenter);
```

Also See:

SENDKEY Function
Generate Scripts Automatically

After you have tracked the navigation in your application using RAMP Tools, you can automatically generate scripts using the tracking information.

To generate scripts, click on the messages in the Message Area and use the pop-up menu.

To see how it is done you can play the tutorial movie Define the screens to the VLF and build a navigation script (New Employee) - 7.5 minutes.

The best sequence for choreographing 5250 screen interactions is to:

- Track all the appropriate 5250 screen interactions in the navigation path.
- Go down through the tracking area and classify every screen as a destination, special, junction, etc.
- Go down through the tracking area again and for each screen ask for the scripts to be automatically generated.
Reading, Writing and Storing Values in Scripts - 4 minutes

Play Movie to learn how to read and write values in scripts and how to store them as variables or as properties of objects or read the Movie Summary.
**Movie Summary**

For movie *Reading, Writing and Storing Values in Scripts - 4 minutes*

This movie shows how you can read, write and store values in scripts.

**Reading values**

Scripts can read values from the instance list like this:

```javascript
myVariable = objListManager.Akey3[0];
```

See [Visual and Programmatic Identifiers](#).

If the user has selected several entries in the instance list, you can read all the values in a loop like this:

```javascript
var i = 0;
var strMessage = "";
for (i = 1; i <= objListManager.TotalSelected; i++)
{
    strMessage += "Selected Employee " + objListManager.AKey3[i] + " ";
}
alert(strMessage);
```

Or from a field defined on a 5250 screen like this:

```javascript
MyVariable = GETVALUE("utxtEmployeeCode");
```

**Writing values**

The script can put values on the screen like this:

```javascript
SETVALUE("utxtEmployeeCode", "myText");
```

**Storing values**

You can store values in Javascript variables and then read and write from them:

```javascript
Var MyString = ""
MyString = objListManager.Akey3[0];
```

These variables exist only while the script is running. To share information
between scripts, you need to create and set a property for `objGlobal`:

```
objGlobal.uLastValue = "anything";
```

Then another script can read this value:

```
myVariable = objGlobal.uLastValue;
```

**Getting script pieces quickly**

*Using the Scripting Pop-up Menu*
Javascript Essentials

RAMP manages the 5250 screens in the modernized application with JavaScript scripts.

JavaScript is the most commonly used scripting language in the world. You can also use Microsoft's JScript extension. Note that JavaScript skills can be used in many other contexts such as LANSAna for the Web and HTML manipulation. This section describes some Javascript essentials:

External JavaScript Documentation

Alert()

Converting Numbers to Strings

Converting String to Numbers

String Manipulation Functions

Is This Variable Number or String?

Using the objGlobal Object
External JavaScript Documentation

Put this link behind an icon on your desktop for instant access to formal JavaScript documentation:

http://www.w3schools.com/jsref/

There are also many good books available (such as JavaScript Bible by Danny Goodman, ISBN 0-7645-3188-3).
Alert()

The Alert() function is your most useful tool for debugging errant scripts.
For example:

Alert("About to send the enter key");
Alert("The value of x is " + x.toString());
Alert("The customer number is " + objGlobal.CustomerNumber);

Also See

Strange behavior in scripts
Object expected
Converting Numbers to Strings

If you have a number in JavaScript variable and you want to convert it to a string use the toString() function. For example:

```javascript
var number = 5.65;
var stringnumber = number.toString();

alert(stringnumber);

SETVALUE("Amount",stringNumber);
SETVALUE("Amount",number.toString());
```
Converting String to Numbers

If you have a string and want to convert it to a number then use the parseInt() method. For example this script returns integer values containing 1234 and 43 respectively into X:

```javascript
X = parseInt("1234",10);
X = parseInt("34abc",10);
```

The second argument (10) specifies you want to use a base 10 numbering system. It's unusual to use anything for this parameter except 10 and you should always specify it as the default is a bit unpredictable. (See, for example, http://www.w3schools.com/jsref/jsref_obj_global.asp if you are interested as to why)

If you need to have decimals then use parseFloat(). For example this script returns floating point values 1234.345 and 34.7 respectively into X:

```javascript
X = parseFloat("1234.345");
X = parseFloat("34.7abc");
```

Remember that these are floating point values so they are not always as accurate or as predictable as signed or packed decimals numbers.
String Manipulation Functions

String variables in JavaScript have a number of very useful string functions. Here's a sample of the most commonly used:

<table>
<thead>
<tr>
<th>Operation / Function</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Concatenation (+)</strong></td>
<td>var S1 = &quot;Customer&quot;; var S2 = &quot;123456&quot;; var S3 = S1 + &quot; &quot; + S2 + &quot;could not be found&quot;; puts <em>Customer 123456could not be found</em> in variable S3.</td>
</tr>
<tr>
<td><strong>IndexOf</strong> – finds first occurrence of a string in a string</td>
<td>/* 012345678901 */ var S1 = &quot;ABCDHELLOABC&quot;; var pos = S1.indexOf(&quot;HELLO&quot;); will put the number 4 into variable pos.</td>
</tr>
<tr>
<td><strong>lastIndexOf</strong> - finds last occurrence of a string in a string</td>
<td>/* 012345678901 */ var S1 = &quot;ABCDHELLOABC&quot;; var pos = S1.lastIndexOf(&quot;AB&quot;); will put the number 9 into variable pos.</td>
</tr>
<tr>
<td><strong>charAt</strong> – returns the character at a specific position in a string</td>
<td>/* 012345678901 */ var S1 = &quot;ABCDHELLOABC&quot;; var S2 = S1.charAt(4); var S3 = S1.charAt(9); will put &quot;H&quot; into S2 and &quot;A&quot; into S3.</td>
</tr>
<tr>
<td><strong>length</strong> – returns the length of a string</td>
<td>/* 012345678901 */ var S1 = &quot;ABCDHELLOABC&quot;; var I = S1.length; will put the number 11 into variable I.</td>
</tr>
<tr>
<td><strong>substring</strong> – returns the</td>
<td>/* 01234567789 */</td>
</tr>
<tr>
<td>Function</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>substring</td>
<td>Creates a new string consisting of the characters from <code>start</code> to <code>end</code>.</td>
</tr>
<tr>
<td>var a = &quot;Hello World&quot;;</td>
<td></td>
</tr>
<tr>
<td>var b = a.substring(4,8);</td>
<td></td>
</tr>
<tr>
<td>will put &quot;o Wor&quot; into b.</td>
<td></td>
</tr>
</tbody>
</table>

**substr** – returns the substring of a string using a starting position and a length

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>/* 01234567789 */</td>
<td>substr function</td>
</tr>
<tr>
<td>var a = &quot;Hello World&quot;;</td>
<td></td>
</tr>
<tr>
<td>var b = a.substr(2,3);</td>
<td></td>
</tr>
<tr>
<td>will put &quot;llo&quot; into b.</td>
<td></td>
</tr>
</tbody>
</table>

**toLowerCase** – returns the lowercase of string

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>var a = &quot;Hello World&quot;;</td>
<td></td>
</tr>
<tr>
<td>var b = a.toLowerCase();</td>
<td></td>
</tr>
<tr>
<td>will put &quot;hello world&quot; into b.</td>
<td></td>
</tr>
</tbody>
</table>

**toUpperCase** – returns the uppercase of a string

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>var a = &quot;Hello World&quot;;</td>
<td></td>
</tr>
<tr>
<td>var b = a.toUpperCase();</td>
<td></td>
</tr>
<tr>
<td>will put &quot;HELL WORLD&quot; into b.</td>
<td></td>
</tr>
</tbody>
</table>

There are more string functions like these available. See: [http://www.w3schools.com/jsref/jsref_obj_string.asp](http://www.w3schools.com/jsref/jsref_obj_string.asp) for more details.
Is This Variable Number or String?

Sometimes you have a variable in Javascript and do not know whether it is a number or a string. You can test the type of a variable by using the typeof() operator like this:

```
Var x = 1.234;
Var y = "Hello";
Var Type1 = typeof(x);
Var Type2 = typeof(y);

Alert(Type1 + " and " + Type2);
```

This code displays the message "number and string".

There are six possible values that typeof returns: "number," "string," "boolean," "object," "function," and "undefined." The most useful are "number", "string" and "undefined".

"undefined" is useful because it tells you that something does not exist yet (ie: it's undefined) so sometimes you see code like this:

```
if (typeof(objGlobal.CustomerNumber) = "undefined"))
objGlobal.CustomerNumber = "12345";
```
Using the objGlobal Object

objGlobal is one of the Framework objects that scripts can refer to. Its purpose is to store your own properties.

This section shows some techniques in using it:

- Getting Organized
- Using objGlobal to pass optional parameters
- Using objGlobal to pass optional parameters to an INVOKE script
- Using objGlobal to define commonly used functions
Getting Organized

If you make a lot of use of the objGlobal object then you should look to organizing its use in some way. One way is to divide it up into multiple sub-objects by application or usage.

For example, if you did this in your logon script:

```javascript
objGlobal.AppA = new Object();
objGlobal.AppB = new Object();
objGlobal.AppC = new Object();
```

Then in your scripts you could make sure your references do not accidentally interfere with each other.

Using *objGlobal* to pass optional parameters

Extending the idea in the previous section slightly, you can introduce the concept of optional parameters being passed into scripts. In a script that needs to pass some optional parameters into another script you might find code like this:

```javascript
objGlobal.OptParms = new Object();
objGlobal.OptParms.CustNumber = "12345";
objGlobal.OptParms.CustName = "ACME ENGINEERING";
NAVIGATE_TO_DESTINATION("uShowCustomer");
```

and the script that receives the optional parameters you would find code possibly structured something like this:

```javascript
var CustNumber = "some default value";
var CustName = "some default value";

if (objGlobal.OptParms != null)
{
    CustNumber = objGlobal.OptParms.CustNumber;
    CustName = objGlobal.OptParms.CustName;
    objGlobal.OptParms = null;
}

/* Now we proceed to use the values in CustNumber and CustName */
```

The line `objGlobal.OptParms = null;` line is very important to this style of processing because it destroys the temporary OptParms object.
Using objGlobal to pass optional parameters to an INVOKE script

Sometime an INVOKE script is executed in different ways. For example:

- When the user clicks on a line in instance list, the script is invoked to display the customer details.
- This script may also be invoked from another script to display the details of a specific customer.

Since this script can be used in two different ways, it needs to be aware of what it is being asked to do. The easiest way to do this is to use the "ObjGlobal" object to pass optional parameters to it.

In an INVOKE script you can define and check for the existence of optional parameters like this:

```plaintext
/* Conceptually this script's behavior is controlled by 2 parameters which may or may not be passed to it */

var Parameter1 = "parameter default value";
var Parameter2 = "parameter default value";

/* If either parameter has been passed in the objGlobal object then override the default behavior. */
/* Note the destruction of the optional parameters. This is so they do not hang around to interfere */
/* with later executions of this script. They are created, passed into the script and then destroyed. */

if (objGlobal.optParameter1 != null) { Parameter1 = objGlobal.optParameter1; objGlobal.optParameter1 = null; }

if (objGlobal.optParameter2 != null) { Parameter2 = objGlobal.optParameter2; objGlobal.optParameter2 = null; }

/* Now use the values in Parameter1 and Parameter 2 to control how this script behaves */

< etc >
< etc >
```
As a specific example, imagine an INVOKE script that by default displayed the current customer from the instance list. However, some other scripts reuse it to display a specific customer, which may or may not be in the instance list. You could handle this situation like this:

```javascript
/* By default this script displays the current customer from the instance list, so get the customer number */

var RequestedCustomer = objListManager.AKey1[0];

/* If the caller has supplied a specific customer number use it instead (making sure to destroy the optional parameter) */

if (objGlobal.optRequestedCustomer != null)
{
    RequestedCustomer = objGlobal.optRequestedCustomer;
    objGlobal.optRequestedCustomer = null;
}

/* Now display the details of the customer identified in RequestedCustomer */

< etc >
< etc >
```

In a script that wants to display a specific customer number you could do something like this:

```javascript
/* Save the changes and (re)display this customer */

case KeyEnter:
{
    var CustomerNumber = GETVALUE("CustNo");  /* Get the
updated customer number from the current screen */
    SENDKEY(KeyEnter);  /* Update the current screen
details */
    objGlobal.optRequestedCustomer = CustomerNumber;  /* Set up the
specific customer number you want (re)displayed */
    NAVIGATE_TO_DESTINATION("uShowCustomerDetails");  /*
Redisplay the customer by executing the destination script again */
}  
break;
Using objGlobal to define commonly used functions

If you want to create a JavaScript function that is reused in many places you could do something like this in your sign-on script:

```javascript
objGlobal.Mult = function (x,y) {
    var z = x * y;
    return(z);   
}

objGlobal.Add = function (x,y) {
    var z = x + y;
    return(z);   
}
```

These operations define 2 functions in objGlobal named Mult and Add and the code that they contain.

Once this has been done the functions objGlobal.Add and objGlobal.Mult can be executed in other scripts like this:

```javascript
var q = objGlobal.Add(222,3);
alert( q.toString() );

q = objGlobal.Mult(22,33);
alert( q.toString() );
```

which would display the results 225 and 726 respectively.
Using

Interacting with Instance Lists in Scripts
Using the Scripting Pop-up Menu
Updating the Instance List from RAMP screens
Subfiles/Browselists
Handling Pop-Ups
Script Functions
Framework Objects that Scripts Can Refer To
User-defined script functions
Switching Off Recursion Checking
Interacting with Instance Lists in Scripts

For an introduction to this topic, play the tutorial movie Link the Selected Employee in the Instance List with the Display Employee Screen - 4 minutes.

The instance list is the list of business object instances typically displayed in the upper right corner of the Framework window. For example, the shipped demonstration system uses an Employee business object that has an instance list that looks like this (outlined in red):

Many scripts need to interact with the instance list. These topics explain how to do it:

The List Manager
Visual and Programmatic Identifiers
Working with All Selected Entries
The List Manager

Script interactions with an instance list are done by accessing properties of the Framework JavaScript object named objListManager (the list manager).

For example an invoke script that displays a screen showing the details of an employee uses the objListManager in the SETVALUE command to set the employee to the selected entry in the instance list:

/* Navigate to the nearest access junction */
NAVIGATE_TO_JUNCTION("uFindEmployee");

/* Check for arrival at uFindEmployee */
if ( !(CHECK_CURRENT_FORM("uFindEmployee","Unable to navigate to form uFindEmployee")) ) return;

/* Set the employee to be displayed to the employee selected in the */ /* instance list (which is identified by the programmatic identifier AKey3) */
SETVALUE("utxtEmployeeCode",objListManager.AKey3[0]);

/* Send the key required to navigate to uDisplayEmployee */
SENDKEY(KeyEnter);
SENDKEY(KeyF21);

Also See
objListManager
Replacing Hardcoded Employee Number with Current Instance List Entry
Visual and Programmatic Identifiers

Instance list entries always have an *identification protocol* that defines their visual and programmatic identification. You set these identifiers when you create the filter that controls the instance list.

(Refer to the section *List Manager* in the Framework guide if you want detailed information about the identification protocol.)

For example, this LANSAR command in a filter for employees adds entries to the instance list and sets programmatic and visual identifiers and additional columns for them:

```lan
Invoke Method(#avListManager.AddtoList) Visualid1(#Empno) Visualid2(#FullName) Akey1(#Deptment) Akey2(#Section) Akey3(#Empno) AColumn1(#PhoneHme) AColumn2(#Address1) nColumn1(#PostCode)
```

In this identification protocol:

- The third programmatic identifier (called AKey3) contains the employee number.
- The second visual identifier (called VisualId2) contains the employee's name.

When you know the identification protocol, you can create a JavaScript that displays the number and name of the currently selected employee in the instance list:

```javascript
/* Get the current instance list details */
{
    var strEMPNO = objListManager.AKey3[0]; /* 3rd Akey is the number */
    var strNAME = objListManager.VisualId2[0]; /* 2nd VisualId is the name */
    alert("Current employee name is " + strNAME);
    alert("Current employee number is " + strEMPNO);
}
```

Like this:
Current employee number is A1020

Current employee name is ADAM PETER DOUGLAS
Working with All Selected Entries

More than one entry can be selected in the instance list. This script displays the number and name of all selected employees in a message:

```javascript
/* Get all the selected employees */
{
    var i = 0;
    var strMessage = "";
    for (i = 1; i <= objListManager.TotalSelected; i++)
    {
        strMessage += "Employee " + objListManager.AKey3[i];
        strMessage += " - " + objListManager.VisualId2[i] + "\x0D";
    }
    alert(strMessage);
}
```

So if this script was used with three selected instance list entries like this:

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Phone</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1001</td>
<td>BEN JONES</td>
<td>799 5268</td>
<td>144 Fro</td>
</tr>
<tr>
<td>A1012</td>
<td>PATRICK PAUL</td>
<td>687 1717</td>
<td>6 Camilc</td>
</tr>
<tr>
<td>A1013</td>
<td>GEORGE PATTISON</td>
<td>750 2552</td>
<td>12 Augu</td>
</tr>
<tr>
<td>A1015</td>
<td>BRADLEY WOODS</td>
<td>450 1236</td>
<td>59 Darle</td>
</tr>
<tr>
<td>A1020</td>
<td>ADAM PETER DOUGLAS</td>
<td>674 5310</td>
<td>6 Readir</td>
</tr>
<tr>
<td>A1021</td>
<td>DAVID MCCULLY</td>
<td>762 1321</td>
<td>15 Baker</td>
</tr>
<tr>
<td>A1025</td>
<td>MARY ROBINSON</td>
<td>126 3598</td>
<td>14 Whitt</td>
</tr>
</tbody>
</table>

It would display this alert message:
Using the Scripting Pop-up Menu

You can use the scripting pop-up menu to format and edit your scripts. To display the menu, right-click the Script Details area.

The first set of options Cut, Copy, Paste, Undo and Redo are commonly used options in many editors and are self-explanatory.

The Upper Case and Lower Case options will change the case of any text currently selected in the script editor. Note that Javascript is case-sensitive.

The Lower font and Larger font options allow you to change the size of the font being used by the text editor.

The Show Line Numbers option displays (or hides) line numbers in the text editor.

Use The Current... options to insert properties for various Framework objects into your script. Use:

- Current Framework to enter properties of `objFramework`
- Current Application to enter properties of `objApplication`
- Current Business Object to enter properties of `objBusinessObject`
- Current Command to enter properties of `objCommand`
- Current Instance List Entry to enter properties of `objListManager`

Use the 5250 Subfile Handling options to insert code for Subfiles/Browselists.
Use the Session Control options to enter commonly used functions and `objUser` parameters to your script.

Examples:

- Replacing Hardcoded User Name with Current Framework User
- Replacing Hardcoded Employee Number with Current Instance List Entry
- Adding Your Own Options to the Scripting Pop-Up Menu
Replacing Hardcoded User Name with Current Framework User

To replace the hardcoded user name "QPGMR" in this line of script with the name of the current framework user:

```
SETVALUE("utxtUserName", "QPGMR");
```

Select "QPGMR" (including the quotes), right-click and select the Session Control and then User Name option:

![Session Control menu](image)

The constant "QPGMR" is now replaced with the substitution value for the current Framework user:

```
SETVALUE("utxtUserName", objUser.Name);
```
Replacing Hardcoded Employee Number with Current Instance List Entry

When you automatically generate scripts using tracking information, the scripts will contain the hardcoded field values you typed. To make the script to work with any selected object, you need to replace the hardcoded value with the appropriate identifier.

To replace the hardcoded employee number "A1234" in this line of script with the name of the employee currently selected in the instance list:

```
SETVALUE("uEmpNo","A1234");
```

First find out the Visual and Programmatic Identifiers used to identify the employee. Then highlight the hardcoded number "A1234" (including the quotes) in the script, right-click to bring up the pop-up menu, select the Current Instance List Entry option and select the appropriate identifier:
The constant "A1234" is now replaced with the programmatic identifier of the employee number:

```javascript
SETVALUE("uEmpNo", objListManager.AKey3[0]);
```
Adding Your Own Options to the Scripting Pop-Up Menu

You can add your own options to the scripting pop up menu by creating an xml file called uf_um835.xml, and putting it in the partition execute directory. You can do this using notepad.

This is an example of uf_um835.xml that you could create:

```
<?xml version="1.0"?>
<EXTRACT>
<MENUITEM>
  <PROPERTY NAME="CAPTION" VALUE="My user defined options" />
  <SUBMENUS>
    <SUBMENUITEM>
      <PROPERTY NAME="CAPTION" VALUE="My caption for option 1" />
      <PROPERTY NAME="STRING" VALUE="My returned text for option 1" />
    </SUBMENUITEM>
    <SUBMENUITEM>
      <PROPERTY NAME="CAPTION" VALUE="My caption for option 2 (multiple lines returned)" />
      <PROPERTY NAME="STRING" VALUE="My returned line 1 for option 2" />
      <PROPERTY NAME="STRING" VALUE="My returned line 2 for option 2" />
      <PROPERTY NAME="STRING" VALUE="My returned line 3 for option 2" />
    </SUBMENUITEM>
    <SUBMENUITEM>
      <PROPERTY NAME="CAPTION" VALUE="My caption for option 3 (handling quotes in the text)" />
      <PROPERTY NAME="STRING" VALUE="Quotes and greater than and less than need special handling" />
      <PROPERTY NAME="STRING" VALUE="Quote - &quot;" />
      <PROPERTY NAME="STRING" VALUE="Less than - &lt;" />
      <PROPERTY NAME="STRING" VALUE="Greater than - &gt;" />
    </SUBMENUITEM>
  </SUBMENUS>
</MENUITEM>
</EXTRACT>
```

If you create a file called uf_um835.xml and paste this text into it and then put uf_um835.xml into your partition execute directory, you will be able to see these new options when you are editing RAMP scripts:
If you choose option 1, this will be added to your script:
My returned text for option 1

If you choose option 2, this will be added to your script:
My returned line 1 for option 2
My returned line 2 for option 2
My returned line 3 for option 2

If you choose option 3, this will be added to your script:
Quotes and greater than and less than need special handling
Quote - "
Less than - <
Greater than - >

In the xml above, you can see that the caption displayed for the first submenu
comes from the caption property, and the value returned to the script when the user clicks on this submenu comes from the String property:

```xml
<SUBMENUITEM>
  <PROPERTY NAME="CAPTION" VALUE="My caption for option 1" />
  <PROPERTY NAME="STRING" VALUE="My returned text for option 1" />
</SUBMENUITEM>
```

From option 2, you can see how to return multiple lines when the user clicks on a submenu:

```xml
<SUBMENUITEM>
  <PROPERTY NAME="CAPTION" VALUE="My caption for option 2 (multiple lines returned)" />
  <PROPERTY NAME="STRING" VALUE="My returned line 1 for option 2" />
  <PROPERTY NAME="STRING" VALUE="My returned line 2 for option 2" />
  <PROPERTY NAME="STRING" VALUE="My returned line 3 for option 2" />
</SUBMENUITEM>
```

And from option 3, you can see the special handling if you want quotes (or greater than or less than) in the value returned to the script:

```xml
<SUBMENUITEM>
  <PROPERTY NAME="CAPTION" VALUE="My caption for option 3 (handling quotes in the text)" />
  <PROPERTY NAME="STRING" VALUE="Quotes and greater than and less than need special handling" />
  <PROPERTY NAME="STRING" VALUE="Quote - &quot;" />
  <PROPERTY NAME="STRING" VALUE="Less than - &lt;" />
  <PROPERTY NAME="STRING" VALUE="Greater than - &gt;" />
</SUBMENUITEM>
```

As long as your xml is valid xml, and keeps to the structure of the example above (EXTRACT, MENUITEM, SUBMENUS and SUBMENUITEM) it should work.

Note: Ensure that your version of UF_UM835.xml is backed up.
Updating the Instance List from RAMP screens

The tutorial movie Update the Instance List from 5250 Screens - 4 minutes covers this topic in detail.

A filter manages its associated instance list. When a RAMP screen deletes, adds or changes business object instances, it needs to notify the filter that a change has occurred.

Create the Filter with Program Coding Assistant

To create a filter that listens for changes from RAMP screens use the Program Coding Assistant and select the option Routine to listen for changes and update the instance list:

This option creates Filter Code which Automatically Handles Changes to Instance List.

Add AVSIGNALEVENT Function to the Button Script

Add an AVSIGNALEVENT Function in the button script of your RAMP destination screen for the button that handles the change (typically Save or Delete) to signal to the filter that the instance list needs to change.

For example, in a RAMP screen that updates an object, add this statement to its SAVE button script:

AVSIGNALEVENT("Update_List_Entry", "BUSINESSOBJECT", objListManager.AKey1[0]);

The event being signaled is named Update_List_Entry, and the value being passed is the identifier of the instance that has been updated.
To handle the saving of a newly created object, you must pass to the filter the identifier of the object. For example, to add a new employee with employee number, you would first capture the employee number on the screen using the `GETVALUE` function and store it as a property of the `objGlobal` object, and then pass it to the filter:

```vbnet
objGlobal.utxtEmployeeCode = GETVALUE("utxtEmployeeCode");
SENDKEY(KeyEnter);
AVSIGNALEVENT("Add_List_Entry", "BUSINESSOBJECT",
   objGlobal.utxtEmployeeCode);
```

(The `utxtEmployeeCode` field is the employee number field that has been defined as a text field on the destination screen.)

The standard event names you can use to update the instance list are:

- `Refresh_Instance_List`
- `Update_List_Entry`
- `Add_List_Entry`
- `Delete_List_Entry`. 
Filter Code which Automatically Handles Changes to Instance List

This RDMLX code which is created by the Program Coding Assistant automatically handles events signaled by the RAMP screen (it is shown here just for your reference, you do not need to modify it):

*--------------------------------------------------------------------------------
* Handle any external requests to update the Instance List
*--------------------------------------------------------------------------------
EvtRoutine #Com_owner.avEvent WithId(#EventId) WithAInfo1(#AInfo1) WithAInfo2(#AInfo2) WithAInfo3(#AInfo3) WithAInfo4(#AInfo4) WithAInfo5(#AInfo5) WithNInfo1(#NInfo1) WithNInfo2(#NInfo2) WithNInfo3(#NInfo3) WithNInfo4(#NInfo4) WithNInfo5(#NInfo5)
* put the received values into fields
Change #vf_elIdn #EventId.Value
* Map the AInfo and NInfo values passed, into the key fields - #EMPNO
Change #DEPTMENT #AInfo1
Change #SECTION #AInfo2
Change #EMPNO #AInfo3

Case #vf_elIDN

when ' = Refresh_Instance_List'
* Reload the Instance List
Invoke #Com_Owner.uSelectData

when ' = Add_List_Entry'
* Add an entry to the list view
fetch FIELDS(#XG_Ident) FROM_FILE(PSLMST) WITH_KEY(#EMPNO)
if_status *OKAY
* Start an instance list update
Invoke Method(#avListManager.BeginListUpdate)
* Set up the visual Identifier(s)
Change #UF_VisID1 #EMPNO
Change #UF_VisID2 #GIVENAME
Use BConcat (#UF_VisID2 #SURNAME) (#UF_VisID2)
* Add instance details to the instance list
Invoke #avListManager.AddtoList Visualid1(#UF_VisID1)
Visualid2(#UF_VisID2) AKey1(#DEPTMENT) AKey2(#SECTION)
AKey3(#EMPNO) ACOLUMN1(#PHONEHME) ACOLUMN2(#ADDRESS1)
NCOLUMN1(#POSTCODE)
* Instance list updating has been completed
Invoke Method(#avListManager.EndListUpdate)
endif

when '=' Update_List_Entry'
* Update an entry that already exists in the instance list
fetch FIELDS(#XG_Ident) FROM_FILE(PSLMST) WITH_KEY(#EMPNO)
if_status *OKAY
* Start an instance list update
Invoke Method(#avListManager.BeginListUpdate)
* Set up the visual Identifier(s)
Change #UF_VisID1 #EMPNO
Change #UF_VisID2 #GIVENAME
Use BConcat (#UF_VisID2 #SURNAME) (#UF_VisID2)
* Add instance details to the instance list
Invoke #avListManager.UpdateListEntryData Visualid1(#UF_VisID1)
Visualid2(#UF_VisID2) AKey1(#DEPTMENT) AKey2(#SECTION)
AKey3(#EMPNO) ACOLUMN1(#PHONEHME) ACOLUMN2(#ADDRESS1)
NCOLUMN1(#POSTCODE)
* Instance list updating has been completed
Invoke Method(#avListManager.EndListUpdate)
endif

when '=' Delete_List_Entry'
Invoke Method(#avListManager.BeginListUpdate)
* Remove instance details from the instance list
Invoke #avListManager.RemoveFromList AKey1(#DEPTMENT)
AKey2(#SECTION) AKey3(#EMPNO)
Invoke Method(#avListManager.EndListUpdate)
endcase

Endroutine
End_Com
**Subfiles/Browselists**

From time to time you will need to create scripts that access 5250 subfiles. There are three common approaches used to do this:

Movie **Not Using a Datagrid Control - 1 minute**

Movie **Using Subfile Accessor - 5 minutes**

Movie **Subfile Direct Access - 2 minutes** (If you need to use subfile direct access then please review this movie first.)

After this following additional script samples may be useful to you in different situations:

Script for Locating an Entry in a Subfile/Browselist

Script for Locating and Selecting an Entry in a Browselist or Subfile by Positioning the Cursor

Script for Locating an Entry when no Positioning is Available

Script for Locating an Entry when no Positioning is Available and the List has more than One Page

Also See

**SUBFILE_ACCESSOR Object**
Not Using a Datagrid Control - 1 minute

Play Movie to learn how to manage subfiles/browselists without datagrid control or read the Movie Summary.
Movie Summary

For movie Not Using a Datagrid Control - 1 minute.

When a 5250 subfile is presented as a data grid on a junction screen the first question you should always ask: "Can my script always ensure that the data I am interested in occurs in the first entry in the subfile?"

If the answer is yes, then the easiest way to access the content of the 5250 subfile data grid is to disable the grid and treat the entry (browselist cell) as a field:

Disable the grid

In newlook Designer, open the properties of the Form object by double-clicking on the form. Locate the Recognition UseGrids property and set it to False.

Close the designer and save your changes.

Now newlook recognizes the browselist cells as normal fields.

Name the first cell as a field

Open the Designer again. The subfile area is now presented as a series of simple text boxes and labels, rather than as a data grid.

Right-click the first text box to bring up its properties and give it a name using the Name property, for example uSelectEmployee.

The script can now put a value to the field just as if it was a normal field:

```
SETVALUE("uSelectEmployee", "8");
SENDKEY(KeyEnter);
```
Using Subfile Accessor - 5 minutes

Play Movie to learn how to use the subfile accessor or read the Movie Summary.
Movie Summary
For movie Using Subfile Accessor - 5 minutes.
A typical Work With screen has a subfile/browselist of objects (in this example Employees), each with an option field.
In RAMP a subfile is displayed as a data grid.
In this tutorial we want to enter option "8" in front of a specific entry in the data grid:

Name the data grid
Open the screen in newlook Designer, click on the grid and specify EMPLOYEE_LIST as the Name property in the Misc section.

Note that the data grid and the subfile have different numbers of columns and rows
- A data grid starts column and row numbering from 0 and includes the header rows
- Column numbers are not necessarily sequential in a data grid
- Columns have names based on the text in the column headings

To select an employee in the grid using SUBFILE_ACCESSOR
Create the SUBFILE_ACCESSOR object:
var SFL = new SUBFILE_ACCESSOR ("EMPLOYEE_LIST");

Put an "8" somewhere in column "Opt":
SFL.SetSelectionColumnName("Opt","8");

Then locate the employee that has "A0090" in column "EmployNumber":
SFL.SetSearchColumnName("EmployNumber","A0090");

Put the value into the subfile:
SFL.SelectSubfileEntry();

Lastly, destroy the subfile object:
SFL.Dispose();
Do not write subfile code manually
Instead see how to create a subfile script Using the Scripting Pop-up Menu and then modify it as required.

Find out row and column names
Use the Probe button which appears on RAMP screens.

Also see SUBFILE_ACCESSOR Object.
Subfile Direct Access - 2 minutes

Play Movie to learn how to directly access subfiles or read the Movie Summary.
Movie Summary

For movie Subfile Direct Access - 2 minutes.

This tutorial describes the subfile direct access foundation script.

Create the script Using the Scripting Pop-up Menu. The script reads all subfile pages, and for each page it reads all columns and for each column it reads all the cells.

By modifying this script you should be able to perform any required subfile operation.

Foundation Script

```javascript
{ 
var strDataGridName = "xxxxxxxxx"; /* Specify the data grid name here */
var flagAnotherPageExists = true; /* Another subfile page exists */
/* Loop through all subfile pages */
do
  {
    var intColumnCount = TONUMBER(GETVALUE(strDataGridName + ".Columns.Count"));
    var intRowCount = TONUMBER(GETVALUE(strDataGridName + ".RowCount"));
    var intColumn, intRow = 0;
    /* Iterate over the current subfile page */
    for (intColumn = 0; intColumn < intColumnCount; intColumn++) /* Iterate through the columns */
      {
        var strColumn = intColumn.toString();
        var strColumnName = GETVALUE(strDataGridName + ".Columns(" + strColumn + ").Name");
        TRACE("Column number " + strColumn + " is named " + strColumnName + ";");
        /* Iterate through the cells in the column */
        for (intRow = 0; intRow < intRowCount; intRow++) /* Iterate through the rows for a column */
          {
            var strRow = intRow.toString();
            var strRowCellValue = GETVALUE(strDataGridName + ".Columns(" + strColumn + ").Cells(" + strRow + ").Text");
            TRACE(" in row " + strRow + " it contains the value " + strRowCellValue + ");
          }
    }
}
```
/*
end iterating the columns */

/* Proceed (or not) to the next subfile page based on the marker */
flagAnotherPageExists = (GETVALUE(strDataGridName + ".Marker") != "");
if (flagAnotherPageExists) { TRACE("Scrolling to next page.");
    SENDKEY(KeyPageDown); }
else { TRACE("End of subfile encountered"); }
} while(flagAnotherPageExists); /* Loop around and process the next subfile page */
} /* NOTE: This script is dependent on the use of newlook for 5250 access */

**To test you have the row you want**

To work with subfile entries you need to compare your search value with the text in the cell. To read the text in a cell:

```
strCell = StrGridName+.Columns("+strColumn+").Cells("+strRow+").Text;
```

And put the value into a GETVALUE function:

```
StrRowCellValue = GETVALUE( strCell );
```

To set the value of a cell:

```
SETVALUE( strCell, "some valid value" );
```
Locating and Selecting an Entry in a System i Subfile/LANSA Browselist

Many 5250 applications use System i Subfiles or LANSA Browselists to allow the end-user to select the object they want to work with.

In a modernized RAMP application that uses filters and the instance list the subfiles/browselists typically become superfluous so you will probably want to hide them. You do this by using a script that automatically locates the entry in the subfile/browselist without the user having to interact with the screen.

Script for Locating an Entry in a Subfile/Browselist

Script for Locating and Selecting an Entry in a Browselist or Subfile by Positioning the Cursor

Script for Locating an Entry when no Positioning is Available

Script for Locating an Entry when no Positioning is Available and the List has more than One Page
Script for Locating an Entry in a Subfile/Browselist

This script locates an entry in a browse list.
The position of the entry in the list is determined by the value entered in an input field. Then, perform an action on the selected the entry.
In this script:
· utxtEmpno is the name given to the field to position to in the form using newlook Designer
· uDataGrid Is the name given to the browselist/subfile in the form using newlook Designer
· The first column in the data grid contains the Option field.
· The second column in the data grid contains the value to position to.
· The VisualID1 of the Instance List has the employee number
· Use option 2 to change the details of an employee selected in the Instance List.

```javascript
/* Set the value of a variable to that of the selected Employee */
var strCompare = objListManager.VisualId1[0];

/* Set the value of the field in the form to that of the selected Employee */
SETVALUE("utxtEmpno", strCompare);

/* Send an Enter key to cause the list positioning */
SENDKEY(KeyEnter);

/* Get the number of rows in the data grid */
var intRowCount = GETVALUE("uDataGrid.RowCount");

/* Traverse the rows and compare the value of the second column with the one to position to. */
for (var intRowNo = 0; intRowNo < intRowCount; intRowNo++)
{
    if (GETVALUE("uDataGrid.Rows(" + intRowNo + ").Cells(1).Text") == strCompare)
    {
        /* Type a 2 next to the first entry and press enter */
        SETVALUE("uDataGrid.Rows(" + intRowNo + ").Cells(0).Text", 2);
        SENDKEY(KeyEnter);
        break;
    }
}
```
Script for Locating and Selecting an Entry in a Browselist or Subfile by Positioning the Cursor

Sometimes entries in browselists/subfiles are selected by positioning the cursor on the desired row and pressing Enter.

To position the cursor in a desired row/column you can use the provided SETCURSOR() interface. Please refer to <setcursor> to find out details of the uses of SETCURSOR().

SETCURSOR receives a row, column and row offset position. The latter is the row number of the first entry in the browselist/subfile. Note that newlook's Data Grids counts the column headings as rows. To find out the row position of a browselist or subfile, run the application in green screen mode until you reach the desired list. You should be able to see the row/column positions on the bottom right of the screen. Move the cursor until the column heading's top most piece of text. That will be the row offset value to pass.

```javascript
var strCompare = objListManager.VisualId1[0]; /* This is the row number where the first row entry in the list. Column headings are counted as rows */
var intListOffset = 3;
var flagPageDown = true;
while (flagPageDown)
{
    intRowCount = GETVALUE("uuDataGrid.RowCount");
    for (var intRowNo = 0; intRowNo < intRowCount; intRowNo++)
    {
        /* The value we want to compare with is in the first cell */
        if (GETVALUE("uDataGrid.Rows(" + intRowNo + ").Cells(0).Text") == strCompare)
        {
            SETCURSOR(intRowNo, 10, intListOffset);
            SENDKEY(KeyEnter);
            flagPageDown = false;
            break;
        }
    }
    if (flagPageDown)
    {
        if (GETVALUE("uDataGrid.Marker") != "") SENDKEY(KeyPageDown);
    }
}```
else { flagPageDown = false; alert("page down is false"); }
Script for Locating an Entry when no Positioning is Available

A variation on the previous script is to find an entry in a list where there is no positioning available and we do not know which column holds the sought after value. In such scenario, for each row we'd have to traverse each cell. Note that for big lists this can be a time consuming task:

for (var intRowNo = 0; intRowNo < intRowCount; intRowNo++)
{
    /* Get the number of cells in this row. */
    var intColCount = GETVALUE("uDataGrid.ColCount");
    for (var intColNo = 0; intColNo < intColCount; intColNo++)
    {
        if (GETVALUE("uDataGrid.Rows(" + intRowNo + ").Cells(" + intColNo + ").Text") == strCompare)
        {
            /* Type a 2 next to the first entry and press enter */
            SETVALUE("uDataGrid.Rows(" + intRowNo + ").Cells(0).Text", 2);
            SENDKEY(KeyEnter);
            break;
        }
    }
}

Note that the above script will only handle the first page in the list.
Script for Locating an Entry when no Positioning is Available and the List has more than One Page

The previous example showed how to handle a list with only one page. If a list has more than one page, we have to page down until the end of the list. Therefore, the for loop should be enclosed within another loop to be executed while we haven't reached the end of the list. Note that in this case, the row count must be retrieved for each page.

```javascript
var flagPageDown = true;
while (flagPageDown)
{
    intRowCount = GETVALUE("uDataGrid.RowCount");
    for (var intRowNo = 0; intRowNo < intRowCount; intRowNo++)
    {
        /* Get the number of cells in this row. */
        intColCount = GETVALUE("uDataGrid.ColCount");
        for (var intColNo = 0; intColNo < intColCount; intColNo++)
        {
            if (GETVALUE("uDataGrid.Rows(" + intRowNo + ").Cells(" + intColNo + ").Text") == strCompare)
            {
                /* Type a 2 next to the first entry and press enter */
                SETVALUE("uDataGrid.Rows(" + intRowNo + ").Cells(0).Text", 2);
                SENDKEY(KeyEnter);
                /* Reset the flag to cause the while loop to end */
                flagPageDown = false;
                break;
            }
        }
    }
    if (flagPageDown)
    {
        /* Get the value of the newlook indicator that tells us whether there is another page in the list. If not, reset the flag to cause the while loop to end */
        if (GETVALUE("uDataGrid.Marker") != ")
            SENDKEY(KeyPageDown);
        else flagPageDown = false;
    }
}
```
Handling Pop-Ups

When newlook recognizes a border pattern on a 5250 screen, it creates a pop-up window. You are not compelled to present these pseudo pop-ups as a real windows, and we strongly recommend you do not define them as destination screens.

During Navigation
Pop-up as Destination
When Triggered by Button Click or Function Key Press
Forcing a Pop-Up to Front
How to Turn Pop-Ups into Full Screens

Also see FORCE_POPUP_REFRESH Function.
During Navigation

Situation
RAMP navigates through a pop-up on its way to a destination screen.

Expected Behavior
Windows: the pop-up is not visible during navigation.
Browser: the pop-up is visible during navigation.

Remarks
You cannot interact with newlook when it is hidden in the browser.
Pop-up as Destination

We recommend you absolutely avoid using 5250 pop-up screens as RAMP destination screens.

Having a pop-up jump out of command tab would be very unusual. We recommend you instruct newlook to present the 5250 pop-up as a full screen. See How to Turn Pop-Ups into Full Screens.
When Triggered by Button Click or Function Key Press

**Situation**
Ramp navigates to a destination. The user clicks on a VLF push button or presses a function key to display a pop-up.

**Expected Behavior**
Windows and Browser: the pop-up will not be visible and the main screen becomes grayed out and input incapable.

**Remarks**
In this case the pop-up is hidden behind the main screen. See [Forcing a Pop-Up to Front](#).
Forcing a Pop-Up to Front

If you need to force a pop-up window to front (for example if you absolutely have to present a 5250 pop-up window as a destination screen), using FORCE_POPUP_REFRESH Function will not help you because it only turns the automatic force-to-front logic off or on. It does not change when the logic is used.

In these special cases you will have to invoke the force logic yourself, probably at the end of your destination pop-up screens INVOKE script.

The easiest way to do this is by executing the JavaScript function VF_SY120_FORCE_POPUP_REFRESH(). This will cause the current 5250 pop-up to come to the front.

If you want to force a pop-up which is triggered by a button click or function key press to front, do it like this:

SENDKEY(KeyF10);
VF_SY120_FORCE_POPUP_REFRESH();
How to Turn Pop-Ups into Full Screens

This example turns a pop-up into a full screen. It uses the Department pop-up called using option 8 (Dept/Section/Employee Window Enquiry) from the Personnel System’s main menu.

1. Start newlook, connect to your System i and sign on. On the command line, invoke the Personnel System’s main menu. For example, lansa run pslsys partition(dem)

2. Use option 8 to display the Departments prompter:
3. Press Ctrl+D to start newlook Designer. The screen should look something like this:
4. Click on Identify to work in newlook Identify mode:
5. Use the mouse to select the entire grey area:
6. Right click anywhere on the selected area and select the Set Window Area option in the Screen submenu:
Main Menu

- Departments
- Dept
- Code
- ADM
- AUD
- FLT
- GAC
- INF

F1=Help F3=Exit F12=Cancel

Exit from Application

F1=Help F3=Exit F12=Cancel F14=Msgs
7. Now select everything surrounding the pop-up area, right click on the selected area and select Ignore. Note that you may have to do more than one selection to cover the whole of the surroundings. Make sure to have something selected as the pop-up screen id. In the example below, the id is the attribute bytes enclosing the Department and Description subfile headers:
<table>
<thead>
<tr>
<th>Dept</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADM</td>
<td>ADMINISTRATOR DEPT</td>
</tr>
<tr>
<td>AUD</td>
<td>INTERNAL AUDITING</td>
</tr>
<tr>
<td>FLE</td>
<td>FLEET ADMINISTRATION</td>
</tr>
<tr>
<td>GAC</td>
<td>GROUP AC</td>
</tr>
<tr>
<td>INF</td>
<td>INFORMATION SERVICES</td>
</tr>
</tbody>
</table>

Key:
- F1=Help  F3=Exit  F12=Cancel  F14=Msgs

Main Menu:
- Place cursor on same line.

Options:
- Screen ID
- Unknown
- Ignore
  - Screen
  - Field
  - Menu
  - Subfile
  - Command
  - Miscellaneous
  - Group Fields

Exit from Application
8. Close Identify. The screen should now look something like this:
The pop-up has now been converted into a full screen.

<table>
<thead>
<tr>
<th>Dept</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADM</td>
<td>ADMINISTRATOR DEPT</td>
</tr>
<tr>
<td>AUD</td>
<td>INTERNAL AUDITING</td>
</tr>
<tr>
<td>FLT</td>
<td>FLEET ADMINISTRATION</td>
</tr>
<tr>
<td>GAC</td>
<td>GROUP AC</td>
</tr>
<tr>
<td>INF</td>
<td>INFORMATION SERVICES</td>
</tr>
</tbody>
</table>
**Script Functions**

This section describes the shipped RAMP JavaScript functions you can use in your scripts.

Note that these functions are case sensitive, so be careful to use exactly the same case as shown when writing scripts.

<table>
<thead>
<tr>
<th>Get and Set Values of fields on RAMP Screens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set a field on a RAMP screen to a value</td>
</tr>
<tr>
<td>Get the value from a field on a RAMP screen</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Screen Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emulate pressing a key.</td>
</tr>
<tr>
<td>Check that RAMP is showing a screen</td>
</tr>
<tr>
<td>Signal to the Framework to close the current screen</td>
</tr>
<tr>
<td>Hide the current screen with an optional message</td>
</tr>
<tr>
<td>Get the Form Name of the current RAMP screen</td>
</tr>
<tr>
<td>Position the cursor in a given row and column of the screen</td>
</tr>
<tr>
<td>Searches the label fields on the form for a</td>
</tr>
<tr>
<td>menu option by name</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Message Functions**

<table>
<thead>
<tr>
<th>Message Functions</th>
<th>function name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Issue a message as an alert</td>
<td>ALERT_MESSAGE Function</td>
</tr>
<tr>
<td>Clear all messages currently in the stack</td>
<td>CLEAR_MESSAGES Function</td>
</tr>
<tr>
<td>Issue a fatal message</td>
<td>FATAL_MESSAGE Function</td>
</tr>
<tr>
<td>Issue a message</td>
<td>MESSAGE Function</td>
</tr>
<tr>
<td>Stop the Framework from shutting down when a fatal navigation error occurs</td>
<td>FATAL_MESSAGE_TYPE Function</td>
</tr>
<tr>
<td><strong>Other Functions</strong></td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Signal an event to filters and RAMP screens</td>
<td>AVSIGNALEVENT Function</td>
</tr>
<tr>
<td>Add run time information to the trace panel</td>
<td>TRACE Function</td>
</tr>
<tr>
<td>Run a newlook Macro</td>
<td>RUNMACRO Function</td>
</tr>
<tr>
<td>Navigate to a Junction screen</td>
<td>NAVIGATE_TO_JUNCTION Function</td>
</tr>
<tr>
<td>Show a user defined prompter form for a field</td>
<td>HANDLE_PROMPT Function</td>
</tr>
<tr>
<td>Navigate to a Destination screen</td>
<td>NAVIGATE_TO_DESTINATION Function</td>
</tr>
<tr>
<td>Navigate to a previously shown Destination screen</td>
<td>NAVIGATE_TO_PREV_DESTINATION Function</td>
</tr>
<tr>
<td>Returns the leading numbers from a string</td>
<td>STRIP_LEADING_NUMBERS Function</td>
</tr>
<tr>
<td>Defines a string by a unique number for use by other scripts</td>
<td>ADD_STRING Function</td>
</tr>
<tr>
<td>Sets the message to show when the Framework locks up</td>
<td>SET_LOCK_MESSAGE Function</td>
</tr>
<tr>
<td>Returns the string for a given string identification number</td>
<td>STRING Function</td>
</tr>
<tr>
<td>Call this function to</td>
<td>SETUNKNOWNLOCKING Function</td>
</tr>
<tr>
<td>Function</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>override the Lock Framework when unknown 5250 form is displayed session property</td>
<td>Set the focus to a field on the current screen: SETFOCUS Function</td>
</tr>
<tr>
<td></td>
<td>Get the name of the field with focus on the current screen: GETFOCUS Function</td>
</tr>
<tr>
<td></td>
<td>Return a DataGrid as a string: MAKESUBFILEINTOSTRING Function</td>
</tr>
<tr>
<td><strong>newlook Function Key Bar Functions</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Causes all screens not defined to RAMP to show the newlook toolbar buttons: OVERRIDE_BUTTONS_UNDEFINED_SCREENS Function</td>
</tr>
<tr>
<td><strong>Multilingual Caption Functions</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Assigns a new caption for a function key on a particular screen: OVERRIDE_KEY_CAPTION_SCREEN Function</td>
</tr>
<tr>
<td></td>
<td>Assigns a new caption for a function key on any screen: OVERRIDE_KEY_CAPTION_ALL Function</td>
</tr>
<tr>
<td><strong>Virtual Clipboard Access Functions</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Save an alphanumerical or numeric value in the Framework virtual clipboard: AVSAVEVALUE Function</td>
</tr>
<tr>
<td></td>
<td>Restores an AVRESTOREAVALUE and AVRESTORENVALUE</td>
</tr>
<tr>
<td>Function</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td></td>
</tr>
<tr>
<td>COPYTOClipboard Function</td>
<td></td>
</tr>
</tbody>
</table>

**Real Clipboard Access Functions**

| Copy a string to the user's clipboard | COPYTOClipboard Function |
**SETFOCUS Function**
Set the focus to a field on the current screen.

**Syntax**

SETFOCUS(sControlName);

**Parameters**

| sControlName | Required. String that contains the name of the field that focus is to be set to. |

**Return Value**
None

**Example**

SETFOCUS("utxtSurname");

**Notes**
The field (or other control) name is the name assigned to the field in Newlook Identify.

This function uses a new macro in VF_MACRO.sid, called VF_Macro.VF_Set_Active_Control. So before this function can be used, the latest shipped VF_MACRO.sid must be merged into your Newlook.sid file.
**GETFOCUS Function**
Get the name of the field with focus on the current screen.

**Syntax**
GETFOCUS();

**Parameters**
None

**Return Value**

| sControlName | String that contains the name of the field that has focus. It is "" if no control is found, or if the Control with focus does not have a name. |

**Example**

```
var strValue = GETFOCUS();
```

**Notes**
The field (or other control) name is the name assigned to the field in Newlook Identify.
MAKESUBFILEINTOSTRING Function

Return a DataGrid as a string.

Syntax

MAKESUBFILEINTOSTRING(sDataGridName, All_Pages, Include_Heading, sHeader_Column_Numbers, sDetail_Column_Numbers)

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sDataGridName</td>
<td>Required. String that contains the name of the data grid that is to be returned as a string.</td>
</tr>
<tr>
<td>All_Pages</td>
<td>Optional. Boolean that tells the function to page down through all pages in the subfile. Defaults to false.</td>
</tr>
<tr>
<td>Include_Heading</td>
<td>Optional. Boolean that tells the function to include the subfile header rows in the returned string. Defaults to true.</td>
</tr>
<tr>
<td>sHeader_Column_Numbers</td>
<td>Optional. String that contains the column numbers of the header rows to show, delimited by commas. Default is all non-blank columns.</td>
</tr>
<tr>
<td>sDetail_Column_Numbers</td>
<td>Optional. String that contains the column numbers of the detail rows to show, delimited by commas. Default is the columns used for the header columns.</td>
</tr>
</tbody>
</table>

Return Value

| sSubfileAsString | Required. String that contains the subfile as a tab delimited string. |

Examples

/* Get just the currently visible page of the subfile named uDataGrid */
/* Get the header rows, */
/* and paste them all onto the clipboard. */
/* Only show the header cells in columns 0,2,3,4 and 5 */
/* Only show the detail cells in columns 1,2,3,4 and 6 */

COPYTOCLIPBOARD(MAKESUBFILEINTOSTRING("uDataGrid", false ,
true ,"0,2,3,4,5" , "1,2,3,4,6");

/* Get all the pages of the subfile named uDataGrid */
/* Get the header rows, */
/* and paste them all onto the clipboard. */
/* Only show the header cells in columns 0,2,3,4 and 5 */
/* Only show the detail cells in columns 1,2,3,4 and 6 */

COPYTOCLIPBOARD(MAKESUBFILEINTOSTRING("uDataGrid", true, 
true , "0,2,3,4,5" , "1,2,3,4,6");

/* Get all the pages of the subfile named uDataGrid */
/* Get the header rows, */
/* and paste them all onto the clipboard. */
/* Only show the header cells in columns 0,2,3,4 and 5 */
/* Only show the detail cells in columns 0,2,3,4 and 5 */

COPYTOCLIPBOARD(MAKESUBFILEINTOSTRING("uDataGrid", true, 
true , "0,2,3,4,5" ));

/* Get all the pages of the subfile named uDataGrid */
/* Get the header rows, */
/* and paste them all onto the clipboard. */
/* Show the non-blank header cells */
/* Only show the detail cells in columns 1,2,3,4 and 6 */

COPYTOCLIPBOARD(MAKESUBFILEINTOSTRING("uDataGrid", true, 
true , null ,"1,2,3,4,6");

/* Get all the pages of the subfile named uDataGrid */
/* Get the header rows, */
/* and paste them all onto the clipboard. */
/* Show the non-blank header cells */
/
*/ Only show the detail cells in columns with non-blank headers */
COPYTOCLIPBOARD(MAKESUBFILEINTOSTRING("uDataGrid", true, true));

/* Get all the pages of the subfile named uDataGrid */
/* Get all the detail rows, but don't get the header rows, */
/* paste them onto the clipboard. */
/* Only show the detail cells in columns 1,2,3,4 and 6 */
COPYTOCLIPBOARD(MAKESUBFILEINTOSTRING("uDataGrid", true, false, null, "1,2,3,4,6"));

Notes
Use the probe screen report to ensure that Newlook is displaying the subfile as a datagrid, and to determine the column numbers of the header and detail cells that you want to show.
Can be used in combination with function COPYTOCLIPBOARD to allow the user to paste a subfile into their own excel spreadsheet.
COPYTOCLIPBOARD Function
Copy a string to the user's clipboard.

Syntax
COPYTOCLIPBOARD(sString);

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sString</td>
<td>Required. String that contains the data to be copied to the user's clipboard.</td>
</tr>
</tbody>
</table>

Return Value
None

Examples

COPYTOCLIPBOARD("ABC");

COPYTOCLIPBOARD(MAKESUBFILEINTOSTRING("uDataGrid", true, true, "0,2,3,4,5", "1,2,3,4,6"));

/* Copy to a spreadsheet */

var MyString = "";
var TAB_Char = "\x09";
var End_Of_Line_Char = "\x0D\x0A";

MyString = "Line 1 Cell 1" + TAB_Char + "Line 1 Cell 2" + End_Of_Line_Char;
MyString += "Line 2 Cell 1" + TAB_Char + "Line 2 Cell 2" + End_Of_Line_Char;
COPYTOCLIPBOARD(MyString);

Notes
This function can be used to allow the user to copy data to their real clipboard, for pasting into Word documents or spreadsheets
**FATAL_MESSAGE_TYPE Function**

Use this function when you don’t want the Framework to shut down when a fatal navigation error occurs.

**Syntax**

FATAL_MESSAGE_TYPE(sType)

**Parameters**

<table>
<thead>
<tr>
<th>sType</th>
<th>Optional. String that contains the message type:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FATAL (default) – in end user mode, the framework will shut down.</td>
</tr>
<tr>
<td></td>
<td>HIDE – the RAMP command tab will hide Newlook 5250 and show the error.</td>
</tr>
<tr>
<td></td>
<td>INFO – the error message will be routed to the Framework message area.</td>
</tr>
</tbody>
</table>

**Return Value**

None

**Example**

FATAL_MESSAGE_TYPE("HIDE");
SET_UNKNOWN_LOCKING Function

We strongly recommend you do not to use this function because the default locking behaviour is correct in most situations. If you think you need to use this function please contact your support representative.

Call this function to override the Lock Framework when unknown 5250 form is displayed session property. See Session Details for more information.

Syntax
SET_UNKNOWN_LOCKING(boolean)

Parameters
Boolean. One of the following possible values:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>true</td>
<td>Apply a lock to the framework when an unknown 5250 form is encountered.</td>
</tr>
<tr>
<td>false</td>
<td>Don’t lock the framework when an unknown 5250 form is encountered.</td>
</tr>
</tbody>
</table>

Return Value
None.

Remarks
Invoke only once per session from the sign on script. Dynamically changing this value may cause undesirable results.
SETKEYENABLED Function
Dynamically enable or disable a destination’s button or 5250 function key. This function overrides the destination’s function key enablement, for the duration of the logged on 5250 session. The override will impact all future displays of the destination screen.

Syntax
SETKEYENABLED (sDestinationName,sKeyName,bEnableVLF,bEnableNL)

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sDestinationName</td>
<td>Required. A string that contains the name of a Destination.</td>
</tr>
<tr>
<td>sKeyName</td>
<td>Required. String that contains the name of the key. See Function Key Names for SENDKEY Function.</td>
</tr>
<tr>
<td>bEnableVLF</td>
<td>Optional. Boolean. Set to true to show the button, false to hide it, null to ignore.</td>
</tr>
<tr>
<td>bEnableNL</td>
<td>Optional. Boolean. Set to true to enable the 5250 function key, false to disable it, null to ignore.</td>
</tr>
</tbody>
</table>

Return Value
None

Example
The Destination named uDisplayEmployee was set up to Show the prompt button but disable the F4 5250 function key.
To override those settings to the reverse:

SETKEYENABLED("uDisplayEmployee", KeyF4, false,true);

To leave the original setting for the button but enable the F4 function key as well:
SETKEYENABLED("uDisplayEmployee", KeyF4, null, true);
SETVALUE Function

Set the content of a field on a 5250 screen to a value. The field may be identified by name or by its order on the screen.

Syntax

Setting by Name - SETVALUE(sVariable, sValue)
Setting by Order - SETVALUE(__Field, sOrder, sValue)

Parameters

Setting by Name:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sVariable</td>
<td>Required. String that contains the RAMP field name.</td>
</tr>
<tr>
<td>sValue</td>
<td>Required. String that contains the value to set the field to.</td>
</tr>
</tbody>
</table>

Setting by Order:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>__Field</td>
<td>Special value __Field (with two underscores) indicates that a field (i.e., a simple text area) on the form is to be set.</td>
</tr>
<tr>
<td>sOrder</td>
<td>The order of the field on the form starting from 1. Special values __Last and __First (again with two underscores) may be used. Note the order is that of the fields on the form, not of all the controls on the form (e.g., labels, combo boxes, etc).</td>
</tr>
<tr>
<td>sValue</td>
<td>Required. String that contains the value to set the field to.</td>
</tr>
</tbody>
</table>

Return Value

None

Remarks

To set a value of a field on a screen by name, the field must be given a name in the newlook Designer.
The use of field identification by order is more likely to be impacted by form layout changes than by using a name. The initial setting of a field by order is more expensive to execute than by name, however screen field order details are cached so that the subsequent access is faster. The caching logic assumes that the relative order of a field on any particular screen will not change within a signed on 5250 session.

Examples

```
SETVALUE("utxtSignOn", objUser.Name);
SETVALUE("utxtPassword", objUser.Password);
SETVALUE("utxtSelectionOrCommand","90");
SETVALUE("utxtTransaction","MOV");
SETVALUE(__Field,__First,"xxx"); /* Set first field */
SETVALUE(__Field,__Last,"7.45"); /* Set last field */
SETVALUE(__Field,1,"Hello World"); /* Set field number 1 */
SETVALUE(__Field,6,"ADM"); /* Set field number 6 */
```
**GETVALUE Function**

Get the value from a field on a RAMP screen.

**Syntax**

GETVALUE(sVariable)

**Parameters**

| sVariable | Required. String that contains the newlook field name. |

**Return Value**

**String.** Returns the value of the field, as a string:

**Example**

MyString = GETVALUE("utxtSignOn") ;
SENDKEY Function
Emulates the pressing of a key.

Syntax
SENDKEY(sKeyName)

Parameters

| SKeyName | Required. String that contains the name of the key. See Function Key Names for SENDKEY Function. |

Return Value
None

Example
SENDKEY(KeyEnter);
**CHECK_CURRENT_FORM Function**
Check that RAMP is showing a screen.

**Syntax**
CHECK_CURRENT_FORM(sFormName [, sMessageText1] [, sMessageText2] ...)

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sFormName</td>
<td>Required. String that specifies the Name of the Form</td>
</tr>
<tr>
<td>sMessageText1</td>
<td>Optional. String that contains the first message to be issued.</td>
</tr>
<tr>
<td>sMessageText2</td>
<td>Optional. Other strings that are to be concatenated with the first message string (a separator space is automatically added between each string).</td>
</tr>
</tbody>
</table>

**Return Value**

**Boolean.** Returns one of the following possible values:

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>true</td>
<td>The form currently shown has the form name specified.</td>
</tr>
<tr>
<td>false</td>
<td>The form currently shown does not have the form name specified.</td>
</tr>
</tbody>
</table>

**Remarks**

Used for checking whether the script or user has progressed to a particular screen, or has stopped at an earlier screen.

The Form name for a RAMP screen is found by working with the screen in newlook in Designer mode and setting the Name property of the Form object.

If the CHECK_CURRENT_FORM returns false, the function will also automatically hide the Current RAMP screen and display the message provided.

If the script wants to test that the expected screen has arrived, and yet still display the current screen if it hasn't, it should not use function CHECK_CURRENT_FORM, but instead use

```javascript
if (CURRENT_FORM() == "My_Form");
```
When you are writing scripts that handle validation errors on a screen, you usually want the current screen to be displayed even if a validation error occurred and the user has not progressed to the expected next screen. So in this situation you should not use CHECK_CURRENT_FORM.

Example

if ( !(CHECK_CURRENT_FORM("uItemMasterBrowse","Unable to navigate to form uItemMasterBrowse")) ) return;
AVCLOSEFORM Function
Signals to the Framework to close the current form.

Syntax
AVCLOSEFORM()

Parameters
None

Return Value
None

Remarks
If a RAMP screen is running as a separate form, and needs to be closed automatically after completing, use AVCLOSEFORM.

Ensure that the current form is a form known to the Visual LANSA Framework, at the point the AVCLOSEFORM is issued, and that there is a valid Return Script for this Junction or Destination. This will allow the Framework to navigate back to sign off and end the session cleanly.

Example
/* Close this command handler, since the Delete is now done */
/* We should ensure we are on a Junction or Destination at this point */
/* so that the Framework can cleanly navigate the newlook session to sign off */
AVCLOSEFORM();
**HIDE_CURRENT_FORM Function**

Hides the current form and displays an optional message. This function is used to hide the current 5250 screen from the users and to prevent them from manually interacting with it. For example, a script that performed a 5250 sub-file search and failed to find an expected product number might do this:

```plaintext
HIDE_CURRENT_FORM("Product number", strProductNumber, "could not be found. You may not be authorized to view it.");
```

This presents an error message to the user and hides the current 5250 form, which can then only be interacted with by other script controlled actions.

**Syntax**

```plaintext
HIDE_CURRENT_FORM([sMessageText1] [, sMessageText2] ... [, sMessageTextN])
```

**Parameters**

<table>
<thead>
<tr>
<th>sMessageText1</th>
<th>Optional. String that contains the first message to be issued.</th>
</tr>
</thead>
<tbody>
<tr>
<td>sMessageText2 -&gt; N</td>
<td>Optional. Strings that are to be concatenated with the previous message text (a separator space is added).</td>
</tr>
</tbody>
</table>

**Return Value**

None

**Example**

```plaintext
HIDE_CURRENT_FORM("Inventory item ", objListManager.AKey1[0], "was deleted.");
```
**CURRENTFORM Function**

Gets the Form Name of the current RAMP screen.

**Syntax**

CURRENT_FORM()

**Parameters**

None

**Return Value**

String. Returns the Form name of the current screen, as a string:

**Example**

MyString = CURRENT_FORM();
**SETCURSOR Function**

Positions the cursor in a given row and column of the screen

**Syntax**

```
SETCURSOR([iRowNumber][,iColumnNumber][,iRowOffset])
```

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRowNumber</td>
<td>Required. Integer that specifies the row number where to position the cursor.</td>
</tr>
<tr>
<td>IColumnNumber</td>
<td>Optional. Integer that specifies the column number where to position the cursor. Defaults to 1.</td>
</tr>
<tr>
<td>IRowOffset</td>
<td>Optional. Integer that specifies the row number of the first row in a browse list or subfile. This parameter only makes sense in situations where the cursor is to be positioned in a browse list or subfile row and the entry is selected pressing the Enter key. Note that in newlook, browse lists and subfiles are recognized as grids. In these grids, column headings are counted as rows. Hence the value of this parameter should equal to the row position of the topmost column heading literal. To find out the row position of the browselist or subfile, run the application in 5250 session until you reach the desired list. You should be able to see the row/column positions on the bottom right of the screen. Move the cursor until the column heading's top most piece of text.</td>
</tr>
</tbody>
</table>

**Return Value**

None.

**Example**

```
SETCURSOR(7, 10, 3);
```
**ALERT_MESSAGE Function**

Issue a message as an alert.

**Syntax**

ALERT_MESSAGE(sMessageText1 [, sMessageText2] ...)

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sMessageText1</td>
<td>Required. String that contains the first message to be issued.</td>
</tr>
<tr>
<td>sMessageText2</td>
<td>Optional. Other strings that are to be concatenated with the first message string (a separator space is automatically added between each string).</td>
</tr>
</tbody>
</table>

**Return Value**

None

**Example**

```plaintext
ALERT_MESSAGE("Inventory item ", objListManager.AKey1[0] , "was deleted.");
```
CLEAR_MESSAGES Function
Clears all messages currently in the stack.

Syntax
CLEAR_MESSAGES()

Parameters
None

Return Value
None

Example
CLEAR_MESSAGES();
**FATAL_MESSAGE Function**

Issues a fatal message and causes the entire VLF application to terminate (unless it is being executed in design mode).

In design mode the message details are presented in the center of the RAMP panel area and the application continues to execute. In execution mode the entire VLF application terminates.

**Syntax**

FATAL_MESSAGE(sMessageText1 [, sMessageText2] [, sMessageText3]...)

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sMessageText1</td>
<td>Optional. String that contains the first message to be issued.</td>
</tr>
<tr>
<td>sMessageText2</td>
<td>Optional. Other strings that are to be concatenated with the first message string (a separator space is automatically added between each string).</td>
</tr>
</tbody>
</table>

**Return Value**

None

**Example**

FATAL_MESSAGE("Inventory item ", objListManager.AKey1[0] , "was deleted.");
MESSAGE Function
Issue a message.

Syntax
MESSAGE(sMessageText1 [, sMessageText2] ...)

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sMessageText1</td>
<td>Required. String that contains the first message to be issued.</td>
</tr>
<tr>
<td>sMessageText2</td>
<td>Optional. Other strings that are to be concatenated with the first message string (a separator space is automatically added between each string).</td>
</tr>
</tbody>
</table>

Return Value
None

Example
MESSAGE("Inventory item ", objListManager.AKey1[0] , "was deleted.");
**AVSIGNALEVENT Function**

Signal an event to the Framework filters and RAMP screens.

**Syntax**


**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SId</td>
<td>Required. String containing an identifier of the Event.</td>
</tr>
<tr>
<td>STo</td>
<td>Valid values are: FRAMEWORK = The signal is broadcast to the whole framework BUSINESSOBJECT = The signal is only broadcast to filters and RAMP screens in the current business object</td>
</tr>
<tr>
<td>sAInfo1</td>
<td>Optional. String containing additional information that the object listening for the signal can use.</td>
</tr>
<tr>
<td>sAInfo2</td>
<td>Optional. String containing additional information that the object listening for the signal can use.</td>
</tr>
<tr>
<td>sAInfo3</td>
<td>Optional. String containing additional information that the object listening for the signal can use.</td>
</tr>
<tr>
<td>sAInfo4</td>
<td>Optional. String containing additional information that the object listening for the signal can use.</td>
</tr>
<tr>
<td>sAInfo5</td>
<td>Optional. String containing additional information that the object listening for the signal can use.</td>
</tr>
<tr>
<td>nNInfo1</td>
<td>Optional. Number containing additional information that listening object may use.</td>
</tr>
<tr>
<td>nNInfo2</td>
<td>Optional. Number containing additional information that listening object may use.</td>
</tr>
<tr>
<td>nNInfo3</td>
<td>Optional. Number containing additional information</td>
</tr>
</tbody>
</table>
that listening object may use.

<table>
<thead>
<tr>
<th>nNInfo4</th>
<th>Optional. Number containing additional information that listening object may use.</th>
</tr>
</thead>
<tbody>
<tr>
<td>nNInfo5</td>
<td>Optional. Number containing additional information that listening object may use.</td>
</tr>
</tbody>
</table>

**Return Value**

None

**Example**

This example signals that an entry has been deleted in the instance list:

```javascript
AVSIGNALEVENT("Delete_List_Entry", "BUSINESSOBJECT", objListManager.AKey1[0]);
```

Also see [Updating the Instance List from RAMP screens](#).
**TRACE Function**
Allows the user to add run time information from the script to the application trace panel.

**Syntax**
TRACE(sTraceText1 [, sTraceText2] ...)

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sTraceText1</td>
<td>Required. String that contains the trace information to be shown.</td>
</tr>
<tr>
<td>sTraceText2</td>
<td>Optional. String that is concatenated with the previous trace text (a separator space is added).</td>
</tr>
</tbody>
</table>

**Return Value**
None

**Example**
TRACE("Inventory item ", objListManager.AKey1[0] , "was deleted.");
RUNMACRO Function
Runs a newlook Macro.

Syntax
RUNMACRO(sMacroName)

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sMacroName</td>
<td>Required. String that contains the name of the newlook Macro.</td>
</tr>
</tbody>
</table>

Return Value
None

Example
RUNMACRO("MyMacro") ;
NAVIGATE_TO_JUNCTION Function
Navigates RAMP to a Junction.

Syntax
NAVIGATE_TO_JUNCTION(sJunctionName)

Parameters

| SjunctionName | Required.String that contains the form name of the Junction. |

Return Value
None

Example

/* Navigate to the nearest access junction */
NAVIGATE_TO_JUNCTION("uItemMasterBrowse");

Note that this function should only be invoked from an invoke script.
HANDLE_PROMPT Function
Causes an associated prompter form (VL Handler) to appear next to a field. The fields and the prompter forms are specified in the Special Field Handling area as described in Advanced Prompting. Optionally additional information can be passed to or retrieved from the prompter form.

Syntax
HANDLE_PROMPT(sArgument1 [, sArgument2] [, sArgument3]...)

Parameters

<table>
<thead>
<tr>
<th>SArgumentn</th>
<th>Optional. String that contains any value the user defined prompter may require. Note that by default the user defined prompter has bi-directional access to all named fields in the 5250 screen.</th>
</tr>
</thead>
</table>

Return Value
None

Example
if ( HANDLE_PROMPT() ) return;

Accessing the values passed as sArgument1, sArgument2, etc., in the prompter form
A function like this in a RAMP script:
HANDLE_PROMPT("HELLO","THERE",123);

Is accessed like this in the prompter form:
Invoke Method(#Com_Owner.uGet5250Field) Name(UARG1) Value(#Arg1Value) ... returns "HELLO" in #Arg1Value.
Invoke Method(#Com_Owner.uGet5250Field) Name(UARG2) Value(#Arg2Value) ... returna "THERE" in #Arg2Value.
Invoke Method(#Com_Owner.uGet5250Field) Name(UARG3) Value(#Arg3Value) ... returns "123" as a string in #Arg3Value.
There is no limit on how many arguments you can pass. Numeric values can be passed, but they will turn up as strings in the VL component, so they need to be converted back to a number again. Referencing an un-passed argument does not cause a problem. This code:

```
#Arg15Value := "TEST"
Invoke Method(#Com_Owner.uGet5250Field) Name(UARG15) Value(#Arg15Value)
```

Would execute and leave #ARG15Value unchanged as "TEST", but you can actually tell whether the value was passed by doing this:

```
Invoke Method(#Com_Owner.uGet5250Field) Name(UARG15) Value(#Arg15Value) Found(#Found)
If (#Found = TRUE) /* 15th argument was passed to HANDLE_PROMPT */
Else /* 15th argument was not passed)
```

As an example, you can use the additional arguments in a HANDLE_PROMPT function if you need access to values which are not on the screen from which the prompter form is invoked.

For instance, this could be used in a situation where customer information is entered on the first screen and an invoice number is prompted for on the second screen. If this invoice number is dependent on the customer information initially entered on the first screen and the information is not available to you on the second screen, you could store the required customer information in an objGlobal variable and pass it as HANDLE_PROMPT() parameters for proper select criteria in the prompter form code.
NAVIGATE_TO_DESTINATION Function

Navigates to a nominated 5250 Destination screen.

Note that if you specify the name of the current destination the request will be ignored. If you want to re run the script for a current destination use NAVIGATE_TO_PREV_DESTINATION(1).

Syntax

NAVIGATE_TO_DESTINATION(sDestinationName)

Parameters

<table>
<thead>
<tr>
<th>SDestinationName</th>
<th>Required. A string that contains the name of a Destination.</th>
</tr>
</thead>
</table>

Return Value

None

Example

NAVIGATE_TO_DESTINATION("Enrol Employee");

Note that this function should only be invoked from a button script.
NAVIGATE_TO_PREV_DESTINATION Function
Navigates the 5250 to a previously shown destination in this execution.

Syntax
NAVIGATE_TO_PREV_DESTINATION(iPreviousDestination)

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>iPreviousDestination</td>
<td>Required. Integer that contains a number that indicates how many destinations backwards to navigate. The maximum allowed is 20. Note that previous destinations include every single destination that has been navigated through irrespective of whether it was shown or not. For example, you might execute a screen wrapper that passes through 2 destinations.</td>
</tr>
</tbody>
</table>

Return Value
None

Example
/* Re run INVOKE script to get the current 5250 destination screen*/
NAVIGATE_TO_PREV_DESTINATION(1);
/* Navigates to the previous 5250 destination screen*/
NAVIGATE_TO_PREV_DESTINATION(2);

Note that this function should only be invoked from a button script.
**GET_MENU_OPTION_NUMBER Function**

Searches the label fields on the current form looking for a menu option by name. If the menu option can be found an attempt is made to deduce an associated menu option number.

This function is useful in applications where the menu option number associated with an activity varies because it allows a text string that identifies the menu option in words to be dynamically converted to the associated menu option number.

This function uses a cache keyed by screen name/search text to optimize repeatedly performing the same operation.

The cache logic assumes that a menu option number on any given 5250 screen will not change within a signed-on session.

**Syntax**

```
GET_MENU_OPTION_NUMBER(sSearchText, bCaseInsensitive, bTryPrecedingField)
```

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sSearchText</td>
<td>String. Required. The menu option search string.</td>
</tr>
<tr>
<td>bCaseInsensitive</td>
<td>Boolean (true/false). Optional. Default is true. Indicates that the search should be case insensitive.</td>
</tr>
<tr>
<td>vTryPreceding</td>
<td>Boolean (true/false). Optional. Default is true. Indicates that when a label contains the search text, but a menu number cannot be deduced from it, that the preceding label field should be used as an alternate source for the menu number. This option accommodates menus where the menu option number and the menu text are in separate but adjacent label fields.</td>
</tr>
</tbody>
</table>

**Return Value**

String. The associated menu option number or an empty string if no menu option could be deduced.
Example

This code causes the message "Menu option number returned was 2" to be displayed:

```javascript
/* Locate the menu option number of Office Tasks on the I5/OS Main menu */
var strMenuNumber = GET_MENU_OPTION_NUMBER("office tasks");
alert("Menu option number returned was "+ strMenuNumber);
```

This code causes the message "Menu option number returned was 11" to be displayed:

```javascript
/* Locate the menu option number of Client Access/400 tasks on the I5/OS Main menu */
var strMenuNumber = GET_MENU_OPTION_NUMBER("client acc");
alert("Menu option number returned was "+ strMenuNumber);
```
**STRIP_LEADING_NUMBERS Function**
Returns the leading numbers from a string to the caller.

**Syntax**
STRIP_LEADING_NUMBERS(sSourceString)

**Parameters**
| sSourceString | String. Required. The string from which the numbers are to be stripped. |

**Return Value**
String. The stripped numbers.

**Example**
This code causes the message "String returned was 15" to be displayed:
```
var strResult = STRIP_LEADING_NUMBERS("015. Office Tasks");
alert("String returned was " + strResult);
```
ADD_STRING Function

Defines a string by a unique number for use by other scripts. This function is especially useful in multilingual applications.

Syntax

ADD_STRING(iStringNumber , sText)

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>iStringNumber</td>
<td>The number to be assigned to the string</td>
</tr>
<tr>
<td>sText</td>
<td>The string text</td>
</tr>
</tbody>
</table>

Return Value

None

Examples

See the STRING Function definition.
**STRING Function**

Returns the string for a given string identification number. This function is especially useful in multilingual applications.

**Syntax**

STRING(iStringNumber)

**Parameters**

| iStringNumber | The identification number of the string |

**Return Value**

The string previously defined by ADD_STRING with the specified identification number or a string containing the text "String number n not found."

**Examples**

If your sign-on function used the ADD_STRING() function to define multilingual strings like this based on different language codes:

```plaintext
ADD_STRING(1,"OK");
ADD_STRING(2,"Cancel");
ADD_STRING(3,"Customer not found");
```

Then all other scripts that needed to access a multi-lingual string would reference the function STRING(n) in their code in a language independent way. For example this code:

```plaintext
for (i = 0; i <= 4; i++)
{
    alert( STRING(i) );
}
```

Would display the strings:

- String number 0 not found.
- OK
- Cancel
- Customer not found
- String number 4 not found
Similarly, if your sign-on script had defined two strings like this:

```
ADD_STRING(1,"Customer number ");
ADD_STRING(2," could not be found or you are not authorized to view them.");
```

Then you could dynamically build a multi-lingual message in another script like this:

```
var strMessage = STRING(1) + CustomerNumber.toString() + STRING(2);
alert(strMessage);
```
OVERRIDE_BUTTONS_UNDEFINED_SCREENS Function
Applicable to Windows only.
Causes all undefined screens to show the 5250 function key bar.

Syntax
OVERRIDE_BUTTONS_UNDEFINED_SCREENS()

Parameters
None.

Return Value
None

Remarks
This function turns on the function key bar for all screens in a session, but because function key bars should not appear in defined screens it must be hidden.
To use this special function you must do this:

- Set the Bottom Mask Height property for the session to 28. All destinations will inherit this mask setting by default.
- Use the OVERRIDE_BUTTONS_UNDEFINED_SCREENS() function in your sign-on script.

Once the option is turned on it will remain so for the duration of the session.
To show the function key bar for a destination screen, reset the Bottom Mask Height of the destination screen to zero. However, we do not recommend showing the function key bar for destination screens.
Note: when the undefined screen is a pop-up, the screen in the background (even though defined) might also show the function key bar although it will not be usable.

Examples
OVERRIDE_BUTTONS_UNDEFINED_SCREENS()
**OVERRIDE_KEY.Caption_SCREEN Function**

Assigns a new caption for a function key on a particular screen.

**Syntax**

OVERRIDE_KEY.Caption_SCREEN
(sDestinationName,sKeyName,sOverrideCaption)

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sDestinationName</td>
<td>Required. A string that contains the name of a Destination.</td>
</tr>
<tr>
<td>sKeyName</td>
<td>Required. String that contains the name of the key. See Function Key Names for SENDKEY Function.</td>
</tr>
<tr>
<td>sOverrideCaption</td>
<td>Required. The new caption that will be used for the button</td>
</tr>
</tbody>
</table>

**Return Value**

None

**Example**

OVERRIDE_KEY.Caption_SCREEN("uDisplayEmployee", KeyF1, "Aide");

**Notes**

This function is very sensitive to where in a RAMP script it is used. If it is used in an INVOKE script for a destination, it should be placed just before the destination screen appears.

This function can also be used in a sign-on script.
OVERRIDE_KEY_CAPTION_ALL Function
Assigns a new caption for a function key on any screen.

Syntax
OVERRIDE_KEY_CAPTION_ALL (sKeyName, sOverrideCaption)

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sKeyName</td>
<td>Required. String that contains the name of the key. See Function Key Names for SENDKEY Function.</td>
</tr>
<tr>
<td>sOverrideCaption</td>
<td>Required. The new caption that will be used for the button</td>
</tr>
</tbody>
</table>

Return Value
None

Example
OVERRIDE_KEY_CAPTION_ALL (KeyF1, "Aide");

Notes
This function is usually used in a sign-on script. It can be used for multilingual applications to set all function key captions to another language.
**AVSAVEVALUE Function**
Saves an alphanumeric or numeric value onto the VLF virtual clipboard.

**Syntax**
AVSAVEVALUE(vValue, sID1, sID2, sID3, iInstance, sLanguage, bPersist)

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>vValue</td>
<td>Required. Alphanumeric or numeric value to save to the virtual clipboard. If this parameter is a JavaScript variable of type string, then the value is posed to the clipboard as an alphanumeric value and can therefore can only be sensibly be retrieved using the AVRESTOREVALUE function (or equivalent). If it is of type number it is posted as type numeric to the clipboard and can only be sensibly retrieved using the AVRESTOREVALUE function (or equivalent).</td>
</tr>
<tr>
<td>sID1</td>
<td>Required. String that contains the Virtual Clipboard identifier 1.</td>
</tr>
<tr>
<td>sID2</td>
<td>Optional. String that contains the Virtual Clipboard identifier 2.</td>
</tr>
<tr>
<td>sID3</td>
<td>Optional. String that contains the Virtual Clipboard identifier 3.</td>
</tr>
<tr>
<td>iInstance</td>
<td>Optional. Integer that contains the instance number. Defaults to 1 when not specified. Instances are typically used to create lists of clipboard values and usually accompanied by another clipboard value that indicates how many entries currently exist in the list.</td>
</tr>
<tr>
<td>sLanguage</td>
<td>Optional. String that contains the language</td>
</tr>
</tbody>
</table>
code. Defaults to ALL languages when not specified.

| bPersist | Optional. Boolean value that indicates whether or not a saved value should persist beyond the current execution of the RAMP application. Defaults to true. This parameter has no meaning for VLF-WEB RAMP applications because VLF virtual clipboard values never persist in WEB applications. |

**Return Value**
None

**Remarks**
- Use AVSAVEVALUE in your RAMP scripts to save value in the VLF virtual clipboard. More information about the Virtual Clipboard can be found in The Virtual Clipboard in the Framework guide.
- For information about the parameter lengths, please refer to VF_SAVEAVALUE and VF_SAVENVALUE.
- The posting of clipboard values from RAMP scripts is asynchronous. When you post values they are not physically processed onto the clipboard until your RAMP script completes execution and yields control back to the framework.
- The virtual clipboard is primarily designed to pass information between RAMP scripts and RDML(X) code executing in filters, command handlers, etc.
- The virtual clipboard is not primarily designed to pass information between RAMP scripts. The JavaScript objGlobal object is a more efficient way to pass information exclusively between RAMP scripts.
- When a RAMP script executing in a web browser application posts values onto the virtual clipboard, they need to be sent to the server for subsequent access by RDML(X) code executing in filters or command handlers (because they are executing on the server). This means that the volume of information you place onto the clipboard will impact the amount of information that needs to be transmitted between the client and the server.
Examples
RDMLX code in a filter or command handler to save/restore clipboard values:

* Save values onto the clipboard

Invoke #avFrameworkManager.avSaveValue WithID1(Test) WithID2(EMPNO) FromAValue("A0090")
Invoke #avFrameworkManager.avSaveValue WithID1(Test) WithID2(SURNAME) FromAValue("FRED")
Invoke #avFrameworkManager.avSaveValue WithID1(Test) WithID2(GIVENAME) FromAValue("BLOGGS")
Invoke #avFrameworkManager.avSaveValue WithID1(Test) WithID2(POSTCODE) FromNValue(2150)
Invoke #avFrameworkManager.avSaveValue WithID1(Test) WithID2(SALARY) FromNValue(123456.78)

* Restore values from the clipboard

Invoke #avFrameworkManager.avRestoreValue WithID1(Test) WithID2(EMPNO) ToAValue(#EMPNO) UseAValueDefault("NA")
Invoke #avFrameworkManager.avRestoreValue WithID1(Test) WithID2(SURNAME) ToAValue(#SURNAME) UseAValueDefault("NA")
Invoke #avFrameworkManager.avRestoreValue WithID1(Test) WithID2(GIVENAME) ToAValue(#GIVENAME) UseAValueDefault("NA")
Invoke #avFrameworkManager.avRestoreValue WithID1(Test) WithID2(POSTCODE) ToNValue(#PostCode) UseNValueDefault(0)
Invoke #avFrameworkManager.avRestoreValue WithID1(Test) WithID2(SALARY) ToNValue(#Salary) UseNValueDefault(0)

RAMP JavaScript code to perform the equivalent operations:

/* Save values onto the clipboard – note POSTCODE and SALARY are numeric */

AVSAVEVALUE("A0090","TEST","EMPNO");
AVSAVEVALUE("FRED","TEST","SURNAME");
AVSAVEVALUE("BLOGGS","TEST","GIVENAME");
AVSAVEVALUE(2150,"TEST","POSTCODE");
AVSAVEVALUE(123456.78,"TEST","SALARY");

/* Restore values from the clipboard */

var vEMPNO = AVRESTOREAVALUE("NA","TEST","EMPNO");
var vSURNAME = AVRESTOREAVALUE("NA","TEST","SURNAME");
var vGIVENAME = AVRESTOREAVALUE("NA","TEST","GIVENAME");
var vPOSTCODE = AVRESTORENVALUE(0,"TEST","POSTCODE");
var vSALARY = AVRESTORENVALUE(0,"TEST","SALARY");
AVRESTOREAVALUE and AVRESTORENVALUE Function

Restore an alphanumeric or numeric value from the VLF virtual clipboard.

Syntax

AVRESTOREAVALUE/AVRESTORENVALUE(Default, sID1, sID2, sID3, iInstance, sLanguage)

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td>Required. String/Number that contains the default value to return if the value is not found.</td>
</tr>
<tr>
<td>sID1</td>
<td>Required. String that contains the Virtual Clipboard identifier 1.</td>
</tr>
<tr>
<td>sID2</td>
<td>Optional. String that contains the Virtual Clipboard identifier 2.</td>
</tr>
<tr>
<td>sID3</td>
<td>Optional. String that contains the Virtual Clipboard identifier 3.</td>
</tr>
<tr>
<td>iInstance</td>
<td>Optional. Integer that contains the instance number. Defaults to 1 when not specified</td>
</tr>
<tr>
<td>sLanguage</td>
<td>Optional. String that contains the language code. Defaults to ALL languages when not specified.</td>
</tr>
</tbody>
</table>

Return Value

None

Remarks

Use AVRESTOREAVALUE/AVRESTORENVALUE in your RAMP scripts to restore a value from the VLF virtual clipboard. More information about the Virtual Clipboard can be found in The Virtual Clipboard in the Framework guide.

For information about the parameter lengths, please refer to VF_RESTOREAVALUE and VF_RESTORENVALUE in the Framework guide.
Examples

var sSavedSurname = AVRESTOREAVALUE("Not Found", "NewEmployee", "Surname", ",", 1, FRA);
var sSavedPostcode = AVRESTOREAVALUE(9999, "NewEmployee", "Postcode");
SET_LOCK_MESSAGE Function
Set the message to show when the Framework locks up.

Syntax
SET_LOCK_MESSAGE(sText)

Parameters
Setting by Name:

<table>
<thead>
<tr>
<th>sText</th>
<th>Required. String that contains the text of the message.</th>
</tr>
</thead>
</table>

Return Value
None

Remarks
Using SET_LOCK_MESSAGE overrides the default message shown by the Framework. This function can be invoked at anytime in any script. It's recommended that, when used, the user message is set at the very beginning of the sign-on script.

This will have no effect when executing RAMP in a browser because locking is disabled in such an environment.

Examples

SET_LOCK_MESSAGE(“This is my own message text for when the framework locks up”)

ADDUNKNOWNFORMGUESS Function
Function keys to send when an unknown form appears during RAMP navigation. Only available in Windows.

Syntax
ADDUNKNOWNFORMGUESS(sKeyName)

Parameters

| SKeyName | Required.String that contains the name of the key. See Function Key Names for SENDKEY Function. |

Return Value
None

Remarks
Use this function call in the session's sign-on script.
When an unknown 5250 screen is encountered, the Framework goes into a locked state if the Lock Framework when an unknown 5250 form is displayed property is turned on. The user will not be able to move around within the Framework until they navigate to a defined 5250 screen.
The ADDUNKNOWNFORMGUESS function can help to work around such situation by specifying function keys to send as the user tries to execute a different Framework action (for example click on a different Application or Business Object, Command, etc.) without having to navigate to a defined 5250 screen. Before getting into a locked state, the Framework will send the added keys in the sequence they were added.
For example, your RAMP application may have many undefined F4=Prompt pop-up windows that are all closed by using F12=Cancel. You can instruct RAMP that when an unknown screen is on display (for example an F4=Prompt window) it should first try F12 (to see if it can close the window) before displaying the lock message.
It's up to the unknown 5250 screen to support the usage of the sent function keys and to the screen arriving after sending the keys to be defined for this functionality to work. This responsibility is up to the designer.
Care should be taken when using this function as it applies generically to all undefined screens.
Examples

ADD_UNKNOWN_FORM_GUESS(KeyF3);
ADD_UNKNOWN_FORM_GUESS(KeyF12);
FORCE_POPUP_REFRESH Function

We strongly recommend you do not to use this function because the default behavior of pop-up windows is correct in most situations. If you think you need to use this function please contact your support representative.

RAMP contains force-to-front logic. This logic is invoked automatically whenever a 5250 pop-up is encountered as an undefined screen or when a function key or button is used from a destination form. This logic can be turned off using FORCE_POP_UP_REFRESH(False).

Syntax

FORCE_POPUP_REFRESH(boolean)

Parameters

boolean. One of the following possible values:

<table>
<thead>
<tr>
<th>boolean</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>true</td>
<td>Default. RAMP will attempt to bring the hidden pop up to the foreground.</td>
</tr>
<tr>
<td>false</td>
<td>Do nothing.</td>
</tr>
</tbody>
</table>

Return Value

None

Remarks

Using FORCE_POPUP_REFRESH only impacts the enablement of the force-to-front logic, not when it is used.

Please refer to Handling Pop-Ups for more information about this option.
SET_HANDLER_CAPTION Function
Set the current command handler caption to a new value.

Syntax
SET_HANDLER_CAPTION(sCaption)

Parameters
Setting by Name:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>sCaption</td>
<td>Required. String that contains the new caption for the current command handler.</td>
</tr>
</tbody>
</table>

Return Value
None.

Remarks
Using SET_HANDLER_CAPTION overrides the default command handler caption shown by the Framework. This function can be invoked at anytime in any script.
This function is available to be used in Windows and Web RAMP applications.

Examples
SET_HANDLER_CAPTION("New Command Handler Caption")
Framework Objects that Scripts Can Refer To

A number of RAMP provided JavaScript objects make standard information accessible to all scripts. For example the JavaScript object `objUser` publishes properties `Name` and `Password`.

This means that you can access and pass around the name and password of the current user in your scripts like this:

```javascript
if (objUser.Name == "QSECOFR") alert("Your are signed on as the security officer!");
```

Note that these names are CASE SENSITIVE. Be careful to use exactly the same case as shown when writing scripts.

- `objGlobal`
- `objFramework`
- `objApplication`
- `objBusinessObject`
- `objCommand`
- `objListManager`
- `objUser`
- `SUBFILE_ACCESSOR Object`

To find out how you can quickly enter these objects and their properties in your scripts, see Using the Scripting Pop-up Menu.
**objGlobal**

objGlobal can be used to store your own properties. This can be useful if you need to store information from one script and use it later in another script. The information could be field values from a screen that need to be referred to by a later script. Or it could identify which path a script is on, so that when the same screen is used by two paths, the script can determine which path it is on.

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;&lt;any property name&gt;&gt;</td>
<td>string</td>
<td>Any property you want to assign to</td>
</tr>
</tbody>
</table>

**Example**

Save the path the user is on, and the item the user is working with (On Screen 1).

```javascript
/* Store the Item number that the user entered - this field has to be defined on this form in newlook */
objGlobal.utxtItemNumber = GETVALUE("utxtItemNumber");
/* Store the action that is being performed (so that shared screens can know whether its an add or a copy) */
objGlobal.uLastAction = "COPY";
Remember the path the user is on, and the item the user is working with (On Screen 4).
/* Get the action that is being performed */
if (objGlobal.uLastAction == "COPY") {
    ALERT_MESSAGE("Inventory item ", objGlobal.utxtItemNumber, "was copied from ", objListManager.AKey1[0]);
} else {
    ALERT MESSAGE("Inventory item was added. ", objGlobal.utxtItemNumber , "has been saved.");
}
```

Note that objGlobal is global within a 5250 session. Each 5250 session has its
own unique instance of objGlobal.
For more information refer to Using the objGlobal Object.
**objFramework**

objFramework contains read only properties that provide information about the current framework to your scripts:

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>uCaption</td>
<td>string</td>
<td>The caption of the current framework</td>
</tr>
<tr>
<td>ExecutionEnvironment</td>
<td>string</td>
<td>Identifies the execution environment as &quot;WIN&quot; or &quot;WEB&quot;</td>
</tr>
<tr>
<td>flagDesignMode</td>
<td>boolean</td>
<td>Identifies whether the Framework is executing in design mode. Boolean value containing true or false.</td>
</tr>
<tr>
<td>Language</td>
<td>string</td>
<td>Identifies the current LANSA language code (eg: &quot;ENG&quot;, &quot;FRA&quot;, etc)</td>
</tr>
<tr>
<td>Partition</td>
<td>string</td>
<td>Identifies the current LANSA partition (eg: &quot;DEM&quot;, &quot;SYS&quot;)</td>
</tr>
<tr>
<td>TraceMode</td>
<td>string</td>
<td>Identifies whether the Framework is executing in Trace mode as &quot;TRUE&quot; or &quot;FALSE&quot;</td>
</tr>
</tbody>
</table>
**objApplication**

objApplication contains read only properties that provide information about the current application to your scripts:

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>uCaption</td>
<td>string</td>
<td>The caption of the current application.</td>
</tr>
<tr>
<td>uUserObjectType</td>
<td>string</td>
<td>The User Object Name / Type of the current application.</td>
</tr>
</tbody>
</table>
**objBusinessObject**

objFramework contains read only properties that provide information about the current business object to your scripts:

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>uCaption</td>
<td>string</td>
<td>The caption of the current business object.</td>
</tr>
<tr>
<td>uUserObjectType</td>
<td>string</td>
<td>The User Object Name / Type of the current business object.</td>
</tr>
</tbody>
</table>
objCommand

objFramework contains read only properties that provide information about the current command to your scripts:

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>uCaption</td>
<td>string</td>
<td>The caption of the current command.</td>
</tr>
<tr>
<td>uUserObjectType</td>
<td>string</td>
<td>The User Object Name / Type of the current command.</td>
</tr>
<tr>
<td>uAlphaArg1</td>
<td>String</td>
<td>The optional alpha argument 1 of the current VLF command handler</td>
</tr>
<tr>
<td>uAlphaArg2</td>
<td>String</td>
<td>The optional alpha argument 2 of the current VLF command handler</td>
</tr>
<tr>
<td>uNumArg1</td>
<td>Integer</td>
<td>The optional numeric argument 1 of the current VLF command handler</td>
</tr>
<tr>
<td>uNumArg2</td>
<td>Integer</td>
<td>The optional numeric argument 2 of the current VLF command handler</td>
</tr>
<tr>
<td>uExecReason</td>
<td>String</td>
<td>The reason that the current command handler was executed. This string contains &quot;EXECUTE&quot; or &quot;ACTIVATE&quot; indicating why the current RAMP command was executed. The value &quot;ACTIVATE&quot; is only applicable to visible VLF-WIN application scripts. In all other contexts, including screen wrappers, the value &quot;EXECUTE&quot; is always used.</td>
</tr>
</tbody>
</table>
**objListManager**

`objListManager` contains read only properties that provide information about the instance list to your scripts.

**Array properties**

Array entry [0] is the value for the current entry in the instance list. (the entry that has focus)

Array entries [1], [2], [3] ... are the values for the selected entries in the instance list

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AKey1[0] - AKey5[0]</td>
<td>string</td>
<td>The 5 Alpha identifying key values of the current instance of the instance list</td>
</tr>
<tr>
<td>NKey1[0] - NKey5[0]</td>
<td>String</td>
<td>The 5 Numeric identifying key values of the current instance of the instance list</td>
</tr>
<tr>
<td>VisualId1[0]</td>
<td>String</td>
<td>Visual Identifier 1 of the current Instance List entry</td>
</tr>
<tr>
<td>VisualId2[0]</td>
<td>String</td>
<td>Visual Identifier 2 of the current Instance List entry</td>
</tr>
<tr>
<td>AColumn1[0] – AColumn10[0]</td>
<td>String</td>
<td>The 10 Alpha Additional Column values of the current instance list entry</td>
</tr>
<tr>
<td>NColumn1[0] – NColumn10[0]</td>
<td>String</td>
<td>The 10 Numeric Additional Column values of the current instance list entry</td>
</tr>
</tbody>
</table>

**Single value properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TotalSelected</td>
<td>integer</td>
<td>The number of selected entries in the instance list.</td>
</tr>
</tbody>
</table>

For information about how to use the list manager object, see how to Interacting with Instance Lists in Scripts.
**objUser**

objUser contains read only properties that provide information about the current user to your scripts:

<table>
<thead>
<tr>
<th>Property</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>string</td>
<td>The profile of the current User.</td>
</tr>
<tr>
<td>Password</td>
<td>string</td>
<td>The password of the current User.</td>
</tr>
</tbody>
</table>
**SUBFILE_ACCESSOR Object**

The SUBFILE_ACCESSOR object may be used to access a 5250 subfile from a script.

See the movie Using Subfile Accessor - 5 minutes.

**Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SelectionColumnOffset</td>
<td>The offset of the selection column when it is in a different row to the matched column. Default is 0 (zero), indicating it is on the same subfile row.</td>
</tr>
<tr>
<td>SelectionKey</td>
<td>The key to be sent to select an entry in the subfile. The default is KeyEnter. If you don't want any key to be pressed, set this value to null (no quotes).</td>
</tr>
<tr>
<td>KeyPageDown</td>
<td>The key to be used to page the subfile down. The default is KeyPageDown.</td>
</tr>
<tr>
<td>Scrollable</td>
<td>Indicates whether the subfile may be scrolled down. The default is true.</td>
</tr>
<tr>
<td>Trace</td>
<td>Indicates whether detailed trace information should be produced from the subfile when trace mode is on. The default is true.</td>
</tr>
<tr>
<td>SelectionByCursor</td>
<td>Used when selection is to be done by cursor location. Default is false. Typically SelectionByCursorOffset is also set when using this value.</td>
</tr>
<tr>
<td>SelectionByCursorOffset</td>
<td>When using SelectionByCursor this value indicates the offset between the matching row in the datagrid control and the actual 5250 screen line number the cursor should be positioned to.</td>
</tr>
<tr>
<td></td>
<td>For example, if the first data line in 5250...</td>
</tr>
</tbody>
</table>
subfile (visualized as a datagrid) was on line 12 of the 5250 display, you would set this property to 11. This indicates that a match on datagrid row 3 (say) would map to real 5250 screen line $3 + 11 = 14$.

**EndofFileMarker**

Set the EndofFileMarker property to the value used in the subfile/browselist marker when the end of file has been reached. It will be then used to determine the end of the subfile when trying to select an entry. Default is "Bottom".

This property can be set in RAMP scripts like this;

```ramp
objAccessor.EndofFileMarker = "End";
```

This will be used to determine when scrolling is no longer required.

**UseMarker**

Set the UseMarker property to `false` when the subfile/browse list does not use markers.

Note that you must set the EndofFileMarker property to all or part of the message that appears when scrolling past the end of the subfile/browselist so the Subfile Accessor can determine when the end of the subfile/browselist is reached. The default is `true`.

### Methods

<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>used</code></td>
<td>Used to dispose of a SUBFILE_ACCESSOR object</td>
</tr>
<tr>
<td>Function</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Dispose()</td>
<td>when you have completed using in a script</td>
</tr>
<tr>
<td>SetSearchColumnNumber(1,2,3,4);</td>
<td>Defines a search column, by column number, to be used when looking for an entry in the subfile. Arguments are:</td>
</tr>
<tr>
<td></td>
<td>1 – Column Number</td>
</tr>
<tr>
<td></td>
<td>2 – Value to Search for</td>
</tr>
<tr>
<td></td>
<td>3 – Search without regard to case. Optional. Default false.</td>
</tr>
<tr>
<td>SetSearchColumnName(1,2,3,4)</td>
<td>Defines a search column, by column name, to be used when looking for an entry in the subfile. Arguments are:</td>
</tr>
<tr>
<td></td>
<td>1 – Column Name</td>
</tr>
<tr>
<td></td>
<td>2 – Value to Search for</td>
</tr>
<tr>
<td></td>
<td>3 – Search without regard to case. Optional. Default false.</td>
</tr>
<tr>
<td>SelectSubFileEntry()</td>
<td>Searches the subfile using the column search and selection details provided and selects the required subfile entry.</td>
</tr>
<tr>
<td>TracePage()</td>
<td>Dumps the current subfile details to the trace (if trace is active). No arguments.</td>
</tr>
<tr>
<td>Method (1,2,3)</td>
<td>Definition</td>
</tr>
<tr>
<td>---------------</td>
<td>------------</td>
</tr>
<tr>
<td>SetSelectionColumnName</td>
<td>Defines the selection column, by column name, to be used when selecting an entry in the subfile. Arguments are: 1 – Column number 2 – Selection value to be used 3 – Unselection value. Optional. Default is that automatic unselection of columns is not performed.</td>
</tr>
<tr>
<td>SetSelectionColumnNumber</td>
<td>Defines the selection column, by column number, to be used when selecting an entry in the subfile. Arguments are: 1 – Column number 2 – Selection value to be used 3 – Unselection value. Optional. Default is that automatic unselection of columns is not performed.</td>
</tr>
</tbody>
</table>

Use the right mouse when coding scripts to generate base SUBFILE_ACCESSOR code. See Using the Scripting Pop-up Menu.
Function Key Names for SENDKEY Function

This table shows the function key names you need to use in the SENDKEY function and the corresponding 5250 and Windows key names.

Note that the key names are case sensitive and you must enter them exactly as shown here in the SENDKEY function.

<table>
<thead>
<tr>
<th>SENDKEY Name</th>
<th>Windows Keyboard</th>
<th>5250 Key action description</th>
<th>Button Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>KeyAttn</td>
<td>Esc</td>
<td>sys attn</td>
<td>&quot;Attn&quot;;</td>
</tr>
<tr>
<td>KeyClear</td>
<td>Shift Enter</td>
<td>Field Exit</td>
<td>&quot;Clear&quot;;</td>
</tr>
<tr>
<td>KeyEnter</td>
<td>Enter</td>
<td>Enter</td>
<td>&quot;Enter&quot;;</td>
</tr>
<tr>
<td>KeyHelp</td>
<td>alt F1</td>
<td>help</td>
<td>&quot;Help&quot;;</td>
</tr>
<tr>
<td>KeyPageDown</td>
<td>Page Down</td>
<td>Page Down</td>
<td>&quot;Page Up&quot;;</td>
</tr>
<tr>
<td>KeyPageUp</td>
<td>Page Up</td>
<td>Page Up</td>
<td>&quot;Page Down&quot;;</td>
</tr>
<tr>
<td>KeyPrint</td>
<td>ctrl Pause</td>
<td>host print</td>
<td>&quot;Print&quot;;</td>
</tr>
<tr>
<td>KeyReset</td>
<td>ctrl</td>
<td>reset</td>
<td>&quot;Reset&quot;;</td>
</tr>
<tr>
<td>KeySysReq</td>
<td>shift Esc</td>
<td>sys req</td>
<td>&quot;Sys Req&quot;;</td>
</tr>
<tr>
<td>KeyTestReq</td>
<td>alt Pause</td>
<td>test req</td>
<td>&quot;Test Req&quot;;</td>
</tr>
<tr>
<td>KeyF1</td>
<td>F1</td>
<td>F1</td>
<td>&quot;F1&quot;;</td>
</tr>
<tr>
<td>KeyF2</td>
<td>F2</td>
<td>F2</td>
<td>&quot;F2&quot;;</td>
</tr>
<tr>
<td>KeyF3</td>
<td>F3</td>
<td>F3</td>
<td>&quot;F3&quot;;</td>
</tr>
<tr>
<td>KeyF4</td>
<td>F4</td>
<td>F4</td>
<td>&quot;F4&quot;;</td>
</tr>
<tr>
<td>KeyF5</td>
<td>F5</td>
<td>F5</td>
<td>&quot;F5&quot;;</td>
</tr>
<tr>
<td>KeyF6</td>
<td>F6</td>
<td>F6</td>
<td>&quot;F6&quot;;</td>
</tr>
<tr>
<td>-------</td>
<td>-----</td>
<td>-----</td>
<td>--------</td>
</tr>
<tr>
<td>KeyF7</td>
<td>F7</td>
<td>F7</td>
<td>&quot;F7&quot;;</td>
</tr>
<tr>
<td>KeyF8</td>
<td>F8</td>
<td>F8</td>
<td>&quot;F8&quot;;</td>
</tr>
<tr>
<td>KeyF9</td>
<td>F9</td>
<td>F9</td>
<td>&quot;F9&quot;;</td>
</tr>
<tr>
<td>KeyF10</td>
<td>F10</td>
<td>F10</td>
<td>&quot;F10&quot;;</td>
</tr>
<tr>
<td>KeyF11</td>
<td>F11</td>
<td>F11</td>
<td>&quot;F11&quot;;</td>
</tr>
<tr>
<td>KeyF12</td>
<td>F12</td>
<td>F12</td>
<td>&quot;F12&quot;;</td>
</tr>
<tr>
<td>KeyF13</td>
<td>shift F1</td>
<td>F13</td>
<td>&quot;F13&quot;;</td>
</tr>
<tr>
<td>KeyF14</td>
<td>shift F2</td>
<td>F14</td>
<td>&quot;F14&quot;;</td>
</tr>
<tr>
<td>KeyF15</td>
<td>shift F3</td>
<td>F15</td>
<td>&quot;F15&quot;;</td>
</tr>
<tr>
<td>KeyF16</td>
<td>shift F4</td>
<td>F16</td>
<td>&quot;F16&quot;;</td>
</tr>
<tr>
<td>KeyF17</td>
<td>shift F5</td>
<td>F17</td>
<td>&quot;F17&quot;;</td>
</tr>
<tr>
<td>KeyF18</td>
<td>shift F6</td>
<td>F18</td>
<td>&quot;F18&quot;;</td>
</tr>
<tr>
<td>KeyF19</td>
<td>shift F7</td>
<td>F19</td>
<td>&quot;F19&quot;;</td>
</tr>
<tr>
<td>KeyF20</td>
<td>shift F8</td>
<td>F20</td>
<td>&quot;F20&quot;;</td>
</tr>
<tr>
<td>KeyF21</td>
<td>shift F9</td>
<td>F21</td>
<td>&quot;F21&quot;;</td>
</tr>
<tr>
<td>KeyF22</td>
<td>shift F10</td>
<td>F22</td>
<td>&quot;F22&quot;;</td>
</tr>
<tr>
<td>KeyF23</td>
<td>shift F11</td>
<td>F23</td>
<td>&quot;F23&quot;;</td>
</tr>
<tr>
<td>KeyF24</td>
<td>shift F12</td>
<td>F24</td>
<td>&quot;F24&quot;;</td>
</tr>
<tr>
<td>KeyPA1</td>
<td>Esc 1</td>
<td>program attention 1</td>
<td>&quot;PA1&quot;;</td>
</tr>
<tr>
<td>KeyPA2</td>
<td>Esc 2</td>
<td>program attention 2</td>
<td>&quot;PA2&quot;;</td>
</tr>
<tr>
<td>KeyPA3</td>
<td>Esc 3</td>
<td>program attention 3</td>
<td>&quot;PA3&quot;;</td>
</tr>
</tbody>
</table>

**Example**
SENDKEY(KeyEnter);
User-defined script functions

You can define your own JavaScript functions to be used in different RAMP scripts by editing a special JavaScript file UF_SY120.JS in the partition execute directory and creating your own functions based on function UF_MY_FUNCTION.

Note that the file names start with "U", not with "V".

You can edit this file with any editor or use the button at the top of the RAMP tools window to edit via NOTEPAD.

Your RAMP scripts will then be able to use the JavaScript functions you define.

If you are using RAMP in a web browser application, you will need to save uf_sy120.js to your web server.

To do this, select Current RAMP Design Details or Shipped system and demonstration objects options when you are saving the Framework on the web server.
**Switching Off Recursion Checking**

Each time a RAMP script is executed, the Framework checks if the script has been called recursively and flags an error if it has.

However, situations may arise where a script may appear to be called recursively, for example if a special screen appears two or more times in succession. In these cases the GLOBAL_flagRecursionCheck property can be used to switch off the recursion checking and avoid applications ending in error.

The property can be used in scripts in this way:

```plaintext
var flagSaveCheckState = GLOBAL_flagRecursionCheck;

GLOBAL_flagRecursionCheck = false;

SENDKEY(KeyEnter);

GLOBAL_flagRecursionCheck = flagSaveCheckState;
```

Saving and restoring the state like this, rather than simply setting the global property to TRUE or FALSE is the best solution because this is a recursive situation. The Framework will handle three or four levels of recursion (depending on script size and system resources available) if a special screen appears this many times. Only the top recursion level will finally set the GLOBAL_flagRecursionCheck property back to TRUE again.
Debugging

Debug and Diagnostics - 2.5 minutes
Common Scripting Errors
Tracing
Using ALERT_MESSAGE in Your Scripts
Debug and Diagnostics - 2.5 minutes

Play Movie to learn how to debug your application or read the Movie Summary.
Movie Summary
For movie Debug and Diagnostics - 2.5 minutes.

Switch on Tracing
Tracing is the first thing you need to do when debugging. Inspect the trace and look for screens that have not been recognized or that have a blank name.

Add Alert statements
An easy way to debug scripts is to add Alert() statements to display values in a pop-up window at run-time.

Add Alert_Message functions
Similarly, you can use the ALERT_MESSAGE Function to display values in pop-up windows.

Add Trace functions
If you do not want to interrupt application execution, but instead record values in the trace, use the TRACE Function in your script.

Debug your filters
If you want to debug your filters, you can use the avRecordTrace method in your filter program:
Invoke avFrameworkManager.avRecordTrace Component(#Com.Owner) Event('Search Button click handler started')

For more information see Basic Tracing Service.

Click on the Show Current newlook Form button
If the Framework ends on a screen it does not expect to be on, and you get a blank screen with an error message Unable to display form.

Use the Probe Screen button in Design mode
To find out what is know about the current screen.
Common Scripting Errors

NAVIGATE_TO_JUNCTION request failed
Unable to display form
Script with identifier XYZ not found
Could not complete the operation due to error 80020101
Object expected
Strange behavior in scripts
Your script does not execute at all
NAVIGATE_TO_JUNCTION request failed

The execution of a RAMP screen results in a screen like this:

What does this error mean?

This error happens when the Framework has failed to build a navigation path because there is insufficient or no information for the navigation to complete successfully.

You can train the Framework to navigate from one RAMP screen to another until reaching the Destination screen. All Destinations screens need to have an INVOKE_SCRIPT_n associated with them. The first line in an INVOKE_SCRIPT_n looks like this:

/* Navigate to the nearest access junction */
NAVIGATE_TO_JUNCTION("<junction name>");

where <junction name> is the name given to a screen using newlook Designer and tagged as a Junction using the RAMP tools in the Framework.

Before starting the navigation, the Framework tries to create a navigation path to go from the screen currently showing to reach the <junction name> specified
in the NAVIGATE_TO_JUNCTION() function call.
The error means there is no valid path from the current screen to the <junction name>. The error shown in the example screen means there is no path to get from EnrolEmployee to a Junction named pslsys_menu (see the first message).

**Solution**

You need to manually execute the application starting at the screen that was showing in your runtime session, stop at every screen and verify that is has been defined, that the required scripts are there and that they are correct until you find the mistake. Somewhere along the navigation path you should find an undefined screen.

Do this:

Press the Show Current newlook Form button on the bottom of the error message screen to see the currently active screen. In the example the screen should be *EnrolEmployee* which is the name given to it using newlook Designer.

Choose the RAMP Tools option from the Framework menu and start a newlook session.

In newlook, display the screen that was showing in your runtime session. In our example, *EnrolEmployee*.

Once you have reached the screen causing the error (*EnrolEmployee*), have a close look at the list of messages on the top right and answer the following questions:

| Has the screen been defined in the Framework as a Junction, Destination or Special? | If not, then it would not have any scripts and hence it would be unable to navigate anywhere. |
| If the screen has been defined, have all the scripts been defined? | If all scripts have been defined, you need to review them. |
Unable to display form

The execution of a RAMP screen results in a screen that looks like this:

![Screen with error message]

What does this error mean?

The Framework has created a valid navigation path.

Most scripts check that the screen being shown is the one expected. That's why at the end of most scripts there is a line like this one:

```c
/* Check for arrival at <form name> */
if ( !(CHECK_CURRENT_FORM("<form name>","Unable to display form <form name>"))) return;
```

The message Unable to display form suggests that at one stage during the navigation, a the identified screen was expected but another screen was received.

The message *Unable to navigate* is sent by the Destination's INVOKE_SCRIPT. It is a check to ensure that before running the Destination’s script, the application is showing the proper screen. This avoids typing or sending key strokes in unwanted screens.

Sometimes you may not be able to reach the undefined screen. This can happen when the screen which showed up unexpectedly was one that needs to be eliminated to allow the navigation to continue, typically a break message.
Solution

Press the Show Current newlook Form button to see the currently active screen. The screen shown is the unexpected one.

Select the RAMP Tools option in the Framework menu and manually perform the navigation that the RAMP screen was supposed to perform.

As you navigate through each one of the screens, answer the following questions:

Has the screen been defined?
Looking carefully at the scripts for the screen, does the script match what you do on the screen?

You should be able to manually reach the unexpected screen because you know what to do, what to type and what keys to press in each screen.
**Script with identifier XYZ not found**

The execution of a RAMP screen results in a screen like this:

![Screen with error message](image.png)

**What does this error mean?**

This error happens when you delete a script and then execute the RAMP screen without saving and restarting the Framework.

**Solution**

Save and restart the Framework.
Could not complete the operation due to error 80020101

You execute one of your scripts and see an error message like this:

```
Could not complete the operation due to error 80020101.
Error: Could not complete the operation due to error 80020101. detected in script INVOKE_SCRIPT_1
```

What does this error mean?

Your script has a structural defect that prevents any attempt to execute it. For example, put this code:

```
if (1 == 2)
{
```

into a script and fail to add the required closing } . The RAMP editor will warn you about the missing }, but ignore the warning and go ahead and execute the script anyway. This will cause a 80020101 error because the script has a missing }

The missing } means the whole script does not make any sense at all.
Similarly, this code causes an error because of the double closing square brackets:

```
SETVALUE("utxtBankAccountID",objListManager.AKey3[0])
```

Solution

Look for "unbalanced" things in your script such as:

- An ( without a closing/matching )
- An { without a closing/matching }
- An [ without a closing/matching ]
- A " or ' without a closing/match " or ' (an un-terminated string constant).
- An */ without a closing/matching */ (an un-terminated comment)

Other JavaScript constructs that are structurally incorrect.
Object expected
You execute one of your scripts an get an "Object Expected" error like this:

![Object expected error message]

What does this error mean?
You have probably referred to something in your script that does not exist. The most common cause of this error is simple typographic errors or even case errors.
These script lines:

```javascript
NaVIGATE_TO_JUNCTION("uOS400MainMenu");
NAVIGATE_TO_JUNCTIN("uOS400MainMenu");
```

will both produce an "object expected" error. The reason is that no object named NaVIGATE_TO_JUNCTION or NAVIGATE_TO_JUNCTIN actually exists. The correct JavaScript function name is NAVIGATE_TO_JUNCTION (remembering that JavaScript is case sensitive).

Solution
When you get an "Object expected Error" try:

- Checking the spelling of the name of object you are referencing.
- Checking the case of the name of the object you are referencing (eg: Userprofile or UserProfile).

Sometimes it is hard to tell exactly which line in your script is producing an error.
The easiest way to resolve this is to make liberal use of the JavaScript alert function. For example:

```javascript
alert("About to navigate");
NaVIGATE_TO_JUNCTION("uOS400MainMenu");
alert("Navigation finished");
```
Would fairly quickly isolate that the NaVIGATE_TO_JUNCTION() line was the one causing the script failure.
Strange behavior in scripts

A very common cause of strange behavior in scripts comes from not using the "==" comparison correctly. This simple script demonstrates a very common and time wasting scripting problem:

```javascript
var X = 1;
alert("X is " + X);
if (X = 2)
{
    alert("X is 2");
}
```

If you execute this script this first alert message will show X is 1 and the second will show shows X is 2 … which is not possible.

The cause of this problem is of course that the if statement should have been

```javascript
if (X == 2)
{
    alert("X is 2");
}
```
**Your script does not execute at all**

Sometimes your script does not seem to execute at all.

Typically this is because it is not being invoked in a 5250 screen navigation in the way that you thought it would be.

Use the *Framework* -> *(Tracing)* -> *Application Level* menu options and trace the flow of control in your application to understand the navigation in detail. Generally this will reveal why your script is not being invoked.
Tracing

You can start tracing at any point in time during the execution of the Framework in design mode.

Use the Application Level trace facility to trace RAMP execution. To start tracing, click on the (Framework) menu, select (Tracing) -> Application Level. Trace statements will appear in the Trace Window.

RAMP execution might produce a large number of statements. It will also produce long statements that will make it difficult to view in its entirety unless the window is enlarged.

For RAMP execution tracing, we recommend to use the Save Trace to File button to save the trace into a text file in your temp directory. The exact location and file name of the trace file produced will appear in a message. Press the Messages button to find out about the location of the trace file.
Adding Your Own Tracing Statements

The shipped Java Script function TRACE() allows you to add your own trace statements to the Application Level trace and the output of the trace statements is directed to the Application Level trace window.

For example, this trace statement:

```
TRACE("");
TRACE("Value of AKEY1 is =>" + objListManager.AKey1[0] + "<=");
TRACE("");
```

Generates this tracing:

The blank lines before and after the actual trace statement are generated by TRACE(""); simply to make it easier to read.

For more information about the trace statement refer to Script Functions.
Using ALERT_MESSAGE in Your Scripts

You might sometimes find that the easiest and quickest way to debug a problem is to put up a message box.

Using ALERT_MESSAGE() in your scripts causes a dialog box with a predefined message to appear.

ALERT_MESSAGE() can also display a mixture of text and variable values. For example, if in one of your scripts you wanted to display the value of an Akey that is passed into the script, ALERT_MESSAGE() would look something like this:

```
ALERT_MESSAGE("The value of AKEY1 is =>" + objListManager.AKey1[0] + "<=");
```

and during the execution a message box like this would be displayed:
Screen Wrappers

RAMP screen wrappers are Visual LANSA components that access 5250 screens behind the scenes. The screens and fields accessed are defined in the usual manner by choreographing them.

A screen wrapper can pick values out of 5250 screens and present them to the user in completely different ways. Equally, a screen wrapper can accept input from the user and map it back into the 5250 screens to cause 5250 transactions to take place.

When to Use 5250 Screen Wrappers?

Screen Wrapper Fundamentals
Events
Methods
Examples
When to Use 5250 Screen Wrappers?
The main advantage of a screen wrapper is obvious. You can put a good looking, easy to use, high GUI veneer over 5250 screens, without having to spend the time and money required to analyze, rewrite and then retest all the business logic imbedded inside them as you would if you replaced them with VL components.
This is especially important for users to whom platform portability is of no real interest because they are content with a System i only solution.

Usage Examples
Some usage examples might include:

- A screen wrapper can pick values out of hidden 5250 screens and present it in completely different ways. For example, statistical information can be extracted and presented as a series of bar graphs (see Example 3: Show the System i Disk Usage).

- A screen wrapper can accept user input and then map it back into the 5250 screens so as to cause 5250 transactions to take place. For example, a VL component could allow high function, high volume order entry. When the user clicks Save, the order details are mapped into a series of 5250 screens and input.

- A screen wrapper might execute many 5250 screens from one click. For example a screen wrapper might display a list of 20 order numbers. When the user clicks OK all 20 orders are deleted by repeatedly executing a 5250 screen that only allows one order at a time to be deleted.

Role in Modernization Projects
For a customer happy with a System i dependent solution, a screen wrapper might be as far as they ever take application modernization.
Realistically, screen wrappers take time and money to develop, but probably significantly less than the equivalent VL component would, especially in the application testing phase of the modernization project.
Screen wrappers are not thrown away. When time and money permit, they may still be changed into proper VL components by removing their 5250 dependency.
You would expect modernization projects to go to market using a mix of 5250 screens, screen wrappers and VL components. For example, this might be the mix appropriate to an ISV:

- 85% - 5250 screens – to get to market ASAP.
- 10% - screen wrappers - to rapidly replace some heavily used and critical areas (eg: Order Entry) with something much better to use that adds a lot of business value.
- 5%  - VL components – add high end value to the application (eg: E-Mail, PDF documents, MS-Excel spreadsheets, Web integration, etc).
Screen Wrapper Fundamentals

Define your screen wrapper

A screen wrapper is a VL reusable part of class VF_SY122. You must define it globally scoped as opposed to inside any type of routine.

Define_Com Class(#vf_sy122) Name(#myscreen_wrapper) Parent(#PANL_1) Visible(False)

Key Points:

- Set the initial visibility to \textit{False}. This will ensure it will never show up unless you want to. For example you might want to make it visible in design mode when a fatal error occurs to give you the option of seeing what the current 5250 screen is.
- You might want to make it a child of a panel attached to the center of the main panel. This will make it easier to see when you want to make it visible to track down fatal errors.

Set the \textit{uCommand} property

In the command's \textit{uInitialize} method routine, set the screen wrapper's \textit{uCommand} property:

Mthroutine Name(uInitialize) Options(*REDEFINE) * Do any initialization defined in the ancestor
Invoke Method(#Com_Ancestor.uInitialize)
Set Com(#myscreen_wrapper) Ucommand(#com_owner)
Endroutine

Key Points:

- Always set \textit{uCommand} to \#com_owner.
- Failure to set \textit{uCommand} will result in an error message of type VF\_INIT\_ERROR.

Kick off execution by making RAMP available for a specific action

Usually you will invoke \texttt{MakeRampAvailable Method} inside the \textit{uExecute} method of your command for the first time:

#myscreen_wrapper.MakeRampAvailable Foraction(Display)

Key Points:

- The first time you make RAMP available during the first execution of a
command it will take slightly longer for the event to be fired because RAMP is not connected to the host.

- The command regains control in the event routing handling `RampAvailable Event`.

**Listen to the RampAvailable event**

Once RAMP has connected and it's ready to be interacted with it will signal back to the command. It will pass the value of the action you requested. Typically this routine will consist of a CASE statement handling all the possible actions.

**Listen to the RampMessage event**

You write error handling logic and handle messages originating in your 5250 application in the `RampMessage Event`. 
**Events**

RampMessage Event
RampAvailable Event
RampMessage Event
A message is issued by RAMP or the underlying 5250 application.

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>uMessageType</td>
<td>Char 256</td>
<td>String that specifies a type of message as per table below.</td>
</tr>
<tr>
<td>uMessageText</td>
<td>Char 132</td>
<td>String that contains the text of the message.</td>
</tr>
</tbody>
</table>

This table illustrates the available message types and their causes:

<table>
<thead>
<tr>
<th>Type</th>
<th>Cause</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>VF_ERROR</td>
<td>Fatal errors.</td>
<td>For whatever reason, RAMP has failed in the process of executing a request. For example, a failed navigation request.</td>
</tr>
<tr>
<td>VF_INFO</td>
<td>A message from the 5250 application.</td>
<td>Any message sent by the actual 5250 program running under the covers. For example, failed validation rules.</td>
</tr>
<tr>
<td>VF_INIT_ERROR</td>
<td>The Screen wrapper failed to initialize.</td>
<td>This usually happens when the session user object type supplied doesn't yield a defined session. Alternatively, if you haven't set the uCommand property (see Screen Wrapper Fundamentals).</td>
</tr>
<tr>
<td>VF_WAITCONNECTION</td>
<td>Issued every ½</td>
<td>Connections usually</td>
</tr>
</tbody>
</table>
second while newlook is attempting a connection with the host.

This type is provided only when for whatever reasons the connection is expected to take a little while.

| VF_UNKNOWN_FORM | During navigation, an undefined form was detected. |

**Remarks**

It is entirely up to the developer how to handle different types of errors. To cause a message to pop up automatically, use the `#com_owner.avshowmessages` method. During development it might be useful to show the underlying newlook screen when a fatal error occurs. You can do so by changing the Screen wrapper's visibility and/or display position.

**Example**

```vbnet
Evtroutine Handling(#screen wrapper.uRampMessage)
Umessagetype(#MsgType) Umessagetext(#MsgText)
Case (#msgtype.value)
When Value_Is('=', VF_ERROR')
* Optional. In design mode, making the screen wrapper visible allows you to show the 5250 screen.
Set Com(#myscreen_wrapper) Visible(True)
When Value_Is('=', VF_INFO')
Message Msgid(dcm9899) Msgf(dc@m01) Msgdta(#msgtext.value)
When Value_Is('=', VF_UNKNOWN_FORM')
Message Msgid(dcm9899) Msgf(dc@m01) Msgdta(#msgtext.value)
When Value_Is('=', VF_INIT_ERROR')
Message Msgid(dcm9899) Msgf(dc@m01) Msgdta(#msgtext.value)
Endcase
Endroutine
```
RampAvailable Event
RAMP has signaled it is interactive.

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ForAction</td>
<td>Char 256</td>
<td>String that specifies a user defined action identifier.</td>
</tr>
<tr>
<td>NextAction</td>
<td>Char 256</td>
<td>When a second action is attempted during the handling of an action, specify it here.</td>
</tr>
</tbody>
</table>

Remarks
Sometimes you might need to perform a second action within the same event handler.

For example, you make RAMP available for action A. For this action you navigate to a screen, then you get some values and depending on a condition you want to do action B or C, that is, navigate to a different screen.

Invoking the MakeRampAvailable method for action B or C while handling action A will cause a signal to the same event routine with undesirable consequences. It's only in these situations where you must set NextAction.

Example

Etvroutine Handling(#myscreen_wrapper.RampAvailable)
Foraction(#ForAction) Nextaction(#NextAction)

Case (#ForAction)
When Value_Is(‘= Display’)
navigate to a screen
get value
If value is A
#NextAction := X
Else
Navigate to Y
endif
When Value_Is(‘= X’)
When Value_Is(‘= Y’)
Otherwise
Use Builtin(message_box_show) With_Args(ok ok info *component ('Unknown
ForAction>>' + #ForAction.Value + '<<'))
Endcase

Endroutine

Also see MakeRampAvailable Method.
Methods

Screen wrappers drive the 5250 screens using normal VL code methods supplied by component VF_SY122 (this is very similar to how the corresponding RAMP javascript functions work):

- MakeRampAvailable Method
- NavigateToScreen Method
- SetValue Method
- GetValue Method
- SendKey Method
- Current_Form Method
- SetCursor Method
MakeRampAvailable Method
Make RAMP interactive for a specified action.

Syntax
Define_Com Class(#vf_sy122) Name(#myscreen_wrapper)
Parent(#COM_OWNER)
#myscreen_wrapper.MakeRampAvailable Foraction(sAction)

Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ForAction</td>
<td>Char 256</td>
<td>String that specifies an action. Actions are listened to in the RampAvailable event listener.</td>
</tr>
<tr>
<td>uUserObjectType</td>
<td>Char 32</td>
<td>String that contains the user object type of the RAMP session specified when defining the session using the RAMP tools. When there is one session this parameter is not required.</td>
</tr>
<tr>
<td>uSession_Id</td>
<td>Char 40</td>
<td>The session assigned to a destination. Defaults to *AUTO.</td>
</tr>
</tbody>
</table>

Return Value
None

Remarks
This method triggers the execution of a specific user-defined action. When you invoke this method the VLF will perform the connection if required. Once RAMP is available it will signal a RampAvailable event. The event routine listening to RampAvailable is where the main program logic is performed according to the specified action.
Examples
Invoke Method(#myscreen_wrapper.MakeRampAvailable) For action(Display)
  uSession_Id(SESSION_A)
Invoke Method(#myscreen_wrapper.MakeRampAvailable) For action(Update)
  uSession_Id(SESSION_A)
Invoke Method(#myscreen_wrapper.MakeRampAvailable) For action(Display)
  uUserObjectType(HumanResources)
Related Topic MakeRampAvailable Method.
NavigateToScreen Method
Navigate newlook to a screen.

Syntax
Define_Com Class(#vf_sy122) Name(#myscreen_wrapper)
Parent(#COM_OWNER)
#myscreen_wrapper.NavigateToScreen Name('EmpDetails') ReturnScreen

Parameters

<table>
<thead>
<tr>
<th>Name</th>
<th>Char 256 – Required</th>
<th>String that contains the name of the screen to navigate to.</th>
</tr>
</thead>
</table>

Return Value

<table>
<thead>
<tr>
<th>ReturnScreen</th>
<th>Char 256 – Optional</th>
<th>String that contains the name of the screen wrapper 5250 screen when the navigation has completed.</th>
</tr>
</thead>
</table>

Remarks
The screen to navigate can be a Junction or a Destination as defined in the choreographer.

Examples
Define_Com Class(#vf_sy122) Name(#myscreen_wrapper)
Parent(#COM_OWNER)
#myscreen_wrapper.NavigateToScreen Name('EmpSkills')
Returnscreen(#vf_eltxtl)
**SetValue Method**

Set the content of a field on a 5250 screen to a value. The field may be identified by name or by its order on the screen.

**Syntax**

Define_Com Class(#vf_sy122) Name(#myscreen_wrapper)
Parent(#COM_OWNER)
Setting by Name - #myscreen_wrapper.setvalue Infield(sField) Value(vValue)

**Parameters**

Setting by Name:

<table>
<thead>
<tr>
<th>InField</th>
<th>Char 256 – Required</th>
<th>String that contains the RAMP field name.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>Variant – Required</td>
<td>String or number that contains the value to set the field to.</td>
</tr>
</tbody>
</table>

Setting by Order:

<table>
<thead>
<tr>
<th>InField</th>
<th>Property - Required</th>
<th>&lt;#myscreen_wrapper&gt;.ByOrder_Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>Variant – Required</td>
<td>String or number that contains the value to set the field to.</td>
</tr>
<tr>
<td>SpecialValue</td>
<td>Property – Optional</td>
<td>One of these two values:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;#myscreen_wrapper&gt;.First_Field – to set the value of the first field on the screen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&lt;#myscreen_wrapper&gt;.Last_Field – to set the value of the last field on the screen</td>
</tr>
<tr>
<td>Order</td>
<td>Integer – Optional</td>
<td>The order of the field on the form starting from 1.</td>
</tr>
</tbody>
</table>

**Return Value**
Remarks
To set a value of a field on a screen by name, the field must be given a name in newlook Designer.
The use of field identification by order is more likely to be impacted by form layout changes than when using a name.
The initial setting of a field by order is more expensive to execute than by name, however screen field order details are cached so that the subsequent access is faster. The caching logic assumes that the relative order of a field on any particular screen will not change within a signed on 5250 session.

Examples
Define_Com Class(#vf_sy122) Name(#myscreen_wrapper)
Parent(#COM_OWNER)
Setting by Name - #myscreen_wrapper.setvalue Infield('uEmpno')
Value(#EMPNO)
Setting by Order - #myscreen_wrapper.setvalue
Infield(#myscreen_wrapper.ByOrder_Field) Value(#Empno) Order(2)
**GetValue Method**
Get the value from a field on a RAMP screen.

**Syntax**
Define_Com Class(#vf_sy122) Name(#myscreen_wrapper)
Parent(#COM_OWNER)
#myscreen_wrapper.getvalue From(sField) Value(sValue)

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>Char 256 – Required</td>
<td>String that contains the RAMP field name to get the value from.</td>
</tr>
</tbody>
</table>

**Return Value**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>Variant – Required</td>
<td>Returns the value of the field as a string or number.</td>
</tr>
</tbody>
</table>

**Examples**
Define_Com Class(#vf_sy122) Name(#myscreen_wrapper)
Parent(#COM_OWNER)
#myscreen_wrapper.getvalue From('uSurname') Value(#surname.value)
SendKey Method

Emulates the pressing of a function key.

Syntax

Define_Com Class(#vf_sy122) Name(#myscreen_wrapper)
Parent(#COM_OWNER)
#myscreen_wrapper.SendKey Key(#myscreen_wrapper.<key property>)

Parameters

| Key               | Property – Required | The property of
#myscreen_wrapper that resolves to the desired key.
For a list of these properties
See the SENDKEY Names in
Function Key Names for
SENDKEY Function in
lansa049.chm. |

Return Value

| ReturnScreen | Char 256 – Optional | String that contains the name of the screen wrapper 5250 screen after the key was sent. |

Examples

Define_Com Class(#vf_sy122) Name(#myscreen_wrapper)
Parent(#COM_OWNER)
#myscreen_wrapper.Sendkey Key(#myscreen_wrapper.KeyEnter)
Current_Form Method
Gets the Form name of the current screen wrapper screen.

Syntax
Define_Com Class(#vf_sy122) Name(#myscreen_wrapper)
Parent(#COM_OWNER)
#myscreen_wrapper.current_form Name(sName)

Parameters
None

Return Value
| Name   | Char 256 – Required | String that contains the name of the current 5250 screen wrapper screen |

Examples
Define_Com Class(#vf_sy122) Name(#myscreen_wrapper)
Parent(#COM_OWNER)
#myscreen_wrapper.current_form Name(#vf_eltxtl)
**SetCursor Method**

Positions the cursor in a given row and column of the screen. Optionally sends a key once the cursor has been positioned.

**Syntax**

Define_Com Class(#vf_sy122) Name(#myscreen_wrapper)
Parent(#COM_OWNER)

#myscreen_wrapper.SetCursor RowNum(iRowNum) ColNum(iColNum)
SendKey(#myscreen_wrapper.<key property>)

**Parameters**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RowNum</td>
<td>Integer – Required</td>
<td>Integer that specifies the row number where to position the cursor.</td>
</tr>
<tr>
<td>ColNum</td>
<td>Integer – Optional</td>
<td>Optional. Integer that specifies the column number where to position the cursor. Defaults to 1.</td>
</tr>
<tr>
<td>SendKey</td>
<td>Property - Optional</td>
<td>The property of #myscreen_wrapper that resolves to the desired key. For a list of these properties See the SENDKEY Names in Function Key Names for SENDKEY Function in lansa049.chm.</td>
</tr>
</tbody>
</table>

**Return Value**

None

**Examples**

Define_Com Class(#vf_sy122) Name(#myscreen_wrapper)
Parent(#COM_OWNER)

#myscreen_wrapper.setcursor Rownum(10)
Sendkey(#myscreen_wrapper.keyenter)
Examples

Example 1: Show Employee Details.
Example 2: Show Employee Details and Skills
Example 3: Show the System i Disk Usage
Example 1: Show Employee Details.

This example will navigate to the Browse and Maintain Employees screen which is part of the Personnel System.

To reach this screen, RAMP scripts will execute the following steps:

- Sign on
- Type `lansa run pslsys partition(dem)` in the command line and press Enter.
- Type 3 in the option field and press Enter.
- Type the employee number of the currently selected employee and press Enter.
- Press F21.

```
Function Options(*DIRECT)
Begin_Com Role(*EXTENDS #VF_AC010) Height(569)
Layoutmanager(#MAIN_LAYOUT) Width(776)
*  
```
* Simple Field and Group Definitions
*

Group_By Name(#XG_HEAD) Fields(#EMPNO #SURNAME #GIVENAME #ADDRESS1 #ADDRESS2 #ADDRESS3 #POSTCODE #PHONEHME #DEPTMENT #SECTION)

* Body and Button arrangement panels
Define_Com Class(#PRIM_PANL) Name(#BUTTON_PANEL)
Displayposition(3) Height(569) Hint(*MTXTDF_DET1)
LayoutManager(#BUTTON_FLOW) Left(688) Parent(#COM_OWNER)
Tabposition(3) Tabstop(False) Top(0) Width(88)
Define_Com Class(#PRIM_PANL) Name(#BODY_HEAD) Displayposition(2)
Height(569) Hint(*MTXTDF_DET1)
LayoutManager(#BODY_HEAD_FLOW) Left(0) Parent(#COM_OWNER)
Tabposition(2) Tabstop(False) Top(0) Verticalsckscroll(True) Width(688)

* Attachment and flow layout managers
Define_Com Class(#PRIM_ATLM) Name(#MAIN_LAYOUT)
Define_Com Class(#PRIM_FWLM) Name(#BUTTON_FLOW)
Direction(TopToBottom) Flowoperation(Center) Marginbottom(4)
Marginleft(4) Marginright(4) Margintop(4) Spacing(4) Spacingitems(4)
Define_Com Class(#PRIM_FWLM) Name(#BODY_HEAD_FLOW)
Direction(TopToBottom) Marginbottom(4) Marginleft(4) Marginright(4)
Margintop(4) Spacing(4) Spacingitems(4)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_EMPNO)
Manage(#EMPNO) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_SURNAME)
Manage(#SURNAME) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_GIVENAME)
Manage(#GIVENAME) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_ADDRESS1)
Manage(#ADDRESS1) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_ADDRESS2)
Manage(#ADDRESS2) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_ADDRESS3)
Manage(#ADDRESS3) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_POSTCODE)
Manage(#POSTCODE) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_PHONEHME)
Manage(#PHONEHME) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_SAVE_BUTTON)
Manage(#SAVE_BUTTON) Parent(#BUTTON_FLOW)
* The save button
Define_Com Class(#PRIM_PHBN) Name(#SAVE_BUTTON)
Caption(*MTXTDF_SAVE) Displayposition(1) Left(4)
Parent(#BUTTON_PANEL) Tabposition(1) Top(4)
* Collection for detail fields
Define_Com Class(#Prim_ACol<#prim_evef>) Name(#PanelFields)
* Fields in the head area
Define_Com Class(#EMPNO.Visual) Displayposition(1) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(1) Top(4)
Usepicklist(False) Width(209)
Define_Com Class(#SURNAME.Visual) Displayposition(2) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(2)
Top(27) Usepicklist(False) Width(324)
Define_Com Class(#GIVENAME.Visual) Displayposition(3) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(3)
Top(50) Usepicklist(False) Width(324)
Define_Com Class(#ADDRESS1.Visual) Displayposition(4) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(4)
Top(73) Usepicklist(False) Width(363)
Define_Com Class(#ADDRESS2.Visual) Displayposition(5) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(5)
Top(96) Usepicklist(False) Width(363)
Define_Com Class(#ADDRESS3.Visual) Displayposition(6) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(6)
Top(119) Usepicklist(False) Width(363)
Define_Com Class(#POSTCODE.Visual) Displayposition(7) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(7)
Top(142) Usepicklist(False) Width(216)
Define_Com Class(#PHONEHME.Visual) Displayposition(8) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(8)
Top(165) Usepicklist(False) Width(286)
Define_Com Class(#PRIM_ATLM) Name(#ATLM_1)
Define_Com Class(#PRIM_ATLI) Name(#ATLI_1) Attachment(Center)
Parent(#ATLM_1)
Define_Com Class(#PRIM_ATLI) Name(#ATLI_2) Attachment(Center)
Manage(#BODY_HEAD) Parent(#MAIN_LAYOUT)
Define_Com Class(#PRIM_ATLI) Name(#ATLI_3) Attachment(Right)
Manage(#BUTTON_PANEL) Parent(#MAIN_LAYOUT)
Define_Com Class(#vf_sy122) Name(#myscreen_wrapper) Height(569)
Parent(#COM_OWNER) Visible(False) Width(688)
Define_Com Class(#PRIM_ATLI) Name(#ATLI_4) Attachment(Center)
Parent(#MAIN_LAYOUT)
Define_Com Class(#PRIM_ATLI) Name(#ATLI_6) Attachment(Center)
Manage(#myscreen_wrapper) Parent(#MAIN_LAYOUT)
*--------------------------------------------------------------------------------
* Handle Initialization
*--------------------------------------------------------------------------------
Mthroutine Name(uInitialize) Options(*REDEFINE)
Define_Com Class(#Prim_evef) Name(#FormField) Reference(*dynamic)
Invoke Method(#Com_Ancestor.uInitialize)
For Each(#Control) In(#Body_Head.ComponentControls)
  If_Ref Com(#Control) Is(*INSTANCE_OF #prim_evef)
  Set_Ref Com(#FormField) To(*dynamic #Control)
  Invoke Method(#PanelFields.Insert) Item(#FormField)
Endif
Endfor
* Set the uCommand wrapper property.
Set Com(#myscreen_wrapper) Ucommand(#com_owner)
Endroutine
*--------------------------------------------------------------------------------
* Handle Command Execution
*--------------------------------------------------------------------------------
Mthroutine Name(uExecute) Options(*REDEFINE)
Invoke Method(#Com_Ancestor.uExecute)
* The user has selected an Employee from the instance list.
MakeRampAvailable will make sure the connection is in order and then signal back with the appropriate action
Invoke Method(#myscreen_wrapper.MakeRampAvailable)
Foraction(ShowDetails)
Set Com(#Save_Button) Enabled(False)
Endroutine
*
================================================================================
* Event Handlers
*
RAMP has signalled it's available. What we do will depend on the #ForAction specified in the MakeRampAvailable method invocation.

Evtroutine Handling(#myscreen_wrapper.RampAvailable)
Foraction(#ForAction) Nextaction(#NextAction)
Case (#ForAction)
When Value_Is('= ShowDetails')
* Navigate to a Destination that was previously named EmployeeDetailsAndSkills using newlook Designer. Use the ReturnScreen parameter to verify we are in the expected screen
* once the navigation has completed
Invoke Method(#myscreen_wrapper.navigatetoscreen)
Name('EmployeeDetailsAndSkills') Returnscreen(#vf_eltxtl)
* If the current screen is the expected one, get the values of the 5250 screen fields into the fields in this component
If (#vf_eltxtl = 'EmployeeDetailsAndSkills')
Invoke Method(#avListManager.GetCurrentInstance) Akey3(#EMPNO)
#myscreen_wrapper.getvalue From('uSurname') Value(#surname.value)
#myscreen_wrapper.getvalue From('uGivename') Value(#givename.value)
#myscreen_wrapper.getvalue From('uAddress1') Value(#address1.value)
#myscreen_wrapper.getvalue From('uAddress2') Value(#address2.value)
#myscreen_wrapper.getvalue From('uAddress3') Value(#address3.value)
#myscreen_wrapper.getvalue From('uHomePhone') Value(#phonehme.value)
#myscreen_wrapper.getvalue From('uPostcode') Value(#POSTCODE.value)
Endif
When Value_Is('= UpdateDetails')
* Set the values of the fields in the newlook form with the ones from this component
#myscreen_wrapper.setvalue Infield('uSurname') Value(#surname.value)
#myscreen_wrapper.setvalue Infield('uGivename') Value(#givename.value)
#myscreen_wrapper.setvalue Infield('uAddress1') Value(#address1.value)
#myscreen_wrapper.setvalue Infield('uAddress2') Value(#address2.value)
#myscreen_wrapper.setvalue Infield('uAddress3') Value(#address3.value)
#myscreen_wrapper.setvalue Infield('uHomePhone') Value(#phonehme.value)
#myscreen_wrapper.setvalue Infield('uPostcode') Value(#POSTCODE.value)
* Send the enter key to update the details in the 5250
#myscreen_wrapper.sendkey Key(#myscreen_wrapper.KeyEnter)
Returnscreen(#vf_eltxtl)
Otherwise
Use Builtin(message_box_show) With_Args(ok ok info *component ('Unknown
ForAction>>' + #ForAction.Value + '<<'))
Endcase
Set Com(#myscreen_wrapper) Visible(False)
Endroutine
* Listen to messages from RAMP and the 5250 application
Evtroutine Handling(#myscreen_wrapper.RampMessage)
Umessagetype(#MsgType) Umessagetext(#MsgText)
Case (#msgtype.value)
When Value_Is('= VF_ERROR')
* Fatal messages reported by Ramp (e.g. Navigation request failed, etc). If in
design mode, show the underlying newlook screen. Otherwise, make the error
message
* appear in a message box on top of the command
If (#usystem.iDesignMode = true)
Set Com(#myscreen_wrapper) Visible(True)
Else
Message Msgid(dcm9899) Msgf(dc@m01) Msgdta(#msgtext.value)
#com_owner.avshowmessages
Endif
* Messages sent by the System i application or unknown form was encountered
When Value_Is('= VF_INFO' '= VF_UNKNOWN_FORM')
Message Msgid(dcm9899) Msgf(dc@m01) Msgdta(#msgtext.value)
* Failure to initialize RAMP. Could occur for mainly one of two reasons
When Value_Is('= VF_INIT_ERROR')
Message Msgid(dcm9899) Msgf(dc@m01) Msgdta(#msgtext.value)
#com_owner.avshowmessages
When Value_Is('= VF_WAITCONNECTION')
Otherwise
Use Builtin(message_box_show) With_Args(ok ok info *Component
('Unknown message type ' + #MsgType + 'encountered'))
Endcase
Endroutine
*--------------------------------------------------------------------------------
* Handle changes in any of the fields on the panel
*--------------------------------------------------------------------------------
Evtroutine Handling(#PanelFields<>.Changed)
* Enable the save button
Set Com(#SAVE_BUTTON) Enabled(True)
* Lock the framework and set a message for the user
Use Builtin(bconcat) With_Args('Changes made to employee' #GiveName #Surname 'have not been saved yet.' 'Do you want to save them before continuing?') To_Get(#sysvar$av)
Set Com(#avFrameworkManager) Ulocked(USER)
Ulockedmessage(#sysvar$av)

Endroutine
*------------------------------------------------------------------------------
* Enter key pressed
*------------------------------------------------------------------------------
Evtroutine Handling(#PanelFields<>.KeyPress)
Options(*NOCLEARMESSAGES *NOCLEARERRORS)
Keycode(#KeyCode)
If Cond('#KeyCode.Value = Enter')
* If there no changes have been made issue message and ignore enter
If Cond('#SAVE_BUTTON.Enabled *EQ True')
Invoke Method(#Com_Owner.Save)
Else
* Issue 'There are no changes to save' message
Use Builtin(Message_box_show) With_Args(ok ok Info *Component *MTXTDF_NO_SAVE)
Endif
Endif
Endroutine

Endroutine
*------------------------------------------------------------------------------
* Handle the save button
*------------------------------------------------------------------------------
Evtroutine Handling(#SAVE_BUTTON.Click)
* Call the Save method
Invoke Method(#Com_Owner.Save)
Endroutine
*------------------------------------------------------------------------------
* Handle Save
*------------------------------------------------------------------------------
Mthroutine Name(Save)
* Update data base
Invoke Method(#myscreen_wrapper.MakeRampAvailable)
Foraction(UpdateDetails)
Endroutine
* Handle Termination
* -----------------------------------------------------------------
Mtroutine Name(uTerminate) Options(*REDEFINE)
* Clean up the collection of fields on the panel
Invoke Method(#PanelFields.RemoveAll)
* Do any termination defined in the ancestor
Invoke Method(#Com_Ancestor.uTerminate)
Endroutine
End_Com
Example 2: Show Employee Details and Skills

This example is an extension of the previous one. It shows the same details but it also shows the skills in a Visual LANSA list view.

In this example you can see how to access a subfile/browselist:

Function Options(*DIRECT)
Begin_Com Role(*EXTENDS #VF_AC010) Height(569)
Layoutmanager(#MAIN_LAYOUT) Width(776)
*

* Simple Field and Group Definitions
*

Group_By Name(#XG_HEAD) Fields(#EMPNO #SURNAME #GIVENAME #ADDRESS1 #ADDRESS2 #ADDRESS3 #POSTCODE #PHONEHME #DEPTMENT #SECTION)
* Body and Button arrangement panels
Define_Com Class(#PRIM_PANL) Name(#BUTTON_PANEL)
Displayposition(2) Height(569) Hint(*MTXTDF_DET1)
Layoutmanager(#BUTTON_FLOW) Left(688) Parent(#COM_OWNER)
Tabposition(3) Tabstop(False) Top(0) Width(88)
Define_Com Class(#PRIM_PANL) Name(#BODY_HEAD) Displayposition(1)
Height(569) Hint(*MTXTDF_DET1)
Layoutmanager(#BODY_HEAD_FLOW) Left(0) Parent(#COM_OWNER)
Tabposition(2) Tabstop(False) Top(0) Verticalscroll(True) Width(688)

* Attachment and flow layout managers
Define_Com Class(#PRIM_ATLM) Name(#MAIN_LAYOUT)
Define_Com Class(#PRIM_FWLM) Name(#BUTTON_FLOW)
Direction(TopToBottom) Flowoperation(Center) Marginbottom(4)
Marginleft(4) Marginright(4) Margintop(4) Spacing(4) Spacingitems(4)
Define_Com Class(#PRIM_FWLM) Name(#BODY_HEAD_FLOW)
Direction(TopToBottom) Marginbottom(4) Marginleft(4) Marginright(4)
Margintop(4) Spacing(4) Spacingitems(4)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_EMPNO)
Manage(#EMPNO) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_SURNAME)
Manage(#SURNAME) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_GIVENAME)
Manage(#GIVENAME) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_ADDRESS1)
Manage(#ADDRESS1) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_ADDRESS2)
Manage(#ADDRESS2) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_ADDRESS3)
Manage(#ADDRESS3) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_POSTCODE)
Manage(#POSTCODE) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_PHONEHME)
Manage(#PHONEHME) Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_SAVE_BUTTON)
Manage(#SAVE_BUTTON) Parent(#BUTTON_FLOW)

* The save button
Define_Com Class(#PRIM_PHBN) Name(#SAVE_BUTTON)
Caption(*MTXTDF_SAVE) Displayposition(1) Left(4)
Parent(#BUTTON_PANEL) Tabposition(1) Top(4)

* Collection for detail fields
Define_Com Class(#Prim_ACol<#prim_evef>) Name(#PanelFields)
* Fields in the head area
Define_Com Class(#EMPNO.Visual) Displayposition(1) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(1) Top(4)
Usepicklist(False) Width(209)
Define_Com Class(#SURNAME.Visual) Displayposition(2) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(2)
Top(27) Usepicklist(False) Width(324)
Define_Com Class(#GIVENAME.Visual) Displayposition(3) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(3)
Top(50) Usepicklist(False) Width(324)
Define_Com Class(#ADDRESS1.Visual) Displayposition(4) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(4)
Top(73) Usepicklist(False) Width(363)
Define_Com Class(#ADDRESS2.Visual) Displayposition(5) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(5)
Top(96) Usepicklist(False) Width(363)
Define_Com Class(#ADDRESS3.Visual) Displayposition(6) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(6)
Top(119) Usepicklist(False) Width(363)
Define_Com Class(#POSTCODE.Visual) Displayposition(7) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(7)
Top(142) Usepicklist(False) Width(216)
Define_Com Class(#PHONEHME.Visual) Displayposition(8) Height(19)
Hint(*MTXTDF_DET1) Left(4) Parent(#BODY_HEAD) Tabposition(8)
Top(165) Usepicklist(False) Width(286)
Define_Com Class(#PRIM_ATLM) Name(#ATLM_1)
Define_Com Class(#PRIM_ATLI) Name(#ATLI_1) Attachment(Center)
Parent(#ATLM_1)
Define_Com Class(#PRIM_ATLI) Name(#ATLI_2) Attachment(Center)
Manage(#BODY_HEAD) Parent(#MAIN_LAYOUT)
Define_Com Class(#PRIM_ATLI) Name(#ATLI_3) Attachment(Right)
Manage(#BUTTON_PANEL) Parent(#MAIN_LAYOUT)
Define_Com Class(#vf_sy122) Name(#myscreen_wrapper) Displayposition(3)
Height(569) Parent(#COM_OWNER) Visible(False) Width(688)
Define_Com Class(#PRIM_ATLI) Name(#ATLI_4) Attachment(Center)
Parent(#MAIN_LAYOUT)
Define_Com Class(#PRIM_ATLI) Name(#ATLI_6) Attachment(Center)
Manage(#myscreen_wrapper) Parent(#MAIN_LAYOUT)
Define_Com Class(#PRIM_LTVW) Name(#skills) Componentversion(2)
Displayposition(9) Fullrowselect(True) Height(229) Left(4)
Parent(#BODY_HEAD) Showsortarrow(True) Tabposition(9) Top(188)
Width(485)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_1) Manage(#skills)
Parent(#BODY_HEAD_FLOW)
Define_Com Class(#PRIM_LVCL) Name(#LVCL_2) Displayposition(2)
Parent(#skills) Source(#SKILCODE) Width(17)
Define_Com Class(#PRIM_LVCL) Name(#LVCL_3)
Captiontype(ColumnHeadings) Displayposition(3) Parent(#skills)
Source(#SKILDESC) Width(32)
Define_Com Class(#PRIM_LVCL) Name(#LVCL_4)
Captiontype(ColumnHeadings) Displayposition(4) Parent(#skills)
Source(#COMMENT) Width(24)
Define_Com Class(#PRIM_LVCL) Name(#LVCL_5) Displayposition(5)
Parent(#skills) Source(#GRADE) Width(8) Widthtype(Characters)
Define_Com Class(#PRIM_LVCL) Name(#LVCL_1) Caption('Acquired')
Captiontype(Caption) Displayposition(1) Parent(#skills) Source(#VF_ELTXTS)
Width(18) Widthtype(Fixed)
* *-----------------------------------------------------------------------------------------------
* Handle Initialization
* *-----------------------------------------------------------------------------------------------
Mthroutine Name(uInitialize) Options(*REDEFINE)
Define_Com Class(#Prim_evef) Name(#FormField) Reference(*dynamic)
Invoke Method(#Com_Ancestor.uInitialize)
For Each(#Control) In(#Body_Head.ComponentControls)
If_Ref Com(#Control) Is(*INSTANCE_OF #prim_evef)
Set_Ref Com(#FormField) To(*dynamic #Control)
Invoke Method(#PanelFields.Insert) Item(#FormField)
Endif
Endfor
* Set the uCommand wrapper property.
Set Com(#myscreen_wrapper) Ucommand(#com_owner)
Endroutine
* *-----------------------------------------------------------------------------------------------
* Handle Command Execution
* *-----------------------------------------------------------------------------------------------
Mthroutine Name(uExecute) Options(*REDEFINE)
Invoke Method(#Com_Ancestor.uExecute)
* The user has selected an Employee from the instance list.
* MakeRampAvailable will make sure the connection is in order and then signal
  back with the appropriate action
* Invoke Method(#myscreen_wrapper.MakeRampAvailable)
* Foraction(ShowDetails)
* Set Com(#Save_Button) Enabled(False)
* Endroutine

* Event Handlers

* RAMP has signalled it's available. What we do will depend on the #ForAction
  specified in the MakeRampAvailable method invocation.
* Evtroutine Handling(#myscreen_wrapper.RampAvailable)
* Foraction(#ForAction) Nextaction(#NextAction)
* Case (#ForAction)
* When Value_Is('= ShowDetails')
  * Navigate to a Destination that was previously named
  EmployeeDetailsAndSkills using newlook Designer. Use the ReturnScreen
  parameter to verify we are in the expected screen
  * once the navigation has completed
  * Invoke Method(#myscreen_wrapper.navigatetoscreen)
  * Name('EmployeeDetailsAndSkills') Returnscreen(#vf_eltxtl)
  * If the current screen is the expected one, get the values of the 5250 screen
    fields into the fields in this component and the skills into the skills list view
  If (#vf_eltxtl = EmployeeDetailsAndSkills)
  * #myscreen_wrapper.sendkey(#myscreen_wrapper.KeyF21)
  * Invoke Method(#avListManager.GetCurrentInstance) Akey3(#EMPNO)
  * #myscreen_wrapper.getvalue From('uSurname') Value(#surname.value)
  * #myscreen_wrapper.getvalue From('uGivename') Value(#givename.value)
  * #myscreen_wrapper.getvalue From('uAddress1') Value(#address1.value)
  * #myscreen_wrapper.getvalue From('uAddress2') Value(#address2.value)
  * #myscreen_wrapper.getvalue From('uAddress3') Value(#address3.value)
  * #myscreen_wrapper.getvalue From('uHomePhone') Value(#phonehme.value)
  * #myscreen_wrapper.getvalue From('uPostcode') Value(#POSTCODE.value)
  * #com_owner.uGetSkills Gridname('uSkillsGrid')
* Endif
* When Value_Is('= UpdateDetails')
#myscreen_wrapper.setvalue Infield('uSurname') Value(#surname.value)
#myscreen_wrapper.setvalue Infield('uGivename') Value(#givename.value)
#myscreen_wrapper.setvalue Infield('uAddress1') Value(#address1.value)
#myscreen_wrapper.setvalue Infield('uAddress2') Value(#address2.value)
#myscreen_wrapper.setvalue Infield('uAddress3') Value(#address3.value)
#myscreen_wrapper.setvalue Infield('uHomePhone') Value(#phonehme.value)
#myscreen_wrapper.setvalue Infield('uPostcode') Value(#POSTCODE.value)
#myscreen_wrapper.sendkey Key(#myscreen_wrapper.KeyEnter)
Returnscreen(#vf_eltxtl)
* Update the instance list using the "quick update" method
Use Builtin(BConcat) With_Args(#GiveName #SurName) To_Get(#FullName)
Invoke Method(#avListManager.UpdateListEntryData) Akey1(#Deptment)
Akey2(#Section) Akey3(#Empno) Visualid2(#FullName)
Acolumn1(#Phonehme) Acolumn2(#Address1) Ncolumn1(#PostCode)
Businessobjecttype(EMPLOYEES)
* Disable the save button again
Set Com(#SAVE_BUTTON) Enabled(False)
* Drop the framework lock as no updates are outstanding now
Set Com(#avFrameworkManager) Ulocked(FALSE)
Otherwise
Use Builtin(message_box_show) With_Args(ok ok info *component ('Unknown ForAction>>' + #ForAction.Value + '<=')
Endcase
Set Com(#myscreen_wrapper) Visible(False)
Endroutine
* Traverse the skills subfile/browselist by column name
Mthroutine Name(uGetSkills)
Define_Map For(*input) Class(#vf_eltxtl) Name(#GridName)
Define_Map For(*input) Class(#vf_eltxtl) Name(#nxtpage) Mandatory('+')
Define Field(#colcount) Type(*dec) Length(2) Decimals(0)
Define Field(#rowcount) Type(*dec) Length(4) Decimals(0)
Define Field(#column) Type(*dec) Length(2) Decimals(0) Default(0)
Define Field(#row) Type(*dec) Length(2) Decimals(0) Default(0)
Define Field(#colname) Type(*char) Length(50)
Define Field(#headrows) Type(*dec) Length(2) Decimals(0) Default(0)
Clr_List Named(#skills)
Dowhile (#nxtpage *NE '')
* Get the total number of subfile rows
#myscreen_wrapper.getvalue From(#GridName.value + ".RowCount")
Value(#rowcount)
* Get the total number of subfile heading rows
#myscreen_wrapper.getvalue From(#GridName.value + ".HeadRows")
Value(#headrows)
* Subtract one because the row collection is zero based.
#rowcount -= 1
Begin_Loop Using(#row) From(#headrows) To(#rowcount)
* get the number of subfile columns
#myscreen_wrapper.getvalue From(#GridName.value + ".Columns.Count")
Value(#colcount)
Begin_Loop Using(#column) To(#colcount)
* get the column name. Use a method to make the code easier to read
#com_owner.uGetColName Ugridname(#GridName.value)
Ucolnumber(#column) Ucolname(#colname)
* for the appropriate column, get the cell value
Case (#colname)
When Value_Is(= 'DateSklAcquired')
#com_owner.uGetCellValue Ugridname(#GridName.value)
Ucolnumber(#column) Urownumber(#row) Ucellvalue(#vf_eltxts)
When Value_Is(= 'SkillCode')
#com_owner.uGetCellValue Ugridname(#GridName.value)
Ucolnumber(#column) Urownumber(#row) Ucellvalue(#skilcode)
When Value_Is(= 'SkillDescription')
#com_owner.uGetCellValue Ugridname(#GridName.value)
Ucolnumber(#column) Urownumber(#row) Ucellvalue(#skildesc)
When Value_Is(= 'Comment')
#com_owner.uGetCellValue Ugridname(#GridName.value)
Ucolnumber(#column) Urownumber(#row) Ucellvalue(#comment)
When Value_Is(= 'Grade')
#com_owner.uGetCellValue Ugridname(#GridName.value)
Ucolnumber(#column) Urownumber(#row) Ucellvalue(#grade)
Endcase
End_Loop
* Sometimes newlook treats rows without data as valid rows so add only the ones where at least one field has data
If_Null (#skilcode #skildesc #comment #grade)
Else
Add_Entry To_List(#skills)
Endif
End_Loop
* If there is another page, page down
#myscreen_wrapper.getvalue From(#GridName.value + ".Marker")
Value(#nxtpage.value)
If (#nxtpage.value *NE ")
#myscreen_wrapper.sendkey Key(#myscreen_wrapper.KeyPageDown)
Endif
Endwhile
Endroutine
Mthroutine Name(uGetColName)
Define_Map For(*input) Class(#vf_eltxtl) Name(#uGridName)
Define_Map For(*input) Class(#vf_elnum) Name(#uColNumber)
Define_Map For(*output) Class(#vf_eltxtl) Name(#uColName)
* The column collection is zero based but Begin Loop must start at minimum of 1.
#ucolnumber -= 1
#myscreen_wrapper.getvalue From(#uGridName.value + ".Columns(" + 
#uColNumber.asstring + ").Name") Value(#ucolname.value)
Endroutine
Mthroutine Name(uGetCellValue)
Define_Map For(*input) Class(#vf_eltxtl) Name(#uGridName)
Define_Map For(*input) Class(#vf_elnum) Name(#uColNumber)
Define_Map For(*input) Class(#vf_elnum) Name(#uRowNumber)
Define_Map For(*output) Class(#vf_eltxtl) Name(#uCellvalue)
* The column collection is zero based but Begin Loop must start at minimum of 1.
#ucolnumber -= 1
#myscreen_wrapper.getvalue From(#uGridName.value + ".Columns(" + 
#uColNumber.asstring + ").Cells(" + #uRowNumber.asstring + ").Text")
Value(#uCellvalue.value)
Endroutine
* Listen to messages from RAMP and the 5250 application
Evtroutine Handling(#myscreen_wrapper.RampMessage)
Umessagetype(#MsgType) Umessagetext(#MsgText)
Case (#msgtype.value)
When Value_Is(" = VF_ERROR")
* Fatal messages reported by Ramp (e.g. Navigation request failed, etc). If in
design mode, show the underlying newlook screen. Otherwise, make the error
message
* appear in a message box on top of the command
If (#usystem.iDesignMode = true)
Set Com(#myscreen_wrapper) Visible(True)
Else
Message Msgid(dcm9899) Msgf(dc@m01) Msgdta(#msgtext.value)
#com_owner.avshowmessages
Endif
* Messages sent by the System i application or unknown form was encountered
When Value_Is(' = VF_INFO' ' = VF_UNKNOWN_FORM')
Message Msgid(dcm9899) Msgf(dc@m01) Msgdta(#msgtext.value)
* Failure to initialize RAMP. Could occur for mainly one of two reasons
When Value_Is(' = VF_INIT_ERROR')
Message Msgid(dcm9899) Msgf(dc@m01) Msgdta(#msgtext.value)
#com_owner.avshowmessages
When Value_Is(' = VF_WAITCONNECTION')
Otherwise
Use Builtin(message_box_show) With_Args(ok ok info *Component ('Unknown message type ' + #MsgType + 'encountered'))
Endcase
Endroutine
*--------------------------------------------------------------------------------
* Handle changes in any of the fields on the panel
*--------------------------------------------------------------------------------
Evtroutine Handling(#PanelFields<>.Changed)
* Enable the save button
Set Com(#SAVE_BUTTON) Enabled(True)
* Lock the framework and set a message for the user
Use Builtin(bconcat) With_Args('Changes made to employee' #GiveName #Surname 'have not been saved yet.' 'Do you want to save them before continuing?') To_Get(#sysvar$av)
Set Com(#avFrameworkManager) Ulocked(USER)
Ulockedmessage(#sysvar$av)
Endroutine
*--------------------------------------------------------------------------------
* Enter key pressed
*--------------------------------------------------------------------------------
Evtroutine Handling(#PanelFields<>.KeyPress)
Options(*NOCLEARMESSAGES *NOCLEARERRORS)
Keycode(#KeyCode)
If Cond('#KeyCode.Value = Enter')
* If there no changes have been made issue message and ignore enter
If Cond('#SAVE_BUTTON.Enabled *EQ True')
Invoke Method(#Com_Owner.Save)
Else
* Issue 'There are no changes to save' message
Use Builtin(Message_box_show) With_Args(ok ok Info *Component
*MTXTDF_NO_SAVE)
Endif
Endif
Endroutine
*--------------------------------------------------------------------------------
* Handle the save button
*--------------------------------------------------------------------------------
Evtroutine Handling(#SAVE_BUTTON.Click)
* Call the Save method
Invoke Method(#Com_Owner.Save)
Endroutine
*--------------------------------------------------------------------------------
* Handle Save
*--------------------------------------------------------------------------------
Mthroutine Name(Save)
* Update data base
Invoke Method(#myscreen_wrapper.MakeRampAvailable)
Foraction(UpdateDetails)
* If update completed okay
Endroutine
*--------------------------------------------------------------------------------
* Handle Termination
*--------------------------------------------------------------------------------
Mthroutine Name(uTerminate) Options(*REDEFINE)
* Clean up the collection of fields on the panel
Invoke Method(#PanelFields.RemoveAll)
* Do any termination defined in the ancestor
Invoke Method(#Com_Ancestor.uTerminate)
Endroutine
End_Com
Example 3: Show the System i Disk Usage

A screen wrapper can pick values out of hidden 5250 screen(s) and present it in completely different ways. This example shows the disk usage of a System i graphically:

<table>
<thead>
<tr>
<th>Disk Unit</th>
<th>% Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>70.4</td>
</tr>
<tr>
<td>2</td>
<td>70.4</td>
</tr>
<tr>
<td>3</td>
<td>70.4</td>
</tr>
<tr>
<td>4</td>
<td>70.4</td>
</tr>
<tr>
<td>5</td>
<td>70.4</td>
</tr>
<tr>
<td>6</td>
<td>70.4</td>
</tr>
</tbody>
</table>

To access the work with disk status screen type `wrkdsksts` in the command line. The name given to the Work with Disk Status screen in this example is "DiskStatus".

When in the disk status screen, read the %Use column of the subfile and feed the data to the graph.

* 
* 
* COMPONENT: STD_PANL 
*
Function Options(*DIRECT)
Begin_Com Role(*EXTENDS #VF_AC010) Height(559)
Hint(*MTXTDF_DET1) Layoutmanager(#ATLM_1) Width(557)
Define_Com Class(#PRIM_GRID) Name(#DiskSts) Displayposition(1)
Height(150) Left(109) Parent(#PANL_2) Rowheight(19) Tabposition(1)
Top(15) Width(212)
Define_Com Class(#PRIM_GDCL) Name(#GDCL_1) Caption('Disk Unit')
Captiontype(Caption) Displayposition(1) Parent(#DiskSts)
Source(#VF_ELTYPE) Width(29)
Define_Com Class(#PRIM_GDCL) Name(#GDCL_2) Caption('% Use')
Captiontype(Caption) Displayposition(2) Parent(#DiskSts) Readonly(False)
Source(#VF_ELTXTS) Width(30) Widthtype(Remainder)
Define_Com Class(#PRIM_GRPH) Name(#GRPH_1) Displayposition(1)
Height(370) Left(0) Parent(#PANL_3) Scatterstyle(SymbolAtPoints+Solid)
Surfacestyle(ConnectLinesInBlack) Tabposition(1) Top(0) Width(557)
Xcaption('Disk Units') Ycaption('% Use')
Define_Com Class(#PRIM_GRCL) Name(#GRCL_1) Columnrole(Label)
Displayposition(1) Parent(#GRPH_1) Source(#VF_ELTYPE)
Define_Com Class(#PRIM_GRCL) Name(#GRCL_2)
Columnsymbol(HollowUpTriangle) Displayposition(2) Parent(#GRPH_1)
Source(#VF_ELWIDP)
Define_Com Class(#vf_sy122) Name(#myscreen_wrapper) Displayposition(3)
Height(513) Left(144) Parent(#PANL_1) Top(24) Visible(False) Width(593)
Define_Com Class(#PRIM_PANL) Name(#PANL_1) Displayposition(1)
Height(559) Layoutmanager(#SPLM_1) Left(0) Parent(#COM_OWNER)
Tabposition(1) Tabstop(False) Top(0) Width(557)
Define_Com Class(#PRIM_ATLM) Name(#ATLM_1)
Define_Com Class(#PRIM_ATLI) Name(#ATLI_1) Attachment(Center)
Manage(#PANL_1) Parent(#ATLM_1)
Define_Com Class(#PRIM_SPLM) Name(#SPLM_1)
Define_Com Class(#PRIM_PANL) Name(#PANL_2) Displayposition(1)
Height(185) Layoutmanager(#FWLM_1) Left(0) Parent(#PANL_1)
Tabposition(2) Tabstop(False) Top(0) Width(557)
Define_Com Class(#PRIM_PANL) Name(#PANL_3) Displayposition(2)
Height(370) Layoutmanager(#ATLM_2) Left(0) Parent(#PANL_1)
Tabposition(3) Tabstop(False) Top(189) Width(557)
Define_Com Class(#PRIM_SPLI) Name(#SPLI_1) Manage(#PANL_2)
Parent(#SPLM_1) Weight(1)
Define_Com Class(#PRIM_SPLI) Name(#SPLI_2) Manage(#PANL_3) Parent(#SPLM_1)
Define_Com Class(#PRIM_ATLM) Name(#ATLM_2)
Define_Com Class(#PRIM_ATLI) Name(#ATLI_2) Attachment(Center) Manage(#GRPH_1) Parent(#ATLM_2)
Define_Com Class(#PRIM_FWLM) Name(#FWLM_1) Direction(TopToBottom) Flowoperation(Center) MarginTop(15) SpacingItems(2)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_3) Manage(#DiskSts) Parent(#FWLM_1)
Define_Com Class(#PRIM_PHBN) Name(#PHBN_1) Caption('Refresh Statistics') DisplayPosition(2) Left(331) Parent(#PANL_2) TabPosition(2) Top(15) Width(117)
Define_Com Class(#PRIM_FWLI) Name(#FWLI_6) Manage(#PHBN_1) Parent(#FWLM_1)
Mthroutine Name(uInitialize) Options(*REDEFINE)
   * Do any initialization defined in the ancestor
   Invoke Method(#Com_Ancestor.uInitialize)
Set Com(#grph_1) Graphtype(Bar)
Set Com(#myscreen_wrapper) Ucommand(#com_owner)
Endroutine
Mthroutine Name(uExecute) Options(*REDEFINE)
   * Do any execution logic defined in the ancestor
   Invoke Method(#Com_Ancestor.uExecute)
   Invoke Method(#myscreen_wrapper.MakeRampAvailable)
Foraction(ShowDiskStatus)
Endroutine
Evtroutine Handling(#myscreen_wrapper.RampAvailable)
Foraction(#ForAction)
   * Get the employee number of the employee whose details are to be displayed.
Case (#ForAction)
   When Value_Is('=' ShowDiskStatus')
   #myscreen_wrapper.current_form Name(#vf_eltxtl)
   If (#vf_eltxtl *NE 'DiskStatus')
   Invoke Method(#myscreen_wrapper.navigatetoscreen) Name('DiskStatus')
   Returnscreen(#vf_eltxtl)
   Endif
   If (#vf_eltxtl = 'DiskStatus')
   #myscreen_wrapper.sendkey Key(#myscreen_wrapper.KeyF10)
#myscreen_wrapper.sendkey Key(#myscreen_wrapper.KeyF5)
#com_owner.uGetDiskStatus Gridname('uDiskStatus')
Endif
Otherwise
Use Builtin(message_box_show) With_Args(ok ok info *component ('Incorrect ForAction>>' + #ForAction.Value + '<<'))
Endcase
Endroutine
Mthroutine Name(uGetDiskStatus)
Define_Map For(*input) Class(#vf_eltxtl) Name(#GridName)
Define_Map For(*input) Class(#vf_eltxtl) Name(#nxtpage) Mandatory('+
Define Field(#colcount) Type(*dec) Length(2) Decimals(0)
Define Field(#rowcount) Type(*dec) Length(4) Decimals(0)
Define Field(#column) Type(*dec) Length(2) Decimals(0) Default(0)
Define Field(#row) Type(*dec) Length(2) Decimals(0) Default(0)
Define Field(#colname) Type(*char) Length(50)
Define Field(#headrows) Type(*dec) Length(2) Decimals(0) Default(0)
Clr_List Named(#DiskSts)
Clr_List Named(#grph_1)
Dowhile ((#nxtpage *NE ") And (#nxtpage *NE 'Bottom'))
#myscreen_wrapper.getvalue From(#GridName.value + ".RowCount")
Value(#rowcount)
#myscreen_wrapper.getvalue From(#GridName.value + ".HeadRows")
Value(#headrows)
* Subtract one because the row collection is zero based.
#rowcount -= 1
Begin_Loop Using(#row) From(#headrows) To(#rowcount)
#myscreen_wrapper.getvalue From(#GridName.value + ".Columns.Count")
Value(#colcount)
Begin_Loop Using(#column) To(#colcount)
#com_owner.uGetColName Ugridname(#GridName.value)
Ucolnumber(#column) Ucolname(#colname)
Case (#colname)
When Value_Is(= 'Unit')
#com_owner.uGetCellValue Ugridname(#GridName.value)
Ucolnumber(#column) Urownumber(#row) Ucellvalue(#vf_eltype)
When Value_Is(= 'Used')
#com_owner.uGetCellValue Ugridname(#GridName.value)
Ucolnumber(#column) Urownumber(#row) Ucellvalue(#vf_eltxts)
#VF_ELWIDP := #vf_eltxts.trim.asnumber
Endcase
End_Loop
Add_Entry To_List(#DiskSts)
Add_Entry To_List(#grph_1)
End_Loop
#myscreen_wrapper.getvalue From(#GridName.value + ".Marker")
Value(#nxtpage.value)
If (((#nxtpage.value *NE ") And (#nxtpage.value *NE 'Bottom'))
#myscreen_wrapper.sendkey Key(#myscreen_wrapper.KeyPageDown)
Endif
Endwhile
Endroutine
Mthroutine Name(uGetColName)
Define_Map For(*input) Class(#vf_eltxtl) Name(#uGridName)
Define_Map For(*input) Class(#vf_elnum) Name(#uColNumber)
Define_Map For(*output) Class(#vf_eltxtl) Name(#uColName)
#ucolnumber -= 1
#myscreen_wrapper.getvalue From(#uGridName.value + ".Columns(" + 
#uColNumber.asstring + ").Name") Value(#ucolname.value)
Endroutine
Mthroutine Name(uGetCellValue)
Define_Map For(*input) Class(#vf_eltxtl) Name(#uGridName)
Define_Map For(*input) Class(#vf_elnum) Name(#uColNumber)
Define_Map For(*input) Class(#vf_elnum) Name(#uRowNumber)
Define_Map For(*output) Class(#vf_eltxtl) Name(#uCellvalue)
#ucolnumber -= 1
#myscreen_wrapper.getvalue From(#uGridName.value + ".Columns(" + 
#uColNumber.asstring + ").Cells(" + 
#uRowNumber.asstring + ").Text")
Value(#ucellvalue.value)
Endroutine
Mthroutine Name(uTerminate) Options(*REDEFINE)
* Clean up the collection of fields on the panel
* Do any termination defined in the ancestor
Invoke Method(#Com_Ancestor.uTerminate)
Endroutine
Evtroutine Handling(#PHBN_1.Click)
Invoke Method(#myscreen_wrapper.MakeRampAvailable)
Foraction(ShowDiskStatus)
Endroutine
End_Com
Programming Techniques

This section shows programming techniques to help you overcome common application design issues and to easily integrate advanced functionality in your RAMP applications.

Defining Screens

- Handling a Single Screen which Shows Multiple Modes
- Handling Multi-5250 Screen Data Entry

Programming

- Short-circuiting Navigation
- A Command Handler Tab with Many 5250 Destinations
- Advanced Prompting
- A RAMP Design Approach Using a Single Junction Point (SJP)
- Using HIDE_CURRENT_FORM to manage access to command handler tabs
Handling a Single Screen which Shows Multiple Modes

In System i applications it is possible that a single screen handles multiple modes.
For example, an application can have a single screen which allows ADD, CHANGE, DISPLAY and DELETE.
To be able to handle such screens in RAMP, the screens must have a unique screen ID in all the modes they can appear in and they must be uniquely defined as separate destination screens using newlook Designer.
If the mode is displayed on the screen, you can include it in the screen ID in newlook Identify so that the screen ID automatically changes according to the mode.
Also, the attribute bytes (the grey squares) surrounding a field in newlook Identify distinguish whether a field is input capable or not. Newlook is able to recognise the state of the attribute bytes and they can be used as part of the screen ID.
For example if you have two identical screens where the only difference is that one screen is input capable and the other one only displays information, you can use a single field with the surrounding attribute bytes as the screen ID.
Handling Multi-5250 Screen Data Entry

In this scenario three 5250 screens are used to input new orders like this:

We need to do is to make them all work on a single command handler tab like this, handling the "New" command for business object "Order":

![Diagram of screens A, B, and C with data entry fields](image-url)
Here's an outline of the steps required to do this and some ideas about how this common type of 5250 interaction might be modernized:

- First, enroll Screen A, Screen B and Screen C in RAMP as destinations.
- Now, link Screen A to the "New" command in the "Orders" business object.
- Do not link destination screens B or C to anything. They are defined as destinations only so that RAMP can control their function keys and execute scripts associated with them. They are never directly accessed by any command, so their INVOKE scripts will never be used.
- Now examine and think about the INVOKE, BUTTON and RETURN scripts associated with each of screen A, B and C as follows:

<table>
<thead>
<tr>
<th>Screen A</th>
<th>Screen B</th>
<th>Screen C</th>
</tr>
</thead>
<tbody>
<tr>
<td>INVOKE script</td>
<td>Should be okay as generated.</td>
<td>Should never be used, so delete any script lines or add an error message.</td>
</tr>
<tr>
<td>BUTTON script</td>
<td>Successful Enter/OK button usage should cause Screen B to appear.</td>
<td>Successful Enter/OK button usage should cause Screen C to appear</td>
</tr>
<tr>
<td>---------------</td>
<td>---------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>RETURN script</td>
<td>Should be okay as generated</td>
<td>Make sure it navigates back to the correct junction and not back to screen A.</td>
</tr>
</tbody>
</table>

The preceding table mentions "Successful Enter/OK button usage". This means that your script does a SENDKEY(KeyEnter) and then possibly checks that everything went as expected.

As generated, default scripts probably would handle the Screen A -> B -> C flow automatically, but it might be useful to understand how this happens so that you can modify the behavior. Consider this modified partial BUTTON script:

```java
/* The user has clicked the OK button or pressed the enter key on screen A */
case KeyEnter:

    /* Send the enter key on Screen A to the System i 5250 server */

    SENDKEY(KeyEnter);

    /* Now handle the screen that results (ie: after sending the Enter key) */

    switch ( CURRENT_FORM() )
    {
```
/* If screen B is now being displayed we have advanced to the 2nd screen. */

/* There is nothing more to do as screen B's scripts will now take over. */

case "Screen B":
    break;

/* If Screen A is still being displayed the user has probably made a data entry error */

case "Screen A":
    ALERT_MESSAGE("Please correct the data entry errors and click OK again.");
    break;

/* If we reach here, then some unexpected screen is being displayed */

default:
    HIDE_MESSAGE("Unexpected screen " + CURRENT_FORM() + " encountered.");
    break;
    
break;

- Finally, think about adding, re-labeling or changing buttons and function keys so as to get a more Windows like "Previous" -> "Next" -> "Save" flow going on between screens A, B and C. Possibly something like this:

<table>
<thead>
<tr>
<th></th>
<th>Has a &quot;Next&quot; Button</th>
<th>Has a &quot;Previous&quot; Button</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen A</td>
<td>Yes - probably re-labels existing Enter/OK button. Script sends KeyEnter to advance</td>
<td>No.</td>
</tr>
<tr>
<td>Screen B</td>
<td>Screen C</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>---------</td>
<td></td>
</tr>
<tr>
<td>Yes - probably re-labels existing Enter/OK button. Script sends KeyEnter to advance to screen C</td>
<td>No - Existing Enter/OK button is probably re-labeled as &quot;&quot;Save&quot;&quot; instead. Script probably sends KeyEnter to advance to screen A to start a brand new order (after saving the current one).</td>
<td></td>
</tr>
<tr>
<td>Yes - probably re-labels something like F12 to cause Screen A to be redisplayed (the 5250 application would need to support this of course)</td>
<td>Yes - probably re-labels something like F12 to cause Screen B to be redisplayed (the 5250 application would need to support this of course)</td>
<td></td>
</tr>
</tbody>
</table>

### If a pop-up message is displayed when leaving Screen A B or C

Sometimes a 5250 pop-up message is displayed when leaving Screen A, B or C (either by pressing F12 on System i or by selecting another object in the Framework) asking to confirm the changes, and the response to the message takes the user to different screens. For example if the answer is Yes the user might be taken to the nearest junction, but if the answer is No the user might be taken back to the entry screen (A B or C).

The easiest solution to this is to ignore the popup by defining it in newlook as a full display (see How to Turn Pop-Ups into Full Screens) and defining it to RAMP as a special screen. The script for the special screen can set the value of the Response field to Yes and send the Enter key. In this way, the assumption is that the user is cancelling the entry when they select something else in the Framework.

In addition a Cancel button on each of the entry screens can be set to send an F12 key to get to the special screen and back to the junction, and the pop-up can be hidden. Alternatively the Cancel button script for the F12 key could contain a
javascript confirm() function, which will display a confirmation box to the user:

```javascript
var answer = confirm("Confirm cancellation of changes?")
if (answer == true)
{
    /* user pressed the ok button on the confirmation box to cancel, so send
the F12 key */
    SENDKEY(KeyF12);
    /* if popup is defined as a special, let the special eliminate the screen */
    HIDE_CURRENT_FORM("Entry successfully cancelled.");
}
else
{
    /* user pressed the cancel button on the confirmation box, so don’t do
anything */
}
```
Short-circuiting Navigation

Sometimes 5250 enquiry style transactions use a 5250 screen that loop on 
<enter key values> -> <display data> -> <enter key values> -> <display data> 
interactions.

Typically these screens have an INVOKE script that is structured along these 
lines:

```
var strAccessMenu = "SomeMenuScreenName";
var strThisEnquiry = "SomeCherryEnquiryScreenName";

/* Navigate to the menu that will provide access to the enquiry function */
NAVIGATE_TO_JUNCTION(strAccessMenu); 
if ( !( CHECK_CURRENT_FORM(strAccessMenu, "Could not display 
menu", strAccessMenu) ) return;

/* Invoke the screen from the access menu */
SETVALUE("uMenuOptionField","7"); /* Say */
SENDKEY(KeyEnter);
if ( !( CHECK_CURRENT_FORM(strThisEnquiry,"Could not display 
enquiry screen", strThisEnquiry ) ) return;

/* Enter the appropriate key value and display the enquiry details */
SETVALUE("uKeyValueField",objInstanceList.Akey1[0] ); /* Say */
SENDKEY(KeyEnter);
if ( !( CHECK_CURRENT_FORM(strThisEnquiry,"Could not display", 
strThisEnquiry ) ) return;

/* Finished */
```

When this transaction is used repeatedly (for example by clicking down through 
an instance list or orders, products, policies, etc) you can sometimes short- 
circuit the navigation logic by a simple script change along the following lines. 
This change produces less 5250 screen interactions giving a faster response for 
your end-users:
var strAccessMenu = "SomeMenuScreenName";
var strThisEnquiry = "SomeCherryEnquiryScreenName";

/* We only need to navigate if we are not already at the screen */

if ( CURRENT_FORM() != strThisEnquiry )
{
    /* Navigate to the menu that will provide access to the enquiry function */

    NAVIGATE_TO_JUNCTION(strAccessMenu);
    if ( !( CHECK_CURRENT_FORM(strAccessMenu, "Could not display menu", strAccessMenu) ) ) return;

    /* Invoke the screen from the access menu */

    SETVALUE("uMenuOptionField","7"); /* Say */
    SENDKEY(KeyEnter);
    if ( !(CHECK_CURRENT_FORM(strThisEnquiry,"Could not display enquiry screen",strThisEnquiry)) ) return;

}

/* Enter the appropriate key value and display the enquiry details */

SETVALUE("uKeyValueField",objInstanceList.Akey1[0]); /* Say */
SENDKEY(KeyEnter);
if ( !( CHECK_CURRENT_FORM(strThisEnquiry,"Could not display", strThisEnquiry ) ) ) return;

/* Finished */
A Command Handler Tab with Many 5250 Destinations

You can associate many 5250 destination screens with a single command handler tab. There are many uses for this capability and it may be used to overcome some common application design issues.

For example, imagine that you have five different 5250 destination forms that each request report production criteria and then submit the report to batch. Let's call these five different 5250 screens uReport1, uReport2 .... uReport5.

In prototyping this application you might approach handling these five different reports in a number of ways:

**Too Many Business Objects**

Each report is defined as a unique business object named "Report 1" through "Report 5". In this case the application navigation tree might be structured like this …

![Diagram of Too Many Business Objects](image)

When the user clicks on one of the reports the entire right hand side of the form would display the reports associated 5250 form.

**Too Many Command Tabs**

You define a single business object called "Reports" which has five associated commands or actions called Report 1 .... Report 5. In this case the application navigation and command handler tabs might be structured like this …

![Diagram of Too Many Command Tabs](image)

When the user clicks on a report tab the associated 5250 form would appear on the tab. One of the tabs would probably be a default.

There are a number of issues with these approaches:

- The first approach consumes too many business objects
- The second approach consumes too many commands (or actions)

What do you do if there are 50 or 500 different types of reports?

**Solution: Dynamic Command Tab**
The answer may be to use a single business object named, for example *Reports* with a single dynamic command handler tab named *Submit Report Request*. For example, here is the Reports business object set up to show two tabs. The first is "Submit Report Request" and the second is "View Spool Files" which might be used to display the output of report batch jobs in a variety of different ways.

In this example we are only interested in the "Submit Report Request" command handler tab because we need, at execution time, to dynamically vary which 5250 destination screen actually appears on it.

So how can you vary which 5250 screen appears on this single tab? There are two main ways this is done:

- **A User Controlled Command Tab with Many Destinations**
- **A Program Controlled Command Tab with Many Destinations**

**Limitations**

- Using the Framework SWITCH facility to switch to a command handler with many 5250 destinations is not supported.
- Any command handler using this option must be in the main Framework window, not in a separate pop-up window.
A User Controlled Command Tab with Many Destinations

You can associate several destination screens with a command handler, in which case the Framework automatically shows a window to allow the end-user decide which screen to use:

- Create the Reports business object
- Make sure the Reports business object does not have any filters and is set up so that it uses up the entire viewing area on the right hand side of the main form.
- Give Reports a single business object level command handler named "Submit Report Request". Make it the default command.
- Define the five 5250 destination forms in the normal manner.
- Associate all five 5250 destination forms with the Submit Report Request command handler tab. As you do this the RAMP tool will notify that you are associating multiple destinations with a single command handler tab.
- Execute the application.

Whenever the Submit Report Request command tab needs to be displayed it detects that it has multiple 5250 destinations and asks the user to choose which one they would like to use:
**A Program Controlled Command Tab with Many Destinations**

You can create a program that controls which screen is displayed on the command tab. This is slightly harder to set up but is more easily expanded.

Create the Reports business object

Give Reports a single instance level command handler named "Submit Report Request". Make this the default command.

In the business object Reports create an invisible filter that fills the instance list with the five report names. Make sure to include AKeyN and/or NKeyN values that identify the associated report. For example:

```
BEGIN_COM ROLE(*EXTENDS #VF_AC007) HEIGHT(182) WIDTH(326)
Mtroutine uInitialize Options(*Redefine)
#Com_Owner.avHiddenFilter := TRUE
#avListManager.ClearList
Invoke #avListManager.AddtoList Visualid1('Report 1') Visualid2('Daily production report') AKey1('uReport1') NKey1(1)
Invoke #avListManager.AddtoList Visualid1('Report 2') Visualid2('Monthly production report') AKey1('uReport2') NKey1(2)
Invoke #avListManager.AddtoList Visualid1('Report 3') Visualid2('Overloaded production report') AKey1('uReport3') NKey1(3)
Invoke #avListManager.AddtoList Visualid1('Report 4') Visualid2('Monday Morning Management Report') AKey1('uReport4') NKey1(4)
Invoke #avListManager.AddtoList Visualid1('Report 5') Visualid2('Daily production report') AKey1('uReport5') NKey1(5)
* Instance list updating has been completed
INVOKE METHOD(#avListManager.EndListUpdate)
Endroutine
End_Com
```

The instance list and command handler tabs are presented to the user like this:

![Command Tab with Many Destinations](image)

When the user clicks on a report in the instance list the associated 5250 destination screen is displayed on the tab.
Define the five 5250 destination forms in the normal manner.

Associate just the first 5250 destination forms (eg: uReport1) with the "Submit Report Request" command handler tab.

Say the numeric instance list key value NKey1 contained the requested report number ….. then you could change the uReport1 INVOKE_SCRIPT to be like this:

/* See is the report number in the instance list is for some other report */
/* If it is then "reroute" this request to correct 5250 destination form */
switch ( objListManager.NKey1[0] )
{
    case 2: NAVIGATE_TO_DESTINATION("uReport2"); return;
    case 3: NAVIGATE_TO_DESTINATION("uReport3"); return;
    case 4: NAVIGATE_TO_DESTINATION("uReport4"); return;
    case 5: NAVIGATE_TO_DESTINATION("uReport5"); return;
}

/* Normal navigation logic to handle report number 1 */
NAVIGATE_TO_JUNCTION("whatever");
Etc, etc ………………………

If the alphanumerics instance list key value AKey1 contained the requested 5250 destination screen's name ….. then you could change the uReport1 INVOKE_SCRIPT like this:

/* See is the 5250 screen name is this screen's name */
/* If it is then "reroute" this request to correct 5250 destination form */
if ( objListManager.AKey1[0] != "uReport1")
{
    NAVIGATE_TO_DESTINATION(objListManager.AKey1[0]);
    return;
}
/* Normal navigation logic to handle this screen */
NAVIGATE_TO_JUNCTION("whatever");
Etc, etc ………………………
Using this Approach in other Situations

This is an example that shows how to dynamically choose to present five different 5250 reporting screens onto a single command handler tab.

The choice may be made by the user or logic you write into a script.

You should now understand:

- That if there were three different types of "Orders" in an "ERP" application (International, National and Local, say) that you could use this approach to cause three different 5250 destination screens to be displayed on a single command handler tab named "Details".

- That the instance list can be used to dynamically create a "menu" of 5250 destination forms.

- That not all 5250 destination screens need to be formally attached to a command handler tab. They can be dynamically attached (ie: displayed) on tabs by logic imbedded in a navigation script by using the NAVIGATE_TO_DESTINATION() function.
Advanced Prompting

You can easily provide advanced prompting in your 5250 RAMP screens by associating simple Visual LANSA forms with fields.

For example you could create a Visual LANSA form to show different item sizes as a set of radio buttons and then associate this form with an Item Size field in the RAMP screen to return its value:

![Radio Buttons Form](image)

The prompter forms give you access to all the advanced Visual LANSA features such as radio buttons, sortable tree and list views, etc.

Unlike System i prompting, Visual LANSA prompter forms do not necessarily cause any interaction with the System i server which makes them fast.

Moreover, advanced prompting can be used to provide functionality that is not possible on a 5250 device. For example, a phone number prompter could display a phone number search web site and when the user chooses a phone number, place it's value back into the 5250 screen.

Other Uses for Prompter Forms

Prompter forms can also be used in various ways for sophisticated Windows desktop integration. For example they might:

- Prepare and send an overdue payment e-mail.
- Submit a credit reference check via an internet site or a web service.
- Extract information from the System i server, create a MS-Excel spreadsheet, then start MS-Excel to display the spreadsheet information.
- Display a linked or associated web page.
- Display a linked or associated PDF document.
- Do any other form of advanced Windows desktop integration that you can dream up.

The advanced prompter forms are designed as an easy way integrate sophisticated functionality to subsets of information on the 5250 screen. Of
course entire new RAMP screens can be added to a RAMP application any time to handle all desktop integration requirements.
Using Prompter Forms

Creating Prompter Forms

Create prompter forms as normal VL forms. Their Ancestor property must be set to VF_AC017 so as to inherit standard behavior.

Associating Prompter Forms with Fields

To associate prompter forms with fields, open the RAMP window and click on the session object in the navigation tree. The Session properties are displayed:

![Session properties](image)

The Special Field Handling area is used to define the forms to be associated with fields.

The two entries in the example indicate that:

If an input field named txtSTATE is on any 5250 destination form, and it is where the cursor/focus is, and the user presses function key F4 (or the equivalent button) then the VL form named P_STATE is to be invoked to handle the request.

If an input field named txtPHONE is on any 5250 destination form, and it is where the cursor/focus is, and the user presses function key F5 (or the equivalent button) then the VL form named P_PHONE is to be invoked to handle the request.

How do Advanced Prompter Forms Work?

Whenever the user performs the actions required to invoke one of the VL forms
the following happens:

- The `HANDLE_PROMPT Function` in the script is invoked to show the prompter form associated with the field. Optionally additional information can be passed to the form using this function.
- If the form has not been used already in the session it's `uInitialize` method is invoked. This allows it to do first time processing.
- The values of all the named fields on the current 5250 destination form are extracted and made available to the VL form.
- The VL form's `uShow` method is then invoked so that it can prepare and position anything that it wants to show to the user.
- When the user makes a selection, the VL form can alter the value of any named field on the current 5250 destination form.
Are any Examples Provided to Learn More about this Topic?
Yes, you should be able to find the following Visual LANSA forms in your repository:

**Combo Box**
DF_PRM01 prompts using a combo box of US states like this:

<table>
<thead>
<tr>
<th>ARKANSAS - AR</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALABAMA - AL</td>
</tr>
<tr>
<td>ALASKA - AK</td>
</tr>
<tr>
<td>AMERICAN SAMOA - AS</td>
</tr>
<tr>
<td>ARIZONA - AZ</td>
</tr>
<tr>
<td>ARKANSAS - AR</td>
</tr>
<tr>
<td>CALIFORNIA - CA</td>
</tr>
</tbody>
</table>

**Radio Buttons**
DF_PRM02 prompts using a set of product size radio buttons:

<table>
<thead>
<tr>
<th>Item Sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Small - SML</td>
</tr>
<tr>
<td>☐ Medium - MED</td>
</tr>
<tr>
<td>☐ Large - LGE</td>
</tr>
<tr>
<td>☐ Extra Large - XL</td>
</tr>
<tr>
<td>☐ Extra Extra Large - XXL</td>
</tr>
</tbody>
</table>

**List with Columns**
DF_PRM03 generically prompts for employees by name:
Tree

DF_PRM04 prompts department and section information using a tree:
A RAMP Design Approach Using a Single Junction Point (SJP)

A complex 5250 application that RAMP is being applied to may be visualized like this:

\[J = \text{Junction/Menu Screen}\]
\[C = \text{Cherry Screen}\]

A 5250 user signs on and navigates around a cloud of menus/junctions to reach the "cherries" (5250 destination screens) where they do useful work.

The RAMP choreographer is able to follow these navigations and working with it you can define the various navigations required to move around in the cloud. To a RAMP developer the identification of the junctions and the generation of their navigation scripts may be a time consuming and rather mundane job.

From the RAMP developers point of view the whole process would be easier to handle if the 5250 application was actually structured like this:
Here a single junction point (or program) controls access to every 5250 destination screen.

If the 5250 application was structured this way then designing a RAMP application would be simpler and faster because:

- Only a single junction needs to be defined and scripted.
- The invocation scripts for the destination screens are simpler and standardized.

This rest of this section describes ways that you might set up this type of view of a 5250 application.

This approach is called the **Single Junction Point (SJP)** model.

The SJP model cannot be applied to every type of application, but where it can be applied it may represent a saving in the time taken to develop a RAMP application.

Essentially a SJP approach means that two different views of an application exist:
To make this programmatic view of the world the System i 5250 program needs to already exist or to be created.

Let's call this special program the SJP (Single Junction Point) program.

A kind of already exists on all System i system.

It is a program called QCMD (or Command Entry Display) and from it almost any 5250 application can be invoked in some direct or indirect way. However using QCMD is not acceptable to many sites for security reasons, so the rest of this material discusses various ways you might create your own specialized and some of issues and additional benefits that might arise.

How does an SJP work?
Is an SJP really that simple in a real application?
Can SJP do the other useful things?
Does SJP have to be CL (Control Language) program?
What other issues might impact the use on an SJP approach?
How does an SJP work?

An SJP program provides generic access to the destinations that are available to a RAMP application. An SJP is not designed to talk to a user, it is designed to talk to a RAMP script.

A simple SJP and RAMP script might work together like this:

The RAMP script example used here is associated with a command handler that wants to display the details of a customer using a 5250 program named CUSTINQ.

When it starts to execute it first navigates to the junction screen named JSP.

This causes the SJP program to displays its 5250 screen.

It then sets the field PGMNAME to value "CUSTINQ" and sends the enter key.

This causes the SJP program to receive the screen back.

The CL field &PGMNAME in the SJP program now contains the name "CUSTINQ".

Program CUSTINQ is then called using a generic call.

The RAMP script then gets the program CUSTINQ to display customer number 123456.

Using this simple SJP hundreds of destination screen scripts could be created to access all sorts of System i 5250 programs, providing that they all have a simple CALL interface.
Is an SJP really that simple in a real application?

Probably not. Often the programs being called required simple (and sometimes complex) parameters to be passed to them and amongst them.

However, in this style of application design, groups of programs usually fall into large application groups that share a common parameter protocol.

By adding an REQUEST_TYPE (say) field to the information exchanged between RAMP scripts you can easily accommodate different program parameter protocols along these lines (logic is in pseudo code):

```
WRITE and READ the 5250 screen containing PGMNAME and REQUEST_TYPE

DOWHILE (REQUEST_TYPE not equal to "SIGNOFF")

CASE of REQUEST_TYPE
WHEN = "CALLP1" CALL PGM_NAME using calling protocol 1 for parameters
WHEN = "CALLP2" CALL PGM_NAME using calling protocol 2 for parameters
WHEN = "CALLP3" CALL PGM_NAME using calling protocol 3 for parameters
<etc>
ENDCASE

WRITE and READ the 5250 screen containing PGMNAME and REQUEST_TYPE
ENDWHILE
```

If you are used to RPG and CL programs you might not be aware just how flexible the IBM i program call interface is. Program parameters are just areas of memory and passed between programs as pointers. You might not know:

- Parameters do not have to be the exact length the called program defined. They just need to be as long or longer, which makes sharing and reusing a small set of parameter variables in a SJP quite simple.

- You can pass a program more parameters than it actually requires. The extra ones are generally ignored, which means you can have very few actual
CALL commands in your program.

- You could directly pass parameter values from your RAMP scripts to the SJP and pass them into the called programs. You could also get retuned parameter values back into the script again using this approach. This means your RAMP scripts can call batch style programs as well.
Can SJP do the other useful things?

It could be designed to do almost anything. For example it can provide a very flexible and generic interface to IBM i command like this:

```plaintext
WRITE and READ the 5250 screen containing PGMNAME, REQUEST_TYPE and COMMAND

DOWHILE (REQUEST_TYPE not equal "SIGNOFF")

CASE of REQUEST_TYPE
  WHEN = "CMD" CALL QCMDEXEC (COMMAND 256)
  WHEN = "CALLP3" CALL PGM_NAME using calling protocol 3 for parameters
<etc>
```

Would allow your RAMP scripts to execute a CL command like this:

```plaintext
  NAVIGATE_TO_JUNCTION("SJP");
  SETVALUE("REQUEST_TYPE","CMD");
  SETVALUE("COMMAND","WRKSBMJOB *JOB")
  SENDKEY(KeyEnter);
```

Or

```plaintext
  NAVIGATE_TO_JUNCTION("SJP");
  SETVALUE("REQUEST_TYPE","CMD");
  SETVALUE("COMMAND","SBMJOB(BATCH) CMD("CALL PRINTORDER")")
  SENDKEY(KeyEnter);
```

The 5250 screen used to communicate between a RAMP script and a SJP is really more of program data structure that a real 5250 screen that a user would ever see.
Does SJP have to be CL (Control Language) program?

No, it could be written in any program language that supports the reading and writing of 5250 screens such as RPG, COBOL, C or RDML (which is really RPG anyway).

If you have LANSA programs RDML is a good choice because it makes it very easy to call LANSA processes and functions and allows access to common inter-program communications mechanism such as the exchange list and data structures.
What other issues might impact the use on an SJP approach?

One of the main ones relates to user profile and site security requirements. You would probably not want the SJP program accessible to USERA (say) when he or she is using a normal 5250 screen.

Additionally most sites insist that USERA executes his/her IBM i job under the profile USERA so that audit, log and security information shows the "real" user (although this is disappearing as more and more "threaded" processes serving many concurrent users, such as HTTP web servers, are used on the System i server).

So how can a single user profile USERA support these different views of the world?

- When they sign on to a real 5250 session they get their normal sign-on menu.
- When they sign on via a RAMP script they get the SJP program as their main "menu"?

There are several solutions to this problem:

- Use the Program/Procedure option on the IBM i sign-on screen to specify the SJP program when logging in via a RAMP script. You would probably add some security logic to the JSP to prevent users doing this through a real 5250 interface (see point 2).
- If you use a common menu program you could alter it to detect that it is being called from a RAMP script and then call the SJP program. Equally you could display the common menu initially and use a special "hidden" menu option to call the JSP program. The JSP program could confirm that it is being accessed by a RAMP script by conducting, for example, an encrypted exchange with the RAMP script that is impossible for a real human user to perform.
- RAMP scripts could sign on initially as a generic "USERX" whose initial program is the SJP program. The SJP program then presents a screen asking for the real user profile and password, which the RAMP logon script fills in and sends back. An IBM API is then called to change the current job's user profile from generic USERX to the real user. Again an encrypted exchange that is impossible for a real user could be used to confirm access is from a RAMP script.
Using HIDE_CURRENT_FORM to manage access to command handler tabs

In this scenario a RAMP application has been created over an order processing system.
Imagine that some of the command handler tabs (and their underlying 5250 destination scripts) need to prevent users from performing actions on cancelled or completed orders.

**Step 1 - Put some sort of "Code" or "Status" column into every instance list entry**

Here field #ORDSTATUS is mapped into instance list column Acolumn9(). Imagine it contains values "CAN" (cancelled), "OPN" (Open), "WIP" (Being worked on) or "COM" (completed) ....

Invoke Method(#avListManager.AddtoList) Visualid1(#OrdNo) Visualid2(#CustlName) Akey1(#OrderNumber) AColumn9(#ORDSTATUS)

Note: AColumn9() may or may not be shown to the user as desired.

**Step 2 - Put checking code into the appropriate INVOKE scripts**

Here the INVOKE script for a 5250 screen that allows an order to be modified has had a check added to stop people from trying to display cancelled or completed orders ..... 

```
/* Get the order status from additional column 9 in the current order instance list entry */

var ORDSTATUS = objListManager.AColumn9[0];

/* If the order is cancelled or closed, prevent the 5250 screen from being displayed, and show a message as to why */

if (((ORDSTATUS == "CAN") || (ORDSTATUS == "COM"))
{
    HIDE_CURRENT_FORM("Sorry, but you are not allowed to display this
```
order because it is cancelled or completed.
    return;
}

/* If we reach here then it's okay to proceed to the order display screen */
NAVIGATE_TO_JUNCTION("OrderMainMenu");
<etc>
<etc>

The HIDE_CURRENT_FORM("message") function causes the current 5250 screen being displayed on the command tab to be hidden and the message "Sorry, but you are not allowed to display this order because it is cancelled or completed." to appear in the center of the tab instead.

The content of AColumn9 (ie: "CAN", "OPN", "WIP", "COM") could be used anywhere in INVOKE or BUTTON scripts to limit or control user activities.
Multilingual RAMP Applications

Strings
Refer to the ADD_STRING Function and the STRING Function.
The captions show on RAMP buttons can be changed to be multilingual using the OVERRIDE_KEY_CAPTION_SCREEN Function and OVERRIDE_KEY_CAPTION_ALL Function.
Troubleshooting

Error Messages

An unexpected database error has occurred
TCP/IP timeout has occurred
TCP/IP host was not found
The connection to <newlook server name> has not been defined
Script cannot be generated at this time
xxxxxxx is an orphan script and should be deleted
Error running RAMP in end-user mode (UF_EXEC) but not in design mode (UF_DESGN)

Problems

When recording:
newlook cannot be started in the RAMP Window
Keystroke is ignored
RAMP does not recognise the name of forms that I have defined recently or any other newlook definition changes
RAMP Choreographer does not recognize a screen that has a name in newlook Designer

When executing RAMP applications:
Navigation is Incorrect, but there is no error message
Strange behavior in scripts
Screen does not react when selection is changed in instance list
A Screen is not recognized

When scripting:
Subfile accessor only reads the first page
An unexpected database error has occurred

An newlook database error is displayed:

After the error you cannot run the Framework.

What does this error mean?

Some part of your system is corrupted.

Solution

First run the newlook SID file cleanup program CHKSID.exe with the -r parameter.

Then Merge Shipped Macros into newlook again.
A RAMP warning message is displayed saying that a script is an orphan script and should be deleted.

**What does the message mean?**

- It means the script is not used by any destination, junction or special screen.
- Since the script is not used, it should be deleted.
- This message does not impact the operation of RAMP, *it's just a warning.*
- If you get a lot of these warnings, it is likely to be a misunderstanding about use of the merge tool in a multi-developer environment.

**How do you delete a script if you get this message?**

- Start the RAMP tools
- Expand the script tree node and locate the script.
- Select the script and press the Delete button.
- Watch out for duplicated script names (this happens in multi-developer environment). Make sure you have the right script.

**How can you get an orphan script?**

- The most likely way is by using the merge tool to merge in a brand new script all by itself without merging in the parent destination, junction or special screen as well.

**When would you use the merge tool to just merge in a single script without also merging in its parent destination, junction or special screens as well?**

- Normally you would only do this when you have previously merged in the parent object and its associated scripts and are just wanting to merge in a single updated script. You should never do this on an initial merge or you risk creating orphan script(s).
How should you approach merging RAMP screens and their associated scripts produced by multiple developers?

Assuming that the high level Framework design objects, that is applications, business objects, commands and command handlers (tabs) have been set up by the master designer and all developers are working from the same model (that is the developers just define the RAMP screens and scripts and then link them up to the pre-defined command handler tabs):

- The sender should add the screens that they have produced to a merge list. This should automatically include the associated scripts.

- The sender should also add to the same merge list all the command handler(s) that have been modified by being linked up with RAMP destination screens.

- The receiver should merge everything into the master Framework. The command handlers should be handled as updates/replacements and the RAMP objects should be new objects. In no case should new GUIDs be assigned.

How can you get scripts with the same name?

In a multi-developer environment if two developers create scripts, you may end up with two scripts named for example INVOKE_SCRIPT_16. If the work of these developers is merged together, this situation may be confusing to the developers, but it is not confusing to RAMP because to RAMP the script name is just a caption. Internally RAMP recognizes and executes scripts by their unique GUID.

Developers can change the default script names to avoid this confusion.
Navigation is Incorrect, but there is no error message

Navigation produces no error but it doesn't do what it should.

When does this problem happen?

This can happen when a field in a RAMP screen which is required for navigation has not been given a name using newlook Designer and a script is generated using RAMP's tracking facility.

This is because scripts produced by RAMP tracking ignore actions taken in unnamed fields.

Solution

Use newlook Designer to give fields you intend to use in the navigation a name.

When the field has a name, make sure to run the navigation again so that the tracking facility can detect it and use it in the script.
Keystroke is ignored
The keystroke is ignored when recording screens.

When does this problem happen?
This happens when one and the same screen is used for both display and edit. The screen has the same name in newlook.
When the key is pressed, RAMP detects that the screen arriving is the one currently showing because it has the same name and ignores it so the keystroke is lost.

Solution
The solution is to make display and edit two different screens, in other words identify them and name them as two different screens using the newlook Designer. One with the fields as output (display) and another one with the fields input capable.
RAMP does not recognise the name of forms that I have defined recently or any other newlook definition changes

When does this problem happen?
This happens when newlook is not aware of the changes.

Solution

- Check that the form object is named when in newlook designer mode.
- Check that the name of the form object (when in newlook designer mode) does not have any trailing spaces
- If this happens on a RAMP web development PC that has downloaded a newlook deployment package from a RAMP website recently, it could be that the RAMP choreographer (the newlook activeX) looking at the .sid file from the downloaded package. This will be different than the local sid file that holds the newlook screen definitions that you have made since the package was created. RAMP should not be tested on development PCs.
The connection to <newlook server name> has not been defined

Connection fails with following error:

![Connection Error Message]

**Cause**

In the Framework server definitions there is a server of type newlook with name <server name> without IP address or Port fields defined, but there is no session with the name is defined to newlook.

If you specify a newlook server in the Framework, but leave the IP address and port fields blank, the Framework assumes that there is a permanent connection with the corresponding name defined in newlook.

**Solution**

Option 1:

If you want to define a permanent connection in newlook:

- Start newlook 8.0.
- Click on the Session menu and select Connect. The connect dialog shows all the defined connections.
- Use the newlook connection wizard to define a new connection using the name you have used in the Framework server definitions.

For more information see Verify newlook Installation.

Option 2:

If you want to change the Server Name of the server definition to an existing newlook connection in the Framework:

- Display the Servers tab in the Framework
- Locate the server with name <server name> and change the name.

Option 3:
If you do not want to define a permanent connection in newlook, fill in the IP address and Port Number in the Framework server details for the newlook server:

- Display the Servers tab in the Framework
- Locate the server with name <server name>
- Fill in the IP Address and Port Number fields.

For more information refer to Configure RAMP.
Script cannot be generated at this time

Script generation fails with an error saying the script cannot be generated at this time:

Solution

Check when the screen was defined in Newlook that:

- The Name doesn't exceed 265 characters.
- There are no trailing spaces in the name.

Is recommended that only characters A - Z are used and blanks or spaces are not used anywhere in the name.

Also note that screen names are case sensitive.
TCP/IP timeout has occurred

Connection fails with following error:

![Run-Time Error](image)

**Cause**

For the Server Type newlook in the Framework server definition, the IP address or the port number or both are incorrect.

**Solution**

In the Framework Server Details tab, locate the definition of the newlook server you are trying to connect to. Make sure the IP address and the port number are correct.

Note that if you specify a Server which has a connection defined in newlook, you can leave the IP address and port number fields blank in the Framework Server Details tab.

For more information refer to Configure RAMP.
TCP/IP host was not found
Connection fails with following error:

![Run-Time Error]

**Cause**
An invalid host name has been specified in the IP address for the newlook server in the Framework Server Details tab.
The IP address can be specified in the form nnn.nnn.nnn.nnn or as a host name. This error points to an incorrect host name.

**Solution**
In the Framework Server Details tab, locate the server of type newlook that you are trying to connect to. Make sure the IP address contains a valid host name.
Note that if you specify a Server which has a connection defined in newlook, you can leave the IP address and port number fields blank in the Framework Server Details tab.
For more information refer to Configure RAMP.
**Screen does not react when selection is changed in instance list**

When an entry is selected in the instance list, the RAMP screen does not reflect this change and instead shows the data for the entry that was first selected.

**When does this problem happen?**

You recorded the invoke script of the destination screen, but you have not changed the value parameter of the SETVALUE Function from the recorded hardcoded value to a substitution value.

Another possible cause is that the value in the SETVALUE function has been enclosed in quotes in which case it is interpreted as a literal, not as a substitution value.

For example this example is wrong:

```plaintext
SETVALUE("UtxtMachine","objListManager.AKey1[0]");
```

**Solution**

Make the value parameter of the SETVALUE function a substitution value and make sure it is not surrounded by quotes:

```plaintext
SETVALUE("UtxtMachine", objListManager.AKey1[0]);
```

For more information:

- Watch the tutorial movie [Link the Selected Employee in the Instance List with the Display Employee Screen - 4 minutes](#)
- See the topic [Interacting with Instance Lists in Scripts](#)
- See the topic [Replacing Hardcoded Employee Number with Current Instance List Entry](#)
A Screen is not recognized

The Framework fails to recognise a screen, this may happen always or occasionally.

The Trace for the screen looks like this:

VF_CH006 Screen named has arrived and is being processed
VF_CH006 Screen named in a form not defined to the framework.
VF_CH006 Signal LockFramework is being queued.
VF_CH006 Signal LockFramework has been queued.
VF_CH006 Screen named is not a destination do function keys will be left unchanged.

Solution

Check that:

- The form object is named in newlook design mode.
- The screen ID area covers only static elements in newlook Identify mode.
  In other words, the ID area must not cover field data, browselist data, system date/time, System i machine name, User profile or other data that can change.
**newlook cannot be started in the RAMP Window**

newlook client (designer) works in its own window, but not inside the RAMP window.

**When does this problem happen?**

The most likely cause is that you do not have a Standard Edition or liteclient newlook licence on the server.

**Solution**

Check [Licensing Requirements](#) to make sure you have the correct licences.
**Subfile accessor only reads the first page**

If you are using the RAMP subfile accessor, and you believe it should scroll through all the pages in the subfile looking for a row, but it never seems to read beyond the first page,

**Solution**

Check that:

- PageUp and PageDown function keys are working
- newlook recognises the subfile marker. Check this by going into newlook Identify, and then select the area containing the plus (+) sign that indicates there are more subfile entries, and ensure that this is ticked as SubFile Marker.
Error running RAMP in end-user mode (UF EXEC) but not in design mode (UF DESGN)

You can run your RAMP application in Design mode but you get an error like this when you try to run it in End-User mode:

Why does this problem happen?

The main difference between running RAMP in design mode and running it end-user mode is the way javascript is executed.

In design mode, javascript is reloaded each time the Framework is saved if there has been a change affecting RAMP. Each time the javascript is reloaded, the object properties are re-set. And each time the Framework is saved, if RAMP is enabled and has changed, a set of javascript files called <system prefix>Nodes_nnnnnnnnnnnnnnnnnnn.js are generated, one for each session where the nnnnnnnnnnnnnnnn part is the session identifier.

These files are the ones used in end user mode. They represent the screens and scripts written out as javascript at the time the Framework was saved.

In end-user mode, these files are loaded once for each session. Each one of the javascript functions in the file is called only once during session start up. This method speeds up the start up time of RAMP in end-user mode considerably as opposed to design time.

When RAMP is executed without errors in design mode but with errors like the above in end-user mode, the prime suspect is a syntax error in the user-defined scripts (be it navigation scripts, invoke, etc).
**Solution**

To find out what line of javascript has the error, you can simply load the file into a basic .HTM file.

For example create a file called test.htm with content like this:

```html
<html>
<head>
<title>Untitled Page</title>
<script language="javascript" type="text/javascript" src="<your nodes.js file here>"></script>
</head>
<body>
Hello World
</body>
</html>
```

Specify the name of your nodes.js file in the src= attribuite of the `<script>` tag and put Test.htm in the same folder as the javascript.

Using Internet Explorer, check your Advanced settings tab under Tools/Internet options to verify you have the "Display notification about about every script error" checked. You can then run Test.htm and you should get a script error showing the line number where the error has occurred. Tip: the error is most likely to be inside a javascript function called something like this:

```javascript
function __UF__nnnnnnnnnnnnnnnnnnnnnnnnnnnnn(objScriptInstance)
```

which makes it a bit hard to correlate it with the actual script name. To find out exactly what this script is, do a Find in the same file of the nnnnnnnnnnnnnnnnnn part of the function name. You should then locate the lines of javascript that define that script as an object and that will have the user name (for example `oS.uScriptUserName="NAVIGATE_SCRIPT_13";`)

Edit the script using the RAMP tools, correct the error and save.
**RAMP Choreographer does not recognize a screen that has a name in newlook Designer**

Using the choreographer in the RAMP tools, I navigate to a screen that I had previously named using Newlook Designer. The choreographer doesn't recognise it and shows a message saying *Unknown Form*.

If I start the Newlook windows client and navigate to that screen, I can verify that the screen has indeed been given a name.

**Why does this problem happen?**

Most likely you have executed a RAMP application that was deployed using a cab file. In such cases, the downloaded Newlook ActiveX control is registered in your machine as the cab file is automatically downloaded. Thereafter, you would be running a different newlook with a different SID file than the one you were working with before.

When the downloaded newlook version is different than the Newlook version that was installed, you can easily verify this anomaly:

- Locate a file called `nl_load_test.htm` in the partition execute folder. Double click on it and show the Help/About.
- Start the Newlook windows client from the Newlook folder and show the Help/About.

**Solution**

If the versions are different:

- Uninstall Newlook (a shortcut to this step is to run `nlclean.exe` and answer Y to all questions).
- Reboot
- Reinstall Newlook

*Remember no tot test VLF.RAMP-WEB deployments onto your development PC!*
Frequently Asked Questions

How is my newlook license type determined when starting newlook?
How can I use web browser windows from RAMP scripts?
How can I get the message from the bottom of the current 5250 screen into my RAMP script?
How do I handle RA (Auto Record Advance) fields?
Why does my newlook session have a message "Press SPACEBAR or ENTER to activate and use this control"?
What is the difference between newlook Designer and newlook Emulator Session?
Why should the F12=Cancel and F3=Exit buttons and function keys be disabled on every 5250 screen?
I have defined a screen as a junction, but it should be destination. How do I change it?
Do I have to identify and script every 5250 screen in my application to modernize it?
How can I get the RAMP tool to assign a fixed session?
How do I make my scripts work in multiple partitions?
How can I change the background color of RAMP screens?
How can I ~suppress the action of Alt + F4 inside Newlook?
How is my newlook license type determined when starting newlook?

In RAMP Tools
If any of the newlook server definitions in your Framework has the Use liteclient license option checked, RAMP tools start newlook requesting that a liteclient license type is used. Otherwise newlook will use a default license type.

When executing Windows Applications
When newlook is started it is associated with a server defined in your Framework.
If the server has the Use liteclient license option checked, a liteclient license type will be used. Otherwise newlook will use a default license type.

When executing Web Browser Applications
When the HTML and JavaScript flies associated with your Framework are saved a default license type is determined.
If any of the newlook server definitions in your Framework has the Use liteclient license option checked, the default will be to use a liteclient type of newlook license. Otherwise a default newlook license will be used.
You can override this default by adding +NLLiteClient=TRUE or +NLLiteClient=FALSE to the URL you use to start your web browser application. For more information see Web Application Start Options in the Framework guide.

There may be exceptions
If a developer modifies the VF_UM703.HTM (RAMP tools) or VF_SY120.HTM (RAMP Execution) start up pages they may unconditionally force a newlook license type to be used in all situations.
How can I use web browser windows from RAMP scripts?

Here's a really simple web browser form that accepts three input fields as arguments, displays them, allows them to be altered, then returns the altered values back to the calling RAMP script:

```html
<HTML>
<HEAD>
</HEAD>
<BODY onload="BODY_Load();" onunload="BODY_UnLoad();">
<script>
function BODY_Load() /* Map arguments passed in to web form fields */
{
    FieldA.value = window.dialogArguments[0];
    FieldB.value = window.dialogArguments[1];
    FieldC.value = window.dialogArguments[2];
}
function BODY_UnLoad() /* Map web form fields into return values */
{
    var arrayRets = new Array();
    arrayRets[0] = FieldA.value;
    arrayRets[1] = FieldB.value;
    arrayRets[2] = FieldC.value;
    window.returnValue = arrayRets;
}
function OK_Click() /* Handle OK button by closing the web form */
{
    window.close();
}
</script>
<P>Input details and click OK"<br/>
<input id="FieldA" type="text"><br/>
<input id="FieldB" type="text"><br/>
<input id="FieldC" type="text"><br/>
<input id="Button1" type="button" value=" OK " onclick="OK_Click();">  
</BODY>
</HTML>
```
It looks like this when displayed:

![Web Page Dialog](image)

This is the RAMP BUTTON script that is used to display the web browser form. It displays the form when the user hits F5, taking the fields SURNAME, GIVENAME and ADDRESS1 from the 5250 form and then mapping them back:

```javascript
switch (objScriptInstance.FunctionKeyUsed)
{
    case KeyEnter:
        SENDKEY(KeyEnter);
        break;
    case KeyF5:
    {
        var arrayArgs = new Array();
        arrayArgs[0] = GETVALUE("SURNAME");
        arrayArgs[1] = GETVALUE("GIVENAME");
        arrayArgs[2] = GETVALUE("ADDRESS1");
        arrayRets = window.showModalDialog("Example.htm",arrayArgs,"dialogHeight:155px;dialogWidth:200px;help:no;resizable:no;scroll:no;status:no;");
        SETVALUE("SURNAME",arrayRets[0]);
        SETVALUE("GIVENAME",arrayRets[1]);
        SETVALUE("ADDRESS1",arrayRets[2]);
        delete(arrayArgs);
        delete(arrayRets);
    }
    break;
    default:
        SENDKEY(objScriptInstance.FunctionKeyUsed);
        break;
}
```
This is just a simple example of some of the things you can do (please note that no warranty about any of this is expressed or implied).
How can I get the message from the bottom of the current 5250 screen into my RAMP script?

Use a script like this:

```javascript
{ 
  var strMessage = GETVALUE("ActiveForm.Message"); /* Get the message into JavaScript variable strMessage */
  if (strMessage != "") ALERT_MESSAGE(strMessage); /* If a message was retrieved, display it in a message box */
}
```
How do I handle RA (Auto Record Advance) fields?

Some 5250 applications may use fields with an RA input attribute (Auto Record Advance). Programs that display these fields automatically press Enter when the last digit or character is entered by the user.

The RAMP choreographer cannot automatically generate a script for this situation based on your keystrokes. Instead, it will generate lines like:

```plaintext
/* Set up data fields on form xxx */

SETVALUE("utxtMenuOption","");

/* Send the key required to navigate to xxx */
```

You will need to edit the generated script, and specify both the value and the Enter key press, like this:

```plaintext
/* Set up data fields on form xxx */

SETVALUE("utxtMenuOption","2");

/* Send the key required to navigate to xxx */

SENDKEY(KeyEnter);
```
Why does my newlook session have a message "Press SPACEBAR or ENTER to activate and use this control"?

This message is presented by a change to the handling of Active-X controls that Microsoft introduced with Service Pack 2. They have since rescinded this patch because of the disruption it caused to existing applications. Please refer to http://support.microsoft.com/?kbid=917425 for more details.
What is the difference between newlook Designer and newlook Emulator Session?

You use the newlook Designer to identify all the screens in the application being modernized by giving them a unique name. You start the Designer by clicking the newlook Designer button in the RAMP window.

You use the newlook emulator session (which is located in the top left corner of the RAMP window) to define your screens to the Framework and to trace navigation between the screens. To start the emulator click on the message `newlook has not been started` in the message area.
Why should the F12=Cancel and F3=Exit buttons and function keys be disabled on every 5250 screen?

Have a think about how you navigate a Windows application.
I have defined a screen as a junction, but it should be destination. How do I change it?

Delete the screen definition in the 5250 screen list on the bottom left of the RAMP window. The screen will appear as undefined in the Tracking Information area.
Do I have to identify and script every 5250 screen in my application to modernize it?

No.

Typically some areas of a 5250 application are rarely used or used by very few users.

The degree of modernization you apply to an application area should be related to the area's degree of exposure to end users and to the amount of benefit that they would gain if it were completely modernized.

**Modernizing a Single Screen to Provide Access to a Subsystem**

In this example a 5250 menu or work with screen named uCodeTableMaint manages access to 47 different 5250 screens that handle System Code Table Maintenance (for example classic code and parameter tables such as states, companies, currencies, interest rates, etc that are used to define and control an application).

uCodeTableMaint could be visualized as an "application subsystem" like this:

![Diagram of uCodeTableMaint as a subsystem](image)

Because this application area does not need to be completely modernized, the most rapid way to modernize it is to create a single RAMP screen that provides access to the other screens.

To do this:
• Create a business object called Code Tables and associate with an application.

• Give it a single RAMP screen (or tab) called Maintain (say). Make sure this is an object level command and that it is the default command so that it is executed automatically every time you click on it.

• Identify and define the 5250 work with screen uCodeTableMaint to the Framework as a destination screen and associate it with the Maintain screen. When the user clicks on Code Tables in the Framework application they are immediately navigated to the uCodeTableMaint 5250 screen.

It occupies the entire right hand side of the windows form like this:

Once the user has displayed the uCodeTableMaint screen they can then navigate around in the other 47 associated screens in the normal manner:
This is a minimal modernization of the whole uCodeTableMaint managed subsystem.

Only the 5250 screen uCodeTableMaint needed to be defined and scripted into the framework. The other 47 screens did not have to be identified nor scripted in any way.
How can I get the RAMP tool to assign a fixed session?

I want to assign a fixed session, such as Session A, for my destination screen in the Destination Screen Details. How can I do this?

You have to select the command handler so that the line it is on goes blue, not just tick the checkbox. Then you associate a session with it.

This may seem unusual, but sometimes multiple command handlers are associated with a single destination form and therefore you have to actually indicate which one you want to change the session for.
How do I make my scripts work in multiple partitions?

Replace any hard-coded references to a partition in your scripts with this piece of code:

```objFramework.Partition```

You can enter the code Using the Scripting Pop-up Menu: choose Current Framework and then partition.
How can I change the background color of RAMP screens?

To change the RAMP background color, edit the visual style called UF_VS006 and change the NormBackColor of the Caption and Value to Buttonface. Recompile your equivalent of UF_SYSTM, to pick up the change. The visual lansa component that displays RAMP screens will then pick up the current theme.

To change the theme within the newlook area of a RAMP screen, ensure that the shipped VF_XP_2003*.nlg and VF_XP_2007*.nlg files are present in the looksoftware directory and from within newlook, choose the matching scheme in --> Tools --> Settings --> Display --> Appearance, Settings --> Scheme and apply.
**How can I suppress the action of Alt + F4 inside Newlook?**

Pressing Alt + F4 when focused in the RAMP-NL command handler causes the Newlook session to terminate (the user is prompted with the "do you wish to exit" pop-up). The Framework however remains active.

You can disable the Alt+F4 key by doing the following:

1. Create a macro named Disable Alt+F4 Key (or name it whatever you want).
2. Set the Action on row 1 to be **CancelEvent**.
3. Then choose File|Properties|Menu from the Macro Editor.
4. Then assign the Alt+F4 key as the shortcut key for this macro and your problem will be solved.
### Conceptual

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### Tutorial: Modernizing Complete Application

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**Tutorial: Modernizing Application Navigation**

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</tr>
<tr>
<td>Script the Screens and Snap them in the Framework</td>
<td>16 minutes</td>
</tr>
</tbody>
</table>

**Scripting: General**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Scripts</td>
<td>6.5 minutes</td>
</tr>
<tr>
<td>Scripting: Subfiles/Browselists</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Not Using a Datagrid Control - 1 minute</td>
<td>Movie Summary</td>
</tr>
<tr>
<td>Using Subfile Accessor - 5 minutes</td>
<td>Movie Summary</td>
</tr>
<tr>
<td>Subfile Direct Access - 2 minutes</td>
<td>Movie Summary</td>
</tr>
</tbody>
</table>