Documentation Library

eXtensions Guide

Scripting Reference, Help Text and Problem Isolation Techniques

Documentation Library

eXtensions Scripting Reference

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Important Warning

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You should only use methods, objects and properties that are described in this documentation.

You are not permitted to use any scripting features that are not mentioned in this documentation.

If you ignore this warning then you are implicitly accepting responsibility for the risk of all of the following:

- The introduction into your application of incompatibilities with future versions of aXes.
- Voiding or limitation of any maintenance or support contract you may have in place for aXes.
- Being charged for problem resolutions that are traced back to being caused by such non-permitted usage.

These methods, objects and properties are usable in the AXES object:

Name	Type	Environment	Description
isTS2Engine	Boolean	TS and TS2	Indicates if the aXes TS2 rendering engine is currently being used.
displayMessage()	Function	TS2 only	AXES API that allows user defined messages to be added to the AXES status bar.
isDeveloper()	Function	TS and TS2	Axes API that indicates whether that the aXes 5250 session is executing in development mode.

About This Document

This purpose of this document is to provide a complete reference of all methods, objects and properties available in the eXtension scripting library.
Any methods, objects and properties that are not mentioned in this documentation are not part of the eXtension scripting library and should not be used in your scripts.

Important Warning

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aXes Scripting Basics

What scripting language does aXes support?

All scripting in aXes is done in JavaScript. Please note that aXes does not have its own scripting engine - it uses the current browser's scripting engine. It is therefore your responsibility to test that the scripts you write are running on your targeted browser version.

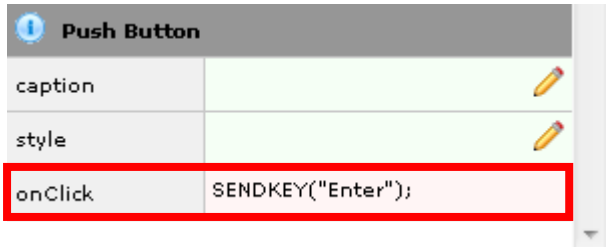
Inserting Your Scripts into aXes

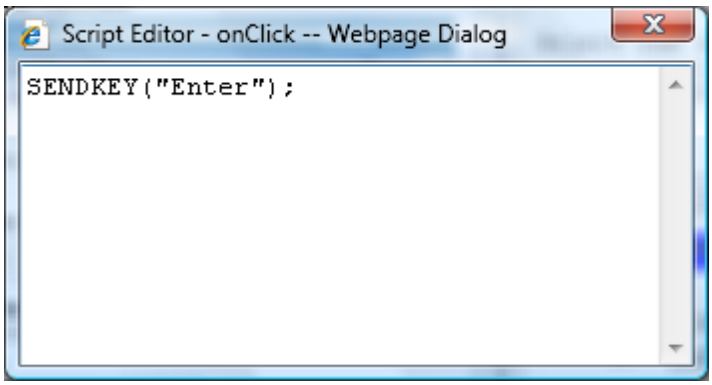
There are 2 places where you can put your scripts:

- Various eXtension's properties / events
- USERENV.js

Scripting in eXtension's Properties / Events

The most common way of scripting is by typing scripts into an eXtension's property in the property sheet. Below is an example of a script that sends an enter key to the server when a user clicks a button.



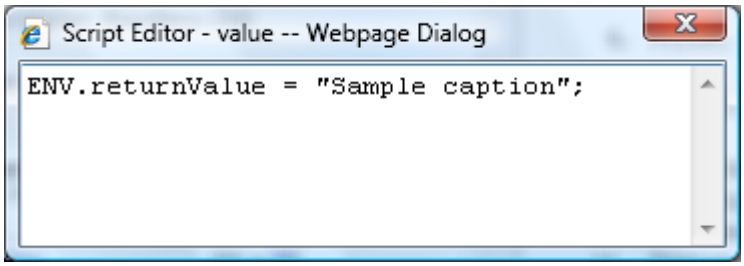


The objects available in the eXtension scripting library will be covered in detail in the next few sections.

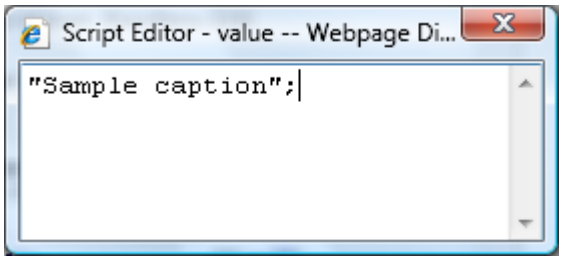
One special object worth mentioning here is the ENV object. It is an object that represents the current eXtension's context. Most features in ENV object are available to any scripts, however some features are specific to the event or property the script is for.

When you are writing a script for a property, the script needs to yield a value that will be used as the value of the property. The script can do this in two ways:

- Setting the **ENV.returnValue** property (this is the preferred way).



- The last statement in the script yields the value.



Another common use of ENV is to give access to the eXtension scripting objects to an arbitrary function by passing the ENV object to the function as a parameter. This will be discussed in the next section.

Scripting in USERENV.js

USERENV.js is a special file that aXes automatically includes in its runtime environment. This file is **not** optional and it must exist in your aXes project folder.

aXes comes with a standard USERENV.js file that you can extend with your own scripts. This file is an ideal place to put your global functions - functions that you want to make available for use from any scripts defined elsewhere.

Note also that some predefined methods that come with the default USERENV.js file are used by aXes eXtensions, so care should be observed when removing existing methods from this file.

It is important to note that eXtension scripting library is not available for use from USERENV.js, as many of the objects and methods in the library are context-sensitive. Take as an example the property FIELD which returns a reference to the field object currently associated with the eXtension. It will not make any sense to just say FIELD in a global level as there is no way aXes could tell which eXtension is associated with FIELD.

The solution is to pass the context when calling functions defined in the USERENV.js, this way those functions will have access to the scripting library.

Supposing that we have a function in the USERENV.js that copies the content of a subfile column to your computer's clipboard. The first parameter to the function will be the context of the eXtension, which will give this function access to various eXtension features.

```
function copyColumnToClipboard(context, fieldName)
{
        // we now have access the eXtension scripting objects such as FIELD
        var field = context.FIELD;
        . . .
}
```

Assuming that we use a button to trigger execution of the `copyColumnToClipboard`, we need to put the following code in the ***onClick*** event of the button:

```
copyColumnToClipboard(ENV, "employeeNo");
```

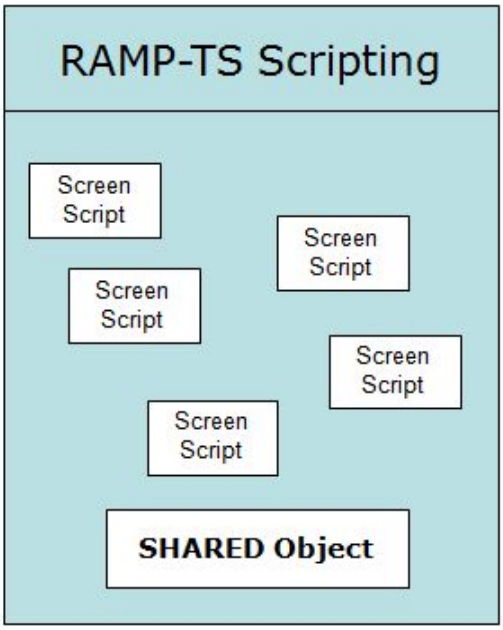
The tutorial 5 of aXes eXtensions tutorial series discusses USERENV.js in more details.

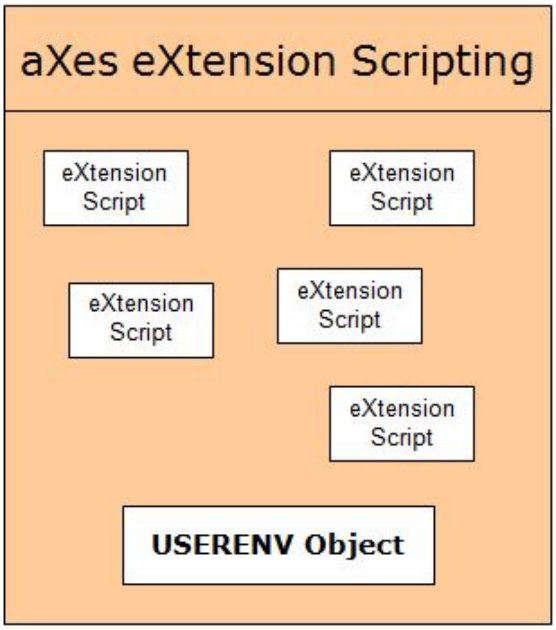
Cross-Scripting: Using RAMP-TS functions and properties in your aXes scripts and vice versa

(For RAMP-TS developers.)

In the RAMP-TS environment, functions can be shared by scripts by using the SHARED object.

In the aXes environment, functions can be shared by scripts by using the USERENV object.





aXes scripts can use RAMP-TS functions and properties, including the SHARED object, *if* the aXes script is being executed within a RAMP-TS application at runtime. But they must prefix the function name with "RAMP." , and they must be coded to handle the absence of the RAMP runtime environment.

```
if (RAMP != null)
{
   RAMP.ALERT_MESSAGE("my alert message");
}
```

or

```
if (RAMP != null)
{
   RAMP.SHARED.Test ;
}
```

Conversely, RAMP-TS scripts can always refer to aXes functions in USERENV

```
USERENV.asString(26);
```

Key points to remember:

- RAMP-TS screen navigation scripts and aXes eXtension scripts execute in different name spaces.
- The aXes eXtensions scripting environment is always available.
- The RAMP-TS scripting environment exists only when the RAMP-TS execution environment is running.
- The RAMP-TS scripting environment is not available when you execute an eXtension's script in Axes all by itself - or when executing it from RAMP-Tools.

Example: To execute RAMP functions in an Axes Script

Suppose you are writing an onClick script for a push button extension, and you want to be able to use the RAMP-TS function ALERT_MESSAGE("My message").

To use the function in an aXes script you must specify that it is a RAMP script. You do this by using the RAMP name space.

```
RAMP.ALERT_MESSAGE("My message");
```

This will work provided that the aXes script always runs in aXes within a RAMP-TS application. But what if it is sometimes run in a standalone aXes environment, or in the RAMP Tools window?

You handle this by checking for the existence of RAMP, before trying to use ALERT_MESSAGE.

```
if (RAMP != null)
{
   RAMP.ALERT_MESSAGE("My message");
}
else
{
   /* use some other method, or do nothing */
}
```

Similarly, if your aXes onClick routine wants to use a function that the RAMP-TS scripts share through the SHARED object, (held in UF_SY420_RTS.js),

```
if (RAMP != null)
{
   RAMP.SHARED.myFunction1("x", "y", "z");
}
else
{
   /* use some other method, or do nothing */
}
```

Example: To execute an aXes USERENV function in a RAMP Script

Suppose you are writing a RAMP-TS vHandle_ARRIVE routine, and want to use function asString that the aXes eXtension scripts all share in USERENV.

If using RAMP-TS, then the aXes scripting environment is always available, so you just write:

```
USERENV.asString(26);
```

A table of scripting options

Situation	In a RAMP-TS Script	In an eXtension script
Use RAMP-TS function ALERT_MESSAGE("Hello")	Use ALERT_MESSAGE("Hello") Or RAMP.ALERT_MESSAGE("Hello")	Must use RAMP.ALERT_MESSAGE("Hello") and cater for situations where RAMP is null.
Access SHARED property named Test.	Use SHARED.Test Or RAMP.SHARED.Test	Must use RAMP.SHARED.Test and cater for situations where RAMP is null.
Access USERENV property named Test	Use USERENV.Test	Use USERENV.Test

eXtension Scripting Global Functions & Objects

Summary of global functions & objects:

Name	Type	Description
ENV	Object	Represents the current execution context
FIELD	Object	Gets a reference to the element associated with the eXtension that this script is written for.
TABLEMANAGER	Object	Gets a reference to the eXtension table manager.
LANGUAGE	String	Gets the 2-character code representing the current language used (for example English is en, French is fr).
SCREENNAME	String	Gets the name of the current screen.
SCREENVARIANTNAME	String	Gets the variant name of the current screen.
FIELDS	Method	Get a reference to an element with the specified name and optionally the specified index (if the element is a subfile column).
TRACE	Method	Output a message to the trace window.
DEBUG	Method	Output a message to the debug window.
CTEXT	Method	Get the text resource with the specified key from the user-defined resource file (Texts_Cust_ll.txt). Note that if you change a Texts_Cust_ll.txt file you should clear your browser cache to pick up the new file version.
SET5250CURSORTO	Method	Set the **5250 logical cursor** to the specified field.
SET5250CURSORPOS	Method	Set the **5250 logical cursor** to the specified row and column.
SHOWAXESMENUBAR	Method	Show or hide aXes menu bar.
SHOWAXESSTATUSBAR	Method	Show or hide aXes status bar.
GETACTIVEELEMENT	Method	Gets reference to the element that currently has input focus.
GETFIELDATCURSOR	Method	Gets a reference to the field at the current 5250 cursor position (TS2 only)

ENV

ENV represents the current execution context of the script. Each eXtension has their own context. This means that the context of a script that you wrote for an ***onClick*** event in button A will be different from the context of a script that you wrote for an ***onClick*** event in button B.

ENV also acts as a big container that holds all the global functions & objects of the eXtension scripting library. This makes it possible to make the library accessible to functions defined anywhere by passing this ENV object to that function.

When we type in the following statement in the aXes script editor:

```
var empNoField = FIELDS("employeeNo");
```

It is equivalent to the following:

```
var empNoField = ENV.FIELDS("employeeNo");
```

The first way is the preferred way since it is clearer and more succinct.

As mentioned earlier, another common use of ENV is passing it to a function defined somewhere else such as in UserENV.js:

```
copyToClipboard(ENV, "empNoField");
```

Some eXtensions will also provide additional methods and objects in their context that are specific for the event or properties. A good example for this is the **onClick** event of the **Quick Pick** eXtension. This event is triggered when a user clicks on a menu item. Since most likely there are more than 1 menu item the eXtension needs to tell the script which menu item is clicked. The **Quick Pick** does this by exposing additional properties in the **ENV** object: ***itemNumber*** and ***itemCaption***.

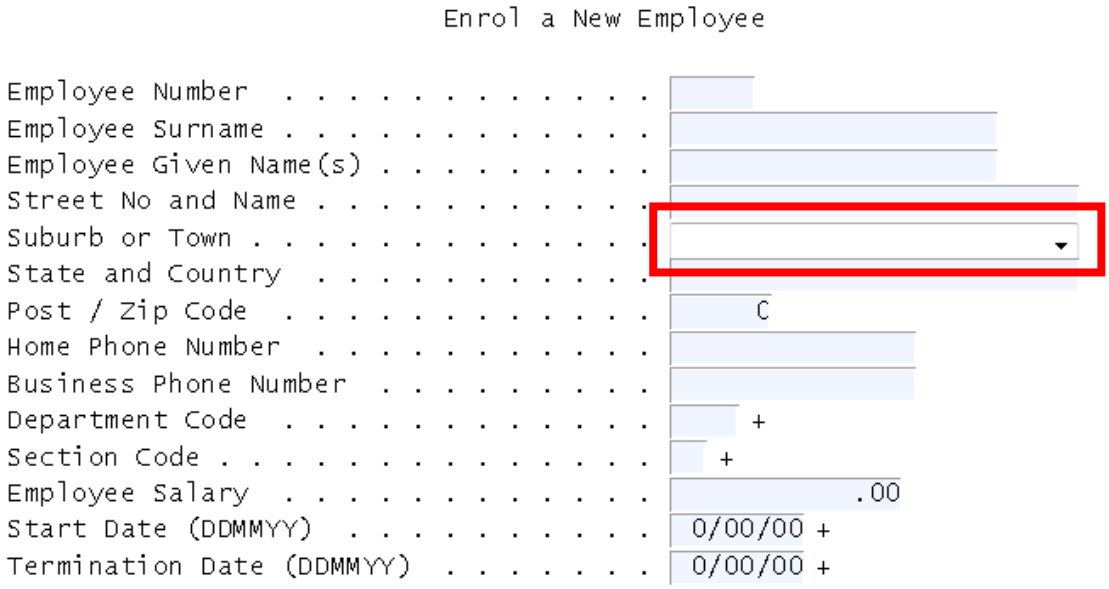
An example of how the script can access those additional properties:

```
var item = ENV.itemNumber;
var text = ENV.itemCaption;
alert("Item is clicked: " + text);
```

FIELD

FIELD returns a reference to the element associated with the eXtension.

Supposing you have applied a **Dropdown** eXtension to a field on the screen as illustrated below:



In the ***onSelectedValueChanged*** (an event that is triggered when a user selects an item in the dropdown) event we will have a script that look like this:

onSelectedValueChanged	FIELD.setValue(ROW.value)

The code above gets a reference to the **field element** associated with this **Dropdown** eXtension, and then sets the value to the currently selected row in the dropdown.

Since FIELD returns an element object, it will also have its own methods.

Summary of methods & properties:

Name	Type	Description
getValue	Method	Gets the current value of the element. Always returns a string.
setValue	Method	Sets the current value of the element.
isInputField	Method	Checks if the element is an input field.
getHtmlElement	Method	Gets the HTML DOM element associated with this element.
getProperty	Method	Gets the property value of an eXtension associated with this element.
setProperty	Method	Sets the property value of an eXtension associated with this element.
refresh	Method	Refreshes this element to reflect visually any changes made to the properties of this element.
focus	Method	Sets the input focus to this element.
set5250Cursor	Method	Position the **5250 logical cursor** on this element.
getIndex	Method	Gets this element's row index (starts from 1) in a sub-file.

The methods & properties will be covered in more details in its own section.

TABLEMANAGER

TABLEMANAGER returns a reference to the eXtension table manager. eXtension table is a concept that is similar to relational database tables. The data itself however can come from anywhere and does not necessarily come from a physical DBMS.

Tables are used as data source by various eXtensions. Some examples of eXtensions that are using tables as their data source are **Dropdown** and **Radio Buttons**.

The use of tables is discussed in more details in tutorial 6 of aXes eXtensions tutorial series.

Summary of TABLEMANAGER methods & properties:

Name	Type	Description
getTable	Method	Gets a reference to a table with the specified name (create a new table if one does not exist).
deleteTable	Method	Deletes the table with the specified name.
loadDynamicTable	Method	Loads the specified dynamic table from the host.
loadStaticTables	Method	Loads all static tables from the host.
loadFromXML	Method	Loads a specified table from an XML document on the server.

LANGUAGE

Gets the 2-character code representing the current language used.

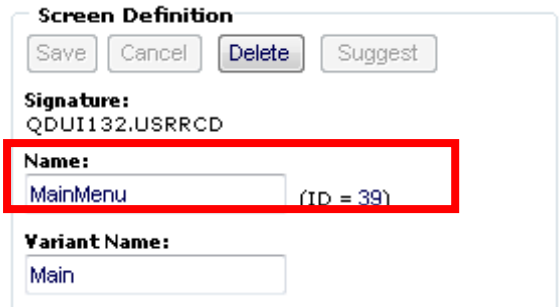
Example of usage:

```
var text = "";
if(LANGUAGE == "fr") text = "...";
else text = "...";
```

By default the current language is the language of the currently logged in Windows user, however this can be overridden by specifying the **lang** parameter as part of the URL when navigating to aXes: http://axeshost/ts/skins/ts.html?lang=fr

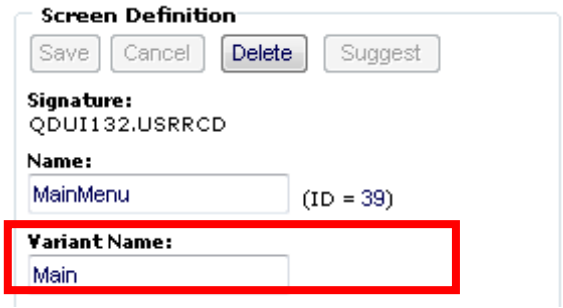
SCREENNAME

Gets the name of the current screen.



SCREENVARIANTNAME

Gets the variant name of the current screen.



FIELDS

Gets a reference to an element with the specified name on the current screen.

Parameters:

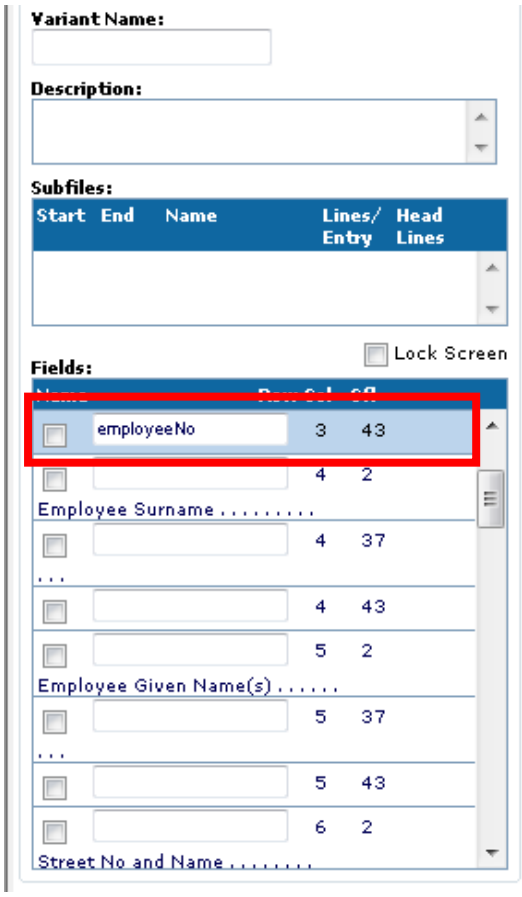
Name	Type	Mandatory	Description
name	String	Yes	Name of the element. Please see further explanation below about naming elements.
index	Integer	No	If the name describes a subfile column, index specifies which element in the column to return. Index starts from 1. If index is not specified, the first element in the column will be returned.

Return value:

Type	Description
ELEMENT	If an element with the specified name is found, it returns a reference to the element. If not found, null is returned.

Note that elements on the screen must be named first before they can be referenced through FIELDS function. The way to name screen elements depends on whether it's an existing 5250 field or a new screen element.

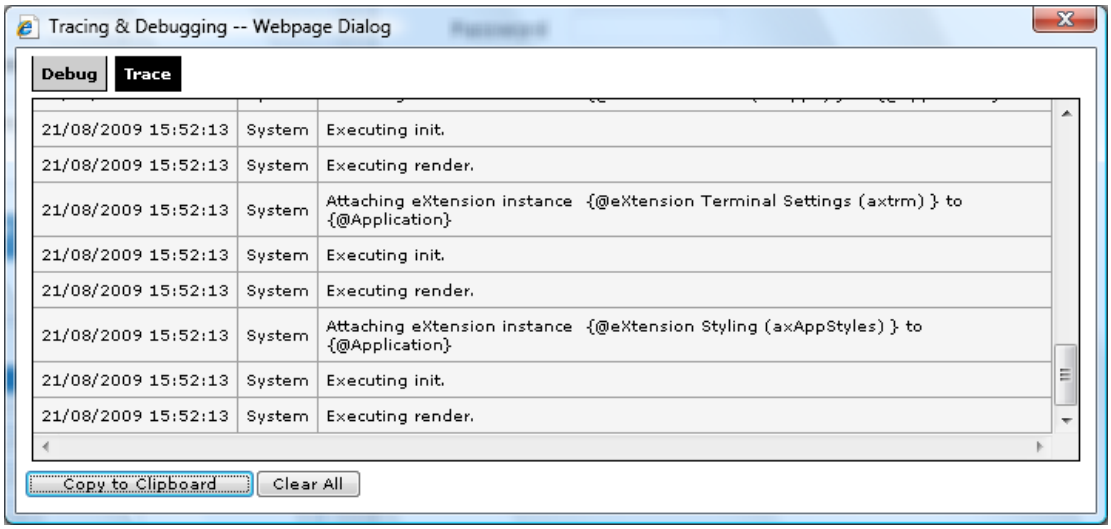
For existing 5250 fields, use the screen tab in the main aXes window (shown below) to assign names.



To assign a name to a new screen element, use the property sheet in the aXes Designer window (you need to select the element first by clicking on it).

TRACE

This function outputs a message to the aXes trace window. Trace messages will appear if parameter trace=all or trace=app is specified in the aXes URL.



aXes Tracing & Debugging window

Please refer to Tutorial 4 - Tracing and Debugging Techniques for more information on tracing & debugging techniques.

DEBUG

This function outputs a message to the aXes debug window. Unlike trace messages, debug messages will always appear without the need to specify additional parameter in aXes URL.

The difference between trace & debug messages is that trace messages are normally left in the system so later on it can be used to aid in troubleshooting of issues found after deployment, whereas debug messages are used during debugging. That's the reason why trace messages can be turned on and off whereas debug messages are always visible.

CTEXT

Get the text resource with the specified key from the user-defined resource file (Texts_Cust_ll.txt).

This method is mostly used for text externalization & globalization. Note that if you change a Texts_Cust_ll.txt file you should clear your browser cache to pick up the new file version.

Tutorial 3 discusses in more details about this topic.

SET5250CURSORTO

Set the **5250 logical cursor** to the specified field. This method is very useful for programs that are dependant on the cursor position in its navigation.

Please note that the cursor here does not necessarily refer to the actual cursor that might visible on the browser. You can still use this method even though your screen has been customized and you do not enable the limited cursor support property.

This method basically tells the physical program on the server that the cursor should move to the specified element.

Parameters:

Name	Type	Mandatory	Description
element	ELEMENT	Yes	Reference to the element to set the 5250 cursor to.

Return value:

None

SET5250CURSORPOS

Set the **5250 logical cursor** to the specified row and column. Please read about the **SET5250CURSORTO** method if you have not done so as it contains some important information about the cursor.

Parameters:

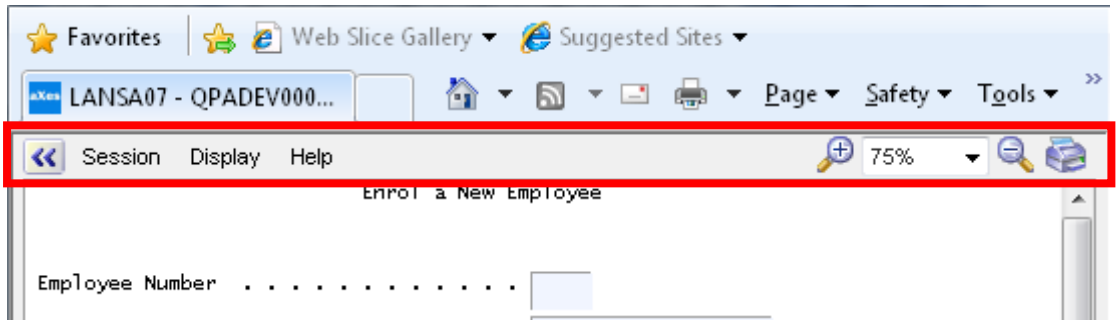
Name	Type	Mandatory	Description
row	Integer	Yes	Row number, starts from 1
column	Integer	Yes	Column number, starts from 1

Return value:

None

SHOWAXESMENUBAR

Show or hide aXes menu bar.



Parameters:

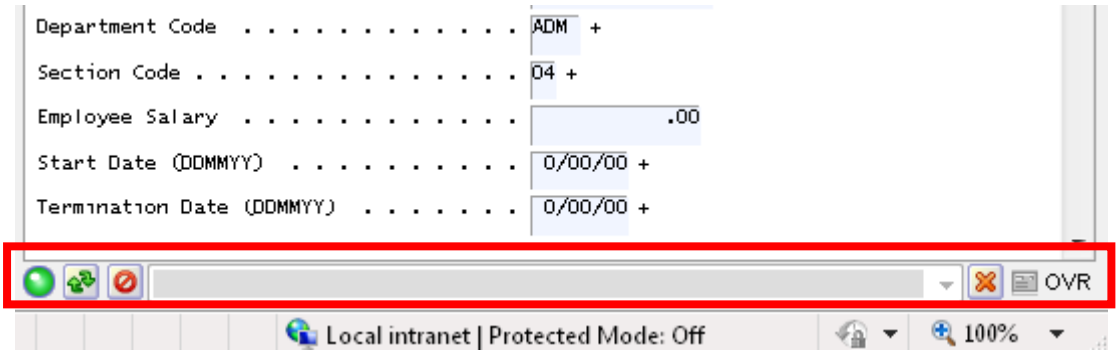
Name	Type	Mandatory	Description
show	Boolean	Yes	true → show menu bar, hide otherwise

Return value:

None

SHOWAXESSTATUSBAR

Show or hide aXes status bar.



Parameters:

Name	Type	Mandatory	Description
show	Boolean	Yes	true → show status bar, hide otherwise

Return value:

None

GETACTIVEELEMENT

Gets reference to the element that currently has input focus.

Parameters:

None

Return value:

Type	Description
ELEMENT	Element that currently has the input focus. If no element has the focus, null is returned.

GETFIELDATCURSOR

Gets a reference to the field at the current 5250 cursor position. This method is only available in aXes TS2.

Parameters:

None

Return value:

Type	Description
ELEMENT	Element at the current 5250 cursor position. If no element is at this position, null is returned.

ELEMENT Object Members

The object returned by **FIELD** & **FIELDS**() is an ELEMENT object.

Note that you you cannot return a reference to a field that uses extended DDS options to alter its visualization.

The members of an ELEMENT object are listed below.

getValue function

Gets the current value of the element.

Parameters:

None

Return value:

Type	Description
String	The current value of the element.

setValue function

Sets the current value of the element.

Parameters:

Name	Type	Mandatory	Description
value	String	Yes	the value to set

Return value:

None

isInputField function

Checks if the element is an input field or output field.

Parameters:

None

Return value:

Type	Description
Boolean	Returns true if input field, otherwise false

getProperty function

Gets the property value of an eXtension applied to this element.

Parameters:

Name	Type	Mandatory	Description
propertyName	String	Yes	Property name of the eXtension. Can be unqualified or fully qualified. A fully qualified name specifies the eXtension programmatic name in addition to the property name, separated by a period (for example: axButton.caption). Most of the time it's enough to specify an unqualified property name, however when the property name is ambiguous (two or more eXtensions have the same property), it is necessary to specify the fully qualified name of the property.

Return value:

The value of the property if an eXtension containing the specified property is found, null otherwise.

If the property contains a script, the script will **not** be evaluated. It will be returned as an **EMBEDDEDSCRIPT** object. Please see the example below for more information.

Example:

An element on the screen has the button eXtension applied to it. We need to get the value of the caption property of the button. Below is how to do it:

```
var element = FIELD;
// use un-qualified name – OK most of the time
var caption = element.getProperty("caption");
// if "caption" is ambiguous, fully qualify the name
var caption = element.getProperty("axButton.caption");
// check if the caption is a script
var caption = element.getProperty("axButton.caption");
if(caption instanceof EMBEDDEDSCRIPT)
{
        var script = caption.script;
}
```

setProperty function

Sets the property value of an eXtension applied to this element.

Note that for a change in a property value (that would affect the appearance of the element) to be reflected visually, **refresh** method needs to be invoked afterwards.

Parameters:

Name	Type	Mandatory	Description
propertyName	String	Yes	Property name of the eXtension. Can be unqualified or fully qualified. A fully qualified name specifies the eXtension programmatic name in addition to the property name, separated by a period (for example: axButton.caption). Most of the time it's enough to specify an unqualified property name, however when the property name is ambiguous (two or more eXtensions have the same property), it is necessary to specify the fully qualified name of the property.
value	Variant	Yes	The property value to set. To set the property as a script, create an EMBEDDEDSCRIPT object. See the example below for more information.

Return value:

None

Example:

An element on the screen has the button eXtension applied to it. We need to set the value of the caption property of the button. Below is how to do it:

```
var element = FIELD;
// use un-qualified name – OK most of the time
element.setProperty("caption", "My caption");
// if "caption" is ambiguous, fully qualify the name
element.setProperty("axButton.caption", "My caption");
// set caption to a script to show current date
var script = new EMBEDDEDSCRIPT("new Date().toString()");
element.setProperty("caption", script);
```

refresh function

Re-render the element to reflect any changes in properties.

Parameters:

None

Return value:

None

focus function

Set the input focus to this element.

Parameters:

None

Return value:

None

set5250Cursor function

Position the **5250 logical cursor** on this element. This method should be applied only to existing 5250 elements.

Please note that this method moves the 5250 cursor in the actual program in the host machine and is not directly related to the cursor that might or might not appear in the user's browser.

Parameters:

None

Return value:

None

Examples:

See Tutorial 11 – FAQ & Examples

getIndex function

Gets this element's row index (starts from 1) in a sub-file.

Parameters:

None

Return value:

Type	Description
Integer	Row index (starts from 1) if a this element is part of a sub-file, otherwise always returns 1.

get5250Attribute function

Get the 5250 attribute of this element.

Parameters:

None

Return value:

5250 attribute code.

If this element is not associated with a 5250 field, this method returns an empty string.

List of 5250 attribute code and their meanings:

X20 Green

X21 Green/Reverse Image

X22 White

X23 White/Reverse Image

X24 Green/Underscore

X25 Green/Underscore/Reverse Image

X26 White/Underscore

X27 Nondisplay

X28 Red

X29 Red/Reverse Image

X2A Red/Blink

X2B Red/Reverse Image/Blink

X2C Red/Underscore

X2D Red/Underscore/Reverse Image

X2E Red/Underscore/Blink

X2F Nondisplay

X30 Turquoise/Column Separators

X31 Turquoise/Column Separators/Reverse Image

X32 Yellow/Column Separators

X33 Yellow/Column Separators/Reverse Image

X34 Turquoise/Underscore

X35 Turquoise/Underscore/Reverse Image

X36 Yellow/Underscore

X37 Nondisplay

X38 Pink

X39 Pink/Reverse Image

X3A Blue

X3B Blue/Reverse Image

X3C Pink/Underscore

X3D Pink/Underscore/Reverse Image

X3E Blue/Underscore

X3F Nondisplay

TABLEMANAGER Object Members

getTable function

Gets a reference to a table with the specified name. If such a table does not exist, a new table will be created.

Parameters:

Name	Type	Mandatory	Description
Name	String	No	The name of the table. If not specified, a new unnamed table will be created.

Return value:

Type	Description
TABLE object	Existing table object matching the specified name or new table object

deleteTable function

Delete a table with the specified name.

Parameters:

Name	Type	Mandatory	Description
name	String	Yes	The name of the table to be deleted

Return value:

None

loadDynamicTable function

Loads the specified dynamic table from the host machine.

Parameters:

Name	Type	Mandatory	Description
name	String	Yes	The local name of the table. This will be the same name that you pass when calling getTable.
hostTableDefinitionFile	String	Yes	The name of the file on the host machine that defines how the data is to be retrieved.
parameters	Object	No	Object containing parameters for the data retrieval
keepLastKey	Boolean	No	If true, compare the key used to retrieve data with the key used in the previous request. If it is the same, do NOT load the table again. If false, the table will always be reloaded, even if the key is the same. The default is false.

Return value:

None

loadStaticTables function

Loads all static tables from the host machine.

Parameters:

Name	Type	Mandatory	Description
hostTableDefinitionFile	String	Yes	The name of the file on the host machine that defines the static tables
parameters	Object	Yes	Object containing parameters to be applied
forceReload	Boolean	No	Force reload of all static tables

Return value:

None

loadFromXML function

Loads all static tables from the host machine.

Parameters:

Name	Type	Mandatory	Description
hostXMLFile	String	Yes	The name of the XML file on the host machine that is to be used as the data source
table	TABLE	Yes	The table object to populate. Use getTable to create a new table if required.
forceReload	Boolean	No	Force reload of the XML.

Return value:

None

TABLE Object Members

insertChild function

Inserts a table child.

Parameters:

Name	Type	Mandatory	Description
parameters	Object	Yes	Object that represents a table row.
atBegin	Boolean	No	Add the child at the beginning of the table. Defaults to false.

Return value:

None

childCount function

Returns the number of table children (rows).

Parameters:

None

Return Value:

Type	Description
Integer	Number of table children (rows)

child function

Returns the table child object at the nominated index.

Parameters:

Name	Type	Mandatory	Description
index	Integer	Yes	The positional index of the child in the table.

Return Value:

Type	Description
Object	A table child (row) object

removeChildren function

Delete all table children (rows) effectively clearing the table.

Parameters:

None

Return Value:

None

childMember function

Returns a child *member* object at the nominated index with the nominated name.

Parameters:

Name	Type	Mandatory	Description
index	Integer	Yes	The positional index of the child in the table.
memberName	String	Yes	The name of the desired member. This is equivalent to the row property.
defaultValue	Variant	No	Default value when member not found.

Return Value:

Type	Description
Variant	The member when found, otherwise the default value.

aXes Object Functions and Features

With the introduction of aXes-TS2, various functions and features in the AXES object are being formally exposed for public use. These functions and features can be used in scripting provided the following warning is observed.

Important Warning

You should only use methods, objects and properties that are described in this documentation.

You are not permitted to use any scripting features that are not mentioned in this documentation.

If you ignore this warning then you are implicitly accepting responsibility for the risk of all of the following:

- The introduction into your application of incompatibilities with future versions of aXes.
- Voiding or limitation of any maintenance or support contract you may have in place for aXes.
- Being charged for problem resolutions that are traced back to being caused by such non-permitted usage.

These methods, objects and properties are for aXes-TS2 only.

Name	Type	Description
isTS2Engine	Boolean	Indicates if the aXes TS2 rendering engine is currently being used.
displayMessage	Method	AXES API that allows user defined messages to be added to the AXES status bar.

isTS2Engine

Use this Boolean value to determine if the aXes TS2 rendering engine is currently being used.

For example:

```
if(aXes.isTS2Engine) {<your TS2 code here>};
```

displayMessage

AXES API that allows user defined messages to be added to the AXES status bar.

In eXtension scripts this new API is invoked as:

```
AXES.Layout.displayMessage(msgtext,clearfirst,makesound)
```

In RAMP-TS screen definition scripts the API can also be invoked by using GLOBAL_oAXESInterface in place of AXES in the preceding example.

Using this API in RAMP-TS scripts would be very unusual because the aXes status bar is normally invisible. Typically messages are routed to the framework's main status bar area.

Parameters:

Name	Type	Mandatory	Description
msgtext	String	Yes	A mandatory string containing the text of the message to be added to the status bar.
clearfirst	Boolean	No	Default is false. It indicates whether other messages already present in the status bar area should be cleared when this message is added.
makesound	Boolean	No	Default is false. It indicates whether a sound should be made to draw the users attention to the message.

Return value:

None

aXes GPS Object Functions and Features

Using HTML 5 Geolocation API, aXes can now locate a user's position using browsers, too, provided that the user has consented. And with the use of Google Maps Geocoding API, geocoding (process of converting address to geographic coordinates) and reverse geocoding (process of converting geographic coordinates to human-readable address) services are also available. These functions and features can be used in scripting provided the following warning is observed.

Important Warning

You should only use methods, objects and properties that are described in this documentation.

You are not permitted to use any scripting features that are not mentioned in this documentation.

If you ignore this warning then you are implicitly accepting responsibility for the risk of all of the following:

- ❖ The introduction into your application of incompatibilities with future versions of aXes.
- ❖ Voiding or limitation of any maintenance or support contract you may have in place for aXes.
- ❖ Being charged for problem resolutions that are traced back to being caused by such non-permitted usage.
- ❖ By using the Google Maps Geocoding API, you are subject to the Google Terms of Service outlined in https://developers.google.com/maps/terms#4-provision-of-the-service-by-google.

These methods, objects and properties are for aXes-TS2 only:

Name	Type	Environment	Description
getCurrentLocation()[1]	Function	TS2 only	AXES API that returns the user's current location using HTML5 Geolocation function.
		aXes Mobile	AXES API that returns the user's current location using LongRange. getGeolocation.
*getCurrentAddress()[1]	Function	TS2	AXES API that returns the current address of the user. The address includes street number, street name, sublocality, town, state, post code and country information.
		aXes Mobile	AXES API that returns the current address of the user based on the geographic coordinates retrieved in LongRange.getGeolocation
*getAddressByLocation()	Function	TS2 and aXes Mobile	AXES API that returns the address information based on the geographic coordinates input.
*getLocationByAddress()	Function	TS2 and aXes Mobile	AXES API that returns the location information based on the address input.

Note*: Functions which Google Maps Geocoding API is used.

Note[1]: Functions that are not supported by desktop Safari

getCurrentLocation

AXES API that returns the user's current location.

For example:

On your PC, in aXes Developer mode:

- Add a button to your aXes screen, with an onclick script like this:

```
var callBackFunction = function(result)
{
        alert("Longitude: " + result.userInfo.LONGITUDE + " Latitude: " +
                result.userInfo.LATITUDE);
}
var options = { callBack: callBackFunction };
```

```
AXES.GPS.getCurrentLocation( options );
```

- Make the button caption “Get my current location”.
- Save your changes.

When you run your aXes project on mobile or PC, and touch the button, you will see your current location: latitude, longitude, and altitude. (This is the location of the device – mobile or PC).

Output for PC and mobile may vary because of the different geolocation service that they access.

Parameters:

The parameter is in the form of object with the following properties.

Name	Type	Mandatory	Description
callBack	Function	Yes	The callback function to be triggered when the process of retrieving the information is done.

Return value:

An object that contains the following properties:

Name	Type	Description
success	Boolean	True if the process is successful.
userInfo	Object	Contains geolocation properties.
LATITUDE	String	The current latitude value.
LONGITUDE	String	The current longitude value.
ALTITUDE	String	The current altitude value.

getCurrentAddress

AXES API that returns the current location address of the user.

For example:

On your PC, in aXes Developer mode:

- Add a button to your aXes screen, with an onclick script like this:

```
var callBackFunction = function(result)
{
    alert("sublocality:" + result.userInfo.SUBLOCALITY + "\n" +
          "street: " + result.userInfo.STREET.no + "::" +
           result.userInfo.STREET.name + "\n" +
          "city: " + result.userInfo.CITY + "\n" +
          "state: "+ result.userInfo.STATE.code + " :: " +
           result.userInfo.STATE.name + "\n" +
           "postcode: " + result.userInfo.POSTCODE + "\n" +
           "country: " + result.userInfo.COUNTRY.code + " :: " +
            result.userInfo.COUNTRY.name + "\n" +
            result.userInfo.ADDRESS
    );
}
var options = { callBack: callBackFunction };
```

```
AXES.GPS.getCurrentAddress( options );
```

- Make the button caption “Get my current address”.
- Save your changes.

When you run your aXes project on mobile or PC, and touch the button, you will see your current address. (This is based on the location retrieved by the device – mobile or PC).

Output for PC and mobile may vary because of the different geolocation service that they access.

Parameters:

The parameter is in the form of object with the following properties.

Name	Type	Mandatory	Description
callBack	Function	Yes	The callback function to be triggered when the process of retrieving the information is done.

Return value:

An object that contains the following properties:

Name	Type	Description
success	Boolean	True if the process is successful.
userInfo	Object	Contains geolocation properties.
ADDRESS	String	The full formatted address.
PREMISE	String	The named location if available.
STREET	Object	
no	String	The street number.
name	String	The abbreviated street name.
longname	String	The full street name.
SUBLOCALITY	String	For Japan address that includes street number, street name, ward, separated by a comma.
CITY	String	The name of the city or town.
STATE	Object	
code	String	The code of the state.
name	String	The name of the state.
COUNTRY	Object	
code	String	The country code.
name	String	The country name.
POSTCODE	String	The postal code.

getLocationByAddress

AXES API that returns the location information based on the address input.

For example:

On your PC, in aXes Developer mode:

- Add a button to your aXes screen, with an onclick script like this:

```
var callBackFunction = function(result)
{
    alert("Longitude: " + result.userInfo.LONGITUDE + "\nLatitude: " +
              result.userInfo.LATITUDE + "\nAddress: " + result.userInfo.ADDRESS);
    );
}
var options = { address:  "Chatswood",
                callBack: callBackFunction };
AXES.GPS.getLocationByAddress( options );
```

- Make the button caption "Get location by address".
- Save your changes.

When you run your aXes project on mobile or PC, and touch the button, you will see the geolocation information based on the address you passed as parameter.

Parameters:

The parameter is in the form of object with the following properties.

Name	Type	Mandatory	Description
address	String	Yes	The address to locate.
callBack	Function	Yes	The callback function to be triggered when the process of retrieving the information is done.

Return value:

An object that contains the following properties:

Name	Type	Description
success	Boolean	True if the process is successful.
userInfo	Object	Contains geolocation properties.
LATITUDE	String	The current latitude value.
LONGITUDE	String	The current longitude value.
ADDRESS	String	The formatted address value.

getAddressByLocation

AXES API that returns the address information based on the geographic coordinates input.

For example:

On your PC, in aXes Developer mode:

- Add a button to your aXes screen, with an onclick script like this:

```
var callBackFunction = function(result)
{
    alert("sublocality:" + result.userInfo.SUBLOCALITY + "\n" +
          "street: " + result.userInfo.STREET.no + "::" +
           result.userInfo.STREET.name + "\n" +
```

```
                "city: " + result.userInfo.CITY + "\n" +
               "state: "+ result.userInfo.STATE.code + " :: " +
                result.userInfo.STATE.name + "\n" +
               "postcode: " + result.userInfo.POSTCODE + "\n" +
                "country: " + result.userInfo.COUNTRY.code + " :: " +
                 result.userInfo.COUNTRY.name + "\n" +
                 result.userInfo.ADDRESS
        );
    }
    var options = { position: {LATITUDE: 34.6937, LONGITUDE: 135.5022 },
                    callBack: callBackFunction };
    AXES.GPS.getAddressByLocation( options );
```

- Make the button caption “Get address by location”.
- Save your changes.

When you run your aXes project on mobile or PC, and touch the button, you will see the address information based on the geographic coordinates you passed as parameter.

Parameters:

The parameter is in the form of object with the following properties.

Name	Type	Mandatory	Description
position	Object	Yes	
LATITUDE	Number		Latitude value to locate.
LONGITUDE	Number		Longitude value to locate.
callBack	Function	Yes	The callback function to be triggered when the process of retrieving the information is done.

Return:

Same as the getCurrentAddress return value.

Google API Key

Google Maps expects to find the API key in the key parameter when loading an API like Google Maps Geocoding API. If you plan to exceed the usage limit, it is recommended to get an API key from Google. Once the key is available, edit your project’s USERENV object and add the following:

```
    googleAPIKey: “<your API key goes here>”,  /* Google API Key */
```

For more information, visit the following link:
https://developers.google.com/maps/documentation/geocoding/get-api-key#get-an-api-key
Make sure to clear the cache and restart aXes when editing your project’s USERENV object.

aXes Clipboard Object Functions and Features

The user can now access the clipboard when using the desktop browsers like IE, Chrome and Firefox. This allows for easy copying of group of screen fields and pasting them on another aXes session or other application. These functions and features can be used in scripting provided the following warning is observed.

Important Warning

You should only use methods, objects and properties that are described in this documentation.

You are not permitted to use any scripting features that are not mentioned in this documentation.

If you ignore this warning then you are implicitly accepting responsibility for the risk of all of the following:

- ❖ The introduction into your application of incompatibilities with future versions of aXes.
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- ❖ Being charged for problem resolutions that are traced back to being caused by such non-permitted usage.

These methods, objects and properties are for aXes-TS2 only:

Name	Type	Browser	Description
copyToClipboard()	Function	IE	AXES API that copies text data into the clipboard directly using window. clipboardData.setData() provided that the user has consented to allow clipboard access.
		Chrome/Firefox	AXES API that copies text data into the clipboard using document.execCommand('Copy').
getFromClipboard()	Function	IE	AXES API that retrieves the text data from the clipboard using window. clipboardData.getData() provided that the user has consented to allow clipboard access.
		Chrome/Firefox	AXES API that retrieves the text data from the clipboard only when paste event (Ctrl-V) is triggered.

Note: The functions above do not support Safari browser.

copyToClipboard

AXES API that copies text data into the clipboard. An identifier text, “<<AXES.CLIPBOARD.DATA>>”, is prepended to the text data. The purpose of this is to identify that the data in the clipboard was set by this AXES copy function, and not by the normal copy.

For example:

On your PC, in aXes Developer mode:

- Go to any screen with input fields like Maintain Employee Infromation edit screen and assign a name to the target fields and save.
- Add a button to your aXes screen, with an onclick script like this:

```
var clipText1 = FIELDS("Street").getValue()+ "\n";
var clipText2 = FIELDS("City").getValue()+ "\n";
var clipText3 = FIELDS("State").getValue()+ "\n";
var clipText4 = FIELDS("Zip").getValue()+ "\n";
```

```
var clipText5 = FIELDS("Country").getValue()+ "\n";
var items = [ {  text : clipText1}, { text : clipText2}, { text : clipText3}, { text : clipText4}, { text : clipText5} ];
var options = { arrayItems:items } ;

AXES.CLP.copyToClipboard( options );
```

- Make the button caption “Copy Address”.
- Save your changes.

When you run your aXes project on PC, and touch the button, the text data set in the parameter is copied to the clipboard. To confirm, try pasting the data to any text editor.

Parameters:

The parameter is in the form of object with the following property:

Name	Type	Mandatory	Description
arrayItems	Object	Yes	Contains an array of text objects. Each data has a text property and value. Example: { text: “value” } Each value can be appended by a new line character or any character to separate the screen field data from one another. This separator, in turn, can be used when manipulating the retrieved data from the clipboard.

Return value:

None

getFromClipboard

AXES API that retrieves the text data from the clipboard provided that the text data contains the identifier text, “<<AXES.CLIPBOARD.DATA>>”. This identifier text will prevent the user from accidentally pasting data that are not copied using the AXES copyToClipboard function.

For security reasons, Chrome and Firefox browsers does not allow direct access of data from the clipboard. As a workaround, a blinking field will be displayed on the screen, and the user must click it then press Ctrl-V to be able to retrieve the data from the clipboard.

The display field shown when call to getFromClipboard is done is described below:

Display Field Image	Key Events	Functionality
Press Ctrl-V here!	Ctrl-V	Retrieves the text data from the clipboard. If the text data does not contain an identifier text, an error message will be displayed. Finally, this field will be removed from the screen.
	Esc	Removes this field from the screen.

For example:

On your PC, in aXes Developer mode:

- Go to Maintain Employee Information edit screen.
- Add a button to your aXes screen, with an onclick script like this:

```
var functionCallback = function(result) {
    var items = result.userInfo.split("\n"); // separator used in copyToClipboard
    FIELDS("Street").setValue(items[0]);
    FIELDS("City").setValue(items[1]);
    FIELDS("State").setValue(items[2]);
    FIELDS("Zip").setValue(items[3]);
    FIELDS("Country").setValue(items[4]);
};
var options = { callBack: functionCallback };
AXES.CLP.getFromClipboard( options );
```

- Make the button caption “Paste Address”.
- Save your changes.

When you run your aXes project on IE, and touch the button, the text data in the clipboard will be pasted to the target screen fields.

When you run your aXes project on Chrome or Firefox, the display field is shown. When you click and press Ctrl-V in this field, the text data in the clipboard will be pasted to the target screen fields.

Parameters:

The parameter is in the form of object with the following property.

Name	Type	Mandatory	Description
callBack	Function	Yes	The callback function to be triggered when the retrieving of data from the clipboard is done.

Return value:

An object that contains the following property:

Name	Type	Description
userInfo	String	Text data retrieved from the clipboard.

aXes IBMi Service

AXES.IBMiService is the namespace for all ConnectorJS-related API. This is where the common events, enumeration, and functions are defined.

These methods, objects and properties are for aXes-TS2 only:

Name	Type	Description
Event	Enum	These events are used by ConnectorJS-related APIs and eXtensions. Events for webQueue are as follows: CONNECTION_OPENED CONNECTION_CLOSED CONNECTION_READY DATA_PUSHED_BY_SERVER ERROR_RECEIVED MESSAGE_ACCEPTED MESSAGE_PUSHED_BY_SERVER MESSAGE_REJECTED Event for connectorEmail is as follows: EMAIL_SEND_COMPLETED
_scriptList	Array	Contains all the scripts that has been loaded when loadScript() is called. This should be only used within loadScript() method.
ReceiverType	Enum	This is used by ConnectorEmail API and consists of: TO CC BCC
loadScript()	Function	Used by ConnectorJS APIs to load the script when web service endpoint URL has been set.

loadScript

Loads the external script to be used in ConnectorJS services. This is usually called when web service endpoint URL is specified. (See ConnectorEmail API)

If loading is successful, it will be added to AXES.IBMiService._scriptList. This list is maintained to avoid multiple loading of the same script.

Parameters:

Name	Type	Mandatory	Description
endpoint	String	Yes	Web service endpoint URL.
script	AXES.IBMiService.Script	Yes	Script to load.

Return value:

None

aXes Connector Web Queue Object Functions and Features

Communication between AXES and server can now be established using AXES.IBMiService.ConnectorWebQueue API. Thus, allowing AXES to perform web queue transactions such as sending and receiving messages to and from the server. These functions and features can be used in scripting provided the following warning is observed.

Important Warning

You should only use methods, objects and properties that are described in this documentation.

You are not permitted to use any scripting features that are not mentioned in this documentation.

If you ignore this warning then you are implicitly accepting responsibility for the risk of all of the following:

- The introduction into your application of incompatibilities with future versions of aXes.
- Voiding or limitation of any maintenance or support contract you may have in place for aXes.
- Being charged for problem resolutions that are traced back to being caused by such non-permitted usage.

These methods, objects and properties are for aXes-TS2 only:

Name	Type	Description
getHostEndPoint()	Function	AXES API that returns the web service endpoint URL.
setHostEndPoint()	Function	AXES API that sets the web service endpoint URL.
getHostUserid()	Function	AXES API that returns the user id for connecting to web service.
setHostUserid()	Function	AXES API that sets the user id for connecting to web service.
getHostPassword()	Function	AXES API that returns the password for connecting to web service.
setHostPassword()	Function	AXES API that sets the password for connecting to web service.
setConnectionParameterAsString()	Function	AXES API that sets the value of string parameter to pass with the connection request
setConnectionParameterAsNumber()	Function	AXES API that sets the value of numeric parameter to pass with the connection request
clearParameters()	Function	AXES API that removes all the parameters that have been set
open()	Function	AXES API that opens the queue.
send()	Function	AXES API that sends a message to the queue using string or JSON string identifier.
sendWithNumericId()	Function	AXES API that sends a message to the queue using numeric identifier.
close()	Function	AXES API that closes the queue

getHostEndPoint

Returns the web service endpoint URL

Parameters:

None

Return value:

Type	Description
String	Web service endpoint URL

setHostEndPoint

Sets the web service endpoint URL.

Parameters:

Name	Type	Mandatory	Description
endpoint	String	Yes	The web service endpoint URL. The value must start with “ws://”

Return value:

None

For example:

```
AXES.IBMiService.ConnectorWebQueue.setHostEndPoint(“ws://lansaServer:1234/service
/webqueue.jsp”);
```

getHostUserid

Returns the user id for connecting to web service.

Parameters:

None

Return value:

Type	Description
String	User profile

setHostUserid

Sets the web service endpoint URL.

Parameters:

Name	Type	Mandatory	Description
userid	String	Yes	User profile

Return value:

None

getHostPassword

Returns the password for connecting to web service.

Parameters:

None

Return value:

Type	Description
String	Host password

setHostPassword

Sets the password for connecting to web service.

Parameters:

The parameter is in the form of object with the following property.

Name	Type	Mandatory	Description
passwd	String	Yes	Host password

Return value:

None

setConnectionParameterAsString

Sets the value of a string parameter to pass with the connection request.

Parameters:

Name	Type	Mandatory	Description
name	String	Yes	Parameter name
value	String	Yes	Parameter value

Return value:

None

For example:

```
AXES.IBMiService.ConnectorWebQueue.setConnectionParameterAString({
name:"USERPARAM", value:"XXX" });
```

setConnectionParameterAsNumber

Sets the value of a numeric parameter to pass with the connection request.

Parameters:

Name	Type	Mandatory	Description
name	String	Yes	Parameter name
value	Number	Yes	Parameter value

Return value:

None

For example:

```
AXES.IBMiService.ConnectorWebQueue.setConnectionParameterAString({ name:"length",
value: 1024 });
```

clearParameters

Removes all the parameters that have been set.

Parameters:

None

Return value:

None

For example:

```
AXES.IBMiService.ConnectorWebQueue.clearParameters();
```

open

Opens the queue.

Parameters:

Name	Type	Mandatory	Description
queue	String	Yes	Queue id
callback	Function	Yes	The function to receive the message from the queue. This function must contain parameters to receive the message and binary object.

For example:

```
var onMessage = function( message, binaryData) {
    switch (message.type) {
        case “error”:
            /*Do processing for error*/
            return;
        case “status”:
            switch (message.status) {
                case “OPEN”:
                   /*Do processing for open*/
                   return;
                // other events
            }
    }
};
AXES.IBMiService.ConnectorWebQueue.open( “MONITOR”, onMessage );
```

message object

The message object can have the following properties:

Name	Type	Description
type	String	The message.type has the following values: error status
status	String	The message.status has the following values: OPEN CLOSE READY PUSH ACCEPT REJECT

Return value:

None

send

Sends a message to the queue using string or JSON string identifier.

Parameters:

Name	Type	Mandatory	Description
messageId	String / JSON String	Yes	Message identifier that can be used to track related messages.
message	String	Yes	Message to send
file	File object	No	File to send

Return value:

None

For example:

using string as message identifier:

```
AXES.IBMiService.ConnectorWebqueue.send("XYZ", "Test Message");
```

using JSON string as message identifier:

```
AXES.IBMiService.ConnectorWebqueue.send({id:10}, "Test Message");
```

with file:

Add a Multitype Input Box extension to the screen.

Set its inputType property to File.

Set its Basic-> name property to "myFile".

Add a Push Button extension to the screen.

Set its caption property to "Upload File".

Click Edit Script button of its onClick property and type the following:

```
var files = GETFILES("myFile");
var file = files[0];
var message = { type: "action", action: "sendfile", name: file.name,
                mimetype: "text/plain", value: "Some data"};
if ( file instanceof File ) {
    AXES.IBMiService.ConnectorWebqueue.send( "FILE001", message, file);
}
```

Click OK to close the Edit Script dialog.

Save and unlock screen.

Once the webqueue is ready, select a file then click the "Upload File" button.

sendWithNumericId

Sends a message to the queue using numeric identifier.

Parameters:

Name	Type	Mandatory	Description
messageId	Integer	Yes	Message identifier that can be used to track related messages.
message	String	Yes	Message to send
file	File object	No	File to send

Return value:

None

For example:

```
AXES.IBMiService.ConnectorWebqueue.send(23, “Test Message”);
```

close

Closes the queue.

Parameters:

Name	Type	Mandatory	Description
code	Integer	Yes	Code that specifies the reason for closing the queue. The reason code range is 4000 to 4999. 4000 is currently used by axConnectorWebQueue extension.
message	String	No	Reason for closing the queue

Return value:

None

For example:

```
AXES.IBMiService.close( 4500, “CLOSE REASON” );
```

Notes:

For more information in using ConnectorJS Webqueue, please refer to ConnectorJS WebQueue Developer Guide document.

aXes ConnectorEmail Object Functions and Features

The user can now send email using ConnectorJS web service. This is part of the IBMi Services API. This API is also used by axConnectorEmail eXtension. These functions and features can be used in scripting provided the following warning is observed.

Important Warning

You should only use methods, objects and properties that are described in this documentation.

You are not permitted to use any scripting features that are not mentioned in this documentation.

If you ignore this warning then you are implicitly accepting responsibility for the risk of all of the following:

- The introduction into your application of incompatibilities with future versions of aXes.
- Voiding or limitation of any maintenance or support contract you may have in place for aXes.
- Being charged for problem resolutions that are traced back to being caused by such non-permitted usage.

These methods, objects and properties are for aXes-TS2 only:

Name	Type	Description
getHostEndPoint()	Function	AXES API that retrieves the currently set web service endpoint URL.
setHostEndPoint()	Function	AXES API that sets the web service endpoint URL.
getHostUserId()	Function	AXES API that retrieves the currently set host user id.
setHostUserId()	Function	AXES API that sets the host user id.
getHostPassword()	Function	AXES API that retrieves the currently set host password.
setHostPassword()	Function	AXES API that sets the host password.
getEmailRequest()	Function	AXES API that retrieves the currently set server's email object identifier.
setEmailRequest()	Function	AXES API that sets the server's email object identifier.
getSMTPServer()	Function	AXES API that retrieves the currently set SMTP server.
setSMTPServer()	Function	AXES API that sets the SMTP server.
getSender()	Function	AXES API that retrieves the currently set sender's email address.
setSender()	Function	AXES API that sets the sender's email address.
getSubject()	Function	AXES API that retrieves the currently set subject.
setSubject()	Function	AXES API that sets the subject.
getBodyText()	Function	AXES API that retrieves the currently set message text.
setBodyText()	Function	AXES API that sets the message text.
addReceiver()	Function	AXES API that adds the email address to the list of addresses.
send()	Function	AXES API that sends the email.
clearsReceiversList()	Function	AXES API that clears the list of addresses.
getAsynchronous()	Function	AXES API that retrieves the currently set asynchronous value.
setAsynchronous()	Function	AXES API that sets the asynchronous value.
setCallback()	Function	AXES API that sets the callback function when send with asynchronous call is done.

removeCallback()	Function	AXES API that removes the currently set callback function.

getHostEndPoint

AXES API that retrieves the currently set web service endpoint URL.

Parameters:

None

Return value:

Name	Type	Description
m_HostEndPoint	String	Web service endpoint URL.

setHostEndPoint

AXES API that sets the web service endpoint URL. In addition, loads the /axes/lui-connector-min.js and /axes/lui-encrypt-min.js scripts.

Parameters:

Name	Type	Mandatory	Description
endpoint	String	Yes	Web service endpoint URL.

Return value:

None

getHostUserId

AXES API that retrieves the currently set host user id.

Parameters:

None

Return value:

Name	Type	Description
m_HostUserid	String	Host User Id

setHostEndPoint

AXES API that sets the host user id.

Parameters:

Name	Type	Mandatory	Description
userId	String	Yes	Host User Id.

Return value:

None

getHostPassword

AXES API that retrieves the currently set host password.

Parameters:

None

Return value:

Name	Type	Description
m_HostPassword	String	Host Password

setHostPassword

AXES API that sets the host user id.

Parameters:

Name	Type	Mandatory	Description
password	String	Yes	Host Password

Return value:

None

getEmailRequest

AXES API that retrieves the currently set server's email object identifier.

Parameters:

None

Return value:

Name	Type	Description
m_EmailRequest	String	Server's email object identifier

setEmailRequest

AXES API that sets server's email object identifier. When "ANY" is set, all the values required for email sending must be set including SMTP server and sender's email address.

Parameters:

Name	Type	Mandatory	Description
emailRequest	String	Yes	Server's email object identifier

Return value:

None

getSMTPServer

AXES API that retrieves the currently set SMTP server.

Parameters:

None

Return value:

Name	Type	Description
m_Server	String	SMTP server

setSMTPServer

AXES API that sets the SMTP server.

Parameters:

Name	Type	Mandatory	Description
server	String	Yes	SMTP server

Return value:

None

getSender

AXES API that retrieves the currently set sender's email address.

Parameters:

None

Return value:

Name	Type	Description
m_From	String	Sender's email address

setSender

AXES API that sets the sender's email address.

Parameters:

Name	Type	Mandatory	Description
sender	String	Yes	Sender's email address

Return value:

None

getSubject

AXES API that retrieves the currently set subject.

Parameters:

None

Return value:

Name	Type	Description
m_Subject	String	Email's subject

setSubject

AXES API that sets the subject.

Parameters:

Name	Type	Mandatory	Description
subject	String	Yes	Email's subject

Return value:

None

getBodyText

AXES API that retrieves the currently set message text.

Parameters:

None

Return value:

Name	Type	Description
m_BodyText	String	Message text

setBodyText

AXES API that sets the message text.

Parameters:

Name	Type	Mandatory	Description
bodyText	String	Yes	Message text

Return value:

None

getError

AXES API that retrieves the currently set error message.

Parameters:

None

Return value:

Name	Type	Description
m_Error	String	Error message

setError

AXES API that sets the error message.

Parameters:

Name	Type	Mandatory	Description
error	String	Yes	Error message

Return value:

None

addReceiver

AXES API that adds an email address to the list of addresses. There are three lists that are based on receiver type.

Parameters:

Name	Type	Mandatory	Description
emailAddress	String	Yes	Email address
receiverType	AXES.IBMiService.ReceiverType	Yes	Receiver types are as follows: TO CC BCC

Return value:

None

clearReceiversList

AXES API that removes all the email addresses in each list.

Parameters:

None

Return value:

None

getAsynchronous

AXES API that retrieves the currently set asynchronous value.

Parameters:

None

Return value:

Name	Type	Description
m_Asynchronous	Boolean	Returns true or false

setAsynchronous

AXES API that sets the error message.

Parameters:

Name	Type	Mandatory	Description
asynchronous	Boolean	Yes	Asynchronous value

Return value:

None

setCallback

AXES API that sets the callback function to be called when email is sent with asynchronous call.

Parameters:

Name	Type	Mandatory	Description
callback	Function	Yes	Callback function

Return value:

None

removeCallback

AXES API that removes the currently set callback function.

Parameters:

None

Return value:

None

send

AXES API that executes LUICONNECTOR to send the email using all the properties set in the above methods. In case, invalid hostEndPoint is detected, error message will be displayed in the console.

Parameters:

Name	Type	Mandatory	Description
aysnchronous	Boolean	No	If undefined, the currently set m_Asynchronous will be used.

Return value:

Name	Type	Description
status	String	Status of email sending execution. The status includes: “OK” – where message is blank “ER” – where message contains the error

For example:

Sending with asynchronous call

On your PC, in aXes Developer mode:

- Go to main screen and set its name and save.
- Add a button to your aXes screen, with an onClick script like this:

```
var CM = new AXES.IBMiService.ConnectorEmail();
CM.clearReceiversList();
CM.setHostEndPoint("http://<endpointURL>:<port>/service/connector.jsp?trace=true"
);
CM.setHostUserid("<valid host user id>");
CM.setHostPassword("<valid password>");
CM.setEmailRequest("ANY");
CM.setSMTPServer("<valid server>");
CM.setSender("<valid email address>");
CM.setSubject("Email using ConnectorJS");
CM.setBodyText("Email with asynchronous call.");
CM.addReceiver("<valid email address>", AXES.IBMiService.ReceiverType.TO);
var callback = function(status, message) {
     alert("asynchronous: " + status + "\n" + message);
```

```
};
CM.setCallback(callback);
CM.send(true);
```

- Make the button caption “Async-email”.
- Save your changes.

When you run your aXes project, and click the button, a message will be displayed with the execution status. If the status is OK, check that the message has been received by the email address you specified.

Sending with synchronous call

On your PC, in aXes Developer mode:

- Go to main screen and set its name and save.
- Add a button to your aXes screen, with an onClick script like this:

```
var CM = new AXES.IBMiService.ConnectorEmail();
CM.clearReceiversList();
CM.setHostEndPoint("http://<endpointURL>:<port>/service/connector.jsp?trace=true"
);
CM.setHostUserid("<valid host user id>");
CM.setHostPassword("<valid password>");
CM.setEmailRequest("<valid server’s email object id>");
CM.setEmailRequest("ANY");
CM.setSMTPServer("<valid server>");
CM.setSender("<valid email address>");
CM.setSubject("Email using ConnectorJS");
CM.setBodyText("Email with asynchronous call.");
CM.addReceiver("<valid email address>", AXES.IBMiService.ReceiverType.TO);
var response =  CM.send(false);
alert("synchronous: " + response);
```

- Make the button caption “Sync-email”.
- Save your changes.

When you run your aXes project, and click the button, a message will be displayed with the execution status. If the status is OK, check that the message has been received by the email address you specified.

aXes ConnectorPgmCall Object Functions and Features

The user can now call a program(pgm) using ConnectorJS web service. This is part of the IBMi Services API. This API is also used by axConnectorPgmCall eXtension. These functions and features can be used in scripting provided the following warning is observed.

Important Warning

You should only use methods, objects and properties that are described in this documentation.

You are not permitted to use any scripting features that are not mentioned in this documentation.

If you ignore this warning then you are implicitly accepting responsibility for the risk of all of the following:

- The introduction into your application of incompatibilities with future versions of aXes.
- Voiding or limitation of any maintenance or support contract you may have in place for aXes.
- Being charged for problem resolutions that are traced back to being caused by such non-permitted usage.

These methods, objects and properties are for aXes-TS2 only:

Name	Type	Description
getHostEndPoint()	Function	AXES API that retrieves the currently set web service endpoint URL.
setHostEndPoint()	Function	AXES API that sets the web service endpoint URL.
getHostUserId()	Function	AXES API that retrieves the currently set host user id.
setHostUserId()	Function	AXES API that sets the host user id.
getHostPassword()	Function	AXES API that retrieves the currently set host password.
setHostPassword()	Function	AXES API that sets the host password.
getProgram	Function	AXES API that retrieves the currently set program text.
setProgram()	Function	AXES API that sets the program text.
getAsynchronous()	Function	AXES API that retrieves the currently set asynchronous value.
setAsynchronous()	Function	AXES API that sets the asynchronous value.
setParameter()	Function	AXES API that sets the parameter values
clearParameters()	Function	AXES API that removes or clear the pameter values.
call()	Function	AXES API that executes or call the program.

getHostEndPoint

AXES API that retrieves the currently set web service endpoint URL.

Parameters:

None

Return value:

Name	Type	Description
m_HostEndPoint	String	Web service endpoint URL.

setHostEndPoint

AXES API that sets the web service endpoint URL. In addition, loads the /axes/lui-connector-min.js and /axes/lui-encrypt-min.js scripts.

Parameters:

Name	Type	Mandatory	Description
endpoint	String	Yes	Web service endpoint URL.

Return value:

None

getHostUserId

AXES API that retrieves the currently set host user id.

Parameters:

None

Return value:

Name	Type	Description
m_HostUserid	String	Host User Id

setHostEndPoint

AXES API that sets the host user id.

Parameters:

Name	Type	Mandatory	Description
userId	String	Yes	Host User Id.

Return value:

None

getHostPassword

AXES API that retrieves the currently set host password.

Parameters:

None

Return value:

Name	Type	Description
m_HostPassword	String	Host Password

setHostPassword

AXES API that sets the host user id.

Parameters:

Name	Type	Mandatory	Description
password	String	Yes	Host Password

Return value:

None

getProgram

AXES API that retrieves the currently set program to call.

Parameters:

None

Return value:

Name	Type	Description
m_Program	String	Program name

setProgram

AXES API that sets the program to call.

Parameters:

Name	Type	Mandatory	Description
pgm	String	Yes	Program name

Return value:

None

getAsynchronous

AXES API that retrieves the currently set asynchronous value.

Parameters:

None

Return value:

Name	Type	Description
m_Asynchronous	Boolean	Returns true or false

setAsynchronous

AXES API that sets the error message.

Parameters:

Name	Type	Mandatory	Description
async	Boolean	Yes	Asynchronous value true or false

Return value:

None

setParameter

AXES API that sets the parameter values.

Parameters:

Name	Type	Mandatory	Description
name	String	Yes	Set the name of parameter
value	Any(String,Number ,Bolean,Object)	Yes	Set the value of parameter

Return value:

None

clearParameters

AXES API that removes all or clear the current parameter values.

Parameters:

None

Return value:

None

call

AXES API that executes LUICONNECTOR to call the program(pgm) using all the properties set in the above methods. In case, invalid hostEndPoint is detected with error message or a successfull call it will be pass as parameters to callback function.

Parameters:

Name	Type	Mandatory	Description
Callback	Function	Yes	A callback function pass as parameters

E.g.:

```
var callback = function(response) {
        console.log(response.status);
        console.log(response.messages);
};
```

Return value:

None

For example:

Sending with asynchronous call

On your PC, in aXes Developer mode:

- Go to main screen and set its name and save.
- Add a button to your aXes screen, with an onClick script like this:

```
var pgmCall = AXES.IBMiService.ConnectorPgmCall;
pgmCall.setHostEndPoint("http://<endpointURL>:<port>/service/connector.jsp?trace=true");
pgmCall.setHostUserid("<valid host user id>");
pgmCall.setHostPassword("<valid password>");
pgmCall.setProgram("<pgm name>");
pgmCall.setAsynchronous(true);
pgmCall.setParameter('<parameter 1 name>', <parameter 1 value> );
pgmCall.setParameter('<<parameter 2 name>', <parameter 2 value> );
pgmCall.setParameter('<<parameter 3 name>', '<parameter 3 value>' );

var callback = function(response) {
  console.log(response.status);
  console.log(response.messages);
```

```
})

pgmCall.call(callback);
```

- Make the button caption “Async-PgmCall”.
- Save your changes.

When you run your aXes project, and click the button, a message will be displayed with the execution status. If the status is OK, check that the message has been received by the email address you specified.

Sending with synchronous call

On your PC, in aXes Developer mode:

- Go to main screen and set its name and save.
- Add a button to your aXes screen, with an onClick script like this:

```
var pgmCall = AXES.IBMiService.ConnectorPgmCall;
pgmCall.setHostEndPoint("http://<endpointURL>:<port>/service/connector.jsp?trace=true");
pgmCall.setHostUserid("<valid host user id>");
pgmCall.setHostPassword("<valid password>");
pgmCall.setProgram("<pgm name>");
pgmCall.setAsynchronous(false);
pgmCall.setParameter('<parameter 1 name>', <parameter 1 value> );
pgmCall.setParameter('<<parameter 2 name>', <parameter 2 value> );
pgmCall.setParameter('<<parameter 3 name>', '<parameter 3 value>' );

var callback = function(response) {
  console.log(response.status);
  console.log(response.messages);
})

pgmCall.call(callback);
```

- Make the button caption “Sync-PgmCall”.
- Save your changes.

When you run your aXes project, and click the button, a message will be displayed with the execution status. Check response status or messages value.

General JavaScript Resources

External JavaScript Documentation

Click here to access some excellent online 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).

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:

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

alert(stringnumber);


FIELD.setValue(stringNumber);
FIELD.setValue(number.toString());
```

Converting Strings 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:

```
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.

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:

```
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:

Operation / Function	Example
Concatenation (+)	var S1 = "Customer"; var S2 = "123456"; var S3 = S1 + " " + S2 + "could not be found"; puts *Customer 123456could not be found* in variable S3.
IndexOf – finds first occurrence of a string in a string	/* 012345678901 */ var S1 = "ABCDHELLOABC"; var pos = S1.indexOf("HELLO"); will put the number 4 into variable pos.
lastIndexOf - finds last occurrence of a string in a string	/* 012345678901 */ var S1 = "ABCDHELLOABC"; var pos = S1.lastIndexOf("AB"); will put the number 9 into variable pos.

charAt – returns the character at a specific position in a string	/* 012345678901 */
	var S1 = "ABCDHELLOABC";
	var S2 = S1.charAt(4);
	var S3 = S1.charAt(9);
	will put "H" into S2 and "A" into S3.

length – returns the length of a string	/* 012345678901 */ var S1 = "ABCDHELLOABC"; var I = S1.length; will put the number 11 into variable I.
substring – returns the substring of string using a starting and ending point.	/* 01234567789 */ var a = "Hello World"; var b = a.substring(4,8); will put "o Wor" into b.
substr – returns the substring of a string using a starting position and a length	/* 01234567789 */ var a = "Hello World"; var b = a.substr(2,3); will put "llo" into b.
toLowerCase – returns the lowercase of string	var a = "Hello World"; var b = a.toLowerCase(); will put "hello world" into b.
toUpperCase – returns the uppercase of a string	var a = "Hello World"; var b = a.toUpperCase(); will put "HELLO WORLD" into b.

There are more string functions like these available.
See http://www.w3schools.com/jsref/jsref_obj_string.asp for more details.

Using 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 " + USERENV.currentCustomerNo);
```

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

```
if (typeof(USERENV.CustomerNumber) == "undefined") USERENV.CustomerNumber =
"12345";
```

Strange Behaviour 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:

```
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

```
if (X == 2) alert("X is 2");
```

“Object Expected” or “XXXX is null or not an object” errors

When executing your scripts you will inevitably get an "object expected" or "xxxxxx is null or not an object" error at some stage.

This means you have referred to something in your script that does not exist.

The most common cause of these errors are simple typographic errors or even case errors. These simple script lines:

```
var iLimit = 1;
ilimit++;
```

will produce an "object expected" error - the variable is named i**L**imit.

This code:

```
var field = FIELDS("Commandline");
field.setValue("Hello");
```

will produce a "field is null or not an object" error. This is because the FIELDS() function returns null when it cannot find the named field on the current screen. The field name should have been "Command**L**ine", so variable field is set to null, causing the field.setValue() operation to fail.
When you get an "Object expected" or "XXXX is null error"

- Check the spelling of the name of objects you are referencing.
- Check the case of the names (eg: is it Userprofile or UserProfile?).

Documentation Library

eXtensions Help Text

Application Level Basic Properties

axApplicationScreenSize - Auto Zoom Screen Size

Application Style Collection

Application Terminal Settings

axApplicationWindow – application popup window

axAutoComplete – Insert auto complete into screen

axButton – Insert a Push Button into screen

axCheckBox – Checkbox Option

axConnectorEmail – Send an email via ConnectorJS

axConnectorPgmCall – ConnectorJS program call extension

axConnectorWebQueue – Open the web queue to send and receive messages to and from the server

axDate – Insert date picker into screen

axDefaultVisualization - Default Visualization for a Screen Element

axDropDown – Insert a drop down into screen

axElementBasicProperties - 5250 Screen Element Basic Properties

axFKeyPanel – Insert a function key panel into screen

axFrame – Insert a frame into the screen

axGoogleChart – Insert a Google Chart into screen

axGoogleChart – Provides a window to the Google Visualization Charts

axKeypad – provides a jQuery keypad

axLabel – Insert label into screen

axJQueryTheme – Change existing jQuery theme

axMessageHandler – Read and Display Messages from the 5250 Screen

axMobileCamera – Insert camera functionality into screen

axMobileSendEmail – Send an email via Axes Mobile

axMultilineInputbox – Insert an HTML textarea element

axMultitypeInputbox – Insert an HTML multitype input element

axPopupWindow — Window Settings

axQuickPick – Insert quick pick menu into screen

axRadioButton – Insert radio buttons into screen

axScreenBasicProperties - Screen Level Basic Properties

axScreenDataViewer – Display data from another screen

axScreenSize - Auto Zoom Screen Size

axScrollableSubfileTable – Enhanced Subfile Viewing

axSimpleBox – Insert a simple box into screen

axSMS – Provide the ability to send a SMS via Axes Mobile.

axUserElementBasicProperties - New Screen Element Basic Properties

axSimpleLine – Insert a simple line into screen

axGraphPaper – Place Graph Paper on Screen

axGroupBox – Insert a group box into screen

axHTML – Insert raw HTML into screen

axHyperLink – Insert a hyperlink into screen

axImage – Insert image into screen

axInputboxStyle1 – Insert an HTML input element

axJQueryTheme – Change existing jQuery theme

axSimpleStripe – Insert a simple stripe into screen

axSpinEdit – Insert a Spin Edit

axSubfileEnhancer – Enhance Subfile Appearance

axSubfileScroller – Insert Subfile Scroll buttons into a 5250 Screen

axTabs – Insert tabs functionality into screen

axTimer – Insert a timer into the screen

axUserElementBasicProperties - New Screen Element Basic Properties

Application Level Basic Properties

Description

Application level basic properties apply to an entire application.
An application is defined by the content of its definition set folder.

Properties

Name	Description and Comments	JavaScript	Shipped default
defaultTheme	Default theme to be used when AXES starts up.	Yes.	None.
autoGUIOn	The initial state of the AutoGUI feature. Overrides any value set in the TS1 skin by setting the gui_mode variable.	Yes.	True.
moveableWindows	Determines if 5250 windows can be moved by the user. This property applies to the TS2 engine only and will have no effect on TS1.	Yes.	True.
onApplicationStart	JavaScript code that is to be executed when the application starts up in the browser.	Yes.	None.
onApplicationEnd	JavaScript code that is to be executed when the browser navigates away from AXES.	Yes.	None.
onSignOn	JavaScript code that is to be executed as the aXes 5250 session is initiated after successful user sign-on.	Yes.	None.
onSignOff	JavaScript code that is to be executed as the aXes 5250 session is terminated normally after user sign-off.	Yes.	None.
strictLayoutGridForDbcs	Indicates whether strict layout grid should be used for languages such as Japanese	Yes.	False.

Notes, Comments and Warnings

You should not use alerts and any other operation that halts or interrupts the execution of JavaScript code during application initialization or termination.

Termination code may not be executed in an abnormal termination.

Most browsers have problems correctly converting mouse co-ordinates when sending events to objects that have been scaled. This can lead to some strange behaviour when dragging a window on a screen that has been scaled to anything other than 100%. In this case, you may want to use the moveableWindows property to prevent window movement.

Examples

(1). Specify this code in the **onApplicationStart** property:

```
TRACE("**** MY ONAPPSTART CODE IS EXECUTING. ****");
```

Specify this code in the **onApplicationEnd** property:

```
TRACE("**** MY ONAPPEND CODE IS EXECUTING. ****");
```

Now execute your aXes application with trace mode turned on.

You should see trace statements indicating that your code has been executed.

See Also

Using Themes

Can I create a script that runs when my application starts up and when the user has signed on?

How can I hide AXES menu bar and status bar?

axApplicationScreenSize - Auto Zoom Screen Size

Description

This extension is the same as axScreenSize - Auto Zoom Screen Size. Setting of this extension will affect all the screens in the entire application, except the screens in which axScreenSize has been added.

This extension is for TS-2 only.

Properties

Name	Description and Comments	JavaScript	Shipped default
width	Width of the screen (in pixels). If 0 the default screen width will be used.	Yes.	0
height	Height of the screen (in pixels). If 0 the default screen height will be used.	Yes.	0
zoom	Sets the zoom value for the current screen. Allowable values are: -2: Fit. This causes the screen to automatically zoom to fit the window. This is a one-off operation. The zoom will not adjust when the window is resized. -1: Auto. This causes the screen to automatically zoom to fit the window. The zoom will continue to adjust when the window is resized. 0: Do nothing. This leaves the zoom setting untouched. 5-200: Fixed value. This sets the zoom to the specified percentage.	Yes.	0
lockZoom	Locks the zoom control in the user interface, preventing the user from changing it.	Yes.	False

See Also

axScreenSize - Auto Zoom Screen Size

Understanding Screen Sizing and the Thin Red Line in Tutorial 10 - 5250 Screen Styling

Application Style Collection

Description

An application may contain a collection of named styles.

Named styles are designed to overcome a common problem ….

> Imagine that you decide that customized screens should display the most commonly used push button with a pale orange background.
>
> You have 50 screens and set about changing the style property for the most commonly used push button on each screen to #FF9933 - a pleasant shade of orange.
>
> Just after you finish, your marketing manager takes a look and declares that the shade of orange is "completely wrong" and that a pale yellow needs to be used instead.
>
> You now need to change 50 screen definitions, and risk having to do it again next week when the fickle marketing manager changes her mind yet again.
>
> The solution is to define an application style named "PrimaryButton" (say) that defines the color, and possibly other characteristics of the button. Then on each individual button you indicate that the style to be used is "PrimaryButton", instead of using a specific color.
>
> Next time the marketing manager changes her mind, you can implement a simple change to the application's "PrimaryButton" style - all the buttons on all 50 screens will change instantly.
>
> Understanding the benefits of this approach, and being quite wary of the fickle marketing manager, you will also understand why:

- Naming the application style "YellowButton" is a bad idea.
- Creating a style named "SecondaryButton" for all the other buttons is a good idea.

Properties

Name	Description and Comments	JavaScript	Shipped default
interface	The format of the interface of which the style will be saved. Either as a list or Jason data.	No.	List.
styles	Style collection. Each style in the collection has their own properties (see next table).	No.	None.
useJQueryExtensions	When checked, it enables the use of JQuery themes. When false, the setting in **jqueryTheme** will be ignored.	Yes. Must return bool.	False.
jqueryTheme	Set of JQuery themes available to use. Additional items can be added by downloading and adding the folder into the project's JQuery theme folder. The jQuery theme folder is located at \ts\screens \<projectname>\projectThemes folder.	Yes. Must return String.	Default. (redmond)

Properties of Style Item

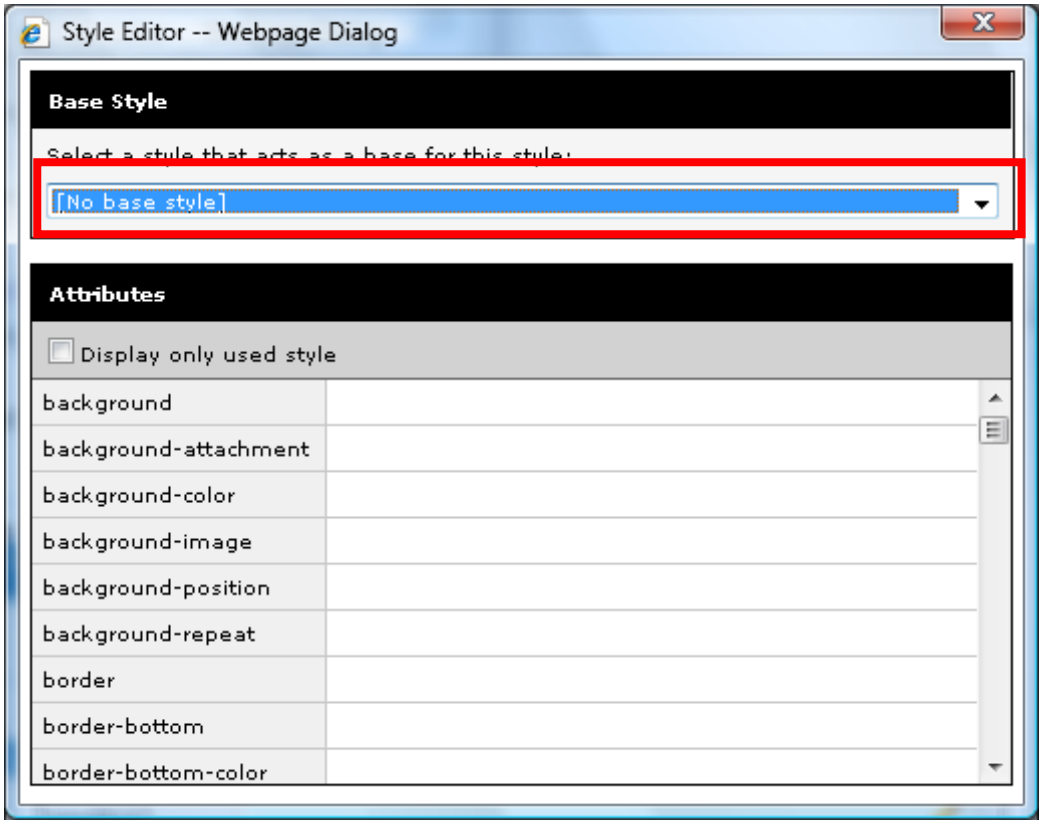
Name	Description and Comments	JavaScript	Shipped default
name	The symbolic name of the application style.	No.	None.
styleFor	If specified this style will automatically be applied to the specified element. Possible values for this property: ❖ **Blank** – the style will not be applied automatically to an element. To apply this style to an element you need to refer to this style from that element. ❖ **All** – the style applies to everything unconditionally. This is useful for specifying things such as font styles that should be consistent across the whole application.	No.	None.

	❖ **Application Window** – the style applies to the main browser window. Most common use of this is to change the window background color or image. ❖ **Specified HTML Tag** – the style applies to the HTML tag specified in the ***htmlTag*** (see the next entry in the table) property. Note that this is an advanced feature and you should not attempt to use this unless you are familiar with Cascading Style Sheet.		
htmlTag	Applicable only if ***styleFor*** attribute is set to ***Specified HTML Tag***.	No.	None.
Style	The style details that define the style.	No.	None.
for5250Attributes	Any display attributes specified here will cause the style to be applied when a field with one of these attributes is encountered. This can be used, for example, to make fields in error appear differently to other input fields. Multiple display attributes can be specified for this property	No.	None.

Style Inheritance

A style can be based on another style – so if later you change some attributes in the base style, the inheriting style will immediately inherit those changes as well.

It is recommended that you design your styles in this fashion so as to avoid duplications and to make maintaining your styles easier.



See Also

Tutorial 3 - Advanced Screen Enhancement

Tutorial 10 - 5250 Screen Styling

Tutorial 15 – JQuery Styles

Application Terminal Settings

Description

Application terminal settings specify how texts from 5250 terminal are rendered in the browser.

These properties will affect all screens in the entire application, including screens that haven't been customized.

Properties

Name	Description and Comments	JavaScript	Shipped default
rowHeight	The height of a row (in pixels).	No.	15
spaceBetweenRows	Space between two rows (in pixels)	No.	3
columnWidth	The width of a column (in pixels)	No.	8
autoColWidth	Indicates whether to automatically compute for the column width based on the font setting.	No.	True
spaceBetweenColumns	Space between two columns (in pixels)	No.	0
addPaddingToMain	Indicates whether to add padding to the top and left position of auto-generated fields in the main window. (TS-2 only)	No.	True.
addPaddingToPopup	Indicates whether to add padding to the top and left position of auto-generated fields in the popup window. (TS-2 only)	No.	False.

Notes, Comments and Warnings

You need to decide on the values of these properties prior to customizing any of your screens. If you decide to change these properties after some screens have been customized, some elements in the screens might move or become smaller or bigger and they will need to be manually repositioned and resized.

If it becomes necessary to modify any of these properties after you have started customization of screens, you will need to go through each of the customized screens and visually inspect that all elements are positioned correctly.

In TS-2, the top and left position of auto-generated fields in the main window has a padding of 2 pixels.
In case there are several auto-generated fields' position that has been modified in TS-1, and you decide to open the project in TS-2, uncheck the addPaddingToMain property to prevent the addition of padding, thus, making your TS-1 project compatible with TS-2.

For popup window, the auto-generated fields' position in TS-2 is the same as in TS-1. Check addPaddingToPopup property if you want to apply the 2 pixel padding to the top and left position of the field. In doing this, your project will not be compatible with TS-1 anymore.

See Also

Changing 5250 Row / Column Size

axApplicationWindow – application popup window

Description

This is application property to set the popup window behaviour in TS2. Setting of this property will affect all the screens in the entire application, except the screens in which axPopupWindow has been added (see screen window extension).

This application property is for TS-2 only.

Properties

Name	Description and Comments	JavaScript	Shipped default
type	Set the popups window and screen rendering in aXes-TS2. Allowable values are: -1 Default will get popups parameter from the URL if available. 0 Off all enhanced window handling. 1 Turns on the detection of degraded DDS windows only. 2 Turns on the "keep the previous screen background" behaviour only. 3 Turns on both.	Yes	-1
top	Sets the popup window top position	Yes.	-1
left	Sets the popup window left position	Yes.	-1

See Also

axPopupWindow – Popup window screen extension

URL Parameters in Tutorial 9 - Deployment

axAutoComplete – Insert auto complete into screen

Description

axAutoComplete allows an auto complete to be inserted into the 5250 screen.

Useability

Context	Supported
Input screen fields	Yes
Output screen fields	Yes
Input subfile fields	Yes
Output subfile fields	Yes
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
dataSourceType	Indicates where the source data is obtained from.	No	fixedValues
deferRequestBy	The delay in seconds to defer the autocomplete request, after the user has finished typing.	No	0
fixedValues	For **Fixed values** data source type you must enter the values used to fill the drop down	Yes. Must return an array of item object.	No
lookupVariableField	SQL Query Lookup Field Name.	No	SQLVariableLookupField
matchingType	Determines the search pattern to use in retrieving values from the pre-populated list. Includes 'starts-with', 'ends-with' and 'contains' as its options.	No	startsWith
minChars	Minimum number of characters to use before sending an autocomplete request.	No	2
onFillDropDown	JavaScript code to execute to fill the drop down.	Yes	Blank (i.e. no script to execute – interpreted as ROW.text)
sqlQueryName	For **Dynamic Table** data source type provide the name property from the Dynamic table you are using.	No	Blank
sqlVariables	For **Dynamic Table** data source the variables used in your query.	Yes	ENV.SQL.SQLVariableLibrary =USERENV.dftSQLDataLibrary
containerStyle	CSS to apply to dropdown list.	No	Blank

tableName	For **Static Table** data source type provide the name property from the Static table you are using.	No	Blank
xmlFileLocation	Path to locate the xmlFileName when the source type is XML.	No	*DEFAULT which is equal to /ts/screens/<private folder>
xmlFileName	Name of XML file when the source type is XML.	No	Blank

Notes, Comments and Warnings

This extension is **not** a visual extension and needs to be used in conjunction with a visual extension such as Default Visualization or Multitype Input Box extension.

***dataSourceType*:**

Determines the method used to populate the drop down. The options are:

XML File: the data to fill the table is obtained from an XML file located by default in /ts/screens/<private folder>. To specify another location change the *xmlFileLocation* property.

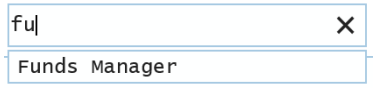
XML settings example:
xml file example called jobtitles_en.xml

```
<?xml version="1.0" encoding="iso-8859-1"?>
<jobtitles>
  <title>Lawyer</title>
  <title>Auditor</title>
  <title>Maintenance Officer</title>
  <title>Quality Manager</title>
  <title>Funds Manager</title>
</jobtitles>
```

- From the Auto Complete extension change the dataSourceType property to XML file
- From the Auto Complete extension change the onFillDropDown property to ROW.title
- From the Auto Complete extension change the tableName property to jobtitles
- From the Auto Complete extension change the xmlFileName to JobTitles_en.xml
- From the Auto Complete extension change the xmlFileLocation to /ts

Output Result:

Type “fu” on the input box and AutoComplete is displayed as follows:



Dynamic Table: use this option carefully as it is the only one where the data is loaded at every screen arrival with an expected performance impact in the rendering of the screen. When you use this option you must specify the name of the query in *sqlQueryName* as defined in your dynamic tables file.
This value indicates that the data should come from a dynamically created table.

- A dynamic table is (re)loaded every time a screen is displayed.
- Dynamic tables are expensive to use compared to static tables.
- Only use them when the table content needs to vary according to some dynamic criteria (eg: current company, current product, etc).
- Dynamic tables can only be loaded by SQL commands.

Dynamic settings example:

Dynamic table example called XHRDepartment

```
DefineObjectInstance {

    className = "DynamicTable",
    name = "XHRDepartment",
    source = "sql",
    selectSQLcommand = "XHRDEPCDE,XHRDEPNME from AXESDEMO.XHRDEPT where
UPPER(XHRDEPNME)  like UPPER ('%:SQLVariableLookupField%')",
    resultColumnNames = {"value","text"},
};
```

- From the Auto Complete extension change the dataSourceType property to Dynamic Table.
- From the Auto Complete extension change the sqlQueryName property to XHRDepartment.
- From the Auto Complete extension make sure the sqlVariables property is at the default of:

  ENV.SQL.SQLVariableLibrary = USERENV.dftSQLDataLibrary;
- From the Auto Complete extension make sure the lookupVariableField property is at the default of SQLVariableLookupField.
- From the Auto Complete extension select the onFillDropDown property. Make sure the Edit Script is equal to ROW.text.

Output Result:

Type “fi” on the input box and AutoComplete is displayed as follows:

Static Table: static tables are loaded once from the server at start up. The name of the static table must be the name specified in *tableName*.
Static tables are very efficient and they can contain hard coded values or can be loaded by executing SQL commands.

Static Table settings example:

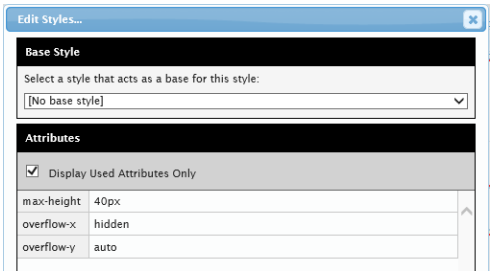
STATIC TABLE (Make sure USState STATIC TABLE EXISTS)

- From Extensions add an Extension Multitype Inputbox.
- From Extensions add an Extension Auto Complete to the Multitype Inputbox extension.
- From the Auto Complete extension change the dataSourceType property to Static Table.
- From the Auto Complete extension change the tableName property to USState.
- From the Auto Complete extension select the onFillDropDown property. Make sure the Edit Script is equal to ROW.text.

Output Result:

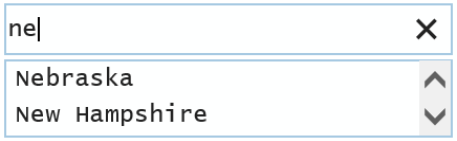
Type “Ne” on the input box and AutoComplete is displayed as follows:

To set the height and display scrollbar in case data overflows, set theAutoComplete’s containerStyle property as follows:



Output Result:

Type “ne” on the input box and AutoComplete is displayed as follows:



Fixed Values: use this setting for drop downs with a small number of values when the values don't change.
Fixed Values settings example:

- From the Auto Complete extension change the dataSourceType property to Fixed Values.
- From the Auto Complete extension select the fixedValues.
- Add items by pressing the + key and hit ok when finished.

  If using script, the ENV.returnValue must contain an array of item object as follows:

```
ENV.returnValue = [ { caption: "item1" },
                    { caption: "item2" },
                    { caption: "item3" }
                  ];
```

See Also

Note : This is to be modified and added to the tutorial.

Dropdowns in Tutorial 3 - Advanced Screen Enhancement

Static Tables that load from static data in Tutorial 6 - Tables and XML Documents

Static Tables that load from a database file in Tutorial 6 - Tables and XML Documents

XML Documents in Tutorial 6 - Tables and XML Documents

axButton – Insert a Push Button into screen

Description

axButton allows a push button to be inserted into the 5250 screen.

Useability

Context	Supported
Input screen fields	No
Output screen fields	Yes
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
caption	Specifies the text that is to appear on the button.	Yes. Must return a string.	None.
tooltip	The tool tip (or hint) that should appear when the user hovers the mouse over this button.	Yes. Must return a string.	None.
style	Additional style properties that should be applied to the button.	Yes. Must return a valid style object.	None.
sizeToField	Indicates whether this button should be sized to fill its containing field or automatically sized to match its content.	Yes.	True.
onClick	Optional. JavaScript code to be executed when the user clicks on the button.	Yes.	SENDKEY(ENV.defaultKey);
hidden	Indicates whether this button is hidden or visible.	Yes. Must return a Boolean.	False.
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes.	None.
onBlur	Optional. JavaScript code to be executed when the element lost the focus.	Yes.	None.
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

Notes, Comments and Warnings

useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property.

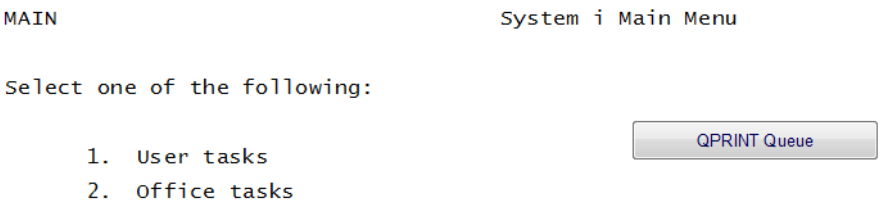
Basic display:

When **useJQueryExtensions** is checked:

Hovering on the button will also change its styles.

Examples

(1). On the System i Main Menu, with the command input field named Commandline, if this push button is added to the display:

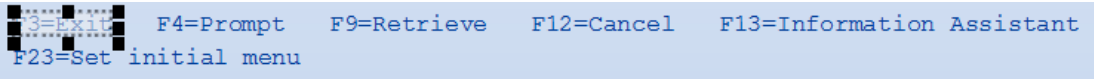


with this **onClick** code:

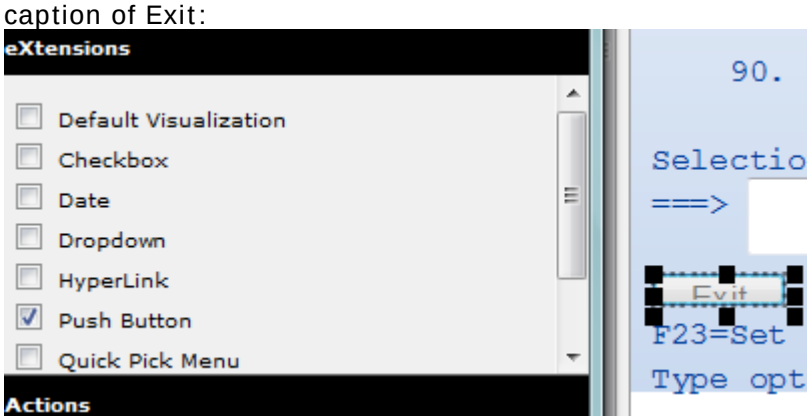
```
FIELDS("CommandLine").setValue("WRKOUTQ QPRINT");
SENDKEY("Enter");
```

then clicking on the button will cause the output queue QPRINT to be displayed.

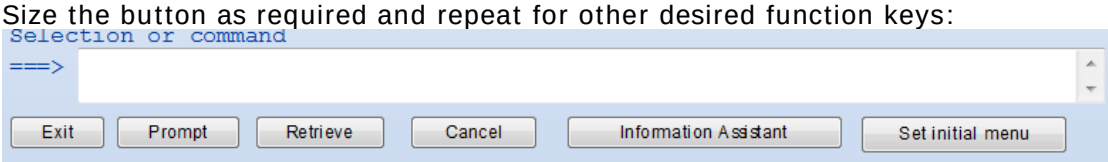
(2). On the System i Main Menu turn the function key strings Fn=xxxx into buttons: Click on F3=Exit to select it.



In the extensions list, select Push Button and F3=Exit should turn into a button with a caption of Exit:



Size the button as required and repeat for other desired function keys:



See Also

Using Screen Customization to Add Value

Using Scripting in Properties to Add Value

Push Buttons in Tutorial 3 - Advanced Screen Enhancement

Using Multilingual Captions on Buttons (and other places) in Tutorial 3 - Advanced Screen Enhancement

Using alert()

axCheckBox – Checkbox Option

Description

Presents a field as a Checkbox.

Useability

Context	Supported
Input screen fields	Yes
Output screen fields	Yes
Input subfile fields	Yes
Output subfile fields	Yes
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
label	This is only available when the useJQueryExtensions flag of the Application->Styling property is checked. The text that will be displayed inside the checkbox button.	Yes.	None.
style	Additional style properties that should be applied to the button.	Yes. Must return a valid style object.	None.
onBlur	Optional. JavaScript code to be executed when the element lost the focus.	Yes.	None.
onChange	Optional. JavaScript code to be executed when the element changes state from unchecked to checked and vice versa.	Yes.	None.
onChecked	Sets the field to the nominated value when the checkbox is checked.	Yes.	FIELD.setValue("Y")
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes.	None.
onSetValue	Optional. The JavaScript code (condition) to be executed when the extension is loaded to reflect the value of the underlying field. Should return true or false. See examples below.		
onUnchecked	Sets the field to the nominated value when the checkbox is unchecked.	Yes.	FIELD.setValue("N")
sizeToField	Indicates whether this button should be sized to fill its containing field or automatically sized to match its content.	Yes.	True.
fitText	Indicates whether to automatically resize the text to fit inside the extension.	Yes.	True.
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

Notes, Comments and Warnings

The axCheckBox extension is ideally suited to fields whose value has only two possibilities, e.g. "Y" or "N", "TRUE" or "FALSE", "Enabled" or "Disabled". The JavaScript of the supplied properties should be changed to use the required field values (see examples).

useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the display of this extension will change according to the theme that was set in the Application's **jqueryTheme** property.

Basic display:

When **useJQueryExtensions** is checked:

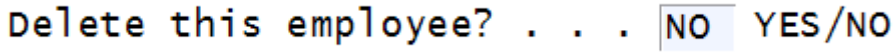
As you can see above, the checkbox is displayed as a button. Clicking/Selecting it will change its display indicating that it is checked.

When **useJQueryExtensions** is checked, the label property can also be set. Any string set in this property will be displayed inside the button. The size of the button will automatically adjust to the size of the label. The longer the label, the wider the button becomes.

The checked and unchecked style of the button differs to indicate the state. Also, hovering over the button will change its style.

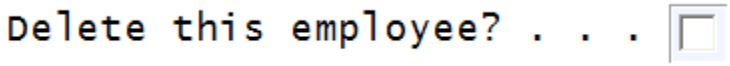
Examples

(1). If the value of the field can be either "YES" or "NO" the axCheckBox properties should be set as follows;



Property	Javascript
onSetValue	FIELD.getValue() == "YES"
onChecked	FIELD.setValue("YES ")
onUnchecked	FIELD.setValue("NO")

should produce a display like this ...



Checking the checkbox displayed would set the field to "YES", confirming the deletion of the Employee to the underlying 5250 application.

(2). If the value of the field can be either "*ENABLED" or "*DISABLED" the axCheckBox properties should be set as follows;

Property	Javascript
onSetValue	FIELD.getValue() == "*ENABLED"
onChecked	FIELD.setValue("*ENABLED")
onUnchecked	FIELD.setValue("*DISABLED")

axConnectorEmail – Send an email via ConnectorJS

Description

axConnectorEmail provides the ability to send an email via ConnectorJS service email.

Useability

Context	Supported
Input screen fields	Yes
Output screen fields	No
Input subfile fields	No
Output subfile fields	No

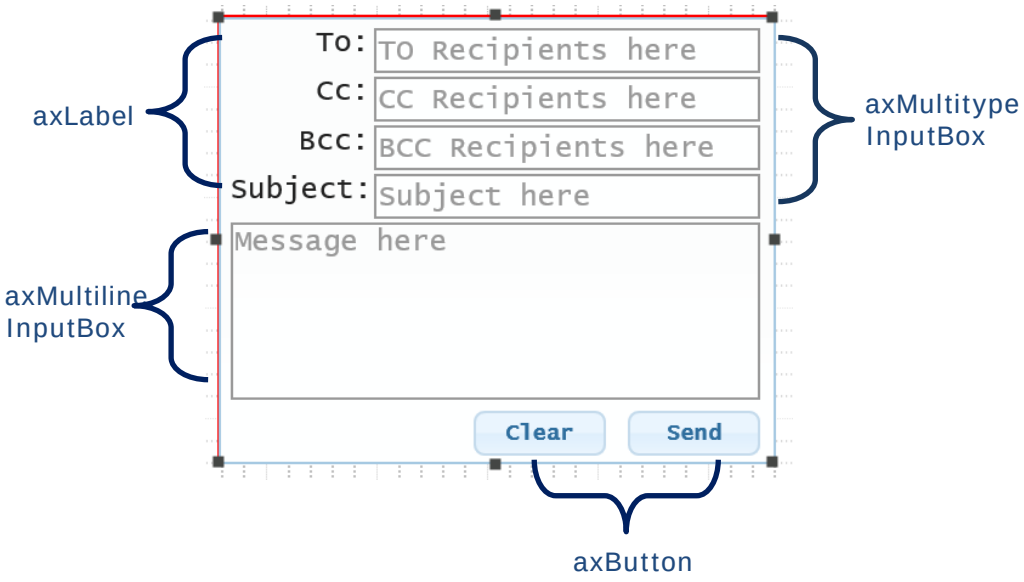
Properties

Name	Description and Comments	JavaScript	Shipped default
hostEndPoint	Web service endpoint URL.	Yes. Must return a string.	None
hostUserId	User id.	Yes. Must return a string.	None.
hostPassword	Password.	Yes. Must return a string.	None.
emailRequest	Server's email object identifier.	Yes. Must return a string.	ANY.
smtpServer	The SMTP server to set.	Yes. Must return a string.	None.
from	The sender's email address to set.	Yes. Must return a string.	None.
asynchronous	Send with asynchronous call or not.	Yes. Must return a Boolean.	True.
onEmailSendCompleted	JavaScript code to be executed when the email is sent with asynchronous call.	Yes.	// {Object} ENV.cmMessage{status, message}

Notes, Comments and Warnings

This eXtension works only in the advanced terminal emulator (TS2) and is not intended to be run in the basic terminal emulator (TS1).

This eXtension is composed of different eXtensions such as:


To:
TO Recipients here
Cc:
CC Recipients here
Bcc:
BCC Recipients here
Subject:
Subject here
Message here
Clear
Send
axLabel
axMultitype InputBox
axMultiline InputBox
axButton

All the extensions inside this eXtension has the following behaviour:

1. Can only be dragged within the boundaries of axConnectorEmail eXtension
2. Cannot be deleted.
3. When double-clicked, the selection is moved to axConnectorEmail eXtension. Thus, allowing the add eXtension only to axConnectorEmail extension itself.
4. When right-clicked, the selection is moved to axConnectorEmail eXtension. Thus, allowing the context menu to be available to axConnectorEmail extension only.

When this eXtension is resized, only the following fields are changed:

1. Width of To, Cc, Bcc and Subject input fields
2. Width and Height of the message field

When this eXtension is created, a value is automatically set to name property of this eXtension, all the input fields and message field. These names are used in the auto-generated code set on the onClick property of **Clear** and **Send** buttons. You can always change the predefined name any time, but be sure to update the code in the **Clear** and **Send** buttons and the name is not yet set to any existing eXtension.

Auto-generated code for **Clear** button is as follows:

```
FIELDS("cmto1").setValue("");
FIELDS("cmcc1").setValue("");
FIELDS("cmbcc1").setValue("");
FIELDS("cmsubject1").setValue("");
FIELDS("cmbody1").setValue("");
var CM = GETCMAILINSTANCE("cmail1");
CM.clearReceiversList();
```

Auto-generated code for **Send** button is as follows:

```
var CM = GETCMAILINSTANCE("cmail1");
CM.clearReceiversList();
var toFlds = FIELDS("cmto1").getValue().split(",");
var ccFlds = FIELDS("cmcc1").getValue().split(",");
var bccFlds = FIELDS("cmbcc1").getValue().split(",");
for (var i in toFlds)
  CM.addReceiver(toFlds[i], AXES.IBMiService.ReceiverType.TO);
for (var i in ccFlds)
  CM.addReceiver(ccFlds[i], AXES.IBMiService.ReceiverType.CC);
for (var i in bccFlds)
  CM.addReceiver(bccFlds[i], AXES.IBMiService.ReceiverType.BCC);
CM.setSubject(FIELDS("cmsubject1").getValue());
CM.setBodyText(FIELDS("cmbody1").getValue());
CM.send();
```

This eXtension uses the connectorEmail widget that accesses the ConnectorEmail API. When this eXtension is rendered, an instance of AXES.IBMiService.ConnectorEmail API is created.
To get the instance to AXES.IBMiService.ConnectorEmail API used by this eXtension, use this code:

GETCMAILINSTANCE(<base name>);

Where <base name> is the value of the “name” property under the “Basic” sub-pane of the “eXtensions” pane in TS2 Developer.

GETCMAILINSTANCE is a common user function that retrieves the instance of AXES.IBMiService.ConnectorEmail API set in this extension.

asynchronous property
When set to true, the onEmailSendCompleted event acts as a callback function. The status of email sending and the message if there's any can be accessed from ENV.cmMessage object.

When set to false, AXES.IBMiService.ConnectorEmail.send() returns the status. And the error message can be accessed by AXES.IBMiService.ConnectorEmail.getError().

Example

On the System i Main Menu, add the axConnectorEmail extension to the screen. Set a valid value to the following properties:

Example,

hostEndPoint: http://<*endpointURL:port*>/service/connector.jsp
hostUserId: <*valid user id*>
hostPassword: <*valid password*>
emailRequest: ANY
smtpServer: <*valid server*>
from: <*valid sender email address*>
asynchronous: true
onEmailSendCompleted: alert(ENV.cmMessage.status);

Save and unlock the screen.
Input valid email addresses for the To, Cc and Bcc input fields. You can specify multiple addresses by separating them with a semicolon.
Type an email subject in the subject input field, for example "axConnectorEmail test"
Type a message inside the message field, for example "This is a test email using ConnectorJS."
Click the send button of the eXtension and then check that the message has been received in the email addresses you specified and the alert message will be displayed with its status.

See Also

Extension_ScriptingReference - aXes ConnectorEmail Object Functions and Features

axConnectorPgmCall – ConnectorJS program call extension

Description

axConnectorPgmCall is an IBMi Services extension to integrate ConnectorJS API.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
Whole screen	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
HostEndPoint	Web service endpoint URL.	Yes.	http://
HostUserid	Userid	Yes.	
HostPassword	Password	Yes.	
Program	Name of the program to call.	Yes.	
Parameters	Values for program parameters	Yes.	
Asynchronous	Retrieve with synchronous or asynchronous call	Yes.	False.
onErrorReceived	Events when error received occur.	Yes.	
onPgmCallCompleted	Events when program call completed.	Yes	

Notes, Comments and Warnings

This extension is intended for integration with ConnectorJS API IBMi services. This extension executes the call method upon layout rendering. This extension is a non-visual element where extension is not visible on the screen but accessible on the Extendable objects on design mode.

Examples

In TS2

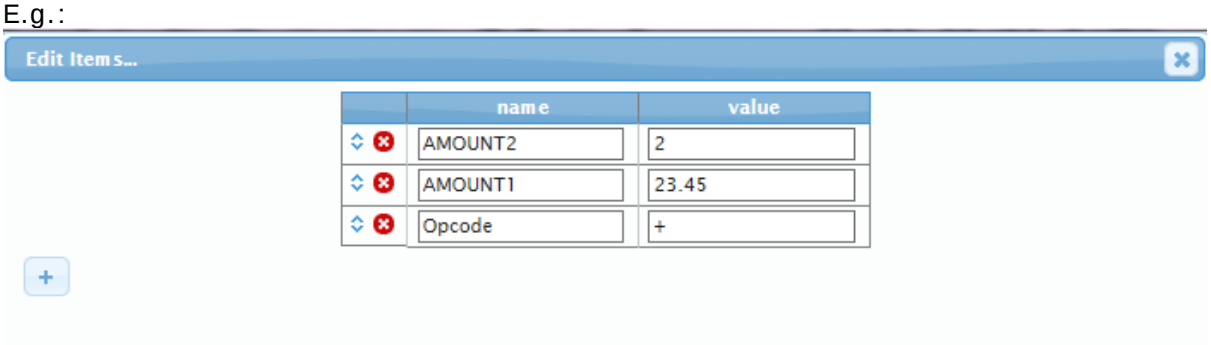
To use the connector program call extension in TS2, you must first name the screen you wish to customise. Switch to design mode, then in the eXtensions tab, choose the connector program call under HTML Elements and IBMi Services extension drag and drop to screen.

You can now start changing the default properties.

Supply values for

- Hostendpoint URL
  E.g.:
  http://lansa06.syd.lansa.com.au:8463/service/connector.jsp?trace=true
- UserID,
  E.g.:
  devuser
- Password
  E.g.:
  devuser
- Program to call.
  E.g.:
  Tstpgm3

- Parameters. Add parameter for the testpgm3
  E.g.:



- onErrorReceived Events to check for errors. Add script code
  Ex:
  console.log(ENV.cpcMessage);

- onPrgmCallCompleted to get results. Add script code
  Ex:
  console.log(JSON.stringify(ENV.messages));

Switch to preview mode and it will render and redraw the screen layout where it will execute call method.

Note:
Events message and returned variables are accessible in the ENV objects.

If you need the program call execution triggered by a button or other scripting options use the ConnectorProgramCall API. see extension scripting reference documentation.

See Also

Extension_ScriptingReference - aXes ConnectorProgramCall Object Functions and Features

axConnectorWebQueue – Open the web queue to send and receive messages to and from the server

Description

axConnectorWebQueue adds the functionality to open a web queue between AXES and the server making it possible to send and receive messages between them. This extension also provides the functionality to implement scripts for messages received from the server.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
hostEndPoint	Specifies the web service endpoint URL.	Yes. Must return a string.	ws://
hostUserId	Specifies the user id to connect to a web service.	Yes. Must return a string.	None.
hostPassword	Specifies the password to connect to a web service.	Yes. Must return a string.	None.
queueId	Specifies the name of the queue.	Yes. Must return a string.	None.
parameters	Specifies the parameters to pass with the connection request.	No.	None.
onConnectionOpened	Javascript code to be executed when the connection has been opened to the server.	Yes.	None.
onConnectionClosed	Javascript code to be executed when the connection has been closed by either the client or the server. Receives *ENV.cwqMessage* object with the following properties: *code* - Reason code *clean* – True indicates a planned shutdown *reason* – Reason for closing the connection	Yes.	// {Object} ENV.cwqMessage{code, clean, reason}

onConnectionReady	Javascript code to be executed when the queue is ready. Receives *ENV.cwqMessage* string as the queue id.	Yes.	// {String} ENV.cwqMessage - messageQueue.
onDataPushedByServer	Javascript code to be executed when the server has pushed a message with a text based data. Receives *ENV.cwqMessage* object with the following properties: *textFormat* - Format of the text *data* – Text from server *message* – Unfiltered message received from the server as JSON string.	Yes.	// {Object} ENV.cwqMessage{textFormat, data, message}
onErrorReceived	Javascript code to be executed when error has been received. Receives *ENV.cwqMessage* string as the error message.	Yes.	// {String} ENV.cwqMessage - error message.
onMessageAccepted	Javascript code to be executed when the message sent to the host has been accepted. Receives *ENV.cwqMessage* string as the message id.	Yes.	// {String} ENV.cwqMessage - message id
onMessagePushedByServer	Javascript code to be executed when the server has pushed a message. Receives *ENV.cwqMessage* string as the message text.	Yes.	// {String} ENV.cwqMessage - message text
onMessageRejected	Javascript code to be executed when the message sent to the host has been rejected. Receives *ENV.cwqMessage* object with the following properties: *messageId* – Message identifier of the message that was rejected. *code* - Code for the reason the message was rejected. *reason* – Reason why the message was rejected.	Yes.	// {Object} ENV.cwqMessage{messageId, code, reason}

Notes, Comments and Warnings

This extension provides the ability to open a web queue.
Refer to Examples how to open a queue.

To handle the message received from the server, implement the script to the events properties attached to this extension. Some of the events contain data that is stored in *ENV.cwqMessage* variable in the form of an object or String. (Refer to description of properties for details.)

In order to send a message, there must be a Command Language(CL) server program that sends the files to a Web application.

To send messages to the server, use AXES.IBMiService.ConnectorWebQueue API. Example:

```
AXES.IBMiService.ConnectorWebQueue.send(messageId, message, file);
```

In addition, please take note of the following:

- in case axConnectorWebQueue extension is added to the screen, its render timing is after all the extensions have been loaded.
- a web queue can also be opened using AXES.IBMiService.ConnectorWebQueue API instead of this extension.
- only one web queue can be opened. In case there are other extensions calling the open web queue, the last one to process open web queue will be the one to receive the messages sent by the server.
- the web queue is closed when screen is locked in the developer mode.

Examples

On the System i Main Menu, add the axConnectorWebQueue extension to the screen. Set a valid value to the following properties:

Example,

hostEndPoint: ws://<*endpointURL:port*>/service/webqueue.jsp
hostUserId: <*valid user id*>
hostPassword: <*valid password*>
queueId: <*valid queue id*>
onConnectionOpened: alert("ext-open");
onConnectionReady: alert("ext-Ready: " + ENV.cwqMessage);

Save and unlock the screen.
The alert message “ext-open” will be displayed.
Close the alert message, then the message “ext-Ready: ” including the queueId will be displayed.

To send a message to download data, add an axButton eXtension to the screen.
Set its caption property to “Send message”.
On its, onClick property,type the following:

Example,

```
AXES.IBMiService.ConnectorWebQueue.send "DMSG002", "DEF");
```

Note: Provided that “DEF” is the message for a text file in the server

Update the following axConnectorWebQueue extension’s properties:

onMessageAccepted: alert("ext-messageAccepted: " + ENV.cwqMessage);
onDataPushedByServer: alert("Data pushed.\n textFormat: " +
ENV.cwqMessage.textFormat);

Save and unlock the screen.

After the message is displayed for ready, click the “Send message” button.
The alert message “ext-messageAccepted” including the message id will be displayed.
Close the alert message, then the message “Data pushed.\n textFormat: PLAIN” will be displayed.

To close the queue, add another axButton eXtension to the screen.
Set its caption property to “Close queue”.
On its, onClick property, type the following:

```
AXES.IBMiService.ConnectorWebQueue.close(4100, "Closed by button click.");
```

Update the following axConnectorWebQueue extension’s property:
onConnectionClosed: alert("ext-closed");

Save and unlock the screen.
After the message is displayed for ready, click the “Close queue” button.
The alert message “ext-closed” will be displayed.

See Also

Extension Scripting Reference - aXes Connector Web Queue Object Functions and Features

ConnectorJS WebQueue developer guide

axDate – Insert date picker into screen

Description

axDate allows a date field to be displayed and edited in various ways.
This component can be dropped on a date field (input or output). The component will then display its own version of the field.
For input fields, a calendar button can also be displayed.
When the user clicks the calendar button, a calendar will display. The calendar will show the date from the field as the selected date, or if the date in the field is null or unrecognisable, the current date. If the user clicks on a day in the calendar, the date in the field will be changed accordingly. If the user does not click on a day, no change to the date will be made.
When the user clicks on the edit field (for input date fields only) the date displayed will be changed to the edit format, and selected. When the user moves away, the date format will revert to the normal display format.
Note: All properties can have a soft coded system default value. If a property is unspecified for an instance of this control, then the system default is checked, and if that is not found, the controls default value is used. This allows systems where the same date formats are used throughout to use DatePickers with no properties specified.

Useability

Context	Supported
Input screen fields	Yes
Output screen fields	Yes
Input subfile fields	Yes
Output subfile fields	Yes
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
dateFormatDisplay	This is the format the date will be shown in, unless the user has clicked on the date to edit it	Yes	language default
dateFormatEdit	This is the format the date will be shown in when the user clicks on the field to edit it	Yes	language default
dateFormatServer	This is the format the date would be shown in if there was no date extension applied	Yes	language default
showConfirmButton	Deprecated. See showButtonPanel. Enables buttons for confirm and cancel on the calendar	Yes	false
showButtonPanel	Specifies whether to display a button pane underneath the calendar that contains Today and Close buttons.	Yes	false
calendarYearSelect	Allow the user to select a year from a drop down, on the calendar	Yes	false
calendarMonthSelect	Allow the user to select a month from a drop down, on the calendar	Yes	false
calendarThinImage	Deprecated. See hideCalendarImage. Use a thin image for the calendar icon	Yes	false
hideCalendarImage	Specifies whether to show or hide the calendar image.	Yes	false
ignoreInvalidCharacters	If true this disables the aXes character checking that would occur when running in TS2 mode. This is useful when using this extension with numeric fields that use edit words to provide non-numeric date characters.	Yes	false
minimumDate	The minimum date that can be set.	Yes	None.
maximumDate	The maximum date that can be set.	Yes	None.
yearSelectValue	A positive value to be added and subtracted to the current year; the corresponding	Yes	None.

	range of values will be listed in the year dropdown element.		
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes.	None.
onBlur	Optional. JavaScript code to be executed when the element lost the focus.	Yes.	None.
onSelectedValueChanged	Optional. JavaScript code to be executed when the field value has changed.	Yes.	None.
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.
style	CSS to apply to the element.	Yes. Must return a valid style object.	None.

Property Values for date formats

Caption	Description and Comments	Value
language default	This means use the format for the language the user is working in. (This format is specified in Text_Cust_xx.txt, where xx is the language code for the user)	default
day dd month yyyy	Show a value like "Sunday 26 April 2009"	DD d MM yy
d/mm/yy	Show a value like 7/03/09	d/mm/y
dd/mm/yy	Show a value like 07/03/09	dd/mm/y
d/mm/yyyy	Show a value like 7/03/2009	d/mm/yy
dd/mm/yyyy	Show a value like 170309 or 07/03/2009	dd/mm/yy
ddmmyy	Show a value like 170309 or 070309	ddmmy
ddmmyyyy	Show a value like 17032009 or 07032009	ddmmyy
similarly for other formats:		
mm/dd/yy		mm/dd/y
mm/dd/yyyy		mm/dd/yy
mmddyy		mmddy
yy/mm/dd		y/mm/dd
yyyy/mm/dd		yy/mm/dd
yymmdd		ymmdd
yyyymmdd		yymmdd
yyyy-mm-dd		yy-mm-dd
yy-mm-dd		y-mm-dd

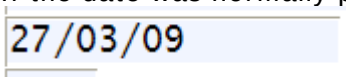
Notes, Comments and Warnings

The *value* for date formats is specified according to the format rules for the jQuery Datepicker. The caption is a more intuitive version.
The properties of the Date Picker can be stored at different levels:
You can specify a default date format for all date pickers in the application, by using edit application properties, and then editing the properties of the date extension.
You can override the default date formats for an individual date picker on a screen, by editing its properties.
If you are building an application where different users will use different date formats depending on their language, then you need to specify the default date formats you want for each language (for dateFormatDisplay, dateFormatEdit, and dateFormatServer), in the Text_Cust_xx.txt file. Then, if the date format properties of the datepicker are "language default", it will use the language dependent format.
(The language for each user will be determined from their iSeries user profile)
The ignoreInvalidCharacters option is usually not necessary. It is only needed when working with a numeric field where the iSeries edit word for the field causes non-numeric characters (e.g. typically the / characters) to appear in some circumstances and not in others. This could happen if when the date is zero, the slashes are not shown, and when the date is non-zero the slashes are shown. For fields where the non-numeric characters always appear, then there is no need to use the ignoreInvalidCharacters option.
ignoreInvalidCharacters is applicable in TS2 mode only.
On mobile devices (Android, iPad, etc..), when the date input field receives the focus, the virtual keypad will appear prompting the user to enter the date string.

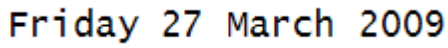
When the calendar button receives the focus, a calendar dialog only will appear, and the virtual keypad is hidden.

Examples

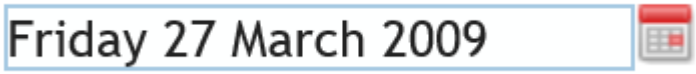
(1).
If the date was normally presented like this (without an extension)



And a Date visualization was added to the field, and the properties were set as follows:
dateFormatDisplay: day dd month yyyy
dateFormatEdit: ddmmyy
dateFormatServer : dd/mm/yy
(where the dateFormatServer has been chosen to match the way the date would be shown without an extension)
When the date field appears in output mode, it will look like this:



When the date field appears in input mode, it will look like this:



If the user clicks on the field in input mode, it will look like this:

If the user clicks on the calendar button, a calendar will appear, like this:

If hideCalendarImage property is set to true, the calendar image will be hidden and the user can click on the field to show the calendar.

If showButtonPanel property is set to true, the buttons for today (current date) and close are displayed like this:

The presence of the month and year selection dropdowns are controlled by the properties:
calendarMonthSelect
calendarYear Select

So the calendar can be made to appear like this:

To enable the setting of calendar year range, first set calendatYear to true, remove the minimumDate and maximumDate values, then set the yearSelectValue. Below is the example when yearSelectValue is set to 5.

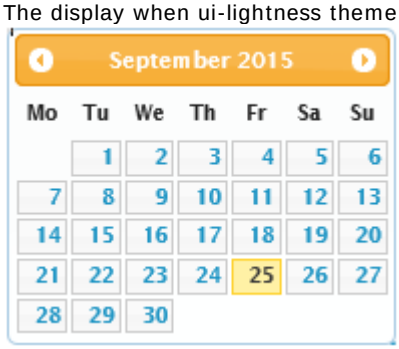
In mobile devices where touch screens are prevalent and virtual keypad is the means for user input, clicking the calendar button will only show the date picker and not the virtual keypad. The virtual keypad will only show when the date field is clicked.

useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property. Unlike the Basic extension which only uses the smoothness theme, when the **useJQueryExtensions** property is checked, the theme of this extension will also change by applying the JQuery theme that is set in the **jqueryTheme** property.

The display when redmond theme is set:

The display when ui-lightness theme is set:



See Also

Dates in Tutorial 3 - Advanced Screen Enhancement

Example – Using a date format not available in the Date eXtension

axDefaultVisualization - Default Visualization for a Screen Element

Description

All 5250 and new screen elements have a default visualization.
It is used to visualize the element - unless you *specifically* indicate not to do this, typically because you want to:

1. Hide the element - by not visualizing it at all

2. Use an alternate visualization - like a radio button.

Useability

Context	Supported
Input screen fields	Yes
Output screen fields	Yes
Input subfile fields	Yes
Output subfile fields	Yes
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
value	A value override that the element should be set to initially.	Yes. Must return a string.	None.
style	Additional style properties that should be applied to the default visualization.	Yes. Must return a valid style object.	None.
removeCUADots	When a screen element is an output field you can use this option to remove CUA style double spaced trailing dots from it.	Yes. Must return a boolean.	False.
maxInputLength	When a screen element is an input field this property specifies the maximum number of characters the field will accept. Value of "0" is a special value and its meaning depends on the type of the element: • For existing 5250 field, value of 0 means that the original 5250 field's length will be used. • For new elements, value of 0 means that the field's length is unlimited. This property is designed intended for use with new input elements added to a 5250 screen. It is not intended for use with existing 5250 screen elements.	Yes. Must return a number.	0.
imeMode	When a screen element is an input field this property indicates whether the Input Method Editor (IME) should be active or inactive for this field. Possible values are 'Default', 'Active' and 'Inactive'. The 'Default' setting means that AXES will determine automatically whether to turn IME on or off based on the language used. • IME mode is only supported in Internet Explore. This property will not work in other browsers.	Yes. Must return "default", "active", or "inactive"	Default
selectContentOnFocus	Applies only to an input element. This property indicates whether the whole content of the input element should be selected when focus moves to the element.	Yes. Must return a boolean.	True
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

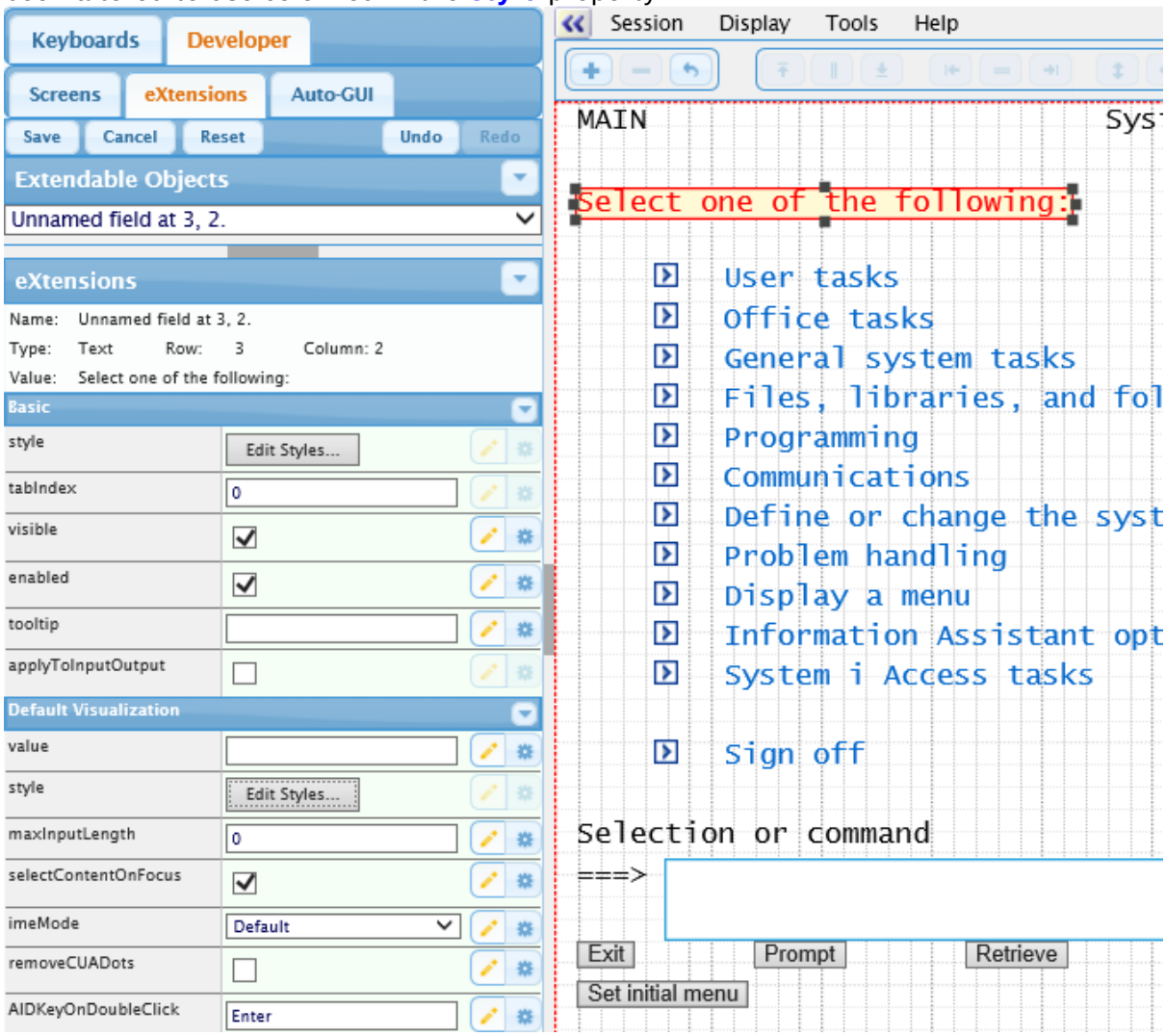
Notes, Comments and Warnings

Use of the value property should be considered carefully and tested.
useJQueryExtensions Application Property
When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property. Basically, the default border and the font styles will be based on the JQuery theme.

For browser compatibility reasons, setting the font-size in the style property will not work in TS2. Use the style property of the field's basic properties for this purpose instead.

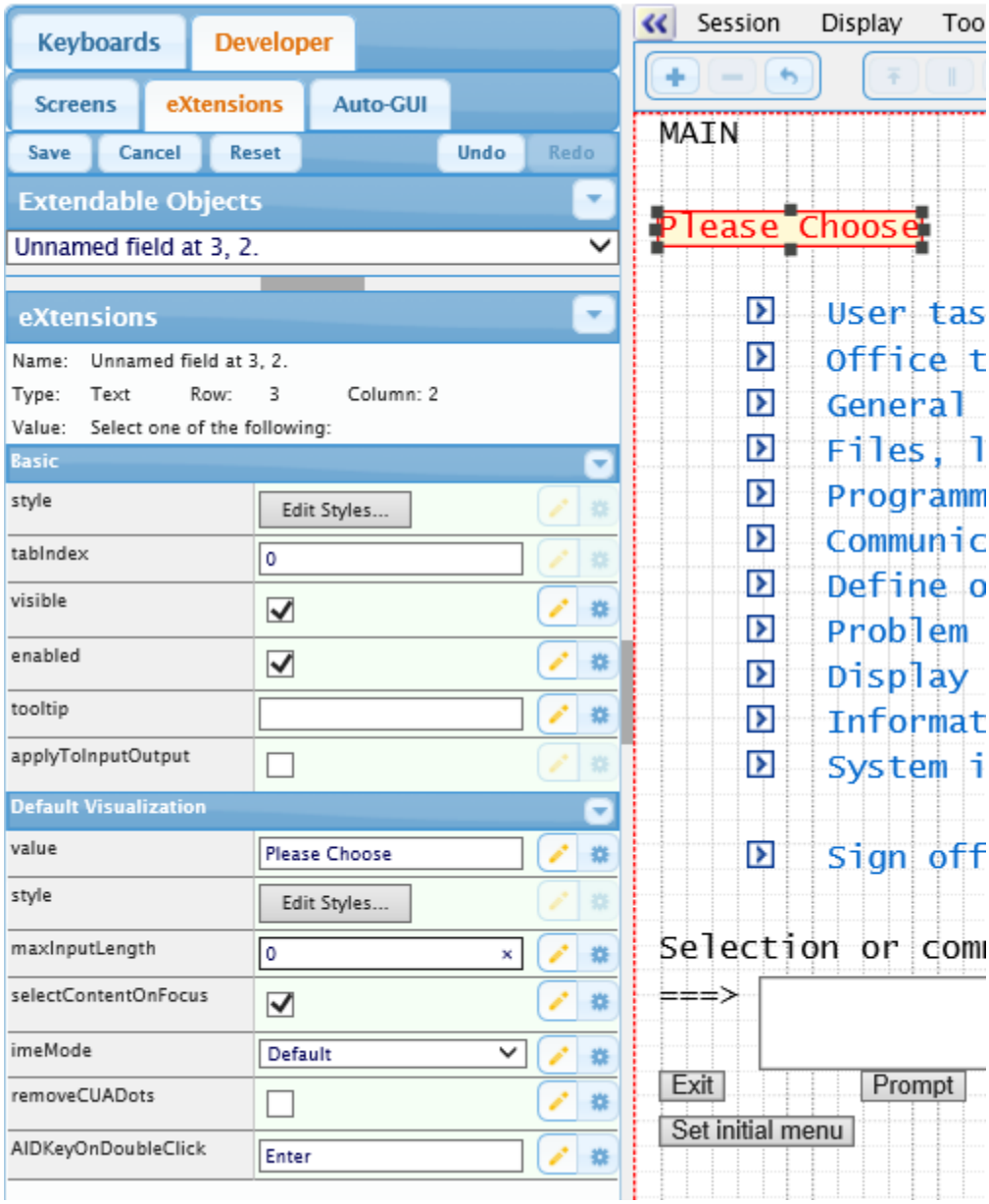
Examples

(1). Here the default visualization of the instruction line on the System i Main menu has been altered to use color red in the **style** property:

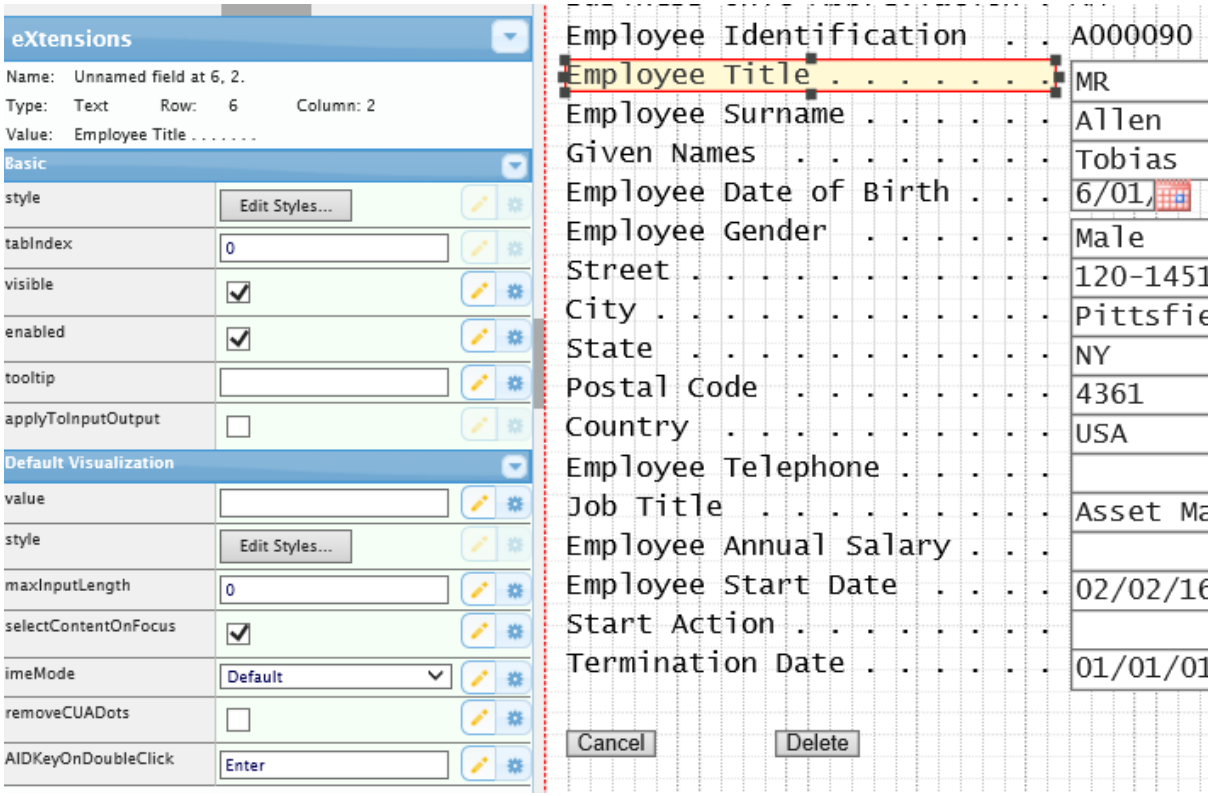


---

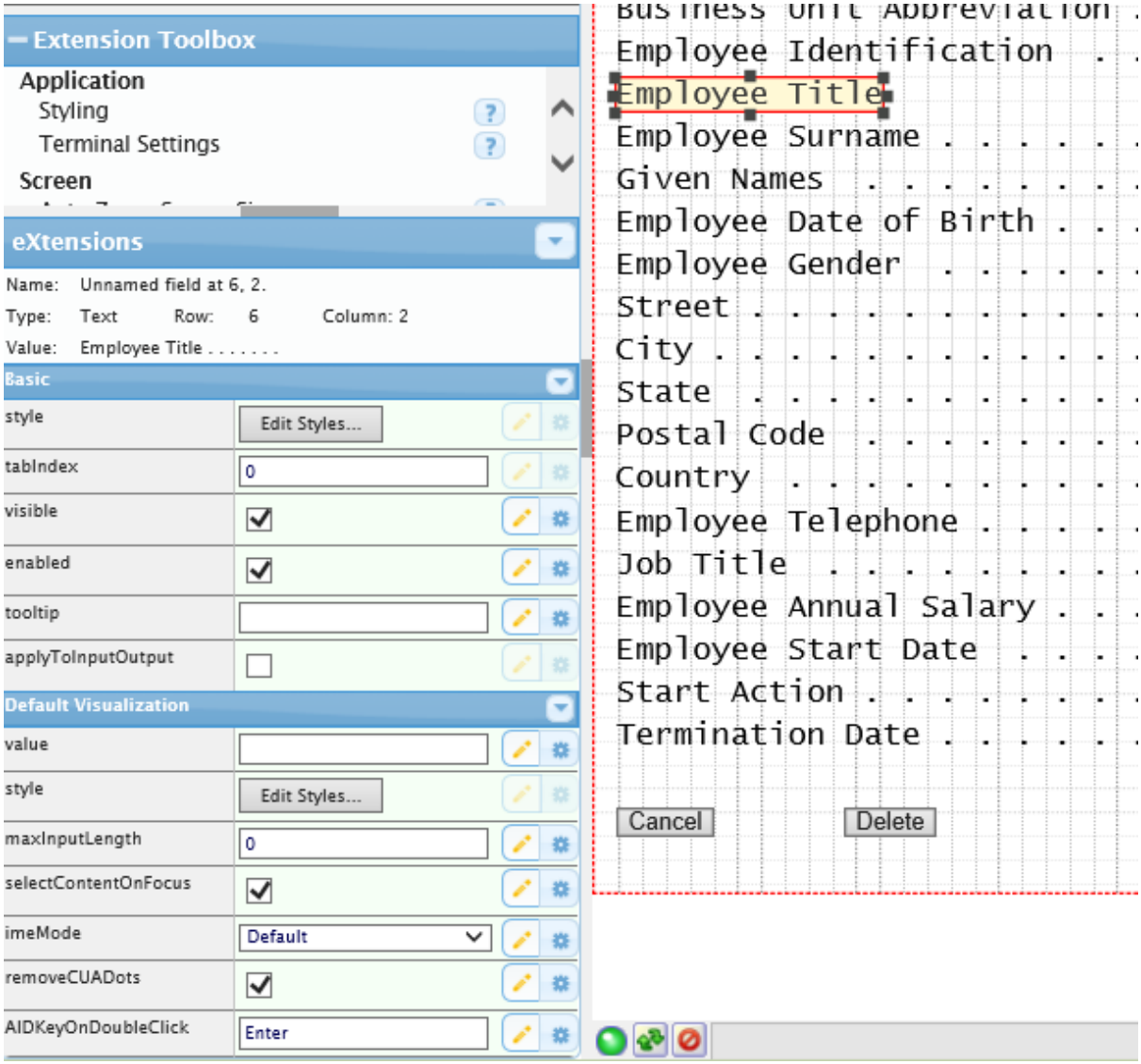
(2). Now the instruction has been altered by setting its **value** property to *Please Choose*:



(3). On this 5250 screen the *Given Name* field label is selected.



The **removeCUADots** property is changed to true, so the output field is now displayed like this:


Extension Toolbox
Application
Styling
Terminal Settings
Screen
eXtensions
Name: Unnamed field at 6, 2.
Type: Text Row: 6 Column: 2
Value: Employee Title . . . . . .
Basic
style
Edit Styles...
tabIndex
0
visible
enabled
tooltip
applyToInputOutput
Default Visualization
value
style
Edit Styles...
maxInputLength
0
selectContentOnFocus
imeMode
Default
removeCUADots
AIDKeyOnDoubleClick
Enter
Employee Identification
Employee Title
Employee Surname . . . . . .
Given Names . . . . . .
Employee Date of Birth . . .
Employee Gender . . . . . .
Street . . . . . .
City . . . . . .
State . . . . . .
Postal Code . . . . . .
Country . . . . . .
Employee Telephone . . . . .
Job Title . . . . . .
Employee Annual Salary . . .
Employee Start Date . . . .
Start Action . . . . . .
Termination Date . . . . . .
Cancel
Delete

axDropDown – Insert a drop down into screen

Description

axDropDown allows a drop down to be inserted into the 5250 screen.

Useability

Context	Supported
Input screen fields	Yes
Output screen fields	Yes
Input subfile fields	Yes
Output subfile fields	Yes
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
dropDownStyle	CSS to apply to the drop down	No	Blank
dataSourceType	Indicate where the source data is obtained from.	No	fixedValues
tableName	For **Static Table** data source type, this must be the value set for the name = property.	No	Blank
onFillDropDown	JavaScript code to execute to fill the drop down.	Yes	Blank (i.e. no script to execute – interpreted as ROW.text)
xmlFileName	Name of XML file when the source type is XML.	No	Blank
xmlFileLocation	Path to locate the xmlFileName when the source type is XML.	No	*DEFAULT which is equal to /ts/screens/<private folder>
fixedValues	For **Fixed values** data source type you must enter the value pairs used to fill the drop down	Yes. Must return an array of value pair object.	No
additionalEntries	Use this property to add one or more entries to the drop down. Note that if you use this option with static tables, dynamic tables or XML documents, the values you are adding are inserted into the underpinning table – which subsequently causes them to appear in the drop down. This may impact other eXtensions or scripting that also use the same underpinning table.	Yes	No
onSelectValue	Determines the drop down entry to select.	Yes	Blank (i.e. no script to execute – interpreted as ROW.value)
onSelectedValueChanged	Event raised when the selected drop down entry changes	Yes	FIELD.setValue(ROW.value)
sqlQueryName	For **Dynamic Table** data source type the value set for the name = property	No	Blank

sqlVariables	For **Dynamic Table** data source the variables used in your query.		ENV.SQL.SQLVariableLibrary = USERENV.dftSQLDataLibrary
keepLastKey	For **Dynamic Table** data source. If this option is true, a dynamic table will only be reloaded if the key changes.	No	false
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes.	None.
onBlur	Optional. JavaScript code to be executed when the element lost the focus.	Yes.	None.
label	This is only available when the useJQueryExtensions flag of the Application->Styling property is checked. The text that will be displayed on top of the dropdown.	Yes.	None.
fitText	Indicates whether to automatically resize the text to fit inside the extension.	Yes.	True.
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

Notes, Comments and Warnings

***dataSourceType*:**

Determines the method used to populate the drop down. The options are:

Fixed Values: use this setting for drop downs with a small number of values when the values don't change.

Static Table: static tables are loaded once from the server at start up. The name of the static table must be the name specified in *tableName.*

Static tables are very efficient and they can contain hard coded values or can be loaded by executing SQL commands.

XML File: the data to fill the table is obtained from an XML file located by default in /ts/screens/<private folder>. To specify another location change the *xmlFileLocation* property.

Dynamic Table: use this option carefully as it is the only one where the data is loaded at every screen arrival with an expected performance impact in the rendering of the screen. When you use this option you must specify the name of the query in *sqlQueryName* as defined in your dynamic tables file.

This value indicates that the data should come from a dynamically created table.

- A dynamic table is (re)loaded every time a screen is displayed.
- Dynamic tables are expensive to use compared to static tables.
- Only use them when the table content needs to vary according to some dynamic criteria (eg: current company, current product, etc).
- Dynamic tables can only be loaded by SQL commands.

You can use the keepLastKey option to improve performance, if multiple requests using the same query key are commonly made.

Should I use a Static or a Dynamic Table?

You do not have to use a dynamic table just because you want to execute an SQL command to load the table. You can load static tables from SQL commands as well.

You can use the highly efficient static tables in ways you may not know about.

Imagine a scenario where a currency table's content needs to change according to a company number (ie: You can only use certain currencies for certain companies).

Your immediate reaction may be to just use a dynamic table - passing the company number as an SQL variable to control which currencies are selected by the SQL command that is executed to fill the dynamic table.
This will work, but compared to using a static table this approach is expensive to execute.
You can improve this approach in several ways by using static tables instead:

Option 1: Create a single Static Table named Currency:

It would contain all the currency details for all the companies - and the associated company number as an extra column. When filling a drop down you can use scripting in the *onFillDropDown* property to omit table entries that are not valid for the current company by returning ENV.returnValue as null (meaning no visible entry is to be added to the drop down).

Option 2: Create multiple Static Tables named Currency_CC:

Where _CC is the company number (say).
Script the drop down's *tableName* property to dynamically change.
You are using static tables - but now you are dynamically changing the table name - instead of the table content.
Note: This approach also works well with XML sourced tables. For example, you could also create an RPG program that runs every night (say).
It would read corporate "static" data files and flatten them out into a highly structured series of XML documents - where the name of the document (ie: table) is meaningful.

Option 3: Use start up or log on logic to load the "correct" set of static table data

When there is a clear point in the application where the user logs on and selects a company to work with - you can script an onArrive or onLeave events to force all static tables to load or reload.
Where they are loaded from SQL you can pass variables to the SQL executed to load them (eg: the selected company number).
Now the static table Currency would only ever contain the currencies for the currently selected company.
All the "users" of the Currency static table - like drop downs - no longer have to worry about the content - it will always be correct for the currently selected company.

What is a ROW.

The drop down makes use of the aXes table structures. It means that the data to populate the drop down is stored in memory in a table-like structure consisting of rows and columns. For example, consider a table defined like this:

```
DefineObjectInstance { className = "StaticTable",
  name    = "Gender",
  source  = "inline",
  rows = {
                {value="M",text="Male"},
                {value="F",text="Female"},
            },
  };
```

(Note that for such a table you would most likely set the *dataSourceType* to *Fixed Values* and type in the values manually).
At start up aXes populates the tables with one called *Gender*. It will have 2 rows, each **ROW** consisting of columns *value* and *text.* Using the Gender table, *ROW.value* would yield the current row's *value*= value and *ROW.text* the current row's *text*= value.
There is no constraint on how you name the row columns. If you use other names you must remember to change the default values to reflect the column names.
For example, if your file or fixed values define your columns like this:

```
  rows = {
                {codigo="M",descripcion="Masculino"},
                {codigo="F",descripcion="Femenino"},
```

```
            },
  };
```

The default values or script code should refer to *ROW.codigo* and *ROW.descripcion*.

***onFillDropDown* event**:

This event populates the drop down. It will fire (following our table example) whenever a screen (*any screen)* that has a drop down whose *tableName* was set to *Gender* arrives.
It will locate the *Gender* table and iterate through all its entries.
For each entry it will add an entry where the visible text in the drop down is equal to the value in *text* column of the Gender table. The result in our example will be a drop down with 2 entries: Male and Female.
This is the simplest way to use *onFillDropDown.*
A more powerful way would be to fill the drop down with a *value* resulting from the evaluation of a more complex expression.
If we extended the *Gender* table like this:

```
DefineObjectInstance { className = "StaticTable",
  name    = "Gender",
  source  = "inline",

  rows = {
               {value="M1",text="Male", agerange="16-25"},
               {value="M2",text="Male", agerange="26-35"},
               {value="M3",text="Male", agerange="36-45"},
               {value="F1",text="Female", agerange="16-25"},
               {value="F2",text="Female", agerange="26-35"},
               {value="F3",text="Female", agerange="36-45"},
            },
  };
```

We could change *onFillDropDown* to say:
ROW.text + "s aged " + ROW.agerange
The drop down would end up with entries that look like this:
Males aged 16-25
Males aged 26-35
Males aged 36-45
Females aged 16-25
Females aged 26-35
Females aged 36-45
Note that executing custom code is a relatively expensive process. This event is fired once for each entry in the dropdown. If you have a lot dropdowns and/or large dropdowns this can have an impact on screen rendering time. The eXtension recognises the special case of an empty script (the default) and returns the value of ROW.text without having to execute any custom code. Consider carefully if you need to use this event, or if you can change the structure of your table so that ROW.text already contains the correct data.

***onSelectValue* event**:

The code in this event determines what drop down entry to set as the selected. It can be something simple like:
ROW.value
If the expression does not return a value of type *Boolean,* the default logic of comparing the value is returned with the associated field's value.
An example of an expression returning a value of type *Boolean* would be:
(ROW.value == "Hello")
Note that executing custom code is a relatively expensive process. This event is fired once for each entry in the dropdown. If you have a lot dropdowns and/or large dropdowns this can have an impact on screen rendering time. The eXtension recognises the special case of an empty script (the default) and returns the value of ROW.value

without having to execute any custom code. Consider carefully if you need to use this, or if you can change the structure of your table to avoid it.

***onSelectValueChanged* event**:
This event fires when an entry in the drop down changes. The default behaviour here is
FIELD.setValue(ROW.value)
In other words, set the value of the field (which is referred to as FIELD) associated with the drop down to the value of the selected ROW.

***additionalEntries*:**
Lets you add entries in addition to those added by the specified method in *dataSourceType.*
The easiest and preferred way of adding a blank entry at the top of the drop down would be to add it to your static table or fixed values with blank values.
Another way would be to use *additionalEntries*.
This property works by calling an internal method named `addTableROW`. It receives 2 parameters:

`oRow`	`Object` - represents the ROW. It must be structurally the same as any of your other ROWs. In other words it must have the same properties.
`bAtBegin`	`Boolean` - Indicates whether to add the entry at the beginning or at the end of the drop down. Defaults to `false`

For example, to add an entry at the top of the drop down source by the *Gender* table you would this in your additionalEntries property:

```
var oGenderROW = {value: "", text: "Select an entry from this list", agerange:"" }
this.addTableROW(oGenderROW, true); /* Note the this qualifier */
```

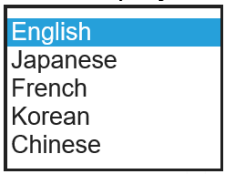
Note that when the drop down is associated to a field, the field will be set to the "" when this entry is selected unless you add logic to the *onSelectValue* and *onSelectValueChanged*.

***fixedValues*:**
Sets the data of Dropdown when Fixed Values is selected as the *dataSourceType*. If using script, the ENV.returnValue must contain an array of value pair object as follows:

```
ENV.returnValue = [ { value: "GA", text: "Georgia" },
                    { value: "HI", text: "Hawaii" },
                    { value: "UT", text: "Utah" }
                  ];
```

useJQueryExtensions Application Property

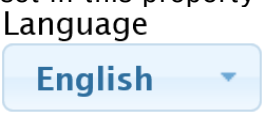
When the **useJQueryExtensions** property of the Application is checked, the display of this extension will change according to the theme that was set in the Application's **jqueryTheme** property.
Basic display:



When **useJQueryExtensions** is checked:

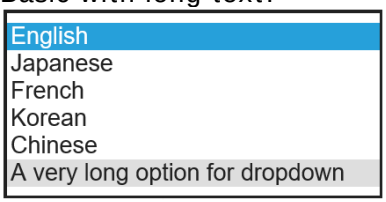
The size of the dropdown will depend on the size of the field. Resizing the field will also resize the dropdown.

When **useJQueryExtensions** is checked, the label property can also be set. Any string set in this property will be displayed on top of the dropdown.



Unlike the basic extension, the JQuery dropdown extension's menu will always have the same width as the dropdown itself. When the option text does not fit the width of the dropdown, the text will be displayed in multiple lines.

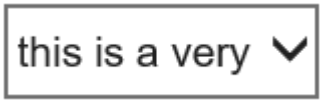
Basic with long text:



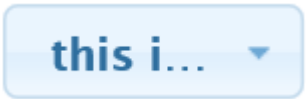
JQuery extension with long text:

When a text does not fit the dropdown, the JQuery extension will display the "..." characters indicating that the full text cannot be displayed.

Basic extension with a long text option selected:



JQuery extension with a long text option selected:



See Also

Dropdowns in Tutorial 3 - Advanced Screen Enhancement

Static Tables that load from static data in Tutorial 6 - Tables and XML Documents

Static Tables that load from a database file in Tutorial 6 - Tables and XML Documents

XML Documents in Tutorial 6 - Tables and XML Documents

Example – Dynamically refreshing a drop down without server interaction in **Tutorial 11 - FAQ and** Examples

Example – Two level drop down in Tutorial 11 - FAQ and Examples

Example – Using a drop down as subfile option field in Tutorial 11 - FAQ and Examples

axElementBasicProperties - 5250 Screen Element Basic Properties

Description

Every 5250 screen element has a fundamental and common set of properties, regardless of any further visualization that is applied to it.

5250 screen elements exist naturally on the 5250 screen because of the way it has been designed and the DDS used to display it.

Useability

Context	Supported
Input screen fields	Yes
Output screen fields	Yes
Input subfile fields	Yes
Output subfile fields	Yes
New screen elements	No

Properties

Name	Description and Comments	JavaScript	Shipped default
style	Additional style properties that should be applied to the screen element.	Yes. Must return a valid style object.	None.
tabIndex	The tab index that should be applied to this element relative to all other elements on the screen.	No.	0
visible	Indicates whether this element is visible.	Yes.	True.
enabled	Indicates whether this element is enabled. This is for TS1 only. In TS2, the enabled property is specified in each extension that can be enabled and disabled.	Yes.	True.
tooltip	The tool tip (or hint) that should appear when the user hovers the mouse over this screen element.	Yes. Must return a valid string.	None.
applyToInputOutput	Indicates whether this eXtension should be applied automatically to both input and output element	Yes	False.

Notes, Comments and Warnings

None.

Examples

(1). On the System i Main Menu, *option 8 – Problem handling* has its **tooltip** property set to *Please screen print and problem report details that you have and e-mail them to support@mycompany.com for further assistance*.

When the user hovers the mouse over the option the tooltip appears, like this:

```
     6. Communications

     8. Problem handling
     9. Display
    10. Information Assistant options
    11. System i Access tasks

    90. Sign off

Selection or command
===>
```

Please screen print and problem report details that you have and e-mail them to support@mycompany.com for further assistance.

axFKeyPanel – Insert a function key panel into screen

Description

A typical 5250 screen shows function keys in two rows at the bottom of the screen. aXes emulates the screen by displaying function keys as buttons in the same place. The aXes Function Keys Panel is a separate HTML panel that sits adjacent to a terminal server panel and contains the function keys displayed as buttons. The Enter key button is always available and the screen in the terminal server panel determines the other function keys available in the function keys panel. The terminal server panel includes no function keys when the function keys panel is active

Useability

Context	Supported
Input screen fields	No
Output screen fields	Yes
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments		JavaScript	Shipped default
position	Right	A vertical function keys panel will appear at the right of the terminal server panel	No	right
	Left	A vertical function keys panel will appear at the left of the terminal server panel		
	Top	A horizontal function keys panel will appear above the terminal server panel.		
	Bottom	A horizontal function keys panel will appear below the terminal server panel.		
horizontalWidth	The width of a horizontal function keys panel is fixed at the same width of the terminal server panel.		No	180
verticalHeight	The height of a vertical function keys panel is fixed at the same height of the terminal server panel.		No	40
resizePane			No	False
buttonWidth	The button width applies to all buttons		No	150
buttonHeight	The button height applies to all buttons		No	30
buttonPadding	The button padding applies to all buttons		No	5
buttonStyle			Yes. Must return a valid style object.	Flat
label	Text	Text is the button label extracted from the terminal server screen without the function key	No	Text Only

		identification (i.e. Exit without the F3). Cancel and Exit are examples of setting "text" as the label property value.		
	Function key	Function key shows only the function key identification. F12 and F3 are examples of setting "function key" as the label property value.		
	Both	The both value shows the button label from the terminal server screen and the function key. F12=Cancel and F3=Exit are examples of setting the "both" as the label property value.		
autoGenerateFunctionKeyScript			No	True
onItemSelection			Yes	
enabled	Indicates whether this element is enabled. TS2 only.		Yes. Must return a Boolean.	True.

Notes, Comments and Warnings

The function key panel extension works on TS2.

AutoGUI options for TS1 developer are not available, as the function key panel extension does not work on TS1.

Function key panel if configured as autoGUI options, dynamically inserts this extension into every available screen. Same properties appear on autoGUI options.

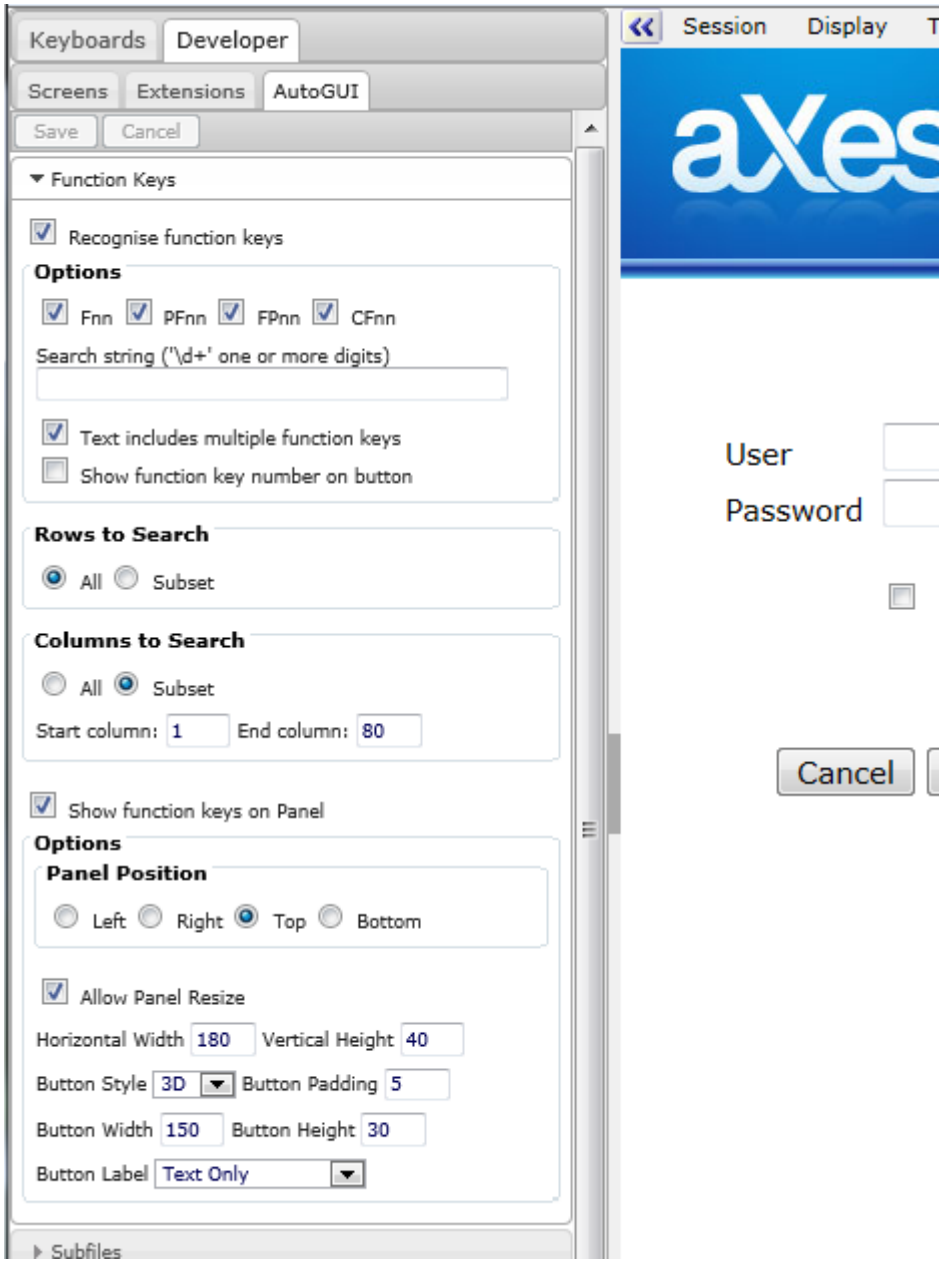
When using the function keys panel extension and autoGUI on customized screens, the function key panel extension takes priority and overrides autoGUI settings.

Button Label options to select text only, function key only and both text and function key overrides the “Show function key number on button” options.

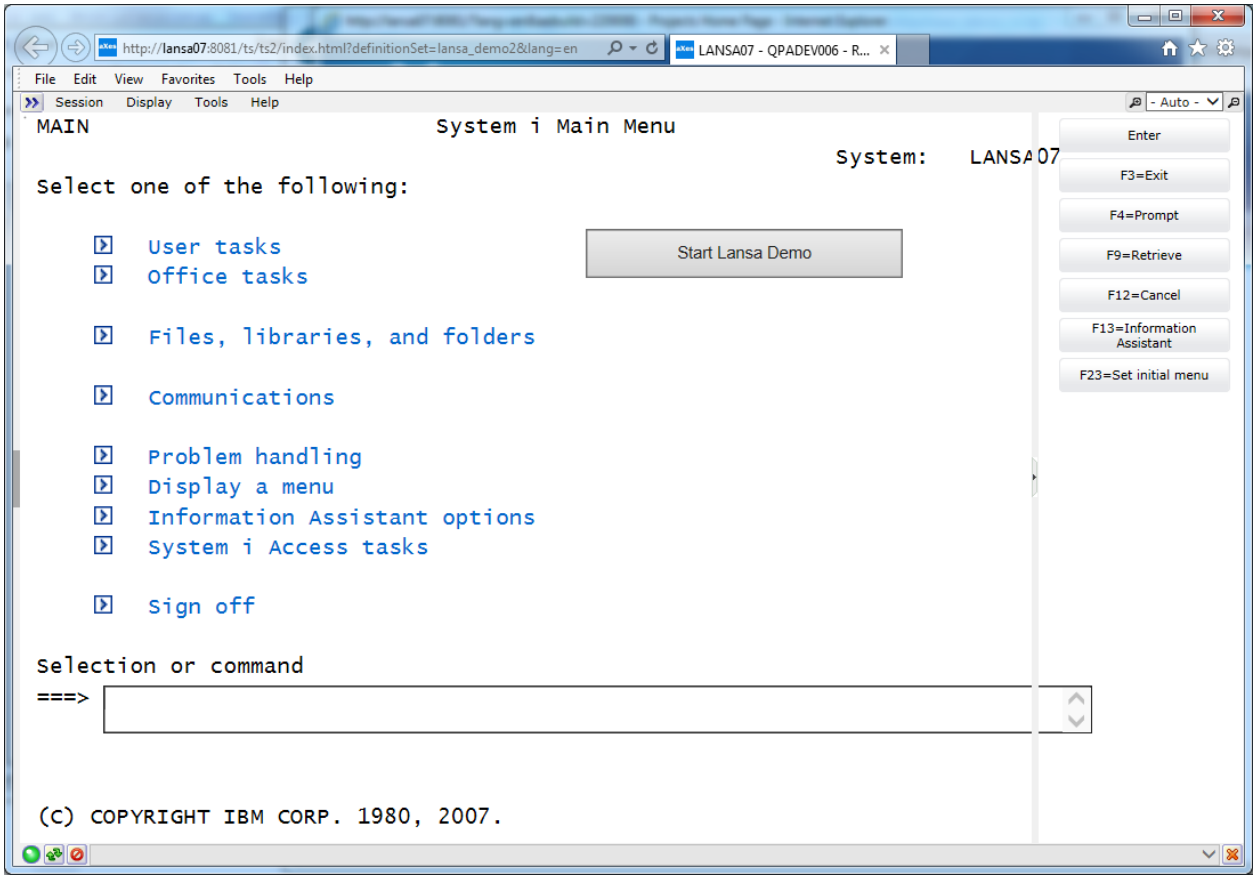
Screens containing selectable items, with select type “button”, will have the buttons positioned in the function keys panel. Screens with pop up windows that contain function keys retain the function key buttons and the buttons do not appear in the function keys panel.

AutoGUI Options

AutoGui options is accessible only on TS2 developer tools. Start TS2 developer tools within the development session or add “&dev” to URL of TS2 this will enable developer mode and AutoGui tab will be accessible within the developer tab panel. Check Show function keys on Panel to enable the options.
See screenshot below.


Keyboards
Developer
Screens
Extensions
AutoGUI
Save
Cancel
Function Keys
Recognise function keys
Options
Fnn
PFnn
FPnn
CFnn
Search string ('\d+' one or more digits)
Text includes multiple function keys
Show function key number on button
Rows to Search
All
Subset
Columns to Search
All
Subset
Start column: 1
End column: 80
Show function keys on Panel
Options
Panel Position
Left
Right
Top
Bottom
Allow Panel Resize
Horizontal Width 180
Vertical Height 40
Button Style 3D
Button Padding 5
Button Width 150
Button Height 30
Button Label Text Only
Subfiles
Session
Display
User
Password
Cancel

Function key panel
TS2 user mode



axFrame – Insert a frame into the screen

Description

axFrame allows a frame to be added to a 5250 screen.

The frame is typically used to display a web page from a corporate or external web site.

The frame can be made to fade away when the user moves the mouse out of it to another 5250 screen area - revealing what is visible beneath it. This allows for significant reuse of 5250 screen real estate.

There may be multiple frames on a 5250 screen.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
style	The style to be applied to the frame.	Yes	
src	The URL that the frame is to be loaded from. The load process, like all web pages, is asynchronous. The frame will not attempt to display itself if this property is set to an empty string.	Yes	/ts/blank_page.html
intFadeInterval	The initial fade interval. The use of fading is a way to preserve and reuse 5250 screen real estate. Refer to the examples following. This specifies, in milliseconds, the initial time taken for the frame to fade by 10%. When the frame has faded to zero it is made invisible and can no longer be accessed. The default value of 600 indicates that it takes 6 seconds (600 milliseconds X 10 fades) for the frame to become invisible. Set this property to zero to turn off frame fading. Frame fading is initiated when the user moves the mouse out of the frame area. Frame fading stops and the fade effect is removed if the user moves the mouse back over the frame any point before it becomes invisible.	Yes	600

subsFadeInterval	The subsequent fade interval. This specifies, in milliseconds, the subsequent time taken for the frame to fade by 10%. The default value of 150 indicates that it takes 1.5 seconds (150 milliseconds X 10 fades) for the frame to become subsequently invisible. Set this property to zero to turn off frame fading.	Yes	150
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

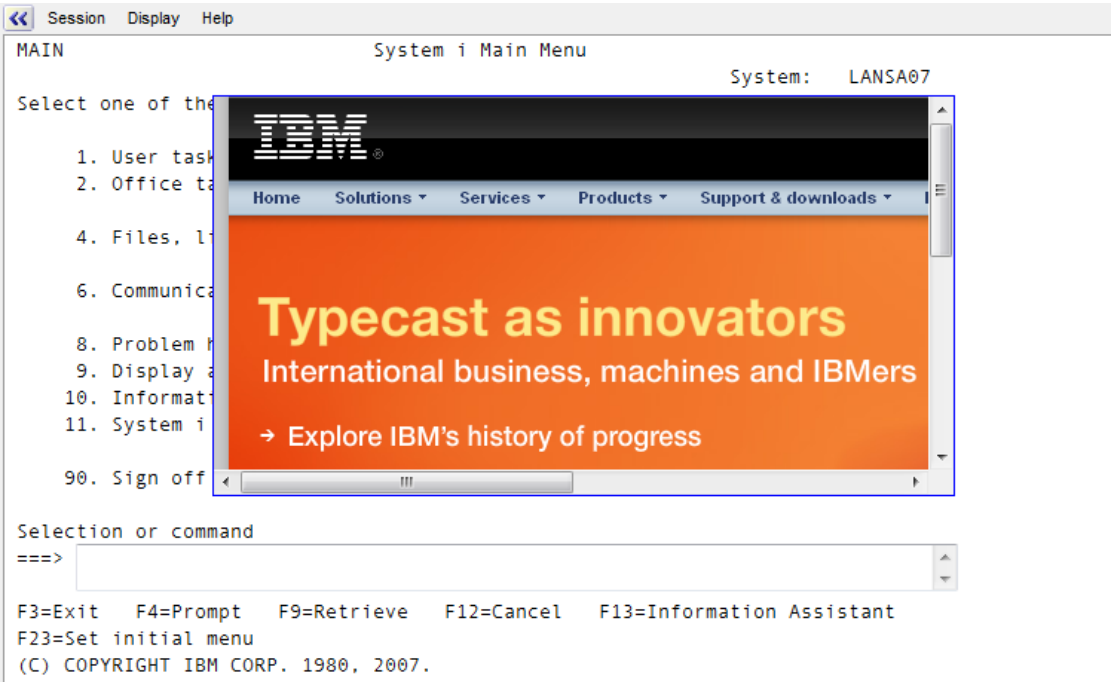
Examples

(1). Add the IBM web site to the System i Main menu.

A frame is added to the System i Main Menu as a new element with these properties:

Frame	
style	border:1px solid blue;
src	http://www.ibm.com
initFadeInterval	0
subsFadeInterval	0

The resulting display looks like this:



---

(2). Fade the IBM web site to the System i Main menu.

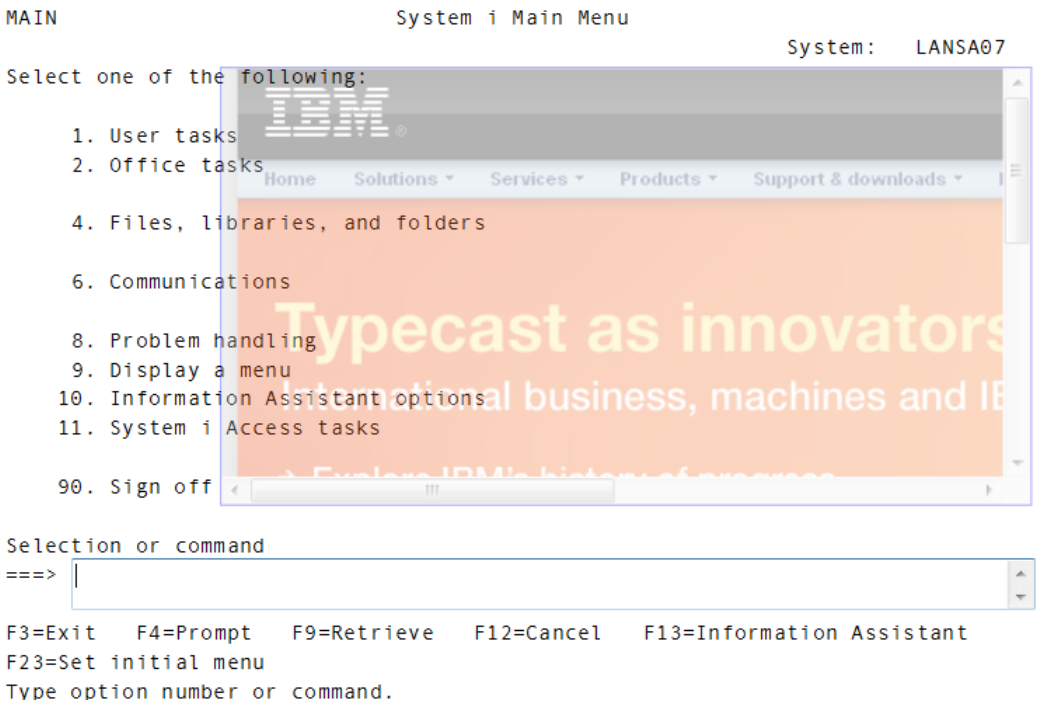
The frame in example 1 is changed to have these properties:

Frame	
style	border:1px solid blue;
src	http://www.ibm.com
initFadeInterval	1000
subsFadeInterval	50

These indicate that when the frame is displayed initially it will fade away in about 10 seconds (1000 milliseconds is defined as the time for each 10% of the fading) unless the user positions the mouse over it.

If they subsequently move the mouse off the frame it will fade away in about 0.5 seconds (50 milliseconds is defined as the time for each 10% of the fading).

The display now looks like this:



The frame initially fades away over 10 seconds. If the user moves the mouse over the frame the fading stops and the fading effect is removed from the frame. When the user subsequently moves the mouse out of the frame it fades away almost instantly.

---

(3). Reusing 5250 screen real estate

The command input field on the System i Main menu is named *CommandLine*.

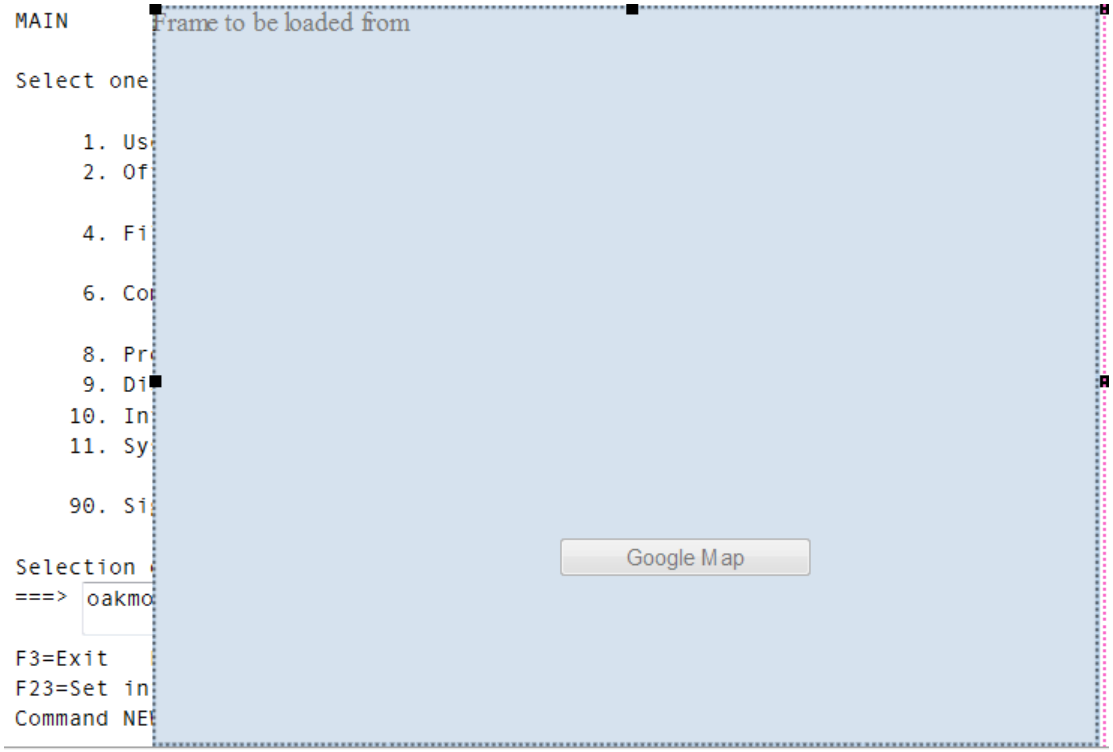
A frame is then added to the System i Main Menu with these properties:

Properties	
Basic	
name	GoogleMap
style	left:90px;top:40px;width:550px;h
type	Input
tabIndex	0
visible	True
enabled	True
tooltip	
Frame	
style	border:1px solid orange;
src	
initFadeInterval	2000
subsFadeInterval	50

Significantly, the frame:

- is named ***GoogleMap***.
- has no src (source) value specified.
- has a long initial total fade time of 20 seconds.
- has a short subsequent total fade time of 0.5 seconds.

The frame is sized to use a very large portion of the 5250 screen, like this:



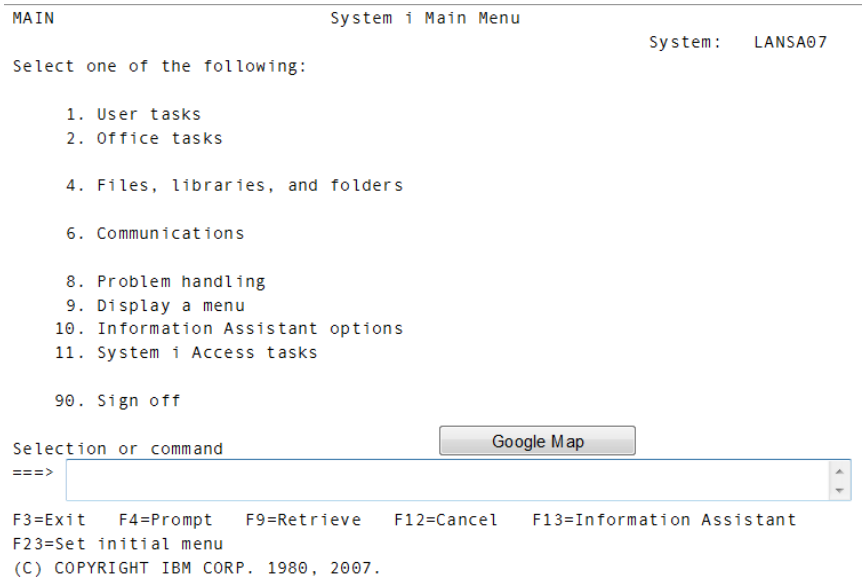
Next a button is added as new element with caption *Google Map* and this *onClick* script:

```
/* Get the value typed into the command line */

var cl = FIELDS("CommandLine").getValue();

/* If it is blank/null then show an error */

if (cl == "")
{
   window.alert("Enter the location details for the map");
}

/* Display the Google map details using the command */
/* details as the requested address details         */

else
{
   var gm = FIELDS("GoogleMap");
   var url = "http://maps.google.com/maps?q=" + cl;
   gm.setProperty("src",url);
   gm.refresh();
}
```

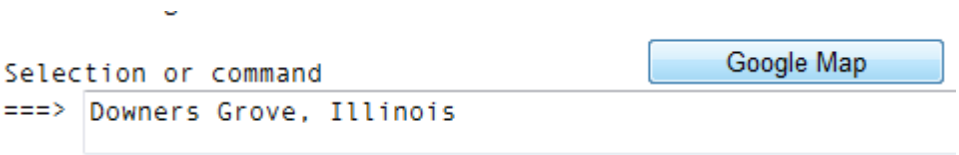
This script takes the value from the CommandLine and passes it to Google Maps.

In use, this example works something like this:

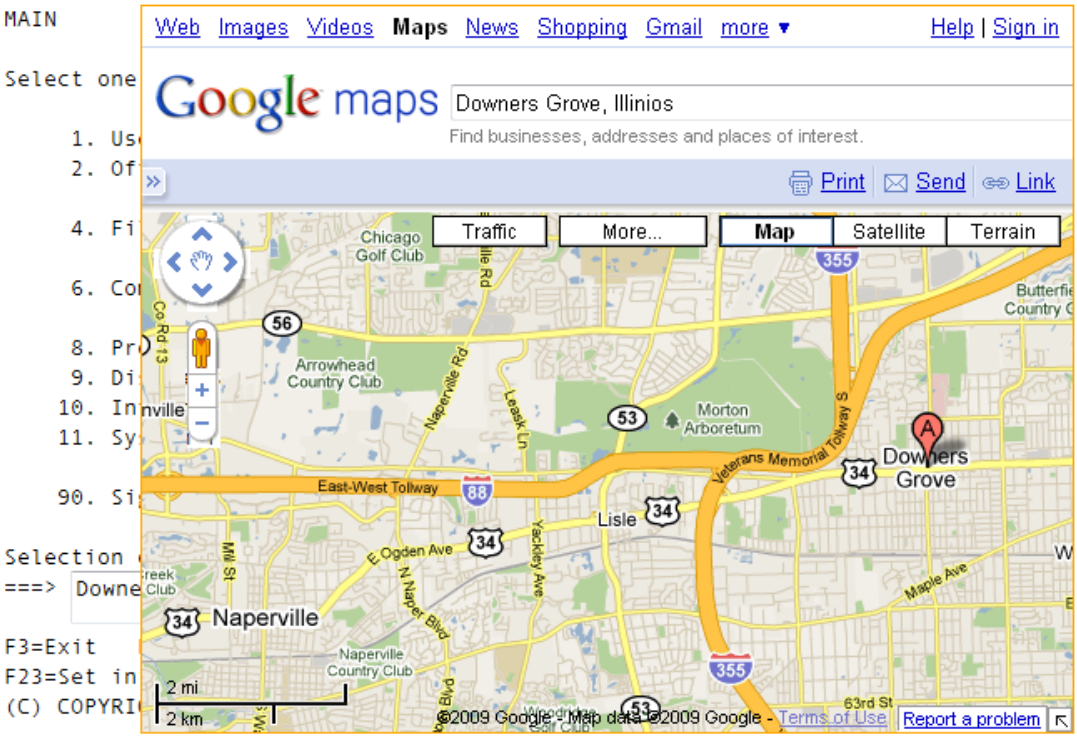
Initially the frame does not appear because it has a blank/null src property:



The user enters an address and clicks the Google Map button:



The frame is now activated because it has a *src* property, so it displays the Google map details:



The frame will stay on display as long as the user keeps the mouse over it.

Once they move the mouse outside it, back to the 5250 screen, it will fade away very quickly and become invisible - allowing the user to perform another Google map search or to resume using the normal 5250 options on the System i Main menu.

---

(4). Introductions and Welcomes

In this example a simple and visually crude "corporate home page" HTML document named ***MyCompany.html*** is added to the aXes ts/screens folder.

Its source code is like this:

```
<html>
<head>
</head>
<body style="font-family:Verdana;background-color:#FFFF99;">
<p style="text-align:center;">Welcome to ACME</p>
<dir>
<li style="margin-top:20px;"><b>Company HR Policy</b></li>
<div style="margin-left=40px;">Click in here to read about ..... etc, etc, etc, etc</div>
<div style="margin-left=40px;">Click in here to read about ..... etc, etc, etc, etc</div>
<div style="margin-left=40px;">Click in here to read about ..... etc, etc, etc, etc</div>
<div style="margin-left=40px;">Click in here to read about ..... etc, etc, etc, etc</div>
<li style="margin-top:20px;"><b>Upcoming Company Social Functions</b></li>
<div style="margin-left=40px;">Click in here to read about ..... etc, etc, etc, etc</div>
<div style="margin-left=40px;">Click in here to read about ..... etc, etc, etc, etc</div>
<div style="margin-left=40px;">Click in here to read about ..... etc, etc, etc, etc</div>
<div style="margin-left=40px;">Click in here to read about ..... etc, etc, etc, etc</div>
<li style="margin-top:20px;"><b>Vist the Company Facebook to get to know your Peers</b></li>
<div style="margin-left=40px;">Click in here to read about ..... etc, etc, etc, etc</div>
<div style="margin-left=40px;">Click in here to read about ..... etc, etc, etc, etc</div>
<div style="margin-left=40px;">Click in here to read about ..... etc, etc, etc, etc</div>
<div style="margin-left=40px;">Click in here to read about ..... etc, etc, etc, etc</div>
</DIR>
</body>
</html>
```

Hint: Set user *PUBLIC to have *R rights only for any new documents you add to aXes folders.

It looks like this when displayed in a browser page:

Welcome to ACME

- **Company HR Policy**
  Click in here to read about ..... etc, etc, etc, etc
  Click in here to read about ..... etc, etc, etc, etc
  Click in here to read about ..... etc, etc, etc, etc
  Click in here to read about ..... etc, etc, etc, etc
- **Upcoming Company Social Functions**
  Click in here to read about ..... etc, etc, etc, etc
  Click in here to read about ..... etc, etc, etc, etc
  Click in here to read about ..... etc, etc, etc, etc
  Click in here to read about ..... etc, etc, etc, etc
- **Vist the Company Facebook to get to know your Peers**
  Click in here to read about ..... etc, etc, etc, etc
  Click in here to read about ..... etc, etc, etc, etc
  Click in here to read about ..... etc, etc, etc, etc
  Click in here to read about ..... etc, etc, etc, etc

Hint: We very strongly recommend that you consult with a professional graphics designer if you intend to build a corporate home page.

Next a property is added to the USERENV object to count how often the System i Main menu has been displayed in the current session:

```
var USERENV =
{
    mainMenuUseCount : 0, /* Count how many times the main menu is used */
```

Hint: You will need to stop and restart your development session to pick up the modified USERENV.

Next a frame is added to the System i Main menu with these properties:

Basic	
name	Introduction
style	left:20px;top:20px;width:61
type	Input
tabIndex	0
visible	True
enabled	True
tooltip	
Frame	
style	border:1px solid gray;
src	
initFadeInterval	600
subsFadeInterval	150

Significantly, the frame:

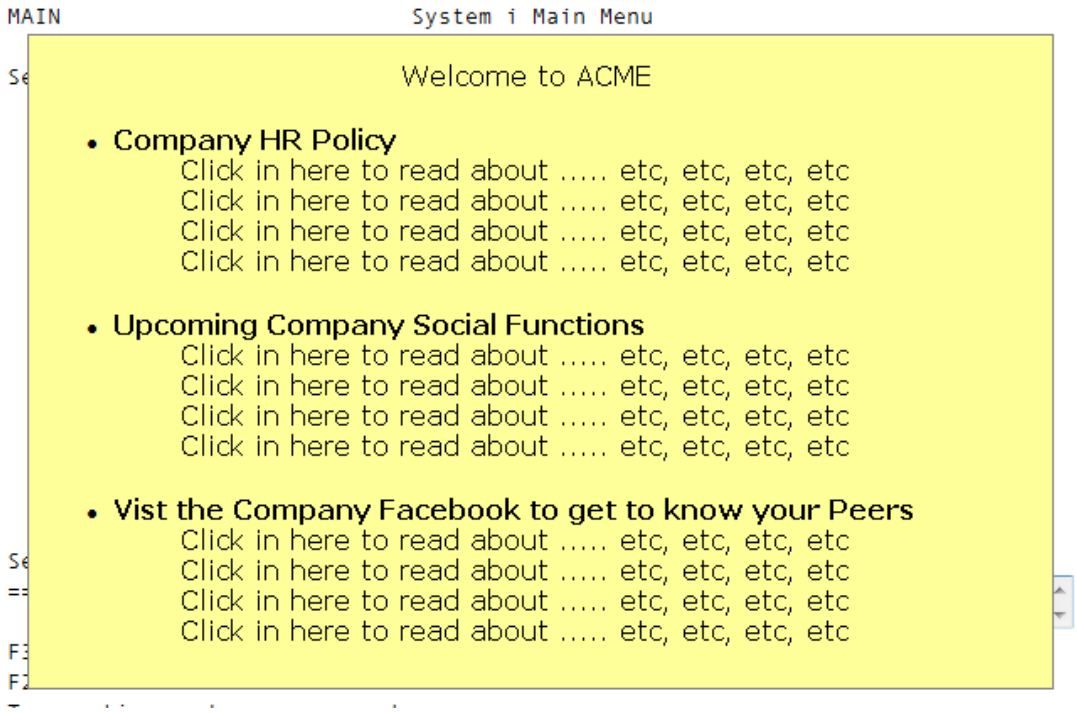
- is named ***Introduction***.
- has no src (source) value specified.
- has a long initial total fade time of 6 seconds.
- has a short subsequent total fade time of 1.5 seconds.

Finally, this script is a added to the ***onArrive*** property of the System i Main menu screen itself:

```
/* Increment count of times menu used */

USERENV.mainMenuUseCount++;

/* If this is the first time show the introduction */

if (USERENV.mainMenuUseCount == 1)
{
   var intro = FIELDS("Introduction")
   intro.setProperty("src","/ts/screens/myCompany.html");
   intro.refresh();
}
```

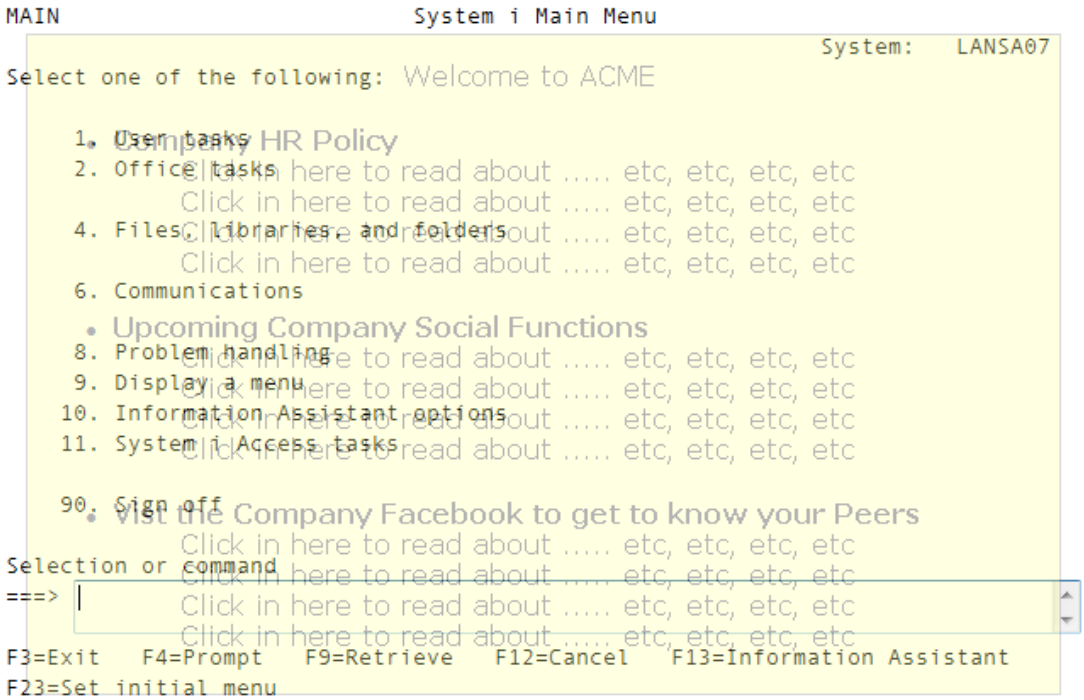
This script is counting how many times the System i Main Menu is displayed. It shows the introduction frame only the first time that the screen arrives.

So when the user signs on and the System i Main Menu displays for the first time they see this “corporate home page” frame overlaying the 5250 screen:



As long as they keep the mouse over the frame they can work within it.

Once they move the mouse outside the frame it fades away in about 1.5 seconds.



If the mouse is not over frame on the initial display the frame would fade away much more slowly - in about 6 seconds.

Subsequent redisplays of the System i Main Menu do not show the frame at all because the src property is not set to anything by the System i Main Menu's ***onArrive*** script.

These types of corporate home pages are useful to keep employees up to date.

Additionally, they can be changed externally at any time in just a few seconds - without any changes being required to the 5250 application or to any aXes customizations.

Additionally they easily link off to other HTML pages, web sites, etc.

axGoogleChart – Provides a window to the Google Visualization Charts

Description

axGoogleChart or Google Chart adds the API of various Google visualization charts to an Axes screen. This modern behaviour of the extension is only available in TS2 runtime environment.

By using this extension you will be subject to the Google Terms of Service as outlined in https://developers.google.com/chart/terms

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

A newly added Google chart extension in an Axes screen initially has only 2 properties, namely chartType and version. Setting the version property to "classic" will set the extension to its old behaviour which is documented in **axGoogleChart_Classic – Insert a Google Chart into screen**. Setting the version property to "modern" will enable access to the modern behaviour. The following table describes in alphabetical order the properties of the modern version of the extension.

Name	Description and Comments	JavaScript	Shipped default
arrayData	To non-Diff charts, the description is: Chart data population method via the Google-specified data array format; the result of the conversion by the arrayToDataTable() function will serve as the data parameter to the draw() API of the Google Visualization Chart. (To know more about the data array format specified by Google, please refer to the https://developers.google.com/chart/interactive/docs/datatables_dataviews#arraytodatatable link.) When the chartType property is set to "Diff", the description is: Chart data population method via the Google-specified data array format; the result of the conversion by the arrayToDataTable() function will serve as the 1st parameter to the computeDiff() API of the Google Visualization Chart. (To know more about the computeDiff() API, please see the https://developers.google.com/chart/interactive/docs/gallery/diffchart link.)	Yes	ENV.returnValue = [];
arrayData2	Conversion by the arrayToDataTable() function where the result will serve as the 2nd parameter to the computeDiff() API of the Google Visualization Chart.	Yes	ENV.returnValue = [];
chartType	Selection of Google Visualization charts	No	Blank
columnOrder	If specified, this property will determine the order of appearance of the column data; if not specified, all the query items will appear according to the alphabetical order of the column names.	Yes	ENV.returnValue = [];

dataSourceType	Indicates where the source data come from	No	Fixed Array
directory	To non-Diff charts, the description is: The directory where the XML file resides When the chartType property is set to “Diff”, the description is: The directory where the 1st XML file resides	No	*DEFAULT (Value is the same as /ts/screens/<project folder>)
directory2	The directory where the 2nd XML file resides	No	*DEFAULT (Value is the same as /ts/screens/<project folder>)
dragHandle	If checked, the chart can be moved only with an assigned drag handle; otherwise the chart can be moved by holding any part of it.	Yes	false
dragHandleOrientation	The location of the draggable handle	No	Top-Right

dragHandleVariable	The configuration values for the draggable handle	Yes	ENV.returnValue = {
			backgroundCSS: “lightblue”,
			bottomOffset : 10,
			height : 20,
			leftOffset : 10,
			rightOffset : 10,
			topOffset : 10,
			width : 50
			}

draggable	If checked, the placement of the chart is movable; otherwise the position is fixed.	Yes	False
filename	To non-Diff charts, the description is: The filename of the XML file When the chartType property is set to “Diff”, the description is: The filename of the 1st XML file	No	Blank
filename2	The filename of the 2nd XML file	No	Blank
noColumnLabel	If checked, all the array contents will be treated as data; otherwise, the first row will serve as the column labels.	Yes	false
options	The options parameter to the draw() API of the Google Visualization Chart To know more about the draw() API, please see the https://developers.google.com/chart/interactive/docs/drawing_charts#chart.draw link.	Yes	ENV.returnValue = {};
queryString	To non-Diff charts, the description is: The query string to the datasource web service When the chartType property is set to “Diff”, the description is: The query string to the 1st datasource web service	No	Blank
queryString2	The query string to the 2nd datasource web service	No	Blank
sqlVariable	To non-Diff charts, the description is: Values to use in the SQL database query When the chartType property is set to “Diff”, the description is: Values to use in the 1st SQL database query	Yes	ENV.returnValue = {};
sqlVariable2	Values to use in the 2nd SQL database query	Yes	ENV.returnValue = {};
subChartType	Selection of Google Visualization charts	No	Blank
tableFileName	To non-Diff charts, the description is: The name of the file where the table object instance is defined When the chartType property is set to “Diff”, the description is: The name of the file where the 1st table object instance is defined	No	When the dataSourceType is set to “Dynamic Table”, the default value is: tables_dynamic.txt When the dataSourceType is set to “Static Table”, the default value is: tables_static.txt
tableFileName2	The name of the file where the 2nd table object instance is defined	No	When the dataSourceType is set to “Dynamic Table”, the default value is: tables_dynamic.txt When the dataSourceType is set to “Static Table”, the default value is: tables_static.txt
tableName	To non-Diff charts, the description is: The name of the query table	No	Blank

	When the chartType property is set to “Diff”, the description is: The name of the 1st query table		
tableName2	The name of the 2nd query table	No	Blank
tableScript	To non-Diff charts, the description is: The chart data population method via the Google-specified DataTable scripts; the corresponding data table constructed from scripts will serve as the data parameter to the draw() API of the Google Visualization Chart. (To know more about DataTable scripts, please see the https://developers.google.com/chart/interactive/docs/datatables_dataviews#emptytable link.) When the chartType property is set to “Diff”, the description is: The chart data population method via the Google-specified DataTable scripts; the corresponding data table constructed from scripts will serve as the 1st data parameter to the computeDiff() API of the Google Visualization Chart.	Yes	Blank
tableScript2	The corresponding data table constructed from scripts will serve as the 2nd data parameter to the computeDiff() API of the Google Visualization Chart.	Yes	Blank
url	To non-Diff charts, the description is: The URL of the datasource web service When the chartType property is set to “Diff”, the description is: The URL of the 1st datasource web service	No	Blank
url2	The URL of the 2nd datasource web service	No	Blank
version	Set to 'Modern' to use the Google Visualization charts; set to 'Classic' to use the chart prior to Axes version 3.1.1.	No	Modern

Notes, Comments and Warnings

To use this extension, you **must** be familiar with Google visualization charts.
Information about Google visualization charts can be found at:
`https://developers.google.com/chart/interactive/docs/`
This extension provides access to the javascripts required to invoke Google Visualization APIs.

chartType property
As of this current date, charts that are available from the Google developer website are the following:
annotation chart, area chart, bar chart, bubble chart, calendar chart, candlestick chart, column chart, combo chart, diff charts, donut chart, gantt chart, gauge chart, geo chart, histogram, interval, line chart, map, org chart, pie chart, sankey chart, scatter chart, stepped area chart, table chart, timeline, tree map, trendline, waterfall chart, word tree
All these charts are supported in the extension. Selection of chart can be made by setting the chartType property.

dataSourceType property
The 3 basic data sources from Axes are utilized in this extension, namely Static Table, Dynamic Table and XML file. (To review this Axes notes, please refer to the dataSourceType paragraph of the Extension_axDropDown.pdf document.)
Other data sources made available in this extension are: Fixed Array (Google Array Format), Fixed Table (Google DataTable Script) and Google Data Query.
Thus, all in all there are 6 data sources available in this extension.
The usage of the Static and Dynamic Tables are the same as that of the usage described in the document of the dropdown extension. Basically, a user of the Axes developer would depend on the table file, table name, SQL variable, and the table query definition defined either in Static Tables or Dynamic Tables found in the project files.

An example illustrating the usage for the Static Table is given in the following steps.

axGoogleChart_Classic – Insert a Google Chart into screen

Description

axGoogleChart allows to embed of a Google Chart into your screen.

By using this extension you will be subject to the Google Terms of Service as outlined in http://code.google.com/apis/chart/terms.html

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
sourceParmString	The source of the parameters to add to the google chart URL.	No	Table
tableName	For **sourceParmString** = table, supply the table name where to get the parameter URL information from. This must be the same name as the one specified in the getTable() call – see **onLoadChart** and examples. And make sure that the **table name used does not exist in static and dynamic table files** to avoid conflict with other extensions. Please refer to Notes.	No	Blank
userString	For **sourceParmString** = User String, supply a valid string to append to the Google Chart URL as parameters.	No	Blank
appendString	For **sourceParmString** = table, append this string to the URL parameters.	No	Blank
onLoadChart	Code to execute prior to invoking the Google Chart URL.	Yes	Blank
type	The type of Google Chart. Maps to the **cht=** Google chart parameter.	No	Blank
colors	The colors to apply to the chart. Maps to the **chco**= Google chart parameter and **must be specified according to its rules**.	No	Blank
legends	Chart legends. Maps to the **chdl=** Google chart parameter and **must be specified according to its rules**.	No	Blank
axis	Chart axes to show. Maps to the **chxt=** Google chart parameter and **must be specified according to its rules**.	No	x
title	The title of the Google Chart.	No	Blank

Notes, Comments and Warnings

To use this extension you **must** be familiar with Google charts.

Information about Google charts can be found at: `http://code.google.com/apis/chart`

This extension provides a mechanism to build the URL parameter string to append to the Google Chart URL. In other words, given the Google Chart URL

`http://chart.googleapis.com/chart`

this extension appends the `?<parameters>` to it.

As such it relies on the functionality provided by the Google Chart API.

There are 2 ways to build the parameters based on the value of the **sourceParmString** property.

Setting the **sourceParmString** to **User String** requires the user to enter the entire string to append to the URL in the **userString** parameter.
The only property that is evaluated when choosing **User String** is **userString.**

When **sourceParmString** is set to **Table** the user must create and fill a table using the **onLoadChart** property and specify its name in the **tableName** property. The table row object must conform to this structure:

Property Name	Type	Mandatory	Description
chartData	String	Yes	The data used by Google to draw the chart. Google Parameter: **chd** **Note: this extension implements only chd=t**
dataSet	String	No	A string to identify a dataSet. Required only when the chart is made of more than one set of data.
chartLabel	String	No	A label for the chartData

When the value specified in **tableName** property is the same as those defined in static and dynamic table files (e.g. tables_static.txt), this extension deletes all the rows of that table then replaces it with the data specified in the script of **onLoadChart** property. If in any case, another extension like dropdown or google chart (modern) uses the same table, table-related errors occur. If this happens, specify a different name to **tableName** and **onLoadChart** property of this extension, save and then sign off and open the project again to reload the static and dynamic table files.

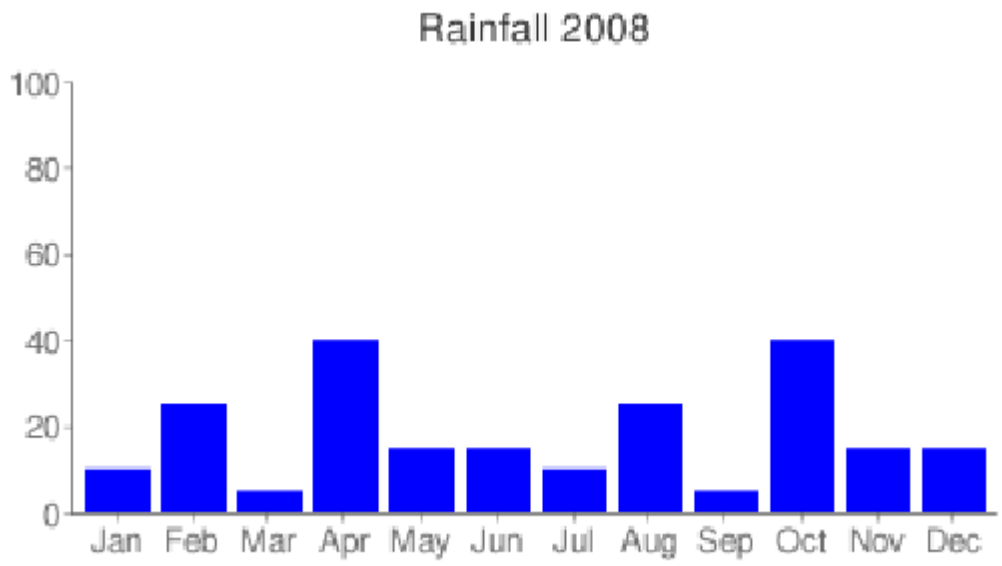
Here is some sample code to put into the onLoadChart property. This code creates a table called `Rainfall` by month …

```
var t1 = TABLEMANAGER.getTable("Rainfall");

t1.insertChild ({chartData:"10",chartLabel:"Jan"});
t1.insertChild ({chartData:"25",chartLabel:"Feb"});
t1.insertChild ({chartData:"5",chartLabel:"Mar"});
t1.insertChild ({chartData:"40",chartLabel:"Apr"});
t1.insertChild ({chartData:"15",chartLabel:"May"});
t1.insertChild ({chartData:"15",chartLabel:"Jun"});
t1.insertChild ({chartData:"10",chartLabel:"Jul"});
t1.insertChild ({chartData:"25",chartLabel:"Aug"});
t1.insertChild ({chartData:"5",chartLabel:"Sep"});
t1.insertChild ({chartData:"40",chartLabel:"Oct"});
t1.insertChild ({chartData:"15",chartLabel:"Nov"});
t1.insertChild ({chartData:"15",chartLabel:"Dec"});
```

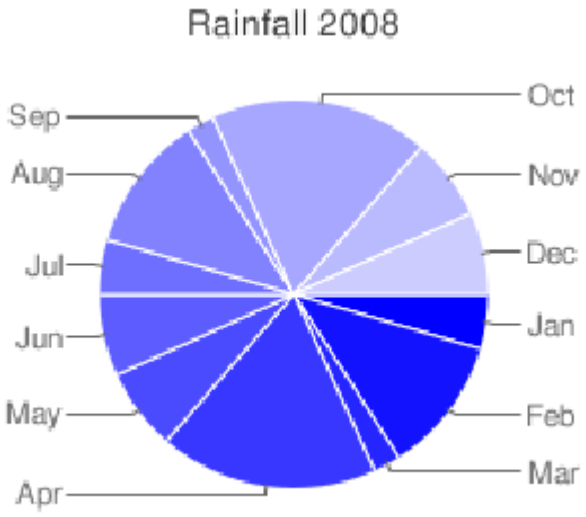
Together with these Chart properties …

tableName	Rainfall
type	bvs
colors	0000FF
axis	x,y
title	Rainfall+2008

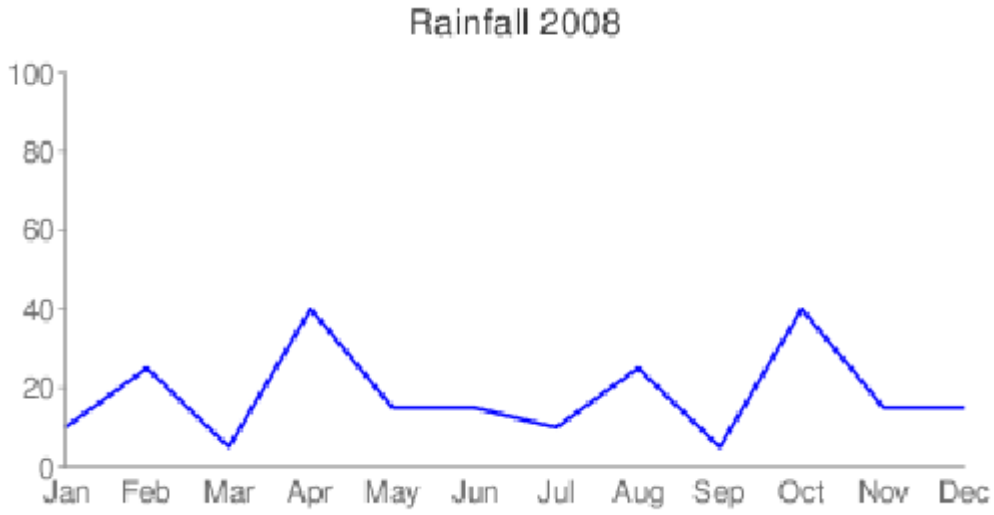
produce this chart:



To produce a Pie chart with the same data set the Type property to **p**



For a line chart set the Type property to **lc**



Using more than one data set.

To show more than one data set you must identify the row being inserted as belonging to a specific set. To do this use the optional **dataSet** property.

We can extend the above example by adding the Rainfall for the year 2007. First we would have to add the **dataSet** to the existing 2008 data:

```
t1.insertChild ({dataSet:"A",chartData:"10",chartLabel:"Jan"});
t1.insertChild ({dataSet:"A",chartData:"25",chartLabel:"Feb"});
t1.insertChild ({dataSet:"A",chartData:"5",chartLabel:"Mar"});
t1.insertChild ({dataSet:"A",chartData:"40",chartLabel:"Apr"});
t1.insertChild ({dataSet:"A",chartData:"15",chartLabel:"May"});
t1.insertChild ({dataSet:"A",chartData:"15",chartLabel:"Jun"});
t1.insertChild ({dataSet:"A",chartData:"10",chartLabel:"Jul"});
t1.insertChild ({dataSet:"A",chartData:"25",chartLabel:"Aug"});
t1.insertChild ({dataSet:"A",chartData:"5",chartLabel:"Sep"});
t1.insertChild ({dataSet:"A",chartData:"40",chartLabel:"Oct"});
t1.insertChild ({dataSet:"A",chartData:"15",chartLabel:"Nov"});
t1.insertChild ({dataSet:"A",chartData:"15",chartLabel:"Dec"});
```

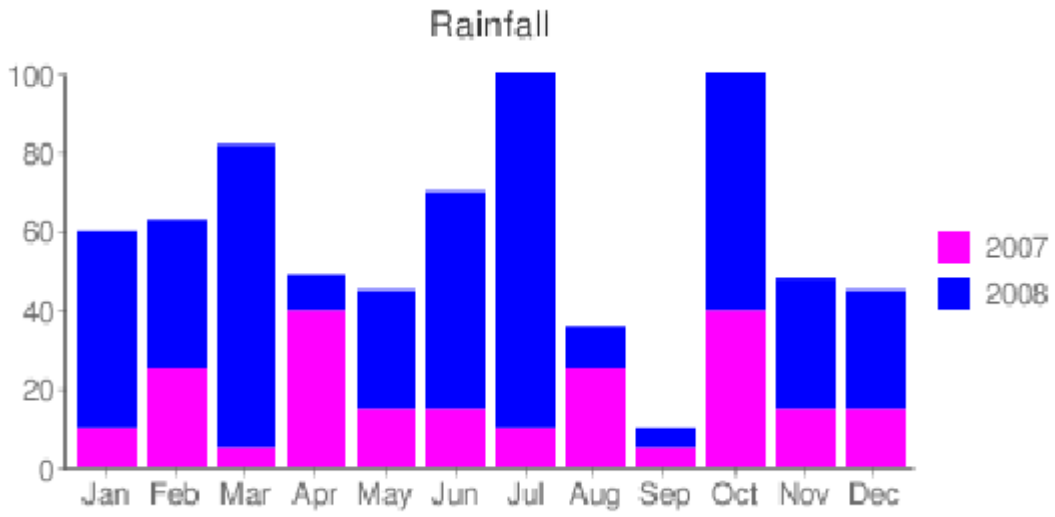
Next we add the second set using a different identifier than the "A" used above. Note also that we don't to specify chart labels:

```
t1.insertChild ({dataSet:"B",chartData:"50"});
t1.insertChild ({dataSet:"B",chartData:"38"});
t1.insertChild ({dataSet:"B",chartData:"77"});
t1.insertChild ({dataSet:"B",chartData:"9"});
t1.insertChild ({dataSet:"B",chartData:"30"});
t1.insertChild ({dataSet:"B",chartData:"55"});
t1.insertChild ({dataSet:"B",chartData:"90"});
t1.insertChild ({dataSet:"B",chartData:"11"});
t1.insertChild ({dataSet:"B",chartData:"5"});
t1.insertChild ({dataSet:"B",chartData:"66"});
t1.insertChild ({dataSet:"B",chartData:"33"});
t1.insertChild ({dataSet:"B",chartData:"30"});
```

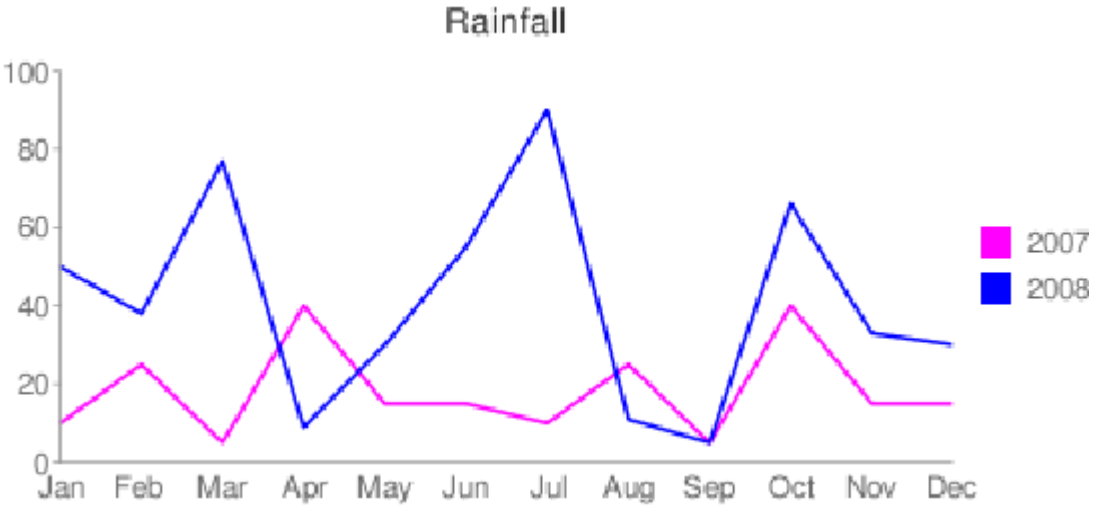
Using the **legends** property we can add a legend for the 2007 and 2008 sets, change the **title** and add a color to the **colors** property for the second set like this:

colors	FF00FF,0000FF
legends	2007|2008
title	Rainfall

Result for the Bar Chart (**type** bvs):



Result for the Line Chart (**type** lc):



Pie charts are not suitable to display more than one data set.

See Also

Example – Dynamic Google Chart 1 in Tutorial 11 - FAQ and Examples

Example – Dynamic Google Chart 2 in Tutorial 11 - FAQ and Examples

axGraphPaper – Place Graph Paper on Screen

Description

axGraphPaper draws graph paper over or under the current 5250 screen.

It is designed to assist aXes developers in laying out screens by providing a layout grid for them to work from.

axGraphPaper only functions in design mode.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	No
Whole Screen	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
lineColor	The color of the graph paper lines. Specify as a valid HTML color.	No.	DarkGray
lineStyle	The style of the graph paper lines - solid, dotted or dashed.	No.	dotted
graphSize	The size of the graph paper squares in pixels. Default is 10. Must be in range 5 through 200.	No.	10
graphStyle	The style of the graph paper lines. Specify as horizontal, vertical or both.	No.	Both
graphLocation	The location of the graph paper lines. Specify as at the front or at the back of the 5250 display.	No.	Front

Notes, Comments and Warnings

Theoretically, this eXtension should be removed from customized screens before they are deployed to production systems. No harm will come from not doing this as the graph paper eXtension will only display itself when executed in design mode.

See Also

Using Screen Graph Paper

axGroupBox – Insert a group box into screen

Description

axGroupBox allows a group box to be inserted into the 5250 screen.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

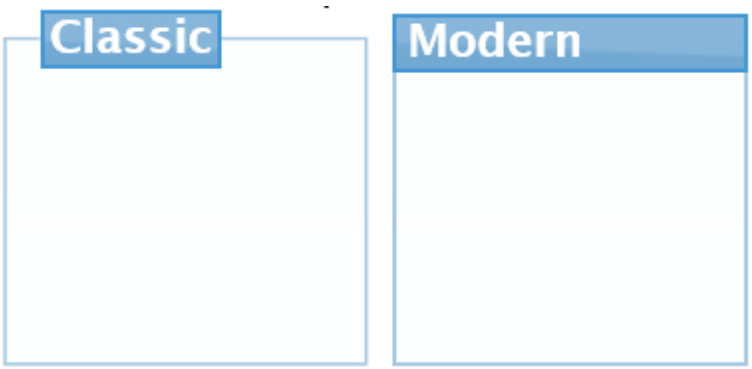
Name	Description and Comments	JavaScript	Shipped default
caption	Specifies the caption or title to be used for the group box.	Yes. Must return a string.	axGroupBox
style	Additional style properties that should be applied to the group box and its caption.	Yes. Must return a valid style object.	None.
contentStyle	The style that will be applied to the content area of the GroupBox. Note: This is for the jQuery version only and it will not apply to extensions on top of the GroupBox.	Yes. Must return a valid style object.	None.
look	Specifies the overall look of the group box as class or modern. The colors and gradients used by the modern look check box are determined in the same way as the mini-panel header and mini-panel body details are for the axSimpleStripe – Insert a simple stripe into screen.	Yes. Must return a string as "C" (classic) or "M" (Modern).	Classic.

Notes, Comments and Warnings

useJQueryExtensions Application Property

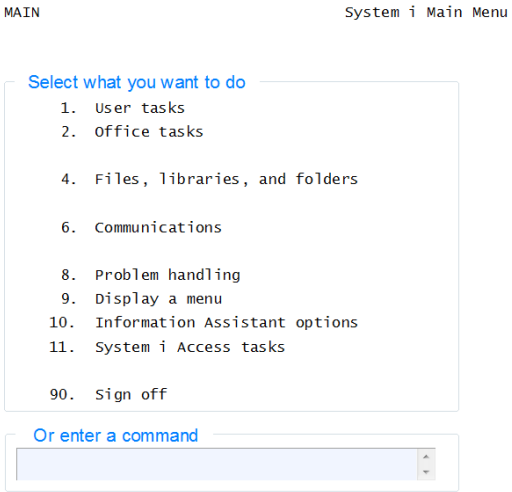
When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property. Basic display for Classic and Modern look:

When **useJQueryExtensions** is checked:

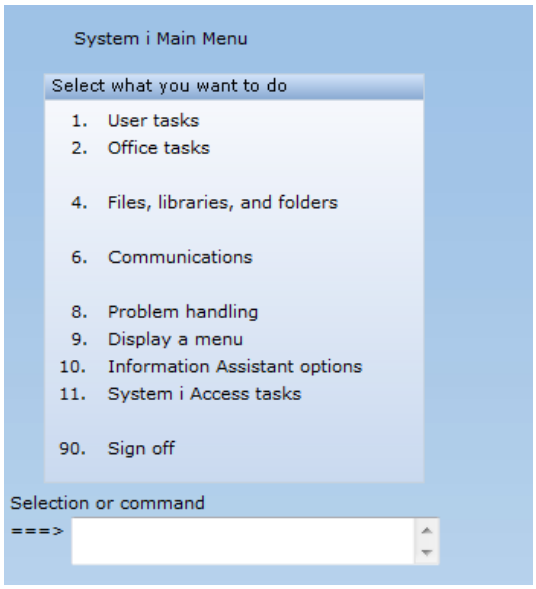


Examples

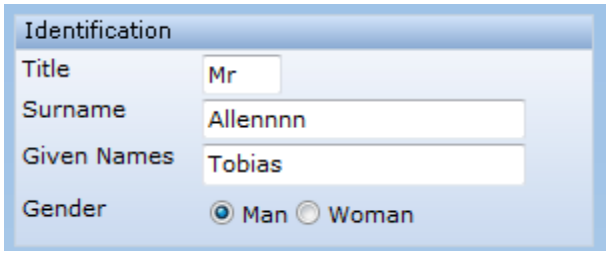
(1). This is an example of two group boxes being used to enhance the OS?400 main menu ...



(2). Here is the same example using the modern group box look



(3). Here are some examples of using the modern group box look to group fields:



See Also

Simple Customization in Tutorial 2 - Basic Screen Enhancement

Group Boxes in Tutorial 3 - Advanced Screen Enhancement

Understanding Screen Sizing and the Thin Red Line in Tutorial 10 - 5250 Screen Styling.

I want to always use the “Modern” look for all my group box eXtensions, can I do this without having to change the “look” property of each group box?

axHTML – Insert raw HTML into screen

Description

axHTML allows a raw HTML string to be inserted into a 5250 screen.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
html	Specifies a string or JavaScript code that defines the HTML element definition(s) to be inserted into the screen. For example: Hello or <table><tr><td>123</td></tr><tr> td>456</td></tr></table>.	Yes. Must return a string.	None.
style	Additional style properties that should be applied to the container of the HTML elements defined by the html property.	Yes. Must return a valid style object.	None.
onScreenReady	JavaScript code that is to be executed every time layout render of all extension is completed.	Yes	None

Notes, Comments and Warnings

None.

Examples

(1). This simple string ...

```
<p style="color:red;font-size:48pt;">Hello World</p>
```

should produce a display like this ...

Hello
World

---

(2). This executable JavaScript ...

```
var oDate   = new Date();
var sResult = "<div>Time is " + oDate.getTime().toString() + "</div>";
ENV.returnValue = sResult;
```

should produce a display like this ...

Time is 1247727497119

(3). Specify this code in the **onScreenReady** property:

```
TRACE("**** MY ONREADY CODE IS EXECUTING. ****");
```

Now execute your aXes application with trace mode turned on.

You should see trace statements indicating that your code has been executed.

axHyperLink – Insert a hyperlink into screen

Description

axHyperLink allows a hyperlink to be inserted into the 5250 screen.

Useability

Context	Supported
Input screen fields	Yes
Output screen fields	Yes
Input subfile fields	Yes
Output subfile fields	Yes
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
caption	The text to appear in the hyperlink.	Yes. Must return a string.	"Link"
mouseOverStyle	CSS to apply to the hyperlink while the mouse is hovered over it.	No.	Blank
onClick	Event that fires when clicking on the hyperlink.	Yes .	window.open('http://www.axeslive.com/' , 'aXes')"
style	CSS to apply to the hyperlink.	No.	Cursor:hand
textAfterLink	The text to appear after the hyperlink.	Yes. Must return a string.	Blank
textBeforeLink	The text to appear before the hyperlink.	Yes. Must return a string.	Blank
mouseOverColor	Deprecated. Use mouseOverStyle instead.	Yes. Must return a string.	Blank
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.
wrapText	Indicates whether to wrap the text of this extension. TS2 only.	Yes. Must return a Boolean.	False.

Notes, Comments and Warnings

The textBeforeLink and textAfterLink properties allow you to create a link that is only a part of the whole field such as "Click here to register."

useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property. Basically, the default font style will be based on the JQuery theme.

See Also

Hyperlinks in Tutorial 3 - Advanced Screen Enhancement

Example – Using a Hyperlink to select a subfile entry in Tutorial 11 - FAQ and Examples

axImage – Insert image into screen

Description

axImage allows an image to be inserted into the 5250 screen.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
style	CSS to apply to the image.	Yes. Must return a valid style object.	Blank
imagePath	Path to locate the image file	No	ts/screens/<private folder>
imageName	Name of the image file	No	Blank
onClick	Event that fires when clicking on the image.	Yes	Blank
onMouseOver	Event that fires when the mouse is hovered on the image.	Yes	Blank
onMouseOut	Event that fires when the mouse pointer moves out of the image.	Yes	Blank
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.
altImageName	The filename of the alternative image file.	No	Blank
altImagePath	Path to locate the alternative image file.	No	ts/screens/<private folder>
altText	Sets the alternate text of the image.	No	'no image'

Notes, Comments and Warnings

The properties - altImageName, altImagePath and altText of this eXtension is only available in the advanced terminal emulator (TS2).

The default display of image extension when added to the screen in TS-2 is as follows:

When the image file specified in the imagePath and imageName properties failed to load, this extension will load the one specified in the altImageName and altImagePath properties.
If both the image files failed to load, the text set in altText property will be displayed instead.

See Also

Images in Tutorial 3 - Advanced Screen Enhancement

axInputboxStyle1 – Insert an HTML input element

Disclaimer

This extension is now deprecated and we advise customers to use axMultitypeInputBox

Description

aXInputboxStyle1 allows a user to add an HTML input element which can be a password, text, file, color, email, or a number

Useability

Context	Supported
Input screen fields	Yes
Output screen fields	Yes
Input subfile fields	Yes
Output subfile fields	Yes
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
value	Indicates the value that a user entered.	No	Blank
style	CSS style to be applied.	Yes. Must return a valid style object.	None.
selectContentOnFocus	When set to true, the whole content will be highlighted when the element receives the focus.	Yes. Must return a Boolean.	True.
inputType	List of HTML input element that can be selected. Values are color, text, password, file, email and number.	Yes	Blank
onChange	Optional. JavaScript code to be executed when the element changes state from unchecked to checked and vice versa.	Yes.	None.
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes.	None.
onBlur	Optional. JavaScript code to be executed when the element loses the focus.	Yes.	None.

Notes, Comments and Warnings

useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property. Basically, the default border and the font styles will be based on the JQuery theme.

axJQueryTheme – Change existing jQuery theme

Description

axJQueryTheme allows Developers to change existing jQuery themes in TS2 using JQuery theme options available and from jQuery website.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	No

Properties

Name	Description and Comments	JavaScript	Shipped default
jqueryTheme	Select from jqueryTheme available options.	No.	DefaultTheme

Notes, Comments and Warnings

TS2 by default is using the jQueryUI smoothness theme. By adding this extension to customize screens, Developers can now change the jQueryUI theme using available options currently shipped with aXes. It does not limit Developer to use available options; it is also possible for the Developer to add additional themes that are available from jQueryUI websites.

How to Add additional jQueryUI theme.

Visit http://jqueryui.com/ click the themes sections, customized or download any existing theme available.

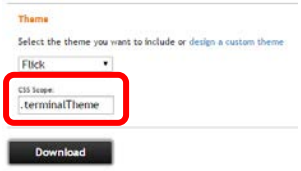
1. Extract the zip files and look for the css folder containing the theme that we will be adding to aXes.
2. Copy the folder containing the selected theme.
   example:
   eggplant
3. Add a prefix "jQtheme_" to the selected theme folder
   Example:
   jQtheme_eggplant
4. Copy the jQtheme_<theme name> folder to /ifs/axes/ts/ts2/css
5. Make sure to set the authorities of all the file inside the jQtheme_<theme name> to *PUBLIC *R authorities. See notes below

Note:
Use the WRKLNK command in your IBM i to ensure that the new file only has *PUBLIC *R authorities.

useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the behaviour and the path being accessed by this extension will change. When the **useJQueryExtensions** is checked, follow the following steps in downloading the JQuery Theme.

Visit http://jqueryui.com/themeroller and customize or download any existing theme available. During download, enter ".terminalTheme" (with the dot) in the CSS Scope input box.



1. Extract the zip files and look for the css folder containing the theme that we will be adding to aXes.

2. Copy the folder containing the selected theme.
   example:
   eggplant
3. Add a prefix “jQtheme_” to the selected theme folder
   Example:
   jQtheme_eggplant
4. Copy the jQtheme_<theme name> folder to /ifs/axes/ts/ts2/css/projectThemes
5. If you want the theme to be used in an existing project only and not on all projects, copy it to the folder /ifs/axes/ts/screens/<project name>/projectThemes where <project name> is the project where you want to use this particular theme.
6. Make sure to set the authorities of all the file inside the jQtheme_<theme name> to *PUBLIC *R authorities. The note mentioned above also applies for this.

Using the JQuery extension version of this extension, the theme set in the **jqueryTheme** will only be applied into the screen where this extension is added. Moving to another screen that does not contain this extension will apply the JQuery theme that is set in the Application->Styling->jqueryTheme property. This will allow different screens to have its own JQuery theme.

See Also

N/A

axKeypad – provides a jQuery keypad

Description

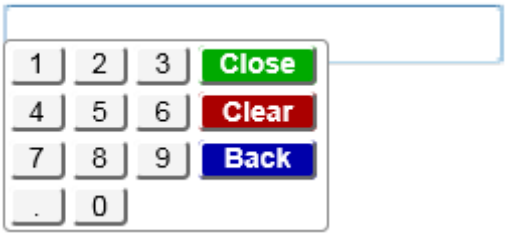
This is a text element which attaches a default jQuery keypad with a decimal character.

Properties

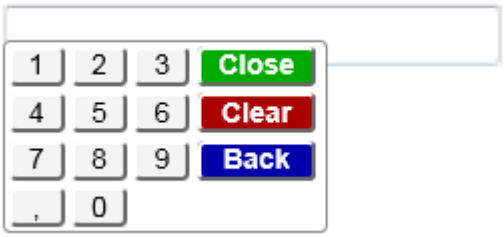
Name	Description and Comments	JavaScript	Shipped default
value	Initial element value to be displayed.	Yes. Must return a string.	None.
style	Additional style properties that should be applied to the element.	Yes. Must return a valid style object.	None.
maxInputLength	If specified, this will set the maximum number of characters that can be entered.	Yes. Must return a number.	0
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes.	None.
onBlur	Optional. JavaScript code to be executed when the element lost the focus.	Yes.	None.
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.
layout	The keypad layout to be applied. Comma separated strings can be inputted or an array of string in the script editor. TS2 only.	Yes. Must return an array of strings.	None.
prompt	The text that will displayed on top of the keypad. TS2 only.	Yes. Must return a string.	None.
allowKeyboardInput	Indicate whether entry by keyboard is enabled. TS2 only.	Yes. Must return a Boolean.	False.
randomise	Indicate whether to randomise the keys' positions on every show of the keypad. TS2 only.	Yes. Must return a Boolean.	False.

Notes, Comments and Warnings

When language is set to non-French, the following keypad eXtension with decimal point character will be displayed:



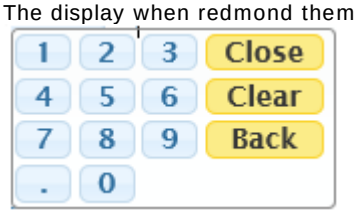
And if set to French, the following keypad eXtension with the comma character as the decimal point will be displayed:



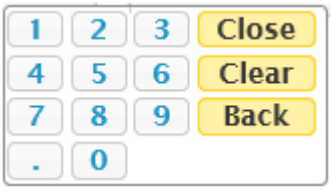
useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property. Unlike the Basic extension which only uses the smoothness theme, when the **useJQueryExtensions** property is checked, the theme of this extension will also change by applying the JQuery theme that is set in the **jqueryTheme** property.

The display when redmond theme is set:

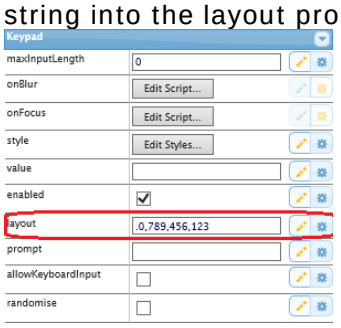


The display when ui-lightness theme is set:

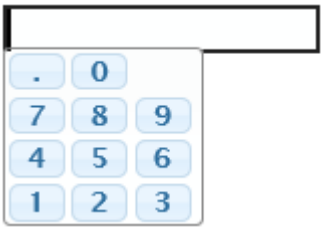


layout Property

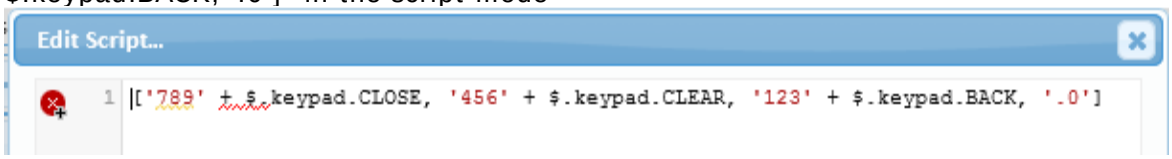
The **layout** of the keypad can be changed using this property. Setting the ".0,789,456,123" string into the layout property



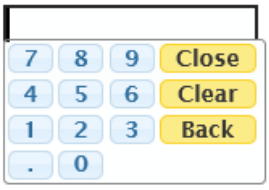
will result in the extension being display this way:



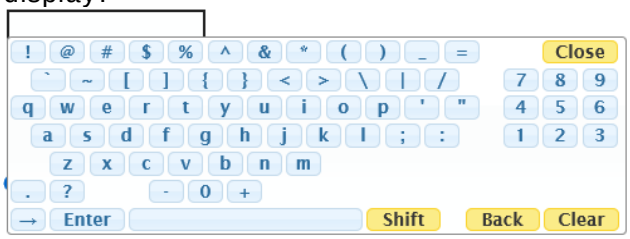
Setting the following values "['789' + $.keypad.CLOSE, '456' + $.keypad.CLEAR, '123' + $.keypad.BACK, '.0']" in the script mode



will result in the keypad being display this way:



Setting the value "$.keypad.qwertyLayout" in the script mode will result in the following display:



$.keypad.qwertyLayout is a jQuery constant that indicates to the keypad to use the standard QWERTY layout when displaying the keypad. Other constants that can be use are the following:

$.keypad.numericLayout: Standard numeric layout
$.keypad.qwertyAlphabetic: Standard US keyboard alphabetic layout
$.keypad.qwertyLayout: Standard US keyboard layout

For special key markers, the following can be used:

$.keypad.CLOSEt: Close button
$.keypad.CLEAR: Clear button
$.keypad.BACK: Back button
$.keypad.SHIFT: Shift button
$.keypad.SPACE_BAR: Space bar button
$.keypad.ENTER: Enter button
$.keypad.SPACE: Empty space
$.keypad.HALF_SPACE: Empty half space

axLabel – Insert label into screen

Description

axLabel allows a text label to be inserted into the 5250 screen.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
text	Specifies a string or JavaScript code that text to be inserted into the label.	Yes. Must return a string.	axLabel
style	Additional style properties that should be applied to the container of the label.	Yes. Must return a valid style object.	None.
onClick	Optional JavaScript code to be executed when the user clicks on the label	Yes.	None.
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.
wrapText	Indicates whether to wrap the text of this extension. TS2 only.	Yes. Must return a Boolean.	False.
onScreenReady	JavaScript code that is to be executed every time layout render of all extension is completed.	Yes	None
sizeToText	Indicates whether the label should size to its content.	Yes	False

Notes, Comments and Warnings

useJQueryExtensions Application Property
When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property. Basically, the font style will be based on the JQuery theme.

Examples

(1). If this string is used as **text** ….

```
Hello World
```

should produce a display like this …

Hello World

---

(2). If this **style** is added to the preceding example …

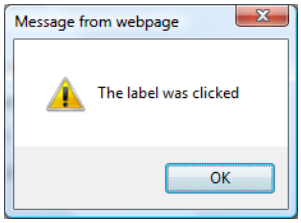
```
color:red;
```

it should produce a result like this …

(3). If this **onClick** code is added style is added to the preceding example …

```
window.alert("The label was clicked");
```

then clicking on the label should produce a result like this:



(4). If the IBM i Main Menu screen has been identified, and the command entry field has been named "Command", then these axLabels are added to it:

Text	onClick
Click here for output queue QPRINT	FIELDS("Command").setValue("WRKOUTQ QPRINT"); SENDKEY("Enter");
Click here for job queue QBATCH	FIELDS("Command").setValue("WRKJOBQ QBATCH"); SENDKEY("Enter");

Then the command entry screen should look something like this …

```
MAIN                                System i Main Menu
                                                          System:      LANSA07
Select one of the following:

                                                   Click here for output queue QPRINT
      1.  User tasks                               Click here for job queue QBATCH
      2.  Office tasks

      4.  Files, libraries, and folders

      6.  Communications
```

When you click on the labels the commands WRKOUTQ QPRINT, or WRKJOB QBATCH are entered, and the enter key is sent.

In effect these labels act as command short cuts by allowing commonly used commands to be executed with a single click. This adds value to the application by making it easier to use.

(5). Specify this code in the **onScreenReady** property:

```
TRACE("**** MY ONREADY CODE IS EXECUTING. ****");
```

Now execute your aXes application with trace mode turned on.

You should see trace statements indicating that your code has been executed.

See Also

Moving Things Around and Changing Labels and Captions in Tutorial 3 - Advanced Screen Enhancement

axMessageHandler – Read and Display Messages from the 5250 Screen

Description

axMessageHandler allows messages to be read from the 5250 screen and displayed in a control. If there is more than one message, that is the more messages indicator is found on the message line, the Next Message button is enabled. Hitting the Next Message button will read and display the next message in the message handler.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
lineNumber	The number of the line on the 5250 screen that displays messages.	No	22
moreIndicator	The list of markers that indicate that there are more messages.	No	"+"
style	The style of the Message Handler.	No	blank
prevOnClick	The JavaScript code to execute when the previous message button is clicked.	Yes	`SET5250CURSORPOS(this.getPropertyValue("lineNumber"),1);` `SENDKEY("PageUp");`
nextOnClick	The JavaScript code to execute when the next message button is clicked.	Yes	`SET5250CURSORPOS(this.getPropertyValue("lineNumber"),1);` `SENDKEY("PageDown");`
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.
addTerminalMsg	If set to true, the terminal messages, usually displayed in the status bar, are added after the line messages. TS2 only.	Yes. Must return a Boolean.	False.

Examples

Insert a Message Handler into the *Maintain Employee Information* screen of the aXes Demo HR system.

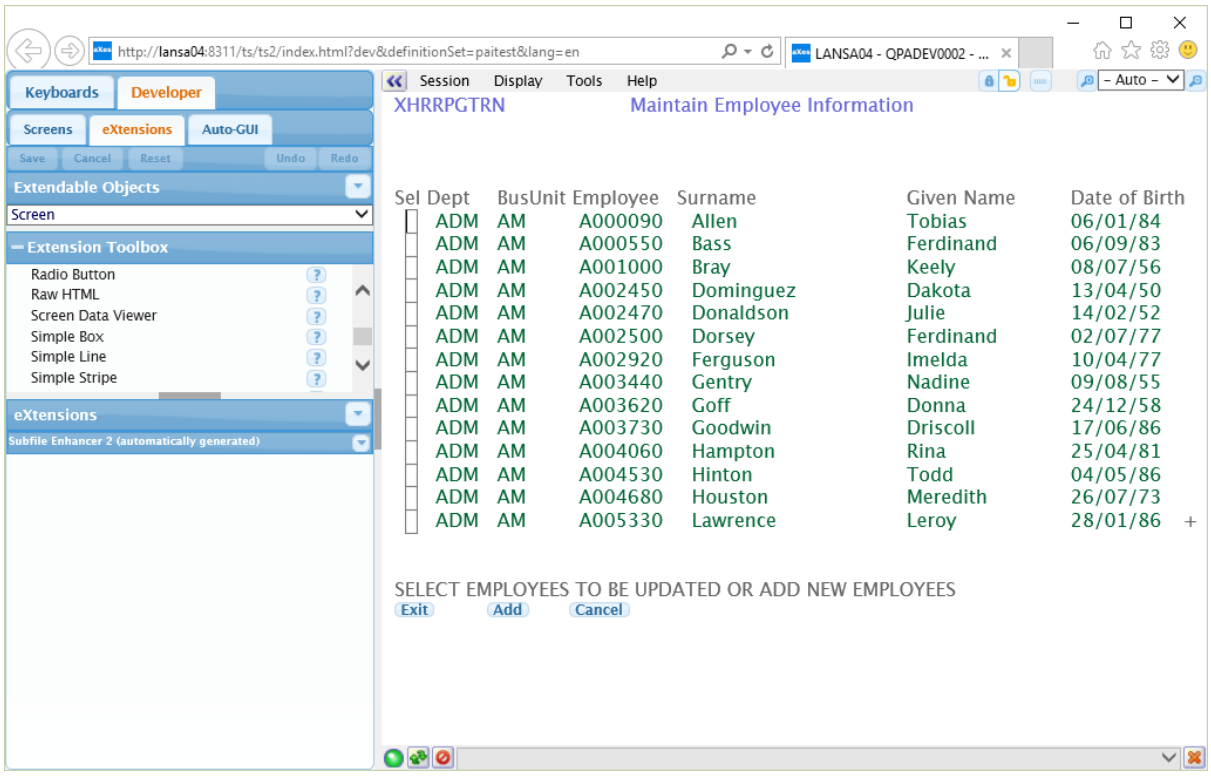
Step 1: Open the *Projects Home Page*. Select your project and then use the *Work as a TS2 Developer* option and sign on to a 5250 session.

Step 2: Start the shipped aXes demo system by entering the commands:

ADDLIBLE AXESDEMO

CALL XHRRPGTRN

The resulting 5250 screen should look something like this:



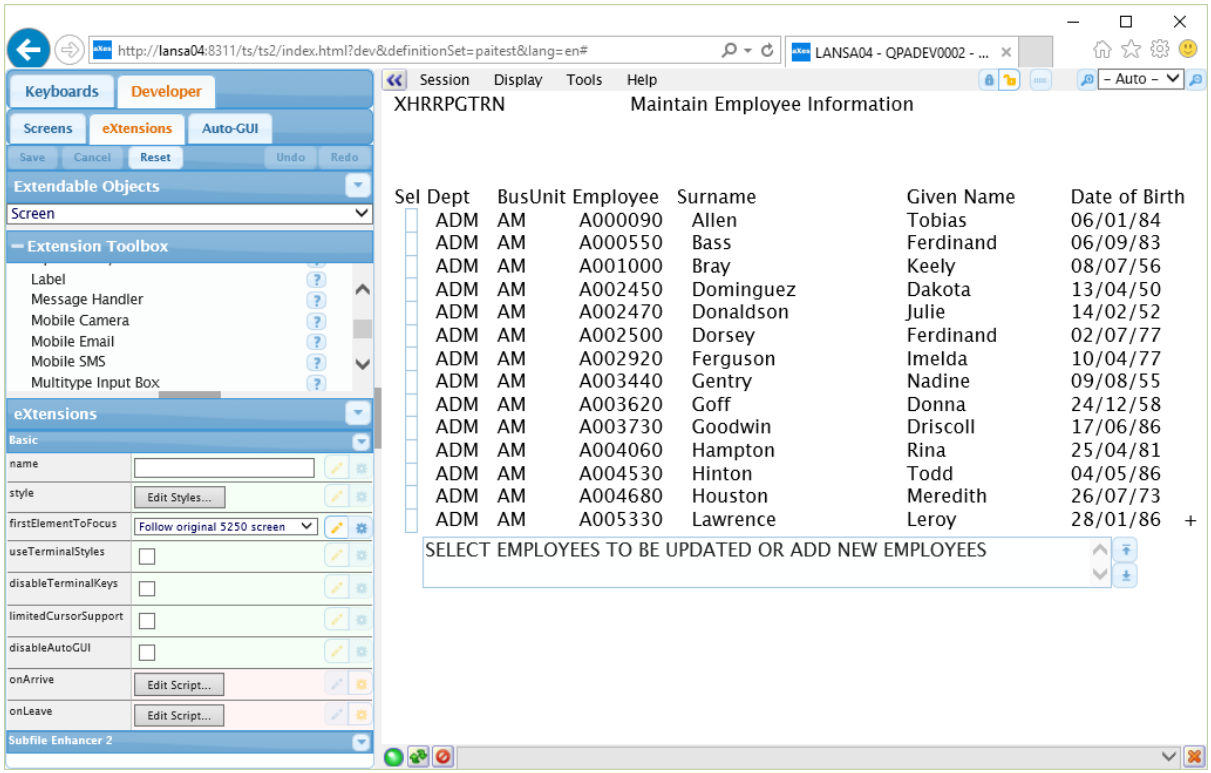
Step 3: Lock the screen for edit.

Step 4: Add an axMessageHandler eXtension. (drag and drop in a empty part of the screen)

Step 5: Select the message text on line 22 and uncheck its “Visible” property option so that it no longer appears.

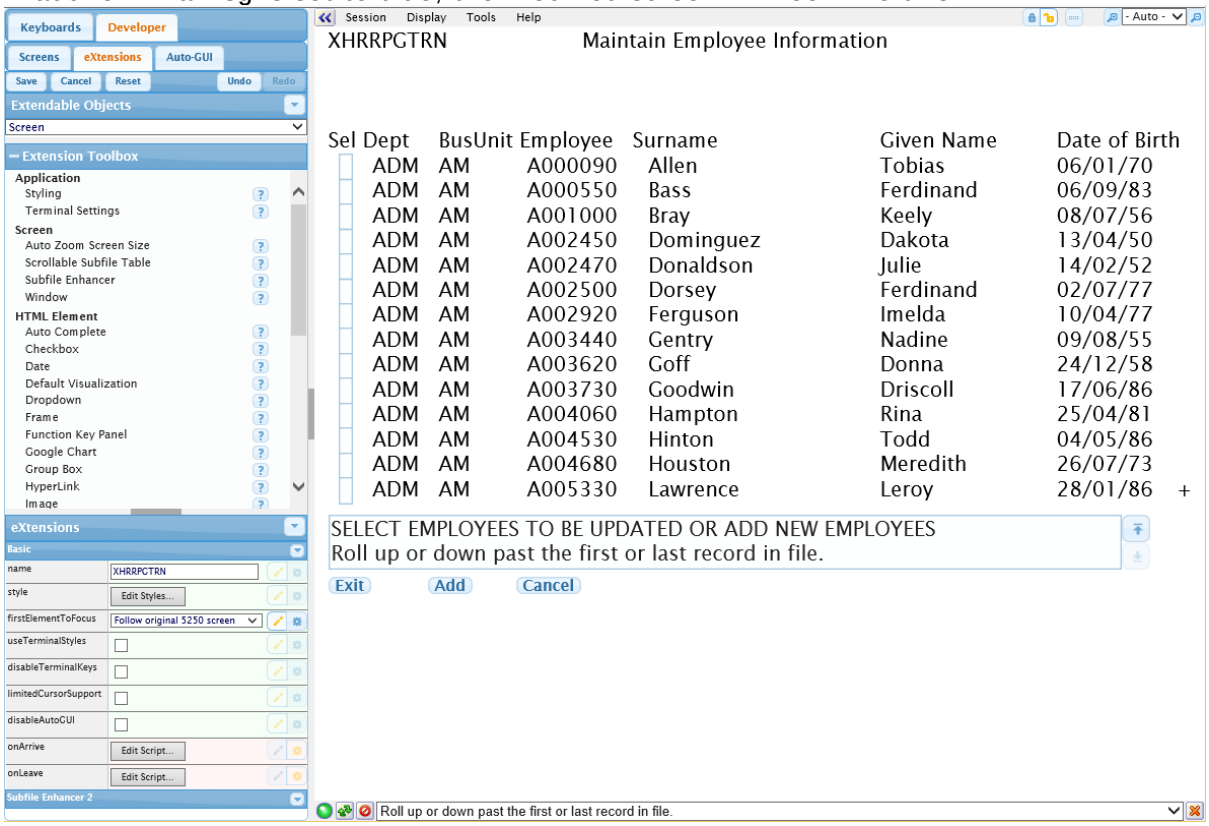
Save your changes.

The modified screen should look something like this:



The display of the Up and Down button will change if the **useJQueryExtensions** Application Property is checked. When this property is checked, the Up and Down button will be displayed as a JQuery themeable button and the style will depend on the JQuery theme that is set in the Application->Styling->jqueryTheme property.

If addTerminalMsg is set to true, the modified screen will look like this.



axMobileCamera – Insert camera functionality into screen

Description

axMobileCamera allows a mobile device's camera to set the image to be displayed on the 5250 screen.

Useability

Context	Supported
Input screen fields	No
Output screen fields	Yes
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes
Axes Mobile Execution	Only

Properties

Name	Description and Comments	JavaScript	Shipped default
caption	Specifies the text that is to appear on the image. The text will be displayed depending on the device.	Yes. Must return a string.	Mobile Camera.
sizeToField	Indicates whether the image should be sized to fill its containing field or automatically sized to match its content.	Yes. Must return a Boolean.	True.
style	Additional style properties that should be applied to the button.	Yes. Must return a valid style object.	None.
allowsEditing	Indicates whether the editing function of the camera will be enabled. The editing features are device specific.	Yes. Must return a Boolean.	True.
enableAnnotation	Indicates whether taking a photo from the existing gallery and functionality to do annotation is enabled. When set to false, only taking photo using the camera will be enabled.	Yes. Must return a Boolean.	True.
saveToPhotoGallery	Indicates whether any photo chosen or taken using the camera will be saved to the device's gallery or not.	Yes. Must return a Boolean.	False.
imagePath	Path to save the image file	Yes. Must return a string.	`/media`
imageName	Name of the image file	Yes. Must return a string.	None
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

Notes, Comments and Warnings

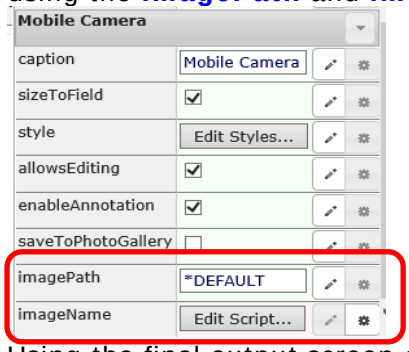
Some of the functionality of this extension is dependent on the device (for example **allowsEditing** and **caption**) just like the operation and screens. So these functions vary from device to device.
The extension display is very similar to the axImage component with added functionality similar to the axPushButton. Touching/Clicking the image will automatically launch the Camera application of the device.
When **saveToPhotoGallery** is true and **enableAnnotation** is true, even choosing an existing photo from the Gallery will automatically save another copy of that photo in the Gallery.
When **enableAnnotation** is set to false, it will not be possible to choose an existing photo from the Gallery when the camera application is launched. Only taking pictures using the camera will be allowed.
The **imagePath** is a local folder on the device in which the **imageName** will be saved.
When an image is taken or selected using the axMobileCamera extension, the image will

be saved locally to the **imagePath** + "/" + **imageName** location. Therefore, when viewing it on the PC, any saved images will not be viewable. Note that the **imagePath** should not contain any trailing slash ("/") characters.
The function to capture video is not currently available.

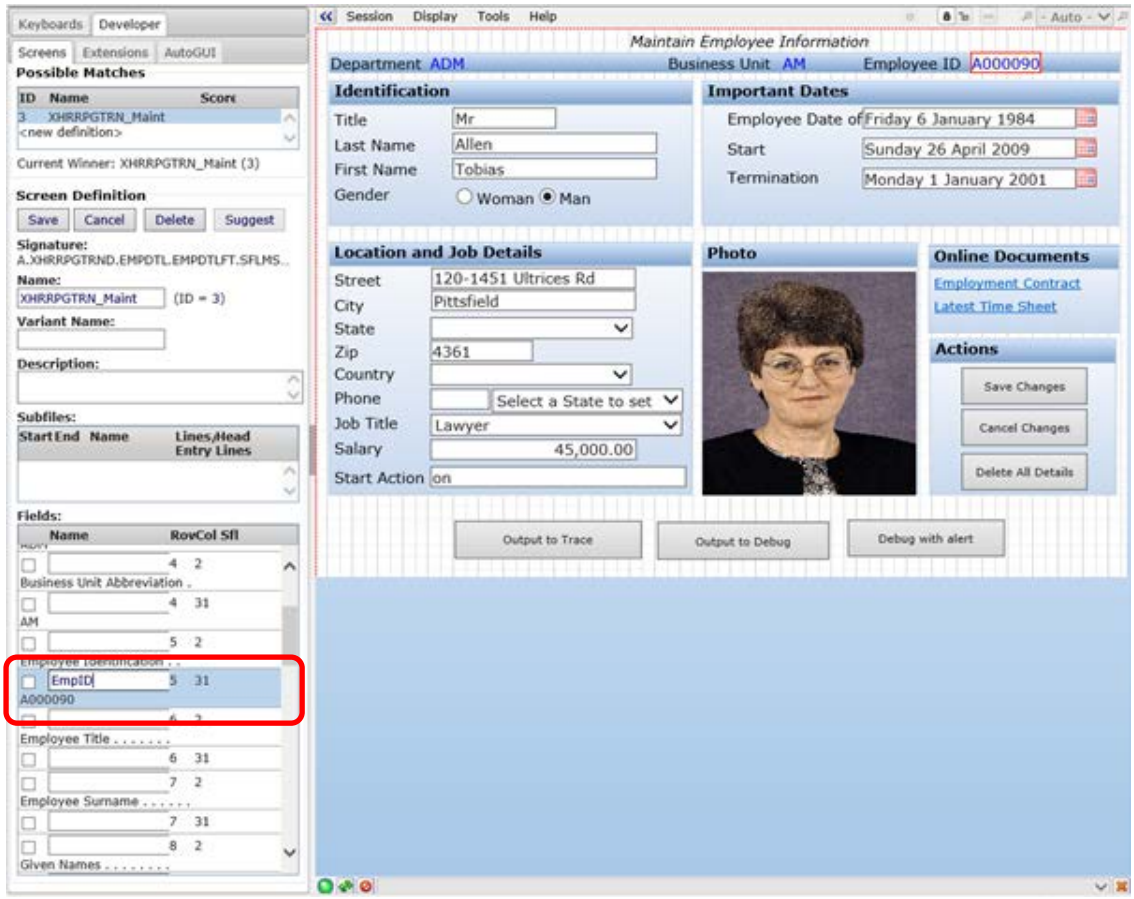
useJQueryExtensions Application Property
When the **useJQueryExtensions** property of the Application is checked, a border will appear around the image when the mouse is hovered over it. The style of the border will be based on the theme that was set in the Application's **jqueryTheme** property.
The following shows the aXes logo image when the mouse is hovered over it:

Examples

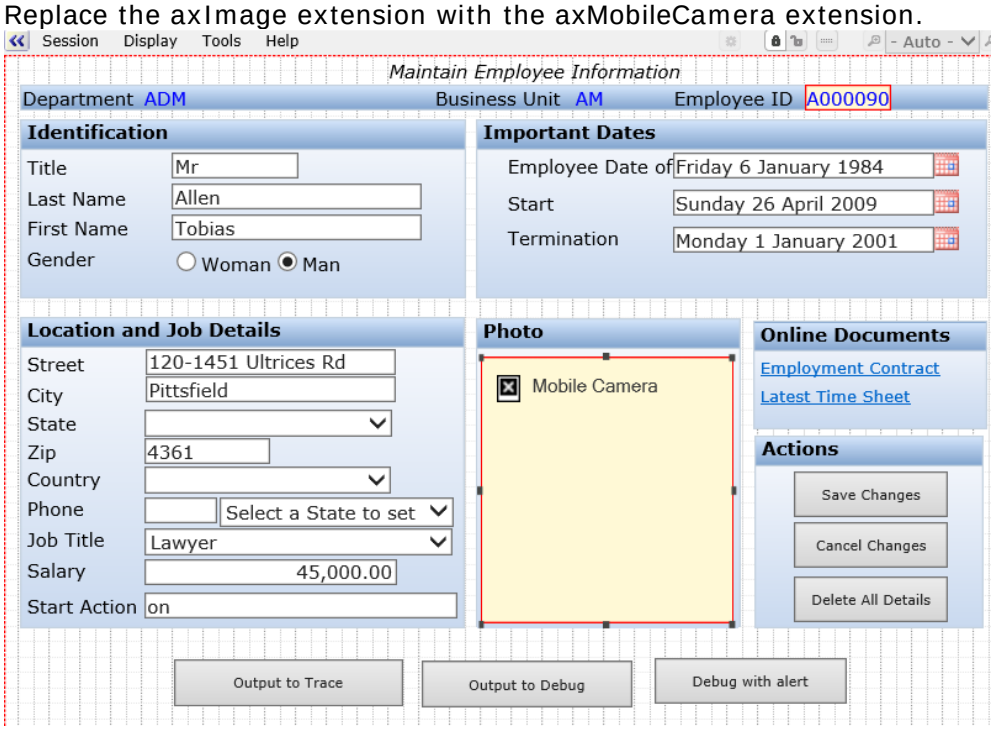
Just like the axImage extension, the location of the image to be displayed can be set using the **imagePath** and **imageName** properties.



Using the final output screen of the eXtensions Tutorial 3 – Advanced Screen Enhancement, in Developer mode, set the name of the employee ID field to EmpID.



Replace the axImage extension with the axMobileCamera extension.



Set the **imageName** property with this code:

```
FIELDS("EmpID").getValue() + ".jpg";
```

Access the definition set you used above using aXes Mobile and tap on the axMobileCamera image.

Choose or take a photo and use it. The photo will be displayed inside the axMobileCamera extension.

Log out and view the screen again. The photo you have set will still be displayed inside the axMobileCamera extension.

See Also

Tutorial 3 - Advanced Screen Enhancement

axMobileSendEmail – Send an email via Axes Mobile

Description

axMobileSendEmail provides the ability to send an email using a mobile device via Axes Mobile.

Useability

Context	Supported
Input screen fields	No
Output screen fields	Yes
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes
Axes Mobile Execution	Only

Properties

Name	Description and Comments	JavaScript	Shipped default
caption	Specifies the text that is to appear on the axMobileSendEmail button.	Yes. Must return a string.	"Mobile Email".
style	Additional style properties that should be applied to the axSMS.	Yes. Must return a valid style object.	None.
sizeToField	Indicates whether this button should be sized to fill its containing field or automatically sized to match its content.	Yes.	True.
messageText	Specifies the message of the email to be sent to the recipient.	Yes.Must return a string.	None.
recipient	Specifies the recipient's email address. Multiple addresses can be separated by a semicolon.	Yes. Must return a string.	None.
ccAddress	Specifies the email address of the person to receive a carbon copy of the message. Multiple addresses can be separated by a semicolon.	Yes. Must return a string.	None.
bccAddress	Specifies the email address of the person to receive a blind carbon copy of the message. Multiple addresses can be separated by a semicolon.	Yes. Must return a string.	None.
subject	Indicates the subject of the email to be sent.	Yes. Must return a string.	None
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes.	None.
onBlur	Optional. JavaScript code to be executed when the element lost the focus.	Yes.	None.
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

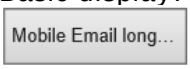
Notes

The display and behaviour of the email application that will launch when clicking this extension will depend on the device.

useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the display of will change according to the theme that was set in the Application's **jqueryTheme** property.

Basic display:



When **useJQueryExtensions** is checked:

In order to be able to use this extension on iOS, the user needs to have setup a mail account in Settings > Mail, Contacts, Calendars.

Examples

On the System i Main Menu, add the axMobileSendEmail extension to the screen.
Type a message inside **messageText**, for example “This is a test email from axes Mobile.”
Input valid email addresses for the **recipient**, **ccAddress** and **bccAddress**. You can specify multiple addresses by separating them with a semicolon.
Type an email subject in the **subject** property, for example “axMobileSendEmail test”.
Save your work and access the project using any mobile device.
Touch the axMobileSendEmail button on the device to launch the email application of the device. The details you specified are automatically inserted into the email.
Press the send button of the email application and then check that the message has been received in the email addresses you specified.

See Also

Using Screen Customization to Add Value

Using Scripting in Properties to Add Value

axMultilineInputbox – Insert an HTML textarea element

Description

axMultilineInputBox allows a user input of more than one line of text. The text display depends on the size of this extension. The text will go to the next line when it overflows the width while vertical scrollbar becomes visible when the text overflows the height.

Useability

Context	Supported
Input screen fields	Yes
Output screen fields	Yes
Input subfile fields	Yes
Output subfile fields	Yes
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
enabled	Indicates whether this element is enabled.	Yes. Must return a Boolean.	True.
imeMode	When a screen element is an input field this property indicates whether the Input Method Editor (IME) should be active or inactive for this field. Possible values are 'Default', 'Active' and 'Inactive'. The 'Default' setting means that AXES will determine automatically whether to turn IME on or off based on the language used. * IME mode is only supported in Internet Explorer. This property will not work in other browsers.	Yes. Must return "default", "active", or "inactive"	Default
maxInputLength	When a screen element is an input field this property specifies the maximum number of characters the field will accept. Value of "0" is a special value and its meaning depends on the type of the element: • For existing 5250 field, value of 0 means that the original 5250 field's length will be used. • For new elements, value of 0 means that the field's length is unlimited. This property is designed intended for use with new input elements added to a 5250 screen. It is not intended for use with existing 5250 screen elements.	Yes. Must return a number.	0.
placeholderText	The text to be displayed as a short hint for this extension.	No	Blank
style	CSS properties to be applied to the eXtension.	Yes. Must return a valid style object	None
value	Indicates the initial value of the input element.	No	Blank
onBlur	Optional. JavaScript code to be executed when the element loses the focus.	Yes	None
onChange	Optional. JavaScript code to be executed when the value changes.	Yes	None
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes	None

Notes, Comments and Warnings

This eXtension works only in the advanced terminal emulator (TS2) and is not intended to be run in the basic terminal emulator (TS1).

The Enter key is available in this eXtension to move the cursor to the next line.

When this extension's Basic->type property is set to output, this extension becomes read-only.

The value of placeHolderText property displayed in this extension has a fixed style color of #999. Even if this extension's style->color property is set to another color, the display of the placeholder text will not be affected.

useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property. Basically, the default border and the font styles will be based on the JQuery theme.

axMultitypeInputbox – Insert an HTML multitype input element

Description

Allow a user add an HTML input element which can be text, color, email, file, number, password or url.

Also included in this eXtension is the Japanese Kana conversion function with the Furigana input type.

Useability

Context	Supported
Input screen fields	Yes
Output screen fields	Yes
Input subfile fields	Yes
Output subfile fields	Yes
New screen elements	Yes

Properties

eXtension properties vary depending on the selected input type.

Properties when Text (default) is selected as inputType:

Name	Description and Comments	JavaScript	Shipped default
inputType	List of input elements that can be selected. Current values are Color, Email, File, Furigana, Number, Password and URL. Text is the default value when none is selected.	No	Blank
onBlur	Optional. JavaScript code to be executed when the element loses the focus.	Yes	None
onChange	Optional. JavaScript code to be executed when the value changes.	Yes	None
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes	None
onScreenReady	Optional. JavaScript code to be executed every time layout render of all extension is completed.	Yes	None
style	CSS properties to be applied to the eXtension.	Yes. Must return a valid style object.	None
value	Indicates the initial value of the input element.	Yes. Must return a String.	Blank
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.
placeholderText	The text to be displayed as a short hint for this extension.	Yes. Must return a String.	Blank
required	Indicates whether this extension must be filled up.	Yes. Must return a Boolean.	False
pattern	The regular expression to check against the value of this extension.	Yes. Must return a String.	Blank
validationMessage	The message to replace the default validation message.	Yes. Must return a String.	Blank

Properties when Color is selected as inputType:

Name	Description and Comments	JavaScript	Shipped default

inputType	List of input elements that can be selected. Current values are Color, Email, File, Furigana, Number, Password and URL. Text is the default value when none is selected.	No	Color
onBlur	Optional. JavaScript code to be executed when the element loses the focus.	Yes	None
onChange	Optional. JavaScript code to be executed when the value changes.	Yes	None
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes	None
onScreenReady	Optional. JavaScript code to be executed every time layout render of all extension is completed.	Yes	None
style	CSS properties to be applied to the eXtension.	Yes. Must return a valid style object	None
value	Indicates the initial value of the input element. The value must be a hexadecimal color code, usually starts with "#". (e.g. #BFAA8F). When invalid color code is set, the browser will display black as the default color.	Yes. Must return a String.	#000000
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

Properties when Email is selected as inputType:

Name	Description and Comments	JavaScript	Shipped default
inputType	List of input elements that can be selected. Current values are Color, Email, File, Furigana, Number, Password, and URL. Text is the default value when none is selected.	No	Email
maxLength	The maximum number of characters allowed. By default, this is set to the standard Javascript maximum value.	Yes	524288
multiple	When enabled, multiple email entries can be set in a form of comma-separated values.	Yes. Must return a Boolean.	False
onBlur	Optional. JavaScript code to be executed when the element loses the focus.	Yes	None
onChange	Optional. JavaScript code to be executed when the value changes.	Yes	None
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes	None
onScreenReady	Optional. JavaScript code to be executed every time layout render of all extension is completed.	Yes	None
style	CSS properties to be applied to the eXtension.	Yes Must return a valid style object.	None
value	Indicates the initial value of the input element.	Yes. Must return a String.	Blank
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.
placeholderText	The text to be displayed as a short hint for this extension.	Yes. Must return a String.	Blank
required	Indicates whether this extension must be filled up.	Yes. Must return a Boolean.	False

pattern	The regular expression to check against the value of this extension.	Yes. Must return a String.	Blank
validationMessage	The message to replace the default validation message.	Yes. Must return a String.	Blank

Properties when File is selected as inputType:

Name	Description and Comments	JavaScript	Shipped default
inputType	List of input elements that can be selected. Current values are Color, Email, File, Furigana, Number, Password, and URL. Text is the default value when none is selected.	No.	File
multiple	When enabled, multiple file selection is possible; otherwise only a single file can be selected.	Yes. Must return a Boolean.	False
onBlur	Optional. JavaScript code to be executed when the element loses the focus.	Yes	None.
onChange	Optional. JavaScript code to be executed when the value changes.	Yes	None.
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes	None.
onScreenReady	Optional. JavaScript code to be executed every time layout render of all extension is completed.	Yes	None
style	CSS properties to be applied to the eXtension.	Yes. Must return a valid style object	None.
type	Indicates the file type filter. Possible values are All, Audio, Image, Video.	No	All
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.
required	Indicates whether this extension must be filled up.	Yes. Must return a Boolean.	False
validationMessage	The message to replace the default validation message.	Yes. Must return a String.	Blank

Properties when Furigana is selected as inputType:

Name	Description and Comments	JavaScript	Shipped default
inputType	List of input elements that can be selected. Current values are Color, Email, File, Furigana, Number, Password, and URL. Text is the default value when none is selected.	No	Furigana
kanaStyle	CSS properties to be applied to the Kana output portion of the eXtension.	Yes. Must return a valid style object.	None
kanaType	Either Hiragana or Katakana.	Yes	Hiragana
nameCaption	A string of characters which stands as the label of the Kana input portion.	No	名前
nameStyle	CSS properties to be applied to the Kana input portion of the eXtension.	Yes. Must return a valid style object.	None
onBlur	Optional. JavaScript code to be executed when the element loses the focus.	Yes	None

onChange	Optional. JavaScript code to be executed when the value changes.	Yes	None
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes	None
onScreenReady	Optional. JavaScript code to be executed every time layout render of all extension is completed.	Yes	None
showCaption	When enabled, the name and label captions will be shown. Otherwise they are hidden.	Yes	True
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.
placeholderText	The text to be displayed as a short hint for this extension.	Yes. Must return a String.	Blank

Properties when Number is selected as inputType:

Name	Description and Comments	JavaScript	Shipped default
inputType	List of input elements that can be selected. Current values are Color, Email, File, Furigana, Number, Password, and URL. Text is the default value when none is selected.	No	Number
maxNum	Maximum value that can be set.	Yes	10
minNum	Minimum value that can be set.	Yes	0
onBlur	Optional. JavaScript code to be executed when the element loses the focus.	Yes	None
onChange	Optional. JavaScript code to be executed when the value changes.	Yes	None
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes	None
onScreenReady	Optional. JavaScript code to be executed every time layout render of all extension is completed.	Yes	None
step	Unit scale for each increment or decrement.	Yes	1
style	CSS properties to be applied to the eXtension.	Yes. Must return a valid style object	None
value	Indicates the initial value of the input element.	Yes	0
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.
placeholderText	The text to be displayed as a short hint for this extension.	Yes. Must return a String.	Blank
required	Indicates whether this extension must be filled up.	Yes. Must return a Boolean.	False
validationMessage	The message to replace the default validation message.	Yes. Must return a String.	Blank

Properties when Password is selected as inputType:

Name	Description and Comments	JavaScript	Shipped default
inputType	List of input elements that can be selected. Current values are Color, Email, File, Furigana, Number, Password, and URL. Text is the default value when none is selected.	No	Password
maxLength	The maximum number of characters allowed. By default, this is set to the standard Javascript maximum value.	Yes	524288

onBlur	Optional. JavaScript code to be executed when the element loses the focus.	Yes	None
onChange	Optional. JavaScript code to be executed when the value changes.	Yes	None
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes	None
onScreenReady	Optional. JavaScript code to be executed every time layout render of all extension is completed.	Yes	None
style	CSS properties to be applied to the eXtension.	Yes. Must return a valid style object	None
value	Indicates the initial value of the input element.	Yes. Must return a String.	Blank
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.
placeholderText	The text to be displayed as a short hint for this extension.	Yes. Must return a String.	Blank
required	Indicates whether this extension must be filled up.	Yes. Must return a Boolean.	False
pattern	The regular expression to check against the value of this extension.	Yes. Must return a String.	Blank
validationMessage	The message to replace the default validation message.	Yes. Must return a String.	Blank

Properties when URL is selected as inputType:

Name	Description and Comments	JavaScript	Shipped default
inputType	List of input elements that can be selected. Current values are Color, Email, File, Furigana, Number, Password, and URL. Text is the default value when none is selected.	No	URL
onBlur	Optional. JavaScript code to be executed when the element loses the focus.	Yes	None
onChange	Optional. JavaScript code to be executed when the value changes.	Yes	None
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes	None
onScreenReady	Optional. JavaScript code to be executed every time layout render of all extension is completed.	Yes	None
style	CSS properties to be applied to the eXtension.	Yes. Must return a valid style object	None
value	Indicates the initial value of the input element.	Yes. Must return a String.	Blank
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.
placeholderText	The text to be displayed as a short hint for this extension.	Yes. Must return a String.	Blank

required	Indicates whether this extension must be filled up.	Yes. Must return a Boolean.	False
pattern	The regular expression to check against the value of this extension.	Yes. Must return a String.	Blank
validationMessage	The message to replace the default validation message.	Yes. Must return a String.	Blank

Notes, Comments and Warnings

This eXtension works only in the advanced terminal emulator (TS2) and is not intended to be run in the basic terminal emulator (TS1).

The eXtension properties will be updated automatically according to the selected input type.

To dynamically read the value of the eXtension in a script, use the code:

FIELDS(<base name>).getProperty("value");

Where <base name> is the value of the "name" property under the "Basic" sub-pane of the "eXtensions" pane in TS2 Developer.

That is, the code is applicable for all the given input types except for the Furigana type. To get the values for of the two input elements in the Furigana eXtension, use this code:

GETKANAVALUE1(<base name>);
GETKANAVALUE2(<base name>);

Where <base name> is the value of the "name" property under the "Basic" sub-pane of the "eXtensions" pane in TS2 Developer.

GETKANAVALUE1 is a common user function that retrieves the value of the Kana input element. GETKANAVALUE2 is also a common user function that retrieves the value of the Kana output element.

When the input type is File, the file object list associated with the files selected by this extension can be retrieved using the following code:

GETFILES(<base name>);

Where <base name> is the value of the "name" property under the "Basic" sub-pane of the "eXtensions" pane in TS2 Developer.

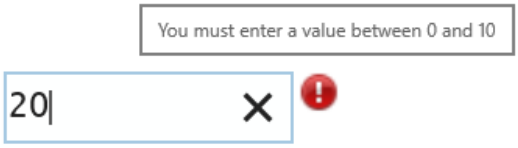
GETFILES is a common user function that retrieves the array of File objects set in this extension.

The value of placeholderText property displayed in this extension has a fixed style color of #999. Even if this extension's style->color property is set to another color, the display of the placeholder text will not be affected.

Color input type is not supported in IE/Edge.

Each of the input types, depending on the input restrictions set, is automatically validated as the user types the value.

In case of invalid value, an error icon is displayed at the right side of the input box. When the mouse is hovered on the error icon, the browser's built-in message is displayed as follows:



IE 11 is used in the above image.

Please note that the error message is browser-dependent.
But this message can be customized by setting a value to validationMessage property.

In addition, when this extension is added to an aXes input field that needs to be posted and it contains input validation error, a message will display on the status bar as follows and the screen will not be posted:

useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property. Basically, the default border and the font styles will be based on the JQuery theme.

Examples

(1). Specify this code in the **onScreenReady** property:

```
TRACE("**** MY ONREADY CODE IS EXECUTING. ****");
```

Now execute your aXes application with trace mode turned on.

You should see trace statements indicating that your code has been executed.

axPopupWindow — Window Settings

Description

This eXtension allows you to customize the position, size and style of a 5250 window. This eXtension applies to the TS2 engine only.

Properties

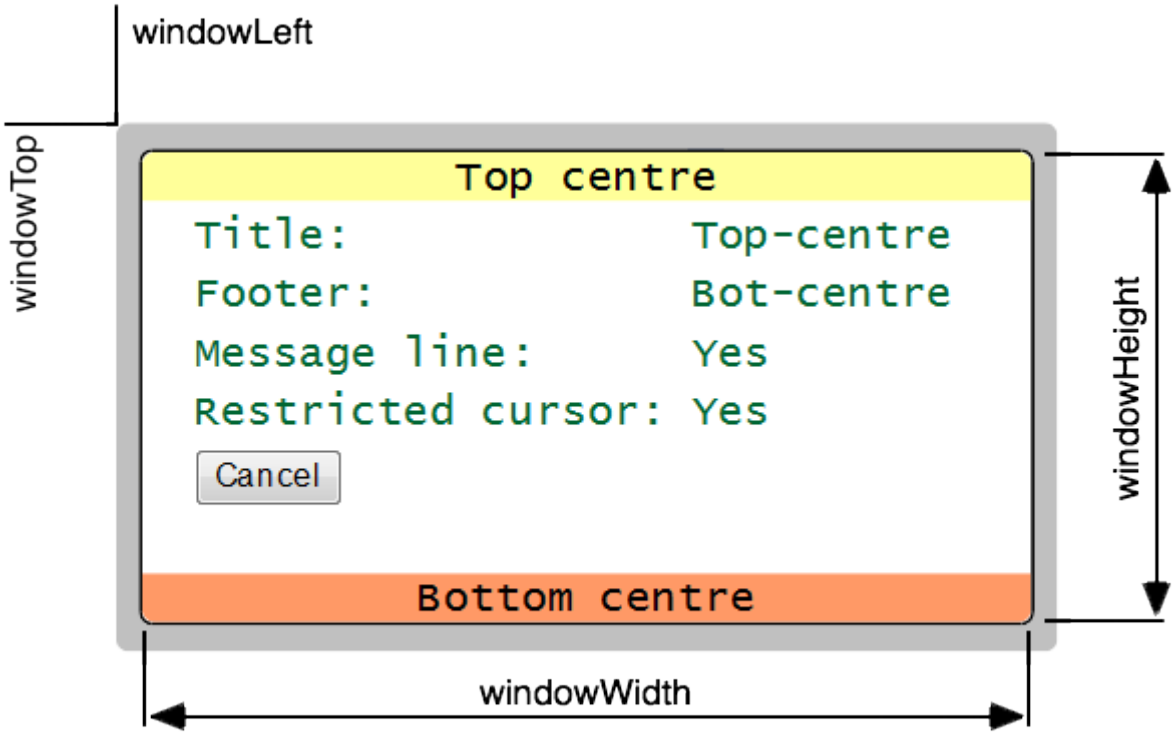
Name	Description and Comments	JavaScript	Shipped default
style	Additional style properties that should be applied to the window.	Yes. Must return a valid style object.	None.
backgroundStyle	Additional style properties that should be applied to the window.	Yes. Must return a valid style object.	None.
windowTop	The position, in pixels, of the top of the window. A negative value indicates that the position specified by the host application should be used.	Yes.	-1
windowLeft	The position, in pixels, of the left edge of the window. A negative value indicates that the position specified by the host application should be used.	Yes.	-1
windowWidth	The width of the window in pixels. A negative value indicates that the width specified by the host application should be used.	Yes.	-1
windowHeight	The height of the window in pixels. A negative value indicates that the height specified by the host application should be used.	Yes.	-1

Notes, Comments and Warnings

TS2 windows are constructed using two boxes. A gray, slightly transparent (on browsers that support it) box provides a clearly visible border that separates the window from the background. Inside it is another box that provides a solid border to the window, has a white background, and contains any headers or footers specified by the host application.

To maintain backward compatibility with TS1 windows, the contents of the window are not placed inside the background box. They are placed inside the gray window box and the background is then positioned behind them. This is important to understand when applying styles. Inherited styles like font settings applied to the background will not be inherited by the window contents.

The windowTop and windowLeft properties define the position of the top left corner of the window. The windowWidth and windowHeight properties define the size of the content area inside all borders.



Also see PopUp Windows and Screen Rendering in aXes-TS2.

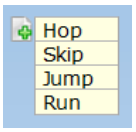
axQuickPick – Insert quick pick menu into screen

Description

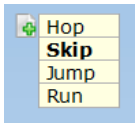
axQuickPick may be used in two different ways:
(1). The first is when the **image** property is used with a new screen element or with an existing 5250 screen element *whose default visualization has been unchecked/removed.*

axQuickPick displays an image on the 5250 screen, like this example:

As the user mouses over the image a quick pick menu appears, like this example:



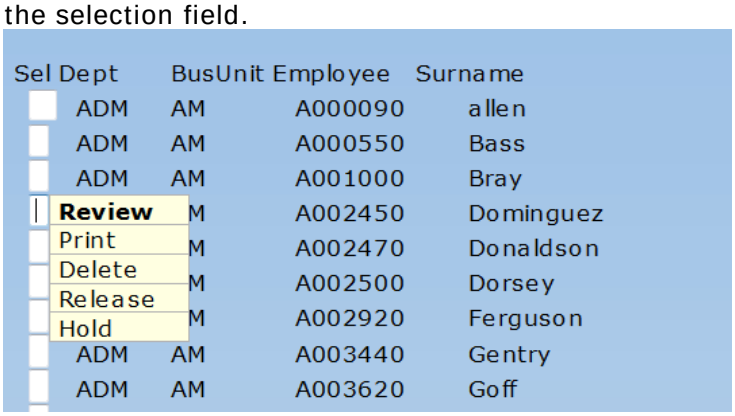
As the user mouses over the menu items the font weight changes:



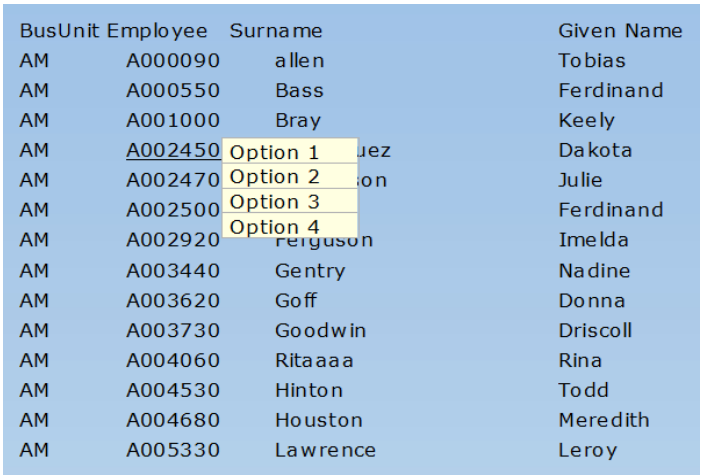
When the user clicks on a menu item an associated script is executed.

(2). The second is when the **image** property is not used - typically only with existing 5250 elements *whose default visualization has <u>not</u> been unchecked/removed*:

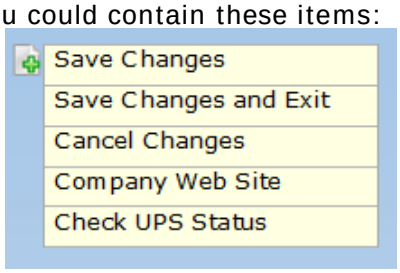
axQuickPick does not display an image. Instead it underlines the associated 5250 screen element's default visualization as the mouse passes over it, presenting the quick pick menu near the visualized field. This is an example of a quick pick menu that has been associated with the "Sel" (selection) column in a subfile. The quick pick menu appears beside the selection field.



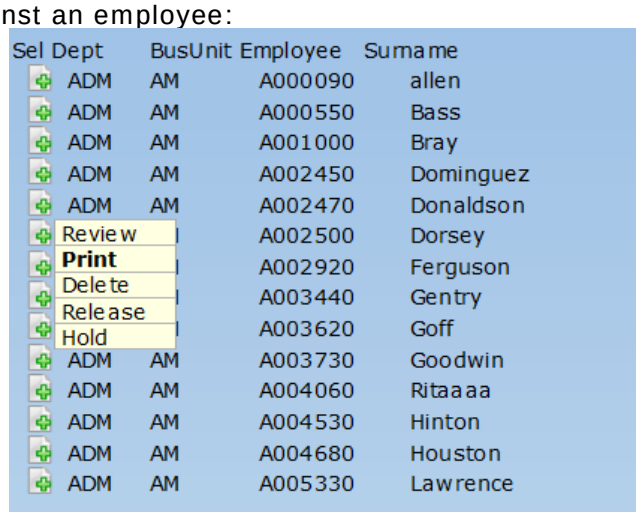
Likewise, here a quick pick menu has been associated with the Employee column in a subfile. As the user moves the mouse down the column the quick pick menu follows - indicating which employee it is currently associated with by underlining it:



Quick pick menus may be used as new screen elements in place of push buttons. For example a quick pick menu could contain these items:



Quick pick menus may also useful for selecting items from subfiles. For example. here the selection field in a subfile is visualized as a quick pick menu indicating what action should be taken against an employee:



Useability

Context	Supported
Input screen fields	Yes
Output screen fields	Yes
Input subfile fields	Yes
Output subfile fields	Yes
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
image	The image to be displayed. The quick pick menu is displayed as	Yes. Must return a string.	axquickpick.gif

	the mouse passes over this image. Typically the image property is only used with new screen elements or with existing 5250 screen elements whose *Default Visualization* has been unchecked/removed. Typically the image property is not used (ie: blanked out/removed) with existing 5250 screen elements whose *Default Visualization* has not been removed.		
imageSize	The size of the image that is to be displayed. Choose from 16x16, 32x32 or 64x64.	Yes. Must return "S" (16x16), "M" (32x32) or "L" (64x64).	16px x 16px
items	The captions of the item(s) that are to appear on the quick pick menu.	Yes. Must return an array of item object.	None.
style	The style of the item(s) on the quick pick menu. The height must be specified, be in pixels (px) and in the range 5 to 500. The width must be specified, be in pixels (px) and in the range 5 to 500.	Yes. Must return a style object.	height:15px width:80px background:infobackground, border-bottom:1px solid activeborder padding-left:4px
containerStyle	The style of the container (DIV) of the quick pick menu items.	Yes. Must return a style object.	cursor:pointer background:infobackground border-top:1px solid activeborder border-left:1px solid activeborder, border-right:1px solid activeborder
containerLocation	The displayed location of the quick pick menu relative to the image. Chose from Above and Left, Above and Right, Below and Left or Below and Right.	Yes. Must return on o f the strings "AL", AR", "BL" or "BR".	Below and Right.
containerVOffset	Additional specific vertical offset to be applied to the quick pick menu container. Default is zero. Specify as an integer in the range -256 to +256. Value specifies the number of pixels.	Yes. Must return an integer.	0
containerHOffset	Additional specific horizontal offset to be applied to the quick pick menu container. Default is zero. Specify as an integer in the range -256 to +256. Value specifies the number of pixels.	Yes. Must return an integer.	O
onItemSelection	The script to be executed when the user clicks on a quick pick menu item. Special scripting values ENV.itemNumber and ENV.itemCaption are accessible to this script. They may be used to identify which menu item was clicked.	Yes.	None/

enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

Notes, Comments and Warnings

items:

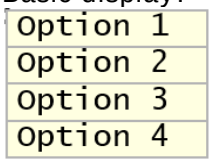
To set the items of Quick Pick Menu using script, the ENV.returnValue must contain an array of item object as follows:

```
ENV.returnValue = [ { caption: "item1" },
                    { caption: "item2" },
                    { caption: "item3" }
                  ];
```

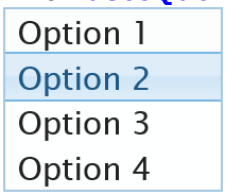
useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the display of the extension will change according to the theme that was set in the Application's **jqueryTheme** property.

Basic display:



When **useJQueryExtensions** is checked:

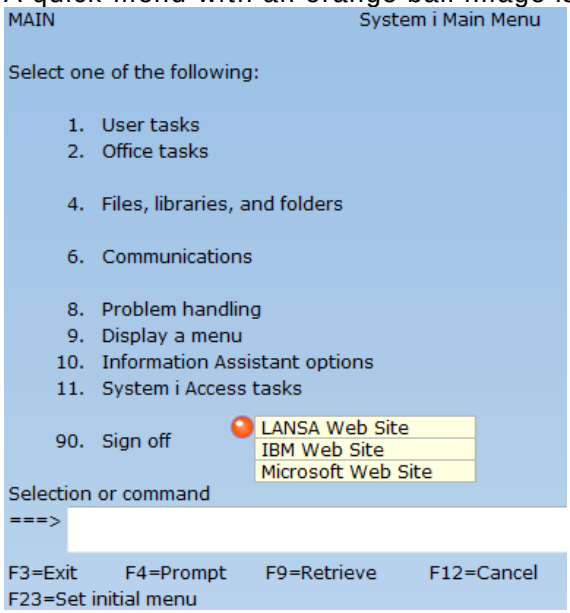


Hovering on the option changes the background of the option.

Examples

(1). Used as way to a launch other web sites

A quick menu with an orange ball image is added to the IBM i Main Menu:



The **onItemSelection** script allows the LANSA, IBM and Microsoft web sites to be viewed in another window:

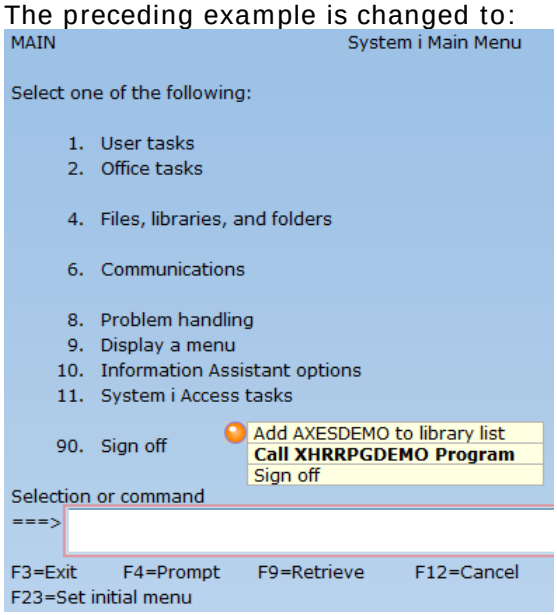
```
switch (ENV.itemNumber)
```

```
{
   case 1:
        window.open("http://www.lansa.com","_blank");
        break;
   case 2:
        window.open("http://www.ibm.com","_blank");
        break;
   default:
        window.open("http://www.microsoft.com","_blank");
        break;
}
```

---

(2). Used as way to minimize keystrokes for common actions

The preceding example is changed to:



and the **onItemSelection** script was changed to:

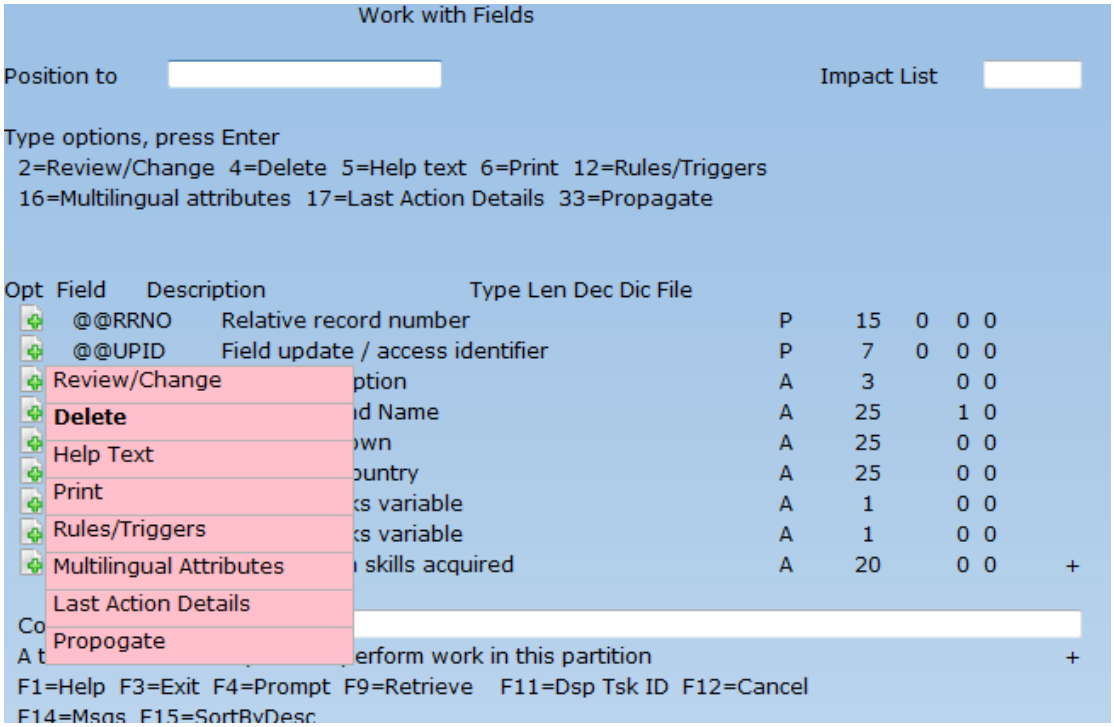
```
var command = "";
switch (ENV.itemNumber)
{
   case 1:
        command = "ADDLIBLE AXESDEMO";
        break;
   case 2:
        command = "CALL XHRRPGTRN";
        break;
   default:
        command = "SIGNOFF";
        break;
}
FIELDS("CommandLine").setValue(command);
SENDKEY("Enter");
```

---

(3). Used to select subfile entries

Here a classic 5250 "Work With" style screen has an option column (titled "Opt") in which action values can be entered.

The subfile option column was named *SFLOption* and replaced by the axQuickPick eXtension:



The **onItemSelection** script was set to:

```
var sOption = "";
/* Set the correct subfile value for the menu item number */
switch (ENV.itemNumber)
{
   case 1: sOption = "2"; break;
   case 2: sOption = "4"; break;
   case 3: sOption = "5"; break;
   case 4: sOption = "6"; break;
   case 5: sOption = "12"; break;
   case 6: sOption = "16"; break;
   case 7: sOption = "17"; break;
   case 8: sOption = "33"; break;
   default: break;
}

/* If an option was set, put into the 5250 subfile field */
/* and press the enter key                               */
if (sOption != "")
{
   FIELD.setValue(sOption);
   SENDKEY("Enter");
}
```

See Also

Dynamically Changing Themes in Tutorial 10 - 5250 Screen Styling

axRadioButton – Insert radio buttons into screen

Description

axRadioButton allows the creation of a set of radio buttons.

Useability

Context	Supported
Input screen fields	Yes
Output screen fields	Yes
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
radioButtonStyle	CSS to apply to the radio buttons	No	Blank
captionStyle	CSS to apply to the text of the radio buttons	No	Blank
orientation	Layout the radio buttons horizontally (**orientation = H**) or vertically (**orientation = V**)	No	V (vertical)
dataSourceType	Indicate where the source data is obtained from.	No	fixedValues
tableName	For **Static Table** data source type, this must be the value set for the name = property. For **Dynamic Table, XML File** or **Fixed values** this property is ignored and sqlQueryName is used instead.	No	Blank
onCreateRadioButton	JavaScript code to execute to set the radio button text.	Yes	ROW.text
xmlFileName	Name of XML file when the source type is XML.	No	Blank
xmlFileLocation	Path to locate the xmlFileName when the source type is XML.	No	*DEFAULT which is equal to /ts/screens/<private folder>
fixedValues	For **Fixed values** data source type you must enter the value pairs used to fill the radio button	Yes. Must return an array of value pair object.	No
onSelectRadio	Determines the radio button entry to select.	Yes	ROW.value
onRadioButtonClicked	Event fired when clicking on a Radio Button	Yes	FIELD.setValue(ROW.value)
sqlQueryName	For **Dynamic Table** data source type the value set for the name = property	No	Blank
sqlVariables	For **Dynamic Table** data source the variables used in your query.		ENV.SQL.SQLVariableLibrary = USERENV.dftSQLDataLibrary
keepLastKey	For **Dynamic Table** data source. If this	No	false

	option is true, a dynamic table will only be reloaded if the key changes.		
onChange	Optional. JavaScript code to be executed when the element changes state from unchecked to checked and vice versa.	Yes.	None.
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes.	None.
onBlur	Optional. JavaScript code to be executed when the element lost the focus.	Yes.	None.
fitText	Indicates whether to automatically resize the text to fit inside the extension.	Yes.	True.
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

Notes, Comments and Warnings

The *dataSourceType* property determines the method used to populate the radio button. Except for *Dynamic Table* you should specify a *tableName.*
Fixed Values: use this setting to hard code the value and text of the radio buttons.
Static Table: static tables are loaded once from the server at start up. The name of the static table must be the name specified in *tableName.*
XML File: the data to fill the table is obtained from an XML file located by default in /ts/screens/<private folder>. To specify another location change the *xmlFileLocation* property.

Dynamic Table: use this option carefully as it is the only one where the data is loaded at every screen arrival with an expected performance impact in the rendering of the screen. When you use this option you must specify the name of the query in *sqlQueryName* as defined in your dynamic tables file. You can use the keepLastKey option to improve performance, if multiple requests using the same query key are commonly made.
What is a ROW.
The radio button makes use of the aXes table structures. It means that the data to create the radio button is stored in memory in a table-like structure consisting of rows and columns. For example, consider a table defined like this:

```
DefineObjectInstance { className = "StaticTable",
  name    = "Gender",
  source  = "inline",
  rows = {
              {value="M",text="Male"},
              {value="F",text="Female"},
           },
  };
```

(Note that for such a table you would most likely set the *dataSourceType* to *Fixed Values* and type in the values manually).
At start up aXes populates the tables with one called *Gender*. It will have 2 rows, each **ROW** consisting of columns *value* and *text.* Using the Gender table, *ROW.value* would yield the current row's *value*= value and *ROW.text* the current row's *text*= value.
There is no constraint on how you name the row columns. If you use other names you must remember to change the default values to reflect the column names.

For example, if your file or fixed values define your columns like this:

```
  rows = {
                {codigo="M",descripcion="Masculino"},
                {codigo="F",descripcion="Femenino"},
            },
  };
```

The default values or script code should refer to *ROW.codigo* and *ROW.descripcion*.

***onCreateRadioButton* event**:

This event creates the radio button and sets its displayable text. It will fire (following our table example) whenever a screen (*any screen)* that has a radio button whose *tableName* was set to *Gender* arrives.

It will locate the *Gender* table and iterate through all its entries.

For each entry it will create a radio button using the value of the *text* column of the Gender table as the label. The result in our example will be two radio buttons: one with caption Male and the other with caption Female.

This is the simplest way to use *onCreateRadioButton.*

A more powerful way would be to create the radio buttons with a *value* resulting from the evaluation of a more complex expression.

If we extended the *Gender* table like this:

```
DefineObjectInstance { className = "StaticTable",

  name    = "Gender",
  source  = "inline",

  rows = {
                {value="M1",text="Male", agerange="16-25"},
                {value="M2",text="Male", agerange="26-35"},
                {value="M3",text="Male", agerange="36-45"},
                {value="F1",text="Female", agerange="16-25"},
                {value="F2",text="Female", agerange="26-35"},
                {value="F3",text="Female", agerange="36-45"},
            },
  };
```

We could change *onCreateRadioButton* to say:

ROW.text + "s aged " + ROW.agerange

which would create this set of radio buttons:

Males aged 16-25
Males aged 26-35
Males aged 36-45
Females aged 16-25
Females aged 26-35
Females aged 36-45
onRadioButtonClicked

***onSelectRadio* event**:

The code in this event determines which radio button to set as the selected (checked). It can be something simple like the default value:

ROW.value

If the expression does not return a value of type *Boolean,* the default logic of comparing the value is returned with the associated field's value.

An example of an expression returning a value of type *Boolean* would be:

(ROW.value == "Hello")

***onRadioButtonClicked* event**:

This event fires when a radio button is clicked. The default behaviour here is

FIELD.setValue(ROW.value)

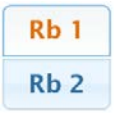
In other words, set the value of the field (which is referred to as FIELD) associated with the radio button to the value of the selected ROW.

useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the display of this extension will change according to the theme that was set in the Application's **jqueryTheme** property.
Basic display:

◉ Rb 1
○ Rb 2

When **useJQueryExtensions** is checked:



As you can see above, the Radio Button options are displayed as buttons. Clicking/Selecting one option will change its display indicating that it is the selected item as shown by the Rb 1 option. The size of the button will automatically adjust to the size of the option string. The longer the option string, the wider the button becomes.

fixedValues:
Sets the data of Radio Button when Fixed Values is selected as the *dataSourceType*. If using script, the ENV.returnValue must contain an array of value pair object as follows:

```
ENV.returnValue = [ { value: "M", text: "Male" },
                    { value: "F", text: "Female" }
                  ];
```

See Also

Radio Buttons in Tutorial 3 - Advanced Screen Enhancement

axScreenBasicProperties - Screen Level Basic Properties

Description

Screen level basic properties apply to an entire screen.

Properties

Name	Description and Comments	JavaScript	Shipped default
name	The name of the screen	No	None.
style	Style elements that should be applied the body of the screen.	Yes. Must return a valid style object.	None.
useTerminalStyles	Indicates whether the normal aXes CSS style sheets should be applied to this screen.	No.	False.
firstElementToFocus	Indicates which element on the screen will get the focus when the screen arrives: Options: Follow the original 5250 screen. Set focus on element with the lowest tab index.	Yes	Follow original 5250 screen
limitedCursorSupport	aXes emulates a 5250 screen cursor. When a screen is customized by eXtensions most of the time cursor use does not make any sense anymore as the fields would have been moved around. There might be occasions where only a very minor modifications are made to the screen and cursor is essential for the operation of that screen. In this case limitedCursorSupport can be turned on (set to true). The cursor support is limited in a sense that: • The cursor positioning is based on the original position of the 5250 elements, so if you move the element the cursor will not have any awareness of it. • The cursor will always be visible even when it is in an edit box.	No.	False.
disableTerminalKeys	Indicates whether terminal keys (for example function keys F1 – F24) should be disabled. When terminal keys are disabled, physical keys typed in by users are ignored by AXES. Keys submitted programmatically using SENDKEY function will still be processed by AXES.	No.	False.
disableAutoGUI	Indicates whether AutoGUI is enabled for the screen. This property is only valid for screens generated with the aXes-TS2 rendering engine. AutoGUI is always disabled for customized screens in aXes-TS.	No.	False.
keepPopupLocation	Where a customized 5250 screen is a 5250 pop-up window you may use this property to maintain its 5250 location (if set to true) or to cause it to be moved to the top left of the display area (if set to false). This does not apply to the aXes-TS2 rendering engine. The user can drag the window out of the way instead.	No.	True.
keepLegacy5250FFW	Indicates whether to apply the legacy 5250 Field Format Word to input elements so that they emulate the behaviour of a 5250 terminal.	Yes.	False.
onArrive	JavaScript code that is to be executed every time the 5250 screen arrives.	Yes.	None.
onLeave	JavaScript code that is to be executed every time the 5250 screen departs.	Yes.	None.

	ENV members: • **ENV.key**: indicates what key triggered the event. Please refer to the key symbolic names table in the examples section. Return value: Set to false to prevent the screen from leaving.		
onReady	JavaScript code that is to be executed every time layout render of all extension is completed.	Yes.	None.

Notes, Comments and Warnings

You should not use alerts and any other operation that halts or interrupts the execution of JavaScript code during the arrival or departure of a screen.

Departure code may not be executed in an abnormal termination.

Examples

(1). Specify this code in the **onArrive** property:

```
TRACE("**** MY ONARRIVE CODE IS EXECUTING. ****");
```

Specify this code in the **onLeave** property:

```
TRACE("**** MY ONLEAVE CODE IS EXECUTING. ****");
```

Specify this code in the **onReady** property:

```
TRACE("**** MY ONREADY CODE IS EXECUTING. ****");
```

Now execute your aXes application with trace mode turned on.

You should see trace statements indicating that your code has been executed.

(2). Disabling certain function keys

Specify this code in the **onLeave** property to disable the F1 & F4 keys:

```
if(ENV.key == "F4" || ENV.key == "F1")
{
    ENV.returnValue = false;
}
```

The following table lists the symbolic names for the keys (the symbolic names are the values that are to be used for comparison with ENV.key):

Key	ENV.key value
F1 – F24	F1 – F24
Enter	ENTER
Roll Down (Page Up)	ROLLDOWN
Roll Up (Page Down)	ROLLUP
Roll Left	ROLLLEFT
Roll Right	ROLLRIGHT
Clear Screen	CLEARSCREEN
PA1	PA1
PA2	PA2
PA3	PA3
Help	HELP

Print	PRINT

See Also

My popup is making use of the cursor to allow the user to select an item from a list, how will this work after the screen has been customized as the cursor does not show anymore? in Tutorial 11 - FAQ and Examples

axScreenDataViewer – Display data from another screen

Description

Use of this eXtension enables the display of individual field data or a subfile data from one 5250 screen to another screen.

Properties

Name	Description and Comments	JavaScript	Shipped default
caption	Specifies the text that is to appear at the top of the element. Applicable only when the reference is a subfile and not an individual field.	Yes. Must return a string.	None.
referenceName	Refers to the logical name of the reference data.	Yes. Must return a string.	None.
style	Additional style properties that should be applied to the element. Overrides values whenever there is a previous setting.	Yes. Must return a valid style object.	None.
onFocus	Optional. JavaScript code to be executed when the element receives the focus.	Yes.	None.
onBlur	Optional. JavaScript code to be executed when the element lost the focus.	Yes.	None.
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

Notes, Comments and Warnings

useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property. Basically, the default border and the font styles will be based on the JQuery theme.

There are two user scripts needed to successfully display data from one screen to another screen:

1) SAVESCREENDATA and
2) DISPLAYSCREENDATA.

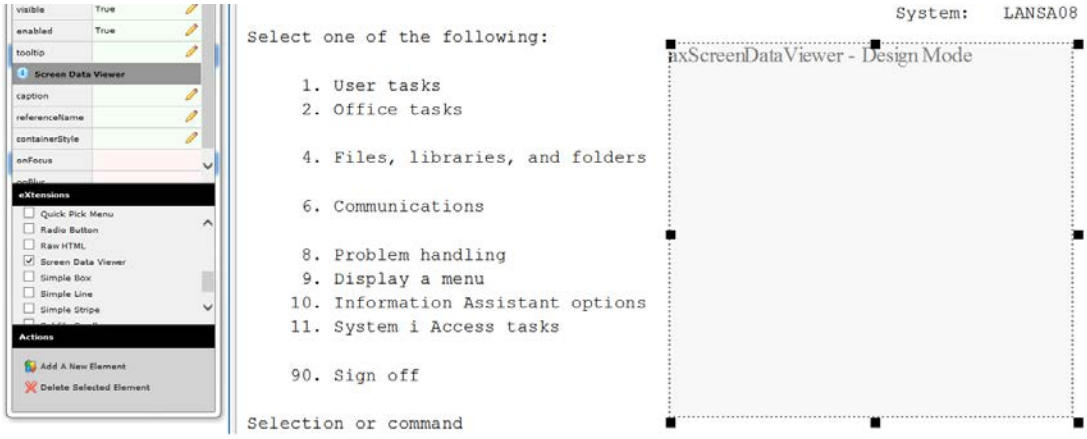
SAVESCREENDATA(<fieldName>);
where <fieldName> is the name of a reference field assigned by the user.

SAVESCREENDATA(<referenceName>, <rowCount>, <colName1>, … <colNameN>);
<referenceName> - the logical name of a subfile assigned by the user.
<rowCount> - the number of subfile rows to be displayed.
<columnName> - the name of the subfile column assigned by the user.

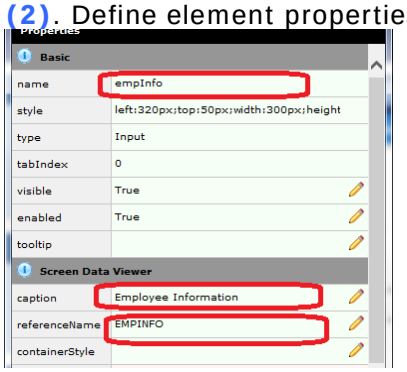
DISPLAYSCREENDATA(<element name>);
<element name> - the name of the Screen Data Viewer element assigned by the user.

Examples

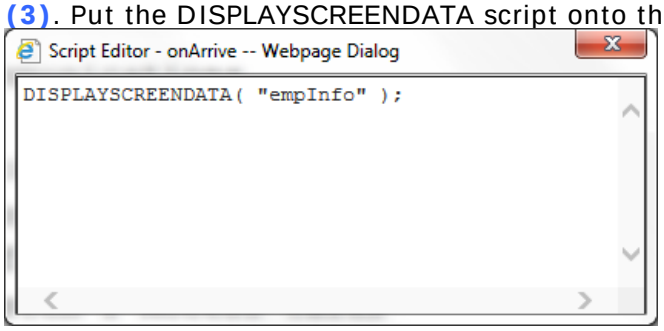
(1). Add a Screen Data Viewer element to a primary screen.



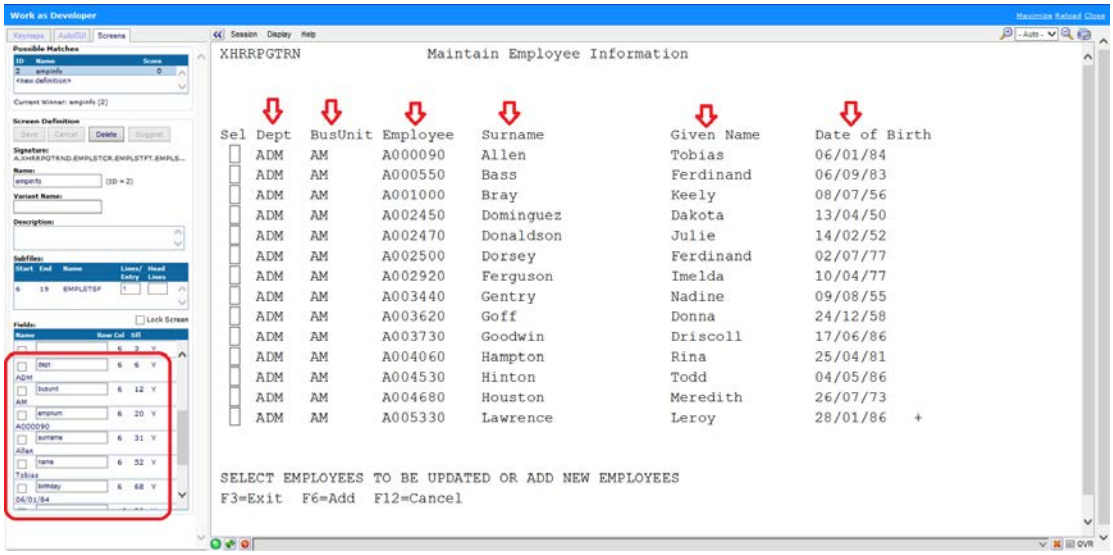
(2). Define element properties.



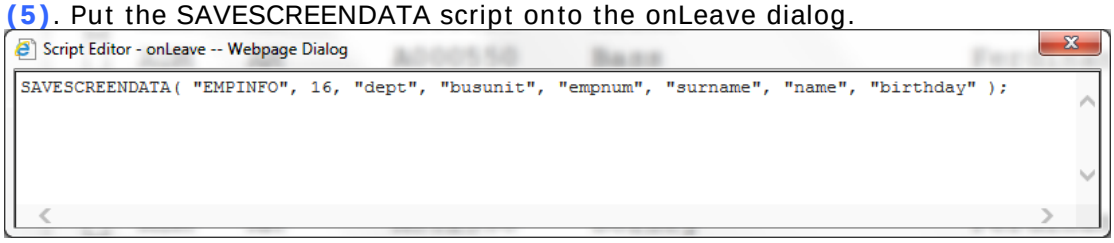
(3). Put the DISPLAYSCREENDATA script onto the onArrive dialog.



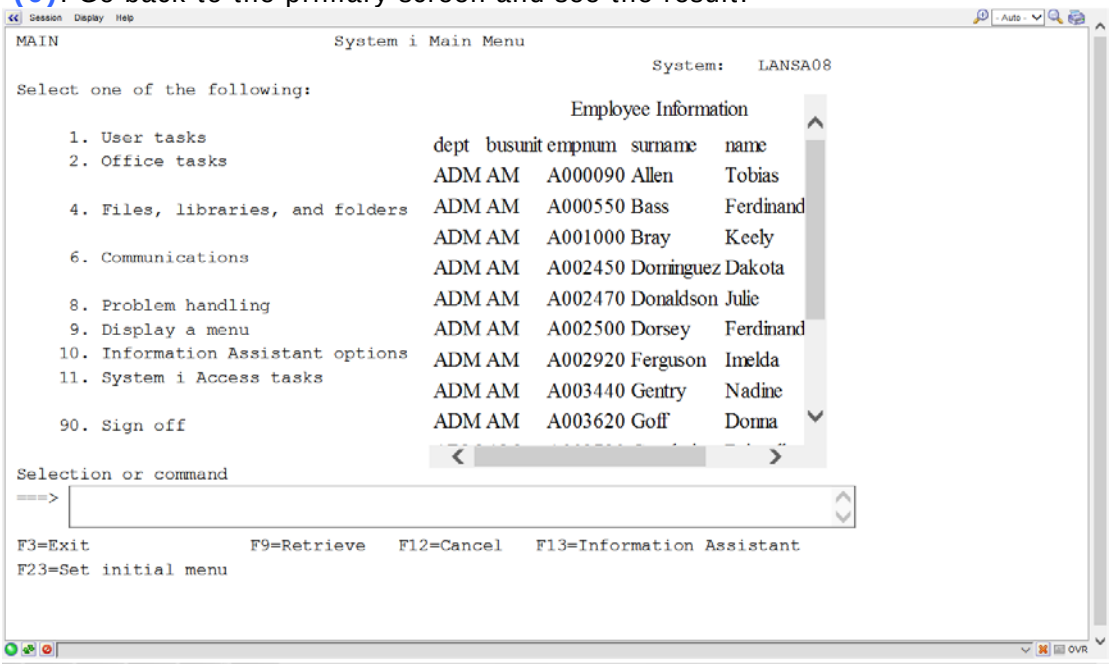
(4). Go to the screen where the subfile resides. Mark the columns to be referenced.



(5). Put the SAVESCREENDATA script onto the onLeave dialog.



(6). Go back to the primary screen and see the result.



axScreenSize - Auto Zoom Screen Size

Description

The Auto Zoom feature in TS1 calculates the zoom amount based on the default screen size (which is derived from the 5250 terminal size which is normally 80 rows x 24 columns). When larger real estate area is required for a screen, it is necessary to specify the width and height of the screen to help the layout engine calculate the correct zoom. This eXtension allows you to define this size.

The TS2 engine calculates the zoom based on the actual contents of the screen. So it may not be necessary to specify a size. But, if you want to override the default calculations for a particular effect, or to force consistency with TS1 this eXtension will allow you to override the calculated height and width.

In TS2, this eXtension will also allow you to override the zoom setting used by the layout engine.

Properties

Name	Description and Comments	JavaScript	Shipped default
width	Width of the screen (in pixels). If 0 the default screen width will be used.	Yes.	0
height	Height of the screen (in pixels). If 0 the default screen height will be used.	Yes.	0
zoom	Sets the zoom value for the current screen. Allowable values are: -2: Fit. This causes the screen to automatically zoom to fit the window. This is a one-off operation. The zoom will not adjust when the window is resized. -1: Auto. This causes the screen to automatically zoom to fit the window. The zoom will continue to adjust when the window is resized. 0: Do nothing. This leaves the zoom setting untouched. 5-200: Fixed value. This sets the zoom to the specified percentage. This is available in TS2 only.	Yes.	0
lockZoom	Locks the zoom control in the user interface, preventing the user from changing it. This is available in TS2 only.	Yes.	False

See Also

Understanding Screen Sizing and the Thin Red Line in Tutorial 10 - 5250 Screen Styling

axScrollableSubfileTable – Enhanced Subfile Viewing

Description

axScrollableSubfileTable adds the functionality to view multiple pages of subfile records on the screen. Originally, only one page of subfile records can be viewed on the screen and this limits the user's viewing of subfile records per page, without having a complete view of the whole subfile.
With axScrollableSubfileTable, multiple pages of subfile records can be loaded into the screen therefore allowing the user to view more records at the same time. Using the properties described below, the user can customize how the subfile records can be loaded.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
highlightRows	Indicates that a stripe be created for each row of the subfile rather than for the whole body.	No.	False.
alternateColors	Indicates that rows should be highlighted with alternate colors (ignored if highlightRows is False).	No.	False.
initialNoOfPages	The number of pages that will be loaded on the first display of the screen.	Yes.	1
loadFromFirstPage	Indicates whether to load from the first page when the current page in the screen is not the first page.	No.	False.
showExportLink	Indicates whether the export link or button is displayed or hidden.	No.	Hide.
scrollBarAtTop	Indicates whether the scrollbar will initially be positioned at the top for multiple pages.	No.	True.

Notes, Comments and Warnings

This extension is intended to be used for TS2 development only. Its behaviour and functionality is not guaranteed in TS1.
In addition, it automatically looks for subfile defined in the screen. Customization of the subfile properties such as start row, end row, etc. is not supported. Only those defined for the screen can be processed and detected.
Since this extension when used will take control of most of the keyboard and event processing of the screen, some normal subfile behaviours may not work. For example, when viewing multiple pages of subfile records on popup windows, only the last page's subfile records can handle any click and/or double-click events that were binded to it. That is why using this extension on popup windows is not currently supported and can be used at your own risk.
This extension should not be used simultaneously with other extensions that access subfile on the screen such as the axSubfileEnhancer.
The styles of the table is based on basic jQuery theme classes. All style will change according to the current jQuery theme that is set.
For any other specific issues that may arise, please consult the aXes Team.

initialNoOfPages property

The initialNoOfPages property can be used if at the initial display of the screen, the user already wants multiple pages of subfile records to be displayed. When this property is set to any number greater than 1, the subfile records that will be displayed will start from the current page of subfile up to the next succeeding initialNoOfPages. For example, if the current page of subfile records initially displayed is the 2nd set, and the initialNoOfPages is set to 2, then 2nd, 3rd and 4th pages of subfile records will initially be displayed on the screen. Therefore, initialNoOfPages will not necessarily start from the 1st page of subfile records.

loadFromFirstPage property

If this property is set to true, the screen will always be displayed from the 1st set of subfile records. This means that if the initial set of subfile record for the screen is the 3rd set, when this property is set to true, the 1st, 2nd and 3rd set of subfile records will be displayed on the screen.

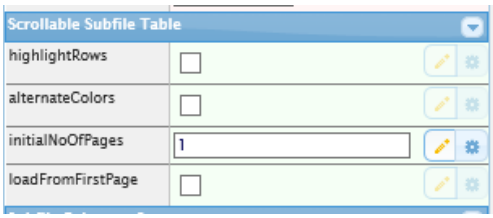
Examples

(1) Default settings

Create a new project in aXes and open it in Developer mode.
At the command line, type the following command:

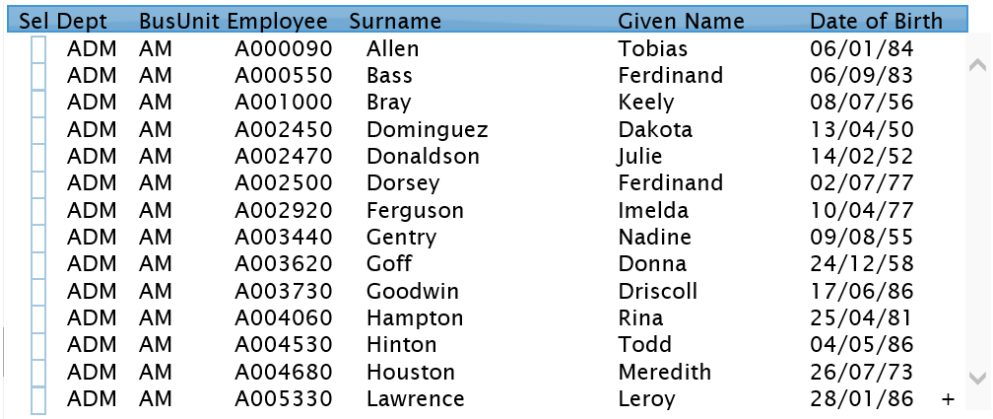
addlible axesdemo
call xhrrpgtrn

The Maintain Employee Information screen will be displayed.
Lock the screen and add the Scrollable Subfile Table extension into the screen.
The extension's default properties are as follows:



Note: The extension will not be visible during lock mode.

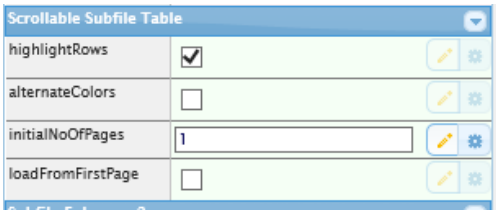
Save and unlock the screen, leaving the default settings as is. The subfile will be displayed with a new look and a scrollbar at the right.



Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	AM	A000090	Allen	Tobias	06/01/84
	ADM	AM	A000550	Bass	Ferdinand	06/09/83
	ADM	AM	A001000	Bray	Keely	08/07/56
	ADM	AM	A002450	Dominguez	Dakota	13/04/50
	ADM	AM	A002470	Donaldson	Julie	14/02/52
	ADM	AM	A002500	Dorsey	Ferdinand	02/07/77
	ADM	AM	A002920	Ferguson	Imelda	10/04/77
	ADM	AM	A003440	Gentry	Nadine	09/08/55
	ADM	AM	A003620	Goff	Donna	24/12/58
	ADM	AM	A003730	Goodwin	Driscoll	17/06/86
	ADM	AM	A004060	Hampton	Rina	25/04/81
	ADM	AM	A004530	Hinton	Todd	04/05/86
	ADM	AM	A004680	Houston	Meredith	26/07/73
	ADM	AM	A005330	Lawrence	Leroy	28/01/86

(2) Using the visual properties

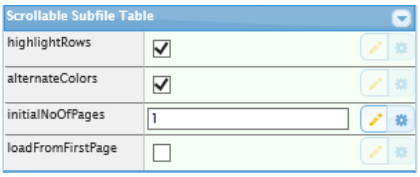
Set the highlightRows property of the extension to true.



Save and unlock the screen. The rows of the subfile will be displayed with highlights.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	IA	A000830	Blake	Barbara	13/03/82
	ADM	IA	A001560	Carver	Jena	30/12/71
	ADM	IA	A003970	Gutierrez	Rina	09/02/88
	ADM	IA	A005280	Langley	Justin	28/01/79
	ADM	IA	A005320	Larson	Glenna	10/04/55
	ADM	IA	A007240	Peters	Melanie	16/04/85
	ADM	IA	A007400	Ramirez	Shoshana	21/05/64
	ADM	IA	A008550	Singleton	Lesley	06/01/81
	ADM	IA	A009000	Talley	Alexander	19/08/57
	ADM	IA	A009370	Vega	Quintessa	24/05/55
	ADM	LEGAL	A000220	Arnold	Ahmed	02/01/57
	ADM	LEGAL	A000350	Ballard	Conan	06/09/80
	ADM	LEGAL	A000530	Barton	Bert	14/07/75
	ADM	LEGAL	A000710	Benjamin	Reagan	13/02/89 +

Set the alternateRows property of the extension to true.



Save and unlock the screen. The rows of the subfile will be displayed with highlights and alternating colors.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	IA	A000830	Blake	Barbara	13/03/82
	ADM	IA	A001560	Carver	Jena	30/12/71
	ADM	IA	A003970	Gutierrez	Rina	09/02/88
	ADM	IA	A005280	Langley	Justin	28/01/79
	ADM	IA	A005320	Larson	Glenna	10/04/55
	ADM	IA	A007240	Peters	Melanie	16/04/85
	ADM	IA	A007400	Ramirez	Shoshana	21/05/64
	ADM	IA	A008550	Singleton	Lesley	06/01/81
	ADM	IA	A009000	Talley	Alexander	19/08/57
	ADM	IA	A009370	Vega	Quintessa	24/05/55
	ADM	LEGAL	A000220	Arnold	Ahmed	02/01/57
	ADM	LEGAL	A000350	Ballard	Conan	06/09/80
	ADM	LEGAL	A000530	Barton	Bert	14/07/75
	ADM	LEGAL	A000710	Benjamin	Reagan	13/02/89 +

The colors of the highlight and alternating colors depends on the jQuery Theme CSS classes ui-state-highlight and ui-widget-content.

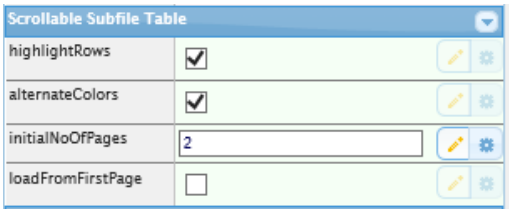
Note: The alternateRows property will not be applied if the highlightRows property is set to false.

(3) Using *initialNoOfPages*

For this example, make sure that you currently on the first page by pressing PageUp multiple times on the Maintain Employee Information screen. The first page should contain the following records.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	IA	A000090	Allen	Tobias	06/01/84
	ADM	IA	A000550	Bass	Ferdinand	06/09/83
	ADM	IA	A001000	Bray	Keely	08/07/56
	ADM	IA	A002450	Dominguez	Dakota	13/04/50
	ADM	IA	A002470	Donaldson	Julie	14/02/52
	ADM	IA	A002500	Dorsey	Ferdinand	02/07/77
	ADM	IA	A002920	Ferguson	Imelda	10/04/77
	ADM	IA	A003440	Gentry	Nadine	09/08/55
	ADM	IA	A003620	Goff	Donna	24/12/58
	ADM	IA	A003730	Goodwin	Driscoll	17/06/86
	ADM	LEGAL	A004060	Hampton	Rina	25/04/81
	ADM	LEGAL	A004530	Hinton	Todd	04/05/86
	ADM	LEGAL	A004680	Houston	Meredith	26/07/73
	ADM	LEGAL	A005330	Lawrence	Leroy	28/01/86 +

Lock the screen and set the initialNoOfPages property to 2.



Save and unlock the screen. The screen should display 2 pages of subfile records starting from the 1st page.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	AM	A000090	Allen	Tobias	06/01/84
	ADM	AM	A000550	Bass	Ferdinand	06/09/83
	ADM	AM	A001000	Bray	Keely	08/07/56
	ADM	AM	A002450	Dominguez	Dakota	13/04/50
	ADM	AM	A002470	Donaldson	Julie	14/02/52
	ADM	AM	A002500	Dorsey	Ferdinand	02/07/77
	ADM	AM	A002920	Ferguson	Imelda	10/04/77
	ADM	AM	A003440	Gentry	Nadine	09/08/55
	ADM	AM	A003620	Goff	Donna	24/12/58
	ADM	AM	A003730	Goodwin	Driscoll	17/06/86
	ADM	AM	A004060	Hampton	Rina	25/04/81
	ADM	AM	A004530	Hinton	Todd	04/05/86
	ADM	AM	A004680	Houston	Meredith	26/07/73
	ADM	AM	A005330	Lawrence	Leroy	28/01/86 +

Press the PageDown key or scroll using the mouse and you will be able to see the 2nd page.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	AM	A005880	Mcconnell	Clementine	20/09/81
	ADM	AM	A005970	Mccullough	Yoshi	28/07/65
	ADM	AM	A006330	Montgomery	Hector	22/03/68
	ADM	AM	A006580	Nash	Rylee	18/05/60
	ADM	AM	A006720	Nieves	Olivia	03/01/88
	ADM	AM	A007200	Perry	Alec	16/01/71
	ADM	AM	A008130	Sanford	Chantale	23/03/61
	ADM	AM	A008290	Schultz	Nina	17/01/57
	ADM	AM	A008680	Soto	Simone	12/11/76
	ADM	AM	A008770	Stark	Allen	11/02/57
	ADM	AM	A009050	Terry	Selma	21/05/85
	ADM	AM	A009420	Wade	Brianna	31/10/61
	ADM	AM	A009460	Waller	Eaton	30/03/69
	ADM	AM	A009680	Wheeler	Carla	19/08/59 +

Lock the screen again. The 2nd page should be the one visible on the lock mode.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	AM	A005880	Mcconnell	Clementine	20/09/81
	ADM	AM	A005970	Mccullough	Yoshi	28/07/65
	ADM	AM	A006330	Montgomery	Hector	22/03/68
	ADM	AM	A006580	Nash	Rylee	18/05/60
	ADM	AM	A006720	Nieves	Olivia	03/01/88
	ADM	AM	A007200	Perry	Alec	16/01/71
	ADM	AM	A008130	Sanford	Chantale	23/03/61
	ADM	AM	A008290	Schultz	Nina	17/01/57
	ADM	AM	A008680	Soto	Simone	12/11/76
	ADM	AM	A008770	Stark	Allen	11/02/57
	ADM	AM	A009050	Terry	Selma	21/05/85
	ADM	AM	A009420	Wade	Brianna	31/10/61
	ADM	AM	A009460	Waller	Eaton	30/03/69
	ADM	AM	A009680	Wheeler	Carla	19/08/59 +

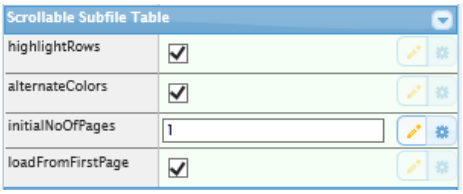
Unlock the screen. The 2nd and 3rd pages should be displayed.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	AM	A005880	Mcconnell	Clementine	20/09/81
	ADM	AM	A005970	Mccullough	Yoshi	28/07/65
	ADM	AM	A006330	Montgomery	Hector	22/03/68
	ADM	AM	A006580	Nash	Rylee	18/05/60
	ADM	AM	A006720	Nieves	Olivia	03/01/88
	ADM	AM	A007200	Perry	Alec	16/01/71
	ADM	AM	A008130	Sanford	Chantale	23/03/61
	ADM	AM	A008290	Schultz	Nina	17/01/57
	ADM	AM	A008680	Soto	Simone	12/11/76
	ADM	AM	A008770	Stark	Allen	11/02/57
	ADM	AM	A009050	Terry	Selma	21/05/85
	ADM	AM	A009420	Wade	Brianna	31/10/61
	ADM	AM	A009460	Waller	Eaton	30/03/69
	ADM	AM	A009680	Wheeler	Carla	19/08/59 +

From this example, the initialNoOfPages starts from the current page and not necessarily from the first page of the subfile records.

(4) Using *loadFromFirstPage*

Set the extensions properties as follows (Make sure you are at the first page):



Unlock the screen. The 1st page should be displayed.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	IA	A000090	Allen	Tobias	06/01/84
	ADM	IA	A000550	Bass	Ferdinand	06/09/83
	ADM	IA	A001000	Bray	Keely	08/07/56
	ADM	IA	A002450	Dominguez	Dakota	13/04/50
	ADM	IA	A002470	Donaldson	Julie	14/02/52
	ADM	IA	A002500	Dorsey	Ferdinand	02/07/77
	ADM	IA	A002920	Ferguson	Imelda	10/04/77
	ADM	IA	A003440	Gentry	Nadine	09/08/55
	ADM	IA	A003620	Goff	Donna	24/12/58
	ADM	IA	A003730	Goodwin	Driscoll	17/06/86
	ADM	LEGAL	A004060	Hampton	Rina	25/04/81
	ADM	LEGAL	A004530	Hinton	Todd	04/05/86
	ADM	LEGAL	A004680	Houston	Meredith	26/07/73
	ADM	LEGAL	A005330	Lawrence	Leroy	28/01/86 +

Press the PageDown button. The 1st and 2nd page will be loaded.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	AM	A000090	Allen	Tobias	06/01/84
	ADM	AM	A000550	Bass	Ferdinand	06/09/83
	ADM	AM	A001000	Bray	Keely	08/07/56
	ADM	AM	A002450	Dominguez	Dakota	13/04/50
	ADM	AM	A002470	Donaldson	Julie	14/02/52
	ADM	AM	A002500	Dorsey	Ferdinand	02/07/77
	ADM	AM	A002920	Ferguson	Imelda	10/04/77
	ADM	AM	A003440	Gentry	Nadine	09/08/55
	ADM	AM	A003620	Goff	Donna	24/12/58
	ADM	AM	A003730	Goodwin	Driscoll	17/06/86
	ADM	AM	A004060	Hampton	Rina	25/04/81
	ADM	AM	A004530	Hinton	Todd	04/05/86
	ADM	AM	A004680	Houston	Meredith	26/07/73
	ADM	AM	A005330	Lawrence	Leroy	28/01/86 +

Lock the screen again. The 2nd page should be displayed.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	AM	A005880	Mcconnell	Clementine	20/09/81
	ADM	AM	A005970	Mccullough	Yoshi	28/07/65
	ADM	AM	A006330	Montgomery	Hector	22/03/68
	ADM	AM	A006580	Nash	Rylee	18/05/60
	ADM	AM	A006720	Nieves	Olivia	03/01/88
	ADM	AM	A007200	Perry	Alec	16/01/71
	ADM	AM	A008130	Sanford	Chantale	23/03/61
	ADM	AM	A008290	Schultz	Nina	17/01/57
	ADM	AM	A008680	Soto	Simone	12/11/76
	ADM	AM	A008770	Stark	Allen	11/02/57
	ADM	AM	A009050	Terry	Selma	21/05/85
	ADM	AM	A009420	Wade	Brianna	31/10/61
	ADM	AM	A009460	Waller	Eaton	30/03/69
	ADM	AM	A009680	Wheeler	Carla	19/08/59 +

Unlock the screen again. The 1st and 2nd page will be loaded.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	AM	A000090	Allen	Tobias	06/01/84
	ADM	AM	A000550	Bass	Ferdinand	06/09/83
	ADM	AM	A001000	Bray	Keely	08/07/56
	ADM	AM	A002450	Dominguez	Dakota	13/04/50
	ADM	AM	A002470	Donaldson	Julie	14/02/52
	ADM	AM	A002500	Dorsey	Ferdinand	02/07/77
	ADM	AM	A002920	Ferguson	Imelda	10/04/77
	ADM	AM	A003440	Gentry	Nadine	09/08/55
	ADM	AM	A003620	Goff	Donna	24/12/58
	ADM	AM	A003730	Goodwin	Driscoll	17/06/86
	ADM	AM	A004060	Hampton	Rina	25/04/81
	ADM	AM	A004530	Hinton	Todd	04/05/86
	ADM	AM	A004680	Houston	Meredith	26/07/73
	ADM	AM	A005330	Lawrence	Leroy	28/01/86 +

(5) PageUp and PageDown

Set the extensions properties as follows (Make sure you are at the first page):

Scrollable Subfile Table	
highlightRows	☑
alternateColors	☑
initialNoOfPages	1
loadFromFirstPage	☐

Unlock the screen. The 1st page should be displayed.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	IA	A000090	Allen	Tobias	06/01/84
	ADM	IA	A000550	Bass	Ferdinand	06/09/83
	ADM	IA	A001000	Bray	Keely	08/07/56
	ADM	IA	A002450	Dominguez	Dakota	13/04/50
	ADM	IA	A002470	Donaldson	Julie	14/02/52
	ADM	IA	A002500	Dorsey	Ferdinand	02/07/77
	ADM	IA	A002920	Ferguson	Imelda	10/04/77
	ADM	IA	A003440	Gentry	Nadine	09/08/55
	ADM	IA	A003620	Goff	Donna	24/12/58
	ADM	IA	A003730	Goodwin	Driscoll	17/06/86
	ADM	LEGAL	A004060	Hampton	Rina	25/04/81
	ADM	LEGAL	A004530	Hinton	Todd	04/05/86
	ADM	LEGAL	A004680	Houston	Meredith	26/07/73
	ADM	LEGAL	A005330	Lawrence	Leroy	28/01/86 +

Press the PageDown button two times. The 1st, 2nd and 3rd page will be loaded.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	IA	A000830	Blake	Barbara	13/03/82
	ADM	IA	A001560	Carver	Jena	30/12/71
	ADM	IA	A003970	Gutierrez	Rina	09/02/88
	ADM	IA	A005280	Langley	Justin	28/01/79
	ADM	IA	A005320	Larson	Glenna	10/04/55
	ADM	IA	A007240	Peters	Melanie	16/04/85
	ADM	IA	A007400	Ramirez	Shoshana	21/05/64
	ADM	IA	A008550	Singleton	Lesley	06/01/81
	ADM	IA	A009000	Talley	Alexander	19/08/57
	ADM	IA	A009370	Vega	Quintessa	24/05/55
	ADM	LEGAL	A000220	Arnold	Ahmed	02/01/57
	ADM	LEGAL	A000350	Ballard	Conan	06/09/80
	ADM	LEGAL	A000530	Barton	Bert	14/07/75
	ADM	LEGAL	A000710	Benjamin	Reagan	13/02/89 +

Pages are being added at the end of the table as you press PageDown. This will continue until the last records are fetched.

Lock the screen again. The 3rd page should be displayed at locked mode.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	IA	A000830	Blake	Barbara	13/03/82
	ADM	IA	A001560	Carver	Jena	30/12/71
	ADM	IA	A003970	Gutierrez	Rina	09/02/88
	ADM	IA	A005280	Langley	Justin	28/01/79
	ADM	IA	A005320	Larson	Glenna	10/04/55
	ADM	IA	A007240	Peters	Melanie	16/04/85
	ADM	IA	A007400	Ramirez	Shoshana	21/05/64
	ADM	IA	A008550	Singleton	Lesley	06/01/81
	ADM	IA	A009000	Talley	Alexander	19/08/57
	ADM	IA	A009370	Vega	Quintessa	24/05/55
	ADM	LEGAL	A000220	Arnold	Ahmed	02/01/57
	ADM	LEGAL	A000350	Ballard	Conan	06/09/80
	ADM	LEGAL	A000530	Barton	Bert	14/07/75
	ADM	LEGAL	A000710	Benjamin	Reagan	13/02/89 +

Unlock the screen again and the same page will be displayed.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	IA	A000830	Blake	Barbara	13/03/82
	ADM	IA	A001560	Carver	Jena	30/12/71
	ADM	IA	A003970	Gutierrez	Rina	09/02/88
	ADM	IA	A005280	Langley	Justin	28/01/79
	ADM	IA	A005320	Larson	Glenna	10/04/55
	ADM	IA	A007240	Peters	Melanie	16/04/85
	ADM	IA	A007400	Ramirez	Shoshana	21/05/64
	ADM	IA	A008550	Singleton	Lesley	06/01/81
	ADM	IA	A009000	Talley	Alexander	19/08/57
	ADM	IA	A009370	Vega	Quintessa	24/05/55
	ADM	LEGAL	A000220	Arnold	Ahmed	02/01/57
	ADM	LEGAL	A000350	Ballard	Conan	06/09/80
	ADM	LEGAL	A000530	Barton	Bert	14/07/75
	ADM	LEGAL	A000710	Benjamin	Reagan	13/02/89 +

Press PageDown and the 4th page will be added after the 3rd page.

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	LEGAL	A001510	Carrillo	Alexander	05/04/55
	ADM	LEGAL	A002020	Crosby	Barclay	08/08/72
	ADM	LEGAL	A003950	Guthrie	Tanisha	23/03/91
	ADM	LEGAL	A005720	Martin	Nerea	20/06/51
	ADM	LEGAL	A006080	Mclaughlin	Jolene	03/08/60
	ADM	LEGAL	A007390	Ramirez	Lewis	11/05/64
	ADM	LEGAL	A007650	Riggs	Clinton	10/12/68
	ADM	LEGAL	A007670	Riley	Fuller	16/03/86
	ADM	LEGAL	A008340	Sexton	Dieter	22/01/68
	ADM	LEGAL	A008650	Sosa	Xanthus	29/01/79
	ADM	LEGAL	A009070	Thomas	Hilel	18/04/66
	ADM	LEGAL	A009310	Vargas	Brynn	25/03/74
	ADM	LEGAL	A009760	Wiley	Risa	27/04/77
	ADM	LEGAL	A009840	Wolf	Camden	31/07/63 +

Scroll using the mouse until the scrollbar reaches the top then press PageUp. The 2nd, 3rd and 4th page will be displayed.

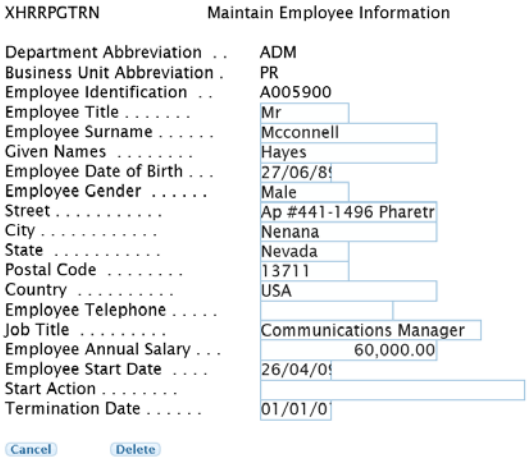
Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	AM	A005880	Mcconnell	Clementine	20/09/81
	ADM	AM	A005970	Mccullough	Yoshi	28/07/65
	ADM	AM	A006330	Montgomery	Hector	22/03/68
	ADM	AM	A006580	Nash	Rylee	18/05/60
	ADM	AM	A006720	Nieves	Olivia	03/01/88
	ADM	AM	A007200	Perry	Alec	16/01/71
	ADM	AM	A008130	Sanford	Chantale	23/03/61
	ADM	AM	A008290	Schultz	Nina	17/01/57
	ADM	AM	A008680	Soto	Simone	12/11/76
	ADM	AM	A008770	Stark	Allen	11/02/57
	ADM	AM	A009050	Terry	Selma	21/05/85
	ADM	AM	A009420	Wade	Brianna	31/10/61
	ADM	AM	A009460	Waller	Eaton	30/03/69
	ADM	AM	A009680	Wheeler	Carla	19/08/59 +

Continue pressing PageUp until the 1st page is displayed. The loading should stop when the 1st page is reached. Then press PageDown again until the scrollbar reaches the bottom. After the scrollbar reaches the bottom, pressing PageDown again will load the next page after the last page that was loaded.

This is how the loading of the subfile records behave when using the PageUp and PageDown keys.

(6) Editing

With multiple pages loaded inside the extension, after doing example number 5. Try selecting some records for editing by typing some characters inside the input boxes.
First click on any input boxes. The cursor/caret should be displayed inside the input box. Type any character. After typing one character, the cursor should move to the next input field. This behaviour will depend on the settings of the subfile. Tabbing and using the arrows keys inside the input boxes should also work.
Now select multiple records from multiple pages. For example, one record for each page.
After selecting records, press the ENTER key. The screen should change to the Maintain Employee Information edit screen with one of the selected record displayed.



Pressing the ENTER key will display the next selected record until all the selected records are displayed. After which the screen will return to the Maintain Employee Information list screen.

axSimpleBox – Insert a simple box into screen

Description

axSimpleBox allows a simple box to be inserted into the 5250 screen.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
style	Additional style properties that should be applied to the container of the label.	Yes. Must return a valid style object.	None.

Notes, Comments and Warnings

useJQueryExtensions Application Property
When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property. Basically, the default border and the font styles will be based on the JQuery theme.

Examples

(1). If this is used as **style** and the box is sized and located ….

```
border:1px solid red;background:buttonface;
```

it should produce a display like this when used on the IBM i main menu …

```
MAIN                                   System i Main Menu

Select one of the following:

      1.  User tasks
      2.  Office tasks

      4.  Files, libraries, and folders
```

---

(1). If this is used as **style** and the box is sized and located ….

```
background:orange;
```

it should produce a display like this on the IBM i main menu …

```
MAIN                                   System i Main Menu

Select one of the following:

      1.  User tasks
      2.  Office tasks

      4.  Files, libraries, and folders

      6.  Communications

      8.  Problem handling
      9.  Display a menu
```

axSimpleLine – Insert a simple line into screen

Description

axSimpleLine allows a simple line to be inserted into the 5250 screen.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
orientation	The intended orientation of the line. Specify as horizontal or vertical.	Yes. Must return "H" or "V".	Horizontal
lineStyle	The style of the line. Specify as dotted, dashed, solid or double.	Yes. Must return "dotted", "dashed", "solid" or "double".	Solid
lineColor	The color of the line. Must be a valid HTML color. For example: Green or #FFF5F6.	Yes. Must return a valid color.	Black
lineThickness	The thickness of the line in pixels. Must be specified as Npx where N is in the range 1 to 256.	Yes. Must return a valid thickness string in format "Npx".	1px

Notes, Comments and Warnings

useJQueryExtensions Application Property

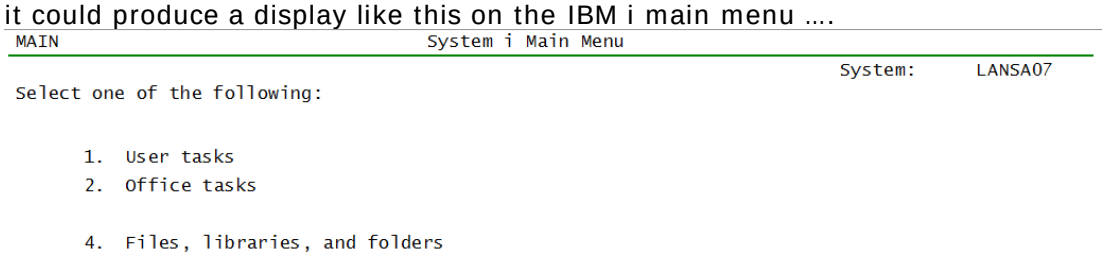
When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property. Basically, the default border and the font styles will be based on the JQuery theme.

Examples

(1). If these properties are used and the line is sized and located ….

orientation	Horizontal
lineStyle	Solid
lineColor	Green
lineThickness	2px

it could produce a display like this on the IBM i main menu ….



(2). If these properties are used and the line is sized and located ….

orientation	Vertical
lineStyle	Dashed
lineColor	Red
lineThickness	8px

it could produce a display like this on the IBM i main menu ….

```
MAIN                                   System i Main Menu

Select one of the following:

      1.  User tasks
      2.  Office tasks

      4.  Files, libraries, and folders

      6.  Communications

      8.  Problem handling
      9.  Display a menu
     10.  Information Assistant options
     11.  System i Access tasks

     90.  Sign off

Selection or command
```

axSimpleStripe – Insert a simple stripe into screen

Description

axSimpleLine allows a simple stripe to be inserted into the 5250 screen. Stripes are intended to be used to enhance the appearance of 5250 screen bodies, subfile headings and subfile bodies.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
Context	The context of the stripe. Specify as screen panel, subfile heading, subfile body, mini-panel heading or mini-panel body. This determines the way that the stripe will be colored and bordered. See notes following regarding how colors and borders are determined.	Yes. Must return "PH" (Screen Panel), "SH" (Subfile heading) or "SB" (subfile body).	Screen panel
orientation	The orientation of any color gradient that may be applied to the stripe. Specify as horizontal or vertical.	Yes. Must return "H" or "V".	Vertical
useOldStle	Only available when the **useJQueryExtensions** of the Application property is set to true.	Yes. Must return Boolean.	false

Notes, Comments and Warnings

When the selection of the context is made, this in effect chooses a scheme for producing the stripe. The scheme is defined in the USERENV object by the aSimplestripeStyles object array. This array defines the start and end colors and the border used by the stripe. By altering your USERENV object's definition you can change the way that all stripes are visualized.

useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property. Also, the **useOldStle** property will be visible and when this property is checked, the jQuery theme will not be applied but the old styles setting in the USERENV object will be used. Check the **useOldStle** property if you want the behaviour of the old extension to be applied. The **orientation** property will be ignored if the **useJQueryExtensions** property is checked.

Examples

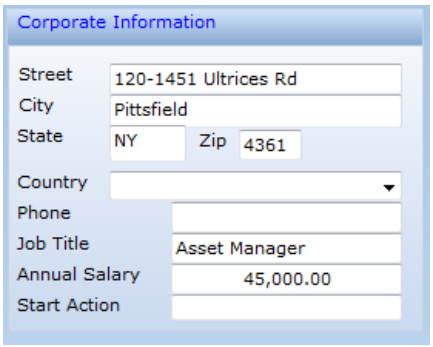
(1). By using 3 stripes this 5250 screen can be altered from this …

```
Employee Number . . . . . . . . .        . . :  A0090
Employee Surname . . . . . . . . .       . . :  BLOGGS
Employee Given Name(s) . . . . . .       . . :  SEYMOUR
Street No and Name . . . . . . . .       . . :  70 MAIN  STREET
Suburb or Town . . . . . . . . . .       . . :  West Pennant Hills
State and Country  . . . . . . . .       . . :  AUSTRALIA                    2220
Home Phone Number  . . . . . . . .       . . :  344-2234454545
Department Code  . . . . . . . . .       . . :  ADM   +
Section Code . . . . . . . . . . .       . . :  03  +
Start Date (DDMMYY)  . . . . . . .       . . :   3/08/92   +
Termination Date (DDMMYY)  . . . .       . . :   0/00/00   +

   Date Skl     Skill        Skill
   Acquired     Code         Description            Comment                Grade
     25/03/98   ADMIN1       Administratn Part 1    Met requirement          D
      4/05/98   COM          Communications Degre                            D
      5/05/98   CS           Computer Science Deg                            P
      2/05/98   HIS          History Degree         EXECELLENT               F
```

to this:

```
Employee Number . . . . . . . . .        . . :  A0090
Employee Surname . . . . . . . . .       . . :  BLOGGS
Employee Given Name(s) . . . . . .       . . :  SEYMOUR
Street No and Name . . . . . . . .       . . :  70 MAIN  STREET
Suburb or Town . . . . . . . . . .       . . :  West Pennant Hills
State and Country  . . . . . . . .       . . :  AUSTRALIA                    2220
Home Phone Number  . . . . . . . .       . . :  344-2234454545
Department Code  . . . . . . . . .       . . :  ADM   +
Section Code . . . . . . . . . . .       . . :  03  +
Start Date (DDMMYY)  . . . . . . .       . . :   3/08/92   +
Termination Date (DDMMYY)  . . . .       . . :   0/00/00   +

   Date Skl     Skill        Skill
   Acquired     Code         Description            Comment                Grade
     25/03/98   ADMIN1       Administratn Part 1    Met requirement          D
      4/05/98   COM          Communications Degre                            D
      5/05/98   CS           Computer Science Deg                            P
      2/05/98   HIS          History Degree         EXECELLENT               F
```

(2). Here a mini-panel heading and mini-panel bodies have been used to visually group sets of related fields together ….



See Also

Adding a Stripe in Tutorial 3 - Advanced Screen Enhancement

axSMS – Send an SMS via Axes Mobile

Description

axSMS provides functionality to send an SMS via Axes Mobile.

Useability

Context	Supported
Input screen fields	No
Output screen fields	Yes
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes
Axes Mobile Execution	Only

Properties

Name	Description and Comments	JavaScript	Shipped default
caption	Specifies the text that is to appear on the axSMS.	Yes. Must return a string.	None.
messageText	Specifies the message to be sent to the recipient.	Yes.Must return a string.	None.
recipient	Specifies the recipients contact details.	Yes. Must return a string.	None.
style	Additional style properties that should be applied to the axSMS.	Yes. Must return a valid style object.	None.
sizeToField	Indicates whether this button should be sized to fill its containing field or automatically sized to match its content.	Yes.	True.
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

Notes

This extension provides the ability to send an SMS via Axes Mobile.
To send a message via Axes Mobile to a recipient do the following:

- Add a message to the message property of the axSMS extension.
- Add the recipient's contact details to the recipient property of the axSMS extension.

useJQueryExtensions Application Property
When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property.
Basic display:

When **useJQueryExtensions** is checked:

Hovering over the button will also change its style.

See Also

Using Screen Customization to Add Value

Using Scripting in Properties to Add Value

axSpinEdit – Insert a Spin Edit

Description

Use this extension to add a spin edit box into a 5250 screen. The end-user can use this extension to change a field value by scrolling a list of enumerated values. This is an extended Dropdown element.

Useability

Context	Supported
Input screen fields	Yes
Output screen fields	Yes
Input subfile fields	Yes
Output subfile fields	Yes
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
style	CSS to apply to the element	Yes. Must return a valid style object.	Blank
dataSourceType	Indicates where the source data is obtained from.	No	fixedValues
visibleLines	Indicates the number of visible lines. When a selected value is greater than 1, the element acts as a spin edit element. When the value is 1, it will behave as a drop down element.	No	2
multipleSelect	Allows selection of multiple data or single data.	No	false
lowerRange	The lowest value in the element list.	No	Blank
upperRange	The highest value in the element list.	No	Blank
tableName	For **Static Table** data source type, this must be the value set for the name = property.	No	Blank
onFillDropDown	Script codes to execute during the filling up of element list.	Yes	Blank (i.e. no script to execute – interpreted as ROW.text)
xmlFileName	Name of XML file when the source type is XML.	No	Blank
xmlFileLocation	Path to locate the xmlFileName when the source type is XML.	No	*DEFAULT which is equal to /ts/screens/<private folder>
fixedValues	For **Fixed values** data source type, you must enter the pair of data values that will appear on the element list.	Yes. Must retun an array of value pair object.	No
additionalEntries	Use this property to add one or more entries to the spin edit element. Note that if you use this option with static tables, dynamic tables or XML documents, the values you are adding are inserted into the	Yes	No

	underpinning table – which subsequently causes them to appear element list. This may impact other eXtensions or scripting that also use the same underpinning table.		
onSelectValue	Data to be displayed as a result of the script code execution during the selection of value.	Yes	Blank (i.e. no script to execute – interpreted as ROW.value)
onSelectedValueChanged	Script code to execute when the current value has changed.	Yes	FIELD.setValue(ROW.value)
sqlQueryName	For **Dynamic Table** data source type the value set for the name = property	No	Blank
sqlVariables	For **Dynamic Table** data source the variables used in your query.		ENV.SQL.SQLVariableLibrary = USERENV.dftSQLDataLibrary
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

Notes, Comments and Warnings

***dataSourceType*:**

Determines the method used to populate the element. The options are:

Fixed Values: use this setting for a small number of values and the values don't change.

Static Table: static tables are loaded once from the server at start up. The name of the static table must be the name specified in *tableName.*

Static tables are very efficient and they can contain hard coded values or can be loaded by executing SQL commands.

XML File: the data to fill the table is obtained from an XML file located by default in /ts/screens/<private folder>. To specify another location change the *xmlFileLocation* property.

Dynamic Table: use this option carefully as it is the only one where the data is loaded at every screen arrival with an expected performance impact in the rendering of the screen. When you use this option you must specify the name of the query in *sqlQueryName* as defined in your dynamic tables file.

This value indicates that the data should come from a dynamically created table.

- A dynamic table is (re)loaded every time a screen is displayed.
- Dynamic tables are expensive to use compared to static tables.
- Only use them when the table content needs to vary according to some dynamic criteria (eg: current company, current product, etc).
- Dynamic tables can only be loaded by SQL commands.

You can use the keepLastKey option to improve performance, if multiple requests using the same query key are commonly made.

Should I use a Static or a Dynamic Table?

You do not have to use a dynamic table just because you want to execute an SQL command to load the table. You can load static tables from SQL commands as well.
You can use the highly efficient static tables in ways you may not know about.
Imagine a scenario where a currency table's content needs to change according to a company number (ie: You can only use certain currencies for certain companies).
Your immediate reaction may be to just use a dynamic table - passing the company number as an SQL variable to control which currencies are selected by the SQL command that is executed to fill the dynamic table.
This will work, but compared to using a static table this approach is expensive to execute.
You can improve this approach in several ways by using static tables instead:
Option 1: Create a single Static Table named Currency:
It would contain all the currency details for all the companies - and the associated company number as an extra column. When filling the element list, you can use scripting in the *onFillDropDown* property to omit table entries that are not valid for the current company by returning ENV.returnValue as null (meaning no visible entry is to be added to the element list).
Option 2: Create multiple Static Tables named Currency_CC:
Where _CC is the company number (say).
Script the element's *tableName* property to dynamically change.
You are using static tables - but now you are dynamically changing the table name - instead of the table content.
Note: This approach also works well with XML sourced tables. For example, you could also create an RPG program that runs every night (say).
It would read corporate "static" data files and flatten them out into a highly structured series of XML documents - where the name of the document (ie: table) is meaningful.
Option 3: Use start up or log on logic to load the "correct" set of static table data
When there is a clear point in the application where the user logs on and selects a company to work with - you can script an onArrive or onLeave events to force all static tables to load or reload.
Where they are loaded from SQL you can pass variables to the SQL executed to load them (eg: the selected company number).
Now the static table Currency would only ever contain the currencies for the currently selected company.
All the "users" of the Currency static table - like drop downs - no longer have to worry about the content - it will always be correct for the currently selected company.

What is a ROW

The element list makes use of the aXes table structures. It means that the data to populate the list is stored in memory in a table-like structure consisting of rows and columns. For example, consider a table defined like this:

```
DefineObjectInstance { className = "StaticTable",

  name    = "Gender",
  source  = "inline",

  rows = {
                {value="M",text="Male"},
                {value="F",text="Female"},
            },
  };
```

(Note that for such a table you would most likely set the *dataSourceType* to *Fixed Values* and type in the values manually).

At start up aXes populates the tables with one called *Gender*. It will have 2 rows, each **ROW** consisting of columns *value* and *text.* Using the Gender table, *ROW.value* would yield the current row's *value*= value and *ROW.text* the current row's *text*= value.

There is no constraint on how you name the row columns. If you use other names you must remember to change the default values to reflect the column names.

For example, if your file or fixed values define your columns like this:

```
  rows = {
                {codigo="M",descripcion="Masculino"},
                {codigo="F",descripcion="Femenino"},
             },
  };
```

The default values or script code should refer to *ROW.codigo* and *ROW.descripcion*.

***onFillDropDown* event**:

This event populates the element list. It will fire (following our table example) whenever a screen (*any screen)* that has the element whose *tableName* was set to *Gender* arrives.

It will locate the *Gender* table and iterate through all its entries.

For each entry it will add an entry where the visible text in the list is equal to the value in *text* column of the Gender table. The result in our example will be a spin edit element with 2 entries: Male and Female.

This is the simplest way to use *onFillDropDown.*

A more powerful way would be to fill the list with a *value* resulting from the evaluation of a more complex expression.

If we extended the *Gender* table like this:

```
DefineObjectInstance { className = "StaticTable",

  name    = "Gender",
  source  = "inline",

  rows = {
                {value="M1",text="Male", agerange="16-25"},
                {value="M2",text="Male", agerange="26-35"},
                {value="M3",text="Male", agerange="36-45"},
                {value="F1",text="Female", agerange="16-25"},
                {value="F2",text="Female", agerange="26-35"},
                {value="F3",text="Female", agerange="36-45"},
             },
  };
```

We could change *onFillDropDown* to say:

ROW.text + "s aged " + ROW.agerange

The element list would end up with entries that look like this:

Males aged 16-25
Males aged 26-35
Males aged 36-45
Females aged 16-25
Females aged 26-35
Females aged 36-45

Note that executing custom code is a relatively expensive process. This event is fired once for each entry in the element list. If you have a lot spin edit elements and/or large lists this can have an impact on screen rendering time. The eXtension recognises the special case of an empty script (the default) and returns the value of ROW.text without having to execute any custom code. Consider carefully if you need to use this event, or if you can change the structure of your table so that ROW.text already contains the correct data.

***onSelectValue* event**:

The code in this event determines what entry in the element list to set as the selected. It can be something simple like:

ROW.value

If the expression does not return a value of type *Boolean,* the default logic of comparing the value is returned with the associated field's value.

An example of an expression returning a value of type *Boolean* would be:

(ROW.value == "Hello")

Note that executing custom code is a relatively expensive process. This event is fired once for each entry in the list. If you have a lot spin edit elements and/or large lists, this can have an impact on screen rendering time. The eXtension recognises the special case of an empty script (the default) and returns the value of ROW.value without having to execute any custom code. Consider carefully if you need to use this, or if you can change the structure of your table to avoid it.

***onSelectValueChanged* event**:

This event fires when the current element value changes. The default behaviour here is

FIELD.setValue(ROW.value)

In other words, set the value of the field (which is referred to as FIELD) associated with the element list to the value of the selected ROW.

***additionalEntries*:**

Lets you add entries in addition to those added by the specified method in *dataSourceType.*

The easiest and preferred way of adding a blank entry at the top of the element list would be to add it to your static table or fixed values with blank values.

Another way would be to use *additionalEntries*.

This property works by calling an internal method named `addTableROW`**.** It receives 2 parameters:

oRow	Object - represents the ROW. It must be structurally the same as any of your other ROWs. In other words it must have the same properties.
bAtBegin	Boolean - Indicates whether to add the entry at the beginning or at the end of the element list. Defaults to false

For example, to add an entry at the top of the element list source by the *Gender* table you would this in your additionalEntries property:

```
var oGenderROW = {value: "", text: "Select an entry from this list", agerange:"" }
this.addTableROW(oGenderROW, true); /* Note the this qualifier */
```

Note that when the list is associated to a field, the field will be set to the "" when this entry is selected unless you add logic to the *onSelectValue* and *onSelectValueChanged*.

***fixedValues*:**

Sets the data of Spin Edit when Fixed Values is selected as the *dataSourceType*. If using script, the ENV.returnValue must contain an array of value pair object as follows:

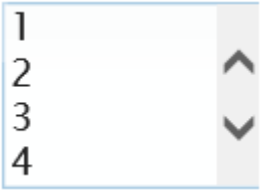
```
ENV.returnValue = [ { value: "GA", text: "Georgia" },
                    { value: "HI", text: "Hawaii" },
                    { value: "UT", text: "Utah" }
                  ];
```

useJQueryExtensions Application Property

When the **useJQueryExtensions** property of the Application is checked, the display will change according to the theme that was set in the Application's **jqueryTheme** property. Basically, the default border and the font styles will be based on the JQuery theme.
In addition, using the JQuery extension version, the Spin Edit's behaviour changed to properly support the **visibleLines** property. Using the basic extension, setting the **visibleLines** property to greater than 1 will have no effect on the height of the extension. The basic extension's height will always be the same as the height of the field. For the JQuery extension, setting the **visibleLines** property to more than 1 will automatically resize the height of the extension so that the number of items indicated in the **visibleLines** property will be visible. To support the original basic extension's behaviour of the height being always the same as the field, setting the **visibleLines** property to 0 will make the JQuery extension behave like this.

Basic extension with **visibleLines** set to 4.

JQuery extension with **visibleLines** set to 4.



***visibleLines*:**

In Chrome and Safari, this attribute may not work as expected for values 2 and 3. In mobile, there is no spin edit so only a normal dropdown will be displayed whatever the value of this property is.

See Also

Dropdowns in Tutorial 3 - Advanced Screen Enhancement

Static Tables that load from static data in Tutorial 6 - Tables and XML Documents

Static Tables that load from a database file in Tutorial 6 - Tables and XML Documents

XML Documents in Tutorial 6 - Tables and XML Documents

Example – Dynamically refreshing a drop down without server interaction in **Tutorial 11 - FAQ and** Examples

Example – Two level drop down in Tutorial 11 - FAQ and Examples

Example – Using a drop down as subfile option field in Tutorial 11 - FAQ and Examples

axSubfileEnhancer – Enhance Subfile Appearance

Description

axSubfileEnhancer automatically adds simple stripes to the header and body of a subfile on a screen. The stripes are intended to enhance the appearance of the subfile. The subfile defaults to the first subfile on the screen, but this can be overridden to any other subfile on the screen, or moved elsewhere on the screen, using the start and end row properties.
The subfile enhancer is sized by using the row / column properties of the extension.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
Whole screen	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
subfileName	The subfile to have its appearance enhanced. "First" means detect the first subfile on the screen. It can be set to any of the subfiles on the screen.	Yes. Must return "FIRST" or a subfile record format name.	First
headerHeightRows	The number of rows in the subfile header.	Yes. Must be 1 - 24	1
bodyFirstRow	The first row of the subfile body. If 0, this means automatically determine the first row of the subfile body.	Yes. Must be 1 - 24	0
bodyLastRow	The last row of the subfile body. If 0, this means automatically determine the last row of the subfile body.	Yes. Must be 1 - 24	0
highlightRows	Indicates that a stripe be created for each row of the subfile rather than for the whole body.	Yes.	False.
alternateColors	Indicates that rows should be highlighted with alternate colors (ignored if highlightRows is False).	Yes.	False.
linesPerRow	The number of screen lines that represent a row in the subfile. A value of 0 tells the eXtension to attempt to automatically determine the value.	Yes.	0
columnFirst	The first column of the subfile	Yes	1
columnLast	The last column of the subfile	Yes	79
style	The style applied to the stripes	Yes	
headerStyle	The style applied to the header.	Yes	
useOldStyle	When true, disables the use of jQuery styles.	Yes	
moveManually	Indicates if the extension can be dragged manually to a new position. This will ignore the row/col properties.	Yes	False

Notes, Comments and Warnings

This extension is intended for straightforward subfile modification. (For more complex scenarios, use two Simple Stripe extensions)

useJQueryExtensions Application Property
When the **useJQueryExtensions** property of the Application is checked, the display of the extension will change according to the theme that was set in the Application's **jqueryTheme** property.

Basic display:

Surname	Given name(s)	Employ Number	Business Phone Number
SALINGER	BETTY	A8345	3433098767
SALINGER	TIM ALAN	A2367	308429
SAUNDERS	JAMES	A3876	3432
SCHNEIDER	HELMUT	A2008	9746 6767
SHERRING	KD	A9459	DF
SMITHE	ROBERT	A1003	406 6395
SMITHERS	JACK	A1006	32 1667
SMITHS	PETER	A1005	777 7265
SMITHSON	FRED	A0193	(02) 354-5647
SMITHSON	PAUL	A1004	239 9174
SMYTHE	JOHN	A1002	798 4381
SNASHALL	DAMIAN	A1009	331 5265
SNEDDON	ALLAN	A1008	630 8888
SNELL	GEORGE	A1007	44 2965
SNOW	BRIDGET MARY	A3145	34 +

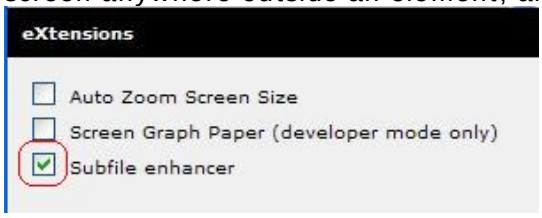
When **useJQueryExtensions** is checked:

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	AM	A000090	Allen	Tobias	06/01/85
	ADM	AM	A000550	Bassxx	Ferdinand	06/09/83
	ADM	AM	A001000	BrayXXX	Keely	08/07/56
	ADM	AM	A002450	Dominguez	Dakota	13/04/50
	ADM	AM	A002470	Donaldson	Julie	14/02/52
	ADM	AM	A002500	Dorsey	Ferdinand	02/07/77
	ADM	AM	A002920	Ferguson	Imelda	10/04/77
	ADM	AM	A003440	Gentry	Nadine	09/08/55
	ADM	AM	A003620	Goff	Donna	24/12/58
	ADM	AM	A003730	Goodwin	Driscoll	17/06/86
	ADM	AM	A004060	Hampton	Rina	25/04/81
	ADM	AM	A004530	Hinton	Todd	04/05/86
	ADM	AM	A004680	Houston	Meredith	26/07/73
	ADM	AM	A005330	Lawrence	Leroy	28/01/86 +

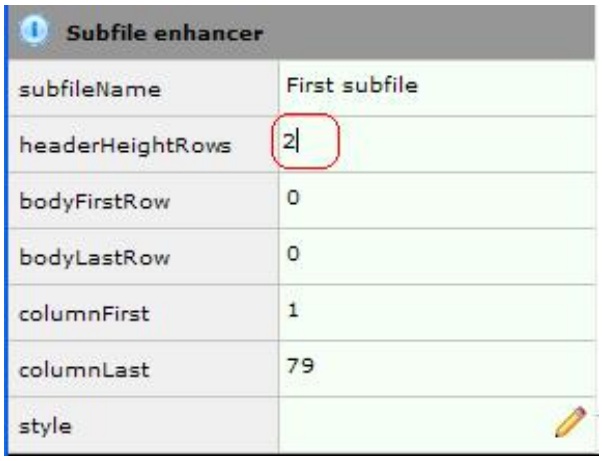
Examples

In TS:

(1). To use the subfile enhancer in TS, edit the screen's properties and click on the screen anywhere outside an element, and check the subfile enhancer checkbox:

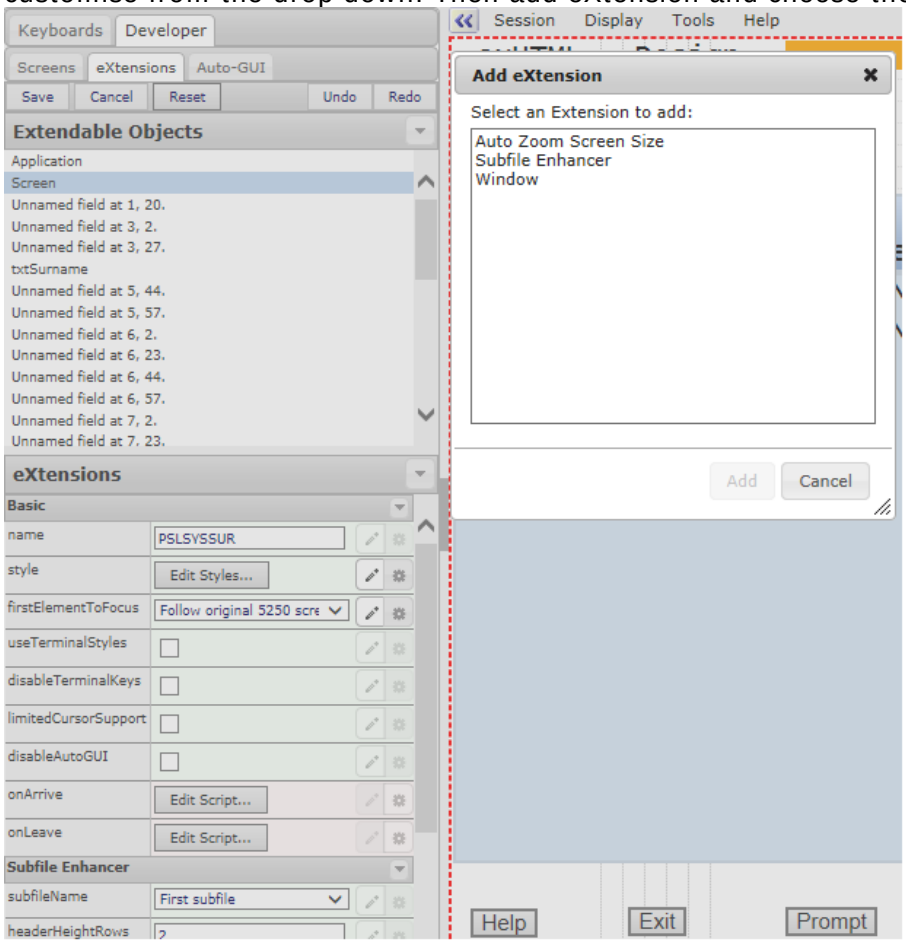


Then set the headerHeightRows property to the required value for your subfile



In TS2

(2). To use the subfile enhancer in TS2, you must first name the screen you wish to customise. Then, in the eXtensions tab, click on the eXtension called screen and customise from the drop down. Then add eXtension and choose the subfile enhancer.



You can now start changing the default properties.

Using the default settings and changing the headerHeightRows to 2, the subfile's appearance can be changed to this:

Surname	Given name(s)	Employ Number	Business Phone Number	
SALINGER	BETTY	A8345	3433098767	
SALINGER	TIM ALAN	A2367	308429	
SAUNDERS	JAMES	A3876	3432	
SCHNEIDER	HELMUT	A2008	9746 6767	
SHERRING	KD	A9459	DF	
SMITHE	ROBERT	A1003	406 6395	
SMITHERS	JACK	A1006	32 1667	
SMITHS	PETER	A1005	777 7265	
SMITHSON	FRED	A0193	(02) 354-5647	
SMITHSON	PAUL	A1004	239 9174	
SMYTHE	JOHN	A1002	798 4381	
SNASHALL	DAMIAN	A1009	331 5265	
SNEDDON	ALLAN	A1008	630 8888	
SNELL	GEORGE	A1007	44 2965	
SNOW	BRIDGET MARY	A3145	34	+

axSubfileScroller – Insert Subfile Scroll buttons into a 5250 Screen

Description

axSubfileScroller allows a subfile scrolling control to be inserted into the 5250 screen.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
markerFieldName	The name of the field that contains the string that indicates the subfile extends to another page	No	Blank
style	CSS to apply to the subfile scrolling buttons.	No	Height = 17px Width = 17px
scrollMarkers	List of strings that indicates that the subfile extends to another page	No	"+", "More..."
pgUpImagePath	Path to locate the page up image file	No	`/ts/skins/images`
pgUpImageName	Name of the page up image file	No	`pageup.gif`
pgDnImagePath	Path to locate the page down image file	No	`/ts/skins/images`
pgDnImageName	Name of the page down image file	No	`pagedown.gif`
pgUpOnClick	Event that fires when clicking on page up.	Yes	SENDKEY("PageUp");
pgDnOnClick	Event that fires when clicking on page down.	Yes	SENDKEY("PageDown");
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

Examples

Insert subfile scroll buttons into the *Maintain Employee Information* screen of the aXes Demo HR system.

Step 1: Open the *Projects Home Page*. Select your project and then use the *Work as Developer* option and sign on to a 5250 session.
Step 2: Start the shipped aXes demo system by entering the commands:
ADDLIBLE AXESDEMO
CALL XHRRPGTRN
The resulting 5250 screen should look something like this:

XHRRPGTRN Maintain Employee Information

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	AM	A000090	Allen	Tobias	06/01/84
	ADM	AM	A000550	Bass	Ferdinand	06/09/83
	ADM	AM	A001000	Bray	Keely	08/07/56
	ADM	AM	A002450	Dominguez	Dakota	13/04/50
	ADM	AM	A002470	Donaldson	Julie	14/02/52
	ADM	AM	A002500	Dorsey	Ferdinand	02/07/77
	ADM	AM	A002920	Ferguson	Imelda	10/04/77
	ADM	AM	A003440	Gentry	Nadine	09/08/55
	ADM	AM	A003620	Goff	Donna	24/12/58
	ADM	AM	A003730	Goodwin	Driscoll	17/06/86
	ADM	AM	A004060	Hampton	Rina	25/04/81
	ADM	AM	A004530	Hinton	Todd	04/05/86
	ADM	AM	A004680	Houston	Meredith	26/07/73
	ADM	AM	A005330	Lawrence	Leroy	28/01/86 +

Step 3: Start editing the screen and click on the "+" sign and name that field PageMarker.
Step 4: Add an axSubfileScroller eXtension.
This is done by adding a new element to the screen.
Make it into a *Subfile Scroller* by checking that option.
Change the scroller's *markerFieldName* property to "PageMarker".
Then move and position the scroller as required.
Step 5: Select the PageMarker field and uncheck its Default Visualization option so that its contents no longer appear.

Save your changes.
The modified screen should look something like this:

XHRRPGTRN Maintain Employee Information

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	AM	A000090	allen	Tobias	06/01/84
	ADM	AM	A000550	Bass	Ferdinand	06/09/83
	ADM	AM	A001000	Bray	Keely	08/07/56
	ADM	AM	A002450	Dominguez	Dakota	13/04/50
	ADM	AM	A002470	Donaldson	Julie	25/07/53
	ADM	AM	A002500	Dorsey	Ferdinand	02/07/77
	ADM	AM	A002920	Ferguson	Imelda	10/04/77
	ADM	AM	A003440	Gentry	Nadine	09/08/55
	ADM	AM	A003620	Goff	Donna	24/12/58
	ADM	AM	A003730	Goodwin	Driscoll	17/06/86
	ADM	AM	A004060	Ritaaaa	Rina	25/04/81
	ADM	AM	A004530	Hinton	Todd	04/05/86
	ADM	AM	A004680	Houston	Meredith	26/07/73
	ADM	AM	A005330	Lawrence	Leroy	28/01/86

Change Scroller Button Images
This example assumes that an axSubfileScroller eXtension has been added to an aXes screen as in the previous example.
Step 1: Open the *Projects Home Page*. Select your project and then use the *Work as Developer* option and sign on to a 5250 session.
Step 2: Start the shipped aXes demo system by entering the commands:
ADDLIBLE AXESDEMO
CALL XHRRPGTRN
Step 3: Start editing the screen and click on the Subfile Scroller eXtension to highlight it and bring up its properties into the aXes Designer window.

Step 4: Click on and change the ***pgUpImageName*** property to movepageup.jpg. Then click on and change the ***pgDnImageName*** property to movepagedown.jpg.
Step 5: Click on the ***style*** property and change the ***height*** and ***width*** style attributes so that the scroller buttons will be large enough to display the new images. Use 22px for each attribute.
Save your changes.
The modified screen should look something like this:

XHRRPGTRN Maintain Employee Information

Sel	Dept	BusUnit	Employee	Surname	Given Name	Date of Birth
	ADM	AM	A000090	allen	Tobias	06/01/84
	ADM	AM	A000550	Bass	Ferdinand	06/09/83
	ADM	AM	A001000	Bray	Keely	08/07/56
	ADM	AM	A002450	Dominguez	Dakota	13/04/50
	ADM	AM	A002470	Donaldson	Julie	25/07/53
	ADM	AM	A002500	Dorsey	Ferdinand	02/07/77
	ADM	AM	A002920	Ferguson	Imelda	10/04/77
	ADM	AM	A003440	Gentry	Nadine	09/08/55
	ADM	AM	A003620	Goff	Donna	24/12/58
	ADM	AM	A003730	Goodwin	Driscoll	17/06/86
	ADM	AM	A004060	Ritaaaa	Rina	25/04/81
	ADM	AM	A004530	Hinton	Todd	04/05/86
	ADM	AM	A004680	Houston	Meredith	26/07/73
	ADM	AM	A005330	Lawrence	Leroy	28/01/86

The display of the Up and Down button will change if the **useJQueryExtensions** Application Property is checked. When this property is checked, the Up and Down button will be displayed as a JQuery themeable button and the style will depend on the JQuery theme that is set in the Application->Styling->jqueryTheme property.

axTabs – Insert tabs functionality into screen

Description

axTabs allows the functionality to add tabs into the 5250 screen.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

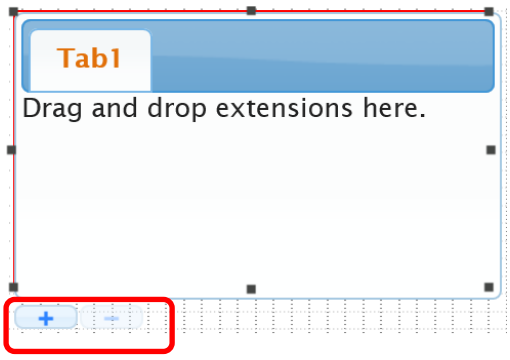
Name	Description and Comments	JavaScript	Shipped default
orientation	Indicates whether the tabs will be displayed vertically or horizontally.	Yes. Must return a string.	Horizontal
collapseContent	Indicates whether the contents of the tab will collapse when the tab name is clicked or hovered.	Yes. Must return a Boolean.	False.
openOnMouseOver	Additional style properties that should be applied to the button.	Yes. Must return a Boolean.	False.
sortable	Indicates whether the editing function of the camera will be enabled. The editing features are device specific.	Yes. Must return a Boolean.	False.
keepLastActiveTab	Indicates whether the last active tab will be remembered when leaving and re-entering the screen.	Yes. Must return a Boolean.	False.
enabled	Indicates whether this element is enabled. TS2 only.	Yes. Must return a Boolean.	True.

Notes, Comments and Warnings

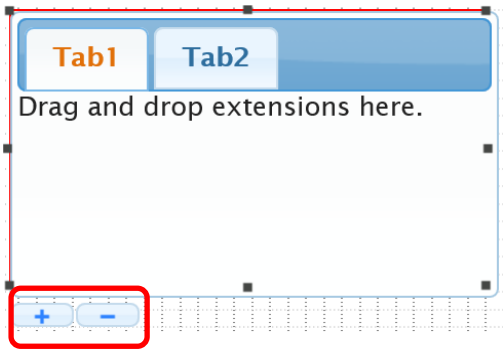
Display position of extensions added inside the tab is absolute. Therefore, drag and dropping an extension inside the tab will not change its position in the screen. Changing the **orientation** property will not automatically realign or reposition the existing extensions already added in the tabs.
Only extensions already in the screen can be added into the tab. Drag and dropping any extension from the Extensions list of the Extensions tab will just add the extension into the screen and not into the tab. So for new extensions, first insert it into the screen and then drag and drop it into the tab.
Just like any other extensions, the display of the axTabs extension will change automatically with any jQuery themes that is set.

Examples

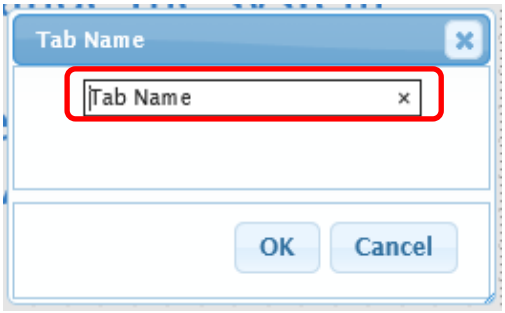
1. Add/Delete tab
   Adding and deleting tabs can only be done using the "+" and "-" buttons located at the bottom of the extension.



The “-” button is disabled when only one tab exist. It will be enabled once the number of tabs is greater than one.

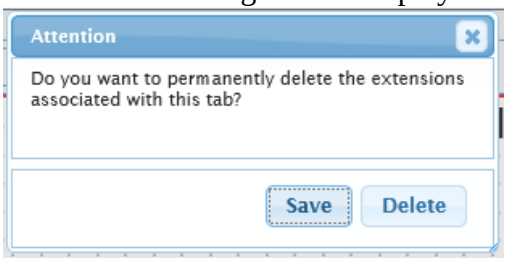


Clicking the “+” button will display the Tab Name dialog where you can input the name of the tab to be added.



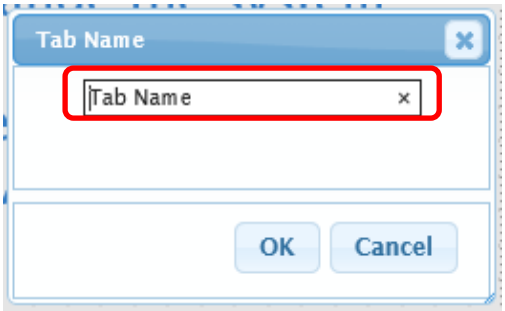
Clicking OK on the dialog above will add the new tab with the name you indicated in the input box.

Clicking the “-” button will delete the currently active tab. The active tab is the currently opened tab. If there are extensions in the tab to be deleted, the following confirmation dialog will be displayed.



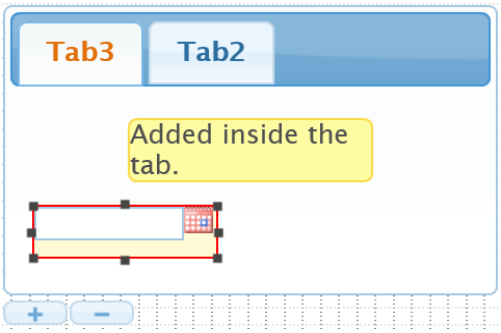
Clicking on the Delete button will perform the deletion of all the extensions currently added inside the tab to be deleted. Choosing Save on the other hand will move the extensions from the Tabs extension back into the screen.

2. Changing tab name
   Double-clicking the tab name of a tab will display the Tab Name dialog. Using the input box, you can change the name of the tab.

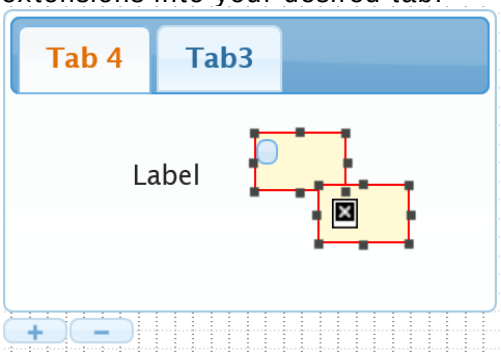


3. Sorting tabs
   Tabs can be sorted by dragging and dropping it on your desired position.
   On user mode, the **sortable** property can be set to true, to allow the user to sort the tabs on the screen.

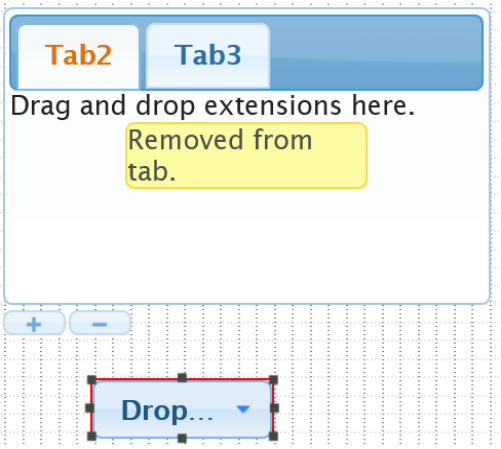
4. Adding/Removing extensions
   Adding extensions can also be done using drag and drop. In order for the extension to be added into the tab, the extension should first be added into the screen.



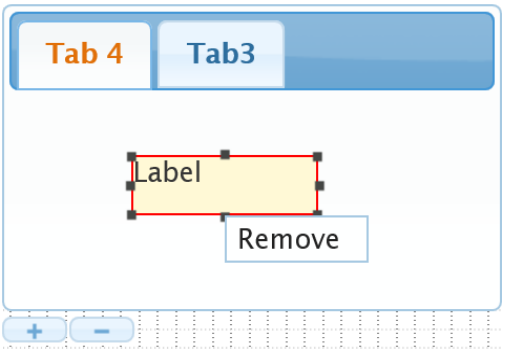
   Multiple extensions can be added at the same time by selecting the extensions using the CTRL key or by mouse. After selection, just drag and drop the extensions into your desired tab.



   To remove an extension from a tab, just drag and drop the extension outside of the tab.

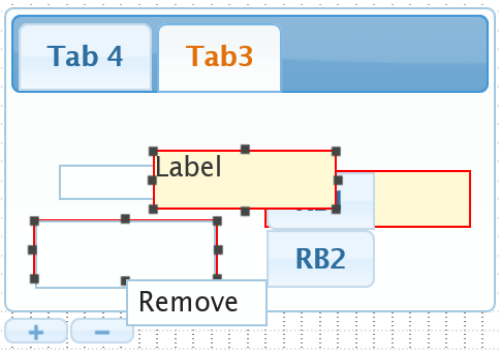


Another method is to right-click on the extension which will display the “Remove” popup menu.

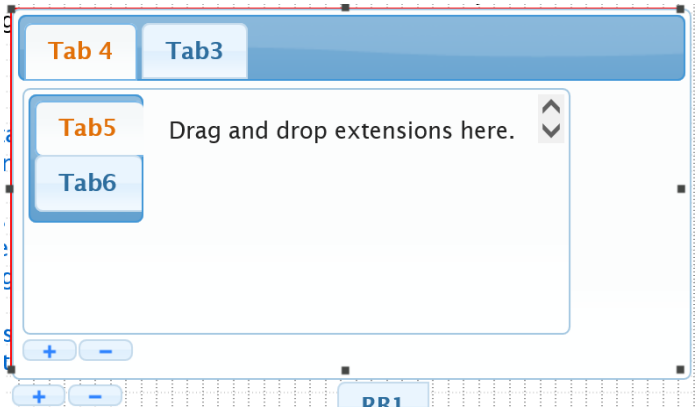


Clicking on the Remove menu will remove the extension from the tab but the position of the extension will not change.

Multiple extensions can be removed from the tab using drag and drop or the Remove menu. This can be done by first selecting the extension using multiple selection and then right-clicking or dragging them out of the tab.



5. Tabs inside tabs
   The axTabs extension can be added inside another axTab extension. Just add the axTabs into another axTabs extension as you would any other extension.



Drag and dropping extensions to and from tabs is also supported.

axTimer – Insert a timer into the screen

Description

axTimer allows a timer to be added to the screen. The timer is not visible at run time. When the timer interval has passed, the timer ticks and executes the script specified.

The timer can be set to tick repeatedly or just once, or by setting the interval to 0, it can be set to not tick at all.

A timer would normally be added as a new element to a screen. When creating the new element you will need to manually uncheck the default visualization.

A timer will be invisible unless the screen is being edited.

There can be multiple timers on a screen.

Useability

Context	Supported
Input screen fields	Yes
Output screen fields	Yes
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

Name	Description and Comments	JavaScript	Shipped default
tickInterval	This is the time between ticks, in milliseconds	Yes	0
onTick	This is the script that will be executed when the timer ticks	Yes	alert('timer tick occurred');
keepTicking	This indicates whether the timer will tick once and stop (false) or tick repeatedly (true)	Yes	true

Warnings

When creating a new element, you will need to check the timer extension and uncheck the default visualization extension.

Examples

(1).

<u>Add a timer that ticks once, after 10 seconds, and issues an alert</u>

Edit a screen and add a new element to it, and make it a Timer

Set its properties to:
tickInterval: 10000
onTick: `alert('10 seconds has elapsed');`
keepTicking : false

Save the screen. After 10 seconds an alert will appear:

"10 seconds has elapsed"

If you click ok on the alert, the timer will not tick again, because property keepTicking is false.

(2).

Add a timer that checks every 10 seconds whether the user has entered a value, and stops checking when a value has been entered.

Find and edit a screen with an input field on it.

Name the input field "myField".

Add a new element to the screen and make it a timer.

Set its properties to:
tickInterval: 10000
onTick:

```
alert('timer 10 seconds tick occurred');

var F = FIELDS("myField");
if ( F.getValue() != "")
{
alert("setting my tick interval to 0");

FIELD.setProperty("tickInterval", 0);
FIELD.refresh();
}
```

keepTicking : true

Save the screen and ensure the field named myField is blanked out.

Every 10 seconds an alert will appear: "timer 10 seconds tick occurred".

Type in a value into the field named "myField".

The next alert will be:
"timer 10 seconds tick occurred"

followed by:
"setting my tick interval to 0"

Then there will be no more ticks, because the timer's interval has been set to zero.

(3).

Add a timer that changes the style of an input field, after 2 seconds.

Find and edit a screen with an input field on it.

Change the field to use the Default Visualization *and* the Timer extension.

Set the input field's properties as follows:

tickInterval: 2000
onTick:

```
var oStyle = null;
oStyle = {"color":"red", "background":"blue"};

FIELD.setProperty("axdv.style" , oStyle );
FIELD.refresh();
```

keepTicking: false

Note that the style that is changed is the style of the default visualization, and this is distinguished from the Basic style by using "axdv.style"

axUserElementBasicProperties - New Screen Element Basic Properties

Description

Every new screen element has a fundamental and common set of properties, regardless of any further visualization that is applied to it.

New screen elements do not exist naturally on the 5250 screen.

They have been added to the 5250 screen layout by an aXes developer.

Useability

Context	Supported
Input screen fields	No
Output screen fields	No
Input subfile fields	No
Output subfile fields	No
New screen elements	Yes

Properties

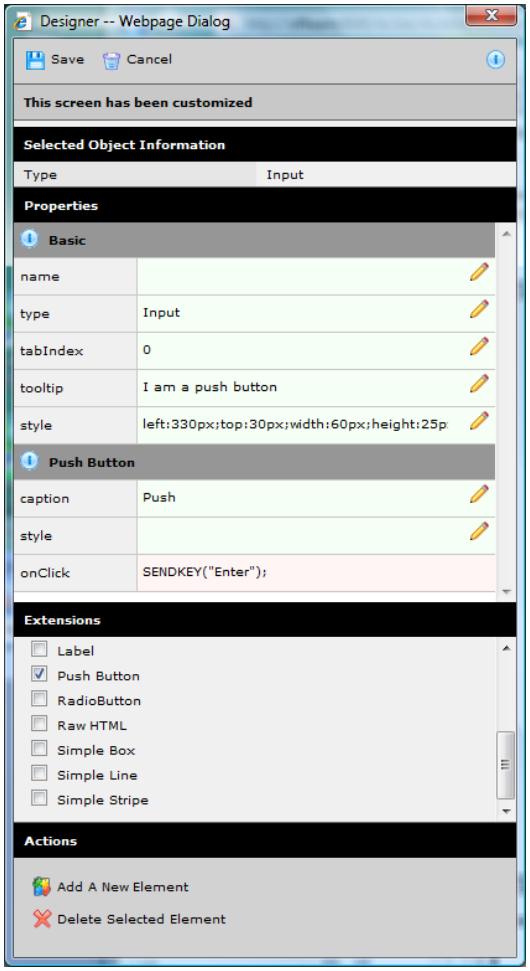
Name	Description and Comments	JavaScript	Shipped default
name	The symbolic name of the new screen element. Just as 5250 screen elements may have names, new screen elements may have names.	No.	None.
type	The type of the new screen element. May be input or output. The use of this property on new screen elements is rare.	No.	Input.
tabIndex	The tab index that should be applied to this element relative to all other elements on the screen.	No.	0
tooltip	The tool tip (or hint) that should appear when the user hovers the mouse over this screen element.	Yes. Must return a valid string.	None.
style	Additional style properties that should be applied to the screen element.	Yes. Must return a valid style object.	None.
visible	Indicates whether this element is visible.	Yes.	True.
enabled	Indicates whether this element is enabled. This is for TS1 only. In TS2, the enabled property is specified in each extension that can be enabled and disabled.	Yes.	True.

Notes, Comments and Warnings

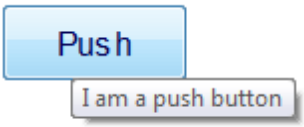
None.

Examples

(1). If a new element is added to a screen and visualized as a pushbutton, its property sheet may look like this, with the **tooltip** property set to *I am a push button*:



When the user hovers the mouse over the push button the tooltip appears:



Documentation Library

eXtensions Problem Isolation Techniques

Checking IBM i PTF levels

Checking Axes Server Job Logs

Using Fiddler

Checking IBM i history logs

Checking Axes CERN logs

Checking IFS File Authority

Checking Customized IBM i Logon Screens

Checking for network/browser compression issues

Checking IBM i PTF levels

To use Axes some IBM supplied IBM i PTFs are mandated:

IBM i Version	PTFs required
V5R3M0	**SI15896** – CPF8902 occurs. Unable to create new virtual devices **SI22468** – Virtual terminal feedback not available when QSECURITY =30 o
V5R4M0 **V5R4M5**	**SI35079** - QTVOPNVT ignores initial pgm, menu, curlib with Key 8. This PTF also includes and supersedes `SI22470`.

- To check if a PTF is installed use the *DSPPTF* command.
- Also check that it has been applied temporarily or permanently.
- After applying a PTF stop and restart all Axes server jobs.

Checking Axes Server Job Logs

Often checking the job logs of Axes server jobs can reveal information about a problem:

Does this facility need to be installed separately? If yes, where do you get it from?	No.
How you turn it on / start it?	It is always on.
How you turn it off / stop it?	It cannot be turned off.
Are there performance ramifications in using it?	No.
How is it typically used to isolate problems?	Use the ***WRKSBSJOB* AXES** command to display all Axes server jobs active in the AXES subsystem. Use option *5 - Work With*, then option *10 - Display job log, if active, on job queue, or pending*. On the resulting *Display Job Log* screen, use *F10=Display detailed messages* and then scroll through all the message displayed. Look for messages of interest that indicate warning or error situations. Use F1=Help on any message to display more details the time and date it was issued, which is often useful in associating a message with a problem. Repeat this procedure for all jobs active in the AXES subsystem.
What sort of information might you be asked to send to Axes support?	If an Axes server job contains messages of interest, record the job name, user and number from the top of the screen (eg: job AXES, user AXES, job number 041940). Use the ***DSPJOBLOG*** command to print details of all the messages associated with the Axes server job: Eg: DSPJOBLOG JOB(041940/AXES/AXES) OUTPUT(*PRINT) Locate the report (spool file) produced and send it to Axes support as a simple text document. Please avoid sending screen prints.

Using Fiddler

Fiddler runs on your PC. It monitors all traffic between your web browser and the Internet. When captured and saved this traffic can be a useful source of problem resolution information.

Does it have to be installed separately? If yes, where do you get it from?	Yes. Fiddler can be downloaded from http://www.fiddler2.com/fiddler2/
How you turn it on / start it?	Run the Fiddler application on the same PC as the browser. To start capturing traffic, select *Capture Traffic* from the *File* menu.
How you turn it off / stop it?	Deselect *Capture Traffic* from the *File* menu or close the Fiddler application.
Are there performance ramification in using it?	If run for long periods of time it may develop some memory or disk space problems. Normally you would only run it while reproducing a particular problem.
How is it typically used to isolate problems?	Fiddler is a proxy that sits between the browser and the server and captures all traffic between the two. It makes it possible to see exactly what is, or isn't, being sent between the two. In addition, the sessions can be saved for later playback making it possible to reproduce and diagnose a problem remotely, without needing a VPN or host connection.
What sort of information might you be asked to send to Axes support?	You may be asked to send a Fiddler log. This would involve starting Fiddler and then turning on *Capture Traffic* just before reproducing the problem. After the problem has been reproduced you save the traffic details to a Session Archive file (*.saz) by selecting *File* > *Save -> All Sessions*. Send the resulting .saz file to Axes support.

Checking IBM i history logs

All IBM i servers maintain a history log called QHST. In sites with suspect communication links QHST will often record TCP/IP level drop outs and recoveries. If an aXes system is exhibiting intermittent or random issues then the root problem may be traceable to TCP/IP level communications issues. In such situations you need to rectify these basic TCP/IP level issues before aXes will function reliably. For example, people using a wireless link or with a loose or failing LAN connection may experience problems, as will people whose network routers play up or are re-booted.

Does it have to be installed separately? If yes, where do you get it from?	No
How you turn it on / start it?	It is always turned on.
How you turn it off / stop it?	It is always turned on.
Are there performance ramification in using it?	No.
How is it typically used to isolate problems?	Use the IBM i command DSPLOG and scroll to messages issued around the time of the aXes issue. Look for any messages related to communication errors.
What sort of information might you be asked to send to Axes support?	Screen prints of the DSPLOG command showing messages issued at or around the time of the aXes issue.

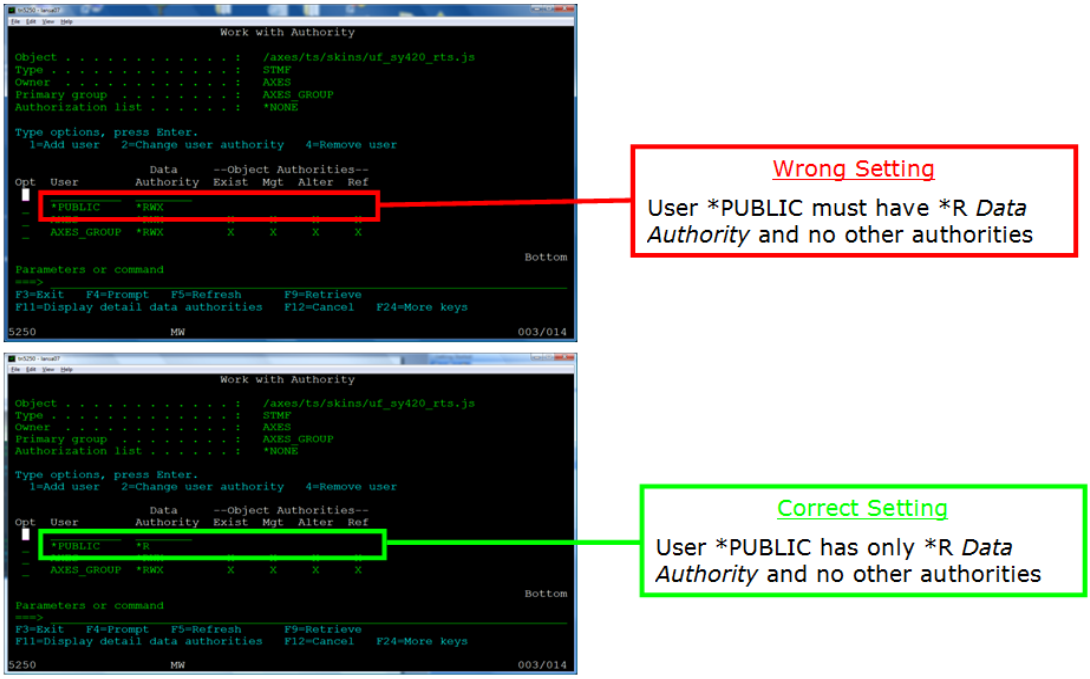
Checking Axes CERN logs

Axes can produce CERN logs. These may reveal information about a problem. It is most useful in situations where you cannot install Fiddler onto the problem PC.

Does it have to be installed separately? If yes, where do you get it from?	No
How you turn it on / start it?	Edit /axes/configs/aXesW3.conf by using the WRKLNK command: ▪ Uncomment this directive by deleting the # in front of it: **#CernLog=1** ▪ Uncomment the directive by deleting the # in front of it: **#LogPath=/axes/logs/** ▪ Save the changes to /axes/configs/aXesW3.conf ▪ Stop and restart the axes server jobs
How you turn it off / stop it?	Comment the directives that were uncommented in the previous point. Stop restart the Axes servers.
Are there performance ramification in using it?	Yes, but they are not very heavy, so it is okay to leave CERN logging on in multi-user production environments for short time periods. Large amounts of trace information may be produced.
How is it typically used to isolate problems?	Entries in the log file typically contain information about the success or failure of http transactions. Typically you would search for bad return codes from http requests like 401, 403, etc.
What sort of information might you be asked to send to Axes support?	Log files are located in the directory specified in the LogPath directive in file /axes/configs/aXesW3.conf. By default this is /axes/logs Log files follow the naming pattern: **cernYYYYMMDD_hhmmss** where the date time refers to when the server was last stopped. To obtain a log file for a transaction that occurred between the time the server was LAST started and now you will have to stop the server to allow for the log file to be created. If requested send the CERN logs files to Axes support.

Checking IFS File Authority

In general Axes files stored on the IBM i IFS should be set so that user *PUBLIC has *Data Authority* *R only and no other authorities. When files do not follow this rule they may not be served, causing problems in client side applications. Use the IBM i *WRKLNK* command to review and alter IFS file authorities. For example:



Checking Customized IBM i Logon Screens

Axes imposes some limitations on how customized IBM i sign-on screens are formatted. A problem is typified by this error message: **CPF1296 – Signon information required**. (assuming that all mandated PTFs have been applied).
To verify that a custom sign-on is causing an issue with Axes follow these steps:

> Note: Do not use *LIBL or omit library names from any of the following commands. If you do not specify an exact library name you risk checking the wrong thing.

- Find out the name of the subsystem that Axes 5250 sessions are attempting to log into. Typically this is QINTER, but it may be different at some sites.
- Use a **DSPOBJD *all/xxxxxx *sbsd** command to identify how many subsystems named xxxxxx exist. Typically only one exists. If multiple exist you need to determine which one is being used when you attempt to sign on.
- You should now have a single subsystem name (eg: QINTER) and library (eg: QSYS).
- Next determine the exact details of the customized logon screen by using the command **DSPSBSD llllll/xxxxxxx** where llll is the library name and xxxxxx is the subsystem name. Then use menu option *1- Operational attributes* and record the sign-on display file and library name, like in this example:

```
Sign-on display file . . . . . . . . . . :   QDSIGNON
  Library  . . . . . . . . . . . . . . . :     QSYS
```

- Now used the command **DSPFFD llllll/dddddd** where llll is the display file library and dddddd is the display file name, like this example – DSPFFD qsys/qdsignon.
- Now examine the 2nd and 3rd displayed pages displayed by the DSPFFD command and fill in this table from the details:

Field	Row in display file	Column in display file	Visual Order of field (working from top to bottom, left to right)
USERID			
PASSWRD			
PROGRAM			
MENU			
CURLIB			

√ For example, the DSPFFD results for the shipped IBM sign-on screen QSYS/QDSIGNON yields this table:

Field	Row in display file	Column in display file	Visual Order of field (working from top to bottom, left to right)
USERID	6	53	**1**
PASSWRD	7	53	**2**
PROGRAM	8	53	**3**
MENU	9	53	**4**
CURLIB	10	53	**5**

If the display file you are checking does not yield a display order of exactly 1 -> 5 for fields USERID -> CURLIB then it may need to be altered to work with Axes.

√ Finally, check that *all* of these fields, and *only* these fields are defined in the display file: SYSNAME, SBSNAME, DEVNAME, USERID, PASSWRD, PROGRAM, MENU, CURLIB, QSNERROR, COPYRIGHT and UBUFFER.

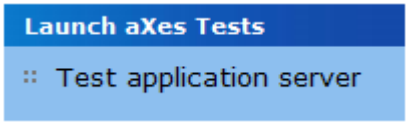
Checking for network/browser compression issues

aXes installs many files on the IFS in compressed format. It delivers them to the browser in this compressed form. Sometimes networks and/or browsers are unable to handle the compressed format correctly (the circumstances in which this problem occurs are arcane).

A compressed file problem is typified by a JavaScript error that says something like "Line 1 character 1 is invalid" - because the compressed file cannot be processed by the JavaScript interpreter.

You can confirm you have this problem by doing this simple test:

Go to the aXes home page and use this option:

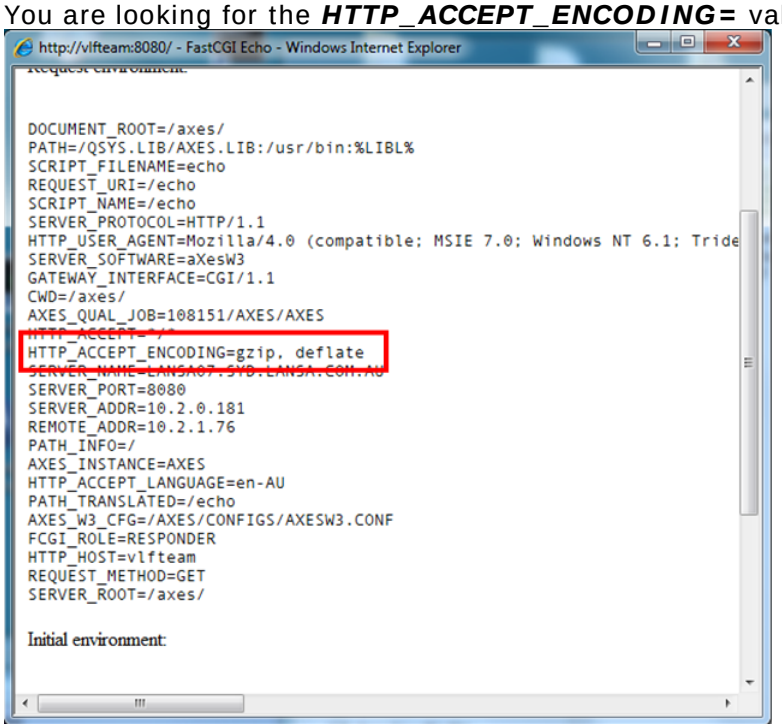


If you cannot even display the home page use a URL formatted like this instead:

http://<aXes host and port>**/echo**

Scroll through the resulting display.

You are looking for the ***HTTP_ACCEPT_ENCODING=*** value - like this:



If the HTTP_ACCEPT_ENCODING= option is not displayed -OR- if it does not say gzip, deflate then you have this compression problem.

If you have the problem then you should use the aXes DECOMPRESS command against the various aXes IFS folders, the most significant one being the <axes root folder>/ts folder. After decompressing you must clear your browser caches.