

User Interface - Bug #2734

Bug # 2677 (New): fix drawing and functional differences between P2J GUI and 4GL GUI

button/gui_btn_test4.p abend after pause

09/23/2015 02:11 PM - Greg Shah

Status:	Closed	Start date:	
Priority:	Normal	Due date:	
Assignee:	Greg Shah	% Done:	100%
Category:		Estimated time:	0.00 hour
Target version:	GUI Support for a Complex ADM2 App	case_num:	
billable:	No		
vendor_id:	GCD		
Description			

History

#1 - 09/23/2015 02:13 PM - Greg Shah

- Target version set to Milestone 12

This is the abend (to see it one must have the logging added to the Dispatcher.processInbound()) as described in [#2700](#):

```
Caused by: java.lang.IllegalStateException: Can not change window to 1 if batch is already started!
    at com.goldencode.p2j.ui.client.gui.driver.AbstractGuiDriver.selectWindow(AbstractGuiDriver.java:1515)
    at com.goldencode.p2j.ui.client.gui.driver.AbstractGuiDriver.enableEvents(AbstractGuiDriver.java:1841)
    at com.goldencode.p2j.ui.client.gui.driver.GuiOutputManager.enableOSEvents(GuiOutputManager.java:257)
    at com.goldencode.p2j.ui.chui.ThinClient.getChanges(ThinClient.java:11821)
    at com.goldencode.p2j.net.Protocol.attachChanges(Protocol.java:274)
    at com.goldencode.p2j.net.Queue.enqueueOutbound(Queue.java:810)
    at com.goldencode.p2j.net.Queue.transactImpl(Queue.java:1109)
    at com.goldencode.p2j.net.Queue.transact(Queue.java:585)
    at com.goldencode.p2j.net.BaseSession.transact(BaseSession.java:223)
    at com.goldencode.p2j.net.HighLevelObject.transact(HighLevelObject.java:163)
    at com.goldencode.p2j.net.RemoteObject$RemoteAccess.invokeCore(RemoteObject.java:1425)
    at com.goldencode.p2j.net.InvocationStub.invoke(InvocationStub.java:97)
    ... 71 more
```

To recreate it, just run the program and press space at the pause. This can be created on 1811q revision 11036.

#2 - 09/25/2015 07:57 AM - Greg Shah

The logging is now checked into the trunk at revision 10940. The latest run of the program abends with this:

```
Caused by: java.lang.IllegalStateException: Can not change window to 1 if batch is already started!
    at com.goldencode.p2j.ui.client.gui.driver.AbstractGuiDriver.selectWindow(AbstractGuiDriver.java:1514)
    at com.goldencode.p2j.ui.client.gui.driver.AbstractGuiDriver.enableEvents(AbstractGuiDriver.java:1840)
    at com.goldencode.p2j.ui.client.gui.driver.GuiOutputManager.enableOSEvents(GuiOutputManager.java:257)
    at com.goldencode.p2j.ui.chui.ThinClient.getChanges(ThinClient.java:11882)
    at com.goldencode.p2j.net.Protocol.attachChanges(Protocol.java:274)
    at com.goldencode.p2j.net.Queue.enqueueOutbound(Queue.java:810)
    at com.goldencode.p2j.net.Queue.transactImpl(Queue.java:1109)
    at com.goldencode.p2j.net.Queue.transact(Queue.java:585)
    at com.goldencode.p2j.net.BaseSession.transact(BaseSession.java:223)
    at com.goldencode.p2j.net.HighLevelObject.transact(HighLevelObject.java:163)
    at com.goldencode.p2j.net.RemoteObject$RemoteAccess.invokeCore(RemoteObject.java:1425)
    at com.goldencode.p2j.net.InvocationStub.invoke(InvocationStub.java:97)
    ... 71 more
```

#3 - 09/25/2015 08:09 AM - Greg Shah

Here is where we generate the exception (AbstractGuiImpl line 1508):

```
public void selectWindow(int windowId)
{
    if (ews == null || ews.getWindowId() != windowId)
    {
        if (ews != null && batch.peek())
        {
            throw new IllegalStateException(
                "Can not change window to " + windowId + " if batch is already started!");
        }

        direct.selectWindow(windowId);

        ews = direct.getWindowEmulator();
    }
}
```

This code is written such that window selection cannot be done while inside a batch. This concept seems sensible since all drawing ops should relate to the same window.

The problem occurs due to this code (AbstractGuiDriver line 1839, inside enableEvents()):

```
// TODO: do we really need to select each window or can we just use
//       direct.getWindowEmulator() to get each one?
for (int wid : windowIds)
{
    selectWindow(wid);

    ews.enableEvents(capture);
}
```

This code can never be used inside a batch. Is it time to address the TODO as a solution? If so, we also need to highlight this batch limitation in

some comments so that people don't re-introduce this later.

In our case, the code is being invoked at the end of `ThinClient.getChanges()`, which seems to be a valid use case:

```
// TODO: Disabling OS events here disables all user input on the client (while
//       the control is on the server). This is in contrast with the original 4GL/Windows
//       behavior where some input is processed. For example client window can be moved
//       while the 4GL app doesn't process any user input instructions.
tk.enableOSEvents(WindowManager.windowIds(), false);
```

I guess the other question is whether it is valid to have batch still be active while returning control to the server?

#4 - 09/25/2015 08:23 AM - Constantin Asofiei

Greg Shah wrote:

I guess the other question is whether it is valid to have batch still be active while returning control to the server?

Batch should never remain open after drawing is completed. I think the exception you've seen is a side effect of something else.

#5 - 09/25/2015 08:30 AM - Constantin Asofiei

The P2J code fails during this invocation during drawing, as it interrogates the server-side to determine the UI theme - to me it was looking suspicious that `ThinClient.getChanges` gets called during drawing, but this is a valid case.

```
public String getUiTheme()
{
    // first call, request server for current theme to use
    if (theme == null)
    {
        Directory dir = DirectoryManager.getInstance();

        theme = dir.getString(Directory.ID_RELATIVE, "windows-os-ui-theme", "classic")
                .toLowerCase();
    }

    return theme;
}
```

So, the real problem is in `AbstractGuiDriver.enableEvents()` - changing the loop to this (addressing the TODO) solves the abend:

```
for (int wid : windowIds)
{
```

```
direct.getWindowEmulator(wid).enableEvents(capture);  
}
```

#6 - 09/25/2015 09:06 AM - Greg Shah

Thank you. I'll include that change and some related comments in my next check-in.

#7 - 09/25/2015 09:17 AM - Greg Shah

- *Status changed from New to Closed*

Task branch 1811r revision 10942 has the fix for this issue.

#8 - 11/10/2015 05:02 AM - Greg Shah

- *% Done changed from 0 to 100*

- *Assignee set to Greg Shah*

#9 - 11/16/2016 12:13 PM - Greg Shah

- *Target version changed from Milestone 12 to GUI Support for a Complex ADM2 App*