Bugs - Bug #1567

NullPointerException in Admin Applet

09/21/2012 07:21 AM - Ovidiu Maxiniuc

Status:	Closed		**Start date:**	09/21/2012
Priority:	Normal		**Due date:**	
Assignee:	Ovidiu Maxiniuc		**% Done:**	100%
Category:			**Estimated time:**	0.00 hour
Target version:				
billable:	No		**case_num:**	
vendor_id:	GCD		**version:**	
Description				

History

#1 - 09/21/2012 07:56 AM - Ovidiu Maxiniuc

The initial issue was that the "Add ACL" button is not working. However, after analyzing the callstack that was thrown:

```
Exception in thread "AWT-EventQueue-1" java.lang.NullPointerException
    at com.goldencode.p2j.admin.client.AdminACL.handleAddACL(AdminACL.java:1497)
    at com.goldencode.p2j.admin.client.AdminACL.access$600(AdminACL.java:61)
    at com.goldencode.p2j.admin.client.AdminACL$5.actionPerformed(AdminACL.java:822)
    at javax.swing.AbstractButton.fireActionPerformed(AbstractButton.java:1995)
    at javax.swing.AbstractButton$Handler.actionPerformed(AbstractButton.java:2318)
    at javax.swing.DefaultButtonModel.fireActionPerformed(DefaultButtonModel.java:387)
    at javax.swing.DefaultButtonModel.setPressed(DefaultButtonModel.java:242)
    at javax.swing.plaf.basic.BasicButtonListener.mouseReleased(BasicButtonListener.java:236)
    at java.awt.Component.processMouseEvent(Component.java:6290)
    at javax.swing.JComponent.processMouseEvent(JComponent.java:3267)
    at java.awt.Component.processEvent(Component.java:6055)
    at java.awt.Container.processEvent(Container.java:2039)
    at java.awt.Component.dispatchEventImpl(Component.java:4653)
    at java.awt.Container.dispatchEventImpl(Container.java:2097)
    at java.awt.Component.dispatchEvent(Component.java:4481)
    at java.awt.LightweightDispatcher.retargetMouseEvent(Container.java:4575)
    at java.awt.LightweightDispatcher.processMouseEvent(Container.java:4236)
    at java.awt.LightweightDispatcher.dispatchEvent(Container.java:4166)
    at java.awt.Container.dispatchEventImpl(Container.java:2083)
    at java.awt.Component.dispatchEvent(Component.java:4481)
    at java.awt.EventQueue.dispatchEventImpl(EventQueue.java:648)
    at java.awt.EventQueue.access$000(EventQueue.java:84)
    at java.awt.EventQueue$1.run(EventQueue.java:607)
    at java.awt.EventQueue$1.run(EventQueue.java:605)
    at java.security.AccessController.doPrivileged(Native Method)
    at java.security.AccessControlContext$1.doIntersectionPrivilege(AccessControlContext.java:87)
    at java.security.AccessControlContext$1.doIntersectionPrivilege(AccessControlContext.java:98)
    at java.awt.EventQueue$2.run(EventQueue.java:621)
    at java.awt.EventQueue$2.run(EventQueue.java:619)
    at java.security.AccessController.doPrivileged(Native Method)
    at java.security.AccessControlContext$1.doIntersectionPrivilege(AccessControlContext.java:87)
    at java.awt.EventQueue.dispatchEvent(EventQueue.java:618)
    at java.awt.EventDispatchThread.pumpOneEventForFilters(EventDispatchThread.java:269)
    at java.awt.EventDispatchThread.pumpEventsForFilter(EventDispatchThread.java:184)
    at java.awt.EventDispatchThread.pumpEventsForHierarchy(EventDispatchThread.java:174)
    at java.awt.EventDispatchThread.pumpEvents(EventDispatchThread.java:169)
    at java.awt.EventDispatchThread.pumpEvents(EventDispatchThread.java:161)
    at java.awt.EventDispatchThread.run(EventDispatchThread.java:122)
```

I found out that com.goldencode.p2j.admin.client.AdminClient.resourceTypes was not correctly initialized before accessing it.

Indeed, when logon/authentication takes place a null pointer is thrown:

```
Exception in thread "AWT-EventQueue-1" java.lang.NullPointerException
    at com.goldencode.p2j.security.SecurityAdmin.getAdminDef(SecurityAdmin.java:999)
    at com.goldencode.p2j.admin.AdminServerImpl.getAdminDef(AdminServerImpl.java:353)
    at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
    at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:39)
    at sun.reflect.DelegatingMethodAccessorImpl.invoke(DelegatingMethodAccessorImpl.java:25)
    at java.lang.reflect.Method.invoke(Method.java:597)
    at com.goldencode.p2j.util.MethodInvoker.invoke(MethodInvoker.java:76)
    at com.goldencode.p2j.net.Dispatcher.processInbound(Dispatcher.java:675)
    at com.goldencode.p2j.net.Conversation.block(Conversation.java:316)
    at com.goldencode.p2j.net.Conversation.run(Conversation.java:158)
    at java.lang.Thread.run(Thread.java:662)
```

As a result com.goldencode.p2j.admin.client.AdminLogon.logon() ends abruptly and lets uninitialized some fields in com.goldencode.p2j.admin.client.AdminClient because postLogon() is not called any more.

#2 - 09/21/2012 08:23 AM - Ovidiu Maxiniuc

The initial exception (null pointer) is thrown in AdminLogon.logon() at line 492.
The call to com.goldencode.p2j.admin.AdminExports.getAdminDef() ends abruptly with a NullPointerException.
I was able to follow the call stack up to the following:

```
ThreadSafeQueue<E>.enqueue(E) line: 79
Queue.enqueueOutbound(Message) line: 802
Queue.transactImpl(Message, int) line: 1088
Queue.transact(Message, int) line: 575
DirectSession(BaseSession).transact(Message, int) line: 178
HighLevelObject.transact(RoutingKey, Object[]) line: 163
RemoteObject$RemoteAccess.invokeCore(Object, Method, Object[]) line: 1407
RemoteObject$RemoteAccess(InvocationStub).invoke(Object, Method, Object[]) line: 97
$Proxy0.getAdminDef() line: not available
AdminLogon.logon() line: 494
```

There is no indication of any issue in the server log.

#3 - 09/21/2012 11:56 AM - Ovidiu Maxiniuc

I found out and fixed the cause. In com.goldencode.p2j.security.AdminResource, the AdminResource ar is initialized in constructor as

```
ar = (AdminResource)sm.getPluginInstance("admin");
```

However, because so it is configured, it is returned as null. There are 6 references of this field but in only one place there is no null-guard before accessing its content (in getAdminDef():999).

I added the guard but I have an issue here, if ar is null, the newly created AdminDef.Profile s should have permission for this resource instance set to true or false ? For the moment, I assumed false even though the other guards are using true:

```
def.profile[i] = new AdminDef.Profile(prof[i], (null == ar) ? false : ar.checkAnyAdminAccess(prof[i]));
```

Now, after recompiling the project, the original NullPointerException does not occur any more.

Instead another one can be seen in console:

```
Exception in thread "AWT-EventQueue-1" java.lang.NullPointerException
    at com.goldencode.p2j.admin.client.AdminClient.postLogon(AdminClient.java:796)
    at com.goldencode.p2j.admin.client.AdminLogon.logon(AdminLogon.java:524)
    at com.goldencode.p2j.admin.client.AdminLogon.access$100(AdminLogon.java:62)
    at com.goldencode.p2j.admin.client.AdminLogon$2.actionPerformed(AdminLogon.java:249)
    at javax.swing.JTextField.fireActionPerformed(JTextField.java:492)
    at javax.swing.JTextField.postActionEvent(JTextField.java:705)
    at javax.swing.JTextField$NotifyAction.actionPerformed(JTextField.java:820)
    at javax.swing.SwingUtilities.notifyAction(SwingUtilities.java:1639)
    at javax.swing.JComponent.processKeyBinding(JComponent.java:2851)
    at javax.swing.JComponent.processKeyBindings(JComponent.java:2886)
    at javax.swing.JComponent.processKeyEvent(JComponent.java:2814)
        ...
```

Looking at AdminClient.java:796 you can see that the menuExt remains null because loadCustomExtensionsPlugin(String pluginClass) returns true without initializing it.

For the moment, I added, again, a null-guard here:

```
if (null != menuExt)
{
   menuExt.insertCustomMenuItems(menuList);
}
```

However, the menuList does contain a few items and they should be displayed in some kind of menu, I think.

At this moment, the "Add ACL" button is functioning fine, but I am not very confident about the patches I have done.
Please advise.

#4 - 09/24/2012 12:20 PM - Greg Shah

- Status changed from New to WIP

- Assignee set to Ovidiu Maxiniuc

Constantin and Stanislav: please review this issue and advise Ovidiu.

#5 - 09/24/2012 02:10 PM - Constantin Asofiei

About the NPE in SecurityAdmin.getAdminDef: if the ar field is null, then you should either use true or the value returned by sr.checkAdminAccess() (not sure which, as sr.checkAdminAccess() is used in some places to protected against null ar field and other places just assume true if ar field is null) - please check the implications if sr.checkAdminAccess() and if true is used.

About the NPE in AdminClient.postlogon - you are correct, you need to protect against null menuExt. But I think the entire "rebuild the menu with custom modifications" block can be skipped if null menuExt (please test):

```
if (null != menuExt)
{
   // rebuild the menu with the custom modifications
   List<JMenuItem>menuList = menu.getMenuList();
   menuExt.insertCustomMenuItems(menuList);
   menu.buildMenu(adminDef.profile);
   setJMenuBar(menu.getMenu());
}
```

The menuList contains the menus as displayed in the admin console, it is passed to the insertCustomMenuItems call because the custom extension plugin can add custom menu items to the menubar.

#6 - 10/23/2012 08:44 AM - Ovidiu Maxiniuc

- File om_upd20121002a.zip added

- Status changed from WIP to Review

Attached the old fix for issue.
Please review.

#7 - 10/26/2012 03:27 PM - Greg Shah

I am OK with the changes. The only problem I see is that both files need their copyright date updated.

I also prefer (menuExt != null) instead of (null != menuExt). The reason is how it "reads". The first reads "null is not equivalent to menuExt" and the second reads "menuExt is not null". The first form requires a bit more thinking (at least it does for me) to determine its logical meaning.

Please update the copyright notices and repost the result here. Don't delete the original update file.

I assume you have tested this code in a generic P2J environment. The resulting code should be tested in a Majic environment since they heavily use the admin console. You can work with Stanislav or Constantin to get access to a proper environment for testing. Report the results here and so long as everything is working OK, we will schedule the check in to CVS and the application of the change to TIMCO's staging.

#8 - 11/05/2012 08:54 AM - Ovidiu Maxiniuc

- File om_upd20121105a.zip added

I updated the files and attached the new update patch.
The (null == somePtr) test comes from my experience as a C/C++ programmer. This is is a good practice because if, by mistake, you type just one =
the compile will not complain and the test will always fail, because in C/C++ NULL is 0, aka false. A side effect of this is that the pointer (or any other
variable) will be altered by assignment. It is, indeed, awkward, and I am glad that Java is really a strong-typed languages so this kind of 'good
practice' is not needed any more.

I tested the changes in Majic environment and everything is Ok. In fact the changes are irrelevant to Majic as the new code handles the lack of
custom menu extensions.
The changes in the code do not interfere with normal run of the application because the Majic directory storage declares some extensions which
makes the program flow to avoid the locations where the NPE was thrown. This is probably why this bug was not visible on the production
environment.

However, to be sure, I altered the gso-directory.xml so that the admin interface lacked the extended menu items and also execute the tests with the
old and new code for comparison. The new code worked fine.

#9 - 11/05/2012 01:23 PM - Greg Shah

I am OK with the final result. You can check it into CVS. Don't forget to tag the specific files with their Hxxx history tag. Please work with Constantin
to apply the change to staging. When it is both in CVS and in staging, you can send out the update notification email (with the zip file attached).

#10 - 11/06/2012 04:27 AM - Constantin Asofiei

I've applied the update to staging; P2J is rebuilt.

#11 - 11/12/2012 10:46 AM - Greg Shah

Please make sure this update is checked into Bazaar and I will close the issue. Remember that in Bazaar, we do NOT tag each file with a history tag.
Just make sure that both files are checked in with the same "bzr commit" command, by explicitly listing those files (and ONLY those files). Don't
check in other pending files with the same command.

#12 - 11/12/2012 11:10 AM - Ovidiu Maxiniuc

Files committed. You can close the issue.

#13 - 11/12/2012 11:18 AM - Greg Shah

- Status changed from Review to Closed

- % Done changed from 0 to 100

Files

om_upd20121002a.zip	42.4 KB	10/23/2012	Ovidiu Maxiniuc
om_upd20121105a.zip	42.4 KB	11/05/2012	Ovidiu Maxiniuc