RunaWFE. TaskNotifier. Developer guide

Version 3.0

Project structure

- lib – additional libraries
- nsis – build files
- resources – application settings
- resources/img – pictures for UI
- src – project source files

Architecture

This application works with the RuneWFE system through two "channels" simultaneously: RMI and HTTP. RMI and HTTP calls are independent from each other and are used for different purposes. RMI is used for retrieving information for tray application icon and popup tips. Rtn doesn't use direct HTTP calls, but the built in browser (RunaWFE web-interface) uses HTTP. The essential part of work with RunaWFE is carried out via web-interface that uses HTTP.

RunaWFE task notifier (rtn) must be able to be authenticated in RunaWFE system in order to start its work. Authentication can be performed both over HTTP and RMI. Before the authentication over RMI the icon of task notifier in the system tray displays a red circle with white rectangular inside and new tasks notifications is not available. Before the authentication over HTTP web interface RunaWFE is not available. But if one of the authentications fails the other is not affected.

Rtn client periodically checks the current user tasks (over RMI) and if there are any changes in the user tasks list the user is notified via tray icon change and popup tips. If user hovers mouse cursor over the rtn icon in the system tray a check for new tasks occurs.

Authorization

In order to add another implementation of RMI authorization it is necessary to create a class that implements ru.runa.notifier.auth.Authenticator and add created class to LoginHelper. Currently there are 2 implementation available:

- UserInputAuthenticator (userinput) - is used for user login-password authentication. User is prompted to enter login and password first thing at the beginning of working with RunaWFE session.
- KerberosAuthenticator (kerberos) - is used for authentication with the help of kerberos. No user (login and password) input required.

The authentication over HTTP is set relatively to the root of RunaWFE web application. Available types of HTTP authentication depend on the RunaWFE configuration and include:

- /login.do - provides authentication via prompting for entering login and password. In order for this type of authentication to work correctly it is necessary that RMI authentication is also set to login-password authentication type.
- /krblogin.do - provides authentication via kerberos

- /ntlmlogin.do - provides authentication via ntlm

Description of Classes

ru.runa.notifier.PlatformLoader

Start class of the application. When started, it shows a splash (a picture) in another Shell and after initialization it starts another Shell with support of system tray.

ru.runa.notifier.GUI

The main class of the application graphical shell. Creates a Browser and attaches event handlers to the three buttons in the top right corner of the screen.

ru.runa.notifier.tray.SystemTray

Provides support in system tray. Contains system tray event handlers.

ru.runa.notifier.tray.SystemTrayAlert

Implements a pop-up window near system tray. Contains functions for drawing this window. Called when it is necessary to notify the user about new tasks.

ru.runa.notifier.checker.TaskChecker

Provides periodical (TimerTask) or requested (SystemTray) checking of new tasks.

ru.runa.notifier.auth.LoginHelper

This class performs Kerberos authentification in a RuneWFE system. In case authentication fails, it displays a dialog window.

ru.runa.notifier.auth.LoginModuleResources

Used as container for kerberos_module.properties settings.

ru.runa.notifier.auth.LoginConfiguration

Configuration for authentification.

org.eclipse.swt.widgets.STrayItem

SWT message event handler class. Designed to respond to MouseOver events.

ru.runa.notifier.util.ExtendedThread

Used by the SystemTrayAlert class.

ru.runa.notifier.util.WidgetsManager

Helper class.

ru.runa.notifier.util.ResourcesManager

A class to liad and store application.property values.

ru.runa.notifier.util.LayoutsManager

A helper class, used by the SystemTrayAlert class.

ru.runa.notifier.util.ImageManager

A manager class to handle images (load, unload).

Application Configuration

kerberos_module.properties

appName=com.sun.security.jgss.initiate

moduleClassName=com.sun.security.auth.module.Krb5LoginModule

useTicketCache=true

doNotPrompt=true

debug=false

serverPrincipal=WFServer

appName – login module name

moduleClassName – login module class

useTicketCache – whether to use cache for Kerberos tickets

doNotPrompt – do not use user input in any situation

debug – additional logging for authentication

serverPrincipal – login from the server side (configured in AD)

application.properties

All Russian values are specified in ANSI encoding.

application.name, popup.newtasks, user.name, user.password, login.message,

retry.message, error.login, error.internal, popup.no.tasks, popup.tease,

popup.error, menu.open, menu.exit – localized user messages

server.url – server URL

(Example: http://localhost:8080/wfe)

login.relative.url – a starting page of the system (an authentification page)

(Examples:

/login.do – a form for entering user name and password;

/ntlm.do – NTLM authentification;

/ntlm.do – Kerberos authentification;

)

start.relative.url – a page with tasks

(Example: /manage_tasks.do?tabForwardName=manage_tasks)

check.tasks.timeout – Timeout for checking for new tasks, ms

authentication.type – sets authentification type for RMI (possible values are **userinput, kerberos)**

infopath.submit.button.name – The name of the button for running InfoPath form

infopath.submit.button.name – The name of the button for InfoPath form cancellation

(Only for username and password authentification)

userinput.default.login – default login name, recommended to left blank

userinput.default.login – default password, recommended to left blank

References

[1] http://www.gnu.org/licenses/lgpl.html

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