# Evaluation Scenario Definition

A well-defined GUI test scenario was implemented with each tool with the goal of evaluating tool features, capabilities, and performance under common conditions. The evaluation scenario is described in the following paragraphs.

## Scenario Overview

The SUT chosen for this evaluation scenario is an ASRC Federal MSE developed web application called CIWi (Component Installation Wizard). CIWi provides capabilities for packaging and deploying software components over a network to distributed remote hosts. CIWi’s GUI provides features for selection of a packaged software component and automates deployment of the component’s files onto all hosts where the software was defined to be installed.

The CIWi GUI provides an adequately complex system for the purpose of evaluating the Automated GUI Test tools. The scenario automates use of the CIWi GUI to install and then uninstall a packaged software component on one network host.

## Scenario Design

The high level scenario design is as follows:

* Launch a web browser
* Login to the CIWi web application
* Use CIWi to install an software package onto a remote host
* Verify install was successful
* Use CIWi to uninstall the package from the same host
* Verify uninstall was successful
* Logout of CIWi

The scenario is run twice for each tool in order to evaluate tool performance under success and failure conditions. The CIWi Java service running on the remote node is stopped in order to create a repeatable situation where the scenario reliably fails. This causes the CIWi web application to fail when it attempts to submit an install transaction, thus permitting the evaluation of tool failure detection, handling, and reporting capabilities.

A VNC server is started on the SUT host machine. Each tool performs the test using a VNC viewer to access the SUT desktop “screen”.

Jenkins is used to automate running the scenarios for each tool. This provides the benefits of being able to coordinate starting each scenario with one click, and capturing execution times for each tool evaluated. To this end the following discrete steps are created and used within Jenkins for each of the tools that were evaluated:

* Start VNC server on the SUT
* Start CIWi service
* Run scenario expecting success
* Stop CIWi service (to induce failure during next scenario run)
* Run scenario expecting failure
* Stop the VNC server on the SUT (to reset the SUT desktop)

## Scenario Steps

The following are the detailed steps of the common scenario used for evaluation of all tools.

* Launch Firefox
* Navigate to rhelserv1/ciwi/ciwi/
* On "CIWI Login" screen,
  + Type Username: ciwi
  + Type Password: asd123
  + Click "Login" or "type return"
* On the "Domain" window,
  + Select "Innovation Lab" from dropdown
  + Click "Set Domain"
* At "Main Menu" screen,
  + Click "Components
* On the "Components" screen,
  + Click "Modify" for the ADS component
* On the "Component Status" screen,
  + Click the tab "By Host"
  + Click the "Install" button for the rhel1 host
* On "Remote Login Credentials" screen,
  + For "Username", type "autotest"
  + For "Password", type "autotest"
  + For "Install as User", delete all contents of the text entry box
  + Click "Next"
* On "Installation Path" screen,
  + Type "/home/autotest/ciwi"
  + Click "Next"
* On "Site Specific Questions" screen
  + Click "Next"
* On "Physical Hosts" screen
  + Click "Next"
* On "Summary" screen
  + Click "Install"
* On the screen that pops up,
  + Verify "submitted"
  + Click "OK"
* On the "Components" screen,
  + Click the "Modify" button for the ADS component
* On the "Component Status" screen,
  + Click the tab "By Host"
  + Wait for up to 1 minute for the rhel1 "Status" column to display "Installed"
  + Click "Uninstall"
* On "Remote Login Credentials" screen,
  + For "Username", type "autotest"
  + For "Password", type "autotest"
  + For "Uninstall as User", delete all contents of the text entry box
  + Click "Next"
* On "Site Specific Questions" screen
  + Click "Next"
* On "Hosts" screen
  + Click "Next"
* On "Summary" screen
  + Click "Uninstall"
* On the screen that pops up,
  + Verify "submitted"
  + Click "OK"
* On the "Components" screen,
  + Click the "Modify" button for the ADS component
* On the "Component Status" screen,
  + Click the tab "By Host"
  + Wait for up to 1 minute for the rhel1 "Status" column to display "Uninstalled"
* Click "Logout"
  + Exit Firefox

From the above, each step is broken down into pre-defined subroutines to be implemented using each tool in order to evaluate test modularity mechanisms of the tools.

The time to implement the scenario with each tool is recorded as a metric for tool usability.