

TeamMentor WebServices Unit Tests

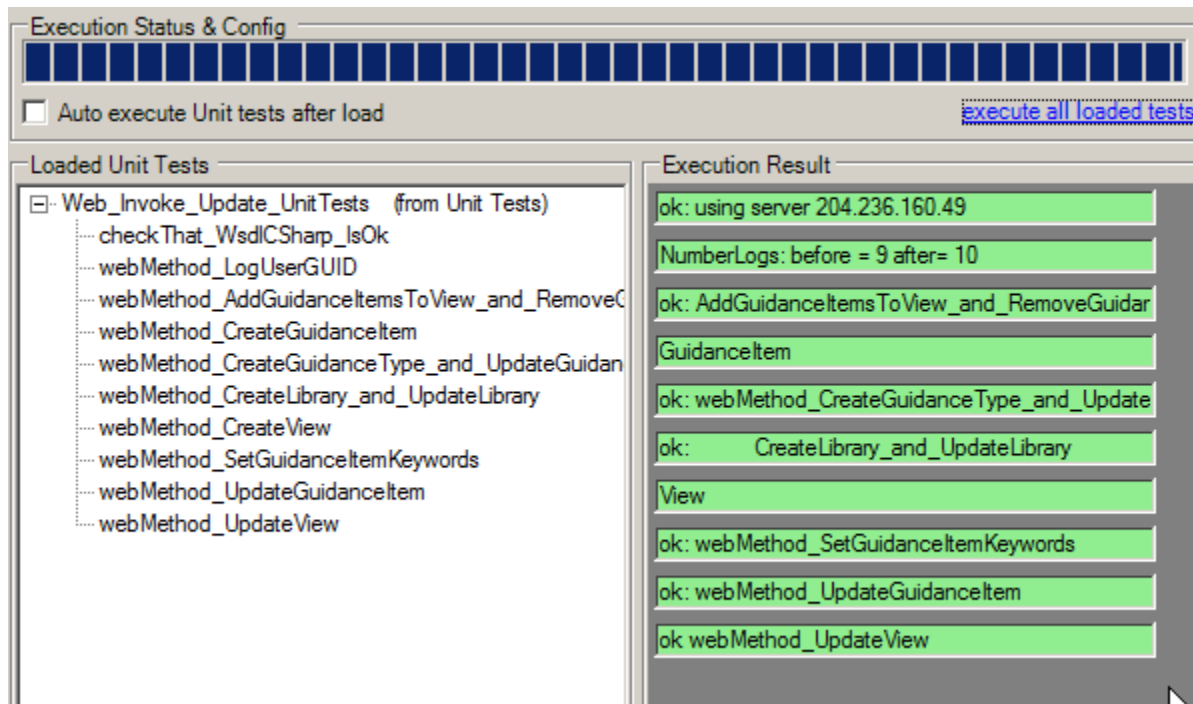
To improve TeamMentor WebService's testability (and to help understanding how they work), a number of Unit Tests were created. They currently cover all of the original functionality exposed by the multiple WebServices and most of the one exposed by the new webservices (note that this is mostly functional testing, a separate document will show the security mappings)

These UnitTests were executed on two different websites:

- a website which hosts a copy of the OWASP TM database:
 - <http://204.236.160.49:8562> (website)
 - <http://204.236.160.49:8563/OnlineStorage.asmx>
- a website which hosts a database that contains the original SI Library (some of the tests expected to find the SI Library since they look for SI content)
 - <http://204.236.160.49:9123> (website)
 - <http://204.236.160.49:9124/onlinestorage.asmx> , <http://204.236.160.49:9124/webservices/authentication.asmx> , <http://204.236.160.49:9124/webservices/lingdb.asmx> , <http://204.236.160.49:9124/webservices/teammentorsecurity.asmx>

SecurityInnovation.TeamMentor.WebServices.OnlineStorage_Invoke_Update_UnitTests.cs

These test are focused on the OnlineStorage.asmx webmethod that modify the database, and only users with 'Admin' permission will be able to invoke them



SecurityInnovation.TeamMentor.WebServices.OnlineStorage_Invoke_Query_UnitTests.cs

These test are focused on the OnlineStorage.asmx webmethod that allow the user to Fetch/Query data (i.e. there should be no modifications on the database, and any user with 'ReadArticles' permission can invoke them

Execution Status & Config

☐ Auto execute Unit tests after load

[execute all loaded tests](#)

Loaded Unit Tests

Web_Invoke_Query_UnitTests (from Unit Tests)

checkThat_WsdlCSharp_IsOk

webMethod_GetAllLibraryIds

webMethod_GetLibraryById

webMethod_GetLibraryById_with_BadData

webMethod_GetLibraryIndex

webMethod_GetGuidanceTypes

webMethod_GetGuidanceTypeById

webMethod_GetGuidanceTypeByName

webMethod_GetGuidanceTypeByCaption

webMethod_GetGuidanceItemById

webMethod_GetGuidanceItemById_TestAllRecords

webMethod_GetGuidanceItemContent

webMethod_GetGuidanceItemContent_TestAllRecords

webMethod_GetGuidanceItemKeywords

webMethod_GetGuidanceItemKeywords_TestAllRecords

webMethod_GetSchemaById

webMethod_GetViewById

webMethod_GetListViewForNodeId

webMethod_GetNavigationTree

webMethod_GetNavigationTreeChilds

webMethod_GetAllUserLogs

Execution Result

ok: using server 204.236.160.49

System.String[]

Library

ok: webMethod_GetLibraryById_with_BadData

LibraryIndex

GuidanceType[]

ok: GetGuidanceTypeById

ok: GetGuidanceTypeByName

ok: GetGuidanceTypeByCaption

GuidanceItem

__Skipped test because executeLongTest flag is not set

<H1>Applies to</H1>Microsoft® Window

__Skipped test because executeLongTest flag is not set

ok: GetGuidanceItemContent

__Skipped test because executeLongTest flag is not set

Schema

ok: tested for 55 views

ok: 113 guidance items received

NavigationTree

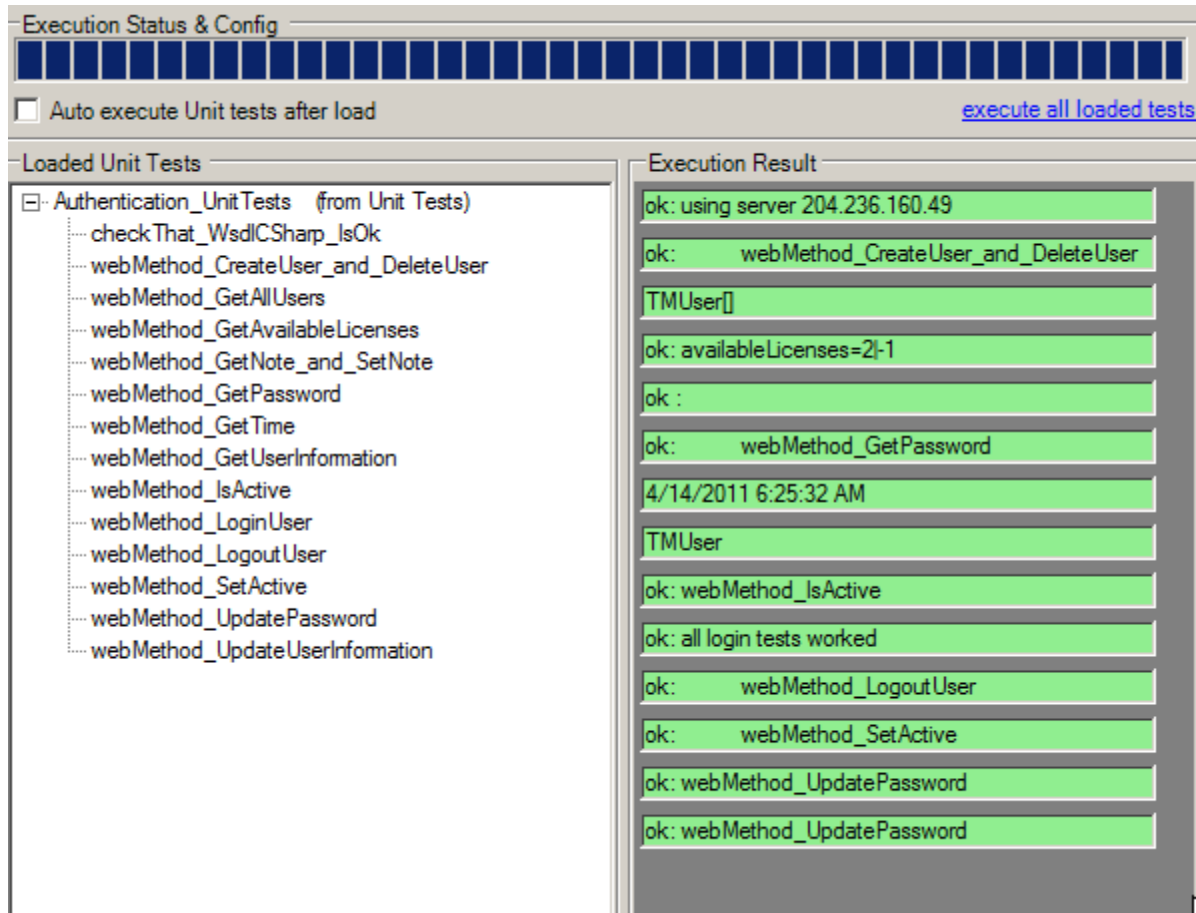
ok: GetNavigationTreeChilds

<UserLogsArray><UserLogs xmlns="x-schema:#Schema

the 2 tests that were skipped are tests that try to download large parts of the database and are quite slow to run remotely

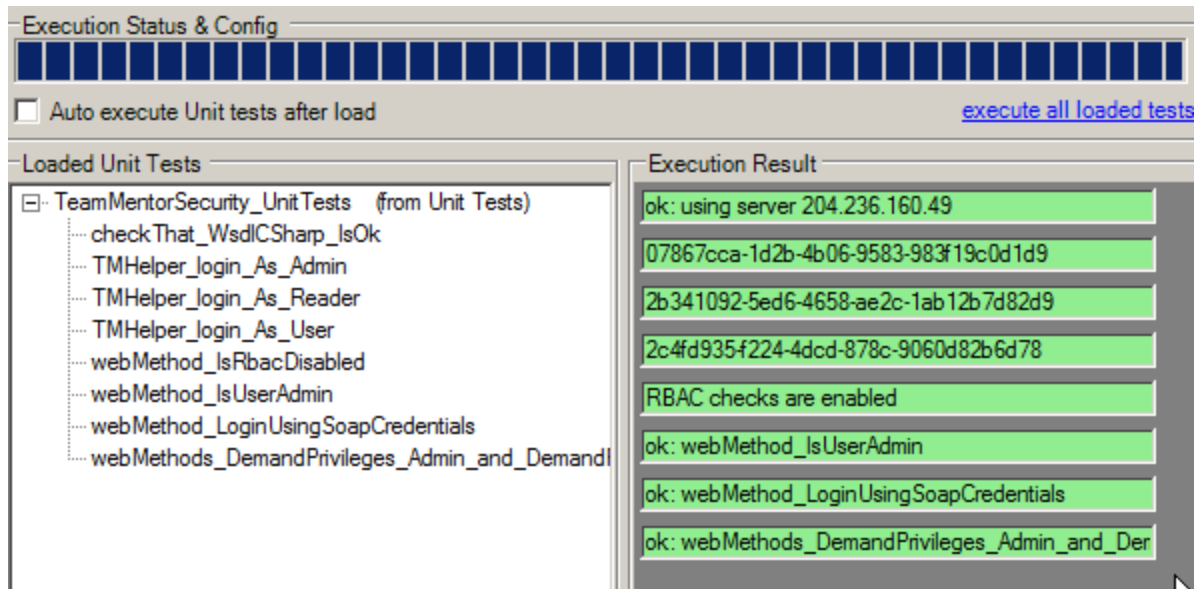
SecurityInnovation.TeamMentor.WebServices.Authentication_UnitTests.cs

These test the multiple authentication WebMethods that exist in the Authentication.asmx webservice



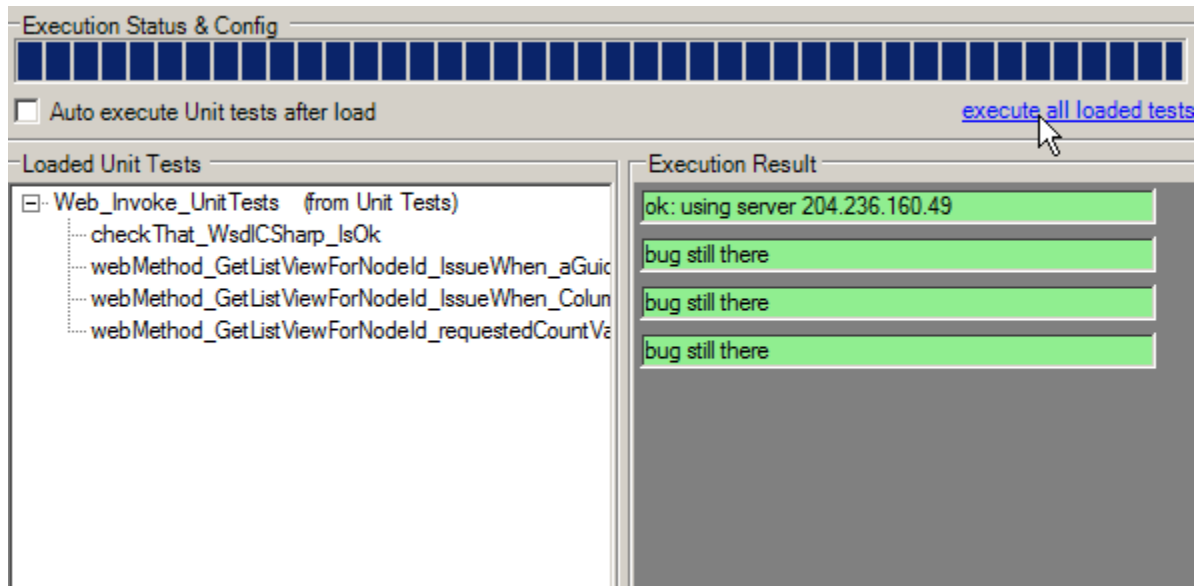
SecurityInnovation.TeamMentor.WebServices.TeamMentorSecurity_UnitTests.cs

These test the multiple authentication WebMethods that exist in the TeamMentorSecurity.asmx webservice (some of help to debug the RBAC system)



SecurityInnovation.TeamMentor.WebServices.OnlineStorage_BUGS_UnitTests.cs

These are tests for a couple bugs that were discovered on a WebMethod's behaviour and the test was initially used to understand the exact behaviour+bug and then/now, is used to test for its existence



Example of UnitTests execution Log and Source code

Here are some source code examples of the created UnitTests. Note the existence of helper methods like the 'login_As_Admin' which help to set-up the WebMethod request with the right authentication and authorization requirements.

Example of a simple UnitTest

```
///*****  
///*** GetAllUsers  
[Test]  
public TMUser[] webMethod_GetAllUsers()  
{  
    var adminSessionID = TMLoginHelper.login_As_Admin();  
    var allUsers = authentication.GetAllUsers(adminSessionID);  
    Assert.That(allUsers.size() > 0, "there were no users returned");  
    return allUsers;  
}
```

Example of a UnitTest with two steps

```
///*****  
///*** CreateLibrary and UpdateLibrary  
/// |  
[Test]  
public string webMethod_CreateLibrary_and_UpdateLibrary()  
{  
    // check creation  
    var newLibraryName = "SI_2_UnitTests".format(5.randomLetters());  
    Assert.That(onlineStorage.library(newLibraryName).isNull(), "random library name should not exist");  
  
    var library = onlineStorage.createTestLibrary(newLibraryName);  
  
    //check updates and delete  
    var newTitle = "changed_title_{0}".format(5.randomLetters());  
    library.caption = newTitle;  
    onlineStorage.UpdateLibrary(library);  
    var updatedLibrary = onlineStorage.library(newTitle);  
    Assert.That(updatedLibrary.notNull() && updatedLibrary.caption==newTitle, "library caption was not updated");  
  
    onlineStorage.deleteLibrary(newTitle);  
  
    return "ok: CreateLibrary_and_UpdateLibrary";  
}
```

Example of a complex UnitTest

```
///*****  
///*** UpdateGuidanceItem  
///  
[Test]  
public string webMethod_UpdateGuidanceItem()  
{  
    var unitTestLibrary = onlineStorage.createTestLibrary("TempLibrary_for_UnitTest_{0}".format(4.randomLetters()));  
    var libraryIdGuid = unitTestLibrary.id.split(":")[1].guid();  
  
    var newGuidanceItemId = this.onlineStorage.createGuidanceItem(libraryIdGuid.str(),  
                                                                    "testing update_{0}".format(5.randomLetters()),  
                                                                    "Html test content");  
  
    var newGuidanceItem = this.onlineStorage.guidanceItem(newGuidanceItemId);  
    Assert.That(newGuidanceItem.notNull(), "new GuidanceItem was not there");  
  
    var newTitle = "title_{0}".format(10.randomLetters());  
    var newContent = "content_{0}".format(10.randomLetters());  
    newGuidanceItem.title = newTitle;  
    this.onlineStorage.UpdateGuidanceItem(newGuidanceItem, newContent);  
  
    var updatedGuidanceItem = this.onlineStorage.guidanceItem(newGuidanceItemId);  
    Assert.That(updatedGuidanceItem.title == newTitle, "title was not updated");  
    Assert.That(this.onlineStorage.GetGuidanceItemContent(newGuidanceItemId.str()) == newContent,  
                "content was not updated");  
  
    updatedGuidanceItem.delete = true;  
    this.onlineStorage.UpdateGuidanceItem(newGuidanceItem, "");  
    var deletedGuidanceItem = this.onlineStorage.guidanceItem(newGuidanceItemId);  
    Assert.That(deletedGuidanceItem.delete == true, "delete flag was not set");  
  
    //newGuidanceItem.show.info();  
    return "ok: webMethod_UpdateGuidanceItem";  
}
```

Log Execution trace of multiple UnitTests

Some of the test workflows are quite complex and have multiple steps:

[7:19:48 AM] DEBUG: Execution result was: true
 [7:19:48 AM] INFO: Library mark for deletion: temp_Lib_QuwNwjWCdF
 [7:19:46 AM] INFO: test Library created: temp_Lib_QuwNwjWCdF
 [7:19:45 AM] INFO: Created view with caption 'View to delete via view update - dCEVxUtUEi' on folder 'View Edits' with id d51b913c-229c-49ae-a7ea-11ea2052ec6c
 [7:19:45 AM] INFO: test Library created: e11fd594-7827-4761-9d72-1e272d07898c
 [7:19:44 AM] INFO: test Library created: TempLibrary_for_UnitTest_CCvT
 [7:19:43 AM] INFO: executing method: webMethod_UpdateView
 [7:19:43 AM] DEBUG: Execution result was: true
 [7:19:42 AM] INFO: Created GuidanceItem with the title'testing update_IIIwd' with id: 00000000-0000-0000-0000-0000000022db
 [7:19:41 AM] INFO: test Library created: dea124e4-0af5-4764-a861-d9e18d25fa76
 [7:19:40 AM] INFO: test Library created: TempLibrary_for_UnitTest_fJua
 [7:19:39 AM] INFO: executing method: webMethod_UpdateGuidanceItem
 [7:19:39 AM] DEBUG: Execution result was: true
 [7:19:37 AM] INFO: editing keywords for guidanceItem with Id:00000000-0000-0000-0000-000000001aa1
 [7:19:37 AM] INFO: Created GuidanceItem with the title'keywords_test_KNtSSteNeX' with id: 00000000-0000-0000-0000-000000001aa1
 [7:19:37 AM] INFO: test Library created: 77d994c4-e770-4ad4-b503-5e50fbb82ac5
 [7:19:36 AM] INFO: test Library created: TempLibrary_for_UnitTest_KTPI
 [7:19:34 AM] INFO: executing method: webMethod_SetGuidanceItemKeywords
 [7:19:34 AM] DEBUG: Execution result was: true
 [7:19:34 AM] INFO: Created view with caption 'another topic_RgrSXutwMe' on folder 'in this folder' with id e52f0407-8dfd-48e3-861a-de29dd48a663
 [7:19:34 AM] INFO: test Library created: 1f533034-4608-4f1c-bb21-8329567d9328
 [7:19:32 AM] INFO: test Library created: TempLibrary_for_UnitTest_xLmd
 [7:19:31 AM] INFO: executing method: webMethod_CreateView
 [7:19:31 AM] DEBUG: Execution result was: true
 [7:19:31 AM] INFO: Library mark for deletion: changed_title_oQkhi
 [7:19:30 AM] INFO: test Library created: SI_2_UnitTests
 [7:19:28 AM] INFO: executing method: webMethod_CreateLibrary_and_UpdateLibrary
 [7:19:28 AM] DEBUG: Execution result was: true
 [7:19:27 AM] INFO: Testing GuidanceType functions with ID: 7fa39222-bef3-4ef2-afdb-6326309f664c
 [7:19:27 AM] INFO: executing method: webMethod_CreateGuidanceType_and_UpdateGuidanceType_and_RemoveGuidanceTypeColumns
 [7:19:27 AM] DEBUG: Execution result was: true
 [7:19:27 AM] INFO: Created GuidanceItem with the title'this is a title' with id: 00000000-0000-0000-0000-000000002037
 [7:19:27 AM] INFO: test Library created: 0959748d-f7a0-47c5-85ff-fe31c97e594e
 [7:19:25 AM] INFO: Created GuidanceItem with the title'GI title' with id: 00000000-0000-0000-0000-0000000011b7
 [7:19:25 AM] INFO: test Library created: TempLibrary_for_UnitTest_gSmx
 [7:19:24 AM] INFO: executing method: webMethod_CreateGuidanceItem
 [7:19:24 AM] DEBUG: Execution result was: true
 [7:19:23 AM] INFO: Created view with caption 'some topic_6' on folder 'in this folder2' with id 50a24714-0fbc-47eb-b186-46ff324da954
 [7:19:22 AM] INFO: Created GuidanceItem with the title'aaa_lktXE' with id: 00000000-0000-0000-0000-0000000010a2
 [7:19:21 AM] INFO: test Library created: 318fa73a-77b-40b6-b52f-88e47b92392d
 [7:19:20 AM] INFO: test Library created: TempLibrary_for_UnitTest_njhb
 [7:19:19 AM] INFO: executing method: webMethod_AddGuidanceItemsToView_and_RemoveGuidanceItemsFromView
 [7:19:19 AM] DEBUG: Execution result was: true
 [7:19:18 AM] INFO: executing method: webMethod_LogUserGUID