

ORACLE iLEARNING – COURSEWARE TROUBLESHOOTING GUIDE

AUDIENCE

This document aims to provide courseware developers and learning and development professionals with answers to some of the more common issues experienced by end users when running courseware on the Oracle iLearning LMS.

SUMMARY

There are many things that can potentially go wrong when deploying courseware on iLearning. Most of which can be avoided by accurately preparing your courseware for the SOE (Standard Operating Environment). However, SOEs are not always as standard as we'd like them to be and you are likely to experience some users not being able to playback courseware, especially if it is the first online course they have run.

Some of the issues experienced can be quite simple to resolve, and the user will be up and running in a matter of minutes. Some issues can be more complex to resolve, and in this case it is best to collect as much data about the end user as possible, and refer the issue to somebody with a good understanding of the technical requirements of the system and courseware.

ASKING QUESTIONS AND ASSESSING THE ISSUE

When diagnosing courseware issues, it is extremely useful to get as much information about the users system as possible and find out what they were doing at the time of the problem. This may help you re-create the issue, and sometimes, user behaviour can highlight a functional weakness in the course.

Getting as much information as possible provides you with the tools to make a proper diagnosis. A doctor can't make a diagnosis on a sore foot until they've made an assessment and asked the right questions.

1. What system is the user running (browser vendor & version, operating system)? You can use the Seertech Browser test application to report on the users system.
2. Does the system meet the required minimum specification for the LMS and content? For example does it have the required browser, java, flash and pop-ups enabled?
3. Has the user previously been able to run courseware from the PC they are currently on?
4. Ask the user to describe exactly what happens. Are there error messages and what do they say?
5. If possible, login as the user and attempt to play the course. Do you experience the same issues?

COMMON COURSEWARE ISSUES

POP-UPS

If the course is launching in a popup window or is using the iLearning popup window, ensure that the user does not have a popup blocker enabled. This may prevent the course from launching and can affect tracking of the course.

Use the Seertech Solutions browser test application to detect if pop-ups are enabled or if you do not have access to the browser test application, Google **pop-up test**

JAVA NOT INSTALLED

To run SCORM courseware and iLearning authored assessments, it is a requirement that you have Java installed on your system.

Sun JVM / JRE environment 1.5+ is supported by the LMS, with the exception of JVM / JRE environment 1.6_11 which has a known bug and does not work with the LMS.

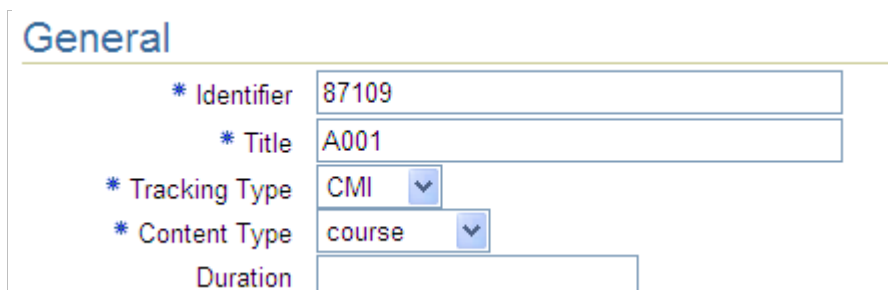
Use the Seertech Solutions browser test application to detect a Java installation, or if you do not have access to the browser test application, Google **java tester**

API ERROR MESSAGE (SCORM COURSEWARE ONLY)

You may receive an error message saying that the API or SCORM API cannot be found. This message is generated by the course when it is built to SCORM specification. There are a few scenarios that could cause this outcome.

Tracking is not set to CMI (will affect all users)

For a SCORM course to run and track correctly the Tracking Type needs to be set to CMI. To check this, login into the iLearning administrators section and select the problem content object. Under the **General** subsection you will see the **Tracking Type** dropdown list. Ensure CMI is selected and click **Update** if you needed to change it.



General	
* Identifier	87109
* Title	A001
* Tracking Type	CMI
* Content Type	course
Duration	

Oracle SCORM CMI Adapter not set up (will affect all users)

In order to run SCORM courseware you must ensure that the CMI adapter is setup on your content server. Without the CMI adapters, the courseware has no means of communication with the LMS and vice versa.

Consult the help documentation on in the admin section of iLearning for instructions on how to set up a SCORM CMI Adapter.

Reference: Oracle iLearning Admin >Help > Managing Content > Enabling SCORM CMI Tracking

Java not installed

It is a requirement that the Java Run Time Environment is installed on the users system if they intend to run SCORM courseware or iLearning authored assessments.

Java Settings

Sometime a specific setting on the user's installation of Java can prevent the courseware from accessing the API. If "Scripting of Java Applets" is set to "disable", the browser will not allow the courseware to get/set any values using the Java Applet. SCORM courseware will not run is "Scripting of Applets" is set to "disable".

API too deeply nested

SCORM courseware uses an algorithm to find the SCORM API to communicate with the LMS. If the course fails to find the API, it could also be possible that the algorithm has a problem.

JAVASCRIPT ERRORS

Courseware can sometimes fail and show an error or information message on the screen, however, courseware can also fail **silently**, meaning there is nothing obvious on screen as to why the course has failed.

JavaScript errors will always generate an error message on the browser, but it can be hidden away sometimes. If a course is failing to load, and errors have not appeared on the screen, it is also a good idea to do one of the following.

1. **IE6, IE7 and IE8:** A yellow hazard sign will appear in the bottom left corner of your browser.

Double clicking this hazard sign will display a more detailed message.



2. **Firefox:** Open the error console by using the following key combination CLT+SHIFT+J and then click the Errors tab
3. **Safari:** Open the error console by using the following key combination CTL+ALT+C. Anything in red text is worth noting.
4. **Google Chrome:** Open the error console by using the following key combination CTL+ALT+J. Anything in red text is worth noting.

5. Opera: Tools > Advanced > Error Console

Check your JavaScript errors against some of the errors listed in this document. Especially anything related to the **API** or **Permission Denied**.

MISSING PLUG-IN

Some courseware may require a plug-in in order to run on the users system. Common examples include Adobe Flash, Adobe Captivate and Apple QuickTime. If a user is missing a particular plug-in, it can result in the courseware not loading at all, or portions of the courseware not loading or working correctly.

To trouble shoot a missing plug-in, first establish the end user system requirements for playing the course. These should have been discussed and formally signed-off at the beginning of your eLearning project. Once you are clear on the technical requirements, you can then ask the person who is experiencing difficulties to run some tests for you.

The Seertech Solutions browser test application may cover the plug-in you wish to test, if not, just Google **n version test**, where **n** is the plug-in name. Confirm the plug-in is installed, and that the correct version is available (if version specific).

PROBLEMS WITH TRACKING USER PROGRESS

There are a large number of factors that can affect the success of a course tracking correctly. The factors can involve the course offering, users system, the course and user behaviour. It is a matter of assessing how widespread the tracking issue is, and how the problem manifests itself in order to diagnose correctly.

Unsupported Data Types Used

The Oracle iLearning LMS supports SCORM 1.2 RTE-1 (only mandatory CMI data fields). This is the same for AICC also. As of Oracle iLearning 5.2, SCORM 2004 is supported, and at the time of writing Oracle are working with the ADL in order to achieve SCORM 2004 conformance.

If courseware is attempting to send unsupported data to the LMS it will fail. In the case of AICC you are likely to lose all other data as well, as it is sent all at once, and a failure means all will fail.

In the case of SCORM, you should still see bookmarking, score and lesson status working to some degree. However, course logic may rely on retrieving the unsupported data from the LMS and therefore scores and lesson status may not be calculated.

This problem will have to be fixed in order for the course to work correctly.

We recommend testing AICC course communications using Firefox browser with Firebug. This will allow you to view communications between the courseware and LMS and vice versa.

To view SCORM communications, use the Java console and enable tracing in the advanced options.

Course Offering

Check the course offering details and make sure that you have not selected **Browse Only** under the Student Access sub section of the course properties.

Users System

If the users system does not properly support the courseware by blocking pop-ups or using an incorrect browser, it can affect the tracking of the course. Bookmarks, completion status and scores can all be affected. Ensure the user's system has the required configuration and software to run the course.

A common cause of tracking being completely lost is when courseware is launched in pop-up window using the iLearning "open in new window" property. When exiting the course a small pop-up window is launched that writes data back to the LMS. If this pop-up window is blocked, the data will be completely lost.

Course

Occasionally the course may contain errors that prevent the tracking from working correctly. This may be apparent at the start of the course when first trying to run it, but some problems may only become apparent as users progress further through the course and regularly save & exit.

User Behaviour

If a course is well designed and instructions on exiting the course are clear and easy to follow, the problems with user behaviour will be negligible. However, if it is not clear how to save & exit a course, this can contribute to users closing browser windows prematurely and closing tracking windows, risking losing tracking data. It is not the users fault, but the fault of the course for not guiding the user in exiting the course correctly.

It is recommended that courseware is deployed with the LMS toolbar enabled with the exit button present. Users should be encouraged to use this exit button to finally exit the course.

If launching a course in a popup window, we would recommend **not** using the iLearning "Open in new window" feature, but launching in the LMS course player with the LMS toolbar present. If the course needs to launch in a popup window, it is recommended that the course launches its own popup window. For a solution see the **Launch SCORM or AICC Course Popup Window** application at http://www.seertechsolutions.com/all_assets/pages/learning/courseware-developers.html.

SLOW LOADING OR SLOW RESPONSE TIMES

Occasionally some users may experience slow loading courseware or slow response times. It is important to fix this issue if it affects many users. Apart from it being a tedious experience for the user, you are likely to experience a high amount of user tracking data being lost. There are many factors that contribute to this. Some of the more common factors can be:

1. Course files are too large (file size) for the target bandwidth. Some flash content, video and audio demands a lot of bandwidth and should be authored so that it will playback as smoothly as possible on the end users system.
2. Course files do not buffer. It is a good idea for the courseware developer to use technology that allows them to buffer audio or video before playing back, and continuing to download. This means that the user can begin to interact with the course before it has fully downloaded.
3. If the end user is accessing the course outside of you standard operating environment, they may be connecting with a low connection speed resulting in the course running slowly. Confirm that the user has the minimum required bandwidth to run the course.
4. If caching is switched off, or not enough space is allocated, then user will be forced to download common assets every time they are requested. There are certain techniques your courseware developer may be able to employ in order to circumvent this problem, although a retrospective change can be difficult.
5. There can be certain times during the day that the system will be at its busiest and experiencing a peak in traffic. Users may experience slower response times during this period and should be asked to access the system at a different time if possible.

UNSUPPORTED BROWSER

A lot of courseware is developed and tested to a specific browser vendor and/or version. Confirm which browser(s) your course will support and ensure your users are using the supported browser(s) to play the course.

You can ask your users to confirm this by running the Seertech Solutions browser test application, or if you do not have access to this ask the user to:

1. **IE:** Select Help > About Internet Explorer
2. **Firefox:** Select Help > About Mozilla Firefox
3. **Safari:** Select the cog icon (top right) > About Safari
4. **Google Chrome:** Select the spanner icon (top right) > About Google Chrome
5. **Opera:** Select Help > About Opera

PERMISSION DENIED ERRORS

If the course is displaying Permission Denied error messages, it is likely that the course is trying to access a different domain to the content server (cross domain scripting). For example if your course is hosted on **www.abc.com** and is trying to communicate with **www.123.com**, this can cause problems.

SCORM

If these problems exist with SCORM content, the course is likely to be trying to access a function or variable in the parent frame. Content must not use **top** when accessing variables and methods as the course is hosted in the LMS course player frameset.

You can also receive permission errors when you are running your content on a different domain to the server. In order to circumvent this problem you must copy the CMI adapters to the content server, and then set them up in the iLearning admin section.

Reference: Help > Managing Content > Enabling SCORM CMI Tracking

AICC

If the course is developed to AICC, then it is likely that the browser is preventing cross domain scripting and all HTTP Requests will not work. For Flash content you are able to use the crossdomain.xml file to circumvent this issue. Google **Flash crossdomain.xml**.

For HTML/JavaScript applications, you can use Flash to facilitate your communications to and from the LMS using the crossdomain.xml file. Google **Cross-domain AJAX using Flash**.

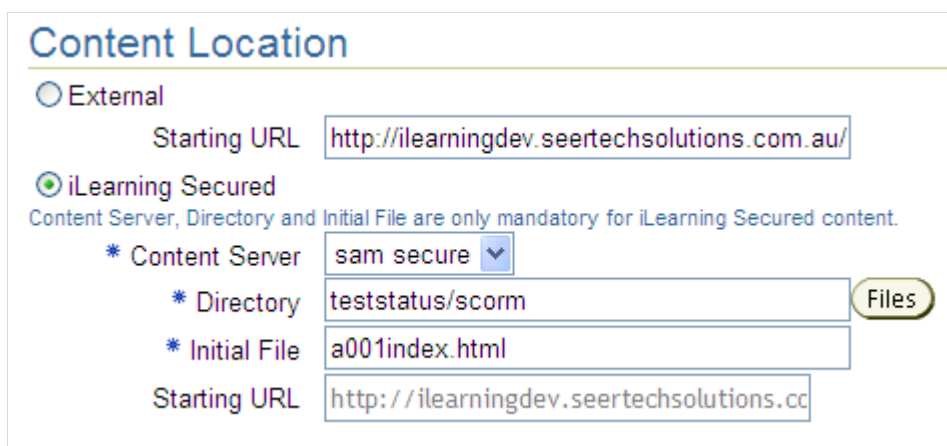
Another solution is to use a communication proxy that is hosted on the content server. All AICC communications are issued to the proxy, which then in turn communicated with the LMS and set or gets the data. Google **cross-domain JavaScript proxy** for more information.

404 PAGE NOT FOUND ERROR ON FIRST LAUNCH

It is possible that you have incorrectly set up your content object in the LMS and the course cannot find the **Initial File**.

To check this, login into the iLearning administrators section and select the content object. Scroll down through the properties section to **Content Location** subsection.

First check the **Initial File** and make sure that the correct file is named. Now check for the existence of the file named as the **Initial File** using the **Files** button to the right of the **Directory** input field.



Oracle iLearning is a case sensitive system so you should make sure that the correct case is being used for bookmarks and other data. INDEX.HTML and index.html are seen as two separate resources by the system.

404 PAGE NOT FOUND ERROR ON SUBSEQUENT LAUNCH

If a user has previously launched the course and can no longer access it due to a 404 page not found error, the usual cause is incorrect data stored in the **lesson_location** or a change in the content structure.

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Content Structure Change

First confirm if the course structure has changed since the user has last accessed the course. For example, if a screen has been deleted and the course re-uploaded, it is possible that the user is bookmarked on the screen that has been removed. If this is the case, it will depend on your course and the ability of your system administrator as to how the issue will be resolved. Possible resolutions include:

- If the course asks the user if they wish to return to a bookmarked page, select No,
- If the administrator has the appropriate knowledge, it is possible to delete the stored bookmark (LOCATION) from the users attempt record,
- Your courseware developer may be able to add some logic to the course that will detect a broken link (404 error) and re-direct to the menu page if there is, or
- Re-offer the course to the users who are experiencing problems.

Courseware Problems

If you are confident that this is not the case, and it is happening frequently with many different users, it points to a problem with the course and the data it is storing in the **lesson_location**.

You will need to notify your courseware developer of the issue and provide as much information as possible as to which screen the user thought they were last on. If possible have your system administrator retrieve the **lesson_location** and **suspend_data** for the affected to users and forward to your courseware developer.

If the course is live and If possible prevent anybody else from accessing the course until the problem is fixed and then use one of the following possible resolutions:

- If the course asks the user if they wish to return to a bookmarked page, select No,
- If the administrator has the appropriate knowledge, it is possible to delete the stored bookmark (LOCATION) from the users attempt record,
- Your courseware developer may be able to add some logic to the course that will detect a broken link (404 error) and re-direct to the menu page if there is, or
- Re-offer the course to the users who are experiencing problems.

BROKEN LINKS AND MISSING ASSETS

Oracle iLearning is a case sensitive system so you should make sure that the correct case is being used for bookmarks and assets.

INDEX.HTML and index.html are seen as two separate resources by the system.

Courseware that is developed on a non-case sensitive system, such as Windows will not highlight these issues until the courseware is loaded onto the Oracle iLearning system.

FEEDBACK

This document has been produced using the collective knowledge and experience of the Seertech Solutions staff. We hope it will be of assistance to you.

This document can only get better and be of more assistance with your contribution and feedback. Please share your feedback, experiences and solutions with us. We'd especially like to know if we got something wrong.

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