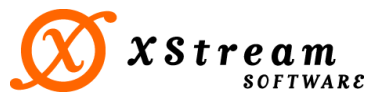


# **RapidExam<sup>TM</sup> v3.0 Deluxe**

**SCORM 2004, v1.2, and v1.1  
Compliance**



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## Introduction

**RapidExam** is a SCORM-compliant technology that enables developers to save exams as SCORM-compliant content packages.

The **Sharable Content Object Reference Model (SCORM)**, published by the Advanced Distributed Learning (ADL) project, is a collection of standards and specifications (adapted from multiple sources) that are used to enable interoperability, accessibility and reusability of web-based learning content.

As a continually evolving standard, there have been several versions of SCORM. RapidExam supports **SCORM 2004** (the most current version of SCORM) as well as **SCORM v1.2** and **SCORM v1.1** (previous versions of SCORM that are still widely used). A learning content file that complies with the SCORM specifications can be easily deployed and managed using any Learning Management System (LMS) that supports SCORM (including XStream's own web-based XStream LMS). For the purposes of SCORM, an LMS is any system for managing and deploying e-learning content.

**NOTE:** A SCORM-compliant course may contain different types of e-learning content, including courses, exams, or other material. In SCORM terminology, the term "course" is used generically to refer to a structured SCORM package containing **Sharable Content Object (SCO)** learning modules, which may incorporate actual course content or other learning content such as exams.

## Components of a SCORM Course

A SCORM content package is structured within a designated course folder and subfolders. There are various required files and **SCO** files contained within the course folder (labeled with the name of the course).

In RapidExam, an exam file may be saved as a SCORM 2004, SCORM v1.2, or SCORM v1.1 content package. The folder and file structure of the package will differ slightly depending on the format selected.

**NOTE:** A SCORM 2004, v1.2, or v1.1 content package may be deployed and managed through any third-party LMS that supports the same version of SCORM. XStream's own web-based XStream LMS currently supports SCORM v1.2 only (and not SCORM 2004 or SCORM v1.1).

### SCORM 2004 or v1.2 Course Structure

As an example, assume we have saved an .EXM file as a SCORM 2004 or v1.2-compliant content package named **MyExam01**. The package would contain the following components within a folder named "**MyExam01**":

- **imsmanifest.xml** – The **Content Aggregation Model (CAM)** manifest file, which contains all the information necessary for registering and deploying the course. The **imsmanifest.xml** file, which includes data describing the overall course package (i.e., content structure, metadata, resources, sequencing information, and other details about the aggregation or grouping of the different course elements), is necessary for sharing and reusing the contents of the course within any Learning

Management System (LMS) that supports SCORM. In order to register the SCORM course in a SCORM-compliant LMS, the system administrator provides a link to the course's **imsmanifest.xml** file.

Note that the **imsmanifest.xml** file is always present in the course folder for each SCORM course. Although it always has the same predefined structure, the contents of the **imsmanifest.xml** file will be different for each course (since different courses will have different names, descriptions, content structures, authors, resources, etc.).

**NOTE:** The "ims" in "imsmanifest.xml" comes from "IMS Global Learning Consortium, Inc." which is one of the organizations involved in defining the SCORM and metadata specifications.

- **MyExam01.xml** – The course metadata file, which contains the course's metadata (meaning data about data). The main functionality of metadata is to provide a common way of describing the learning resources so that they can be searched for, located, retrieved and reused in other places. Metadata, as such, provides third-party users with information about the learning resource and how it can be used so that they can reuse it as part of the SCORM courses they are creating.
- **Various XSD Files** – The various required IMS and ADL XSD control documents (such as **adlcp\_rootv1p2.xsd**, **imscp\_rootv1p1p2.xsd**, etc.), which are used by the manifest file during the import process into the LMS.
- **XMLSchema.dtd** and **datatypes.dtd** (SCORM 2004 only) – The **Document Type Definition (DTD)** files used to validate the XSD files. The DTD files essentially define the rules of the XSD files, such as which elements are present and the structural relationship between the elements. Specifically, the DTD files define such things as valid tag names and attribute names, which fields are optional, which are required, and which may occur multiple times in the document. The DTD files help to validate the data when the receiving application does not have a built-in description of the incoming data.
- **SCORMCONTAINER.JS** (stored in the "XRMScripts" subfolder) – The Javascript file for implementing **SCO** functionalities. Because the **SCORMCONTAINER.JS** file is a common file used to access the **SCO** functionalities for each lesson in the course, it is stored in a separate "XRMScripts" subfolder.
- **SCO File** (stored in the "Lessons" subfolder) – The **Sharable Content Object (SCO)** is a standardized, reusable learner object containing the actual exam content. The **SCO** comprises three files:
  - **HTML file** (e.g., **SCO1.HTM**) - The actual **SCO** file that refers to the SCORMCONTAINER.JS file in order to access **SCO** functionalities. The .HTM file contains code for launching the exam content file\* from the LMS (e.g., **XStream LMS**).

\*NOTE: In the case of an XML-based **SCO**, there is no HTML file generated (because it is not necessary). The .XML content file serves as the main **SCO** file.

  - **EXM or SWF or XML content file** (e.g., **SCO1.EXM** or **SCO1.SWF** or **SCO1.XML**) - The RapidExam file (in .EXM, .SWF, or .XML format) containing the contents of the exam.
  - **XML metadata file** (e.g., **SCO1\_Metadata.XML**) - The metadata file containing the metadata details (tags) for the **SCO**. Metadata essentially provides descriptive information about the

content represented in the **SCO**. It is used to facilitate the reuse and discoverability of content within a content repository.

Note that the developer may also save an .EXM file as a standalone **SCO** (comprising an HTML file, EXM/SWF/XML content file, and XML metadata file) that is not part of a ready-made SCORM content package. Standalone **SCOs** may be reused within other SCORM content packages.

- **MyExam01.zip** – A zip package file containing all of the course-related files described above.

## **SCORM v1.1 Course Structure**

Assume we have saved an .EXM file as a SCORM v1.1-compliant content package named **MyExam01**. The structure of this SCORM v1.1-compliant content package is very similar to a SCORM 2004 or v1.2-compliant content package. The SCORM v1.1-compliant content package would contain the following components within a folder named “**MyExam01**”:

- **MyExam01.xml** – The **Content Structure Format (CSF)** manifest file, which contains all the information necessary for registering and deploying the course. This is the SCORM v1.1 equivalent of the imsmanifest.xml file provided in a SCORM 2004 or v1.2 course.
- **scormcsf(1.1).dtd** – The **Document Type Definition (DTD)** file used to validate the CSF manifest file. The DTD file essentially defines the rules of the CSF file, such as which elements are present and the structural relationship between the elements. Specifically, the DTD file defines such things as valid tag names and attribute names, which fields are optional, which are required, and which may occur multiple times in the document. The DTD file helps to validate the data when the receiving application does not have a built-in description of the incoming data.
- **MyExam01\_metadata.xml** – The course metadata file containing the course’s metadata.
- **SCORMCONTAINER.JS** (stored in the “**XRMScripts**” subfolder) – The Javascript file for implementing **SCO** functionalities.
- **SCO File** (stored in the “**Lessons**” subfolder) – Contains the **SCO** (consisting of an .HTM file, .EXM/.SWF/.XML content file, and .XML metadata file).
- **MyExam01.zip** – A zip package file containing all of the course-related files described above.

## Saving an Exam as a SCORM Course or SCO

RapidExam enables the developer to save an exam as a structured SCORM course or a standalone **SCO**:

- **Save as EXM-based, Flash-based, or XML-based SCORM Course** – When an exam is saved as a SCORM course, RapidExam generates all the necessary files (i.e., course manifest file, course metadata file, SCORMCONTAINER.JS file, SCO file, and other required files) required for the SCORM course package. The course may then be registered, deployed, and scored/tracked through any LMS that supports SCORM.
- **Save as EXM-based, Flash-based, or XML-based SCO** – When an exam is saved as a standalone **SCO**, RapidExam generates all the necessary files (i.e., .HTM file, .EXM/.SWF/.XML content file, and .XML metadata file) required for the **SCO**. The **SCO** may be subsequently incorporated into a third-party SCORM course in order to be scored/tracked as part of the course.

**NOTE:** When creating a SCORM course or SCO in RapidExam, the developer may customize the course manifest, SCO metadata, and/or sequencing information by entering information in the fields of the forms provided. However, the process of creating a SCORM course in RapidExam is almost completely automated and requires minimal user input. Accordingly, the course manifest, SCO metadata, and sequencing forms do not have to be filled out in order to create the SCORM course. Entering manifest and metadata details is optional, and you may bypass this step if you wish. Note that even if the course manifest and SCO metadata forms are not filled out, all the necessary information will be automatically provided within the course manifest **imsmanifest.xml** file (which also contains a link to the course's .XML metadata file containing metadata details) and SCO metadata file. You need to fill out the manifest and metadata forms only if you want to customize your own manifest and metadata information for the course and SCO.

## Managing/Deploying SCORM Courses

A SCORM 2004, v1.2, or v1.1 course may be registered and deployed through any Learning Management System (LMS) that supports the equivalent SCORM standard.

A **SCO** within a SCORM-compliant content package (saved from an .EXM file in RapidExam) is a self-contained, browser-launchable file. RapidExam **SCOs** are always launched using a web browser (e.g., Internet Explorer or Netscape). In addition, in order to enable proper tracking by the LMS, the self-contained **SCO** within the content package is played individually (i.e., a **SCO** cannot be launched from another **SCO**). Note that the precise method used to access the **SCO** within the SCORM content package is dependent on the individual LMS.

**XStream LMS**, XStream's web-based Learning Management System, may be used to register, launch, and track any SCORM v1.2 course created with RapidExam, RapidBuilder, Performance Analyzer, RapidSVG, or another third-party SCORM course-building tool.

**NOTE:** XStream LMS only supports SCORM v1.2 courses. It does not support SCORM 2004 or v1.1 courses. The SCORM 2004 and v1.1 courses created with RapidExam must be managed and deployed using a third-party LMS that supports SCORM 2004 or v1.1.

## Contact Information

For more information on the SCORM-compliant technology of **RapidExam v3.0 Deluxe**, please contact our sales team either by phone at (613) 731-9443 or by e-mail at [salesupport@xstreamsoftware.com](mailto:salesupport@xstreamsoftware.com).

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