

avalonlearning: WP4 Virtual Learning Platform:WP4 Operational handbook



<toc> Table Of Contents

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Introduction

This deliverable of the operational handbook is closely linked to the other deliverables in work-package 4 of the AVALON project and shares some components with other deliverables in this work-package. This work-package constitutes the operational infrastructure which is used in the execution of action learning events and may be useful to replicate the infrastructure used.

Audience

The special focus of this deliverable, different to other deliverables in this work-package, is to serve IT system administrators who would have to run such an infrastructure. Thus the intended **audience of this deliverables are IT system administrators**.

Motivation

This handbook shall enable system administrators to replicate and run the basic operational infrastructure used in the AVALON project. It shall also help to migrate content to other, similar systems.

Methodology

The methodology used in this deliverable is based on the "Rational Unified Process" and the IBM Global Service Method. Similar methodologies but different namings are posted by different software engineering vendors, with similar results. As the "Rational Unified Process" is widely used in the academic and commercial software engineering domain, we will use the relevant naming and structuring without an additional reference.

Deviating from the usual content of an operational handbook we will NOT include access schemes and user credentials like certificates, user permissions, etc. in the public version of this document.

Architectural Desicions

In 2009 openID was the protocol of choice to integrate internet-services provided by different systems. It is still regarded as an effective open-standard and data privacy protection solution. However, it turned out not to be very user friendly for an average student/ educator, thus in late 2010 we turned towards testing/using facebook-connect, see <http://moodle.org/mod/data/view.php?id=13&rid=3316>

Operative AVALON IT Infrastructure

The IT system in this section describes the system as it is/ was used during the duration of the AVALON project.

System Context

The system context illustrates the focus of this document:

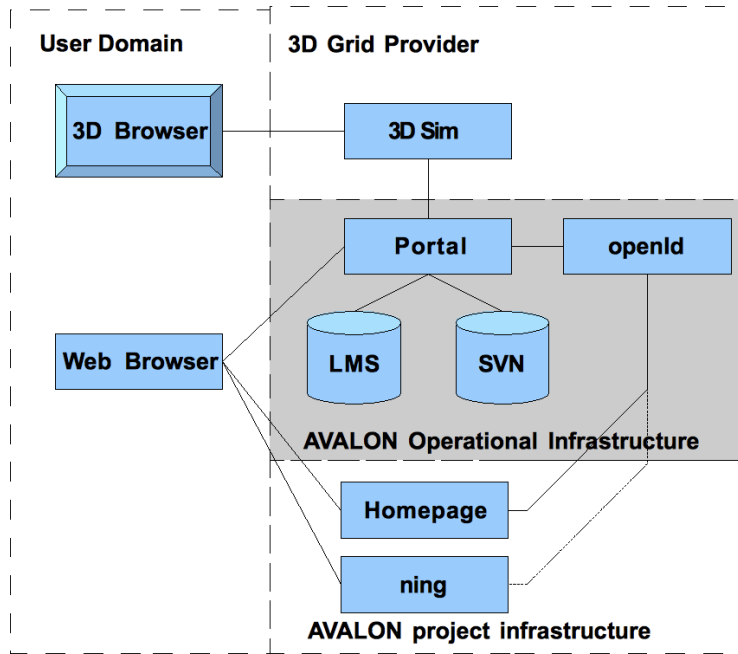


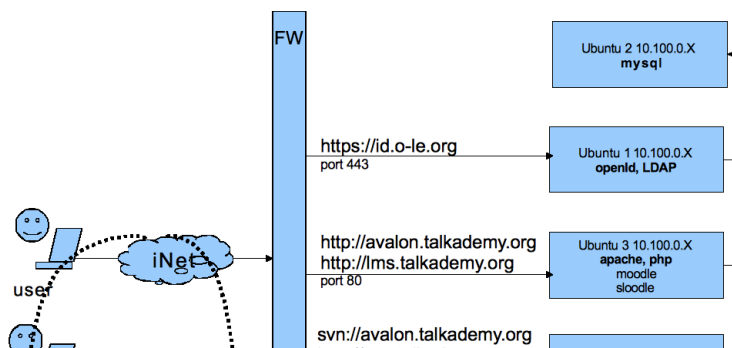
Fig. 1: System Context of the AVALON Operational Infrastructure

Only the components on the grey background are included in this documentation. The components required for WP4-3 are separately documented in "AVALON WP4-3 GUI configuration"

- The user system is typically a PC connected to the internet with 3D browser software and web-browser software installed. Typically a number of users are connected at the same time to share a live action learning event in the 3D space. This PC is under control of the user and cannot be accessed directly by the service provider;
- The 3D simulation on a remote system, provided by a 3D grid, in our case this is the service of Linden Labs operating the Second Life grid. We only have limited access to this system using a 3D browser ourselves;
- The operational infrastructure we are operating based on an LMS and an SVN repository plus some web-service applications included in the web-portal servicing both a human readable Web browser in the client domain as well as machine readable web-services addressed by the 3D simulator. Single Sign On functionality and basic authentication is provided by the openId server;
- The AVALON project infrastructure is hosted based on standard services like Google Groups, Ning, Wordpress etc. If Ning authentication allows an openId integration or is proprietary this needs to be assessed later in the project.

Operational Model

Security sensitive information has been removed from the operational model.



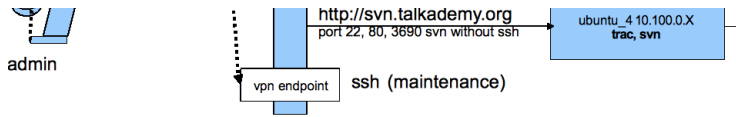


Fig. 2: Operational Model

Fig. 2 shows that the different protocols are routed to different machines:

- Authentication is handled by the openld server, serving the https protocol;
- the LMS including the portal application and the 2D/3D integration (ref. WP4-2) is served via the http protocol;
- the SVN repository can be accessed by the svn(ssh) protocol or a web-interface.

Installation

Security sensitive information like usernames and passwords are not included in this setup guide

General setup

1. Ubuntu server setup <http://www.ubuntu.com/getubuntu/download-server>;
2. Add hostnames and config firewall (depending on your network infrastructure);
3. Create SSL certificate for https domain (depending on your organizational structure), usually this certificate needs to be financially maintained at a signing authority like VeriSign.

Web- and Application-server configuration

(0) Start Apache with PHP module

#####

Server Checks

Name Information Report Status

unicode must be installed and enabled OK

database mysql version 4.1.16 is required and you are running 5.0.51 OK

php version 4.3.0 is required and you are running 5.2.4.2.5.6 OK

php_extension iconv should be installed and enabled for best results OK

php_extension mbstring should be installed and enabled for best results OK

php_extension curl should be installed and enabled for best results OK

php_extension openssl should be installed and enabled for best results OK

php_extension tokenizer should be installed and enabled for best results OK

php_extension xmlrpc should be installed and enabled for best results OK

php_extension ctype should be installed and enabled for best results OK

#####

(1) Installation of Moodle 1.9.6+ Version vom 23.5.09 (weekly Build: 20090520))

-> http://docs.moodle.org/en/Step-by-step_Install_Guide_for_Ubuntu

(2) Add missing modules

\$ sudo apt-get install php5-gd php5-curl php5-xmlrpc

\$ sudo apt-get install zip unzip

-> <http://wiki.ubuntuusers.de/Baustelle/Moodle>

(3) Openld plugin

-> <http://moodle.org/mod/data/view.php?id=13&rid=928>

also see README (*)

(4) Sloodle plugin

-> http://slicweb.sjsu.edu/sl/index.php/Install_Sloodle

also see README (*)

(5) Book plugin

-> <http://moodle.org/mod/data/view.php?d=13&rid=319&filter=1>

(6) iTunes block

-> <http://moodle.org/mod/data/view.php?d=13&rid=1582&filter=1>

(*) if more languages are added, there are additional things to do! See README

(6) Add open source code patches

see SVN repository:

<http://code.google.com/p/avalon-learning>

more information how to access the repository see [WP4-1 Repository for 2D and 3D object](#)

Security Policy, Access Schemes and User Permissions

Removed from the public version of this document.

Maintained Post-Project IT Infrastructure

Public services

A few services will be moved from private to public operations or discontinued after the end of the project, anyhow the results and content of the AVALON project will be available to the public after the end of the project and an operational infrastructure in place:

- the 3D Sim (the island "[AVALON Learning](#)" in [Second Life](#)) will stay funded and accessible to the public for some time in the future
- the LMS will be moved to the url <http://lms.workademy.net/course/category.php?id=3>
- the SVN repository will be moved to the url <http://code.google.com/p/avalon-learning> and made public available
- the homepage <http://avalonlearning.eu> will stay online and maintained
- the community portal <http://avalon-project.ning.com> will stay online and funded for some time in the future
- the wiki <http://avalonlearning.pbworks.com> will stay online and funded for some time in the future

For accessing the contents on the post-project infrastructure, see also [WP4-1 Repository for 2D and 3D object](#).

Commercial services

An existing commercial service providing a similar service platform:

- <http://www.avatarclassroom.com> (launched 2010, not related to the AVALON project, also combining Second Life and moodle.org)

AVALON project partner might offer commercial infrastructure hosting services in the future, please check the homepage on this.

Content Migration Guide

Processing steps for packaging 2D and 3D content to create reusable packages for educators

1.) Identify WHERE the content used in an AVALON learning-event is, which needs to go into the repository

=> collect the data in the wiki [Summary of courses](#)

2.) Check on PERMISSIONS and licensing issues

=> provide infos that we are allowed and enabled to handle the content

3.) Transcode the content to FIT INTO the repository structure

=> see [WP4 2D 3D content publishing component](#)

3.a) One transcoding phase will produce an EXTERNAL ARCHIVE, which can be reused in different platforms (to be used and enhanced by content creators)

=> see [WP4-1 Repository for 2D and 3D object](#)

Transcoding steps:

- - EXPORT the 3D content;

- - SUPPLEMENT it with 2D data like:
 - * DESCRIPTION / HOWTO USE (need your text input for this);
 - * SCORM package from moodle (if available);
 - * BEST PRACTICES (if available);
 - * VIDEO FOOTAGE (if available);
 - * technical documentation.
- - ARCHIVE it in the public repository as:
 - * SVN (maintained, can carry different versions);
 - * ZIP (released snapshot).

=> result see example ZIP file (distributed manually on request, see next chapter)

3.b) The other transcoding phase will produce an *IN WORLD ARCHIVE*, a "holodeck" which can be moved inside Second Life (to be managed and used by teachers)

Transcoding steps:

- - RE-IMPORT (if possible) the 3D content into SL to have clear permissions or directly transfer the content "in world";
- - MANAGE the content by putting it into the holodeck controller;
- - SUPPLEMENT the description (same like in 3.A) as a notecard;
- - ARCHIVE the holodeck in a public dispenser.

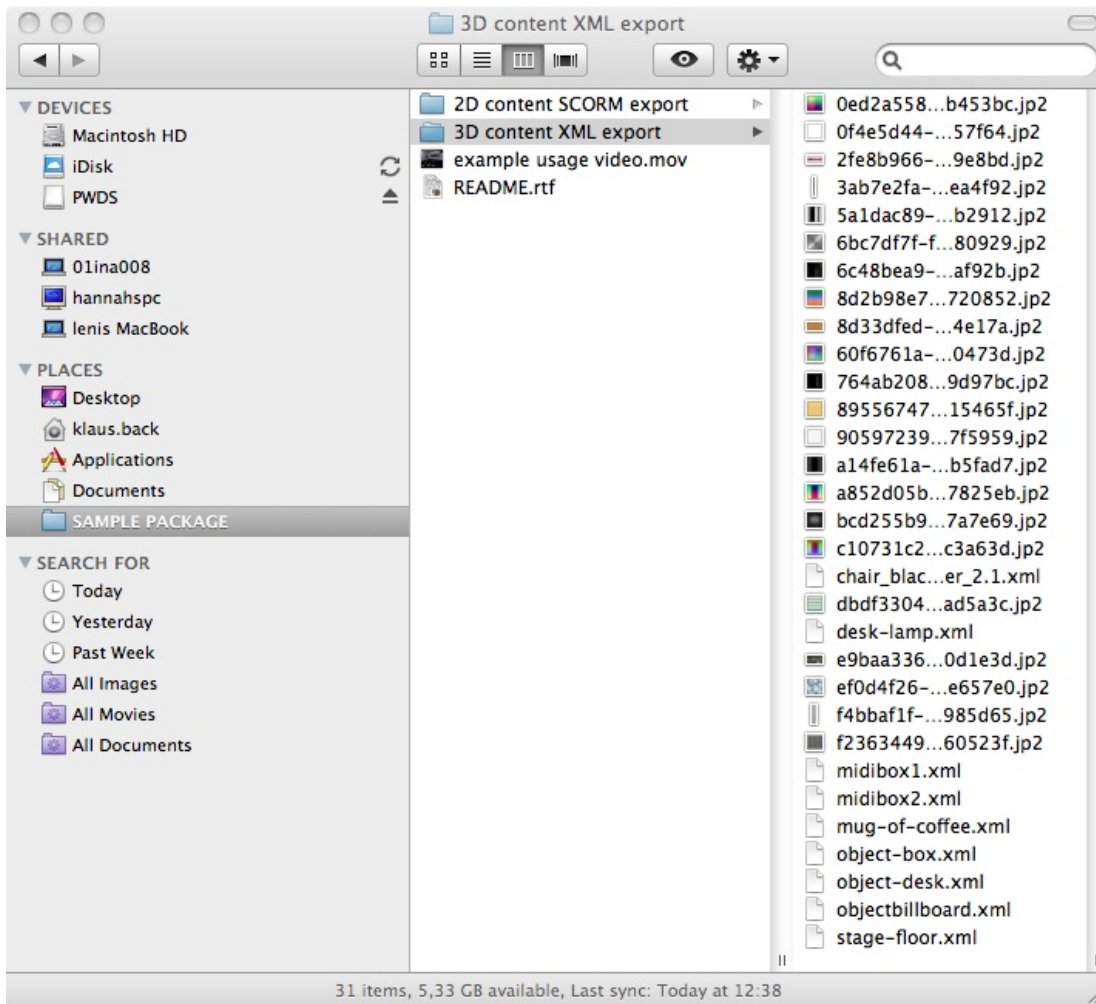
=> result see recorded holodeck session on avalonlearning.ning.com and the public dispenser on "Avalon Learning" island in Second Life

4.) Trekking the STATUS of the package for QA and to produce a list of available packages

=> we will publish the list of available packages on the "open source portal" at the AVALON website (including how to get it)

example package structure and contents

directory listing of a content package



instructions how to use the content package

"Rehearsal Stage"

<http://www.avalonlearning.eu>

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Table Of Contents

1. Motivation
2. Licensing & Acknowledgment
3. Package contents description
4. I want to ...
5. What for to use
6. Where to find the contents
7. How to use the contents

1. Motivation

We believe this package helps to change how we experience education. More hands on, more personal, more motivating, more engaged, more productive ... connecting participants globally.

Join our community, have a look at <http://avalon-project.ning.com> , on Facebook or our website [avalonlearning.eu](http://www.avalonlearning.eu)

2. Licensing & Acknowledgment

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There is NO WARRANTY attached to the usage of the contents of this package, it is provided "as is".

CC BY NAME attribution:

- Autor: talkademy.org: Klaus Hammermüller, Gerhilde Meissl-Egghart, Felix Tulzer
- Package maintainer: klaus@talkademy.org

This content package is a work product of the AVALON project <http://www.avalonlearning.eu> . This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

3. Package contents description

- README.rft - this file
- 3D content XML export - directory with all source files of the 3D contents
- 2D content SCORM export - directory with all web-learning content
- example usage video.mov - video how to use the contents (maybe provided in different formats or as link)
- best practice.pdf - experiences how to use the contents (maybe provided in different formats or as link to a wiki)

4. I want to ...

- know what this is all about ==> see <http://www.avalonlearning.eu>
- know what I can do with this package ==> see next chapter
- use the package as an educator for my class
 - => have a look at the videos & best practices included in this package
 - => get into SL and use the holodeck on "Avalon Learning" island or get your own copy (see the chapter 6ff)
- set up my own learning environment
 - => read everything here
- modify / enhance this package
 - => read everything here

5. What for to use

Abstract

The "Rehearsal Stage" is a multi purpose place to let participants develop, discuss, train and pitch their ideas / plots.

Context

The "Rehearsal Stage" can be used for stand-alone session bur usually is used in a series of stages to develop a story. This story may e.g. be a media production project, e.g. to produce a movie / theater play / ...

Audience

The "Rehearsal Stage" can be used by language students (e.g. English), media students (e.g. movie makers) or any project team looking for an ad-hoc rehearsal place.

Atmosphere

It is a "white box" space like in a modern studio, with little facilities to distract / preoccupy the creativity of the participants.

Active Roles (visible on stage)

There may be any combination of: actors, script-writer, director, publisher, producer, reviewer, typical there are 3 to 9 participants on stage

Passive Roles (invisible on stage)

Teacher for formal feedback e.g. in language training, Technical assistance

6. Where to find the contents

Due to technical reasons the contents for this package consists on different platforms, including 3D models, textures, scripts, animations, text, sounds, videos, etc. For your convenience there are two versions of the package available, accessible very differently:

(A) The "ready to use" contents can be found in the contents dispenser located at

<http://maps.secondlife.com/secondlife/AVALON%20Learning/23/223/58>

(B) All source files can be found at

<http://code.google.com/p/avalon-learning/source/checkout> - maintained archive accessible in SVN format

or

<http://code.google.com/p/avalon-learning/downloads/list> - containing ZIP archives with releases

Legal Disclaimer

Second Life permissions, terms & conditions of Linden Labs and American and European Intellectual property rights define different levels of usage rights. The AVALON team has tried hard to make created content available as freely as possible. Anyhow as some contents are created by third parties, bought, deeded or user created different legal situations apply. Therefore all contents used are available, but not all contents are available in all components of the repository. E.g. some items could not be exported from Secondlife but remain bound to the platform. Anyhow all key scenarios which are useful for reuse in educational application have been made available to the public.

7. How to use the contents

7.1) Select the package version:

- If you want a "ready to use" package you will go for a release, if you want to develop a new version of the package, go for the maintained package. Please keep in mind, that we are looking forward learning about your development and will appreciate your commit of the enhancements you made the maintained repository.
- If you are using Second Life as a 3D platform, go to the dispenser in Second Life, if you want to use the contents on a different platform, check out the source files of contents. opensim should work straight forward (not tested), other 3D platforms might need some format conversion first (technical stuff).

7.2) Download the package:

- a. open the url provided in the prior chapter according to the package version selection you made in a web browser
- b. register and login on the platform (if you are new to that platform), a free account is sufficient (No payment required to access the service. This is unlikely to change but it but changes are not within the control of the authors of this package)
- c. accept the terms of service and login. (The terms of the services might change over time, the changes are not within the control of the authors of this package)
- d. Follow the instructions provided on the service to retrieve the package. There might be different packages / variations of the package provided, navigate to the version you selected

7.3) Learn how to use the contents:

- Read the README file with all the latest updates
- Have a look at the VIDEO which might be provided as a link or as a file
- Read the BEST PRACTICES in the related wiki (or included pdf if available)
- go to "Avalon Learning" island and check out the stage for yourself

7.4) Use the content as educator:

- Check out the stage on "Avalon Learning" island (if capacities are free you are welcome to use the facilities there)
- or
- rezz the holodeck (the archive you've got from the content dispenser, see chapter 6(A)) on your place or a public sandbox
 - if required import the SCORM package into your LMS (which is provided in the file archive, see chapter 6(B)) or hand out materials manually to your students (using email etc.)

7.5) Set up my own system:

- place your holodeck on space you own in Secondlife (or opensim, etc.)
- setup an LMS which can import SCORM packages (see installation procedures there)
- some packages require a 2D / 3D integration, in this case we recommend to use Secondlife and moodle.org as an LMS. In this case you benefit from the <http://sloodle.org> integration which can be installed on top (see installation procedures there). In every other case you have to develop your own integration, you might re-use the provided source code to save time.
- as an alternative AVALON project members might offer a hosted service for the complete setup. Please have a look at <http://www.avalonlearning.eu> or ask gary.motteram@manchester.ac.uk

7.6) Modify or Extend the content package:

- Depending on what kind of modification you have in mind, you will need different tools. For most tasks you might
- upload new textures (pictures, etc.) and put it on your holodeck
- change the holodeck with the tools provided by the Second Life viewer
- change content in the LMS
- To SAVE the changes you made you need to
- create a new version of the holodeck
- export the content and put it into the repository
- => see next sub-chapter
- We appreciate if you add your improvements into the content repository

7.7) Save / import / export contents

- see <http://avalonlearning.pbworks.com/WP4-1+Repository+for+2D+and+3D+object>

7.8) Migrate content to different platforms

- therefor you need to transform the content to fit. You need to mach the source format (see documentation in the previous sub-section) and the target source format (see documentation of your target platform)
- platforms supporting SCORM (2D) and the secondlife / opensim / openmetaverse standard this should be feasible with reasonable efforts