

CENG 492

CONFIGURATION MANAGEMENT REPORT

SECURE VIDEO STREAMING PROXY SERVER

TEAM PRIME'

Ant Ongun Kefeli

Dođan Poyraz

Yurdakul Göksu Orhun

Onur Cem Sırlı

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1. Introduction

1.1. Purpose of Configuration Management Plan

Secure Scalable Media Streaming Server with Reverse Proxy Support System is a very complex project due to its nature. Moreover, through its development cycle four individual software developers will be working on it simultaneously. Therefore, for the sake of healthy and neat development process it is mandatory to use a configuration management plan. This plan will dramatically regulate interactions between developers and project. Furthermore, it will help integrating changes made on the project and allow us to return to a previous version of the system when required.

1.2. Scope of the Document

The specification of the configuration management plan for SSMSSRPSS project of Prime' Software Group also known as Prime' is the scope of the document. Configuration efforts which will be employed throughout the development period will be outlined and reflected in this plan.

1.3. Definitions, Acronyms and Abbreviations

- **SSMSSRPSS** Secure Scalable Media Streaming Server with Reverse Proxy Support System
- **CVS** Concurrent Versions System
- **SVN** Subversion

1.4. Document References

- Software Requirement Specification, by Prime', Fall 2010
- Detailed Design Report, by Prime', Fall 2010
- Configuration Management Plan Presentation, METU Computer Engineering, Spring 2011

1.5. Document Overview

This document is divided into six sections. Overview of each section is as follows;

Introduction: This section contains purpose and scope of this document. Also, acronyms, definitions and abbreviations that are needed to follow the document can be found under this section. Finally, an overview of the document is provided.

The Organization of CM Framework: In this section, organization of the CM is explained. Tools that we will be using and responsibilities of the team members are also discussed in this section.

Configuration Management Process: The process we will follow is identified in this section. Also CM plan is detailed in this section.

Project Schedules & CM Milestones: Important dates and milestones are given according to course syllabus.

Project Resources: Resources of Prime' Software Group.

Plan Optimization: Plan Optimization methods we are going to use in CMP is explained in this section.

2. The Organizations CM Framework

2.1. Organization and Responsibilities

Prime' Software Group consists of four dedicated members. Every member is actively involved in development process. The members are;

- Ant Ongun Kefeli
- Doğan Poyraz
- Yurdakul Göksu Orhun
- Onur Cem Sırlı

2.1.1. Program Management Division

Division Members: Doğan Poyraz

This division is responsible from managing and regulating the development and other processes of the software group. It makes sure that each individual member outputs as much as he is assigned at the group meetings. Also deadline management and work hour regulations falls into this division's area of work.

2.2.2. Software Development Division

Division Members: All

This is the core division that the Prime' Software Group is built around. This division's responsibilities range from pre-development documentation to development and deployment of the software. This division is strictly supervised by Program Management division. Also, output of this division is thoroughly tested by Software Testing Division.

2.2.3. Software Testing Division

Division Members: Yurdakul Göksu Orhun, Onur Cem Sırlı

This division's main responsibility is to conduct various testing on software and report bugs to Software Development Division. Tests conducted by this division includes but not limited to functionality testing, unit testing, stress testing, volume testing, security testing, localization testing. Also regression tests are conducted when necessary.

2.2.4 Configuration Management Division

Division Members: Ant Ogun Kefeli, Doğan Poyraz

This division is responsible for organization of CM plan and living schedule.

2.2. Tools and Infrastructure

2.2.1. Netbeans IDE

The software will be mainly developed under Linux environment. Although there are numerous IDEs offered to this environment we decided to use Netbeans. Netbeans is an open sourced integrated development environment which is mainly sponsored by Oracle. It offers support for various languages including C++ which is the language that our software will be developed with.

2.2.2. Apache Subversion

Apache Subversion (also known as SVN or subversion) is a tool which lets developers to store versions of project's source codes, webpages, documentation etc. Not only it gives the users an ability to control versions of the items, it also serves as a tool to monitor progress. Netbeans IDE has an SVN plugin which we will employ in the development process.

2.2.3. PHPEdit

PHPEdit is an IDE which is written in Delphi and runs on the Microsoft Windows operating system, and is designed mainly for the PHP language, but supports many other languages such as CSS, HTML, JavaScript, INI, PHPEditScript, PlainText, SQL, XML, and XSLT. Our team uses this editor for developing our web interface.

2.2.4. nginx

Nginx quickly delivers static content with efficient use of system resources. It can deploy dynamic HTTP content on a network using FastCGI handlers for scripts, and can serve as a very capable software load balancer. Nginx uses an asynchronous event-driven approach to handling requests which provides more predictable performance under load, in contrast to the Apache HTTP server model that uses a threaded or process-oriented approach to handling requests. This performance issue and ease of use made nginx our choice for web servers.

2.2.5. Google Docs

Google Docs is free, Web-based word processor, spreadsheet, presentation, form, and data storage service offered by Google. It allows users to create and edit documents online while collaborating in real-time with other users. We use Google Docs due to its high accessibility and feature which supports concurrent editing of documents by many users.

3. Configuration Management Process

3.1. Identification

3.1.1. Source Code

The source code consists of PHP files which constitute SSMSSRPSS's web interface. Through this interface we console commands to the server to control the tools running on them.

3.1.2. Servers

3.1.2.1. Media Server

Media server receives streams from media servers and transmits these streams to the web servers. Main responsibility of media server is decoding incoming streams and encoding them into desired format.

3.1.2.2. Web Servers

Web servers receive streams from media servers and deliver them to end-users. There is no process done on web servers to the stream. They are only used for transfer mediums.

3.1.3. Data

We have configuration files for the tools that are working on. Therefore, we have these files as persistent data in our project. Also, we keep user information and stream list with their settings in a relational SQL database.

3.1.4. Documentation

We keep our project documents on Google Docs and our web site. Our documents are:

- Project Proposal
- Software Requirements Specification
- Initial Design Report
- Detailed Design Report
- Revised Design Report

Web page: <http://primeprime.oos.cc>

3.2. Configuration Management and Control

When someone wants to propose a change in the project he requests a team meeting. In the meeting we discuss the change and if we find it applicable, we generate and run some test scenarios. After test process if system works fine we continue our project with changes. Otherwise, we will have the old version available in SVN database and our personal backup files.

3.3. Configuration Status Accounting

During the project we may encounter some serious problems. When it happens we can find since which version on the problem exists from the comments and logs. Therefore, everyone who makes a change writes a meaningful and helpful comment about the update.

3.4. Auditing

Auditing will be done by all team members during our weekly meetings. Also, every team member is responsible for his own SVN commits. Each commit should at least not conflict with previous versions. In addition, during our weekly meetings we will check our physical web servers to make sure that they are running.

4. Project Schedules and CM Milestones

CMP Milestone	Date
CLVC	07.03.2011
Codec Conversion	10.03.2011
Web page	18.03.2011
Camera Configuration	25.03.2011
First Development Snapshot	29.03.2011
Database Design	30.03.2011
Interface Design	07.04.2011
Test Specifications Report	19.04.2011
First Release	10.05.2011
Media Server Design	12.05.2011
Load Balancer Setup	21.05.2011
Final Package	23.05.2011

5. Project Resources

Our resources for CM are:

- SVN
- TRAC
- PHPEdit
- Website

6. Plan Optimization

This report will be a guide for coordination and planning of our team during the project. Any update or change in this report will be done after a notification to all group members. Also we will try to stick to the schedule in this document as much as possible in order to finish everything in time and not postpone anything. Mainly our configuration management team is responsible for updating this document if necessary.