

PRIMA

Panel for Remote Infrastructure Management Applications

Software Requirement Specifications



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Prologue

The Clientele is spread out globally, remote infrastructure management is done through an offshore development center, connectivity is through VPN/VoIP, SSL (Secure Sockets Layer) protocol is to be used for encrypted transmission, LDAP (Lightweight Directory Access Protocol) will be authorization point; Linux OS, Apache, MySQL and Perl-CGI are technologies running on Server. Setup can be customized for Infrastructure management services like web hosting solutions, mail server, access to data in the distributed/remote storage areas and multiple other service areas

The purpose of this document is to specify the Software requirement specifications to develop the Panel for Remote Infrastructure Management Applications (PRIMA) for the clients to manage server machines. This document outlines a brief plan about how the project is to be shaped and also includes the milestones and deliverables. The document will serve as a guide, developing the product as part of the project.

The scope of this document is limited to initial software requirements and is open for revision. As the new modules are added new software requirements specification documents will be released

Table of Contents

Revision History	3
1.0 Introduction	4
1.1 Scope, Purpose and Objectives	4
1.2 Assumptions and Constraints	4
1.3 Project Deliverables	4
1.4 Schedule and Budget Summary	5
2.0 Overall Description	6
2.1 System Environment	6
2.2 Functional Requirements Definitions	6
2.3 Use Cases	6
2.4 Brief Description	8
2.5 Non-Functional Requirements	8
3.0 Requirement Specifications	9
3.1 External Interface Specification	8
3.1.1. User interface	9
3.1.1.1 Access PRIMA Home Page	9
3.1.1.2 Login to PRIMA	9-10
3.1.1.3 Service	11-12
3.2 Software Interfaces	13
3.3 Hardware Interfaces	13
3.4 Communications Interfaces	13

Revision History

Name	Date	Reason For Changes	Version

1.0 Introduction

1.1 Scope, Purpose and Objectives

PRIMA, a web-based configuration panel to be developed to provide infrastructure Management services to the client.

Remote management and configuration of the server machines using a globally accessible web-based configuration panel, **PRIMA** –Panel for Remote Infrastructure Management Applications targets the client's requirements to easily manage the server machines

Primary objective of the PRIMA is to develop a secured service to the client using LDAP, SSL certificates and encryption techniques for secured authentications.

Secondary objective of the PRIMA is to Partition the memory for the client server remotely through the web-based panel developed (**PRIMA**).

1.2 Assumptions and Constraints

The project PRIMA is expected to be completed before 2nd of May. This project will use resources in the form of time and effort that will be spent developing the project deliverables by the VAssure development team.

1.3 Project Deliverables

The list of project deliverables is:

- Project Abstract
- Software Requirements Specification
- Software Design Description
- Software Quality Assurance Plan (including the Software Verification and Validation Plan and the Test Design Document)

1.4 Schedule and Budget Summary

Budget Summary: “No specific budget planning required”

A tentative schedule is as shown below in table 1.

Figure 1: Schedule

Item	Due date
Project Abstract	March 25, 2006
Software Requirements Specifications	March 27, 2006
Software Design Document	March 28, 2006
Software Quality Assurance and Verification & Validation Plan	May 5 th , 2006

Note: Schedule of activities is subject to availability of the project resources on time.
Software responsiveness in various environmental configurations should be considered

2.0 Overall Description

The PRIMA provides infrastructure management services to client servers remotely with fully secured authentications using LDAP, SSL certificates and encryption certificates. An internet connection is necessary to establish a connection between server and clients. PRIMA is remote management of the configuration of the client server machines using a globally accessible web-based configuration panel.

2.1. System Environment

The PRIMA web site will be operated from the client server. The client connects to the PRIMA web server, where the client will go through the few authentication procedure to connect to the PRIMA server. Upon connecting to the PRIMA web server the client will be able to use the panel for remote management of infrastructure and configuration of the client's server.

2.2. Functional requirements definitions

Functional Requirements are those that refer to the functionality of the system, i.e., what services PRIMA will provide to the user. Nonfunctional (supplementary) requirements pertain to other information needed to produce the correct system and are detailed separately.

2.3. Use cases

The system will consist of PRIMA home page with a selection. Disk management will be the initial service provided by the PRIMA to client to remotely configure the client server machine for the service DISK MANAGEMENT.

Every client server machines meets the task of disk management. An optimum allocation of the disk resources is the key point to manage data and operating systems on the client server machines effectively. PRIMA's disk manager will provide easily and reliable hard drive partitioning and full range hard disk management. It enables the client server machines to easily create, copy, resize and move hard drive partitions.

PRIMA's disk manager will help the client server machines to:

- Enhance computer performance, convert operating systems, defragment partitions, optimize your hard disk partitions cluster size
- Resize, move, hide, merge, restore and convert partitions without data loss
- Recover lost or deleted partitions; fix crashed operating system with bootable Recovery CD
- Install and manage several operating systems on your computer with Boot Manager
- Copy partitions and whole hard drives adopting their size to target partition

PRIMA's disk manager module features are as follows and features list to clients will be as follows:

- Create, format and delete partitions
- Copy and move partition of any file system format, quick and sector by sector modes.
- Resize hard disk partitions with data
- Merge hard disk partitions
- Hide/unhide partition, set partition active/inactive
- Set or change drive letter (Windows NT/2000/XP only)
- Hide/unhide partition, set partition active/inactive
- Change hard disk partition Label (Volume Label)
- Copy disk to disk
- Convert file system
 - FAT16 to FAT32 and vice versa
 - FAT16/32 to NTFS and vice versa
 - Ext2 FS to Ext3 FS and vice versa
- Undelete hard disk partition
- Convert Primary hard disk partition to Logical and vice versa
- Change hard disk Partition ID (hard disk partition signature)
- Change hard disk Partition Primary Slot (in Master Boot Record)
- Update MBR (Master Boot Record) with standard code
- Convert NTFS revision (from anyone to any other within Windows NT, 2000 and XP)
- Change FAT parameters - boot size, root size
- Implementation of RAID

2.4. Brief description

The PRIMA chooses web-based configuration to interact with clients needs.

Initial step-by-step description:

For this use case to be initiated the user must be connected to the Internet and on the PRIMA Home Page.

1. The client chooses to use PRIMA to perform client server configuration remotely through the PRIMA panel remotely.
2. The PRIMA server performs authentication checks to the connection from the client through SSL certificates.
3. validation of the client user who connected to PRIMA server is done
4. Username and password provided by the client server to PRIMA server is encrypted and stored in PRIMA database.
5. The PRIMA server decrypts the data received by the client server.
6. The PRIMA server encrypts the data to be sent to that client who logged on or who is requesting for the services of PRIMA.
7. Client server logs out after using PRIMA services and the PRIMA home page will again be displayed on the client server desktop.

2.5. Non-functional requirements

There are requirements that are not functional in nature. Specifically, these are the constraints the system must work within. The web site must be compatible with both the Netscape and Internet Explorer, Mozilla web browsers.

3.0 Requirement Specifications

3.1. External Interface Specifications

3.1.1 User Interfaces

3.1.1.1 Access PRIMA Home Page

Use Case Name:	Access PRIMA Home Page
Priority	Essential
Trigger	Menu selection
Precondition	client is connected to the Internet and on the PRIMA home page
Basic Path	1. PRIMA Web Server sends the client to the PRIMA Server. 2. The PRIMA Server presents the client with the PRIMA Home Page.
Alternate Path	N/A
Post condition	The client is on the PRIMA Home Page
Exception Path	If there is a connection failure the PRIMA Server returns to the wait state

3.1.1.2. Login to PRIMA

Use Case Name:	Login
Priority	Essential
Trigger	Selects
Precondition	The client is connected to the Internet and on the PRIMA Home Page
Basic Path	1. The PRIMA Server presents the client with a form.

	2. The client fills in the form and click submit 3. The PRIMA Server checks to see if all required fields are not empty. 4. If the required fields are not empty, the PRIMA Server creates a new record in the PRIMA Database. 5. If any of the required fields are empty, the PRIMA Server returns a message and returns the client, the login form. 6. The PRIMA Server returns the client to the PRIMA Home Page 7. The client enters login name and password. 8. The PRIMA Server queries the respective client Database for that particular login name and password. 9. If the password does not match the PRIMA Server returns a message and allows the client to try again. 10. If after 3 tries the password does not match, the PRIMA Server will return a message telling the client to contact the PRIMA designated Official to receive their password. 11. If the password matches the PRIMA server will returns a service menu list form. 12. The PRIMA server waits for the client select the service for a period of time. 13. If the PRIMA Server doesn't any request from the client server, PRIMA server returns the client to the PRIMA Home Page.
Alternate Path	N/A
Post-Condition	The login record is created in the login Table of the PRIMA Database.
Exception Path	1. If the connection is terminated before the form is submitted, the fields are all cleared and the PRIMA Server is returned to the wait state.

3.1.1.3. Service

Use Case Name:	Service
Priority	Essential
Trigger	Menu selection
Precondition	The client must be connected to the Internet and on the PRIMA Entries page.
Basic Path	1. The client clicks on the service. 2. The PRIMA Server returns a form. 3. The client fills in the form and clicks submit. 4. The PRIMA Server checks to see if any required field is empty. 5. If any required field is empty the PRIMA Server will send a message and return the client to the new entry form page. 6. If no required field is empty the PRIMA Server will create a new record in the client Table in the client Database, and return the client to the PRIMA Home Page. 7. The client may select Cancel. 8. If the client selects Cancel, the form is cleared and the client is returned to the PRIMA Home page. 9. The PRIMA server will return respective parameter form for the respective service to the client. 10. The client fills in the form and clicks submit. 11. The PRIMA Server checks to see if any required field is empty. 12. If any required field is empty the PRIMA Server will send a message and return the client to the new entry form page. 13. If no required field is empty the PRIMA Server will create a new record in the client Table in the client Database, and return the client to the PRIMA Home Page. 14. The client may select Cancel. 15. If the client selects Cancel, the form is

	cleared and the client is returned to the PRIMA service menu entries list. 16. If no required fields are empty the PRIMA server returns a select SERVICE RESTART. 17. Client clicks SERVICE RESTART and configurations remotely are done 18. Client can select SERVICE CANCEL select before SERVICE RESTART to cancel the configuration entry. 19. On selecting SERVICE RESTART or SERVICE CANCEL the client will return to service menu form with a message
Alternate Path	N/A
Post-Condition	A record is created in the client Table of the client Database.
Exception Path	1. If the connection is terminated before the form is submitted, the fields are cleared and the PRIMA Server is returned to the wait state. 2. If the connection is terminated after the form is submitted, but before the client is returned to the PRIMA Home Page, the record is created in the client Table of the client Database.
Alternate Path	N/A
Post-Condition	The client receives the information on the requested service, receives e-mail confirmation message, or is returned to the PRIMA Home Page
Exception Path	1. If the connection is terminated before the information is returned, the PRIMA server is returned to the wait state. 2. If the connection is terminated after the information is returned, the PRIMA Server is returned to the wait state

3.2 Software Interfaces

PRIMA provides its services to clients of various cross platforms like:

UNIX
LINUX
MS-WINDOWS XP
Windows 2000 Professional

PRIMA uses MySQL database server.

3.3 Hardware interfaces

PRIMA uses existing TCP/IP to configure. Both server and client use TCP/IP to communicate with each other, where the PRIMA provides configuration services to client servers remotely using existing TCP/IP.

3.4 Communication interfaces

Communication interfaces used by clients:

Cookies enabled Web browser.
-- Internet explorer
-- Netscape navigator
-- Mozilla

Communication interfaces used by PRIMA server:

--Web server
--mail server
--database server
--DNS server

This paper is not intended to be a definitive implementation guide. Many factors are not addressed in this document. Expertise may be required to solve logistical problems when the system is designed and built. VAssure team has not tested this procedure with all the combinations of hardware and software options available on all OS variants. There may be significant differences in your configuration that will alter the procedures necessary to accomplish the objectives outlined in this paper.