Department of Veterans Affairs

VHA Point Service (Kiosks) Phase II

Enhancement VPS\*1.0\*10

**Technical Manual**



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# Orientation

## How to Use this Manual

This manual provides instructions on the use of VPS\*1.0\*10 remote procedure calls (RPC) to access Veterans Health Information Systems and Technology Architecture (VistA) as a data source for VHA Point Service (Kiosks).

## Intended Audience

The intended audience of this manual is the following stakeholders:

* Product Development (PD) VistA legacy development teams.
* Information Resource Management (IRM) system administrators at Department of Veterans Affairs (VA) sites who are responsible for computer management and system security on VistA M Servers.
* Information Security Officers (ISOs) at VA sites responsible for system security.
* Health Product Support (HPS) Information Technology (IT) Specialists who provide application support to VA end-users.

## Legal Requirements

There are no special legal requirements involved in the use of VPS\*1.0\*10 RPCs.

### Disclaimers

This manual provides an overall explanation of VPS 1 functionality. This guide does not attempt to explain how the overall VistA programming system is integrated and maintained.

DISCLAIMER: The appearance of any external hyperlink references in this manual does not constitute endorsement by the Department of Veterans Affairs (VA) of this Website or the information, products, or services contained therein. The VA does not exercise any editorial control over the information you may find at these locations. Such links are provided and are consistent with the stated purpose of this VA Intranet Service.

## Documentation Conventions

The following symbols are used throughout this document to alert the reader to special information.

 **NOTE/REF:** Used to denote general information including references to additional reading material.

 **CAUTION / RECOMMENDATION / DISCLAIMER:** Used to caution the reader to take special notice of critical information.

Snapshots of computer online displays (screen captures) and computer source code are shown in non-proportional font and are enclosed within a box. User responses to displayed prompts are ***bold italic***typeface. Software reserved words are displayed in **bold** font**.**

References to “<**Enter**>” within the screen captures indicate that the user should press the <**Enter**> key on the keyboard. Other special keys are represented within **< >** angle brackets and indicate the user should press the indicated key on the keyboard. For example, **<PF1>** directs the user to press the **PF1** key on the keyboard.

The following conventions are used to display test data:

* Social Security Numbers (SSN) for test patients are prefixed with five zero digits e.g. 000009999.
* Patient names are formatted as [Application Name]PATIENT,[N] e.g. VPSPATIENT, ONE.
* User names are formatted as [Application Name]USER[N] e.g. VPSUSER, ONE.

 This guide refers to the M programming language as M. Under the 1995 American National Standards Institute (ANSI) standard, M is the primary name of the MUMPS programming language, and MUMPS is considered an alternate name.

## Commonly Used Terms

Table 1: Commonly Used VPS\*1.0.10 Terms

| Term | Description |
| --- | --- |
| Client | A single term used interchangeably to refer to a user, the workstation (i.e., PC), and the portion of the program that runs on the workstation. |
| Component | A software object that contains data and code. A component may or may not be visible. |
| GUI | The Graphical User Interface application that is developed for the client workstation. |
| Host | The term Host is used interchangeably with the term Server. |
| Server | The computer where the data and the RPC Broker remote procedure calls (RPCs) reside. |
| TCP | Transmission Control Protocol is a communications protocol used to provide end-to-end connectivity between hosts. |

## Technical Information Online

Project documentation for VPS Kiosks may be found in the Technical Services Project Repository (TSPR). Other online technical information from M Server-based software file, routine and global documentation may be generated using Kernel, MailMan and VA FileMan utilities.

## Help Prompts

There are no Help prompts provided for VPS\*1.0\*10.

## Data Dictionary

Technical information on VistA M Server-based files is stored in the VA FileMan Data Dictionary. The VA FileMan List File Attributes option on the Data Dictionary Utilities submenu may be used to view the attributes of VistA M Server files.

## Assumptions

This guide is written with the assumption that the reader is familiar with:

* Kernel – VistA M Server software
* Remote Procedure Call (RPC) Broker – VistA Client/Server software
* VA FileMan data structures and terminology – VistA M Server software
* Microsoft Windows
* M programming language

## References

The following references support the reader’s understanding of the operation and functioning of VPS\*1.0\*10:

* *VPS 1\*10 Technical Guide (this document)*
* *RPC Broker Release Notes*
* *RPC Broker Developer’s Guide*
* *RPC Broker Systems Management Guide*
* *RPC Broker TCP/IP Supplement, Patch XWB\*1.1\*35 and XWB\*1.1\*44*
* *RPC Broker Technical Manual*
* *RPC Broker User Guide*
* *Department of Veterans Affairs Veterans Point Service (VPS) FY15 OIT BRD Business Requirements Document, version V4, May 2015.*
* *Vitals/Measurements User Manual Version 5.0, October 2002*

These references may be downloaded from the [VA Software Document Library (VDL) Website](http://www.va.gov/vdl/).

# Introduction

The *VPS 1\*10 Technical Guide* provides descriptive information and instruction on the use of VPS\*1.0\*10 Remote Procedure Calls (RPCs) within VA's Veterans Health Information Systems and Technology Architecture (VistA) environment. This document is intended for systems managers—Information Resource Management (IRM) personnel who are responsible for implementing and maintaining this software, application programmers, and developers. It acquaints system managers with the software structure and functionality of the VPS RPC routines and files that comprise this software.

## Product Overview

VPS 1\*10 project provides RPCs that extends VetLink and consuming application integration with multiple VistA packages, and provides the capability to read and write patient vital sign data to VistA database vitals files.

The VPS\*1.0\*10 VistA patch provides read and write capabilities to VistA Vitals files for a specified patient and date range to include patient readings for

* Temperature
* Blood Pressure
* Pain (self-reported input)
* Pulse Oximetry
* Pulse
* Respiration
* Weight
* Height (self-reported input)

The VPS\*1.0\*10 VistA patch also provides alerts to staff for measurements indicating a High Risk factor; when the user- inputted measurement exceeds locally set parameters configured in Vista Vitals or on the Kiosk device.

## Namespace Conventions

VPS is the namespace assigned to VPS\*1.0\*10.

# Implementation and Maintenance

The *VPS 1\*10 Installation Manual* provides detailed information regarding the installation of VPS\*1.0\*10, as well as the patch’s configuration requirements.

## Site Parameters

No site specific parameters are provided or required for VPS\*1.0\*10.

# Files

## VistA M Server Files

VPS\*1.0\*10 reads and writes data to/from VistA M Server files owned and maintained by packages external to VPS. The following table lists the VistA M Server files and global references used by VPS\*1.0\*10 RPCs. Note: VPS\*1.0\*10 does not use direct global read/write using Global References. All reads and writes are executed using FileMan read/write functions.

Table 2 VistA M Server Files Accessed by VPS\*1.0\*10

| **FILE NAME AND NUMBER** | **GLOBAL REFERENCE** |
| --- | --- |
| GMRV VITAL TYPE #120.51 | ^GMRD(120.51 |
| GMRV VITAL QUALIFIER #120.52 | ^GMRD(120.52 |
| GMRV VITAL MEASUREMENT #120.5 | ^GMR(120.5 |
| HOSPITAL LOCATION #44 | ^SC( |
| NEW PERSON #200 | ^VA(200 |

# Global Translation, Journaling and Protection

There are no VPS\*1.0\*10 VistA M Server files for which VPS is the custodial owner. Consequently, global translation, journaling and protection are not required.

# Routines

Table 3 VPS VistA Routines

| **ROUTINE NAME** | **DESCRIPTION** |
| --- | --- |
| VPSVTL01 | This routine implements the VPS RETRIEVE PATIENT VITALS RPC which returns all vitals measurements for a patient. |
| VPSVTL02 | This routine implements the VPS STORE VITALS RPC which stores a patient’s vital measurement. |

## VPS\*1.0\*10 RPCs

The VPS\*1.0\*10 routines are executed by remote procedure calls through VistA RPC Broker. The following table lists the VPS\*1.0\*10 RPC names providing the RPC tag and routine name used for invocation:

Table 4 VPS\*1.0\*10 RPCs - Tags and Routines

| **RPC NAME** | **TAG** | **ROUTINE** |
| --- | --- | --- |
| VPS RETRIEVE PATIENT VITALS | GET | VPSVTL01 |
| VPS STORE VITALS | WRITE | VPSVTL02 |

## Detailed VPS\*1.0\*10 RPC Information

Details on the input parameters and the output produced by each of the VPS\*1.0\*10 RPCs may be obtained from a FileMan inquiry to the REMOTE PROCEDURE file # 8994.

1. Sign on to **VistA** system
2. Select option **VA FILEMAN DIUSER**.
3. Select the **Inquire to File Entries** option
4. OUTPUT FROM WHAT FILE: **REMOTE PROCEDURE**
5. Select REMOTE PROCEDURE NAME: **<ENTER THE VPS RPC NAME>**
6. ANOTHER ONE: **`<ENTER>**
7. STANDARD CAPTIONED OUTPUT? Yes//**Y**
8. Include Computed fields: (N/Y/R/B): NO// **<ENTER>**
9. The entry for the VPS RPC NAME entered at step 5 is listed.

# Exported Options

There are no VistA M Server options exported with VPS\*1.0\*10.

# Archiving and Purging

## Archiving

There are no archiving procedures needed for VPS\*1.0\*10 RPC components.

## Purging

There are no purging procedures needed for VPS\*1.0\*10 RPC components.

# Callable Routines

VPS\*1.0\*10 VistA patch does not provide callable VistA M Server routines.

# External Interfaces

There are no interfaces to VPS\*1.0\*10 RPCs other than those provided by the VistA M Server and VistA RPC Broker.

# External Relations

The following minimum package versions are required:

* VA FileMan V. 22.0,
* Kernel V. 8.0,
* Kernel Toolkit V. 7.3,
* CPRS V. 30,
* RPC Broker V. 1.1

Sites should verify that all patches to these packages have been installed.

# Internal Relations

There are no internal relations for VPS\*1.0\*10.

# DBIA Agreements

The VistA Database Administrator (DBA) maintains a list of Integration Agreements (IAs) or mutual agreements between custodial owners allows the use of internal entry points or other software-specific features that are not open for unrestricted use.

## DBIA Agreements – Custodial Package

1. Sign on to **FORUM** system
2. Go to the **DBA** Menu
3. Select the **Integration Control Registrations Menu** option
4. Select the **Custodial Package Menu** option
5. Choose the **Active ICRs by Custodial Package** Option
6. When prompted for a package, enter ***VPS VA Point of Service (Kiosks)***
7. All current IAs to which VPS VA Point of Service (Kiosks) is custodian are listed.

Note: there are no Integration Control Registrations for which VPS is the custodial package.

## DBIA Agreements – Subscriber Package

1. Sign on to the **FORUM** system
2. Go to the **DBA** Menu
3. Select the **Integration Control Registrations Menu** option
4. Select the **Subscriber Package Menu** option
5. Select the **Print ALL by Subscriber Package** Option
6. When prompted with “Select PACKAGE NAME,” enter ***VPS***
7. When prompted with “START WITH SUBSCRIBING PACKAGE,” ENTER ***VPS***
8. All current IAs to which VPS VA Point of Service (Kiosks) is a subscriber are listed

# Package-wide Variables

There are no package-wide variable associated with VPS\*1.0\*10.

# SAC Exemptions

There are no SAC Exemptions for VPS\*1.0\*10.

# Software Product Security

## Security Management

No security keys required for used of VPS\*1.0\*10 RPCs.

## Mail Groups and Alerts

There are no mail groups or alerts provided in VPS\*1.0\*10 RPCs.

## Remote Systems

### Connections

There are no direct remote system connections to VPS\*1.0\*10 RPCs. Access to VPS\*1.0\*10 run routines is provided through the VistA RPC Broker and the underlying VistA M Server.

### Remote Data Views

Remote Data views are not supported by VPS\*1.0\*10 RPCs.

## Interfaces

There are no non-VA products embedded in or required by VPS\*1.0\*10 RPCs, other than those proved by the underlying operating system and VistA RPC Broker.

## Electronic Signatures

There are no electronic signatures used or required by VPS 1\*.0\*10 RPCs.

## Security Keys

No security keys are exported with the RPC Broker software.

## File Security

There are no VistA M Server data files for which VPS\*1.0\*10 is the custodial owner.

## Official Policies

As per the Software Engineering Process Group/Software Quality Assurance (SEPG/SQA) Standard Operating Procedure (SOP) 192-039—Interface Control Registration and Approval (effective 01/29/01), application programmers must not alter any HealtheVet VistA Class I software code.

# Acronyms and Glossary

### Acronyms

Table 5: List of Acronyms

| Term | Definition |
| --- | --- |
| AVS | After Visit Summary |
| BR | Business rule |
| CBO | Chief Business Office |
| CCOW | Clinical Context Object Workgroup |
| CPRS | Computerized Patient Record System |
| DFN | Data file number |
| HIPAA | Health Insurance Portability and Accountability Act |
| HL7 | Health Level Seven |
| DBIA | Database Integration Agreement |
| IB | Integrated Billing |
| ICR | Integration Control Registrations |
| IEN | Internal entry number |
| GUI | Graphical user interface |
| MUMPS/M | Massachusetts General Hospital Utility Multi-Programming System |
| NSR | New Service Request |
| OED | Office of Enterprise Development |
| PIMS | Patient Information Management System |
| PMO | Program Management Office |
| POS | Point of Service |
| RPC | Remote Procedure Call |
| RSD | Requirements Specification Document |
| SACC | Standards and Conventions Committee |
| SSOi | Single Sign On and Patient Context Management |
| TCP/IP | Transmission Control Protocol/Internet Protocol |
| VistA | Veteran’s Health Information Systems and Technology Architecture |
| VISN | Veterans Integrated Service Network |
| VHA | Veterans Health Administration |
| VPS | Veterans Point Of Service |
| VSS | Voluntary Service System |

### Glossary

Table 6: Glossary

| Term | Definition |
| --- | --- |
| Access Code | The unique sequence of characters assigned to the user by the site system manger. The access code in conjunction with the verify code is used to identify authorized users. |
| Application | A collection of computer programs and files developed specifically to meet the requirements of a user or group of users. |
| Archive | The process of moving data that is no longer actively used to a separate storage for long-term retention. |
| Computerized Patient Record System (CPRS) | A suite of clinical applications in VistA that provide access to a patient’s Electronic Medical Record (EMR). |
| E-VPS | The set of VistA patches implementing features identified by VHA Point of Service (Kiosks) Phase II Enhancement VPS 1\*4. |
| Field | A data element in a file. |
| FileMan | The VistA database manager. |
| Global | A collection of variables (fields) stored on disk that persist beyond routine or process completion. M VistA Server Globals are records stored in structured data files by M. |
| Kernel | A set of utilities that support data processing on VistA M Servers. |
| Kiosk | Implementation of a kiosk server at one TCP/IP domain. |
| M | Massachusetts (General Hospital) Utility Multi-Programming System, formerly known as MUMPS. |
| Option | Commands presented to a computer user by an applications. Typically, options are presented on a menu and have specific entry and exit actions. |
| Purge | The action/process of deleting a file or data from a file. |
| Procedure | A re-useable part of a computer program that performs a single function. |
| Required Field | A field which must have a data value entered by the user or passed as a parameter to computer program or subroutine. |
| Reminder Definition | Pre-defined sets of findings used to identify patients that should receive tests or treatments specific to diagnosed patient conditions. Reminder definitions specify criteria such as diagnoses, procedures, health factors, medications, or demographic variables used to identify affected patients. |
| RPC | Remote Procedure Call is an inter-process communication protocol that allows invocation of a program subroutine or procedure to execute in shared network space. |
| Routine | A set of commands and arguments related, stored and executed as a single M program. |
| Security Key | A keyword which makes specific options accessible to an authorized user. |
| Remote Procedure | A remote procedure is a procedure that can be executed by another program executing on a remote computer or another program process area. |
| Verify Code | A unique code which server as a second level of user authentication for accessing a VistA M Server. |
| VetLink | The VPS Kiosk application composed of a kiosk client used by VA patients and staff to connect to a kiosk server. |