VistA Audit Solution (VAS) 1.0
Technical Manual

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Department of Veterans Affairs
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Revision History

NOTE: The revision history cycle begins once changes or enhancements are requested after the document has been baselined.

Date	Revision	Description	Author
02/15/2023	1.7	Minor updates to document	VAS Support Team
10/04/2022	1.6	Minor updates to format	VAS Support Team
3/25/2022	1.5	Added diagrams to Section 2.1.2	VAS Support Team
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8/12/2021	1.3	Added Redis installation procedure in Section 2.2	VAS Team
7/21/2021	1.2	Updates to format and Section 13	VAS Team
7/14/2021	1.1	Updates to Section 1.2, 1.3, and 2 - 12	VAS Team
5/25/2021	1.0	Initial Draft	VAS Team

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1 Introduction

The Veterans Information System and Technology Architecture (VistA) Audit Solution (VAS) is a real-time web-based interface.

It provides a nationwide Health Insurance Portability and Accountability Act (HIPAA) compliant Audit Tracking Solution with the ability to track and report on access logs for patient's Personally Identifiable Information (PII)/Protected Health Information (PHI) data across all VistA instances. VAS users are Privacy Officers, Information Systems Security Officers (ISSO), and their authorized representatives who need the ability to view the log of Creation, Retrieval, Updating, and Deletion (CRUD) operations on patient information ***to respond to Freedom of Information Act (FOIA), HIPAA, employee and Inspector General (IG) requests***. This data originates from VistA and flows through in-memory database servers to be stored in the Veterans Affairs Enterprise Cloud (VAEC) Amazon Web Services (AWS). VAS web-based User Interface (UI) will access and display the data stored in AWS.

Authorized VAS users may view the patient data that was accessed and modified as well as the individual that performed the actions.

1.1 Purpose

The purpose of the VAS Technical Manual is to familiarize authorized users and support staff with the important features and navigational elements of the product.

1.2 System Overview

The VAS UI is a web-based application that may be accessed using either Google Chrome or Microsoft Edge.

VAS provides the ability to search for audit records generated from any VistA instance.

The VAS UI provides the following functionalities and features:

- Patient data accessed and modified (within VistA) is available for reviewing in the VAS UI by authorized users
- Authorized VAS users may view and identify the actions made by VistA users for targeted audit records to include the individual (and date/time) that performed the actions

Additional functions include:

- Search for patient record selection utilizing patient identifying information including full name, date of birth, and social security number
- Selection of user from the VistA environment that has accessed the chosen patient record
- Review and navigation of metadata records
- Selection and view of selected audit record fields

1.3 Document Orientation

The intended audience for the VAS Technical Manual is anyone that is supporting the VAS UI system.

1.3.1 Disclaimers

1.3.1.1 Software Disclaimer

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1.3.1.2 Documentation Disclaimer

The appearance of 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 the VA.

1.3.2 References

- VAS 1.0 User Guide
- VAS 1.0 Technical Manual
- VAS 1.0 Release Notes
- WEBS*1*1 Patch Description
- DG*5.3*964 Patch Description
- DG*5.3*964 DIBRG (Deployment, Installation, Backout, Rollback Guide)
- DG*5.3*964 Release Notes
- PIMS Technical Manual
- PIMS ADT Module User Manual – Security Officer Menu

2 Implementation and Maintenance

VAS is a web-based application available on Google Chrome and Microsoft Edge for the VA.

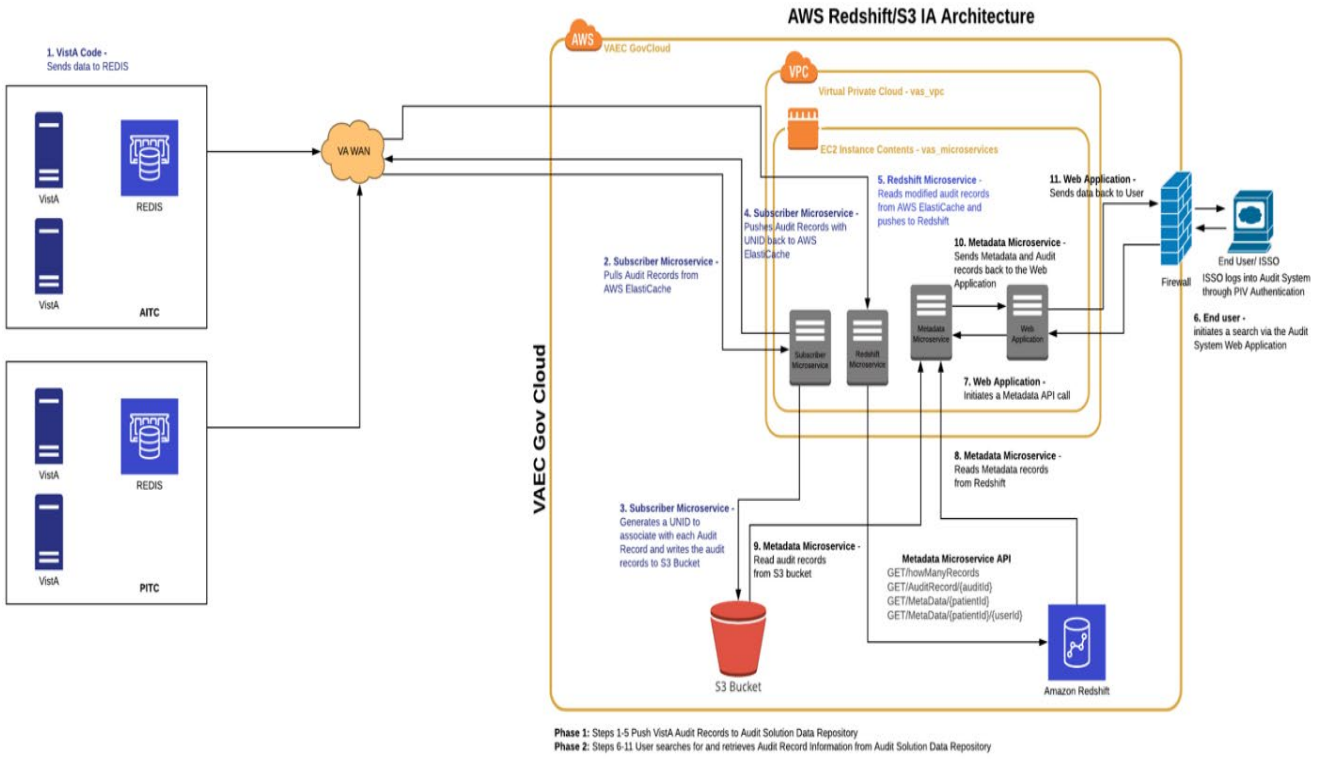

Figure 1 VAS Architecture

For information contact the REDACTED team using the email group available in the VA Global Address List (GAL).

REDACTED

Figure 2 VAS Global Address Listing

2.1 System Requirements

The VAS Solution requires the installation of the DG*5.3*964 patch in each VistA environment.

The Austin Information Technology Center (AITC) and Philadelphia Information Technology Center (PITC) Data Centers are utilized for VAS.

The VAS is also using the VAEC AWS GovCloud which contains Redshift for indexing and querying of data and S3 Bucket for long-term data storage.

2.1.1 Hardware Requirements

Hardware requirements for VAS 1.0 are as follows:

Resource	Quantity	Name and Type
REDACTED	REDACTED	REDACTED

REDACTED	REDACTED	REDACTED

2.1.2 Software Requirements

Software requirements for VAS 1.0 are as follows:

- Google Chrome or Microsoft Edge web browsers – used to display VAS UI
- Docker Container – VAS docker containers to be stored in the new GitHub Docker repository for VAS so that they are not publicly available outside of the VA network
    - Subscriber Microservice – Node JS Microservice
    - Metadata Microservice – Node JS Microservice
    - Redshift Microservice – Java Microservice
- Amazon Redshift – used as a database to index audit records to retrieve using UI
- Amazon ElastiCache – used to access patient records from Redshift using index
- REDACTED

REDACTED

Figure 3 VAS Physical Architecture (AWS) as of March 24, 2022

REDACTED

Figure 4 VAS Physical Architecture (On Prem) as of March 24, 2022

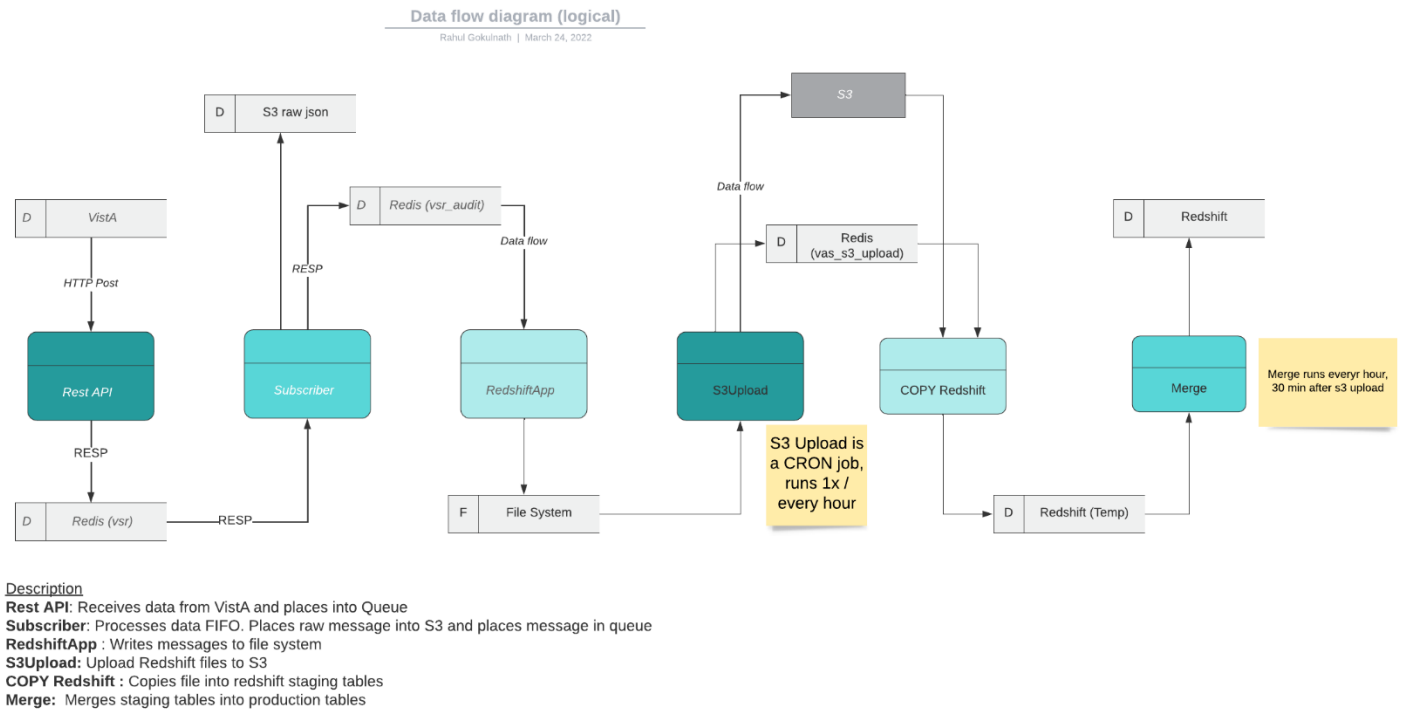

Figure 5 VAS Data Flow Diagram (Logical) as of March 24, 2022

2.1.3 Database Requirements

Database Requirements for VAS 1.0 are as follows:

- Amazon Redshift – Amazon Data Warehouse database used to index metadata tags for retrieval of audit records from UI
- Amazon S3 Bucket – utilized as long-term storage of the audit records within the AWS GovCloud servers
- Amazon ElastiCache – used to access patient records from Redshift using index

2.1.4 Cloud Services

- Amazon Redshift – Amazon Data Warehouse database used to index metadata tags for retrieval of audit records from UI
- Amazon S3 Bucket – utilized as long-term storage of the audit records within the AWS GovCloud servers
- Amazon ElastiCache – used to access patient records from Redshift using index
- AWS Elastic Compute Cloud (EC2) – secure and resizable compute capacity to support virtually any workload
- Amazon Virtual Private Cloud (VPC) – a service that lets you build and launch AWS resources in a logically isolated network in the AWS GovCloud
- Amazon CloudWatch – used for monitoring and provides observability on AWS resources and applications on AWS and on-premises
- AWS CloudTrail – tracker of users' activities and API usage thereby enabling governance, compliance, and operation auditing

2.2 System Setup and Configuration

2.2.1 Redis Enterprise Installation Procedure

- Download the installation package of the Redis Enterprise software from any of the supported platforms on Redis Labs
    - Prepare to install on Linux
        - Disable Linux swap on all nodes by running the below commands
            - sudo swapoff -a
            - sudo sed -i.bak '/ swap / s/^(.*)$/#1/g' /etc/fstab
- Install Redis software on Linux
    - Extract the .tar installation file and make sure to be in the right directory. Run command: tar vxf <tarfile name>
    - Finally, to install Redis Enterprise software,
        - Execute: sudo ./install.sh -y

- Setup a three-node cluster on Redis Enterprise user interface
    - By navigating to REDACTED for example REDACTED where REDACTED is the server IP in which Redis software has been installed
    - Join other nodes to cluster after creating the cluster on master node
- Create Redis Database VASDB on the UI and configure endpoints and replication on the cluster

3 Files

- Docker files: subscriber-microservice, redshift-microservice, metadata-microservice
- UI distribution folder

4 Routines

No routines

5 Exported Options

Not applicable

6 Mail Groups, Alerts, and Bulletins

For additional support and information contact the REDACTED team using the email group available in the VA Global Address List (GAL).

REDACTED

Figure 6 REDACTED Team Email Group

7 Public Interfaces

None

7.1 Integration Control Registrations

Not applicable

7.2 Application Programming Interfaces

None

7.3 Remote Procedure Calls

None

7.4 HL7 Messaging

None

7.5 Web Services

None

8 Standards and Conventions Exemptions

8.1 Internal Relationships

Each microservice has a dependency on each other. The Subscriber microservice sends messages to the Redshift microservice via the queue. The Redshift microservices reads the messages and inserts them into the Redshift database.

8.2 Software-wide Variables

Not Applicable

9 Security

9.1 Security Menus and Options

Not Applicable

9.2 Security Keys and Roles

Only authorized users with active PIV cards and Active Directory (AD) group membership are allowed to access the VAS UI

9.3 File Security

There are no files stored in the system

9.4 Electronic Signatures

Not applicable

9.5 Secure Data Transmission

Not applicable

10 Archiving

Data is archived automatically into the S3 file system

11 Non-Standard Cross-References

None

12 Troubleshooting

FAQs

- What if I don't see the data I expect?
    - Times for data to arrive and process will vary based on network conditions. Please submit an email to the VAS Support team (see Section 6) if data is not visible after 24 hours.
- What if I can't access the VAS UI?
    - Please submit an email to the VAS Support team (see Section 6) for assistance.

12.1 Special Instructions for Error Correction

None

12.2 National Service Desk and Organizational Contacts

Contact the VAS team by submitting an email to the REDACTED email group (see Section 6).

Appendix A: Acronyms

Acronyms	Definition
AD	Active Directory
AITC	Austin Information Technology Center
API	Application Programming Interface
AWS	Amazon Web Services
CRUD	Creation, Retrieval, Updating, and Deletion
DIBRG	Deployment, Installation, Back-Out and Rollback Guide
FOIA	Freedom of Information Act
HIPAA	Health Insurance Portability and Accountability Act
IG	Inspector General
IOC	Initial Operating Capability
ISSO	Information System Security Officer
IT	Information Technology
MUMPS	Massachusetts General Hospital Utility Multi-Programming System
OIT	Office of Information Technology
PHI	Protected Health Information
PII	Personally Identifiable Information
PIMS	Patient Information Management System
PITC	Philadelphia Information Technology Center
PIV	Personal Identitfication Verification
PO	Privacy Officer
SQA	Software Quality Assurance
TAR	Test Analysis Report

Acronyms	Definition
UAT	User Acceptance Testing
UI	User Interface
VA	Department of Veterans Affairs
VAS	VistA Audit Solution
VAEC	Veterans Affairs Enterprise Cloud
VAMC	VA Medical Center
VDL	VA Software Document Library
VHA	Veterans Health Administration
VistA	Veterans Information System and Technology Architecture