

VAR Web 4.2.x SDD

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Mobile Application System Design Document (SDD) Addendum

The System Design Document (SDD) is a dual-use document that provides the conceptual design as well as the as-built design. This document will be updated as the product is built, to reflect the as-built product. Per the Project Management Accountability System (PMAS) Guide, the SDD with conceptual design is required prior to the Milestone 1 Review. The as-built for each delivery must be incorporated prior to the Milestone 2 Review.

1. Mobile Application Information

1.1 - Overview

Project Name: Veteran Appointment Requests (VAR) Web Application

Project Increment / Release Designation: [var-web](#)

Product Version: [4.2.7](#)

	Veteran	Care Giver	Provider	Public	Help Desk
Intended Audience for Mobile Application	X				

Question	Yes	No	If Yes, what information / data	If yes, then identify any consumer or source system(s) for the data

Does the user enter information or data into the mobile application?	X		<ul style="list-style-type: none"> Appointment request information VistA appointment information Notification preference data 	<ul style="list-style-type: none"> VARDB VistA
Does Mobile Application store information or data entered by the User? If yes, where is it stored?	X		<ul style="list-style-type: none"> VARDB Oracle Database 	<ul style="list-style-type: none"> VARDB
Does Mobile Application transmit/push data entered outside of the VAMF to VA?	X		<ul style="list-style-type: none"> Appointment request information Appointment information 	<ul style="list-style-type: none"> VARDB VistA
Does Mobile Application pull data from a VA Database (external to VAMF)?	X		<ul style="list-style-type: none"> Patient Information Booked appointments Facilities Providers and clinics 	<ul style="list-style-type: none"> VARDB VistA CDW
Does the Mobile Application store in the VAMF or on the device data pulled from a VA Database?	X		<ul style="list-style-type: none"> Patient Information Patient preference data Appointment request information 	<ul style="list-style-type: none"> VARDB

This application can be classified as one of the following:

Mobile Application Classification (Only one box may be checked)	Mark with X
1 – Very Low: Mobile Application does not use VA Resource	
2 – Low: Read only access to VA Resource(s) (No PII / PHI)	
3 – Medium: Write access to VA Resource(s)	
4 – High: Read and/or Write access of sensitive data to VA Resource(s) (Includes PII/PHI/other sensitive)	X

1.2 - Supported Devices

Device OS	Native	Hybrid	Web-Only	OS version supported	Targeted Devices (iPhone, iPad, Samsung model...)	Estimated Storage Required for Device
iOS			X	iOS 9+	iPhone	n/a
Android			X	4.x+ (confirm)	Tablet - Samsung Galaxy Note	n/a
Windows			X	Windows 8 (confirm)	Desktop	n/a

1.3 - Supported Browsers

Device	Browser	Version
iOS	Safari	
Android	Chrome	

Windows	Internet Explorer	10+
Apple OSX	Safari	

1.4 - Capabilities

The **VAR** application provides the following features:

1. View list of VistA booked appointments.
2. Cancel VistA booked appointments.
3. View list of appointment requests made in VAR.
4. Cancel appointment requests.
5. Directly book a VistA appointment at a clinic.
6. Request an appointment at a facility.
 1. Submit message to clerk along with request.
7. Submit an Express Care request.

2. Application Design

2.1 - Design Principles and Patterns

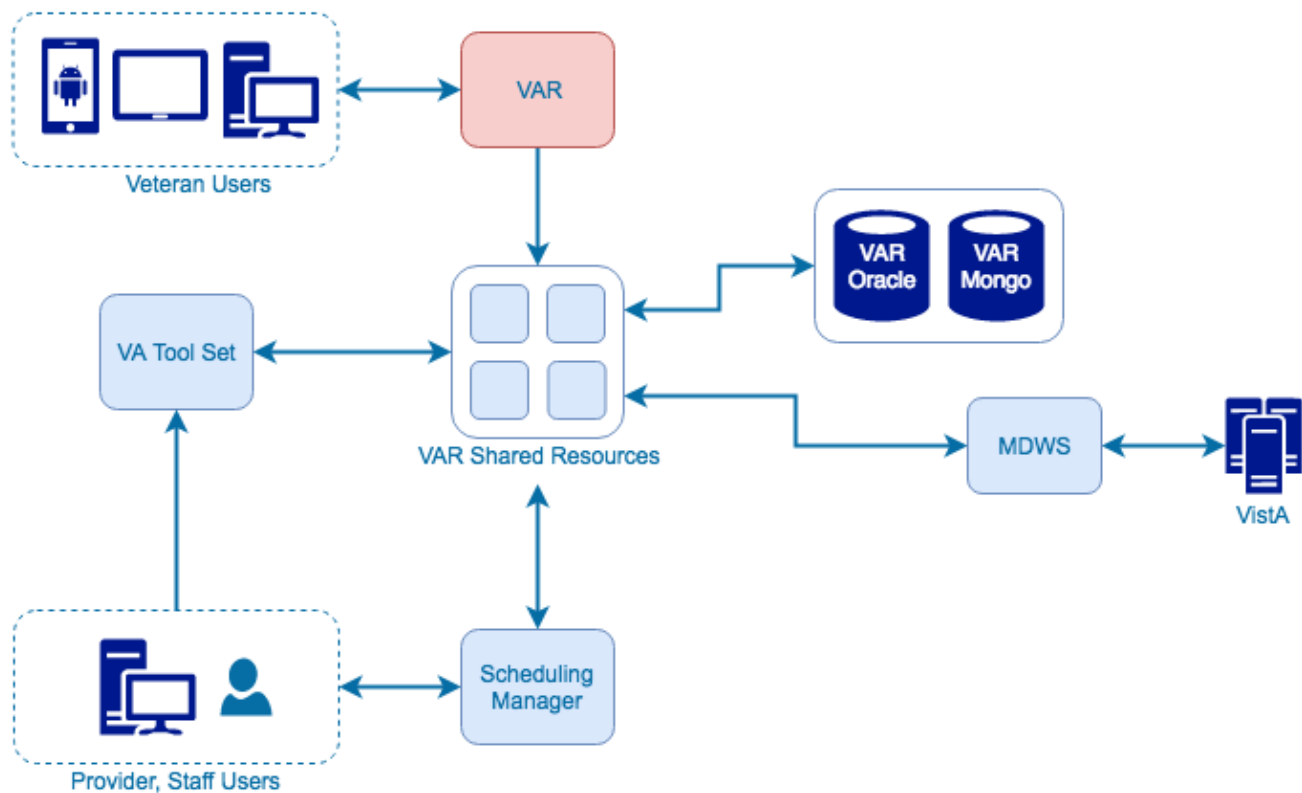
- VAR follows the 12 Factor App Guidelines <https://12factor.net/>
- VAR is a VAMF NextGen Application and follows the fundamentals and requirements of the platform
- Single Page Application - Single Page Application design patterns will be leveraged, but, not strictly adhered to. This includes the Backbone.js framework and the addition of mobile styling from jQuery UI.
- Application Specific Dependencies - External REST service dependencies are managed through application specific resource directory (resource-directory.json) packaged with the application. Each REST service endpoint is defined with a "title" and "href". For convenience, all the dependencies are identified in the VAMF Interfaces section.
- REST Conventions - The application works with data using HTTP verbs. GET is used for retrieving data, POST is used for creating or processing data, PUT is used for updating data and DELETE is used for deleting data.
- Exception Handling using HTTP standards - Exception handling is performed based on HTTP status codes. Bad Request (status code 400) is handled at the Model or Resource level. Internal Server Error (status code 500) is handled globally within the application.
- Leveraging common VAMF Services such as User Service and Right of Access (ROA) Web/Service.

2.2 - Conceptual Perspective

Component diagram depicting how the VAR Web Application connects across software in the VAOS Scheduling Suite is illustrated below.

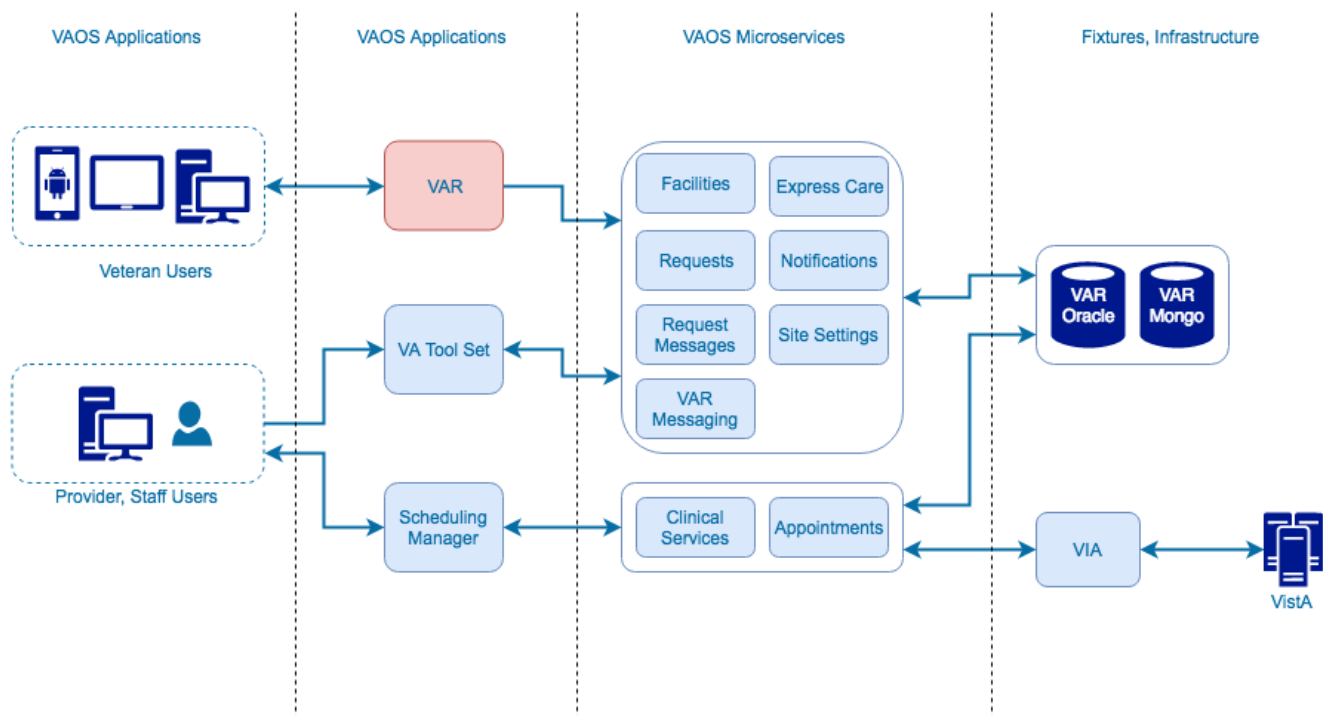
2.2.1 - Component Overview - Current as of April 04, 2018

VAR Web Application receives input from Veteran Users and requests appointments and other settings data through **VAOS Shared Resources**. **VAR Web Application** also accesses **MDWS** for EHR and other Patient information, as well as appointment slots for booking appointments and servicing requests. Site-specific settings for this application are retrieved from **VAOS Shared Resources** as configured through **VA Tool Set**.



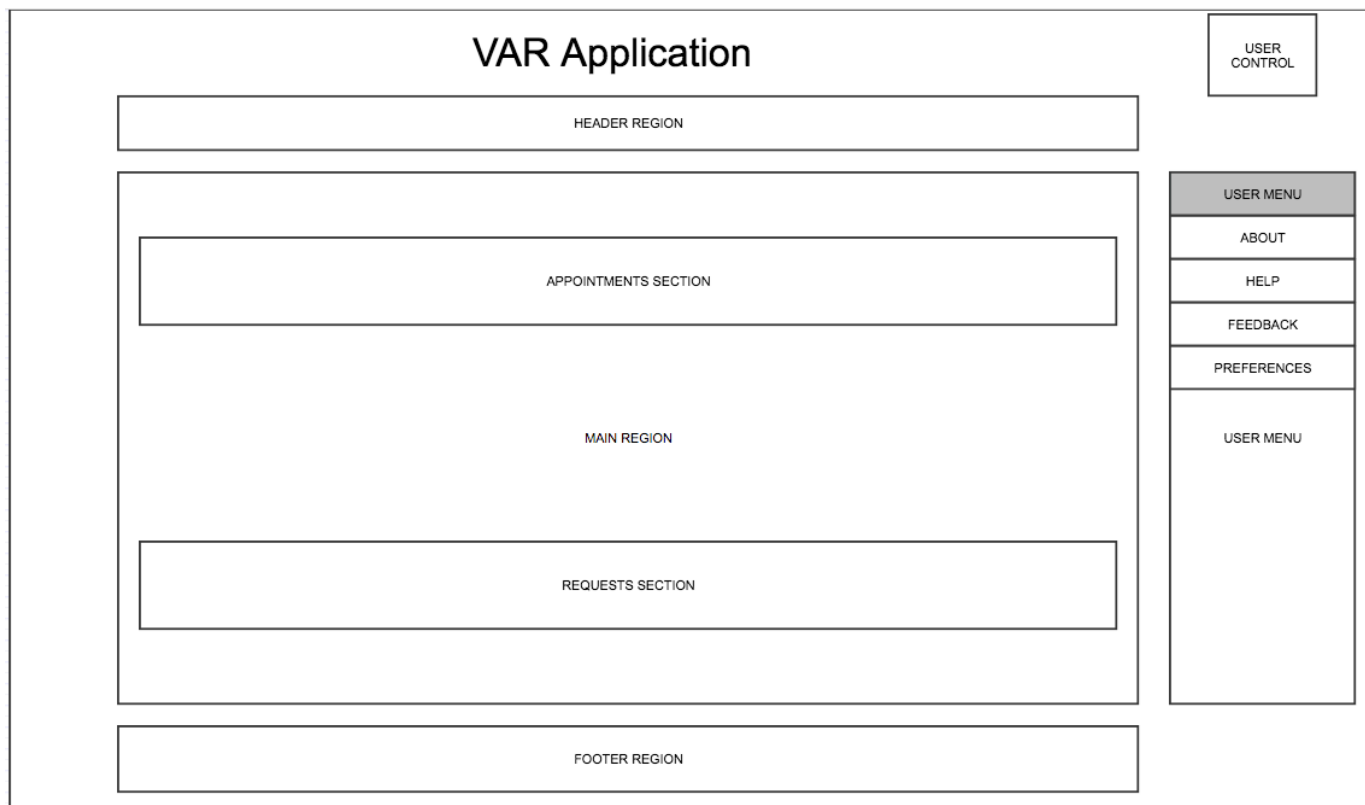
2.2.2 - Component Overview - through completion of VAR 4.x

The following diagram illustrates the to-be architecture through the completion of VAR 4.x. The primary differences here are the use of **VIA** for EHR and other Patient Information, and the use of **VAOS Microservices** in place of **Shared Resources** to retrieve VAR-centric data and settings.



2.2.3 - High-level User Interface Diagram

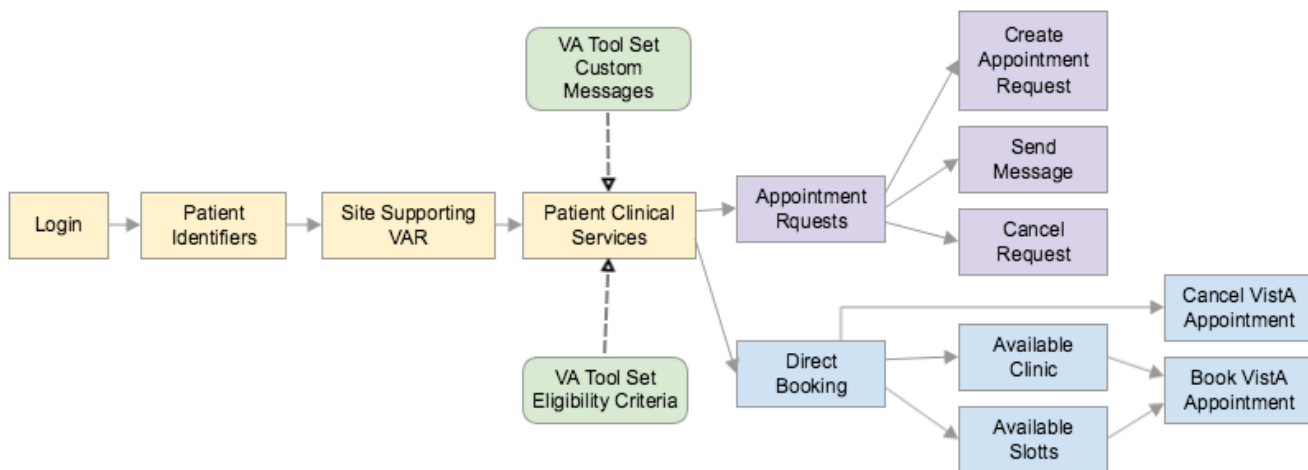
The primary User Experience, noted as functional regions and components, is depicted in the diagram below.



2.3 - Logical Perspective

2.3.1 - Functional Workflows Diagram

VAR logical functions are depicted below. The two main functional areas are Appointment Requests and Direct Booking. Only patients meeting the eligibility criteria are allowed to access the main functions operating on a Facility registered as a Site supporting VAR. Subsequent actions in each functional area are as illustrated.



3. Physical Perspective

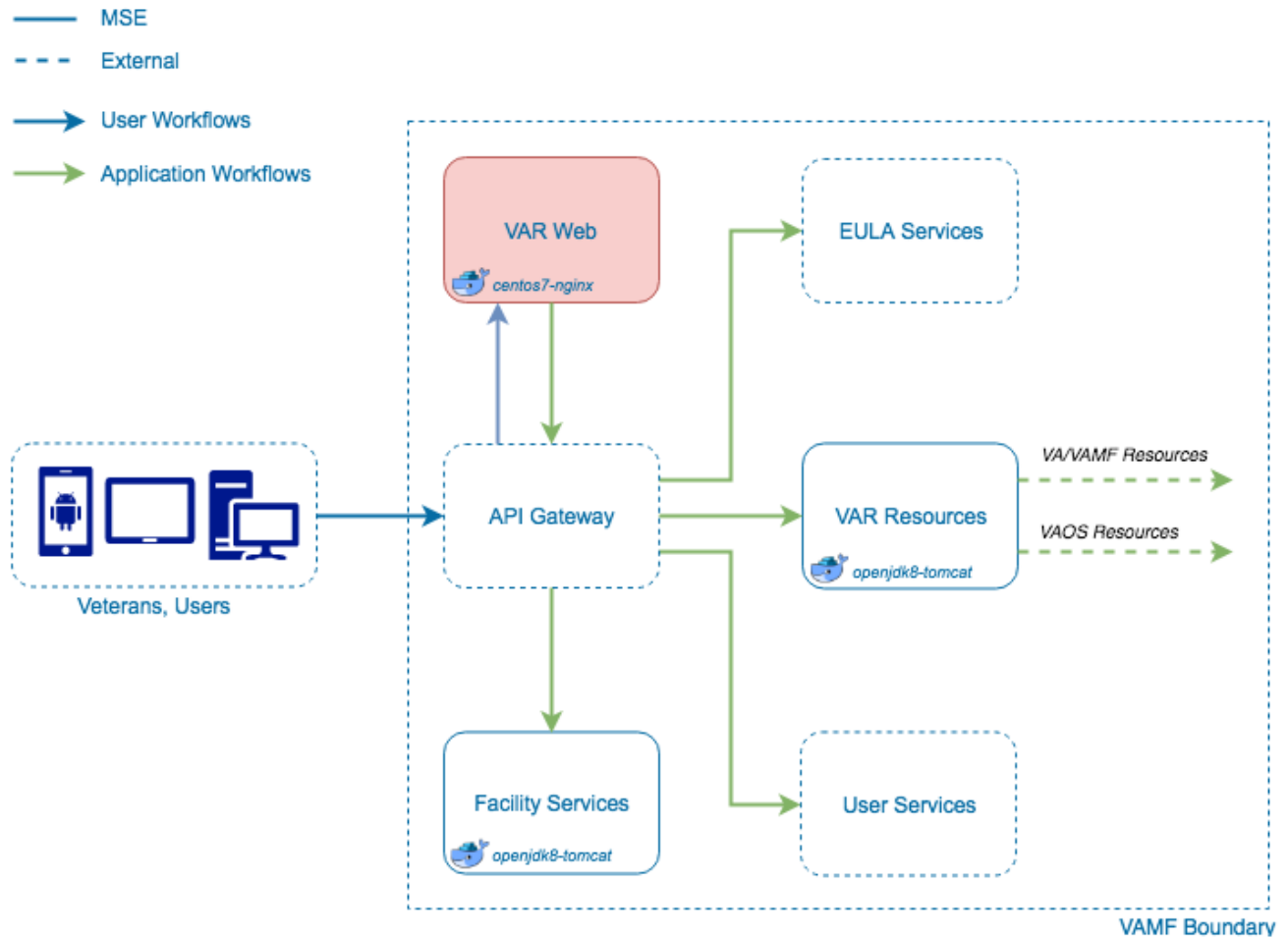
3.1 - Deployment Diagrams

This section highlights a complete list of the deployment diagrams, in order of completion and delivery of the software. The first set is based on incremental releases. The last is the ideal planned architecture based on evolving requirements and targeted resolution of technical debt.

3.1.1 - Deployment Diagram, Current as of April 04, 2018

Summary:

Deployment of the **VAR** application is depicted in the diagram below. **VAR** is intended for deployment in the VAMF NextGen environment, and as such, all containers listed in the diagram are run in both a Docker Compose environment and Docker Swarm environment, depending on the deployment stage to production. The **VAR Web** (VAR UI) portion is deployed to a Centos 7 NGINX server in a Docker container. **VAR Resources** (Veteran Appointment Request Service) is deployed to a Java 8 Tomcat server in a Docker container. **VAR Web** leverages **MDWS** in directly through **VAR Resources** to make requests to **VistA** for EHR data including patient information and appointments. **VAR Resources** make s direct requests to **CDW** and **MVI** for patient information and correlation data, and accesses the **VAR Mongo DB** and **VAR Oracle DB** for appointment information. **VAR Resources** connects to an external **SMTP Server** server to complete workflows relevant to this application. Please refer to the other **VAMF Shared Services** SRVDDs for additional information and component dependencies related to those services independently, but not listed in this diagram.

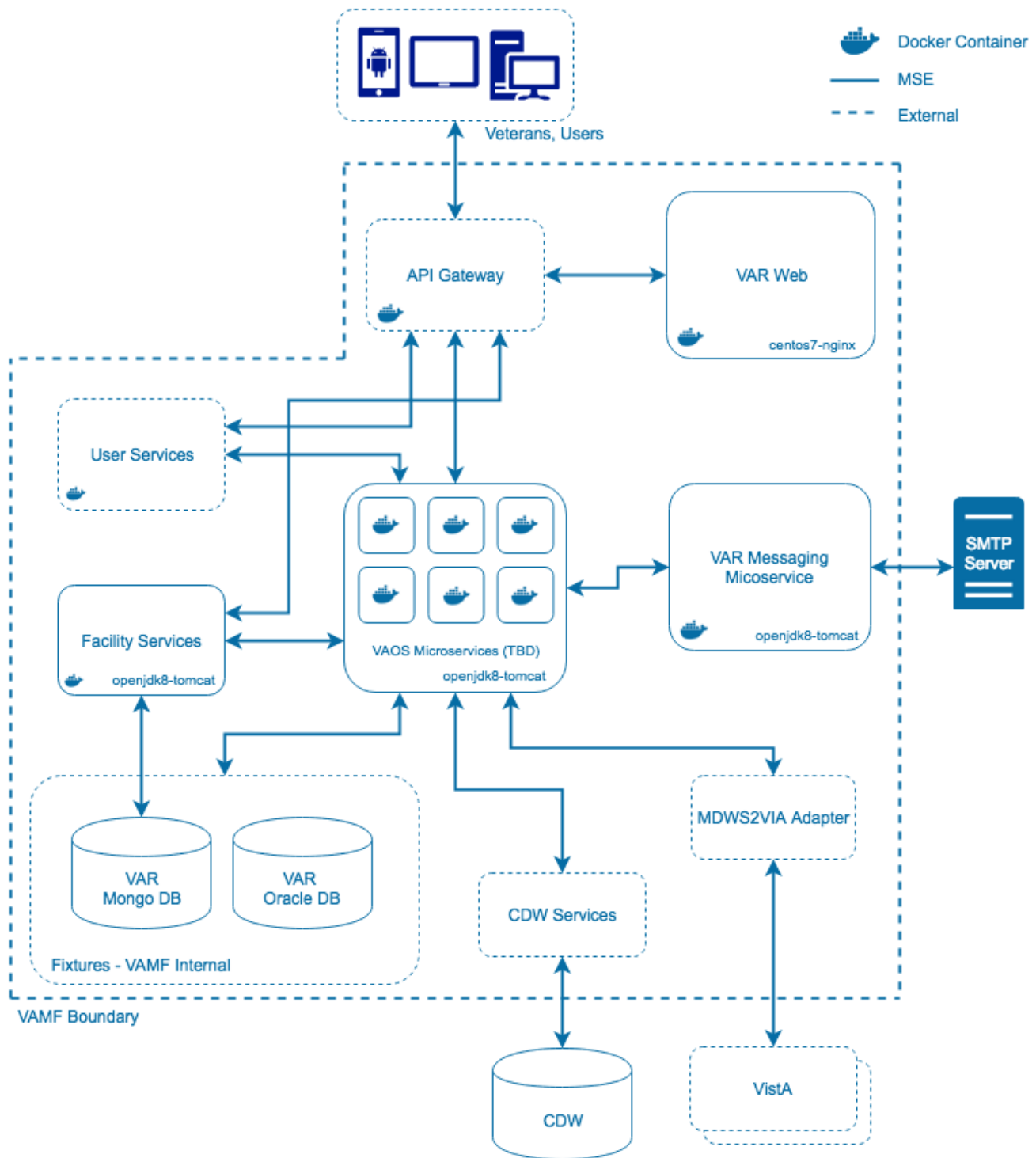


Footnotes:

1. The direct use of MVI is technical debt that is accounted for, and scoped for a future release (priority not yet given). The use is around legacy EDIPI correlation to account for pre-existing data design in production, as well as proper collection of DFNs. This will be resolved with the most up to date correlation pattern using ICN and a production-level data migration.

3.1.2 - Deployment Diagram, Planned for 4.x completion (subject to change as requirements evolve)

Summary:



4. Technology Stack and Service Dependencies

4.1 - Technology Stack Overview

The following is a running list of all major technologies chosen to build out the **VAR Web Application**.

Technologies, Libraries, and Tools Used in the App	Version	On the TRM? (If not, provide a link to the waiver)
HTML5	5	Yes
CSS	3	Yes
BackboneJS	1.1.2	Yes
Marionette	2.4.4	Yes
jQuery	2.1.4	Yes
jQuery Mobile	1.4.5	Yes
Lo-Dash	2.4.2	Yes
Moment	2.7.0	Yes
Moment Timezone	0.5.13	Yes
Font Face Observer	1.7.1	No
RequireJS	2.1.14	Yes
Appicare	7.3.8.4	Yes
Google Analytics	7.x	Yes

4.2 - VA Interfaces

4.2.1 - VA Mobile Infrastructure and Microservices

The **Scheduling Manager Application** has *direct dependencies* on the following VA-provided interfaces:

Interface Name	Version	Domain	Description of Role	SDD
API Gateway	1.x	VAMF NextGen Infrastructure	Access to VA domain services	VDD Link
User Services	1.x	VAMF NextGen Infrastructure	Login, Session, Patient Information	SRVDD Link
Consul (HashiCorp)		VAMF NextGen Infrastructure	Application runtime configuration	
ROA Services	1.x	VAMF NextGen Infrastructure	Right of Access UI/Service	SRVDD Link

4.3 - VAOS Interfaces

The Scheduling Manager Application has *direct dependencies* on the following VAOS interfaces developed in line with Scheduling Manager on the same contract:

Interface Name	Version	Domain	Description of Role	
VAR Resources	4.2.x	VAOS Services	Business logic passthrough for access to underlying VAMF Infrastructure	SRVDD Link
Facility Service	2.x	VAOS Services	Retrieval of facilities supporting VAR functionality	SRVDD Link

5. Non-functional Requirements

5.1 - Container Capacity

Type	Min	Max
CPU	1	2
Memory	512 MB	1024 MB
Storage	1 GB	5 GB

6. Developer and Program Manager (PM) Contact Information

Developer Name/Point of Contact (POC)	VA E-Mail Address	Phone Number
Doug Kurucz	doug.kurucz@ablevets.com	
Developer Organization/Company	Contract Start Date	Contract End Date
AbleVets	1/27/17	1/26/18
Web and Mobile Solutions PM or POC	VA E-Mail Address	Phone Number
VA Product Development PM or POC	VA E-Mail Address	Phone Number
Steve Green	steven.green@va.gov	