

Provider to Provider Messaging v1.0.0 SDD Addendum

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.

****Replace the blue instructional text in the various fields and tables below****

Mobile Application Information

Project Increment / Release Designation: Provider To Provider Messaging

Product Version: 1.0.0

| | Veteran | Care Giver | Provider | Public |
|--|---------|------------|----------|--------|
| 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 | | Messages to other Providers | Other Providers |
| Does Mobile Application store information or data entered by the User? If yes, where is it stored? | x | | Messages | MongoDB DB on Device (Encrypted) |
| Does Mobile Application transmit/push data entered outside of the VAMF to VA? | x | | Push Notifications, APNS Device Token | APNS |
| Does Mobile Application pull data from a VA Database (external to VAMF)? | | x | | |
| Does the Mobile Application store in the VAMF or on the device data pulled from a VA Database? | x | | Provider contact information retrieved and stored in P2P Data store. FirstName, LastName, user identifier, assigning authority, facility name for each provider | Authorization Services |

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 |
|---|---|

Application Design

The Provider to Provider Messaging app provide the capability for VA Clinical Staff to communicate health care information or requests related to patients securely with a friendly user interface that mimics SMS text messaging.

ESE is reviewing a Risk Based Decision Memorandum dealing with use of the Apple Common Crypto library.

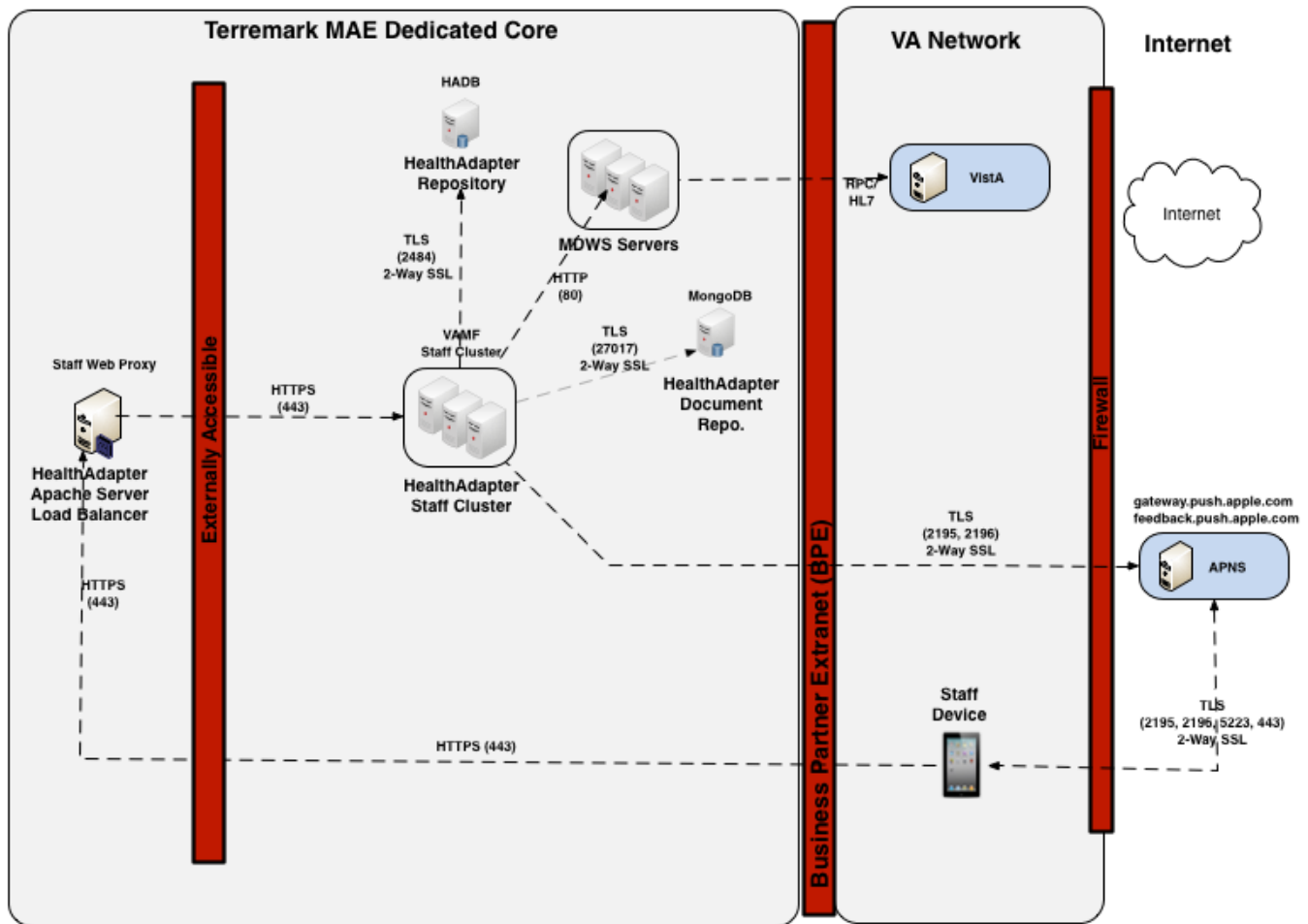
Network Overview

The CMS P2P deployment environment is comprised of several components, including:

- **Staff Web Proxy** - Health Adapter Apache Server Load Balancer, a load balancer to distribute transactions among the CMS P2P (and HealthAdapter) Nodes.
- **VAMF Staff Cluster** - Existing HealthAdapter WebLogic cluster to host the CMS P2P services.
- **MongoDB** - This is the HealthAdapter Document Repository where application data is stored.
- **HADB** - This is the HealthAdapter Oracle Repository, used to store infrastructure information such as scheduled jobs.
- **Staff Device** - The Mobile devices accessing the CMS P2P Application via a native app (iOS).
- **APNS** - Apple Push Notification Services, provides ability to send push notifications to iOS devices.

CMS P2P Focused view of Staff Environment

CMS P2P Production Staff Network Architecture



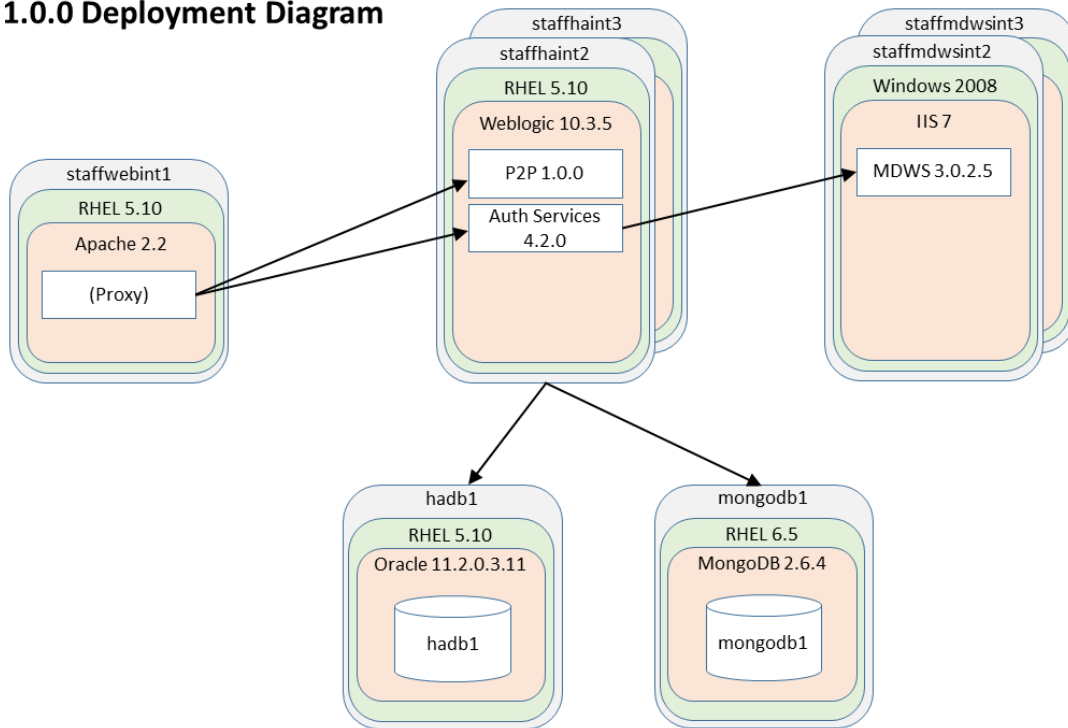
System Components

The following systems/sub-systems describe interfaces utilized by the project

- Authorization Services:** Services to provide Authentication and Authorization services.
 See Authorization Services SDD - [System Design Document](#)
 How to use Authorization Services: [REDACTED]
- Quartz Enterprise Job Scheduler:** Internal component that provides scheduling capability for "jobs".
- HealthAdapter Staff -** Application servers to host the HealthAdapter services configured as an application server cluster.
- Mongo DB -** This is the HealthAdapter Document Repository where application data is stored.
- Oracle -** This is the HealthAdapter Repository where the Oracle instance resides used to store infrastructure information such as scheduled jobs.
- Staff Devices -** The Mobile devices accessing the Application via a native app.
- Apple APNS -** This provides ability to send push notifications to iOS applications.
- Quartz Enterprise Job Scheduler -** This is the internal component that provides scheduling capability for "jobs". The scheduled jobs are used for scheduled messages.

Deployment Diagram

P2P 1.0.0 Deployment Diagram



Sequence Diagrams

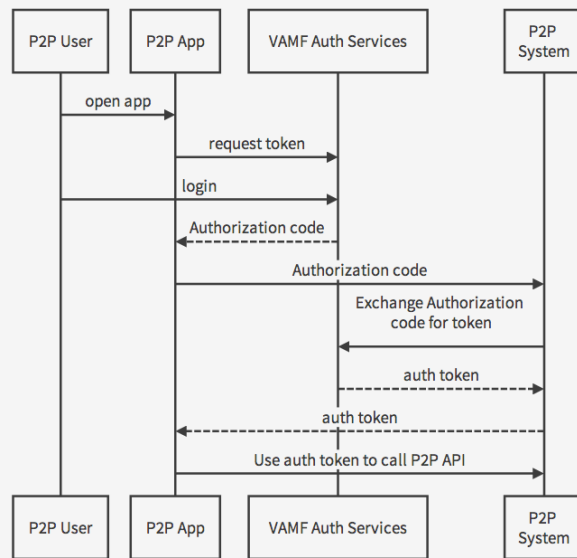
The following sequence diagrams provide a conceptual understanding of the interaction between a mobile app, and the associated components of the service. These components include:

- **P2P System**: The REST endpoints that accept authorized requests from an application user. These are deployed to the Staff VAMF Weblogic Cluster. Details on services can be found within the API documentation at [Provider 2 Provider API](#)
- **MongoDB**: The NoSql data store for P2P application data.
- **APNS**: Apple Push Notification Service, provides ability to send push notifications to iOS applications.
- **VAMF Auth Services**: VA Mobile Framework Authorization Services, provide Authentication and Authorization services.
- **P2P Scheduler**: Quartz Enterprise Job Scheduler, internal component that provides capability to create schedules for job execution.
- **Oracle DB**: The SQL data store for P2P Scheduler data.

Login

This sequence diagram depicts the interaction between the P2P user, P2P mobile app and VAMF Auth Services to authenticate the user and verify user authorization for P2P services.

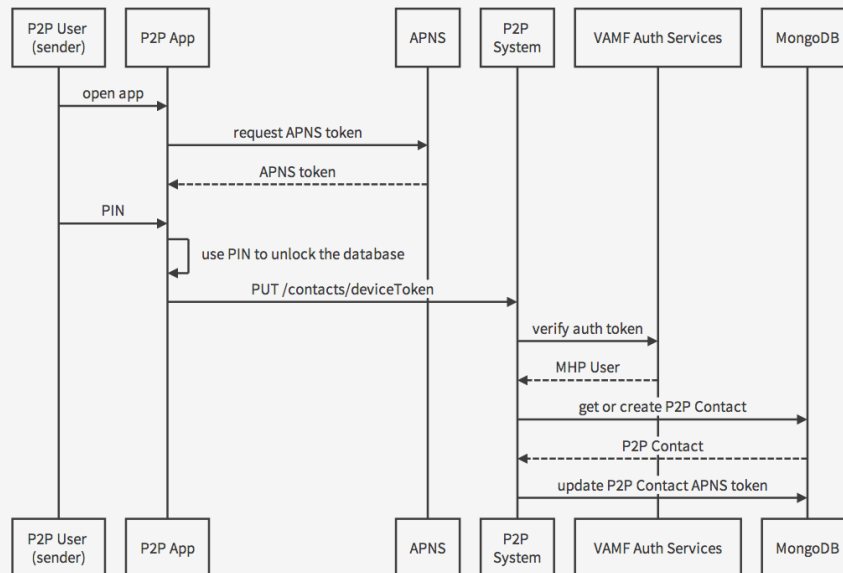
Login



Device token

This sequence diagram depicts the interaction between the P2P user and system components to generate and store APNS device token that will be used to send push notification.

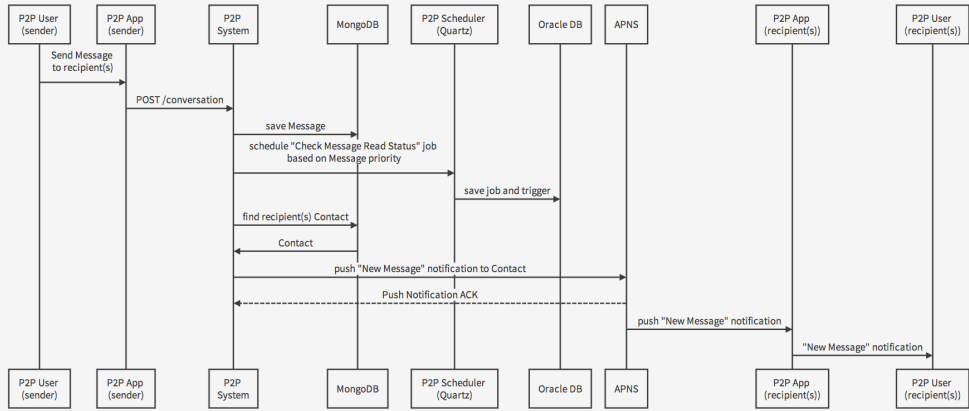
Device token



Start new conversation

This sequence diagram depicts the interaction between the P2P user and system components to create a new Conversation.

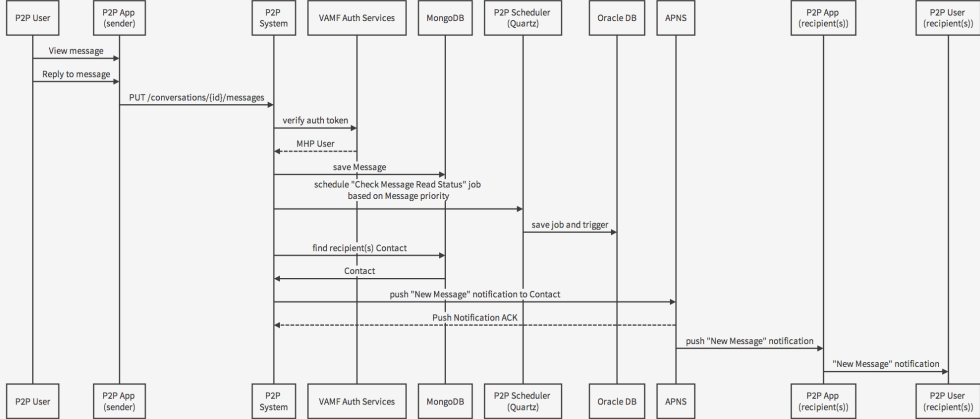
Start New Conversation



Reply

This sequence diagram depicts the interaction between the P2P user and system components to create a reply Message.

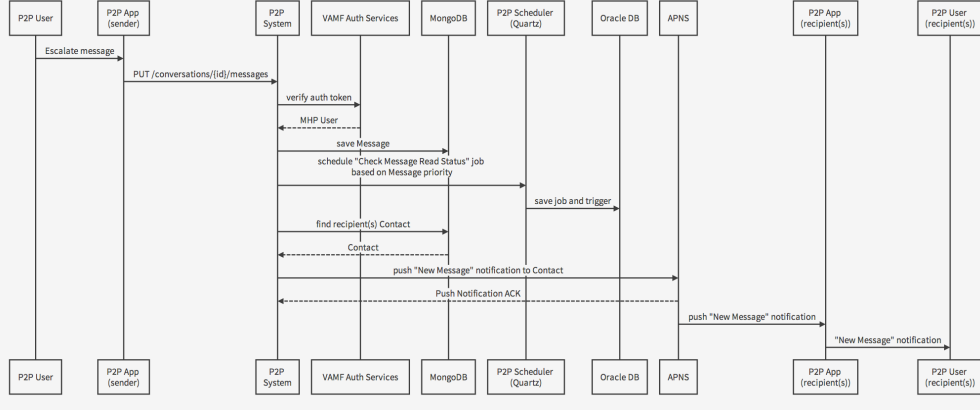
Reply to a message



Escalation

This sequence diagram depicts the interaction between the P2P user and system components to escalate a Message.

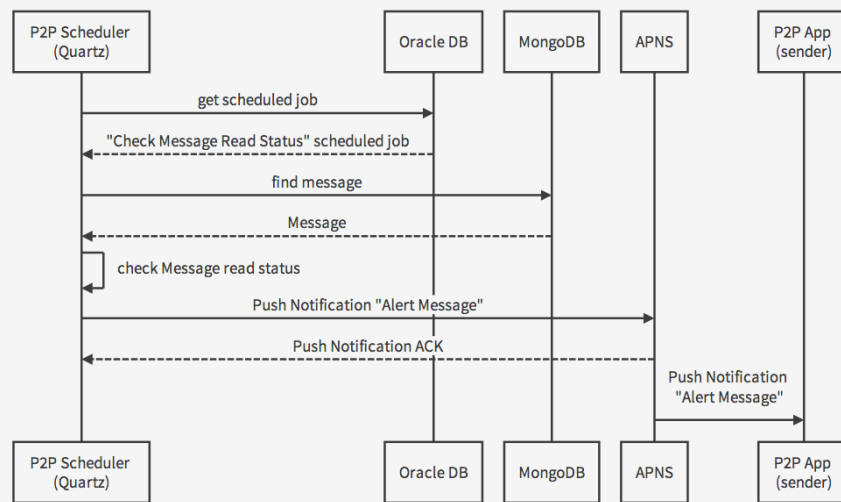
Escalation



Apple Push Notification - Alert message

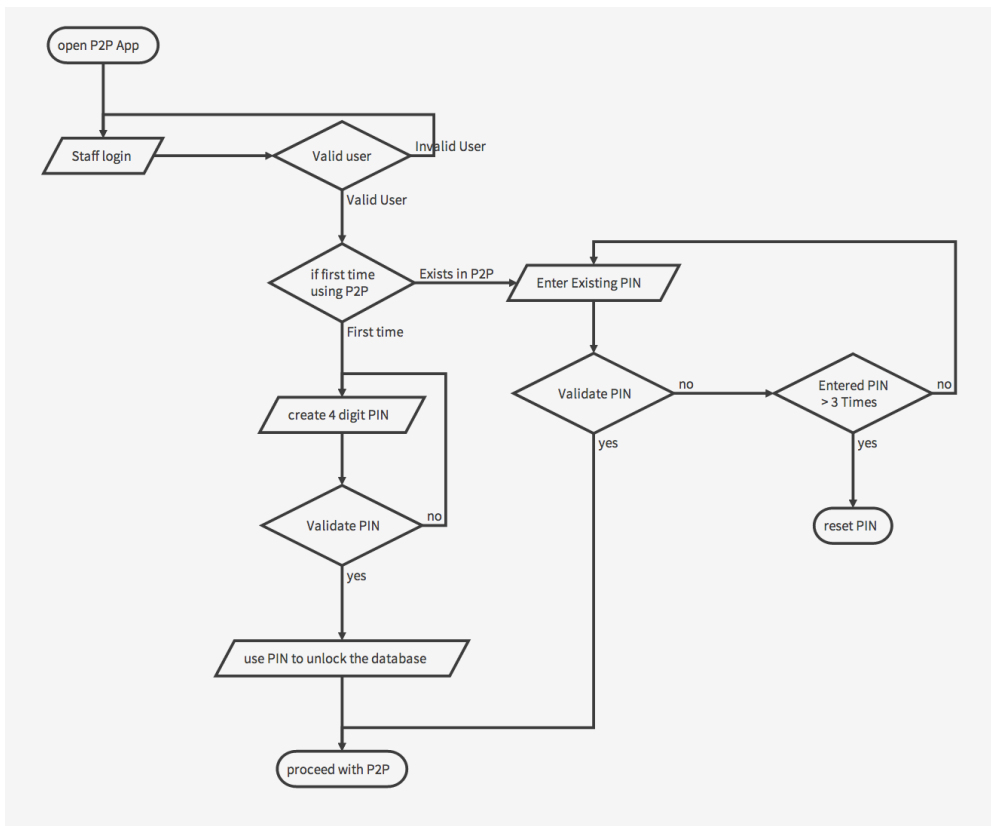
This sequence diagram depicts the interaction between P2P system components to send an Alert push notification.

Alert Push Notification



PIN Management

This flow diagram depicts the interaction between P2P User and P2P App to unlock the encrypted database on the iOS device using PIN .



Original Markdown source: [P2P-Sequence-diagrams.md](#)

| Device's OS | Native | Hybrid | Web-Only | OS version supported | Targeted devices (iPhone, iPad, Samsung model...) | Estimated Storage Required for Device |
|-------------|--------|--------|----------|----------------------|---|---------------------------------------|
| iOS | x | | | 7.1.x | iPhone | 5MB |

| Technologies, Libraries, and Tools Used in the App | Version | On the TRM? (If not, provide a link to the waiver) |
|--|----------------|--|
| iOS | 7.1.2 | Yes |
| Java | 6 or above | Yes |
| MongoDB | 2.6.5 or above | Mongo DB Waivers: [REDACTED] (P2P is part of the Annie/HealthDialog/CMS project) |
| Oracle Database | 11g or above | Yes |
| Oracle WebLogic Server | 11g or above | Yes |
| Quartz Enterprise Job Scheduler | 2.2.1 | Yes |

Data Architecture

- All collections listed will reside in P2P database in HealthAdapter Document Repository

| Ref # | NoSQL Collection | Description of data collection | Source of data | Structure |
|-------|------------------|--------------------------------|----------------|-----------|
|-------|------------------|--------------------------------|----------------|-----------|

| | | | | |
|---|--------------|--|-------|--|
| 1 | p2p.contacts | <p>List of available provider contacts.</p> <p>The following is obtained from VAMF:</p> <ol style="list-style-type: none"> 1. firstName 2. lastName 3. facility 4. userIdentifier <p>The following is obtained from APNS:</p> <ol style="list-style-type: none"> 1. deviceToken | Mongo | <pre>{ "_id": ObjectId("53e4e68a9f261956b7c977bf"), "firstName": "TEN", "lastName": "VEHU", "facility": { "id": "dfn-688", "facilityName": "WASHINGTON" }, "userIdentifier": { "uniqueId": "20012", "assigningAuthority": "dfn-688" }, "deviceToken": "0d29234c39c9c5279822306e0b0b46dab24188fab221426a470e087270e3fbdb" }</pre> |
|---|--------------|--|-------|--|

| | | | | |
|---|-------------------|--|-------|---|
| 2 | p2p.conversations | List of conversations between recipients, created via app | Mongo | <pre>{ "_id": ObjectId("5400c02c191fe21a3668e208"), "createdBy": "53e4e68a9f261956b7c977bf", "createdTime": "2014-07-09 19:19:00 GMT", "recipients": ["53e4e68a9f261956b7c977bf", "53e4e68a9f261956b7c977c0"] }</pre> |
| 3 | p2p.messages | Individual messages that are part of a conversation, created via app | Mongo | |

```
{
  "_id": ObjectId("5400c02c191fe21a3668e308"),
  "senderId": "53e4e68a9f261956b7c977bf",
  "conversationId": "5400c02c191fe21a3668e208",
  "messageBody": "test message",
  "sentTimestamp": "2014-07-09 19:19:00 GMT",
  "priority": "urgent",
  "recipients": [
    {
      "contactId": "53e4e68a9f261956b7c977c0",
      "deliveryTimestamp": "2014-07-10 19:19:00 GMT"
    }
  ]
}
```

| | | | | |
|---|----------------|---|-------|---|
| 4 | p2p.dictionary | Help message, created by system administrator | Mongo | <pre>{ "code": "10001", "message": "Please view <a href=\"h If you need additional assistance, then please contact our help desk at XXXX." }</pre> |
|---|----------------|---|-------|---|

Add tables like this for Relational tables:

| Schema Name | Description |
|-------------|-------------|
|-------------|-------------|

| | |
|------------|---|
| P2P_QUARTZ | Stores information used by Quartz Enterprise Job Scheduler to perform scheduling capabilities. This schema is defined by the Quartz Enterprise Job Scheduler library. Details can be found in the courier_dbinstall_r1.sql script |
|------------|---|

Laws / regulations that direct the implementation of the app?

No laws or regulations dictate that this capability be made available to the targeted audience.

Expected concurrent and maximum size of the user base?

| User Category | Total Number of Users | Concurrent Users |
|---------------|-----------------------|------------------|
| Providers | 4350 | 435 |

Interface Design

Existing VAMF Interfaces Used

(This section means VAMF services already deployed in production for this app)

| Interface Name (incl. version number) | Data Used by Mobile App | Source of Data | Data Retrieved - provide specific data elements used by this app |
|---|-------------------------|----------------|--|
| Auth Services 4.2.0 | Authentication Response | | |
| /AuthorizationService/provider/authorize | Authentication | | |
| /AuthorizationServices/logout | Logout | | |
| /AuthorizationServices/oauth/token | Authentication | | |
| /AuthorizationServices/rest/validateToken | Authentication Response | Vista | First name, last name, user identifier, assigning authority, facility name |
| /AuthorizationServices/rest/token | Invalidate auth token | | |

New/Updated VAMF Interfaces Added

This section should contain services that are being deployed with this app - RESTful / other web services that become part of the VAMF service inventory, but are not available in production yet.

| Interface Name (incl. version #) | Data Used by Mobile App | Source of Data | Included in Program-Level SDD? |
|---|-----------------------------------|--------------------------|--------------------------------|
| Provider 2 Provider Services 1.0.0 /p2p-resources/v1/contacts /p2p-resources/v1/conversations /p2p-resources/v1/conversations/{id}/messages /p2p-resources/v1/profile /p2p-resources/v1/help | Contacts, Messages, Conversations | P2P Data Store (MongoDB) | No |

For all services not currently in the Program-Level SDD, provide the documentation here that should be included - services, request data, response data, etc.

Dependencies/SLA

For example, you are reliant on a VA system to implement something for you, including supporting testing: None

| Project Dependency | Point of Contact Information | Describe Dependency |
|--------------------|------------------------------|---------------------|
| | | |
| | | |
| | | |

Traceability

See [Provider to Provider Messaging v1.0.0 - Requirements Traceability Matrix \(RTM\)](#)

| EPIC | FEATURE | USER STORY | DESIGN COMPONENT |
|------|---------|------------|------------------|
| | | | |
| | | | |
| | | | |

Developer & PM Contact Information

| Developer Name/Point of Contact (POC) | VA E-Mail Address | Phone Number |
|---------------------------------------|---------------------|-------------------|
| ████████ | ██████████ | ████████ |
| Developer Organization/Company | Contract Start Date | Contract End Date |
| Agilex | 9/30/13 | 11/28/2014 |
| 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 |
| ████████ | ██████████ | ████████ |