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Introduction

This operations guide is designed to assist in the management and maintenance of an on-premise or cloud deployment of the VoiceVault Fusion V9 voice biometric system.

The typical intended audience for this guide would be an Operations Manager, IT Manager or Director, and a Security Manager or Director.

Overview

VoiceVault Fusion V9 has been developed with a completely new user interface, replacing the Management Portal found in previous releases. This new Fusion Operations Portal is a Microsoft IIS web application, and is capable of running on one or more of the existing servers in the Fusion web layer or on one or more separate Microsoft IIS servers as required.

Diagram 1: Infrastructure overview

The Operations Portal interface to the Biometric Database is through the standard Fusion APIs, which also facilitates remote deployment of the IIS server(s) if required. As certain functionality within the portal may make heavy use of the Fusion API methods, specifically reporting and auditing, then the production architecture hardware and software should be determined based on the operational requirements, simultaneous users, system loading, and the need for redundancy and disaster recovery.
Fusion V9.x Operations Portal Requirements

Each system will typically have one or more web servers, depending on the application requirements.

O/S and Software Support

Web Layer

- Windows Server 2012 R2 x64, Standard or higher
- IIS 8.5 or above
- .NET Framework 4.6+

Virtualization

Due to the use of standard commercial platforms throughout the architecture, virtualization should be supported using most of the commonly available systems, and has been tested using:

- Amazon EC2 Xen-virtualized images (IaaS)
- Amazon AWS Elastic Beanstalk (PaaS)

Client Support

The Operations Portal should be compatible with all recent browsers. It is important to ensure that both JavaScript and Cookies are enabled for correct operation. As it has been developed to fully support “Responsive Web Design” (RWD), it should also be feasible to access the portal using a tablet or mobile device.
Users and Roles

Each user in the Operations Portal is linked to a specific Organization application, via a standard Fusion Organization ID and an associated set of credentials. These details are only required when registering a new user in the portal.

Portal Security

All access to the Operations Portal occurs over TLS secured and encrypted connections. Each user is required to logon to the portal using a password (diagram 2). This password should be unique to their portal logon and not reused elsewhere.

Once logged on to the portal, a secure browser token is used to ensure all access to the portal is authorized and authenticated, and to prevent vulnerability to potential security issues such as cross-site scripting. The token will expire periodically, requiring users to log back in at regular intervals to enhance security.

Roles

All functionality within the Operations Portal is secured through the use of User Roles. When a new user is registered, they are allocated a suitable role based upon the level of access they need to be provided with. The standard portal roles are as follows:

- **FusionPortalViewer** – a read-only role for reporting and auditing use
- **FusionPortalUser** – standard operational user with the ability to add, modify and delete claimants and carry out some basic configuration tasks
- **FusionPortalAdmin** – superuser with full system access, and the ability to carry out all configuration activities as well as manage portal users

*Diagram 2: Fusion Portal Logon Screen*
User Management
Managing your profile is carried out using the drop-down menu at the top right of the screen after logging in to the portal (Diagram 3).

![Diagram 3: Fusion Portal Logon Screen](image)

After selecting the Settings menu then the Manage Account screen will be displayed, allowing the user to change their password for the Fusion Portal, to add a phone number for sending SMS notifications, or to enable/disable two-factor authentication (Diagram 4).

![Diagram 4: Manage Account settings](image)

Note that SMS notifications must be separately configured within the Fusion Portal, and may incur extra charges. Please refer to your Support contract.

Logging out
Using the Logout option on the profile drop-down menu will log the user out of the portal, and invalidates the browser token for additional security. It is good practice to manually logout of the portal when you have finished your session.
Portal Functionality

Navigation

After successfully logging on, the Operations Portal Home screen will be active. The user role within the portal is displayed on the top bar (diagram 5).

While in the portal, navigation between screens is carried out using the left-hand menu. The currently active screen will be highlighted on the navigation menu, as well as being displayed on the top of the display screen area. The navigation menu can be collapsed and expanded as required to maximize the display screen space.

Display Panels

Each screen presents information on an individual display panel. Each panel has a status icon, panel content heading and group of panel settings icons (diagram 6).
The status icon indicates whether the displayed information is static or being refreshed, while the panel settings icons allow the specific display panel to be primary focus, expanded or collapsed, and manually refreshed. Note that refreshing the panel may make many calls to the API, and potentially load the system depending on the extent and complexity of the displayed information.

*Diagram 6: Display Panel overview*
Home Screen

The Home screen shows an overview of the Organization application and configuration (diagram 7). Refer to the Fusion documentation for further information regarding the details shown on this screen. It also includes a summary of the total number of claimants registered, as well as the activity over the previous 7 days.

On the Home screen it is possible to click on a specific Configuration ID to view all the transactions filtered by that configuration (see Transactions Screen for details).

At the top of the Home screen are a few small graphs showing details of the enrollments, verifications and active users in the system over the last week by day (right-hand column represents today). You can hover the mouse over the individual columns to show the exact number for a specific day (diagram 8), and also click on a column to view the specific transactions for that day.

Diagram 7: Home screen main display

Diagram 8: Activity 7-day graphs
Claimants Screen

The Claimants screen displays a report table that allows you to view all the registered claimants in the Organization. The table is displayed in pages which are navigated using the buttons at the bottom right of the table, and the number of entries per page is selectable using the dropdown box at the top left of the table (diagram 9).

It is also possible to search for a specific Claimant ID using the filter, located at the top right of the table.

Within the Claimants table, clicking on a specific Claimant ID will allow you to drill-down on all the transactions for that user (see Transactions Screen). If the user has the required authorization as set by their portal role, then Claimants can be quickly enabled and disabled using the drop-down buttons on the left side of the table. Users with a read-only role cannot make any permanent changes in any part of the Fusion portal.

At the very top left corner of the panel is a button to create a new Claimant. This is useful when a Claimant ID needs to be registered in advance, for use in testing an IVR or mobile application for example. However, note that all registered claimants will count towards any contractually agreed limit or pricing model, regardless of whether they have been enrolled or not, so new claimants should only be created when they are required in your application.

Actions Control

The Actions Controls are located at the right column in the report table. These controls consist of a primary button combined with a drop-down menu that are used to carry out actions for a specific Claimant (diagram 10).
Action View Button

The primary View button will open a new table row containing a graphical summary of all the transactions for the claimant.

Note that you can click on both the transaction summary graph and the transactions timeline to drill-down to the individual transactions (see Transactions Screen).

Drop-down Menu

The drop-down menu contains the following actions:

- **Abort Active Dialogues** – manually aborts any active transactions for that Claimant. Used primarily where a dialogue has been started, such as during testing, and therefore another dialogue cannot be started until the previous one times out (refer to the Fusion documentation for further details). Note that clicking this during normal operation may cause a legitimate verification to fail, and/or unexpected behavior in a mobile or IVR application.

- **Unenroll Claimant** – manually unenrolls the Claimant, invalidating the voice model and any associated transactions. The next time the Claimant accesses the system then they will need to re-enroll with a new voice model. This function is used to force a new enrollment, such as when the existing voice model quality is considered insufficient or when it is believed that a Claimant voice model might have been compromised.

- **Delete Claimant** – permanently removes the Claimant and all associated data from the Fusion system. Note that the Claimant’s data cannot be recovered, so care should be taken if it may later be required for non-repudiation or legislative reasons. Disabling the Claimant may be more appropriate in these cases.

- **View Audit data** – view all the audit data for the claimant (see Audit Activity Screen).

- **View Details** – view or hide the graphical details, this is the same function as the Action View button.
Transactions Screen

The Transactions screen displays a report table that allows you to view all the transactions that have taken place within the system for the Organization. This table is again displayed in pages which are navigated using the buttons at the bottom right of the table but, as there may be a significant number of transactions, navigation is limited to next and previous pages. The number of entries per page is selectable using the dropdown box at the top left of the table (diagram 11).

In most cases the transactions will be filtered, either in the process of drilling down from data presented on other screens (such as from the Claimants graphical details), or entering one or more manual filters located above the top row of the table data.

![Diagram 11: Transactions report table](image)

The Reference column contains either data set by your specific application displayed in text format (see ExternalCallRef in Fusion API documentation), or data that is specific to a VoiceVault Fusion application such as ViGo or VIM.

For example, both ViGo and VIM support tracking the location of the Claimant while interacting with the system, and this is represented in the table by a map pin. Clicking on this pin will display a map if this functionality is enabled in the Fusion system (diagram 12).

![Diagram 12: Context sensitive Reference column](image)
In the case of VIM access using an IVR then the icon displayed is a user pass. In this case, if you hover the mouse over the VIM icon it will display the User ID and telephone number used by the caller to the IVR (Diagram 13).

**Diagram 13: Fusion Portal integration with VIM**

**Actions Control**

The Actions Controls are located at the right column in the report table, and consists of a primary button combined with a drop-down menu.

**Action View Button**

The primary View button will open a new table row containing the details of all the steps within the specific transaction (Diagram 14). Refer to the Fusion documentation for further information on the meaning of these parameters.

**Diagram 14: Transaction table details row**

The **Adapt** button on the right-hand side of the details row is used to carry out a manual Adaptation for the Claimant. This process uses the utterances from the transaction being viewed to adapt that Claimant’s voice model, with the goal of improving accuracy for future authentication.

It is extremely important to fully understand the Adaptation process and the benefits and possible issues before using this function, to avoid potentially damaging or compromising the existing voice model. Refer to the Fusion documentation for details of both manual and automatic Adaptation.
The **Speech Controls** allow the utterances associated with the transaction to be played back or saved, as well as to view the recorded waveform (*diagram 15*). It is possible to double-click on any segment within the waveform to play that part of the audio for further analysis.

*Diagram 15: View Transaction audio analysis*

**Drop-down Menu**

The drop-down menu contains the following actions:

- **View Audit data** – view all the audit data for the claimant (see Audit Activity Screen).
- **View Details** – view or hide the transaction details, this is the same function as the Action View button.
Audit Activity Screen

The Audit Activity screen displays a report table that allows you to view an audit of all the activities that have taken place within the system for the Organization. This table is again displayed in pages which are navigated using the buttons at the bottom right of the table (diagram 16).

![Audit Activity Screen](image)

*Diagram 16: Audit Activity screen*

The search parameter permits filtering of the audit entries based on Action Type (e.g. “Register Claimant”). It is also possible to search for specific Target Details parameters, which could be a Claimant ID or Configuration ID depending on the Action Type.

To filter by Target Details then use the format “`targetObjectID:<GUID_TO_SEARCH_FOR>`” as the Search parameter.

For example:

```plaintext
targetObjectID:4616308c-a18f-44c7-8d46-40dc046d5bc9
```

The audit activity screen is typically used to trace specific activities within the system, from either the Organization’s application making calls to the Fusion APIs, or from activities carried out by users within the portal itself.
Configurations Screen

The Configurations screen displays a report table to view all the separate Configurations that exist for your Organization application. As there are typically only a few Configurations at most, there is no paging required with this table. It is possible to search for a specific Configuration ID using the filter at the top right of the table (Diagram 17).

Configurations can be enabled and disabled using the drop-down button at the left hand side of the row, and a new Configuration can be created using the Create New Configuration button at the top left of the table.

Note that creating or modifying a Configuration may be restricted in your system, in which case it can only be carried out by contacting VoiceVault Support. This also applies to the VoiceVault Fusion cloud-based environment, where the configuration settings will be set and managed based on the Organization’s requirements while creating the account.

Modifying the existing Fusion Configuration parameters may cause your application to become unstable, or compromise the biometric accuracy of your system, and should only be carried out by users experienced with the Fusion biometric configuration settings. Please refer to the Fusion documentation for further details.

Actions Control

The Actions Controls are located at the right column in the report table, and consists of a primary button combined with a drop-down menu.
Action Edit Button

The Edit button allows the Name and Description to be modified for a Configuration ID.

Drop-down Menu

The drop-down menu contains the following actions:

- **Configure Processors** – allocate and deallocate specific Fusion biometric processors to a Configuration. These processors are deployed at system installation time, and depend on the languages supported, required throughput and authentication mode.

- **View Audit data** – view all the audit data for the Configuration (see Audit Activity Screen).

- **Configuration Settings** – view and edit the Configuration parameters, requires full system access with the FusionPortalAdmin role. This functionality is typically restricted to VoiceVault Support personnel only.
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