

vMeasure Ultima

# Client Integration Guide



VisAI Labs

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**Disclaimer**

The instructions are provided here as reference only and VisAI Labs reserves the right to edit/modify this document without any prior intimation whatsoever.

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# Introduction

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The vMeasure system can operate in the following modes.

1. Master Mode
2. Slave Mode

## Master Mode

In Master Mode, the vMeasure system triggers the measurement, and the data is pushed to the client system. The following are the trigger options available in the Master Mode.

- Barcode Trigger
- Touchscreen Trigger (Default Trigger Mode)

The client-server can access the measurement data through webhook or vMeasure Forge's GET APIs.

## Slave Mode

In Slave Mode, the client system triggers the measurement and gets the measurement data as a response. This is done using the vMeasure APIs. The flow for this mode is as follows.

1. The client requests the measurement trigger using the *Live Measurement API* (Refer to [Reference Links](#) section).
2. The vMeasure system receives and handles the request and triggers the measurement.
3. The measurement data shall be sent back to the client as a response.

Also, the measurement data can be downloaded from [vMeasure Forge](#) as CSV or JSON files.

This document explains the possible ways of integrating the vMeasure Ultima system, in the above modes, with the client-server/software.

## Prerequisites

The below URL and ports are to be whitelisted from the network firewall.

### vMeasure Cloud URL:

1. <https://forge.vmeasure.ai/>
2. [api.vmeasure.ai](https://api.vmeasure.ai)
3. [remote.vmeasure.ai](https://remote.vmeasure.ai)
4. [service.vmeasure.ai](https://service.vmeasure.ai)
5. [ota.vmeasure.ai](https://ota.vmeasure.ai)

### vMeasure Cloud Port:

8000, 6600, 8003, 8050

**Other URLs:**

\*.s3.us-east-2.amazonaws.com

\*.s3.ap-south-1.amazonaws.com

api.ecr.us-east-2.amazonaws.com

dkr.ecr.us-east-2.amazonaws.com

<http://archive.raspberrypi.org/debian>

<http://raspbian.raspberrypi.org/raspbian>

<http://mirror.poliwangi.ac.id/raspbian/raspbian>

<http://mirror.us.leaseweb.net/raspbian/raspbian>

# Methods of Integration

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The vMeasure system provides various interfaces to integrate and get the measurement data flowing to the client. This section explains the possible ways of integration.

1. [vMeasure Forge Webhook - Master Mode](#)
2. [vMeasure Forge API - Slave Mode](#)
3. [vMeasure Ultima API – Slave Mode](#)
4. [Measure Desk – Master Mode](#)
5. [Measure Desk – Slave Mode](#)

## vMeasure Forge Webhook– Master Mode

### Prerequisites

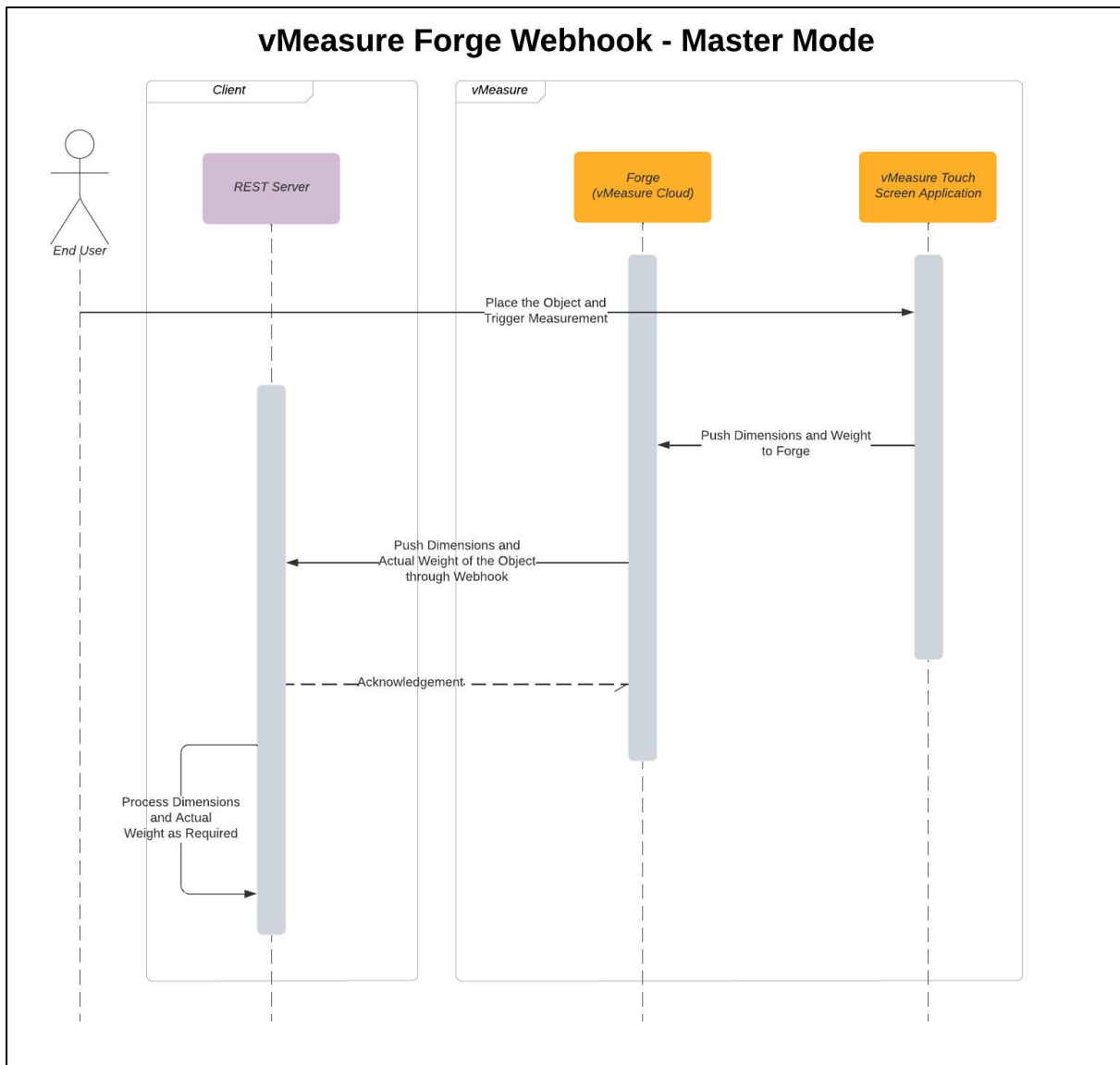
1. Webhook to which the vMeasure system can push the measurement data.

### Workflow

The workflow for the Master Mode of operations using the vMeasure Forge Webhook is as follows.

1. The user places the object on the vMeasure system and triggers the measurement.
2. The vMeasure system captures the measurement.
3. The vMeasure system pushes data to the vMeasure Forge.
4. The vMeasure Forge pushes the data to the respective webhook as configured.
5. If the webhook is not configured, the data can be fetched from vMeasure Forge using the APIs.

## Sequence Diagram



## vMeasure Forge API – Slave Mode

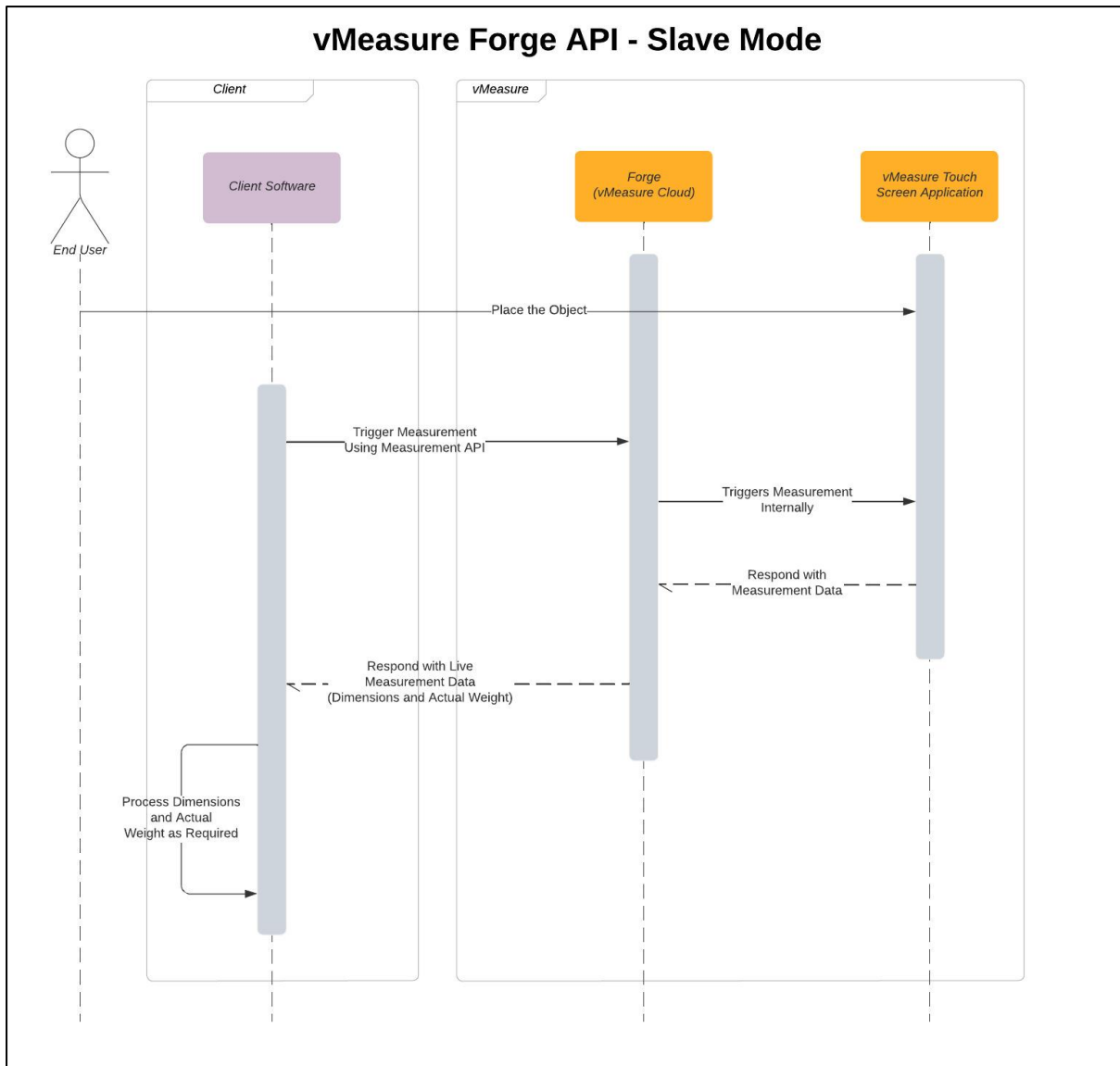
### Workflow

The workflow for the Slave Mode of operations using the vMeasure Forge is as follows.

1. The user places the object on the vMeasure system.
2. The user triggers the measurement from the client system. The client system uses the vMeasure Forge's *Live Measurement API* to trigger the measurement.
3. The vMeasure Forge receives the request and sends the request to the vMeasure system.
4. The vMeasure system captures the measurements and pushes them to the vMeasure Forge.

5. The vMeasure Forge shall respond to the *Live Measurement API* Request with the measurement data.

### Sequence Diagram



## vMeasure Ultima API – Slave Mode

### Prerequisites

1. The vMeasure and client systems shall be connected to the same network.

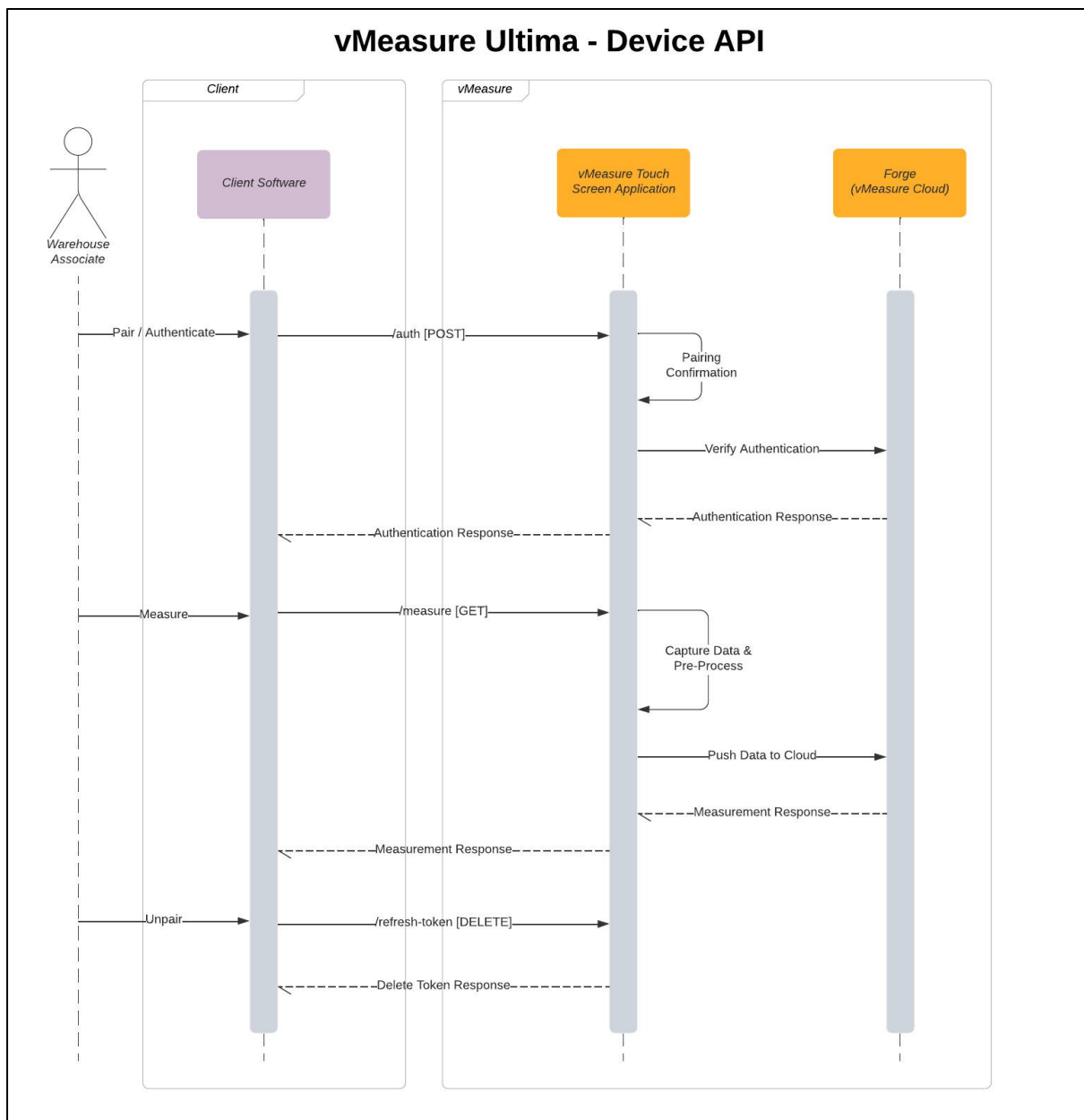
### Workflow

The workflow for the Slave Mode of operations using the [vMeasure Device API](#) is as follows.

1. The user authenticates the access to the vMeasure system using *Authentication & Pairing API*. The *Authentication & Pairing API* internally uses vMeasure Forge for authentication purposes.
2. Upon successful authentication, the user places the object on the vMeasure system.
3. The user triggers the measurement from the client system. The client system uses the vMeasure Ultima's *Live Measurement API* to trigger the measurement.
4. The vMeasure system captures the measurement with the dependency of the vMeasure Forge.
5. The vMeasure system shall respond to the *Live Measurement API* Request with the measurement data.

**Note:** The measurement data will also be pushed to vMeasure Forge and can be viewed on the vMeasure Forge's reports page.

## Sequence Diagram



## Measure Desk – Master Mode

### Prerequisites

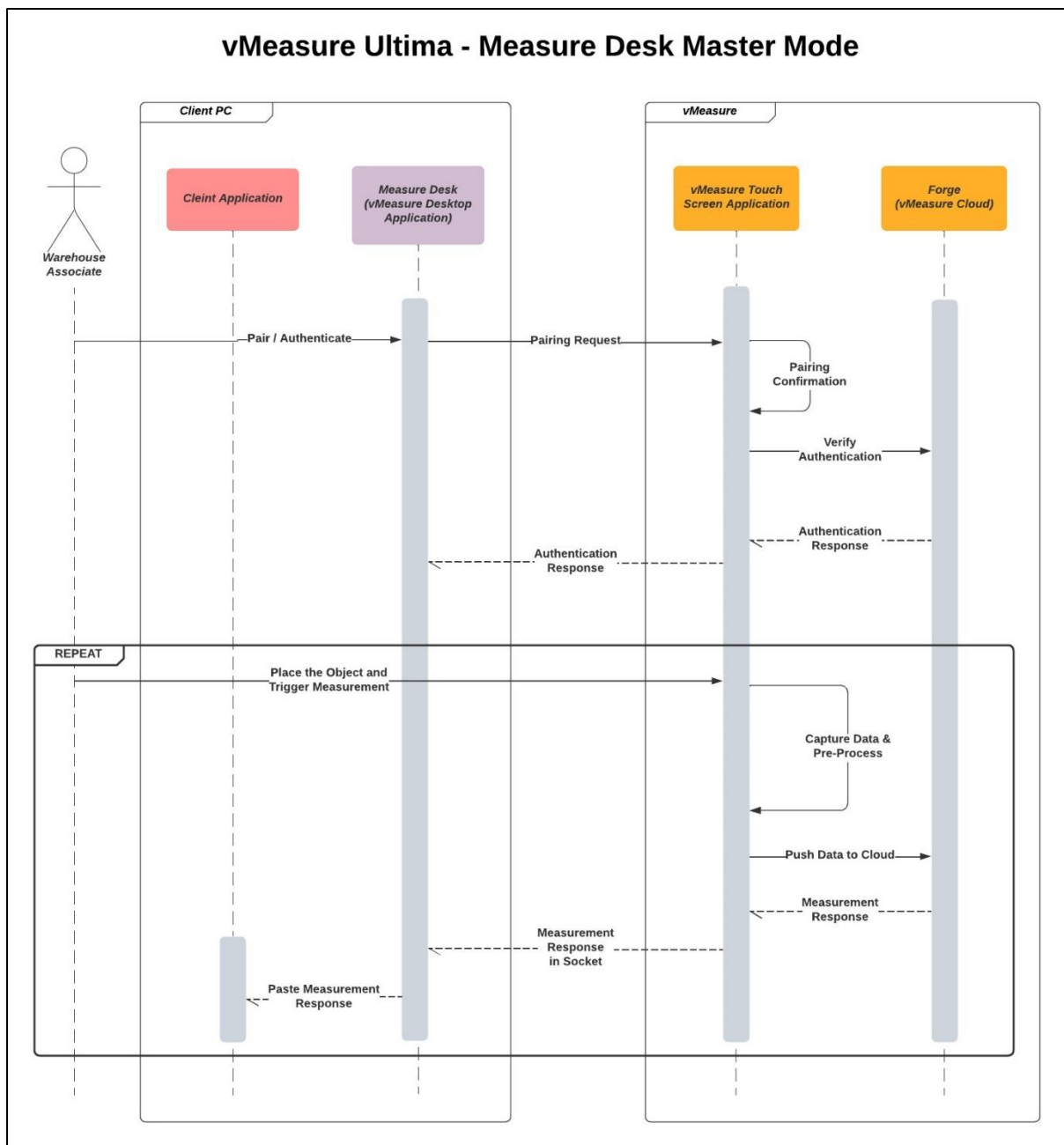
1. The vMeasure and client systems shall be connected to the same network.
2. The *Measure Desk* desktop application shall be installed on the client's system.
3. The *Measure Desk* application shall run in the background on the client's system.

### Workflow

The workflow for the Master Mode of operations using the *Measure Desk* application is as follows.

1. The user pairs the Measure Desk application with the vMeasure system using the vMeasure system's network IP.
2. The user places the object on the vMeasure system and triggers the measurement.
3. The vMeasure system captures the measurements with the dependency of the vMeasure Forge.
4. The vMeasure system pushes the data to the *Measure Desk* application.
5. The *Measure Desk* application acts like a desktop wedge and pastes the measurement data where the cursor is placed.  
**Note:** The *Measure Desk* must be configured as required.
6. The *Measure Desk* application can also save the measurement data on the client system locally in CSV, TSV, or JSON format.

## Sequence Diagram



## Measure Desk – Slave Mode

### Prerequisites

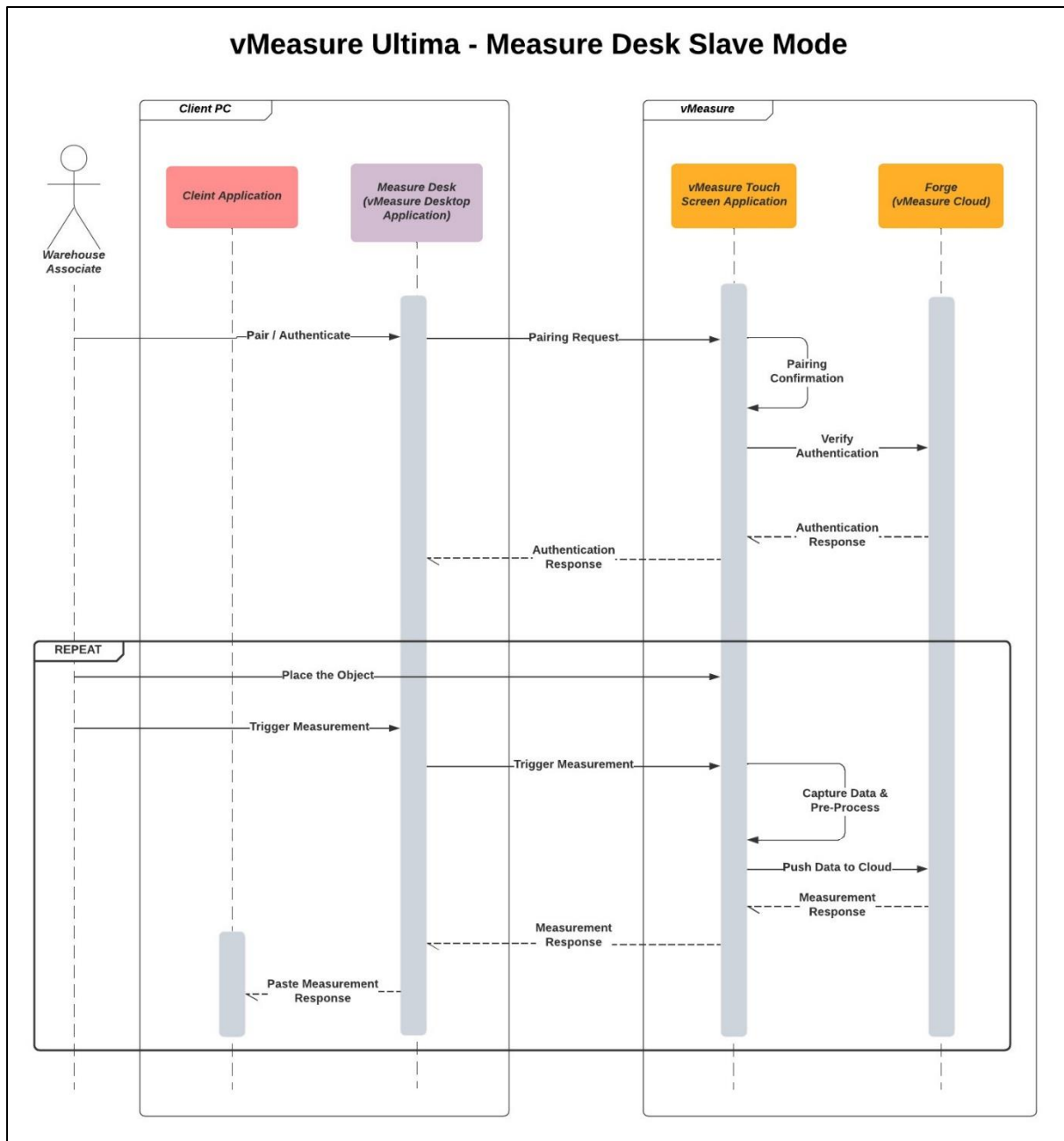
1. The vMeasure and client systems shall be connected to the same network.
2. The *Measure Desk* desktop application shall be installed on the client's system.
3. The *Measure Desk* application shall run in the background on the client's system.

### Workflow

The workflow for the Slave Mode of operations using the *Measure Desk* application is as follows.

1. The user pairs the Measure Desk application with the vMeasure system using the vMeasure system's network IP.
2. The user places the object on the vMeasure system and triggers the measurement on the *Measure Desk* application.
3. The *Measure Desk* application triggers the measurement on the vMeasure system.
4. The vMeasure system captures the measurements with the dependency of the vMeasure Forge.
5. The vMeasure system responds to the Measure Desk application with the measurement data.
6. The *Measure Desk* application acts like a desktop wedge and pastes the measurement data where the cursor is placed.  
**Note:** The *Measure Desk* must be configured as required.
7. The *Measure Desk* application can also save the measurement data on the client system locally in CSV, TSV, or JSON format.

### Sequence Diagram



# Credentials for API Authentication

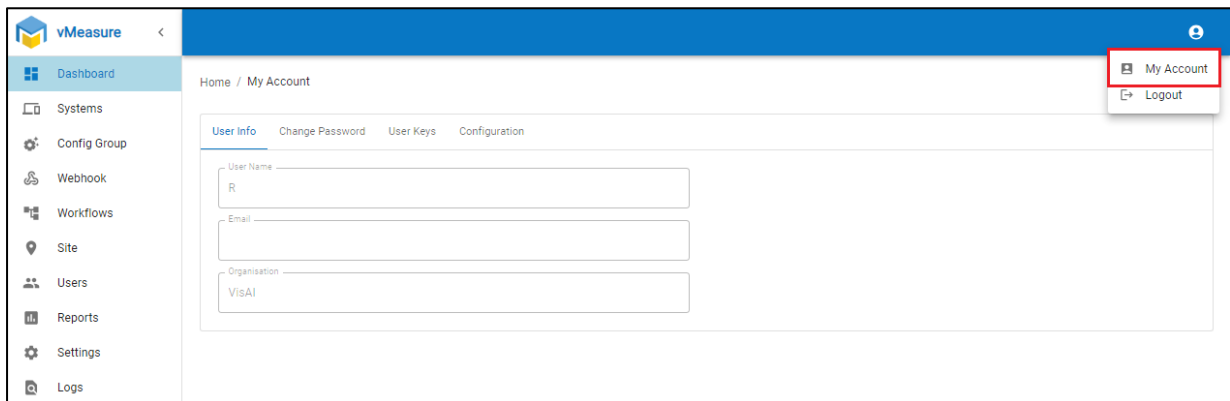
This section describes the steps to get the below keys/tokens in detail.

1. [User ID](#)
2. [Secret Key](#)
3. [System Token](#)

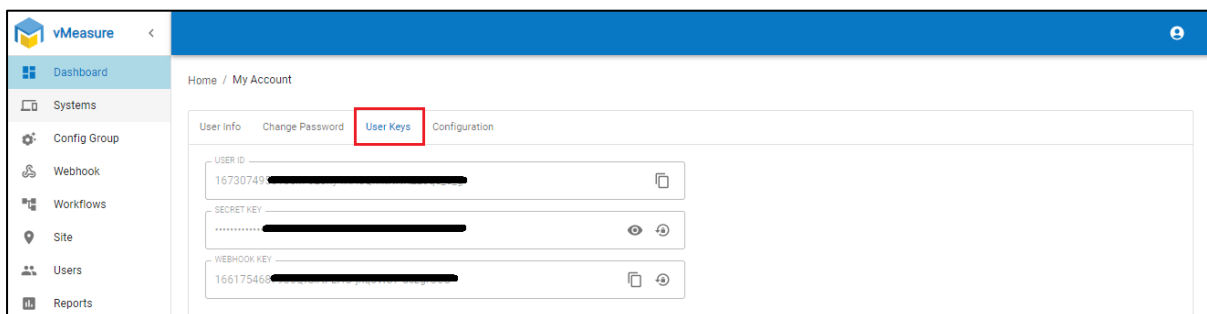
## User ID

The steps to fetch the *User ID* are as follows.

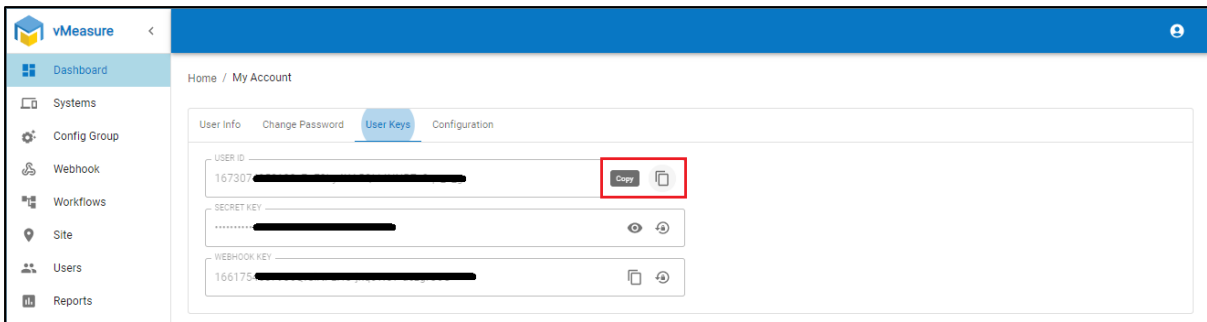
1. Login to [vMeasure Forge](#).
2. Navigate to the *My Account* page as shown below.



3. Navigate to the *User Keys* tab as shown below.



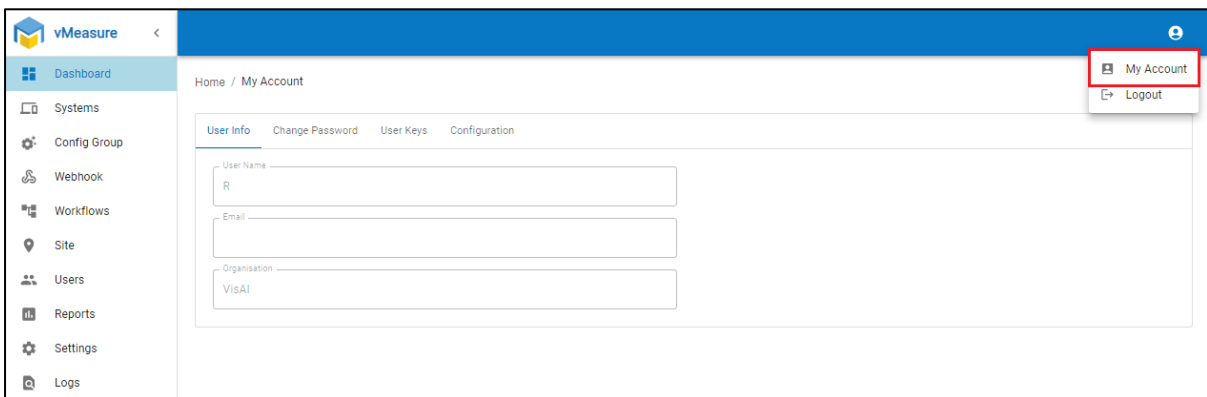
4. *USER ID* can be copied using the *Copy* button as shown below.



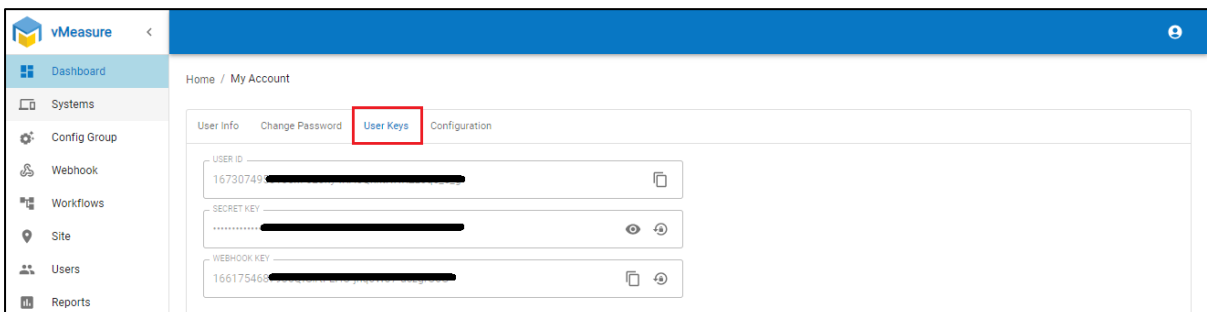
## Secret Key

The steps to fetch the *Secret Key* are as follows.

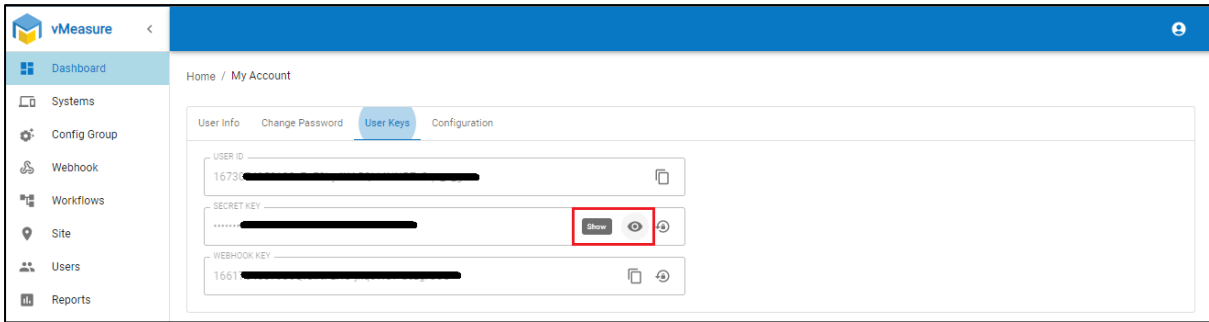
1. Log in to [vMeasure Forge](#).
2. Navigate to the *My Account* page as shown below.



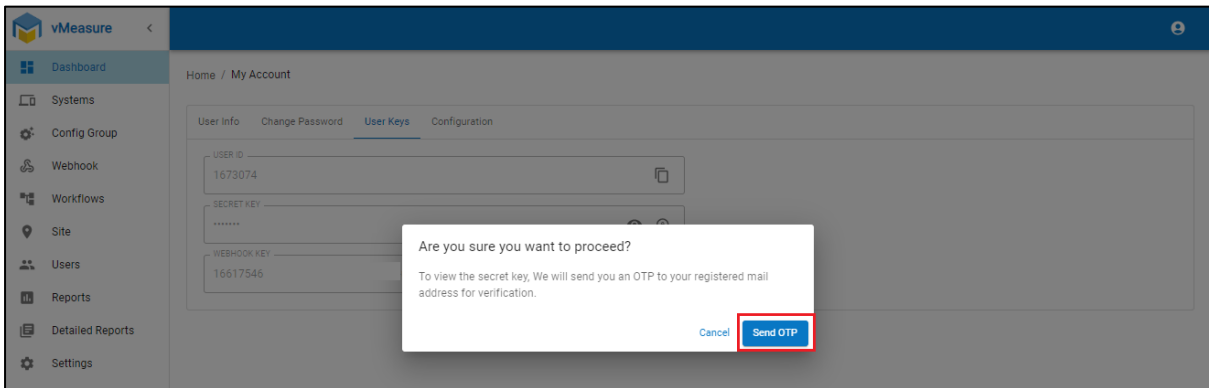
3. Navigate to the *User Keys* tab as shown below.



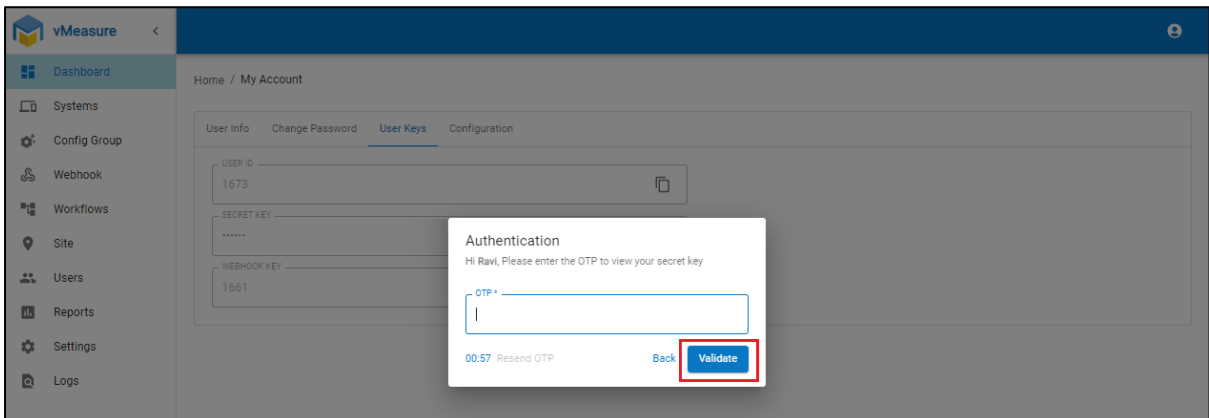
4. Click on the *Show* button on the *SECRET KEY* text box as shown below.



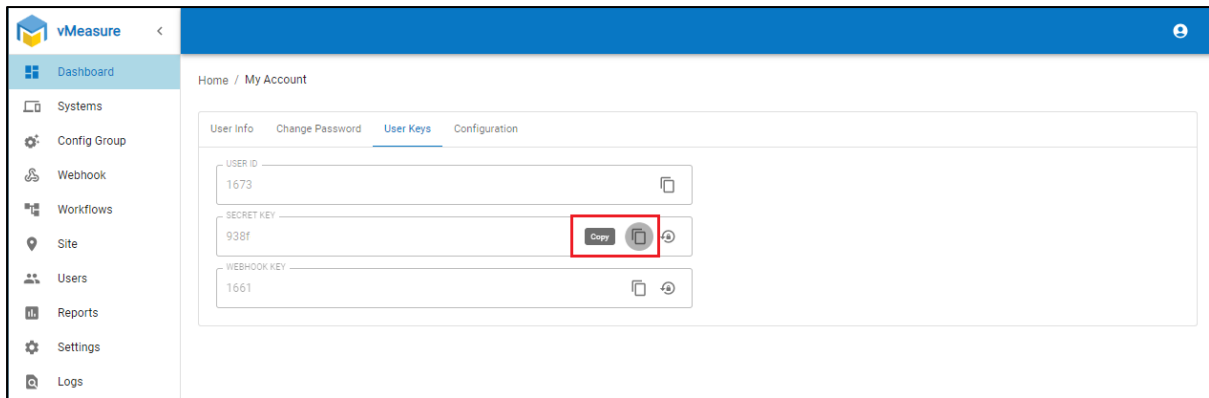
5. Confirmation to send the OTP to fetch the *SECRET KEY* shall be prompted. Click on the *Send OTP* button as shown below.



6. You will be receiving the OTP on your registered email. Input the OTP on the *Authentication* prompt and click *Validate* button as shown below.



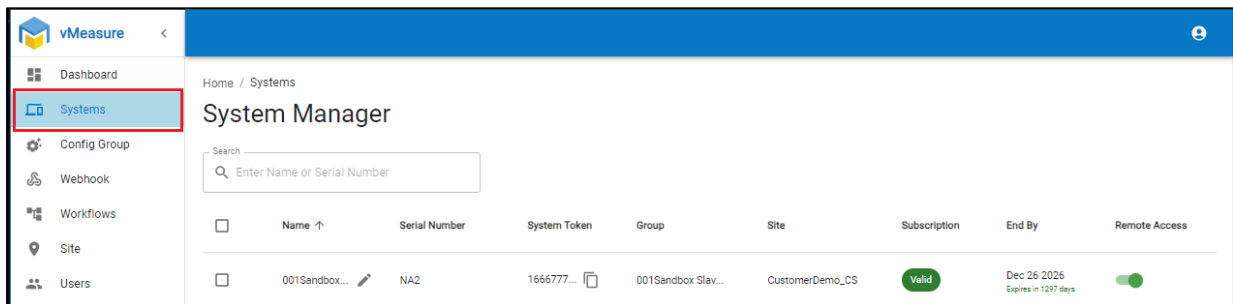
7. *SECRET KEY* can be copied using the *Copy* button as shown below.



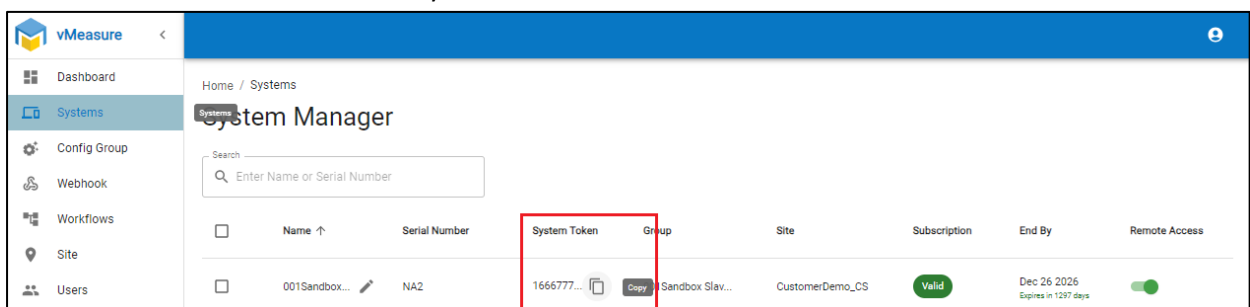
## System Token

The steps to fetch the *System Token* are as follows.

1. Login to [vMeasure Forge](#).
2. Navigate to the *System* page as shown below.



3. *System Token* can be copied using the *Copy* button on the *System Token* column of the desired system as shown below.



# Barcode Validation

The vMeasure system can validate the Barcode scanned in 3 levels. The validation types are as follows.

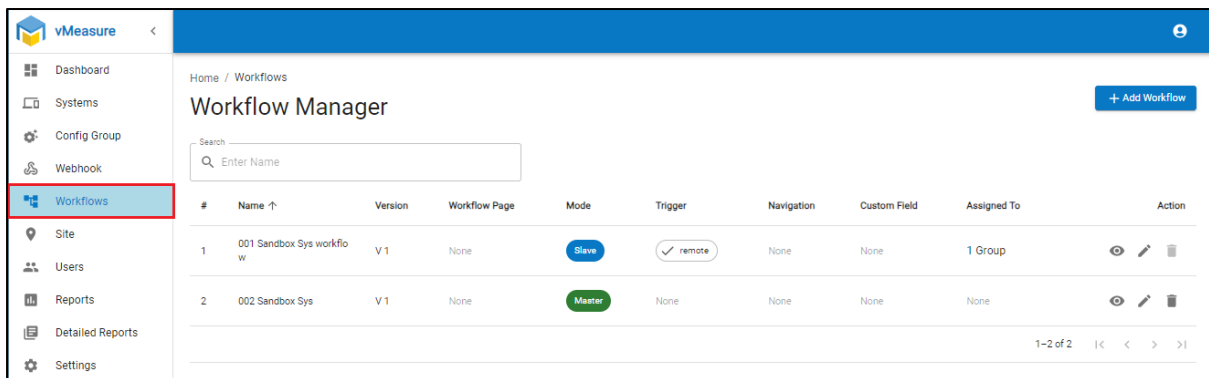
1. [Validation by Barcode Length](#)
2. [Validation by RegEx](#)
3. [Validation by Client API](#)

**Note:** The *Barcode Validation* can only be done with the Master mode of the vMeasure system.

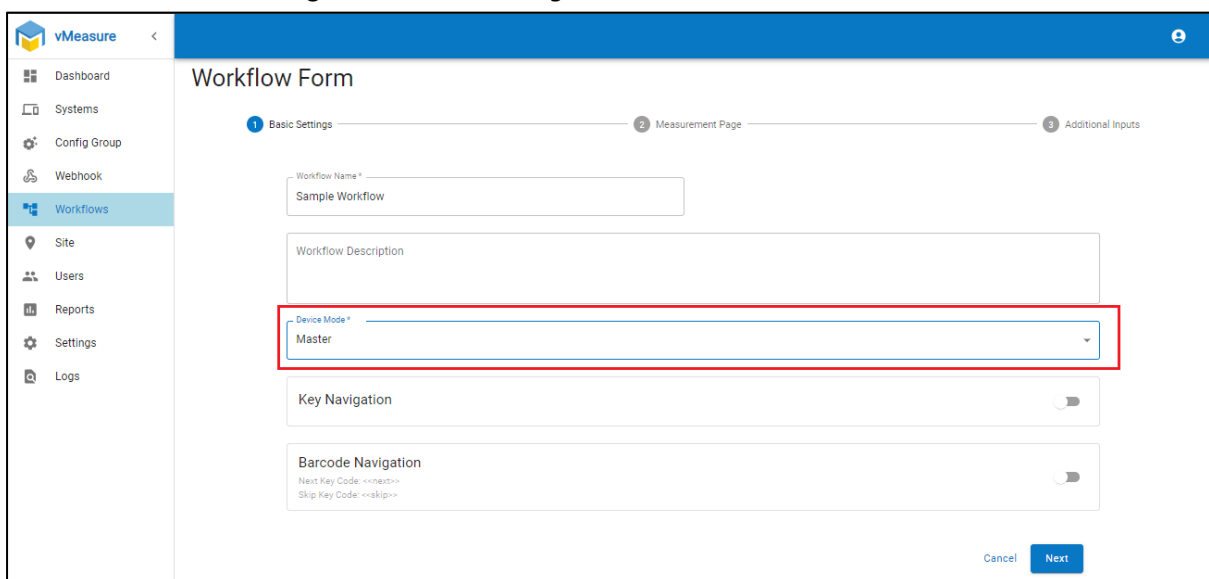
## Validation by Barcode Length

The steps to validate the barcode are as follows.

1. Login to [vMeasure Forge](#).
2. Navigate to the *Workflows* page as shown below.

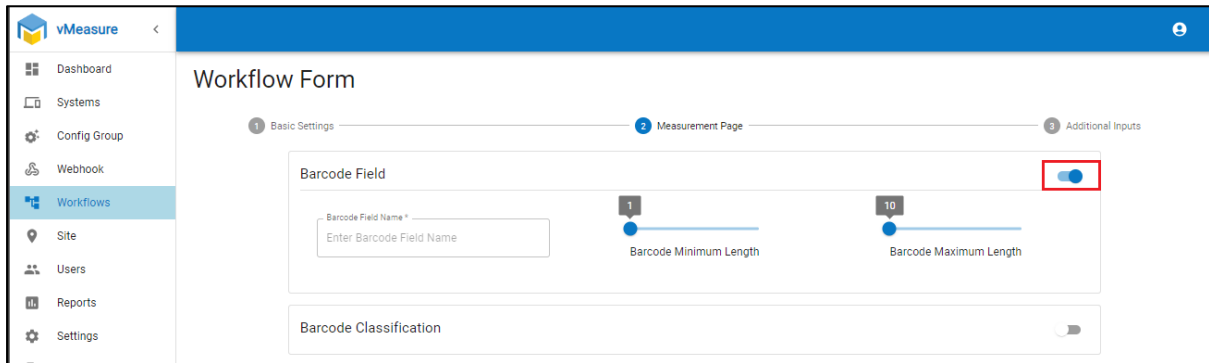


3. Edit the desired workflow or add a workflow using the *+ Add Workflow* button.
4. Configure the *Basic Settings* and click on the *Next* button as shown below.

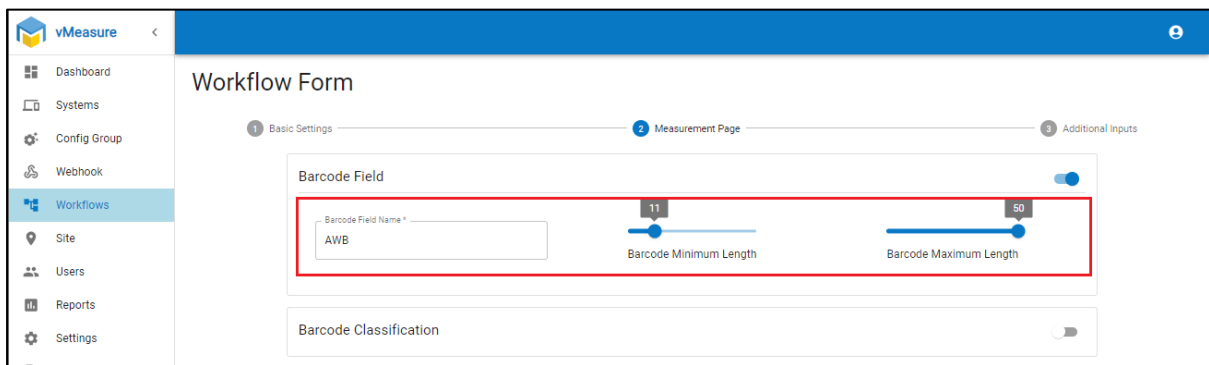


**Note:** Please make sure to select *Master* from the *Device Mode* drop-down.

5. Enable the *Barcode Field* as shown below.



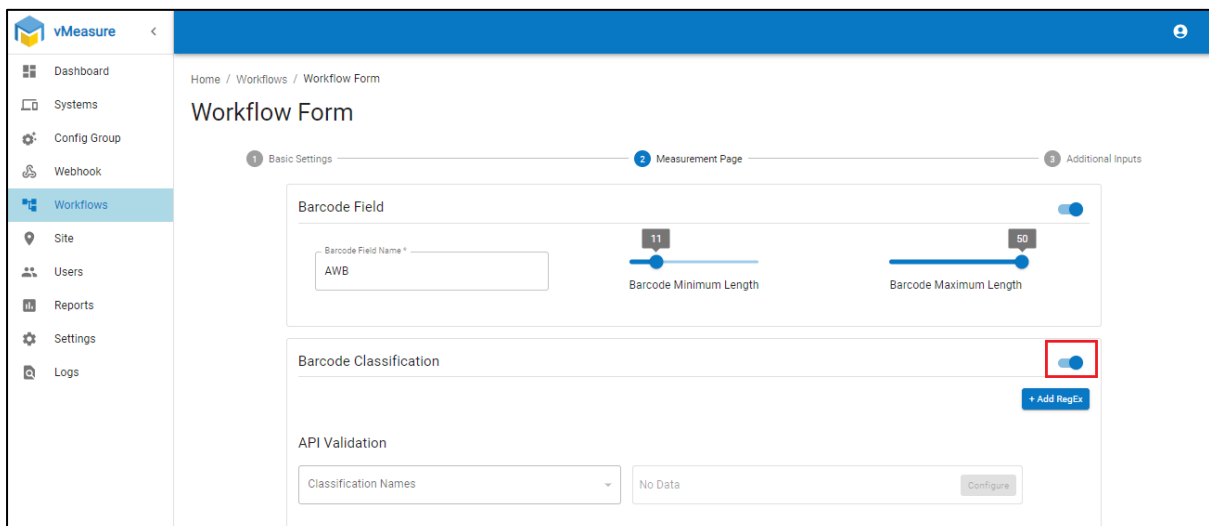
6. As shown below, Input the Barcode Field Name and adjust the Barcode Minimum Length and Barcode Maximum Length.



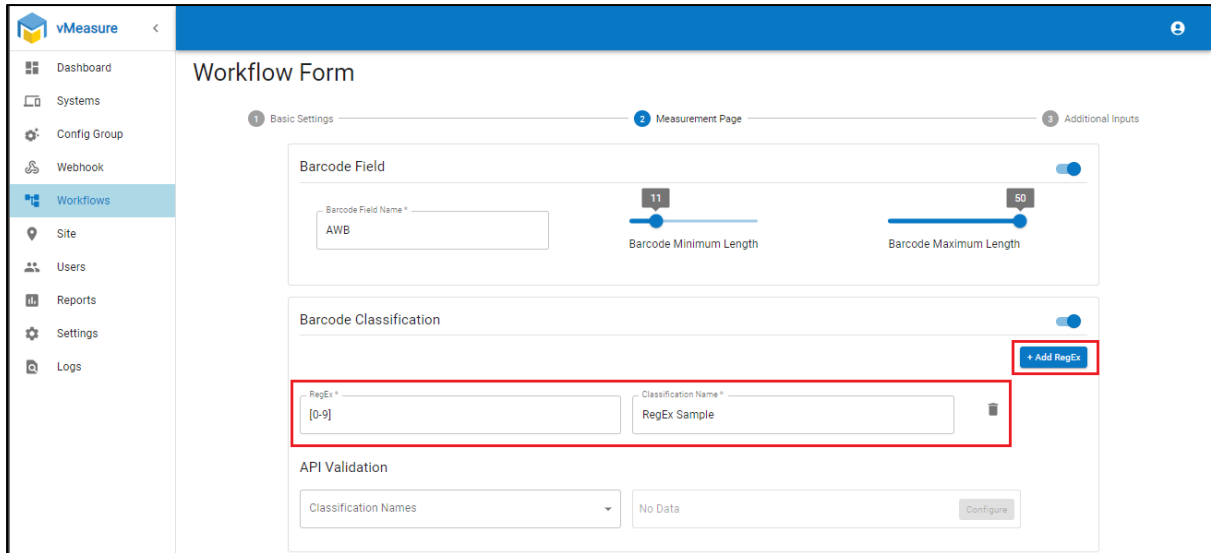
## Validation by RegEx

The steps to validate the barcode using a RegEx pattern are shown below.

7. Continuing from the above steps of the *Validation by Barcode Length* section, enable the *Barcode Classification* as shown below.



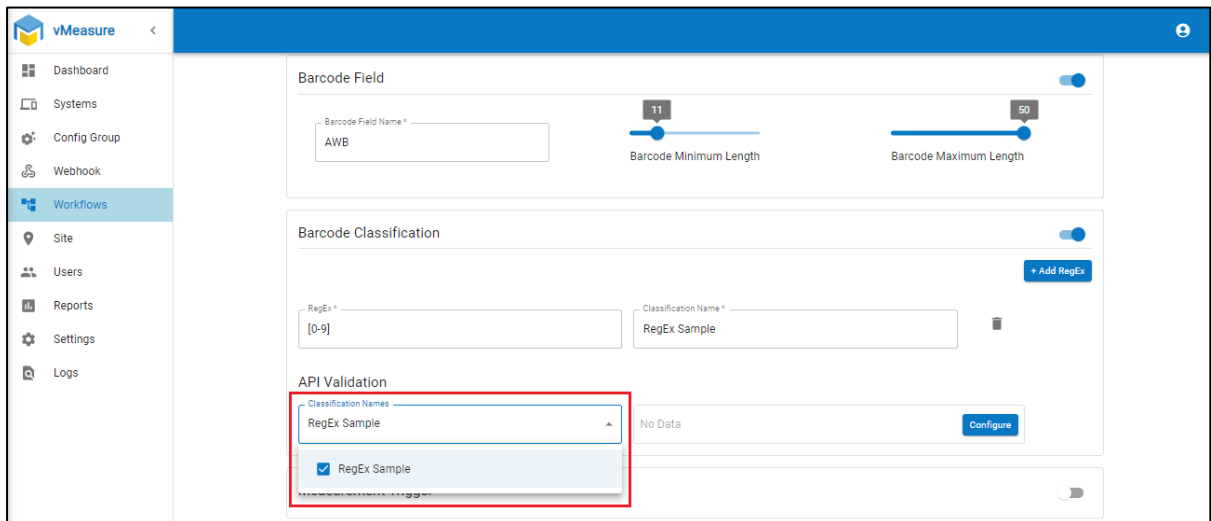
8. Click on the *+ Add RegEx* button and configure the RegEx pattern as shown below.



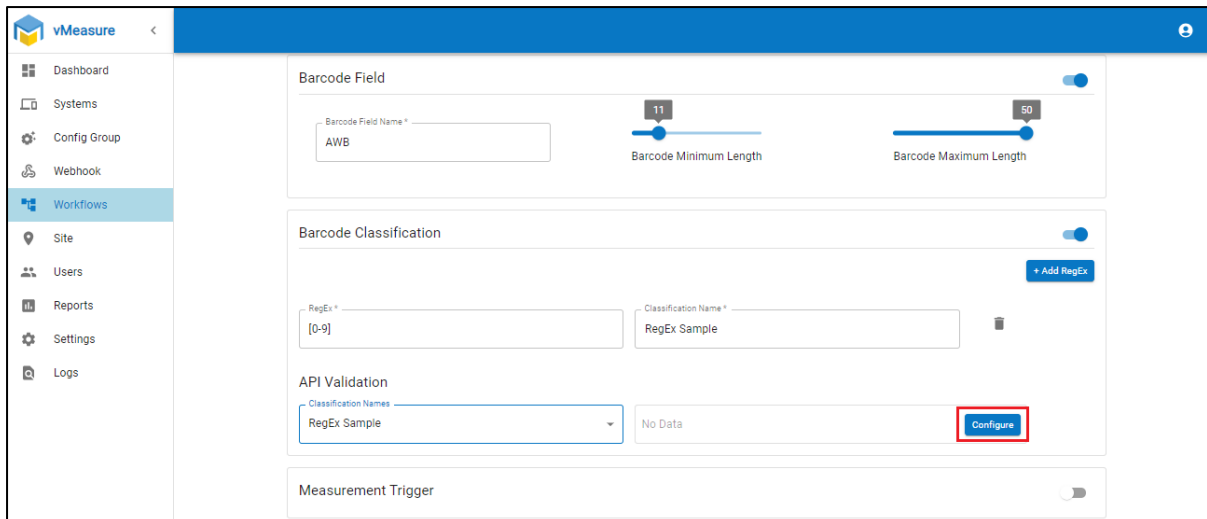
## Validation by Client API

The steps to validate the barcode using an API call are shown below.

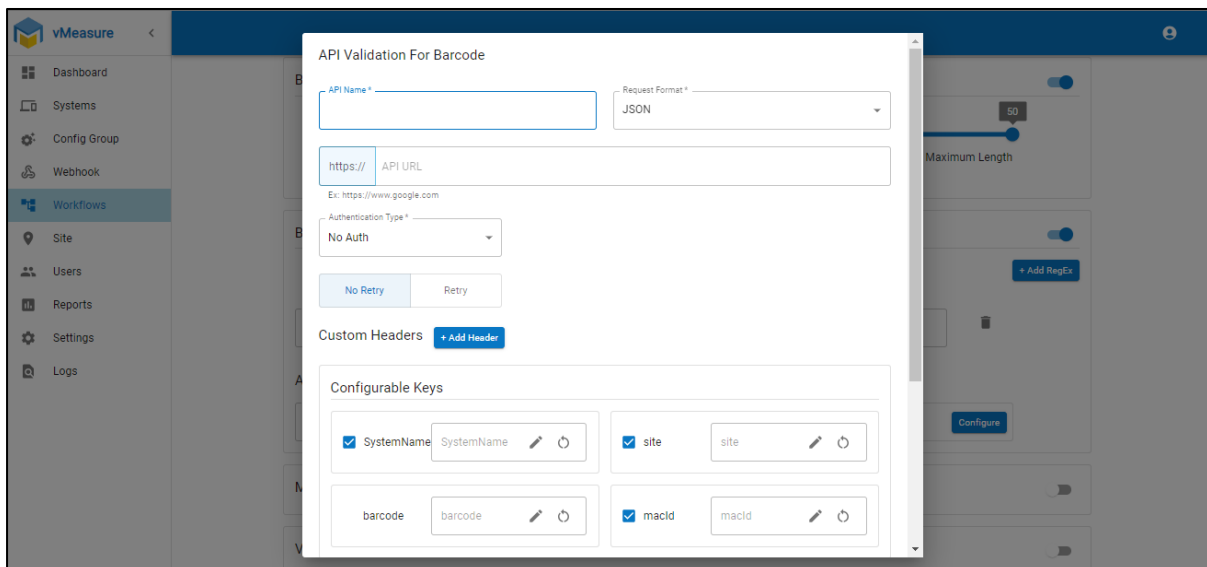
- Continuing from the above steps of the *Validation by RegEx* section, select the barcode classification from the *Classification Names* drop-down as shown below.



- Click on the *Configure* button as shown below.



11. Update the desired configurations of the *API Validation for the Barcode* form shown below.



12. Click on the *Save* button to save the *API Validation for Barcode* configurations.
13. Click on the *Next* button and *Save* the workflow.
14. On the vMeasure system, re-login for the workflow changes to be downloaded.

# Custom Fields

The vMeasure system allows the user to capture additional SKU attributes before measuring the SKU. Below are the types of fields that can be enabled.

1. List
2. Text
3. Toggle

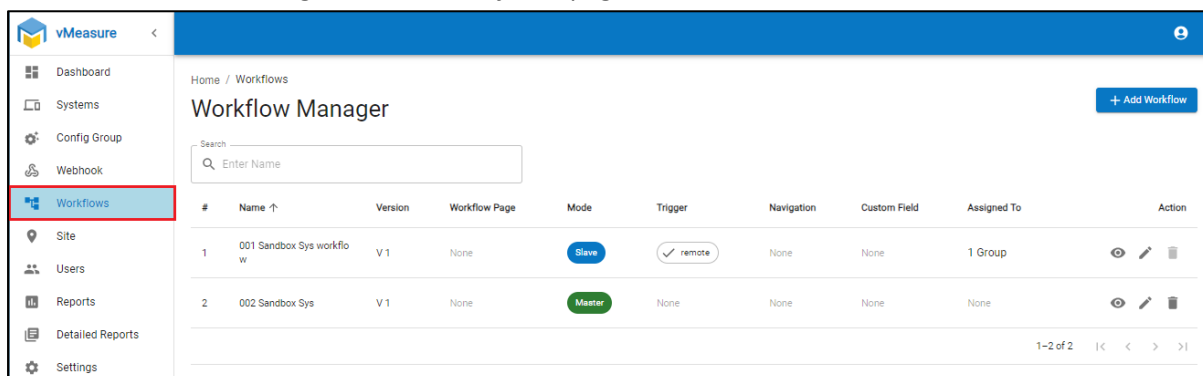
**Note:**

1. The *Custom Fields* can only be enabled with the Master mode of the vMeasure system.
2. A maximum of 2 *Custom Fields* can be added.

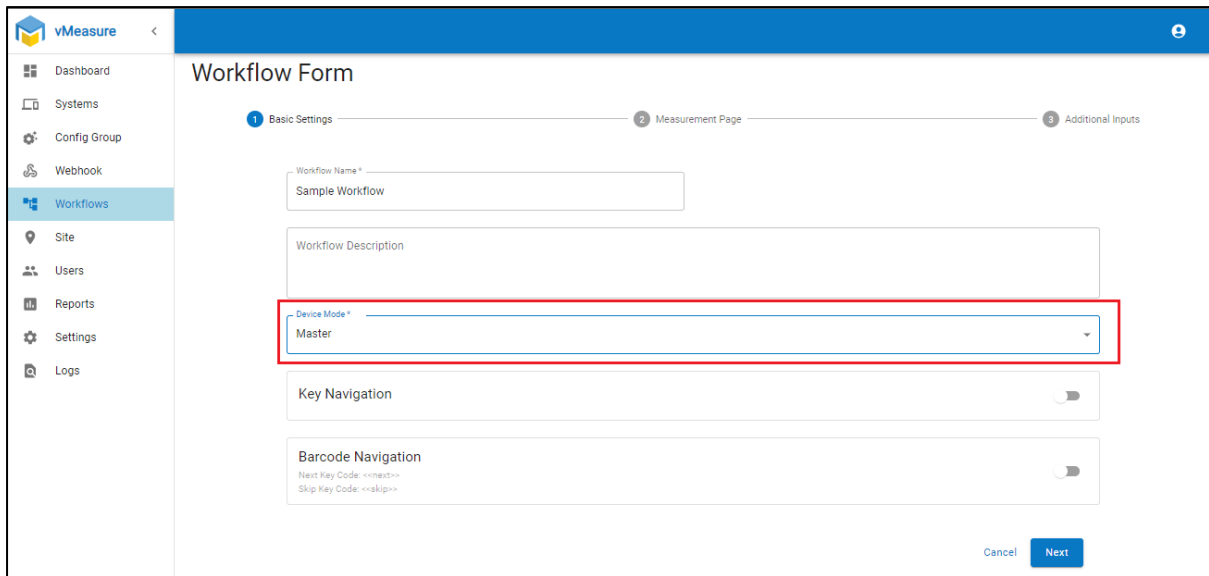
## Adding Custom Fields

This section details the steps to enable the desired *Custom Field(s)*. The steps to enable and add the desired *Custom Field(s)* are as follows.

1. Login to [vMeasure Forge](#).
2. Navigate to the *Workflows* page as shown below.

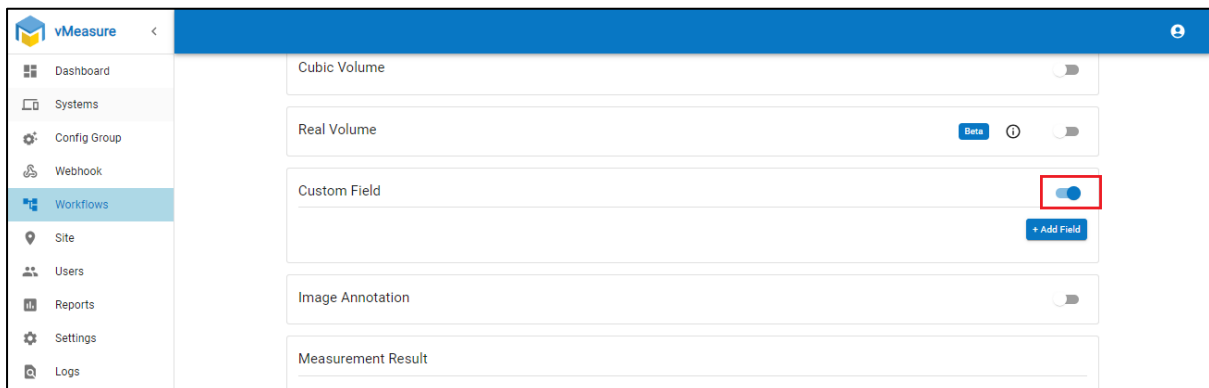


3. Edit the desired workflow or add a workflow using the *+ Add Workflow* button.
4. Configure the *Basic Settings* and click on the *Next* button as shown below.

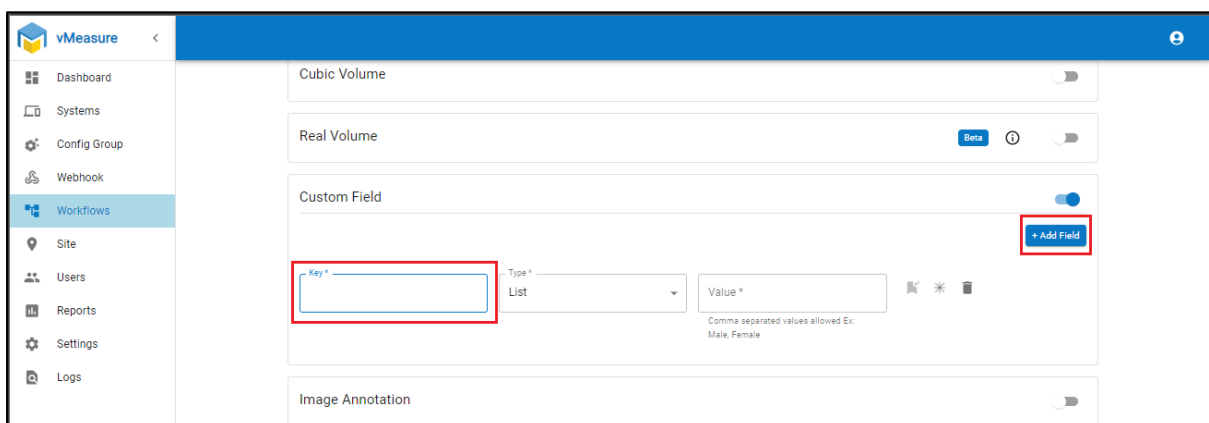


**Note:** Please make sure to select *Master* from the *Device Mode* drop-down.

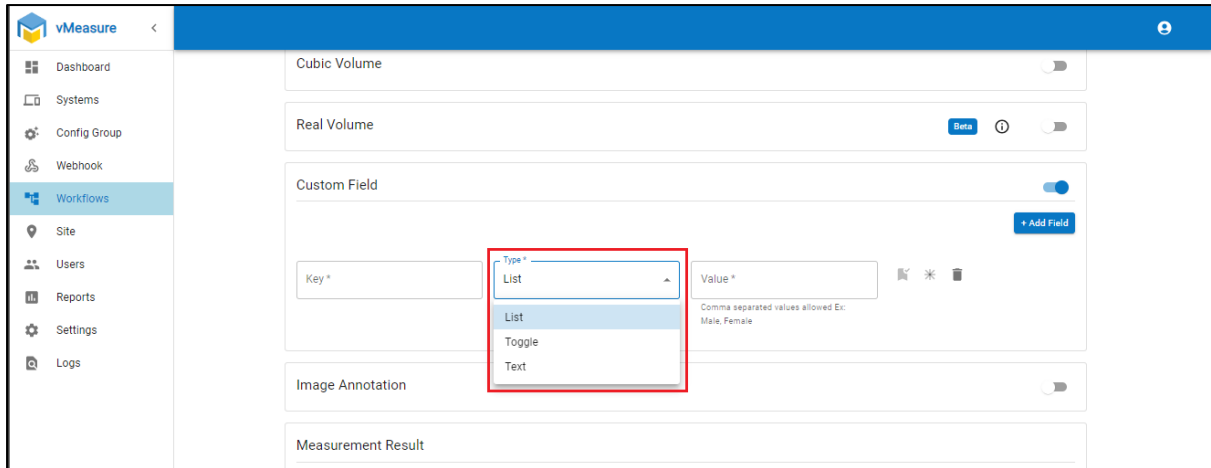
5. Navigate to the *Custom Field* section and enable it as shown below.



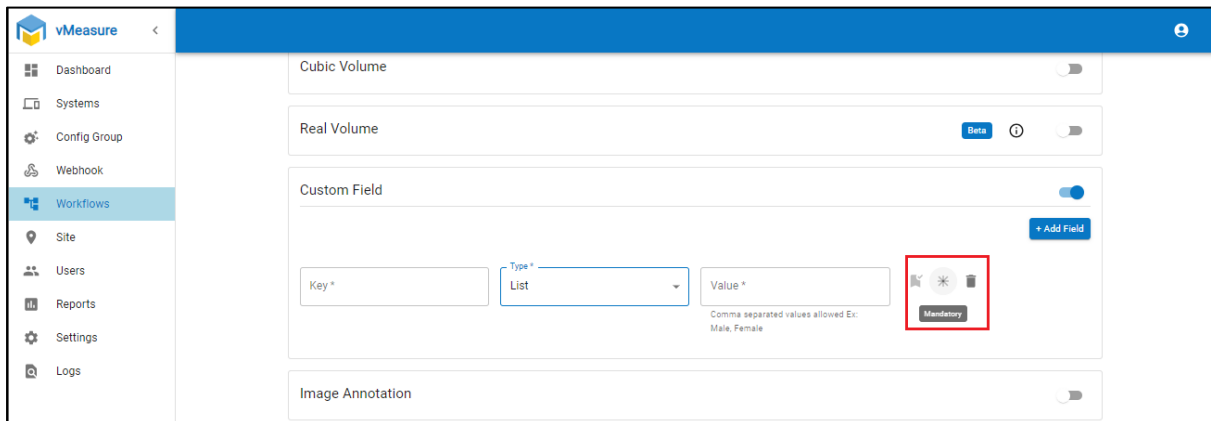
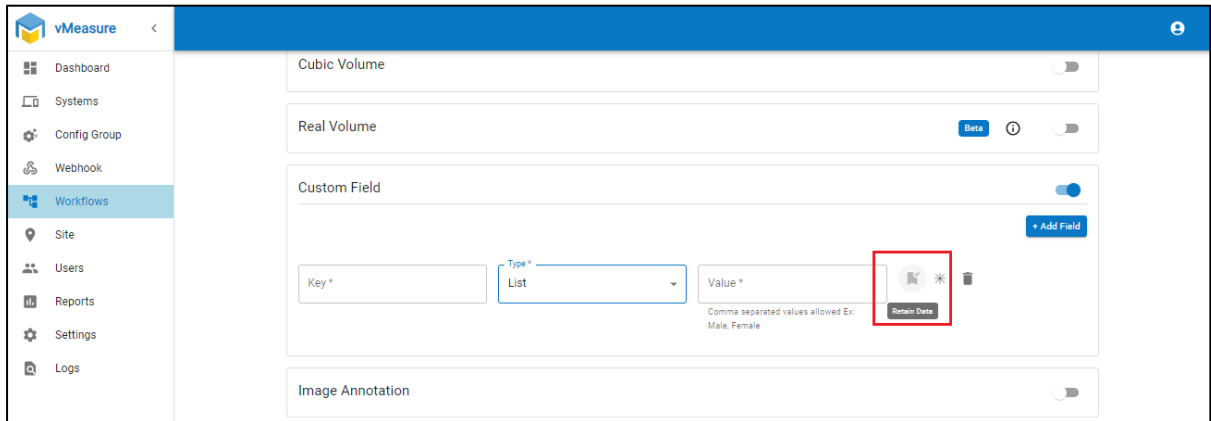
6. Click on the *+ Add Field* button and configure the desired *Key* of the *Custom Field* as shown below.



7. Select the desired type of field from the *Type* drop-down.



8. The *Retain Data* and *Mandatory* options of the *Custom Field(s)* can be configured as shown below.



9. Click on the *Next* button and *Save* the workflow.

10. On the vMeasure system, re-login for the workflow changes to be downloaded.

# UPS WorldShip Integration

The steps to integrate the vMeasure system with the UPS WorldShip application are as follows.

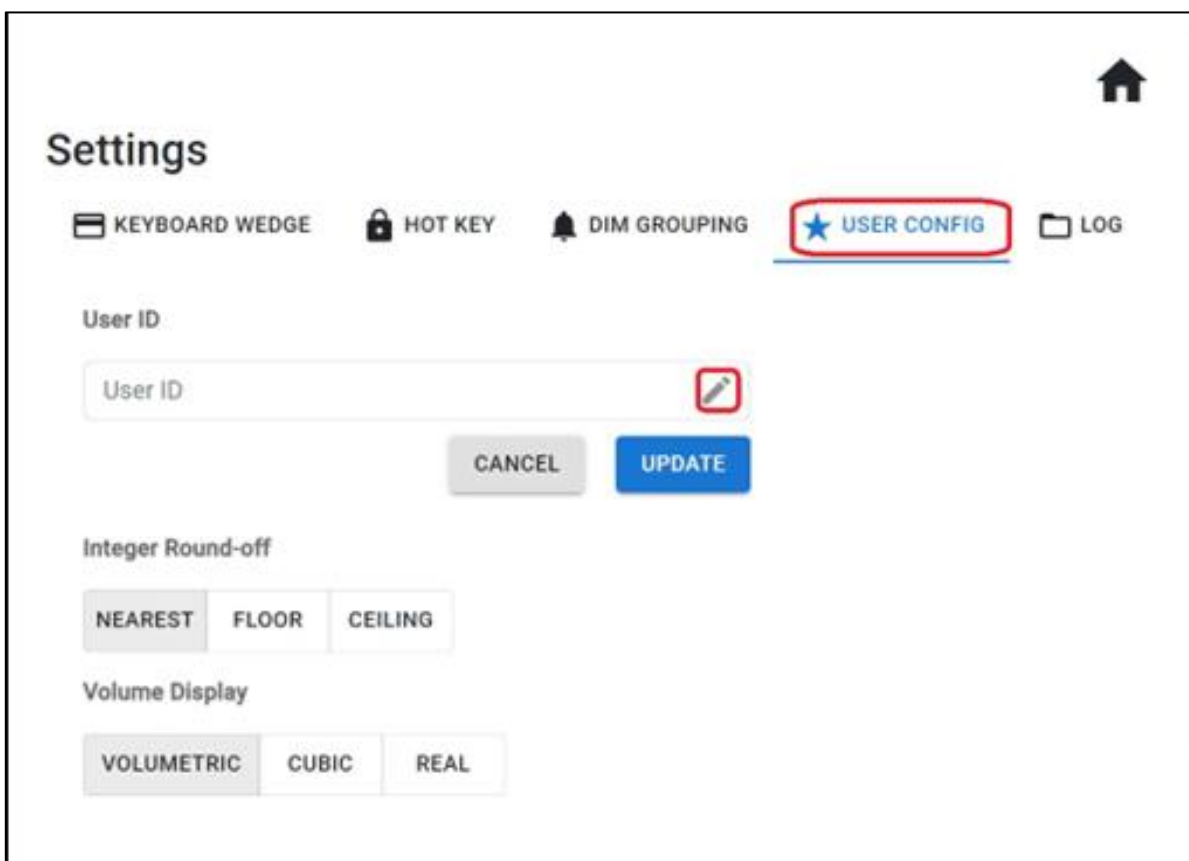
## Prerequisites:

1. The *Measure Desk* application is installed on a Laptop/PC.
2. The laptop/PC is connected to the same network as the vMeasure system.

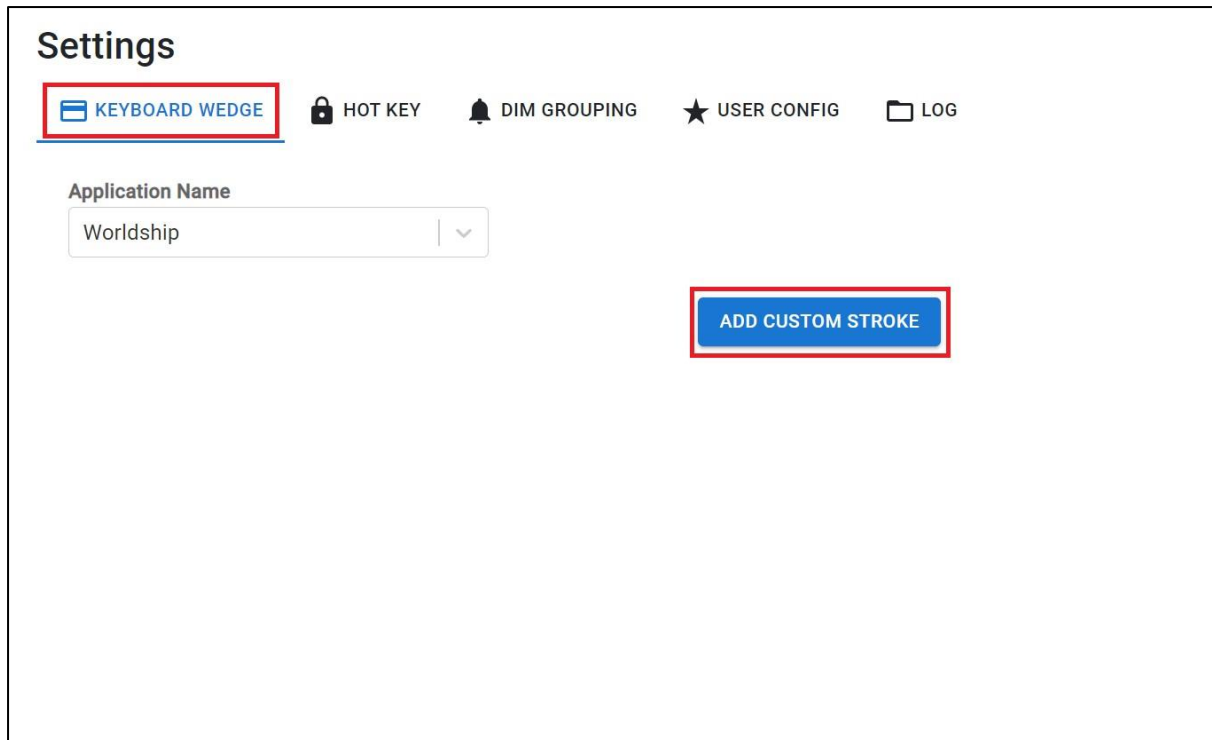
## Procedure

The steps to integrate the vMeasure system with UPS WorldShip are as follows.

1. Configure the vMeasure system's workflow to *Slave Mode*.
2. Install the *Measure Desk* application on your laptop/PC.
3. Navigate to the *Settings* -> *USER CONFIG* page of the *Measure Desk* application and click on the *Edit* button of the *User ID* field as shown below.

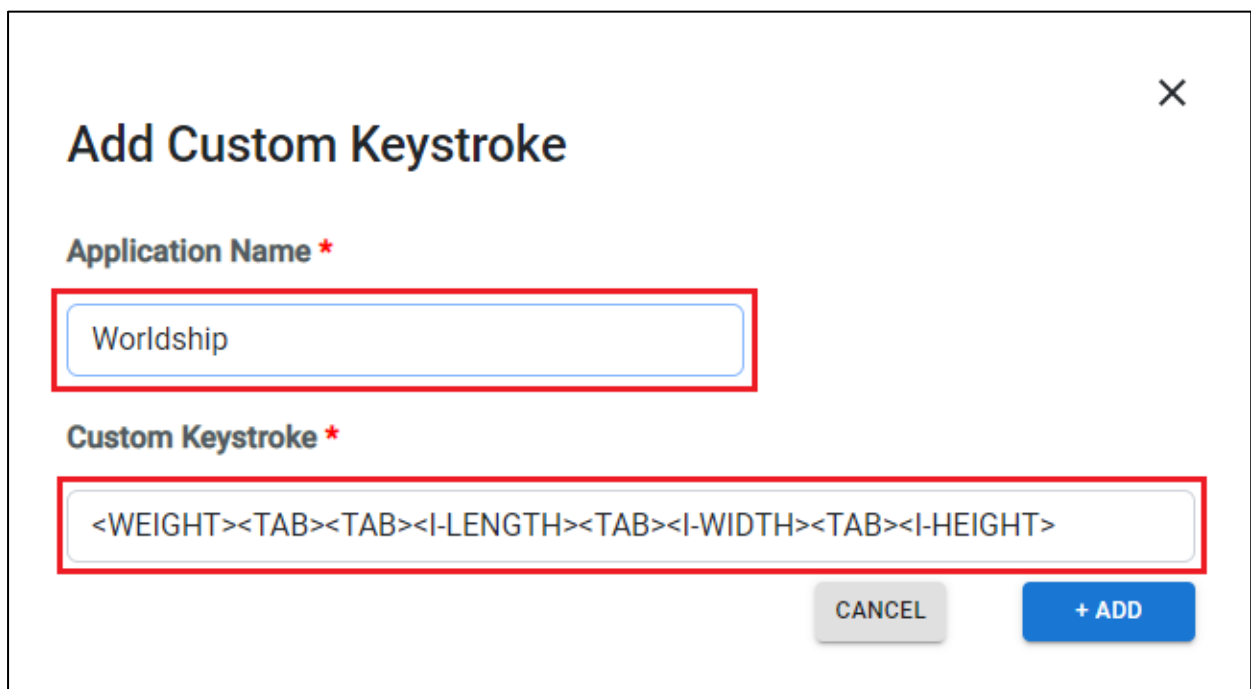


4. Update the *User ID* with the vMeasure account's *User ID*. Refer to the [User ID](#) section above for more information.
5. Navigate to the *KEYBOARD WEDGE* tab and click on *ADD CUSTOM STROKE* button as shown below.



6. Input *WorldShip* in the *Application Name* field and input the below keystroke in the *Custom Keystroke* field as shown below.

```
<WEIGHT><TAB><TAB><I-LENGTH><TAB><I-WIDTH><TAB><I-HEIGHT>
```



7. Click on *+ ADD* button as shown below.

X

## Add Custom Keystroke

**Application Name \***

**Custom Keystroke \***

CANCEL
+ ADD

8. Navigate to the *HOT KEY* tab as shown below.

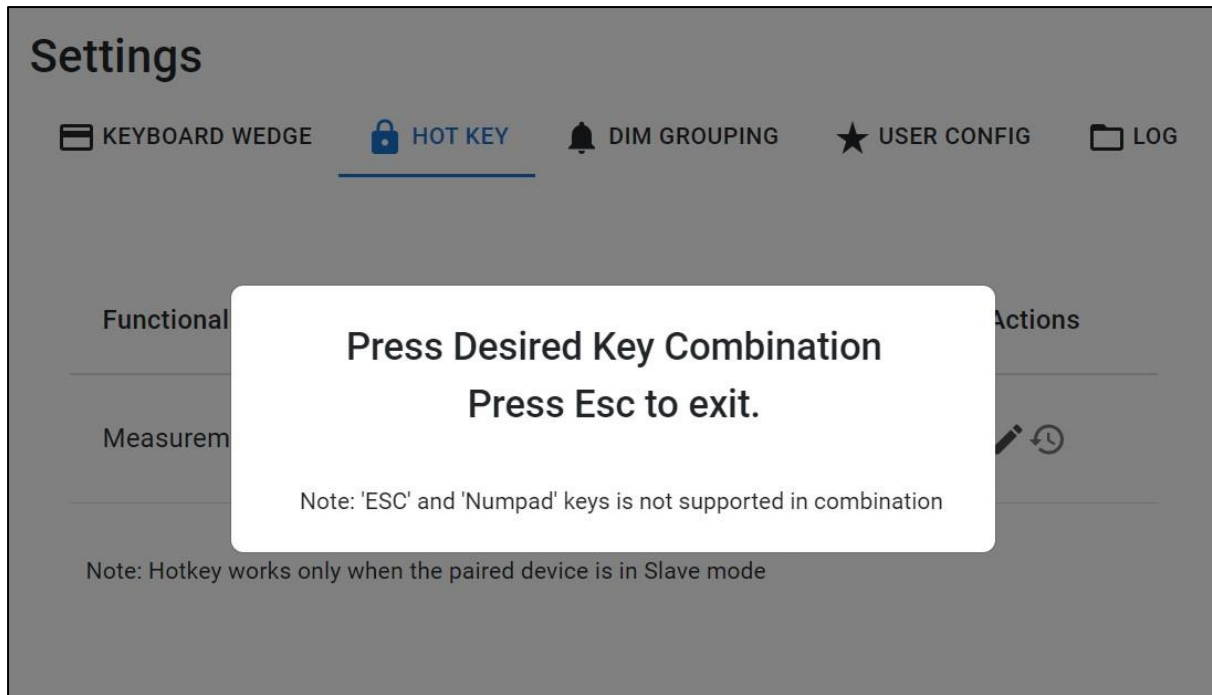
## Settings

KEYBOARD WEDGE
HOT KEY
DIM GROUPING
USER CONFIG
LOG

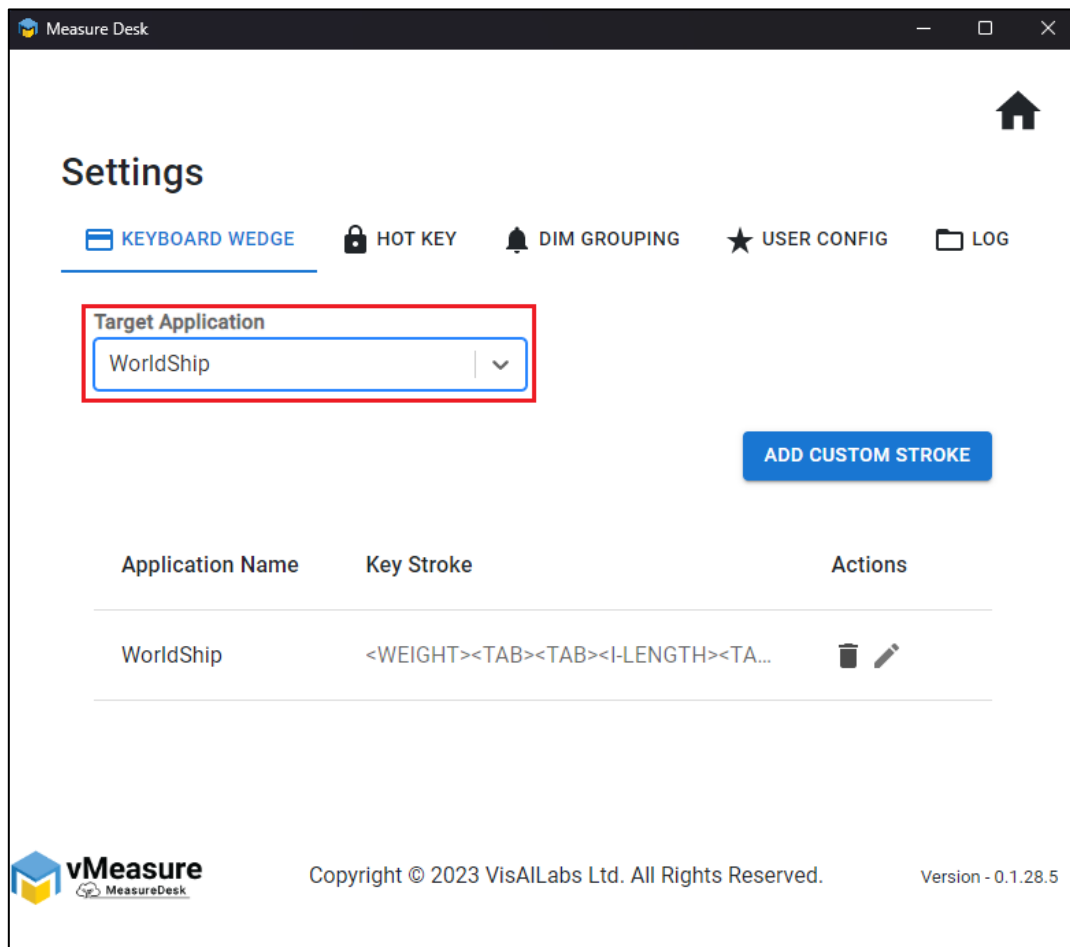
Functionality	Key stroke	Actions
Measurement Trigger	<div style="display: flex; align-items: center; gap: 5px;"> <div style="background-color: #007bff; color: white; padding: 5px 10px; border: 1px solid #007bff;">CTRL</div> <span>+</span> <div style="background-color: #007bff; color: white; padding: 5px 10px; border: 1px solid #007bff;">ALT</div> <span>+</span> <div style="background-color: #007bff; color: white; padding: 5px 10px; border: 1px solid #007bff;">M</div> </div>	

Note: Hotkey works only when the paired device is in Slave mode

9. By default, the shortcut shall be *Ctrl + Alt + M*. To change the hotkey, click on the edit button and input the desired measurement trigger shortcut as shown below.

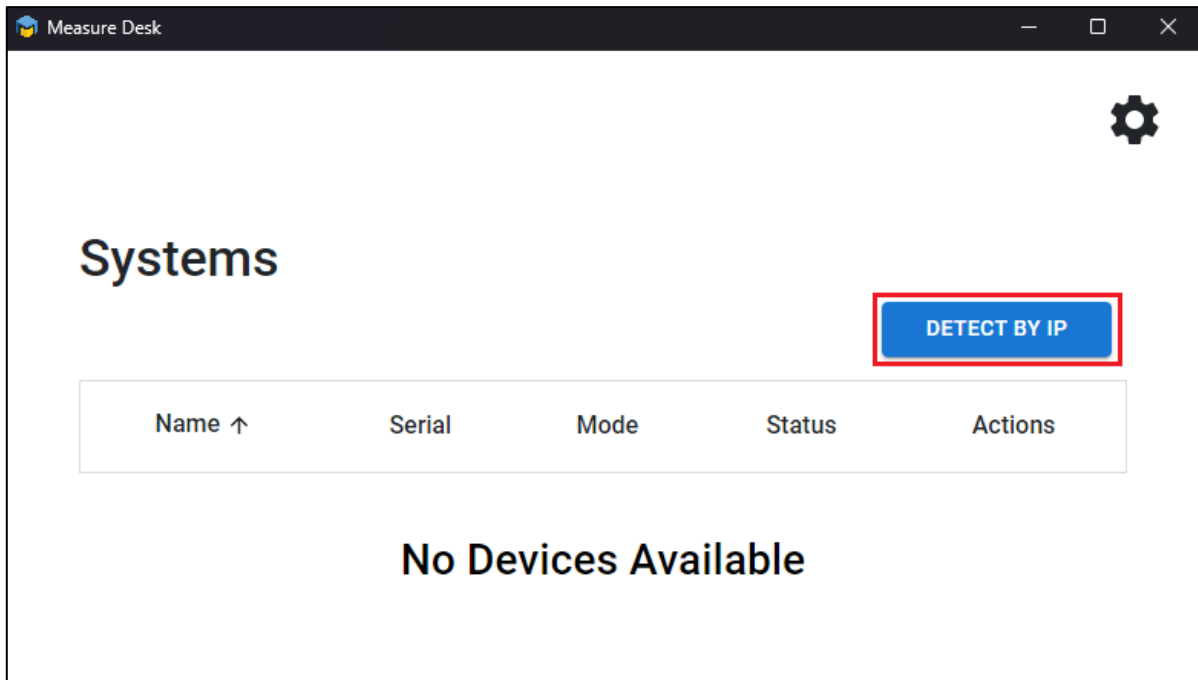


10. Select *WorldShip* from the *Target Application* dropdown in the *KEYBOARD WEDGE* tab as shown below.

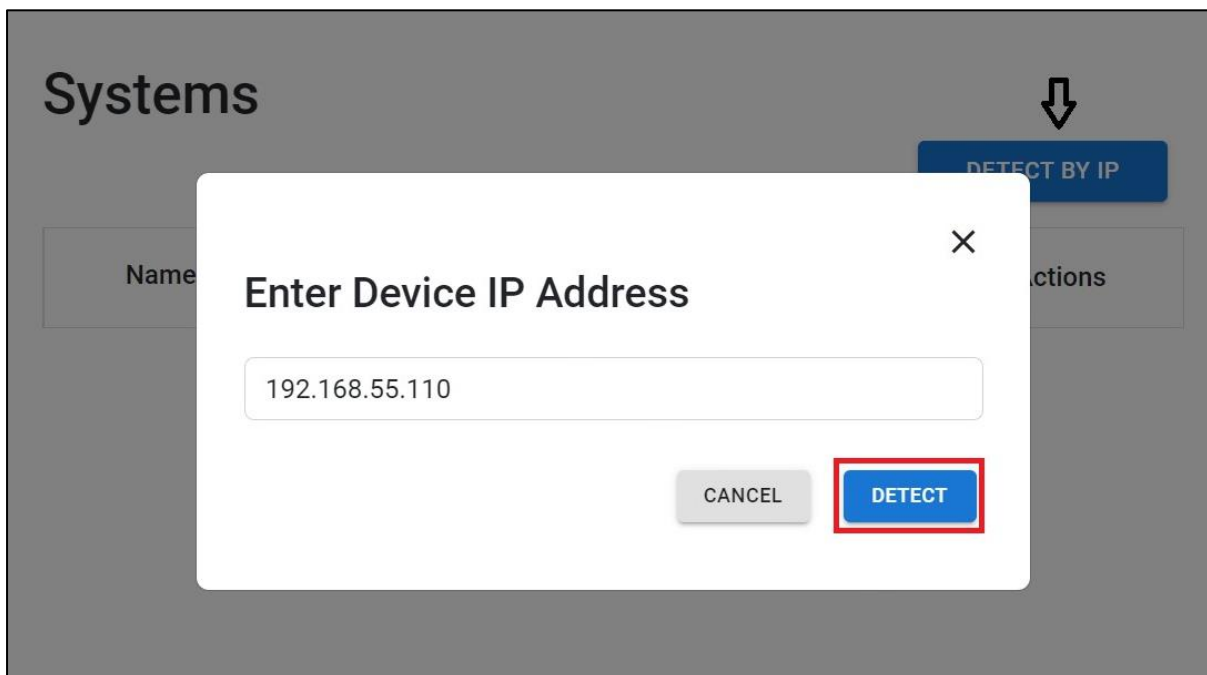


11. Navigate back to the *Home* screen.

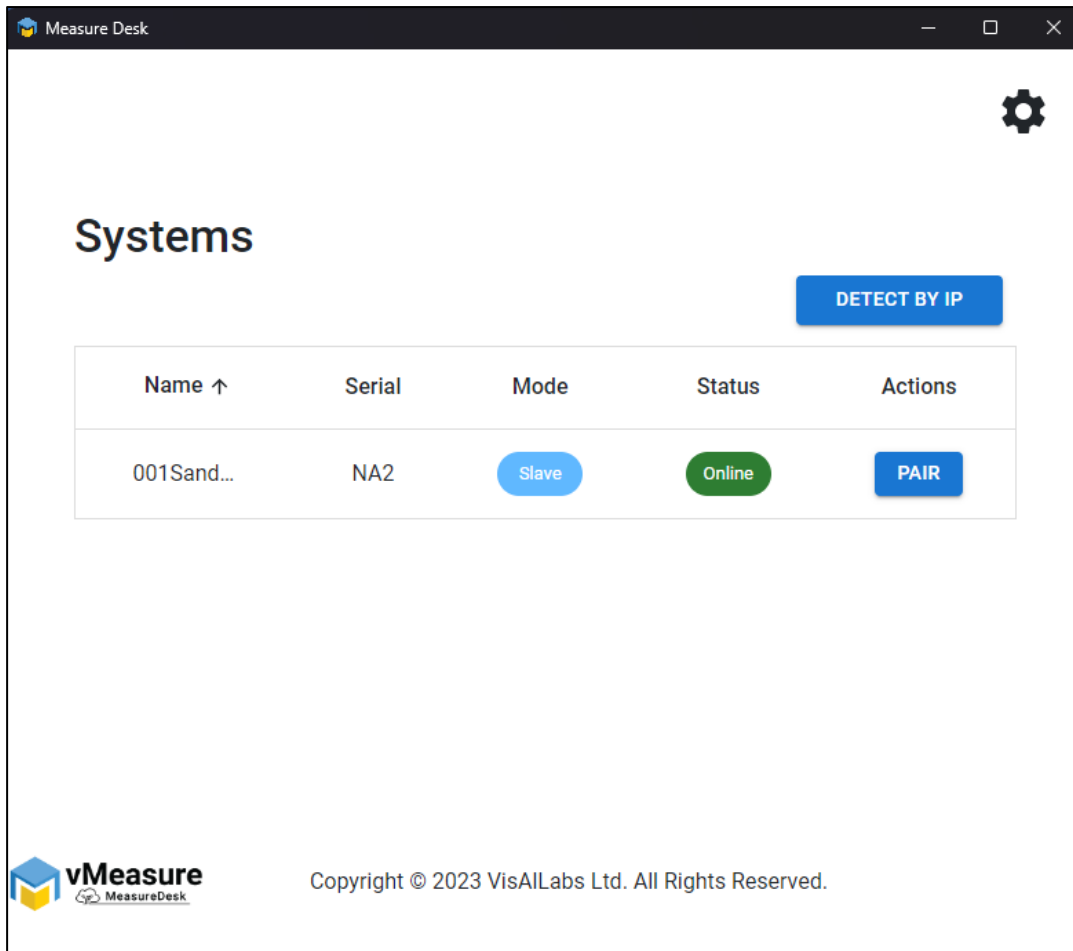
- Click on the *DETECT BY IP* button and input the vMeasure system's IP as shown below.



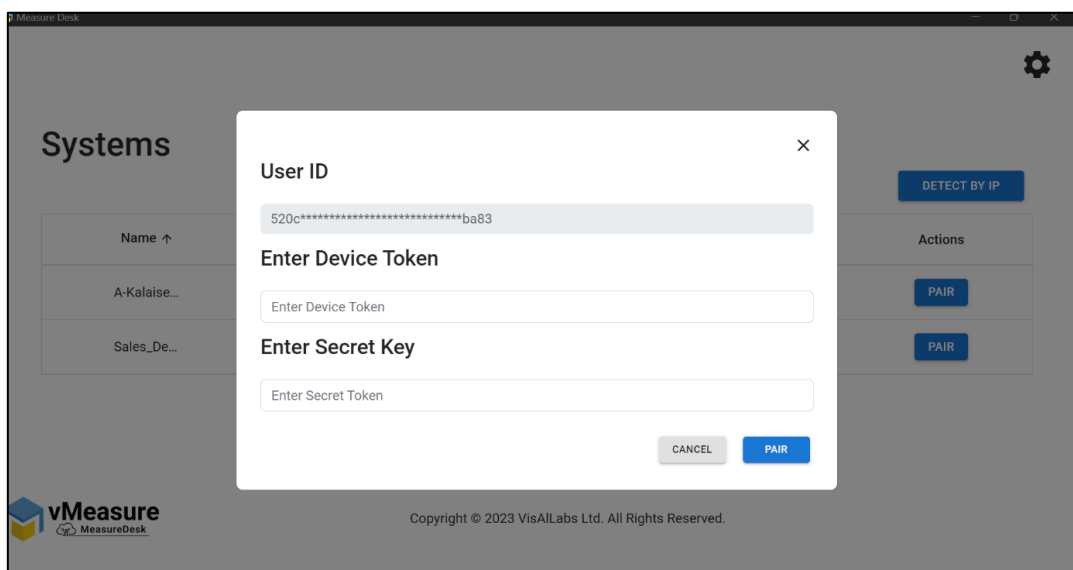
- Click on *DETECT* button as shown below.



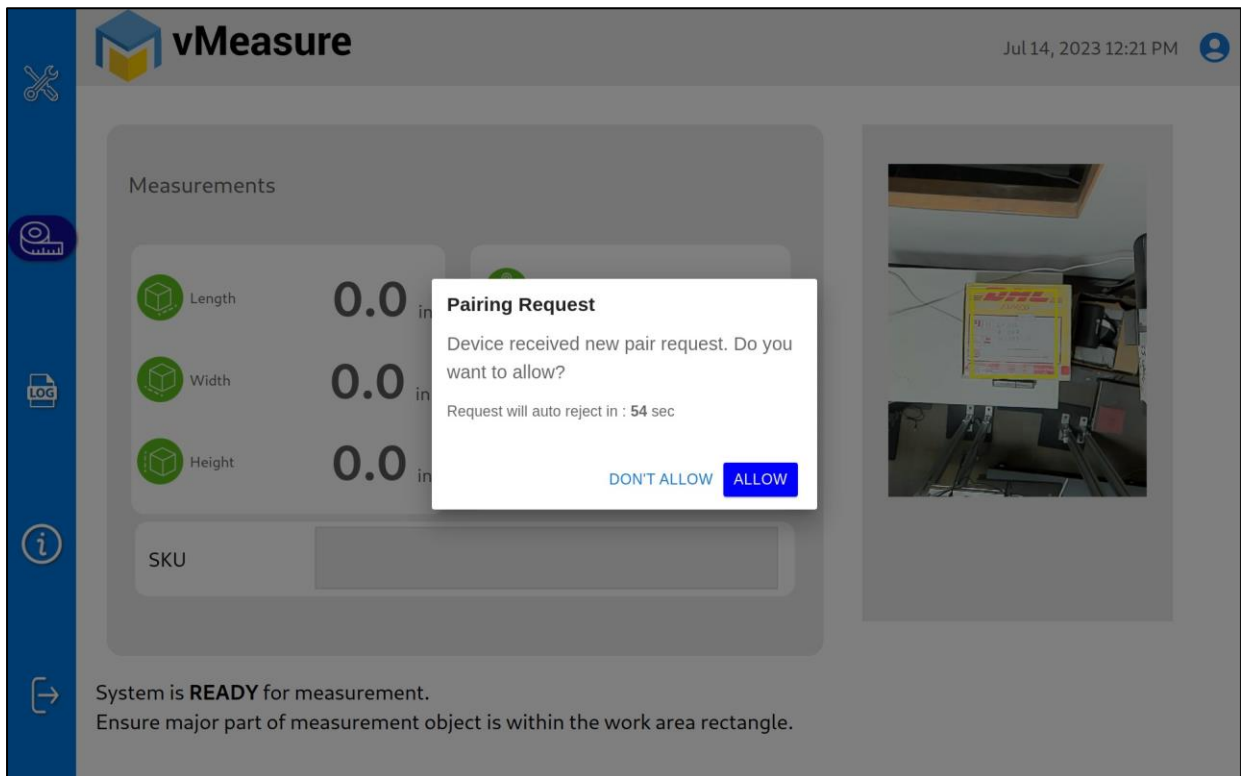
- From the list of systems, click on the *PAIR* button as shown below.



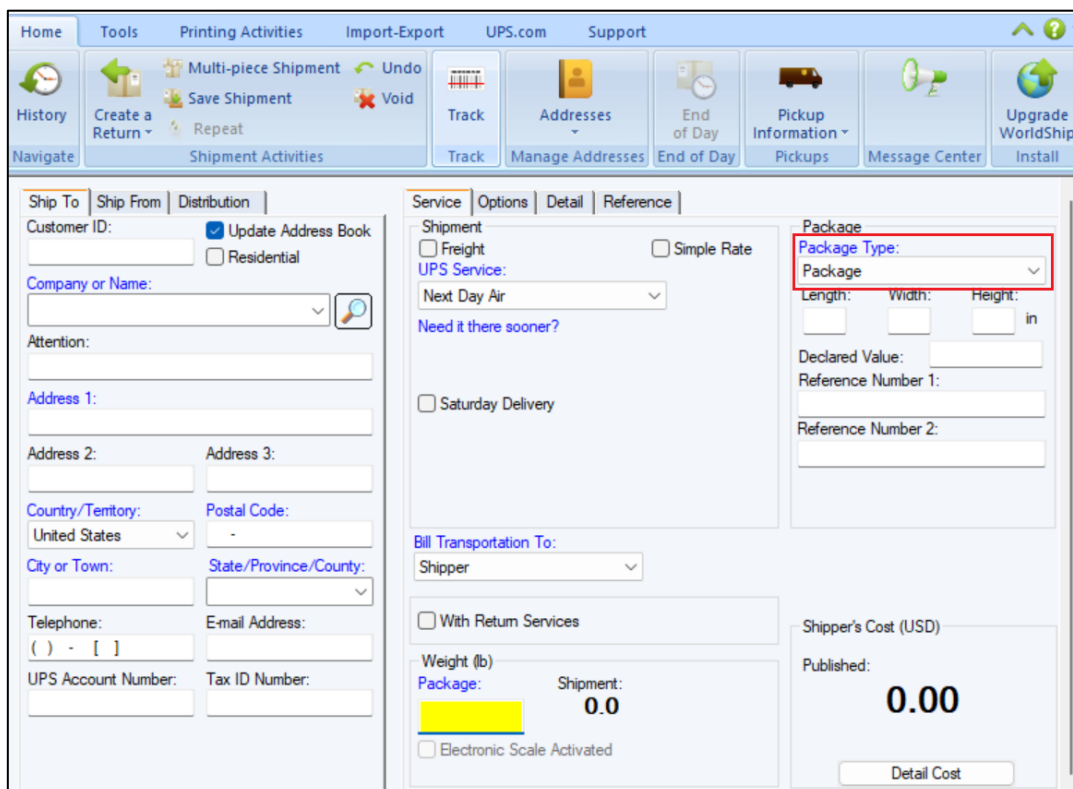
15. Input the vMeasure system's *Secret Key* and *System Token* and click on the *PAIR* button as shown below. Refer to the [Secret Key](#) and [System Token](#) sections above for more information.



16. The vMeasure system will prompt for pairing confirmation. Click on the *Allow* button on the prompt to allow pairing of the vMeasure system and Measure Desk application.

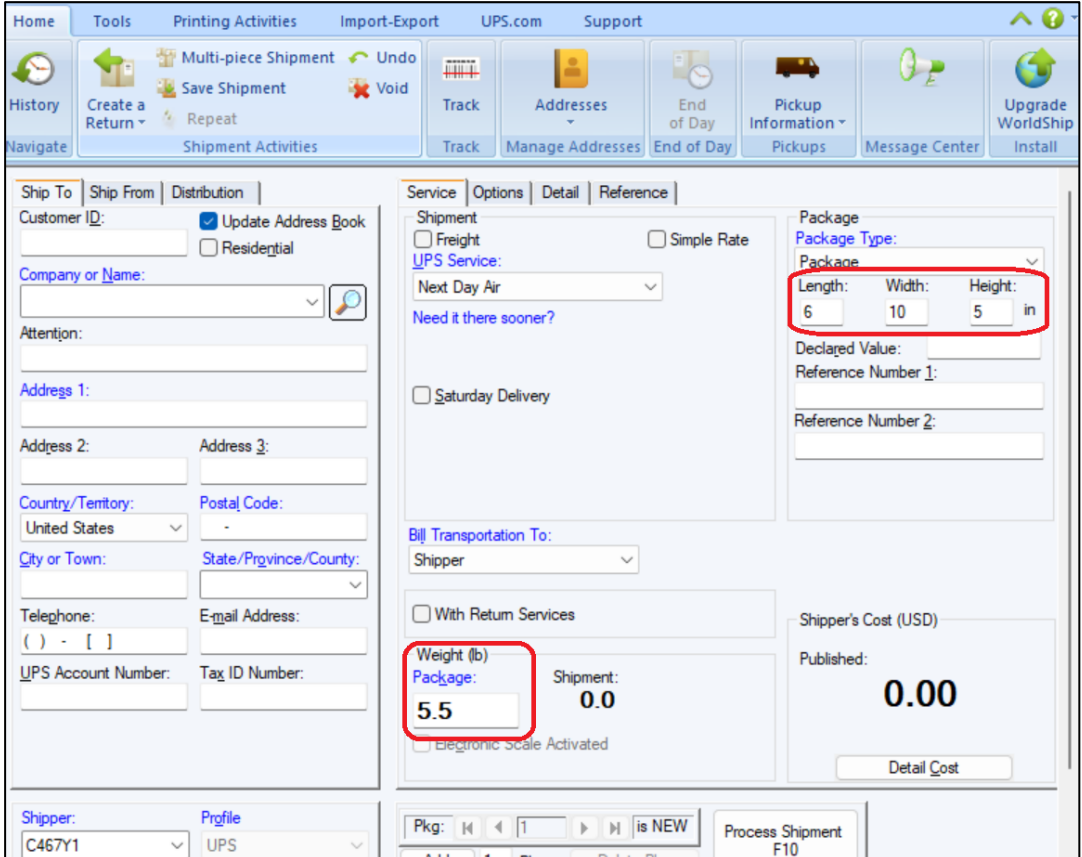


- On the WorldShip application running on the laptop/PC, select *Package* from the *Package Type* dropdown.



- Place the cursor on the weight field and input the keystroke configured for the measurement trigger.

19. The vMeasure system shall capture the measurements and populate the package's length, width, height, and weight as shown below.



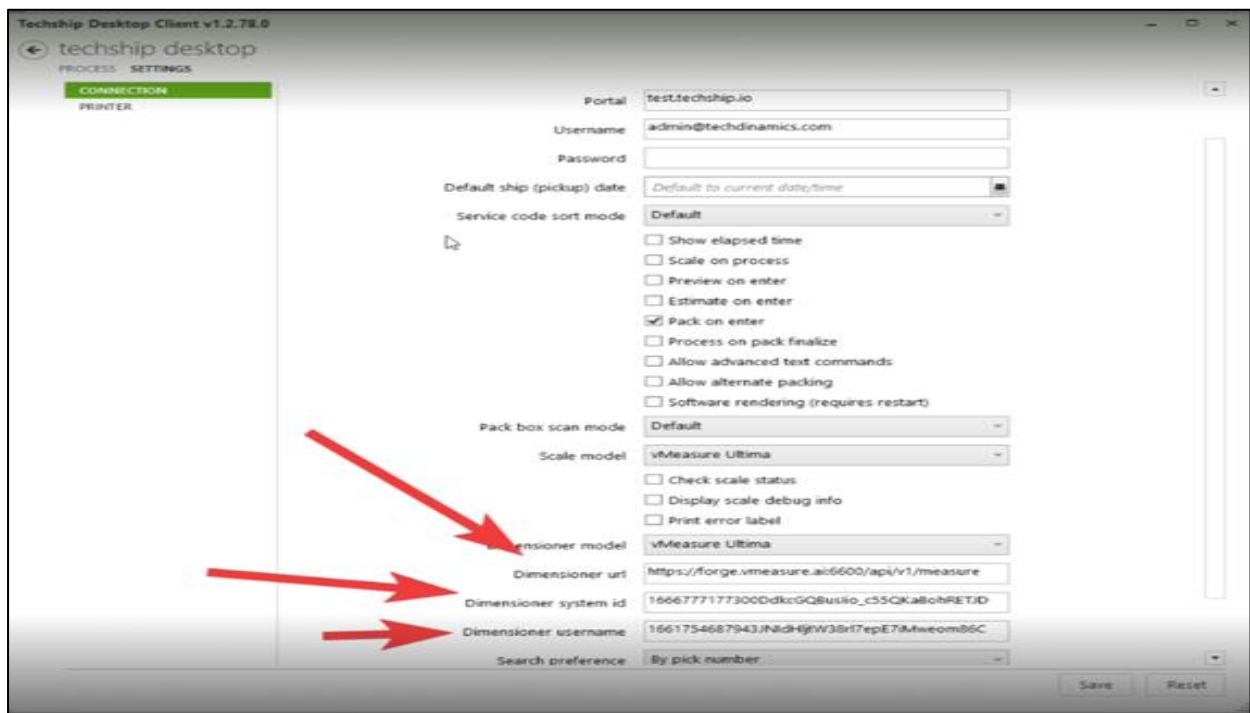
The screenshot displays the vMeasure software interface for creating a shipment. The interface is organized into several sections:

- Navigation Bar:** Includes tabs for Home, Tools, Printing Activities, Import-Export, UPS.com, and Support. Below these are various tool icons like History, Create a Return, Multi-piece Shipment, Save Shipment, Repeat, Undo, Void, Track, Addresses, End of Day, Pickup Information, Message Center, and Upgrade WorldShip.
- Ship To Section:** Contains fields for Customer ID, Company or Name, Attention, Address 1, Address 2, Address 3, Country/Territory (United States), Postal Code, City or Town, State/Province/County, Telephone, E-mail Address, UPS Account Number, and Tax ID Number. There are also checkboxes for 'Update Address Book' and 'Residential'.
- Service Section:** Includes 'UPS Service' (Next Day Air), 'Simple Rate' checkbox, 'Saturday Delivery' checkbox, and 'Bill Transportation To' (Shipper). There is also a 'With Return Services' checkbox and an 'Electronic Scale Activated' checkbox.
- Package Section:** Shows 'Package Type' and a table for dimensions: Length: 6, Width: 10, Height: 5 in. This table is highlighted with a red box.
- Weight Section:** Shows 'Weight (lb)' for the Package: 5.5 and Shipment: 0.0. This section is also highlighted with a red box.
- Shipper's Cost Section:** Shows 'Published' cost of 0.00 USD.
- Bottom Bar:** Includes a 'Pkg:' field with a value of 1, a 'Process Shipment' button, and a 'Detail Cost' button.

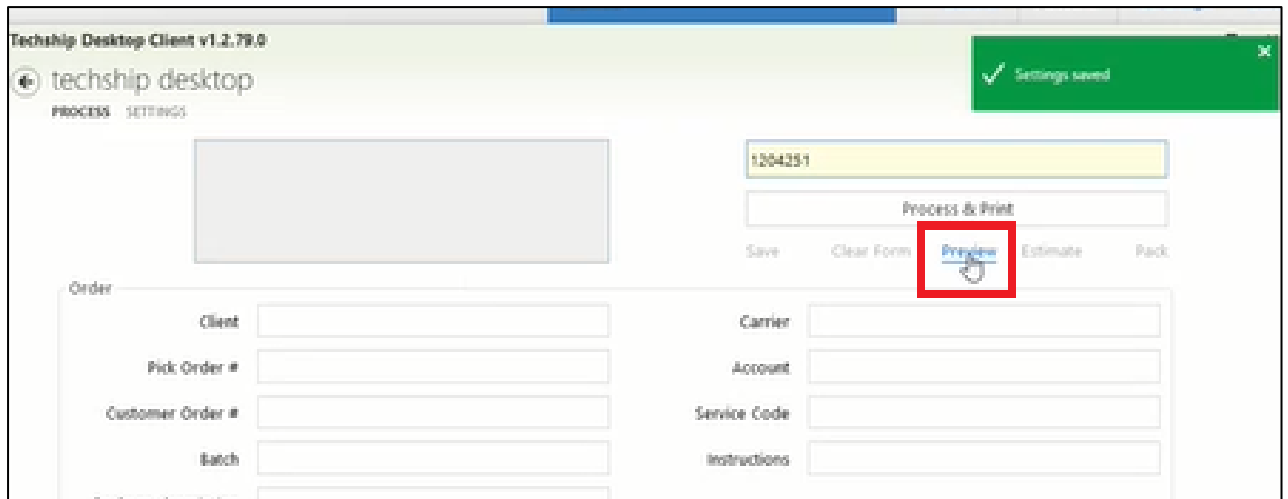
# TechSHIP Integration

The steps to integrate the vMeasure system with the techSHIP application are as follows.

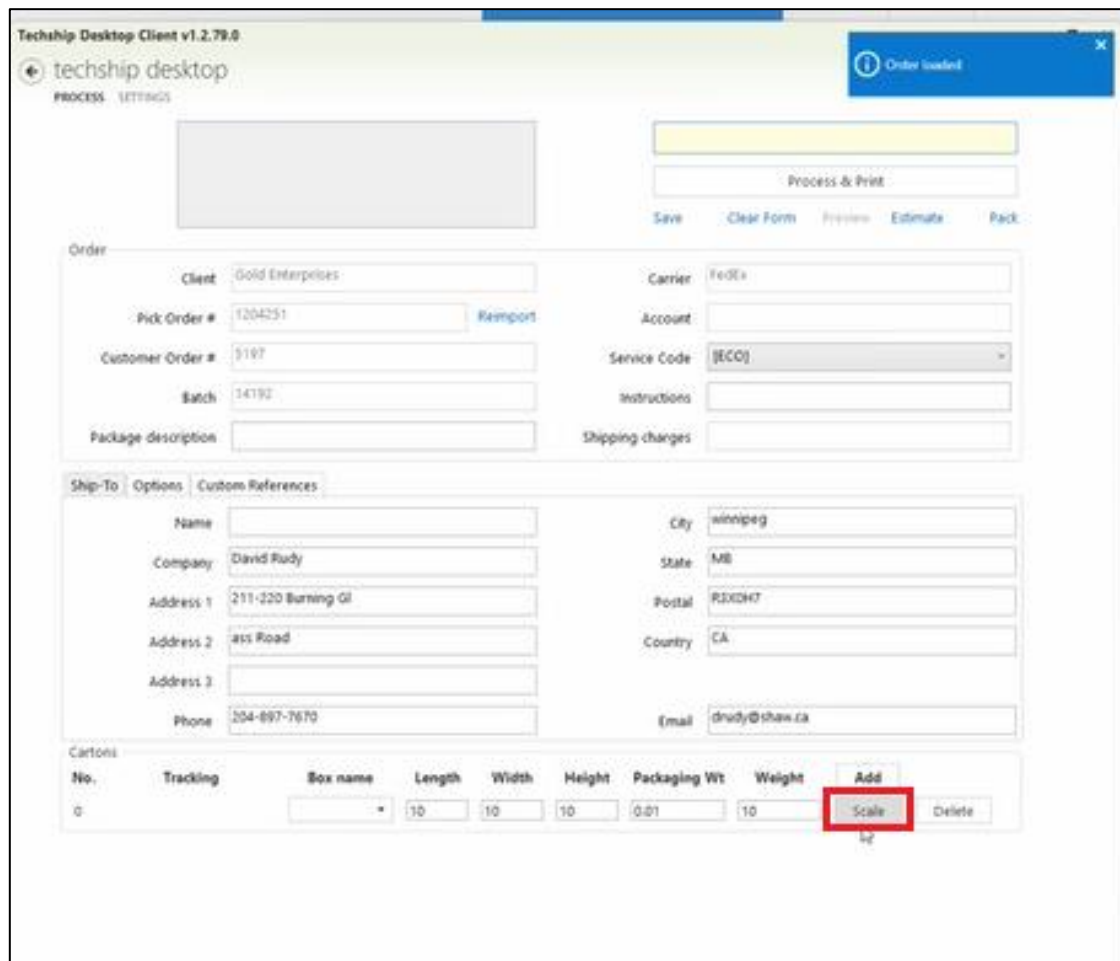
1. Configure the vMeasure system's workflow to *Slave Mode*.
2. Use the techShip desktop client pointing to your Portal.
3. Select vMeasure Ultima from the Dimensioner Model dropdown in the Connection section.
4. Update the *Dimensioner URL* with the *Live Measurement API* of vMeasure Forge. **Note:** Please make sure to use the API version *v1*.
5. Update the *Dimensioner System ID* with the vMeasure system's *System Token*. Refer to the [System Token](#) section above for more information.
6. Update the *Dimensioner Username* with the vMeasure system's *User ID*. Refer to the [User ID](#) section above for more information.



7. Enter the order generated and click on the *Preview* tab as shown below.



8. Once an order is loaded, click on the *Scale* button as shown below.



9. As shown below, A blue pop-up will be displayed as a confirmation.

Techship Desktop Client v1.2.79.0

← techship desktop

PROCESS SETTINGS

Scaled: 25.5 Centimeter x 21.0 Centimeter x 16.5 Centimeter, 0.95 Kilogram

Process & Print

Save Clear Form Preview Estimate Pack

Order

Client: Gold Enterprises

Pick Order #: 1204251 Reimport

Customer Order #: 5197

Batch: 14192

Package description:

Carrier: FedEx

Account:

Service Code: [ECO]

Instructions:

Shipping charges:

Ship-To Options Custom References

Name:

Company:

Address 1:

Address 2:

Address 3:

Phone:

City:

State:

Postal:

Country:

Email:

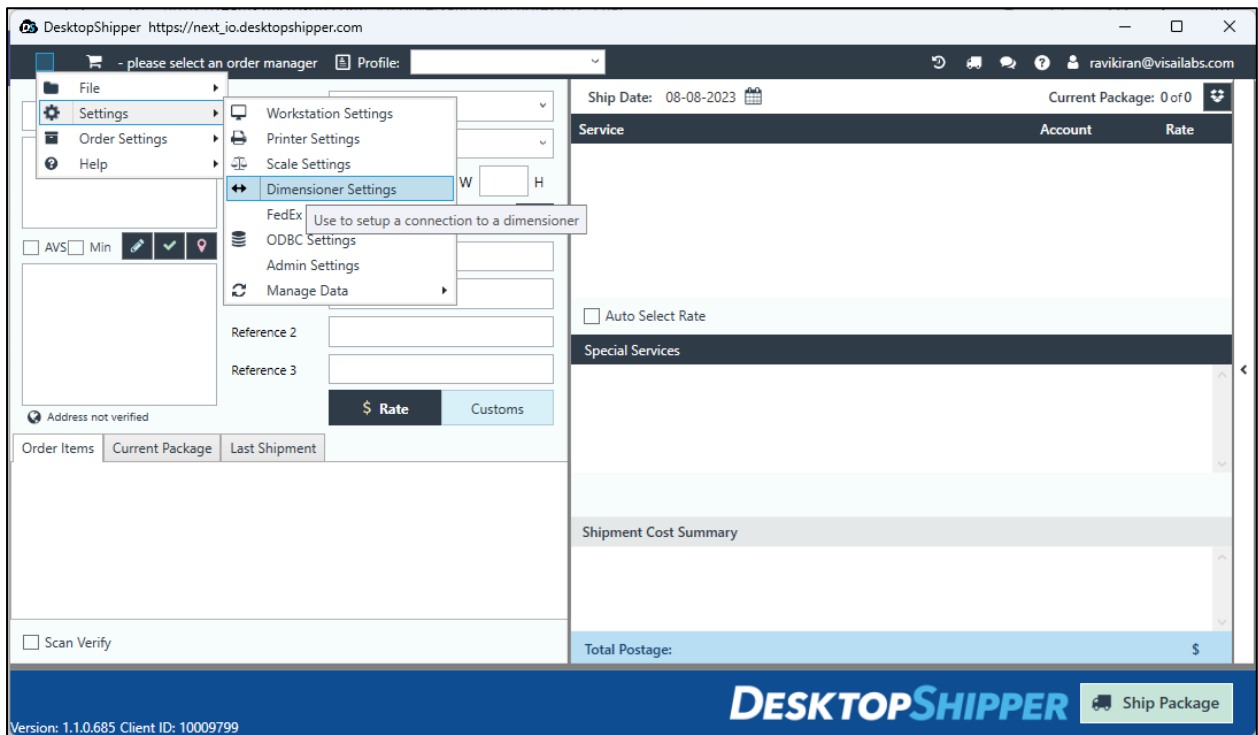
Cartons

No.	Tracking	Box name	Length	Width	Height	Packaging Wt	Weight	Add
0			10.03937	8.267721	6.496066		0.95	Scale + Delete

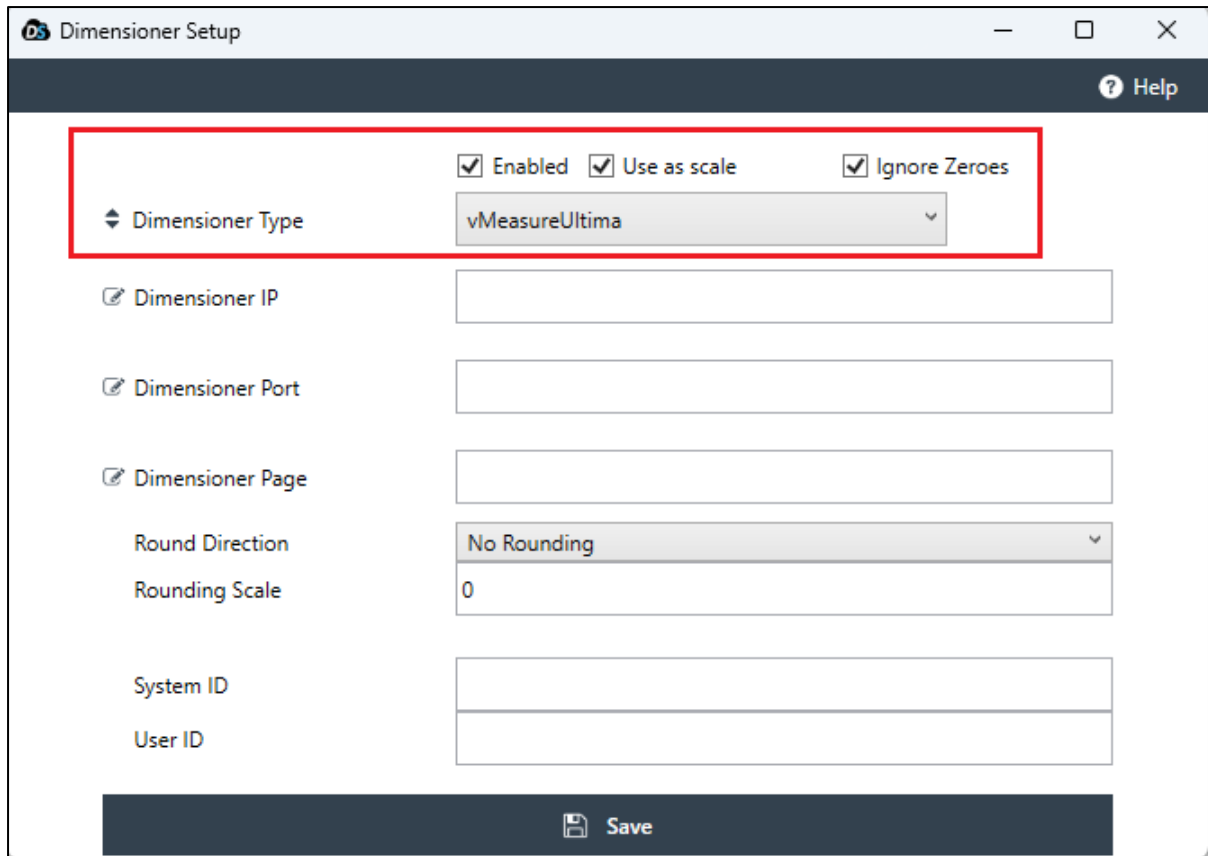
# Desktop Shipper (DSX) Integration

The steps to integrate the vMeasure system with the DSX application are as follows.

1. Configure the vMeasure system's workflow to *Slave Mode*.
2. On the DSX application, navigate to *Settings* -> *Dimensioner Settings* as shown below.



3. Check *Enabled* and *Use as Scale* checkboxes and select *vMeasureUltima* from the *Dimensioner Type* dropdown as shown below.



4. Update the *Dimensioner IP*, *Dimensioner Port* and *Dimensioner Port* with the following value as shown below.

**Dimensioner IP**

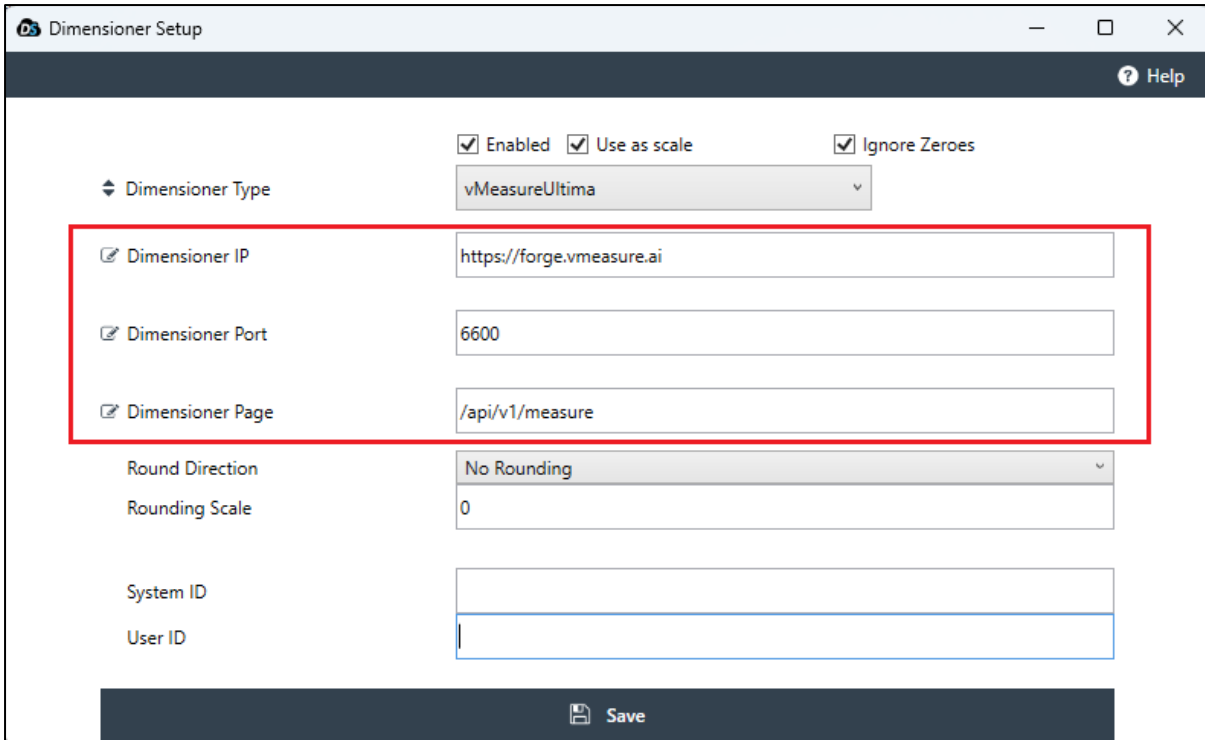
<https://forge.vmeasure.ai>

**Dimensioner Port**

6000

**Dimensioner Path**

/api/v1/measure



Dimensioner Setup

Help

Enabled  Use as scale  Ignore Zeroes

Dimensioner Type: vMeasureUltima

Dimensioner IP: https://forge.vmeasure.ai

Dimensioner Port: 6600

Dimensioner Page: /api/v1/measure

Round Direction: No Rounding

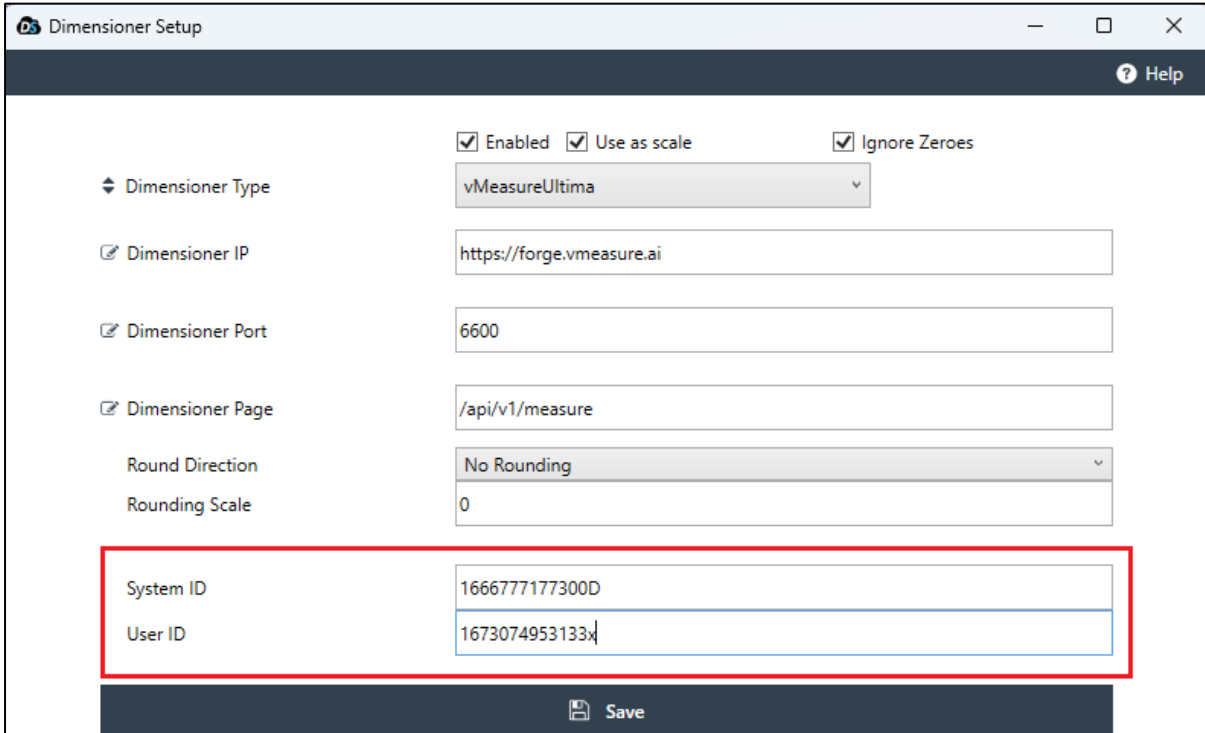
Rounding Scale: 0

System ID:

User ID:

Save

5. Update the vMeasure system's *System ID* and *User ID* in their respective text fields as shown below. Refer to the [System ID](#) and [User ID](#) section above for more information.



Dimensioner Setup

Help

Enabled  Use as scale  Ignore Zeroes

Dimensioner Type: vMeasureUltima

Dimensioner IP: https://forge.vmeasure.ai

Dimensioner Port: 6600

Dimensioner Page: /api/v1/measure

Round Direction: No Rounding

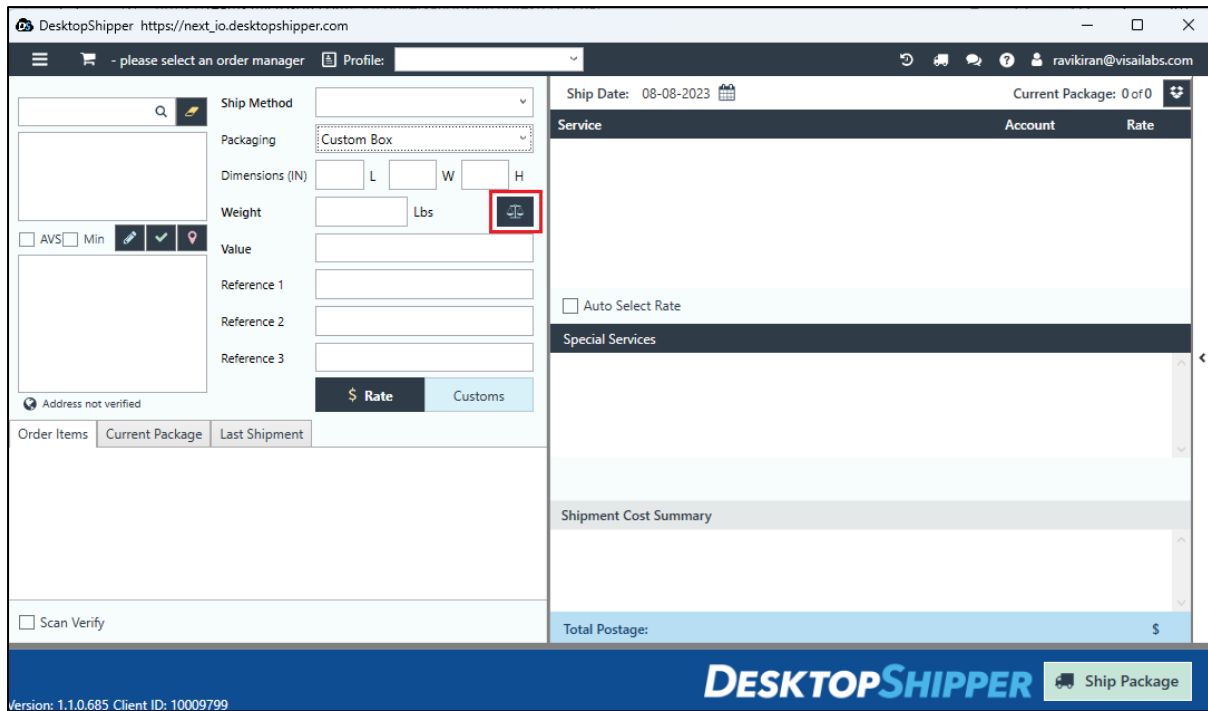
Rounding Scale: 0

System ID: 1666777177300D

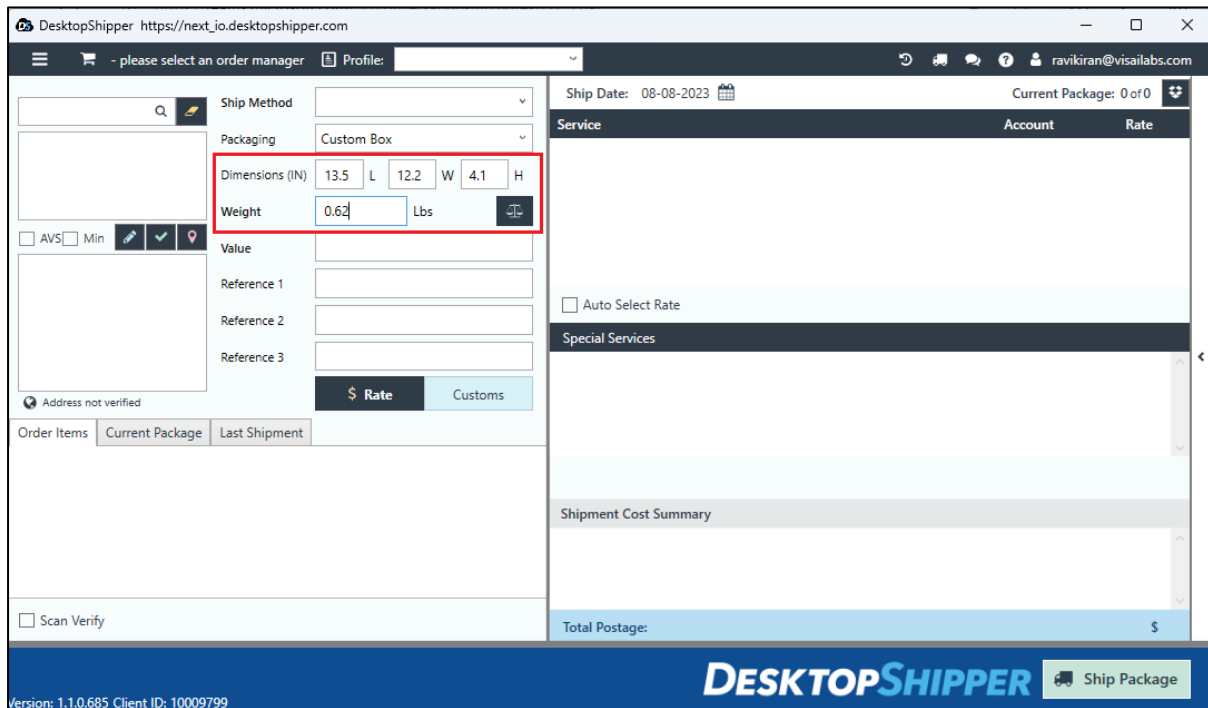
User ID: 1673074953133x

Save

6. Click on the *Save* button.
7. Click on the *Measure* button to trigger the measurement on the vMeasure system as shown below.



8. Upon successful measurement, the measurement data shall be populated on the corresponding fields as shown below.



## Reference Links

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1. [vMeasure Forge API Documentation](#)
2. [vMeasure Ultima API Documentation](#)
3. [Refresh Tokens \(auth0.com\)](#)
4. [Refresh Token Rotation \(auth0.com\)](#)

**1. What is vMeasure Forge?**

The Cloud-based Dimensioning Intelligence Platform powering the world's first and only dimensioning as a service solution – vMeasure Ultima.

The vMeasure Forge is a vMeasure cloud application to configure and manage the vMeasure systems. The Forge platform can also be used to retrieve historic measurement data (max last 90 days data).

**2. What is the authentication method used by the vMeasure APIs?**

The authentication method used is OAuth 2.0

**3. What is Refresh Token?**

The Refresh Token is the bearer token that is used to refresh the access token.

**4. What happens when Webhook data push is failed at the first attempt in vMeasure Forge – Master Mode?**

The vMeasure Forge retries pushing the data to the client-server after the below intervals until HTTP 200 response is received.

1. 1 min
2. 2 min
3. 15 min
4. 30 min
5. 120 min

**5. What is Measure Desk?**

Measure Desk is the vMeasure System's desktop client that acts as a keyboard wedge to get the data from the vMeasure system and paste them on the target application as configured.

**6. What are the operating systems on which the Measure Desk application can be installed?**

The Measure Desk application can be installed in the below OS.

1. Windows 10 and above
2. Ubuntu 20.04 and above

**API:** Application Program Interface

**OTP:** One-Time Password

**SKU:** Stock Keeping Unit

**CSV:** Comma Separated Values

**TSV:** Tab Separated Values

### Revision History

Rev	Date	Major Changes	Author
1.0	09 June -2023	Initial Draft	VisAI Labs
1.1	28 June 2023	Fixed Review Comments	VisAI Labs
1.2	14 July 2023	Added Partner Integration Methods	VisAI Labs
1.3	11 Aug. 23	Added Screenshots for Desktop Shipper Integration	VisAI Labs