

■ Version 1.4

Cogent VDM and Device Guide



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1 Overview

This guide provides procedures for the installation of software and hardware components necessary for operating Cogent's VDM software for UID.

Cogent's VDM software supports the CS500e fingerprint scanner and CIS 202 iris device. It is compliant with the "Aadhaar Biometric Capture Device API" standard. The following features are provided:

- Supports the CS500e fingerprint scanner by allowing capture of the right four fingers, left four fingers, and two thumbs. Each fingerprint image is sized up to 1600 x 1500 pixels.
- Supports the CIS 202 dual iris capture device. Each iris image is sized up to 752 x 480 pixels.
- Runs as a Windows service without user intervention
- Provides auto-detection of device connection and disconnection
- Provides auto-capture for fingerprints and dual iris images
- Supports missing fingers and irises
- Includes the VDM controller for easy setup of the VDM
- Supports both Windows XP and Windows 7, 32-bit and 64-bit

2 Installation

Before installation of the devices, keep these points in mind:

- Do not connect the CS500e fingerprint scanner and CIS 202 iris device to the PC.
- Install the Cogent Biometrics Vendor Device Manager (VDM) by following the procedures described in Section 2.1.
- Connect the devices and install the drivers by following the procedures described in Section 2.2.

2.1 Installing the Cogent Biometrics Vendor Device Manager (VDM)

To install the Cogent VDM:

1. Double-click the Cogent Biometrics Vendor Device Manager v2.4.0.msi file. The **Cogent Biometrics Vendor Device Manager Setup** window will be displayed.

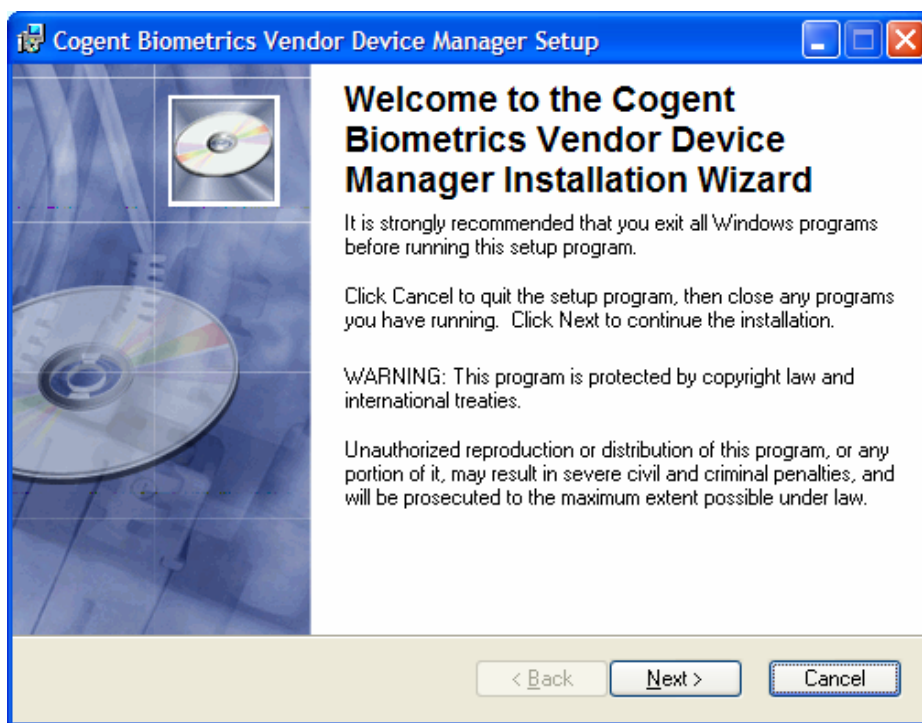


Figure 2-1 Cogent Biometrics Vendor Device Manager Setup Window

2. Click **Next**. The **User Information** window will be displayed.

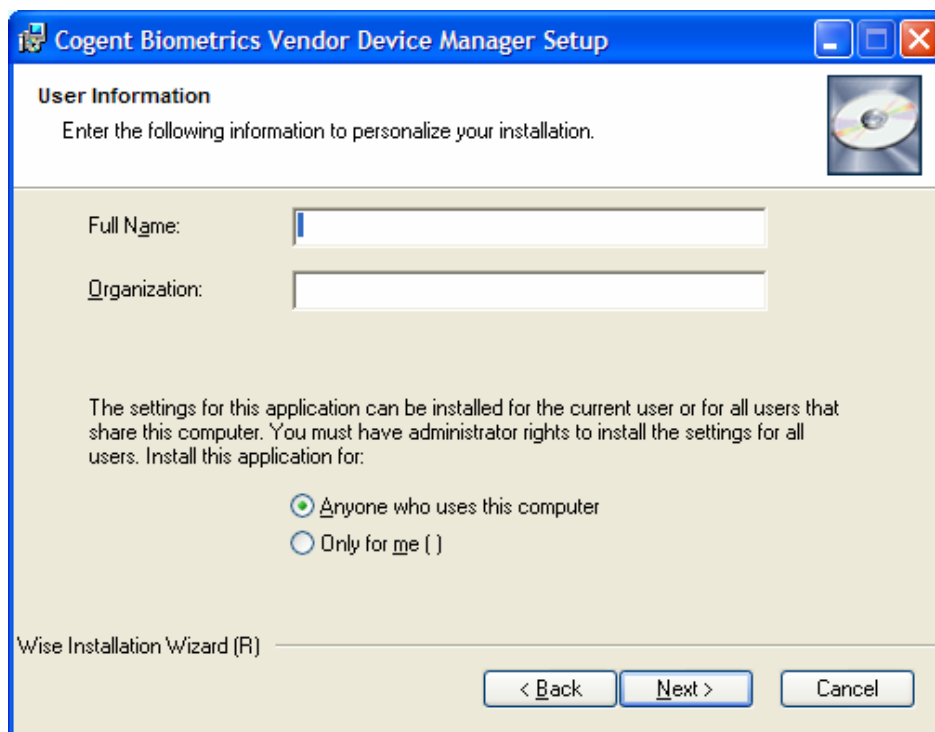


Figure 2-2 User Information Window

3. Enter your **Full Name** and **Organization** and click **Next**. The **Destination Folder** window will be displayed.

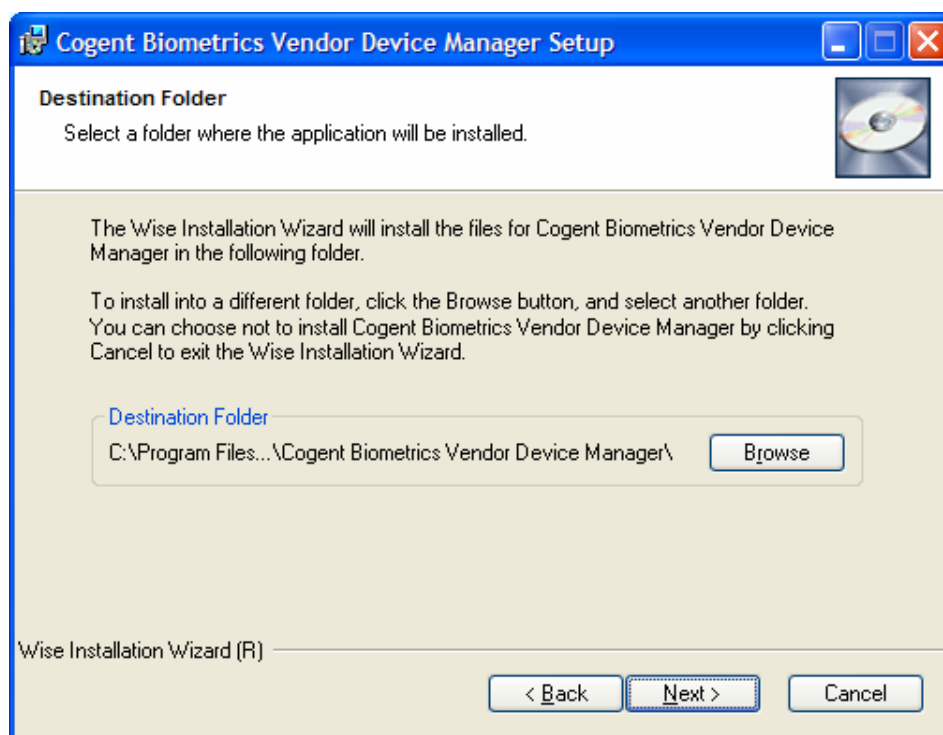


Figure 2-3 Destination Folder Window

4. Click **Next**. The **Ready to Install the Application** window will be displayed.

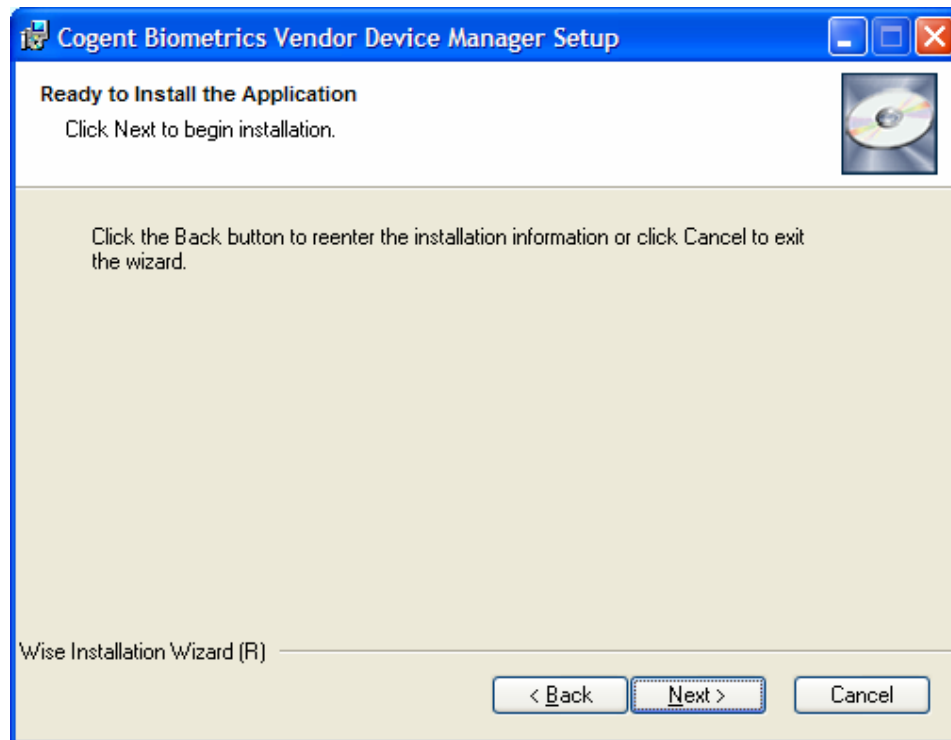


Figure 2-4 Ready to Install the Application Window

5. Click **Next**.
6. Click **Finish**. The VDM software and driver will be installed.

2.2 Installing the Devices

Installation of Cogent's devices consists of the following:

- Installation of the CS500e Fingerprint Scanner
- Installation of the CS500e Device Driver
- Installation of the CIS 202 Iris Capture Device

2.2.1 Installing the CS500e Fingerprint Scanner

To install the CS500e fingerprint scanner:

1. Remove the cable cover from the CS500e scanner.
2. Ensure that the button on the cover is set to the unlocked position.

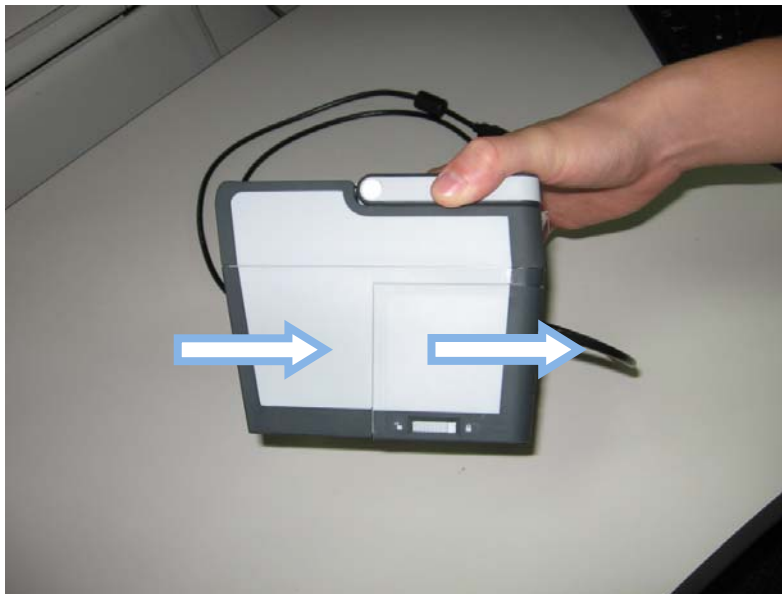


Figure 2-5 Ensure the Cover is Unlocked

3. Plug the USB cable into the scanner.



Figure 2-6 Plug the Cable into the Scanner

4. Replace the cable cover on the CS500e scanner.

2.2.2 Installing Driver

To install the CS500e fingerprint capture device:

1. Connect the CS500e to the PC. The device driver will be auto-installed. The driver version is 1.10.253.

To install the CIS 202 iris capture device:

1. Connect the CIS 202 to the PC. The device driver will be auto-installed. Same driver version as 500e.

3 Usage

3.1 Using the Cogent Biometrics VDM Controller

To use the Cogent Biometrics VDM Controller

1. Click Start, select All Programs.
2. Select Cogent Biometrics Vendor Device Manager.
3. On Windows XP, Click Cogent Biometrics VDM Controller to launch the program. The Cogent Biometrics VDM window will be displayed.
4. On Windows 7, Need to run **Cogent Biometrics VDM Controller** as Administrator if the VDM is installed into "Program Files" folder.
 - a. Right Click on the **Cogent Biometrics VDM Controller**, select **Property**
 - b. Click **Compatibility** tab, select **Run this program as an administrator** check box

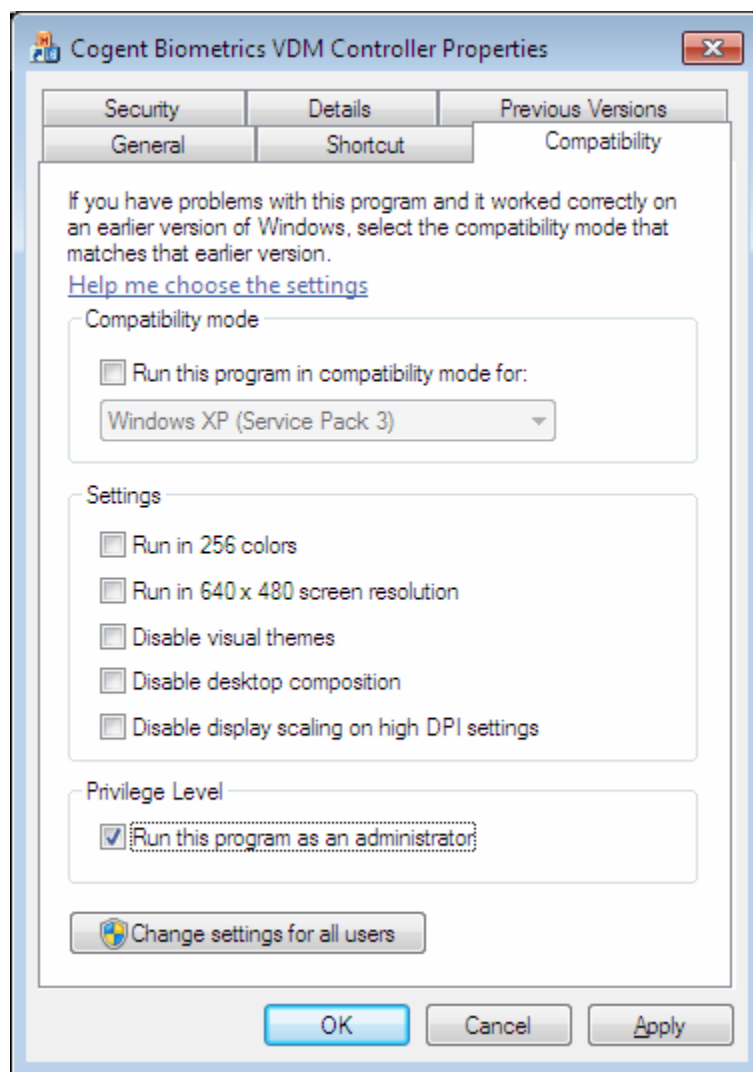
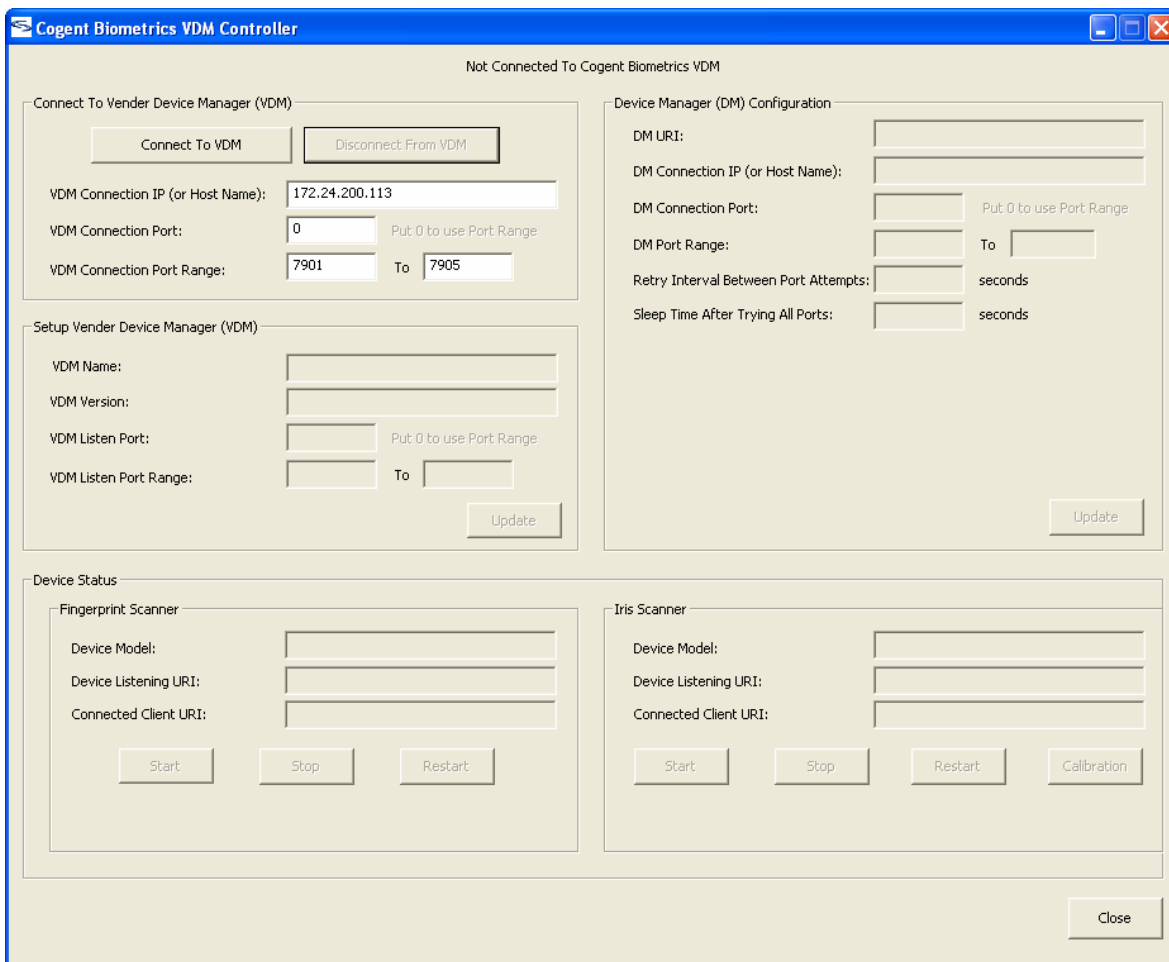


Figure 3-1 Biometrics VDM Controller Properties Window



Cogent Biometrics VDM Controller

Not Connected To Cogent Biometrics VDM

Connect To Vender Device Manager (VDM)

Connect To VDM Disconnect From VDM

VDM Connection IP (or Host Name): 172.24.200.113

VDM Connection Port: 0 Put 0 to use Port Range

VDM Connection Port Range: 7901 To 7905

Setup Vender Device Manager (VDM)

VDM Name:

VDM Version:

VDM Listen Port: Put 0 to use Port Range

VDM Listen Port Range: To

Update

Device Manager (DM) Configuration

DM URI:

DM Connection IP (or Host Name):

DM Connection Port: Put 0 to use Port Range

DM Port Range: To

Retry Interval Between Port Attempts: seconds

Sleep Time After Trying All Ports: seconds

Update

Device Status

Fingerprint Scanner

Device Model:

Device Listening URI:

Connected Client URI:

Start Stop Restart

Iris Scanner

Device Model:

Device Listening URI:

Connected Client URI:

Start Stop Restart Calibration

Close

Figure 3-2 Cogent Biometrics VDM Controller Window

5. Check the VDM setting on left upper boxes and click **Connect To VDM**.

By default, “Cogent Biometrics VDM” is auto-started after it is installed. The system will, by default, use port range 7901 through 7905 on the local machine. Cogent’s Biometrics VDM Controller will auto scan these ports and connect to VDM. If the configuration is changed, the user can specify the exact port number on the “VDM Connection Port” box. Once the VDM Controller connects to VDM, the following window will be displayed.

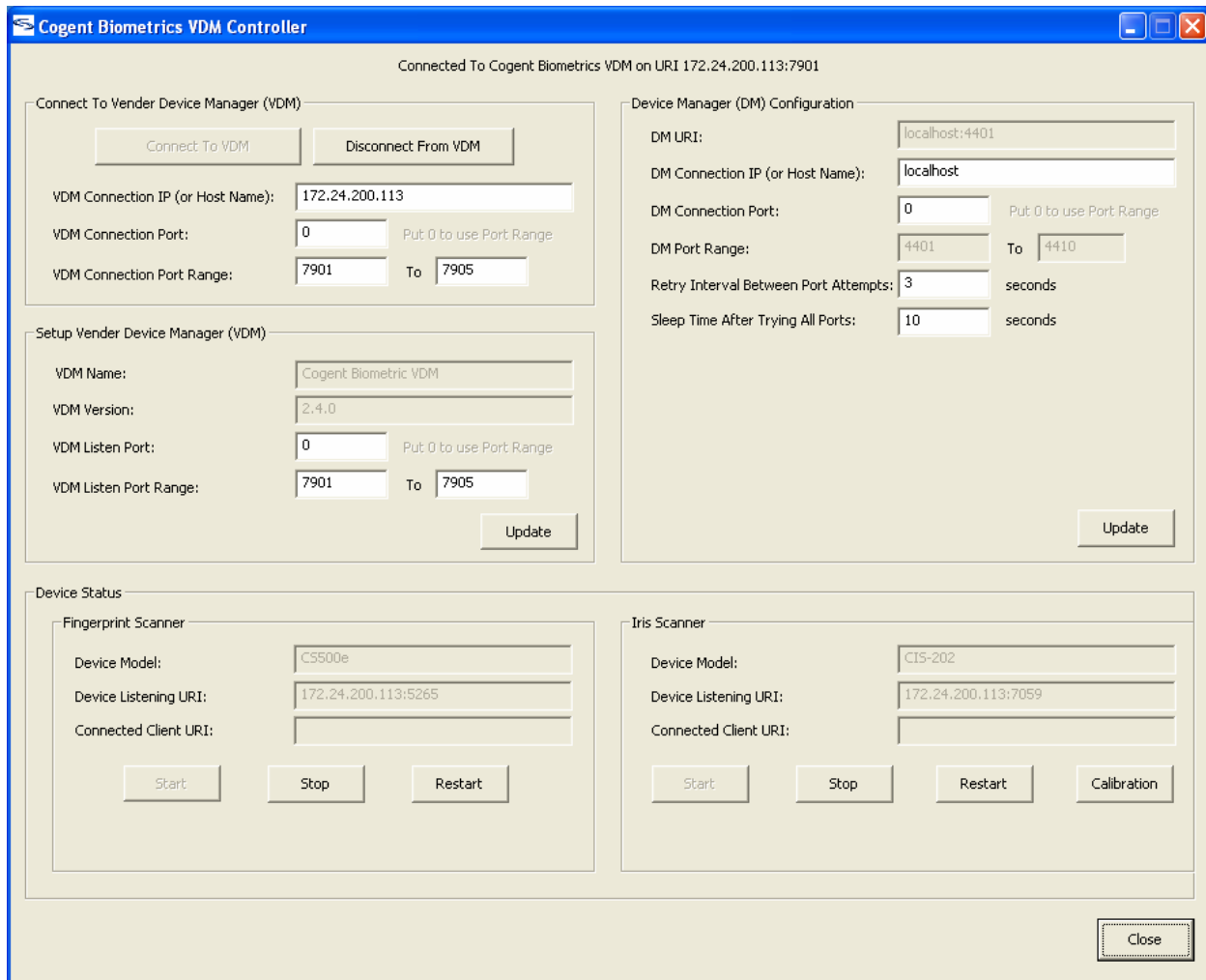
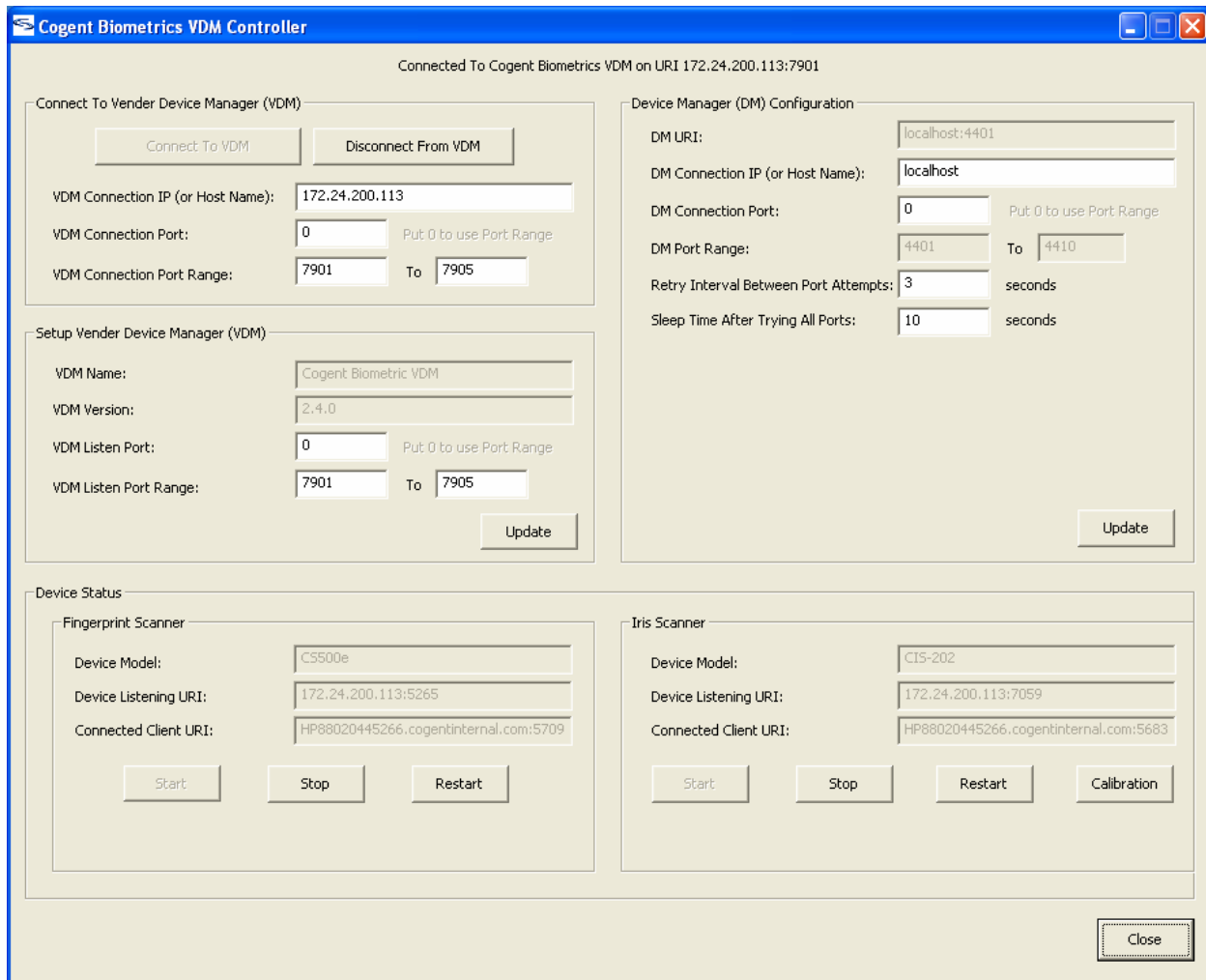


Figure 3-3 Cogent Biometrics VDM Controller Window

6. If VDM connects to the device manager, the right upper box **DM URI** shows the detailed device manager information. If not, this box will be empty like the following window.



Cogent Biometrics VDM Controller

Connected To Cogent Biometrics VDM on URI 172.24.200.113:7901

Connect To Vender Device Manager (VDM)

Connect To VDM Disconnect From VDM

VDM Connection IP (or Host Name): 172.24.200.113

VDM Connection Port: 0 Put 0 to use Port Range

VDM Connection Port Range: 7901 To 7905

Setup Vender Device Manager (VDM)

VDM Name: Cogent Biometric VDM

VDM Version: 2.4.0

VDM Listen Port: 0 Put 0 to use Port Range

VDM Listen Port Range: 7901 To 7905

Update

Device Manager (DM) Configuration

DM URI: localhost:4401

DM Connection IP (or Host Name): localhost

DM Connection Port: 0 Put 0 to use Port Range

DM Port Range: 4401 To 4410

Retry Interval Between Port Attempts: 3 seconds

Sleep Time After Trying All Ports: 10 seconds

Update

Device Status

Fingerprint Scanner

Device Model: CS500e

Device Listening URI: 172.24.200.113:5265

Connected Client URI: HP88020445266.cogentinternal.com:5709

Start Stop Restart

Iris Scanner

Device Model: CIS-202

Device Listening URI: 172.24.200.113:7059

Connected Client URI: HP88020445266.cogentinternal.com:5683

Start Stop Restart Calibration

Close

Figure 3-4 Cogent Biometrics VDM Controller Window

If the user needs to change the UID Device Manager (DM) setting, the user can modify the settings on the right-upper boxes and click **Update**. Then the user needs to restart VDM, either by restarting from Windows Services or rebooting the PC.

- The boxes in the **Setup Vender Device Manager (VDM)** region show the detailed VDM information.

If the user needs to change the VDM setting, the user can edit the values in the boxes of **Setup Vender Device Manager (VDM)**, and click **Update**.

- The user needs to restart VDM, either by restarting from Windows Services or rebooting the PC.

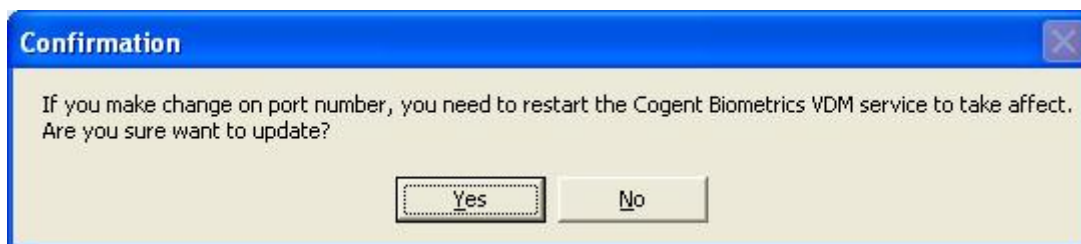


Figure 3-5 Confirmation Window

9. The boxes in the **Device Status** region show the statuses of the connected CS500e and CIS 202.

If the device is not connected (e.g., the CS500e is not connected), the boxes in the **Fingerprint Scanner** region will be empty.

The “Device Listening URI” is used by the application (e.g. Test Harness) to connect to VDM.

10. Once the application establishes the connection to VDM, the **Connected Client URI** region will show the application URI as below:

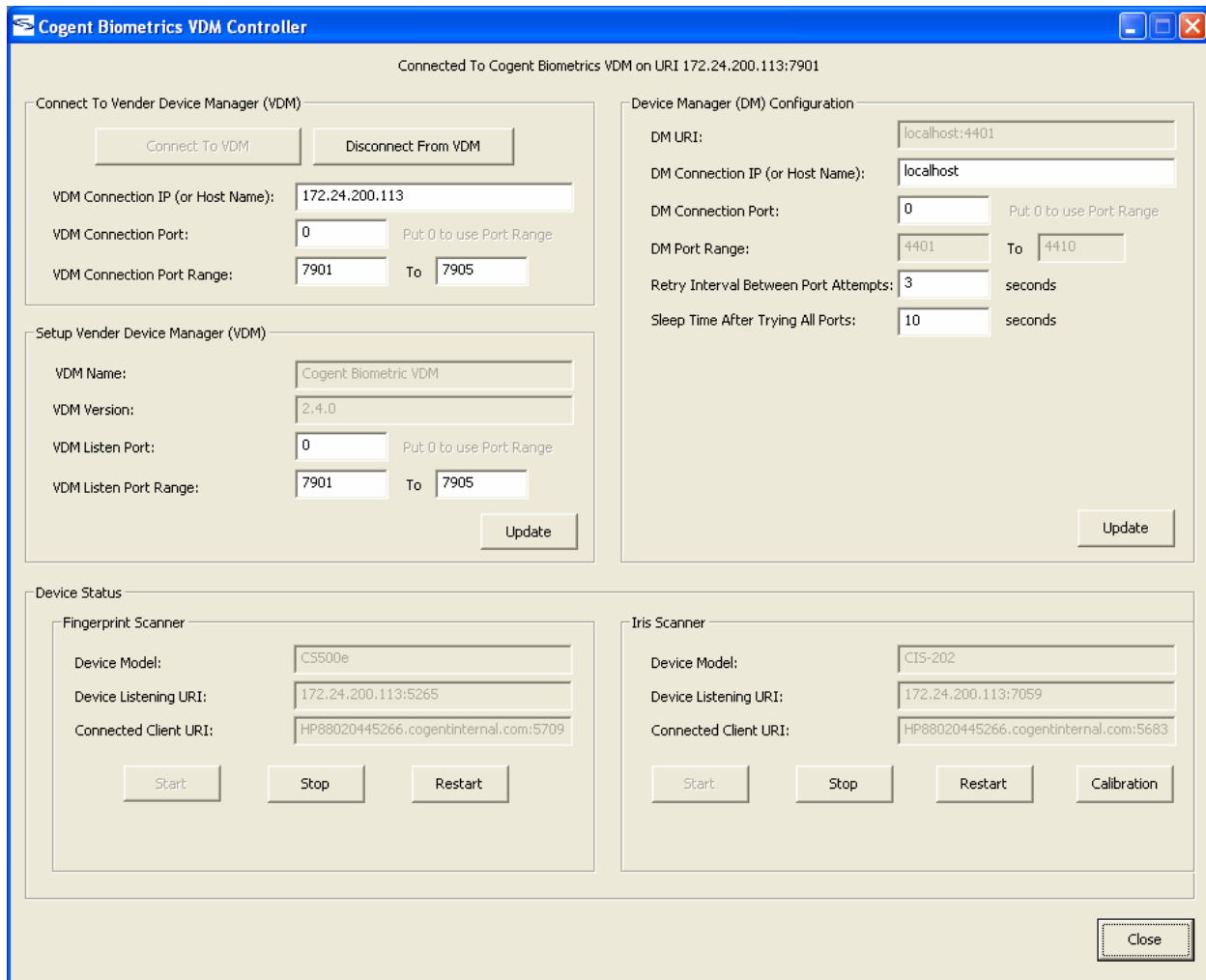


Figure 3-6 Cogent Biometrics VDM Controller Window

3.2 Iris Scanner CIS-202 Calibration

Recommend calibrate the CIS-202 scanner for the first-time use to get best performance. Scanner calibration could be done via Cogent VDM Controller.

1. After Cogent VDM controller connects to VDM and CIS-202 is connected properly, the calibration button will be available as shown in Figure 3-6.
2. Click “Calibration” button on Cogent Biometrics VDM Controller. Below Confirmation box will pop up.

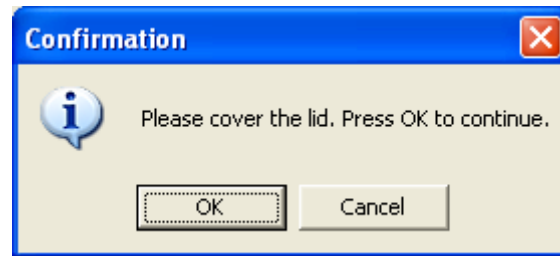


Figure 3-7 Calibration confirmation window

3. Cover Iris Scanner with lids that come with it tightly. Then press OK on Confirmation box. Cogent VDM Controller will show “Calibrating...” as below.

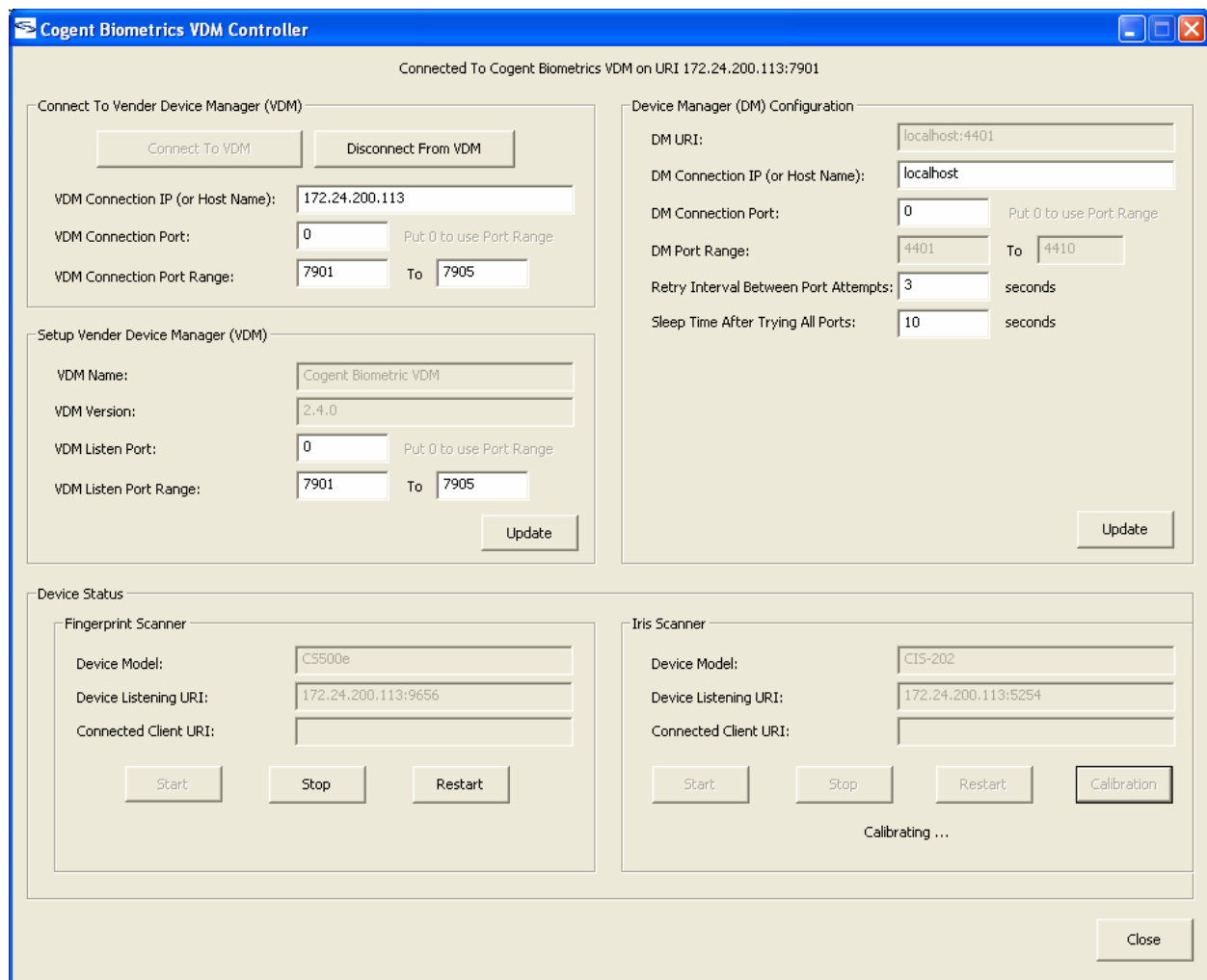


Figure 3-8 Calibrating

4. When calibration is done, “Calibration Success” window will pop up.

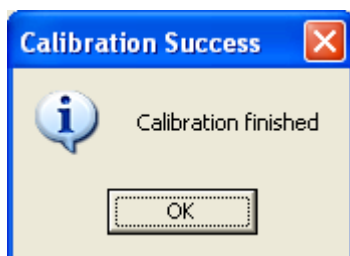


Figure 3-9 Calibration Success Window

5. If lids are not covering correctly, “Calibration Failure” window will pop up. Please make sure the lids are covering correctly and try calibration again.

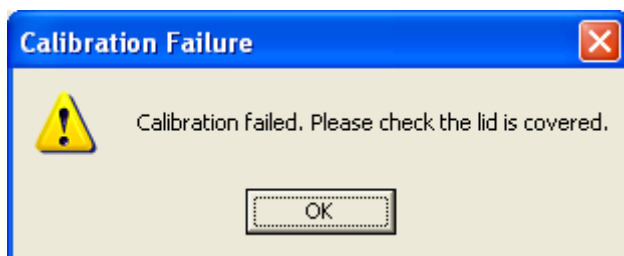


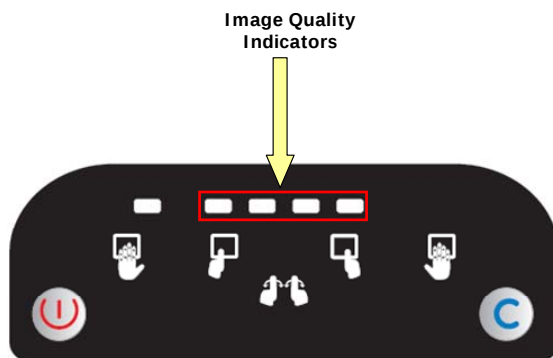
Figure 3-10 Calibration Failure window

3.3 Using the Devices

3.3.1 Using the CS500e Fingerprint Scanner

CS500e: All 4 LEDs turn green and trigger auto capture.

The following images display the Image Quality Indicators on the scanner.



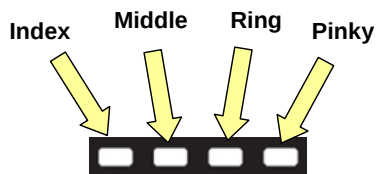


Image Quality Indicators –
During Right Slaps Capture

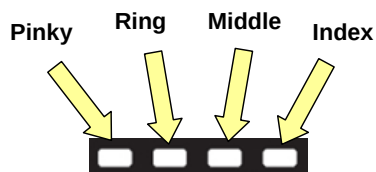


Image Quality Indicators –
During Left Slaps Capture

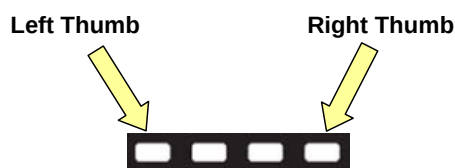


Image Quality Indicators – During
Plain Thumbprint Capture

Figure 3-11 Image Quality Indicators

3.3.1.1 Capturing Fingerprints

Before you begin capturing fingerprints, keep the following in mind:

- Be sure that the subject's hands and the scanner glass platen are clean and free of debris. Excessive perspiration has the same effect as too much ink in traditional fingerprinting. If necessary, clean the person's hands before each print capture. At the same time, if the person's skin is too dry or too cold, the print will be too light. If this is the case, you may use any oil-free lotion to moisturize the person's hands.

3.3.1.1.1 Capturing Slaps

To capture slaps:

1. Place the person's hand flat on the platen and press down firmly.

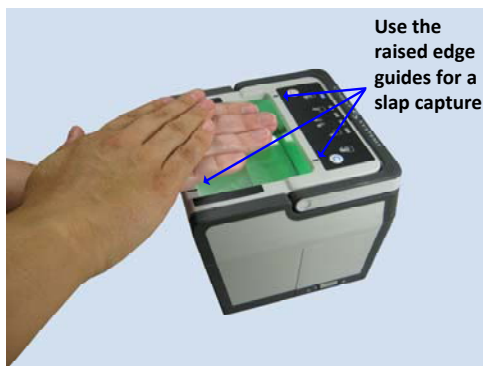


Figure 3-12 Capture Slap

2. The scanner will beep twice and the print image will be captured.
3. After capture is complete, lift the fingers off the glass platen.

3.3.1.1.2 Capturing Plain (Flat) Fingerprints

To capture plain fingerprints:

1. Place the person's finger flat on the glass platen and press firmly.

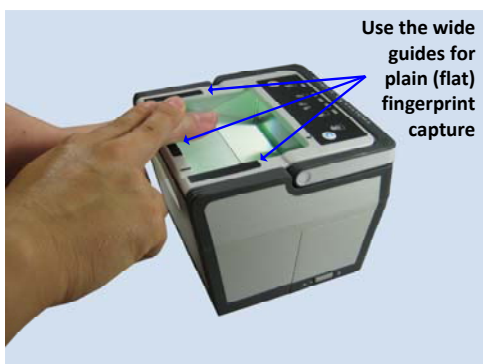


Figure 3-13 Capture Plain (Flat) Fingerprints

2. The scanner will beep twice and the print image will be captured.
3. After capture is complete, lift the finger off the glass platen.

3.3.2 Using the CIS 202 Capture Device

To capture iris images using the CIS 202 capture device:

1. Hold the scanner so that the ridges on the goggles are on top.
2. Adjust the width of the goggles to match the width of the person's eyes.
3. Have the person hold the goggles about 12" away from their face, and look into the mirrors inside the goggles.

4. Have the person gradually move the goggles close to their face, with their eyes open wide.



Figure 3-14 Proper Placement of Scanner Goggles

5. When the white LED is on, it indicates that the iris is detected and the system starts triggering capture.
6. Ask the person to hold the scanner for 1-3 seconds and continue to gradually move the device closer to their face.
7. The white LED will turn off automatically once a quality iris image has been captured. Alternatively, the person can remove the device, and the system will auto pick the best quality images.

NOTE: Make sure the eyes are open wide during image capture, and that the person does not blink. The eyelid must not obscure the iris.

4 Troubleshooting

4.1 Device Installation

Symptoms

- The blue LED on the CS500e scanner is off
- Cannot see the devices from Windows Device Manager

Resolution

- Make sure the ports on PC are USB 2.0 compliant
- Unplug/replug USB port to ensure proper connection
- Switch USB cable
- Switch to another USB port
- Switch to another PC

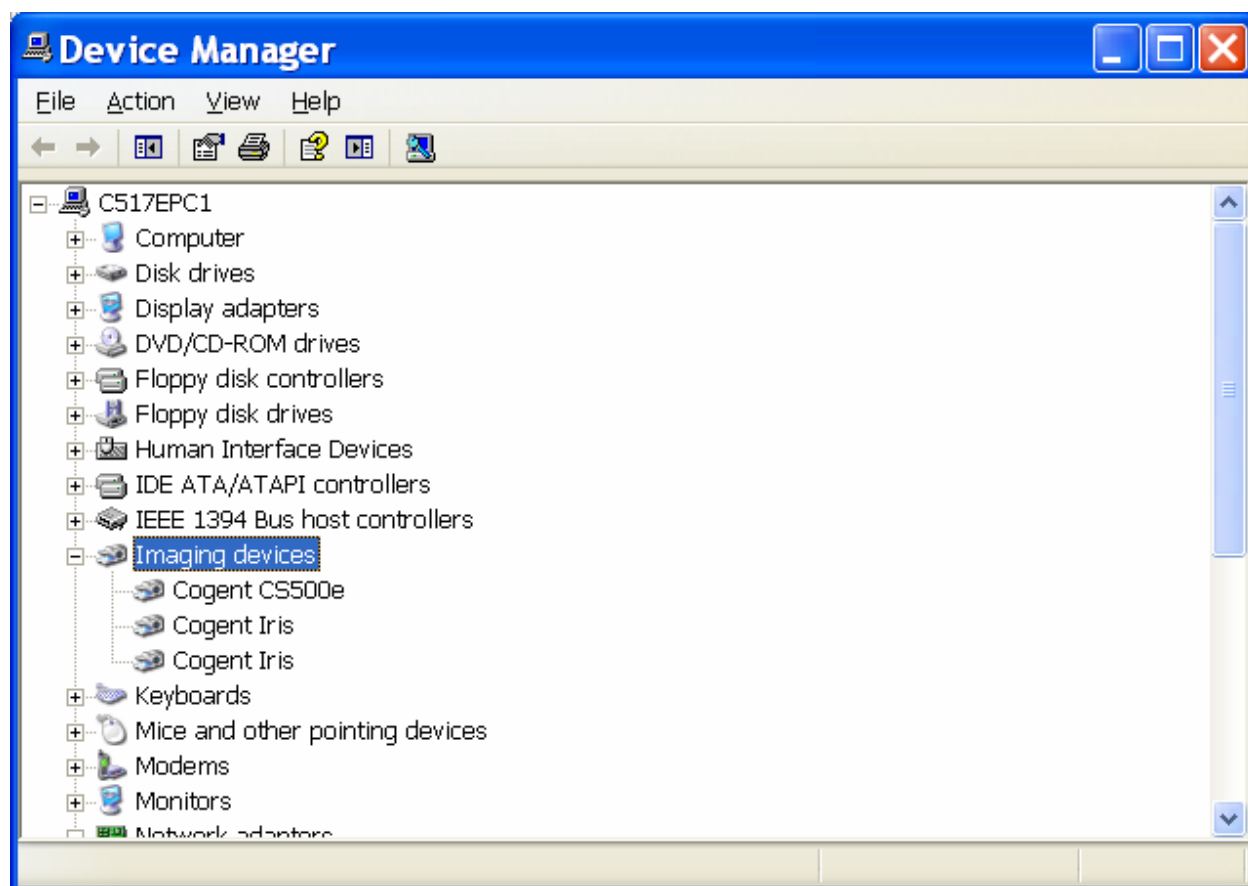
4.2 Driver Installation

Symptoms

- Device does not appear in Windows Device Manager
- An exclamation point appears next to the device's entry in Device Manager
- VDM controller shows empty in device status although you are sure the device is properly installed

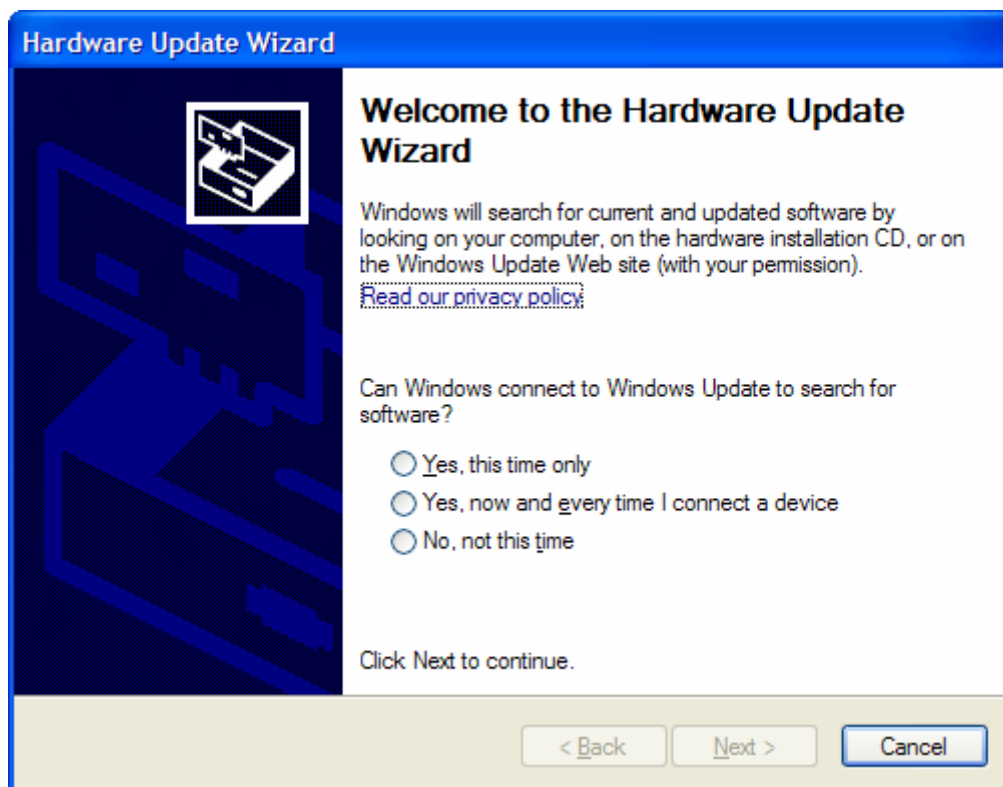
Resolution

- Check that the driver is installed properly
1. Right click **My Computer** and select **Property**. Under the **Hardware** tab, click **Device Manager**.
 2. Expand Imaging Devices and locate the device.



3. Right click the questionable device in **Device Manager** and choose **Uninstall** from the shortcut menu.
4. In the resulting dialog box, click **OK**.

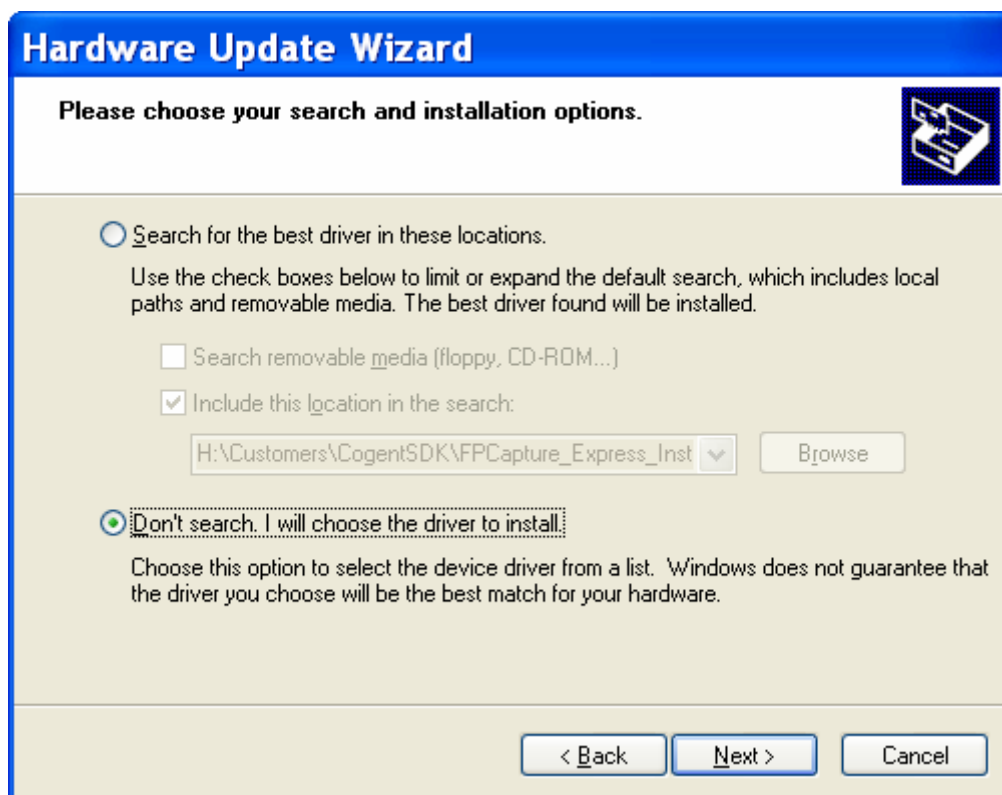
5. In the **Device Manager** window, choose **Scan for hardware** under the **Action** menu.
6. Select **No, not this time** and click **Next** if you see the following window:



7. Select **Install from a list or specific location (Advanced)** and click **Next** in the below window.



8. Select Don't search. I will choose the driver to install and click Next.



9. Click button Have Disk... to locate the driver folder. The driver folder is under installation folder.
10. Check the driver version, which should be 1.10.253.

4.3 “Cogent Biometric VDM” Cannot connect to “UID DM”

Symptoms

- In the VDM Controller window, the DM URI is empty
- On DM log, it doesn't show VDM connection

Resolution

- Check the DM setting is right
- Make sure DM is running and port is open. No firewall blocks
- Change the “DM Connection IP (or Host Name)” in VDM controller to the real IP, not 127.0.0.1 or localhost and “Update” the setting. Restart VDM.

4.4 “Cogent Biometrics VDM Controller” cannot connect to “Cogent Biometric VDM”

Symptoms

- VDM Controller cannot connect to VDM

Resolution

- Check the VDM setting is right
- Make sure VDM service is running and ports are not used by other programs
- Make sure there is no firewall

4.5 Test Harness cannot detect device

Symptoms

- Cannot see the device URI in VDM controller
- Test Harness cannot get device URI

Resolution

- Check the Windows Device Manager, make sure the device and driver are installed properly
- Check the log files to see if there's any device initialization error information
- No other USB devices that require high USB bandwidth are running. For example, a high resolution web cam is in use for chat.

4.6 Fingerprint is not auto capturing

Symptoms

- Hard to trigger fingerprint auto capture
- No auto capturing

Resolution

- Refer to Section 3.2.1 above to ensure the proper usage
- Apply lotion to hand to moisturize dry skin

4.7 Iris is not auto capturing

Symptoms

- Hard to trigger iris auto capture
- No auto capturing

Resolution

- Refer to Section 3.2.2 to ensure proper usage of CIS 202 Capture Device

4.8 Other trouble

For other troubles, please contact the Cogent Support Team.
Please report the detailed problem as well as the following information:

- VDM version
- Your PC configuration, such as: model, memory, CPU
- Any other USB devices are attached or in use when problem occurs
- Log files from VDM installation folder.

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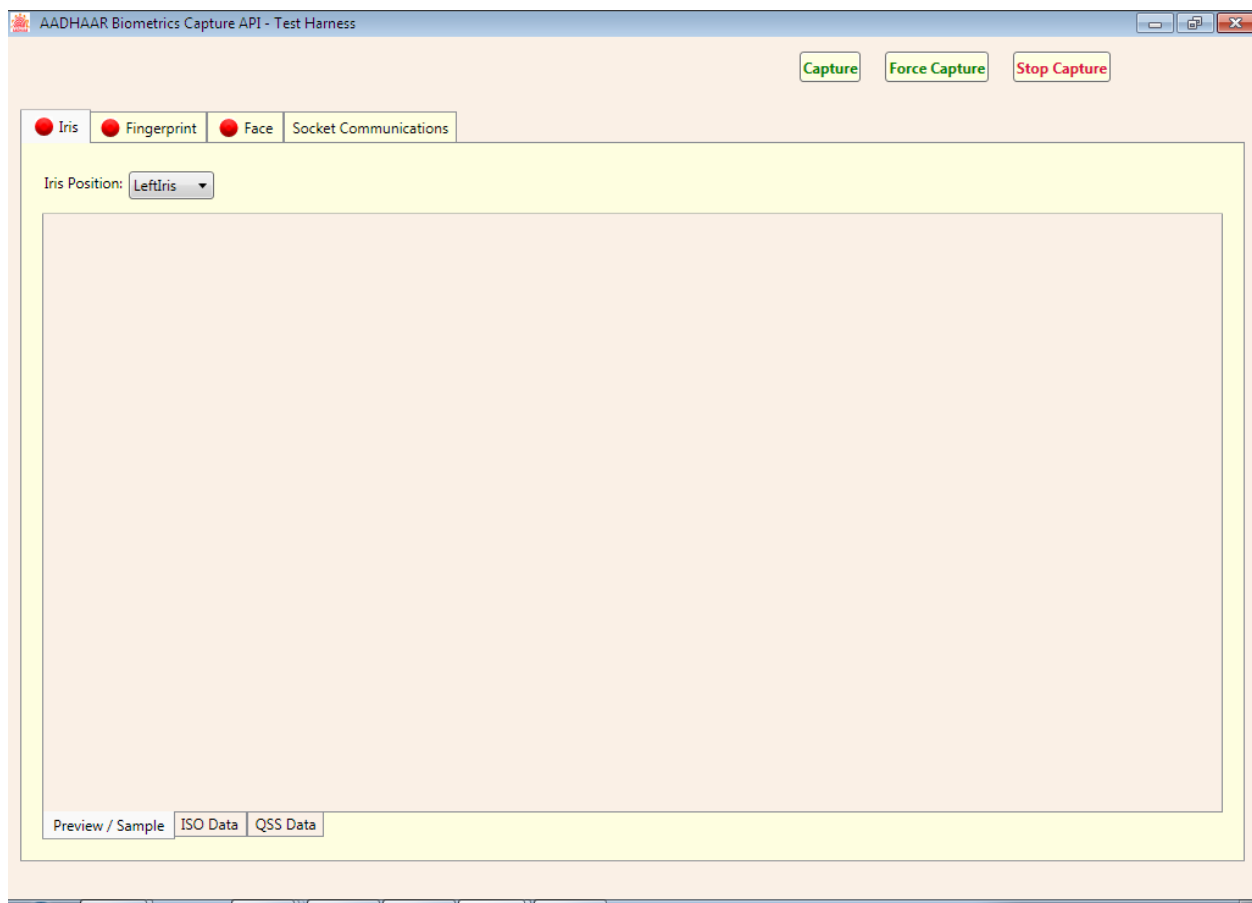
A Work with UID Test Harness

This Appendix explains how to use Test Harness 1.08 released by AADHAAR.

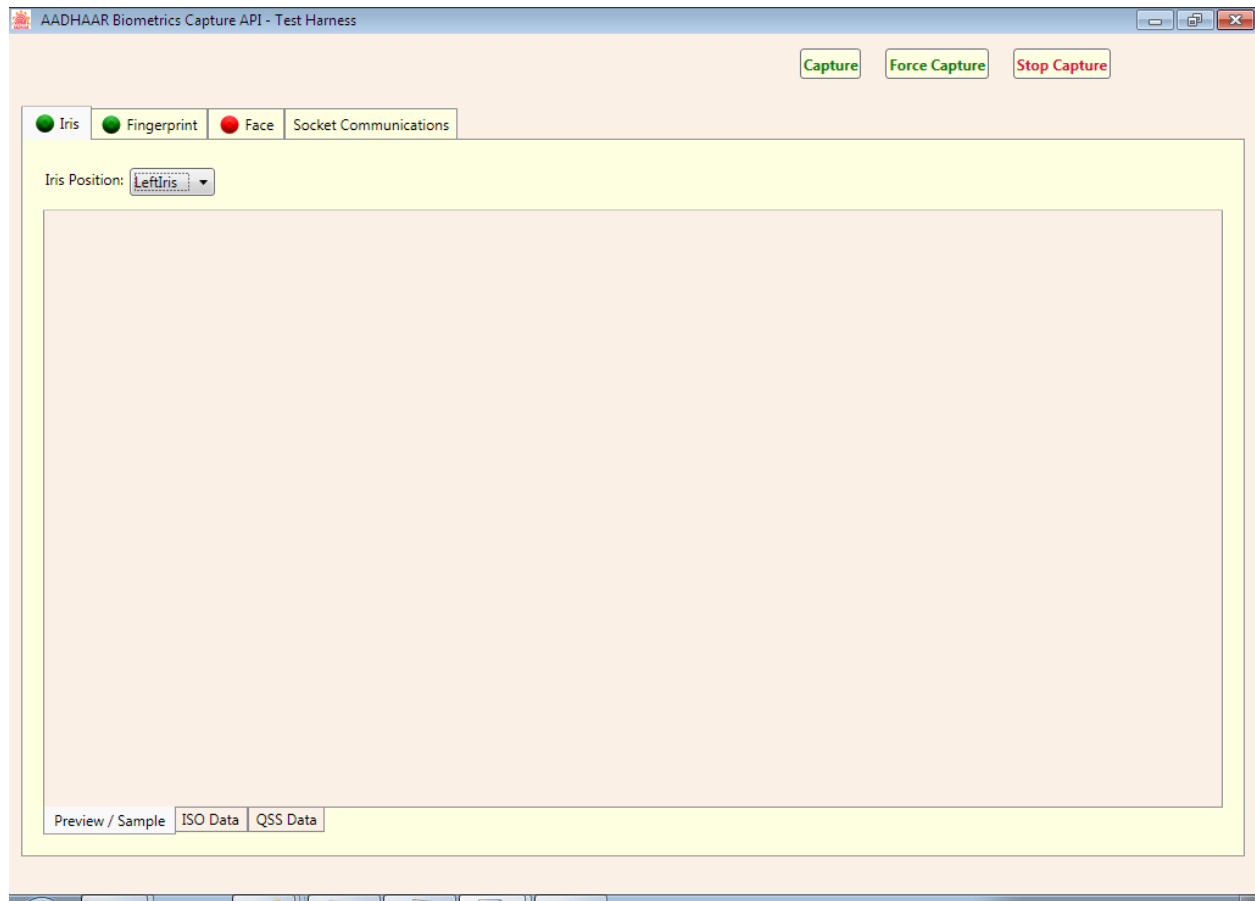
Precondition:

- Have AADHAAR DM installed
- Have AADHAAR Test Harness 1.08 version installed

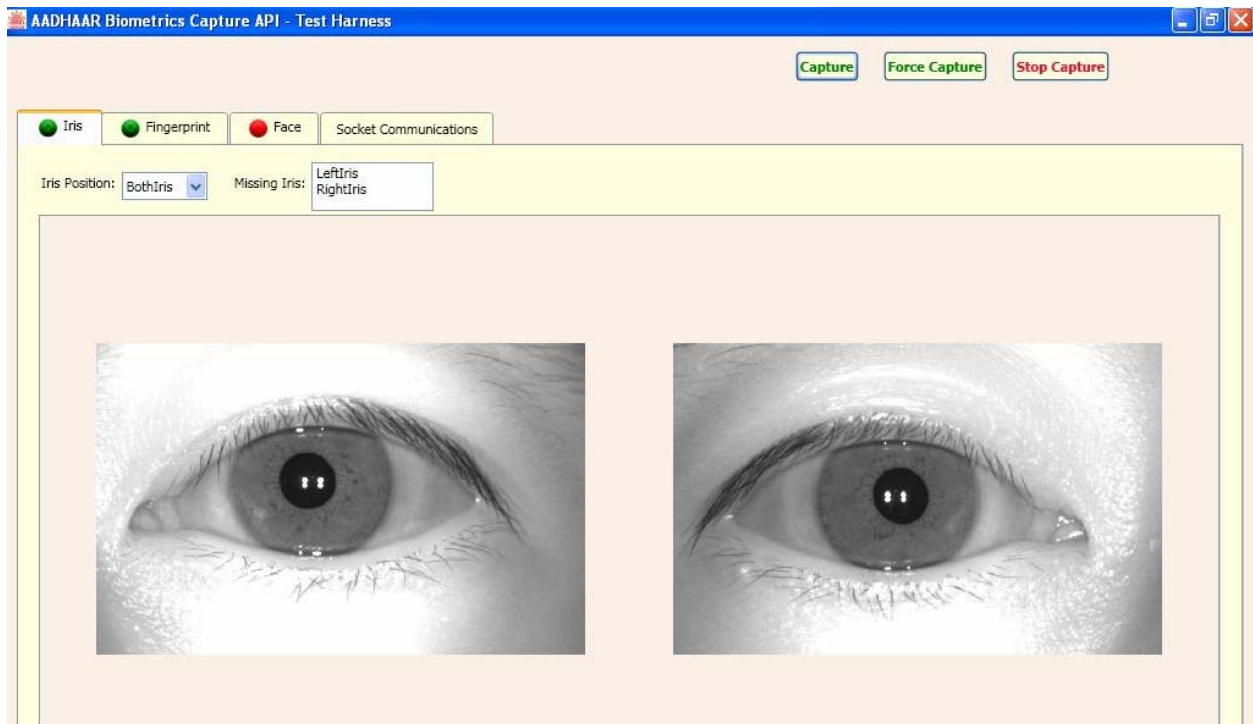
1. Click **Start** -> **All Programs** -> **UID Authority of India** -> **AADHAAR Biometric Capture – Test Harness**. The **Test Harness** window will be displayed.



2. Once the devices are ready, the red radio buttons next to **Iris** and **Fingerprint** will become green, which means the devices are ready to use.



3. On **Iris** tab, choose **Iris Position**. Cogent VDM supports dual irises as well as single iris. Click **Capture**. The windows will show the live preview and start auto capture. Follow the instructions in the previous section to trigger auto capture, or click **Force Capture** to manually capture the iris.



4. On **Fingerprint** tab, choose **Finger Position**, then click **Capture**. The window will show the preview images and start auto capturing. Any missing fingers can be marked in **Missing Fingers**.



5. Click **ISO Data** on the bottom. The result image properties will be displayed.

