Overview:

Installation of the Ricoh Smart Device Connector requires the following prerequisites.

1. All engine firmware and java must be updated to recommend levels.
   
   Note: Firmware versions for smart operation panel equipped engines may be different than standard engine models. Make sure you install the correct versions

   Do not use the ALL firmware package on the TSRC as it may not contain the newest firmware versions.

2. The Smart Operation Panel operating system (Android OS) and Applications must be updated to the recommended levels.

3. Engine settings must be configured for use with Smart Device Connector.

After the items above have been completed the Smart Device Connector solution consists of installing a Smart Device connector (QR code) application on the Smart Operation Panel and installation of the Ricoh Smart Device Connector mobile application on your Apple or Android mobile device.

Ricoh Smart Device Connector Mobile apps are available for download on the Apple and Google Play Stores.

Supported Ricoh Engines

The RICOH Smart Device Connector currently supports the following Smart Operation Panel equipped models:

- MET-C1ab/cde/yz (MP 3003 / 3503 / 4503 / 5503 / 6003 / 2003 / 2503)
- Z-C2 (MP C401)
- OR-C2 (MP 2553 / 3053 / 3353)
- Cor-C1 (MP 2554 / 3554 / 3054)

Cor-C1 engines should have the Smart Device Connector (Smart Operation Panel app) pre installed. It may not be necessary to perform all updates for these engines.

For more information on the Smart Device connector solution including user guides and features please visit this web site.

http://www.ricoh.com/software/connector/
Helpful References:

**Smart Operation Panel installation - Video Nugget**
https://www.youtube.com/watch?feature=player_embedded&v=6RDJcr5v8MM
Knowledgebase Answer ID 184996

**Smart Operation Panel OS Update - Video Nugget** *(Will help with OS update)*
https://www.youtube.com/watch?feature=player_embedded&v=pbC5lV8h77c
Knowledgebase Answer ID 183826

**Smart Panel Application Update - Video Nugget** *(Will help with install of Smart Device Connector app on SOP)*
https://www.youtube.com/watch?feature=player_embedded&v=6qu3rV6BjK8
Knowledgebase Answer ID 183825

**Ricoh click to Learn**
http://www.ricohclick2learn.com/software_training

Before you Begin:

- Print out an engine self diagnostic report (SP 5990 -5) so you have a listing of your current firmware levels.

- Verify the versions of all applications installed on the Smart Operation Panel.

  You can verify current application versions installed on the Smart Operation Panel by selecting “Screen Features” ► “Screen Device Settings Information” ► “Software Version List”.

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Ricoh Engineering and Corporate Support
Engine Firmware and Java Updates - Step 1:

The chart below shows the minimum required engine firmware and Java levels required for Smart Device connector. It is always recommended to be at the most current versions so check the TSRC site as there may be newer versions available.

Compare your engine self diagnostic report (SP 5990 -5) against the charts below. If your engine does not meet the minimum requirements then it is recommended to update all engine firmware to the latest levels.

<table>
<thead>
<tr>
<th>GW firmware</th>
<th>MP C3003 /3503</th>
<th>MP C4503 /5503/6003</th>
<th>MP C2003/2503</th>
<th>MP 2553/3053/3353</th>
<th>MP C401</th>
</tr>
</thead>
<tbody>
<tr>
<td>SystemCopy</td>
<td>3.04</td>
<td>2.04</td>
<td>1.11</td>
<td>1.05</td>
<td></td>
</tr>
<tr>
<td>Web Support</td>
<td>2.05</td>
<td>1.04</td>
<td>2.02</td>
<td>2.01</td>
<td></td>
</tr>
<tr>
<td>NetworkDocBox</td>
<td>2.04</td>
<td>2.05</td>
<td>1.03</td>
<td>1.02</td>
<td></td>
</tr>
<tr>
<td>Network Support</td>
<td>12.88</td>
<td>12.89</td>
<td>13.63</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scanner</td>
<td>02.27</td>
<td>02.16</td>
<td>02.02</td>
<td>02.03</td>
<td></td>
</tr>
<tr>
<td>Printer</td>
<td>2.11</td>
<td>2.11</td>
<td>2.03</td>
<td>1.11</td>
<td></td>
</tr>
<tr>
<td>Fax</td>
<td>11.22.04</td>
<td>09.00.00</td>
<td>06.00.00</td>
<td>08.00.00</td>
<td></td>
</tr>
<tr>
<td>Java VM</td>
<td>11.22.04</td>
<td></td>
<td>11.23.00</td>
<td>12.04.09</td>
<td></td>
</tr>
</tbody>
</table>

Note for (MP 2554 / 3554 / 3054 / 4054 / 5054 / 6054) engines. (Corona C1 engines)

These engines may come with the Smart Operation Panel already installed from the factory. The Smart Device Connector should be preinstalled so it may not be necessary to update these models but some configuration settings may still need to be performed.

However, if you had to install the Smart Operation Panel then you may need to update the engine firmware versions to meet the minimum requirements.

<table>
<thead>
<tr>
<th>Corona C1</th>
<th>Software part number</th>
<th>Ver.</th>
</tr>
</thead>
<tbody>
<tr>
<td>System/Copy</td>
<td>D2015550H</td>
<td>1.07</td>
</tr>
<tr>
<td>FAX</td>
<td>D2015557E</td>
<td>04.00.00</td>
</tr>
<tr>
<td>Scanner</td>
<td>D2015571B</td>
<td>02.01.01</td>
</tr>
<tr>
<td>NCS</td>
<td>D2015564D</td>
<td>14.28</td>
</tr>
<tr>
<td>NFA</td>
<td>D2025565F</td>
<td>1.03</td>
</tr>
<tr>
<td>Printer</td>
<td>DOM: D2015572E</td>
<td>DOM: 1.03</td>
</tr>
<tr>
<td></td>
<td>EXP: D2015573E</td>
<td>EXP: 1.03</td>
</tr>
<tr>
<td>JavaVM</td>
<td>D2025567D</td>
<td>12.06.01</td>
</tr>
</tbody>
</table>
MFP firmware update

1. Turn off the device.
2. Insert the SD card that was previously prepared for updating firmware in the service slot of the MFP.
3. Turn on the device.
4. Wait until the update screen starts. When it appears, “Please Wait” will be displayed.
5. Check whether a program installation screen is displayed. That screen should appear when software modules are loaded onto the SD card.
6. Select the module by using the module selection button or 10-key pad. The selected module will be highlighted, and “Verify” and “Update” will be displayed.
7. Press the “Update” or “#” key, and perform the update.
8. During the firmware update, a “Firmware update/verification progress screen” will appear.
9. When the firmware update is finished, turn off the device and remove the SD card.
10. Turn on the device and check whether the machine is operating normally.

Update Java VM

1. If the boot priority application is set to the ESA application, switch to the copy application.
2. Insert the SD card that was previously prepared for updating the Java VM into the service slot, and then turn on the device.
3. After booting Java VM, the application will start being updated. “Updating SDK/J” will appear in the banner message of the panel display.
4. When the update is complete, “Update SDK/J done SUCCESS” will appear in the banner message of the touch screen display. Turn off the device and remove the SD card from the slot.

Please refer to the engine service manuals for further details on firmware and java update instructions if needed.
Smart Operation Panel Update - Step 2:

The Smart Operation Panel Update procedure described below should be strictly adhered to. If the procedure is conducted in the wrong order by mistake, the machine may not function properly. Therefore, please carefully follow the installation procedure in particular; **be sure to install the SDK Service before installing Web Browser NX.**

On the Smart Operation panel select “Screen Features” ▶ “Screen Device Settings Information” ▶ “Software Version List”.

Compare the software application versions listed against the chart below. These are the minimum requirements. Newer versions may be posted on the TSRC site.

<table>
<thead>
<tr>
<th>Firmware Type</th>
<th>Engine Models</th>
<th>Engine Models</th>
<th>Engine Models</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MP C3003/3503/4503/5503/6003/2003/2503</td>
<td>MP 2553/3053/3353/3054-6054</td>
<td>MP 2554/3554/3054-6054</td>
</tr>
<tr>
<td>SOP System OS</td>
<td>1.32</td>
<td>1.33</td>
<td>1.34</td>
</tr>
<tr>
<td>(Android OS)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Announce</td>
<td>1.09</td>
<td></td>
<td>1.10</td>
</tr>
<tr>
<td>Banner</td>
<td>1.11</td>
<td></td>
<td>1.12</td>
</tr>
<tr>
<td>StateInfo</td>
<td>1.20</td>
<td></td>
<td>1.20</td>
</tr>
<tr>
<td>Quick Copy</td>
<td>1.16</td>
<td></td>
<td>1.16</td>
</tr>
<tr>
<td>Quick Scanner</td>
<td>1.13</td>
<td></td>
<td>1.13</td>
</tr>
<tr>
<td>LegacyUIData2nd*</td>
<td>1.00</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>LegacyUI</td>
<td>1.25</td>
<td></td>
<td>1.26</td>
</tr>
<tr>
<td>WebBrowser NX</td>
<td>1.201.0</td>
<td></td>
<td>1.301.0</td>
</tr>
<tr>
<td>SDKService</td>
<td>1.03.09</td>
<td></td>
<td>1.04.00</td>
</tr>
<tr>
<td>QRCodeforSDC</td>
<td>1.0.0</td>
<td>(This is the smart device connector app)</td>
<td>1.0.0</td>
</tr>
</tbody>
</table>

**LegacyUIData2nd** must not be installed on Met-C1yz. (MP C2003 / 2503)
Download the latest SOP firmware for your engine from the TSRC site

Login to the TSRC site and select “Whats New”

The latest Smart Operation Panel firmware is located under the “Apps” tab

Important Note:
Please update the SOP panel in the following order

1) Update the Smart Operation Panel firmware (Android OS version)
2) Update the applications on Smart Operation Panel
3) Install “SDKService”
4) Install “Web Browser NX”
5) Install the “QRcode” (Smart Device Connector application)

If Web Browser NX is accidentally installed first, reinstall SDKService and Web Browser NX in the correct order.
Android System Update

The Android system will have to be updated by entering the recovery mode. The android system comes in the form of a zip file. Below are the steps to update the system on the device:

1. You’ll have to use the update_sig.zip file
2. Place the update_sig.zip file in the root folder of an SD Card
3. The device will have to be shutdown.
4. Power on the device while holding down the Menu & back keys at the same time -> power on machine before the screen changes release keys (menu & back) and hold down the check status and stop keys
5. Insert SD card where the update_sig.zip is saved onto the SD Card slot of the Smart Operation Panel.
6. Select 'apply update from SD card: (Move: Menu and Back key, Select is the Home Key)

To navigate the menu use the following keys:
(Move: Menu and Back key, Select is the Home Key)
7. Select the update zip file, then install by pressing the home key.

When the message “Continue Update” appears, push the Home key to start updating the version of the Smart Operation Panel firmware.

8) When the message “Install from sdcard complete” appears, select “reboot system now” and push the Home key to restart the Smart Operation Panel.
Update Smart Operation Panel Applications

1. Copy the SOP applications to an SD card
2. Log into SOP service mode  (reset > 8,0,6,1,8,2 # # > hold clear for more than 3 seconds and then release)
3. Insert the SD card into the SD card slot on side of SOP panel
4. Select "Applications", press "Install", and then press "Install from SD card".
5. Select all applications
   
   Note:  Do not Install SDKService, WebBrowser NX or QR code (uncheck these if listed)

   Press install

6) When completed confirm the version is correct and then press and hold down the "Panel reboot" button

Install SDKService

1) Log into SOP service mode  (reset > 8,0,6,1,8,2 # # > hold clear for more than 3 seconds)
2) Insert the SD card into the SD card slot on side of SOP panel
3) Select "Applications", press "Install", and then press "Install from SD card".
4) Select only "SDKService" and press "Install".
   
   **Web Browser NX also appears on the screen, however, select only SDKService at this time.
5) When completed confirm the version is correct and then press and hold down the "Panel reboot" button.

Install Web Browser NX

1) Log into SOP service mode  (reset > 8,0,6,1,8,2 # # > hold clear for more than 3 seconds)
2) Insert the SD card into the SD card slot.
3) Select "Applications", press "Install", and then press "Install from SD card".
4) Select only "Web Browser NX" and press "Install".
5) When completed confirm the version is correct and then press and hold down the "Panel reboot" button.

Install Smart Device Connection Application

Install QR code application  (This is the Smart Device Connector App)

1) Log into SOP service mode  (reset > 8,0,6,1,8,2 # # > hold clear for more than 3 seconds)
2) Insert the SD card into the SD card slot.
3) Select "Applications", press "Install", and then push "Install from SD card".
4) Select only "QRCode" and press "Install".
5) When completed confirm the version is correct and then press and hold down the "Panel reboot" button.
6. Verify Smart Device connector was installed and operating correctly by checking to see if the QR code can be displayed.

Press the Smart Device connector icon on the panel to display the QR code.

Preparing the MFP for use with Ricoh Smart Device Connector - Step 3

Follow the steps below to configure the machine

Creating and Installing a Device Certificate
The device certificate must be installed on the MFP even if an HTTPS connection is not necessary, because the HTTPS connection is required at least once when executing the SmartSDK WebAPI for the first time. Applications that communicate with the SmartSDK need to be authenticated by Ricoh. A simple self signed certificate is all that is needed.

1. From the Home screen select User Tools.
2. Press [System settings]
3. Press [Administrator Tools]
4. Press [Next] three times
5. Press [Program / Delete Device Certificate]
6. Check that [Program] is selected
7. Press [Certificate 1]
8. Leave defaults, no changes are needed.
9. Press [OK]
10. Log out.
Activate “Wi-Fi Direct” and “Port Forwarding”
This is required only when the Smart Device Connector connects to the MFP via a guest network
- Screen Features -> Wireless & networks -> Wi-Fi Direct Settings -> Wi-Fi Direct
- Screen Features -> Wireless & networks -> Port Forwarding to Machine
  -> Port Forwarding Settings -> Port Forwarding

Note:
If DHCP Server IP Address and DHCP IP Address Range fields are not populated, Wi-Fi Direct will fail

Setting the SSL / TLS Encryption Mode
Note:
If HTTPS setting is disabled, “Permit SSL/TLS Communication” in the MFP settings must be configured to “Ciphertext/Cleartext”.

1. From the Home screen select User Tools
2. Press [System Settings].
3. Press [Interface Settings].
4. Press [Next]
5. Press [Permit SSL/TLS Communication]
6. Under HTTPS connection, select [Ciphertext Priority]
7. Press OK
8. Log out.
Writing the Network Settings to the NFC Tag.

Important Note:
Writing the NFC Tag (programming the tag) must be done while logged in as machine administrator. Writing of the NFC tag is only possible from an Android smart device. Tag cannot be written from an iOS device. Also confirm that the Android mobile device is connected to the same network as the MFP.

1. Log in as admin on the Smart Operation Panel
2. From the Home screen locate and select the Ricoh Smart Device Connector Application
3. Press [Settings] (if you cannot select settings you are not logged in as machine admin)
4. If you are using HTTPS connections (corporate network) check HTTPS
   If you are using WiFi direct then select [Allow Usage by Guest]
   It is recommended to select both unless customer requirements prohibit either one.
   Then Press OK
5. On your Android mobile device launch the Smart Device connector App
6. Tap the 3 dots in the upper right hand corner of the screen

7. Tap [Write data to the NFC tag]
8. Scan the QR code displayed on the Smart Operation Panel using the camera of your Android device.

Data can also be manually entered if needed by selecting manual settings when prompted to scan the QR code.
9. Tap the [Write] button and then touch the Android device to the NFC tag on the machine.

Data is successfully written to the tag when the “Data Write Completion” screen is displayed.

10. Log out as admin

Users may now simply tap the NFC tag when using the Smart Device Connector Application from their Android NFC capable device.

Apple IOS devices are not NFC capable so it is necessary to display the QR code on the Smart Operation Panel for scanning from the Apple mobile device. The QR code can be displayed by using a widget on the Cheetah panel without launching the QR code application to make it more convenient.
Enable Machine Management Settings
(Optional but recommended)

Enable Machine Management settings

- Smart Device Connector can transmit information about the connection—for example, the Smart Operation panel SSID and MFP IP address—to the NFC tag.
- The initial settings must be configured so that Smart Device Connector can transmit data to the NFC tag. However, anyone can configure the initial settings by default. Because of this, from a security viewpoint, enabling Machine Administrator Authentication is recommended.
- By enabling Machine Administrator Authentication, only the machine administrator can read the QR code on the Smart Operation panel and relay the connection information to the NFC tag.

Authentication Settings

If User code authentication is configured on the engine you must enter the authentication settings for the user in the Smart Device application on the mobile device. User code authentication is supported for Print function.

- To add authentication information for copy, scan, and fax functions:
  1. Tap the menu button.
  2. Press “Authentication”.
  3. Mark the “User Authentication” checkbox.
  4. Input the username.
  5. Input the password.
Installation complete
Please refer to the Smart Device Connector User Guides for using the mobile applications.
User guides can be downloaded from the Smart Device Connector web site.
http://www.ricoh.com/software/connector/

Troubleshooting

- WiFi direct shows disabled and cannot be enabled.
  - If WiFi direct shows disabled you may see the options grayed out for enabling this service.
  - Log into SOP service mode (reset > 8,0,6,1,8,2 # # > hold clear for more than 3 seconds)
  - You will now be able to select the Wifi Direct feature to enable / disable it.

- If you still cannot enable WiFi Direct make sure a valid DHCP range and DHCP server address has been defined. WiFi will not enable if this is not configured!

The settings must appear as shown below. The defaults are normally
- DHCP Server IP Address 192.168.20.1
- DHCP IP Address Rand 192.168.20,2,192.168.20.10
  (Separate the IP addresses with a comma)
Printing errors or issues:

- Use the Smart Device Print Scan application to verify network connectivity and printing functions between the mobile device and the machine.

  Note: This application must also be installed on the mobile device to use print functions from Smart Device Connector.
- If the engine is configured for any authentication try turning it off

Scanning or Copy function errors or issues:

- “Error has occurred, check the device” when trying to copy or scan. Check the following
  - Device certificate is installed. (see page 10)
  - Wi-Fi Direct and HTTPS are checked under Smart Device connector settings on engine.
  - Engine firmware levels are at supported versions.
  - Smart Op Panel apps are at supported versions.

- Error “Unable to connect to the machine” when copy or scan function is used
  Try scanning using the Ricoh Smart Device Scan Print application. If that works then make the following checks
  - Remove device certificate and then create a new one (see page 10)
  - Wi-Fi Direct and HTTPS are checked under Smart Device connector settings on engine.
  - Engine firmware levels are at supported versions.
  - Smart Op Panel apps are at supported versions.
  - If the engine is configured for any authentication try turning it off

If you cannot scan / copy with the Ricoh Smart Device Print Scan application then check network connectivity and engine configuration. Smart Device Print Scan operates independently of Smart Device connector. If this application doesn’t work then there is a base engine issue (firmware or configuration) or network connection issue.

If all other troubleshooting has been done and configuration verified you might try removing the application from your mobile device and re installing it.

Support Contacts

Ricoh Solutions Support Help Desk 888-424-1573
Error Log Collection
For functional errors with the mobile device applications it may be necessary to collect error logs for troubleshooting and escalation.
The Smart Device Scan & Print application log is also necessary if a printing error occurs.

Error Logs for Android Devices
To access the debug log file, the following folder options in Windows need to be changed.
- Select “Show hidden files, folders, and drives”.
- UnCheck “Hide protected operating system files [Recommended]”.

1. Connect the Android device to your computer via a USB cable. You must have the appropriate USB driver for your mobile device installed on your Windows PC.

   Macintosh computers do not require a driver for connecting Android devices. Android File transfer for Mac is suggested as it is very easy to use https://www.android.com/filetransfer/

2. Once the Android has connected navigate to the following location.
   
   **File path:** “/Ricoh/SmartDeviceConnector/log/” (hidden)

   If an application crash occurred then there will also be a “crash” folder in the same location
   
   **File path:** “/Ricoh/SmartDeviceConnector/crash/” (hidden)
3. Copy the log file with the most recent time and date to your computer. You can also just copy the entire log folder. Also copy the crash log if applicable.

4. Zip up the log file or entire log folder and contact the Ricoh Solutions Help Desk at 888-424-1573 to open a new ticket or submit the logs for an existing case.

Log creation rules.

- Filename creation rule: log-fromyyyyymmddhhMMss.log
- The first time that the application is opened.
- When the application is opened 24 hours after it was previously opened.
- Maximum number of files: 14
- If more than 14 files are created, the oldest file will be deleted when a new file is created.
- Maximum file size: 1 MB
- If a file size exceeds 1 MB, up to three backup files will be created automatically. A fourth file will not be created. If the backup file is too large after creating three backup files, then no new log file will be created until a condition of the new file creation timing, as described above, occurs.
Error Logs for Apple iOS Devices

1. Connect your Apple / iOS device to your Windows or Mac computer via a USB cable.
2. Launch iTunes
4. Select Apps and then scroll down to File Sharing.
5. Select the Smart Device Connector App.

You will see the Logs folder on the right side of the screen. Click, hold and drag the logs folder to the computer desktop to copy the logs to the computer.

Crash log for iOS
The Smart Device Connector application for iOS does not output the crash log. To obtain an iOS default crash log, connect the Apple mobile device to iTunes installed on a computer and then perform synchronization.

The crash log will be transferred to the following folder path:

Windows 8: "%HOMEDRIVE%\Users\%USERNAME%\AppData\Roaming\Apple Computer\Logs\CrashReporter\MobileDevice\device name\***.crash"

Mac OS X 10.x: "~/Library/Logs/CrashReporter/MobileDevice/device name/***.crash"

To access the crash log file, the following folder options in Windows need to be changed.
Check “Show hidden files, folders, and drives”.
Uncheck “Hide protected operating system files (Recommended)".