

PX SCR Controller

Software & Configuration Guide



Version 1.4

Document Revision Information

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1 Introduction

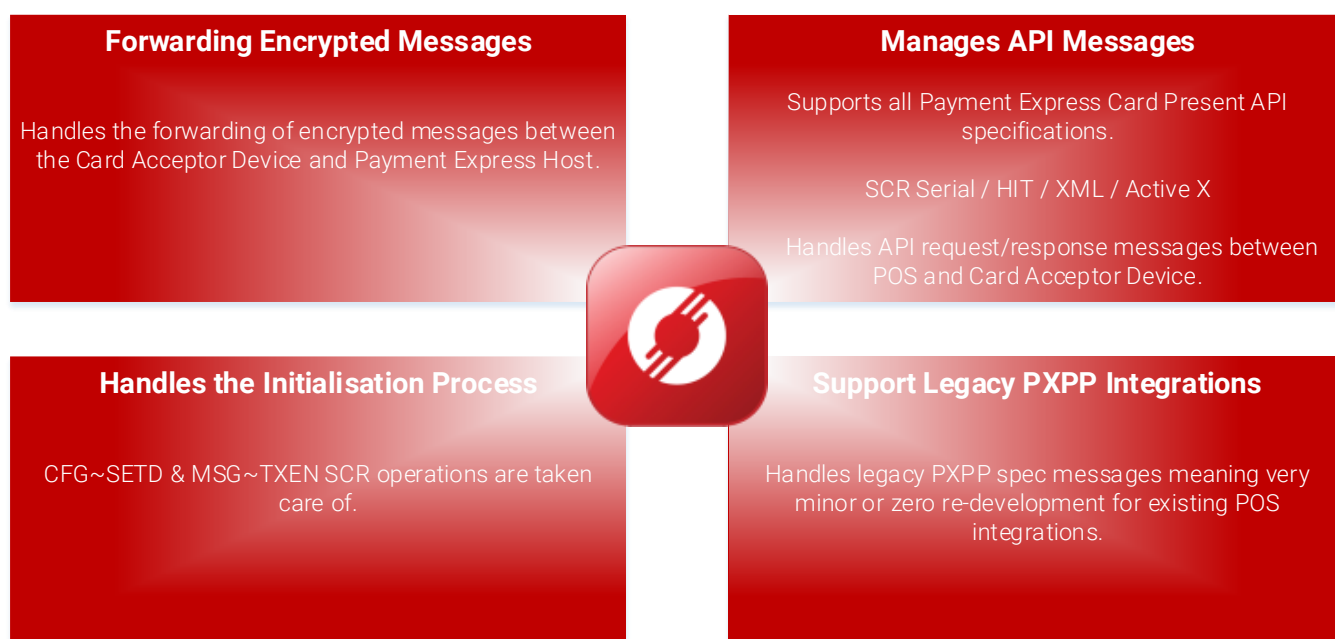
The **Payment Express SCR Controller** is an optional service built to simplify the integration process with the Payment Express SCR Unattended and SCR Tupelo Attended specifications.

The SCR Controller simplifies the process by taking care of the SCR initialisation process and forwarding of encrypted messages between the Card Acceptor Device and the Payment Express Host.

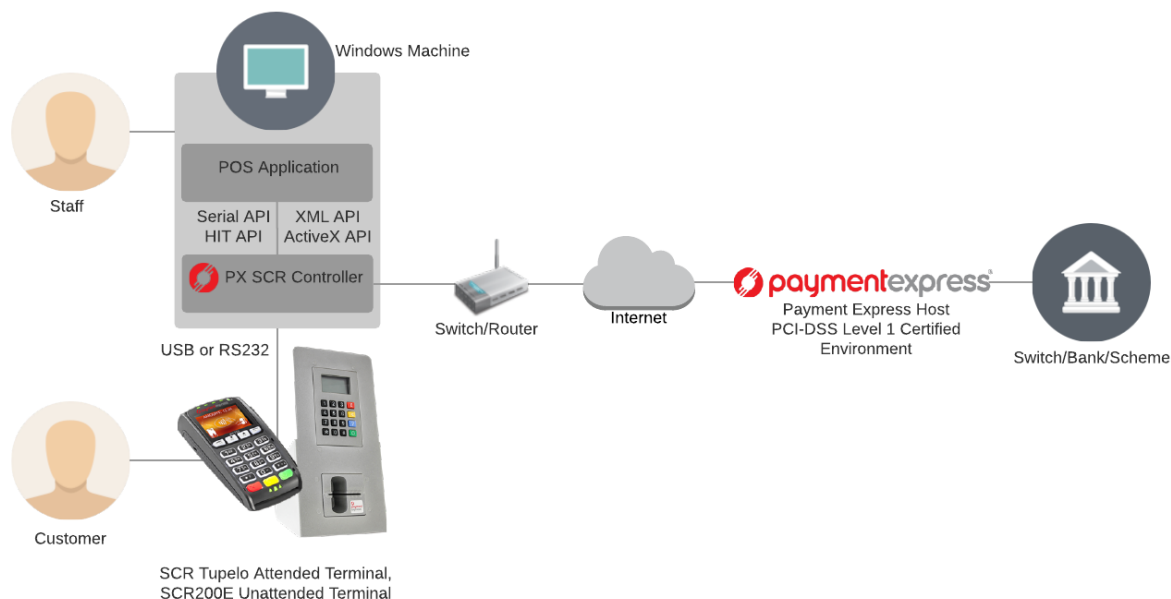
This means that the Point of Sale (POS) application only needs to communicate with the SCR Controller service and handle key operations such as financial messages (e.g. Purchase Transaction). CFG~SETD and MSG~TXEN messages do not need to be coded for.

In addition to the above, the SCR Controller also allows POS applications that are already integrated with the legacy Payment Express PXPP specification to work with the latest SCR Unattended and SCR Tupelo Attended specifications. Whilst in most cases this would mean zero POS development to migrate, the POS application will need to go through a round of validation testing with Payment Express QA to sign-off the migration. Please contact your account manager or email sales@paymentexpress.com to book your POS Validation Testing.

Key features of the SCR Controller service include:



Below is a quick overview of the SCR Controller service used in a typical card present merchant environment.



2 Supported Operating Systems

2.1 Microsoft Windows



Windows 10 (32-bit / 64-bit)

Windows 8 (32-bit / 64-bit)

Windows 7 (32-bit / 64-bit)

Please ensure latest service pack update have been installed. Contact devsupport@paymentexpress.com if you are using a version of Windows that is not listed above.

2.2 Linux



Linux build of SCR Controller is not currently general release. We recommend integrating direct to SCR Serial API without using the SCR Controller if your solution runs in a Linux environment. Please contact your technical contact lead at Payment Express or email devsupport@paymentexpress.com if you would like to explore the option of using the SCR Controller and Linux. Please ensure the following information is provided: Linux Distribution, Init Script and CPU processor.

2.3 OS X



The OS X build of SCR Controller is not currently general release. We recommend integrating direct to SCR Serial API without using the SCR Controller if your solution runs in a OS X environment. Please contact your technical contact lead at Payment Express or email devsupport@paymentexpress.com if you would like to explore the option of using the SCR Controller and OS X.

3 Endpoints & Firewall Considerations

3.1 General

The SCR Controller handles the forwarding of encrypted messages between the Card Acceptor Device, the Payment Express host and the Paymark New Zealand host (for Paymark New Zealand customers only).

Please ensure your network can accommodate the access to all the endpoints below.

| Production Environment | UAT Test Environment |
|--|--|
| Endpoint #1 HTTPS | Endpoint #1 HTTPS |
| Address: https://sec.paymentexpress.com/scr.aspx | Address: https://uat.paymentexpress.com/scr.aspx |
| Port: 443 | Port: 443 |
| Endpoint #2 TCP | Endpoint #2 TCP |
| Address: scr.paymentexpress.com | Address: uat.paymentexpress.com |
| Port: 65 | Port: 65 |

For more information on transmission & security best practices, please visit our website <http://paymentexpress.com/security-about>

3.2 HIT API Specific

The HIT solution supports TCP only. TCP route listed above in 3.1 is not applicable.

The information below is not SCR Controller specific however it is worth mentioning that POS applications using HIT API will need to send HIT API spec messages direct to the Payment Host using **HTTPS** on the addresses below. Please ensure that your network can accommodate this access when using HIT.

| Production Environment (HIT) | UAT Test Environment (HIT) |
|---|---|
| Address: https://sec.paymentexpress.com/pxmi3/pos.aspx | Address: https://uat.paymentexpress.com/pxmi3/pos.aspx |
| Port: 443 | Port: 443 |

3.3 Paymark NZ Specific

Paymark NZ solutions will have additional endpoint and firewall considerations. The following additional endpoints must be accessible for Paymark NZ solutions to operate.

| Production Environment (Paymark) | UAT Test Environment (541 Paymark) |
|--|------------------------------------|
| Endpoint #1 ETSLDIRECT TCP | Endpoint #1 ETSLDIRECT TCP |
| Address: 117.120.34.110 | Address: 117.120.36.122 |
| Port: 33876 | Port: 33876 |
| Endpoint #2 ETSLDIRECT TCP | |
| Address: 117.120.32.110 | |
| Port: 33876 | |
| Endpoint #3 ETSLRKI TCP | |
| Address: eft6.paymentexpress.com | |
| Port: 61 | |

4 SCR Controller Files/Folders & Installation

4.1 Files & Folders

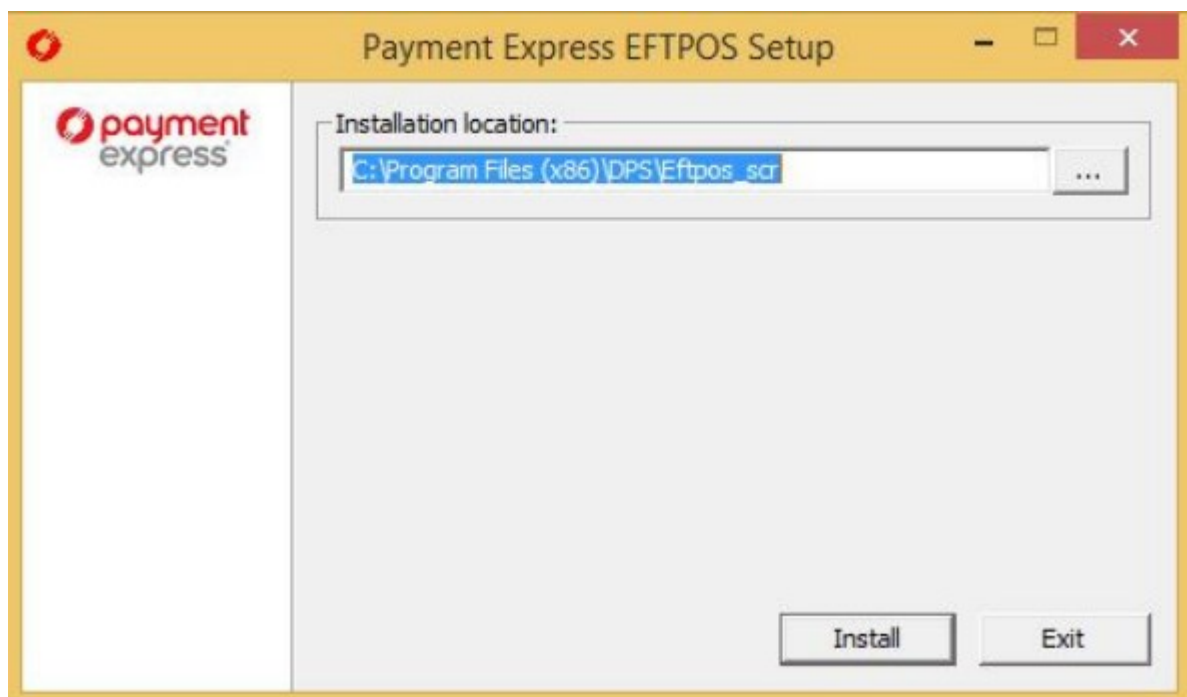
The following files/folders will be installed on the POS Machine.

The default installation directory is "C:\Program Files (x86)\DPS\Eftpos_scr".

| File Name | File Type | Description |
|---------------------|-----------|---|
| PxScrController | .exe | Payment Express SCR Controller service. |
| PXSCRCONTROLLER_CFG | .txt | The configuration file for the SCR Controller service. |
| LOG | folder | Folder for all SCR Controller log files. |
| PXSCRCONTROLLER_* | .log | SCR Controller log files. The filename is prefixed with PXSCRCONTROLLER and appended with Machine Name, Date Stamp and Time Stamp. |
| dpseftx | .ocx | ActiveX Control. Required for ActiveX integrations and dpseftxc application. |
| dpseftxc | .exe | Standalone client to perform non-integrated transactions and functions. <i>Applicable for Attended solutions only.</i> |
| DpsEftTray | .exe | Standalone Tray application. Allows access to the config and maintenance control panels. <i>Applicable for Attended solutions only.</i> |
| pxjview | .exe | Standalone Journal Viewer application. Allows access to past transaction history/receipt data. |
| uninst_scr | .exe | Uninstaller |

4.2 SCR Tupelo Attended Installation (Installer Package)

1. Download the SCR Controller Installer package from our website.
<https://www.paymentexpress.com/support-software>
2. Ensure your Card Acceptor Device is connected then run the Installer package. Click Install when prompted.

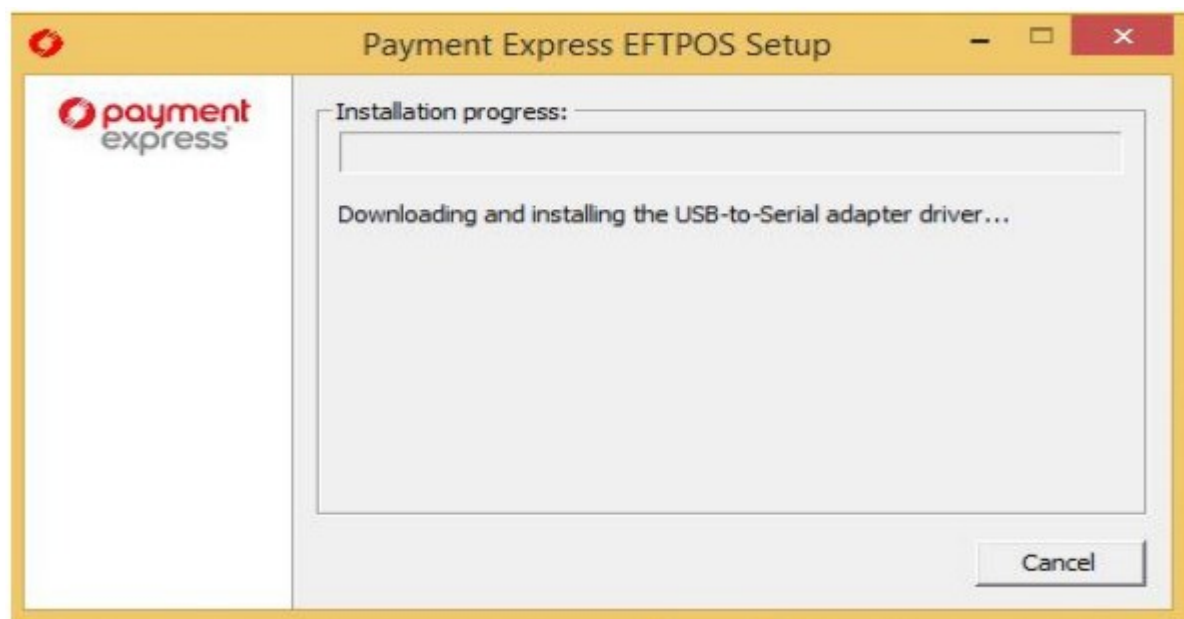


3. Please ensure you read the End User License Agreement (EULA) carefully. Once you have scrolled all the way to the bottom, the option to accept the Payment Express license terms will be presented.

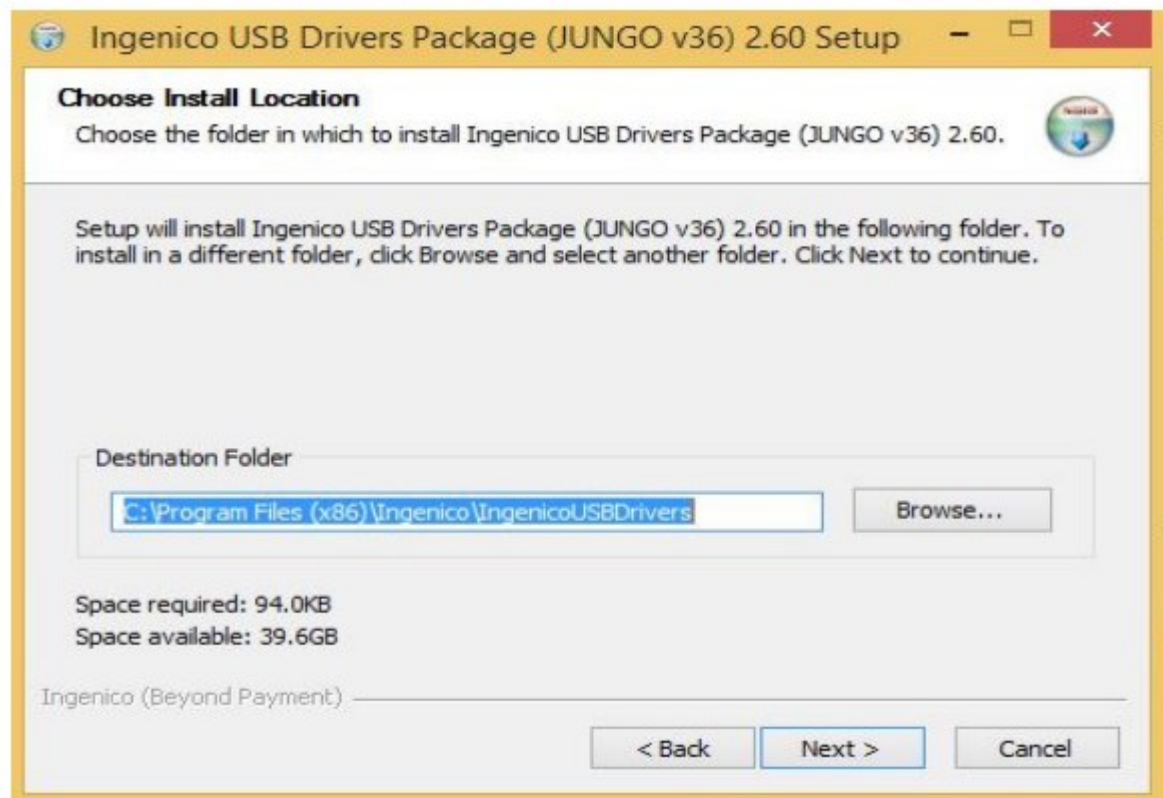


This agreement must be accepted. If you have any questions regarding this then please contact your account manager or email: sales@paymentexpress.com

4. The installer will now start downloading and installing the proprietary PIN pad driver.



5. When installed the driver wizard will appear. Click "Next" to continue when prompted. Select next throughout the wizard using default settings and finalise the installation of the driver.



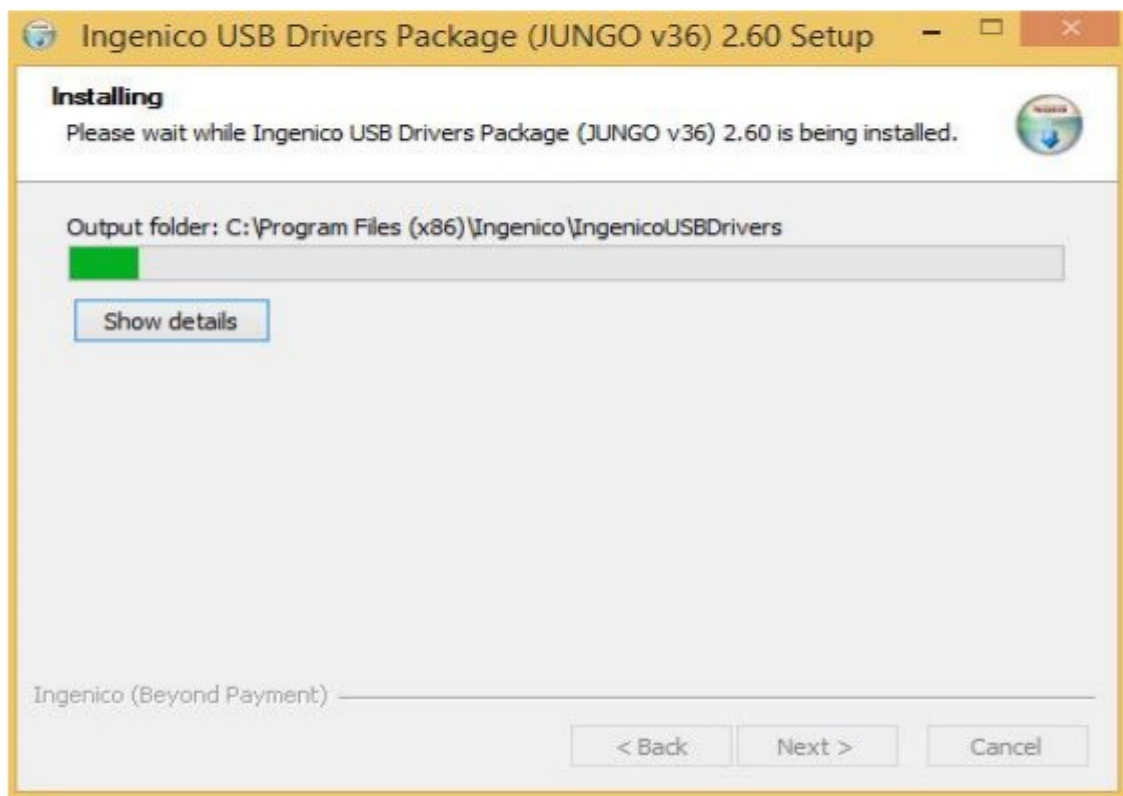
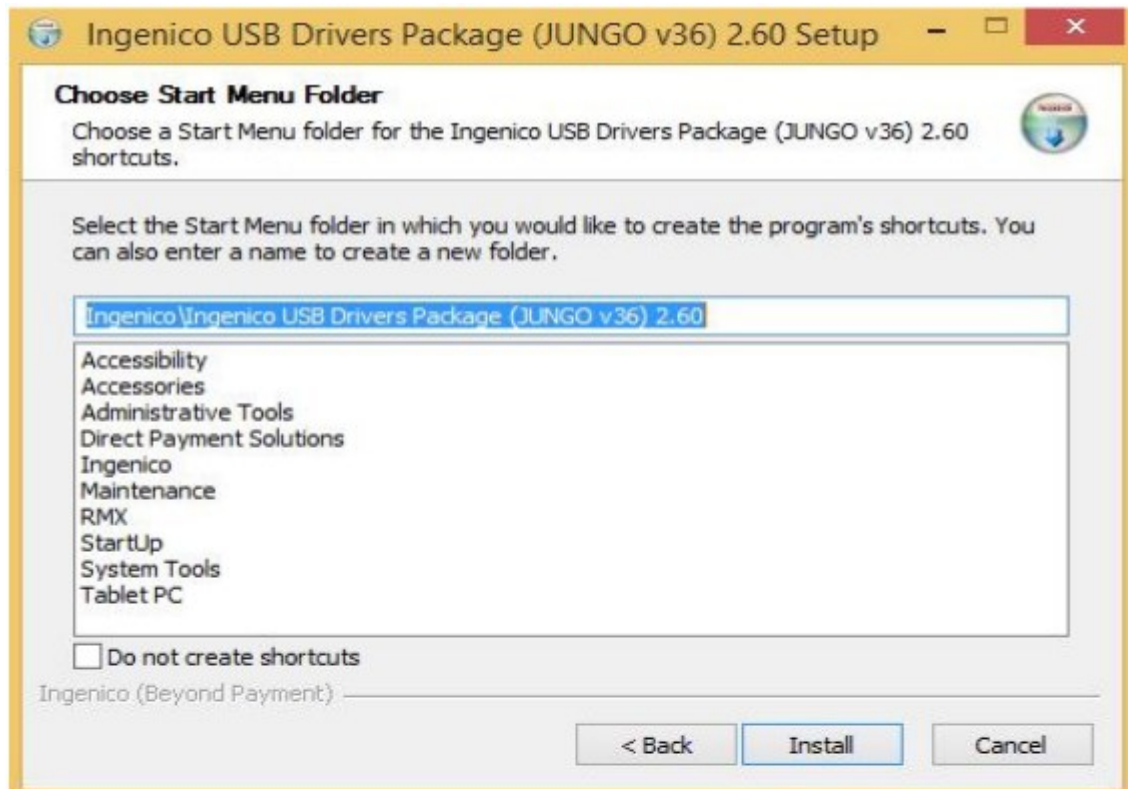
6. Click Next.

The screenshot shows the 'Usb Driver parameters' window. The title bar reads 'Ingenico USB Drivers Package (JUNGO v36) 2.60 Setup'. The window has a yellow border. Inside, the title 'Usb Driver parameters' is in bold. Below it, a subtitle says 'This page allows to set parameters used by USB Driver.' There is a small globe icon in the top right corner. The main area contains a checkbox labeled 'Force COM Port Feature enabled'. Below this, there are two sections: 'Select by Product ID' and 'Virtual COM Port (decimal range 1-256)'. The 'Select by Product ID' section has a label 'Product ID (PID)' and four dropdown menus. The 'Virtual COM Port' section has four text input boxes. Below these, there is a section 'Select by Connection Order (Enter decimal Value of COM port)' with five text input boxes. At the bottom, there is a text field with 'Ingenico (Beyond Payment)' and three buttons: '< Back', 'Next >', and 'Cancel'.

7. Click Next.

The screenshot shows the 'Advanced parameters' window. The title bar reads 'Ingenico USB Drivers Package (JUNGO v36) 2.60 Setup'. The window has a yellow border. Inside, the title 'Advanced parameters' is in bold. Below it, a subtitle says 'This page allows to set advanced options. Select if old versions of Usbser driver will be deleted.' There is a small globe icon in the top right corner. The main area contains a section 'Advanced Options' with a checkbox labeled 'Uninstall Microsoft Usbser drivers(s)' which is checked. Below this, there is a label 'Command line:' and a large text input box. At the bottom, there is a text field with 'Ingenico (Beyond Payment)' and three buttons: '< Back', 'Next >', and 'Cancel'.

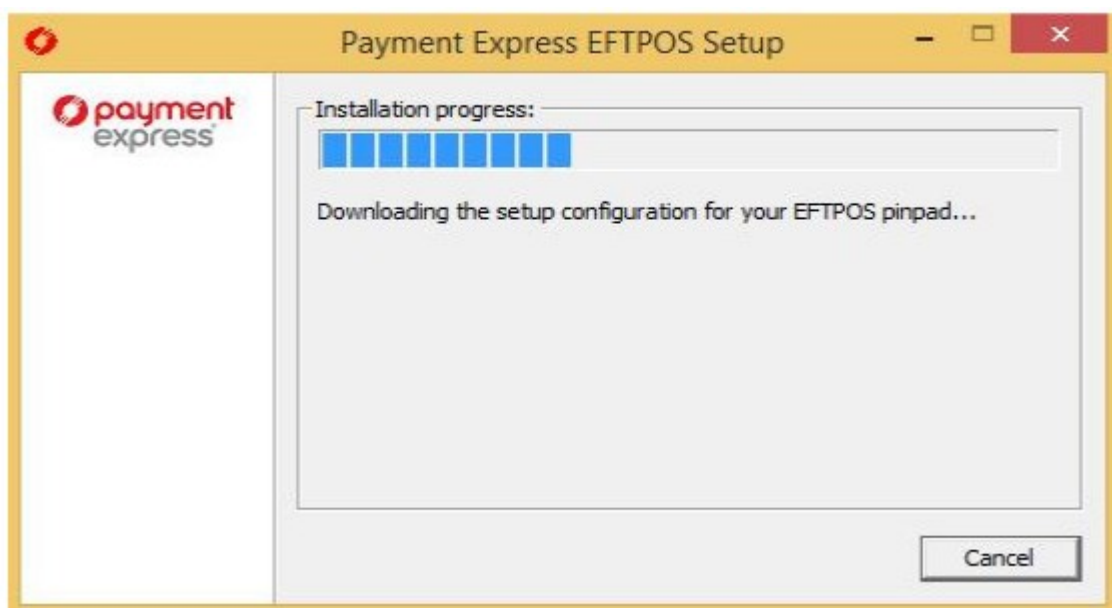
8. Click Install.



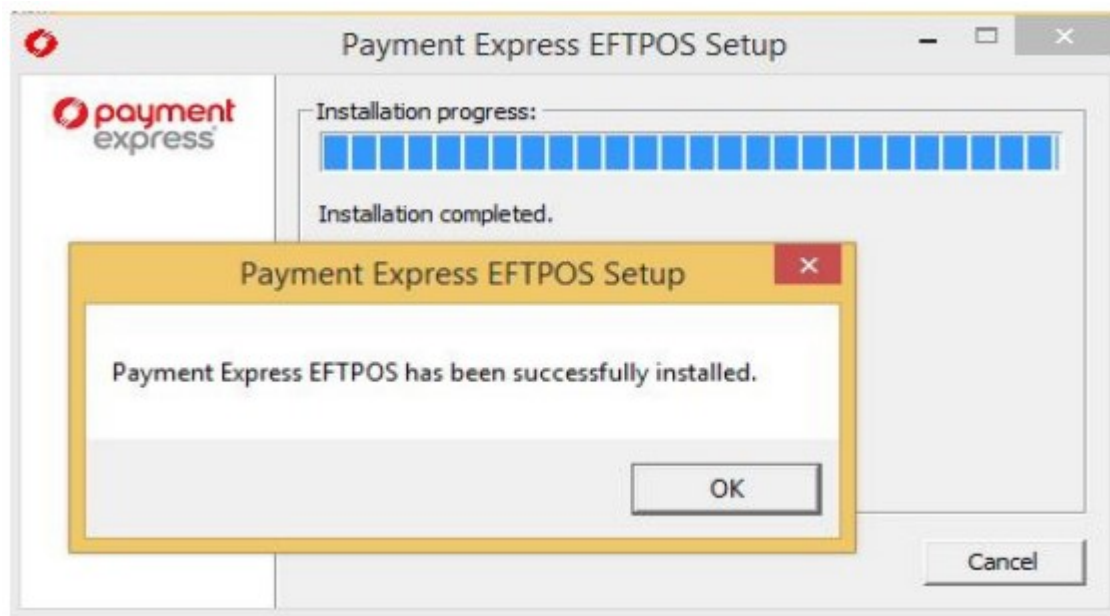
9. Click Finish.



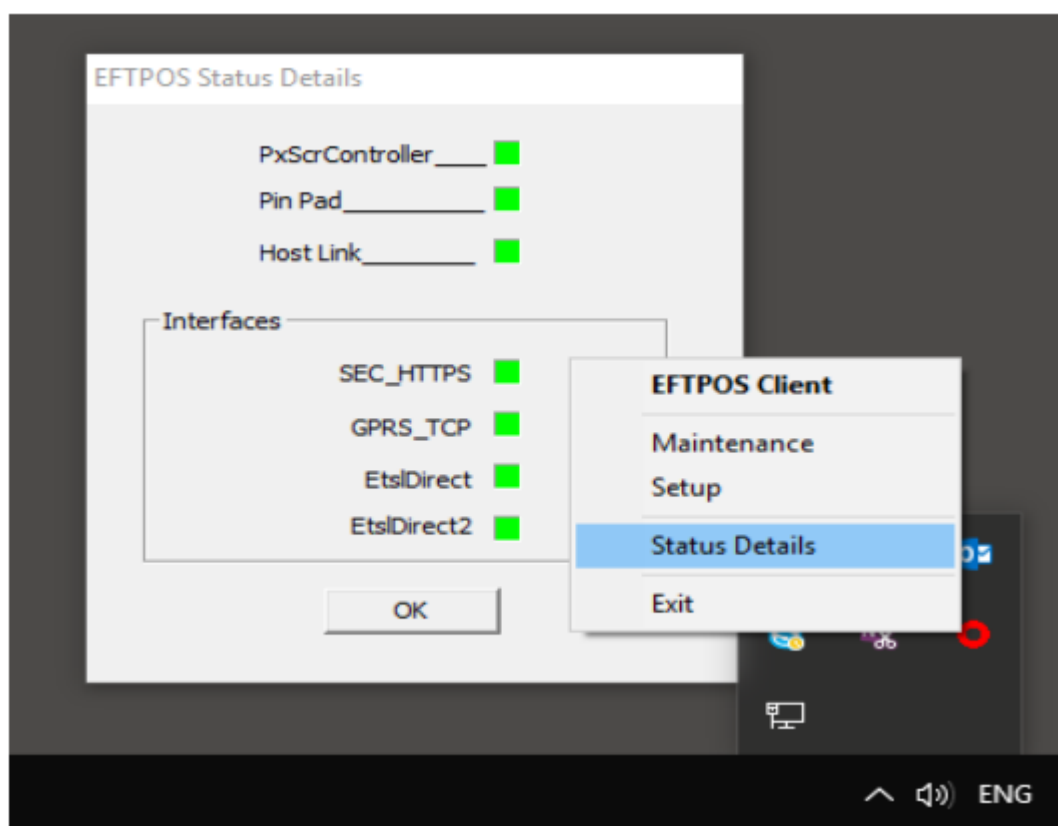
10. The installer will now download the PxScrController application, configuration file and any required components from PX Host. Once completed the Payment Express SCR Tupelo/SCR200E solution should now be installed and ready to process transactions.



11. Click OK to complete install.

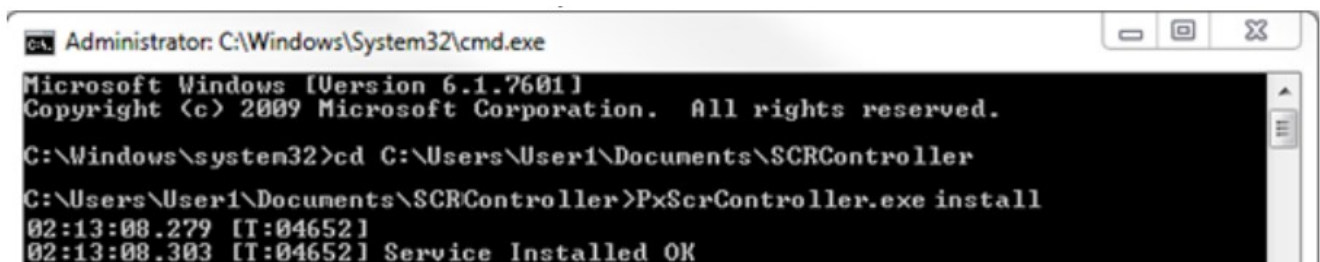


12. You can validate the installation by right clicking on the Payment Express icon that should appear in the taskbar area and then select Status Details. All of the interfaces should be 'Green'.



4.3 SCR Unattended Installation (Manual Installation)

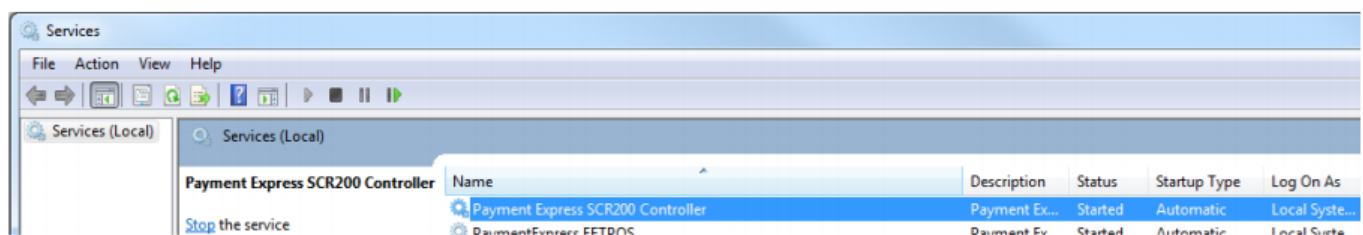
1. Save the SCR Controller package to your Windows machine.
2. Open Windows Command Prompt (CMD).
3. Browse to the folder where the SCR Controller files are located.
e.g. `cd c:\Users\User1\Documents\SCRController`
4. Install the service using the filename and install command.
e.g. `PxScrController.exe install`
5. The service should now be installed successfully. Please note that if you get any errors when attempting to create the service, please try running CMD as administrator.



```
Administrator: C:\Windows\System32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Windows\system32>cd C:\Users\User1\Documents\SCRController
C:\Users\User1\Documents\SCRController>PxScrController.exe install
02:13:08.279 [T:04652]
02:13:08.303 [T:04652] Service Installed OK
```

6. You can validate that the service has been installed in Windows Services menu. The service will be named Payment Express SCR200 Controller.



7. Open the SCR Controller configuration file (PXSCRCONTROLLER_CFG.TXT) and ensure that the settings are correct (e.g. DeviceId). Please see the Configuration section of this document for more information on each setting.
8. Save the SCR Controller configuration file.
9. Restart the Payment Express SCR Controller service to apply any changes.

5 Configuration Settings

5.1 Server Configuration Settings

| Tag | Format | Description |
|-----------------|---------|---|
| LogDrive | String | Root path of log folder. The log files are put in the sub folder LOG under the LogDrive. |
| LogLevel | Integer | Logging level. Available values are: 0 = Trace 1 = Debug (default value) 2 = Info 3 = Warning 4 = Error 5 = Fatal |
| LogMaxFileSize | Integer | The maximum size of each log file in KB. |
| LogMaxTotalSize | Integer | The maximum (total) size of all log files in the log folder in KB. |
| LogMinFreeSpace | Integer | Minimum free disk space size. |
| ClientPort | Integer | The TCP port used for accepting SCR Serial API messages. Default is 2007. |
| XmlClientPort | Integer | The TCP port used for accepting XML messages. Default is 2008. |
| DeviceId | String | The DeviceId gives the POS the ability to track all event and diagnostic activity for a lane/kiosk even after the PINpad has changed (e.g. faulty device replaced with new device). The DeviceId is associated to a Device Profile and each Device Profile contains unique settings for the lane/kiosk downloaded to the device. Basically if the same DeviceId is used per lane/kiosk would allow you to track all event and diagnostic information for that lane/kiosk even after the device has changed. In addition to DeviceId, the DeviceId has a Prefix. This prefix value can be configured per Device Profile and if used will ensure that the correct Profile is downloaded to the lane/kiosk by mandating that the Prefix submitted in the PX SCR Controller matched the prefix configured in the Device Profile. This allows a merchant to ensure the correct settings are applied to the right lane/kiosk. The DeviceId Prefix is part of the DeviceId. The DeviceId is 32 max so the prefix should be 31 max to allow at least 1 character left for the rest of the DeviceId. Most would set a prefix of 8~10 characters. |
| VendorId | String | VendorId allows vendors/merchants to put a unique reference value that can be applied to all or groups of devices. This can be useful for reporting and device reconciliation. The field is 32 characters alphanumeric and may additionally include '-' and '_' (e.g. ABCCORP_PARKING_001). |
| Currency | String | Currency Code that this POS is configured to use. This must match the currency code configured at PX Host (e.g. USD). |
| ProtocolVersion | String | The SCR Serial API protocol version to be used. Current version is 0007. This should be left at default 0007 unless otherwise specified. |

| Tag | Format | Description | | | | | | |
|----------------------------------|---------------------------------|--|-----|---------|---|---------------------------------|---|------------------------|
| EventMask | String | <div>The event mask sets the events that will be sent from the SCR to the POS. The mask is supplied in hex digits.</div> <table><tr><td>Bit</td><td>Meaning</td></tr><tr><td>0</td><td>Card insertion / removal events</td></tr><tr><td>1</td><td>Display message events</td></tr></table> <div>The default value is 3. A null or empty entry will return the actual mask in the response message. All bits on = 3 (not '11').</div> | Bit | Meaning | 0 | Card insertion / removal events | 1 | Display message events |
| Bit | Meaning | | | | | | | |
| 0 | Card insertion / removal events | | | | | | | |
| 1 | Display message events | | | | | | | |
| SignatureSupport | Boolean | Indicates if the Signature functionality is supported. Should be set according to PX Host configuration. Default value is 0 (false). | | | | | | |
| XmlClientAppendNullChar | Boolean | Indicate if null character ('\0') needs to be appended to each XML message as message separator. Default value is 1 (true). | | | | | | |
| EnableSerialPortProbing | Boolean | Enable/Disable automatic serial port detection. Default value is 0 (false). If ComPort setting is empty, EnableSerialPortProbing will be automatically enabled. | | | | | | |
| ComPort | String | The serial port which the SCR device is connected. If EnableSerialPortProbing is set to 1, this field can be empty. | | | | | | |
| BaudRate | Integer | The baud rate used to communicate with SCR device. The default value is 115200. Please contact PX if you cannot use the default baud rate. | | | | | | |
| EnableOffline | Boolean | Indicate if the device allows offline transactions. Should be set according to PX Host configuration. Default value is 0 (false). | | | | | | |
| EnableAutoReadCard | Boolean | Enable/Disable automatic read card when a card swipe/insert/present is detected. Default value is 0 (false). | | | | | | |
| UseScrIdlePromptManagement | Boolean | Indicate whether to use the SCR's built in idle prompt management. Default value is 0 (false). | | | | | | |
| DefaultIdlePromptId | Integer | The default idle prompt ID. If not set default idle prompt "EFTPOS" will be displayed. | | | | | | |
| DefaultIdlePromptBacklight | Integer | Enables/Disables backlight during idle state. Default value is 0 (disabled). | | | | | | |
| UseScrTxnResultDisplayManagement | Boolean | Indicate whether to use the devices built in transaction result display mechanism. Default value is 0 (false). | | | | | | |
| TxnSuccessResultDisplaySeconds | Integer | Indicate how many seconds the unsuccessful result should be displayed. Default value is 0 (means infinitely). | | | | | | |
| TxnErrorResultDisplaySeconds | Integer | Indicate how many seconds the successful result should be displayed. Default value is 0 (means infinitely). | | | | | | |
| SignatureRequiredTxnBlockMinutes | Integer | Default is 30. This setting should be left as-is. | | | | | | |

| Tag | Format | Description |
|-----------------------------------|---------|---|
| PrintMerchantReceipt | Boolean | If enabled, SCR Controller will print extra copy of Merchant Receipt (after Customer Receipt). |
| EnableCheckPrinter | Boolean | If enabled, SCR Controller will check if Printer is available before a transaction. If check printer fails, transaction will not proceed. |
| EnablePrint | Boolean | If Enabled, SCR Controller will handle the receipt printing. |
| Printer | String | Printer name as defined by OS (e.g. Windows Printer Name). |
| PrinterType | String | Possible values are 'System' and 'IWL'. System type uses OS Printer Name whilst IWL type uses IWL on-board printer. |
| TracePrinter | Boolean | If enabled, will trace Printer activity in log files. |
| EnablePrintEMVDiag | Boolean | If enabled, will print EMV Diagnostic receipt after a transaction. |
| ReceiptCutString | String | Hex commands for cutting the receipt. Default value is '1D564200'. |
| SecureDataMaskChar | String | Masking Character used for masking sensitive data. Default value is '0' (e.g. mask a full card number 4111000000000011). |
| EnableMaskReceiptTrace | Boolean | If enabled will mask the receipt data in log files. |
| EnableSuppressTransmissionDisplay | Boolean | If enabled then upload progress display text will not be send to POS. |
| TxnTimeoutSeconds | Integer | Transaction Timeout in seconds. Default is 180. This should be left as-is. |
| ScrRecoTextTableFileName | String | Used to customize Response Text. Recommendation is to use default Response Text. Please contact PX if you would like to customize your Response Text. |
| AlwaysPrintSignatureReceipt | Boolean | If enabled, will cause SCR Controller to always Print Signature Receipt even if EnablePrint is set to 0. |
| AlwaysPrintSettlementReceipt | Boolean | If enabled, will cause SCR Controller to always Print Settlement Receipts even if EnablePrint is set to 0. |
| DisableEmptyXmlTagOutput | Boolean | If enabled, empty XML tags will not be returned. |
| EnableExtendedCardRead | Boolean | If enabled, will return additional data (i.e. Token) in Read Card response. |
| EnableDuplicateCashOutReceipt | Boolean | If enabled, will print an additional copy of Cash Out Receipt. |
| EnablePxppCompatibleMessageMode | Boolean | Setting required for some legacy PXPP integrations. |
| EnableReceiptFormatLines | Boolean | Enable the customized receipt line terminator. Default value is '0'. |

| Tag | Format | Description |
|--|---------|---|
| ReceiptLineTerminator | String | Customized receipt line terminator in HEX format. Default is '0D0A'. |
| EnablePrintIWL | Boolean | If enabled, will enable on-board printer for IWL devices. Legacy setting, replaced by PrinterType setting. |
| DefaultFuelAuthAmount | String | Default Fuel Amount setting. Format dependant on currency used (e.g. NZD = DCC). |
| EnableXifGUI | Boolean | If enabled, SCR Controller using DpsEftTray to handle display prompts on behalf of POS. |
| EnableBroadcastStatusOnNewClientConnection | Boolean | If enabled, on every new connection the status message will be sent to all POS connections. |
| EnableDummyValueForEmptyDpsTxnRef | Boolean | If enabled, a dummy DpsTxnRef will be returned when DpsTxnRef is empty. Not recommended to enable, only required for specific POS integrations. |
| EnableTxnRefMatchingForGetLastTransaction | Boolean | If enabled, will require a matching TxnRef for the GetLastTransaction operation. Only applicable for ActiveX integrations. |

5.2 Host Interface Configuration Settings

| Tag | Format | Description |
|-----------------------|---------|--|
| Id | String | Host interface ID must be unique. |
| Name | String | Name of Interface, must be unique. |
| Type | String | TCP HTTP SCHANNEL ETSLDIRECT |
| Address | String | Address for Payment Express Host. |
| Port | Integer | TCP Port for Payment Express Host. |
| Priority | Integer | Sets the priority when multiple Host Interfaces are configured. Higher the number the higher the priority. |
| Enabled | Boolean | Enable or Disable the Host Interface. |
| Nii | String | Network Identifier. Only required for Paymark NZ integrations. Please see Paymark NZ section of this document for more information. |
| IdleDisconnectTimeout | Integer | Specifies how long the connection is to be maintained for whilst idle. Default is disabled (0). Only applicable to TCP and ETSLDIRECT types. |
| HeartbeatInterval | Integer | Specifies the interval of heart beat messages sent from SCR Controller to PX Host. Only applicable for HTTP type. Default is '15' seconds, this is also the minimum value. |
| EnableTcpKeepAlive | Boolean | If enabled, will enable the TCP Keep Alive feature. Enabled (1) by default. Only applicable to TCP and ETSLDIRECT types. |
| TcpKeepAliveTime | Integer | Default '60' seconds. Only applicable to TCP and ETSLDIRECT types. |
| TcpKeepAliveInterval | Integer | Default '1' second. Only applicable to TCP and ETSLDIRECT types. |
| TcpKeepAliveCount | Integer | Default '5' attempts. Only applicable to TCP and ETSLDIRECT types. |

5.3 Remote Updater Configuration Settings

| Tag | Format | Description |
|-------------------------|---------|--|
| UpdateServerUrl | String | PX Update Server URL. Please refer to the Endpoint section of this document for more information. Previously known as ECommConnectionString. |
| UpdateIntervalInSeconds | Integer | Interval the SCR Controller will check for an update from PX Update Server. Default is '3600' seconds (1 hour). Previously known as UpdatePeriodSec. |
| SignatureKeyFile | String | Reserved for future use. |

6 Contact Us

General Support Queries - email support@paymentexpress.com

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