



Payment Express® SCR Controller

Version 1.2

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RELATED DOCUMENTS

Version	Document Title
1.6.60	Payment Express® SCR Serial Message Specification

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1 INTRODUCTION

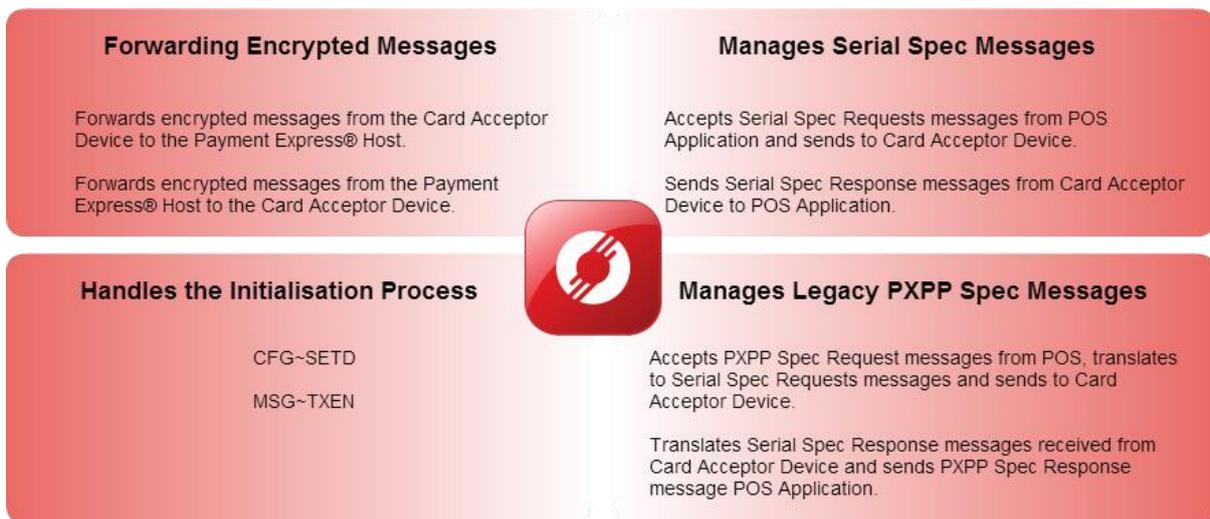
The **Payment Express® SCR Controller** is an optional service built by Payment Express® to simplify the integration process with the **Payment Express® SCR Serial specification**.

The SCR Controller simplifies the process by taking care of the SCR initialisation process and forwarding of encrypted network traffic between the Card Acceptor Device and the Payment Express® Host. This means that the Point of Sale (POS) application only needs to control the SCR financial operations by communicating with the SCR Controller service. CFG and MSG message types do not need to be coded for.

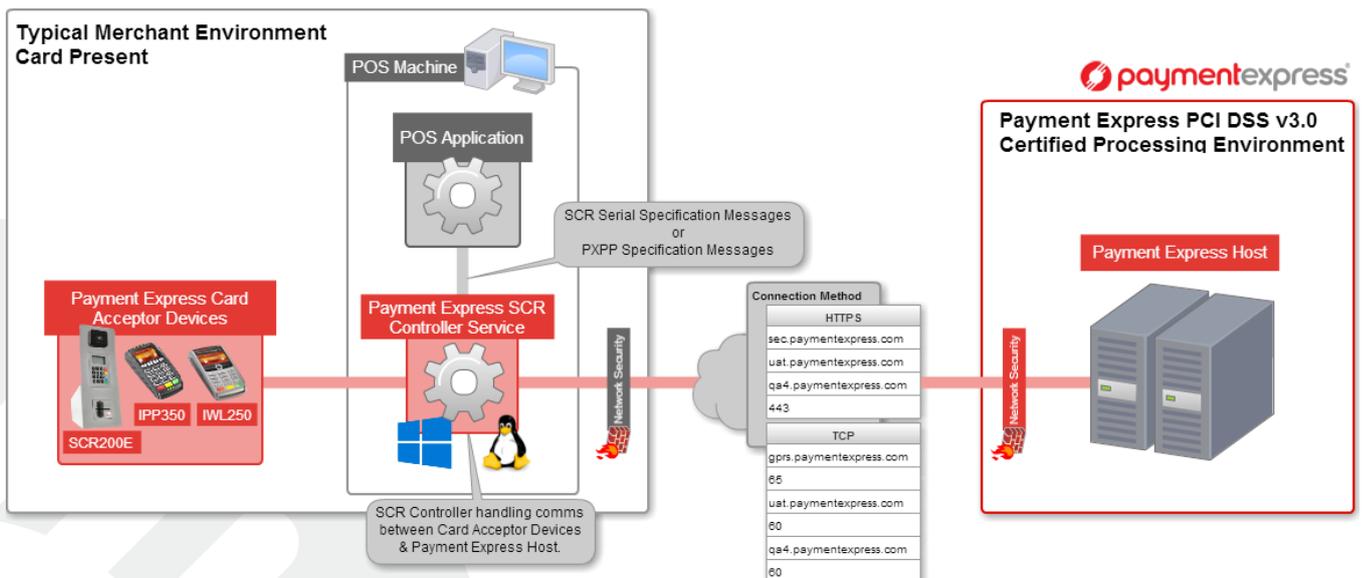
In addition to the above, the SCR Controller also allows POS applications that are already integrated with the legacy **Payment Express® PXPP (XML or Active X) specification** to work with the latest SCR serial specification. Whilst in most cases this would mean zero POS development to migrate from PXPP to SCR serial specification, 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.

To summarise, the SCR Controller service does the following:



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



2 SUPPORTED OPERATING SYSTEMS

2.1 WINDOWS



Windows 10 (32-bit / 64-bit)
Windows 8 (32-bit / 64-bit)
Windows 7 (32-bit / 64-bit)

Please ensure latest Service Pack updates have been installed.

Contact devsupport@paymentexpress.com if you are using a version of Windows that is not listed above.

2.2 LINUX



Due to the multitude of Linux distributions available, Payment Express® cannot guarantee that the SCR Controller will be compatible for every single Linux distribution. Technically SCR Controller will work on virtually any Linux-based system with x86, x64 or ARM family CPU.

Please contact your technical contact lead at Payment Express® or email devsupport@paymentexpress.com to validate compatibility. Please ensure the following information is provided: Linux Distribution, Init Script and CPU processor.

2.3 OS X



Support for OS X is on its way. If you're interested in a package for OS X please contact your technical contact lead at Payment Express® or email devsupport@paymentexpress.com.

3 SCR CONTROLLER FILES & FOLDERS

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

Filename	Type	Description
PxScrController.exe	exe	Payment Express SCR Controller Service.
PXSCRCONTROLLER_CFG.TXT	txt	The configurations file for the SCR Controller Service.
LOG	folder	Folder for all SCR Controller log files.
PXSCRCONTROLLER_*.log	log	SCR Controller log files. The filename is prefixed with PXSCRCONTROLLER and appended with Machine Name, Date Stamp and Time Stamp.

4 INSTALLATION

4.1 WINDOWS INSTALLATION

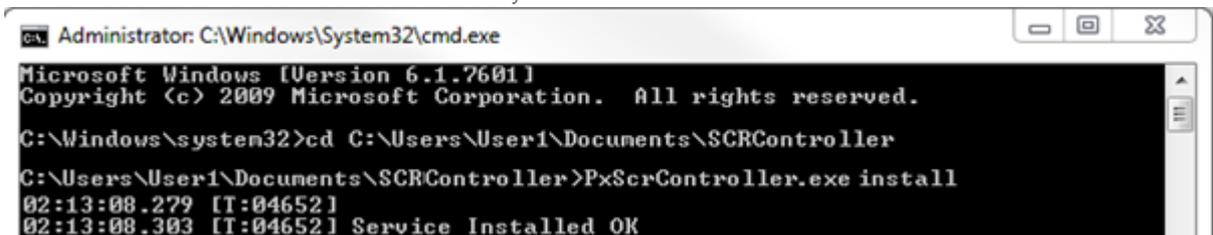
1. Save the SCR Controller files to your computer.
2. Open Windows Command Prompt (CMD).
3. Browse to the folder where the SCR Controller files are located.
e.g.

```
cd c:\Users\User1\Documents\SCRController
```

4. Install the service using the filename followed by install.
e.g.

```
PxScrController.exe install
```

5. The service should now be installed successfully.



```
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
```

Note: if you get an error when trying to create the service, please try running CMD as administrator.

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



7. Open the SCR Controller configuration file (e.g. PXSCRCONTROLLER_CFG.TXT) and ensure that the settings are correct e.g. Deviceld.
8. Save the SCR Controller configuration file.
9. Start the Payment Express SCR Controller service.

4.2 LINUX INSTALLATION

A package based on specific Linux distributions will be made available. Simply execute the package to install the SCR Controller.

Note: As per section 2.2, Payment Express® cannot guarantee that a package will be available for every single Linux distribution, please contact your technical contact lead at Payment Express® or email devsupport@paymentexpress.com if you require a specific package.

5 SCR CONTROLLER CONFIGURATION

The SCR Controller configurations are set in the configuration text file (PXSCRCONTROLLER_CFG.TXT).

5.1 SERVER SECTION

The following parameters are set between the Server tags.

Parameter	Description	Default Value						
BaudRate	The baud rate used to communicate with SCR device.	"115200"						
ClientPort	Listening port for serial message client connection.	"207"						
ComPort	The serial port which the SCR device is connected. If EnableSerialPortProbing is set to 1, this field can be empty.	Vendor specific						
Currency	Currency Code that this POS is configured to use. This must match the SCR configured currency code (e.g. NZD). No default value.	Vendor specific						
DefaultIdlePromptBacklight	The default idle prompt backlight brightness. Default value is 0.	"0"						
DefaultIdlePromptId	The default idle prompt ID. No default value.							
DeviceId	POS Device ID. Should be set according to Payment Express® Host configuration. No default value.	Device specific						
EnableAutoReadCard	Enable/Disable automatic read card when a card swipe/insert/present is detected. Default value is 0 (false).	"0"						
EnableCheckPrinter	Indicate if printer should be check before receipt printing. Default value is 0 (false).	"0"						
EnableOffline	Indicate if the SCR device allows offline transactions. Should be set according to Payment Express® Host configuration. Default value is 0 (false).	"0"						
EnablePrint	Indicate if receipt needs to be printed to connected printer by PxScrController. Default value is 0 (false).	"0"						
EnablePrintEMVDiag	Enable/disable EMV diagnostic receipt printing. Default value is 0 (false).	"0"						
EnableScrPingDelayOnTxn	Enable/disable heartbeat message delay during a transaction. Default value is 0 (false).	"0"						
EnableSerialPortProbing	Enable/Disable automatic serial port detection. Default value is 0 (false).	"0"						
EventMask	The event mask sets the events that will be sent from the SCR to the POS. The mask is supplied in hex digits.	Vendor specific						
<table border="1"> <thead> <tr> <th>Bit</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Card insertion / removal events</td> </tr> <tr> <td>1</td> <td>Display message events</td> </tr> </tbody> </table>		Bit	Meaning	0	Card insertion / removal events	1	Display message events	
Bit	Meaning							
0	Card insertion / removal events							
1	Display message events							
<p>The default value is 0. A null or empty entry will return the actual mask in the response message. All bits on = 3 (not '11')</p>								

	(NB: In backward compatibility mode – versions less than 0007- the mask is 3)	
	Note that transmit events cannot be blocked. These messages are not received in SCR200 hardware where a data channel is provided.	
LogDrive	Root path of log folder. The log files are put in the sub-folder LOG under the LogDrive. Default value is “.”, i.e. the PxScrController installation folder.	“.”
LogLevel	The level of logging done by the SCR Controller service. 0=trace, 1=debug, 2=info, 3=warning, 4=error, 5=fatal.	“2”
LogMaxFileSize	Sets the maximum size of each log file in KB.	“5120” (5MB)
LogMaxTotalSize	Sets the maximum size of all log files in the log folder in KB.	“51200” (50MB)
LogMinFreeSpace	Minimum free disk space size.	“10240” (10MB)
Printer	The Printer Name.	Vendor Specific
PrintMerchantReceipt	Indicate if an extra merchant receipt needs to be printed. Default value is 0 (false).	“0”
ProtocolVersion	The protocol version. Minimum version that the POS can support. Current version is 0007. The SCR Serial message protocol version to be used. Currently the protocol version is 0007. This should be left at default 0007 unless otherwise specified.	“0007”
ReceiptCutString	Printer paper cut command sequence in HEX format. Default value is “1D564200”.	“1D564200”
ScrPingPeriod	The heartbeat message interval. Default value is 5 seconds.	“5”
SecureDataMaskChar	The mask character of secure data output by SCR. Default value is “0”.	“0”
SignatureRequiredTxnBlockMinutes	Indicates how many minutes the SCR Controller should block further transaction processing if signature is not resolved. Default value is 0, i.e., do not block further transaction processing and assume is signature is accepted implicitly.	“0”
SignatureSupport	Indicates if the signature is supported. Should be set according to Payment Express Host configuration. Default value is 0 (false).	“0”
TracePrinter	Enable/Disable printer trace. Default value is 0 (false).	“0”
TxnErrorResultDisplaySeconds	Indicate how many seconds the unsuccessful result should be displayed. Default value is 0 (means infinitely).	“0”
TxnSuccessResultDisplaySeconds	Indicate how many seconds the successful result should be displayed. Default value is 0 (means infinitely).	“0”

UseScrIdlePromptManagement	Indicate whether to use the SCR's built in idle prompt management. Default value is 0 (false). Note that the SCR's built in idle prompt management is only available in firmware version 1.3.4.0+	"0"
UseScrTxnResultDisplayManagement	Indicate whether to use the SCR's built in transaction result display mechanism. Default value is 0 (false). Note that the SCR's built in transaction result display mechanism is only available in firmware version 1.3.4.0+	"0"
VendorId	Vendor ID assigned by Payment Express®. Should be set according to Payment Express® Host configuration. No default value. The field is 32 characters alphanumeric and may additionally include '-' and '_' (e.g. ABCCORP_PARKING_001).	Vendor specific
XmlClientAppendNullChar	Indicate if null character ('\0') needs to be appended to each XML message as message separator. Default value is 1 (true).	"1"
XmlClientPort	Listening port for XML message client connection.	"208"

5.2 HOST INTERFACES SECTION

The following parameters are set between the HostInterfaces tags.

This section may contain one or many HostInterface sections. Each HostInterface section contains the settings of a connection to the Payment Express® Host. Multiple HostInterface sections can be used for failover purpose.

Each HostInterface section contains the following items:

Parameter	Description	Default Value
Id	Unique number identifies the host connection	"1"
Name	The name of host connection. Useful for tracing purpose	
Type	The type of host connection. Available types are: HTTP – HTTPS connection to Payment Express® Host. TCP – TCP connection to Payment Express® Host.	
Address	Payment Express® Host Address For host connection type HTTP: QA Host = qa4.paymentexpress.com/scr.aspx UAT Host = uat.paymentexpress.com/scr.aspx Production Host = sec.paymentexpress.com/scr.aspx For host connection type TCP: QA Host = qa4.paymentexpress.com UAT Host = uat.paymentexpress.com Production Host = gprs.paymentexpress.com	

Port	Payment Express® Host Port	
	<p>For host connection type HTTP: QA Host = 443 UAT Host = 443 Production Host = 443</p> <p>For host connection type TCP: QA Host =60 UAT Host = 60 Production Host = 65</p>	
Priority	The priority of host connection.	
	If multiple HostInterface sections are defined, the connected host connection with the highest priority will be selected for host communication.	
Enable	Indicates whether the host connection is enabled.	"1"

5.3 EXAMPLE SCR CONFIGURATION FILE

```
<?xml version="1.0" encoding="utf-8"?>
<xml>
  <Server>
    <LogDrive>./</LogDrive>
    <LogLevel>1</LogLevel>
    <HostPort>60</HostPort>
    <ClientPort>2007</ClientPort>
    <XmlClientPort>2008</XmlClientPort>
    <DeviceId>PX123</DeviceId>
    <VendorId>PXSCR_001</VendorId>
    <Currency>NZD</Currency>
    <ProtocolVersion>0007</ProtocolVersion>
    <EventMask>3</EventMask>
    <SignatureSupport>1</SignatureSupport>
    <XmlClientAppendNullChar>1</XmlClientAppendNullChar>
    <EnableSerialPortProbing>1</EnableSerialPortProbing>
    <ComPort>COM3</ComPort>
    <BaudRate>115200</BaudRate>
    <EnableOffline>0</EnableOffline>
    <UseScrIdlePromptManagement>0</UseScrIdlePromptManagement>
    <DefaultIdlePromptId>101</DefaultIdlePromptId>
    <DefaultIdlePromptBacklight>100</DefaultIdlePromptBacklight>
    <UseScrTxnResultDisplayManagement>1</UseScrTxnResultDisplayManagement>
    <TxnSuccessResultDisplaySeconds>3</TxnSuccessResultDisplaySeconds>
    <TxnErrorResultDisplaySeconds>3</TxnErrorResultDisplaySeconds>
    <PrintMerchantReceipt>1</PrintMerchantReceipt>
    <SignatureRequiredTxnBlockMinutes>5</SignatureRequiredTxnBlockMinutes>
    <EnablePrint>1</EnablePrint>
    <Printer>Receipt</Printer>
    <EnablePrintEMVDiag>1</EnablePrintEMVDiag>
    <EnableScrPingDelayOnTxn>0</EnableScrPingDelayOnTxn>
    <SecureDataMaskChar></SecureDataMaskChar>
  </Server>
  <HostInterfaces>
    <HostInterface>
      <Id>1</Id>
      <Name>QA4_HTTPS</Name>
      <Type>HTTP</Type>
      <Address>https://qa4.paymentexpress.com/scr.aspx</Address>
      <Port>443</Port>
      <Priority>1</Priority>
      <Enabled>1</Enabled>
    </HostInterface>
  </HostInterfaces>
</xml>
```