stripe

Stripe Terminal Implementation Guide

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This document details how to install the Stripe Terminal application in compliance with PCI PA-DSS Version 3.2 [1]. This guide applies to the Stripe Terminal application version 3.0.x.y.

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[1] https://www.pcisecuritystandards.org/documents/PA-DSS_v3-2.pdf

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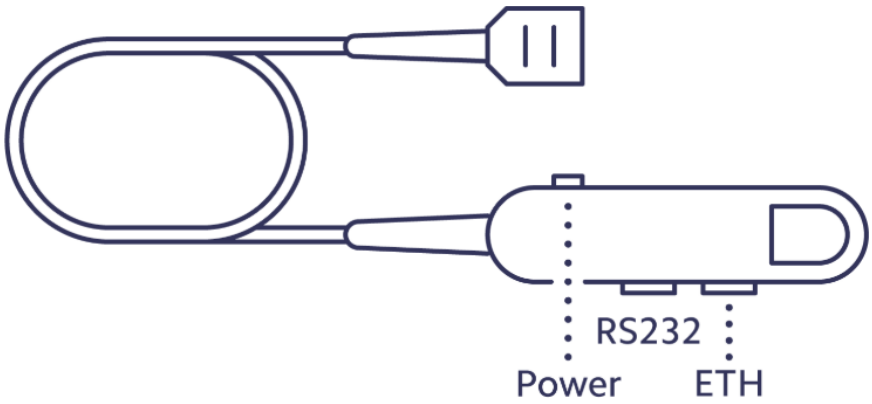
Installation guide

Required components for installation of the Stripe Terminal application in a customer payment environment

- Stripe Terminal P400 hardware
- PCI compliant network
- A functioning Point of Sale utilizing the Stripe Javascript SDK to drive payment flows on the Stripe Terminal application

The Stripe Terminal hardware is shipped provisioned with the Stripe Terminal application and necessary encryption keys loaded. An up to date installation guide is available[2] for successfully powering and connecting your new Stripe Terminal device.

On receipt of the Stripe Terminal hardware, it must first be provided power. To turn the reader on, plug its proprietary I/O cable securely into the port on the bottom of the Verifone P400. (The cover slides back over the port to hold the I/O cable in place.) Plug the power adapter into the I/O block, and into an electrical outlet.



Verifone P400 I/O block

The Stripe Terminal application is required to be IP connected for proper functionality. The Verifone P400 manages data connectivity through a LAN. Connect an Ethernet cable from your router to the Verifone P400, using the ETH port (not the RS232 port).

Once your Stripe Terminal hardware is powered and IP connected, connect to the device using your Javascript SDK integrated application and begin taking payments.

[2] https://stripe.com/docs/terminal/readers/verifonep400

Application versioning

the internal and published Stripe Terminal application version format is 3.0.x.y

- 3 - Major version - indicates a major change to application with corresponding security implications
- 0 - Minor version - Indicates minor change to application with corresponding security implications
- x - Feature - Indicates minor feature update with no security implications
- y - Patch - Indicates bug fixes or minor tweaks with no security implications

Secure application updates

The Stripe Terminal application independently manages the secure downloading and application of updates.

The terminal application is notified by the Stripe fleet management service when a new application is available for update. The terminal application will download the new binary over HTTPS using TLS1.2. The terminal application utilizes the PCI PTS approved hardware for validation of authenticity of the signed software bundle and proceeds with the install.

Current and past release notes can be accessed from the P400 user guide[3]

Secure data handling

The Stripe Terminal application encrypts all authentication and cardholder data immediately upon customer entry using RSA 2048-bit encryption. The plaintext data is discarded, and the encrypted payload is sent to Stripe for payment processing. The resulting metadata passed to the Point-of-Sale is the required non-sensitive receipt fields along with the masked PAN.

No secure data is stored by the payment application. All encrypted and unencrypted data is deleted immediately after authorization. The key material contained in the Stripe Terminal application for secure authentication and cardholder data is isolated to a single RSA public key that is kept and stored in plain text on disk.

Secure transfer protocols

The Stripe Terminal application communicates with a local Point-of-Sale using Remote Procedure Calls (RPC) sent over HTTPS / TLS1.2. An SDK is available for robust and easy integration[4] with the Stripe Payment application. The SDK wraps the encrypted RPC calls with an easy to use Javascript interface.

Payment authorisation messages are sent to Stripe servers over a secure HTTPS / TLS1.2 channel.

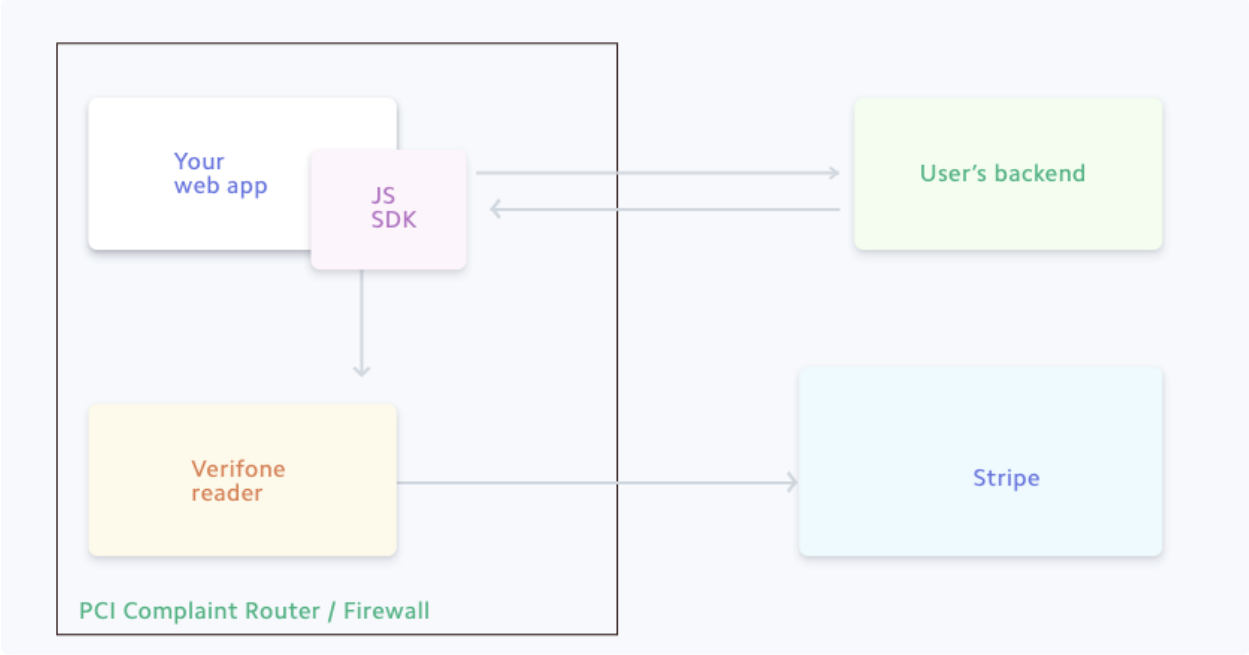
Network Segmentation

The PCI DSS requires that firewall services be used (with NAT or PAT) to segment network segments into logical security domains based on the environmental needs for internet access. Traditionally, this corresponds to the creation of a trusted network segment where only authorized, business-justified traffic is allowed to connect to the trusted segment. No direct incoming internet traffic to the trusted application

[3] https://stripe.com/docs/terminal/readers/verifonep400
[4] https://stripe.com/docs/terminal/js

environment can be allowed. Additionally, outbound internet access from the trusted segment must be limited to required and justified ports and services.

Network Diagram



PA-DSS requirements

1.1.4 Delete Historical Sensitive Data

No current or historical version of the Stripe Terminal application has stored any sensitive payment data. No action is required to remove any historical sensitive data.

Customer / vendor responsibility: None

1.1.5 Delete Sensitive Authentication Data used for Debugging

No sensitive authentication data can be retrieved for any debugging or troubleshooting use. Any sensitive authentication data required for troubleshooting can only be done in a Stripe lab using test cards / data.

Customer / vendor responsibility: Customers and vendors should never capture sensitive data of any kind for troubleshooting purposes. Stripe object IDs can be captured and reported along with a support ticket for optimal issue resolution

2.1 Securely Delete Cardholder Data

No cardholder data is retained with-in the Stripe Terminal application for any reason.

Customer / vendor responsibility: Customers and vendors should never retrain sensitive data of any kind for any reason.

2.2 Mask PAN When Displayed

The full PAN is never made available in any logs or to any personnel.

The masked PAN is available to the merchant within the Stripe ecosystem. It can be accessed as an output result in the return method of confirm payment API in the Terminal API[5]

The masked PAN is also displayed on the transaction summary screen to give customer indication that their card was charged. The full PAN is never displayed in the Stripe terminal application.

Customer / vendor responsibility: Customers and vendors should never retrain sensitive data of any kind for any reason. The masked PAN returned in the instance of a successful authorisation can be displayed for compliance and customer records. It should be retained only so long as to accomplish these goals.

2.3 Render PAN Unreadable Anywhere it is Stored

The PAN is never stored in the Stripe Terminal application.

Customer / vendor responsibility: Customers and vendors should never retrain sensitive data of any kind for any reason. If for any reason cardholder data or secure authentication data is retained, it must never be stored on any system that is public facing or accessible on the internet.

2.4 Protect Keys Used to Secure Cardholder Data

See Secure data handling

Customer / vendor responsibility: None

2.5 Implement Key Management Processes & Procedures

See Secure data handling

Customer / vendor responsibility: None

2.5.1 - 2.5.7 Implement Key Management Functions

See Secure data handling

Customer / vendor responsibility: None

2.6 Provide Mechanism to Wipe Key Material

See Secure data handling

Customer / vendor responsibility: None

[5] https://stripe.com/docs/terminal/js

3.1 - 3.2 Use Unique IDs & Secure Authentication

No administrative access is granted to the device on which the Stripe Terminal application runs.

Customer / vendor responsibility:
The PCI DSS requires that access to all systems in the payment processing environment be protected through use of unique users and complex passwords. Unique user accounts indicate that every account used is associated with an individual user and/or process with no use of generic group accounts used by more than one user or process.

To maintain PCI DSS compliance the following 11 points must be followed per the PCI DSS:

1. You must not use or require the use of default administrative accounts for other necessary or required software (for example, database default administrative accounts) (PCI DSS 2.1 / PA-DSS 3.1.1)
2. You must assign unique IDs for all user accounts. (PCI DSS 8.1.1 / PA-DSS 3.1.3)

3. You must provide at least one of the following three methods to authenticate users: (PCI DSS 8.2 / PA-DSS 3.1.4)
   a. Something you know, such as a password or passphrase
   b. Something you have, such as a token device or smart card
   c. Something you are, such as a biometric

4. You must NOT require or use any group, shared, or generic accounts and passwords (PCI DSS 8.5 / PA-DSS 3.1.5)

5. You must configure passwords must to be at least 7 characters and includes both numeric and alphabetic characters (PCI DSS 8.2.3 / PA-DSS 3.1.6)

6. You must configure passwords to be changed at least every 90 days (PCI DSS 8.2.4 / PA-DSS 3.1.7)

7. You must configure passwords so that password history is kept and requires that a new password is different than any of the last four passwords used (PCI DSS 8.2.5 / PA-DSS 3.1.8)

8. The payment application limits repeated access attempts by locking out the user account after not more than six logon attempts (PCI DSS 8.1.6 / PA-DSS 3.1.9)

9. The payment application sets the lockout duration to a minimum of 30 minutes or until an administrator enables the user ID. (PCI DSS 8.1.7 / PA-DSS 3.1.10)

10. The payment application requires the user to re-authenticate to re-activate the session if the application session has been idle for more than 15 minutes. (PCI DSS 8.1.8 / PA-DSS 3.1.11)

11. You must assign strong passwords to any default accounts (even if they won't be used),

and then disable or do not use the accounts.

4.1, 4.4 Implement Automated Audit Trails / Centralized Logging

Verifone system logs and hardware auditing can be found on the verifone device using the steps found in the Verifone hardware user guide.

Stripe logs for each transaction are available through the Stripe dashboard accessed through your Stripe account.

Customer / vendor responsibility: Your payment terminal's events and logs[6] are available are available for auditing and troubleshooting in your Stripe dashboard. If you suspect payment application errors, check your terminal integration and refer your Stripe dashboard for support. If you suspect your hardware has been tampered with, contact Stripe or your hardware provider as soon as possible.

The Stripe Terminal application log functionality is not configurable by the customer. The customer must not attempt to disable logging functionality in any way. Any attempt to disable or disrupt application logging will result in non-compliance.

5.4.4 Implement and Communicate Application Versioning Methodology

See Application versioning for information on the Stripe Terminal application versioning methodology.

Customer / vendor responsibility: Visit the release notes page[7] to stay up to date on the latest Stripe Terminal application updates

6.1 - 6.3 Securely Implement Wireless Technology

The Stripe Terminal application sends all requests over a secure channel (Secure transfer protocols)

Customer / vendor responsibility: Should the merchant implement wireless access within the cardholder data environment, the following guidelines for secure wireless settings must be followed per PCI Data Security Standard 1.2.3, 2.1.1 and 4.1.1:

2.1.1: Change wireless vendor defaults per the following 5 points:

1. Encryption keys must be changed from default at installation, and must be changed anytime anyone with knowledge of the keys leaves the company or changes positions

2. Default SNMP community strings on wireless devices must be changed

3. Default passwords/passphrases on access points must be changed

4. Firmware on wireless devices must be updated to support strong encryption for

[6] https://dashboard.stripe.com
[7] https://stripe.com/docs/terminal/readers/p400releases

authentication and transmission over wireless networks

5. Other security-related wireless vendor defaults, if applicable, must be changed

1.2.3: Perimeter firewalls must be installed between any wireless networks and systems that store cardholder data, and these firewalls must deny or control (if such traffic is necessary for business purposes) any traffic from the wireless environment into the cardholder data environment.

4.1.1: Industry best practices (for example, IEEE 802.11.i) must be used to implement strong encryption for authentication and transmission of cardholder data.
Note: The use of WEP as a security control was prohibited as of June 30, 2010.

7.2.3 Provide Instructions on Secure Installation of Patches and Updates

See Secure application updates for information on how Stripe manages secure updating of the Stripe Terminal application.

Customer / vendor responsibility: Customers are unable to impact the secure downloading and updating of the device. Follow the provided links to stay up to date on your device.

8.2 Use of secure protocols

The Stripe Terminal application only communicates with external endpoints using HTTPS over TLS1.2. No insecure protocols are used.

Customer / vendor responsibility: None

9.1 Store cardholder data on servers not IP connected

Cardholder data is never stored in the Stripe Terminal payment application

Customer / vendor responsibility: Customers and vendors should never retrain sensitive data of any kind for any reason. The masked PAN returned in the instance of a successful authorisation can be displayed for compliance.

10.1 Implement multi--factor authentication for remote access

Remote access is not permitted by the payment application or the the PCI-PTS approved hardware on which it runs

Customer / vendor responsibility: The Stripe payment application does not allow remote access to the application. If the remote access is allowed in any of the customer services, multi-factor authentication should be used.

10.2.1 Securely deliver remote payment application updates

See Secure application updates for information on remote updates

Customer / vendor responsibility: None

10.2.3 Securely implement remote-access software

See Secure application updates for information on remote updates

Customer / vendor responsibility: None

11.1 Secure transmission of cardholder data

See Secure transfer protocols

Customer / vendor responsibility: None

11.2 Encrypt cardholder data over messaging technologies

The Stripe Terminal application does not send any data over any end user messaging technology

Customer / vendor responsibility: None

12 Non console administrative access

The Stripe terminal application does not support any external console administrative access

Customer / vendor responsibility: The Stripe Terminal application does not support non-console administration and we do not recommend using non-console administrative access. If the customer does support non console administrative access, it must use SSH, VPN, or TLS 1.2 or higher for encryption of this non-console
administrative access, and employ multi-factor authentication for use.