PA-DSS Implementation Guide For OneTouch® Suite

Version 5.1130.XXXX

February 2017

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Introduction

Product Overview

Triple E Technologies LLC's OneTouch® Suite Version 5.1130.XXXX is a Microsoft Visual Basic 6.0 Point of Sale (POS) application, developed and tested for implementation on PC platforms running Microsoft Windows 7 Professional Edition only. OneTouch® Suite uses Microsoft SQL Server 2012 and above for its database.

In keeping with industry payment application best practices and for purpose of compliance with the Payment Card Industry (PCI) Payment Application Data Security Standard (PA-DSS), OneTouch® Suite includes the following security features:

- Use of Microsoft Windows' built-in, host-based firewall to protect cardholder data; firewall drops all incoming traffic not corresponding to traffic sent in response to a host request.
- Disabled or removed vendor-supplied defaults for passwords and other security parameters prior to system use.
- Non-retention of payment card authentication data; full magnetic stripe, PIN and card validation code data are not stored, and account numbers are encrypted. Except when an employee has physical possession of a customer payment card, the full account number is never revealed.
- Supported use and updating of anti-virus software, with specific configuration settings for OneTouch® Suite servers.
- Assignment of specific User access rights and permissions based on predefined group accounts and merchant-determined privileges.
- Windows authentication of user login credentials; presentation and authorization of a unique ID and password required for each user requesting access to OneTouch® Suite.
- Event logging of user activities such as logins, logoffs, security rights changes and accesses to database objects.

In keeping with PCI requirements, the following Windows services, protocols, components and dependent software are required for OneTouch® Suite application functionality:

Software Dependencies

MS Windows 7 - O/S
MS SQL Server 2012 - for DB

Hardware Dependencies

Ingenico ISC250, UIA VERSION = 14.0.2.3068

Protocols and Ports

TCP/IP - port: user choice
TLS 1.2 - port: 443
UDP - port: user choice

Service Dependencies

AutoUpdaterClientService
ccEngineNTService
COM+ Event System
DCOM Server Process Launcher
EEEGuardianService
EEEPluginScheduler
Group Policy Client
Network Store Interface Service
PedestalNTService (pedestal only)
Plug and Play
Power
Print Spooler
Remote Procedure Call (RPC)
RPC Endpoint Mapper
Security Accounts Manager
Security Center
Server
SQL Server (MSSQLSERVER)
SQL Server (SQLEXPRESS)
SQL Server Browser
SQL Server VSS Writer
Task Scheduler
tPortControllerNTService
User Profile Service
uvnc_service
Vigilix POS-Sentry Agent
Vigilix POS-Sentry Agent Guardian
Windows Audio
Windows Audio Endpoint Builder
Windows Driver Foundation - User-mode Driver Framework
Windows Event Log (technician troubleshooting)
Windows Update
Cryptographic Services
Desktop Window Manager Session Manager
Diagnostic Policy Service
Diagnostic Service Host
IKE and AuthIP IP sec Keying Modules
IP Helper
IPsec Policy agent
Program Compatibility Assistant Service
Windows Defender
Windows Firewall

References

Activator
ANDI Active X Communications Type Library
ccToolKit
CAPICOM v2.1 Type Library
Chilkat ActiveX v9.5.0
Common Dialog Control Replacement DLL
Microsoft Access 15.0 Object Library
Microsoft ActiveX Data Objects 2.8 Library
Microsoft ADO Ext. 6.0 for DDL and Security
Microsoft DAO 3.6 Object Library
Microsoft Data Formatting Object Library 6.0 (SP6)
Microsoft Excel 15.0 Object Library
Microsoft WMI Scripting V1.2 Library
Microsoft XML, v4.0
Microsoft Scripting Runtime
Microsoft SQL Parser Object Library 1.0
Microsoft VBScript Regular Expressions 5.5
Sax Comm Objects 7
OLE Automation
OPOS 1.13 Constants
OPOS CashDrawer Control 1.13.001
OPOS LineDisplay Control 1.13.001
OPOS MSR Control 1.13.001
OPOS PINPad Control 1.13.001
OPOS POSPrinter Control 1.13.001
OPOS SigCap Control 1.13.001
Paymentech 1.0 Type Library
tPortObjects
vbAccelerator VB6 Subclassing and Timer Assistant
Visual Basic For Applications
Visual Basic objects and procedures
Visual Basic runtime objects and procedures

Components

e3Frame
eeeButton
eNFormSigDisplay ActiveX Control module
FarPoint ListPro 3.0 Controls
FarPoint Spread 6.0
FarPoint Spread 6.0 (OLEDB)
FarPoint TabPro 3.1
Innovasys Event Logging Library
Microsoft Calendar Control 8.0
Microsoft Comm Control 6.0
Microsoft Commo Control 6.0
Microsoft Common Control 6.0
Microsoft Common Dialog Control 6.0 (SP6)
Microsoft FlexGrid Control 6.0 (SP6)
Microsoft MAPI Controls 6.0
Microsoft Masked Edit Control 6.0 (SP6)
Microsoft NT Service Control
Microsoft Rich Textbox Control 6.0 (SP6)
Microsoft Tabbed Dialog Control 6.0 (SP6)
Microsoft Windows Common Controls 6.0 (SP6)
Microsoft Winsock Control 6.0 (SP5)

OPOS CashDrawer Control 1.13.001
OPOS CoinDispenser Control 1.13.001
OPOS MSR Control 1.13.001
OPOS PINPad Control 1.13.001
OPOS POSPrinter Control 1.13.001
OPOS LineDisplay Control 1.13.001
OPOS SigCap Control 1.13.001
PinPad ActiveX Control module
Sax Comm Objects 7
Sheridan 3D Controls
SigPlus OLE Control module
Sonic Click Ultra Button ActiveX Control
Sonic Progress Bar ActiveX Control
vbAccelerator Image List Control (VB6 version)
vbAccelerator VB6 PopMenu Control

Product Versioning

Triple E Technologies LLC's OneTouch® Suite products employ the following schema to assign unique names to all new software releases and updates:

Major Change	Minor Change	Maintenance	Impact	Place holder	Build
1-9.	1-9	1-9	0-3	0	.0001-9999

- **Major Change**: Sequence number indicating a major change that contains substantial changes (e.g., interface overhaul, change in compatibility, EMV, etc.); increases for each subsequent Major Change release.
- **Minor Change**: Sequence number indicating a minor change (e.g., improvement of existing interfaces, new feature or functionality, etc.); increases for each subsequent Minor Change release; resets to '1' after each new Major Change release.
- **Maintenance**: Sequence number indicating a maintenance change, which is representative of a planned patch to existing features and functionality; increases for each subsequent Maintenance release; resets to '1' after each new Major Change release.
- **Impact**: Change impact on previous software release. Either:
  0 = No Impact
  1 = PCI Impact
  2 = Security Impact
  3 = PCI and Security Impact

- **Placeholder**: Not used; defaults to '0'. Does not display by default.
- **Build**: Sequential wildcard number identifying improvements or bug fixes to current major, minor, maintenance build tuple; resets to .0001 after each new Major Change release; never used to represent a security-impacting change. To see application full version number, including the placeholder and build value:
  - Click the Triple E control panel, then click **Open Dashboard**.

EXAMPLE:
5.1130.9040 = Fifth major release, first minor change in fifth major release, with security and PCI impact and a build value of 9040.

Document Purpose and Use

This guide provides general and detailed instructions for implementing OneTouch® Suite 5.1130.XXXX into your business environment in a manner compliant with the Payment Card Industry (PCI) Data Security Standard (PCI-DSS). The PCI-DSS is a set of security standards created by the PCI Security Standards Council to guide development, implementation and use of payment card applications.

Please note that this document is not intended as a complete implementation guide for OneTouch® Suite; rather, it provides guidelines and instructions only for implementing OneTouch® Suite in a manner that facilitates and supports compliance with established PCI standards.

This guide applies only to OneTouch® Suite 5.1130.XXXX, and only as formally released by Triple E Technologies LLC. Any subsequent modification of the application and/or the PCI-DSS must be reviewed and evaluated to determine continued PCI compliance.

Triple E Technologies LLC makes this guide available to OneTouch® Suite owners and their designees. Triple E Technologies LLC will update the guide annually, or sooner if otherwise demanded by either product or PCI-DSS requirements. Updates can be obtained by going to the Triple E Technologies LLC website at http://www.e3tek.com. Triple E Technologies LLC will also publish and distribute updates as need arises.

For purpose of this guide, the following versions of PCI requirements and standards apply:

- PCI-DSS Version 3.2
- PA-DSS Version 3.2

Building And Maintaining A Secure Network

Using a VPN Router

For purpose of secure OneTouch® Suite implementation and subsequent operation, PCI-DSS requires that merchants use a VPN router to establish the DMZ, provide secure, encrypted remote system logins and ensure that all data on the network is encrypted. VPN router configuration must follow these standards:

- Restrict inbound Internet traffic only to protocols necessary for the cardholder data environment; specifically deny all other inbound traffic.
- Implement and manage multi-factor authentication access control mechanisms for all remote access to systems involved with handling of any PAN or SAD
- Use two-factor authentication (e.g., user name and password and token or certificate) for Triple E Technologies LLC support access
- Use two-factor authentication for individual user remote access accounts
- Limit external outgoing internet traffic to only those sites required by the OneTouch® Suite application, or as specified to meet business needs
- Do not use default passwords
- Require use of personal firewall product for connecting laptop or personal computer

Installing Firewall and Router Configurations

PCI-DSS 1.1-1.5 require OneTouch® Suite system owners to install network firewall and router configurations to protect cardholder data from unauthorized public access (Internet, other networks and hosts). In keeping with this requirement, adhere to the following standards and procedures before and after implementing OneTouch® Suite into your network environment.

NOTE: For general firewall or router installation instructions, refer to documentation provided with product.

1. Establish and at least quarterly review formal Change Management process for approving, testing and implementing external network connections and changes to firewall and router configurations. Ensure change process allows identification of both before and after configuration topologies. Capture change history by generating report detailing new services allowed and existing services denied as result of configuration change(s).

2. Route all proposed configuration changes through Change Management process for approval and implementation.

3. Create and at least quarterly review diagram showing topology of all connections

to OneTouch® Suite cardholder environment and cardholder data flows over the network. Ensure diagram is consistent with established firewall access policies

And associated rules. Diagram must show OneTouch® Suite SQL server segregated from DMZ.

4. Credit Card data (and therefore OneTouch® Suite) must not reside on systems directly connected to the Internet. Thus, a network DMZ (Demilitarized Zone) must be set up to segment the network so that only machines on the DMZ are Internet accessible. DO NOT INSTALL OneTouch® Suite ON ANY SYSTEM THAT DIRECTLY ACCESSES OR IS ACCESSED BY THE INTERNET.

5. Use the DMZ to filter and screen all traffic, and to prohibit direct routes for inbound and outbound Internet traffic. Ensure firewalls installed at each Internet connection and between Demilitarized Zone (DMZ) and internal network zone.

6. Limit all network device access to Administrators. Such access includes exclusive rights to:

    - Install, de-install or perform maintenance on any network device, or change the physical configuration of the firewall or router.
    - Make physical connections to a network device, including direct access ports and console ports.
    - Log in directly to a device console port or other direct access port.
    - Log in remotely to a network device.

7. Use same password policy for network device access as for Windows user accounts.

8. Whenever firewall or router suffers physical damage or there is evidence of tampering, fully evaluate event by means of hardware diagnostics and check physical configuration against existing documentation.

9. Compile list of allowed services, protocols and ports (e.g., Transport Layer Security [TLS], Virtual Private Network [VPN], etc.). Provide business justification for each listed item.

10. For each service, protocol and port deemed insecure (e.g., FTP), specify security features implemented in their behalf. Record exit interface, source and destination addresses and service (protocol/port number).

11. For each service other than HTTP, TLS1.2, SSH or IPSEC (e.g., ICMP), identify and provide business justification for internal and external sub-nets using the service.

12. Provide policy and enforcement mechanism to ensure firewall and router rules sets are reviewed at least every six months.

13. Build and document firewall configuration that restricts connections between un-trusted networks and OneTouch® Suite. Limit inbound traffic only to that necessary for OneTouch® Suite cardholder data environment; deny all other inbound and outbound traffic using either explicit deny all or implicit deny after allow statements.

14. Compile list of external source and destination addresses, and classify them as either trusted or untrusted. Specify policies for each un-trusted host, first as

source and then as destination. Based on protocols connecting un-trusted hosts to internal or DMZ networks, provide business reason for each policy in report.

15. Determine whether any wireless network traffic allowed into OneTouch® Suite cardholder data environment. If so, identify services and analyze associated allow policies and related rules. Devise and install perimeter firewall between wireless network and OneTouch® Suite to control traffic only as in keeping with specified policies and rules.

16. Identify firewall interfaces allowing traffic into OneTouch® Suite's network and DMZ networks. Determine services destined for cardholder environment; ensure services are necessary and originate in an interface connected to an interface within the DMZ. Devise and install DMZ to limit inbound and outbound traffic only to protocols necessary for OneTouch® Suite cardholder data environment.

17. Ensure firewall limits inbound Internet traffic only to IP addresses within the DMZ. Create policy stating all traffic between Internet and Internal networks is denied.

18. Do not allow direct inbound or outbound traffic routes between Internet and OneTouch® Suite cardholder data environment. Identify and remove any policy or rule that allows Internet inbound/outbound traffic to pass through firewall if it has cardholder data network either as source or destination.

19. Require outbound traffic from cardholder data environment to Internet access IP addresses only within DMZ. Ensure cardholder data environment source and destination policies consistent with and justified by business need.

20. Ensure firewall performs Stateful Packet Inspection (SPI) to keep track of each network connection (e.g., TCP stream, UDP communication, etc.) traveling across it. Confirm firewall can distinguish legitimate packets for different types of connections, and that only packets matching known ("remembered") connection states can pass through.

21. Ensure firewall configuration has anti-spoofing rule to prevent internal addresses from passing from Internet into DMZ.

22. Identify internal network segments accessible from outside and DMZ, including routable addresses. Examine rule trails individually for natting. Ensure firewall hides all internal network IP addresses.

23. Verify that all mobile and/or employee-owned computers having both network access and direct Internet connectivity have personal firewall software installed and active. Ensure personal firewall software configured by Administrator in keeping with standards contained herein and are not alterable by mobile computer users.

24. Except for one emergency account, do not configure local user accounts on router. Router must require user authentication, and only Administrators should have access. Ensure 'enable password' on router kept in secure, encrypted form and set to current production password.

25. Ensure router denies all inbound and outbound traffic not specifically allowed. Add router access rules as business needs arise.

26. Document all router configuration files. Secure router configurations through use of access and physical controls, and ensure configuration files are synchronized.

27. Ensure each router has following statement in clear view:

> You have accessed a [*company name*] restricted device. The actual or attempted unauthorized access, use or modification of this system is strictly prohibited. Unauthorized users are subject to disciplinary proceedings and/or criminal and civil penalties under state, federal or other applicable domestic and foreign laws. The use of this system may be monitored and recorded for administrative and security reasons. Anyone accessing this system expressly consents to such monitoring and is advised that if such monitoring reveals possible evidence of criminal activity we may provide the evidence of such activity to law enforcement.

The following ports and protocols are used by the Triple E Suite to facilitate communication between the POS systems and the Navigator Site Controller. The purpose of this information is to serve as a guide when setting up firewall software on the POS systems and Navigator or when putting a firewall between machines on the local network.

Navigator (tPortController and ccEngine)

Outbound Connections

TCP 6627:	tPortController → NeXGen
UDP 5555:	tPortController → Broadcasts pump status on local network
TCP 9999:	PedestalViewer → Pedestal (Sentinel POS)
TCP 443:	ccEngine → Payment Processor

Inbound Connections

TCP 1433:	POS → SQL Server (port for SQL connections accessing DB on Navigator)
TCP 5556:	POS → tPortController (POS sends fuel dispenser commands to tPortController)

Sentinel POS (Pedestal service)

Outbound Connections

TCP 1433:	POS → SQL Server (port for SQL connections accessing DB on Navigator)
TCP 5556:	POS → tPortController (POS sends fuel dispenser commands to tPortController)

Inbound Connections

TCP 9999:	PedestalViewer → Pedestal Service

Vanguard POS

Outbound Connections

TCP 1433:	Register→ SQL Server (running on Navigator)
TCP 5556:	Register→ tPortController (POS sends dispenser commands to tPortController)

Inbound Connections

UDP 5555:	tPortController → Broadcasts pump status on local network

Additional Protocols & Ports

ICMP:	Enabled (for pings)
UDP 138:	File and Printer Sharing (NB-Datagram-In)
UDP 137:	File and Printer Sharing (NB-Name-In)
TCP 139:	File and Printer Sharing (NB-Session-In)
TCP 445:	File and Printer Sharing (SMB-In)
TCP 5900:	UltraVNC viewer for viewing networked machines
TCP 2113 - 2114 [Outbound]:	AutoUpdate Client
TCP 13450 [Outbound]:	nxlog (PaperTrail Event Log Aggregator)

Disabling Vendor-Supplied Default Accounts

PCI-DSS 2.1 requires OneTouch® Suite system owners to change or disable any administrative default account as provided by vendors to install operating systems, servers, databases and applications. In keeping with this strategy, Triple E Technologies LLC disables the Microsoft SQL Server “sa” account by means of forced Windows user login authentication. However, there are four other administrative default Windows accounts associated with OneTouch® Suite that are not PCI compliant if used as-is. Therefore, to maintain system integrity and ensure continued PCI compliance, perform the following procedures both as part of OneTouch® Suite implementation and every ninety days thereafter. Secure authentication should be used for these accounts even if they are to be disabled or not used. These accounts need to be managed as regular Windows accounts.

NOTE: While Triple E Technologies LLC does not recommend nor otherwise support implementing OneTouch® Suite into wireless environments, instructions for securing wireless connections may be found on Page 34 of this guide.

Procedures

Change passwords for any disabled and/or not-in-use accounts, and for the following OneTouch® Suite default accounts:

- Administrator
- SiteController
- POS
- Pedestal

For each such account, devise (strong) replacement password using the following complexity standard:

- At least seven characters.
- No user name, real name or company name.
- No complete dictionary word.
- Characters from each of the following four groups:

Group	Examples
Uppercase letters	A, B, C …
Lowercase letters	a, b, c …
Numerals	0, 1,2, 3, 4, 5, 6, 7, 8, 9
Symbols	` ~ ! @ # $ % ^ & * ( ) _ + - = { } | [ ] \ : " ; ' < > ? , . /

EXAMPLE: 4&q6md13?J

Next, replace default passwords with new passwords using Windows Local Users and Groups. You must be logged-on as Administrator to perform functions associated with changing default account passwords.

Developing System Component Configuration Standards

PCI-DSS Requirements 2.2 and 12.9 mandate that system owners implement OneTouch® Suite into an environment that specifically limits services to, on and from servers and other system components. For this reason, OneTouch® Suite owners must implement and quarterly review system component configuration standards and policies that support or otherwise facilitate the following:

1. Addressing known system network component and critical server vulnerabilities in manner consistent with industry-accepted hardening and lockdown standards, as specified by SysAdmin Audit Network Security Network (SANS), National Institute of Standards Technology (NIST) and Center for Internet Security (CIS).

2. Installing only those system components, especially servers, having documented business justification.

3. Using 128-bit encryption for all internal, non-console data transmission.

4. Using multiple security measures for each system component (e.g., configuring firewall to allow only certain IP addresses to connect to printer and altogether disabling printer on systems where not needed).

5. Following principle of least privilege by limiting system component access to and from only those sources for which demonstrated need has been provided.

6. Mandating clear, concise and simple configuration specification for each server service.

7. Providing logging and other automatic monitoring mechanisms to demonstrate enforcement of configuration standards for each new system component.

8. Calling for initial and periodic system component risk assessments based on analysis of specified configuration rules.

9. Identifying and calling for elimination or modification of configuration rules allowing insecure services.

10. Using security profiles to identify unique server functions and restrict or prevent access to associated services and protocols.

11. Limiting servers to only one primary function (e.g., SQL database implemented on one server, DNS on another, etc.).

12. Determining whether dedicated services have common source network segment and, if so, ensuring servers on the same network segment have same security level.

13. Deploying firewall rules to block all ports and protocols not directly needed to perform server's specified function.

14. Providing common security parameter settings for system components and critical servers.

15. Auditing firewall configurations by running port scans to ensure unexpected ports not accessible.

Transmitting Encrypted Data

PCI-DSS Requirement 4.1 mandates use of strong cryptography and at least 128-bit encryption techniques (either at the transport layer with TLS or IPSEC or data layer with algorithms such as RSA or Triple-DSS) to safeguard cardholder data during transmission over public networks, including the Internet and Internet-accessible DMZ network segments. In this regard, OneTouch® Suite transfers all data to the card processor via TLS 1.2. If applicable, any data coming into your system over the Internet should also be submitted via TLS 1.2. Owners are advised that changing encryption settings below 128-bit encryption will result in PCI non- compliance.

Encrypting All Non-Console Administrative Access

Non-console administrative access to the cardholder data environment (application and servers) requires two-factor authentication and either SSH, VPN or TLS for encryption. It is your responsibility to implement two-factor authentication in order to comply with PCI-DSS requirements. To satisfactorily use encryption for SQL Server communications over a network, you must provide demonstrable means for:

1. Identifying all services to the firewall and their attendant rules and policies, and noting management services with administrative access.

2. Encrypting all communication between administrative console and firewall.

3. Ensuring interface access to all management services uses strong encryption technologies such as SSH, VPN and TLS-encrypted HTTPS protocol.

4. Implementing and managing multi-factor authentication access control mechanisms for all remote access to systems involved with handling of any PAN or SAD.

5. Reviewing system service and parameter files to ensure Telnet FTP, 'r*' protocols and other remote login commands are disabled.

Protecting Cardholder Data

Preventing Storage of Full Magnetic Stripe, Validation Code or Value (CAV2, CID, CVC2, CVV2) or PIN Block Data

Current and previous OneTouch Suite® versions do not store magnetic stripe, card validation code or PINs/PIN block data. OneTouch Suite® software uses multiple passes of different strong encryption algorithms (3DES and RSA-2048) to ensure that such sensitive data never appears in any audit or application log files on the hard disk or stored in the database. The software takes advantage of Microsoft's SQL Server Data Encryption Hierarchy to protect all encryption keys and ensure that a compromised database cannot be used maliciously to extract sensitive data. Preventing storage of such confidential card payment data is required for PCI compliance. It is the merchant's responsibility to ensure that the card payment transactions they process do not store magnetic stripe data, card validation codes, PINS or PIN block data, or cryptographic key material, even when such data is encrypted; it is OneTouch® Suite's responsibility to provide the means. In this regard, such data enters OneTouch® Suite at one of the points of sale (e.g., Register, Pedestal, etc.) through a communications port, and once in one of the applications is used only in random access memory (RAM or Volatile Memory). While in the point of sale, any sensitive that may be logged to a text file is first masked using a masking algorithm to ensure such sensitive data is never logged to the hard disk.

Further, when any POS system sends data to ccEngine (the only application in OneTouch Suite® that authorizes credit cards), the data is encrypted in memory with a 128-bit 3DES algorithm before network submission to the SQL Server. After submission to SQL server, cardholder data is encrypted a second time using an RSA-2048 algorithm. It is upon receipt of this card processing request that ccEngine will decrypt the database data where it will reside for a short period in (RAM) unencrypted before submission to the card processor for authorization. Otherwise the PAN data always resides double encrypted in the database.

When one of the POS systems finishes a transaction, the only data permanently stored in the SQL Server database is the encrypted PAN. This PAN is first encrypted using 3DES in memory before being pushed to the database to avoid leakage of plaintext card data in SQL Trace Audit Logs. As the 3DES encrypted data enters the SQL server, a database trigger doubly-encrypts the PAN as it is written to the sale payments record using asymmetric encryption in SQL 2012 (RSA-2048 Algorithm).

If an application needs to retrieve the encrypted PAN temporarily for post-authorization requests, the applications utilize the asymmetric key/public key and issue an SQL statement to the SQL server database to decrypt the RSA-2048 encrypted PAN and return the 3DES-encrypted PAN to the requesting application. The card processing application then uses the original symmetric key to decrypt the 3DES encrypted string within RAM.

The decrypted PAN only resides within RAM long enough to process the current

operation; nothing sensitive is logged onto the hard drive and OneTouch Suite does not store unencrypted card data.

You do not need to take any additional steps either for or subsequent to system implementation to ensure deletion of magnetic stripe, validation code or PIN Data, or cryptographic key material following transaction processing.

Note: Aside from the encryption method detailed above, there are no other configurable options to encrypt cardholder data.

As regards personnel troubleshooting problems relating to OneTouch® Suite software, PCI compliance requires that you establish and enforce security policies for dealing with sensitive authentication data (swipe data, validation values or codes, PIN or PIN block data). Such policies must include, but are not limited to, the following:

- Never download or store authentication data outside of client's network
- Always encrypt sensitive cardholder data when being stored
- Store such data only in specific, known locations with limited access
- Collect only the limited amount of data needed to solve a specific problem
- Securely delete such data immediately after use

Inadvertent Capture or Retention of Cardholder Data

PA-DSS 2.1 requires that you configure your underlying software or systems (e.g., OS, databases, etc.) in such manner as to prevent inadvertent capture or retention of cardholder data.

Encrypting the Page File

New systems shipped from Triple E have the Windows Paging File already encrypted and are set to clear pagefile.sys upon shutdown. However, to encrypt the Page File for an upgraded system, you must first ensure your computer hard disk is formatted using NTSF, and then perform the following steps:

1. On Windows task bar, click Windows “orb”, and then type **cmd** in search window.
.
2. On menu that displays, right-click **cmd.exe**, and then click **Run as Administrator** on next menu.

3. At prompt, type **fsutil behavior set EncryptPagingFile 1** to encrypt page file.

4. To verify configuration, type **fsutil behavior query EncryptPagingFil**e; **EncryptPagingFile=**1 message displays.

Disabling Page File Encryption

In event you need to disable Paging File encryption:

1 On Windows task bar, click Windows “orb”, and then type **cmd** in search window.

2 On menu that displays, right-click **cmd.exe**, and then click **Run as Administrator** on next menu.

3 At prompt, type **fsutil behavior set EncryptPagingFile 0.**

4 To verify configuration, type **fsutil behavior query EncryptPagingFile**; **EncryptPagingFile=0** message displays.

Clearing the Page File

New systems shipped from Triple E are preset to clear pagefile.sys upon shutdown, thereby purging all temporary data such as application passwords and cardholder PANs. However, to clear the Page File for an upgraded system, you must first perform the steps outlined below. Note that the result of such performance may increase your Windows shutdown time.

1. On Windows task bar, click Windows “orb” and then type **regedit** in search window.

2. On menu that displays, right-click **regedit.exe**, and then click **Run as Administrator** on next menu.

3. On Registry Editor, click **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\ Session Manager\Memory Management**.

4. Do one of the following:

- If Registry entry referenced in Step 3 (above) present, double-click to change value from **0** to **1**; go to Step 6

  or

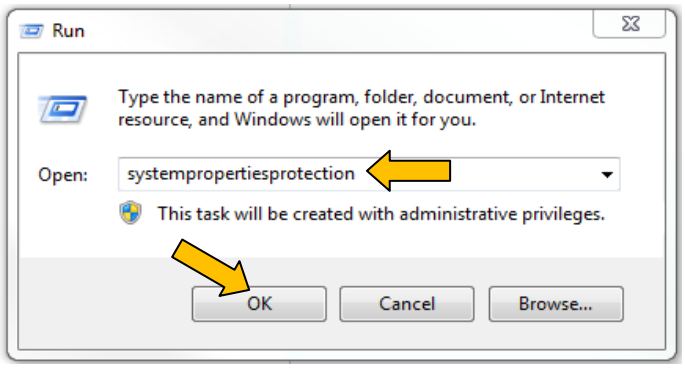
- If Registry entry referenced in Step 3 (above) *not* present, go to Step 5

5. Create Registry entry:
   - Right-click in right pane;
   - Click **New**, and then click **DWORD (32 bit) Value**
   - Type **ClearPageFileAtShutdown**
   - Double-click entry to change value from **0** to **1**
6. Click **OK**; close **regedit**.

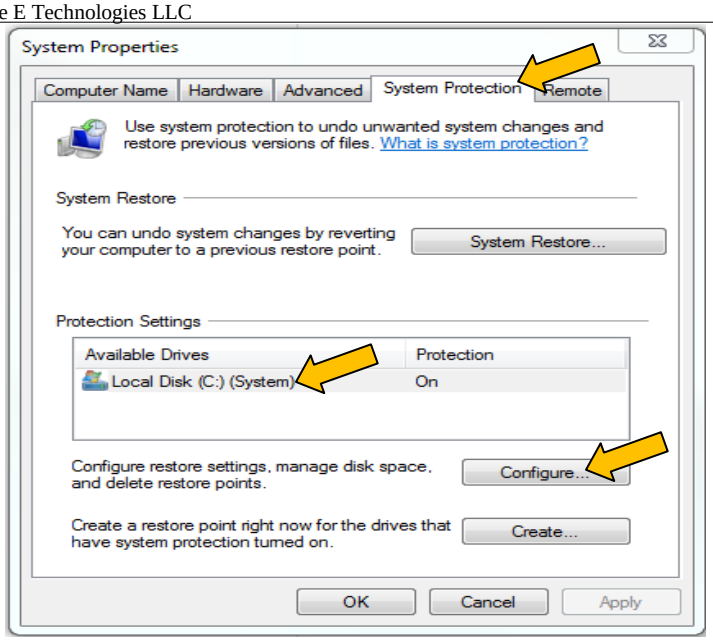
Disabling System Restore Points:

To disable system restore points:

1. On desktop, click **Start**, and then click **Run**. **Run** dialog displays:

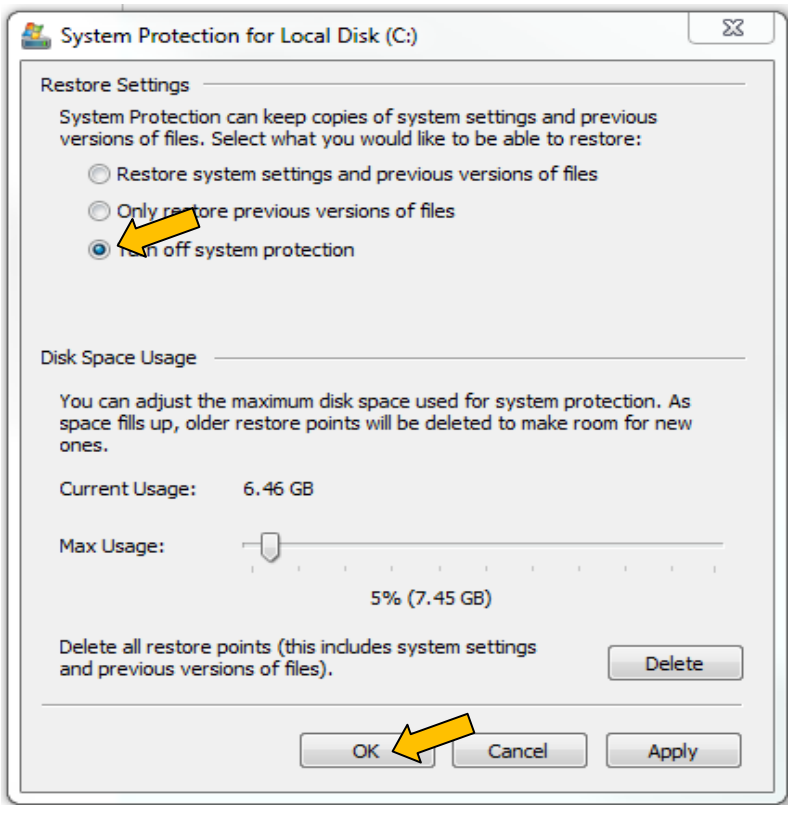


2. In **Open** window, type "systempropertiesprotection", and then click **OK**; **System Properties** dialog displays:



3. Click **System Protection** tab.

4. Click **Local Disk (C:) (System)**, and then click **Configure**; **System Protection for Local Disk (C:)** dialog displays:



5. Click **OK** two (2) times.

6. Restart computer to update settings.

Disabling Windows Error Reporting

The Windows errors reporting feature has the potential to capture and retain cardholder data. Perform the following steps to disable Windows error reporting:

1. Click the **Start** icon on the desktop, then click **Control Panel**.
2. Click **Action Center**.
3. In the **Action Center** window, click **Change Access Center Settings**.
4. In the **Related settings** section, click **Problem reporting** settings.
5. Select **Never check for solutions**, then click **OK**.

Storing Cardholder Data

Sensitive cardholder data must always be encrypted when being stored. OneTouch Suite 5.1130.XXXX never displays full cardholder PAN data, meaning PAN data is always masked by default on all displays. The application cannot be configured to allow viewing of full PAN data.

Per PCI- DSS Requirements 1.3 and 1.3.4, never store cardholder data on Internet-accessible systems (e.g., web server and database server must not be on same server.) Although OneTouch® Suite does use Microsoft SQL Server to distribute the application internally to your network, this server should NOT be used for any external web applications. It is recommended that access to this server from the Internet be severely restricted through use of a VPN firewall. Please see the section on remote access for clarification on how to use VPN access to view OneTouch® Suite data remotely.

Managing stored cardholder data

OneTouch® Suite Version 5.1130.XXXX includes provision for purging historical data on a regular basis (according to schedule you establish). OneTouch® Suite by default is configured to specify clearing encrypted card data after one calendar year. If you have a business reason for keeping card data for less than one-year, you may change the default setting to any period less than the default. Keep in mind, however, that OneTouch® Suite does not retain this data anywhere else in the system; once purged, the data is irretrievable and gone forever.

The following guidelines must be followed when dealing with cardholder data (either PAN alone or with expiry date, cardholder name or service code):

- Establish policy with business justification for sensitive data retention
- Purge data exceeding defined retention period

Listed below are the storage locations of cardholder data that should be purged:

- ccEngine database
  ccRequests
  CardsLockedOut
- rlCustomerData Database

PendingSettlements
SalePayments

Truncated cardholder data may also be output in the following DataManager reports:

- Credit Card Reconciliation Report
- Daily Card Sales Report
- eee2016.rpt- Last 4 only
- eee2017.rpt- Last 4 only
- eee2037.rpt- Last 4 only
- eee2080.rpt- Last 4 only
- eee2028.rpt- Last 4 only
- EMVChipTransactions.rpt- 1st 6 and Last 4

Truncated cardholder data may also be output applications/systems:

Register
Final screen - 1st 6 + Last 4, on all manual/swiped entries
Receipt - Original and reprint - Last 4 only

Dispensers
Receipt - Original - Last 4 only

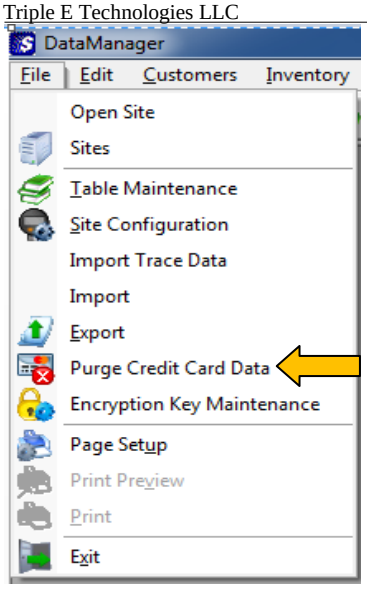
Sentinel
Receipt - Original - Last 4 only

Purging cardholder data

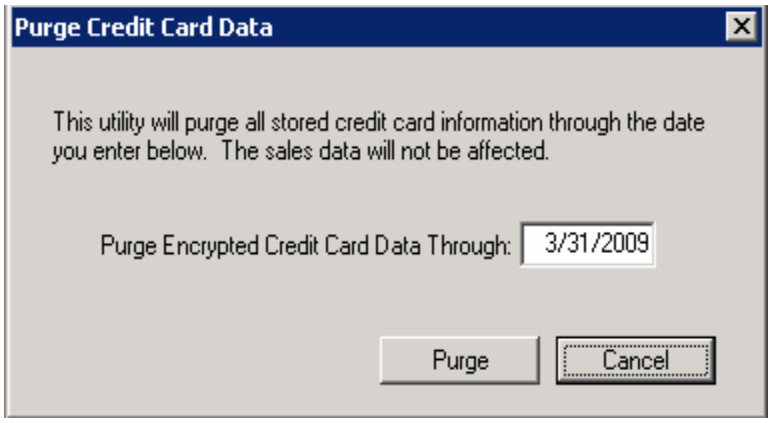
It is a requirement for PCI-DSS compliance that you securely delete cardholder data when the data is no longer required for legal, regulatory, or business purposes.

To perform cardholder data deletion, you must be logged-on as either Administrator or PCI User to perform cardholder data purge functions. To delete selected cardholder data following OneTouch® Suite implementation, follow the procedure below:

1. From OneTouch DataManager Connect menu, click File, and then click Purge Credit Card Data in drop down menu



2. In Purge Credit Card Data dialog, type end date through which you wish to purge stored credit card data.



3. Click Purge.

NOTE: A credit card purge history record will be generated for each purge transaction. Administrators and PCI Users may view audit logs of these transactions in SQL Server 2012 and above Management Studio.

Managing cryptographic material

In keeping with PCI-DSS Requirement 3.6, all cryptographic material (encryption keys and encrypted cardholder data) must be securely removed. In this regard, the process of implementing OneTouch® Suite Version 5.1130.XXXX will automatically purge encrypted data from previous transactions. Removal of this cryptographic material is absolutely necessary for PCI compliance.

Following implementation, system encryption keys must be changed at least annually and whenever deemed necessary or prudent because of actual or suspected security compromise. Keys must also be changed whenever anyone with knowledge of them changes positions or leaves the company. OneTouch® Suite provides system functionality to securely change encryption keys currently used to protect cardholder data, and will automatically change encryption keys annually if not otherwise performed more frequently.

Encryption Storage Key

PA-DSS 2.4. requires that access to keys must be restricted and must be stored securely in the fewest possible locations and forms.

Data encryption keys are protected by Microsoft SQL Server key encryption and protection mechanisms. All utilized keys are stored and protected in separate levels of hierarchy. Databases ccEngine, esController and rlCustomerData each contain the Asymmetric key eeeCCKey. This key is unique to each database and protected by the same Microsoft SQL Server protection mechanisms.

The process of generating keys is contained within encrypted stored procedures. The keys are generated by way of the built-in SQL server symmetric master key generation and asymmetric key generation.

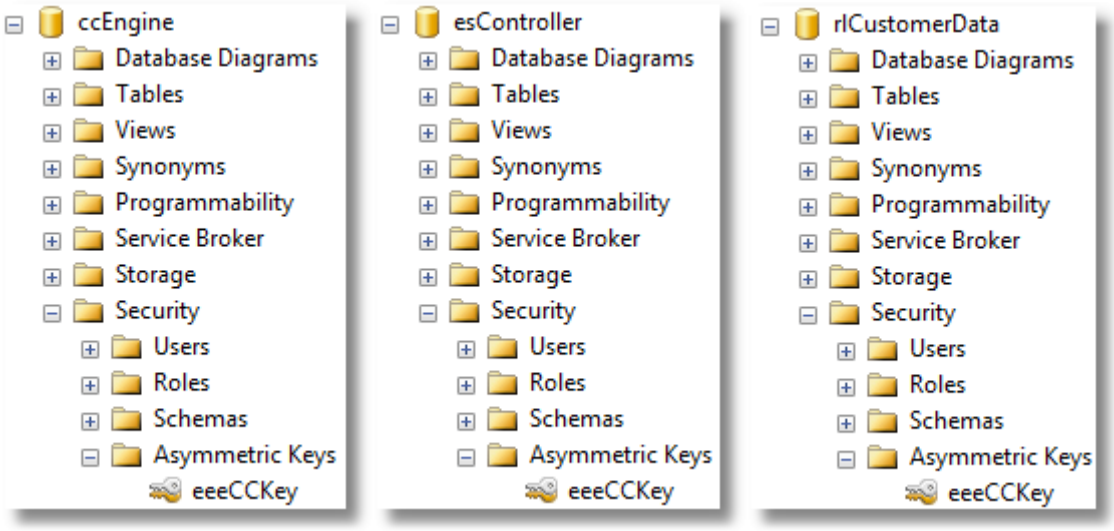
The stored procedures which generate the keys are stored as encrypted stored procedures, meaning it isn't possible for an unauthorized user to script them out and see the process.

Moreover, restricted access to the site controller machine via Windows Accounts is the true layer of security guarding against unauthorized key modification.
The administrator account that installed the SQL Server instance can manipulate the SMK.

The Symmetric Master Key (SMK) is protected by the Windows Data Protection API (DPAPI) and tied to the physical machine key and service account credentials. The Database Master Key (DMK) in each DB is protected by the SMK which is created at SQL Server setup and tied to that unique instance of SQL server. The asymmetric keys are protected by each DMK and thus the data residing in the underlying databases can only be decrypted on the physical SQL Server instance where installation was performed.

Key Locations

The SMK is stored in the 'master' database and each DMK and asymmetric keys are stored within each corresponding binary database file on disk (.mdb file). The eeeCCKey is stored in each database's Asymmetric Keys folder. Encryption storage key locations are not configurable and thus cannot be changed.



Viewing Audit Logs on a Centralized Log Server

Trace files automatically generated by the SQL Server for events related to card processing, encryption key maintenance and other significant events are logged to the C:\EEETechnologies\EEETrace folder and its sub-folders on the Navigator SiteController machine. These files must be transferred to a centralized logging server on a regular interval to avoid system shutdown due to the primary disk storage being exhausted.

You can move the trace log folder's contents from the Navigator to your logging server using your preferred file transfer method. Some valid options include FTPS to a secured FTP server, file transfer via UNC on Windows to a mapped drive, a secure file transfer service such as Google Drive, or a physical medium, among others. All .trc files except the active file locked by SQL Server can be moved.

Trace audit logs will only contain truncated PAN. All of the .trc audit logs can be reviewed with a SQL Trace/Profiler application. A customer can utilize the .trc audit logs that have been transferred to a log server inside SQL Server Profiler or equivalent viewer. It is through utilization of the profiler or other viewer application that customers gain the ability to view the audit logs on a centralized log server.

Encryption Key Custodian

Key encryption management is largely handled by the OneTouch Suite application. However, limited personnel should be designated key custodian roles to manage certain additional functions. The following is a list of key custodian responsibilities:

- Ensure timely generation of new keys as defined in company information security policy and periodically change keys accordingly
- Ensure only authorized users have access to systems with OneTouch Suite software, specifically Datamanager, that have ability to change keys
- Fully document key management processes

PA-DSS 2.6 requires each Administrator or other person assigned encryption key custodianship responsibilities to formally sign a document indicating they understand and acknowledge their assigned responsibilities. A sample form is provided below:

<Company Name>

Encryption Key Custodianship

The undersigned herewith acknowledges understanding and acceptance of all responsibilities assigned as < *Company Name*> Encryption Key Custodian.

Custodian Name:_____ Approved By:_____

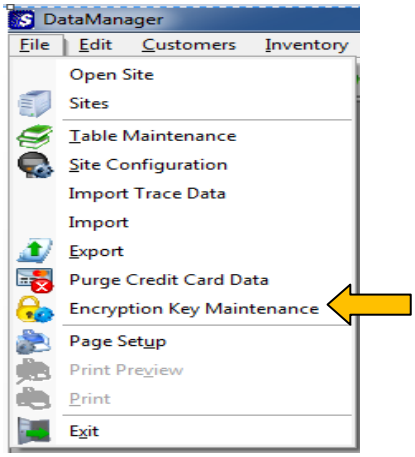
Custodian Signature:_____ Approver Signature:_____

DATE: /_____/_____ DATE: /_____/_____

Changing encryption keys

You must be logged-on as Administrator to perform the encryption key maintenance function. To change the encryption key following OneTouch® Suite implementation, follow the procedure below:

1. From OneTouch DataManager **Connect** menu, click File, and then click Encryption Key Maintenance in drop-down menu.



Change Encryption Key dialog displays:

2. Click Create.

NOTE: OneTouch® Suite generates an Encryption Key Change record in the audit log each time encryption key maintenance is performed. All data encrypted with old keys will no longer be recoverable as the keys are forcibly removed. This data will not need to be re-encrypted following new key generation.

When a new key is generated and data is re-encrypted, then any previous credit card data, if stored, becomes unreadable and unusable and is no longer accessible in the SQL instance, and the purge process deletes all records where the data is stored. No clear text data is created during new key generation.

Maintaining a Vulnerability Management Program

Using and Updating Anti-Virus Software

Because OneTouch® Suite runs on WindowsProfessional 7 over a network, PCI DSS requires system owners to protect the cardholder data environment against intrusion from without by viruses and other malicious software. In keeping with this requirement, ensure the following are in place and working before implementing OneTouch® Suite:

1. Information security policies and procedures establishing requirements and responsibilities for installing, configuring and running anti-malware software.

2. Mechanisms for enforcing established anti-malware policies and procedures, including generation of audit logs demonstrating anti-malware software currency, potency anduse.

3. Deployment of anti-malware software on OneTouch® Suite and all interfacing services and systems.

4. Anti-malware software settings sufficient to detect and remove all known viruses, spyware and adware while permitting security patches and other software updates from authorized sources.

Maintaining Secure Systems and Applications

For purpose of best industry practice and PCI compliance, OneTouch® Suite system owners must make every effort to protect the cardholder data environment from exploitation by employees and external hackers. In keeping with this requirement, ensure the following are in place and working both before and ongoing after OneTouch® Suite implementation:

1. Information security policies and procedures establishing responsibilities and process for installing Triple E Technology-supplied security patches.

2. Information security and daily operating policies and procedures establishing responsibilities and process for installing Triple E Technologies LLC-supplied software updates.

3. Performance standard calling for installation of all OneTouch® Suite security patches and software updates within thirty days of receipt from Triple E Technologies LLC.

4. Change management program ensuring installation of OneTouch® Suite security patches and software updates follow established change control procedures.

5. Provision in change management program for documenting OneTouch® Suite update performance and impact, back-out procedures and management sign-off.

Implementing Strong Access Control Methods

Restricting Cardholder Data Access by Business Need-To-Know

OneTouch® Suite strongly advises limiting access to any PCs, servers and databases with cardholder data by requiring unique User IDs and passwords for purpose of secure authentication. OneTouch® Suite does not have provision for setting up user accounts and relies on Microsoft Windows functionality to setup user accounts and assign users to user groups. A Windows user account defines the actions a user can perform by establishing the privileges (rights and permissions) for that user. Each OneTouch® user must be a member of at least one user group. The rights and permissions assigned to a user group are the same for all members of that group.

OneTouch® is pre-configured with four distinct user groups with the appropriate privileges already assigned. The privileges associated with each user group are described below. As good practice, you should assign users to the group or groups having the least privileges allowing satisfactory performance of assigned duties. For reason of system integrity and PCI compliance, never modify the privileges assigned to OneTouch® user groups.

Administrator Group

An Administrator Group account can make system-wide changes, install programs and access all files on the computer. Only an Administrator has complete access to other user accounts. An Administrator Group member can:

- Create, change and delete user accounts.
- Create, reset and delete user account passwords.

Administrator Group members cannot change their own account type to another account type unless there is at least one other user with an Administrator account type. This is to ensure that there is always at least one Administrator in the system.

Administrators have the following OneTouch® Suite rights and permissions:

System Menu Functions	Reports	Database Tables
Add Customer	Aged Trial Balance	Adjustment Reasons
Add Purchase Order	Checks By Shift	Bad Check Names
Add Item	CP720 Gallon Summary	Card types
Adjust Inventory	Credit Card Reconciliation	Customer Categories
AR Reports	Credit Card Volume And Charges	Customer Pricing
Archive Records	Credit Limit	Customers
Change Prices	Customer Activity	Discount Codes
Clear Limits	Customer Drivers	Employees
Create AR Reports	Customer Fuel History Summary	Export Definitions
Credit Card Search	Customer Pricing and Discounts	Gift Cards
Edit Private Cards	Customer Sales Summary	Import Definition
Encryption Key Maintenance	Daily Card Sales	Inventory Adjustments
Export Data	Daily Journal Report	Inventory Categories
Generate Finance Charges	Daily Card Sales	Inventory Items
Generate Invoices	Daily Shift	Inventory Receipts
Generate Pin Numbers	Discounted Sales	Invoice List
Generate Priced Transactions	Dispensed Volume by Dispenser and	No Sale Reasons
Generate Statements	Dispenser Totals by Product and Dispenser	Other Payment Types

Administrator Group Rights and Permissions (continued)

System Menu Functions	Reports	Database Tables
Inventory Barcodes	FET/SET Exemption	Pricing Categories
Import Receipt Details	Dyed Diesel Sales by Customer	Paid-Out Reasons
Inventory Adjustments	Employee Charges	POS Configuration
Inventory Receipts	Finance Charges	Pricing Levels
Inventory Reports	Fuel Sales By Date and Point Of Sale	Purchase Order Status Codes
Invoice List	Fuel Sales By Dispenser & Product	Quick Menus
Payment Adjustments	Fuel Sales Volume by Dispenser	Sales List
Print Adjustment	Gallon Summary with Discounts	Sites
Print Receipt	Hourly Sales	Terms Codes
Purchase Order Maintenance	Inventory Adjustments	Units Of Measure
Purge Credit Card History	Inventory Receipts	Vendor Categories
Rebuild Item Balances	Inventory Snapshot	Vendors
Rebuild Sales Summary	Inventory Stock On Hand	
Reports List	Invoice Preview	
Sales Entry	Invoices	
Sales List	Invoices – Vehicle Format	
Sales Reports	Loyalty Card Savings	
Show Customer List	Monthly Sales Volume	
Show Items List	No Sale Reasons	
Site Configuration	On Account Charges	
Sites	Other Payment Details	
Synchronize Site	Paid Outs By Date And Category	
System Options	Payment Details	
Table Maintenance	Payment History	
	Pending Settlements	
	Prepaid Card Status	
	Price Change History	
	Private Card Fuel Sales by Dispenser	
	Private Card Sales By Customer and Card	
	Private Card Sales Summary	
	Private Cards List	
	Register Shift	
	Re-Order Limits	
	Sales By Payment Method	
	Sales By Shift and Category	
	Sales Detail by Date and Category	
	Sales History with Signatures	
	Sales Profit Margins by Category	
	Sales Volume by Hour	
	Sales Volume Summary	
	Sales with Overridden Prices	
	Statements	
	Statements [Customer Name/Address Lowered]	
	Top Sellers by Category	
	Top Selling Merchandise	

Manager Group

With few exceptions, a Manager Group account provides access to system business functionality equal to that of the Administrator group. However, Managers cannot make system-wide changes, install programs or create or access other user accounts. A Manager Group member can:

- Perform most all database table maintenance functions with Add, Change and Delete privileges.
- Perform most all system menu functions, and create reports.

Manager Group members cannot change their own account type to another account type, or change password or password change frequency other than as prescribed.

Manager Group members have the following OneTouch® Suite rights and permissions:

System Menu Functions	Reports	Database Tables
Add Customer	Aged Trial Balance	Adjustment Reasons
Add Purchase Order	Checks By Shift	Bad Check Names
Add Item	CP720 Gallon Summary	Card types
Adjust Inventory	Credit Card Reconciliation	Customer Categories
AR Reports	Credit Card Volume And Charges	Customer Pricing
Archive Records	Credit Limit	Customers
Change Prices	Customer Activity	Discount Codes
Clear Limits	Customer Drivers	Employees
Create AR Reports	Customer Fuel History Summary	Export Definitions
Credit Card Search	Customer Pricing and Discounts	Gift Cards
Edit Private Cards	Customer Sales Summary	Import Definition
Encryption Key Maintenance	Daily Card Sales	Inventory Adjustments
Export Data	Daily Journal Report	Inventory Categories
Generate Finance Charges	Daily Card Sales	Inventory Items
Generate Invoices	Daily Shift	Inventory Receipts
Generate Pin Numbers	Discounted Sales	Invoice List
Generate Priced Transactions	Dispensed Volume by Dispenser and Product	No Sale Reasons
Generate Statements	Dispenser Totals by Product and Dispenser	Other Payment Types
Import Receipt Details	Dyed Diesel Sales by Customer	Paid-Out Reasons
Inventory Adjustments	Employee Charges	Pricing Categories
Inventory Barcodes	FET/SET Exemption	Pricing Levels
Inventory Receipts	Finance Charges	Purchase Order Status Codes
Inventory Reports	Fuel Sales By Date and Point Of Sale	Quick Menus
Invoice List	Fuel Sales By Dispenser & Product	Sales List
Payment Adjustments	Fuel Sales Volume by Dispenser	Terms Codes
Print Adjustment	Gallon Summary with Discounts	Units Of Measure
Print Receipt	Hourly Sales	Vendor Categories
Purchase Order Maintenance	Inventory Adjustments	Vendors
Purge Credit Card History	Inventory Receipts	
Rebuild Item Balances	Inventory Snapshot	
Rebuild Sales Summary	Inventory Stock On Hand	
Reports List	Invoice Preview	
Sales Entry	Invoices	
Sales List	Invoices – Vehicle Format	
Sales Reports	Loyalty Card Savings	
Show Customer List	Monthly Sales Volume	
Show Items List	No Sale Reasons	
Table Maintenance	Payment History	
	Pending Settlements	
	Prepaid Card Status	
	Price Change History	
	Private Card Fuel Sales by Dispenser	
	Private Card Sales By Customer and Card	
	Private Card Sales Summary	
	Private Cards List	
	Register Shift	
	Re-Order Limits	
	Sales By Payment Method	
	Sales By Shift and Category	
	Sales Detail by Date and Category	
	Sales History with Signatures	
	Sales Profit Margins by Category	
	Sales Volume by Hour	
	Sales Volume Summary	
	Sales with Overridden Prices	
	Statements	
	Statements [Customer Name/Address Lowered]	
	Top Sellers by Category	
	Top Selling Merchandise	

PCI Group

PCI Group members have very limited access to OneTouch® system menu and reporting functions or data table maintenance functions. However, PCI Group members do perform two extremely critical business tasks:

- Look-up credit card transaction information.
- Purge credit card transaction history.

PCI Group members have the following OneTouch® Suite rights and permissions:

System Menu Functions	Reports	Database Tables
Credit Card Activity Search	Credit Card Reconciliation	None
Purge Credit Card History	Credit Card Volume And Charges	

User Group

User Group members have limited access to system menu and reporting functions, and only Read access to certain data table maintenance functions. Basically, User Group members are primarily involved with sales and inventory activities. User Group members can:

- Generate inventory and sales reports.
- View information in certain data tables.

User Group members have the following OneTouch® Suite rights and permissions:

System Menu Functions	Reports	Database Tables
Inventory Reports	Inventory Adjustments	Adjustment Reasons
Reports List	Inventory R e ce i p t s	Inventory Categories
Sales Reports	Inventory Snapshot	Inventory Items
Show Items List	Inventory Stock On Hand	Inventory Receipts
Table Maintenance	Sales By Payment Method	No Sale Reasons
	Sales By Shift and Category	Other Payment Types
	Sales Detail by Date and Category	Paid-Out Reasons
	Sales History with Signatures	Sales List
	Sales Profit Margins by Category	
	Sales Volume by Hour	
	Sales Volume Summary	
	Sales with Overridden Prices	

Screensaver Display Setting

To minimize observance of cardholder data displayed on temporarily vacated workstations, specify Windows screen saver default setting of 15 minutes or less.

User Account Password and Lockout Policies

OneTouch® Suite uses pre-configured Windows settings for the following account password and system lockout settings:

- Minimum Password Age = 0
- Maximum Password Age = 90
- Minimum Password Length = 7

- Password Complexity = 1
- Lockout Bad Count = 3
- Reset Lockout Count = 30
- Lockout Duration = 30

For purpose of system integrity and PCI compliance, do not change these default settings to less than values specified. NOTE: Windows operating system keeps password history and requires new passwords be assigned at least every ninety (90) days and differ from previous four.

Assigning Unique ID and Password to Each Application User

Each OneTouch® Suite Version 5.1130.XXXX user must have a unique User ID and password. You must be logged-on as Administrator to perform functions associated with setting up the required user accounts. To create a user account, follow instructions provided with your operating system software.

Accessing Cardholder Data Remotely

PCI-DSS requires that if employees or vendors are to be granted remote access to cardholder data, such access must employ two-factor authentication (username/password and an additional authentication method such as a token or certificate). This includes remote administrative access. Acceptable two-factor authentication requires a method from two out of the following three categories:

- Something you know (e.g., personal identification number (PIN) or password)
- Something you have (e.g., phone number, email account)
- Something you are (e.g., fingerprint, voice scan)

Additionally, vendor access should be limited only to time necessary to provide required service, with access rights limited only to minimum required to provide that service. In all cases, remote access activity should be robustly audited daily by merchant or Administrator account personnel.

Use technologies such as remote authentication and dial-in service (RADIUS), terminal access controller access control system (TACACS) with tokens or VPN (based on IPSEC or TLS) with individual certificates. Triple E Technologies LLC again recommends using a secure, encrypted VPN for remote access; authentication may be accomplished by specifying a unique VPN user name and complex password, as well as token or certificate.

Regardless of remote access software used, implement the following security features:

- Do not use group (shared) or generic account name and passwords
- Change default password settings in remote access software; assign unique ID and password to each remote user
- Never allow remote access connections directly from the internet; only allow connections from specific (known) IP/MAC addresses

- Use strong authentication and complex passwords for remote logins, per PCI-DSS requirements 8.1, 8.3 and 8.5.8 – 8.5.15

- Enable encrypted data transmission, per PCI-DSS Requirement 4.1

- Enable account lockout after a certain number of failed login attempts, per PCI-DSS Requirements 8.5.13

- Configure system so remote user must establish connection using VPN router and firewall before access is allowed

- Enable the logging function for auditing purposes

- Establish customer passwords per PCI-DSS Requirements 8.1, 8.2, 8.4 and 8.5

- Restrict access to customer passwords to authorized vendor personnel

- Restrict access to remote control software to administrative personnel only

- In cases of Triple E Technologies LLC technical support requests:

    - Use only authorized Triple E Technologies LLC telephone number (208.777.9300) to request support.
    - Enable remote control software only for duration of required support.
    - Confirm site-unique information provided by support representative to ensure you have reached Triple E Technologies LLC.
    - Disable remote control software immediately after use

Restricting Physical Access to Cardholder Data

For purpose of industry best practice and PCI compliance, OneTouch® Suite system owners must provide physical security for those areas housing any resource used to store, process or transmit cardholder data. In keeping with this requirement, ensure the following are in place and working before implementing OneTouch® Suite:

1. Facility entry controls to monitor personnel access to IT resources. Such controls would include cameras to record 24/7 area egress, with recorded data audited and stored at least three months (unless otherwise restricted by law).
2. Controls providing easy, immediate recognition of visitors to sensitive facility areas, including required log-in and log-out procedure and issuance of token, badge or other device to identify visitor for entire duration of stay.
3. Prohibited use of private handheld computer devices (e.g., PDAs).
4. Prohibited public access to facility network jacks, wireless access points and gateways
5. Secure storage of retained paper media containing cardholder data, including receipts, reports and taxes.
6. Provision for electronic media backup storage in secure location, preferably in protected offsite facility specifically designed for such purpose.
7. Strict internal and external distribution controls over any media type containing cardholder data, including identification of such media as confidential and limiting offsite transport only to bonded couriers.
8. Procedure requiring management approval for any transport of cardholder data media to or from secure storage area.
9. Strict controls over inventory of any stored media containing sensitive data.
10. Procedure for end-of-retention destruction of all stored media containing cardholder data, including specification of methods ensuring data cannot be reconstructed.

Training and Monitoring Administrator Personnel

It is your responsibility to institute proper personnel management policies and techniques for Administrator access to credit cards, site data, etc. In most systems, a security breach is usually the result of personnel advantaging their system access privileges for unethical or illegal purpose. For this reason, you must give special attention to those whom you entrust viewing cardholder information.

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Monitoring and Testing Network

Tracking Network Resources and Cardholder Data Access

PCI DSS Requirement 10 specifies OneTouch® Suite system owners must track and monitor individual accesses to network resources and cardholder data. Owners must provide central log server and establish policies and procedures for server setup, log migration and log modification prevention. Review of the following keyword events, when identified in log files, is critical for PCI compliance:

- pendingsettlements
- cardslockedout
- eeeChangeEncryptionKey
- eeePurgeOldCreditCardData
- salepayments,
- ccrequests.

Specifically, you must be able to verify logging of the following seven events to satisfy this requirement:

1. All individual access to cardholder data through the payment application.
2. Actions taken by any individual with administrative privileges to the payment application.
3. Access to audit trails managed by or within the payment application.
4. Invalid logical access attempts.
5. Use of payment application's identification and authentication mechanisms.
6. Initialization of application audit logs.
7. Creation and deletion of system-level objects within or by the application.

NOTE: Of the seven items listed above, only items 1 and 2 are tracked in SQL trace files found in C:\EEETechnologies\EEETrace and C:\EEETechnologies\EEETrace\Processed. **Tracking of items 3 – 7 is your responsibility, and must be performed by your own means.**

At minimum, OneTouch® Suite identifies the following for each of the above:

- Individual causing event
- Event type
- Event date and time
- Event success or failure
- Component on which event occurred
- Components or data affected by event

Because OneTouch® Suite Version 5.1130.XXXX has predefined database auditing capabilities, you will have no level of customization over the audit output files.

Please note, however, that disabling or subverting the logging function of OneTouch® Suite in any way will result in non-compliance with PCI-DSS. Additionally, OneTouch® Suite owners are advised to have work policies and procedures in place calling for the following prior to system installation:

- Minimum daily review of log files for activity auditing purposes
- Limitation of log file review authority to Administrator account level only
- Timely backup and secure storage of log files
- Timely backup of audit files to a centralized server or media difficult to alter
- Retention of log files for at least one year

Testing security systems and processes

Even though Triple E Technologies LLC does not support or otherwise provide for implementation of OneTouch® Suite other than into a local network, system owners are not relieved of performing security assessments for data loss or intrusion due to wireless technology implementation (PCI-DSS Requirements 1.2.3, 2.1.1 and 4.1.1). In this regard:

1. Install and configure perimeter firewalls between wireless networks and systems that store credit card data per PCI Requirement 1.2.3. Configure such firewalls to block all traffic except that required for business operation.
2. Do not implement Wired Equivalent Privacy (WEP) key-exchange.
3. Per PCI Requirement 2.1.1, change all security-related wireless vendor defaults and settings as follows:
    - Change Default Service Set Identifier (SSID)
    - Disable SSID broadcasts
    - Change default passwords
    - Change default encryption keys
    - Change SNMP community strings
    - Change other security-related wireless defaults
    - Enable WIFI protected access (WPA and WPA2) technology for encryption and authentication when WPA-capable
4. Encrypt wireless transmissions of cardholder data using industry best practices for authentication and transmission. Never rely on Wired Equivalent Privacy (WEP) to protect confidentiality and access to a wireless LAN. Change encryption keys at least annually and whenever deemed necessary or prudent because of actual or suspected security compromise. Change encryption keys whenever anyone with knowledge of them changes positions or leaves the company.
5. Ensure firmware for any wireless device communicating with OneTouch® Suite is updated to use strong encryption algorithms for authentication and transmission.

PCI compliance also requires ongoing monitoring and periodic security assessment of local area network services and protocols. In this regard, the following should be in place prior to OneTouch® Suite implementation:

1. Policy and procedures requiring internal staff network scanning immediately following any resource change.
2. Contract service agreement with an ASV (Approved Scanning Vendor) to perform at least quarterly scans of network resources. Go to pcisecuritystandards.org for current listing of ASVs.
3. Further to ASV contract service agreement, policies and procedures calling for performance of the following:

    - Review of ASV resource scans immediately upon receipt
    - Affix approval signature and date to each scan.
    - Notation of vulnerabilities detected by scan, including description, personnel assignment for remedy and estimated completion date
    - Creation and maintenance of PCI compliance binder containing quarterly scan results, action items and plans, and correspondence relating to vulnerabilities

Delivering PCI Compliant Software Updates

As a software development company, Triple E Technologies must keep current with security concerns and vulnerabilities affecting our area of responsibility and expertise. We do this by subscribing to relevant data feeds and news services that inform us of potential security issues.

We recommend that your Windows server be maintained automatically by using Microsoft's automatic update service to download security patches as they become available. If we identify a relevant vulnerability not covered by these automatic updates, we work to develop and test a patch to protect OneTouch® Suite and using merchants against the new vulnerability, and strive to publish a patch within thirty days of vulnerability identification. We then contact merchants to notify them of the availability of the patch via our secure AutoUpdater service. Typically, merchants are expected to respond quickly and install the patch within thirty days of receipt. In all cases, merchants should contact Triple E Technologies, LLC. for assistance when applying updates and patches using only the authorized Triple E Technologies, LLC telephone number (208.777.9300) and to validate the authenticity of a software patch.

For receiving updates via remote access, use a personal firewall product to secure these "always-on" connections, per PCI Data Security Standard 1.3.10. Please see Building And Maintaining A Secure Network section (above) for description of how we recommend your high-speed connection be secured using two-factor authentication.

Maintaining Information Security Policy

Establishing Information Security

PCI DSS Requirement 12 mandates that OneTouch® Suite system owners maintain a strong information security policy to underline the sensitive nature of cardholder data and to communicate user roles and responsibilities for protecting that data. For purpose of PCI compliance, therefore, you will need to establish information security practices that demonstrate the following:

1. Item-by-item compliance with PCI DSS requirements (1–12).
2. Assignment of security policy development and enforcement responsibilities to specific individuals.
3. Provision of daily operational procedures to enforce or support security policy.
4. Provision of technology resource usage procedures to enforce or support security policy.
5. Procedure for annual security policy review, assessment and maintenance.
6. Provision for and annual testing of security policy risk assessment plan.
7. Provision for and annual testing of security policy compromise response plan.
8. Procedure for security policy dissemination and recipient acknowledgement.
9. Provision for and conduct of formal, ongoing security policy training.

Sample Security Policy

Following is an example of a security information policy written with PCI compliance in mind. Please note that this policy is provided for purpose of illustration; it is intended to serve only as a guideline, not as substitute for an actual PCI-compliant security policy.

INFORMATION SECURITY	
APPROVEDBY: NAME: Robert Jones TITLE: Owner Page 1 of 4	POLICY NUMBER: 01-001.01 REPLACES POLICY: 01-001.00 EFFECTIVE DATE: 07 November 2010 REVISION DATE 01 July 2013

1.0 PURPOSE
Establish and communicate security policy for XYZ Stores cardholder data environment.

2.0 SCOPE
All XYZ Stores IT resources, whether owned or leased, including devices, systems, networks and applications that process, store or cardholder data.

Sample Information Security policy (continued)

INFORMATION SECURITY	
APPROVEDBY: NAME: Robert Jones TITLE: Owner Page 1 of 4	POLICY NUMBER: 01-001.01 REPLACES POLICY: 01-001.00 EFFECTIVE DATE: 07 November 2010 REVISION DATE 01 July 2013

3.1 POLICY

3.2 General

3.2.1 For purpose of industry best practice and PCI compliance, XYZ Stores will develop, implement and enforce information security policies and procedures to protect payment card data.

3.2.2 Content of information security policies and procedures will be reviewed and updated at least annually.

3.2.3 Risk assessment to identify information policy or procedural threats and vulnerabilities will be performed at least annually.

3.2.4 Standard operating procedures will be developed and enforced to support established security policies.

3.2.5 Acceptable use policies and procedures for employee-facing devices such as modems, laptops and PDAs will be developed and enforced to support established security policies.

3.2.6 Information security management procedures will be developed and enforced to clearly define security roles and responsibilities for affected XYZ Stores personnel, including:

- Development, maintenance and enforcement of information security policies and procedures
- Establishment and administration of user accounts
- Control over all customer payment card data access
- Monitoring and follow-up of security alert and breach information

3.2.7 A formal, ongoing education program will be implemented to familiarize all affected new hires and existing XYZ Stores personnel with information security policies and procedures.

3.2.8 New hires and existing XYZ Stores personnel receiving promotions will undergo background checks prior to starting new job responsibilities.

3.3 Policy and Procedure Development

3.3.1 Existing XYZ Stores information security policies and procedures will be reviewed and updated on an as needed basis, but no less than annually.

3.3.2 All information security policies and procedures, whether new or revised, require XYZ Stores owner or designee review and approval prior to distribution.

3.3.3 Approved information security policies and procedures will be distributed to all affected XYZ Stores personnel.

3.3.4 Distribution of information security policies and procedures will be controlled to ensure consistency and currency of content.

Sample Information Security policy (continued)

INFORMATION SECURITY	
APPROVEDBY: NAME: Robert Jones TITLE: Owner Page 2 of 4	POLICY NUMBER: 01-001.01 REPLACES POLICY: 01-001.00 EFFECTIVE DATE: 07 November 2010 REVISION DATE 01 July 2013

3.2.5 PCI DSS requirements will be regularly monitored for changes to ensure XYZ Stores information security policy remains compliant.

3.3 Risk Assessment

3.3.1 A plan will be developed and implemented to regularly assess information security threats and vulnerabilities.

3.3.2 Plan will evaluate efficacy of both the information security measures put into place and related policies and procedures prescribing performance of those measures.

3.3.3 Assessment will document findings for each area found to be at risk, as well as for attendant policies and procedures; analysis of impact shall be provided, along with prioritization of required changes in measures and affected policies and procedures.

3.3.4 Administration and activation of plan is the responsibility of XYZ Stores owner or designee.

3.3.5 Plan will be activated each time there is a security breach.

3.3.6 Plan will be reviewed each time there is a security breach, else at least annually.

3.3.7 Plan will be updated as necessary, based on lessons learned, industry developments and changes in PCI DSS requirements.

3.4 Information Security Breach Response

3.4.1 A plan will be developed and implemented to immediately respond to any breach in information security.

3.4.2 Plan will address the following:

- Incident response team roles, responsibilities and contact information
- Incident response team training
- Incident response procedures and performance standards
- Data backup and recovery procedures
- Business recovery and continuity procedures

3.4.3 Plan will be tested at least annually.

3.4.4 Plan will be activated each time there is an actual or suspected security breach.

3.4.5 Plan will be reviewed each time following a security breach.

3.4.6 Plan will be updated as necessary, based on lessons learned, industry developments and changes in PCI DSS requirements.

3.5 IT Resource Acceptable Use

3.5.1 XYZ Stores personnel (hereinafter “users”) are granted access to computer resources only as and when approved or directed by owner or designee.

3.5.2 User access to customer payment card data shall be granted only on strict need-to-know (least privilege) basis.

Sample Information Security policy (continued)

INFORMATION SECURITY	
APPROVEDBY: NAME: Robert Jones TITLE: Owner Page 3 of 4	POLICY NUMBER: 01-001.01 REPLACES POLICY: 01-001.00 EFFECTIVE DATE: 07 November 2010 REVISION DATE 01 July 2013

3.5.3 Users shall have no expectation of privacy as regards any information or communication residing on any IT resource.

3.5.4 Users shall exercise good judgment when accessing IT resources. If uncertain, users must consult with owner or designee before proceeding.

3.5.5 Users must take all steps necessary to prevent unauthorized access to customer payment card data.

3.5.6 Users are responsible for the security of their system accounts and passwords.

3.5.7 Users must change passwords at least every ninety days.

3.5.8 Users must logoff whenever leaving workstation unattended.

3.5.9 Users must run anti-virus and anti-malware software as directed by XYZ Stores owner or designee.

3.5.10 Workstations will always be secured by password-protected screensaver and Windows automatic lock feature.

3.5.11 Upon any user with encryption key knowledge leaving the company, encryption keys should be changed immediately.

3.5.12 The following practices are strictly prohibited:

- Using any IT resource for purpose other than XYZ Stores business, especially accessing Internet and personal email
- Accessing any IT resource or data for which not specifically authorized
- Installing any software or hardware product not authorized by XYZ Stores owner or designee
- Using personal computer or other device (e.g., laptop, PDA) to access any XYZ Stores IT resource
- Sharing user identification and/or password information with any other person
- Circumventing user authentication or security of any host, network or account.
- Using IT resources to violate individual rights of any person or intellectual property rights of any entity

3.5.13 XYZ Stores owner or designee will periodically audit IT resource logs to ensure compliance with Acceptable Use policy.

3.6 Security Education

3.6.1 A formal security awareness program will be implemented to ensure XYZ Stores personnel are thoroughly trained in all areas of cardholder data security.

3.6.2 XYZ Stores personnel will undergo security program training at time of hire and at least annually thereafter.

3.6.3 XYZ Stores personnel will acknowledge in writing that they have read and understood XYZ Stores' security policies and

Sample Information Security policy (continued)

INFORMATION SECURITY	
APPROVEDBY: NAME: Robert Jones TITLE: Owner Page 4 of 4	POLICY NUMBER: 01-001.01 REPLACES POLICY: 01-001.00 EFFECTIVE DATE: 07 November 2010 REVISION DATE 01 July 2013

3.7 Personnel Screening

3.7.1 A formal, personnel screening program will be implemented to ensure all XYZ Stores personnel pass a thorough background check.

3.7.2 XYZ Stores personnel will undergo security screening by independent, outside authority at time of hire and when receiving promotion.

3.7.3 XYZ Stores personnel must sign release of all background information as necessary to satisfactorily complete personnel screening process.

3.8 Policy and Procedure Distribution

3.8.1 Security policies and procedures will be distributed to XYZ Stores personnel at time of hire and thereafter each time revisions are made.

3.8.2 XYZ Stores personnel must provide written acknowledgement of policy and procedure receipt, review and understanding.

3.8.3 XYZ Stores personnel are responsible for maintaining personal set of information security policies and procedures, including replacing outdated versions with latest revisions.

4.0 RESPONSIBILITY

It is the XYZ Stores owner's responsibility to lead all activities that effect and maintain both card payment industry best practices and compliance with PCI DSS requirements.

5.0 COMPLIANCE

PCI DSS Requirement 12.