



**PA-DSS Implementation Guide**  
**for**  
**Sage MAS 90 and 200 ERP**  
**Credit Card Processing**

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# 1 INTRODUCTION AND SCOPE

## 1.1 Introduction

The purpose of this PA-DSS Implementation Guide is to instruct merchants, resellers and integrators on how to implement Sage MAS 90 and 200 into their environment in a PA-DSS compliant manner. It is not intended to be a complete installation guide. Sage MAS 90 and 200, if installed according to the guidelines documented here, should facilitate and support a merchant's PCI compliance. This guide applies to Sage MAS 90 and 200 as released by Sage. Any modifications to the application must be reviewed to determine their impact to the PA-DSS requirements.

## 1.2 What is Payment Application Data Security Standard (PA-DSS)?

The Payment Application Data Security Standard (PA-DSS) is a set of security standards that were created by the PCI SSC to guide payment application vendors to implement secure payment applications.

## 1.3 Distribution and Updates

This PA-DSS Implementation Guide should be disseminated to all relevant application users including merchants, resellers, and integrators. It should be updated at least annually and after changes in the software. The annual review and update should include new software changes as well as changes in the PA-DSS standard.

Updates to the PA-DSS Implementation Guide can be obtained by going to the Sage Online Customer Support Web site at: [www.sagesoftwareonline.com](http://www.sagesoftwareonline.com). In addition, Sage will publish updates and send update notifications as needed.

## 1.4 Versions

This PA-DSS Implementation Guide references both the PA-DSS and PCI requirements. The following versions are referenced in this guide.

- PA-DSS version 1.2
- PCI DSS version 1.2

## 1.5 Legal Terms and Conditions

The following legal terms and conditions must be provided to the owner of the software being implemented.

*Acceptance of a given payment application by the PCI Security Standards Council, LLC (PCI SSC) only applies to the specific version of that payment application that was reviewed by a PA-QSA and subsequently accepted by PCI SSC (the "Accepted Version"). If any aspect of a payment application or version thereof is different from that which was reviewed by the PA-QSA and accepted by PCI SSC – even if the different payment application or version (the "Alternate Version") conforms to the basic product description of the Accepted Version – then the Alternate Version should not be considered accepted by PCI SSC, nor promoted as accepted by PCI SSC.*

*No vendor or other third party may refer to a payment application as "PCI Approved" or "PCI SSC Approved", and no vendor or other third party may otherwise state or imply that PCI SSC has, in whole or part, accepted or approved any aspect of a vendor or its services or payment applications, except to the extent and subject to the terms and restrictions expressly set forth in a written agreement with PCI SSC, or in a PA-DSS letter of acceptance provided by PCI SSC. All other references to PCI SSC's approval or acceptance of a payment application or version thereof are strictly and actively prohibited by PCI SSC.*

*When granted, PCI SSC acceptance is provided to ensure certain security and operational characteristics important to the achievement of PCI SSC's goals, but such acceptance does not under any circumstances include or imply any endorsement or warranty regarding the payment application vendor or the functionality, quality, or performance of the payment application or any other product or service. PCI SSC does not warrant any products or services provided by third parties. PCI SSC acceptance does not, under any circumstances, include or imply any product warranties from PCI SSC, including, without limitation, any implied warranties of merchantability, fitness for purpose or noninfringement, all of which are expressly disclaimed by PCI SSC. All rights and remedies regarding products and services that have received acceptance from PCI SSC, shall be provided by the party providing such products or services, and not by PCI SSC or any payment brands."*

## 2 SECURE DELETION OF SENSITIVE DATA AND PROTECTION OF STORED CARDHOLDER DATA

### 2.1 Merchant and Reseller/Integrator Applicability

Magnetic stripe data, card validation values or codes, PINs or PIN block data, cryptographic key material, or cryptograms should not be stored in the data. Sage MAS 90 and 200 does not store any of this in the data. Sage MAS 90 and 200 does provide batch processing of credit card transactions to optimize the merchant's fee. The card validation number will be temporarily stored encrypted until that request is attempted. After the request is attempted the card validation number is removed whether the transaction request was successful or unsuccessful.

### 2.2 Secure Deletion Instructions

The following instructions can be used to securely delete prohibited historical data and to purge cardholder data after expiration:

- Cardholder data should be purged on a regular basis depending on a balance between the needs of the business and PCI compliance. Sage MAS 90 and 200 provides a purge task that will remove cardholder data and can be run when needed. This process will only purge credit card related data. Customer and sales related information will be retained.
- Cardholder data can be deleted using the Clear Credit Card Information Utility. Based on criteria specified for the utility, cardholder data will be purged. Data will be purged if it is determined that it is not part of any open transaction and matches criteria specified on the form. The System Activity Log indicates each time the Clear Credit Card Information Utility is run.

Clear Credit Card Information (ABC) 12/31/2009

Clear Expired Credit Cards

Clear Credit Cards Expired on or Before 12/31/2009

Clear Credit Card History

Clear Credit Card History Dated on or Before 12/31/2009

Proceed Cancel ?

- Expired credit cards will also be purged during period end prior to the number of Days to Retain Credit Card History entered in Accounts Receivable Options.

The screenshot shows the 'Accounts Receivable Options (ABC) 12/31/2009' dialog box. The window has a blue title bar and a tabbed interface with tabs for '1. Main', '2. Additional', '3. Credit', '4. Entry', '5. Printing', and '6. History'. The '3. Credit' tab is selected. The dialog is divided into several sections:

- Customer Audit:** 'Customer Changes to Track' is set to 'None' (dropdown), and 'Track Additions in Detail' is an unchecked checkbox.
- Cash Receipts History:** 'Years to Retain Cash Receipts History' is a dropdown menu, and 'Retain Deposit Transaction History' is set to 'All Transactions' (dropdown).
- Invoice History:** 'Retain in Detail' is set to 'Yes' (dropdown), 'Retain Deleted Invoices' is checked, and 'Retain Comment Lines' is checked.
- Sales History:** 'Years to Retain Customer History' is set to 2, 'Years to Retain Salesperson History' is set to 2, and 'Include Sales Tax and Freight' is checked.
- Credit Card History:** This section is highlighted with a red box. It contains 'Days to Retain Credit Card History' set to 99.

At the bottom of the dialog are buttons for 'Accept', 'Cancel', a printer icon, and a help icon.



## 2.3 Display Formatted Credit Card and Print Formatted Credit Card Options

The Customer Listing, Customer Credit Card Listing, Deposit Transaction Report, and the Visual Integrator Exports for tables that include credit card number provide a means where cardholder data can be retrieved and viewed in a usable format. Because of the sensitivity of these reports, access to the reports and protection of the reports after they have been produced is critical to PA-DSS compliance. Similarly, the formatted credit card can be viewed in credit card related maintenance, inquiry and data entry windows. By default, cardholder data is in masked format. The following instructions describe steps that can be taken to secure the displaying and printing of formatted credit card data.

Access to the formatted credit card is controlled through User Maintenance, and should be limited to only those with a business need to obtain the formatted credit card. Limit access to as few people as possible by leaving the Display Formatted Credit Card and Print Formatted Credit Card checkboxes unchecked as shown below:

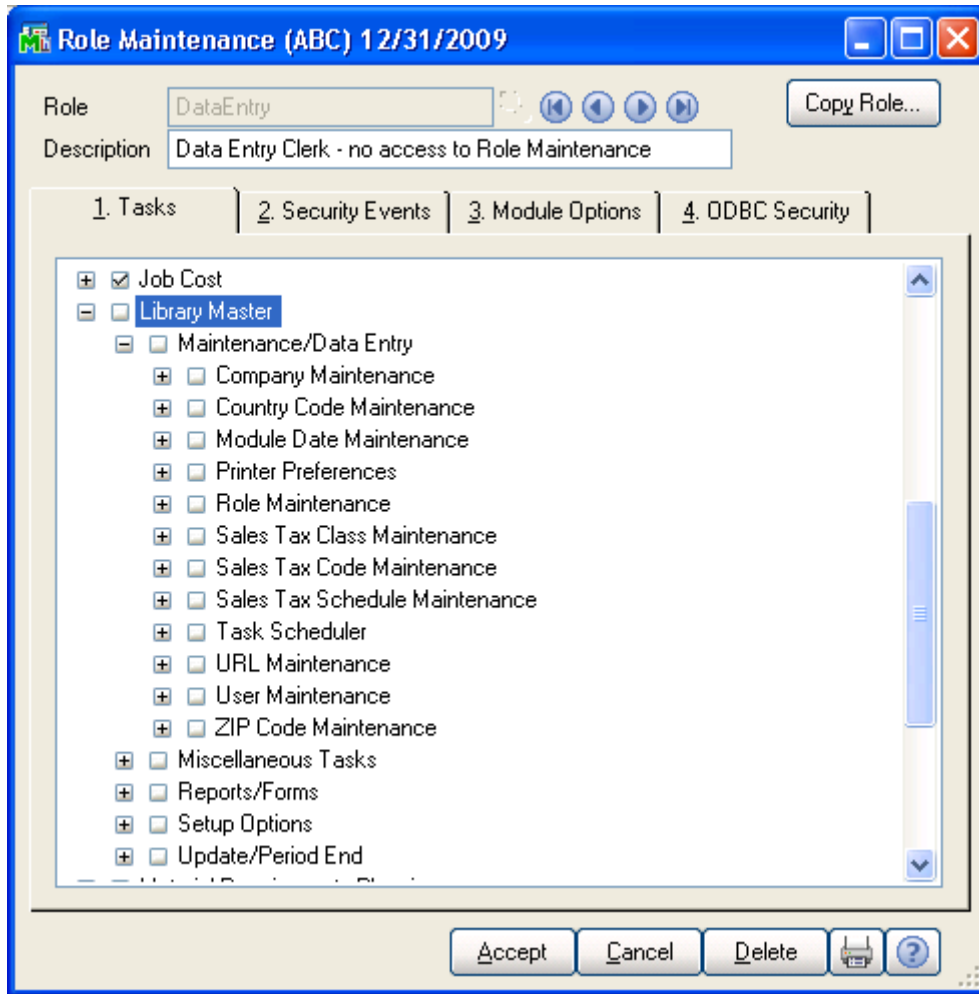
The screenshot shows the 'User Maintenance (ABC) 12/31/2009' window. The 'Preferences' tab is selected. The following table summarizes the visible preference settings:

Preference Name	Checked
Automatic Logoff	<input type="checkbox"/>
Implied Decimal Point	<input checked="" type="checkbox"/>
Low Speed Connection	<input type="checkbox"/>
Lookup Limit for Initial Display	<input type="text" value="0"/>
[ENTER] Key like [TAB] Key for Grid	<input checked="" type="checkbox"/>
Display Reduction Amounts in Red	<input checked="" type="checkbox"/>
Display Formatted Credit Card	<input type="checkbox"/>
Print Formatted Credit Card	<input type="checkbox"/>
Automatic Logoff Delay in Minutes	<input type="text"/>
Use Graphic Report Format	<input checked="" type="checkbox"/>
Partial Lookup Default	Begin with [dropdown]
Prompt for Company Code	<input type="checkbox"/>

At the bottom of the window, there is a checkbox for 'User Account Locked' (unchecked) and buttons for 'Accept', 'Cancel', 'Delete', a printer icon, and a help icon.

The ability to print and display the formatted credit card is set in User Maintenance; therefore, it is crucial that User Maintenance be secured to only those with authority to change the values.

Securing User Maintenance is accomplished in Role Maintenance as shown below:



Role Maintenance and User Maintenance are unchecked for this role. Note: Access to all Library Master tasks should be limited to only those with a need to modify system setup.

The user can then be assigned this role in User Maintenance.

The screenshot shows the 'User Maintenance (ABC) 12/31/2009' window. At the top, there are window control buttons (minimize, maximize, close). Below the title bar, there are several input fields and buttons:

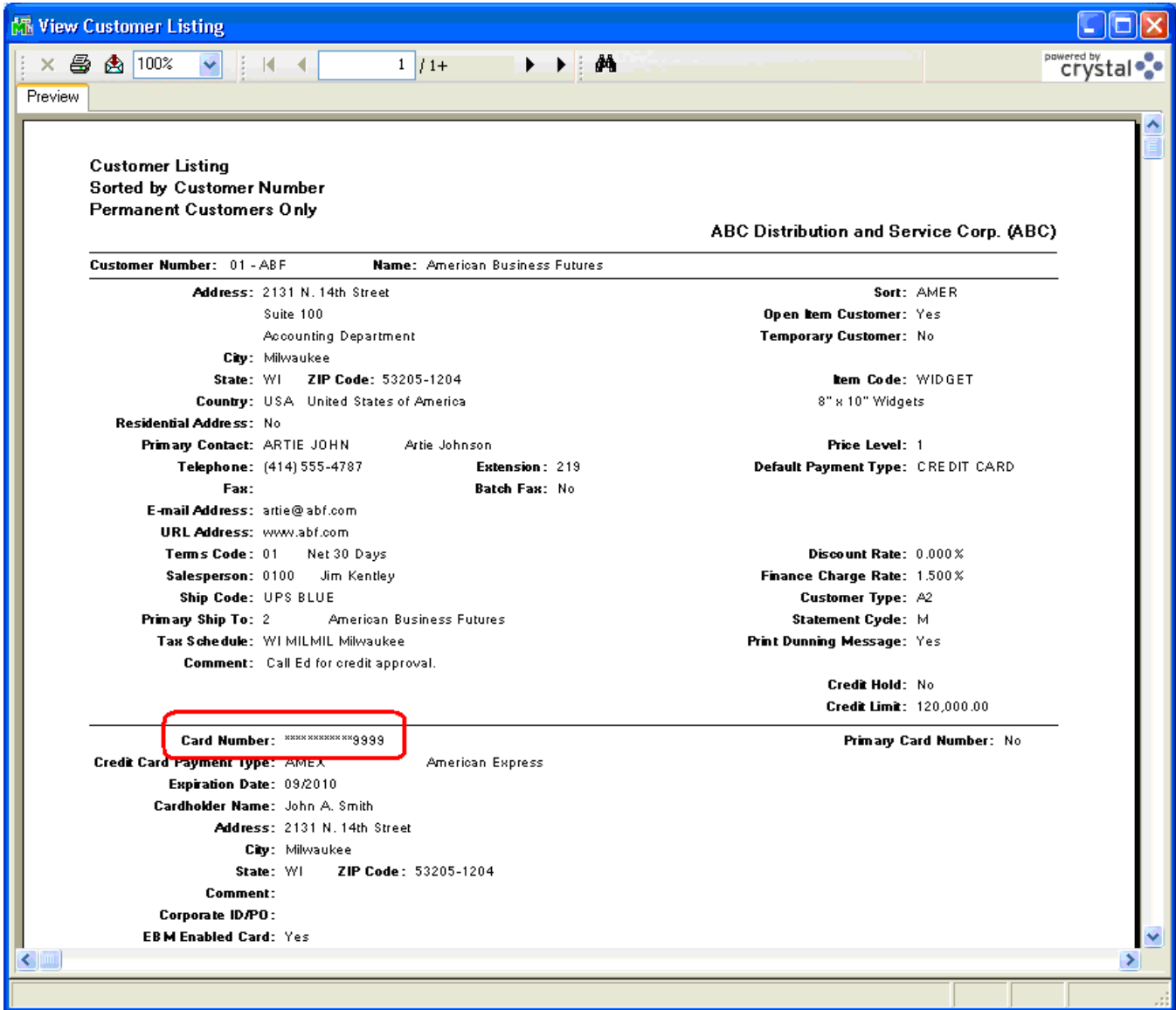
- User Logon: Data Entry
- First Name: Data Entry
- Last Name: Clerk
- User Code: DEC
- Password: \$\$\$\$\$\$\$\$\$\$
- Confirm Password: (empty)
- Customization Group: (empty)
- Expires: 01/31/2010

Below these fields are two tabs: '1. Maintenance' (selected) and '2. Preferences'. The main area contains a table with the following data:

	Company	Role	Start Date	Expiration Date
1	ABC (ABC Distribution and Service)	DataEntry		
2				

At the bottom left, there is a checkbox labeled 'User Account Locked'. At the bottom right, there are buttons for 'Accept', 'Cancel', and 'Delete', along with a printer icon and a help icon.

The Print Formatted Credit Card setting in User Maintenance defaults to unchecked and sensitive card holder data will be masked as shown below:



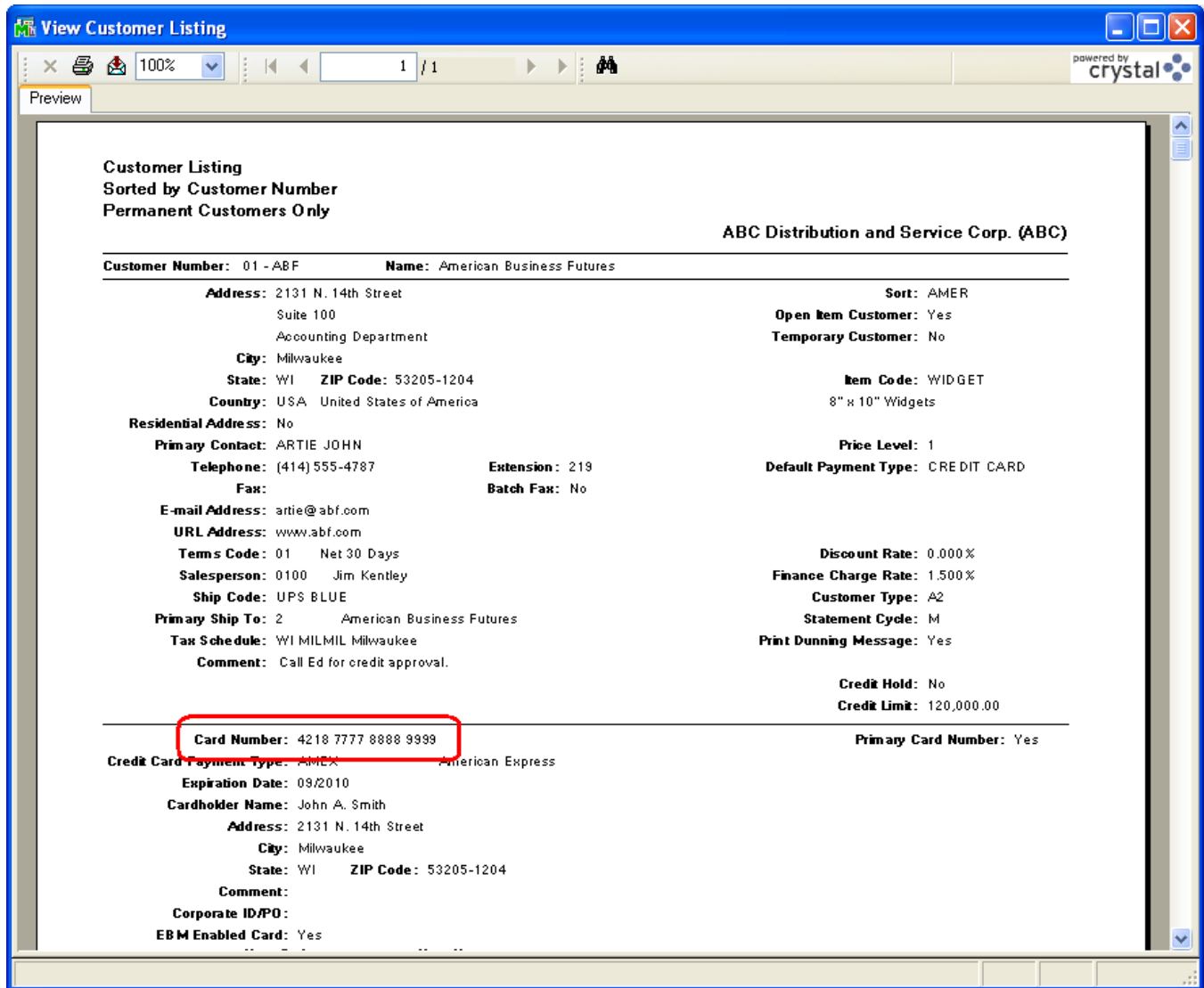
Checking the Display Formatted Credit Card and/or Print Formatted Credit Card in User Maintenance gives permission to display the cardholder data in its unmasked form. This permission should be limited to only those with a business need to have access to sensitive cardholder data. If this access is not necessary, then no user needs to have Display Formatted Credit Card or Print Formatted Credit Card checked.

When printing the report, by default, even when the user has rights to print the formatted credit card a Print Formatted Credit Card checkbox is still disabled on the report dialog. For example, on the Customer Listing the Print Customer Credit Cards checkbox would enable the Print Formatted Credit Card checkbox. Only when both checkboxes are checked is the formatted credit card printed on the report.

The screenshot shows the 'Customer Listing (ABC) 12/31/2009' dialog box. It contains several sections: 'Report Setting' with a 'STANDARD' dropdown and a 'Save' button; 'Description' with 'Customer Listing' text; 'Setting Options' with 'Type' set to 'Public', 'Default Report' checked, 'Print Report Settings' and 'Three Hole Punch' unchecked, 'Number of Copies' set to 1, and 'Collated' checked; 'Sort Report By' set to 'Customer Number'; 'Options' with 'Customers to Print' set to 'Permanent Only' and 'Report Type to Print' set to 'Customer Information'; 'Additional Info' with 'Print Customer Credit Cards' checked and 'Print Formatted Credit Card' checked (highlighted with a red box); and 'Selections' table.

Select Field	Operand	Value
Customer Number	All	
Customer Name	All	
Salesperson	All	
Customer Type	All	

At the bottom, there is a printer selection dropdown set to 'HP LaserJet 5', a 'Keep Window Open After:' section with 'Print' and 'Preview' checkboxes, and buttons for 'Print', 'Preview', 'Setup', and a help icon.



After the report has been printed, control physical access to the report by unauthorized users; limiting access to those with a need to know. After the report is no longer needed, ensure secure destruction of the report using a crosscut shredder or incineration.

## 2.4 Secure Deletion of Sensitive Data

Per PCI DSS requirement 3.2, securely delete any sensitive authentication data (pre-authorization data) used for debugging or troubleshooting purposes from log files, debugging files, and other data sources received from customers, to ensure that magnetic stripe data, card validation codes or values, and PINs or PIN block data are not stored on the software vendor systems. These data sources must be collected in limited amounts and only when necessary to resolve a problem, encrypted while stored, and deleted immediately after use.

Pursuant to this requirement, the system stores a debugging log in the HOME directory when the debugging log check box is selected in Company Maintenance. It is automatically deleted when this check box is cleared.

## 3 PASSWORD AND ACCOUNT SETTINGS

### 3.1 Access Control

Merchants, resellers, and integrators are advised to control access, using unique username and PCI DSS compliant complex passwords, to any PCs, servers, and databases with payment applications and cardholder data.

### 3.2 Passwords

The following guidelines should be followed.

- Customers and resellers/integrators are advised against using administrative accounts for application logins. (PA-DSS 3.1c)
- Customers and resellers/integrators are advised to assign strong passwords to these default accounts (even if they will not be used), and then disable or do not use the accounts. (PA-DSS 3.1c)
- Customers and resellers/integrators are advised to assign strong application and system passwords whenever possible. (PA-DSS 3.1c)
- Customers and resellers/integrators are advised how to create PCI DSS-compliant complex passwords to access the payment application, per PCI Data Security Standard 8.5.8 through 8.5.15. (PA-DSS 3.1c)

Customers and resellers/integrators are advised to control access, using unique username and PCI DSS-compliant complex passwords, to any PCs, servers, and databases with payment applications and cardholder data. (PA-DSS 3.2)

Passwords should meet the requirements set in PCI DSS section 8.5.8 through 8.5.15, as listed here.

- Do not use group, shared, or generic accounts and passwords
- Change user passwords at least every 90 days
- Require a minimum password length of at least 7 characters
- Use passwords containing both numeric and alphabetic characters
- Do not allow an individual to submit a new password that is the same as any of the last 4 passwords he or she has used
- Limit repeated access attempts by locking out the user ID after not more than 6 attempts
- Set the lockout duration to 30 minutes or until administrator enables the user ID
- If a session has been idle for more than 15 minutes, require the user to re-enter the password to re-activate the terminal

Pursuant to this requirement, define the above password settings in System Configuration.

### 3.3 Key Management

Customers must implement key management procedures to support periodic key changes and replacements of known or suspected compromised encryption keys (PA-DSS 2.6). Sage MAS 90 and 200 provides a procedure for securely changing the key for a company used to protect cardholder data in Company Maintenance.

### 3.4 Backups

It is recommended to have a backup procedure in place. For enhanced system credit card security, store the application data separate from the system data.

## 4 LOGGING

### 4.1 Merchant Applicability

Currently, for Sage MAS 90 and 200, version 4.30.0.18 and version 4.40.0.1, there is no end-user, configurable, logging settings. All logging in Sage MAS 90 and 200 conforms to PCI DSS version 1.2 requirements 10.2.1-10.2.7 and 10.3.1-10.3.6. Logs are enabled automatically when selecting a credit card server payment selection in Company Maintenance and cannot be disabled.

### 4.2 PCI Guidelines for Logging

Implement automated audit trails for all system components to reconstruct the following events:

- All individual accesses to cardholder data
- All actions taken by any individual with root or administrative privileges
- Access to all audit trails
- Invalid logical access attempts
- Use of identification and authentication mechanisms
- Initialization of the audit logs
- Creation and deletion of system-level objects

Record at least the following audit trail entries for all system components for each event:

- User identification
- Type of event
- Date and time
- Success or failure indication
- Origination of event
- Identity or name of affected data, system component, or resource

### 4.3 Configuring Log Settings

The following instructions can be used to set up auditing that is required to satisfy PCI-DSS compliance. Disabling or failing to implement the following audits could cause your installation to be no longer PCI-DSS compliant.

#### 4.3.1 Capturing Access to Cardholder Data Outside of Sage MAS 90 and 200

ODBC allows access to encrypted credit card numbers, but not decrypted credit card numbers; however, security can be set up to disable access to the encrypted credit card number by using System Configuration and Role Maintenance.

#### 4.3.2 Capturing Read Access to Cardholder Data

Sage MAS 90 and 200 logs any time a credit card is decrypted for any reason. We store the last four credit card numbers unencrypted and display credit card numbers masked. If a user is only requiring read access, there is no need to decrypt or log the credit card number because the user would have had no access to the full credit card number.



## 5 WIRELESS NETWORKS

### 5.1 Merchant Applicability

If wireless is used or implemented in the payment environment or application, the wireless environment must be configured per PCI DSS version 1.2 requirements 1.2.3, 2.1.1, and 4.1.1. Wireless technology must be securely implemented and transmissions of cardholder data over wireless networks must be secure.

### 5.2 PCI Requirements

Install and configure perimeter firewalls between wireless networks and systems that store credit card data, per PCI DSS version 1.2 and 1.2.3.

Modify default wireless settings, as follows, per PCI DSS 2.1.1:

- Change wireless equivalent privacy (WEP) keys
- Change default service set identifier (SSID)
- Disable SSID broadcasts
- Change default passwords
- Change SNMP community strings
- Enable WiFi protected access (WPA and WPA2) technology for encryption and authentication when WPA-capable.

For wireless networks transmitting cardholder data, encrypt the transmissions by using Wi-Fi protected access (WPA or WPA2) technology, IPSEC VPN, or SSL/TLS. Never rely exclusively on wired equivalent privacy (WEP) to protect confidentiality and access to a wireless LAN. (PA-DSS 6.2 and PCI DSS 4.1.1)

If WEP is used, do the following, per PCI DSS 4.1.1:

- Use with a minimum 104-bit encryption key and 24 bit-initialization value
- Use ONLY in conjunction with Wi-Fi protected access (WPA or WPA2) technology, VPN, or SSL/TLS
- Rotate shared WEP keys quarterly (or automatically if the technology permits)
- Rotate shared WEP keys whenever there are changes in personnel with access to keys
- Restrict access based on media access code (MAC) address

Handheld devices that communicate wirelessly with Sage MAS 90 and 200, such as the Intermec 730 handset from ScanCo, must use strong encryption algorithms such as WPA to secure wireless communications.

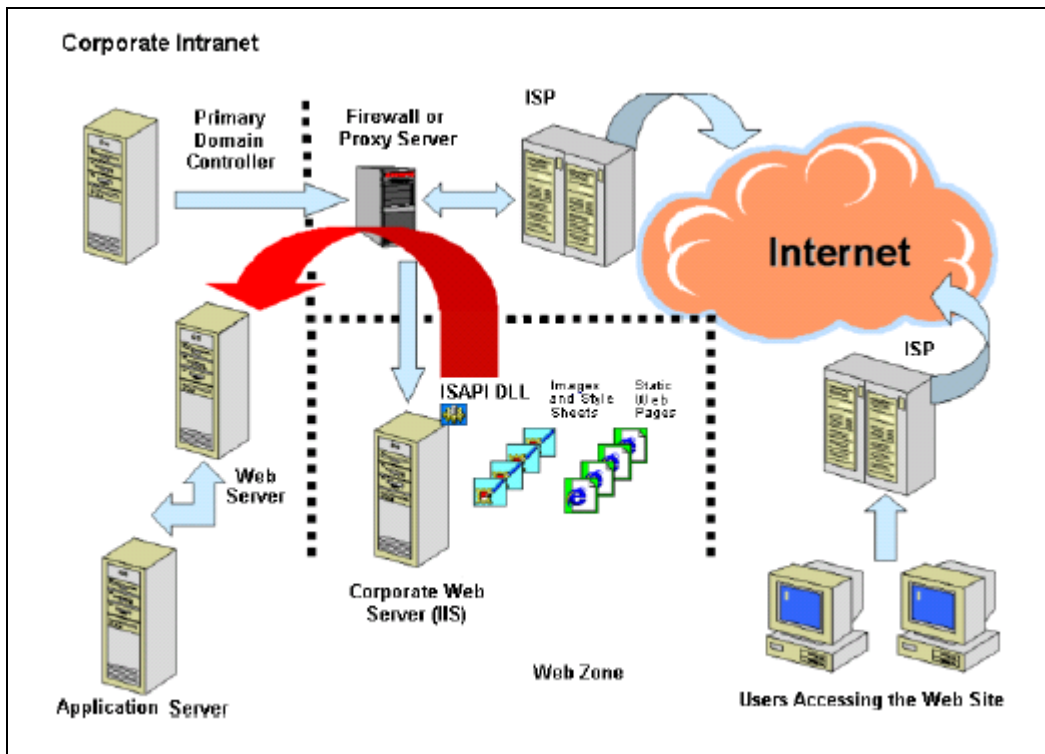
## 6 NETWORK SEGMENTATION

### 6.1 Merchant Applicability

Credit card data cannot be stored on systems directly connected to the Internet. For example, web servers and database servers should not be installed on the same server. A network DMZ (Demilitarized Zone, also known as Demarcation Zone) must be set up to segment the network so that only machines on the DMZ are Internet accessible.

e-Business Manager must be configured to submit .order and .store shopping card pages using SSL encryption. The web engine should be installed on a separate server than the Sage MAS 90 and 200 application server. This will ensure that the credit card initially submitted by the customer is encrypted when it is sent to the Sage MAS 90 and 200 application server. After it is received by the application server e-Business Manager always communicates using the encrypted credit card number plus the last four unencrypted credit card numbers.

Having the web engine on a separate server ensures that should the network become compromise, the Sage MAS 90 and 200 application server would not be directly exposed.



For information on eBusiness Web Services, refer to the eBusiness Web Services Installation and Reference Guide.

## **7 SECURE REMOTE SOFTWARE UPDATES**

### **7.1 Merchant Applicability**

Sage MAS 90 and 200 securely delivers remote payment applications by high-speed connections. Merchants should develop an acceptable use policy for critical employee-facing technologies, per the guidelines below.

For VPN, or other high-speed connections, updates are received through a firewall or personal firewall, per PCI DSS 1 and 1.3.9.

### **7.2 Acceptable Use Policy**

The merchant should develop usage policies for critical employee-facing technologies, like modems and wireless devices, as per PCI DSS requirement 12.3. These usage policies should include:

- Explicit management approval for use
- Authentication for use
- A list of all devices and personnel with access
- Labeling the devices with owner
- Contact information and purpose
- Acceptable uses of the technology
- Acceptable network locations for the technologies
- A list of company approved products
- Allowing use of modems for vendors only when needed and deactivation after use
- Prohibition of storage of cardholder data onto local media when remotely connected

### **7.3 Personal Firewall**

Any "always-on" connections from a computer to a VPN or other high-speed connection should be secured by using a personal firewall product, per PCI DSS 1.3.9. The firewall is configured by the organization to meet specific standards and not alterable by the employee.

### **7.4 Remote Update Procedures**

Sage MAS 90 and 200 do not provide for the remote update of the application.

## 8 REMOTE ACCESS

### 8.1 Merchant Applicability

If Sage MAS 90 and 200 can be accessed remotely, all network connectivity should be performed using two-factor authentication per PCI DSS requirement 8.3. Implement two-factor authentication for remote access to the network by employees, administrators, and third parties. Use technologies such as remote authentication and dial-in service (RADIUS) or terminal access controller access control system (TACACS) with tokens; or VPN (based on SSL/TLS or IPSEC) with individual certificates.

### 8.2 Remote Access Software Security Configuration

Implement the following applicable security features for all remote access software used by the merchant, reseller, or integrator.

- Change default settings in the remote access software (for example, change default Passwords and use unique Passwords for each customer)
- Allow connections only from specific (known) IP/MAC addresses
- Use strong authentication or complex passwords for logins
- Enable encrypted data transmission
- Enable account lockout after a certain number of failed login attempts
- Configure the system so a remote user must establish a Virtual Private Network (VPN) connection using a firewall before access is allowed
- Enable the logging function
- Restrict access to customer Passwords to authorized reseller/integrator personnel
- Establish customer Passwords according to PCI DSS requirements 8.1, 8.2, 8.4, and 8.5

## **9 ENCRYPTING NETWORK TRAFFIC**

### **9.1 Transmission of Cardholder Data**

Sage MAS 90 and 200 use encryption, such as SSL/TLS or IPSEC, for transmission of cardholder data over public networks, per PCI DSS 4.1.

### **9.2 E-mail and Cardholder Data**

Sage MAS 90 and 200 do natively support the sending of e-mail. As per PCI DSS requirement 4.2, cardholder data should never be sent unencrypted by e-mail. To meet this requirement, the e-mail must be sent with the Use 128-bit Encryption for Password Protection Documents check box selected in Company Maintenance and with a password.