# **CAC** for a Mac

Using an Intel-based Apple OS X System to Access NMCI Outlook Web Access (OWA)

# **Change History**

Date Published/ Revised	Version No.	Author or Point of Contact	Section / Description of Change
09/17/08	1.0	Tom Garity	Initial version.
10/08/08 1.1 Tom Garity Corrected typerrors.		Corrected typographical and formatting errors.	
10/23/08	1.2	Tom Garity	Updated for OS X 10.5.5 and Smart Card Services Update 1.2.

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## 1. INTRODUCTION

CAC for a Mac is the ability to use a Department of Defense (DoD) common access card (CAC) on Apple Macintosh computers to access Web sites that require DoD certificate authentication. It was written to allow Navy Marine Corps Intranet (NMCI) users to access their NMCI e-mail using the NMCI Microsoft Outlook Web Access (OWA) portal. Access to other sites is possible; however, the required steps are not addressed in this document.

### 1.1 Use at Your Own Risk

These instructions comprise several steps, which are described in sufficient detail to be understandable by a casual user. EDS is not responsible for any loss of use as a result of installing the software or making the configuration changes discussed in this document.

## 1.2 Required Items and Software

This section describes the hardware and software needed to access NMCI Exchange e-mail via OWA with a Macintosh operating system (OS) X system.

- An Intel-based Apple Macintosh computer running OS X 10.5.1 or higher. (See Note 1.)
- Apple Smart Card Services Update, version 1.2. (See Note 2.) It can be downloaded from the following location:

http://idisk.mac.com/dp.hayes-Public/Smart Card Services Update v1.2.pkg.zip

- A valid DoD CAC.
- An SCM Micro Model SCR331 universal serial bus (USB) Smart Card Reader with Firmware, version 5.25 or later. (See Note 3.)
- Administrative access to a computer running Microsoft Windows XP (WXP) OS is required if the SCR331 USB Smart Card Reader Firmware requires updating.

**Note:** 1. This document has been tested only on Intel-based systems running Apple OS X version 10.5.4 and 10.5.5 however it should be applicable to G4 and G5 PPC-based Apple systems. Steps to update the OS X OS are included in this document.

**Note: 2.** Apple Smart Card Services Update, version 1.2 is for PPC and Intel-based Apple computers running Mac OS X version 10.5.4 or 10.5.5. The Smart Card Services Update, version 1.2 package is an update of the version 1.1 Intel-only patch which contained some components that were not universal and were *only* valid for Intel-based systems. This means that anyone with a PowerPC (PPC)-based system or an Intel-based Apple running Mac OS X 10.5.5 should not install version 1.1 of the Smart Card Services Update. Appendix B, Uninstall Smart Card Services Update, provides the uninstall procedure to remove Smart Card Services Update version 1.1, if necessary.

**Note: 3.** This document was written using the SCR331 USB Smart Card Reader. Several other brands and models of Smart Card Readers are supported by Apple, however they have not been tested using this procedure. SCR331 USB Smart Card Readers with Firmware version of 2.00 or higher can be updated to version 5.25. Steps for updating the SCR331 USB Smart Card Reader Firmware are provided in Appendix A,

**Note:** This completes the setup procedure.

**Note:** SCR331 Firmware Update Procedure.

# 2. INSTALLATION PREPARATION

Table 1 lists the steps to prepare to install this solution.

**Table 1: Preparation Instructions** 

	Step No.	Action	
	1.	Ensure the SCR331 USB Smart Card Reader is connected to the Macintosh.	
2. Power on the Macintosh computer and log in with an account th privileges.		Power on the Macintosh computer and log in with an account that has administrative privileges.	

# 2.1 Verify OS X Version

Table 2 lists the steps to verify the Macintosh computer's OS is at the required patch level.

**Table 2: Verify OS X Version** 

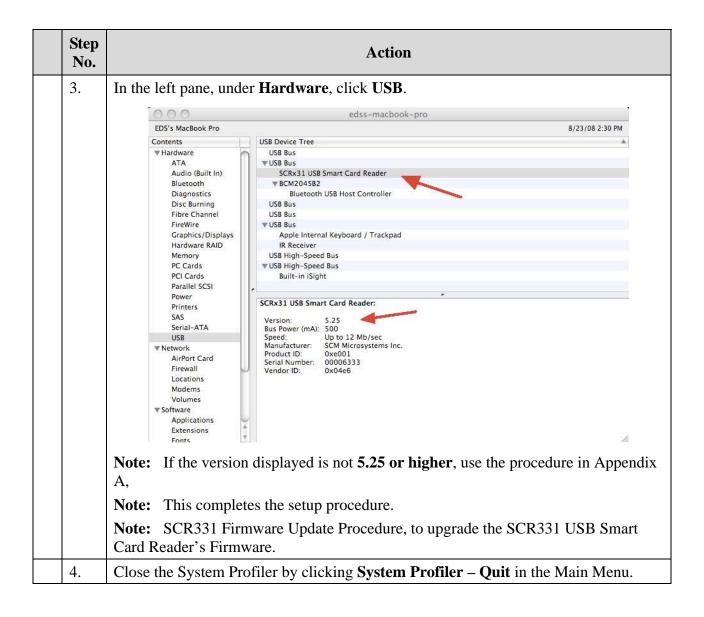
Step No.	Action
1.	From the Apple Menu, click <b>About This Mac</b> . The <b>About This Mac</b> window appears:
	● ○ ○ About This Mac
	Mac OS X
	Version 10.5.4
	Software Update
	Processor 2.6 GHz Intel Core 2 Duo
	Memory 4 GB 667 MHz DDR2 SDRAM
	Startup Disk Macintosh HD
	More Info
	TM & © 1983-2008 Apple Inc. All Rights Reserved.
	The second line displays the OS version number. Verify it is <b>10.5.4 or higher</b> .
2.	If not, update the OS by clicking Software Update and follow the prompts. Note that some OS patches may require restarting the computer.
3.	Repeat as required to bring the OS version up to 10.5.4 or higher. Version 10.5.5 is preferred do to other updates provided.

# 2.2 Verify SCR331 Firmware Version

Table 3 lists the steps to verify the SCR331 USB Smart Card Reader Firmware version.

**Table 3: Verify SCR331 Firmware Version** 

Step No.	Action
1.	If required, from the Apple Menu, click <b>About This Mac</b> . The <b>About This Mac</b> window appears:
	About This Mac
	Mac OS X Version 10.5.4
	Software Update
	Processor 2.6 GHz Intel Core 2 Duo
	Memory 4 GB 667 MHz DDR2 SDRAM
	Startup Disk Macintosh HD  More Info
	TM & © 1983-2008 Apple Inc. All Rights Reserved.
2.	Click More Info The <b>System Profiler</b> window appears.



## 3. INSTALLATION PROCEDURES

This section describes the installations procedures.

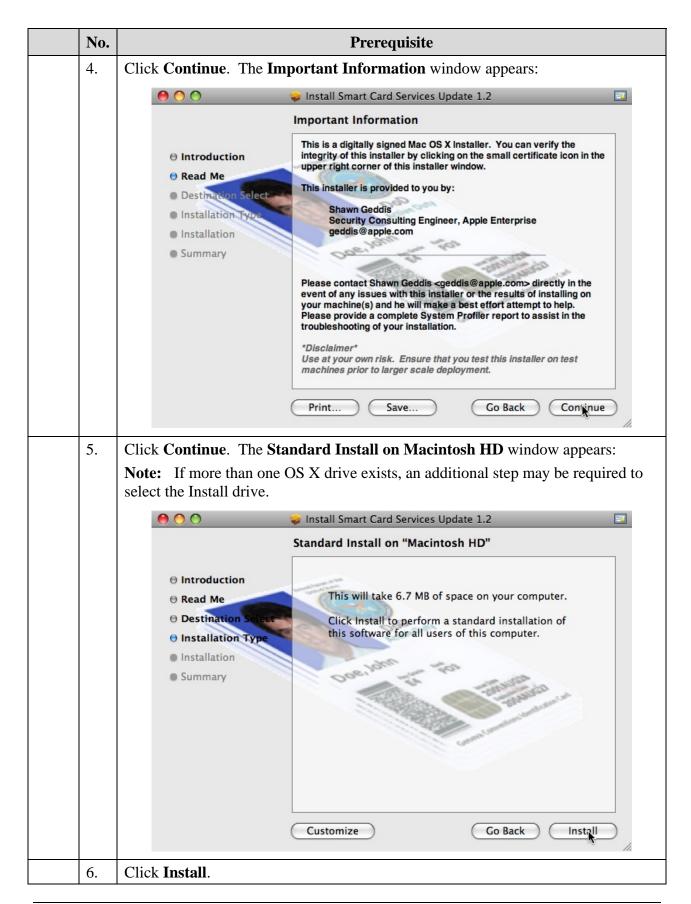
## 3.1 Install Apple Smart Card Services Update

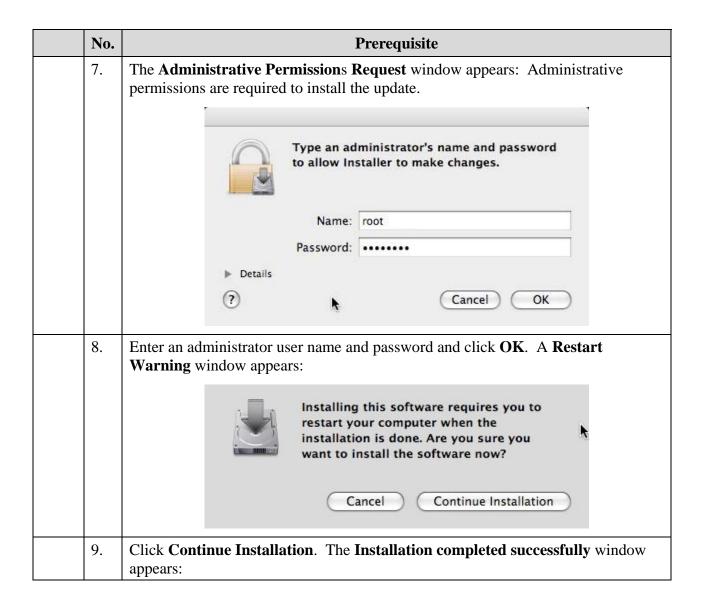
An update to the Apple OS X OS is required to allow DoD CAC certificates to function correctly. Table 4 lists the steps to install this solution.

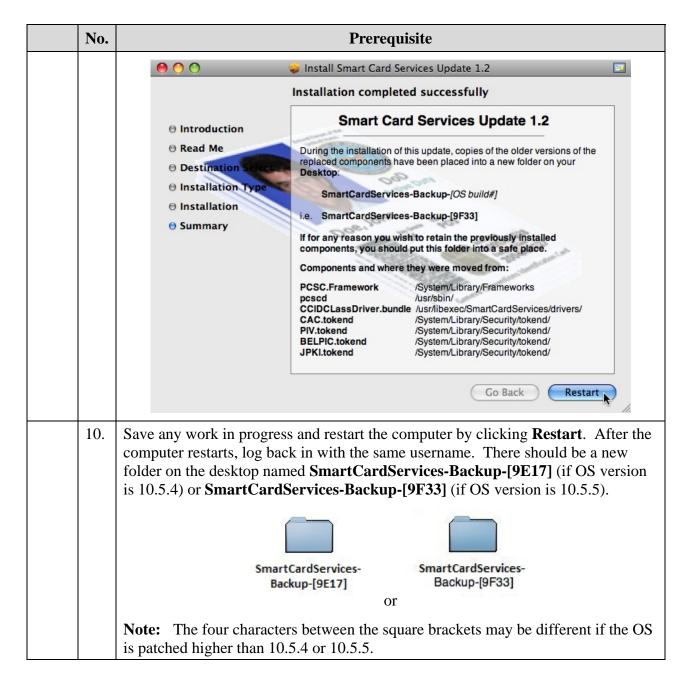
**Note:** The Apple Smart Card Services Update v1.2 can be applied before or after upgrading to Mac OS X 10.5.5, however the OS must be at version 10.5.4 for it to install successfully.

No. **Prerequisite** Download the Apple Smart Card Services Update from the following Uniform 1. Resource Locator (URL): http://idisk.mac.com/dp.hayes-Public/Smart Card Services Update v1.2.pkg.zip 2. The patch should automatically run. If it does not, open the **Downloads** folder and double-click the file. 3. The Welcome to the Smart Card Services Update 1.2 Installer window appears: Install Smart Card Services Update 1.2 Welcome to the Smart Card Services Update 1.2 Installer Smart Card Services Update 1.2 Introduction Smart Card Services components shipped in Mac OS X 10.5.0 -Read Me 10.5.5 require specific updates to support some of the newer Smart Cards issued within the US Federal Government. These newer cards Destinati support a faster transfer protocol (T=1) and can also be a hybrid card (CAC & PIV applets). They require a negotiation of which protocol to Installation use (T=0 or T=1). CCID compliant smart card reader support and protocol negotiation has been significantly improved in this update. Installation New Components to be installed: Summary **PCSC Framework** · PCSC.Framework /System/Library/Frameworks/ · pcscd /usr/sbin/ **CCID Compliant Smart Card Readers** · ifd-ccid.bundle /usr/libexec/SmartCardServices/drivers/ **Smart Cards** · CAC.tokend /System/Library/Security/tokend/ PIV.tokend /System/Library/Security/tokend/ Go Back Continue

**Table 4: Install Apple Smart Card Services** 





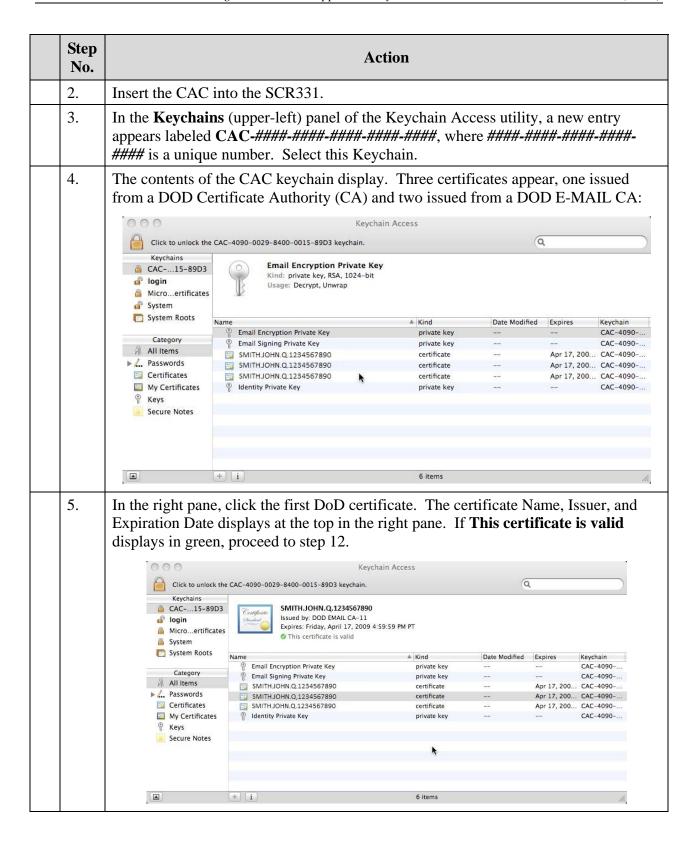


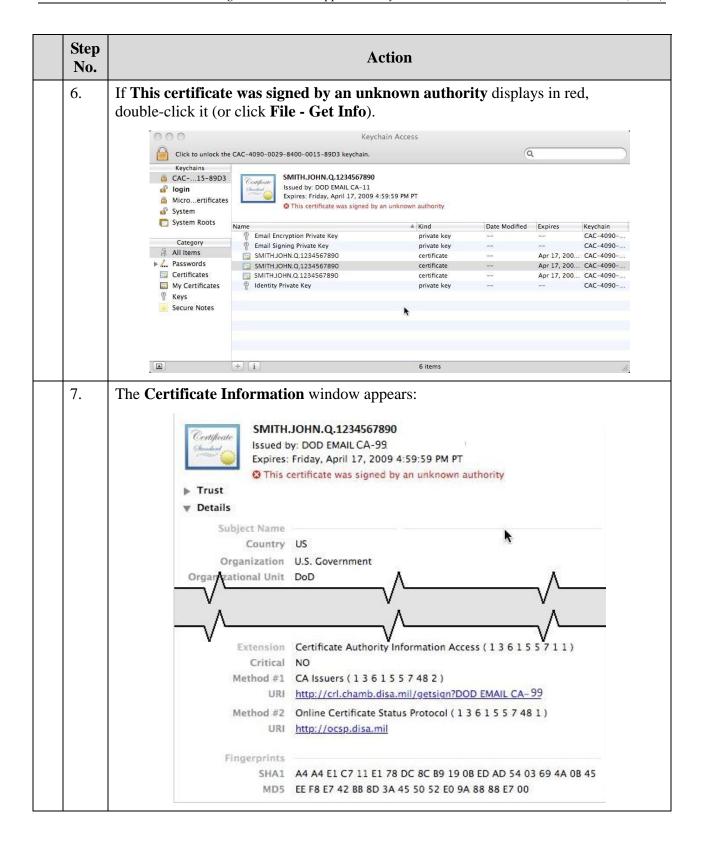
# 3.2 Import CAC Intermediate Certificates

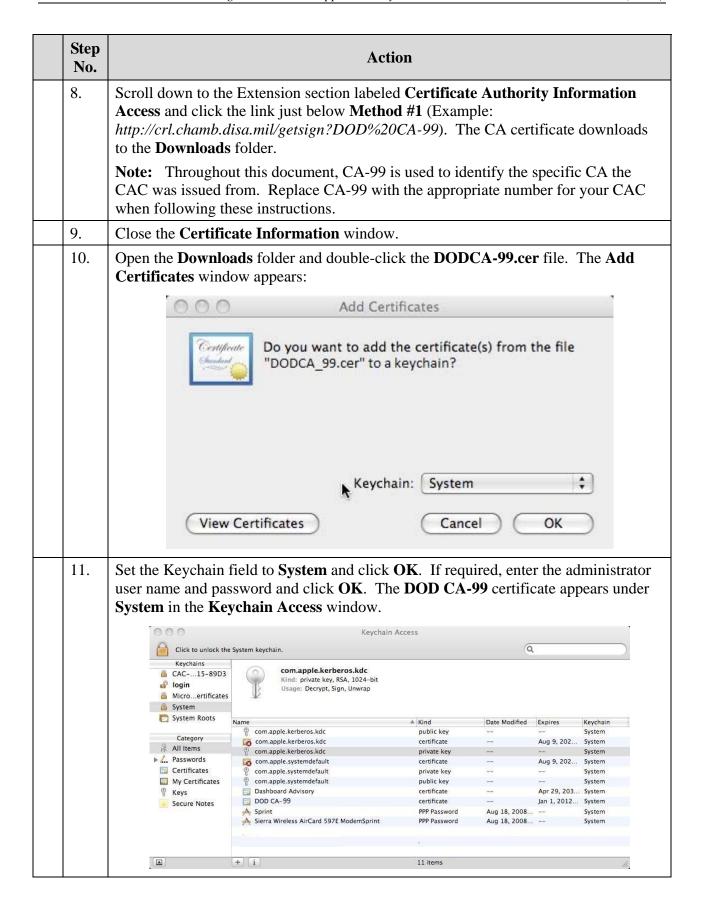
Table 5 lists the steps to import the required DoD intermediate certificates and validate the CAC certificates.

**Table 5: Import CAC Intermediate Certificates** 

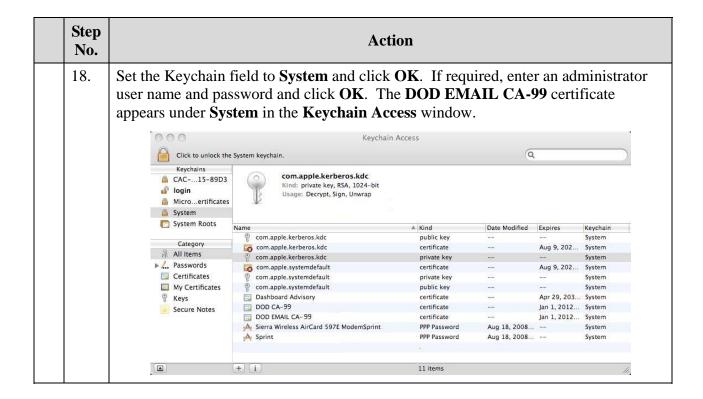
Step No.	Action
1.	Open the Utilities folder and double-click Keychain Access.







Step No.	Action
12.	In the right pane, select the second (DOD E-MAIL) certificate. The certificate Name, Issuer, and Expiration Date displays at the top in the right pane.
13.	If <b>This certificate is valid</b> displays in green, proceed to Section 3.3Determine Correct Link Based on Domain.
14.	If <b>This certificate was signed by an unknown authority</b> displays in red, double-click it (or click <b>File - Get Info</b> ). The <b>Certificate Information</b> window appears.
15.	Scroll down to the Extension Section labeled <b>Certificate Authority Information Access</b> and click the link just below <b>Method #1</b> (Example:  http://crl.chamb.disa.mil/getsign?DOD%20EMAIL%20CA-99). The CA certificate downloads to the Download folder.
16.	Close the Certificate Information window.
17.	Open the <b>Downloads</b> folder and double-click the <b>DOD EMAIL CA-99.cer</b> file. The <b>Add Certificates</b> window displays.
	Add Certificates
	Do you want to add the certificate(s) from the file "DODEMAILCA_99.cer" to a keychain?
	View Certificates  Keychain: System  Cancel OK



### 3.3 Determine Correct Link Based on Domain

There are different Uniform Resource Locator (URL) entries for accessing NMCI Outlook Web Access depending on the user's Active Directory domain. The correct URL to use is based on the user's domain and whether the user is exempted from Cryptographic Log On (CLO). You need to know the domain your user account is located in to determine the correct URL to use. See APPENDIX C: Determine Domain if you do not know how to determine the domain of your user account.

Table 6 identifies the domains and Uniform Resource Locator (URL) link a user of that domain must use to access NMCI Outlook Web Access.

**Note:** Users who are CLO Exempt access NMCI Outlook Web Access using a different URL than others in the same domain.

DomainURL LinkNMCI Navy UsersNADSUSEAhttps://webmail.east.nmci.navy.milNADSUSWEhttps://webmail.west.nmci.navy.milNMCI-ISFhttps://webmail.isf.nmci.navy.milNADSUSEA/NADSUSWE/NMCI-ISFhttps://webmail.exceptions.nmci.navy.mil

Table 6: NMCI Outlook Web Access URL Links

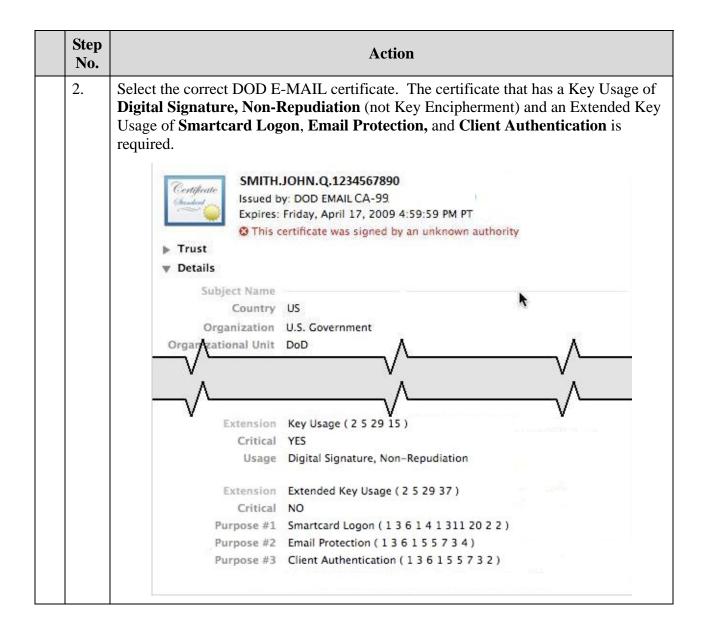
Domain	URL Link
(CLO Exception users)	
NADSUSEA NCIS COI	https://webmail.nmci.nmci.navy.mil
NADSUSEA NCIS COI	https://webmail.exceptions.ncis.nmci.navy.mil
(CLO Exception users)	
PADS	https://webmail.pacom.mil
PADS (PACOM Single Mailbox Restore users and CLO Exception users)	https://webmail.exceptions.pacom.mil
NMCI Marine Corps Users	
MCDSUS, MCDSJP and NMCI	https://webmail.nmci.usmc.mil

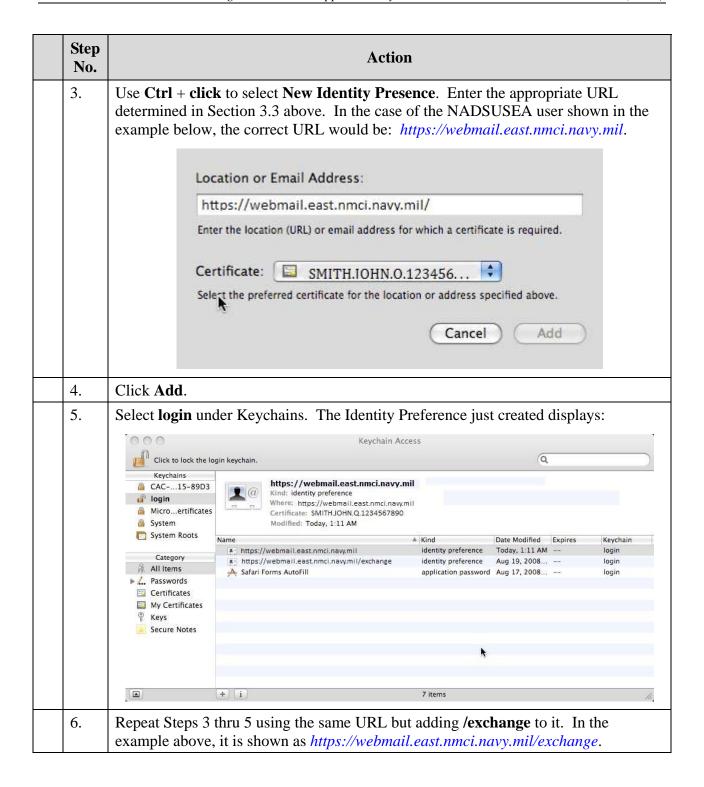
# 3.4 Create an Identity Preference

Table 7 lists the steps to create an Identity Preference. An Identity Preference is required when a Web server's security is set to optional, even if the Web site is set to required.

**Table 7: Create an Identity Preference** 

	Step No.	Action
	1.	Click CAC Keychain under Keychains in the Keychain Access window.





This completes the setup procedure.

# APPENDIX A: SCR331 FIRMWARE UPDATE PROCEDURE

The following three sections describe the procedure for downloading the drivers and firmware.

**Note:** The procedure must be performed on a computer running WXP or Windows 2000 (W2K) OS.

#### **Download Drivers and Firmware**

Table 8 lists the steps to download the SCR331 USB Smart Card Reader drivers and Firmware update.

**Table 8: Download Drivers and Firmware** 

Step No.	Action
1.	Create a folder on the desktop named SCR331Temp.
2.	Open a browser and go to http://www.scmmicro.com/support/pcs_downloads.php?lang=en
3.	In the middle of the window, click <b>Driver/Firmware</b> in the <b>Type</b> field.
4.	Click SCR331/SCR531 CCID USB in the Smartcard Reader field.
5.	Click Windows(R) XP 32-bit in the OS field.
6.	In the bottom of the window, ensure the <b>I read and accept the EULA</b> check box is selected and click <b>Next</b> .
7.	In the SCR331/SCR531 CCID USB Firmware section, download the SCRx31CCID_fw525.zip file by clicking Download File following the name. Save the file to the SCR331Temp folder just created on the Desktop.
8.	In the SCR331/SCR531 CCID USB - Windows (R) XP 32-bit Driver/Installer section, download the SCR3xxx_4.31_4.41.zip file by clicking Download File following the name. Save the file to the SCR331Temp folder just created on the Desktop.
9.	Close the browser.
10.	Expand SCR331Temp\SCR3xxx_4.31_4.41.zip and copy the SCR3xxx_Drivers_Win2k_Win2003server_XP3264_Vista3264_V4.41 folder to the Desktop.
11.	Close SCR3xxx_4.31_4.41.zip.
12.	Expand SCR331Temp\SCRx31CCID_fw5.25.zip and copy the SCRx31CCID_fw5.25 folder to the Desktop.
13.	Close SCRx31CCID_fw5.25.zip.
14.	Delete the SCR331Temp file.

#### **Install the SCR331 USB Smart Card Reader**

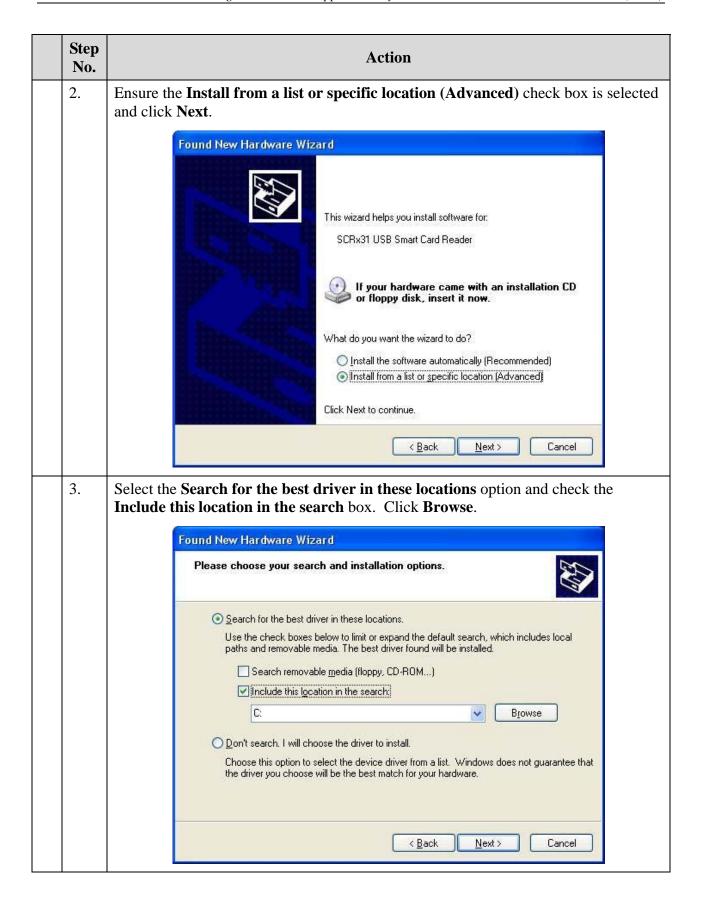
Table 9 lists the steps to install the SCR331 USB Smart Card Reader on a computer running WXP Professional or Home OS.

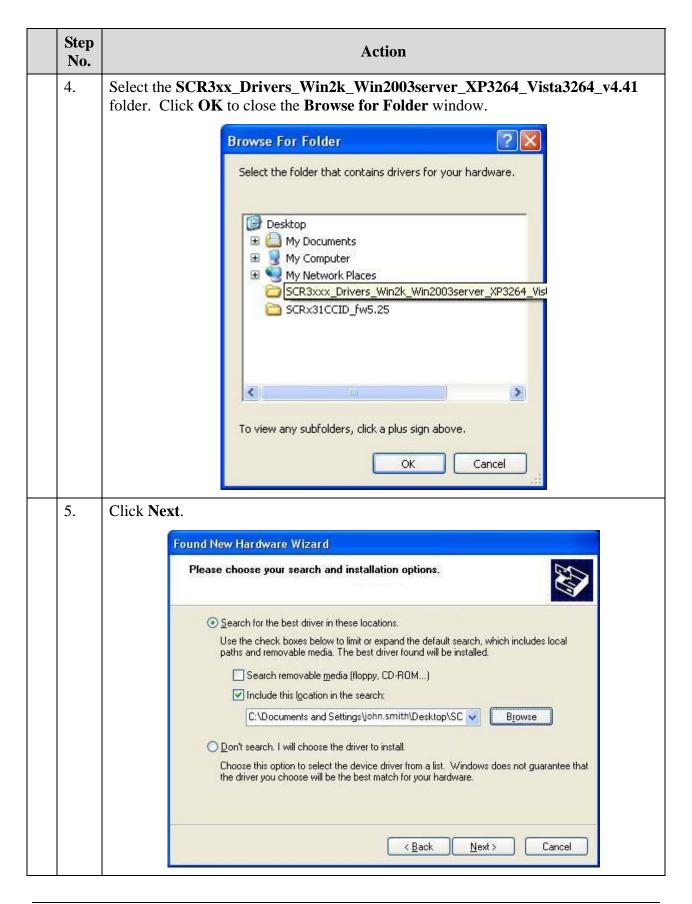
These steps only need to be completed *once*. If the SCR331 was previously installed on the Windows computer, proceed to Section 0,

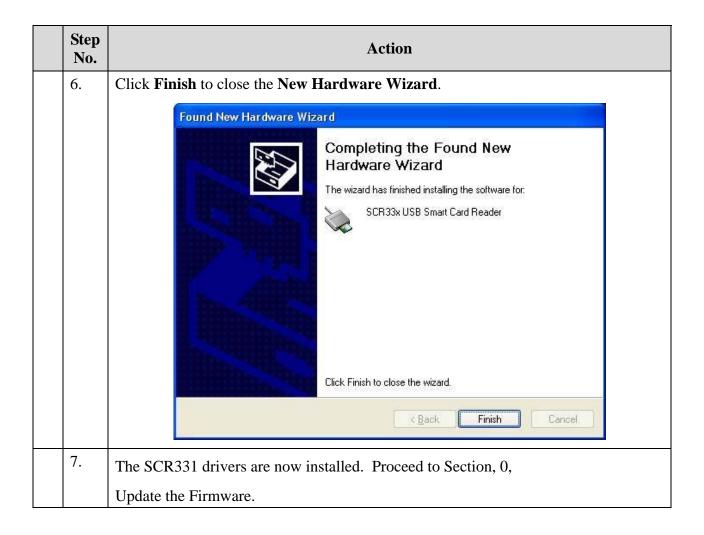
**Note:** Update the Firmware.

**Table 9: Install SCR331 Drivers** 







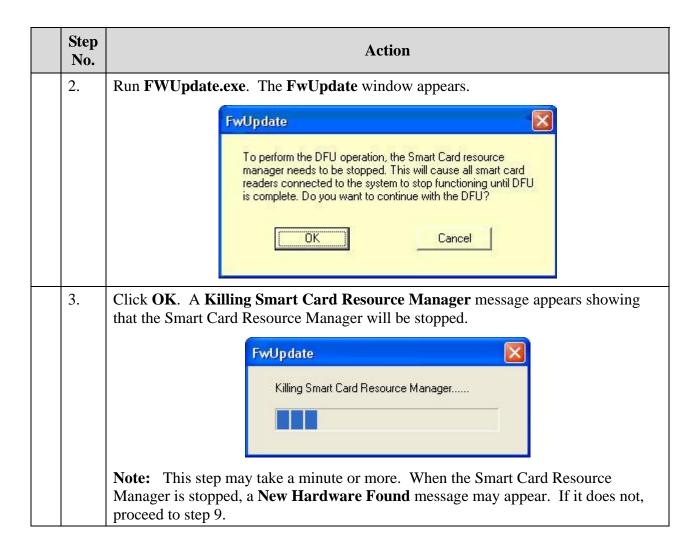


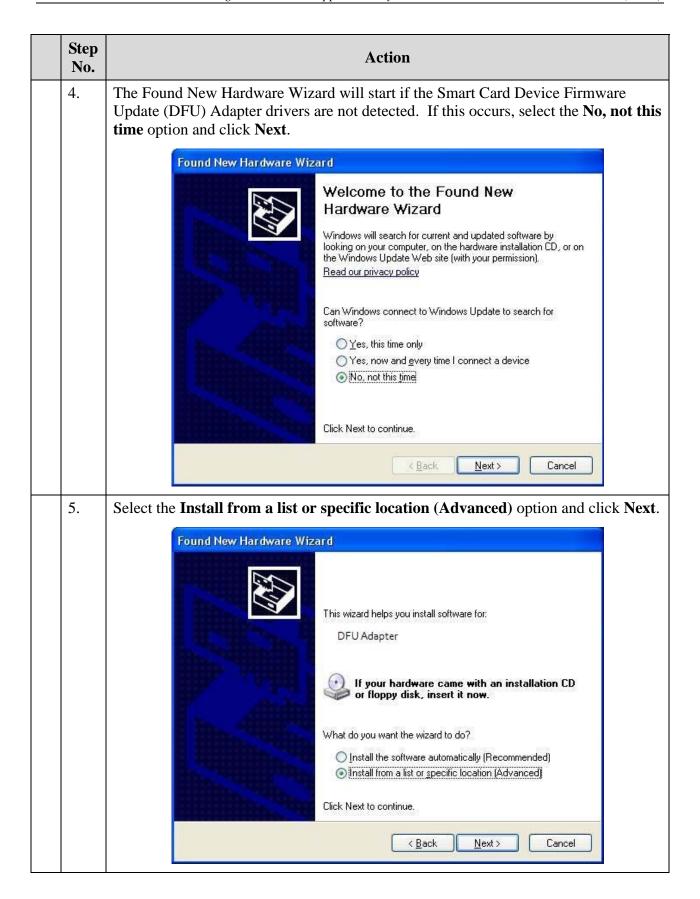
## **Update the Firmware**

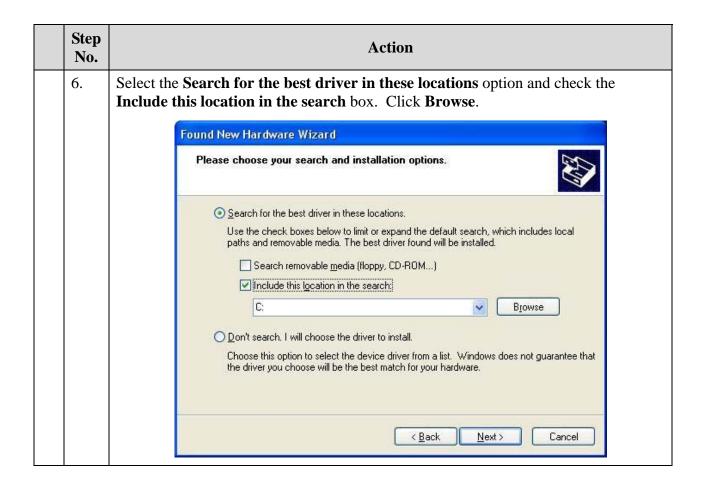
Table 10 lists the steps to update the SCR331 Firmware.

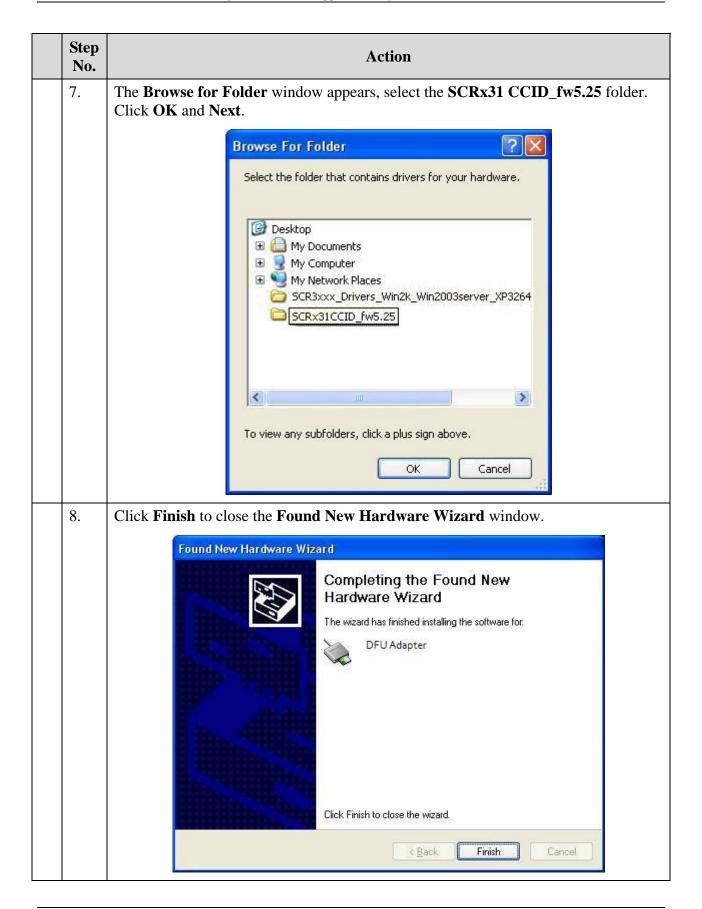
Table 10: Update SCR331 Firmware

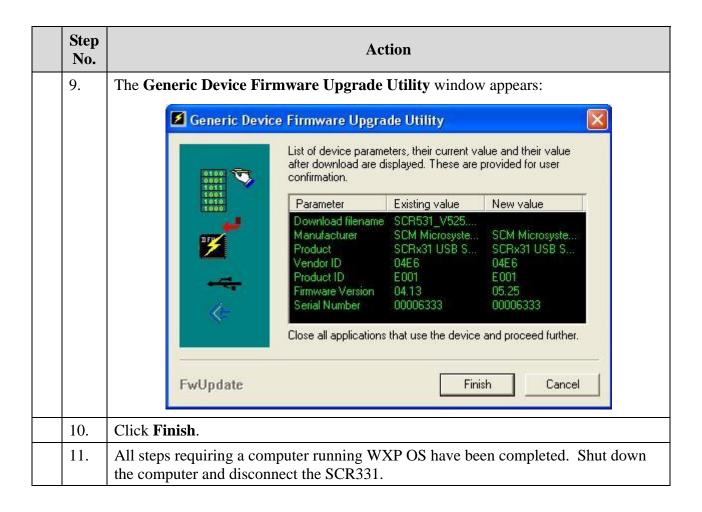
	Step No.	Action
	1.	Open the SCR331\FWUpdate folder.











# APPENDIX B: UNINSTALL SMART CARD SERVICES UPDATE

Table 11 lists the steps to uninstall Smart Card Services Update, version 1.1 from an Intel-based system running OS X version 10.5.4. The folder name in Step 4 and the version number in Step 5 may be different if uninstalling from a system running a higher version of OS X.

**Table 11: Uninstall Smart Card Services Update** 

Step No.	Action
1.	Disconnect the Smart Card Reader from the Apple computer.
2.	Restart the computer.
3.	Log on to the computer with an administrative account.
4.	Open the <b>SmartCardServices-Backup-[9E17]</b> folder and move the old components back to their respective locations.
5.	Restart the computer. The system should be back to a working 10.5.4 configuration.

# APPENDIX C: DETERMINE DOMAIN AND URL

This appendix provides the steps necessary to determine the domain of your NMCI user account as well as the correct URL for accessing NMCI Outlook Web Access. Table 12 lists the domains and provides a brief description of them.

**Table 12: NMCI Domains** 

Domain	Fully Qualified Domain Name (FQDN)	Description			
NMCI Navy Enclave					
NADSUSEA	nadsusea.nads.navy.mil	(Naval Active Directory Services United States East) for Navy NMCI users east of the Mississippi River			
NADSUSWE	nadsuswe.nads.navy.mil	(Naval Active Directory Services United States West) for Navy NMCI users west of the Mississippi River			
PACOM	pacom.pads.navy.mil	(Pacific [Command] Active Directory Services) for Navy NMCI Pacific Command users			
NMCI-ISF	nmci-isf.com	NMCI Administrative domain (Navy) for NMCI administrators in the Navy NMCI Active Directory forest			
NMCI Marine Corps Enclave					
MCDSUS	mcdsus.mcds.usmc.mil	(Marine Corps Directory Services United States) for USMC NMCI users who are part of the continental United States and Hawaii			
MCDSJP	mcdsjp.mcds.usmc.mil	(Marine Corps Directory Services Japan) for USmC NMCI users who are outside the continental United States			
NMCI	nmci.mcds.usmc.mil	NMCI Administrative domain (USMC) for NMCI administrators in the USMC NMCI Active Directory forest			

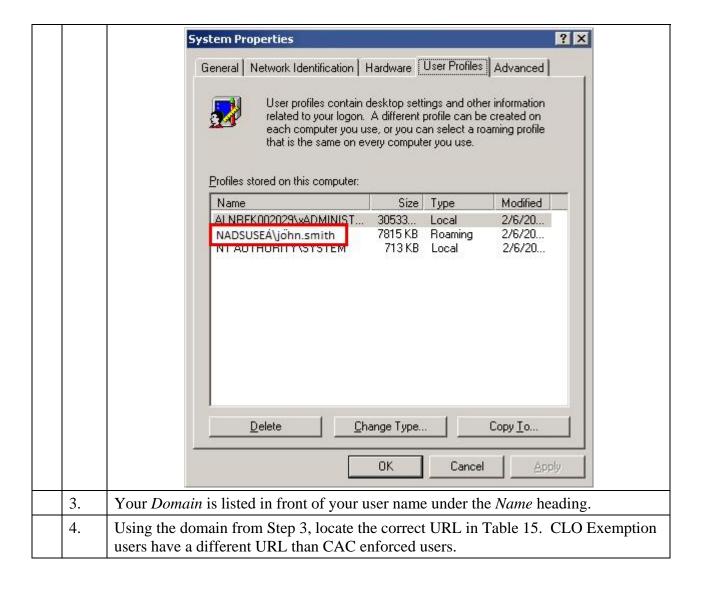
The procedure for determining your NMCI domain is slightly different depending on if you are using a NMCI Client Data seat running the Windows 2000 Professional Operating System or one running the Windows XP Professional Operating System.

#### Determine My NMCI Domain on a Windows 2000 NMCI Client Data seat

Table 13 lists the steps to determine your User account's domain when logged onto a NMCI Client Data seat running the Windows 2000 Professional Operating System.

Table 13: Determining User's Domain on Windows 2000

Step No.	Action
1.	From your NMCI seat, right-click the <b>My Computer</b> icon, then select <b>Properties</b> .
2.	In the System Properties window, select the User Profiles tab.



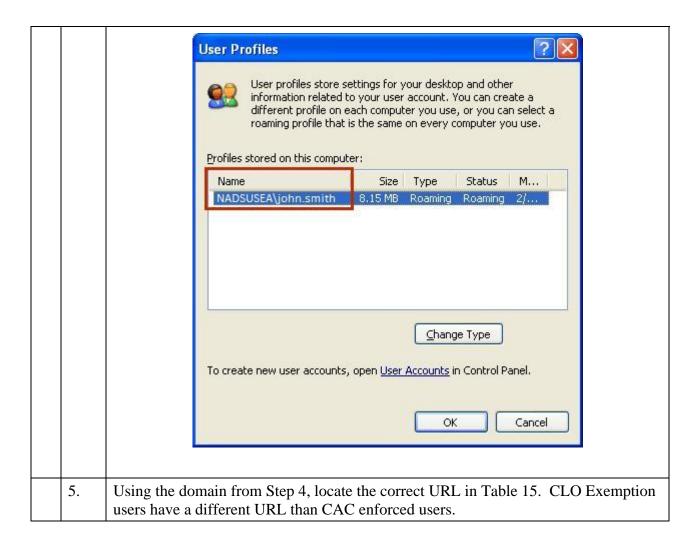
### Determine My NMCI Domain on a Windows XP NMCI Client Data seat

Table 14 lists the steps to determine your User account's domain when logged onto a NMCI Client Data seat running the Windows XP Professional Operating System.

Table 14: Determine My NMCI Domain in Windows XP

Step No.	Action	
1.	From your NMCI seat, right-click the <b>My Computer</b> icon, then select <b>Properties</b> .	

2. In the System Properties window, select the Advanced tab.  3. Click Settings in the User Profiles section.  4. Your Domain is listed in front of your user name under the Name heading.		
3. Click Settings in the User Profiles section.	2	In the System Properties window, select the Advanced tele
4. Your <i>Domain</i> is listed in front of your user name under the <i>Name</i> heading.		
	4.	Your <i>Domain</i> is listed in front of your user name under the <i>Name</i> heading.



#### **Determine Correct NMCI Outlook Web Access URL**

Table 15 identifies the domains and Uniform Resource Locator (URL) link a user of that domain must use to access NMCI Outlook Web Access.

**Note:** Users who are CLO Exempt access NMCI Outlook Web Access using a different URL than others in the same domain.

DomainURL LinkNADSUSEAhttps://webmail.east.nmci.navy.milNADSUSWEhttps://webmail.west.nmci.navy.milNMCI-ISFhttps://webmail.isf.nmci.navy.milNADSUSEA/NADSUSWE/NMCI-ISFhttps://webmail.exceptions.nmci.navy.mil(CLO Exception users)

Table 15: NMCI Outlook Web Access URL Links

Domain	URL Link
NADSUSEA NCIS COI	https://webmail.nmci.nmci.navy.mil
NADSUSEA NCIS COI	https://webmail.exceptions.ncis.nmci.navy.mil
(CLO Exception users)	
PADS	https://webmail.pacom.mil
PADS (PACOM Single Mailbox Restore users and CLO Exception users)	https://webmail.exceptions.pacom.mil

## APPENDIX D: FREQUENTLY ASKED QUESTIONS

Q: What is needed to use my DoD Common Access Card (CAC) on an Apple computer to access my NMCI email?

**A:** The following items are required to allow Outlook Web Access (OWA) to your NMCI email from an Apple computer:

- Apple computer running OS X version 10.5.4 or higher (Note: PPC-based Apple computers have not been tested with this solution.)
- Apple Smart Card Services Update v1.2 patch (Available from: http://idisk.mac.com/dp.hayes-Public/Smart Card Services Update v1.2.pkg.zip
- CAC For A Mac Setup Instructions (Latest version available from: http://idisk.mac.com/dp.hayes-Public/CAC\_for\_a\_Mac\_v1.2.doc)
- SCR331 USB Smart Card Reader with Firmware version 5.25 or higher (Readers with Firmware version of 2.0 or higher can be updated to 5.25. If updating is necessary, the following additional items are also required:
  - Administrator access to a computer running Windows XP (Home or Professional)
  - Windows XP drivers for the SCR331 USB Smart Card Reader SCR3xxx\_4.31\_4.41.zip (Available from: http://idisk.mac.com/dp.hayes-Public/SCR3xxx\_4.31\_4.41.zip)
  - SCR331 Firmware update SCRx31CCID\_fw5.25.zip (Available from: http://idisk.mac.com/dp.hayes-Public/SCRx31CCID\_fw5.25.zip)

#### Q: Where can I obtain the necessary files?

A: The SCR331 drivers and Firmware can be obtained from the SCM Micro website at:

http://www.scmmicro.com/support/pcs\_downloads.php?lang=en

The Apple Smart Card Services Update v1.2 can be obtained from:

http://idisk.mac.com/dp.hayes-Public/Smart Card Services Update v1.2.pkg.zip

#### Q: I get an error: "Safari was unable to open the page."

**A:** There could be any number of causes for this error. First, try quitting Safari (From the Safari Main Menu, select Quit Safari (or use the Command-Q shortcut) and then restarting it. Alternately, restart the computer to clear any data cached in memory.

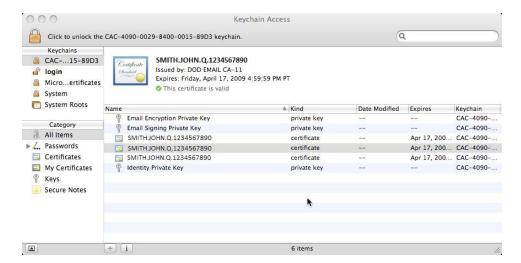
Verify connectivity to websites that do not require authentication to eliminate network issues. A system that is used on multiple networks (i.e. Home and Work) or different network connections (i.e. Wireless, CAT-5 Copper, AirCard, etc.) may need the Network Preferences modified, including proxy settings. Troubleshooting network issues is beyond the scope of this document.

Another possible cause is missing Root or Intermediate Certificates. Ensure the Intermediate Certificates have been imported into the System Keychain of the Keychain Access utility. To download and install the Intermediate Certificates for your CAC, performing the following steps:

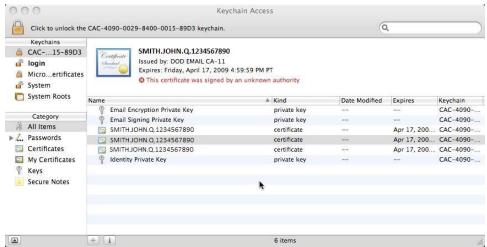
- 1. Open the Utilities folder, and double-click **Keychain Access**.
- 2. Insert your CAC into the SCR331.
- 3. In the Keychains (upper left) panel of the Keychain Access utility, a new entry will appear labeled **CAC-####-####-####-####**, where ####-####-#### is a unique number. Select this Keychain.
- 4. The contents of the CAC keychain will be displayed in the right panel. Three certificates will be displayed, one issued from a DOD CA and two issued from a DOD EMAIL CA.



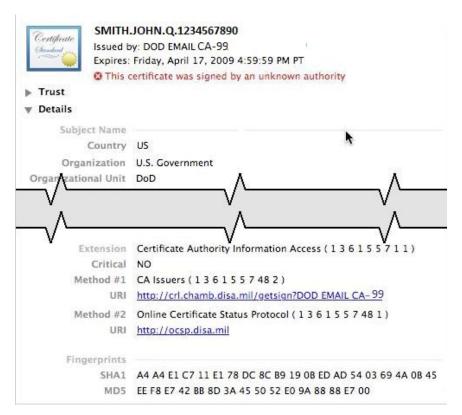
5. In the right panel, select the first (DoD) certificate. The certificate name, Issuer and Expiration Date will be displayed at the top of the right panel. If "**This certificate is valid**" is displayed in green, go to Step 11.



6. If "This certificate was signed by an unknown authority" is displayed in red, double-click it (or select File - Get Info).



7. The certificate Information window opens.



Scroll down to the Extension section labeled **Certificate Authority Information Access** and click on the link just below Method #1 (Example: <a href="http://crl.chamb.disa.mil/getsign?DOD%20CA-99">http://crl.chamb.disa.mil/getsign?DOD%20CA-99</a>). The Certificate Authority's

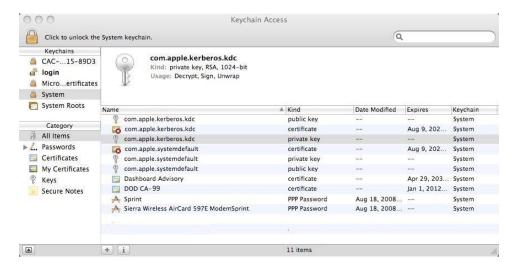
http://crl.chamb.disa.mil/getsign?DOD%20CA-99). The Certificate Authority's certificate will be downloaded to your Downloads folder.

Throughout this document, CA-99 is used to identify the specific Certificate Authority the CAC was issued from. Replace CA-99 with the appropriate number for your CAC when following these instructions.

- 8. Close the Certificate Information window.
- 9. Open the Downloads folder and double-click on the **DODCA-99.cer** file. The Add Certificates window displays.



10. Set the Keychain field to **System** and click **OK**. If necessary, enter the administrator's name and password and click **OK**. The DOD CA-99 certificate will appear in the System section of Keychain Access.

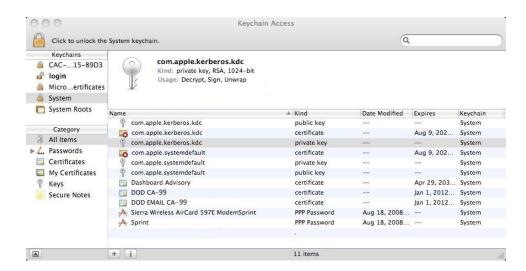


- 11. In the right panel, select the second (DOD EMAIL) certificate. The certificate name, Issuer and Expiration Date will be displayed at the top of the right panel.
- 12. If "**This certificate is valid**" is displayed in green, go to next section (Import CAC Intermediate Certificates).
- 13. If "This certificate was signed by an unknown authority" is displayed, double-click it (or select File Get Info). The Certificate Information window opens.
- 14. Scroll down to the Extension section labeled **Certificate Authority Information Access** and click on the link just below Method #1 (Example: <a href="http://crl.chamb.disa.mil/getsign?DOD%20EMAIL%20CA-99">http://crl.chamb.disa.mil/getsign?DOD%20EMAIL%20CA-99</a>). The Certificate Authority's certificate will be downloaded to the Download folder.

- 15. Close the Certificate Information window.
- 16. Open the Downloads folder and double-click on the DOD EMAIL CA-99.cer file. The Add Certificates window displays.



17. Set the Keychain field to System and click OK. If necessary, enter administrator's name and password and click OK. The DOD EMAIL CA-99 certificate will appear in the System section of Keychain Access.



### Q: My CAC doesn't show up in the Keychain Access utility.

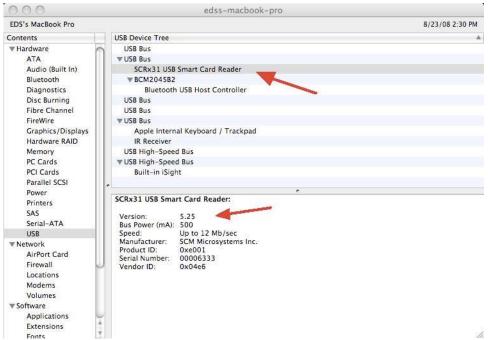
**A:** There are several possible reasons for this:

- 1. Verify the Firmware version of the SCR331 USB Smart Card Reader is correct. It must be 5.25 or higher. To verify the Firmware version, perform the following steps:
  - a. Connect the SCR331 USB Smart Card Reader to the Intel-based Apple computer and log in with an account having administrative privileges.

b. From the Apple Menu, select **About this Mac**. The About this Mac pop-up displays.



- c. Click the More Info... button on the Information display. The System Profiler window opens.
- d. In the Left-hand pane, under the Hardware section, select USB.



- e. If the version displayed is not 5.25 or higher, use the procedures of Appendix A to upgrade the SCR331 USB Smart Card Reader's Firmware.
- f. Close the System Profiler by selecting **System Profiler Quit** from the Main Menu.
- 2. You have a new DoD Common Access Card that is not supported. New versions of CACs are issued as the current supply of cards is exhausted, and they occasionally provide additional capabilities that conflict with existing software. No issues with CACs issued prior to 15 August 2008 have been reported. If you have issues with a CAC issued after 15 August 2008, contact Apple Technical Support.
- 3. You are using an unsupported Smart Card Reader. This process has only been verified using an SMC Micro SCR331 External USB Smart Card Reader. Other readers may work (either as is, or with the implementation of necessary drivers) however they have not been tested and are not included in these documents.

#### Q: Some website links work but others don't.

**A:** This solution has been verified for NMCI OWA only. Access to NMCI SharePoint or other CAC enabled sites has not been tested. Creating a separate Keychains Identity Preference may allow access to other sites. The steps of section 3.4 Create an Identity Preference can be used to create additional Identity Preference entries.

Q: NMCI Outlook Web Access works fine for five to ten minutes and then Safari generates a "The page cannot be displayed" error. Additionally, Technical Information section of the page states "Error Code: 401 Unauthorized. This server requires authorization to fulfill the

# request. Access to the Web server is denied. Contact the server administrator (12209)." When I attempt to reload the page, I get the same result. This doesn't happen on a Windows machine using Internet Explorer. Why?

**A:** This is due to the way Safari 3 handles client-side certificate authentication, by only prompting for when a Web page requires certificate authentication. The NMCI Outlook Web Access site is set for optional certificate authentication and the pages are set to time-out after a short period. This is to prevent a user from forgetting to log out and leaving their session open indefinitely. When the page times out, Safari doesn't automatically resend the certificate authentication, which generates the 401 error.

The current work-around is to close out of Safari completely (not just the active window), restart Safari and connect to NMCI Outlook Web Access again.

#### Q: Why is a Windows machine required? Can a virtual machine be used?

**A:** The Firmware update program is only written for the Windows Operating System. Yes, a Parallels or VMware Fusion virtual machine can be used to update the SCR331 Firmware, however using a physical Windows system is much simpler. One option is to use Boot Camp and install Windows XP on the Apple. If using a virtual machine, you will need to disconnect and connect the reader inside the virtual machine's settings twice (once during the update, and again after it completes). This is because the configuration of the reader changes during the update. Steps to update the SCR331 using a virtual machine are beyond the scope of this document.

# Q: I don't have a SCM Micro SCR-331 USB Smart Card Reader. Can other readers be used?

**A:** Apple supports a number of different Smart Card readers, however the only model tested with this document is the SCM Micro SCR-331. A list of Apple supported readers can be found a <a href="http://pcsclite.alioth.debian.org/ccid.html">http://pcsclite.alioth.debian.org/ccid.html</a> under the section "Supported CCID/ICCD Readers".