OFFICE OF THE CHIEF INFORMATION OFFICER INNOVATIONS & OPERATIONAL ARCHITECTURE

Digital Signatures Microsoft Outlook – 2003 & 2007 User Guide

21 March 2011



Version No.	Date	Description	Author/Approval
1.0	3/21/2011	Version 1.0 Final	Todd Kaywood, Carol Van Natta

Table 1. Document Revision & Version Information

Digital Signatures Microsoft Outlook- 2003 and 2007.docm

Table of Contents

1. Introduction	n	4
1.1 V	Vhat is a Digital Signature?	4
1.2 V	Vhen Should I Use a Digital Signature?	4
1.3 D	Definitions and Acronyms	5
2. Adding a Di	gital Signature to an Outlook Email	6
2.1 H	low to Digitally Sign an Outlook 2003 Email	6
2.1.1	Digitally Sign an Individual Message	6
2.1.2	Digitally Sign All Messages by Default	
2.2 H	low to Digitally Sign an Outlook 2007 Email	
2.2.1	Digitally Sign an Individual Message	
2.2.2	Digitally Sign All Messages by Default	27
3. How to Veri	ify a Signature is Valid (Outlook 2003 & 2007)	
4. Help Desk a	nd Troubleshooting for Digital Signature	32
5. References		

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1. Introduction

This document provides instructions on how to add digital signatures to Microsoft Outlook 2003 or 2007 emails. You must have an activated LincPass + PIN, the ActivIdentity ActivClient software installed, and a card reader to digitally sign a document. You must also have Microsoft Outlook 2003 or 2007 installed.

NOTE: These instructions are based on the FDCC-approved installation of Microsoft Office on computers with the Windows XP operating system. As other agencies may have implemented options, settings, and limitations during installation, you may see slight variations in behavior and screenshots than those shown in this document. Check with your agency's IT help desk if you have questions or problems.

User guides like this one are also available for:

- Microsoft Office 2003
- Microsoft Office 2007
- Adobe Acrobat versions 8 and 9

1.1 What is a Digital Signature?

A digital signature is an electronic signature that can be used to authenticate the identity of the sender of a message or the signer of a document. Besides being easily transportable, it can also add assurance that the content of the message or document that has been sent is unchanged. When time-stamped, the ability to ensure that the original signed message arrived means that the sender cannot easily repudiate it later.

Digital signatures provide a high form of signature and content integrity. Digital signatures are based on public key infrastructure (PKI), and are a result of a cryptographic operation that guarantees signer authenticity, data integrity, and non-repudiation of signed documents. The digital signature cannot be copied, tampered, or altered, and therefore non-repudiable. In addition, because they are based on standard PKI technology, digital signatures made within one application (such as Microsoft Word or Adobe Acrobat) can be validated by others using the same application.

1.2 When Should I Use a Digital Signature?

USDA is developing policy or directives that will officially address the technology of digital signature and its application in USDA. Check with your agency for interim guidance on when to use digital signatures for business purposes. Here are some general guidelines on when you might want to use them:

- Placing a "seal" on the document. Digitally signing using the USDA LincPass card is assurance of document integrity and its legal standing as an official document.
- Multiple signatures. Documents can be digitally signed by more than one person, indicating an approval or agreement with the (unaltered) content.
- Compliance. A digital signature may be required for compliance purposes when a legal signature is required. For example, the System Security Plan for a major system must be signed by the system owner and by the responsible security officer.

- Leadership Memorandums and Policy Issuance. Digital signatures on such documents are assurance that the document was reviewed and approved by the signer, and the recipient can be assured the content is as the signer intended.
- Verification of the signer's digital identity. Digital signatures can be traced to a known electronic identity, which in turn represents a specific individual in USDA. For example, although email headers can be spoofed or forged, the digital signature associated with it cannot.

This is by no means an exhaustive list, and Agencies may well find other uses for digital signatures that meet a specific business need.

1.3 Definitions and Acronyms

- PIV card: FIPS 201-compliant personal identity verification (PIV) card
- LincPass: USDA's name for the PIV cards it issues to employees, contractors, partners, affiliates, et al.
- HSPD-12: Homeland Security Presidential Directive 12, signed 27 August 2004. HSPD-12 requires all federal agencies to conduct background investigations and issue personal identity verification (PIV) credentials to all employees and contractors, and integrate those credentials with logical and physical access control systems.
- Microsoft Office file types:
 - DOC file: Microsoft Word 2003 file
 - o DOCX file: Microsoft Word 2007 file (not backward compatible with Word 2003)
 - o DOCM file: Microsoft Word 2007 file (not backward compatible with Word 2003)
 - o XLS file: Microsoft Excel 2003 file
 - XLSX file: Microsoft Excel 2007 file (not backward compatible with Excel 2003)
 - o PPT file: Microsoft PowerPoint 2003 file
 - PPTX file: Microsoft PowerPoint 2007 file (not backward compatible with PowerPoint 2003)
 - o PDF file: Adobe Acrobat version 8 & 9
 - o Microsoft Outlook 2003
 - o Microsoft Outlook 2007
- User: Employee, contractor, affiliate, partner, et al. with an activated LincPass card.
- **Public key infrastructure (PKI):** Standards-based system that creates a hierarchy of "certification authorities" to allow individuals and organizations to identify each other for the purpose (principally) of doing business electronically.
- **Non-repudiation:** A method to guarantee that the sender of a message cannot later deny having sent the message and that the recipient cannot deny having received the message. In reference to digital security, non-repudiation means to ensure that a transferred message has been sent and received by the parties claiming to have sent and received the message.

2. Adding a Digital Signature to an Outlook Email

In Microsoft Outlook 2003 and 2007, you can choose to either digitally sign individual messages, or digitally sign all messages you send. The following sections cover how to do both in Outlook 2003 and Outlook 2007.

2.1 How to Digitally Sign an Outlook 2003 Email

2.1.1 Digitally Sign an Individual Message

- 1. Open Outlook and, if it isn't already there, insert your LincPass in the card reader.
- 2. Start a new message in Outlook. Address it to yourself so you can see what it looks like when you receive a digitally signed email (described later in step 9).
- 3. From the menu, select View, then Options.



Alternatively, if it's available on your toolbar, click the Options button.

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4. In the *Message Options* window, click the **Security Settings** button.

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Voting and Tracking options Use voting buttons: Request a delivery receip Request a read receipt fo Delivery options	t for this message r this message		M
Have replies sent to:			Select Names
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5. In the Security Properties window, select the "Add digital signature to this message" option.

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	Sensitivity: Normal Security Settings	~
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- 6. Click none, one, or both of the two new options that become available:
 - Select **"Send this message as clear text signed"** if you want to allow others who may be using a lesser technology with Outlook to read your message. Recipients who don't have S/MIME security will be able to read the message.
 - Select "Request S/MIME receipt for all S/MIME signed messages" if you want to be able to verify that your digital signature is being validated by recipients and to request confirmation that the message was received unaltered, as well as notification telling you who opened the message and when it was opened.

Security Prope	erties		
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Request S	/MIME receipt for this message		
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7. Click the **OK** button, then the **Close** button to close all the windows. Your email is now ready for signature. In the toolbar, the envelope icon with a small red ribbon on it indicates the signed message.

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Subject:	TEST	
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This e-	-mail (including any attachments), is confidential and intended only for the use of the addressee(s). It may contain	
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Indicare	active and activity this contact. Bo hot copy, forward, all of altocode this contact marries	
Thank y	7ou.	
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8. Type the content of your message and add other recipients, if any. When you click the **Send** button, you'll be challenged to enter your PIN.

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Please en <u>P</u> IN	iter your PIN.		
		OK	Cancel

9. Messages that have been digitally signed show up in your Outlook Inbox with the icon that indicates the signature (the envelope with a red ribbon). If you followed the instructions in step 2 and addressed the email to yourself, you'll see what this looks like in your Inbox. Note that the contents won't be displayed in the preview window.

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10. When you open the message, you may be prompted to enter your PIN again.

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Please e <u>P</u> IN	nter your PIN.	
		OK Cancel

11. If this is the first time through the process, you will probably see a security warning telling you that you're about to install a certificate. Click the **Yes** button. You won't see this message again for future signed messages sent to you by anyone who used their LincPass certificate to sign the message.

Security	Warning
	You are about to install a certificate from a certification authority (CA) claiming to represent:
•	Common Policy
	Windows cannot validate that the certificate is actually from "Common Policy". You should confirm its origin by contacting "Common Policy". The following number will assist you in this process:
	Thumbprint (sha1): AD6037D4 B55335EA 081AAD67 D4F0010C B947DF80
	Warning: If you install this root certificate, Windows will automatically trust any certificate issued by this CA. Installing a certificate with an unconfirmed thumbprint is a security risk. If you click "Yes" you acknowledge this risk.
	Do you want to install this certificate?
	<u>Y</u> es <u>No</u>

12. When the message opens, the red ribbon in the lower right of the header indicates the message is digitally signed.

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From: Kaywood, Todd - Fort Collins, CO Sent: Tue	8/25/2009 8:28 PM
To: Kaywood, Todd - Fort Collins, CO	
Subject: test	
Signed By: TODD.KAYWOOD@FTC.USDA.GOV	(♣)
	3

13. To verify the signature and certificate, double-click the red-ribbon icon. If you want to see more information about the signature, click the **Details** button...



...then highlight the "Signer" line and click the View Details button.



The Signature window shows the details about the signer's certificate.

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Subject: test	
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14. If you selected the "Request S/MIME receipt" option in step 6, you'll receive a new message that will require you to enter your LincPass PIN again before you can open it.



Page 14

2.1.2 Digitally Sign All Messages by Default

- 1. Open Outlook and, if it isn't already there, insert your LincPass in the card reader.
- 2. From the top menu, select **Tools**, then **Options**.



3. In the *Options* window, select the "Security" tab.

Options ?X								
Preferences Mail Setup Mail Format Spelling Security Other Delegates								
Encrypted e-mail								
Encrypt contents and attachments for outgoing messages								
Add digital signature to outgoing messages								
Send clear text signed message when sending signed messages								
Request S/MIME receipt for all S/MIME signed messages								
Default Setting: ActivClient Certificates 🛛 🖌 Settings								
Security Zones								
Security zones allow you to customize whether scripts and active content can be run in HTML messages.								
Zone: 😑 Restricted sites 🛛 🖌 Zone Settings								
Download Pictures								
⊆hange Automatic Download Settings								
Digital IDs (Certificates)								
Digital IDs or Certificates are documents that allow you to prove your identity in electronic transactions.								
Publish to GAL Import/Export Get a Digital ID								
OK Cancel Apply								

 In the "Encrypted email" section, select the "Add digital signature to outgoing messages" option. See below for a description of the other two options.

Options	? 🗵								
Preferenc	es Mail Setup Mail Format Spelling Security Other Delegates								
Encrypted e-mail									
8	Encrypt contents and attachments for outgoing messages								
~ 1	Add digital signature to outgoing messages								
	Send clear text signed message when sending signed messages								
	Request S/MIME receipt for all S/MIME signed messages								
	Default Setting: ActivClient Certificates Settings								
Security	Zones								
0	Security zones allow you to customize whether scripts and active content can be run in HTML messages.								
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Digital ID	Ds (Certificates)								
UT OF OF	Digital IDs or Certificates are documents that allow you to prove your identity in electronic transactions.								
	Publish to GAL Import/Export Get a Digital ID								
	OK Cancel Apply								

- Select **"Send this message as clear text signed"** if you want to allow others who may be using a lesser technology with Outlook to read your messages. Recipients who don't have S/MIME security will be able to read the messages.
- Select "Request S/MIME receipt for all S/MIME signed messages" if you want to be able to verify that your digital signature is being validated by recipients and to request confirmation that each message was received unaltered, as well as notification telling you who opened the message and when it was opened.

NOTE: It is recommended that you don't select the "Request S/MIME receipt" option unless you have a strong business need, as it doubles the number of emails in your Inbox and adds network traffic.

5. Click the **OK** button to close the Options window. When you start a new message, your toolbar will show the envelope with a small red ribbon already selected, indicating the message will be digitally signed. (You can choose not to sign an individual email by clicking the envelope icon.)

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To <u>.</u>	Kaywood, Todd - Fort Collins, CO;	
<u></u> c		
Subject:	Test 3	
		<u>^</u>
		~

6. After adding recipients and content, click the **Send** button. You will be prompted for your LincPass PIN.

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Activid	vClient	
Please ei <u>P</u> IN	nter your PIN.	
		OK Cancel

7. The message will appear in the recipient's Inbox with an envelope with a red ribbon on it indicating the message is digitally signed.

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Inbox (1)	Date: Today						
For Follow Up	🚂 Kaywood, To	odd test			Tue 8/25/2009 8:28 PM	16 KB	9
Sent Items							
All Mailhox - Kaywood, Todd -							
Conversation History							
Deleted Items							
Inbox (1)							
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8. If you open a digitally signed email, you may be prompted for your PIN before the message will open.

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Please ei <u>P</u> IN	nter your PIN.	
		OK Cancel

9. If this is the first time through the process, you will probably get a security warning telling you that you're about to install a certificate. Click the **Yes** button. You won't see this message again for future signed messages sent to you by anyone who used their LincPass certificate to sign the message.

Security	Warning						
	You are about to install a certificate from a certification authority (CA) claiming to represent:						
<u> </u>	Common Policy						
	Windows cannot validate that the certificate is actually from "Common Policy". You should confirm its origin by contacting "Common Policy". The following number will assist you in this process:						
	Thumbprint (sha1): AD6037D4 B55335EA 081AAD67 D4F0010C B947DF80						
	Warning: If you install this root certificate, Windows will automatically trust any certificate issued by this CA. Installing a certificate with an unconfirmed thumbprint is a security risk. If you click "Yes" you acknowledge this risk.						
	Do you want to install this certificate?						
	<u>Y</u> es						

10. When the message opens, the red ribbon in the lower right of the header indicates the message is digitally signed.

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From: Kaywood, Todd - Fort Collins, CO	Sent: Tue 8/25/2009 8:28 PM
To: Kaywood, Todd - Fort Collins, CO Cc:	
Subject: test	
Signed By: TODD.KAYWOOD@FTC.USDA.GOV	(&
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	<u> </u>

11. If you chose to request S/MIME receipts for all digitally signed emails you send, you will receive a separate email stating that the message was cryptographically verified on the given date and time.

S/MIME Receipt: test - Report (Rich Text)	
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From: Kaywood, Todd - Fort Collins, CO	Sent: Tue 8/25/2009 8:29 PM
To: Kaywood, Todd - Fort Collins, CO Subject: S/MIME Receipt: test	
Signed By: TODD.KAYWOOD@FTC.USDA.GOV	*
i/our message	
To: Kaywood, Todd - Fort Collins, CO	
Sent: 8/25/2009 8:28 PM	
was tryptographically verified on 6/23/2009 6:26 PM.	

2.2 How to Digitally Sign an Outlook 2007 Email

2.2.1 Digitally Sign an Individual Message

- 1. Open Outlook and, if it isn't already there, insert your LincPass in the card reader.
- 2. Start a new message in Outlook. Address it to yourself so you can see what it looks like when you receive a digitally signed email (described later in step 5).
- 3. In the message, with the Message tab selected, look for the digital signature icon (envelope with a red ribbon). Click the digital signature icon to turn it on. Select recipients and compose the message as usual, then click the **Send** button.



4. At the ActivClient prompt, enter your LincPass PIN, then press ENTER or click the **OK** button. Outlook will automatically verify your certificates on your LincPass and send the message.

ActivCli	ent Login	? 🛛
Activid	ivClient	
Please e <u>P</u> IN	enter your PIN.	
		OK Cancel

5. The message will appear in the recipient's Inbox with an envelope with a red ribbon on it, indicating the message is digitally signed.



6. Open the message and look for the "Signed By" information below the subject, and the red ribbon icon on the right. This indicates the message has been digitally signed.

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	9	Message Ad	dobe PDF											۲
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7. Click the red ribbon icon, then the **Details** button to see details of the digital signature.

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If you want to send the message in clear text signed and/or request an S/MIME receipt the email you're sending, continue on to step 8.

8. Start a new message in Outlook. In the top menu bar, select the Options tab.

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9. In the "More Options" group, click the small arrow in the lower right corner of the group title.

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10. In the *Message Options* window, click the **Security Settings** button.

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11. In the **Security Properties** window, check the "Add digital signature to the message" (if it isn't already checked) and, optionally, the "Send the message as clear text signed" and/or the "Request S/MIME receipt for this message" options.

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- Select **"Send this message as clear text signed"** if you want to allow others who may be using a lesser technology with Outlook to read your message. Recipients who don't have S/MIME security will be able to read the message.
- Select "Request S/MIME receipt for all S/MIME signed messages" if you want to be able to verify that your digital signature is being validated by recipients and to request confirmation that the message was received unaltered, as well as notification telling you who opened the message and when it was opened.

12. Click the OK button to close the Security Properties window, and the Close button to close the Message Options window. Add recipients and content as usual, then click the Send button. If you selected the "Request S/MIME receipt" option, Outlook will ask you to confirm that you want to send an S/MIME receipt. If you do, click the Yes button; if you don't, click the No button. (If you want Outlook to always request the receipt when you've selected the option in step 11, first click the "Don't ask me about sending S/MIME receipts again" option, then click the Yes button.)

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13. At the ActivClient prompt, enter your LincPass PIN, then press ENTER or click the **OK** button.

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Please er	nter your PIN.	
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14. The message will appear in the recipient's Inbox with an envelope with a red ribbon on it, indicating the message is digitally signed. If you want to check the signature, follow steps 6 and 7 above.

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15. If you selected the "Request S/MIME receipt" option, you'll receive a new message that will require you to enter your LincPass PIN again before you can open it.



2.2.2 Digitally Sign All Messages by Default

- 1. Open Outlook and, if it isn't already there, insert your LincPass in the card reader.
- 2. From the top menu bar, select **Tools**, then **Trust Center**.



3. In the Trust Center window, select Email Security from the left menu.



- Select "Add ditigal signature to outgoing messages" to automatically send digitally signed emails unless you choose not to for an individual message.
- Select "Send clear text signed message when sending signed messages" if you always want to allow others who may be using a lesser technology with Outlook to read your message. Recipients who don't have S/MIME security will be able to read the message.
- Select "Request S/MIME receipt for all S/MIME signed messages" if you want to be able to verify that your digital signature is being validated by recipients and to request confirmation that the message was received unaltered, as well as notification telling you who opened the message and when it was opened.

NOTE: It is recommended that you don't select the "Request S/MIME receipt" option unless you have a strong business need, as it doubles the number of emails in your Inbox and adds network traffic.



- Page 29
- 4. Click the **OK** button to close the Options window. When you start a new message, your toolbar will show the envelope with a small red ribbon already selected, indicating the message will be digitally signed. (You can choose not to sign an individual email by clicking the envelope icon.)

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Address Check Paste Clipboard © Basic Text	
To Kaywood, Todd - Fort Collins, CO; Send Cc	7
Account • Subject: test	
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If you selected the "Request S/MIME receipt" option in step 3, you will receive a separate message with the receipt information, as described above in section 2.2.1, steps 12-15.

3. How to Verify a Signature is Valid (Outlook 2003 & 2007)

NOTE: The screenshots shown in this section are from Outlook 2003, but they look very similar in Outlook 2007.

1. Open the message that has been digitally signed. Outlook will show you that the email has a digital signature by showing the "Signed By" information and the red ribbon icon.

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From: Kaywood, Todd - Fort Collins, CO Sent: Tue 8/25/	2009 9:31 PM
To: Kaywood, Todd - Fort Collins, CO	
Cc: Subject: <u>Test Test - Validate</u>	
Signed By: TODD.KAYWOOD@FTC.USDA.GOV	
	~

2. To verify the person who sent the email is the person who signed it, compare the "From" properties (right click the name, select Outlook Properties, then click the "Email Addresses" tab) with the email address in the "Signed By" field.



You can also click the red ribbon icon, then click the Details button to look at the signature details (see section 2.1.1, step 13 above).

NOTE: If the Signed By information is underlined in red and the red ribbon icon has a red exclamation point, the signature is invalid. Click the red ribbon icon for more information about the signature status.

4. Help Desk and Troubleshooting for Digital Signature

Problems with digitally signing documents may actually be due to problems with your LincPass. Contact the HSPD-12 help desk for assistance in resolving LincPass issues:

USDA HSPD-12 Help Desk Toll Free: 1-888-212-9309 Local: 703-245-7888 Email: hspd12@ftc.usda.gov

If you are new to using your LincPass, consider taking the USDA AgLearn course on Two-Factor Authentication for end users (look for course ID "USDA-TwoFactorAuthEndUsers-01").

The Two-Factor Authentication Web site also has information on how to use your LincPass: http://hspd12.usda.gov/twofactor.html

In the middle of the page is a section called "Two-Factor Authentication References," which has instructions on using your LincPass, and will help you confirm you are using your card correctly for digital signature.

If you are still having problems digitally signing documents and you know your LincPass is working correctly, contact your agency's IT help desk or IT system administrator to review your operating system, hardware (computer and card reader), and application software for correct setup and functionality.

You may be able to find answers on digital signature issues at the following vendor Web sites:

Microsoft

Microsoft Digital Signature Support Content: <u>http://office.microsoft.com/en-us/outlook/CH010045641033.aspx</u> Microsoft General Support: http://support.microsoft.com/

Adobe

Adobe Digital Signature Support Content: <u>http://www.adobe.com/security/digsig.html</u> Adobe General Support: http://www.adobe.com/support/

5. References

The IOA Digital Signature Web site has information on the project, user guides, technical documents, and policy guidance for digitally signing documents and emails.

IOA Digital Signature Web site:

http://www.ocionet.usda.gov/wps/portal/ocio/ocioportal/home/ioa/ioa.digitial_signature/

Digital Signature User Guides:

http://www.ocionet.usda.gov/wps/portal/ocio/ocioportal/home/ioa/ioa.digitial_signature/

- Digital Signatures Microsoft Office 2003 (this document)
- Digital Signatures Microsoft Office 2007
- Digital Signatures Microsoft Outlook- 2003 and 2007
- Digital Signatures Adobe Acrobat 8 & 9

Technical Configuration Guide Change

http://www.ocionet.usda.gov/wps/portal/ocio/ocioportal/home/ioa/ioa.digitial_signature/

• Digital Signatures Adobe Configuration Change To Registry setting for Certificates

Policy Guidance

http://www.ocionet.usda.gov/wps/portal/ocio/ocioportal/home/ioa/ioa.digitial_signature/

• OCIO I&OA Digital Signatures Policy Guidance

Vendor Web sites have information on how to apply digital signatures in their products:

Microsoft Office

Location: Microsoft Support Site <u>http://www.microsoft.com/downloads/details.aspx?FamilyId=79d06e72-4b45-4669-9eac-</u> <u>Oeca5821e8ff&displaylang=en</u>

Microsoft Outlook

Location: Microsoft Support Site <u>http://www.microsoft.com/downloads/details.aspx?FamilyId=CC37CC1E-028D-4D30-9093-96CC6513ECA1&displaylang=en</u>

Adobe Acrobat 8 & 9

Location: Adobe support site <u>http://learn.adobe.com/wiki/display/security/Document+Library</u> <u>http://www.adobe.com/security/digsig.html</u>

USDA Web sites have general information on the issuance, activation, and use of the LincPass card:

HSPD12

http://hspd12.usda.gov/index.html http://hspd12.usda.gov/fag.html

Two-Factor Authentication

http://hspd12.usda.gov/twofactor.html

Page 33

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