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# 1. Introduction

## 1.1 What is Digital Signature?

You can digitally sign a document for many of the same reasons you might place a handwritten signature on a paper document. A digital signature is used to help authenticate the identity of the creator of (authenticate: The process of verifying that people and products are who and what they claim to be. For example, confirming the source and integrity of a software publisher's code by verifying the digital signature used to sign the code.) digital information — such as documents, e-mail messages, and macros — by using cryptographic algorithms.

Digital signatures are based on digital certificates. Digital certificates are verifiers of identity issued by a trusted third party, called a certification authority or CA. This works similarly to the use of standard identity documents in the non-electronic world. For example, a trusted third party such as a government entity or employer issues identity documents such as driver's licenses, passports and employee ID cards on which others rely to verify that a person is whom he/she claims to be.

#### 1.2 What Digital Signatures Accomplish?

Digital signatures help to establish the following authentication measures:

**Authenticity**: The digital signature helps to assure that the signer is who he or she claims to be. This helps prevent others from pretending to be the originator of a particular document (the equivalent of forgery on a printed document).

**Integrity:** The digital signature helps to assure that the content has not been changed or tampered with since it was digitally signed. This helps prevent documents from being intercepted and changed without knowledge of the originator of the document.

**Non-repudiation:** The digital signature helps to prove to all parties the origin of the signed content. "Repudiation" refers to the act of a signer's denying any association with the signed content. This helps prove that the originator of the document is the true originator and not someone else, regardless of the claims of the signer. A signer cannot repudiate the signature on that document without repudiating his or her digital key, and thus other documents signed with that key.

#### 1.3 Digital Signatures in the Business Environment

The following scenario illustrates how digital signing of documents can be used in a business environment:

- I. An employee uses an Excel spreadsheet to create an expense report. The employee then creates three signature lines: one for herself, one for her manager and one for accounting. These lines are used to identify that the employee is the originator of the document, that no changes will take place in the document as it moves to the manager and the accounting division, and that there is proof that both the manager and accounting department have received and reviewed the document.
- II. The manager receives the document and adds her digital signature to the document, confirming that she has reviewed and approved it. She then forwards it to the accounting department for payment. A representative in the accounting department receives the document and signs it, confirm receipt of the document.

- 2. How to keep your Root Certificate into Trust list?
  - If you select browser to store your personal certificate while pick up from the dataedgeCA then it will come automatically to your browser. It is recommended that you should pick up your personal certificate from the same system that you used for enrollment.
  - If you select eToken to store your personal certificate while pick up from dataedgeCA then it will be stored your Cryptographic eToken but when you will insert your eToken to your system, browser will automatically detect your certificate.
  - To use your certificate for various purposes you need to be added your parents certificate (Root Certificate of CCA Bangladesh) to your browser trust list.

Here the steps to add the parent certificate to your browser trust list:

1. Go to <u>www.dataedgeid.com</u>. Here you will get the Root Certificate of CCA & dataedgeCA



2. Click the Download options then CCA Root Certificate



3. It will redirect to <u>www.cca.gov.bd</u>. Click the Download Root CA Certificate

dataedgeID	× O Controller of Certifying Aut			
← → C ③ www.cca.g	gov.bd/index.php?option=com_	content&task=view&id=499&Itemid=1		公 ~
🗀 CA 🦳 R&D 🦳 Mail 🚞	Education 🦲 Music 🦲 Vedio (	🗅 Scholarship 🧴 University 🦳 Jobs 📋 Social Network 📋 Entertainment 📋 Ne	ws 📋 Others	
		formation and Communication Technology of the Controller of Certifying Authorities (CCA)		<u>^</u>
	search Search	Home Links	s Contact Us Sitemap FAQ	
	Home			
	e Home	Root CA Certificate is Activated	Latest News	
	e About CCA	The Root CA certificate of Bangladesh PKI is been activated on 18th April 2012 followed by Root	Information System and PKI	
	e Act, Rules, and Regulations	Key Generation Ceremony. The Certificate details are given below:	Audit is	
	e Report & Publications		Training on Digital Signature for Government	
	e Audit	n Https://192.161.6.28443/html - 30020204 - Kost CCA of Bangladesh - Windows Informed Explorer	Official (Batch-3) Training on Digital	=
	Notice Board	View Certificate	Signature for government	1
	e Guidelines		official (Batch-3) has been	
	Licensed CAs	CA Name RootCABangladesh (370282204)	Seminar on Digital Signature for Government	
	Quick Links	Certificate Version X.309 v.3 Certificate Seniell SCOERSEBIE(KS-08 Munities Taisean OV Co-related Calibration Advisor of the COLO-RED	and Non-Government Official in Khulna Somicat on Dialtal	
	) Bangladesh Govt. Portal	Valid from 4/18/12 12:01 PM	Upcoming Events	
	+ National Web Portal	Valid to 4/18/22 12:00 PM Subject DM CH=Root CA Banglodesh,0=Office of the CCA,C=8D	No events	
	Ministries and Divisions	Subject Alternative Vane Name		
	<ul> <li>Ministry of Information &amp; Communication Technology</li> </ul>	Subject Directory None Attributes	Download	
	Communication Technology	Public key, RS4 (2048 bits): CIF5455063583807468212CA7CC841086578582568CF67 Basic constraints: CA, No Path Length Caestraint	> Forms	
	Contact Info	Ner usage Digital Signature, Ner ostfikate sign, CRL sign Extended Ner Visage Ner extended Ker usage specified	Training Materials	
	Office of the CCA	Cited und we two band takes we using experiment Qualified Centificate: No Statement	Media Gallery	
	BCC Bhaban, Agargaon Address: Dhaka Bangladesh 1207 Telephone: 88-02-8144042 Fax: 88-02-912-4626	samere a Signare Apolita Security Meto Security Control Provided Inspensive The Fourier State Provided Control Provided Contr	Main Screen	
	E-mail: info@cca.gov.bd	Download Root CA Certificate	Root Key Generation Ceremony	<b>.</b>

4. You can save the Certificate into your system or directly open and can add to browser



5. Click Install Certificate

X), J	Certificate Information
install	A Root certificate is not trusted. To enable trust, this certificate in the Trusted Root Certification ities store.
AULIO	iues store.
Is	sued to: Root CA Bangladesh
Is	sued by: Root CA Bangladesh
	alid from 4/ 18/ 2012 to 4/ 18/ 2022
Va	

6. Click the Next for further proceeding



7. Select Place all certificate in the following store and click Next

Certificat	e Store
Certi	ficate stores are system areas where certificates are kept.
	ows can automatically select a certificate store, or you can specify a location for ertificate.
C	Automatically select the certificate store based on the type of certificate
	Place all certificates in the following store
	Certificate store:
	Browse
earn mo	e about <u>certificate stores</u>
	< Back Next > Cancel

8. Select Trusted Root Certification Authorities and click ok. In next step just click Finish

Select the certificate store you want to use.	Completing the Certificate Import Wizard The certificate will be imported after you click Finish.
Personal Trusted Root Certification Authorities Enterprise Trust Intermediate Certification Authorities Trusted Publishers Intrusted Certificates III Show physical stores	You have specified the following settings: Certificate Store Selected by User Content Certificate
OK Cancel	< Back Finish Can

9. You will get a warning massage for installing your Root certificate. Select Yes



- 3. How to add Digital Signature with your email?
  - 3.1 How to Digitally Sign an Outlook 2003 email?
    - 1. Open Outlook
    - 2. From the top menu, select **Tools**, then **Options**.



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



- 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.

- 4. Select **Setting** to add a digital certificate
- 5. Write the security setting name

urity Setting Preference Security Settings Name			
Md. Ashraful Islam Ra	iu		
Cryptography Format:	S/MIME		
Security Labels	v Setting for all cryp		ges
Signing Certificate:			Choose
Hash <u>A</u> lgorithm:		Ŧ	]
Encryption Certificate:			Choose
Encryption Algorithm:	[	Ŧ	]
	tes with signed mes		

6. Choose your digital certificate for signing & encryption your email.



7. Click the **OK** button to close the **Options** window.

curity Setting Preference Security Settings Name		
Md. Ashraful Islam Raj	ju	
Cryptography <u>F</u> ormat:	S/MIME	
V Default Security	y Setting for all cryptographic <u>m</u> ess	ages
Security Labels	. <u>N</u> ew <u>D</u> elete	Passwor
Security Labels ertificates and Algorithms Signing Certificate:	. <u>N</u> ew <u>D</u> elete Md. Ashraful Islam Raju	Passwor
ertificates and Algorithms		
ertificates and Algorithms Signing Certificate:	Md. Ashraful Islam Raju	

- 8. 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.)
- 9. 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.

Die Sch jewe Jeweit Sprint John Weiter Heiner     Type a quanties für heige	Li United Message	HCHO-
	für fich Ven bean fyrmat Jools Tyble Hindow Help	Type a quantities for help 💿 🕷
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United Name Roman (PD ) A 10 / U   A 10 / U	Tal Send FAccounts + 1 (a) + 1 (a) 1 (b) 1 (b) 1 (c) (c) Options. + HTML (c) (c) (c)	
	Line Contraction of the Contract	
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		1
		:

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 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 certificate to sign the message.

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

- 3.2 How to Digitally Sign an Outlook 2007 email?
  - 1. Open Outlook 2007
  - 2. From the top menu bar, select **Tools**, then **Trust Center**.



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

Trusted Publishers	Encrypted e-mail
Add-ins Privacy Options E-mail Security Attachment Handling Automatic Download Macro Security Programmatic Access	Encrypt contents and attachments for outgoing messages     Add digital signature to outgoing messages     Add digital signature to outgoing messages     Send dear text signed message when sending signed messages     Bequest S/MIME receipt for all S/MIME signed messages     Default Setting:     Digital IDs (Certificates)      Digital IDs or Certificates are documents that allow you to prove your identity in electronic transactions.     Get a Digital ID:     Get a Digital ID:
	Read as Plain Text         Read all standard mail in plain text         Card all digitally signed mail in plain text         Script in Folders         Allow script in shared folders         Allow script in Public Folders

- Select **"Add digital 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 youwho 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.

Security Setting Preference	2S		
Security Settings Name	*		
	-		
Cryptography Format:	S/MIME		
Default Security Se	tting for this crypta	ographic message	format
	y Setting for all cry		
Security Labels	. <u>N</u> ew	Delete	Password.
Certificates and Algorithms			
Signing Certificate:			Choose
Hash <u>A</u> lgorithm:		¥	]
Encryption Certificate:			Choose
Constanting Alexalders		Ŧ	]
Encryption Algorithm:			
Send these certifica	ites with signed me	essages	

4. Select **Setting** to add a digital certificate

5. Write the security setting name and choose your digital certificate for signing & encryption



Security Setting Preference	S		
Security Settings Name			
Md. Ashraful Islam Ra	ju		
Cryptography <u>F</u> ormat:	S/MIME		
	ting for this cryptogr y Setting for all crypt <u>New</u> Md. Ashraful Islam F	ographic <u>m</u> essi Delete	
Hash <u>A</u> lgorithm:	SHA1	+	]
Encryption Certificate:	Md. Ashraful Islam F	Raju	C <u>h</u> oose
Encryption Algorithm:	AES (256-bit)	•	]

6. Click the **OK** button to close the **Options** window.

7. 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.



If you selected the "Request S/MIME receipt" option in step 3, you will receive a separate message with the receipt information.

#### 3.3 How to verify the signature is valid or not? (2003 & 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.

	*) =	-	Test - Me	ssage (HTML)		-	And in case of the local division in the loc	
Message Ad	dd-Ins							0
Reply Reply Forward	Delete Move to Create Othe Folder + Rule Action	er Sender Sender	Categorize Follow Mark as	Find Related •	Send to OneNote			
Respond	Actions	Junk E-mail	Options 🕞	Find	OneNote			
From: Rubayet Bin To: Md. Ashraful Cc: Subject: Test	Modasser [rubayet@data-edge.com i Islam Raju	n]						Sent: Thu 2/23/2012 12:00 PM
Signed By: rubayet@da	ata-edge.com							8
Certifying Authorit	ls, Specialist   Application Admi							

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.

Message	Add-Ins	Test - Message (HTML)	
Reply Reply Forwar to All Respond	🖌 🎽 🍐 📄 🕹 🕸 Safe List	Related	
To: Md. Ash	Rubayet Bin Modasser [rubayet@data-edge.com]		Sent: Thu 2/23/2012 12:00 PM
CC Subject: Test Signed By: rubayet	Schgdule a Meeting Send Mail Additional Actions		8
	Add to Outlook Contacts		
Rubayet Assoc. IT Secur Certifying Author	Outlook Properties		
dataed	dge dataedge D 3320888   Skype # rubayet.data-edge		

Ð	Display name:	Rubayet Bin Modasser	
_	E- <u>m</u> ail address:	rubayet@data-edge.com	
	E-mail type:	SMTP	Cus <u>t</u> om type
	Internet format:	Let Outlook decide the best send	ling format

**Note:** You can also click the red ribbon icon then click the Details button to look at the signature details 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. How to add Digital Signature into your document?4.1 Adding Digital Signature to Microsoft Office 2003 (Word, Excel, Power Point) Document



1. From the menu bar, select **Tools**, then select Options,

2. Click the "Security" tab, and then click the Digital Signatures button.

User Information	Compatibility	File	Locations
General	Edit	Print	Save
Security S	pelling & Grammar	Trad	Changes
le encryption options for th	nis document		
Password to open:		Achy	anced
		Date	di foculari
le sharing options for this o	document		
Password to modify:			
Read and recommende	ed		
Dista Classicas	Droke at Demission		
Digital Signatures	Protect Document		
Digital Signatures	Protect Document		
rivacy options	-	j	
	mation from file proper		tracked
rivacy options Remove personal inform Warn before printing, :	- mation from file proper saving or sending a file	that contains	tracked
ivacy options Remove personal infor Warn before printing, s changes or comments	mation from file proper saving or sending a file to improve merge accur	that contains acy	tracked
Ivacy options Bemove personal infor Warn before printing, echanges or comments Store random number	mation from file proper saving or sending a file to improve merge accur	that contains acy	tracked
ivacy options   Remove personal inform  Warn before printing, scharges or comments  Store random number f  Make hidden markup y acro security  Adjust the security level fit contain macro viruses and	mation from file proper saving or sending a file to improve merge accur sible when opening or s propening files that mis specify the names of	that contains acy saving	tracked
rivacy options           Remove personal inform           Warn before printing, schanges or comments           Store random number to           Make hidden markup viacro security           Adjust the security level for	mation from file proper saving or sending a file to improve merge accur sible when opening or s propening files that mis specify the names of	that contains acy saving	

3. Click the **Add**... button.

	ature generated by Office may n ignature. For more information, elp.	
he following hi Signer	ave digitally signed this documen Digital ID Issued By	t: Date
۲	m	•
∢ [ ] A <u>t</u> tach certi	m ficates with newly-added signatu	res
< [] ☐ A <u>t</u> tach certi <u>V</u> iew Certifica	ficates with newly added signatu	res <u>R</u> emove

4. Select certificate for Digital Signature by clicking the correct line. Because it is impossible to tell from this view which certificate is the one you want, go to step 5 to see how to choose the correct one.



**NOTE:** If other people's certificate has used in your computer, or you have other digital certificates, you may see a long list of certificates. Only select your personal certificates.

5. Click the **View Certificate** button, then click the "Details" tab and scroll down to the "Key Usage" field. You want the certificate that says its key usage is "Digital Signature, Non-Repudiation (c0)."

	n Path
§how: <ali></ali>	•
Field	Value
Authority Key Identifier     Subject Key Identifier     CRL Distribution Points     Authority Information Ac	KeyID=49 0b dc b2 03 93 75 c 6a ee ba be d6 c3 9e 8a 26 8d [1]CRL Distribution Point: Distr ccess [1]Authority Info Access: Acc
Key Usage	Digital Signature, Non-Repudia
in monoprint algorithm	sha1
Dinital Sinnature, Non-Renurd	52 76 af d4 54 83 5b 72 2c 08
	Edit Properties

6. Click the **OK** button to close this window.

**NOTE:** If you selected the wrong certificate in step 4 (e.g., the one that says only "Digital Signature" without the "Non-Repudiation (c0)" part, click the **OK** button, then go back to step 4 to select another certificate

Back at the list of certificates, with the correct certificate highlighted, click the **OK** button.

**NOTE:** If this is the first time you are using any Office 2003 application (Word, Excel, or PowerPoint) to digitally sign a document, it will take a long time – anywhere from 30 to 90 seconds – to add the certificate to the document. The next time you sign an Office 2003 document, it will go much quicker.

7. At the Digital Signature window, click the **OK** button to close it.

ignatures		
egally binding signa signatures in Help.	e generated by Office may no ature. For more information, re digitally signed this document:	ead about digita
Signer	Digital ID Issued By	Date
present line and line		
🕮 Md. Ashraful I	dataedge sub-CA for Cl	. 5/7/2012
Md. Ashraful I	dataedge sub-CA for Cl	. 5/7/2012
<		,
<	III tes with newly added signature	,

8. At the Options window, click the **OK** button to close it.

The Word file is now digitally signed by you. Close the file without making any changes (or the digital Signature will be lost).

**NOTE:** None of the Office 2003 applications has an indicator that the document has been digitally signed at this point. If you close the document, then reopen it again, the title bar at the top will show "signed, unverified" after the file name, and a small red certificate will show in the information bar at the bottom.

4.2 Adding Digital Signature to Microsoft Office 2007 (Word, Excel, Power Point) Document1. From the main menu icon, select Prepare, then Add a Digital Signature.



- 2. If this is the first time you've selected a certificate for digital signing, Microsoft offers to help you set one up. Since your browser/eToken already has certificates, click the **OK** button. (To avoid seeing this message each time, check the "Don't show this message again" option.)
- 3. In the *Sign* window, complete the optional "Purpose for signing this document" field, then click the **Change** button to confirm you have the correct Certificate selected.

ign	the laster of	8 ×
See additional information about what your set of the set of th	ou are signing.	<u></u>
You are about to add a digital signature to this Visible within the content of this document. Purpose for signing this document:	document. Th	is signature will not be
Signing as: Md. Ashraful Islam Raju Issued by: dataedge sub-CA for Class 2		Change
	Sig	n Cancel

4. Select the certificate you want to use by highlighting it. (The next step will help you determine which the correct certificate to select is.)



5. Click the **View Certificate** button. The *General* tab lists the information about the certificate.

- 8	Certificate Information
	certificate is intended for the following purpose(s): • All application policies
	Issued to: Md. Ashraful Islam Raju
	Issued by: dataedge sub-CA for Class 2
	Valid from 1/24/2012 to 1/24/2014 You have a private key that corresponds to this certificate.
	Instal Certificate ) issuer Statement

6. Click the *Details* tab. Scroll down in the list of fields and values to select the "Key Usage" field. In the field below, it should say "Digital Signature, Non-Repudiation (c0)". Click the **OK** button to close the window.

Field	Value
Authority Key Identifier     Subject Key Identifier     CRL Distribution Points     Authority Information Access	KeyID=49 0b dc b2 03 93 75 c 6a ee ba be d6 c3 9e 8a 26 8d [1]CRL Distribution Point: Distr [1]Authority Info Access: Acc
Key Usage	Digital Signature, Non-Repudia
Thumbprint algorithm	sha1 52 76 af d4 54 83 5b 72 2c 08
Digital Signature, Non-Repudiation,	, Key Encipherment (e0)

**NOTE:** If the "Key Usage" field only says "Digital Signature" or something else, go back to step 5 and select one of the other certificates and use the **View Certificate** button to verify it's the one you want

7. Back on the list of certificates, with the correct certificate highlighted, click the **OK** button.

	Md. Ashraful Islam Raju
	Issuer: dataedge sub-CA for Class 2
	Valid From: 1/24/2012 to 1/24/2014
	Click here to view certificate prope
	ami oni
0	Issuer: dataedge sub-CA for Class 1
	Valid From: 3/7/2012 to 3/7/2014

8. Back on the *Sign* window, Click the **Sign** button

Sign	and the second s	8 ×
3 See ad	ditional information about what you are sig	igning
visible within	t to add a digital signature to this docume the content of this document. igning this document:	ent. This signature will not be
	Md. Ashraful Islam Raju dataedge sub-CA for Class 2	Change
		Sign Cancel

**NOTE:** After you select the certificate the first time, Office 2007 will remember this certificate choice. The next time you want to digitally sign a document, you won't have to repeat the selection process – you'll jump from step 4 to step 8 in this sequence.

9. After the Certificate is validated, you will receive a successful signature message. Click the **OK** button.



10. Once the signature has been successfully applied, Office 2007 automatically opens a *Signatures* window on the right side of screen showing the valid signature(s).



11. The Word, Excel, or PowerPoint file is now digitally signed by you. **Close the file without making any changes** (or the digital signature will be lost).

**NOTE:** More than one person can digitally sign a document, as long as the content of the document isn't changed. After the first signature is applied and the file closed, the second person can follow steps 1-12 above to apply a second signature. This can be repeated for as many signatures as are needed.

#### 4.3 How to verify a Signature is valid in Office 2003 & 2007?

1. Open the file for which you want to verify signatures.

You can tell the document has a digital signature because in the top title bar, the name of the document has a note after that says "signed, unverified," and there is a small certificate icon in the bottom status information bar.

**NOTE:** These indicators only tell you whether or not the file has a digital signature, and shows the signature as "unverified." Microsoft Office 2003 doesn't recognize the HSPD- 12 certificate authority, Entrust, so the only way to check that the signature is valid is to view the certificate.

1. To view the digital signature(s) associated with the document, from the menu bar, select Tools, then Options, then click the Security tab, then click the **Digital Signatures** button.



2. The Digital Signature window lists the file's digital signature(s). If there is a problem with the certificate, Microsoft may show it here by showing something other than "Entrust" in the "Digital ID Issued By" field. To verify that a certificate is valid, highlight the certificate name, then click the **View Certificate** button.

	nature - This signature and the signed c I since the signature was applied.	ontent have not been
urpose <mark>f</mark> or si	gning this document:	
	and the state of the	
	Md. Ashraful Islam Raju dataedge sub-CA for Class 2	<u>V</u> iew

3. In the "General" tab, check that the certificate is current by checking the validity date. In the "Details" tab, check that the certificate is a Digital Signature certificate, and that the issuing authority is Entrust.

Certificate Information This certificate is intended for the following purpose(s): • All application policies	
	-
Issued to: Md. Ashraful Islam Raju	
Issued by: dataedge sub-CA for Class 2	
Valid from 1/24/2012 to 1/24/2014 You have a private key that corresponds to this certificate.	

4. Click the **OK** button when you are done and close all menus. Remember, don't save the document when you close it or the digital signatures will be destroyed.

#### 4.4 How to remove Digital Signature from Office 2003 & 2007 document?

If you want to remove all digital signatures from a document, the simplest way is to make a minor change to the document (e.g., add a space), then save the document. When Word warns you that all signatures will be lost, click the **Yes** button to continue the save operation.

If you want to remove one or more digital signatures from the document without changing the document contents, follow these steps:

1. From the menu bar, select Tools, then Options, then click the "Security" tab, and then click the **Digital Signatures** button.

	effection and deserverse (Comparisonly Lis-	de  - Mermatt Wood			and the second
Hana Hant Page Lacout Beforenum Hartings	Review View Are Bangle Tools				
Alter (a - (A + (a))) Alter (a - (A + (a)))		(Procession) measured at	AaBbG AaBbC Aa		A Anna - Common
And the second s		1	and the second se	101	ignetiess
in a paper document. A digita	Digital Sign t for many of the same reasons you might pla al signature is used to help authenticate it eventying that people and products are who .	he identity of the creator	ê) 👘		Tel Andread IsL. UDD Ref. Andread IsL. UDD Signature Details Remore Signature : Remore Signature : This document to sequed. No adds much is The Social products.
Pege 1 of 1 - Words SS - 🔒				1	Last non deut sputzes in DMax Bourers -

dataedge Certifying Authority

2. At the Digital Signature window, highlight the signature to be removed, and then click the **Remove** button.

Remove S	Signature
?	Are you sure you want to permanently remove this signature? This action cannot be undone.

3. At the Options window, click the **OK** button to close it.

That digital signature has now been removed from the Word document.

#### 4.5 Adding a Digital Signature to Adobe Acrobat Reader document

- 1. Please confirm that your Digital Certificate is in your browser or please insert your eToken into USB port where your Digital Certificate is stored.
- 2. Open Adobe Acrobat. Either create a new document or open an existing document you want to sign.



3. From the top menu, select Sign, then Place Signature.

4. Adobe will instruct you to draw an area on the screen where you want to place the signature. Click the OK button, and then with your mouse, draw a box for the signature. You can seethe size of the signature, but it's easier to read if you make it as large as possible. You can place the signature anywhere in your document as well, but the recommended locations are at the beginning or the end of the document.

	for Adobe Acrobet Reader Document.pdf - Adobe Acrobet Standard	_
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	ist View Document Comments Forms Tools Advanced Window Help ireate PDF 🕰 Combine Files = 🔊 Export = 🍰 Start Meeting = 🔒 Secure = 🥒 Sign = 🍚 Review & Comment =	×
	🖶 🔄 🔄 💠 1 /1 🔢 🕙 🥰 🔊 🖲 130% + 🔚 🔛 Find	
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Z		н
•	Test for Adobe Acrob         Image: Second adobe Acroba         Image: S	
Ø		
<b>\$</b>		-

5. After you have created the signature box, a "Sign Document" window appears. From the Digital ID drop list, select the certificate for Digital Signature.

	ami oni Md. Ashraful Isla					
	Md. Ashraful Isla					
		m Raju				
	Digital le	dentification				
	Sign transac Encrypt key:	tion, Sign document, s				
	Md. Ashraful Islam Raju <raju@dataedgeid.com></raju@dataedgeid.com>					
	1/24/2014 8:27:20 AM					
	dataedge sub-CA for Class 2					
		t Digitally signed by Md. A Islam Raju DN: c=BD, I=Dhaka, o=P email=raju@dataedgeld. cn=Md. Ashraful Islam R Date: 2012.05.02.16:07: +06'00'	<sup>9</sup> ersonal, com, aju			

## NOTES:

- If other people's certificate has used your computer, you may see their certificates offered in this list. Only select your personal certificates.
- If you don't see your certificate keys listed at all, first check that your card is in the reader and wait a minute or two for Acrobat to find it. If your keys still aren't listed, your agency may need to implement the Adobe Technical Modification for Digital Signature.

- 6. Because the "Digital ID" drop list isn't very helpful in describing the certificates, you'll need to view the certificate to confirm it is the correct certificate to use for signing.
- 7. Select one of the two lines with your name, then double click the large rectangle that says "Digital Identification." For most certificates, the correct one will be one with your name.

Digital ID: Md. 4	Ashratul Is	lam Raju		
	Digital	Identific	ation	
	Sign trans: Encrypt ke	action, Sign d ys	ocument,	
	Md. Ashraful I	slam Raju ⊲raju@	dataedgeid.co	m>
	1/24/2014	8:27:20 AM		
	dataedge	sub-CA for (	lass 2	
Appearance: St Md. Asl Islam R		Digitally Islam Ra DN: c=Bl email=ra cn=Md. A	ju	am Raju

8. In the Certificate Viewer window, open items in the left-side menu until you get to the lowest level. Click to highlight your name.

dataedge Root CA DATAEDGEONLINE_2	Summary	Details	Revocation	Trust	Policies	Legal Notice	
Md. Ashraful Islan		1	Md. Ashraful Personal	Islam Ra	aju <raju@< td=""><td>dataedgeid.com&gt;</td></raju@<>	dataedgeid.com>	
	Iss	ued by:		-CA for	Class 2		
	2.00		data edge lin	nited			
			: 2012/01/24 14:27:20 +06'00' : 2014/01/24 14:27:20 +06'00' : Sign transaction, Sign document, Encrypt keys				

9. Click the "Details" tab, then in the right-hand window, scroll down to the "Key usage field."

<ul> <li>dataedge Root CA</li> <li>DATAEDGEONLINE_2</li> <li>Md. Ashraful Islan</li> </ul>	Summary Details	Revocation Trust	Policies Legal Notic	e
	Name Subject key i Authority ke X.509 data MD5 digest Private key Sign transaction Sign document Encrypt keys	y i <see details=""> Sign transact 30 82 04 51 3 52 76 AF D4 5</see>	ion, Sign document, E. 0 82 03 39 A0 03 02 01 i4 83 5B 72 2C 08 BB A 51 31 EA FA CE DD 20	
e Þ				

You want the certificate that says "Sign transaction, Sign document" in the Key usage value column. Click the OK button to close the window.

To view the trust level at this point, click the "Trust" tab. It will show there is no trust established yet, wh ich is Adobe's way of saying the document isn't signed yet. Click the OK button to close the window.

dataedge Root CA	Summary Details Revocation Trust Policies Legal Notice
Md. Ashraful Islan	This certificate is not trusted. Trust Settlings
	<ul> <li>Sign documents or data</li> <li>Certify documents</li> </ul>
	Execute dynamic content that is embedded in a certified document
	Execute high privilege JavaScripts that are embedded in a certified document.
	Add to Trusted Identities

10. The Sign Document window now shows the correct certificate selected in the bottom area . Click the Sign button

aful Islam Raju 🗾
gital Identification
n transaction, Sign document, rypt keys
Ashraful Islam Raju «raju@dataedgeid.com>
4/2014 8:27:20 AM
aedge sub-CA for Class 2
ard Text Digitally signed by Md. Ashrafu Islam Raju DN: o=BD, I=Dhaka, o=Person

11. When Acrobat prompts you, save the file. If you are working with an existing document, you may want to save it with a new name to distinguish it from the unsigned version of the document

Save in:	🔰 User Manua	l –	🎯 🤌 📂 🛄 🕶		
Pa	Name	*	Date modified	Туре	
2 h	🔁 Digital_Sig	natures_Adobe_Acrobat_8_and_9	4/29/2012 4:51 PM	Adobe Acro	
ecent Places	🔁 Digital_Sig	natures_Microsoft_Office_2007	4/29/2012 4:19 PM	Adobe Acro	
	🔁 Digital_Sig	natures_Microsoft_Outlook_2003	4/29/2012 4:25 PM	Adobe Acro	
n	🔁 DigitalSign	atureThunderbird	4/29/2012 4:35 PM	Adobe Acro	
Desktop	🔁 test file		4/29/2012 4:40 PM	Adobe Acro	
	Test for Ad	lobe Acrobat Reader Document	5/2/2012 4:03 PM	Adobe Acro	
Libraries		Size: 82.	dobe Acrobat Docume 5 KB odified: 5/2/2012 4:03 F		
Computer					
Network	•	III		•	
	Dia manan	Test for Adobe Acrobat Reader Doo	ument -	Save	
	File <u>n</u> ame:	reactor radooc recorde needer boo	the lot of		

12. Your document is now signed, and you will see the digital signature representation on the document where you placed it. If the signature has a green pencil icon over the name, the signature has a valid trust. If the digital signature block has a question mark over the name, it means the signature still needs to be validated with the trust from the certificates.



If your signature shows a question mark icon, you must to validate it through Adobe by following steps 13-17. You will only need to do this once; thereafter, you can skip to step 18.

13. Double-click the digital signature in your document to open the **Signature Properties** window,



14. Click the Show Certificate button

	Document	Signer D	ate/Time	Legal		
Signed	by: Md. As	hraful Islam	Raju <rajul< td=""><td>Odataed</td><td>peid.com&gt;</td><td>Show Certificate</td></rajul<>	Odataed	peid.com>	Show Certificate
Reaso	on: Not ave	ailable				$\sim$
Da	te 2012/0	5/02 16:19:55	+06'00'		Location	Not available
Validit	y Summary					
1	The Docum	ent has not b	een modif	ied since	this signature	was applied.
			- 330		ficates are tru 1e signer's con	ited identities. nputer.
	re was create	ed using Ado	be Acroba	8.0.0.		
Signatu						

15. Click the Trust tab, then click the hierarchy in the left window to find the certificate with your name. Click the Add to Trusted Identities button.



16. Adobe warns you about trusting certificates. Since you are trusted the certificates click the OK button.



17. In the Import Contact Settings window, make sure the "Signatures and as a trusted root" option s checked, then click the OK button.

Certificate Details		
	ıl Islam Raju <raju@dataedqeid.com></raju@dataedqeid.com>	
Issuer: dataedge sub		
Usage: Sign transact	ion, Sign document, Encrypt keys	
Expiration: 2014.01.2	4 08:27:20 Z	
Trust		
Trust this certifica	te for:	
	87 <b>2</b> 9	
8		
8-		
	1.00	

18. Your document is now digitally signed. Close it without making any changes.

#### 4.6 How to Verify a Digital Signature by Acrobat Reader?

- 1. Open the file for which you want to verify signatures.
- 2. You can tell the document has a digital signature because Acrobat automatically displays the Signatures panel. (If Acrobat doesn't automatically open the Signatures panel, click the Signature icon on the left-side toolbar.) The Signatures panel shows the list of the document's digital signatures and the date each was added.



3. A graphic or text also shows where the signature was placed. You can right-click the signature block itself and select "Show Signature Properties" to see details about the signature. Click the **Signature Properties** button.

<b>k</b>	Signature is VALID, signed by Md. Ashraful Islam Raju <raju@dataedgeid.com>. - The Document has not been modified since this signature was applied. - The document is signed by the current user.</raju@dataedgeid.com>			
	Legal Notice       Signature Properties			

4. The Signature Properties window shows the name and when the document was signed. If you want to look at the specific certificate details, click the **Show Certificate** button.

Signed by:	Document   Signer   Date/Time   Le		Show Certificate
Reason:			
_ Date:		Location: N	ot available
Validity S	Summary		
🥢 Tł	he Document has not been modified	since this signature wa	applied.
🥢 Tł	he document is signed by the current	user.	
🔔 Si	gnature date/time are from the clock	on the signer's compu	ter.
	was created using Adobe Acrobat 8.0	.0.	
Signature			
Signature			
Signature			

5. The Certificate Viewer window shows all the details of the certificate, including the issuance chain, whether or not the certificate is trusted, etc. Click the **OK** button to close the window, then the **Close** button to close the Signature Properties window.

dataedge Root CA	Summary Details Revocation Trust Policies Legal Notice			
Md. Ashraful Islan	This certificate is directly trusted in your trusted identities list.			
	Trust Settings This certificate is set as a trust anchor, the result being that this certificate and all certificates issued beneath this certificate are trusted to:			
	🤣 Sign documents or data			
	X Certify documents			
	Execute dynamic content that is embedded in a certified document			
	Execute high privilege JavaScripts that are embedded in a certified document			
	Revocation checking is not performed for this certificate because it is directly trusted as a trust anchor.			
	Add to Trusted Identities			
The selected certificate p				

#### 4.7 How to Remove a Digital Signature by Acrobat Reader?

- 1. Open the file from which you want to remove a digital signature.
- 2. Find the signature block of the signature you want to remove, and right-click to open the context menu. Select the Clear Signature option to remove this signature.

🔁 Test for Adobe Acrobat Reader Document sign.pdf - Adobe Acrobat Standard		
File Edit View Document Comments Forms Tools Advanced Window	Help	×
🖕 Create PDF 🔹 🦾 Combine Files 🔹 🌾 Export 🔹 🚑 Start Meeting 🔹 👔	🔒 Secure 🔹 🥒 Sign 🍨 🌮 Review & Comment 🍨	
🗀 🛱 🔛 🖃 🧅 🛊 1 /1 🛛 🕅 🖑 🤻 🖲 🖲	130% • 📑 😧 Find •	
		*
Test for Adobe Acrobat Reader	Document Sign	1
R.	Clear Signature	
	<u>V</u> alidate Signature	Ξ.
0	View Signed Version Compare Signed Version to Current Version	
	Show Signature Properties	
	Digitally signed by Md. Ashraful Islam Raju DN: c=BD, I=Dhaka, o=Personal, email=raju@dataedgeid.com, cn=Md. Ashraful Islam Raju Date: 2012.05.02 16:19:55 +06'00'	
<i>©</i>		
		 Ŧ

3. If you want to remove all the signatures at once, open the Signatures panel (click the Signature icon in the left-side toolbar). Click the Options tab in the Signatures panel, then select the "Clear All Signature Fields" option.



4. Acrobat will warn you that you can't undo this action and ask you to confirm you want to remove the signatures. Click the OK button.



5. Click OK to finish