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Addendum to the Digital Signatures Guide

For the Acrobat family of products

Acrobat® Family of Products
Modification date: 12/14/10

Addendum to the Digital Signatures Guide for the Adobe® Acrobat Family of Products.

1 The Basics

This guide describes the technical details of the Acrobat family of products' digital signature feature.

Audience

This document is primarily a technical document which provides in depth details not found in end user help or in the SDK. The primary focus here is to provide details that help enterprise users, admins, and other business users set up and maintain secure PDF workflows. Potential audiences might include:

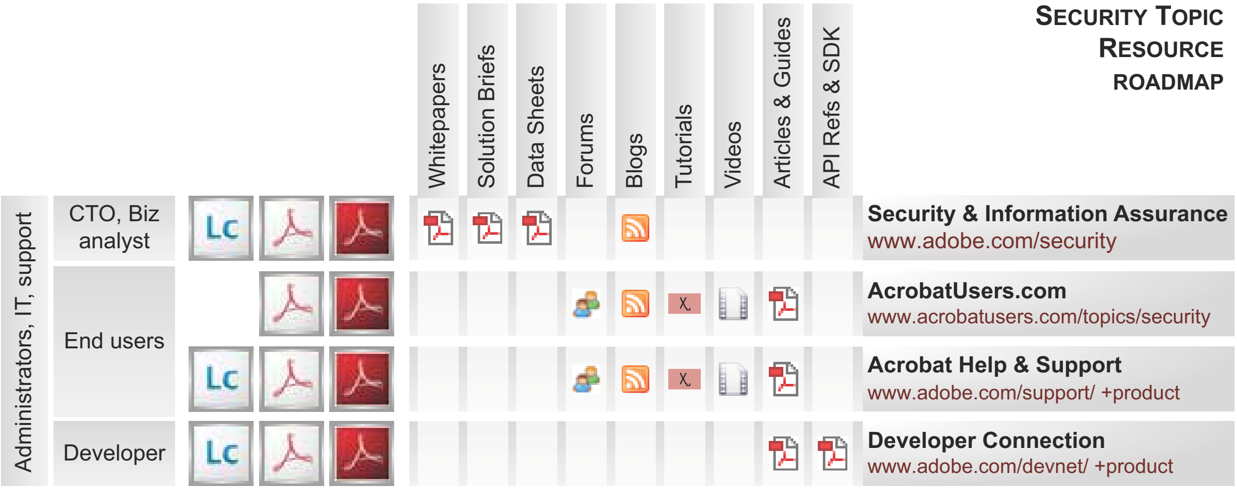
- Administrators who configure, deploy, and maintain clients on many machines in an enterprise environment.
- Developers who need registry level detail to augment SDK information about creating custom plug-ins and handlers that use Acrobat's security features.
- End users that need advanced knowledge of Acrobat's and Adobe Reader's security features.

Other resources

This guide provides technical details that are probably not of interest to the casual user. It is also not a developer document, and developers should refer to the SDK and its associated references and APIs. As you peruse this document, keep in mind that there are numerous resources out there, including forums and even video tutorials. Adobe is aggressively revamping many of its learning resources as Web 2.0 matures, and it may be that one of these sites would prove equally, if not more, useful:

- Documentation Library: http://learn.adobe.com/wiki/display/security/Document+Library
- Developer documentation: http://www.adobe.com/go/acrobat_security.
- Admin and end user documents:
  - http://www.adobe.com/support/acrobat: Provides end user tutorials, guides, videos, and blogs.
  - http://www.adobe.com/support/livecycle
  - http://www.adobe.com/support/reader
- White papers/data sheets: http://www.adobe.com/security
- www.acrobatusers.com

Figure 1 Resource roadmap



Note: Table 1 shows a partial list of the documentation residing at the above locations.

Table 1 Documentation related to security

Document	Audience	For information about
Acrobat SDK Documentation Roadmap	Developers	A guide to the documentation in the Adobe Acrobat SDK.
Acrobat and PDF Library API Reference	Developers	A description of the APIs for Acrobat and Adobe Reader® plug-ins, as well as for PDF Library applications.
JavaScript for Acrobat API Reference	Developers	A listing of the Acrobat JavaScript APIs.
Developing Acrobat Applications with JavaScript	Developers	Additional detail about the Acrobat JavaScript APIs.
PDF Reference 1.x	Developers	A detailed description of the PDF language.
FDF Data Exchange Specification	Developers	A object-level FDF file description. The files can be generated programmatically and used to share security-related data.
PDF Signature Build Dictionary Specification	Developers	Build properties for the PDF Reference's signature dictionary which provides interoperability details for 3rd party handlers.
Digital Signature Appearances	Developers & administrators	Guidelines for creating signatures programmatically.
Guidelines for Developing CSPs for Acrobat on Windows	Developers & administrators	Guidelines for developing a Cryptographic Service Provider for use with Acrobat® on the Windows® platform.
Enhanced Security in Adobe Acrobat 9 and Adobe Reader 9	Administrators & end users	X-domain configuration specifically and other aspects of the enhanced security feature generally.
Digital Signatures in the PDF Language	Anyone needing an overview	A generic description of how signature work in PDF.
Digital Signatures in Acrobat	Anyone needing an overview	A description of how signatures are implemented in Acrobat.

1.1 Basic Concepts

You’re going to have a hard time understanding most of the content in this document without understanding how Acrobat defines or uses “trust,” “trusted identities,” and “digital IDs.” Trust me.

1.1.1 What is Security and Information Assurance?

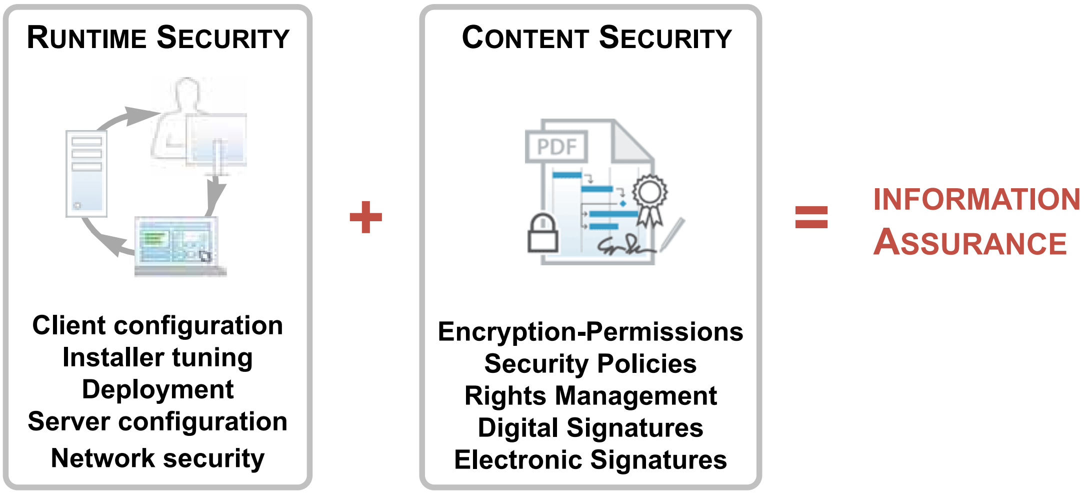
Adobe helps organizations protect sensitive information by enabling confidentiality, privacy, authentication, integrity, non repudiation, and availability. As shown in Figure 2, security in the context of a living workflow includes all of the workflow’s components as well as the proper exercising of Acrobat’s security features by those participating in that workflow. Information assurance includes all the products, services, features, policies, and procedures that allow the reliable exchange of electronic information.

Many users have business and other reasons to care about information assurance more than the average end user. You might work in an enterprise setting as an administrator or workflow architect. Your concern might be configuring, deploying, and managing clients across your organization, or you may be responsible for creating secure end-to-end workflows on a network. In all of those cases, you should be concerned with both the application’s runtime security options as well as its packaged security features.

While digital signatures and content security through encryption and permissions are features designed to help you protect content and control its use, these features are exercised in an application that runs on a machine interacting with other files, machines, and users via a network. Ideally, all of a workflow’s components should be secure, and tuning applications, machine, servers, and users (through education) increases the security of the environment in which signed and encrypted documents exist.

Tip: Runtime security is an essential component of information assurance. For more details, see the document *Application Security in the Acrobat Family of Products*.

Figure 2 Information assurance components



1.1.2 What is Trust?

The concept of "trust" may mean different things in different contexts. In Acrobat security workflows, trust can mean the following:

- **Trusting participants in your workflows**: For content security and signature workflows, you will need to trust those with whom you are sharing your documents. "Trusting an identity" means that you accept that someone's certificate actually represents a particular person or organization. It is official recognition on your part of the ownership and origin of the digital ID; that is, that the digital ID represents a specific entity.
- **Setting certificate trust levels**: Once you've created a trusted identities list, you will likely need to allow and disallow certain operations. You do this by associating (setting) trust levels with each trusted identity's certificate. Trust levels define privileges that allow documents signed or certified by that identity to execute privileged operations on YOUR machine--things that cannot otherwise be done by documents you otherwise just open and display--for example, playing multimedia or executing JavaScript. Providing trust to a certificate should only be done if you want documents created or signed by the trusted identity to have higher levels of access to your machine.

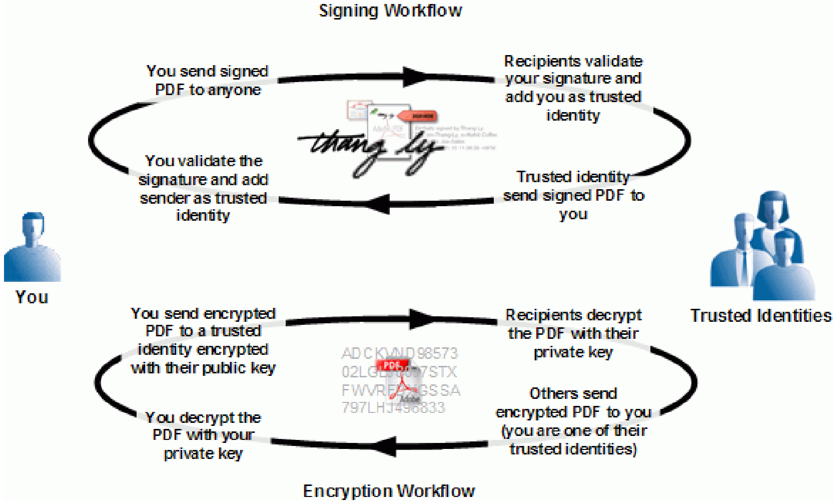
1.1.3 What is a Trusted Identity?

Digital signature and certificate security workflows both rely on certificates. Participants in signing workflows share their certificates ahead of time or embed them in a document. Participants in certificate security workflows must share their certificates ahead of time. Both operations involve importing other people's certificates into your Trusted Identities list. When a person's certificate information appears in the Trusted Identity Manager, they become a *trusted identity*.

Groups of people that share documents with certificate security or digital signatures are in essence a community of trusted identities that share their certificates to make those features work. You will add people to your trusted identity list and others will add you to theirs:

- When you sign document, the document recipient can validate your signature by validating the certificate embedded in the document. Conversely, you need access to a document sender's certificate to validate their signature.

- You encrypt a document with the document recipient's public key so that they can decrypt it with their corresponding private key. Conversely, others need your certificate to encrypt documents for you.

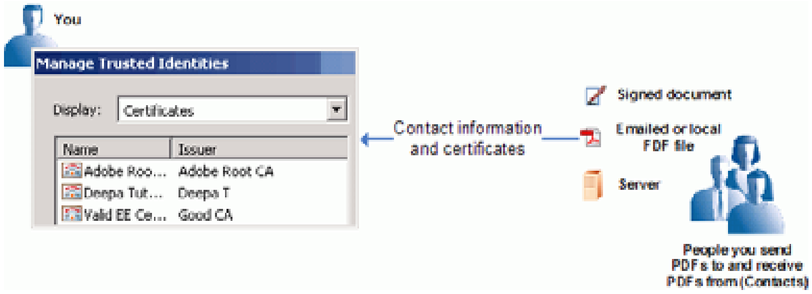

Signing Workflow
You send signed PDF to anyone
Recipients validate your signature and add you as trusted identity
Trusted identity send signed PDF to you
You validate the signature and add sender as trusted identity
You
Trusted Identities
You send encrypted PDF to a trusted identity encrypted with their public key
Recipients decrypt the PDF with their private key
Others send encrypted PDF to you (you are one of their trusted identities)
You decrypt the PDF with your private key
Encryption Workflow

The Acrobat family of products provide tools for selecting and interacting with the certificates of document recipients you trust. For example, Acrobat's user interface prompts authors to select one or more recipients when applying certificate security. Because it is often the case that a document will be sent or received from numerous individuals, it is expedient to create a list of trusted identities ahead of time. In large organizations, an administrator may do this for you; otherwise, you will use Acrobat's Trusted Identity Manager to store your trusted identities' contact information and certificates.

Getting someone's contact information and certificate involves searching for (or having sent to you) the digital ID data in the requisite format. Some common ways of getting the data include the following:

- **Import the data from an .acrobatsecurity file**. Configuration details can be imported from a security settings file as described in Chapter 4, "Migrating and Sharing Security Settings".
- **Extract the data from an FDF file**. Double-clicking on an FDF file causes Acrobat to automatically import the information.
- **Search a server directory**. Users can add directory servers containing contact information and certificates. Sometimes administrators preconfigure these directories.
- **Use the data embedded in a signed document**. The Certificate Viewer's **Add to Trusted Identities** button adds a certificate to the trusted identities list and allows setting its trust level.

Figure 3 Digital ID: Managing trusted identities

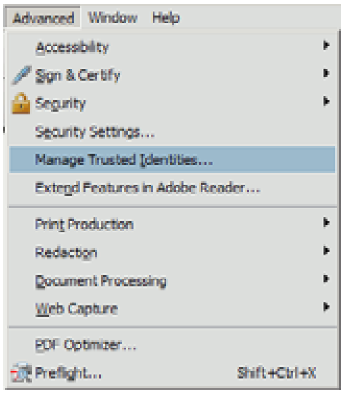

You
Manage Trusted Identities
Contact information and certificates
Signed document
Emailed or local FDF file
Server
People you send PDFs to and receive PDFs from (Contacts)

Display: Certificates

Name	Issuer
Adobe Roo...	Adobe Root CA
Deepa Tut...	Deepa T
Valid EE Ce...	Good CA

From within the Manage Trusted Identities dialog, users import and manage the certificates and certificate owner data for document recipients they wish to trust. A contact will occasionally be associated with multiple certificates. Therefore, contacts and certificates are in some respects managed independently of each other. It is also possible to create a group from any number of contacts so that security can be applied to all group members with a single action. Users manage contacts, groups, and certificates by choosing **Advanced** (Acrobat) or **Document** (Reader) **> Manage Trusted Identities** and opening the Trusted Identities Manager.

Figure 4 Manage Trusted Identities menu item



1.1.4 What is a Digital ID?

A digital ID is like a driver’s license or passport or other “certified by some entity” paper identification. It proves your identity to people and institutions that you communicate with electronically. These IDs are an essential component of digital signatures and certificate security. In signing and certificate security workflows, you will be asked to select a digital ID from a list of previously installed digital IDs, since they are a required for signing, certifying, and applying certificate encryption to PDFs.

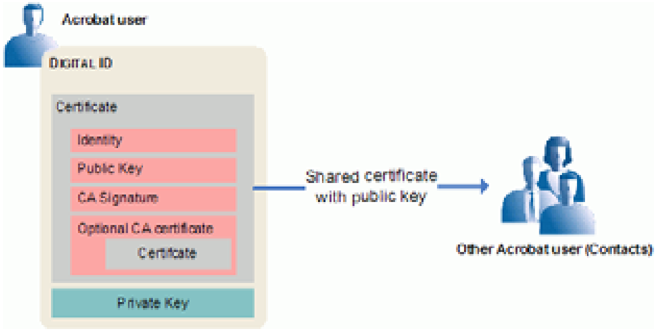
You can get a digital ID from a third-party provider, or you can create a self-signed digital ID. Self-signed digital IDs may be adequate for many situations. However, to prove your identity in most business transactions, you may need a digital ID from a trusted third-party provider, called a certificate authority. Because the certificate authority is responsible for verifying your identity to others, choose one that is trusted by major companies doing business on the Internet.

A digital ID consists of two main parts: a certificate and a private key. A certificate consists of your identity information (name, date, serial number, etc.) and a public key that are bound together and signed by a trusted or untrusted certificate authority. The certificate sometimes includes a reference to the certificate issuer’s certificate, thereby creating what is known as a “certificate chain.”

Digital IDs operate by using a key pair: data encrypted with one key can only be decrypted by the other corresponding key. When you sign PDF documents, you use the private key to apply your digital signature. You distribute the certificate that contains your public key to those who need to validate your signature or encrypt information for you. Only your private key can unlock information that was encrypted using your public key, so be sure to store your digital ID in a safe place.

Some users have multiple digital IDs for different purposes; for example, to sign documents in different roles or using different certification methods. Digital IDs are usually password protected and can be stored on your computer in password protected file, on a smart card or hardware token, in the Windows certificate store, or on a signing server (for roaming IDs). Acrobat applications can access digital IDs from any of these locations.

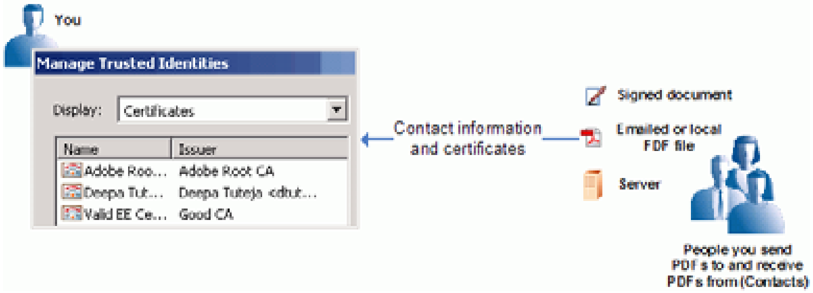
Figure 5 Digital ID: Components



Users exchange their digital ID's certificate so that they can validate signatures and encrypt documents for each other. Shared certificates can be physically sent in a file or made available over a network. The private key is never shared and is used to decrypt documents. There are several ways to share certificates:

- **Physical sharing**: Certificates can be physically shared in a file sent via email or located in a shared directory. They can be imported, exported, and otherwise managed with the Trusted Identity Manager. For details, see Chapter C, "How tos: Certificate Trust and Trusted Identities".
- **Network sharing**: Certificates can be stored on a central server. The Trusted Identity Manager can be used to search for certificates on LDAP directory servers. Adobe applications provide tools for configuring and managing directory servers. For details, see "Using Directory Servers to Add Trusted Identities" on page 206.

Figure 6 Trusted identities


You
Manage Trusted Identities
Contact information and certificates
Signed document
Emailed or local FDF file
Server
People you send PDFs to and receive PDFs from (Contacts)

Display: Certificates

Name	Issuer
Adobe Roo...	Adobe Root CA
Deepa Tut...	Deepa Tuteja <dtut...
Valid EE Ce...	Good CA

1.1.5 Digital ID Storage Mechanisms

A digital ID's certificate and private key need to be stored in a secure location. There are several file types and file locations where these items could be stored (Table 2). The digital ID data in these files is provided to the application via digital ID service providers (sometimes called Cryptographic Service Providers or CSPs). A service provider is simply a storage mechanism and code that makes the data available to the application.

In most cases, the digital ID is stored on a local or networked file. Common locations include the Windows Certificate Store which is accessible by Adobe applications and other Windows applications and the Acrobat store which is used only by the Acrobat family of products. Some IDs may exist only on external hardware such as a smart card connected to the computer.

The Acrobat family of products can access a digital ID from the following storage mechanisms:

- **Windows Certificate Store**: A local store (file location) provided by Windows that can import and export various file formats and that can be used by both Windows programs and Acrobat products.
- **PKCS#12 files**: A common file format residing on your hard drive that is used on both Windows and Macintosh.

  Tip: *PKCS* refers to a group of Public Key Cryptography Standards authored by RSA Security
- **PKCS#11 devices**: External devices such as a USB token or smart card that store digital ID data.
- **Roaming ID servers**: A network server. The private key is known only to the server. The server sends the certificate and its public key to users on demand. Users can import and export the certificate and its public key from Acrobat, but they never have install the private key on a local machine.

Table 2 Digital ID-related file types

Type	Description	5.x	6.x	7.x	8.x	9.x
.acrobat security	An XML format encapsulated in a PDF which stores security settings for import and export. **Contains**: Digital ID (public and private keys)					Export Import
PKCS#12: .pfx (Win), . p12 (Mac)	**Personal Information Exchange Syntax Standard**: Specifies a portable, password protected, and encrypted format for storing or transporting certificates. **Contains**: Digital ID (public and private keys)		Export Import	Export Import	Export Import	Export Import
.fdf	An Adobe file data exchange format used for importing and exporting settings and certificates (usually PKCS#12 files).	Export Import	Export Import	Export Import	Export Import	Export Import
PKCS#7: .p7b, .p7c	**Certificate Message Syntax (CMS)**: Files with .p7b and .p7c extensions are registered by the Windows OS. Acrobat products can import and export these files. **Contains**: Certificate and public key only		Export Import	Export Import	Export Import	Export Import
.cer	**Certificate format**: A Microsoft format for digital IDs usually stored in the Windows Certificate Store. **Contains**: Certificate and public key only		Export Import	Export Import	Export Import	Export Import
.apf	**Adobe Profile Files (Legacy)**: Not used after Acrobat 5. Files can be upgraded by double clicking them. **Contains**: Digital ID (public and private keys)	Import Export	Import	Import	Import	n/a

2.2 What's new for 9.1?

The following changes and enhancements appear in this release:

- Long term signature validation enhancements:
  - By default, certificate revocation information is embedded in the signature. This provides the ability to verify signatures using embedded revocation information even after the end entity, intermediate CA, and root certificates have expired.
  - Timestamp signatures include revocation information.
  - Ability to add certificate and revocation information post signing. This results in the following behaviors:
    - **Certified documents with no-changes-allowed**: Adding validation information after signing invalidates the certification in Acrobat 9.0 and earlier.
    - **Signed documents**: Adding validation information after signing in Acrobat 9.0 will show unsigned changes if no subsequent signature is added. Documents with validation information added after signing in pre 9.0 versions will show as "Valid with modifications."

    Note: Certified documents configured for no-changes-allowed that have validation information added post signing will show invalid certification in for earlier versions of Acrobat and Adobe Reader.
  - A user-interface item **Show timestamp warnings in the Document Message Bar** has been added. *This feature is currently not implemented*.
- The default signature digest algorithm is changed to SHA-256. If the cryptograph service provider cannot accommodate SHA-256, then the application uses SHA-1. For example, XP pre service pack 3 does not support SH-256 if the Windows CSP is used.
- In Acrobat 9.0, signing a certified document with the Lock After Signing option selected caused the certification to be invalidated. This problem is corrected in Acrobat 9.1.
- Signature verification time: The validation time new default is **The time at which the signature was created**. This value does not update after upgrading to 9.1 if the user has modified the setting for 9.0.
- You can apply an mouse or pen-driven signature by choosing **Advanced > Sign and Certify > Apply Ink Signature**.

  Tip: This command is unrelated to digital signatures and may be disabled for some documents. It may, however, cause confusion for some users. Organizations may wish to educate users on when to sign with one or the other.
- Script changes prevent signing: It is no longer possible to sign (or certify) a document in the same session when a document script change was made. You must first save, close, and reopen the document. This change mainly affects form authors and developers.

  It should also be noted that scripts that modify scripts on the form can no longer be used in conjunction with signatures. This restriction is due to security vulnerability problems. Certified forms could never modify scripts and are unaffected. Uncertified forms that modified scripts during a fill-in and signing process must be changed so that the effects of the script updates can be achieved in other ways.

- Signing and certifying with Adobe-provided Reader Extensions certificates no longer permitted: Prior to Acrobat 9.1, it was possible to use a Reader Extensions certificate provided by Adobe to apply usage rights to a document for signing or certifying. Acrobat and Adobe Reader 9.1 no longer support using those certificates for signing or certifying. If a document was signed or certified using such a certificate in a previous version of Acrobat or in another product such as LiveCycle ES or Interactive Forms based on Adobe software, the certification will be shown as invalid in Acrobat and Adobe Reader 9.1 and later, although it will still show as valid in earlier versions of Acrobat and Adobe Reader.
- Macintosh OS X keychain support for software and hardware credential (private key) usage. The Macintosh Keychain Store is equivalent of the Microsoft Windows Certificate Store, and supporting it allows the user to use their Keychain Store credentials to:
  - Sign a document.
  - Encrypt a document using a certificate associated with a Keychain credential.
  - Decrypt documents.
- PKCS#12 and ArcotID credential provisioning for encrypted document delivery.
- Signature validation performance improvements.
- XML data signature improvements.
- Additional localized search and redact patterns.

Time verification changes from 9.0 to 9.1

With 9.1, the default preferences assure signatures will be valid if the certificate used was valid at the time of signing rather than valid at the time of checking the validation. So by default, a signature will remain valid in the long term even after the certificate has expired. But it also means that, as well as trusting the signature, you are also trusting the document's signing time.

Long term validation improvments

The document security store (DSS) enables embedding long term validation (LTV) data such as large CRLs outside the signature object. DSS is an extension to ISO 32000-1 and part of the PAdES standard. For more information, see PAdES Long Term at http://pda.etsi.org/pda/queryform.asp.

Known issues

Invalid Signature state in Reader 9.1: Forms containing scripts that assign an illegal value, such as a string, to a numeric field cause invalid signature status in some cases.

- If the document was signed by an earlier version of Acrobat and verified in Reader 9.1, Reader 9.1 shows the signature as invalid.
- If the document is signed by Reader 9.1, future versions of Reader show the signature as invalid. The workaround is to remove the offending script. Future versions of Reader will throw an exception so that such script is easier to find.

2.3 What's new for 9.0

2.3.1 Enhanced security

Refer to the documents in the Application Security Library. This feature interacts with certified documents.

2.3.2 Security setting import and export

Acrobat 9 provides a more robust and detailed mechanism for importing and exporting security settings than was provided by FDF files. With Acrobat 9, all settings can be migrated to new machines, saved during upgrades, or distributed via a server. The new feature includes the following

- A new XML format for storing security settings which are saved in an empty PDF.
- Separate site and personal settings.
- A secure way of communicating and installing site-wide security settings.
- A user interface for selecting which settings are imported and exported.
- A mechanism for automatically installing or updating security settings from a server.

2.3.3 Signatures and signing workflows

Note: For additional detail, refer to "Adobe Acrobat 9 Digital Signatures, Changes and Improvements".

- **User interface changes**: Numerous user interface improvements throughout, including the Signature Properties dialog and the Certificate Viewer. The Digital Signature Tool was moved from the Advanced Editing toolbar to the Forms menu.
- **Indication of overall signature validity state**: Changes the Document Message Bar to specify the overall validity and integrity of the document. You can use this information to make a quick decision about the document.
- **Revision tracking in Signature panel**: Describes the changes made to each revision of the document. The changes to a revision include all changes made to the document between signing. This information is displayed in the signature panel for an Acrobat form.
- **Clearing signatures**: Prior to Acrobat 9.0, a signature that was not specifically protected by field locking could be cleared by anybody while protected fields could only be cleared by somebody with the private key that applied the signature. With version 9.0, all signatures can only be cleared by somebody with the private key that applied the signature.
- **Change in status of forms that take multiple signatures**: Allows additional signatures to be applied to a document, without changing earlier signatures to a "Valid with subsequent changes" status (green check with a yellow warning triangle).
- **Allowed and disallowed changes**: Refines the definition of the kinds of changes that can be made to a certified or signed document without invalidating the signatures applied to the document. Disallowed changes invalidate the signatures on a document.
- **Individual signature status icons removed from signature fields**: Removes the signature status icon from the signature appearance. The Document Message Bar is a better source of information about overall signature validity and integrity of a document, and the Signature panel's list of signatures is a better source of information about individual signature status.

- **Individual signature status icon meanings**: Replaces Acrobat 8 icons with new icons that are compatible with the new overall signature validity state icons
- **Lock document after last signature**: Allows the last signer of the document to lock the document, which prevents further changes
- **Certification requirement for XML forms**: Adds requirement to certification of forms created with LiveCycle Designer ES
- **Form field and form behavior changes**:
    - Document lock on signing: A default signing action locks all form fields in a form. Users who want to create a multi-signature workflow must take explicit action to not lock fields they want subsequent fillers to use. This affects only forms created with Acrobat 9.0 and later.
    - Add a new signature and rollup status and icon "form modified during progressive form fill-in and signing." This is similar to in concept (but not the same as) the current "green check+yellow triangle" signature status. It is an advisory warning for users to look more closely at the form and does not invalidate signatures.
    - Signatures followed by a form field change are marked with a "form modified" status and icon rather than a valid signature status and icon, unless the signature included field locking (MDP+). In that case it can be marked with a "valid signature" status and icon.
    - If all signatures are valid or form modified, then the rollup status is "form modified." The document message bar advises the user that the form has gone through a multi-step fill-in workflow and that they should inspect the document history in the signature panel.
    - These same rules apply for both uncertified and certified documents. (That is, signature invalidation on modified field values and "form modified" signature state for multi-step workflows apply to both types of documents.)
- **Post-signing changes warning**: For Acrobat 8.x, the "document modified after signing" warning (the green check with yellow triangle icon) was triggered by any document change of any kind. Now the warning icons and text have changed. If a document is changed after the last signature, a warning is shown indicating that there are unsigned changes in the document. This could happen in the course of normal workflow as a form is filled in. When signed, the warning is no longer shown. The warning could also indicate an attempt to tamper with the document after is was signed.
    - Changes not listed above result in invalid signature status.
    - The "document modified after signing" warning is eliminated and never shown.
    - The "form modified warning" is shown for any form field or data change that follows a non-field-locking (MDP+) signature.
    - The "form modified warning" is displayed when needed for documents signed with a certification signature as well as an approval signature.
- **Certification of XML dynamic forms**: For signed dynamic XML forms in Acrobat 8.0, everything is digested and signed for visible certification signatures. Everything but rendering components are digested and signed invisible certification signatures. For Acrobat 9.0, the rendering components are never signed.

2.3.4 FIPS

The FIPS-mode encryption module has been updated and changed to RSA BSAFE Crypto-C Micro Edition (ME) 2.1.0.3 cryptographic module. The FIPS validation status for RSA BSAFE Crypto-C ME 2.1.0.3

is available at http://csrc.nist.gov/groups/STM/cmvp/documents/140-1/1401val2007.htm#865. For details, see "Turning on FIPS Mode" on page 69.

2.3.5 Certificate Security

- AES 256-bit encryption algorithm can be used.

2.3.6 Reader Enablement

- AES 256-bit encryption algorithm can be used.

2.3.7 Password security

For documents with password security the following changes have been made:

- AES 256-bit encryption algorithm can be used.
- If AES 256-bit encryption is used, then the password may use Unicode.
- Acrobat 8 compatibility allows a programmatic call with a null password for owner permission to succeed if the owner password really is null. Acrobat 9 does not. For Acrobat 9, if the owner password is null but the user password is not null, you must ask for owner permission with the non-null user password.
- Acrobat 9 .0 now allows full Unicode pass phrases up to 128 characters in length (an actual limit of 128 UTF-8 bytes). Acrobat 8.x and earlier limits passwords to 32 characters maximum and almost entirely to the Latin alphabet (strictly, PDFDocEncoding).

2.3.8 Adobe Reader usage rights and feature enablement

Acrobat users can author documents that enable Reader users to take advantage of features that are otherwise unavailable. For example, a Reader user can sign a form field or save a form with their data when the author has enabled those features for that document. Support for earlier versions of this feature which are based on UB1 are disabled. Only UB3 is allowed and error messages have been improved.

2.3.9 Security and Encryption for of PDF packages (portfolios)

- The Modify and Secure Portfolio menu only applies encryption to the cover sheet not child documents.
- Failure to allow form fill-in results in blocking the recipient's ability to modify the portfolio's child documents.
- Encryption must be set at the child document level.
- Reader enablement rights must be set at the child document level.

2.3.10 Signing of PDF packages (portfolios)

Packages have been renamed as "portfolios." The changes are as follows:

- The PDF portfolio's user interface provides the standard signing mechanism. The signature is placed on the portfolio cover sheet (choose **View > Portfolio > Cover sheet**). The cover sheet may be signed in the traditional way either with an approval or certification signature.
- Signing or certifying a portfolio results in locking down its children (the assembled documents) while they reside within the portfolio.
- Certified documents that are placed inside of a portfolio will behave as if they are uncertified. Once removed from the portfolio, the contained certified document regains it's certified-specific behaviors.
- You can sign but you can't certify a document once it is placed inside a portfolio.

2.3.11 Attachments

Files with the file extensions .pkg and .jar have been added to the default attachment blacklist.

2.3.12 Product renaming

The Adobe LiveCycle Policy Server has been renamed to Adobe LiveCycle Rights Management Server.

2.4 What's New for 8.1

- **FIPS mode**: Acrobat and Reader can provide encryption via a Federal Information Processing Standard (FIPS) 140-2 mode. When the FIPS mode is on, encryption uses FIPS-approved algorithms provided by the RSA BSAFE Crypto-C Micro Edition version 2.1 encryption module. FIPS mode is only supported on Windows and can only be turned on by editing the registry. For details, see "Turning on FIPS Mode" on page 69.
- **digital ID authentication caching**: The `bWinCacheSessionHandles` registry preference has been added to specify whether to retain cryptographic service provider (CSP) handles when a user authenticates to a digital ID. When enabled, users can access their ID without reentering their password unless they log out or the session ends. For example, smart card users won't have to enter their PIN with each use when `bWinCacheSessionHandles` is set to 1. The impact of this preference will vary based on the CSP in use. The setting does not affect Windows CSPs.
- **Refreshing the digital ID list**: A **Refresh IDs** button in the signing dialog allows users to refresh the list of available digital IDs after the signing process has already been initiated. For example, if a smart card user initiates the signing workflow without first attaching their card reader, their digital ID will not appear in the **Digital ID** drop down list. **Refresh IDs** allows users to attach their reader, insert their card, and the refresh the list without having to restart the signing process.
- **Encryption level name changes**: The word "High was removed from "High (128-bit RC4/AES)." For example, the levels are now just "128-bit AES."
- **Document integrity checking and script detection**: During signature validation, the detection of a script in a PDF does not cause Acrobat to flag the document as changed. Acrobat 8.1 compares the digitally signed and current versions of the document to determine if the current version has been modified. Acrobat 8.0 considered all scripts executed during document construction as a document modification even if no changes were made (e.g. it performed a read-only query or some other "no change" action).

- **PDF portfolio security**: The following is a list of expected behaviors when a PDF package is secured:
  - If the cover sheet is signed with an approval or certification signature, then document recipients will not be able to edit and save any documents in the package.
  - If the cover sheet is signed or Reader-enabled, then the security method cannot be changed for any documents in the package.
  - If a package's security settings do not allow changes, then that setting is inherited and it will not be possible to edit and save any child documents. For example, form fill-in and changing the security settings would not be allowed for any document in the package.
  - It is possible to validate a certification signature on the cover sheet when it is Reader-enabled.
  - If the permission to allow deleting, inserting, and extracting pages is turned on, form fill-in cannot be turned on for documents in the package.
  - If form fill-in is allowed on the cover sheet, then editing and saving is allowed for any document in the package.

2.5 What's New for 8.0

Acrobat 8.0 ships with major improvements to its security features, including its user interface and core functionality. Nearly all of it features are more powerful and easier to use as a result of streamlined workflows and a redesigned user interface. All security-related menu items are accessible through a fewer number of clicks, and administrators now have more control over the end user experience via a set of expanded registry preferences.

For an overview, see the following:

- Digital ID Management
- Certificate Processing and Viewing Enhancements
- Signature Enhancements
- Document Security Enhancements
- Application Environment Preference Improvements

2.5.1 Digital ID Management

In addition to the top level menus that have been redesigned to improve usability, managing digital IDs through the Security Settings Console is now easier and less subject to user-error:

- The ID **Usage Options** menu allows users to individually specify which IDs to use for signing, certifying, and encrypting documents.
- The ID **Usage Options** menu enables users to associate a user-friendly name with an ID card that lists the ID's basic details. The friendly name simplifies choosing an ID during signing.
- The **Remove ID** button only allows deleting self-signed digital ID created in Acrobat, thereby preventing accidental deletion of critical IDs. Users can only remove an ID in a .pfx file in the Acrobat store if it was created in Acrobat 8.0 or later.

- A **Manage Attribute Certificates** option enables users to associate an attribute certificate with an ID used for signing.

2.5.2 Certificate Processing and Viewing Enhancements

The application's handling of certificates has been both extended and improved:

- **Attribute certificates** are now supported and can be managed via Security Settings Console.
- **Signature field customization**: Additional seed values have been added to allow authors to require certain certificate attributes in order to sign a field (Refer to Digital Signatures Guide).
- **Certificate Viewer** enhancements were introduced to improve usability and provide more features, including but not limited to the display of:
  - Attribute certificate data.
  - ISIS-MTT-required OIDs (in the **Certificate Data** drop down list on the Details tab).
  - The private key location, if known.
  - The validation model: *shell* or *chain* appears at the bottom of the Certificate Viewer.

2.5.3 Signature Enhancements

Many digital signature features have been added or improved. The changes significantly reduce the amount of effort it takes to sign while at the same time extending Acrobat's signing capabilities:

- **Roaming IDs**: Users can access their roaming ID account on a remote server and sign from any location. Administrators can create custom workflows, manage IDs from a central location, and so on.
- **Signature field customization**: Additional seed values have been added to allow customization of signing workflows such as who can sign and what information is required (Refer to Digital Signatures Guide).
- **Streamlined signature workflow**: Vast changes in a now user-friendly signing dialog provide more detail with fewer steps. All of the signing details can be selected on one dialog:
  - Users can select from a list of available IDs, view an ID card that displays the digital ID's high level details, and click on the card to open it in the Certificate Viewer.
  - A dynamic **Password** field that only appears when needed.
  - Signature appearances display in a drop-down list.
  - Depending on application settings, **Location**, **Contact**, and **Reasons** fields are available.
- **Algorithms**: Support for more signing algorithms, including SHA256, SHA384, SHA512, RIPEMD160.
- **Application settings**: The signing environment now has additional options. Users can turn on and off document warnings, force a warning review, turn off and on the **Location**, **Contact**, and **Reasons** fields, and require signing in preview mode. Administrators can preconfigure these settings via the registry and, in some cases, prevent end-user modification.
- **Preview mode**: Preview mode suppresses dynamic content that could change the appearance of a signed document and analyzes the document for constructs that may be problematic for signing. The document message bar tells the user if the document is safe to sign, the level of PDF/SigQ compliance, and provides links to the PDF/SigQ Conformance Report dialog which lists potential problems. **View Signed version** also invokes the preview mode so that the signature validator can see what was signed by viewing the document in a "safe mode."

2.5.4 Document Security Enhancements

Changes to the security features include:

- **Usability**: Top level menu items have been simplified to streamline workflows and improve usability.
- **New ID choices**: When adding a digital ID during a certificate security workflow, users can add IDs from PKCS#11 devices such as smart cards and tokens.
- **Reader enabling**: It is now possible to enable a document for signing and saving within Adobe Reader. While this is not solely a security feature, signatures provide protection against unknown document changes, and each document version (1 per signature) is always available for viewing.

2.5.5 Application Environment Preference Improvements

The user interface is redesigned for usability:

- **Trust Manager**: Trust settings now include simplified options for accessing resources that exist outside of a document, including attachments, Internet access, and external content. All of the sub-dialogs have been simplified, and advanced configuration details are described in the administration guide.
- **Multimedia Trust**: Options have been removed from the Trust Manager panel have been given a unique home. The options have been simplified and its interaction with the certification signatures has been made more intuitive (signature trust settings interact with the **Trusted Documents** and **Untrusted Documents** settings in Multimedia Trust.

3 How tos: Using Digital IDs

The following sections provide details about managing digital IDs in Acrobat and Adobe Reader.

- "Working with Digital IDs" on page 20
- "Generic ID Operations" on page 22
- "Managing PKCS#12 Digital ID Files" on page 25
- "Managing Windows Digital IDs" on page 33
- "Managing Roaming ID Accounts and IDs" on page 33
- "Managing IDs Stored on Hardware Devices" on page 35

Tip: This feature requires a basic understanding of how Acrobat defines trust and "digital IDs." For more information, see "Basic Concepts" on page 5.

3.6 Working with Digital IDs

3.6.1 Registering a Digital ID for Use in Acrobat

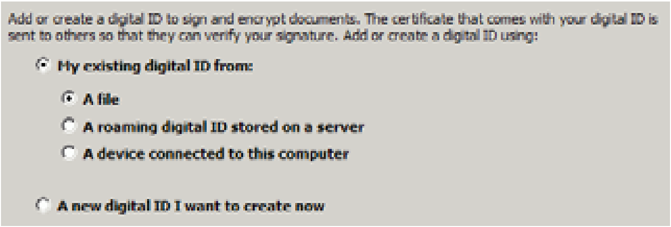
There are two ways to register a digital ID:

- **In advance**: You can set up the ID ahead of time for later use. To do so, choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**, selecting **Digital IDs** in the left-hand tree, and then choosing **Add ID**.
- **On the fly**: You can find or add IDs in signature and certificate security workflows. For example, when the Sign Document dialog appears, choose **New ID** from the **Sign As** drop down list.

For more information, refer to the following:

- Adding a Digital ID from a PKCS#12 File
- Finding a Digital ID in a Windows Certificate Store File
- Adding an ID that Resides on External Hardware
- Adding a Roaming ID Account to Get a Roaming ID

Figure 7 Add Digital ID dialog



Add or create a digital ID to sign and encrypt documents. The certificate that comes with your digital ID is sent to others so that they can verify your signature. Add or create a digital ID using:

● My existing digital ID from:

● A file

○ A roaming digital ID stored on a server

○ A device connected to this computer

○ A new digital ID I want to create now

.apf: No longer supported

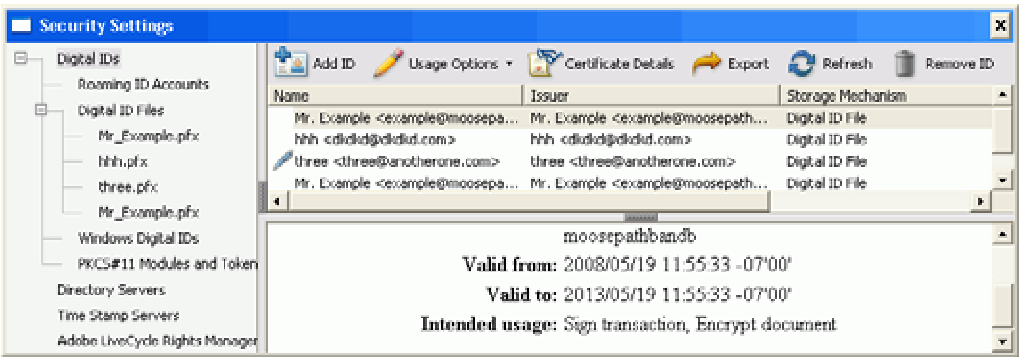
Older application versions use a deprecated digital ID format with an .apf extension. .apf is not supported in 9.0. You must use Acrobat 8.x or earlier to use this type of ID.

3.6.2 Digital ID Management and the Security Settings Console

The Security Settings Console enables users to manage their own digital IDs. Choosing **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings** opens a dialog for adding, removing, and setting the usage preferences for digital IDs stored on .pfx files, PKCS#11 modules and tokens, roaming ID servers, and the Windows Certificate Store.

> **Tip:** You should always back up your private key if you have access to it. Without the key, encrypted documents cannot be decrypted and opened. To protect and back up private keys in an enterprise setting, administrators sometimes escrow private keys. If your digital ID is stored in a file on your local machine, consider copying it to a secure location.

Figure 8 Security settings menu and manager



Name	Issuer	Storage Mechanism
Mr. Example <example@moosepa...	Mr. Example <example@moosepath...	Digital ID File
hhh <dkdkd@dkdkd.com>	hhh <dkdkd@dkdkd.com>	Digital ID File
three <three@anotherone.com>	three <three@anotherone.com>	Digital ID File
Mr. Example <example@moosepa...	Mr. Example <example@moosepath...	Digital ID File

moosepathbandb

Valid from: 2008/05/19 11:55:33 -07'00'

Valid to: 2013/05/19 11:55:33 -07'00'

Intended usage: Sign transaction, Encrypt document

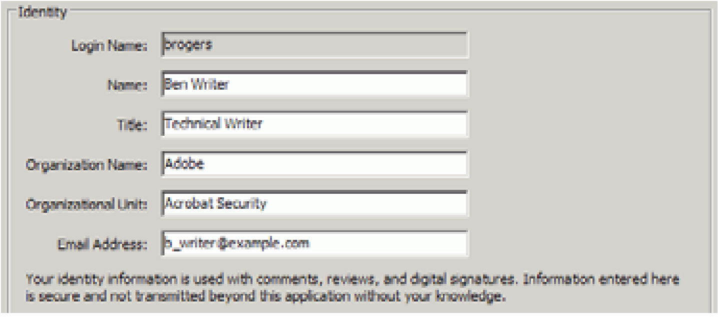
3.6.3 Setting Identity Information

You can enter default identity (user) information that the application can automatically use as the defaults for workflows such as creating self-signed certificates and emailing certificate and server settings.

To create default user information:

1. Choose one of the following.
   - Acrobat (Windows): Edit > Preferences > **Identity**
   - Acrobat (Macintosh): **Acrobat > Preferences > Identity**
   - Adobe Reader (Windows): **Edit > Preferences > Identity**
   - Adobe Reader (Macintosh): **Adobe Reader > Preferences > Identity**
2. Configure the identity details. These details will appear in your signature appearance when you sign with a self-signed digital ID.
3. Choose **OK**.

Figure 9 Identity preferences



Identity

Login Name: brogers

Name: Ben Writer

Title: Technical Writer

Organization Name: Adobe

Organizational Unit: Acrobat Security

Email Address: b_writer@example.com

Your identity information is used with comments, reviews, and digital signatures. Information entered here is secure and not transmitted beyond this application without your knowledge.

3.7 Generic ID Operations

Once you have one or more digital IDs, you can edit, remove, and otherwise manage them from the Security Settings Console. To simplify workflows that use digital IDs, consider doing the following before using your ID:

- Specifying Digital ID Usage: Set an ID to automatically use each time one is required for signing or certificate encryption.
- Sharing (Exporting) a Digital ID Certificate: Since a digital ID’s certificate contains the public key required for validating your digital signature and encrypting documents for you, send it to those who participate in these kinds of workflows with you ahead of time.

Other operations also apply to all digital IDs irrespective of their format. For details, see:

- “Viewing All of Your Digital IDs” on page 23
- “Customizing a Digital ID Name” on page 24
- “Viewing Digital ID Certificates in the Certificate Viewer” on page 24

3.7.1 Specifying Digital ID Usage

If a digital ID is not specified for a particular task that requires one, a prompt will ask for a digital ID file. To avoid repeated prompts, specify a digital ID for signing and encryption. Different IDs may be used for signing and encryption.

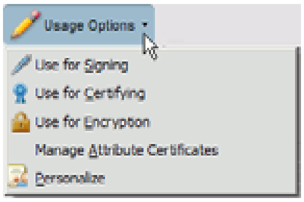
When you specify ID usage, that ID is the first one in the list you’ll see when you’re asked to select an ID in a signing or encryption workflow. If you select a different ID, your usage option will change to the newly selected ID; that is, the last used ID becomes the new “default.”

To select a default digital ID file:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) > **Security Settings**.
2. Select **Digital IDs** in the left-hand tree (Figure 3.7.1).
3. Highlight an ID in the list on the right.

4. Choose **Usage Options**. A drop-down list appears.

Figure 10 Usage options for a digital ID



5. Choose one or more options: signing, certifying, and encrypting. A lock or pen icon (or both) will appear to the left of the digital ID based on this selection.

Caution: Invalid and expired IDs with a yellow caution triangle cannot be used.

3.7.2 Sharing (Exporting) a Digital ID Certificate

Digital ID certificates must be distributed among participants in signing and certificate encryption workflows. Other users must have access to your certificate before:

- They can validate your signature if they are not already trusting a certificate above yours in the certificate chain. Note that a signature always includes the signer's certificate, so validation can occur with the certificate embedded in the signature if it is not already on the validator's machine.
- They can encrypt a document for you using certificate security.

Certificates can be emailed or saved to a file. For more information, see Chapter 6, "Sharing Settings & Certificates with FDF". Note the 9.x products and later off more robust ways of migrating settings. For details, see

Tip: To export a certificate displayed in the Certificate Viewer, choose **Export** on the Summary tab.

3.7.3 Viewing All of Your Digital IDs

You can view all of your digital IDs in one list regardless of their type or location.

To view all of your IDs:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.
2. Select **Digital IDs** in the left-hand tree (Figure 8).

   All the IDs you have added appear in the right hand panel. The list includes all of the IDs that you can view separately under:

- Digital ID Files
- Roaming ID Accounts
- Windows Digital IDs
- PKCS#11 Modules and Tokens

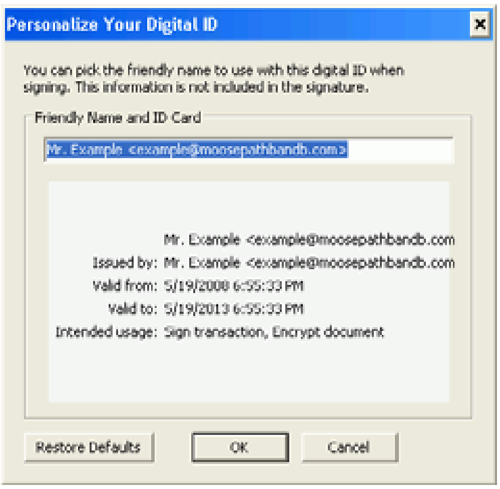
3.7.4 Customizing a Digital ID Name

You can personalize a digital ID by providing a user-friendly name. This name appears in the ID drop-down list in workflows where you are asked to select an ID.

To provide a friendly name:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.
2. Select **Digital IDs** in the left-hand tree (Figure 8).
3. Highlight an ID in the list on the right.
4. Choose **Personalize**.
5. Enter a name for the ID.

Figure 11 Personalizing an ID name



Personalize Your Digital ID

You can pick the friendly name to use with this digital ID when signing. This information is not included in the signature.

Friendly Name and ID Card

Mr. Example <example@moosepathbandb.com>

Mr. Example <example@moosepathbandb.com
Issued by: Mr. Example <example@moosepathbandb.com
Valid from: 5/19/2008 6:55:33 PM
Valid to: 5/19/2013 6:55:33 PM
Intended usage: Sign transaction, Encrypt document

3.7.5 Viewing Digital ID Certificates in the Certificate Viewer

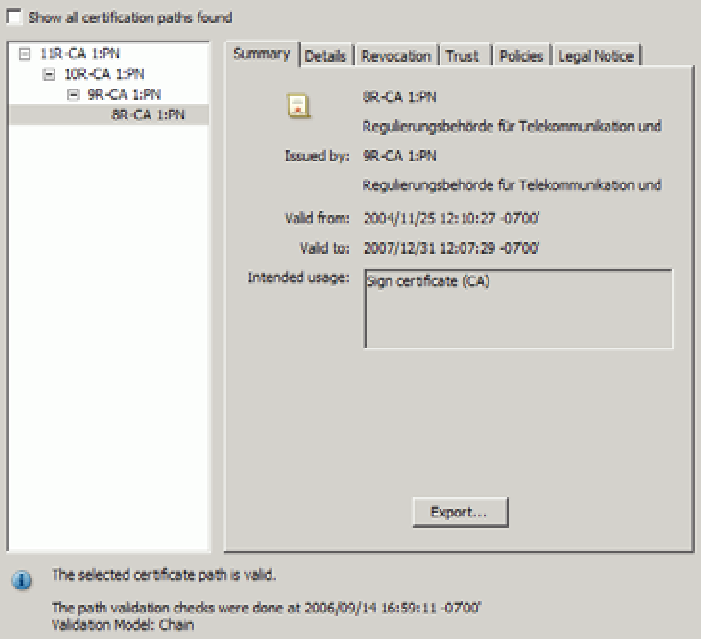
Your digital IDs appear in the Security Settings Console. From there, the Certificate Viewer can be used to display the time for which its certificate is valid and other details such as usage, a unique serial number, public key method, and so on (Figure 12).

To check certificate details:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.
2. Select **Digital IDs** in the left-hand tree (Figure 3.7.1).
3. Highlight an ID in the list on the right.
4. Choose **Certificate Details**. The Certificate Viewer displays the certificate. (Figure 12). The following details are available:
   - **Left hand panel**: The certificate chain.

- **Bottom area**: A description of the certificate, path validity statement, path validation time, and sometimes the type of validation.
- **Summary tab**: Displays the owner, issuer, validity period, and other details. The Intended Usage field tells you whether the certificate can be used for signing, encryption, or both. An **Export** button allow you to export the certificate to a file.
- **Details tab**: Lists all the certificate fields (extensions) and their values.
- **Revocation tab**: Indicates whether a revocation check occurred and the result. Allows users to initiate a manual check and analyze problems.
- **Trust tab**: Displays the certificate's trust level. If it does not already exist in the trusted identities list, the **Add to Trusted Identities** is active. If the certificate is already on the Trusted Identities list and you want to change the trust level, see "Certificate Trust Settings" on page 43.
- **Policies tab**: Displays policy restriction information that must be met for a signature to be valid, if any.
- **Legal Notice tab**: Displays other certificate policies as well as a button which links to that policy, if any.

Figure 12 Digital ID: Certificate viewer



8R-CA 1:PN
Regulierungsbehörde für Telekommunikation und

Issued by: 9R-CA 1:PN
Regulierungsbehörde für Telekommunikation und

Valid from: 2004/11/25 12:10:27 -0700'

Valid to: 2007/12/31 12:07:29 -0700'

Intended usage: Sign certificate (CA)

The selected certificate path is valid.

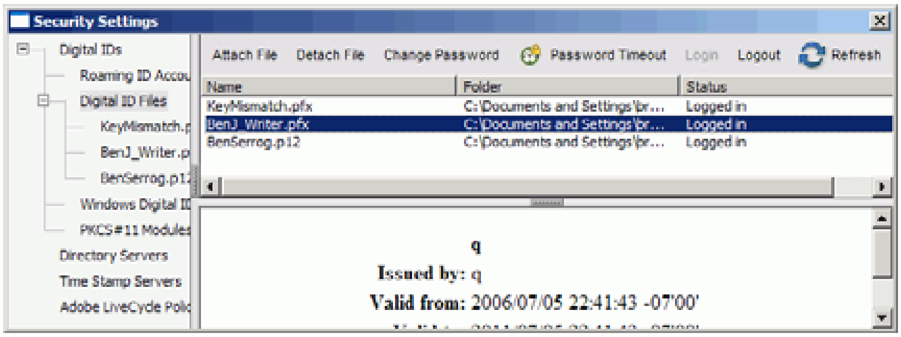
The path validation checks were done at 2006/09/14 16:59:11 -0700'
Validation Model: Chain

3.8 Managing PKCS#12 Digital ID Files

PKCS#12 digital ID files have several convenient features:

- Multiple IDs can be stored in a single, password-protected file.
- A file can contain both the public and private key.
- Passwords and password time-outs are user customizable.

Figure 13 Digital ID Files menu



Name	Folder	Status
KeyMismatch.pfx	C:\Documents and Settings\br...	Logged in
BenJ_Writer.pfx	C:\Documents and Settings\br...	Logged in
BenSerrog.p12	C:\Documents and Settings\br...	Logged in

q

Issued by: q

Valid from: 2006/07/05 22:41:43 -07'00'

3.8.1 Logging in to a Digital ID File

You will not usually need to log in to a digital ID file. Logging in means that Acrobat wants you to prove that you know the password to open the password-protected file containing the digital IDs. Since you likely supplied the password when you created your ID or obtained a new one, then you should be logged in.

However, you may need to log in for the following cases:

- You logged out of the file for some reason.
- You are importing an acrobatsecuritysettings file containing digital IDs.

To log in to a digital ID file:

3.8.2 Adding a Digital ID from a PKCS#12 File

If you need a digital ID does not appear in the digital ID list and you know it's location, browse to it and add it. You can browse to PKCS#12 files (with `.pfx` or `.p12` extensions) and Windows Certificate Store compatible files (with `.cer` and `.der` extensions).

Note: In enterprise settings, you may be instructed by your administrator to get a digital ID from a specific location or to customize Acrobat or Adobe Reader to work with software supplied by your organization.

To find a digital ID file:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.
2. Select **Digital IDs** in the left-hand tree (Figure 8).
3. Choose **Add ID**.
4. Select the **My existing digital ID from** and **A file** radio buttons **(**Figure 7**)**.
5. Choose **Next**.
6. Choose **Browse** and browse to the digital ID file. PKCS#12 files may reside on a network or in some local location. For example,

- On a Window machine it might be C:\Documents and Settings\<username>\Application Data\Adobe\<application name>\<version>\Security\.
- On a Windows machine with Vista in low rights mode and installed from a browser, it is <Boot Drive>:\Users\<user name>\AppData\Roaming\Adobe\<application name>\<version>\Security

7. Select the ID and choose **Open**.

8. Enter a password if one is required.

9. Review the digital ID list and choose **Finish**.

3.8.3 Adding and Removing Digital ID Files from the File List

Adobe Acrobat and Adobe Reader only allow deletion of user-created self-signed digital IDs created with those applications. A file can have one or more IDs.

To delete or add an ID file:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.

2. Select **Digital IDs > Digital ID Files** in the left-hand tree (Figure 13).

3. Highlight a digital ID file in the right-hand panel.

4. Do one of the following:
   - Choose **Detach File**. The file is removed from the list but still remains on your file system.
   - Choose **Attach File**. Browse to the file, enter the file password, and choose **OK**.

   Note: Detaching a file does not remove it from your system, and it may be reattached later.

3.8.4 Changing an ID File's Password

Passwords and password time-outs are unique to PKCS#12 IDs. Since a file can contain multiple IDs, passwords and time-outs are configured at the file level rather than for individual IDs.

Note: If the file is read only, then the **Change Password** and **Password Timeout** options are disabled.

To change the password:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.

2. Highlight **Digital ID Files** in the left-hand tree (Figure 13).

3. Select a file in the right-hand panel (Figure 13).

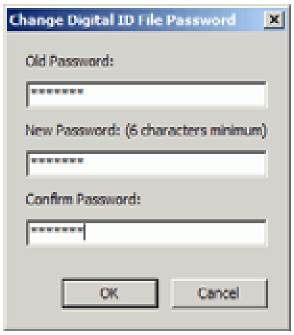
4. Choose **Change Password**.

5. Enter the old password.

6. Enter a new password and confirm it.

7. Choose **OK**.

Figure 14 Digital ID files: Password configuration


Change Digital ID File Password
Old Password:
****
New Password: (6 characters minimum)
****
Confirm Password:
****
OK
Cancel

3.8.5 Changing a PKCS#12 File's Password Timeout

Passwords and password time-outs can only be set for PKCS#12 IDs. Since a file can contain multiple IDs, passwords and time-outs are configured at the file level rather than for individual IDs.

Note: If the is read only, then the **Change Password** and **Password Timeout** options are disabled.

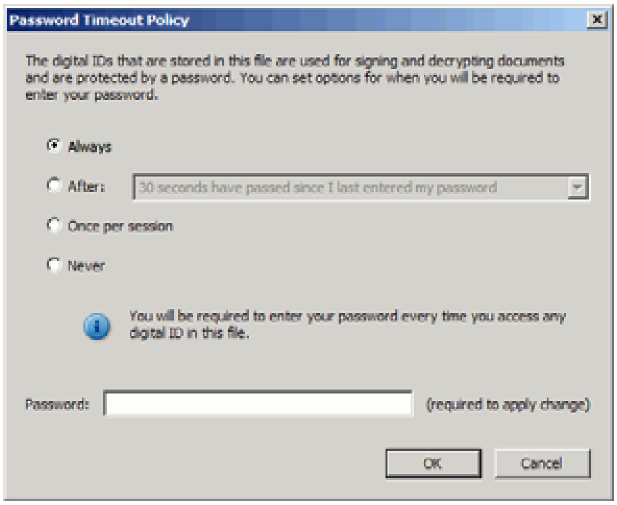
To change the password timeout:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.
2. Highlight **Digital ID Files** in the left-hand tree (Figure 13).
3. Select a file in the right-hand panel (Figure 13).
4. Choose **Password Timeout**.

   Tip: The password timeout feature interacts with the Login/Logout feature as described in "Logging in to PKCS#12 Files" on page 29.

5. Configure the Password Timeout Policy dialog by specifying when a password prompt should appear:
   - **Always**: A password is always required each time the digital ID is used regardless of whether or not you are logged in to a file.
   - **After**: Choose a value from the drop-down list to set a time frame.
   - **Once per session**: A password is asked for only once while the application is open.
   - **Never**: The password is not usually required when using this ID and you are logged into the file.
6. Enter the password.
7. Choose **OK**.

Figure 15 Digital ID files: Timeout settings



Password Timeout Policy

The digital IDs that are stored in this file are used for signing and decrypting documents and are protected by a password. You can set options for when you will be required to enter your password.

● Always

○ After: 30 seconds have passed since I last entered my password

○ Once per session

○ Never

You will be required to enter your password every time you access any digital ID in this file.

Password: (required to apply change)

3.8.6 Logging in to PKCS#12 Files

The digital ID Login feature provides access to the IDs in a particular file. Login behavior is dependant on the user-specified password timeout feature. If the user has specified a password timeout of **Never**, then the application never asks for a password when an ID is used for some process. For example:

- **Signing**: During signing workflows, you can sign with a digital ID without entering a password if you are logged into a file and the time-out is set to **Never**.
- **Batch processing**: In normal operation, batch sequences that require access to a digital ID invoke the user-interface's authentication dialog. Because the dialog prompts for a password, the batch sequence is effectively stopped until a user intervenes. Logging in to a file provides the ID to the process without stopping it or requiring user input.

To enable sequences to run automatically and bypass normal user interface actions, do the following:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.
2. Select **Digital ID Files** in the left-hand tree (Figure 13).

   Tip: Verify the password timeout is set according to your own preferences. For details, see "Changing a PKCS#12 File's Password Timeout" on page 28.

3. Select a file in the right-hand panel (Figure 13).
4. Do one of the following:
   - **Logout**: Highlight an ID in the list on the right and choose **Logout**.
   - **Login**: Highlight an ID in the list on the right and choose **Login**. Enter a password when prompted and choose **OK**.

3.8.7 Creating a Self-Signed Digital ID

Note: The option to create self-signed digital IDs is unavailable if your administrator has configured your application to prevent this operation.

Users can create a self-signed digital ID if they don't wish to purchase an ID from a 3rd party certificate authority (CA) or are not given a company-provided ID. Self-signed IDs are usually considered less secure because the user has not been verified by a 3rd party CA. For self-signed IDs, you act as your own CA.

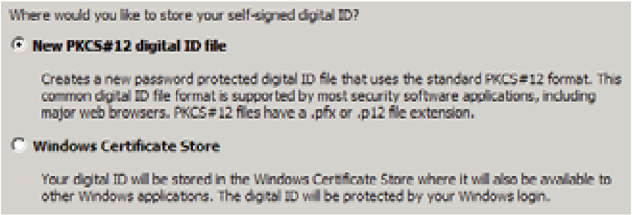
To create a self-signed digital ID:

1. Navigate to the Add Digital ID dialog as described in "Adding a Digital ID from a PKCS#12 File" on page 26.

2. Choose **A new digital ID I want to create now (**Figure 7**)**.

3. Choose **Next**.

Figure 16 Digital ID format selection



Where would you like to store your self-signed digital ID?

● **New PKCS#12 digital ID file**

Creates a new password protected digital ID file that uses the standard PKCS#12 format. This common digital ID file format is supported by most security software applications, including major web browsers. PKCS#12 files have a .pfx or .p12 file extension.

○ **Windows Certificate Store**

Your digital ID will be stored in the Windows Certificate Store where it will also be available to other Windows applications. The digital ID will be protected by your Windows login.

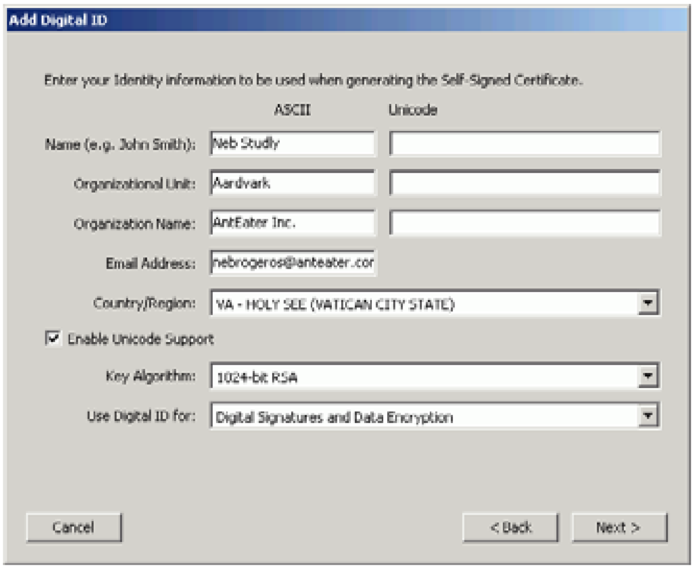
4. Select a digital ID format and storage location:

   - **New PKCS#12 Digital ID File**: Stores the IDs in a password protected file with a .pfx (Win) or .p12 (Mac) extension. The file is in a PKCS#12 standard format. The files can be copied, moved, and emailed. They are cross-platform, portable, and always password protected. This common format is supported by most security software applications, including web browsers. These files should always be backed up. On Windows XP, the default location is `C:\Documents and Settings\<username>\Application Data\Adobe\<application name>\<version>\Security\`.

   - **Windows Certificate Store**: (Windows only) Stores the ID in the Windows Certificate Store where it is also available to other Windows applications. The ID is protected by your Windows login. These IDs are easy to use and do not have to have file-level password protection. However, they are not portable and could be less secure if a file-level password is not specified.

5. Choose **Next**.

Figure 17 Digital ID: Configuration



Enter your Identity information to be used when generating the Self-Signed Certificate.

	ASCII	Unicode
Name (e.g. John Smith):	Neb Studly	
Organizational Unit:	Aardvark	
Organization Name:	AntEater Inc.	
Email Address:	nebrogeros@anteater.cor	

Country/Region: VA - HOLY SEE (VATICAN CITY STATE)

☑ Enable Unicode Support

Key Algorithm: 1024-bit RSA

Use Digital ID for: Digital Signatures and Data Encryption

6. Configure the digital ID. The dialog is prepopulated if the Identity preferences have been previously configured:

   Tip: If you use non-Roman characters, choose **Enable Unicode Support** before continuing.

   - **Name**: The name that appears in the Signatures tab and in the signature field.
   - **Organizational Unit**: Optional. Appears in the signature and certificate.
   - **Organizational Name**: Optional. Appears in the signature and certificate.
   - **Email Address**: Optional. Appears in the signature and certificate.
   - **Country/Region**: Optional. Appears in the signature and certificate.
   - **Enable Unicode Support**: Optional. Use Unicode when your information cannot be adequately displayed with Roman characters.

   Note: Many applications do not support non-ASCII characters in certificates. Be sure to specify both an ASCII representation of the information as well as the Unicode representation of information you are supplying.

   - **Key Algorithm**: 2048-bit RSA offers more security than 1024-bit RSA, but 1024-bit RSA is more universally compatible. Use the 1024 bit key length if you are unsure.
   - **Use Digital ID for**: Select whether to use the digital ID for digital signatures, data encryption (certificate security), or both.

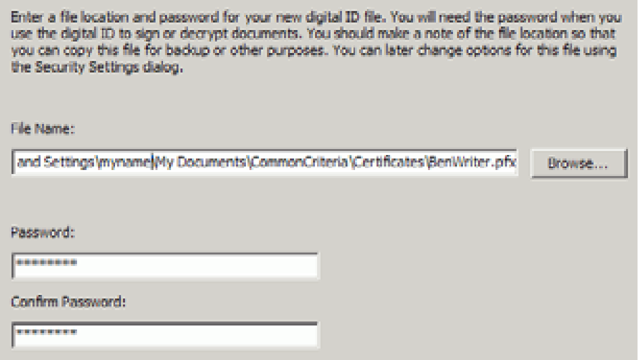
7. If a Windows digital ID was selected, choose **Finish**; otherwise, for a PKCS#12 ID do the following:

   1. Choose **Next**.
   2. Specify a file name and location for the digital ID file.
   3. Enter a password and confirm it.

   Note: Passwords are case-sensitive and must contain at least six characters.

4. Choose **Finish**.

Figure 18 Digital ID: PKCS#12 location and password



Enter a file location and password for your new digital ID file. You will need the password when you use the digital ID to sign or decrypt documents. You should make a note of the file location so that you can copy this file for backup or other purposes. You can later change options for this file using the Security Settings dialog.

File Name:
and Settings\myname\My Documents\CommonCriteria\Certificates\BenWriter.pfx

Password:
****

Confirm Password:
****

3.8.8 Deleting a PKCS#12 Digital ID

Adobe Acrobat and Adobe Reader only allow deletion of user-created, self-signed digital IDs created by them. The methodology for deleting other types of IDs varies with the type of ID.

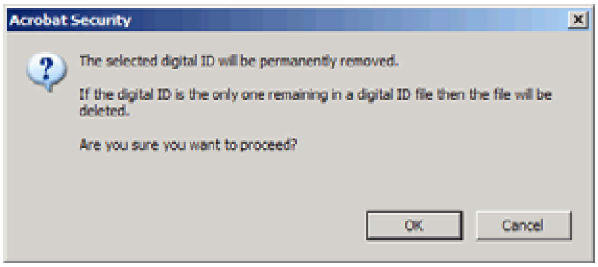
While the ID will be removed from the ID list, other ID's in the container .pfx or p12 file will not be affected. Deleting the last, self-signed PKCS#12 ID in a .pfx or p12 file also deletes the digital ID file.

Caution: Because deleting an ID deletes its private key, operations that require that key will no longer be possible. If the file is used by other programs or you need it to open encrypted documents, do not delete it.

To delete a self-signed ID:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.
2. Select **Digital IDs** in the left-hand tree (Figure 3.7.1).
3. Highlight a self-signed ID in the list on the right that uses a digital ID file or Windows Certificate Store storage mechanism.
4. Choose **Remove ID**.
5. Choose **OK** when asked to proceed.

Figure 19 Digital ID: Deleting



The selected digital ID will be permanently removed.

If the digital ID is the only one remaining in a digital ID file then the file will be deleted.

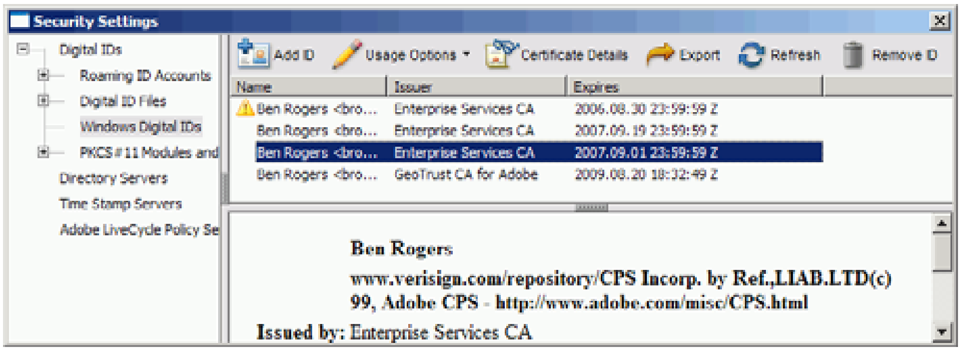
Are you sure you want to proceed?

3.9 Managing Windows Digital IDs

For the Acrobat family of products, a “Windows digital ID” is an ID that resides in the Windows certificate store rather than the Acrobat store. These IDs are protected by your Windows login, are easy to use, and do require file-level password protection. However, they are not portable and are less secure when a file-level password is not specified.

The Windows store makes these IDs available to other Windows applications such as Acrobat and Adobe Reader. When an ID in the Windows store is registered with the application, it appears in the Security Settings Console. IDs in the Windows store are subject to the same operations as described in “Generic ID Operations” on page 22

Figure 20 Windows digital ID menu



Name	Issuer	Expires
⚠ Ben Rogers <bro...	Enterprise Services CA	2006.08.30 23:59:59 Z
Ben Rogers <bro...	Enterprise Services CA	2007.09.19 23:59:59 Z
Ben Rogers <bro...	Enterprise Services CA	2007.09.01 23:59:59 Z
Ben Rogers <bro...	GeoTrust CA for Adobe	2009.08.20 18:32:49 Z

Ben Rogers

www.verisign.com/repository/CPS Incorp. by Ref.,LIAB.LTD(c) 99, Adobe CPS - http://www.adobe.com/misc/CPS.html

Issued by: Enterprise Services CA

3.9.1 Finding a Digital ID in a Windows Certificate Store File

If you have a personal digital ID in the Windows store, it should appear in the Security Settings Console automatically without any special configuration. Acrobat products automatically find that ID. However, if there is a problem, you can browse to and add Windows Certificate Store compatible files (.cer and . p7b).

3.9.2 Deleting a Digital ID from the Windows Certificate Store

IDs that have been added to the Windows certificate store can only be deleted from the Security Settings Console if they are self-signed IDs created in Acrobat or Reader version 8.0 or later. Other IDs must be removed from the Windows store by using an application such as Internet Explorer. The store’s location in Internet Explorer may vary by version, but is typically found under **Tools > Internet Options > Content tab > Certificates button.**

3.10 Managing Roaming ID Accounts and IDs

A roaming ID is a digital ID that is stored on a server. The private key always remains on the server, but the certificate and its public key can be downloaded at the subscriber’s request to any location. Roaming IDs require an Internet connection.

Roaming IDs allow you to access and use your digital Id for signing or encryption from any machine that can access the server. You don't have to have your ID file with you or install it prior to use.

Roaming IDs can be centrally administered. When IDs expire, new ones can be issued and placed on the server rather than being distributed to each individual. Deployment and management therefore occurs in one location rather than on numerous client machines.

Depending on how the system is configured, users identify themselves (authenticate) to the server either with a username and password, Windows single sign-on, or by some 3rd party method such as ArcotID.

Note: Roaming IDs are only used for signing and cannot be used for certificate encryption. They are subject to the same operations as described in "Generic ID Operations" on page 22.

3.10.1 Adding a Roaming ID Account to Get a Roaming ID

Roaming IDs are only available for those with roaming ID accounts on a roaming ID server. For connection details, contact your system administrator. Once you log in to your account, the IDs associated with that account will be automatically downloaded.

To install the roaming IDs certificate:

1. Verify you have an Internet connection.

   Note: If a roaming ID administrator has sent you an file with the account settings preconfigured, refer to Chapter 4, "Migrating and Sharing Security Settings".

2. Do one of the following:
   - Navigate to the Add Digital ID dialog as described in "Adding a Digital ID from a PKCS#12 File" on page 26.
   - Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**. Then expand the left-hand tree to **Roaming ID Accounts** and choose **Add Account** from the top menu (Figure 21).
3. Choose **Configure a roaming ID for use on this computer (**Figure 7**)**.
4. Choose **Next**.
5. In the Add a Roaming ID dialog, enter an arbitrary server name. Choose a name that you can remember.
6. Enter the exact server URL.
7. Choose **Next**.
8. Enter your user name and password for this roaming ID server account.
9. Enter a server name and URL.
10. Choose **Next**.

Tip: Your server may require additional or different authentication steps. Follow the directions that appear in your workflow-specific dialogs.

11. Your certificate(s) will be automatically downloaded. Review the digital ID list and choose **Finish**.

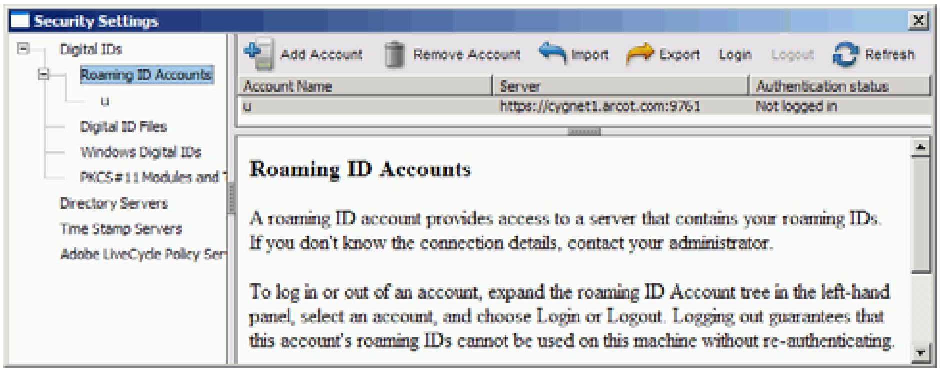
3.10.2 Logging in to a Roaming ID Account

A roaming ID account is a user account on a roaming ID server containing one or more digital IDs. The login feature provides access to the IDs associated with the account. Depending on how the server administrator has set up the server, once you log in you may not be asked to supply a password again when you use that ID to sign.

To log in to a device:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.
2. Expand the left-hand tree to **Roaming ID Accounts (**Figure 21**)**.
3. Select an account in the right-hand panel.
4. Choose **Login**.
5. Follow the instructions in the dialogs. The workflow varies by the roaming ID supplier as well as the authentication type.

Figure 21 Roaming ID Security Settings menu items



Account Name	Server	Authentication status
u	https://cygnet1.arcot.com:9761	Not logged in

Roaming ID Accounts

A roaming ID account provides access to a server that contains your roaming IDs. If you don't know the connection details, contact your administrator.

To log in or out of an account, expand the roaming ID Account tree in the left-hand panel, select an account, and choose Login or Logout. Logging out guarantees that this account's roaming IDs cannot be used on this machine without re-authenticating.

3.11 Managing IDs Stored on Hardware Devices

Smart cards, hardware tokens, and other devices are increasingly being used by businesses and individuals to carry digital IDs. These devices provide enhanced mobility, remote access to intranets and extranets, as well as strong security with public/private key cryptography and PIN access to the digital ID.

Note: Most devices comply with the Public Key Cryptography System 11 (PKCS#11) format devised by RSA.

The method for registering a digital ID on such a device with the application may vary. The manufacturer or your system administrator should provide detailed instructions. However, the steps below may be used as a general guide. IDs stored on a PKCS#11 device are subject to the same operations as described in "Generic ID Operations" on page 22.

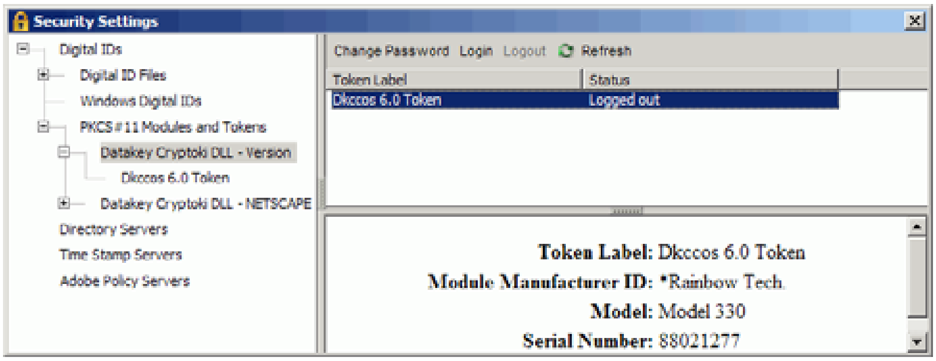
3.11.1 Adding an ID that Resides on External Hardware

Digital IDs can reside on hardware such as a smart card or token with a USB interface. In these cases, the card is inserted into a smart card reader or the token is inserted directly into an USB port. Adobe products can be configured to look for and use IDs on these devices by adding the device's module (software driver) to the module list. The module's IDs are automatically registered with the application.

To register an ID that resides on external hardware:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) > **Security Settings**.
2. Expand **Digital IDs** in the left-hand list (**Figure 20**).
3. Highlight **PKCS#11 Modules and Tokens**.

Figure 22 PKCS#11 Security Settings menu items



Token Label	Status
Dkccos 6.0 Token	Logged out

Token Label: Dkccos 6.0 Token
Module Manufacturer ID: *Rainbow Tech.
Model: Model 330
Serial Number: 88021277

4. Choose **Add Module**.
5. Browse to the device driver. On Windows, this could likely be `C:\Windows\system32\<some dll>.dll`. The exact path will be supplied by your system administrator or the maker of your device.
6. Choose **Open**.

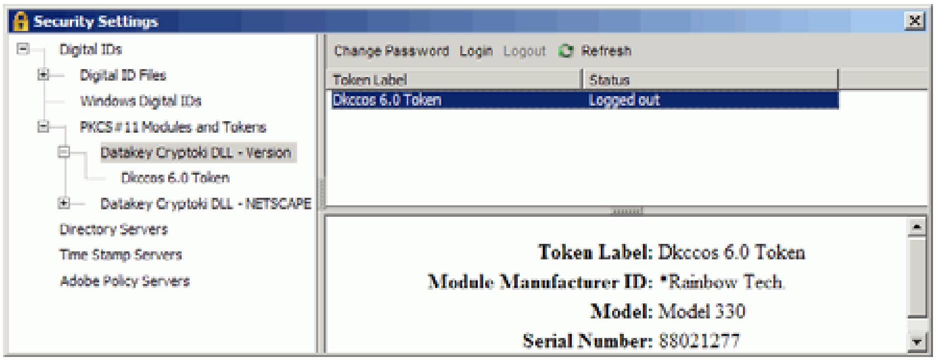
   The module and its IDs are automatically added to the list in the right-hand panel.

3.11.2 Changing Passwords

A card or token may contain multiple IDs. All of the IDs are password protected by a single password. This password is used to log in to a device and to sign.

1. Expand the tree under **PKCS#11 Modules and Tokens**.
2. Highlight any module.

Figure 23 PKCS#11 Security Settings menu items



Token Label	Status
Dkccos 6.0 Token	Logged out

Token Label: Dkccos 6.0 Token
Module Manufacturer ID: *Rainbow Tech.
Model: Model 330
Serial Number: 88021277

3. A card or token label should appear in the right-hand panel. If there is more than one, select one.

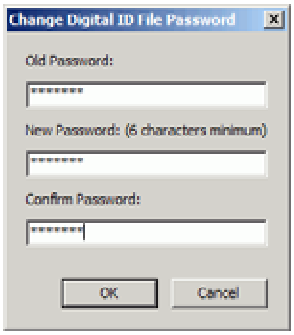
4. Choose **Change Password**.

5. Enter the old password.

6. Enter a new password and confirm it.

7. Choose **OK**.

Figure 24 Digital ID files: Password configuration



Old Password: ********

New Password: (6 characters minimum) ********

Confirm Password: ********

3.11.3 Logging in to a Device

Logging in provides access to the IDs on a particular device or smart card. In most cases login in is not required as it occurs on demand during signing or encryption/decryption.

PKCS#11 workflows vary by the device supplier. For example, additional passwords or PINs may or may not be required. The login interface may be provided by the Adobe application or by the device supplier.

To log in to a device:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.

2. Expand the tree under **PKCS#11 Modules and Tokens**.

3. Highlight any module.

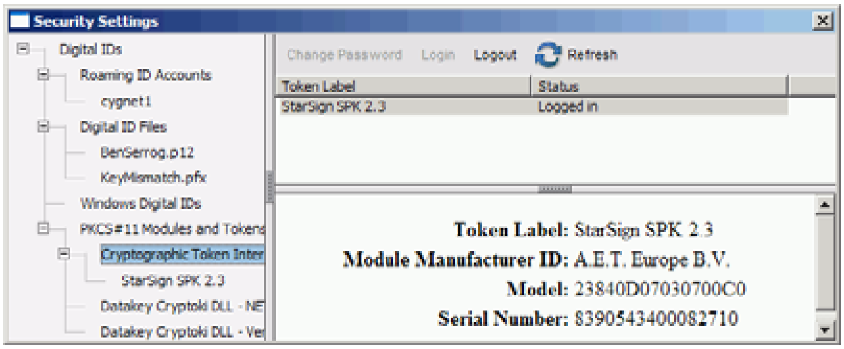
4. A card or token label should appear in the right-hand panel. If there is more than one, select one.

5. Choose **Login**.

6. Enter a password.

7. Choose **OK**.

Figure 25 PKCS#11 Security Settings menu items



Token Label	Status
StarSign SPK 2.3	Logged in

Token Label: StarSign SPK 2.3
Module Manufacturer ID: A.E.T. Europe B.V.
Model: 23840D07030700C0
Serial Number: 8390543400082710

4 How tos: Certificate Trust and Trusted Identities

As described in "Basic Concepts" on page 13, a digital ID consists of two main parts: a certificate with a public key and a private key. Participants in signing and certificate security workflows need to exchange the public part (the certificate) of their digital ID. Once you obtain someone's certificate and add it to your trusted identities list, you can encrypt documents for them. If their certificate does not already chain up to a trust anchor that you have specified, you can set the certificate's trust level so that you can validate the owner's signature.

Tip: This feature requires a basic understanding of how Acrobat defines "trust" and "trusted identities." For more information, see "Basic Concepts" on page 13.

Understanding what a trusted identity is and how trust levels are set can help you streamline workflows and troubleshoot problems. For example, you can add trusted identities ahead of time and individually set each certificate's trust settings. In enterprise settings, where certificates are stored on a directory server, you may also be able to search for certificates to expand your list of trusted identities.

The following sections provide details about managing trust and trusted identities in Acrobat and Adobe Reader.

4.12 Adding Someone to Your Trusted Identity List

You build a list of trusted identities by getting digital ID certificates from those who will be participating in signing and certificate security workflows. You get this information from a server, a file, or from a signed document. For signing workflows, you can get this information during the signature validation process. For certificate security workflows involving encryption, you must request the information ahead of time so you can encrypt the document with the document recipient's public key.

4.12.1 Adding a Certificate From a Signature

When you receive a signed document from someone whose certificate is not in your trusted identity list AND does not chain up to a trust anchor (another certificate that is trusted), the signing certificate's validity is unknown and a related icon and message appear in the document message bar. To validate the signature, you will need to trust one of the certificates in the certification chain. You could trust the signer (the end-entity certificate), one of the EE certificate issuer (an intermediate certificate), or the topmost certificate authority (the root).

Because revocation checking does not occur for certificates that are directly trusted (a trust anchor), it is best practice to trust a certificate other than the signer's. That is, trust a certificate as high up in the chain as is practical for your signing workflows.

To add a certificate to your trusted identities list directly from a signature:

1. Right click on the signature and choose **Show Signature Properties**.

2. Choose **Show Certificate**.

3. When the Certificate Viewer appears, choose the Trust tab.

4. Choose **Add to Trusted Identities** (Figure 26).

5. Set the certificate trust settings as described in “Setting Certificate Trust” on page 44.

Figure 26 Certificate Viewer: Trust tab

4.12.2 Requesting a Digital ID via Email

Email requests for digital ID information use .acrobatsecurity or FDF files. For details, see Chapter 4, “Migrating and Sharing Security Settings”.

For details, see “Requesting a Certificate via Email” on page 55.

4.12.3 Importing a Certificate From a File

Acrobat and Adobe Reader are can export certificates to a file so that they can be shared as needed. To import certificates, follow the instructions described in Chapter 4, “Migrating and Sharing Security Settings”.

However, certificates may also exist in other file types such as `.cer`, `.p7b`, and so on. To import certificates from these file types:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Manage Trusted Identities**.

2. Choose **Add Contacts**.

3. Choose **Browse**.

4. Browse to the contact file location.

5. Select the file.

6. Choose **Open**.

Figure 27 Importing digital ID data

7. Choose **Import**.

8. Choose **OK** when the confirmation dialog appears.

4.12.4 Searching for Digital ID Certificates

The search feature allows you to search a list of directories for certificates. If no directories have been previously specified, the **Search** button will NOT appear. The list of search servers in the Directories drop-down list is populated through three mechanisms:

- The default server settings that ship with Adobe Acrobat and Adobe Reader.
- The Windows Certificate Store if the user has turned on this option.
- User-specified directory servers the user has added in the Security Settings Console. For details, see “Using Directory Servers to Add Trusted Identities” on page 47.

Tip: Home users do not usually need to change the directory server list. Users in enterprise environments typically have the list preconfigured by their system administrator.

Figure 28 Digital IDs: Searching for certificates

To search for a certificate so that you can add one or more people to your trusted identities list:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Manage Trusted Identities**.
2. Choose **Add Contacts**.
3. Choose **Search**.
4. Configure the search options:
   - Choose **Search all directories** or select a directory and optional group.

     Searching all directories may take some time. In a business environment, it is often expedient to just select the company's LDAP directory.
   - Enter a name and/or email address to search. This is an AND search. Using both fields only returns results that match both criteria.
5. Choose **Search**.
6. Select a name from the search results.
7. Choose **OK**.
8. If the desired entries are found, choose **Import**.
9. Choose **OK** when the confirmation dialog appears.

Figure 29 Searching for a document recipients

4.13 Certificate Trust Settings

Contacts in the trusted identities list should be associated with one or more certificates. Those certificate's trust settings may be individually configured. Choosing to not trust a certificate does not prevent a document from displaying, but it will result in signatures having an problematic status. The status is represented by a yellow triangle in the Document Message Bar, Signatures pane, and the Signature Validation Status dialog (Figure 30). For each contact for whom you will encrypt a document with certificate security, one certificate can also be selected as the default for encryption.

Figure 30 Untrusted signature

Certificate trust settings have the following features:

- Trust settings are configured in the Trusted Identity Manager ahead of time, at the time of import, or directly from a signature.

- Trust settings can be viewed in the Trusted Identity Manager by choosing **Edit Trust** or by choosing the Trust tab in the Certificate Viewer (Figure 31).
- Certificates can be separately trusted for approval signatures and certification signatures.
- Certificates can be individually configured to trust operations such as signing, certification, and allowing items such as dynamic content and JavaScript in certified documents. These settings interact with application environment settings.

Figure 31 Certificate trust settings

4.13.1 Setting Certificate Trust

Signers use their digital ID certificate to sign documents. In order for you to verify the validity of a signature, you must have explicitly trusted their certificate for signing or that certificate must chain up to a another certificate you have trusted (a trusted anchor). You can set trust ahead of time or when you are viewing a signature.

To trust a certificate for signing and certifying:

1. Do one of the following:
   - If you already have the certificate:
   1. Choose **Advanced** (Acrobat) or **Document** (Adobe Reader) **> Manage Trusted Identities**.
   2. Choose **Certificates** in the **Display** drop down list.
   3. Select the certificate.
   4. Choose **Edit Trust**.
   - If the certificate is in a signature:
   1. Right click and choose **Signature Properties**.
   2. Choose **Show Certificate**.
   3. Select the Trust tab.

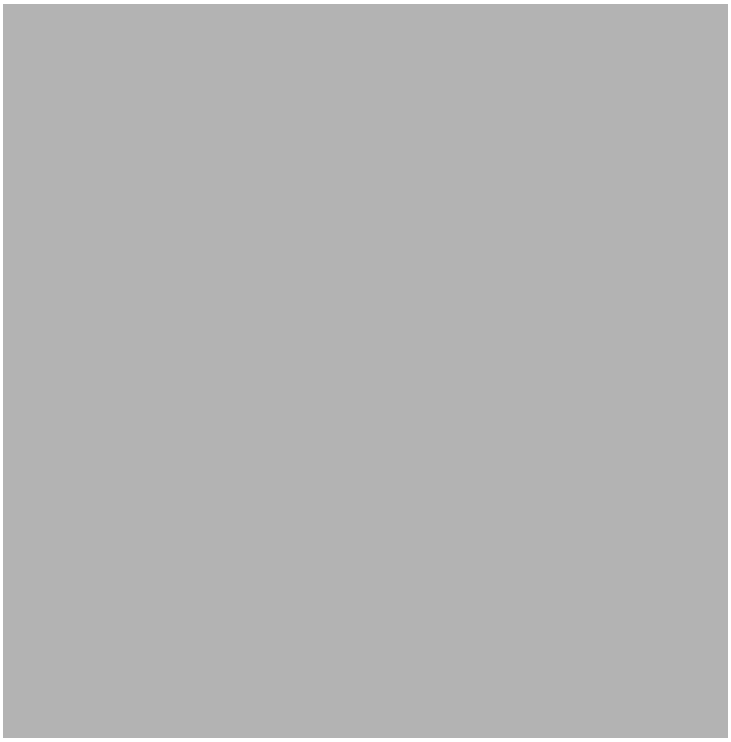
4. Choose **Add to Trusted Identities**.

   Tip: If **Add to Trusted Identities** is disabled, the identity is already on your Trusted Identities list. To change the trust settings, you must use the first method above.

2. On the Trust tab, select the trust options. In enterprise settings, an administrator should tell you which trust settings to use.

   Note: During an import action, recipients of the distributed trust anchor may be able to inherit its trust settings. Once you've verified the sender, you usually want to accept these settings so you can use the certificate they way the sender intended.

Figure 32 Certificate trust settings



- **Use this certificate as a trusted root**: Makes the certificate a trust anchor. The net result is that any certificates which chain up to this one will also be trusted for signing. At least one certificate in the chain (and preferably only one) must be a trusted root (trust anchor) to validate signatures and timestamps.

  Tip: There is no need to make end entity certificates trust anchors if they issued by a certificate holder whose certificate you have configured as a trust anchor. It is best practice to trust the topmost certificate that is reasonable to trust because revocation checking occurs on every certificate in a chain until that anchor is reached. For example, in a large organization, it is likely you would want to trust your company's certificate. If that certificate was issued by VeriSign, you would not want to make VeriSign a trusted root unless you wanted to trust every certificate that chains up to VeriSign.

- **Signed documents or data**: Trusts the certificate for approval signatures.

Tip: This setting is disabled because if the certificate is set as a trust anchor. Trust anchors are automatically trusted for approval signatures.

- **Certified documents**: Trusts the certificate for certification signatures.
  - **Dynamic content**: Trusts multimedia and other dynamic content in certified documents. Selecting this option automatically adds documents that are certified with this certificate to the Trusted Documents list which is maintained by the Multimedia Trust Manager.
  - **Embedded high privilege JavaScript**: Trusts embedded scripts. Certificate settings do not override application-level settings, so even if JavaScript is enabled for a particular certificate, it may not execute unless the application's preferences allow it. This option requires that the application environment be configured correctly.
  - **Privileged system operations (networking, printing, file access, etc.**: Some operations represent a security risk more serious than others. Acrobat considers the following operations potential threats to a secure application operating environment: Internet connections, cross domain scripting, silent printing, external-object references, and FDF data injection. If this checkbox is checked, documents that are certified with this certificate will allow these actions.

Tip: This feature interacts with the Enhanced Security preferences which may be set by choosing **Edit > Preferences > Security (Enhanced)**. The application always takes the least restrictive setting when determining what is allowed. For example, if the trust level for this certificate does not allow privileged operations but the certified file resided in a privileged location, then these operations will be permitted.

3. If you need to specify a policy restriction, do so. Most users only need to set policy restrictions at the request of their administrator.
4. Choose **OK** twice.
5. Choose **Close**.

4.13.2 Setting Certificate Policy Restrictions

Policy restrictions are typically used in enterprise settings when configuring trust anchors. A restriction provides criteria the certificate chain must meet before a signing certificate can be used to create a valid signature. For example, a VeriSign certificate may be set as a trusted root, but a company may wish to only trust their own intermediate certificates (ICAs) that chain to VeriSign rather than *all* certificates that chain up to VeriSign. The company can issue an ICA with a certificate policy extension. By including that ICA in the certificate chain between all end entity certificates and VeriSign and requiring the presence of that extension, only company signers will be trusted.

Policies are represented by numbers called *object identifiers* (OIDs). OIDs are usually provided by your system administrator.

1. Select the Policy Restrictions tab if the Edit Certificate Trust dialog is displayed; otherwise, choose **Advanced** (Acrobat) or **Document** (Reader) **> Manage Trusted Identities**.
2. Choose **Certificates from the Display drop-down list**.
3. Highlight a certificate and choose **Edit Trust**.
4. Choose the Policy Restrictions tab and enter the restrictions:

- **Certificate Policies**: Required. Enter the policy OID.
- **Description**: Optional. Enter a meaningful description.

Figure 33 Policy restrictions

4.13.3 Using Certificates for Certificate Security (Encryption)

You only need to specify a certificate’s encryption usage if you are using certificate security. When more than one certificate is associated with the contact, you can select which one to use as the default encryption certificate. For details, see Chapter 8, “Certificate Security”.

4.14 Using Directory Servers to Add Trusted Identities

Businesses often use a centrally managed certificate repository such as an LDAP directory server. Directory servers are capable of returning X.509 public key certificates. These servers are searchable so that you can easily expand your list of trusted identities. Both Adobe Acrobat and Adobe Reader for Windows ship with default servers:

- Versions 7.x:
  - VeriSign Internet Directory Service
  - GeoTrust Directory Service
  - IDtree Directory Service
- Version 8.x and 9x:
  - VeriSign Internet Directory Service

Home users may never need to use directory servers. In most cases, needed certificates will be sent directly to you or will be embedded in a signature. However, enterprise users will likely use directory servers when their administrator has set up an LDAP server as part of a public key infrastructure. This allows the administrator to make the certificates available to teams and workgroups while managing them from a central location. The administrator usually preconfigures user machines, tells the user how to configure the server manually, or sends the server configuration details in a file as described in Chapter 4, “Migrating and Sharing Security Settings”.

Figure 34 Digital ID Directory servers: Server list

4.14.1 Manually Configuring a Directory Server

Some companies store employee digital ID certificates on a networked LDAP server. To access those certificates, add the server to the list of directories used to locate those IDs.

Tip: In an ideal scenario, the server administrator supplies configuration details in a file as described in Chapter 4, “Migrating and Sharing Security Settings”.

To manually configure an identity directory:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.
2. Select **Directory Servers** in the left-hand list (Figure 34).
3. Choose **New**.
4. Configure the LDAP server settings in the Edit Directory Server dialog:
   - **Directory Name**: An arbitrary directory name.
   - **Access Type**: LDAP is the only type supported.
   - **Server Name**: The server name.
   - **Port**: The server port. 389 is the default port.
   - **Search Base**: A comma-separated list of name-value pairs used in the search. For example, `c=us,cn=Brown Trout,ou=example,dn=Acme Manufacturing` for country, common name, organizational unit, and distinguished name.
   - **This server requires me to log on**: Check this box if the server requires username and password authentication to look up LDAP entries.
   - **User name**: The login username.
   - **Password**: The login password.
   - **Timeout**: The number of seconds to keep trying to connect.
   - **Maximum Number of Records to Receive**: The number of records to return.
5. Choose **OK**.

Figure 35 Digital ID Directory servers: Setting server details

4.14.2 Editing Directory Servers Details

Directory server details can be changed at any time.

To edit directory server information:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.
2. Select **Directory Servers** in the left-hand list (Figure 34).
3. Select a directory server from the right-hand panel.
4. Choose **Edit**.
5. Edit the information as described in "Manually Configuring a Directory Server" on page 48.
6. Choose **OK**.

4.14.3 Deleting a Directory Server

Previously configured directory servers can be removed from the server list at any time.

To delete a directory server:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.
2. Select **Directory Servers** in the left-hand list (Figure 34).
3. Select a directory server from the right-hand panel.
4. Choose **Remove**.
5. When a confirmation dialog appears, choose **OK**.

4.14.4 Specifying a Default Directory Server

A default server may be specified so that it is always used when searching for digital IDs.

To set default directory server:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Security Settings**.
2. Select **Directory Servers** in the left-hand list (Figure 34).
3. Select a directory server from the right-hand panel.
4. Choose **Set Default**.
5. Choose **OK** if a confirmation dialog appears.

   A star appears next to the name of the selected server.

Figure 36 Digital ID Directory servers: Setting defaults

4.14.5 Importing and Exporting Directory Server Settings

For details, refer to Chapter 4, "Migrating and Sharing Security Settings".

4.15 Managing Contacts

Contacts are those people that will send you documents or receive documents from you. Each contact may be associated with one or more certificates. Like certificates, contacts can be added, removed, edited, and so on from the trusted identity list.

4.15.1 Viewing and Editing Contact Details

When a contact's details change, it is possible to update them in the Trusted Identity Manager.

To change a contact's details:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Manage Trusted Identities**.
2. Choose a contact in the left-hand list.

Figure 37 Contacts: Viewing details

3. Choose **Details**.

Figure 38 Edit Contact dialog

4. Edit the details.

5. Choose **OK**.

4.15.2 Emailing Certificate or Contact Data

You can export certificate and contact data via email directly from the Trusted Identity Manager. Doing so allows other users to add that data their trusted identity list, thereby expanding the number of users that can participate in secure document workflows. For details, see "Emailing Your Certificate" on page 53.

4.15.3 Saving Certificate or Contact Details to a File

You can export certificate and contact data and save it to a file from the Trusted Identity Manager. Doing so allows you to email it later or locate it on a shared network directory. Other users can then add that data to their trusted identity list. For details, see “Saving Your Digital ID Certificate to a File” on page 54.

4.15.4 Associating a Certificate with a Contact

A certificate is usually already associated with a contact. However, in certain cases the two may need to be reassociated:

- Someone has provided you with new contact information.
- An old contact has sent you a certificate to be associated with old contact information.

To associate a certificate with a contact:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Manage Trusted Identities**.
2. Choose a contact in the left-hand list (Figure 37).
3. Choose **Details**.
4. Choose **Associate Certificate** (Figure 38).

Figure 39 Contacts: Selecting certificates

5. Select a certificate from the list.
6. Choose **OK**.
7. Choose **OK**.

4.15.5 Changing a Trusted Identity’s Certificate Association

Contacts in the Trusted Identity Manager only have value when they are associated with certificates. Therefore, removing a certificate association only makes sense when it is being replaced by another certificate. For example, someone in your trusted identities list may have replaced a compromised or expired certificate with a new one. In this case, simply replace the old certificate association with a new one.

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Manage Trusted Identities**.
2. Choose a contact in the left-hand list (Figure 37).

3. Choose **Details**.

4. Choose a certificate from the list.

5. Choose **Remove Association** (Figure 40).

6. Choose a certificate from the list.

   Note: The certificate list is populated with the currently associated certificate and any unassociated certificates for the current contact. In other words, the list does not display all of a contact's certificates, it displays only those that have no contact association.

7. Choose **Associate Certificate**.

8. Choose **OK**.

Figure 40 Edit Contact dialog

4.15.6 Deleting Contacts and Certificates

It is possible to delete contact information independently from its certificate. The most common scenarios for deleting trusted identity information include the following:

- You no longer share documents with someone and can delete all of their contact and certificate data.
- The trusted identity's contact information or certificate has changed and new data will be imported.

To delete a contact (and optionally a certificate):

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Manage Trusted Identities**.

2. Choose Contacts from the **Display** drop-down list.

3. Choose a contact in the left-hand list (Figure 37).

4. Choose **Delete**.

5. Choose whether or not to delete the certificates along with contact. Once a certificate is deleted, it can no longer be used to validate someone’s signature or encrypt a document for them.

6. Choose **OK**.

Figure 41 Contacts: Deleting

Deleting a Certificate

To delete a certificate:

1. Choose **Advanced** (Acrobat) or **Document** (Reader) **> Manage Trusted Identities**.

2. Choose Certificates from the **Display** drop-down list.

3. Choose a certificate in the left-hand list (Figure 38).

4. Choose **Delete**.

5. Choose **OK**.

5 Differences Between Signature Types

The following sections provide details about how Acrobat handles signing tasks with respect to a particular signature and document type. The following questions are answered:

- What is digested and signed?
- How is the signature verified?
- How are in-memory changes detected?
- How are prohibited in-memory changes prevented?

5.0.1 Standard PDF and Static XML Forms

5.0.1.1 Approval Signature

What is digested and signed?

The PDF file's full byte range is saved to disk, digested, and signed.

How is the signature verified?

The byte range is digested and compared to the digest stored in the signature value. If they match, the signature is valid. If they do not match, the signature will be invalid. If the digests match, but there have been incremental changes since the signature was applied, these changes are analyzed and the result may be that the signature is considered invalid, valid, or valid with a form modified warning (blue i icon).

How are in-memory changes detected?

When a change is made, a notification is sent to the signature to put it into an unverified state.

When validation is requested (which can be accomplished by clicking the signature field), the signature verification process is executed, updating the signature state.

How are prohibited in-memory changes prevented?

An approval signature does not prohibit any in-memory document changes. However, any changes made after an approval signature will cause the signature status to indicate that changes have been made.

5.0.1.2 Certification Signature (DocMDP)

What is digested and signed?

The PDF file's full byte range is saved to disk, digested, and signed (including the rule(s) data in DocMDP).

Note: For backward compatibility with Acrobat 6.x, a PDF object digest is also included.

How is the signature verified?

The byte range is digested and compared to the digest stored in the signature value. If these digests do not match, the certification signature is invalid.

A run-time analysis of document components compares the opened and signed document versions. Changes that violate the DocMDP rule specified in the signed version of the document will cause the certification signature will be invalid; otherwise, the certification signature will be valid.

> **Note:** In a static XML form, the run-time analysis is only done on PDF level components. In a dynamic XML form, the run-time analysis is done on XML packets and PDF-level components.

How are in-memory changes detected?

When a change is made, a notification is sent to the signature to put it into an unverified state.

When validation is requested (which can be accomplished by clicking the signature field), the signature verification process is executed, updating the signature state.

How are prohibited in-memory changes prevented?

Acrobat/XML form permissions are used to prevent changes that would invalidate the certification signature.

5.0.1.3 Signature with Field Restrictions (FieldMDP)

What is digested and signed?

The PDF file’s full byte range is saved to disk, digested, and signed (including the field rule(s) data in FieldMDP).

How is the signature verified?

The byte range is digested and compared to the digest stored in the signature. If these digests do not match, the signature will be invalid.

A run-time analysis of form field components compares the opened and signed document versions. Form field changes that violate the FieldMDP rules specified in the signed version of the document will cause the FieldMDP signature to report an invalid state; otherwise, the FieldMDP signature will report a valid state.

> **Note:** In a static XML form, the run-time analysis is done on PDF level form fields. This is in contrast to a dynamic XML form where the run-time analysis is done on XML form fields.

How are in-memory changes detected?

When a change is made, a notification is sent to the signature to put it into an unverified state.

When validation is requested (which can be accomplished by clicking the signature field), the signature verification process is executed, updating the signature state.

How are prohibited in-memory changes prevented?

Acrobat permissions are used to prevent changes that would invalidate the FieldMDP signature.

5.0.1.4 Signatures Created When Reader Enabling (UR3)

What is digested and signed?

The PDF file's full byte range is saved to disk, digested, and signed (including the Reader extension usage rules in UR3).

How is the signature verified?

The byte range is digested and compared to the digest stored in the signature value. If these digests do not match, the signature will be invalid.

A run-time analysis of document components compares the opened and signed document versions. Changes that violate the UR3 rule specified in the signed version of the document will cause the signature to report an invalid state; otherwise, the signature is considered valid.

How are in-memory changes detected?

No effort is made to detect in-memory changes.

How are prohibited in-memory changes prevented?

Acrobat permissions are used to prevent changes that would invalidate the signature.

5.0.2 Dynamic XML Forms

5.0.2.1 Approval Signature

What is digested and signed?

The PDF file's full byte range is saved to disk, digested, and signed.

How is the signature verified?

The byte range is digested and compared to the digest stored in the signature value. If they match, the signature is valid. If they do not match, the signature will be invalid. If the digests match, but there have been incremental changes since the signature was applied, the signature will show a warning.

How are in-memory changes detected?

When a change is made, a notification is sent to the signature to put it into an unverified state.

When validation is requested (which can be accomplished by clicking the signature field), the signature verification process is executed, updating the signature state.

How are prohibited in-memory changes prevented?

An approval signature does not prohibit any in-memory document changes. However, any changes made after an approval signature will cause the signature status to indicate that changes have been made since the signature was applied.

5.0.2.2 Certification Signature (DocMDP)

Note: For signed dynamic XML forms in Acrobat 8.0, everything is digested and signed for visible certification signatures. Everything but rendering components are digested and signed invisible certification signatures. For Acrobat 9.0, the rendering components are never signed.

What is digested and signed for certification signatures?

The PDF file's byte range (including the form data but NOT including form rendering components) is saved to disk, digested, and signed (including the rule(s) data in DocMDP).

Note: For more information, see "What's Different with XML Forms?" on page 132.

How is the signature verified?

The byte range is digested and compared to the digest stored in the signature value. If these digests do not match, the certification signature will be invalid.

A run-time analysis of document components compares the opened and signed document versions. Changes that violate the DocMDP rule specified in the signed version of the document will cause the certification signature to report an invalid state; otherwise, the certification signature will report a valid state.

Note: In a static XML form, the run-time analysis is only done on PDF level components. In a dynamic XML form, the run-time analysis is done on XML packets and PDF-level components.

How are in-memory changes detected?

When a change is made, a notification is sent to the signature to put it into an unverified state.

When validation is requested (which can be accomplished by clicking the signature field), the signature verification process is executed, updating the signature state.

How are prohibited in-memory changes prevented?

Acrobat permissions are used to prevent changes that would invalidate the certification signature.

5.0.2.3 Signature with Field Restrictions (FieldMDP)

FieldMDP rule(s) can apply to an approval or a certification signature.

What is digested and signed?

- For approval signatures with FieldMDP rule(s), the full byte range of the PDF file, including document snapshot and including the FieldMDP rule(s) data is saved to disk, digested and signed.

- For certification signatures with FieldMDP rule(s), the full byte range of the PDF file, excluding a document snapshot and including the DocMDP and FieldMDP rule(s) data is saved to disk, digested and signed.

Note: In Acrobat 8.0, rendering components were not digested for invisible certification signatures.

How is the signature verified?

The byte range is digested and compared to the digest stored in the signature. If these digests do not match, the FieldMDP signature will be invalid.

For certification signatures, the certification signature is first verified as described in "Certification Signature (DocMDP)" on page 55.

A run-time analysis of form field components compares the opened and signed document versions. Form field changes that violate the FieldMDP rules specified in the signed version of the document will cause the FieldMDP signature to report an invalid state; otherwise, the FieldMDP signature will report a valid state.

Note: In a dynamic XML form, the run-time analysis is done on XML form fields. This is in contrast to a static XML form document where the run-time analysis is done on PDF level form fields.

How are in-memory changes detected?

When a change is made, a notification is sent to the signature to put it into an unverified state.

When validation is requested (which can be accomplished by clicking the signature field), the signature verification process is executed, updating the signature state.

How are prohibited in-memory changes prevented?

Acrobat form permissions are used to prevent changes that would invalidate the FieldMDP signature.

5.0.2.4 Signatures Created When Reader Enabling (UR3)

What is digested and signed?

The full byte range of the PDF file, excluding document snapshot and including the UR3 rule(s) data is saved to disk, digested, and signed.

How is the signature verified?

The byte range is digested and compared to the digest stored in the signature value. If these digests do not match, the signature will be invalid.

A run-time analysis of document components compares the opened and signed document versions. Changes that violate the UR3 rule specified in the signed version of the document will cause the signature to report an invalid state; otherwise, the signature will report a valid state.

How are in-memory changes detected?

No effort is made to detect in-memory changes.

How are prohibited in-memory changes prevented?

Acrobat permissions are used to prevent changes that would invalidate the signature.

XML digital signatures conform to the W3C XML-Signature standard (http://www.w3.org/TR/xmldsig-core.

The signature information is in the XML form datasets packet which is part of the PDF file. The payload is currently XML form data or a subset thereof which is defined by the XML signature definition. The payload is transformed according to the XML signature definition (there are many potential options) and then digested and signed.

There is no byte range in XML signatures. The payload is transformed according to the XML signature definition and then digested. It is then compared with signature value extracted (decrypted) from the signature. If they match, the signature is valid. If they do not match, the signature will be invalid. If the data has been modified (even incrementally) since it was signed, the signature is invalid.

Data signatures do not prohibit any in-memory document changes. However, any changes (incremental or otherwise) to the signed data since the signature was applied will result in an invalid signature.

6 Sharing Settings & Certificates with FDF

Acrobat and Adobe Reader support the use of FDF files to exchange data between the Acrobat family of client and server products. FDF files use a .fdf extension, and like .pdf, it is registered by Adobe so that the required application is used to open these files via a browser or file explorer. Acrobat provides the following FDF features:

- Import and export of digital ID certificates.
- Import and export of server settings for an Adobe LiveCycle Rights Management Server, LDAP directory servers, roaming credential servers, and timestamp servers.

Whether the file is located on a network or emailed, FDF file recipients simply double click on a FDF file to import its data automatically via the FDF import wizard, thereby eliminating the need for error prone, manual configuration.

Note: The first time you receive settings, you may not have the certificate of the signer of the settings file. This will result in some additional dialogs asking if you are sure you trust the source of the settings file. Once installed, the settings file should include the proper certificate so these additional questions will be avoided in subsequent updates.

FDF files provide individuals and businesses with many opportunities for streamlining workflows. For example:

- Alice wants to email her certificate to Bob and wants Bob to reply with his certificate. Alice chooses **Request Contact** in the Trusted Identity Manager. The workflow generates and emails an FDF file that can contain her certificate, a request for Bob's certificate, and Alice's return email address.
- Alice needs to encrypt documents for a number of people in her organization. An administrator sends her an FDF file that contains a large group of contacts. When Alice opens the FDF file, she is walked through the FDF Data Exchange UI wizard so that she can import these contacts into her Trusted Identities list.
- A server wants a copy of Bob's certificate so that the server can encrypt documents for Bob. The server generates an FDF file that contains a certificate request and a return URL address. When Bob downloads the FDF file from the server, he is walked through the FDF Data Exchange UI wizard where he can respond by allowing his certificate to be returned.
- A company needs to distribute its trusted certificate to customers so that they can verify that the company's documents are authentic. A server or administrator creates an FDF file that contains the trusted certificate and posts it on a Web server that hosts a Web page with a link to the file. When customers download the file, they are asked whether they wish to add this certificate to the Trusted Identity list and are given the ability to set the certificate's trust level.

For more information, refer to the following:

- FDF Files and Security
- Importing Application Settings with FDF Files
  - "Responding to an Email Request for a Digital ID" on page 75
  - "Importing Someone's Certificate" on page 77
  - "Importing Multiple Certificates" on page 78
  - "Importing Timestamp Server Settings" on page 80

- “Importing Directory Server Settings” on page 82
- “Importing Adobe LiveCycle Rights Management Server Settings” on page 83
- “Importing Roaming ID Account Settings” on page 84
- “Importing a Trust Anchor and Setting Trust” on page 86

- Exporting Application Settings with FDF Files
  - “Distributing a Trust Anchor” on page 64
  - “Setting the Certificate Trust Level” on page 67
  - “Exporting Your Certificate” on page 68
  - “Emailing Your Certificate” on page 69
  - “Saving Your Digital ID Certificate to a File” on page 70
  - “Requesting a Certificate via Email” on page 71
  - “Emailing Server Details” on page 72
  - “Exporting Server Details” on page 74

6.0.1 FDF Files and Security

FDF files are data exchange files. Like acrobatsecurity files, they help you move certificate, server, and other data from one machine to another. This data transfer usually involves some mechanism such as data injection into a PDF form field, installing files, executing a script, and so on. These actions represent a potential security risk, and in some environments that risk may be unacceptable. Acrobat therefore provides a new security feature that, when turned on, disables some FDF functionality unless those FDF files originate from a specifically privileged file, folder, or server.

The new feature is called Enhanced Security and may be enabled or disabled by choosing **Edit > Preferences > Security (Enhanced)**. Table 5 lists the high level rules defining FDF behavior.

Tip: If you need to configure your environment for enhanced security or need to troubleshoot FDF workflows that may not be working as expected when enhanced security is on, see *Enhanced Security*.

Table 5 Rules for opening a PDF via FDF

Action	FDF location	PDF location	8.x behavior	9.x behavior
Opening a target PDF	local	local	PDF opens and no authentication required.	Same.
Opening a target PDF	local	http server	PDF opens	User authorization required unless trusted via enhanced security feature.
Opening a target PDF	https server	http server	PDF opens and no authentication required.	Same.
Opening a target PDF	https server	local	Blocked	Http hosted FDFs cannot open local files.

Table 5 Rules for opening a PDF via FDF

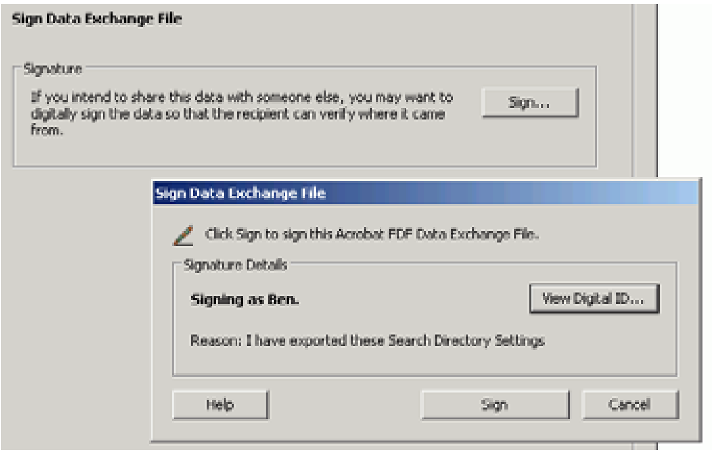
Action	FDF location	PDF location	8.x behavior	9.x behavior
Data injection	n/a	n/a	Allowed	Allowed if: ● Data retuned via a form submit with url#FDF. ● FDF has no /FDF key. ● cross-domain policy permits it.
Data injection	server	browser	Allowed	Allowed if: ● Link to PDF contains #FDF=url. ● FDF has no /FDF key. ● x-domain policy permits it.
Data injection	server	Application	Allowed	Allowed if: ● PDF makes EFS POST/GET and FDF sends data in https response to same PDF. ● x-domain policy permits it.
Data injection	Varied	Varied	Allowed	Authorization required if enhanced security is on and document is not set as a privileged location.
Script injection	Any	Any	Allowed	Injection is blocked unless if enhanced security is on and FDF is not in a privileged location.

6.0.2 Exporting Application Settings with FDF Files

FDF files can be created by administrators, end users, and even a server. It is a good idea to sign FDF files so that recipients of the file can establish a level of trust for the contents of the FDF file. For example, when an FDF file is signed, the **Accept the level of trust specified by the signer for all contacts in this file** checkbox becomes enabled, thereby allowing the importer to accept the level of trust you have specified.

Note: Recipients won’t be able to validate your signature unless you have previously sent them your digital ID certificate or your certificate was issued by someone they already trust.

Figure 42 Signing an FDF file



Sign Data Exchange File

Signature

If you intend to share this data with someone else, you may want to digitally sign the data so that the recipient can verify where it came from.

Sign Data Exchange File

Click Sign to sign this Acrobat FDF Data Exchange File.

Signature Details

Signing as Ben.

Reason: I have exported these Search Directory Settings

6.0.2.1 Distributing a Trust Anchor

You can establish trust via a trust anchor on an organization-wide basis by wrapping one or more certificates in an FDF file and making it available to other users via email, a network directory, or a Web site. Recipients simply click on the file or a link to the file to open the Acrobat wizard which downloads and/or installs the certificate.

Certificate Chains and Trust Anchors /Roots

Certificates usually exist as part of a hierarchy or "chain" of certificates, and part or all of the chain can be wrapped in an FDF file. The bottom-most and end user certificate (yours) is called an "end entity" (EE) certificate. The top-most certificate, (the root) is typically belongs to a trusted Certificate Authority (CA). Certificates in between the end entity and root certificates are sometimes called "intermediate certificates" (ICAs) and are issued by the CA or ICAs underneath the CA. Acrobat enables users to specify one or more of the certificates in a chain as trusted for specific operations. Thus, an EE certificate could have one or more trust anchors (trusted ICAs) that chain up to a the top-most CA certificate which is the primary trust anchor or "trusted root."

A typical chain might include your certificate, your company's ICA, and a root CA. Certificates inherit trust from certificates on the root end of the chain. For example, if the root certificate is trusted, then any certificates chaining to the that root will also be trusted. Some organizations have their own root CA or use an ICA certificate that is issued by an external CA and make these the trust anchors for their employees.

It is a common practice to trust certificates as high up in the chain as is reasonable since revocation checking starts at the chain bottom and continues until it reaches a trust anchor. Revocation checking occurs until reaching a certificate that is absolutely trusted by you or your organization. It also allows users to trust other certificates that chain up to the same root. The trust anchor is often an ICA for example, since if the root is issued by a company such as VeriSign, it might not be wise to make it a trust anchor as that tells Acrobat to trust the millions of certificates that chain up to VeriSign.

Distributing and installing ICA or CA trust anchors to a user or group of users allows them to:

- Distribute certified or signed documents to partners and customers.
- Help document recipients validate the signatures of document authors.

Exporting a Trust Anchor

When Acrobat exports a certificate, it automatically exports other selected certificates in that certificate's chain and includes them in the FDF file.

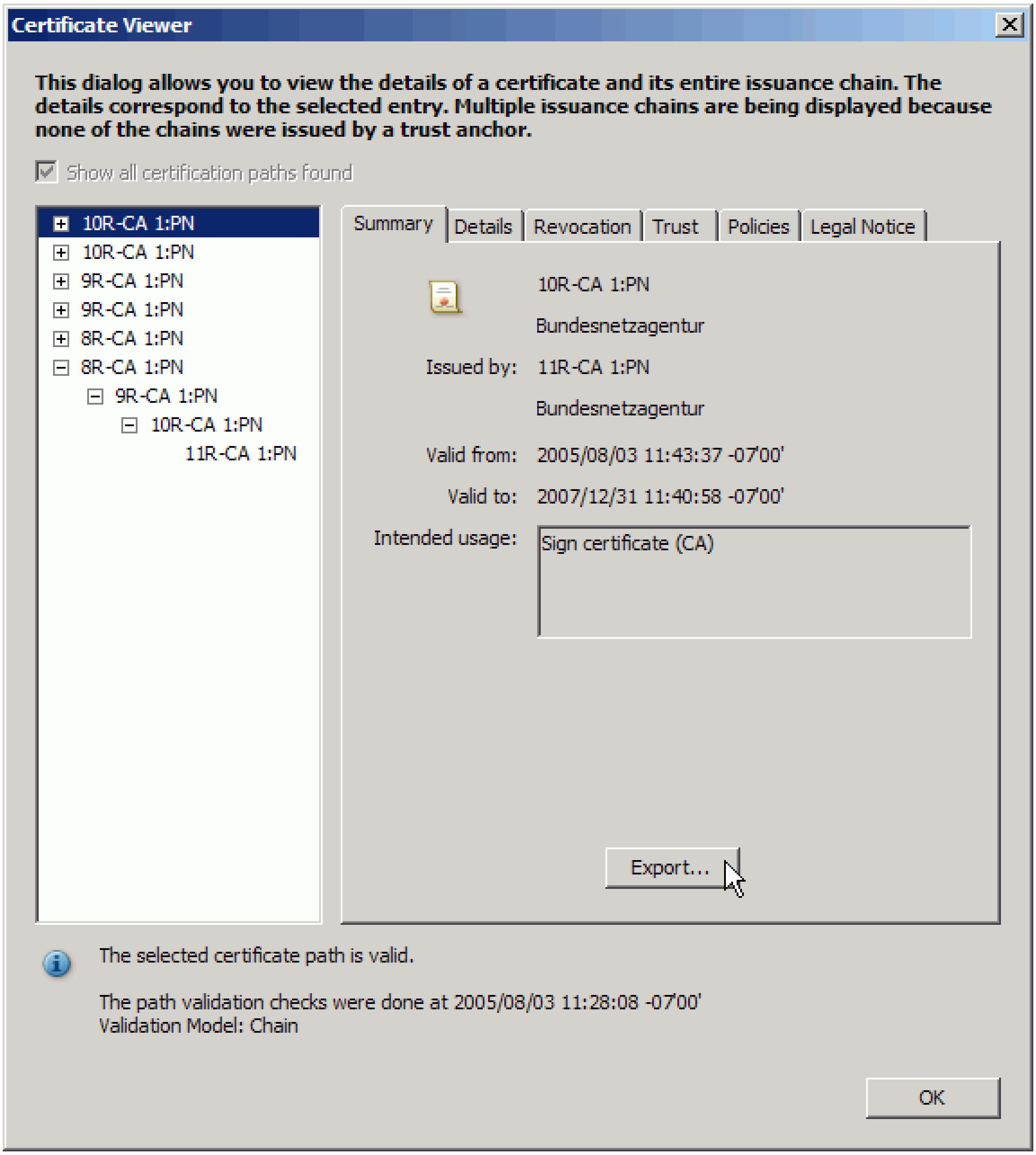
1. Choose **Advanced** (Acrobat) or **Document** (Adobe Reader) **> Manage Trusted Identities**.
2. Choose **Certificates** in the **Display** drop-down list.

   In addition to this method, you can also display the certificate from any signature or certificate security method workflow where a **Show Certificate** or **Certificate Details** button appears, such as the Signature Properties dialog.
3. Select the certificate (Figure 44).

   Note: In the unlikely event that you can sign the FDF file with a signature the recipient can validate (they will use a different certificate than the one you are exporting), set the certificate's trust level before exporting it. For details, see "Setting the Certificate Trust Level" on page 67

   Tip: You could just choose **Export** and bypass the following two steps. However, exporting the certificate from the Certificate Viewer allows you to see the entire certificate chain where you can select all or part of it.
4. Choose **Show Certificate**. The Certificate Viewer displays the certificate.
5. Select a certificate in the chain that appears in the left-hand window.

Figure 43 Selecting a certificate chain for export



Certificate Viewer

This dialog allows you to view the details of a certificate and its entire issuance chain. The details correspond to the selected entry. Multiple issuance chains are being displayed because none of the chains were issued by a trust anchor.

☑ Show all certification paths found

- 10R-CA 1:PN
- 10R-CA 1:PN
- 9R-CA 1:PN
- 9R-CA 1:PN
- 8R-CA 1:PN
- 8R-CA 1:PN
  - 9R-CA 1:PN
    - 10R-CA 1:PN
      - 11R-CA 1:PN

Summary | Details | Revocation | Trust | Policies | Legal Notice

	10R-CA 1:PN
	Bundesnetzagentur
Issued by:	11R-CA 1:PN
	Bundesnetzagentur
Valid from:	2005/08/03 11:43:37 -07'00'
Valid to:	2007/12/31 11:40:58 -07'00'
Intended usage:	Sign certificate (CA)

The selected certificate path is valid.

The path validation checks were done at 2005/08/03 11:28:08 -07'00'
Validation Model: Chain

6. Choose **Export**.

7. Choose one of the following:

   - **Email the data to someone**: Emailing the data automatically creates an FDF file that other Adobe product users can easily import.
   - **Save the exported data to a file**: Acrobat FDF Data Exchange. FDF is a format recognized by the Acrobat family of products.

8. Choose **Next**.

9. (*Optional*) If the Identity Information dialog appears, enter the your email address and any other information. If you have already configured your identity details, this screen may not appear. For details, see "Setting Identity Information" on page 215.

10. **Do not sign** if the certificate you use to sign uses the same trust anchor or you are distributing. Since recipients do not have this certificate yet, they will not be able to validate your signature.

    Note: Signing the FDF will only be useful if you have a digital ID that the recipient has already trusted (uses a trust anchor OTHER than the one you are currently distributing). The FDF file recipients must also already have that digital IDs certificate so that they can validate your signature without relying on the certificate you are currently sending. This workflow is uncommon, but it does allow recipients to automatically inherit your predefined trust settings for the certificate embedded in the file.

11. Choose **Next**.

12. Continue with the workflow until the trusted root is emailed or placed in a directory where your intended recipients can find it.

Providing Instructions to the Trusted Root Recipients

For details, see "Importing a Trust Anchor and Setting Trust" on page 86.

6.0.2.2 Setting the Certificate Trust Level

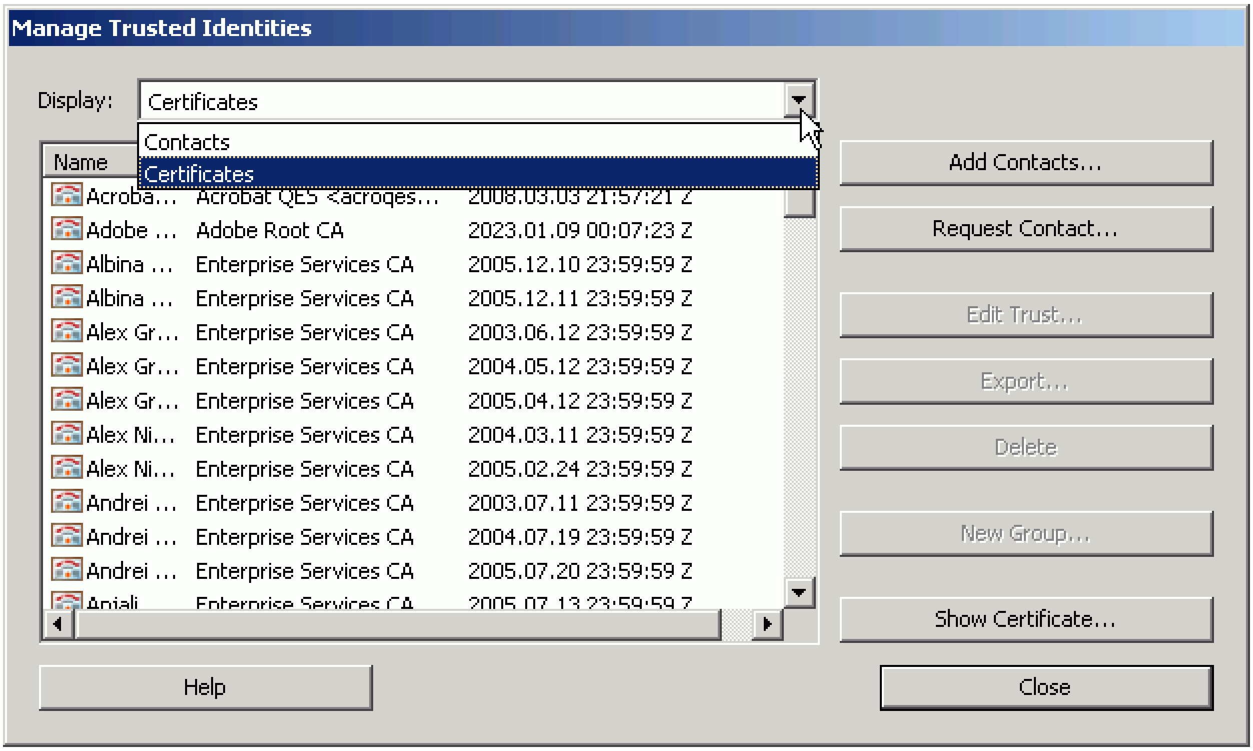
Note: This section is only relevant for trust anchor's in FDF files that are signed with a trusted signature. This is an unlikely scenario, since the trust anchor distributor is probably using the same trust anchor that is being distributed and the recipient doesn't have it yet. Most users will likely need to manually set the imported certificate's trust level.

When distributing a trusted root in a signed file that the FDF recipient can validate, set the certificate trust level:

1. Choose **Advanced** (Acrobat) or **Document** (Adobe Reader) **> Manage Trusted Identities**.

2. Choose **Certificates** in the **Display** drop-down list.

Figure 44 Certificates in the Trusted Identities list



Name		
Acroba…	Acrobat QES <acroqes…	2008.03.03 21:57:21 Z
Adobe …	Adobe Root CA	2023.01.09 00:07:23 Z
Albina …	Enterprise Services CA	2005.12.10 23:59:59 Z
Albina …	Enterprise Services CA	2005.12.11 23:59:59 Z
Alex Gr…	Enterprise Services CA	2003.06.12 23:59:59 Z
Alex Gr…	Enterprise Services CA	2004.05.12 23:59:59 Z
Alex Gr…	Enterprise Services CA	2005.04.12 23:59:59 Z
Alex Ni…	Enterprise Services CA	2004.03.11 23:59:59 Z
Alex Ni…	Enterprise Services CA	2005.02.24 23:59:59 Z
Andrei …	Enterprise Services CA	2003.07.11 23:59:59 Z
Andrei …	Enterprise Services CA	2004.07.19 23:59:59 Z
Andrei …	Enterprise Services CA	2005.07.20 23:59:59 Z
Anjali	Enterprise Services CA	2005.07.13 23:59:59 Z

3. Highlight the needed certificate.

4. Choose **Edit Trust**.

5. Display the Trust tab.

6. Set the trust level as described in "Importing a Trust Anchor and Setting Trust" on page 86.

6.0.2.3 Exporting Your Certificate

You can use FDF files to export your certificate so that others can import it into their list of trusted identities. This enables them to encrypt documents for you and validate your signature for documents that you digitally sign.

- Before users receiving your signed document can validate your signature, they must receive the your certificate or one above it in the trust chain.
- Before users can encrypt a document for you with certificate encryption, they must have access your certificate.

Certificates can be emailed or saved to a file for later use. There are two ways to export a certificate:

- To export a certificate from the list in the Security Settings Console, refer the following:
  - "Emailing Your Certificate" on page 69
  - "Saving Your Digital ID Certificate to a File" on page 70
- To export any certificate displayed in the Certificate Viewer, choose **Export** on the Summary tab.

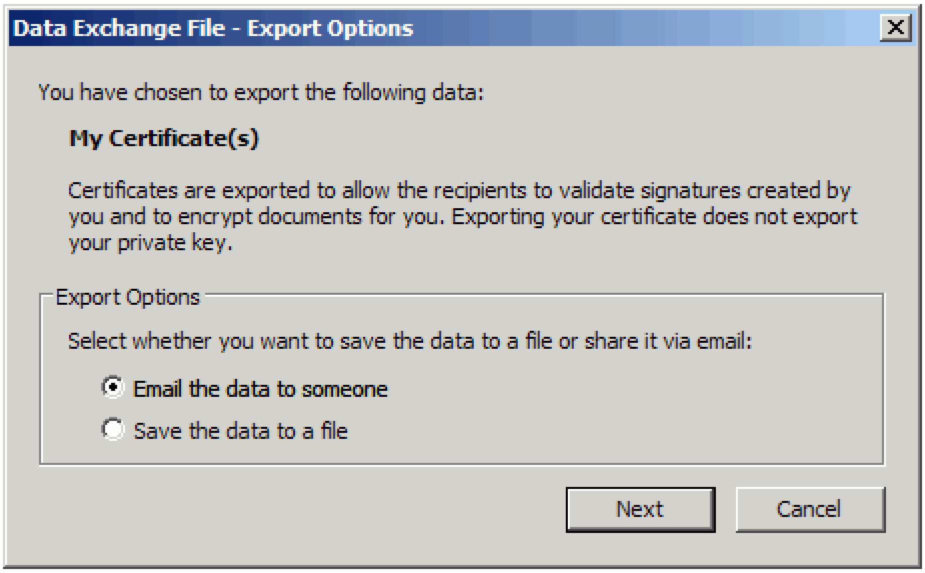
6.0.2.4 Emailing Your Certificate

If you do not have an email program on your machine, save the data to a file as described in "Saving Your Digital ID Certificate to a File" on page 70 and then send the file as an attachment using your web-based email program.

To email a digital ID certificate:

1. Choose **Advanced** (Acrobat) or **Document** (Adobe Reader) **> Security Settings**.
2. Select **Digital IDs** in the left-hand tree.
3. Highlight an ID in the list on the right. If you have more than one, choose the one that is appropriate for the usage context. For example, send your company-issued ID to those you do business with.
4. Choose **Export**.
5. Choose **Email the data to someone** (Figure 45).

Figure 45 Digital ID: ID export options



Data Exchange File - Export Options

You have chosen to export the following data:

My Certificate(s)

Certificates are exported to allow the recipients to validate signatures created by you and to encrypt documents for you. Exporting your certificate does not export your private key.

Export Options

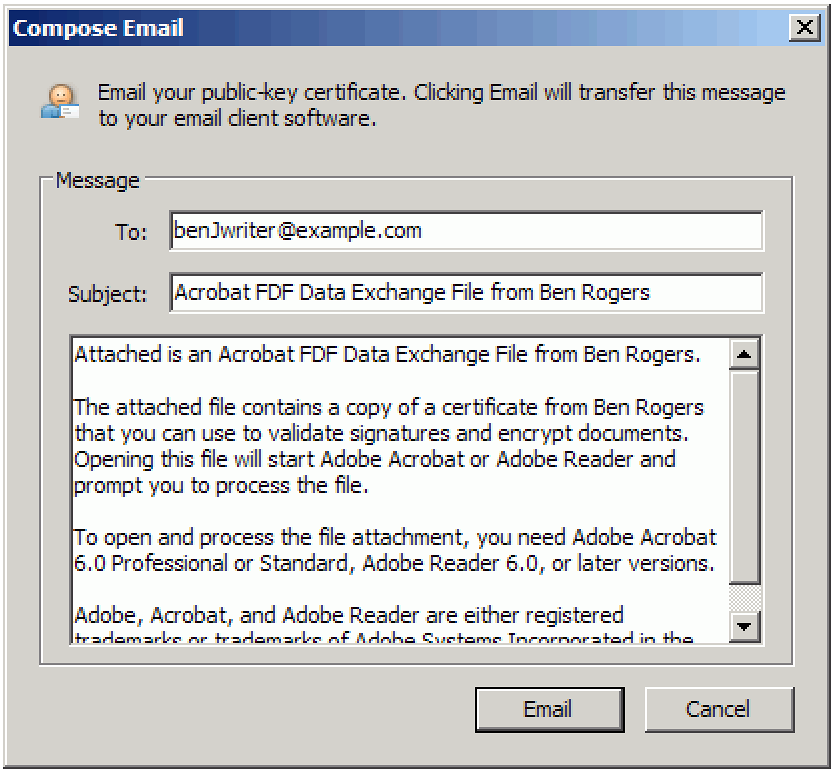
Select whether you want to save the data to a file or share it via email:

● Email the data to someone

○ Save the data to a file

6. Choose **Next**.
7. Enter the recipient's email address and any other optional information.

Figure 46 Emailing your certificate



Email your public-key certificate. Clicking Email will transfer this message to your email client software.

To: benJwriter@example.com

Subject: Acrobat FDF Data Exchange File from Ben Rogers

Attached is an Acrobat FDF Data Exchange File from Ben Rogers.

The attached file contains a copy of a certificate from Ben Rogers that you can use to validate signatures and encrypt documents. Opening this file will start Adobe Acrobat or Adobe Reader and prompt you to process the file.

To open and process the file attachment, you need Adobe Acrobat 6.0 Professional or Standard, Adobe Reader 6.0, or later versions.

Adobe, Acrobat, and Adobe Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the

8. Choose **Email**.

9. When the email program opens, send the email.

Note: Some email problems only queue messages to be sent. You may need to start your email client program to cause the message to actually send.

6.0.2.5 Saving Your Digital ID Certificate to a File

To save a digital ID certificate to a file:

1. Choose **Advanced** (Acrobat) or **Document** (Adobe Reader) **> Security Settings**.

2. Select **Digital IDs** in the left-hand tree.

3. Highlight an ID in the list on the right.

4. Choose **Export**.

5. Choose **Save the exported data to a file** (Figure 45).

6. Choose a file type:

   - **Acrobat FDF Data Exchange**: FDF files enable the easy exchange of data between any Acrobat family of products.

- **Certificate Message Syntax - PKCS#7**: Save the file as a PKCS7 file. Use this format when the data will be imported into a non-Adobe store such as the Macintosh key store or Windows Certificate Store.

7. Choose **Next**.

8. Browse to a file location and choose **Save**.

9. Choose **Next**.

10. Review the data to export and choose **Finish**.

6.0.2.6 Requesting a Certificate via Email

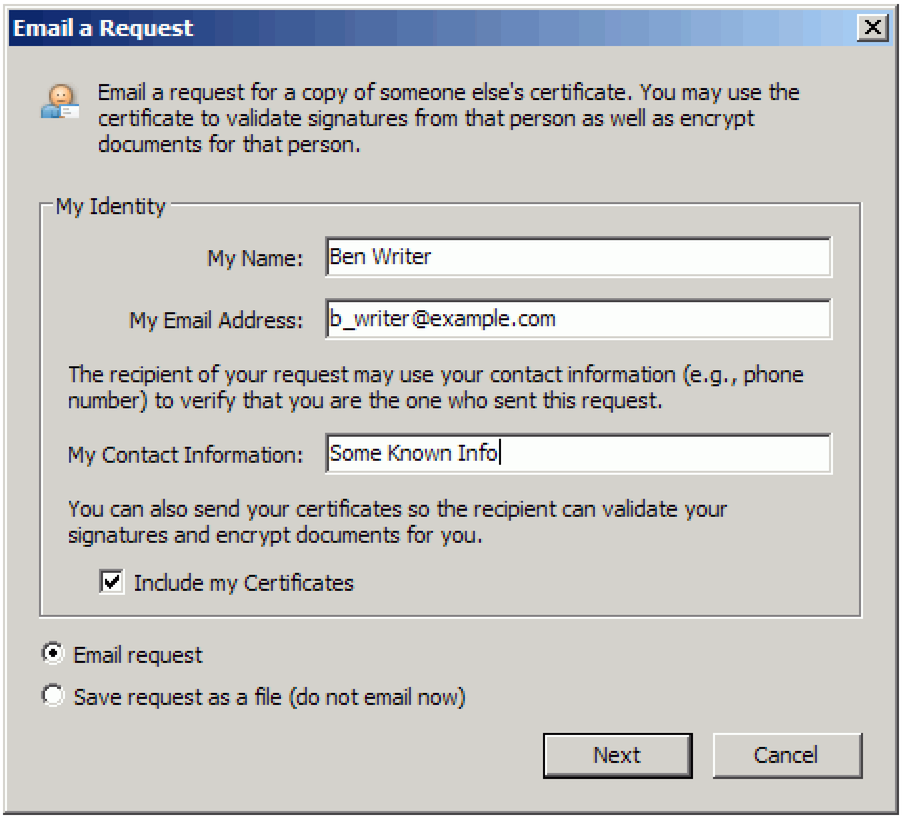
When you request digital ID information from someone, the application automatically attaches to the email an FDF file containing your contact information and certificate.

To request a certificate from someone:

1. Choose **Advanced** (Acrobat) or **Document** (Adobe Reader) **> Manage Trusted Identities**.

2. Choose **Request Contact**.

Figure 47 Emailing a certificate request



Email a Request

Email a request for a copy of someone else's certificate. You may use the certificate to validate signatures from that person as well as encrypt documents for that person.

My Identity

My Name: Ben Writer

My Email Address: b_writer@example.com

The recipient of your request may use your contact information (e.g., phone number) to verify that you are the one who sent this request.

My Contact Information: Some Known Info

You can also send your certificates so the recipient can validate your signatures and encrypt documents for you.

☑ Include my Certificates

● Email request

○ Save request as a file (do not email now)

3. Confirm or enter your identity so that the recipient can identify you. The identity panel is prepopulated if the information has been previously as described in "Setting Identity Information" on page 215.

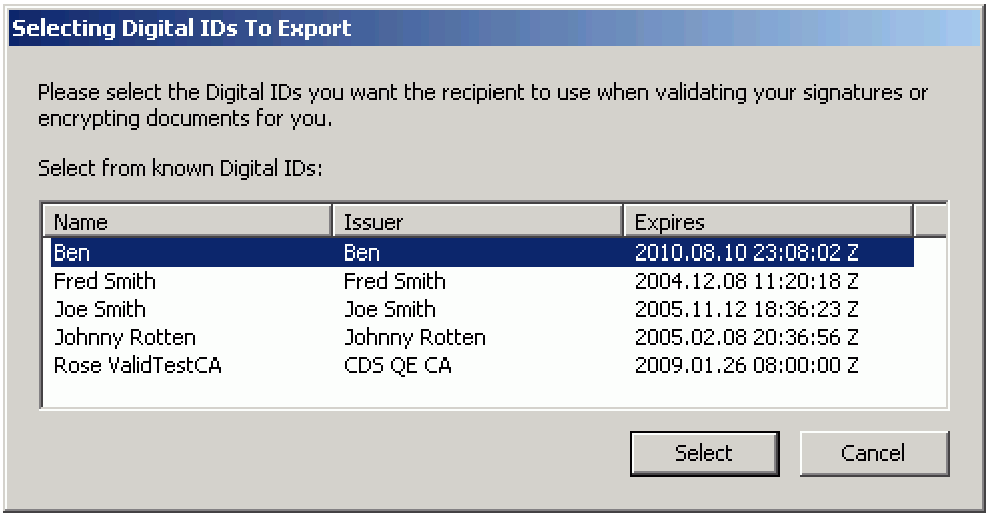
4. Choose **Include My Certificates** to allow other users to add your certificate to their list of trusted identities.

5. Choose whether to email the request or save it as a file.

6. Choose **Next**.

7. Select one or more digital IDs to export. Highlight contiguous IDs by holding down the Shift key. Highlight non-contiguous IDs by holding down the Control key.

Figure 48 Certificates: Selecting a digital ID for export



Selecting Digital IDs To Export

Please select the Digital IDs you want the recipient to use when validating your signatures or encrypting documents for you.

Select from known Digital IDs:

Name	Issuer	Expires
Ben	Ben	2010.08.10 23:08:02 Z
Fred Smith	Fred Smith	2004.12.08 11:20:18 Z
Joe Smith	Joe Smith	2005.11.12 18:36:23 Z
Johnny Rotten	Johnny Rotten	2005.02.08 20:36:56 Z
Rose ValidTestCA	CDS QE CA	2009.01.26 08:00:00 Z

8. Choose **Select**.

9. The next step varies depending on whether you chose to email the ID:

   - **If you chose Email**: Enter the person's email address in the Compose Email dialog and choose **Email**. Send the email message when it appears in the launched email application with the certificate request attached.
   - **If you chose Save as file**: Choose a location for the certificate file Export Data As dialog. Choose **Save**, and then choose **OK**. Tell the intended recipient(s) where to find the file.

6.0.2.7 Emailing Server Details

Adobe LiveCycle Rights Management Server, directory server, roaming credential server, and timestamp server details can be exported to an FDF file for distribution to one or more people. Server information sent via an email resides in an attached FDF file. To send directory server details in an email:

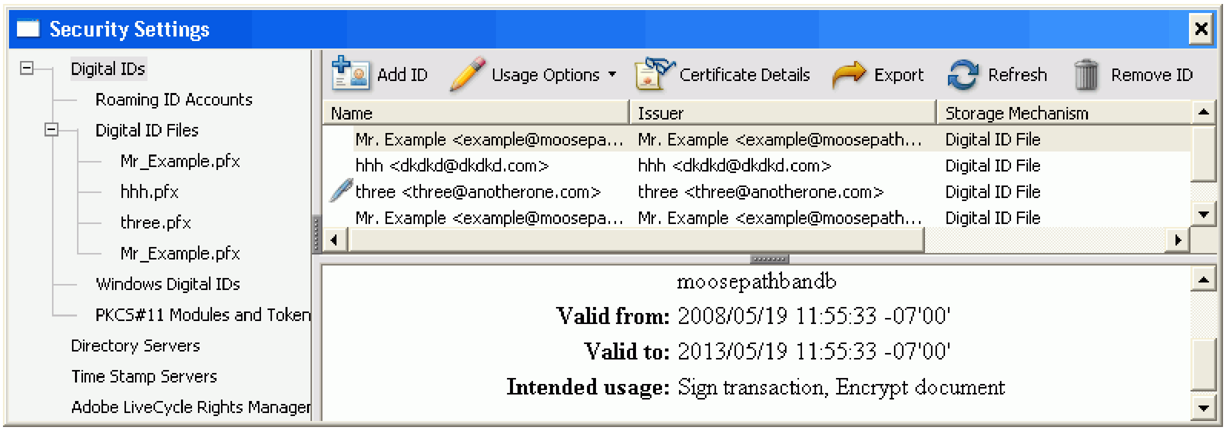
1. Choose **Advanced** (Acrobat) or **Document** (Adobe Reader) **> Security Settings**.

2. Select a server category from the left-hand list.

3. Select a server from the right-hand panel.

4. Choose **Export**.

Figure 49 Security Settings menu items



Name	Issuer	Storage Mechanism
Mr. Example <example@moosepa...	Mr. Example <example@moosepath...	Digital ID File
hhh <dkdkd@dkdkd.com>	hhh <dkdkd@dkdkd.com>	Digital ID File
three <three@anotherone.com>	three <three@anotherone.com>	Digital ID File
Mr. Example <example@moosepa...	Mr. Example <example@moosepath...	Digital ID File

moosepathbandb

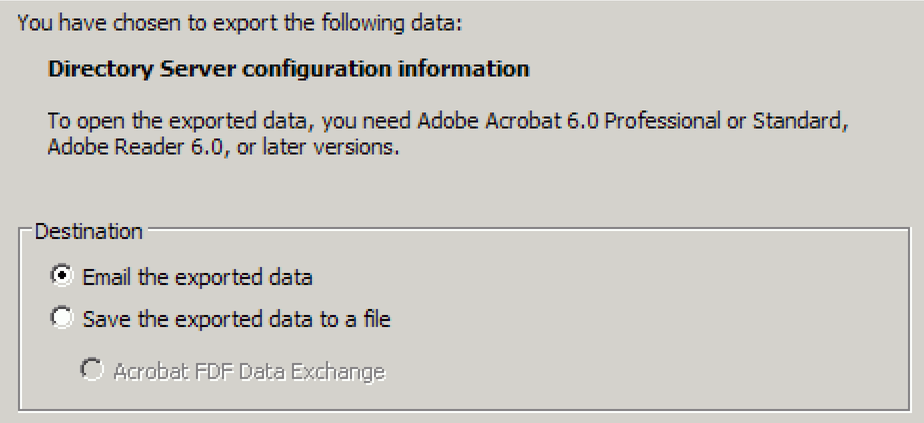
Valid from: 2008/05/19 11:55:33 -07'00'

Valid to: 2013/05/19 11:55:33 -07'00'

Intended usage: Sign transaction, Encrypt document

5. Choose **Email the exported data** to email the FDF file.

Figure 50 Digital ID Directory servers: Export destination



You have chosen to export the following data:

Directory Server configuration information

To open the exported data, you need Adobe Acrobat 6.0 Professional or Standard, Adobe Reader 6.0, or later versions.

Destination

● Email the exported data

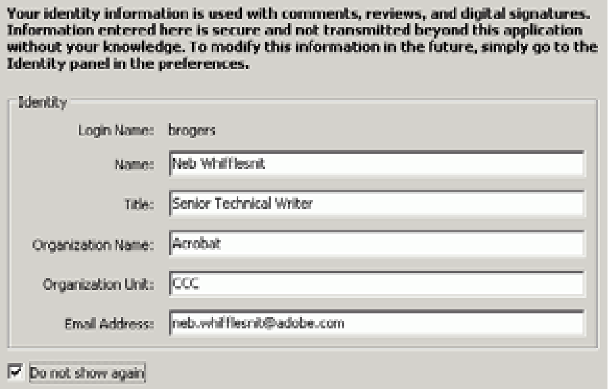
○ Save the exported data to a file

○ Acrobat FDF Data Exchange

6. Choose **Next**.

The Identity panel (Figure 51) will not appear if the information has been previously configured. For details, see “Setting Identity Information” on page 215.

Figure 51 Digital ID Directory servers: Sender’s identify



Your identity information is used with comments, reviews, and digital signatures. Information entered here is secure and not transmitted beyond this application without your knowledge. To modify this information in the future, simply go to the Identity panel in the preferences.

Identity

Login Name: brogers

Name: Neb Whifflesnit

Title: Senior Technical Writer

Organization Name: Acrobat

Organization Unit: CCC

Email Address: neb.whifflesnit@adobe.com

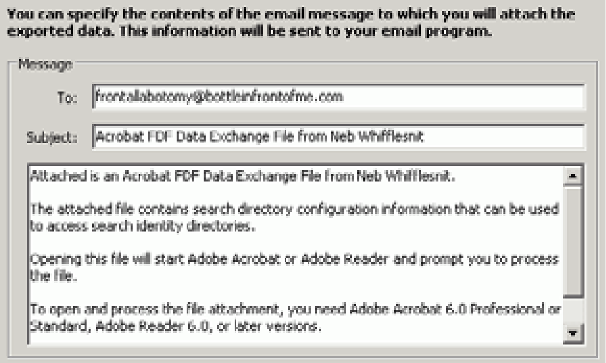
☑ Do not show again

7. Choose **Sign** and complete the signing workflow (Figure 61). Sign FDF files so that recipients of the file can easily trust the file and its contents.

8. Choose **Next**.

9. Enter the email information.

Figure 52 Digital ID Directory servers: Email details



You can specify the contents of the email message to which you will attach the exported data. This information will be sent to your email program.

Message

To: frontallabotomy@bottleinfrontofme.com

Subject: Acrobat FDF Data Exchange File from Neb Whifflesnit

Attached is an Acrobat FDF Data Exchange File from Neb Whifflesnit.

The attached file contains search directory configuration information that can be used to access search identity directories.

Opening this file will start Adobe Acrobat or Adobe Reader and prompt you to process the file.

To open and process the file attachment, you need Adobe Acrobat 6.0 Professional or Standard, Adobe Reader 6.0, or later versions.

10. Choose **Next**.

11. Review the export details.

12. Choose **Finish**.

6.0.2.8 Exporting Server Details

Adobe LiveCycle Rights Management Server, directory server, roaming ID, and timestamp server details can be exported to an FDF file for distribution to one or more people. Server information can be written to a file and saved to any location.

To save server details to a file:

1. Choose **Advanced** (Acrobat) or **Document** (Adobe Reader) > **Security Settings**.

2. Select a server category from the left-hand list.

Note: For roaming ID server settings, choose an account under **Roaming ID Accounts**.

3. Select a server from the right-hand panel.
4. Choose **Export**.
5. Choose **Save the exported data to a file** to save the data in an FDF file that can be shared (Figure 50).
6. Choose **Next**.

   The Identity panel (Figure 51) will not appear if the information has been previously configured. For details, see "Setting Identity Information" on page 215.
7. Choose **Sign** and complete the signing workflow (Figure 61). Sign FDF files so that recipients of the file can easily trust the file and its contents.
8. Choose **Next**.
9. Browse to a location in which to save the file.
10. Choose a file name and choose **Save**.
11. Choose **Next**.
12. Review the export details.
13. Choose **Finish**.

6.0.3 Importing Application Settings with FDF Files

There are several ways to import Acrobat and Adobe Reader data from an FDF file:

- By choosing **File > Open**.
- Double clicking on an FDF file (.fdf)

Tip: The first two options above automatically invoke the simplest workflow.

- For FDF digital ID information, importing it into the Trusted Identity Manager.
- For FDF server settings, importing it with the Security Settings Console.

6.0.3.1 Responding to an Email Request for a Digital ID

There may be times when someone else needs your digital ID to verify your signature or encrypt a file for you to decrypt (for example, when applying certificate security). To do either, they need access to the public part of your digital ID so that it can be added to their trusted identities list. One way someone can get your ID is to request it in an email.

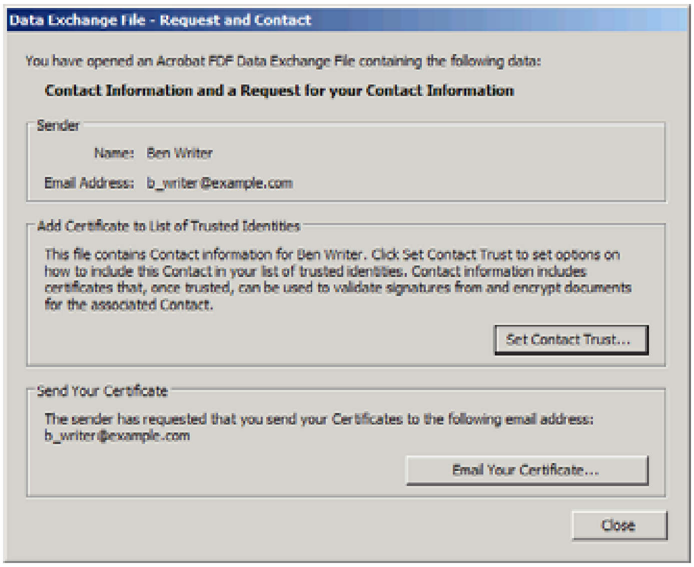
To request your certificate, a user will simply choose **Advanced** (Acrobat) or **Document** (Adobe Reader) **> Manage Trusted Identities** and then choose **Request Contact**. Acrobat automatically attaches an FDF file with their public certificate to an email that requests your digital ID. The workflow is essentially a digital ID "trade" that allows two users to exchange digital IDs. You must have a digital ID before responding to the request.

To respond to an email digital ID request:

1. Double click the attached FDF file.

2. Choose **Email your Certificate**.

Figure 53 Emailing your certificate



Data Exchange File - Request and Contact

You have opened an Acrobat FDF Data Exchange File containing the following data:

Contact Information and a Request for your Contact Information

Sender

Name: Ben Writer

Email Address: b_writer@example.com

Add Certificate to List of Trusted Identities

This file contains Contact information for Ben Writer. Click Set Contact Trust to set options on how to include this Contact in your list of trusted identities. Contact information includes certificates that, once trusted, can be used to validate signatures from and encrypt documents for the associated Contact.

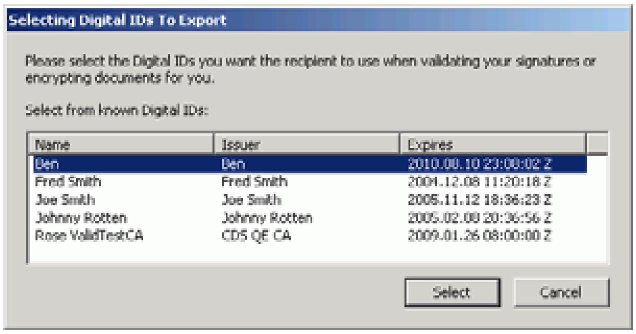
Send Your Certificate

The sender has requested that you send your Certificates to the following email address: b_writer@example.com

3. Choose a digital ID from the list of existing digital IDs.

Note: If you do not have a digital ID or choose **Cancel**, an alert appears that says "A certificate was not selected for export." Exit the workflow and get a digital ID.

Figure 54 Selecting a digital ID



Selecting Digital IDs To Export

Please select the Digital IDs you want the recipient to use when validating your signatures or encrypting documents for you.

Select from known Digital IDs:

Name	Issuer	Expires
Ben	Ben	2010.08.10 23:08:02 Z
Fred Smith	Fred Smith	2004.12.08 11:20:18 Z
Joe Smith	Joe Smith	2005.11.12 18:36:23 Z
Johnny Rotten	Johnny Rotten	2005.02.08 20:36:56 Z
Rose ValidTestCA	CDS QE CA	2009.01.26 08:00:00 Z

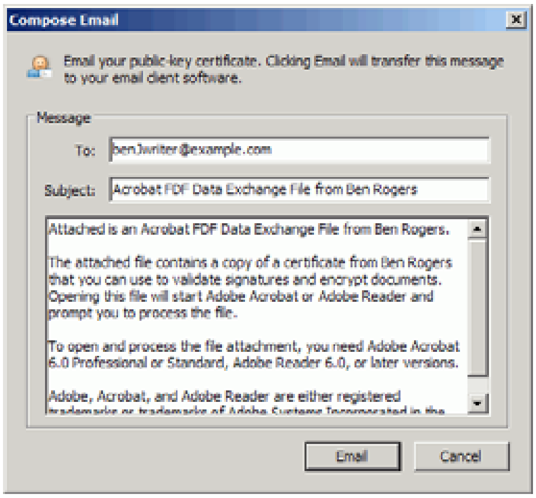
4. Choose **Select**.

5. Review the email details. You can edit the To, Subject, and Body fields (Figure 55).

6. Choose **Email**.

7. Send the email through your mail application.

Figure 55 Emailing your certificate



Compose Email

Email your public-key certificate. Clicking Email will transfer this message to your email client software.

Message

To: benJwriter@example.com

Subject: Acrobat FDF Data Exchange File from Ben Rogers

Attached is an Acrobat FDF Data Exchange File from Ben Rogers.

The attached file contains a copy of a certificate from Ben Rogers that you can use to validate signatures and encrypt documents. Opening this file will start Adobe Acrobat or Adobe Reader and prompt you to process the file.

To open and process the file attachment, you need Adobe Acrobat 6.0 Professional or Standard, Adobe Reader 6.0, or later versions.

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6.0.3.2 Importing Someone’s Certificate

You can use an FDF file to import someone’s certificate into your list of trusted identities. This enables you to validate their signature and encrypt documents with their public key so only that intended recipient can open it.

Tip: Importing this information ahead of time enables you to configure your trusted identities list before needing to validate a signature or encrypt a document for someone.

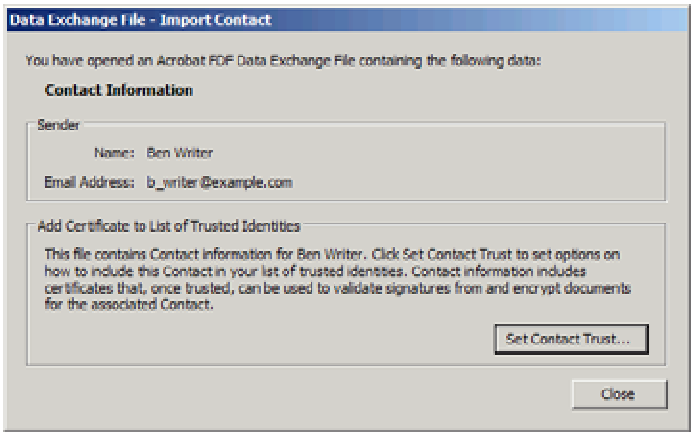
To add someone’s certificate to your list of trusted identities:

1. Click on the FDF file or from Acrobat or Adobe Reader choose **File > Open**. The digital ID certificate may be sent directly from Acrobat as an email attachment or may reside in a networked directory.

2. Review the sender’s information when the Import Contact dialog appears.

   Note: If the file is signed, then the Import Contact dialog will also have a Signature panel as shown in Figure 57.

Figure 56 Certificates: Contact Information



Data Exchange File - Import Contact

You have opened an Acrobat FDF Data Exchange File containing the following data:

Contact Information

Sender

Name: Ben Writer

Email Address: b_writer@example.com

Add Certificate to List of Trusted Identities

This file contains Contact information for Ben Writer. Click Set Contact Trust to set options on how to include this Contact in your list of trusted identities. Contact information includes certificates that, once trusted, can be used to validate signatures from and encrypt documents for the associated Contact.

3. Choose **Set Contact Trust**.

4. When the Import Contact Settings dialog appears, configure the Trust and Policy Restrictions. For details, see "Importing a Trust Anchor and Setting Trust" on page 86.

5. Choose **Certificate Details**.

6. Choose the Details tab.

7. In the Certificate data panel, scroll to MD5-digest and SHA-1 digest and note the fingerprint numbers.

8. Contact the certificate's originator and verify the fingerprints are correct.

9. Choose **OK**.

10. Choose **OK**.

11. Choose **Close**.

6.0.3.3 Importing Multiple Certificates

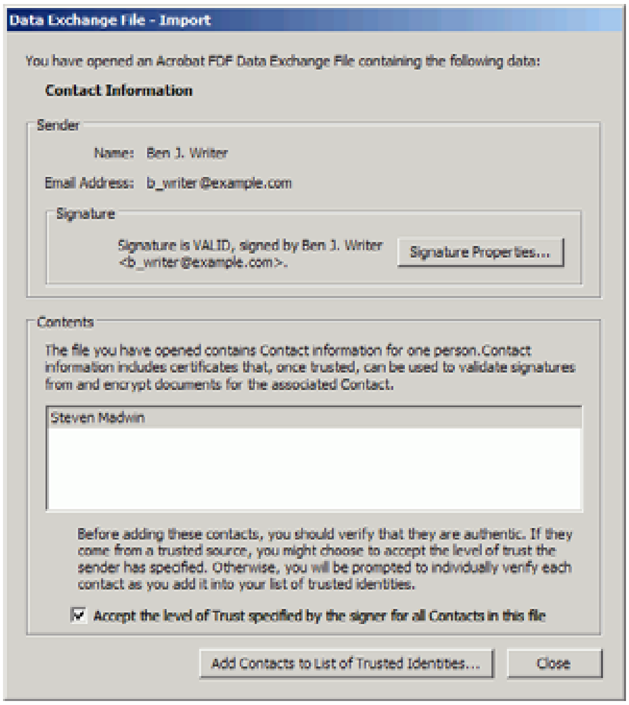
You can use an FDF file to import multiple certificates or a company-wide address book into your list of trusted identities. This enables you to encrypt a document using the public key of the intended recipient so that only they can open it.

Tip: Importing this information ahead of time enables you to configure your trusted identities list before needing to validate signature or encrypt a document to those identities. Administrators can create a company-wide address book and can export it to an FDF file for distribution throughout a company via a network or email.

To add multiple certificate to the trusted identities list all at once:

1. Click on the FDF file or from Acrobat or Adobe Reader choose **File > Open**. The digital ID certificate may be sent directly from Acrobat as an email attachment or may reside in a networked directory.

Figure 57 Importing multiple certificates



Data Exchange File - Import
Signature Properties...
Add Contacts to List of Trusted Identities...
Close

You have opened an Acrobat FDF Data Exchange File containing the following data:

Contact Information

Sender

Name: Ben J. Writer

Email Address: b_writer@example.com

Signature

Signature is VALID, signed by Ben J. Writer <b_writer@example.com>.

Contents

The file you have opened contains Contact information for one person.Contact information includes certificates that, once trusted, can be used to validate signatures from and encrypt documents for the associated Contact.

Steven Madwin

Before adding these contacts, you should verify that they are authentic. If they come from a trusted source, you might choose to accept the level of trust the sender has specified. Otherwise, you will be prompted to individually verify each contact as you add it into your list of trusted identities.

☑ Accept the level of Trust specified by the signer for all Contacts in this file

2. If the FDF file is signed, the signature can be validated, AND a trust level has been specified by the sender, check or uncheck **Accept the level of Trust specified by the signer for all Contacts in this file**.

   Note: The box is disabled if either of the above conditions are not met. If the FDF is signed by someone you trust but their signature has a status of UNKNOWN, you may be able to simply add the sender to your list of trusted identities. To do so, choose **Signature Properties > Show Certificate >** select the **Trust tab >** and choose **Add to Trusted Identities.**

   - If the checkbox is selected, all contacts associated with this certificate will receive the level of trust that was set by the user that signed the FDF file.
   - If the checkbox is not selected, no trust level will be set for these certificates. The certificate cannot be used for many actions (such as providing a valid timestamp or encrypting) until a trust level is set as described in the user documentation.

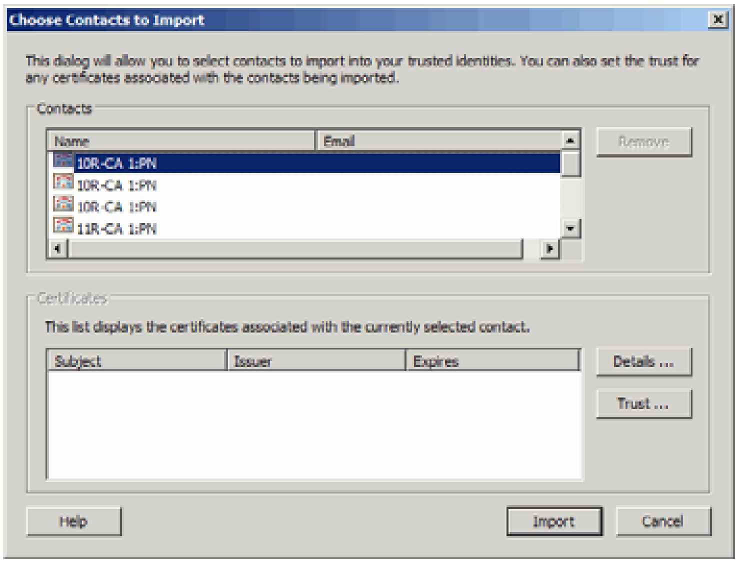
3. Choose **Add Contacts to List of Trusted Identities**.

4. If there are multiple contacts in the file, the Choose Contacts to Import dialog appears. Remove those that are not wanted and highlight the rest.

5. Choose **Import**.

6. Choose **OK** in the confirmation dialog.

Figure 58 Making a contact a trusted identity



This dialog will allow you to select contacts to import into your trusted identities. You can also set the trust for any certificates associated with the contacts being imported.

Name	Email
10R-CA 1:PN	
10R-CA 1:PN	
10R-CA 1:PN	
11R-CA 1:PN	

This list displays the certificates associated with the currently selected contact.

Subject	Issuer	Expires

6.0.3.4 Importing Timestamp Server Settings

In enterprise settings, servers do not usually have to be manually configured. Timestamp server administrators often export the server information to an FDF file which is emailed or made available on a network. Users can import (add) directory server settings through the Security Settings user interface or simply by double clicking on the FDF file containing the data.

To import the server settings:

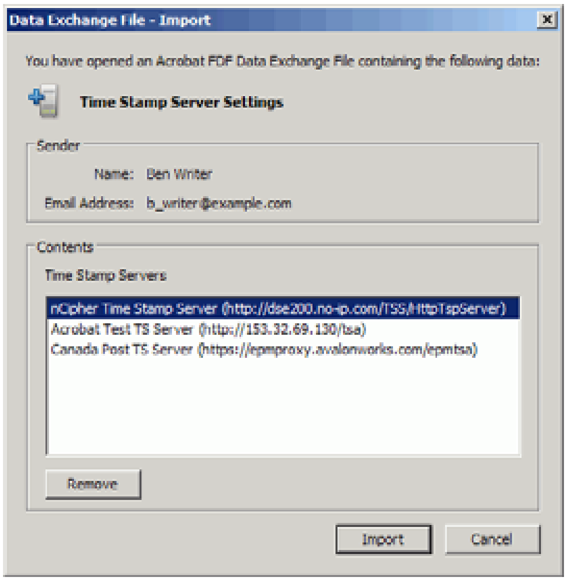
1. Locate the FDF file: find the file in an email or on the local file system and double click on it.

   The FDF can also be imported through the Security Settings Console by choosing **Advanced** (Acrobat) or **Document** (Adobe Reader) **> Security Settings**, selecting **Time Stamp Servers** in the left-hand list, and choosing **Import**.

2. Review the sender's details. Note the following:

   - If the FDF is unsigned, no Signature panel appears in the import dialog.
   - If the FDF is signed, you can use the **Signature Properties** button to find out more information about the sender and the validity of the signature.

Figure 59 Timestamps: Importing server details from an FDF file



Data Exchange File - Import

You have opened an Acrobat FDF Data Exchange File containing the following data:

Time Stamp Server Settings

Sender

Name: Ben Writer

Email Address: b_writer@example.com

Contents

Time Stamp Servers

nCipher Time Stamp Server (http://dse200.no-ip.com/TSS/HttpTspServer)
Acrobat Test TS Server (http://153.32.69.130/tsa)
Canada Post TS Server (https://epmproxy.avalonworks.com/epmtsa)

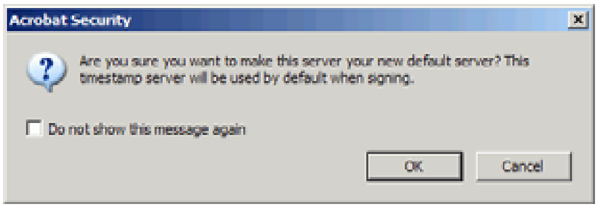
3. Review the timestamp server list. Note the following behavior:
    - If there is more than one server listed, all of the servers will be imported even though only one is highlighted.
    - At import time, you will be asked if you want to make the highlighted server the default server.

    Note: If there is more than one server and you do not want to import all of them, highlight those that should not be imported and select **Remove**.

4. Choose **Import**.

    A dialog appears asking if the first (or only) server in the server list should be used as the default.

Figure 60 Timestamps: Importing a server



Acrobat Security

Are you sure you want to make this server your new default server? This timestamp server will be used by default when signing.

□ Do not show this message again

5. Choose **Yes** or **No**.

    If **No** is selected, a default timestamp server must be set before timestamps can be used. To set a default timestamp server, Choose **Advanced** (Acrobat) or **Document** (Adobe Reader) **> Security Settings > Time Stamp Servers**, select a server, and choose **Set Default**.

6. After the import completes, choose **OK**.

    The settings are automatically imported and should now appear in your list of Time Stamp Servers.

6.0.3.5 Importing Directory Server Settings

In enterprise environments, administrators often set up user machines or export the configuration details to an FDF file which is emailed or made available on a network. In the latter case, you can import the server settings through the Security Settings Console or simply by double clicking on the FDF file containing the data.

To add server settings from a file:

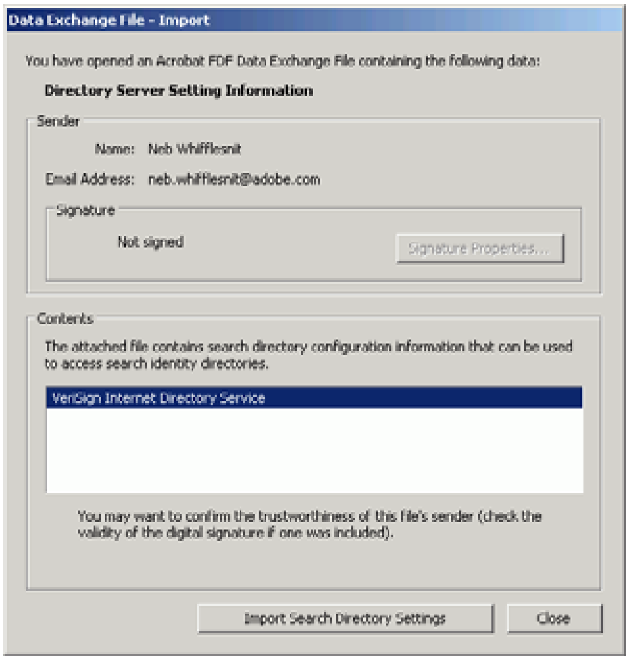
1. Locate the FDF file: find the file in an email or on the local file system and double click on it.

   The FDF can also be imported through the Security Settings Console by choosing **Advanced** (Acrobat) or **Document** (Adobe Reader) **> Security Settings**, selecting **Directory Servers** in the left-hand list, and choosing **Import**.

2. Review the sender's details. Verify the signature properties if needed (Figure 61).

   Note: If the FDF is unsigned, the Signature panel will display *Not signed* and the **Signature Properties** button will be disabled.

Figure 61 Digital ID Directory servers: Importing



Data Exchange File - Import

You have opened an Acrobat FDF Data Exchange File containing the following data:

Directory Server Setting Information

Sender

Name: Neb Whifflesnit

Email Address: neb.whifflesnit@adobe.com

Signature

Not signed

Contents

The attached file contains search directory configuration information that can be used to access search identity directories.

VeriSign Internet Directory Service

You may want to confirm the trustworthiness of this file's sender (check the validity of the digital signature if one was included).

3. Choose **Import Search Directory Settings**.

4. If a confirmation dialog appears, choose **OK**.

   This dialog will not appear if **Do not show this message again** was previously selected.

5. Choose **Close**.

   The settings are automatically imported and should now appear in the Directory Servers list in the Security Settings Console.

6.0.3.6 Importing Adobe LiveCycle Rights Management Server Settings

In enterprise settings, administrators often set up user machines or export the configuration details to an FDF file which is emailed or made available on a network. In the latter case, you can import the server settings through the Security Settings Console or simply by double clicking on the FDF file containing the data.

To import the server settings:

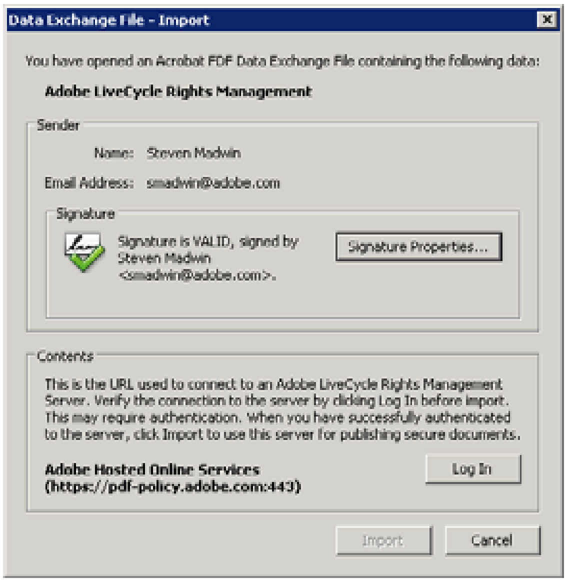
1. Locate the FDF file: find the file in an email or on the local file system and double click on it.

   The FDF can also be imported through the Security Settings Console by choosing **Advanced** (Acrobat) or **Document** (Adobe Reader) **> Security Settings**, selecting **Adobe LiveCycle Rights Management Servers** in the left-hand list, and choosing **Import**.

2. Review the sender's details. Note the following:

   - If the FDF is unsigned, no Signature panel appears in the import dialog.
   - If the FDF is signed, you can use the **Signature Properties** button to find out more information about the sender and the validity of the signature.

   Figure 62 Importing Adobe LiveCycle Server settings



Data Exchange File - Import

You have opened an Acrobat FDF Data Exchange File containing the following data:

Adobe LiveCycle Rights Management

Sender

Name: Steven Madwin

Email Address: smadwin@adobe.com

Signature

Signature is VALID, signed by Steven Madwin <smadwin@adobe.com>.

Contents

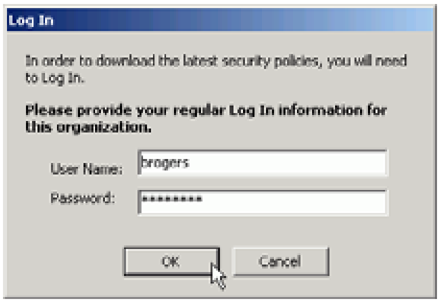
This is the URL used to connect to an Adobe LiveCycle Rights Management Server. Verify the connection to the server by clicking Log In before import. This may require authentication. When you have successfully authenticated to the server, click Import to use this server for publishing secure documents.

Adobe Hosted Online Services (https://pdf-policy.adobe.com:443)

3. Choose **Log In**.

   Tip: You must identify yourself to the server before you will be allowed to import these settings. The Import button does is disabled until you log in.

Figure 63 Logging in to an Adobe LiveCycle Rights Management Server



Log In

In order to download the latest security policies, you will need to Log In.

Please provide your regular Log In information for this organization.

User Name: brogers

Password: ********

4. Choose **OK**.

5. Choose **Import**.

6. If you do not already have a default Adobe LiveCycle Rights Management Server, a dialog appears asking whether or not you want to make this your default server, choose **Yes** or **No**.

7. Choose **OK**.

   The settings are automatically imported and should now appear in the Adobe LiveCycle Rights Management Servers list in the Security Settings Console.

6.0.3.7 Importing Roaming ID Account Settings

In enterprise settings, administrators often set up user machines or export the configuration details to an FDF file which is emailed or made available on a network. In the latter case, you can import the server settings through the Security Settings Console or simply by double clicking on the FDF file containing the data.

To import the server settings:

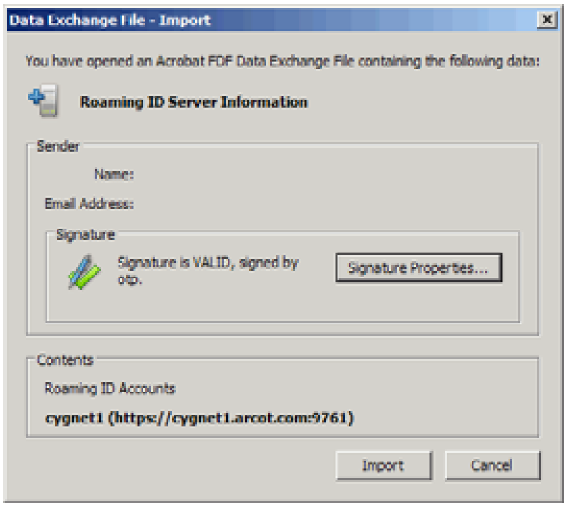
1. Locate the FDF file: find the file in an email or on the local file system and double click on it.

   The FDF can also be imported through the Security Settings Console by choosing **Advanced** (Acrobat) or **Document** (Adobe Reader) **> Security Settings**, selecting **Roaming ID Accounts** in the left-hand list, and choosing **Import**.

2. Review the sender's details. Note the following:

   - If the FDF is unsigned, no Signature panel appears in the import dialog.
   - If the FDF is signed, you can use the **Signature Properties** button to find out more information about the sender and the validity of the signature.

Figure 64 Importing roaming ID server settings



You have opened an Acrobat FDF Data Exchange File containing the following data:

Roaming ID Server Information

Name:

Email Address:

Signature is VALID, signed by otp.

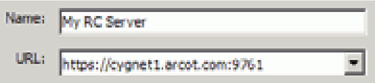
Roaming ID Accounts

cygnet1 (https://cygnet1.arcot.com:9761)

3. Choose **Import**.

4. Verify the roaming ID account name and server URL.

Figure 65 Roaming ID server name and URL



Name: My RC Server

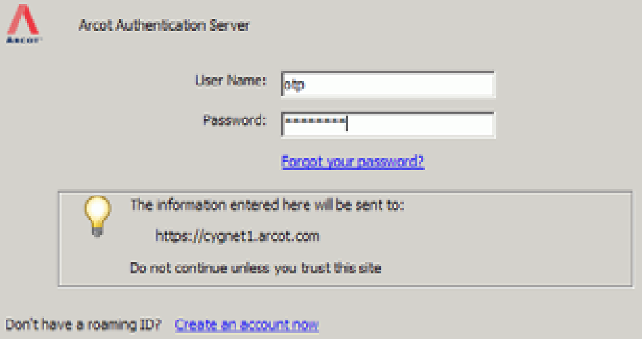
URL: https://cygnet1.arcot.com:9761

5. Choose **Next**.

6. Enter a user name and password.

Tip: The topmost portion of this dialog is customizable and server-dependant. The fields will remain the same, but the branding will vary.

Figure 66 Logging in to a roaming ID server



Arcot Authentication Server

User Name: otp

Password: *********

The information entered here will be sent to:

https://cygnet1.arcot.com

Do not continue unless you trust this site

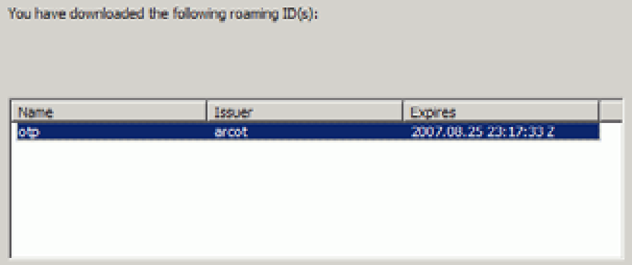
Don't have a roaming ID? Create an account now

7. Choose **Next**.

8. After the confirmation that you have downloaded the roaming ID(s) appears, choose **Finish**.

   The server settings and associated certificates are automatically imported and will now appear in the Roaming ID Accounts list in the Security Settings Console.

Figure 67 Downloaded roaming ID certificates



You have downloaded the following roaming ID(s):

Name	Issuer	Expires
otp	arcot	2007.08.25 23:17:33 Z

6.0.3.8 Importing a Trust Anchor and Setting Trust

Users occasionally need to import a trust anchor so that certificates that chain up to that anchor will also be trusted. This is particularly true in large organizations, and system administrators often distribute a trust anchor so that everyone within that organization can trust everyone else at the same level for signature workflows. For more information about trust anchors, see "Distributing a Trust Anchor" on page 64.

To import a certificate that will be used as a trust anchor:

1. Open the FDF with one of the following methods:
   - Click on the FDF file. It may be an email attachment or a file on a network or your local system.
   - In Acrobat or Adobe Reader choose **File > Open**, browse to the FDF file, and choose **Open**.

   Note: It is unlikely that you will receive a signed FDF file containing a trusted root. However, if you do, simply check **Accept the level of trust specified by the signer for all contacts in this file** and then choose **Close**. Skip the rest of the steps.

2. For unsigned FDF files containing a trusted root (the most likely case), choose **Set Contact Trust**.

3. Import the certificates.

4. Do one of the following:
   - If you already have the certificate:

   1. Choose **Advanced** (Acrobat) or **Document** (Adobe Reader) > **Manage Trusted Identities**.
   2. Choose **Certificates** in the **Display** drop down list.
   3. Select the certificate.
   4. Choose **Edit Trust**.

   - If the certificate is in a signature:

   1. Right click and choose **Signature Properties**.

2. Choose **Show Certificate**.

3. Select the Trust tab.

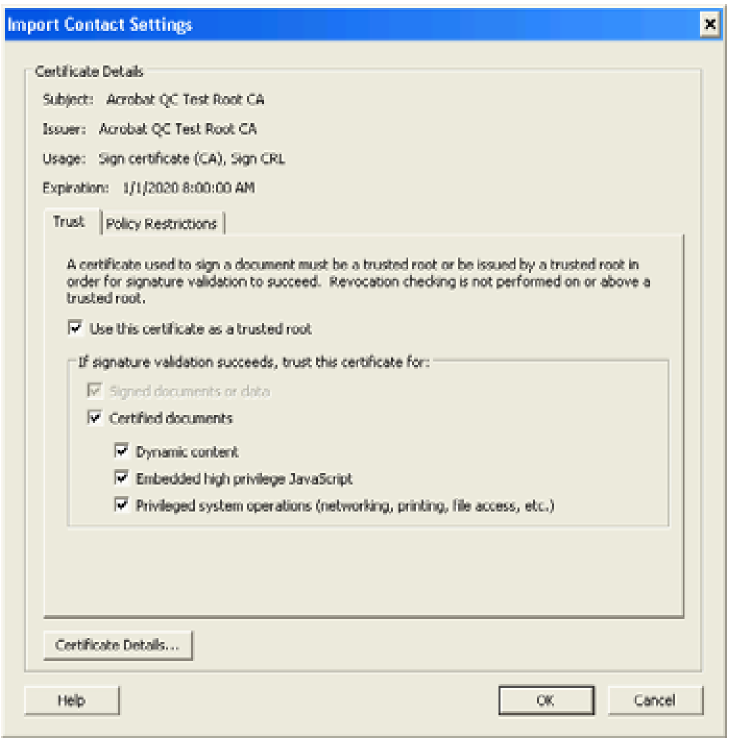
4. Choose **Add to Trusted Identities**.

Tip: If **Add to Trusted Identities** is disabled, the identity is already on your Trusted Identities list. To change the trust settings, you must use the first method above.

5. On the Trust tab, select the trust options. In enterprise settings, an administrator should tell you which trust settings to use.

Note: During an import action, recipients of the distributed trust anchor may be able to inherit its trust settings. Once you've verified the sender, you usually want to accept these settings so you can use the certificate they way the sender intended.

Figure 68 Certificate trust settings



Import Contact Settings

Certificate Details

Subject: Acrobat QC Test Root CA

Issuer: Acrobat QC Test Root CA

Usage: Sign certificate (CA), Sign CRL

Expiration: 1/1/2020 8:00:00 AM

A certificate used to sign a document must be a trusted root or be issued by a trusted root in order for signature validation to succeed. Revocation checking is not performed on or above a trusted root.

☑ Use this certificate as a trusted root

If signature validation succeeds, trust this certificate for:

☑ Signed documents or data

☑ Certified documents

☑ Dynamic content

☑ Embedded high privilege JavaScript

☑ Privileged system operations (networking, printing, file access, etc.)

- **Use this certificate as a trusted root**: Makes the certificate a trust anchor. The net result is that any certificates which chain up to this one will also be trusted for signing. At least one certificate in the chain (and preferably only one) must be a trusted root (trust anchor) to validate signatures and timestamps.

Tip: There is no need to make end entity certificates trust anchors if they issued by a certificate holder whose certificate you have configured as a trust anchor. It is best practice to trust the topmost certificate that is reasonable to trust because revocation checking occurs on every certificate in a chain until that anchor is reached. For example, in a large organization, it is likely you would want to trust your company's certificate. If that certificate was issued by VeriSign, you would not want to make

VeriSign a trusted root unless you wanted to trust every certificate that chains up to VeriSign.

- **Signed documents or data**: Trusts the certificate for approval signatures.

  Tip: This setting is disabled because if the certificate is set as a trust anchor. Trust anchors are automatically trusted for approval signatures.

- **Certified documents**: Trusts the certificate for certification signatures.
  - **Dynamic content**: Trusts multimedia and other dynamic content in certified documents. Selecting this option automatically adds documents that are certified with this certificate to the Trusted Documents list which is maintained by the Multimedia Trust Manager. For this reason, verify your application environment is configured correctly.
  - **Embedded high privilege JavaScript**: Trusts embedded scripts. Certificate settings do not override application-level settings, so even if JavaScript is enabled for a particular certificate, it may not execute unless the application's preferences allow it. This option requires that the application environment be configured correctly.
  - **Privileged system operations (networking, printing, file access, etc.**: Some operations represent a security risk more serious than others. Acrobat considers the following operations potential threats to a secure application operating environment: Internet connections, cross domain scripting, silent printing, external-object references, and FDF data injection. If this checkbox is checked, documents that are certified with this certificate will allow these actions.

  Tip: This feature interacts with the Enhanced Security preferences which may be set by choosing **Edit > Preferences > Security (Enhanced)**. The application always takes the most permissive setting when determining what is allowed. For example, if the trust level for this certificate does not allow privileged operations but the certified file resided in a privileged location, then these operations will be permitted.

6. If you need to specify a policy restriction, do so. Most users only need to set policy restrictions at the request of their administrator. "Certificate Trust Settings" on page 202.

7. Choose **OK** twice.

8. Choose **Close**.

7 Certificate Processing

Table 5 Revocation checking: GUI strings for CRL check

	Sig state	String
Summary Field	Valid	**Default**: The selected certificate is valid. **String for special condition**: See Table 9.
	Invalid	**Default**: The selected certificate has been revoked. **String for special condition**: See Table 9.
	Unknown	**Default**: Could not determine whether the selected certificate is still valid. **String for special condition**: See Table 9.
	Problem	**Default**: Problem determining whether the selected certificate is still valid. **String for special condition**: See Table 9.
Detail string #1	Valid: CRL/OCSP response in signature	**Default**: The selected certificate is considered valid because it does not appear in the Certificate Revocation List (CRL) that is embedded in the document. **String for special condition**: See Table 9.
	Valid: CRL/OCSP outside of signature	**Default**: The selected certificate is considered valid because it does not appear in a Certificate Revocation List (CRL). **String for special condition**: See Table 9.
	Invalid: CRL response is outside of doc	**Default**: The selected certificate has been revoked and appears in a Certificate Revocation List (CRL). **String for special condition**: See Table 9.
	Invalid: CRL response is embedded in doc	**Default**: The selected certificate has been revoked and appears in a Certificate Revocation List (CRL) that is embedded in the document. **String for special condition**: See Table 9.
	Unknown	**Default**: The selected certificate does not provide information on how its revocation status can be verified. It cannot be determined whether this certificate is valid or whether it has been revoked. **String for special condition**: See Table 9.
	Problem	**Default**: An attempt was made to determine whether the certificate is valid by checking whether it appeared in any Certificate Revocation Lists (CRLs). **String for special condition**: See Table 9.
Detail string #2	Any except "Unknown" or "Problem"	**Default**: The CRL was signed by %sSIGNER% on %sDATE1% and is valid until %sDATE2%. There are no special conditions for this field.
	If CRL does not have "valid until" info.	**Default**: The CRL was signed by %sSIGNER% on %sDATE1%. There are no special conditions for this field.

Table 5 Revocation checking: GUI strings for CRL check

	Sig state	String
Detail string #3	Any	**Default**: Click Signer Details to get more information on the source of the revocation information. There are no special conditions for this field.

Table 6 Revocation checking: GUI strings for OCSP check

	Sig state	String
Summary Field	Valid	**Default**: The selected certificate is valid. **String for special condition**: See Table 9.
	Invalid	**Default**: The selected certificate has been revoked. **String for special condition**: See Table 9.
	Unknown	**Default**: Could not determine whether the selected certificate is still valid. **String for special condition**: See Table 9.
	Problem	**Default**: Problem determining whether the selected certificate is still valid. **String for special condition**: See Table 9.
Detail string #1	Valid: OCSP response in signature	**Default**: The selected certificate is considered valid because it has not been revoked, as verified using an Online Certificate Status Protocol (OCSP) response that was embedded in the document. **String for special condition**: See Table 9.
	Valid: OCSP outside of signature	**Default**: The selected certificate is considered valid because it has not been revoked, as verified in real-time using the Online Certificate Status Protocol (OCSP). **String for special condition**: See Table 9.
	Invalid: OCSP response is outside of doc	**Default**: The selected certificate has been revoked, as verified in real-time using the Online Certificate Status Protocol (OCSP). **String for special condition**: See Table 9.
	Invalid: OCSP response is embedded in doc	**Default**: The selected certificate has been revoked, as verified using the Online Certificate Status Protocol (OCSP) response that was embedded in the document. **String for special condition**: See Table 9.
	Unknown	**Default**: The selected certificate does not provide information on how its revocation status can be verified. It cannot be determined whether this certificate is still valid or whether it has been revoked. **String for special condition**: See Table 9.
	Problem	**Default**: An attempt was made to determine whether the certificate is valid by doing a revocation check using the Online Certificate Status Protocol (OCSP). **String for special condition**: See Table 9.

Table 6 Revocation checking: GUI strings for OCSP check

	Sig state	String
Detail string #2	Any except “Unknown” or “Problem”	**Default**: The OCSP Response was signed by %sSIGNER% on %sDATE1% and is valid until %sDATE2%. There are no special conditions for this field.
	If CRL does not have “valid until” info.	**Default**: The OCSP Response was signed by %sSIGNER% on %sDATE1%. There are no special conditions for this field.
Detail string #3	Any	**Default**: Click Signer Details to get more information on the source of the revocation information. There are no special conditions for this field.

Table 7 Revocation checking: GUI strings for MSCAPI check

	Sig state	String
Summary Field	Valid	**Default**: The selected certificate is valid. **String for special condition**: See Table 9.
	Invalid	**Default**: The selected certificate has been revoked. **String for special condition**: See Table 9.
	Unknown	**Default**: Could not determine whether the selected certificate is still valid. **String for special condition**: See Table 9.
	Problem	**Default**: Problem determining whether the selected certificate is still valid. **String for special condition**: See Table 9.
Detail string #1	Valid:OCSP response in signature	**Default**: N/A. **String for special condition**: See Table 9.
	Valid:OCSP outside of signature	**Default**: The selected certificate is considered valid because it has not been revoked, according to Microsoft's cryptographic revocation verification services. **String for special condition**: See Table 9.
	Invalid	**Default**: The selected certificate has been revoked, according to Microsoft's cryptographic revocation verification services. Microsoft's revocation services do not provide details regarding how revocation was performed. **String for special condition**: See Table 9.
	Unknown	**Default**: The selected certificate does not provide information on how its revocation status can be verified. It cannot be determined whether this certificate is valid or whether it has been revoked.
	Problem	**Default**: An attempt was made to determine whether the certificate is valid by doing a revocation check using Microsoft revocation services. There were problems encountered while performing this check. Problem details and the mechanism used to perform revocation checks are not available from Microsoft revocation services. **String for special condition**: See Table 9.

Table 7 Revocation checking: GUI strings for MSCAPI check

	Sig state	String
Detail string #2	Any except "Unknown" or "Problem"	**Default**: The OCSP Response was signed by %sSIGNER% on %sDATE1% and is valid until %sDATE2%. There are no special conditions for this field.
	If CRL does not have "valid until" info.	**Default**: The OCSP Response was signed by %sSIGNER% on %sDATE1%. There are no special conditions for this field.
Detail string #3	Any	**Default**: Click Signer Details to get more information on the source of the revocation information. There are no special conditions for this field.

Table 8 Revocation checking: Revocation info button text

Condition	Button text
CRL check	CRL Signer Details...
OCSP check	OCSP Signer Details...
MSCAPI	No button shown
Path validation error	No button shown
Certificate does not chain to trusted root	No button shown
Certificate is self-signed	No button shown

Table 9 Revocation checking: Strings for special conditions

Field	Sig state	Path validation error	Untrusted chain	Self-signed	OCSP no check	Cert is trust anchor
Summary	Valid	NA	NA	Revocation checks not performed.	Revocation checks not performed.	Revocation checks not performed.
	Invalid	**NA**	**NA**	**NA**	**NA**	**NA**
	Unknown	Revocation checks not performed.	Revocation checks not performed.	Revocation checks not performed.	NA	NA
	Problem	NA	NA	NA	NA	NA

Table 9 Revocation checking: Strings for special conditions

Field	Sig state	Path validation error	Untrusted chain	Self-signed	OCSP no check	Cert is trust anchor
	Valid: CRL/ OCSP response in signature	NA	NA	Self-signed and root certificates do not provide a mechanism for revocation checking to be done.	The selected certificate is considered to be valid because it has OCSP No-Check extension (see the Details Tab for details).	The selected certificate is either a Trusted Root or is a certificate above the Trusted Root in the certificate chain (see the Trust Tab for details). No revocation checks are done for such certificates, they are inherently considered trustworthy.
	Valid: CRL/ OCSP outside of signature	NA	NA	Self-signed and root certificates do not provide a mechanism for revocation checking to be done.	The selected certificate is considered to be valid because it has OCSP No-Check extension (see the Details Tab for details).	The selected certificate is either a Trusted Root or is a certificate above the Trusted Root in the certificate chain (see the Trust Tab for details). No revocation checks are done for such certificates, they are inherently considered trustworthy.
	Invalid: CRL response is outside of doc	NA	NA	NA	NA	NA
	Invalid: CRL response is embedded in doc	NA	NA	NA	NA	NA
	Unknown	There were errors encountered while building the certificate chain to a trusted root Certificate. Revocation checks	The selected certificate does not chain up to a trusted root certificate (see the Trust Tab for details). The result	Self-signed and root certificates do not provide a mechanism for revocation checking to be done.	NA	NA

Table 9 Revocation checking: Strings for special conditions

Field	Sig state	Path validation error	Untrusted chain	Self-signed	OCSP no check	Cert is trust anchor
Detail 2 and 3		There are no special conditions for these fields.				

8 Index