

# Electronic Signatures in PDF Files: A Guide to the Perplexed

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Adobe makes powerful software. But few have accused them of making easy-to-use software. This is true even one of the most popular free programs of all time, Adobe Reader. With Adobe Reader 8, users may – if the originator of the PDF document has configured it correctly – use their digital ID to electronically sign the PDF document.

By electronically signing a PDF, you can assure people that it hasn't been changed since you signed it.

But Adobe's capacity to provide a baffling user interface truly shines when one is trying to use Adobe Reader to electronically sign a PDF document.

<digression>

Now, please pardon my digression. Long, long ago – before Windows, and even before MS-DOS – there were personal computers. And these PCs, based on the CP/M operating system, had productivity software such as the then-popular WordStar. Many still retain their fondness for this hoary old word processor (and I still, to this day, use many of the shortcut keys from WordStar, whether in Microsoft Word or in Programmer's File Editor). The arcane key combinations of WordStar – such as ^C to pagedown, ^R to pageup, ^KS to save a file, ^KX to exit – were efficient for experienced users but presented a cliff-like learning curve for the PC tenderfoot. Indeed, one year, the competition for “most challenging personal computer game” was won by WordStar.

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This brief essay attempts to guide users through the maze of twisty passages, all alike, that lead on, eventually, to success in electronically signing a PDF document. Think of it as a hint book for a particularly difficult computer game.

## ***PDF Electronic Signatures Grossly Oversimplified: the Mental Model***

User interaction gurus like Alan Cooper insist that we should create our programs' interfaces in line with the user's mental model of the process. I must admit that, after my first few experiences with Adobe's electronic signature, my mental model of the process resembled nothing so much as a plate of spaghetti and meatballs. Nonetheless, I think I understand the process enough now to provide a gross oversimplification—one that may perhaps serve as a mental model you as well.

The following isn't a great analogy, but it's better than none. Think of an electronic signature as a rubber stamp kit, one that you can customize at home with different words or pictures. First, you have to buy the rubber stamp kit. And, once you've bought the rubber stamp kit, you have to customize it so it shows what you want—maybe your name and title, or perhaps a scan of your actual handwritten signature. The rubber

stamp kit is a digital ID, and the various patterns you create for it are your various digital signatures.

## Digital IDs

Before you can electronically sign a PDF document—for that matter, before you can even create a customized digital signature—you must create a **digital ID**. A digital ID is a small encrypted file that resides on your hard disk, created by the Adobe Reader program. (Yes, you can copy this file from computer to computer and use the file on multiple different computers.)

Digital IDs come in two flavors.

First, you can pay to buy a digital ID from a **certificate authority**. This is a company that has a good reputation, and is willing to—for a small fee—certify that you are who you say you are, and that your digital ID is indeed yours and yours alone. This is really a pretty solid signature isn't it? Much better than that scrawl you put on your checks. Adobe says a digital ID is like a driver's license or passport, and when you get a digital ID from a certificate authority, it certainly is as good as a driver's license or passport.

Second, you can provide a **self-signed digital ID**. This is at least as good as your signature, so it should be adequate for almost anything you'd sign. If you sign a PDF with a self-signed digital ID, Adobe Reader will let people know that the digital ID can't be verified.

Well, most people don't know precisely what your handwritten signature looks like, either, but they're willing to accept it. Sure, sometimes someone asks to look at a photo ID with a signature on it and compares the signatures, but how often does that really happen? I wonder if this "digital ID cannot be verified" is just a ploy to get lots of people to spend money getting a third party to verify their digital IDs? Well, probably not. If think about it, traditional signatures are very, very insecure... and this is an attempt to improve things.

It is potentially possible that someone could fake a self-signed digital ID with your name on it. So if you want to send someone a PDF with an electronic signature that involves paying them thousands of dollars, maybe you want a digital ID from a certificate authority. But if you are just signing a form to pass on to someone else in the office—for example to approve the revision of a form—a self-signed digital ID is just fine.

I suggest you create a self-signed digital ID first.

## Digital Signatures

You can use a digital ID—either self-signed or from a certificate authority—to create one or more digital signatures. For example, you could have one digital ID, but use separate digital signatures for your two different jobs. As with the customizable rubber stamp kit mentioned above, you can modify your signature in different ways. One signature might just show text with your name and position. Another might have a scan of your signature. I suggest that, to begin with, you create a digital signature with just text. Later, you can add another digital signature with a scan of your handwritten signature if you so desire.

### How To Create a Self-Signed Digital ID and Create a Digital Signature

First, understand this. Creating a PDF digital ID and creating a digital signature are different processes. You have to create a digital ID first. The menus for creating digital IDs and digital signatures are in different places in Adobe Reader.

To create a self-signed digital ID (on Windows, using the latest Adobe Reader as of the date of this document; if you're using Linux or Mac you're on your own here):

- From the menu at the top, select **Document > Security Settings**.
- Select **Digital IDs**, and click **Add ID**.
- Select **Add a new digital ID I want to create now** and click Next.
- Select **Windows Certificate Store** and click Next.
- Fill in the screens as you wish, and then press Finish to set up the self-signed digital ID.

Next, use your digital ID to create a digital signature:

- Choose **Edit > Preferences > Security**
- Click New and select the options you wish for your digital signature.

(Remember, you can come back and use your digital ID to create a new digital signature with a scanned signature later if you wish.)

### To Digitally Sign a PDF

Now that you have created a self-signed digital ID and a digital signature, you can now digitally sign PDF documents in the free Adobe Reader. To digitally sign a PDF, the PDF must have signature fields. These signature fields can be added to a PDF only with the full Adobe Acrobat program.

To sign a PDF, first open the PDF in Adobe Reader. Then, look at the bar on the left side and click on the icon of a page being signed by a pen. (Or, from the menu, select **Document > Sign** to get similar choices via menu.)

This will bring up a sidebar listing existing signatures and signature fields. While it is possible to make signatures visible on the form, it is also possible to make them invisible, in which case, they only show in this sidebar.



Click on one of the signature fields and follow the prompts to digitally sign the document. Adobe Reader will prompt you to save under a new name.

Done!

### Further Information

If you would like to go further or learn more, you should review the help file

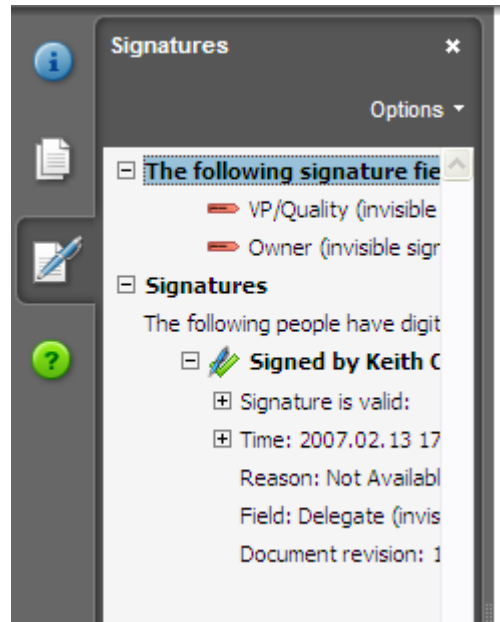
with Adobe Reader, and then consult the following web pages:

<http://www.verisign.com/products-services/security-services/pki/pki-application/trusted-form-signing/individual/index.html>

(how to buy your own digital ID from Verisign)

[http://blogs.adobe.com/acrolaw/2007/02/creating\\_a\\_tran.html](http://blogs.adobe.com/acrolaw/2007/02/creating_a_tran.html) (Creating a Transparent Signature Stamp – I did this and it's not all that hard.)

<http://www.acrobatusers.com/articles/digital-signatures-pdf-acrobat> (Acrobat User Community - Digital Signatures in PDF & Acrobat)



If you are to cosign a document that has already been signed by somebody else, you will need to “trust” their electronic signature. To import a self-signed signature ID from this PDF into your list of trusted identities, do the following (taken from Adobe’s documentation): *You can safely add a certificate to your trusted identities from a signed PDF by first verifying the fingerprint with the originator or the certificate.*

1. Open the PDF containing the self-signed signature.
2. Open the signature panel, and select the certificate in the Signatures panel.
3. On the Options menu, click Show Signature Properties, and then click Show Certificate.
4. If the certificate is self-signed, contact the originator of the certificate to confirm that the fingerprint values on the Details tab are correct. Trust the certificate only if the values match the values of the originator.
5. Click the Trust tab, click Add To Trusted Identities, and click OK.
6. In the Import Contact Settings dialog box, specify trust options, and click OK

Digitally Signed (with a transparent digital “manual” signature),