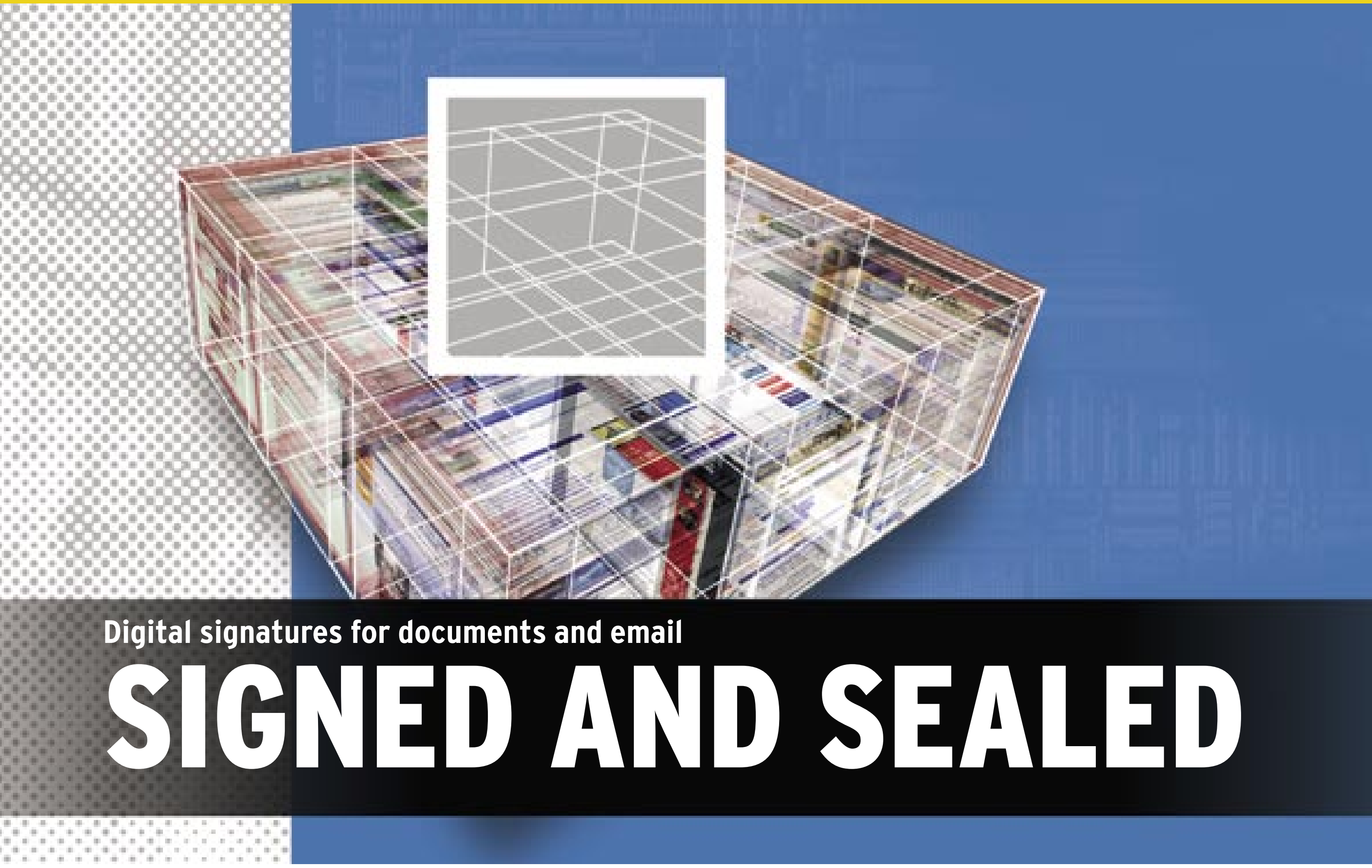


Digital signatures for documents and email

SIGNED AND SEALED

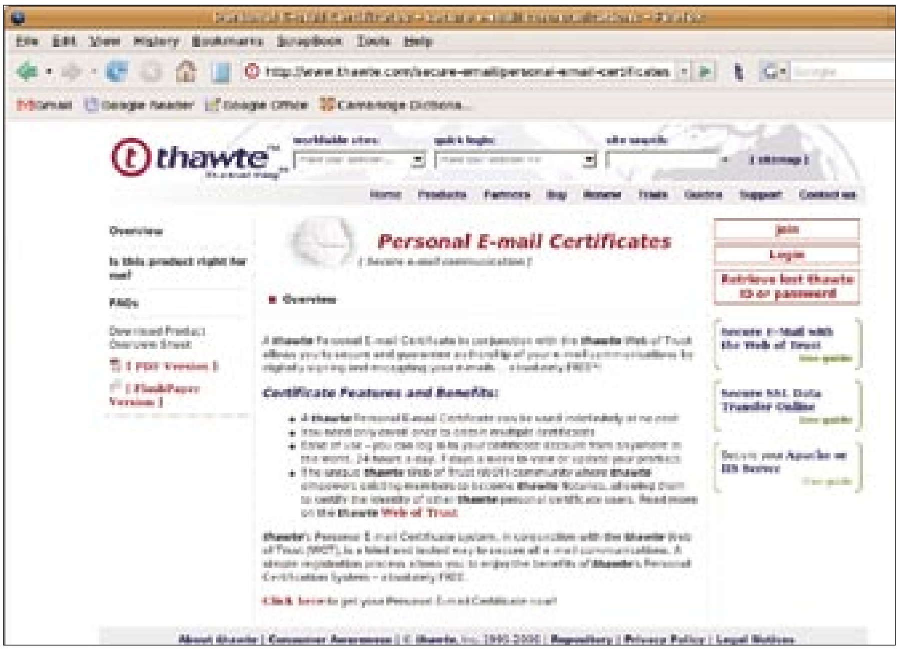
We'll show you the free and easy way to set up digital signatures for office documents and email. **BY DMITRI POPOV**

Although the digital signature features in OpenOffice.org and Thunderbird are easy to use, a digital signature requires a digital certificate, and the task of obtaining one is not always so easy. Digital certificates are normally issued by what are known as certificate authorities, and many of these authorities charge serious money. Moreover, the whole process of getting a digital certificate and installing it on your computer can be quite convoluted. But despair not: this Workspace installment shows you how to get free and self-signed certificates and then use them to sign your personal emails and OpenOffice.org documents. Before you obtain and install a certificate, make sure you have the latest version of the Mozilla Firefox browser on your machine. Firefox acts as a tool for storing and managing certificates.

Personal Email Certificate

Thawte is one of the most well-known certificate authorities, partly because of its founder, Mark Shuttleworth, is the man behind the Ubuntu Linux project. As you might expect, Thawte offers a wide range of certificate-related services, including free email certificates. To obtain your own free certificate, point your browser to Thawte's website [1] and press the *Join* button to create an account.

A wizard guides you through the enrollment process, and once you've completed it, you can log into Thawte. To request a new certificate, go to *Certificates*



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Join
Login
Retrieve lost thawte ID or password
Secure E-Mail with the Web of Trust
Secure SSL Data Transfer Online
Secure your Apache or IIS Server

Personal E-mail Certificates

[Secure e-mail communication]

■ Overview

A **thawte** Personal E-mail Certificate in conjunction with the **thawte** Web of Trust [illegible]

Certificate Features and Benefits:

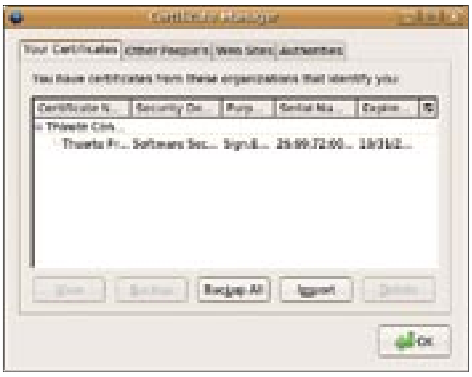
- A **thawte** Personal E-mail Certificate [illegible]
- [illegible]
- [illegible]
- The unique **thawte** Web of Trust [illegible] **thawte** [illegible] on the **thawte** Web of Trust.

thawte's Personal E-mail Certificate system, in conjunction with the **thawte** Web of Trust (WOT), [illegible] **thawte**'s Personal Certification System – absolutely FREE.

Click here to get your Personal E-mail Certificate now!

About thawte | Consumer Awareness | © thawte, Inc. 1995-2006 | Repository | Privacy Policy | Legal Notices

Figure 1: Thawte offers free email certificates.



You have certificates from these organizations that identify you:

Certificate N...	Security De...	Purp...	Serial Nu...	Expire...
Thawte Con...				
Thawte Fr...	Software Sec...	Sign,&...	25:09:72:00...	10/31/2...

Figure 2: Using the Certificate Manager to install and manage certificates.

| *Request a certificate*. Press the *Request* button next to the *X.509 Format Certificates* item and follow the instructions. There are a couple of things you should keep in mind when requesting a certificate. First of all, you must select Mozilla Thunderbird/Firefox from the list of software. In the *Configure X.509v3 certificate extensions* screen, you should press the *Accept* button next to the *Accept Default Extensions* section, and you should also select the highest encryption strength supported by your browser (2048-bit for Firefox). Once the certificate is created, you'll receive an email from Thawte containing a direct link to the certificate. Click the link to install the certificate in Firefox. Note that you must use the same browser, on the same machine, logged in as the same user, as you were when you made the request.

Obviously, to use the installed certificate to sign emails, you must install it into Thunderbird. To do this, choose *Edit* | *Preferences* | *Advanced* | *Encryption* in Firefox and press the *View Certificates* button. Select the Thawte certificate and press *Backup*. Specify the required password, and save the certificate. In Thunderbird, choose *Edit* | *Preferences* | *Privacy* | *Security*, and press the *View Certificates* button. Press the Import button, and import the saved certificate using the specified password.

To digitally sign an email message, open it for editing and choose *Digitally Sign This Message* from the Security menu. When prompted to set up a personal certificate, press *Yes*. Select the

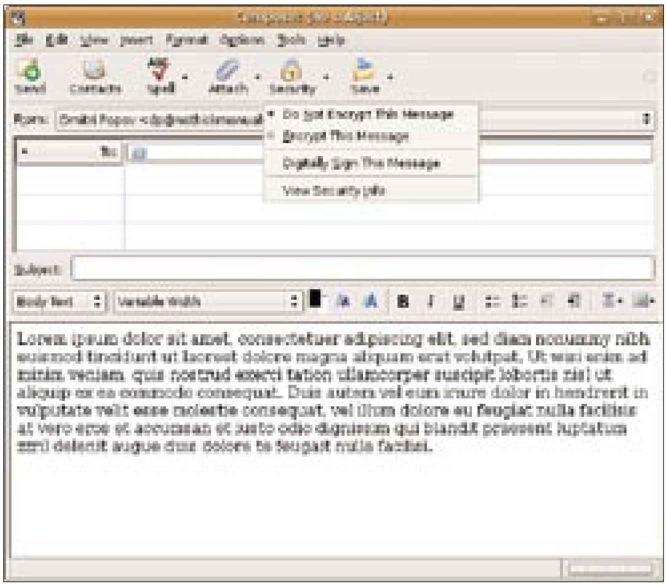


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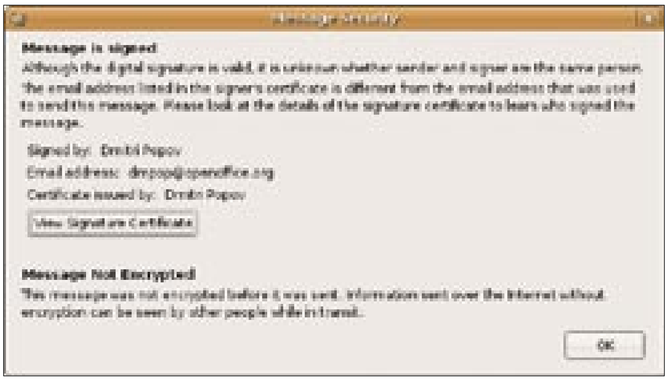
Figure 3: Digitally signing an email message in Thunderbird.

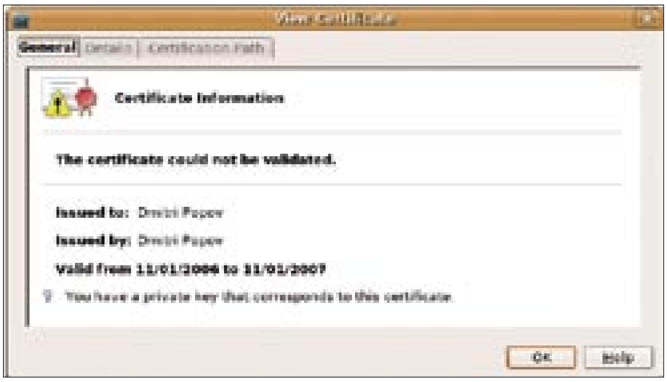


Message is signed
Although the digital signature is valid, it is unknown whether sender and signer are the same person. The email address listed in the signer's certificate is different from the email address that was used to send this message. Please look at the details of the signature certificate to learn who signed the message.

Signed by: Dmitri Popov
Email address: dmpop@openoffice.org
Certificate issued by: Dmitri Popov

Message Not Encrypted
This message was not encrypted before it was sent. Information sent over the Internet without encryption can be seen by other people while in transit.

Figure 4: Viewing the certificate's details in Thunderbird.



Certificate Information

The certificate could not be validated.

Issued to: Dmitri Popov
Issued by: Dmitri Popov
Valid from 11/01/2006 to 11/01/2007
You have a private key that corresponds to this certificate.

Figure 5: Viewing the certificate in OpenOffice.org.

Thawte certificate using the Select button next to the field labeled *Use this certificate to digitally sign messages you send.* If you want all your messages to be digitally signed by default, tick the *Digitally sign messages* check box. Press *OK*, and a tiny pen icon appears in the bottom-right corner of the window, indicating that the email has been digitally signed. When you send the email, the recipient can check your digital signature and view the certificate's details by pressing on the Pen icon.

Creating a Self-signed Certificate

The free email certificate provided by Thawte has one serious drawback, though: unless you complete the process that verifies your identity (known as Web Of Trust [2]), your certificate displays the generic "Thawte Freemail Member" name. This is not particularly useful for people viewing your certificate. You can, however, create a personal self-signed certificate that contains your personal information such as name, address, company, etc. To create a self-signed certificate, you need to have the openssl package installed on your machine. Most major Linux distributions comes with openssl preinstalled, or you can use your package manager to quickly install it on your system.

The process of creating a personal self-signed certificate is straightforward. First, you have to create your own random key:

```
openssl genrsa -des3 1024 > ➘
dmpop-key.cert
```

Replace *dmpop-key* with whatever name you like, and enter a desired password at the prompt. Next, you have to create the certificate itself using the following command:

```
openssl req -new -key ➘
./dmpop-key.cert -x509 ➘
-days 365 -out dmpop-cert.pem
```

This creates an X509 certificate that is valid for 365 days. Replace *dmpop-cert* with your own name, enter the specified earlier password, and provide the required information. Finally, create a PKCS12 compatible certificate containing both the certificate and the private key:

```
openssl pkcs12 -export -out ➘
personalcert.p12 -name ➘
"My Personal Certificate" ➘
-inkey dmpop-key.cert ➘
-in dmpop-cert.pem
```

This creates the *personalcert.p12* file, which you should install in Firefox. Choose *Edit* | *Preferences* | *Advanced* | *Encryption*, and press the *View Certificates* button. Press the *Import* button, and import the certificate using the specified password. If you plan to use the certificate to digitally sign emails, import it into Thunderbird as described previously.

Signing OpenOffice.org Documents

To sign an OpenOffice.org document using the certificate, choose *File* | *Digital Signatures*, press the *Add* button, select your certificate, and press OK to close the dialogs and sign the document. A tiny Seal icon appears in the Status bar, indicating that the document has been digitally signed. The digital signature ensures the authenticity of the document, among other things. In other words, the Seal icon indicates that the document has not been altered in any way. Other users can view the certificate by double-clicking the Seal icon and pressing the *View Certificate* button. Keep in mind that modifying the signed document on your machine automatically removes the digital signature, and you must sign the document again once you're done editing it.

There are also other indicators that show the security status of the document. A red seal and a small yellow triangle with an exclamation mark indicate that the document signature is in order, and that the document hasn't been modified, but the certificate used for signing could not be validated. A yellow triangle with a black exclamation mark indicates that the document signature is broken. This signals that the document has been altered and can't be trusted.

Final Word

While you can easily obtain a free digital certificate or create your own, keep in mind that they are better suited for personal communication or document exchange with people you know and trust. Why? Because these certificates are suitable for ensuring that the document or email hasn't been altered in any way, but they are less useful when it comes to validating your identity. In this case, you should at the very least validate your identity via Web of Trust. ■

INFO

[1] Thawte: *http://www.thawte.com/secure-email/personal-email-certificates/index.html*

[2] Web of Trust: *http://www.thawte.com/secure-email/web-of-trust-wot/index.html*