



Authorizing Form Templates

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Authorizing Form Templates

Chapter 2 explains how you can use signature cells to allow Informed Filler users to digitally sign completed forms, much like you sign a paper form. In this chapter, you'll learn how you can further protect the integrity of your electronic forms by authorizing templates for use in your organization. Authorizing templates provides the same authentication and tamper detection for your form templates as signing completed forms with Informed Filler does for form data. With authorized templates, Informed Filler users can verify the authenticity of a template at any time.

How it Works

Signing a completed form with Informed Filler signs only the form data, leaving the template open to tampering. Without changing the data on a form, a malicious user could alter the form template and, in doing so, change the meaning or context of the data.

For example, suppose a loan application must go through two levels of screening before it can be approved. A loans officer interviews the client and then selects a 'Not recommended' checkbox on the application form and signs it with a digital signature. The application then goes to the bank manager who has the final authority to approve or reject the loan application.

The screenshot shows a digital form interface. At the top, there are several empty rectangular boxes. Below them, there are two checkboxes: 'Recommended' (unchecked) and 'Not Recommended' (checked). Underneath the checkboxes is a signature field containing a small icon of a person and the text 'Hiram Firem (9/19/96)'. Below the signature field, the text 'Loan Officer's Signature' is displayed. At the bottom of the form, there is a status bar showing '5 Records', a search icon, '5 of 5', and several navigation icons.

If a person wanted a loan to be approved, he could secretly alter the form template used by the bank manager so that the application appears to have been recommended by the loans officer. To do so, he would simply use Informed Designer to change the title of the 'Not recommended' checkbox field to 'Recommended,' and the 'Recommended' title to 'Not recommended.' When the bank manager views the data with the altered template, it might look like the one shown in the illustration on the following page.

<input type="checkbox"/> Not Recommended	<input checked="" type="checkbox"/> Recommended
 Hiram Firem (9/19/96)	
Loan Officer's Signature	

5 Records | 5 of 5

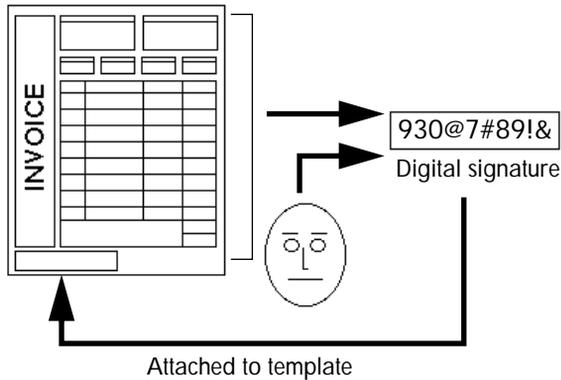
Verifying the loans officer's signature would show that the data on the form has not been altered because the values of the checkboxes have not changed. However, by switching the cell titles on the form template, the meaning or context of those values is different. The bank manager would be misled to believe that approval of the loan application was recommended.

In the example above, the tampering is fairly obvious and is used to illustrate the point. In real world situations, tampering could be much more subtle while still causing serious security breaches.

Informed Designer's Authorize command provides a method for securely authorizing a form template. Doing so allows the Informed Filler user to check the template to ensure its representation is authentic (see "Verifying with Informed Filler" later in this chapter).

Like signing completed forms with Informed Filler, Informed Designer relies on signing services such as Nortel's Entrust for authorization purposes. Informed Designer accesses signing services through the Informed signing plug-ins you have installed in your plug-ins folder.

When you authorize a template, Informed Designer examines the characteristics of the template, including all objects, their size, position, and attributes. The signing service signs, or processes, this information to create a digital signature. A digital signature is like a special number that is derived from information about the person signing and the characteristics of the template being authorized. This number can reliably identify the signer and detect any changes in the authorized template. While the digital signature is stored with the template, the authorization process does not alter the template itself.



Once a template has been authorized, you or the Informed Filler user can verify its authenticity. The verification process involves re-creating parts of the digital signature using the current template, then comparing the results with the original signature. If they are not equal, then either the authorized template or the digital signature itself has been changed or tampered with.

Accommodating Revisions

Over time, templates usually need to be revised. A revision can be as simple as adjusting the spacing or size of a cell, or as significant as adding or removing cells, or changing calculations and check formulas to account for changes in the underlying workflow process. In a technical sense, even the simple conversion of a template to a newer format when the Informed software is upgraded to a new version can constitute a “new” version of the template. (Even though the template’s visual appearance and functionality do not change, the internal—byte for byte—representation of the template might.)

When changes to a template are needed, the form designer decides whether or not it is appropriate to revise the existing version of the template, or to create and introduce a completely new template without affecting the previous version. For example, revising an existing template to accommodate a cosmetic change (such as a new company logo, or changing the size of a cell) might not affect the meaning of the data on previously filled out forms, whereas adding or removing cells on an existing template might.

Note

Care must be taken when revising and replacing an existing version of a template with a new version. Be sure to do so only if the new version provides an appropriate context for Informed Filler users to “see” the data for forms they’ve already filled out. For information about form revision and related issues, please see Chapter 8, “Form Template Distribution and Revision.”

It is because of the need to revise templates, particularly in minor ways, that it is necessary to separate the authorizing of templates from the actual signing of the data on completed forms. If signing a completed form involved signing both the form data and the template together, you would not be

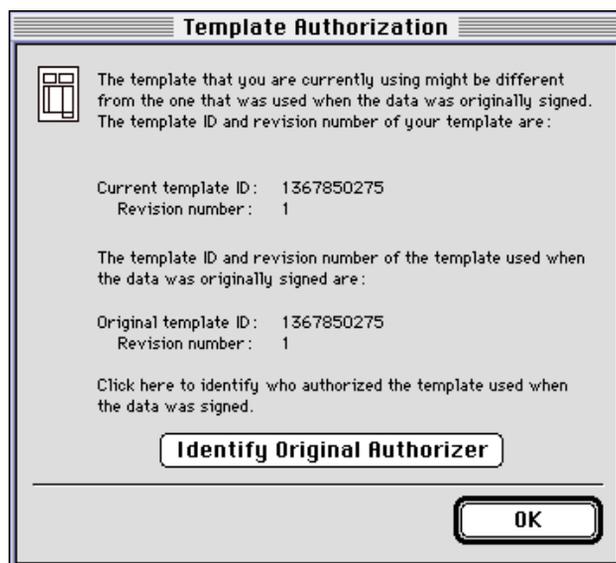
able to later replace the template with a new revision, even if doing so were appropriate, given the nature of the template revision changes. Replacing the template would invalidate the signature of the previously completed and signed form because the template would have changed in comparison with the one that was used when the completed form was signed.

Verification with Informed Filler

Authorizing a template provides information that can be useful to many users during the processing of the form. For example, if John is going to fill out an expense form with Informed Filler, he can first verify the template he is using by choosing the Verify Template command from the Signatures submenu. The template is verified and the details of the person who authorized it are revealed. If the template has been altered or tampered with, the verification process will reveal this.

When John fills out and signs his form, information about the version of his template and the person who authorized it is included with his digital signature. This information is useful later when John's signature is verified. The form is then sent to Donna, John's manager, for approval.

Like John, Donna can verify that the template she is using (which could be a different version from the one John used to complete his form) is valid before she approves or rejects the form. Furthermore, when she verifies John's signature to ensure that his data has not been altered, she can also view the Template ID and Revision Number of the template that John used. The name of the person who authorized John's template is also revealed.



For more information on verifying signatures and templates with Informed Filler, see Chapter 4 of your *Informed Filler User's Manual*.

Authorizing and Verifying Templates

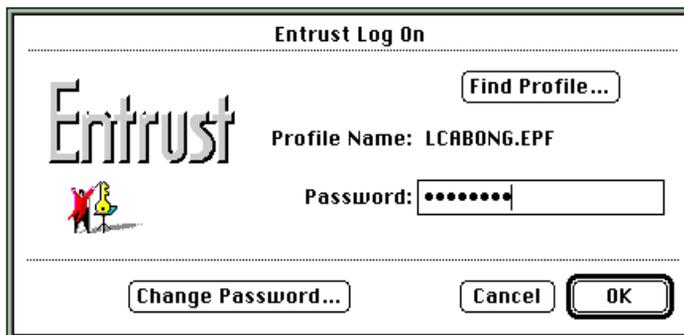
Like signing and verifying completed forms with Informed Filler, you can authorize and verify a template using any available signing service. Informed Designer accesses a signing service through the use of Informed signing plug-ins. The use of signing plug-ins makes it easy for Shana to provide support for new signing services as they become available.

To authorize a template, choose **Authorize...** from the Authorization submenu under the Form menu. If you have more than one signing plug-in in your plug-ins folder, you'll be asked to choose which service to use.



Select the signing service that you want to use from the 'Sign using' drop-down list, then click 'OK.' To cancel the Authorize command, click 'Cancel' instead.

After you click 'OK,' you'll see the authentication dialog box that corresponds to the signing service you are using. Follow the signing procedure for your chosen service to authorize the template. Below is the authentication dialog box for Entrust.



To verify a template, choose **Verify...** from the Authorization submenu under Form. Informed Designer verifies the template and, if valid, displays the name of the person who authorized it.



If verification fails, you'll see a dialog message indicating so.

Some signing services allow you to remain authenticated after you've done so once. Informed Designer will automatically log off when you quit the application. You should be careful to never leave your computer unattended while you're authenticated. Otherwise someone else might use your signing identity to authorize templates or sign forms. You can explicitly log off from a signing service by choosing **Log Off Service** from the Authorization submenu.

