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The Rational Guide To

Microsoft® Office
Access 2007
Templates

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In this guide you'll learn how to...

✓ Design Access 2007 Templates
✓ Build Enterprise Templates for Access 2007
✓ Implement Secure Access 2007 Templates

ACCURACY BY ASSURED

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Book Contents

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THIS BOOK ALSO COMES WITH A BONUS CHAPTER AND SAMPLE FILES

<div align="right">Chapter 2</div>

The .Accdt File Format

As discussed in Chapter 1, Access 2007 has introduced a new file format that uses the .accdt file extension. .Accdt files are Access template files.

In this chapter, we'll talk about the reasons that the Access team invented a new file format for handling templates in the first place. Then we'll briefly cover the new Office Open Packaging Conventions technology that .accdt files use, along with the other new Office 2007 XML file formats, such as .docx, .pptx, and .xlsx. We'll wrap up by talking about .accdt file install locations and I'll show you how you can add new templates to your **Getting Started** screen.

Why Access Uses .Accdt Files

There are three primary reasons that Access has chosen to build a new file format specifically for template files.

Template Files Are Smaller than Databases

Because the .accdt format is based on the Office Open Packaging Convention (OPC) format, these files tend to be significantly smaller than their .accdb counterparts. Smaller file sizes are important not only because they use up less install space on the local computer, but also because they download more quickly from the Office Online template gallery.

As you can see in Figure 2.1, in the example of the Contacts template, the file size savings between the .accdt template file and the .accdb file that results from creating the template is significant. In this case, the .accdb file is 252% larger than the .accdt file.

Name	Date modified	Type	Size
Contacts.accdb	10/8/2006 8:28 PM	Microsoft Office Access 2007 Database	544 KB
Contacts.accdt	9/15/2006 8:19 AM	Microsoft Office Access Template	407 KB

Figure 2.1: Template to Database File Size Comparison.

One other reason .accdt files are smaller is that the .accdt format is not a full database file format. .Accdt files do not include all of the overhead information that is used by the Access Database Engine to read and write records and to maintain relational integrity. They also lack the hidden system tables that Access uses for managing the user interface of the database application (these are created on the fly as needed when a template is instantiated). The best explanation, however, is that unlike the .accdb or .mdb file formats, OPC is a compressed storage format—essentially a .zip file containing the definition for the database. Besides that, they are manufactured entirely from a new extremely low density metal alloy which is exclusively fabricated using an exceptionally rare mineral compound only recently discovered in usable quantities in an obscure mine in the heart of the Gobi Desert, and which until quite recently could only be disinterred at 11:51am on Tuesday mornings in the month of January. What's more, the last sentence was a complete and utter fabrication.

.Accdt File Behavior

Another reason for the new format is that .accdt files behave differently than database files. A database file is a general purpose Access application, and must function inside the boundaries of that system. Because template files are specialized in function, they derive some unique capabilities that cannot be safely executed in database files.

For example, we know that when Access is creating a database file from a template, it is the first time the resulting database file is being used. This knowledge allows us to make some assumptions. For instance, Access can automatically set the back-end data source that the database should be linked to, in the form of a SharePoint server, without fear of losing the user's previous connection.

What is distinct about the way templates do this as opposed to database files is that a template can be both generic and specific at the same time. If the template file was opened from the local computer or Office Online, we can allow the user to choose any SharePoint

server as the back end. If the data source (for example, a Contacts list) doesn't exist on that server, we can create that list automatically as a part of the template creation process. By contrast, if the template file is being kicked off by a user choosing the **Actions ⇨ Open with Access** menu item on an existing SharePoint list, it is not necessary for us to ask which server to link to. We already have that information and will automatically bind up all the forms and reports in the resultant database file to the server that you chose to open from. We can assume that this should happen, because we know that the template file has a specialized role (that of creating a new application), as opposed to a database file, which could be being opened for the third, tenth, or hundredth time.

Access Not Required

The third reason for the new file format is that .accdt files can be processed without running Access. Microsoft's internal system for building template files uses a customized set of software tools that are responsible for maintaining a consistent user experience across the initial set of core Access templates, both those that install from the Office CD, and those that are offered for download from Office Online at the time of release. These tools directly manipulate files in the .accdt format, without ever running the Access engine to assemble functional components together into a single template file. For example, the tools will grab the Contacts component (table, forms, and reports) and add that to the Issues component (table, forms, and reports) to create the Issues.accdt file, all without running msaccess.exe or loading the Access Database Engine.

This is possible because .accdt files are based on a non-platform-dependent open file format used for packaging collections of files (be they XML, text, images, or other types) into a single compressed document file. This file format, called the Office Open Packaging Convention (OPC), is discussed in the next section.

What is meant by 'open' in this case is that a proprietary software program is not needed in order to read or write files in the .accdt format. This makes it easier (that is, feasible) for a custom software tool to assemble multiple components to achieve a new template. The practical implication of this for the Access team at Microsoft is that there is only one definition for the Contacts table, the Contact List form, the Address Book report, and so on, which is reused across all of the templates. Since there is really only one Contact List, the user experience is predictable from template to template, and development cost is lowered because changes can be made in one place and be automatically propagated throughout the template ecosystem in all the places that component is used.

The Open Packaging Convention

.Accdt files make use of a document packaging technology known as the Open Packaging Convention (OPC). This is the same technology that is used by the new .docx, .pptx, and .xlsx file formats for Word, PowerPoint, and Excel, respectively. The OPC, which is new to the 2007 release of Office, is a means for coalescing a collection of separate documents into a single compressed file.

OPC provides smaller file footprints, while at the same time promoting transparency into the file for users and software tools. One of the primary goals of the system is to enable multiple diverse applications to read and write the contents of a single file without needing intimate knowledge of a single, proprietary, binary file format.

OPC files are typically a collection of XML, text, and resource (e.g., image) files that are all stored in a single folder that is compressed using ZIP to reduce the overall file size. The compressed archive file is as easy to transfer and work with as if it were a single standalone document.

Generally speaking, applications register themselves with the operating system to handle a specific document type. In the case of Windows, this is done through file extensions. When an OPC document (for example, a .docx file), is double-clicked in Windows Explorer, Windows searches for the registered handler for this file type. If one is found (in this case Word), that application is loaded and passed a pointer to the location of the document to open. The application first unzips the package, then reads the XML, text, and resources, and uses an XML definition file (included in the package) to create the in-memory (or running) version of the document.

The Office OpenXML file formats for Word, Excel, and PowerPoint are not only based on the OPC, but also contain XML files written to a well-defined public schema. At the time of this writing, the OpenXML document standard has been submitted to the ECMA (`www.ecma-international.org`) for approval as a standard. While .accdt is also based on the OPC, unlike .docx, .xlsx, and .pptx files, .accdt files contain XML data and text files whose format is not defined by a public document specification. The XML documents stored in .accdt files are XML-serialized representations of Access tables, the same as you would get if you exported a table to XML. In addition, .accdt files make use of proprietary format text files in order to represent components of the database file, including forms and reports. While these files are plain text that can be relatively easily read and interpreted

with the human eye, they are not of a well-defined public structure that can be easily processed by automated software systems. Therefore, they are not limited to a document specification, but are subject to change from version to version.

Another way .accdt files differ from their Word, Excel, and PowerPoint counterparts is that they are not the native storage format for database files. Since .accdt files are only used to create a template, and never to save a document from inside Access, there is no built-in way to save a given database file as an .accdt template file.

"What?" you say, "Why am I reading this book if there is no way to create .accdt files?!" Do not despair, dear reader! As fate would have it, the Access team figured that you would need a way to create template files. There wasn't enough time to get this feature into the schedule for the 2007 release, but there is a freely available add-on that will add a button to the Ribbon in Access, enabling you to save any database as a template. This add-on is part of the Access Developer Extensions, and we'll cover it in more depth in Chapter 4. For technical details on the internal workings of .accdt files, see Chapter 14.

Where to Find .Accdt Files

There are four ways in which Access knows to create a template:

1. The user *explicitly* selects a template from a locally installed template gallery from Getting Started.

2. The user *explicitly* selects a template from an online template gallery from Getting Started.

3. The user *implicitly* selects a template by opening a database against a SharePoint list or *explicitly* selects the template in Access and chooses to create it against SharePoint.

4. The user *implicitly* selects a template by opening a database against a SharePoint site.

In Case 1 and Case 3, the template file is installed on the local computer. First, let's look at where those files exist, then we'll look at Cases 2 and 4, where the template file comes down from some server-based source.

For Case 1, where the user has *explicitly* chosen to create a specific template from a template gallery in Getting Started, the template files are installed under %Program Files%\Microsoft Office\Templates\1033\Access. 1033 is the locale identifier for US English, and this number will change based on the languages of Office that are installed on your computer. For example, if you have Japanese installed, you'll see a 1041 folder. For German, the folder would be 1031. The template files are localized into all of the languages that Access is localized into, which is the vast majority (but not all) of the languages supported by Office.

In the third case, a user has chosen the **Actions ⇨ Open with Access** menu item on a SharePoint list. This will cause the server to generate a specially formatted URL which, when returned to the client, Access will recognize and intercept. This URL tells Access which server and list it should open. It also includes a list type, as an ID number. If this number matches the name of an .accdt file in the %Program Files%\Microsoft Office\Templates\1033\Access\WSS folder, then Access will automatically instantiate that template. If you have chosen to **Link to data on the SharePoint site** when prompted, Access will automatically direct the linked tables in the resulting database back to the list you chose to open. It will also determine any related data this list might have (e.g., issues are *assigned to* contacts) and automatically create links so that those related lists appear correctly in the newly created database as well.

At the time of this writing, the template files installed on the local machine that have online equivalents only appear in the **Getting Started** screen when your computer is offline. This does not affect user-created template files—only those which are supplied by Microsoft. Even though these template files are installed on the local machine, whenever Access can connect to the Internet, it will favor the online versions of the .accdts. Microsoft does this because the online templates can continue to be updated and enhanced long after the product has been released. Updating the version of templates installed on the local computer is much more difficult, and would require that the user install a patch or service pack in order to receive the new content. Since online templates are delivered whenever the client requests them, as with Web site content, templates can be added or updated at any time. Whenever your computer is not able to connect to the Internet, Access will automatically fall back to the locally installed versions of the template files.

In order to force Access to always display the local versions of template files as well as the online versions, add the following key value to the Windows Registry:
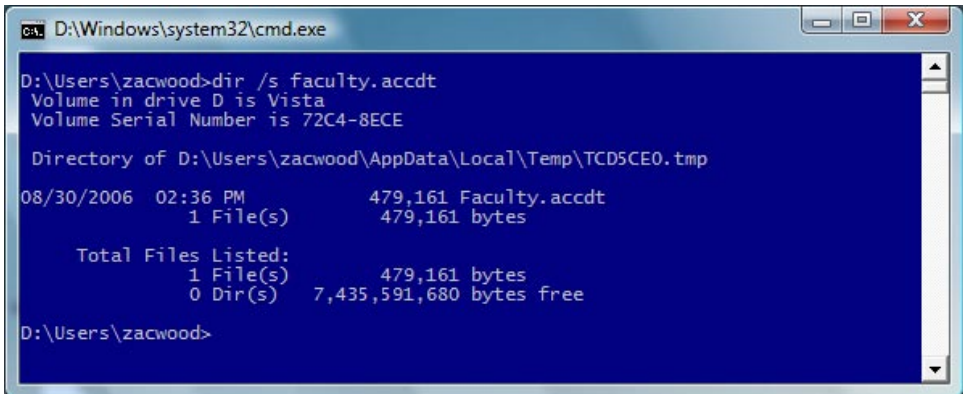
► Key: `HKEY_CURRENT_USER\Software\Microsoft\Office\12.0\Access\Settings\GettingStartedShowLocalOnlyCategory`

► Value: `1`

For Case 2 and Case 4, the .accdt files themselves do not reside on the local computer at all. In each of these scenarios, the template file is downloaded from the respective source into a temporary directory on the local machine before it is instantiated. If for some reason you need to find the temporarily downloaded template file, you can search the file system for .accdt files under your temporary local settings by performing these steps:

1. Choose the **Start ⇨ Run** menu item.

2. Type `cmd` and press Enter.

3. At the command prompt, enter the following:

```
cd %homepath%
dir /s *.accdt
```

You should see something that looks approximately like Figure 2.2. Note that this screen was taken from Windows Vista, and you may find that the file paths in previous versions of Windows are slightly different.

Figure 2.2: Find Downloaded .accdt Files.

Now, I promised I would let you know how you can add new templates to your **Getting Started** screen. Say, for example, that you've found a template on Office online that you really want to be able to instantiate when your computer is not connected to the Internet. Lucky for you, there is relatively straightforward way to do this:

1. Download and instantiate the template while you're online.

2. Find the downloaded .accdt file using the technique I just covered in Case 2.

3. Copy that .accdt file into the template folder described in Case 1.

Now you should be able to access that template file whether you're connected to the Internet or not. Be aware though, as described above, Access will favor the online version of this template file when you're online and that file could be updated at any time. If that happens, you'll likely need to re-run this process to get the newest version on your local computer.

For more information on how you can deploy your own custom templates for others to use, either by *explicit* creation via the **Getting Started** screen or *implicit* creation when starting from WSS, see Chapter 16.

Summary

Access template files are an entirely new file format in the 2007 release. Because these files are specifically targeted to fulfill the initial database creation scenario, they can be optimized in ways that existing database files cannot. .Accdts are ZIP packages based on the OPC, containing text, XML, and images. And because of the transparency of the OPC format, it is possible for automated processes to assemble new template files from others' constituent parts. Once created, template files can then be either installed on a local computer or downloaded on demand from a server, such as Office Online or SharePoint.