
 Servers Enable Acrobat Reader Users to Create Complex PDF Documents

---



Gregory Milman  
National Institute of Allergy  
and Infectious Diseases  
gmilman@niaid.nih.gov

---

---

---


---

---

---

---


---

 When to Use Full Acrobat and When to Use Client Server PDF Document Management

---


Use Full Adobe Acrobat

- All users need full featured program.
- Use frequently.
- Only a few copies needed.
  - Few users or
  - Workstation acceptable.
- Cost is not a concern.
- Help and training is not a concern.



Use Server for Acrobat Reader User

- Many users.
  - Use limited features.
  - Use infrequently.
- Cost is important to user.
- Minimize help and training.
- Standardize PDF file production.
- Control form use.
- Directly input form data to database.



---

---

---


---

---

---

---

---

 You Do Not Need to Be a Programmer for This Session!

---

- I am not a programmer.
- This session presents information I have learned to collaborate with our IT programmers.
- You too will communicate better with your IT staff when you understand some basic concepts.

---

---

---

---











---

---

---

---

### Minimal Client Requirements – One of Each

| Internet Connection  | Operating System  | PDF Software  | Composing Software   |
|--|---|---|--|
| <br> | <br><br> | <br><br> | <br> |

---

---

---

---

---

---

---

---

### A Complex Document May Contain

- Look-alike forms with different properties.
- Forms with multiple pages.
- Multiple forms attached together.
- Forms flattened to non-form PDF format.
- Uploaded client PDF documents.
- Uploaded client files in non-PDF format that can be converted into PDF by server.

---

---

---

---

---

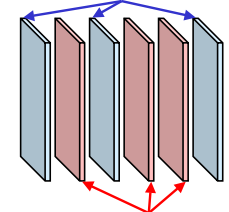
---

---

---

### Tools Used to Construct a Complex Document

Complex Document  
Form Pages



- Form Tools
- Document Tools.
- Merge or Extract Tools.

Client Word Processor Pages

---

---

---

---

---

---

---

---

### Complex Forms Can Be Simple When Completed on Server

**Simple Form**

- On-Line completion.
- Single or at most a few pages with few fields (<50).
- Easier to design.
- Create flexible forms by transmitting new pages.
- Client only needs Acrobat Reader.
- Client-side calculations can use "built-in" Adobe functions.
- Form usually accessed from server.

**Complex Form**

- Off-Line completion.
- Multiple pages and many fields (>200).
- Harder to design.
- Create flexible forms by spawning pages.
- Client needs to use Acrobat or Acrobat Approval.
- Client-side calculations often require JavaScript (in "Validate" function).
- Form usually stored on client, especially with slow speed connections.



### PDF Forms Contain an Image, Form Fields and Data (Form Data File = FDF)

PDF Image  
36KB



### PDF Forms Contain an Image, Form Fields and Data (Form Data File = FDF)

PDF Image  
36KB  
Plus Fields  
72KB  
Plus Script  
150KB





### PDF Forms Contain an Image, Form Fields and Data (Form Data File = FDF)

```
%FDF-1.2
%ããïÓ
1 0 obj
<<
/FDF << /Fields [ << /N (Servers Can Enable Clients to Create Complex Documents)/T
(1)>>
<< /N /Off /T (10-disadvan)>> << /N /Federal /T (10-Fed)>> << /N /Off /T (10-
ForprofitGen)>>
<< /N /Off /T (10-Local)>> << /N /Off /T (10-privatenonprofit)>>
<< /N /Off /T (10-small)>> << /N /Off /T (10-State)>> << /N /Off /T (10-women)>>
<< /N (None)/T (11-a)>> << /N (6700-B Rockledge Drive; Room 2142 \Bethesda, MD
20892-7610 \US Mail\ \
\Rockville, MD 20817-7610 \Delivery Services\))
/T (12-address)>>
<< /N (301-402-0369)/T (12-fax)>> << /N (John J. McGowan)/T (12-name)>>
<< /N (301-496-7291)/T (12-tele)>> << /N (Director)/T (12-title)>>
<< /N (6700-B Rockledge Drive; Room 2142 \Bethesda, MD 20892-7610 \US Mail\ \
\Rockville, MD 20817-7610 \Delivery Services\))
/T (13-address)>> ETC...
```

PDF Image 36KB  
Plus Fields 72KB  
Plus Script 150KB  
Just Data 3KB

---

---

---

---

---

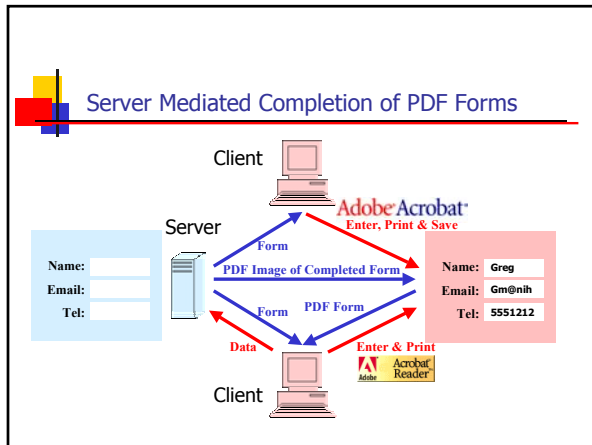
---

---

---

---

---



---

---

---

---

---

---

---

---

---

---

### Adobe FDF Toolkit References

<http://partners.adobe.com/asn/developer/acrosdk/forms.html>

|   |  |
|---|--|
| <br><b>Adobe FDF Toolkit Overview</b><br>Technical Note #5194 | <br><b>Adobe FDF Toolkit Reference</b><br>Technical Note #5193 |
|---|--|

Adobe FDF Toolkit Overview  
Adobe FDF Toolkit Reference

---

---

---

---

---

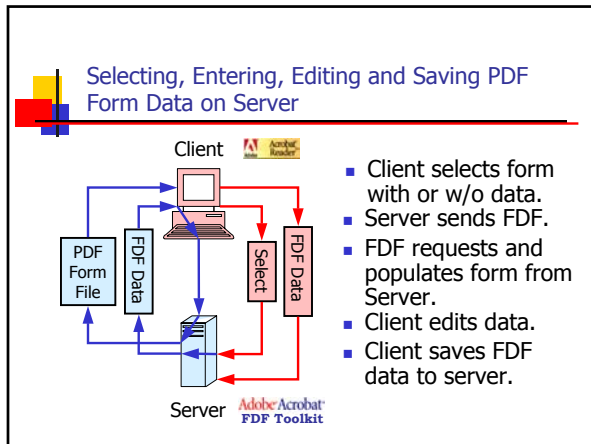
---

---

---

---

---



---

---

---

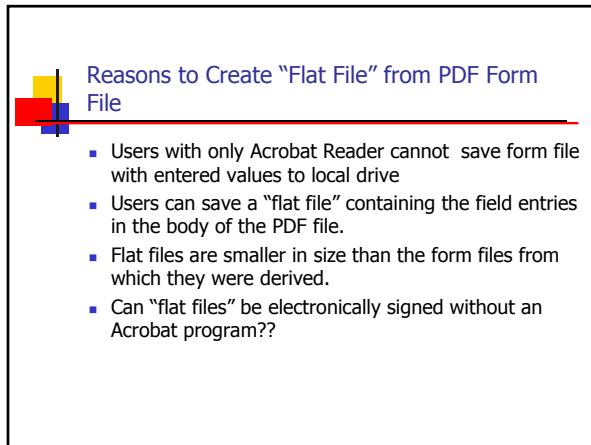
---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

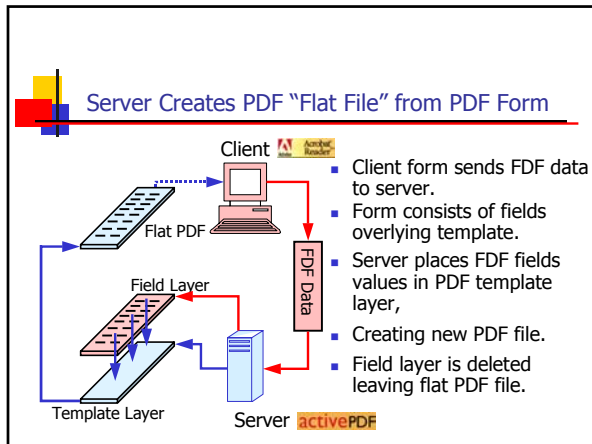
---

---

---

---

---



---

---

---

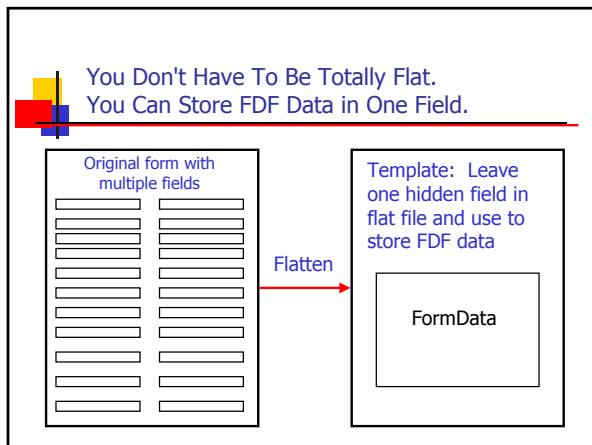
---

---

---

---

---



---

---

---

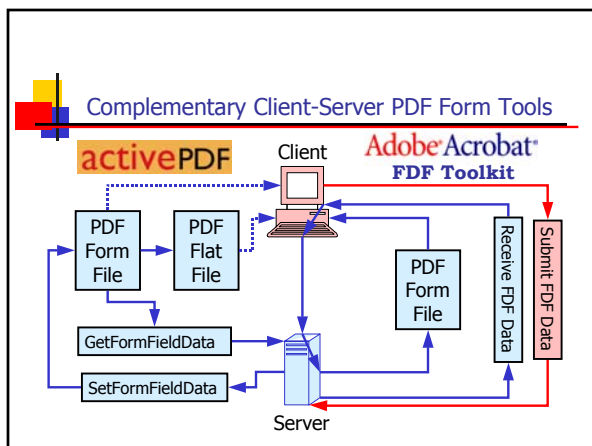
---

---

---

---

---



---

---

---

---

---

---

---

---

### Access Issues with Low Bandwidth Connections

- Acrobat (version 5 and lower) stores FDF files but not PDF forms in cache.
- If Client jumps to link outside form, then on return the form must reload from server.
- Cache FDF data will populate the form.
- **Complex forms (1MB) will take 5-15 minutes to load at low bandwidth (28K).**
- Waiting this long for a form to load is usually unacceptable.

---

---

---

---

---

---

---

---

### When Client Jumps to Link from Form to HTML Page

- FDF file is saved in deleted.tmp directory on client as read-only file named "Acr?????.TMP"
- The PDF form file is not saved on client.
- On back navigation, Acrobat Reader loads "TMP" as FDF file. FDF file reloads and populates PDF form from server taking the same download time as at first.
- Large size PDF forms (~150kb/page) take a long time to download.
- Slow PDF form download times can significantly affect clients with low bandwidth.

---

---

---

---

---

---

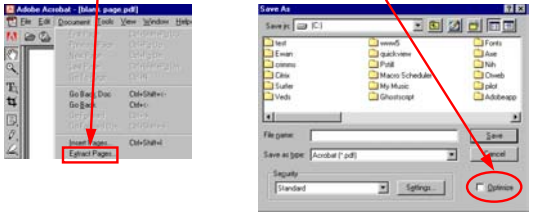
---

---

### Minimize Form File Size to Speed Download Time

Extract Pages of final PDF form to achieve minimal size

Optimize should NOT be checked for multiple page PDF forms delivered by Server



---

---

---

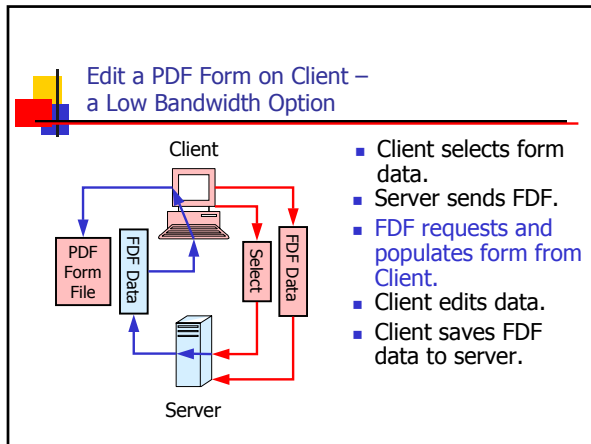
---

---

---

---

---



---

---

---

---

---

---

---

---

### A Server Can Create Complex Forms by Combining FDF Files From Simple Forms

From "FDF Toolkit Overview" #5194 Page 19

If FDF data being imported contains fields whose fully-qualified names are not present in the form, those fields will be discarded. This feature can be useful, among other cases, if FDF data containing commonly used fields (such as name, address, and so forth) is used to populate various types of Acrobat Forms, each of which does not necessarily include all the fields available in the FDF data.

---

---

---

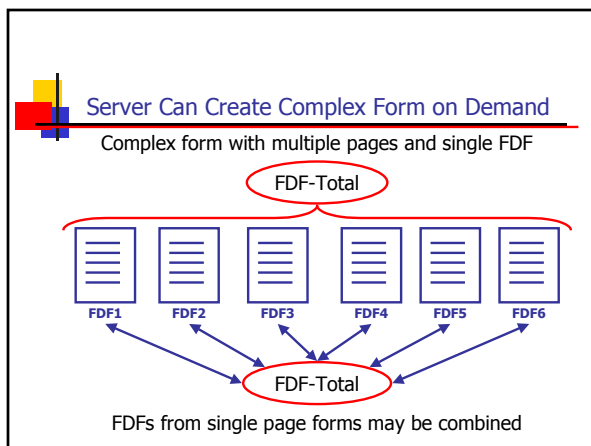
---

---

---

---

---



---

---

---

---

---

---

---

---

### Handling Multiple Copies of Same Form

- **Problem:** Combining multiple copies of same form will overwrite data.
- **Choice 1:** Give fields different names on each copy (labor intensive if many copies)
- **Choice 2:** Keep track of copies in FDF-Total but do not combine

---

---

---

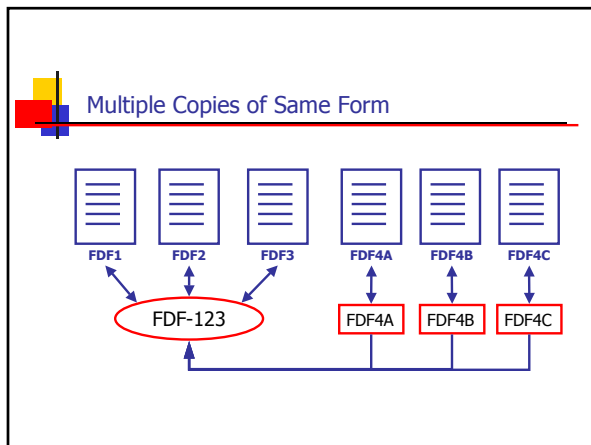
---

---

---

---

---



---

---

---

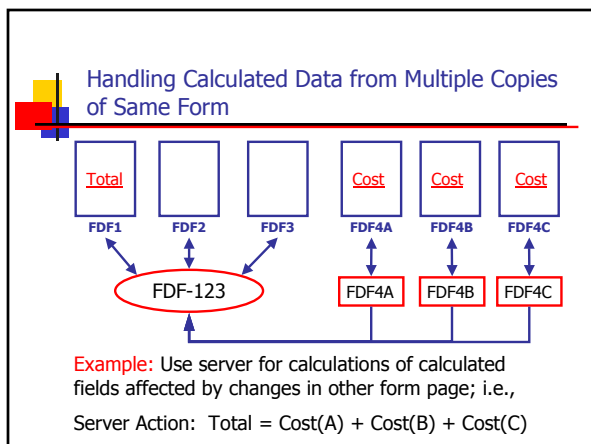
---

---

---

---

---



---

---

---

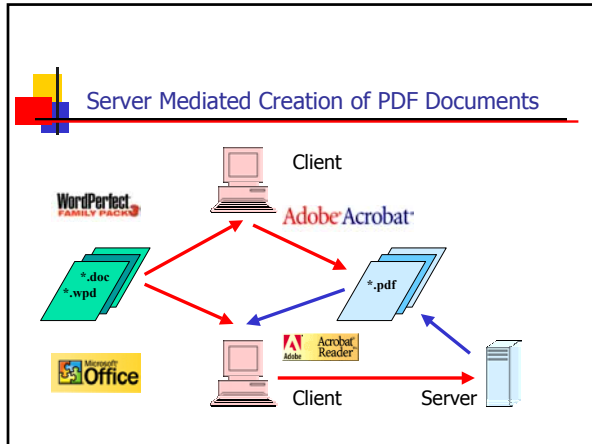
---

---

---

---

---



---

---

---

---

---

---

---

---

### ASPSmartUpload

<http://www.aspsmart.com/>

ASPSMARTUPLOAD

## Features

**A free, fully-featured ASP component**

aspSmartUpload provides you with all the upload/download features you could possibly wish for :

- [Simple and complete upload](#)
- [Total control over the upload process](#)
- [«Mixed forms» management](#)
- [Total control over files sent](#)
- [Download whatever you want](#)

---

---

---

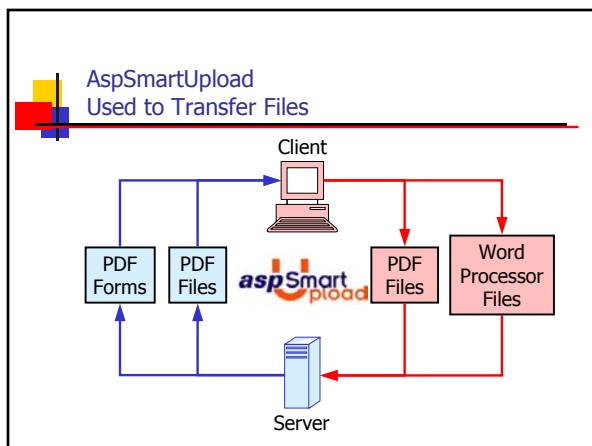
---

---

---

---

---



---

---

---

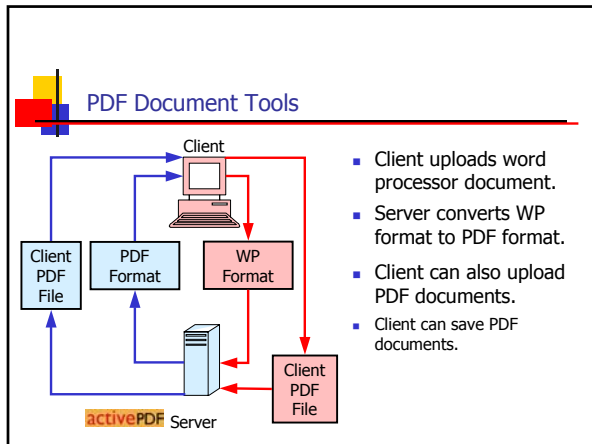
---

---

---

---

---



---

---

---

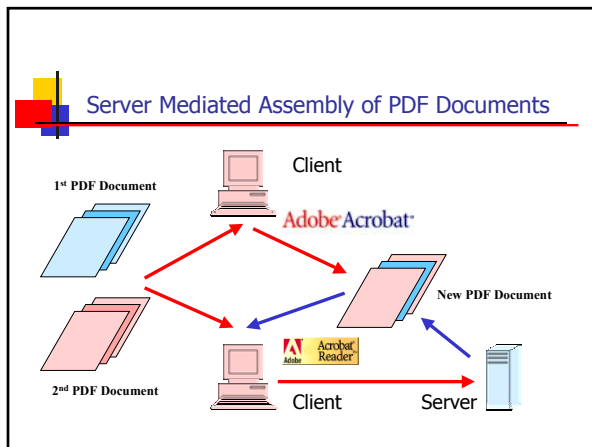
---

---

---

---

---



---

---

---

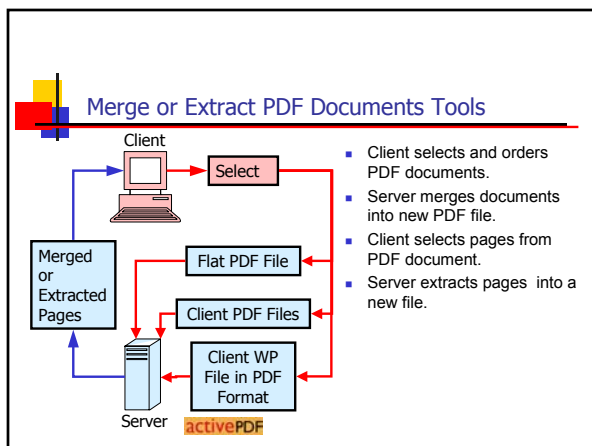
---

---

---

---

---



---

---

---

---

---

---

---

---

### Our Server-Side Process

- Microsoft NT Server running https and using Active Server Pages (ASP) with VB Script.
- Free software
  - AspSmartUpload ([www.aspsmart.com](http://www.aspsmart.com))
  - FDFToolkit ([www.adobe.com](http://www.adobe.com))
- Purchased software
  - Acrobat ([www.adobe.com](http://www.adobe.com))
  - ActivePDF Professional ([www.activepdf.com](http://www.activepdf.com))
  - Sequel Server ([www.microsoft.com/ms.htm](http://www.microsoft.com/ms.htm))

---

---

---

---

---

---


---

---

### Try Out These PDF Tools on Our Site

<https://grants.niaid.nih.gov/grants/index.htm>

Log in  
Create Account



Welcome to the Electronic Grant Application Pilot

We have created this site in response to the community's desire for electronic grant submission. We are testing hardware and software tools to help prepare for NIH's future electronic grant administration. With these tools, you can create, save, and print your application in submit to NIH, while helping us assess this approach. Eventually, you will be able to submit your application electronically. Keep in mind that these tools may change and new ones may be added. Your feedback is key. Please send your comments and suggestions through our site's feedback form.

Grant applications consist of form pages required by NIH and a narrative describing your project. This site simplifies filling out the NIH forms by completing many of the calculations and multiple entries for you. Your information is stored in a database so that it does not have to be reentered all time. Your forms and narrative are converted to a portable data format (PDF) that can be shared with administrators, colleagues and reviewers independent of both platform and operating system.

The pilot includes the following tools that will enable you to prepare an electronic application. The activities in bold are planned and will be added as they become available.

1. Complete NIH Grant Application Forms (DSRP Phase I offers on the way)
2. Create PDF Documents from Word Processor Files
3. Combine or Extract Pages from PDF Documents
4. Complete Application with Electronic Signatures
5. Submit Application

Before you begin:

- Use Internet Explorer (Netscape may not work)
- Use the free Acrobat Reader plug-in (version 4.05) for your browser
- Use only the forms on this site
- Always work connected to the NIAID server; you can save copies to your computer

---

---

---

---

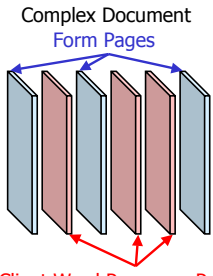
---

---

---

---

### Tools Used to Construct a Complex Document



- Form Tools
- Document Tools.
- Merge or Extract Tools.

---

---

---

---

---

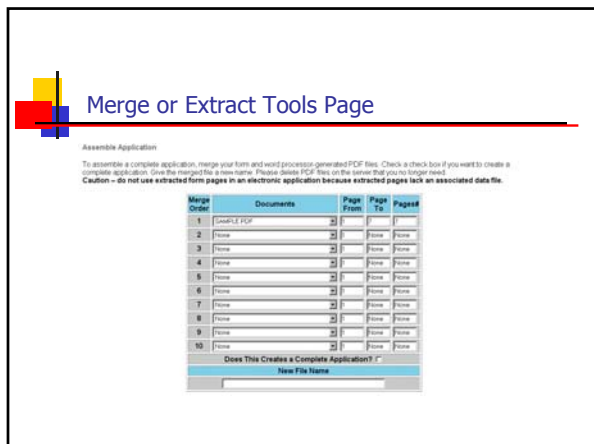
---

---

---







**Merge or Extract Tools Page**

Assemble Application

To assemble a complete application, merge your form and word processor-generated PDF files. Check a check box if you want to create a complete application. Give the merged file a new name. Please delete PDF files on the server that you no longer need.  
**Caution - do not use extracted form pages in an electronic application because extracted pages lack an associated data file.**

| Merge Order | Documents    | Page From | Page To | Page# |
|-------------|--------------|-----------|---------|-------|
| 1           | Loadable PDF | 1         | 1       | 1     |
| 2           | Form         | 2         | 2       | 2     |
| 3           | Form         | 2         | 2       | 2     |
| 4           | Form         | 2         | 2       | 2     |
| 5           | Form         | 2         | 2       | 2     |
| 6           | Form         | 2         | 2       | 2     |
| 7           | Form         | 2         | 2       | 2     |
| 8           | Form         | 2         | 2       | 2     |
| 9           | Form         | 2         | 2       | 2     |
| 10          | Form         | 2         | 2       | 2     |

Does This Create a Complete Application?

New File Name

---

---

---

---

---

---

---

---

---

---

---

---