

# RIGHT NOW

ACE 2014

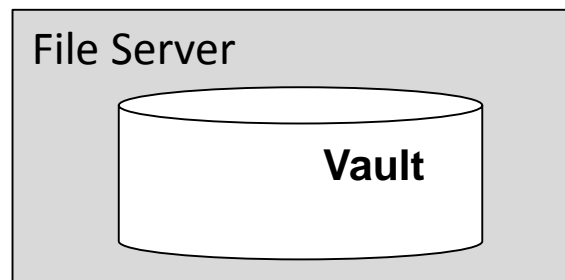
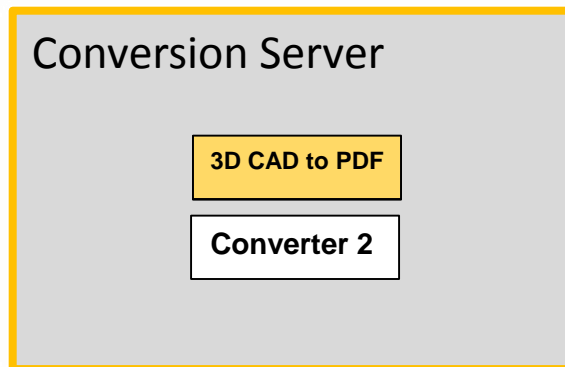
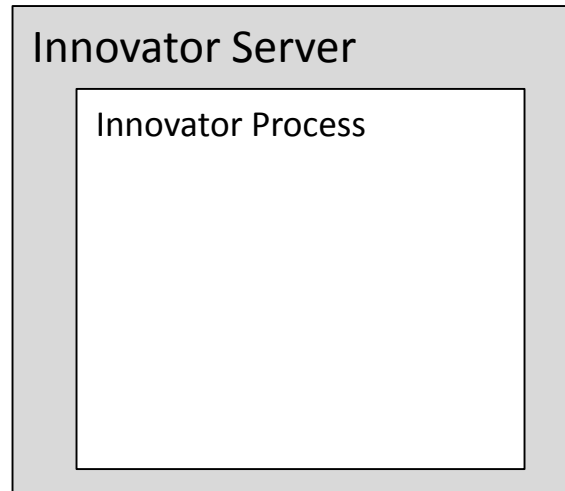
# Implementing Aras Conversion Server

How file conversion works and how to configure file converters in Aras

# Agenda

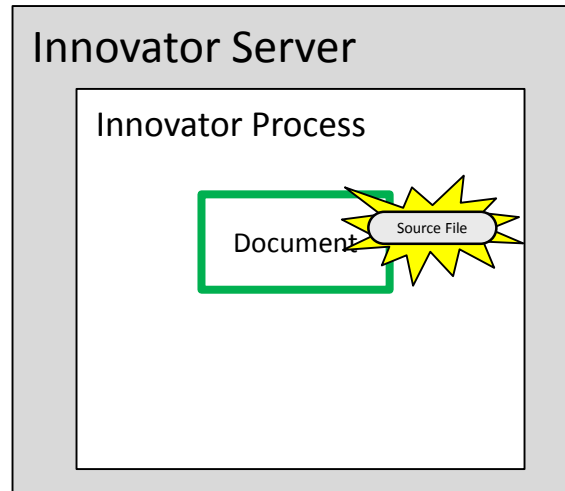
- What is Aras Conversion Server?
- Example Converter: Aras 3D CAD to PDF Converter
- Conversion Server ItemTypes
- Conversion Rule Settings
- Where to find information

# Aras Conversion Server

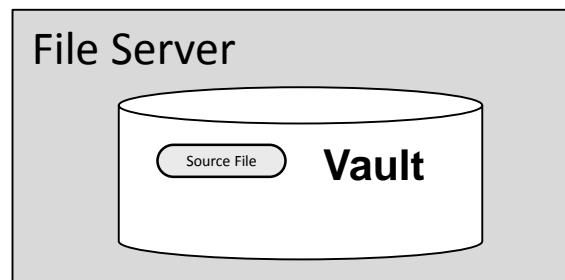
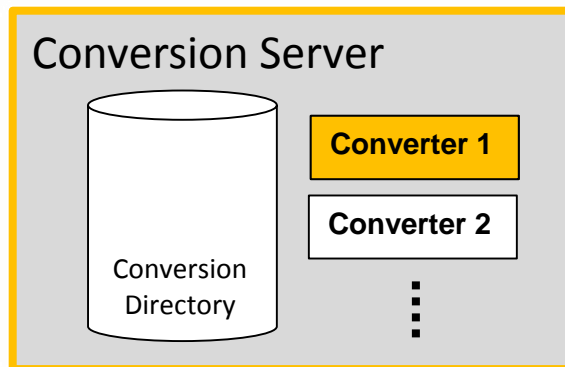


- Aras Conversion Server is a framework for automatic server-side file conversion
  - Task queuing, re-tries, and timeouts
  - Customizable Task Event Methods
  - Public API for adding converters
- By itself, it does NOTHING!
- It requires specific Converters to perform actual file conversion
- Aras currently provides one converter called “Aras 3D CAD to PDF Converter” for its subscribers
- Others can be built by consulting, partners, etc. given an appropriate conversion executable

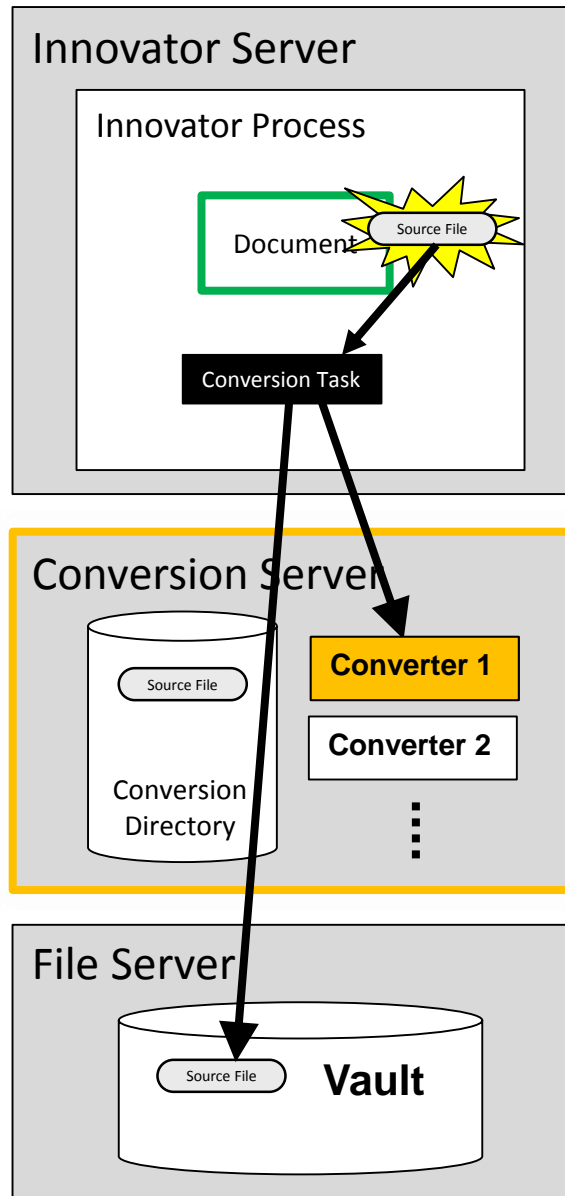
# Conversion Example



- Conversion Rules process specific file types, related to specific item types

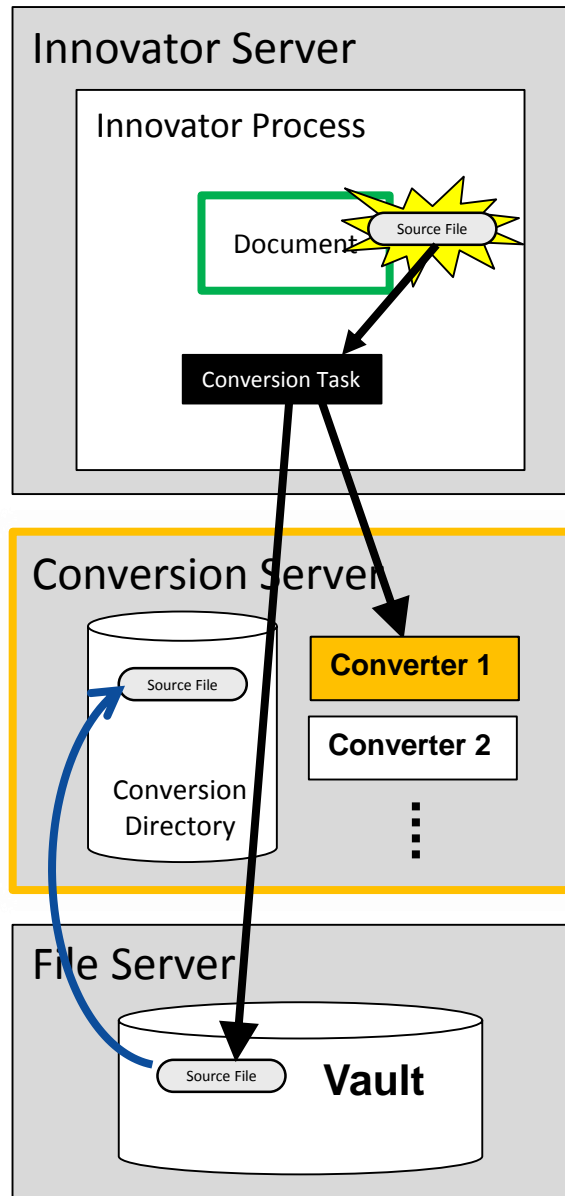


# Conversion Example



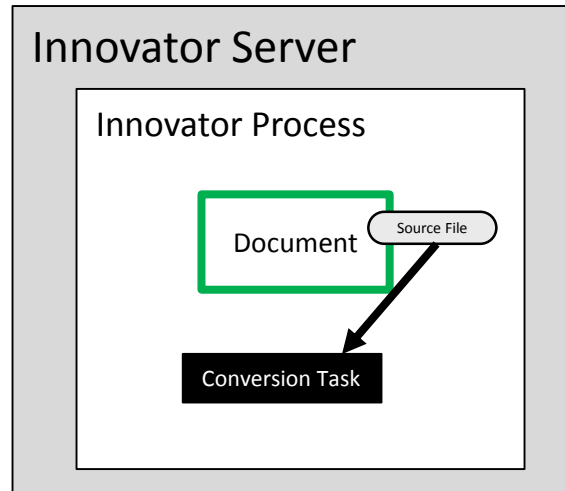
- Conversion Rules process specific file types, related to specific item types
- A Conversion Task is created when a file matching the Conversion Rule is created inside Aras Innovator

# Conversion Example

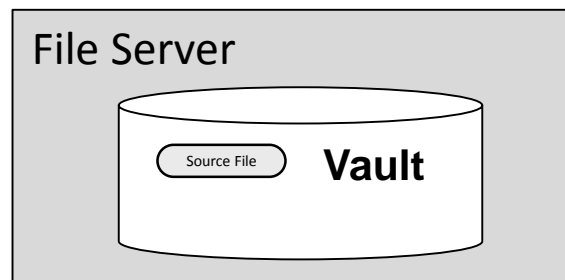
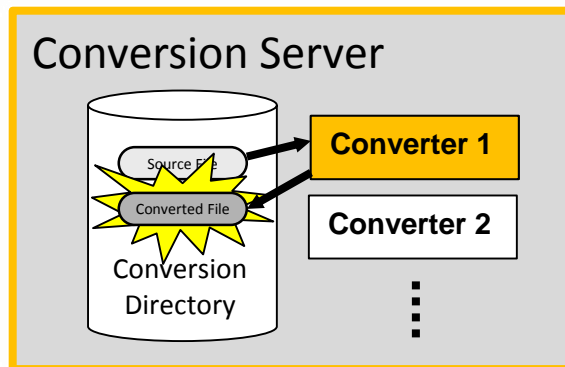


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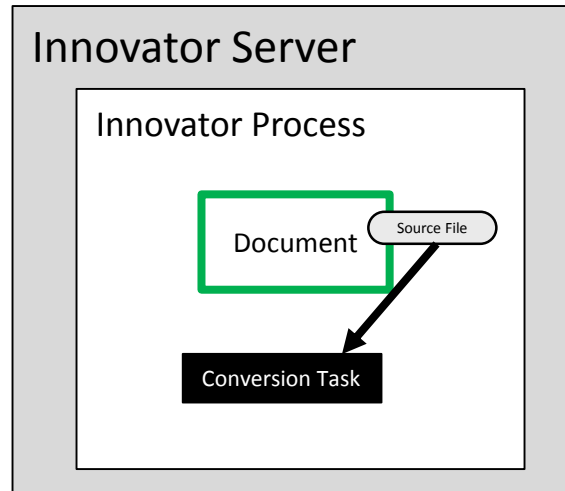


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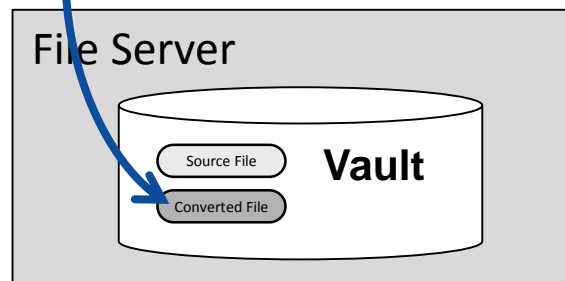
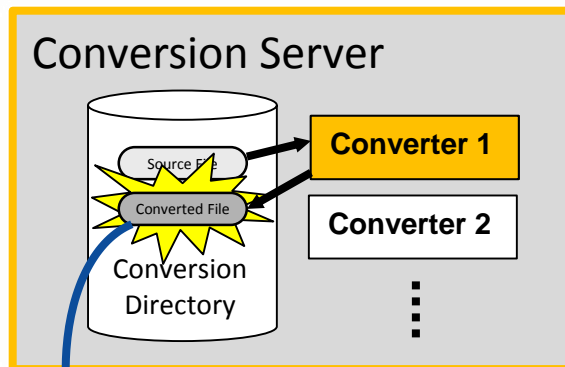




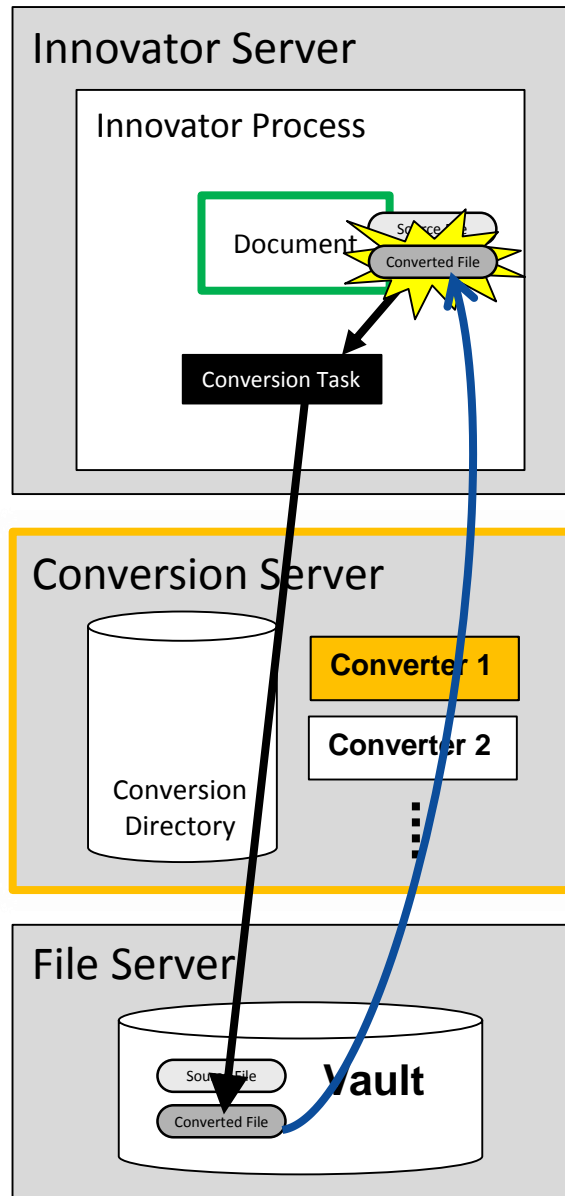
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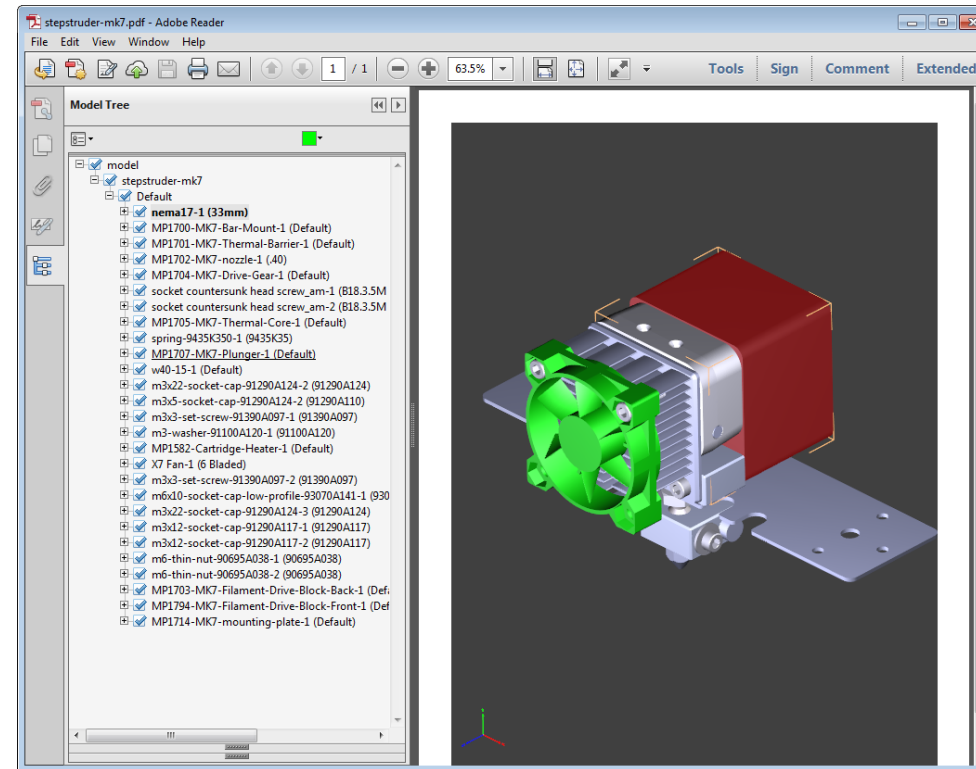


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# Aras 3D CAD to PDF Converter



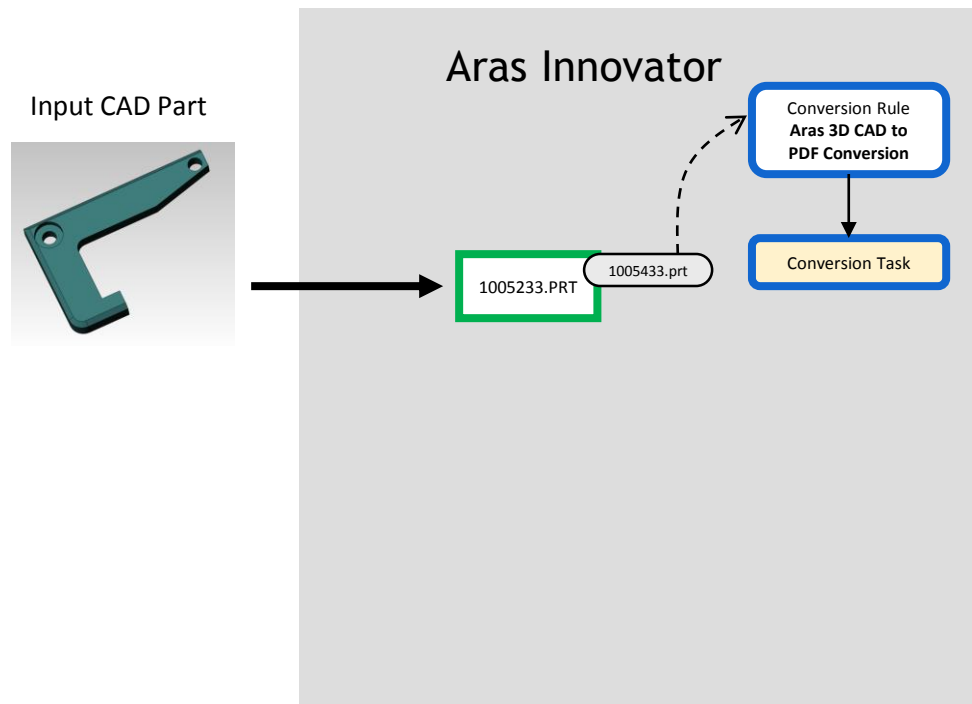
- The Aras 3D CAD to PDF Converter converts 3D CAD files to 3D PDF and PNG thumbnails
- Uses the Aras Conversion Server to perform the conversion automatically on check-in
- The converter is provided to all Aras subscribers at no additional charge
- Resulting 3D PDF files can be viewed using Adobe Reader directly from Aras Innovator



## Supported 3D capabilities in free Adobe Reader (v9 and higher)

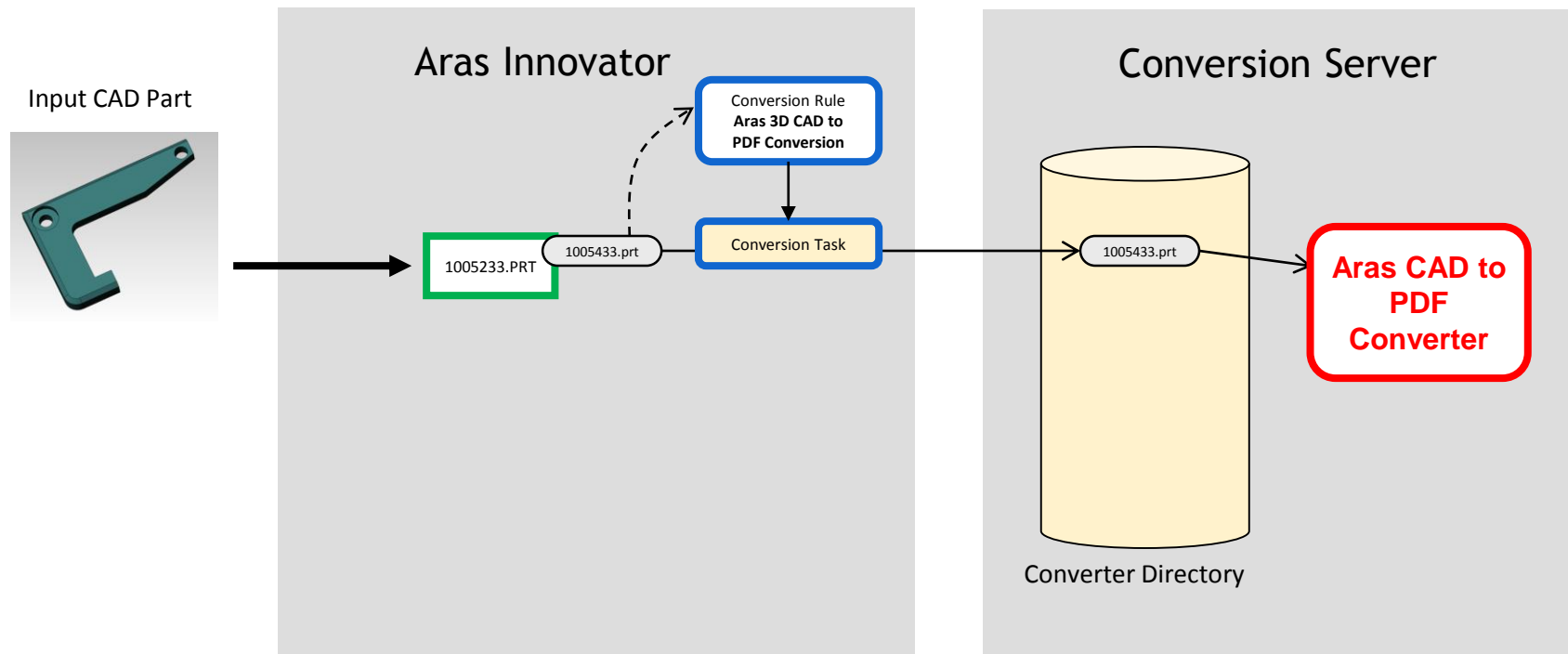
- View modes (shaded, hidden line, etc.)
- Model tree
- Hide / show / isolate components in assembly
- Measurement
- Cross sectioning
- Comments

# Conversion of Single 3D Model



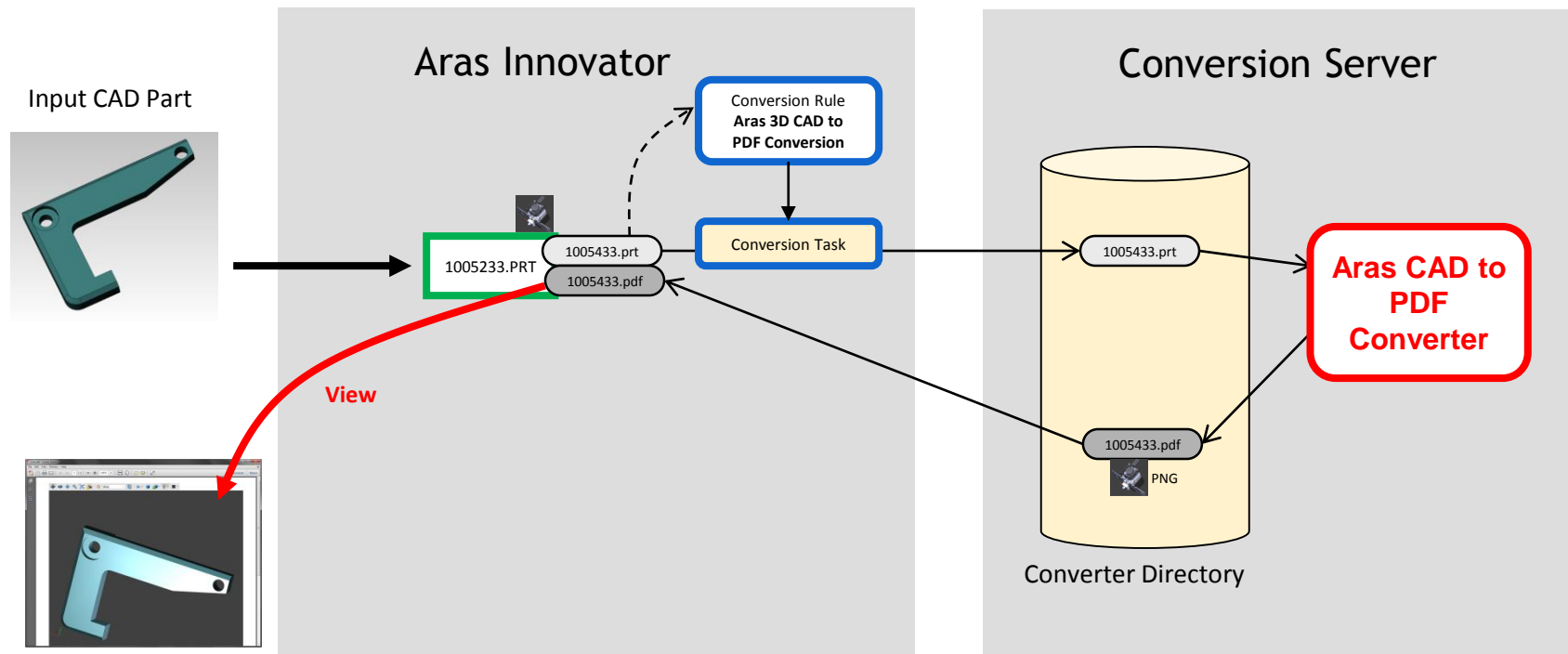
- A CAD file is attached to a CAD Document in Aras, typically by using a CAD Connector
- Based on the CAD file type, a Conversion Rule creates a new Conversion Task

# Conversion of Single 3D Model



- The Conversion Task copies the necessary file to the Conversion Server
- The Conversion Type associated with the Conversion Task is run on the file, in this case “Aras CAD to PDF Converter”

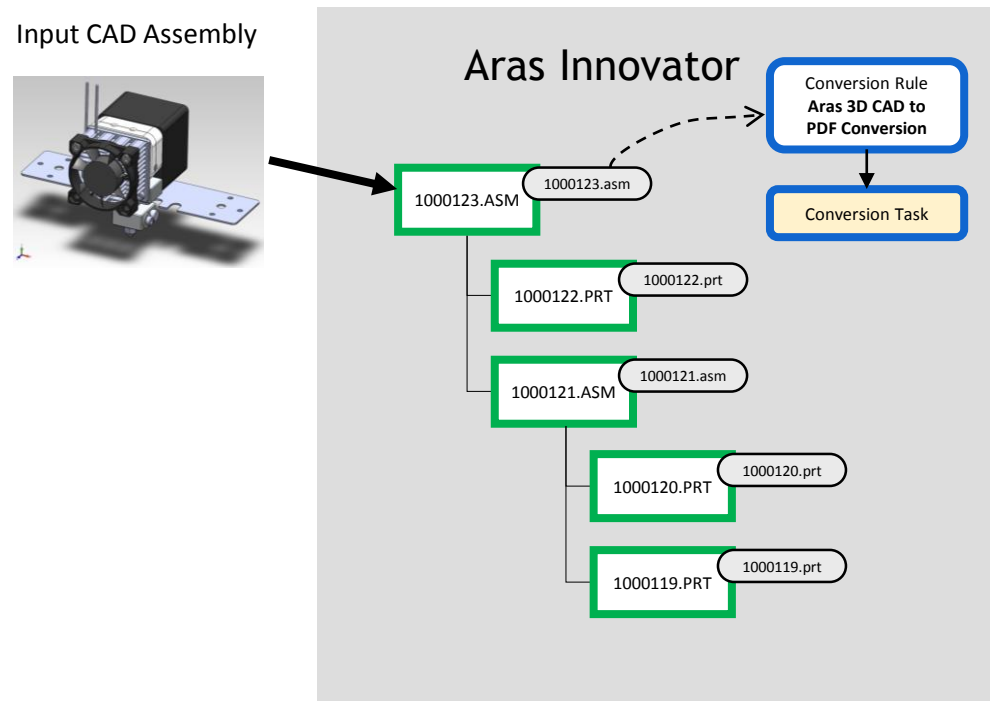
# Conversion of Single 3D Model



**Adobe Reader  
Plugin**

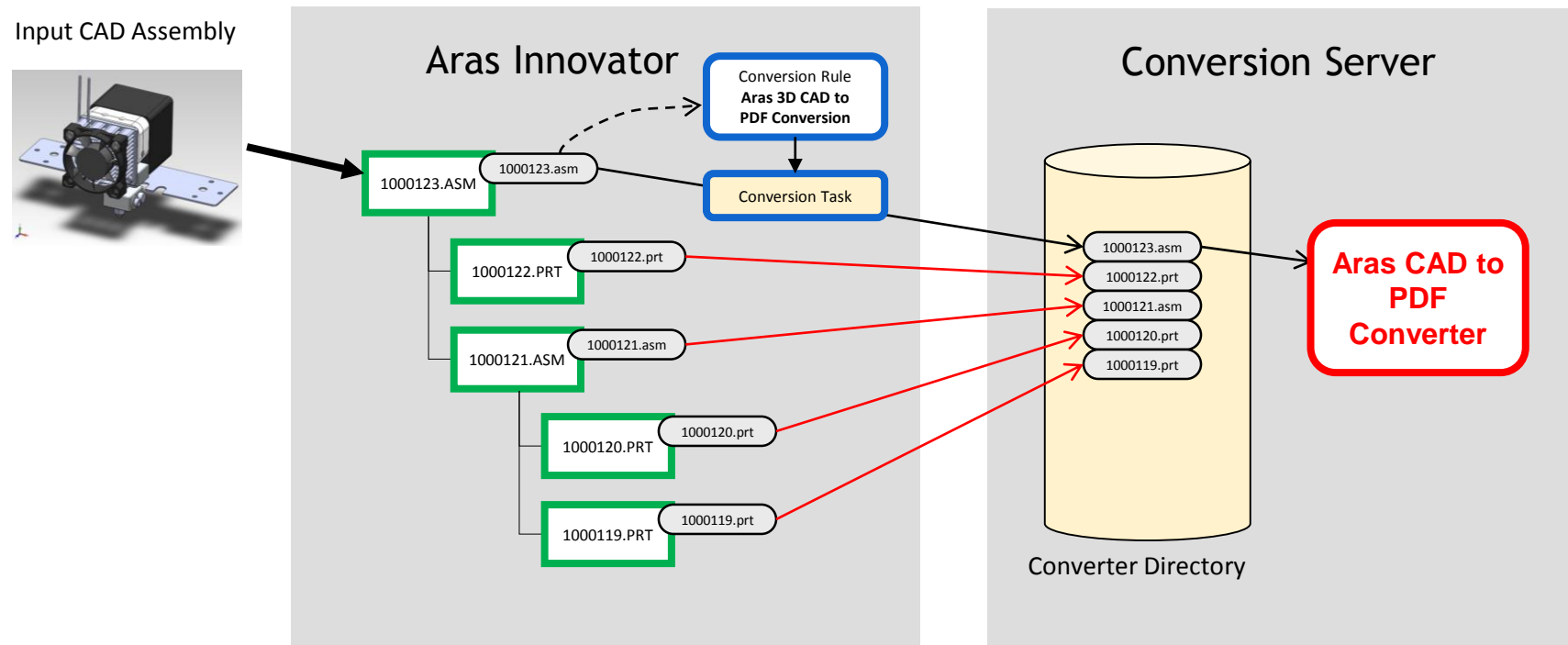
- The output PDF and PNG files are created by the converter
- The Conversion Task attaches the files to the source CAD Document
- The user can then view the 3D PDF file using the Adobe Reader plugin to Aras

# Conversion of a 3D Assembly



- A CAD assembly file is attached to a CAD Document in Aras, typically by using a CAD Connector
- Based on the CAD file type, a Conversion Rule creates a new Conversion Task

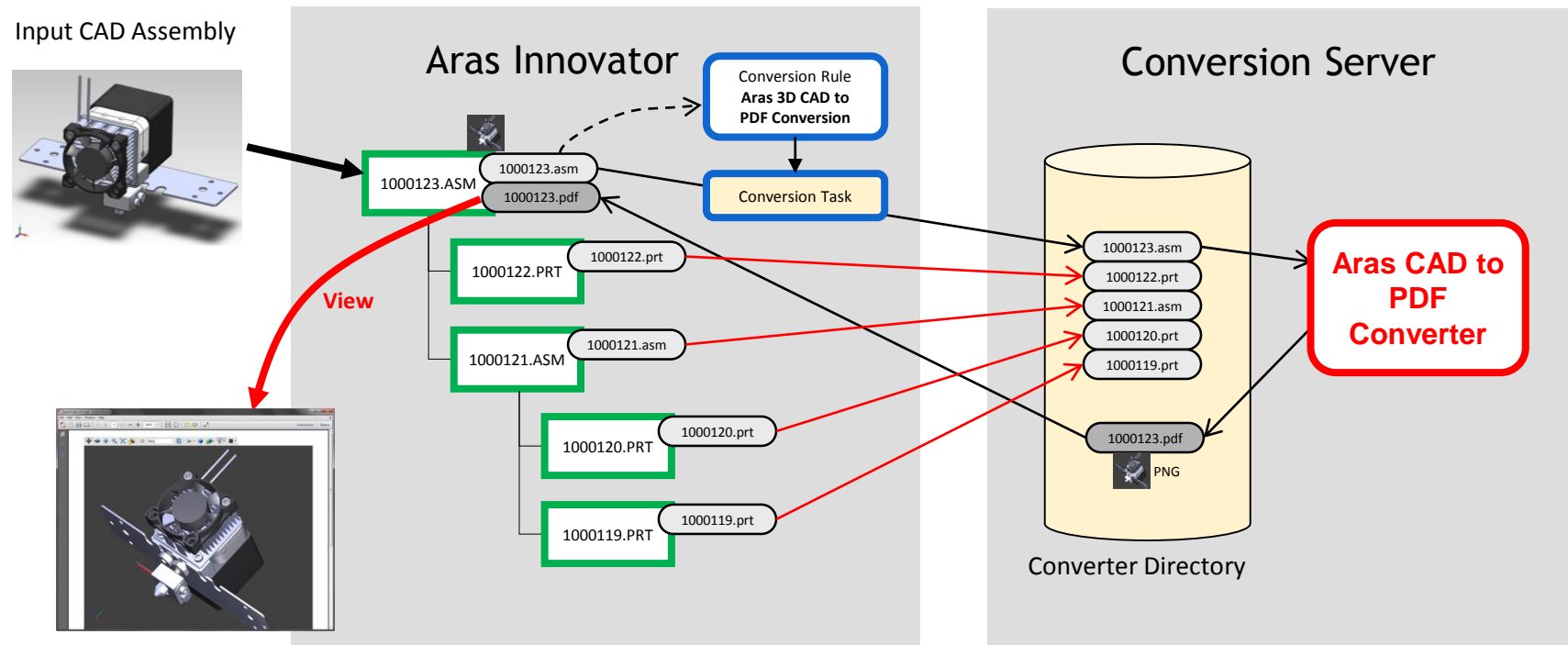
# Conversion of a 3D Assembly



- The Conversion Task copies the necessary file to the Conversion Server
- Since the source file is an assembly, the Conversion Task also copies all files within the CAD Document structure to the Conversion Server
- The Conversion Type associated with the Conversion Task is run on the file, in this case “Aras CAD to PDF Converter”



# Conversion of a 3D Assembly



## Adobe Reader Plugin

- The output PDF and PNG files are created by the converter
- The Conversion Task attaches the files to the source CAD Document
- The user can then view the 3D PDF file using the Adobe Reader plugin to Aras

# Supported File Formats



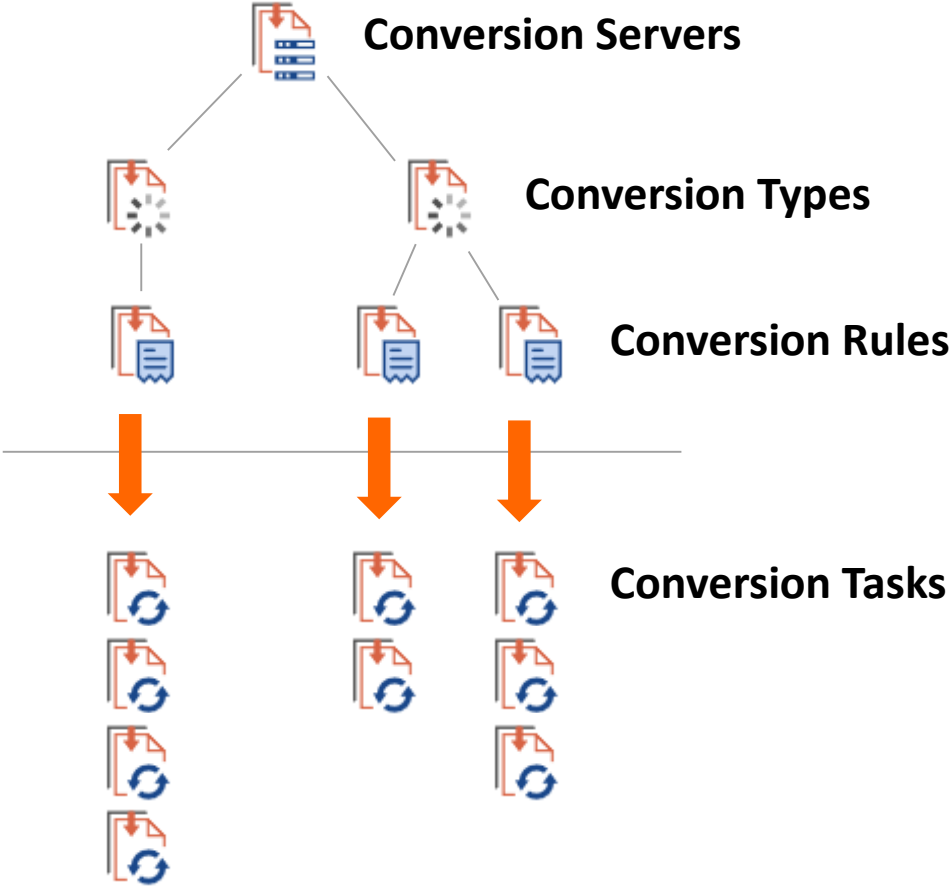
- The Aras CAD to PDF Converter supports the conversion of all major 3D native CAD formats to PDF
- For a complete list go to:
  - <http://www.techsoft3d.com/our-products/hoops-communicator>
  - Click on **Read Formats**

# Aras Conversion Server ItemTypes



☰ Contents

- Administration
  - Configuration
- File Handling
  - Conversion Rules
  - Conversion Servers
  - Conversion Tasks
  - Conversion Types



Defines the location of the server to use

Defines the available converters

Defines the logic for how the converters operate

Individual conversions based upon a given conversion rule

# Conversion Rule Settings



List of File Types that are affected by this Conversion Rule (configurable by customer)

Additional logic for structured extraction of assembly files

Name	Description	Ext.	Options	Enabled
SolidWorks Part	Dassault SolidWorks SLDPR T Part	sldprt		<input checked="" type="checkbox"/>
Solid Edge Part	Siemens Solid Edge PAR Part	par		<input checked="" type="checkbox"/>
STEP Exchange	STEP Exchange	step,stp		<input checked="" type="checkbox"/>
Inventor Part	Autodesk Inventor IPT Part	ipt		<input checked="" type="checkbox"/>
Solid Edge Assembly	Siemens Solid Edge ASM Assembly	asm	<options><cad_structure_class..	<input checked="" type="checkbox"/>
CATIA Assembly	Dassault CATIA CATProduct Assembly	CATProduct	<options><cad_structure_class..	<input checked="" type="checkbox"/>
Pro/ENGINEER Part	PTC Pro/ENGINEER PRT Part	prt	<options><cad_structure_class..	<input checked="" type="checkbox"/>
Pro/ENGINEER Assembly Accel...	PTC Pro/ENGINEER XAS Assembly Accel...	xas	<options><cad_structure_class..	<input checked="" type="checkbox"/>
Inventor Assembly	Autodesk Inventor IAM Assembly	iam	<options><cad_structure_class..	<input checked="" type="checkbox"/>
Pro/ENGINEER Part Accelerator	PTC Pro/ENGINEER XPR Part Accelerator	xpr	<options><cad_structure_class..	<input checked="" type="checkbox"/>

# Conversion Rule Settings



Methods that control ItemType logic

Name	Method Type	Ver	execution_allow...	Comments	Lock Dependenc...	Event Type
CR_3DCADtoPDF_Validate	CSharp	1	World		<input type="checkbox"/>	OnStartTaskProc...
CR_3DCADtoPDF_ClearFiles	CSharp	1	World		<input checked="" type="checkbox"/>	OnBeforeConvert
CR_3DCADtoPDF_SetFiles	CSharp	1	World		<input checked="" type="checkbox"/>	OnAfterConvert
CR_3DCADtoPDF_SetUserData	CSharp	1	World		<input checked="" type="checkbox"/>	OnStartTaskProc...

Method logic includes:

- What ItemType the Conversion Rule affects (e.g. CAD Document)
- Where to put the results of the conversion (e.g. Viewable File and Thumbnail)

# Configuration File Options



- The Aras 3D CAD to PDF Converter uses HOOPS Communicator from Tech Soft 3D to perform the conversion of the files
- The command line which calls the HOOPS converter is located within `../ConversionServer/web.config`

```
<ArasCadConverter>  
<Application converterPath="C:\Innovator94\HOOPS Converter\bin\hoops_converter.exe"/>  
<Command arguments="--input_pdf_template_file 'C:\Innovator94\HOOPS  
Converter\templates\Blank_Template_L.pdf' --output_pdf '%filepath%\%filename%.pdf' --output_png  
'%filepath%\%filename%.png' --png_resolution '150x150' --camera_default --output_logfile  
'%filepath%\%filename%'" />  
</ArasCadConverter>
```

- By editing this command line, you can change behaviors including:
  - Create other output files like STL
    - Requires modifying Conversion Rule Methods as well
  - Use a different PDF template file
  - Use different thumbnail generation options
- Command line options are listed in the HOOPS documentation, which is shipped with Aras Innovator

- Please see the following Aras documentation for further details:
  - Aras Innovator X.X – Installation Guide
    - For installation of the Conversion Server
  - Aras Innovator X.X – CAD to PDF Converter Setup Guide
  - Aras Innovator X.X – Example for Developing Conversion Server Tasks
  
- Instructions on how to manually trigger Conversion Tasks:
  - <http://www.aras.com/projects/project-view.aspx?id=9AD8C6756B964FDA9F98BB844A58E1C4>

- If you are a subscriber, install and test the “Aras 3D CAD to PDF Converter”
- Read the documentation to learn how to adapt conversion software you already have to work with Aras Conversion Server
- Talk to Aras professional services or partners for custom development of converters



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