

SmartStream Production Center JDF Control App

Description

This app will allow you to generate JDF tickets to automate order submission to HP SmartStream Production Center. This app is a direct app conversion for the SmartStream Production Center JDF Control app and should be functionally the same.

NOTE: HP SmartStream Production Center has reached it's end of life as a product. This product is no longer being sold or maintained. This app release is intended only for existing Production Center configurator users. It will not be enhanced moving forward.

Compatibility

App release is for Switch Fall 2023 versions and later, but the configurator version was supported long before that and app should be backwards compatible through at least Switch 2018 or earlier.

Connections

This application requires one input and one output folder.



Input Folder:

- Can contain either the asset file (i.e. a .pdf file) to be used for producing this job, or an upstream JDF ticket (from the HP Digital Front End JDF Control App).
- Can accept a folder with multiple files of the same type.
 - **NOTE:** For more complicated flows with multiple files, it is recommended to use the HP Digital Front End JDF Control app to handle this upstream. Additional detail about linking these apps will be described later in this document.

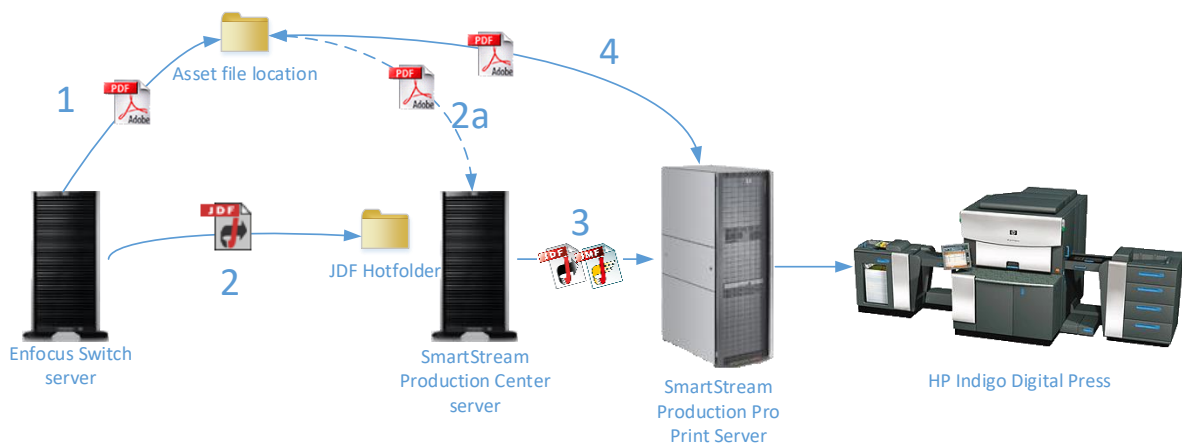
Output Folder:

- Will receive the output from the app (either a JDF ticket, or MIME package) based on property setting in the app.
- For automation purposes can be pointed at the JDF hotfolder on the SmartStream Production Center server (\\PCServerHostname\Jobs\JDF)
 - **NOTE:** for debugging purposes it is recommended to insert at least one folder between the app and the JDF hotfolder.

Asset File Management

Configuring the asset file location (i.e., the PDF file to be printed), is the most complicated part of setting up the app. To understand how the various components involved must be configured it is helpful to get a basic understanding on how asset files in the JDF workflow are handled within the SmartStream workflow.

1. The HP SmartStream Production Center JDF Control app will first copy any incoming asset files to the location defined in the “Asset file location” property.
2. The app will then generate a JDF ticket and move it to the output folder (and ultimately on to the JDF hotfolder of SmartStream Production Center. Inside the JDF ticket will be a generated URL to the asset file. This URL will be generated based on the file name and the value in the “Asset location URL” property (more on this later).
2. (optional) The JDF ticket will be received by SmartStream Production Center and a job will be created. In most cases Production Center will NOT download the asset file at the URL provided in the JDF ticket. The exception to this is if there is a pre-press or non-HP press work center that requires the asset file (e.g. Asset Merge, or a hotfolder work center that must pass off the file to an external location). If there are no work centers like this in the plan, then Production Center will pass the URL through to the HP Printing work center in a new JDF ticket.
3. Production Center will send a new JDF ticket over JMF to the JDF enabled HP device (i.e. a Production Pro Print Server).
4. The HP Digital Front End will download the asset file at the URL provided in the JDF ticket from Production Center (typically the URL generated by the app)



Asset file settings:

There are 4 key settings that determine how The HP SmartStream Production Center JDF Control app handles movement of files and generation of JDF URLs:

1. **Output Format** – Determines if the App will output a JDF ticket or create a MIME package. A MIME package is a collection of multiple files contained in one file including the JDF ticket and the asset file(s).
 - **NOTE:** Although the MIME setting can make asset downloads easier since Production Center doesn't need to go out and download the asset file(s), it is

not a recommended setting. It negatively affects performance by creating and extracting the MIME file, and the app can have unexpected failures if multiple instances of the app are trying to create MIME packages at once.

2. **Asset file location** – This is the folder location where Switch will attempt to copy any files that were input into the app. Enfocus Switch must have write access to this location if it is a remote file share.
3. **Asset location URL** – URLs in the JDF ticket will be generated with this URL plus the name of the file. For example, given the property settings below and a file named “MyFile.pdf” the app would create a URL of FILE://ServerName/Shared/App_Out/MyFile.pdf Production Center would attempt to download the asset file at that URL location. Typically, Asset file location and Asset location URL reference the same location in different formats.

Property	Value
Output Format	JDF Ticket
<i>Asset file location</i>	D:\Shared\App_Out
<i>Asset location URL</i>	FILE://ServerName/Shared/App_Out
<i>File move method</i>	Switch Copy

4. **File move method** – the internal method that Switch uses to copy files to the Asset file location. If “Asset referenced (don’t copy)” is selected the app assumes the Asset location URL contains a complete path to the asset file and doesn’t need to move the file. This Asset URL can be set through metadata pickup/text with variables and will have the best performance since no files need to be moved by the app.

User access

By default, the HP SmartStream Production Center JDF Control app will create a FILE:// based URL in the JDF ticket. This will cause the download client on the SmartStream application to use standard Windows file system controls for downloading asset files. In addition to this, SmartStream Production Center and Production Pro will use the local user rights for the “unicorn” user to download these files.

What does this mean?

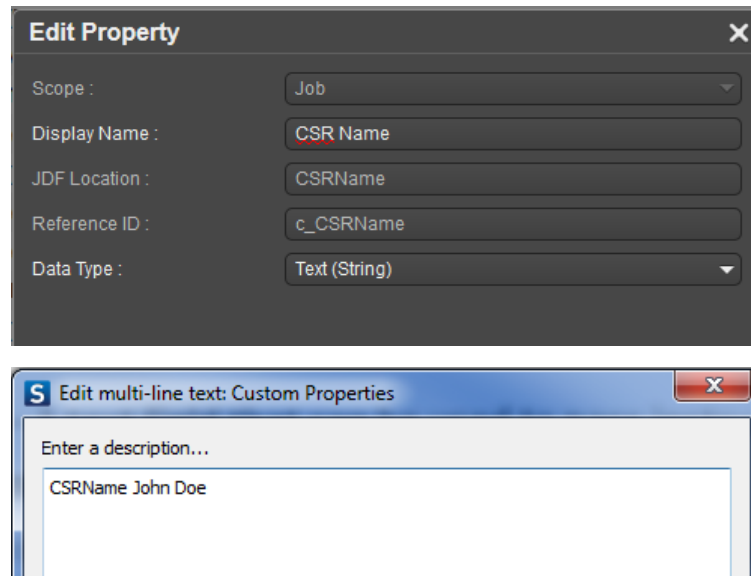
1. Asset files need to be located on a file share that can be accessed by the local unicorn user for Production Center or Production Pro in order to download them. For example if the URL in the generated JDF looks like this: <FILE://FileStorage/Assets/MyFile.pdf> then the Production Center server must have access to the <\\FileStorage\Assets> share for the local unicorn user.
 - **NOTE:** It is not enough to be able to log in to the remote share from the Production Center server, the local unicorn user must have access by creating a user with the same username/password that has access to that file share. If you log-in as the local unicorn user on the Production Center server and try to open a browser to the remote location and are prompted to for credentials, then you most likely do not have the user access set up properly.
 - Typically, if Production Center has access to the share and can download files, the Production Pro should as well since it uses the same credentials and is typically connected to the same network.

2. Enfocus Switch must have write access to this same share in order to copy files from the Switch server to this location. Many people get around the local unicorn access issue by having Switch copy asset files to a share on the Production Center or Production Pro server itself.

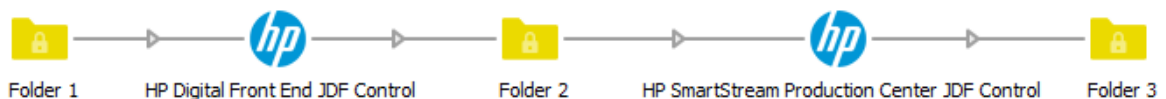
Additional Flow element properties

- **Job Name** – will define the overall job name in Production Center. If this is left at the default setting of “Use asset file name” then the job name will be set to the name of the input file (minus the extension).
- **Job ID / Job Part ID** – sets each of these corresponding values in Production Center.
- **File Sort method** – If the input to the app is a folder containing multiple files, this will determine the order they are listed in the JDF RunList. Sort options are by name or by date created (ascending or descending).
- **Plan name** – defines the production plan in Production Center that this job will be submitted into. This is a required field and must match the name of an existing production plan or the JDF ticket will be rejected.
- **Due Date method** –
 - Select from calendar – Allows you to select a date on a calendar for the Due Date. All due dates will be set with time of 17:00 (5:00 PM).
 - Set offset from submit time – Allows you to select a number of Days/Hours/Minutes from the current time that this job will be due in.
- **Job Priority** – Set the priority of this job. Valid options are integer values from 1 (lowest) to 100 (highest).
- **Quantity** – Sets the overall quantity to be produced for this job.
- **Instructions** – A text field that can be used to pass instructions for this job through to Production Center.
- **Customer name** – Name of the customer for this job.
- **Customer job name** – If the customer has a name for this job it can be provided here.
NOTE: Customer job name will become the overall name of the job if provided.
- **Order ID** – External order ID field that can be passed through to Production Center. Typically an MIS order ID or similar upstream tracking number.

- **Set Custom fields** – If set to “Yes” you can define any number of custom properties and their values. For example, if there was a custom property named “CSR Name” you can set that property by finding the “JDF Location” field (“CSRName” in this case) in the Edit Property dialog. This property can then be set by entering the JDF Location value followed by a space, then the value you wish to set this property to. Each custom property should be separated by a new line.



Linking the DFE and Production Center apps



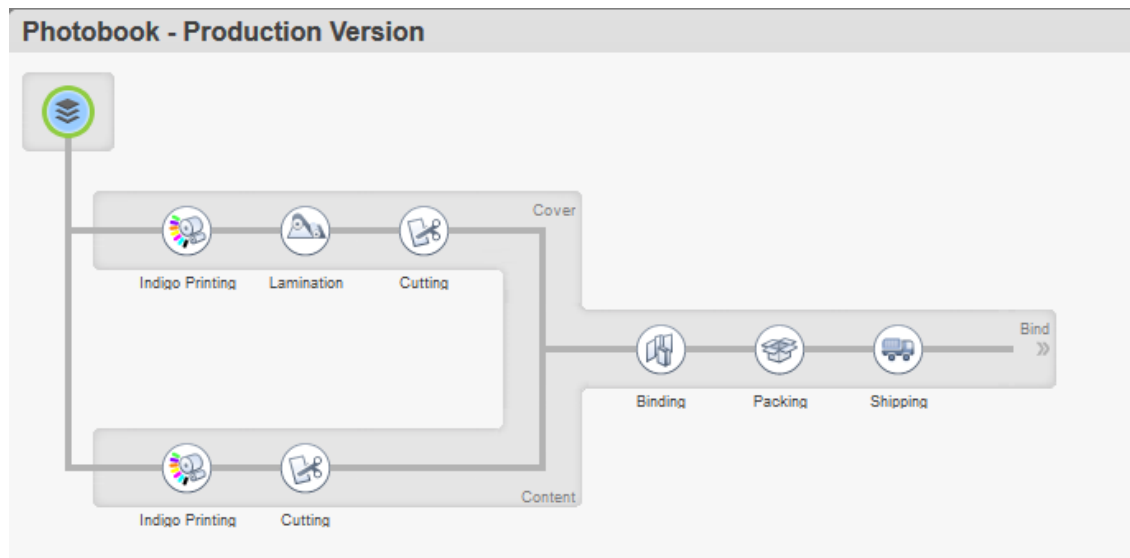
The HP SmartStream Production Center JDF Control app can be linked with the HP Digital Front End JDF Control app by putting the two apps in series as shown above.

This configuration allows you to define additional settings for the SmartStream Production Pro (HP Indigo Printing work center) and pass them through Production Center to the DFE. In general, the stand-alone Production Center app is sufficient for simple single-lane production plans in Production Center, but it is not flexible enough for more complex settings or multi-lane plans.

- Output format of both apps should be set to “JDF Ticket” for this to work properly.
- The HP Digital Front End JDF Control will handle any asset movement and URL creation. These will be passed through to the Production Center JDF control regardless of Asset file settings on the Production Center app.
- If you intend to use the “batching” feature enabled in Production Pro 5.1 or later, this configuration should be used, and individual file copy counts should be defined in the DFE app.

Overview of multi-lane plans in Production Center

This image shows a sample multi-lane plan with two Indigo Printing work centers. This production plan is meant to create Photobooks which have the cover printed with one set of processes (print, laminate, cut) and the content printed with another set of processes (print, cut).



There are a few key items to note with this plan:

1. There are two input lanes:
 1. The top lane (named Cover)
 2. The bottom lane (named Content)
2. All production plans start as a single entry point or "Job" work center.
3. Each work center has its own list of task-level properties that can be set, but JDF enabled work centers such as Indigo Printing, HP Web Press and Connex have a rich set of features that can be set at a task-level and passed through to the controlling application over JDF.

Driving work center settings via JDF

When a JDF ticket is received by Production Center, it will attempt to match individual JDF Resources to either the job or a specific work center based on several factors:

- If the Resource ID attribute value matches the corresponding Resource ID for a given work center.
- If the Resource DescriptiveName attribute value matches the lane name that that work center is located in.
 - The Media Resource is the one exception since DescriptiveName is used to define the name of the substrate.
- If neither of these matches are made then Production Center will attempt to assign the JDF Resources in XML order (not recommended, unexpected outcomes are likely)

The Resource IDs for a given work center can be viewed by selecting the work center in the Production Plan as shown on the right. For example, the NodeInfo Resource for this given work center has an ID value of "IDP_NodeInfo01". Therefore, if a JDF ticket has a NodeInfo Resource with an ID value of "IDP_NodeInfo01" its settings will be mapped to this work center.

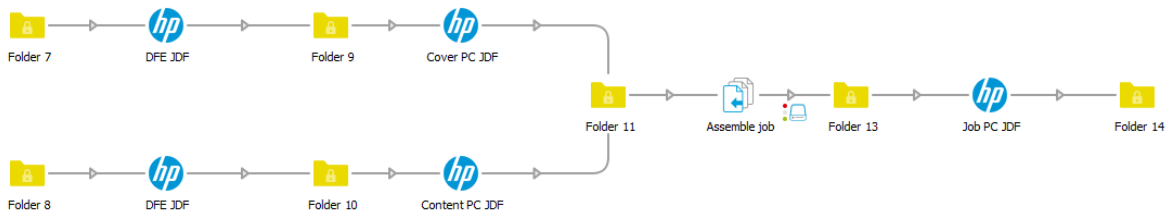
Input Links:	
Name ^	Type
✓ Cover	Digital Asset

Output Links:	
Name ^	Type
✓ Indigo Printing - Output	Physical Asset

Other Resources:	
ID	Type
ColorantControl01	ColorantControl
PressDeviceResID	Device
FeedingParams01	FeedingParams
InsertSheet01	InsertSheet
InterpretingParams01	InterpretingParams
Layout01	Layout
Content	Media
IDP_NodeInfo01	NodeInfo
TrappingDetails01	TrappingDetails
DPP001	DigitalPrintingPa...
LPP001	LayoutPreparatio...

Creating a flow for multi-lane plans

- By combining multiple instances of the HP SmartStream Production Center JDF Control app, you can set individual instances of the app to control both the job and individual work center settings.
- The Switch Flow below models the Multi-lane production plan for Photobooks shown earlier. The first two instances of the app (Cover PC JDF and Content PC JDF) control the individual Indigo Printing work center settings, and the last instance (Job PC JDF) controls the overall job level settings.
- The job-level instance of the app also acts as a merge point for the individual JDF tickets that are created upstream and will merge incoming JDF tickets with the job level JDF that it creates.



Setting up the app

For Job Level Configuration:

Node type	Job
Merge upstream task JDF	Yes

- Node type – “Job”
- Merge upstream task JDF – if this app will be merging multiple task-level JDF tickets created upstream (multiple – lanes) then this needs to be set to “Yes”.

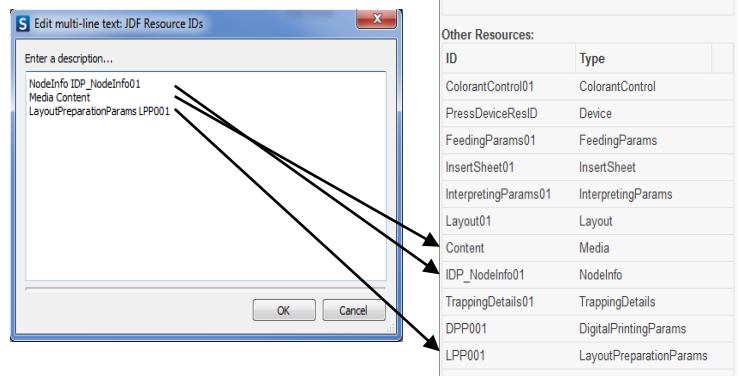
For Task Level (work center) Configuration:

Node type	Task
Lane name	Cover
JDF Resource IDs	NodeInfo IDP_NodeInfo01 Media Content LayoutPreparationParams LPP001

- Node type – “Task”
- Lane Name – must match the name of the lane the work center is in.
- JDF Resource IDs - typically the Lane Name will handle this, but for Media Resources this will not. This option also does a better job of ensuring Resources will map to specific work centers.

Matching Resource ID values

- Resource ID values for a specific work center can be viewed by selecting that work center in the plan view and selecting the “Links” tab in the right column.
- Under “Other Resources” will be a list of each JDF Resource related to this work center and it’s associated ID value.
- You can map this value in the app by editing the Resource IDs property as shown here:
- Each line in the property editor relates to one Resource. Values should be as follows:
ResourceName ResourceID
 where the Resource name and ID values are separated with a space, and each Resource is on a new line.



Which Lane name vs Resource ID mapping

In general, providing the lane name is enough information to map task level information through to a specific work center. However, there are a couple of scenarios where mapping Resource IDs is required:

- If a Media is defined (Media is handled slightly differently in JDF from the other Resources)
- If there is more than one work center in a lane that you wish to drive settings to (i.e. both work centers have the same lane name)

It is not necessary to map every Resource and it’s ID value for each app instance. In general Media will be required if a substrate is being defined for a work center. Other settings are listed under the resources they are handled within JDF (note most of these refer specifically to the Indigo printing work center):

- NodeInfo
 - Job Priority, Due Date, Custom Properties, Instructions
- LayoutPreparationParams
 - Impostion template, Duplexing, Rotation, Page Size
- DigitalPrintingParams
 - Face up / Face Down, Page Order, Media sheet range definitions, Stacker destination, Collate

- Device
 - Destination Device
- ColorantControl
 - Separation Mode

Job level vs Task level properties in Production Center

- All properties in Production Center (built-in or custom) are scoped at either a Job, Task or Link level (Link properties will be ignored for now since they don't apply to this topic).
- Job level properties apply to the overall job and appear in the Jobs view. These include items like Job Name, Production Plan this job will be processed in, Quantity, Job Priority, Due Date and Customer information.
- Task level properties apply only to the task within a specific work center. The same Task level property can have different values in various work centers within a plan.

Properties				
	Display Name ^{▲ 2}	Scope ^{▲ 1}	Link Type	Data Type
▶	Next Late Time (Job)	Job		Date/Time (Date)
▶	Order ID	Job		Text (String)
▶	Plan ID	Job		Text (String)
▶	Plan Name	Job		Text (String)
▶	Rework (Job)	Job		Yes/No (Boolean)
▶	Rework Requested (...)	Job		Yes/No (Boolean)
▶	Root Task ID	Job		Number (Integer)
▶	Root Task State	Job		List (Enum)
▶	send strasse	Job		Text (String)
▶	Submit Time	Job		Date/Time (Date)
▶	Switch BatchName	Job		Text (String)
▶	typ	Job		Text (String)
▶	Work Centers	Job		StringList
▶	Amount	Link	Physical Asset	Number (Integer)
▶	DFE adjust multiplier	Link	Physical Asset	Decimal (Double)
▶	Documents	Link	Digital Asset	Number (Integer)
▶	Estimated Documents	Link	Digital Asset	Number (Integer)
▶	Estimated Pages	Link	Digital Asset	Number (Integer)
▶	Pages	Link	Digital Asset	Number (Integer)
▶	Sheets	Link	Physical Asset	Number (Integer)
▶	Sides	Link	Physical Asset	Number (Integer)
▶	Adjusted Quantity	Task		Decimal (Double)
▶	Aspect Name	Task		Text (String)
▶	Auto Finish Task	Task		Yes/No (Boolean)
▶	Auto Start Task	Task		Yes/No (Boolean)
▶	Can Finish Task	Task		Yes/No (Boolean)

Other considerations

- Multi-lane support is only supported with JDF output in the app, not with MIME packages.
- Output of all “Task” – level app instances need to be merged into a folder in order for the “Job” – level instance to merge them properly. The input to the “Job” – level instance of the app should be a folder containing only JDF tickets.
- When using multi-lane flows in Switch, care needs to be taken that incoming jobs don’t get out of order. For example, if the Cover lane of the flow will typically be receiving small files and the Content lane will be receiving large files, it will take the app longer to move the asset files in the Content lane. This could result in multiple Cover jobs getting merged instead of one Cover and one Content.
- Metadata could probably be injected into the Job – level app instance by adding an XML pickup or some other metadata pickup method after the Assemble job step and before the Job – level app instance, but this has not been validated.