

PRINT MANAGER

OVERVIEW

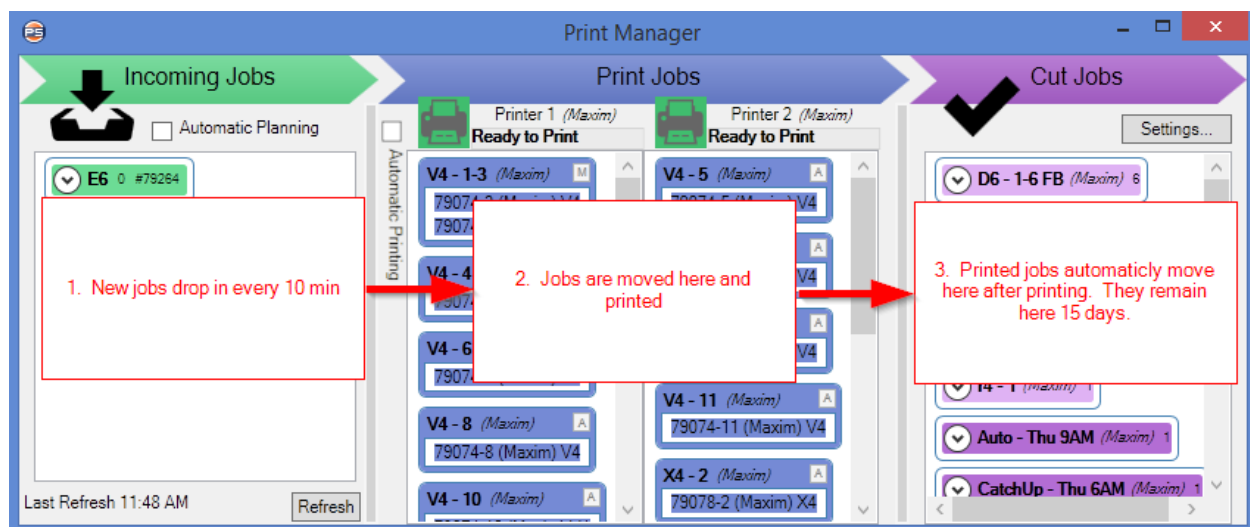
Print Manager's aim is to become a single application that can monitor and orchestrate printing on all printers regardless of what rip, or how many rips are in use. It also attempts to automate much of the mundane steps of prioritizing prints, balancing each printers workload and inform our system when things have printed. Its intent is to lower printing mistakes while increasing prioritization and organization rules for prints, and lower gap time between prints. It also has the intent to relieve much of the management of what, when and where to print something from the print operators so that they can more fully focus on value added things, like print quality, design inspection, throughput.

It is understood that in allowing Print Manager to alleviate the print operator from what, when and where to print jobs that there will be some inefficient and even mistakes made by print manager in this process. So to help cope with this, Print Manager takes a novel design approach that allows a mixture of both automated and manual print planning. This allows the system to automatically plan, say 95% of the jobs while the operator manually intervenes on 5% of the exceptional cases.

BASIC WORKFLOW

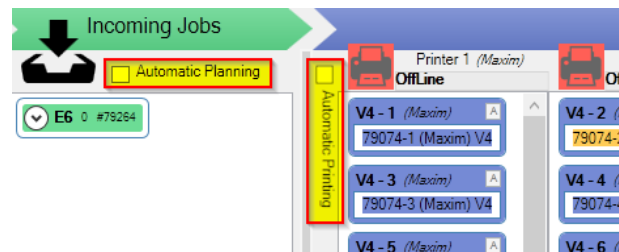
OVERVIEW

The data in Print Manager comes from the Vinyl Manager on the website. So if a job shows in Vinyl Manager, it should show in Print Manager. If a job drops off Vinyl Manager, it will drop off Print Manager too, as long as it has been printed. Every 10 minutes Print Manager will check the system for new or changed jobs and add them to the Incoming Jobs list. Once the jobs are generated they can be dragged into a printers queue and printed. After being printed they are automatically moved to the Cut Jobs list to await cutting. Once in the Cut Jobs list, if they drop off the Vinyl Manager list, they will then automatically drop off the Cut Jobs list. Because of this, the Cut Jobs list will maintain a list of jobs that could be re-printed for up to 15 days.



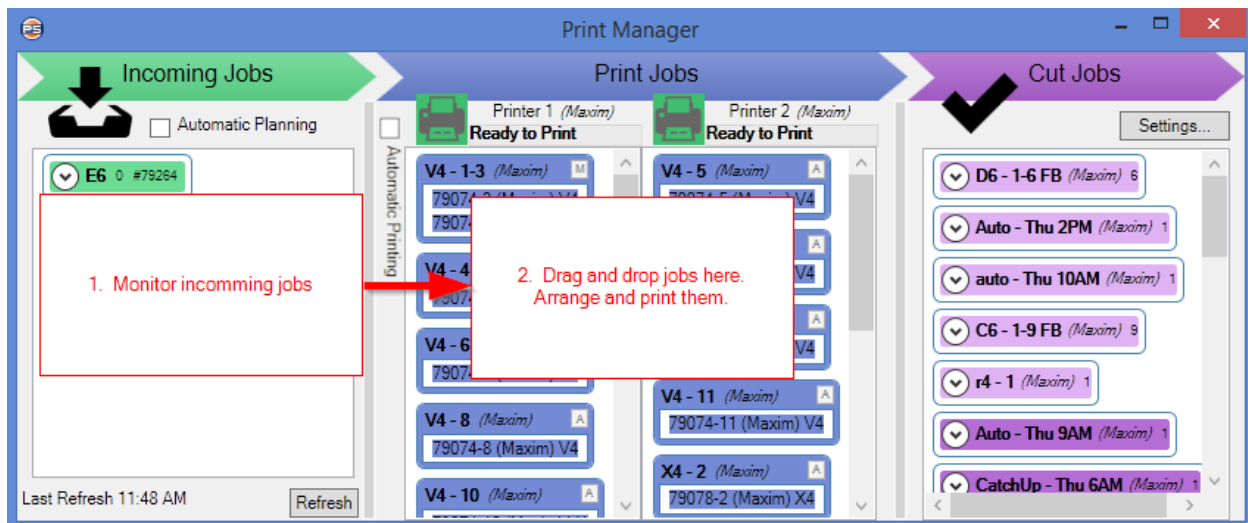
MANUAL WORKFLOW

First, to enable the Print Manager to allow you to manually control all printing and print planning, uncheck the “Automatic Planning” and “Automatic Printing” check boxes. This will place all planning and printing in the operator’s control.



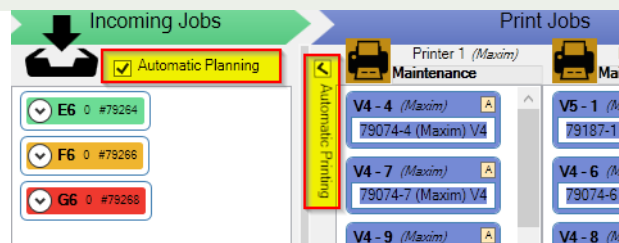
Manual planning and printing is much like it would be without Print Manager (using Onyx or ErgoSoft alone) with the added advantage of having a single application to print on any printer, and having a simpler and more streamlined interface.

You would periodically monitor the “Incoming Jobs” list in Print Manager for any jobs that may be “Ready to print”. These will be Blue, indicating they are ready to progress to the “Print Jobs” list, which is also blue. You would drag and drop the jobs into the appropriate printers queue. If the job is for the roller cutters, Print Manager will split each sheet into an individual Print. Each sheet being in its own print means that each sheet would be cut-off by the printer, and can be planned and prioritized independently. If the job is for the flatbed cutters, Print Manager will place all sheets in the same print. Once in a printers queue you may prioritize or re-organize the prints as appropriate. The final step is to click on the printer icon and select “Print”. When it has completed printing, the print will automatically move to the “Cut Jobs” list and the user can select “Print” again for the next print. All printers can print simultaneously.

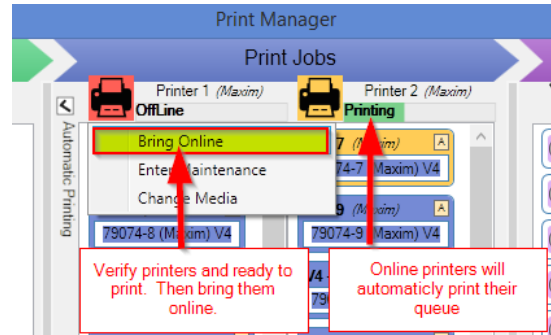


AUTOMATIC WORKFLOW

First, to enable the Print Manager to automatically plan and print jobs, by checking the “Automatic Planning” and “Automatic Printing” check boxes.



When in automatic planning and printing mode, the only concern of the operator is whether or not a printer is in a state where it can print. This is controlled by changing the status of the printer from within Print Manager. By default, when Print Manager is first started, all printers are offline. When the operator starts the printers for the day he prepares them and insures they are ready to print, then changes the printers status to “Online”. If the operator needs to run a few test prints the printer can be change to “Maintenance” and test prints may be printed. Once the printer is “Online” Print Manager will automatically plan and print jobs as they become ready. When the operator finishes for the day, or is no longer available to monitor the printers, the printers’ status can be change to “Offline” and automatic printing will stop. If a printer needs some attention during the day due to banding or other, the print operator changes the printer’s status to “Maintenance”. If the printer is in the middle of the print, canceling the print will automatically put the printer in “Maintenance” mode. While a printer is in a paused state, like maintenance mode. All of its prints in its queue will be redirected to the next best available printer automatically.



GETTING STARTED

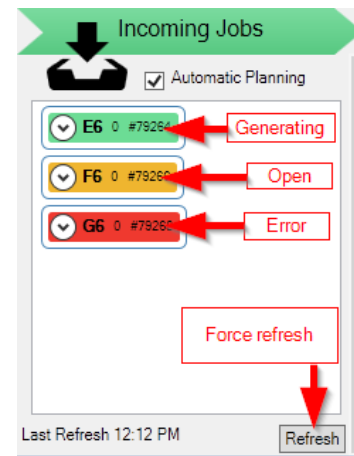
THE INTERFACE

LAYOUT

Print Manager is broken into 3 distinct lists that illustrate a workflow for printing. They are Incoming Jobs, Print Jobs, and Cut Jobs.

INCOMING JOBS

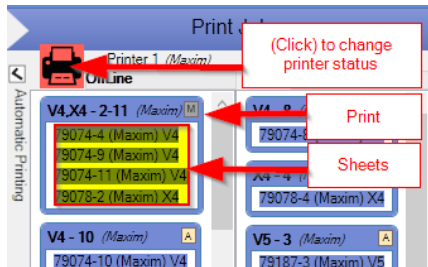
All jobs that have dropped (have generated) first arrive in this list. This list also contains any job that failed to generate and is in error status (red) any open jobs that are still collecting designs (yellow) and any jobs in the process of generating (green) in addition to the jobs that have generated and are ready to print (blue). The jobs list refreshes by itself every 10 minutes by default. This is configurable in the Settings dialog. The refresh button, at the bottom of the list, can also be used to force a refresh to see if any jobs are ready. If the “Automatic Planning” checkbox is not checked then all jobs remain in the list indefinitely, until they are moved out manually. The list is sorted by the created date for the job with the oldest job on top. And newest ones on bottom. This allows visual priority for what’s most important.



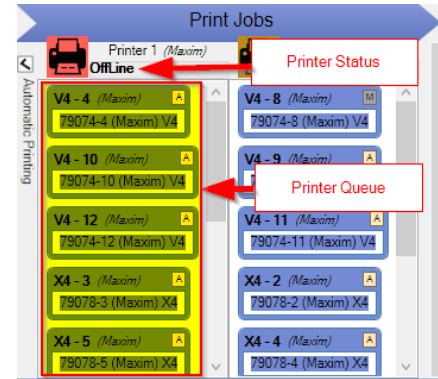
PRINT JOBS

Each printer is represented as a print queue in the Print Jobs list. Additional printers may be added using the settings dialog. The printer icon, at the top indicates the printer's status.

The printer's status is changed by clicking the printer icon. Inside each printer queue are prints. Each print contains 1 or more sheets. When a print is printed, if it contains more than 1 sheet, then the sheets are combined into a single file and sent to the printer.



Each print can be in automatic planning mode, or manual planning mode. This concept is what allows a mixture of automatic planning with some manual overrides where necessary. Whenever something is manually adjusted on a print, for example, the print order is change, or a new sheet is added, the print will automatically switch to manual mode. Checking the “Automatic Printing” button will make any printer that is ready to print “Green” automatically begin printing the



next item in its queue. With “Automatic Planning” off, the printers’ icon will appear gray, indicating they require manual intervention to print.

Prints can be dragged and dropped to the printer queue from Incoming jobs, Cut jobs, and even from another printer’s queue. Once in the print queue the print cannot be dragged back into incoming jobs or cut jobs. Instead it must be deleted. When deleted Print Manager will move the print to the appropriate location.

With “Automatic Planning” enabled, any action you take on a print will probably have a subsequent reaction by the automatic planner. Because of this, there is a short delay between an action you take in the interface, and the automatic planning in response to your action. This is intentional as it give a moment to realize how your change effects the rest of the planning system.

CUT JOBS

Any cut, or ready to be cut prints (printed) appear in the “Cut Jobs” list. The list is sorted by how recently it entered the list. For example, the most recently printed or deleted prints are first in the list, while prints printed long ago are pushed to the bottom. Any print in the Cut Jobs list can be dragged back into a printer’s queue for reprint. However the sheet will maintain its purple color to easily visualize that it’s a reprint as opposed to an initial print (blue). Prints in the Cut Jobs list automatically delete themselves after 15 days. This matches the logic on the Vinyl Manager page on the website. Basically, if you see it in Vinyl Manager, you should be able to see it in Print Manager too.

COLORS

The colors are used through Print Manager to indicate the status of prints, sheets and printers. Hovering over each color will display a tooltip of what the status is. The statuses and colors are as follows:

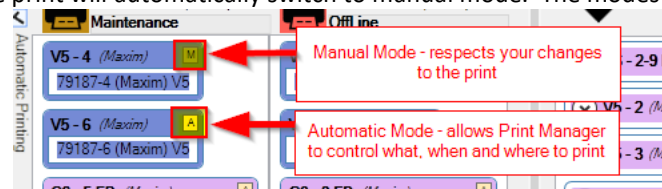
Open	Yellow
Generating	Green
Ready to Print	Blue

Printing	Yellow
Printed	Light Purple
Cutting	Light Purple
Cut	Purple
Error	Red

The colors shift from green to blue to purple indicating the gradual progression of status of a print through its cycles. Yellow and red being used to indicate things on pause, or stopped respectively.

AUTOMATIC VS. MANUAL MODE

The “A” or “M” button in the upper right corner of a print indicates whether or not a print is in automatic or manual planning mode. If in automatic mode, and the “Automatic Planning” checkbox is checked, the print may be reordered, move to a different printer or recombined with other prints at any time by Print Manager. If in manual mode, print manager will respect the printer it’s assigned to, its order in the queue and the sheets contained within it. Essentially both automatic and manual planned prints can exist side by side. If anything is manually change on a print, or a print is canceled, the print will automatically switch to manual mode. The modes can be toggled by pressing the “A” or “M” button. If “Automatic Planning” is disabled, modes can no longer be toggled and the buttons are grayed out. This is a visual indication to know that automatic planning is disabled.



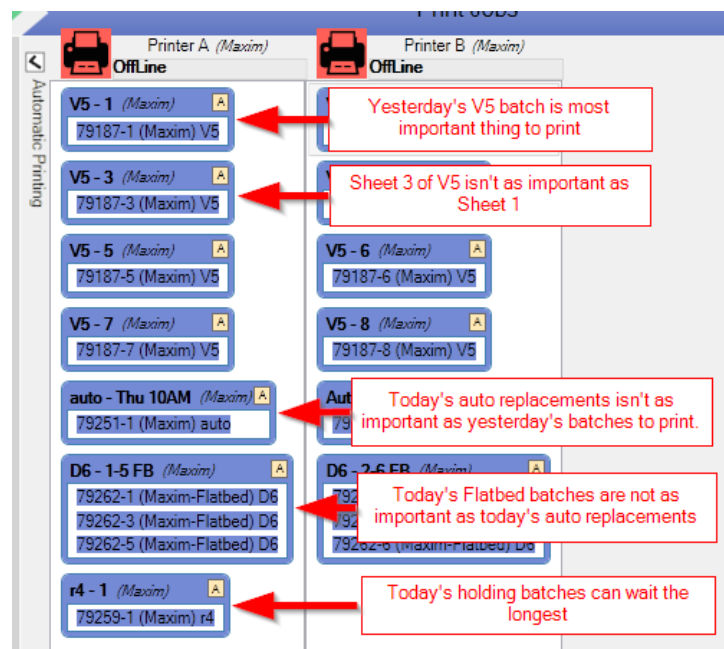
AUTOMATIC PLANNING

When enabled, the Automatic Planning will move incoming jobs that have generated and are ready to print into the printer queue, if one is available. It will also reorder, swap printers or recombine sheets at any time.

PRIORITY (ORDER)

Most of the time, the printer queues are kept small, printing in real time. But when there is a buildup of prints to do. (For example, on Monday morning after a weekend) The priority for sheets are ordered as follows:

1. All jobs created today are prioritized above jobs created yesterday. Then the following applies within the same day
2. Catchups
3. Autos
4. Replacements
5. Roller Batches
6. Flatbed Batches
7. Holding Batches
8. Created Time



9. Lowest Sheet Number

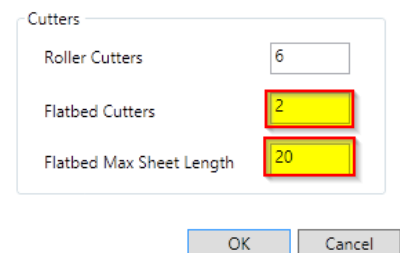
The planner may also recombine sheets together into new sheets

MOVING BETWEEN PRINTERS

If a printer is in maintenance mode, offline, or in error, the planner will move all prints to a more available printer. There is a special case however. If there are no printers available (example: all printers are offline – as is the case on initial startup) the planner will plan as if all printers are available. This is intended to show what-if scenarios for printers while they are all offline. Prints will also be moved to different printers if the media is changed on the printer to one that doesn't match its prints. Automatic planning will never move a print that is in manual mode. The planner will also balance the load between printers. Distributing the load between applicable printers. The highest priority print always goes to the most available printer. For example: if the planner has Printer-A queued with Print-1 (highest priority) and Printer-B queued with Print-2 (second highest priority) then if Printer-A finishes Print-1 and is ready to print another before Printer-B is ready to print Print-2, the planner will move Print-2 to Printer-A to print because it can print it there faster and is more available.

RECOMBINING SHEETS

For jobs intended for the roller cutters the planner will keep each sheet in a separate print. This will allow each print to be cut-off by the printer for loading on to the roller cutters. For jobs intended for the flatbed cutters, the planner combines sheets together in a way that optimizes the output of the available cutters. There are 2 settings that control this in the settings dialog, they are “Flatbed Cutters”, and “Flatbed Max Sheet Length”. The flatbed cutters are the number of actively available cutters. This can be changed in real time if a cutter is suddenly put out of commissions, and the planner will re-plan accordingly.

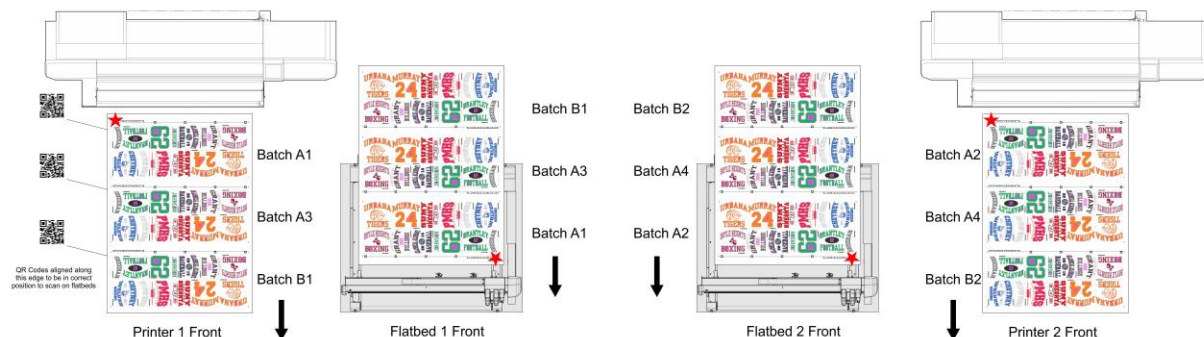


Cutters	
Roller Cutters	6
Flatbed Cutters	2
Flatbed Max Sheet Length	20

OK Cancel

The flatbed max Sheet Length are the max number of sheets allowed to be placed in a single print. The flatbed sheets will try to create a single sheet for each flatbed printer that staggers each sheet in such a way that if you were to load each sheet on each of the flatbeds and cut them simultaneously, it would result in a sequential order coming off the flatbed as A1-1, A1-2, A1-3 ...

Below is an example illustrating this idea:



AUTOMATIC PRINTING

When enabled, any printer that is online and is “Ready to print” will automatically print the next print in its queue. If there are prints of different Medias in the queue, that do not match the printer's media, the printer will skip those prints. Once prints are exhausted from the queue, then the moment a new print enters its queue it will

attempt to print it. If the printer is in any status other than “Ready to print” then the automatic printing feature does nothing.

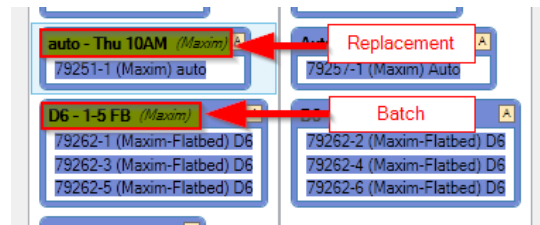
MOVING PRINTS

By drag and drop prints and sheets can be moved and rearranged. The system will not allow you to combine sheets in the same print that aren’t allowed (for example having 2 sheets of different Medias in the same print isn’t allowed). To delete a print or sheet, use the [Del] key or right click and select “Remove” from the context menu. To create a new print for a sheet, drag and drop the sheet onto the bottom, blank area of the print queue. Multiple prints and sheets can be moved or delete at once by holding [Shift] to select a range, or holding [Ctrl] to select multiple at once.

PRINT TITLE

The print title is automatically generated based on what sheets are contained in the print.

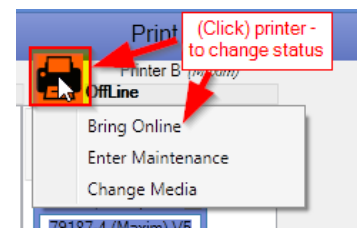
If the print contains batches, the title reads as follows “[batch names] – [Sheet range] [FB if flatbed] ([media])”. Example: “V4 – 1 (Maxim)” means it contains the first sheet from the V4 batch intended for maxim on the roller cutters, “V4,D6 – 1-6 FB (Maxim)” means it contains sheets in the range of 1 to 6 from both V4 and D6 batches that are intended for maxim on the flatbed cutters.



If the print contains replacements the title reads as follows “[replacement type] - [day & hour it was created] [FB if flatbed] ([media])”. Example: “CatchUp - Thu 6AM (Maxim)”.

PRINTER STATE

To change a printer’s state, click the printer icon and select from the context menu. Print Manager won’t show options if it’s not applicable. For example, if the printer is offline, it won’t have the option to print. If a print is canceled, the printer will go into Maintenance mode and the print will be marked as manual mode. This is to allow all other prints to move to a different printer while the current printer, and its print, is being worked on. When not in automatic printing mode, the printer icons are grey to indicate that they will never automatically print, even if online.



INITIAL SETUP

When first starting Print Manager you will have no printers. These will need to be added by going to the Settings dialog. After first creating a new printer, remember to change its media to Maxim as it starts out blank – no media.



TROUBLESHOOTING

ERROR OCCURRED DURING REFRESH

This means there is an issue contacting the website. Check the Vinyl Manager page and see if you can see jobs. This error will prevent getting new dropped jobs but jobs in its queue should still be maintained.

APPLICATION WON'T START, THROWS ERROR ON STARTUP.

This may mean the database that Print Manager uses may be corrupted. Delete or rename it to see if that helps. After deleting it, you will need to recreate each printer. The database is located here:
C:\Producer\PrintManager.db

PRINTER KEEPS GOING TO ERROR STATUS

Hovering over the printer icon will display the actual error in a tool tip. It may give you an indication as to whether the issue is with the print file, or the printer. After the error is corrected you can try the print again.