

## Device Queues and Product Routing

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### Device Queues and Product Routing

Here we will discuss what Device queues are, and how to set them up and how we can apply product routing to these.

We talk about **devices** a lot in this document. A device could typically be a **printer** but it could also be a USB writer, a render-to-file devices, a DVD writer, or even a hotfolder for some other product output.

#### What are Device Queues?

Device queues are a very powerful way of controlling the routing of products to devices, with the following key advantages:

- Allow the system to automatically route prints to the correct printer based on product routing rules
- Manually send batches to a queue instead of to a specific device- allowing multiple compatible devices to be available to each batch sent.
- Gain control of production by enabling or holding queues based on paper sizes which are loaded

- Automatically load-balance between multiple compatible devices.

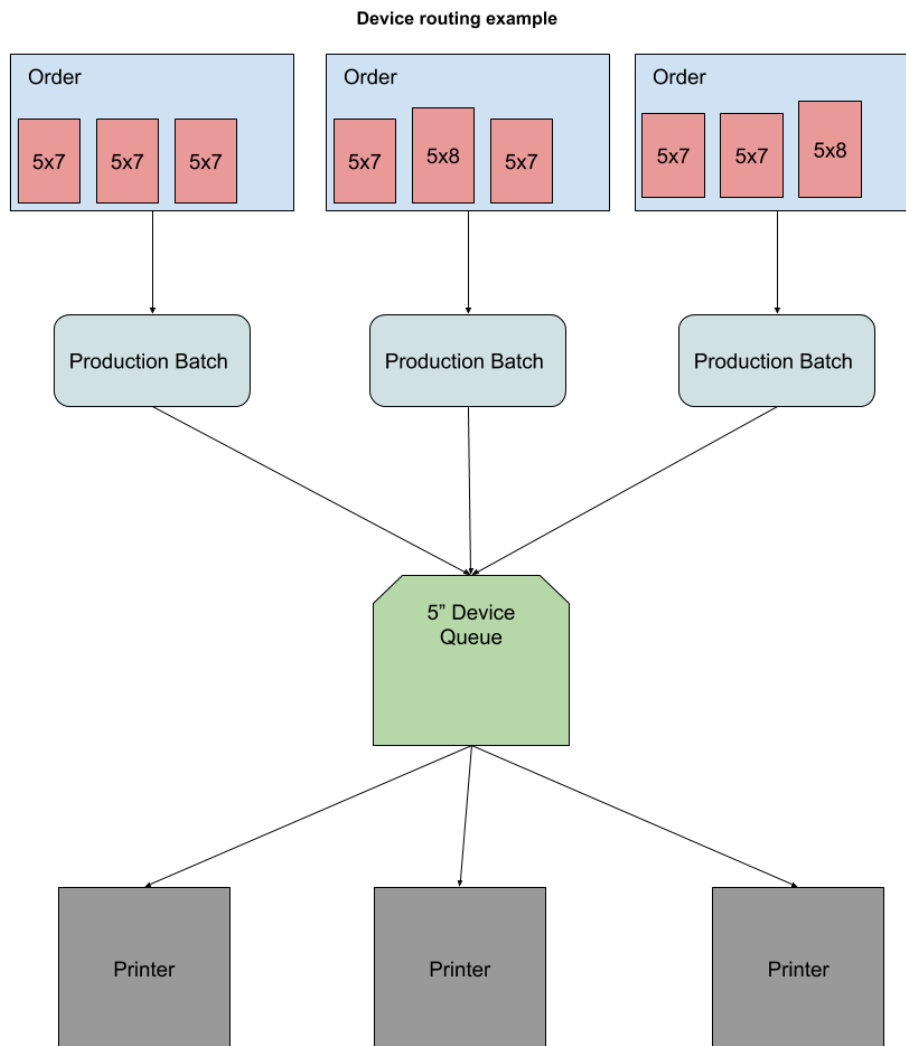
Although this can handle many sophisticated scenarios, the setup can be as simple or as complex as required. In its simplest form, device queues can exist without any associated rules, and be manually managed. This would still allow automated load balancing of fulfilment between all of the devices in a device queue, this is because you can send a production batch directly to a queue, similar to being able to send a production batch directly to a device.

### **Example 1 - Simple load balancing**

This example highlights using device queues for automated load balancing between multiple devices/printers.

*I have 3 Fuji DX100 printers, and an agent running each printer. without Device queues, I would need to send each batch to a specific device and handle the load balancing between devices myself.*

*With Device queues, I can add all 3 devices to a single device queue and then send batches to that queue instead of a specific device - now all 3 devices are able to pick up any batches submitted to that queue. The batches assigned to the queue will be load balanced and fed to one of the 3 devices assigned - whichever is free and ready to pick up a batch.*



This shows load balancing & automated routing of production batches to available printers in a way that distributes the workload between all 3 printers.

### Creating Device Queues

A Device queue can be created from within the Device Queues page in Production Agent, click the 'Add Queue' button and then choose a name for the Device queue, you will also need to choose the media type (Print/Digital - *note that RenderToFile can be used for either*) - Once done hit OK.

Now that a Device queue has been created, you can set up 'Device Routing' by assigning devices to the queue.

### Queue Status

- **Active** - The queue is currently Active, and devices are actively being assigned work from this queue.
- **On Hold** - The queue is currently on hold, work can be assigned to this queue but devices will *\*not\** be assigned work from this queue.
- **Enabled** - When 'Off' work will not be assigned to devices from this queue, and work can not be submitted to this queue.

### What is Product Routing?

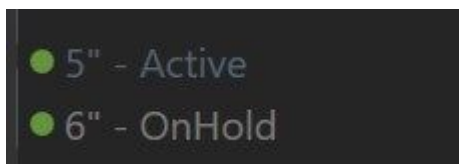
Product routing describes how you define which products go where in the production workflow. Setting up product routes will allow work to be separated and batched in a way that allows it to be produced, this is required in the case where an order contains products that cannot be produced together by the same device-paper pairing.

### Setting up Product Routes

In the Device queues page in Production Agent you can assign products to a device queue - these product routes describe which products should be routed to this queue for fulfilment. This will allow separating work so that it can be produced.

#### Example:

*I have 1 Fuji DX100 printer on a single agent - I need to print 5" and 6" products, to allow this I need to separate all of my 5" prints and my 6" prints so I can produce them.*

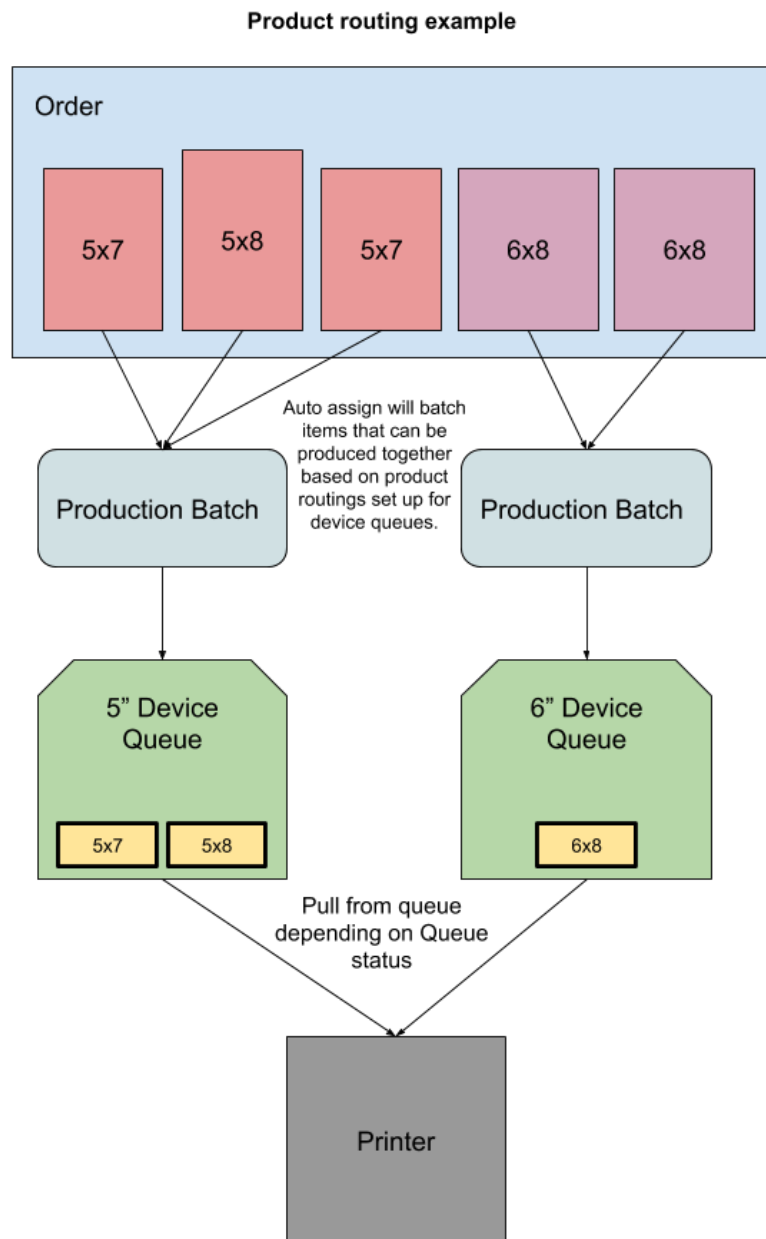


*I have created two device queues, one named 5" and one named 6" - I add all 5" products to the product routing for my 5" device queue, and all 6" products to the product routing for my 6" device queue. I assign my single Fuji DX100 printer to both device queues.*

*I have 5" paper currently loaded in my DX100 and I am going to print my 5" products first - I set the 6" device queue to On Hold and the 5" queue to Active. Now when I go to send work to Production (From the Edit screen, or when releasing Orders to Production) I can choose 'Auto Assign' in the Device drop down list - this will now use my defined product routings to separate the work and route to the correct queues. In this example, I am sending two Orders that have a mix of 5" & 6" products. When sent, two batches will be created - one containing all 5" products and routed to my 5" queue, and one containing all 6" products and routed to my 6" queue.*

*As my 5" queue is currently active, the agent is pulling from this queue to feed my DX100 - all of my 5" work submitted to the 5" queue is produced.*

*When I want to print my 6" products, I can set the 5" queue to On Hold, change the paper in the printer and then set my 6" queue to Active - this will configure the agent to start pulling and producing from the 6" queue.*



**This shows the routing of items in an order with products that cannot be produced together/by the same device-paper pairing.**

The two concepts can work independently, or together depending on the needs of the lab.

Once device queues and product routes are set up as required, the system is able to run the production workflow with a high degree of automation.

### Using Device Queues and Product Routing

Here we will discuss how the two concepts combine together, and how they can be used in production. A Lab may want one, or many of these depending on the needs of the lab.

### Automated Device Load Balancing

Device load balancing means distributing the workload between two or more devices, whilst this can be achieved by someone manually assigning production batches to different devices, this can be error prone, confusing, or slow especially in a high volume lab. Setting up device queues allows this to be achieved in an automated way that saves time and allows for a high degree of automation within the production workflow.

### Automated Routing of work to Devices

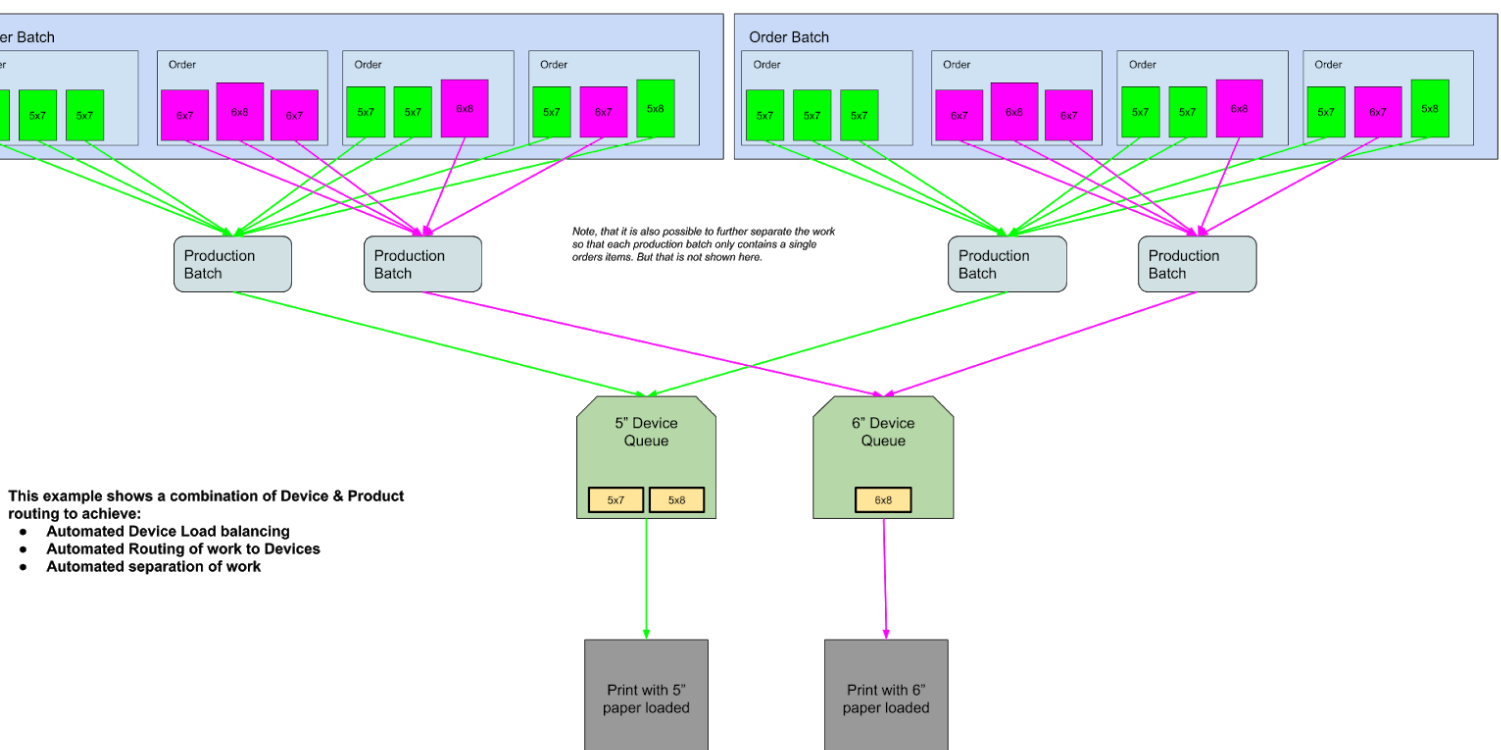
Automated routing means that work can be sent to production and will automatically be routed to the correct device/s for fulfilment. Setting up product routes allows this to be automated.

### Automated Separating of work

Separating work can be necessary if an Order contains products that cannot be produced together by the same device-paper pairing. Setting up product routes allows the separation of work, by product, to be fully automatic when sending to production.

### Diagram showing an example of all 3 combined

Device & Product routing example



## Document Revisions

Rev	Date	By	Notes
1	2019-05-24	maxj	created quick guide
2	2019-05-25	maxj	changes to quick guide - added load balancing information and diagrams.