Dynamic Connect - Print Accuracy Statement

At Dynamic Software Solutions, we aim to provide print solutions that ensure accurate page counts for reliable client billing. Page count print accuracy is not a given standard in the Windows environment, and hence, we provide a number of tools to help organisations achieve their objectives. This document summarises the main ways organisations bill for printing, the tools we provide to support the varying environments and both of our responsibilities in this.

This document summarises how we can count pages, some of the tools available and importantly, each of our responsibilities in setting up and managing the print environment ongoing.

During installation, your assigned Technical Consultant will be available to help you select the right options for your billing objectives. Ongoing, our helpdesk can help you with ongoing management and changes. Please speak to one of our team members.

Print Billing Alternatives

There are 2 main ways organisations bill for printing:

- Bill all pages printed at one default rate

- Bill Colour and Black & White pages at different rates

There is then a variety of custom billing methods firms can use beyond these, which are covered later in this document.

Definitions

Duplex Printing: As standard most firms now print in duplex as standard. Duplex printing is where you print both sides of a sheet of paper. We see each side printed as 1 page. That is a 20 page document printed duplex would use 10 sheets of paper but we count that as 20 printed pages.

If your organisation wanted to count the print as 10 pages, then you need to read on to the section "Bill in an even more granular way for colour and other variations"

Print Environment: The desktop OS, the application that is printing the document, the windows print spooler, the network including firewalls, switches, hubs and other technologies that the print stream will pass through and the printer itself.

Billing all pages printed at one default rate

This simple way of billing for printing is the easiest to implement. Normally we can use our print client and a standard windows desktop. The Microsoft Windows Print Spooler API reports total pages printed accurately in most cases.   Testing is always required to confirm count accuracy for your environment and we've made this as simple as possible.

Recommended Testing

Print our test files to each of the printers in the environment that will be subject to billing. Check the total page counts reconcile.

Should you find discrepancies, you can try other drivers for that printer or consider implementing the Print Smart Reconciliation engine.   Contact your support team for advice.

Bill Colour and Black & White pages at different rates

Billing different rates for Colour and Black & White is common, and it is important to ensure your environment is set up appropriately with our Smart Print Smart Reconciliation engine to ensure accuracy. There are 3 options for improving accuracy in page counting

1. Dynamic Connect Onboard app with Print Smart Monitoring

Some of our Dynamic Connect Onboard apps have Print Smart Monitoring support. The Onboard app listens for print jobs and provides a reconciliation to the server to ensure that what is billed is accurate.

Note: To enable Print Smart Monitoring per print queue you will need to enable this feature per print queue.

2. Implement PrinterLogic by Vasion or Printix by Tungsten Automation

PrinterLogic and Printix are both dedicated print management apps and have features to determine colour vs B&W pages. Our Dynamic Connect print reconciliation service can leverage these third-party apps.

Recommended Testing

With any of these options we provide a testing interface so you can run checks on your print environment. Testing is crucial to ensuring your data integrity. Where issues are detected with count accuracy issues can be raised in advance and resolved.

Billing based on size, duplex, colour and other attributes

Customisations can be accommodated for billing pages at unique rates based on particular combinations. For example, you may want to bill large colour pages at a higher rate again to standard size pages. The variations are endless. If you have such a requirement, please raise this with either your Account Manager or Technical Consultant.

Recommended Testing

Testing for a custom environment is equally important, so please ask your technical consultant for additional guidance.

Challenges, Your Responsibility and Our Responsibility

Our combined challenge is that all implementations of drivers by print manufacturers can vary, and applications themselves create more variations. Drivers also implement different print languages such as PostScript and PCL. Network security can also play a role in managing communications between computers and printers on a network. Any of these components can be updated at any time, making further changes to the environment. All of these factors can create complexities with page counting accuracy. Given the variations in environments, we provide a range of tools.

We are not able to guarantee that any of the above factors will not negatively impact your page counts. Hence, it is your responsibility to test your print environment initially and ongoing.

We will support you with testing tools and guides. Initially, you will have access to a Technical Consultant during set-up and deployment. The support team is available to customers (on subscription) to help you review tests.

Dynamic Connect Onboard Reconciliation

For certain Multifunction Printers (MFPs), our Onboard application can reconcile the print job data captured at submission with the final output data reported by the device as the job is released. This method provides the highest level of accuracy and detail.

Dependencies:

- A supported MFP with the Dynamic Connect Onboard application installed.

- The MFP must be capable of accurately reporting the final print output details.

Limitations:

- Can only be used on Multi-Function Style printers capable of running embedded applications. This will not work for smaller desktop-style or single-function printers.

Implementation:

- To use this method, please ensure you have licensed and installed the Onboard app for your MFPs. Contact our support team to add this capability.

Default Page Counting (Windows Spooler API)

The following provides some additional information on using this option. Our default method uses the Microsoft Windows Print Spooler API. The API receives print information directly from the printer driver and can report the total pages and whether the print job contains colour.

Dependencies:

- The printer manufacturer's driver must report print information correctly and accurately.

- The Windows Print Spooler API must pass this information without error.

- Additional configuration may be required to increase accuracy, e.g - setting 'print after last page is spooled'

Known Limitations:

- Page-level detection of colour is not possible. If the colour flag is detected for a job, all pages in that job will be counted as colour.
- The colour flag may be set to true even when the printer itself is monochrome (B&W only).
- In some instances, total page counts have been found to be inaccurate.
- Information is reported *as it is sent* to the printer. If the printer hardware alters the final output (e.g., booklet finishing), a variation can occur.
- Some B&W-only printers consistently report all print jobs as "Colour"
- Documents with non-standard layouts, such as booklets, may be interpreted differently by printer drivers, potentially leading to page count discrepancies.
- Accuracy is heavily influenced by the specific printer driver in use. While most modern drivers adhere to standard reporting protocols, some can provide unreliable results.
- If a print job is cancelled mid-print or encounters an error, the page count reported by the Spooler might not reflect the actual number of pages physically printed.
- The API generally counts the number of printed sides (impressions). Therefore, a two-sided page will correctly count as two pages. Occasionally, a single-page document sent with duplex settings may report as two pages if the driver rounds up.

Additional Driver settings

The following options in the print driver may also assist with improving accuracy:

- Print After Last Page is Spooled: This ensures the entire job finishes spooling before page counts are read, resulting in a more accurate count.
- Disable Advance printing features: Configures the driver to send print jobs in RAW format, which allows our tracking software to analyse page data with greater accuracy.

Third-Party Reconciliation (PrinterLogic & Printix)

We offer the ability to reconcile print job data against records from leading print management solutions such as PrinterLogic and Printix.

Dependencies:

- The third-party solution (e.g., Printix) must be used for all printing across the environment being monitored.

- Any printing completed outside of this environment will not be reconciled and will fall back to the Default Page Counting method.

Known Limitations:

- Please consult the respective vendor documentation for any specific limitations of their reporting.
Implementation:

- To use this option, ensure you have licensed the third-party product and it is installed on all relevant desktops. Contact our support team to enable the integration.

Validating Accuracy: The Testing Process

Once you have determined which page counting method you will require, the next step is to test and ensure it is working in your specific print environment. Our testing process is designed to help you determine the level of accuracy you can achieve with the Default method and whether a reconciliation engine is necessary for your billing requirements.

Before performing any testing, please ensure that:

- Dynamic Connect Desktop has been installed and is working correctly

- If using a print reconciliation engine, ensure all required configuration has been completed

Then simply visit our dedicated testing portal at <link to test page>. There, you can download the standardised test documents and follow the guided process.

This self-assessment is provided at no charge. Should you encounter any issues or have questions about your results, please contact our support team for further assistance.

Testing should be recompleted whenever a change occurs in your printing environment, such as adding driver updates or new printers.