

iPrint Accounting API

Functional Overview

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1. What it is

This interface provides support for an accounting module on a Linux server to interact with the iPrint Print Manager. It includes basic functionality for tracking the creation and processing of print jobs. It also includes support for extended operations to enable extended functionality. Source code for an example accounting module is provided for the benefit of developers and to demonstrate the basic functionality of the API

2. How it works

- a. If a Printer Agent is configured with the “Accounting Autoload Command “ attribute, the Print Manager launches the specified accounting module, using the executable filename described (see the Configuration section of this document). When the Print Manager unloads, it signals any accounting module that it has launched, to alert the accounting module that it is going away.
- b. The accounting module establishes communication with the Print Manager, using a UNIX domain socket. Then the accounting module registers itself with the Print Manager, using the `NWDP_AccountingBindPsm` operation.
- c. The Print Manager identifies each Printer Agent that is configured for the specific accounting module, using the `NWDP_AccountingBindPa` operation. This operation includes the configured parameter, if any (see the Configuration section of this document). The response from the accounting module specifies at which point(s) in the lifecycle of a print job the Print Manager should contact the accounting module.

- d. At the specified point(s) during the creation and processing of a print job, the Print Manager contacts the accounting module with basic information about the print job. Job processing continues or stops, depending on the response from the accounting module. If the accounting module returns a computed page count for the job, the Print Manager saves the count in the job object. If the accounting module changes the size of the document data file for the job, for example by adding footer content to the pages, the accounting module needs to populate the jobSize field in the reply structure. The Print Manager will save the updated size in the Job object. The response from the accounting module can also direct the Print Manager to place a hold on the job or to cancel it.
- e. If the accounting module has requested a hold on a print job, it can remove the hold or cancel the job, using the NWDP_AccountingJobAction request.
- f. When a Printer Agent is shutdown, the accounting module is notified, using the NWDP_AccountingUnbindPa operation. When a Printer Agent starts, the accounting module is also called with the NWDP_AccountingBindPa operation.
- g. When the Print Manager is unloaded, it signals the accounting module, if the Print Manager originally loaded the module. If not, it calls the module for each Printer Agent that is bound to the accounting module with the NWDP_AccountingUnindPa operation.
- h. When the accounting module is signalled by the Print Manager, it unloads. If it unloads without being signalled by the Print Manager, it calls the Print Manager with the NWDP_AccountingUnbindPsm operation.

3. Configuration

The Print Manager is configured to support the accounting API by setting the “Accounting Autoload Command “ attribute for each Printer Agent that is intended to support accounting. This attribute is similar to the “Gateway Autoload Command“ attribute that configures the iPrint Gateway.

This attribute can be managed from the Printer Agent Configuration page of the iPrint Health Monitor. It can also be set by iprntman.

Support for this attribute is planned for iManager.

The “Accounting Autoload Command “ attribute contains a single text value. The Print Manager parses this text for the executable filename of the accounting module, and any parameters to be passed to the accounting module.

The first word in this value is the name of the executable file of the module. By default, this file resides in the /opt/novell/iprint/bin directory on the server, together with other modules such as the Print Manager (ipsmd) and Gateway (iprintgw). Any text after the first whitespace that follows the first word is the configuration parameter to be passed to the accounting module.

The configuration parameter can be whatever is needed by the individual accounting module, for the respective Printer Agent. The sample module uses these keywords to configure the desired point(s) in the job lifecycle where the Print Manager should contact the accounting module:

newjob	Call at the beginning of job creation
jobcreated	Call at the completion of job creation
jobstart	Call at the beginning of job processing
jobclose	Call at the completion of job processing

In the following example for the accompanying sample module, the accounting module is loaded and specifies that it should be called whenever job creation begins for the respective printer agent, and then the accounting module is called again when job submission is complete for a new job.

```
acctg newjob jobcreated
```

Where acctg is the accounting executable and newjob and jobcreated are the configuration parameters passed to the executable.

4. Notes

- a. The accounting API contains functions to facilitate create, delete, get and set operations for objects in the Managed Object Database (MOD) in the Print Manager. The sample module includes an example of using some of these functions. More example functionality can be added if needed.
- b. The accounting API and sample module do not include any support for eDirectory operations. If it is determined to be worthwhile, we can look at adding functionality, possibly including an operation to acquire an authenticated context from the Print Manager, so the accounting module can do eDirectory operations with the rights of the Print Manager without the name and password required to login. Useful eDirectory operations could include checking and adjusting a credit balance on the user object of the owner of print jobs.