Facilities Manager – Toner Smart Alert Configuration

SUMMARY

Print Audit Facilities Manager (PAFM) can be configured to alert one or more parties when a device requires attention with respect to toner supplies. The device must be licenced at Gold or Platinum level in order to benefit from automatic alerting.

Alert e-mail messages are generated as soon as specified criteria or conditions are encountered. They can be sent to any number of e-mail addresses

PAFM provides you with the 6 independent trigger conditions associated with a devices toner status.

Each condition should be used with consideration to the way the device reports its toner usage and your business requirements.

Smart Alert Profiles

To view the Smart Alert Profiles you currently have configured or to create a new one, navigate to 'Device Management' then 'Smart Alert Profiles'.

Clicking on a profile's name will allow you to edit the profile settings, and clicking the Create new alert profile link creates a new profile.

Configuring Smart Alert Profiles for Low Toner

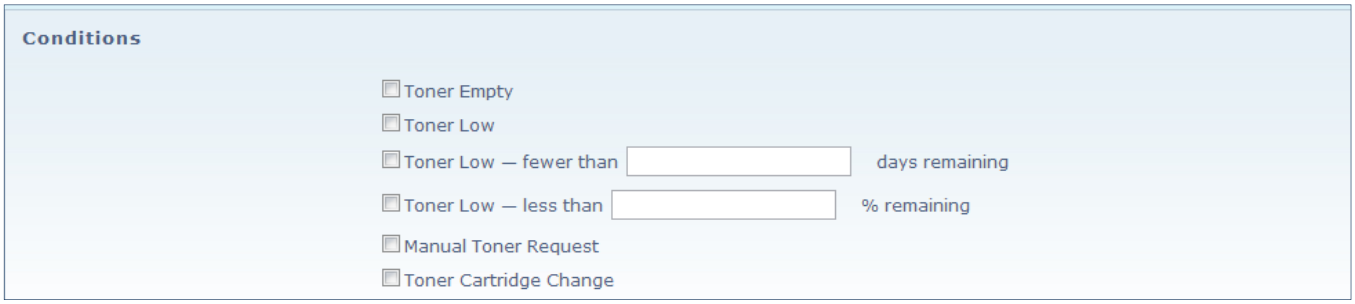
A smart alert profile is comprised of five main components:

1. The Profile Header
2. The Profile Details
3. The list of people to notify
4. A list of devices to which the profile applies
5. Profile Default Settings

In this white paper we will concentrate **2. The Profile Details** for toner based alerting.

The Profile Details

There are 6 individual conditions relating to Toner.



a) ***Toner Empty*** - Triggered when one or more toner / ink cartridges are empty.
b) ***Toner Low*** - Triggered when one or more cartridges are reporting as “LOW”.
c) ***Toner Low (based on days remaining)*** - Triggered when a toner cartridge will run out within the specified number of days.
   Note: the device must have an actual cost profile configured to trigger this alert.
d) ***Toner Low (based on % remaining)*** - Triggered when a toner cartridge reaches the specified percentage remaining.
e) ***Manual Toner Request*** - Triggered when a user clicks on the "Order Toner" button that appears on the supplies information screen for a device.
   Note: Only devices at the Platinum tracking level can trigger this alert.
f) ***Toner Cartridge Change*** – Triggered when a toner change notification is sent by the device. Or the device reports a significant rise in toner >80%.

(a) to (d) relating to the usage of toner.
(e) to (f) used to indicate when a cartridge has been changed or a user has pressed the manual toner order button (where configured).

Careful consideration should be given if selecting **more than one 'level related' condition** (a-d above). Certain combinations **will result in multiple alerts** for the same toner.

This is because conditions effectively 'overlap' whereby both conditions are true and therefore both trigger an alert email.

As an example you might configure two conditions:

(i) Toner Low (less than 25 % remaining)
(ii) Toner Low (less than 15 days remaining)

In this example when the toner reaches 24%, condition (i) will be true, and condition (ii) *may* also be true if 24% of toner is projected to last less than 15 days. If both conditions are true two alerts would be triggered.

FM will always indicate in the alert email which condition triggered the alert, however overlapping conditions and multiple alerts can cause confusion, so are best avoided.

ICE Scan Frequency

The data used for triggering an alert is the data retrieved from the device MIB by the Information Collection Engine (ICE). The frequency of the scan has a direct effect on how quickly an alert is triggered after the actual trigger event has taken place on the device.

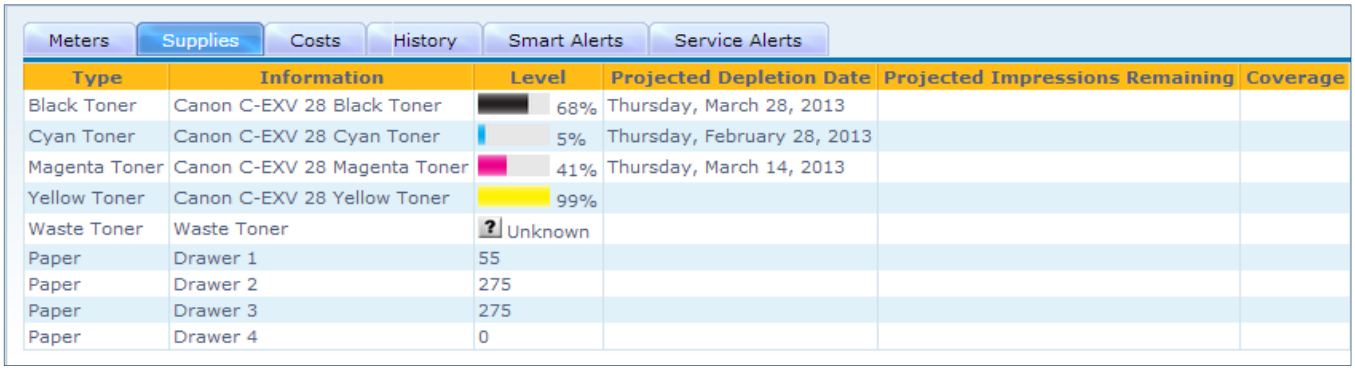
For example if the ICE is set to scan every 120 minutes, and the device toner drops to a low level 2 minutes after an ICE scan has just taken place, it will be at least 118 minutes before FM receives the new level data from the device.

Which alert condition is the best one to use?

The decision as to which condition is the best one to use will be driven primarily by how the device reports its toner levels. Some manufacturers report percentage values, some report 'enumerated' values (e.g. 'OK', 'LOW') and some use both, switching from percentage values to Enumerated at a predefined level (predefined by the device manufacturer).

Devices reporting percentage values also differ in the way the declining toner levels are reported. Some will report in 1% steps others in 10%, 15% and 25% steps. The size of this 'step' in relation to the actual declining toner level will affect the accuracy of the predicted run-down dates, and the ability to trigger an alert at an ideal point in time.

The best way to check how a device is reporting its toner usage is to look at the supplies view of the FM Dashboard or the Supplies tab in the FM Device Details screen.



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Type	Information	Level	Projected Depletion Date	Projected Impressions Remaining	Coverage
Black Toner	Canon C-EXV 28 Black Toner	68%	Thursday, March 28, 2013		
Cyan Toner	Canon C-EXV 28 Cyan Toner	5%	Thursday, February 28, 2013		
Magenta Toner	Canon C-EXV 28 Magenta Toner	41%	Thursday, March 14, 2013		
Yellow Toner	Canon C-EXV 28 Yellow Toner	99%			
Waste Toner	Waste Toner	Unknown			
Paper	Drawer 1	55			
Paper	Drawer 2	275			
Paper	Drawer 3	275			
Paper	Drawer 4	0			

Below are the key manufacturers and how they typically report their remaining toner; however these can vary between models and even firmware levels across the same model. Always check the dashboard or device details screen before deciding which alert condition to use.

Canon , Hewlett Packard, Konica Minolta, Kyocera Mita, Xerox:
Report *Percentage Value* in 1% steps until 0%
100%-99%-98%.....3%-2%-1%-0%

Sharp, Toshiba:
Report *Percentage value* in 25% steps until 25% then switch to *enumerated value "LOW"*
100%-75%-50%-25%-LOW

Lexmark:
Report *Percentage value* in 10% steps until 30% then switch to *enumerated value "LOW"*
100%-90%-80%-70%-60%-50%-40%-30%-LOW

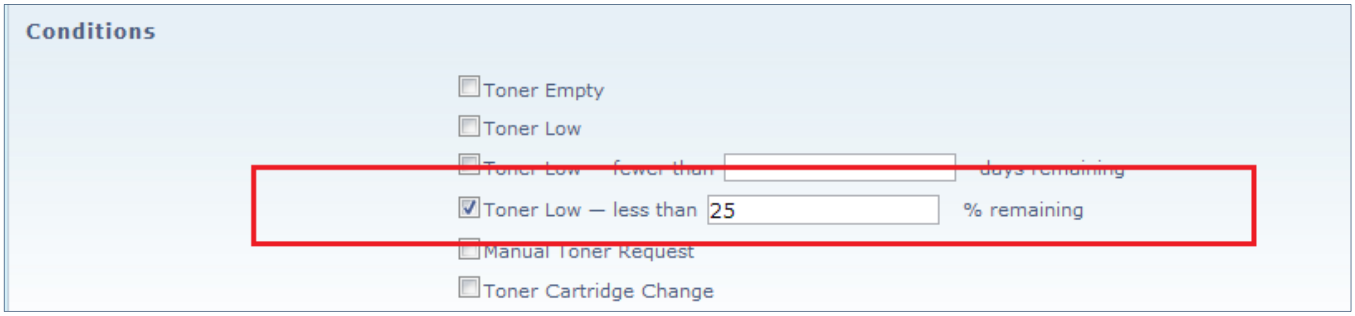
Ricoh:
Some Models *use enumerated values* "OK" switching to "LOW" at around 30% remaining toner
OK-LOW-EMPTY

Most models report a *Percentage value* in 10% steps until 20% then switch to *enumerated value "LOW"*
100%-90%-80%-70%-60%-50%-40%-30%-20%-LOW

Using a percentage based condition.

Before using a percentage based trigger please ensure the device reports the relevant percentage value otherwise the condition will never be met and an alert will never be triggered.

For example if an alert was configured to trigger when the toner remaining is 'less than 25%' as in the image below on a Lexmark device (reporting in 10% drops & switching to LOW at 30 %) the alert would never trigger because the device stops reporting percentage values at 30%. Therefore it never reports a value *Less than 25%.*



In this example if a percentage condition is used it would need to be set to a value higher than 30%.

However if the trigger level is set too close to 30% there is a slight risk the alert will also not trigger. This can be caused if the device skips all possible values between the trigger level and the final value reported by the device.

In other words imagine setting the trigger threshold at "less than 33%". FM will trigger an alert when the device reports 32% 31% or 30% - a 3% margin.

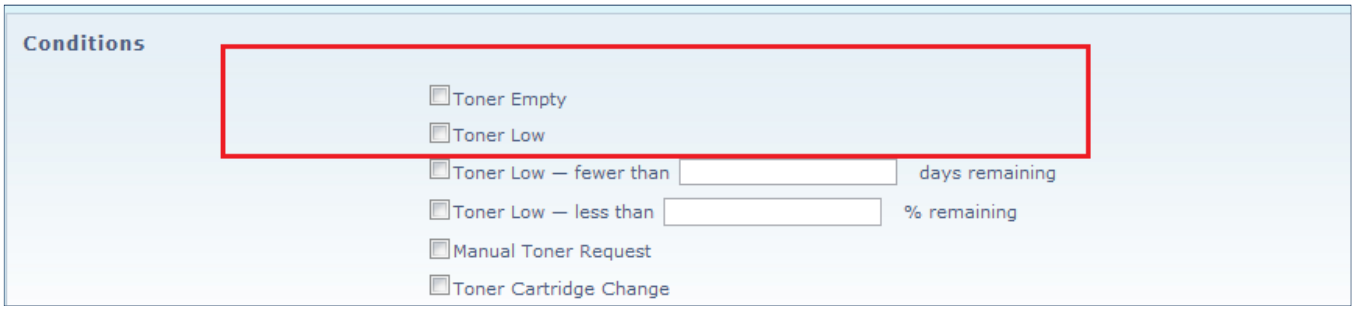
If the device is heavily used it is possible for it to use 3% of its toner between ICE scans, thereby reporting 33% then 'LOW' on successive ICE scans. The alert would not trigger in this situation as none of the trigger values have been reported.

In this example the best condition to use would be "Toner Low" as this would definitely trigger as soon as the device reports "LOW".

Using 'Toner Low' and 'Toner Empty' conditions.

For any device that reports enumerated values such as "OK", "LOW","EMPTY" a percentage trigger WILL NOT WORK.

For these devices the most reliable conditions to use are 'Toner Low' and 'Toner Empty'.



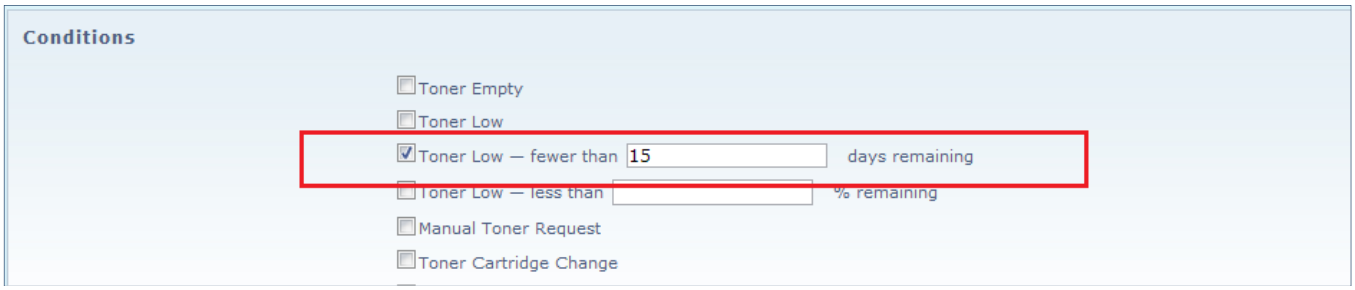
'Toner empty' is self-explanatory, it is triggered when the device reports "EMPTY" this is normally too late for Just In Time ordering processes but good if a site stock is used, as this can be used to trigger the replacement stock order.

For most people 'Toner Low' provides enough time to deliver replacement toner before the device reaches empty. The exact point at which the device reports "LOW" is determined by the device firmware; generally speaking it is around 20% but can be as high as 30%. The device Manufacturer is best placed to confirm the exact level for any given model.

Using the 'days remaining' based condition

Note: The device must have an Actual Cost profile configured to use this alert condition.

All of the above toner level related alerting conditions are triggered by absolute values being reported by the device. The 'days remaining 'condition is slightly different in so far as it is triggered based on an estimated or Projected Depletion Date which is calculated from the data reported by the device .



Because the Projected Depletion Date is an estimated date its use as the basis for alerting and toner ordering should be used with caution.

Provided the device is reporting accurate toner level values and the page volume run rate remains fairly constant the depletion date will be as accurate as possible.

However the following circumstances should be taken into consideration as they will adversely affect the accuracy of the Projected Depletion Date.

1. **Irregular usage patterns and usage 'spikes'**
   If a device has a low volume run rate the projected date is likely to be some weeks away. If the device is then used for a large print run the projected date will adjust accordingly and could trigger an alert. However once the run a rate returns to 'normal' the projected date will re-adjust possibly returning to a date beyond the alert threshold.

2. **Large 'step' decreases in toner reporting.**
   Some devices report their toner usage in large steps, e.g. Sharp devices report in 25% steps, in this scenario FM is seeing pages being printed and time passing but no toner being used, this will continue until 24% of the devices toner has been used (i.e. until the next step is reported). During this period the projected depletion date will potentially be overstated.

3. **Enumerated toner reporting**
   Where a device uses enumerated values to report its toner usage, a rdepletion date cannot be calculated. Likewise if a device switches from percentage to enumerated, FM will not be able to calculate a depletion date once the device has switch to an enumerated value.

4. **Third Party Toner and Firmware issues**
   Where a device is reporting "unknown" for its remaining toner level, whether due to a firmware issue or use of third party supplies FM cannot calculate a depletion date.