LEXMARK

Fleet Manager

Administrator's Guide

Contents

Overview

Lexmark[TM] *Fleet Manager* is a suite of tools that helps organizations save on costs and improve employee and equipment productivity by making it easy to manage printer usage and maintenance. The central component of Fleet Manager is the Fleet Tracker (LFT) 3.0, which aggregates printer data collected and sent to it by the other Fleet Manager components. Though it does not actually collect device data itself, the Fleet Tracker 3.0 (referred to as Fleet Tracker throughout this document) provides the primary user interface for the solution. Lexmark Fleet Manager also consists of Services Monitor (LSM), Embedded Services Monitor (eLSM), Local Tracker (LLT) / Local Printer Management Agent (LPMA), and Fleet Tracker 2.0 (the previous version of Fleet Tracker which can also be used as a data collector). These components collect device and user data and roll it up to the Fleet Tracker 3.0, or Managed Service Provider (MSP), for processing.

To effectively manage printing environments, Fleet Manager can do the following:

- Monitor a large number of printers, printer users, print jobs, and all device meters.
- Calculate customer pricing at the client, group, or device level.
- Provide reports of printer usage, including the number of jobs and pages printed, the number of printers used, energy consumption, and supplies costs.
- Manage printer servicing, including printer maintenance schedules, automated e-mail alerts for printer supply levels, and service tickets.

Auto-discovery

The data collectors automatically detect devices as they are added to the network, updating the data in the Fleet Tracker 3.0 accordingly. To ensure that the use of network resources is kept to a minimum when performing synchronization and monitoring tasks, the data collectors maintain a synchronized configuration as the network environment changes.

Printer monitoring

The data collectors monitor printers and other devices such as print servers, network printers, and USB-attached desktop printers. For printers monitored by network print servers, data collectors connect to the server and query it for any printer information. They also track the server for any changes in reporting status.

The Fleet Tracker sends information regarding low toner, printer jams, and printer status by e-mail to individuals specified in group or device policies.

Security

The Fleet Manager components are monitoring tools only and do not change the settings on networks or computers. Only users with adequate permissions can configure the Fleet Tracker and view printer usage reports.

Rollup data from the Fleet Tracker 2.0, Services Monitor, and Embedded Services Monitor is secured with DES encryption. Fleet Tracker 2.0 and Services Monitor can also be configured to send data over SSL.

Note: This *Administrator's Guide* is written with assumption that readers will have super-administrator-level permissions.

Getting started

Minimum and recommended system requirements

Supported operating systems:

- Windows Server 2012 R2
- Windows Server 2012
- Windows Server 2008 R2

Supported databases:

- PostrgreSQL (built-in)

Server requirements vary depending on the environment in which the Fleet Tracker is operating.

- Minimum requirements, which support up to 2500 devices for two years:
  - 1 processor (3GHz), 1GB of RAM in addition to the minimum RAM required by the operating system
  - 60GB disk space, after operating system installation
- Recommended requirements to support 2500–5000 devices for two years:
  - 1–2 processors (3GHz), 4–6GB of RAM in addition to the minimum RAM required by the operating system
  - 100-200GB disk space, after operating system installation
- If you intend to monitor more than 5,000 devices, consult with your Lexmark representative for recommended system requirements.

Supported browsers:

- Internet Explorer 9
- Google Chrome version 34.x or later
- Mozilla Firefox version 28.x or later

Installing the Fleet Tracker

Notes:

- Make sure you have administrative privileges for the server you are installing the Fleet Tracker on.
- If you do not intend to install and use the open-source PostgreSQL database that comes with the Fleet Tracker, then you must install the database you will use with the solution before installing the Fleet Tracker. When you

install the database, make note of the following pieces of information that you will need when installing the Fleet Tracker: the database vendor, the URL/IP address, user name, and password.

1 From the server on which the Fleet Tracker will reside, launch the Fleet Tracker installer, and then follow the on-screen instructions.

- In the Fleet Tracker Setup wizard, choose which Fleet Tracker components you want to install. Clear the Database check box if you do not want to install the PostgreSQL database and have already preinstalled your desired database. Clear the Port Mirror check box if you do not want the collected data to be replicated between an existing Fleet Tracker 2.0 MSP and the new Fleet Tracker 3.0 that will be installed.

- When installing the PostgreSQL database, you will be prompted to enter a super user name and password for the database. Note that these are the credentials for the database only and do not need to be the same as the administrator credentials of the server.

2 After the installation has completed, make sure that the following services are running:

- LexmarkFleetTracker
- LexmarkFleetTrackerDatabase

Note: The LexmarkFleetTrackerLicensing service will not start to run until you have uploaded a license file to the Fleet Tracker.

3 Log in to the Fleet Tracker Web page.

a Visit the IP address of the Fleet Tracker in a Web browser.

b Log in with the user name "admin" and password "admin." This is the default super administrator of the Fleet Tracker.

c Add credentials for users to access the Web page that are more secure than the default. It is highly recommended that you have at least two super administrators. For information about user roles and adding new users, see "Configuring user access" on page 12.

Configuring remote database connection

Depending on the Fleet Tracker setup and the tools you are using, you may need to set up a connection to the Fleet Tracker database from a computer that does not have the solution installed. This is generally required when using a tool to create reports, like Pentaho Report Designer.

Note: These instructions are specific for the built-in PostgreSQL database. For more information about configuring remote connections, refer to the Client Authentication section in the PostgreSQL documentation.

1 On the server with PostgreSQL and Fleet Tracker installed, browse to C:\%programdata%\Lexmark\FleetTracker \data and open the pg_hba.conf file in a text editor.

2 Under `host all all 127.0.0.1/32 trust`, add another line that explicitly lists the IP address of the computer from which you want to connect to the database. For example, `host all all 192.168.2.12 trust`.

3 Save and close the file, and then restart the LexmarkFleetTrackerDatabase service.

Activating the Fleet Tracker license

In the Fleet Tracker, licenses allow you to monitor a certain number of devices. Once you apply a license, you can specify which devices to monitor by changing their state to "managed" or "unmanaged;" devices in these states are considered licensed devices. While data is still collected for unlicensed devices, which are in "discovered," "retired," or "storage" states, the data is not stored in the database. If the number of devices you want to monitor exceeds the number allotted you by the license, you can purchase additional Fleet Tracker licenses.

To obtain a license file, provide your Lexmark customer service representative with the MAC address of your Fleet Tracker server. Your representative will use the MAC address to generate and provide you with a license file, which you can apply to your Fleet Tracker. Each license file is tied to a specific MAC address and will only work for the server with that address; so make sure you choose to associate license files with a MAC address that will not change, if your server has multiple. If you wish to install the Fleet Tracker on a different server, you will need to acquire new license files.

1 From the Fleet Tracker Web page, click **System Configuration**.

The Upgrades and Licensing tab appears. If you already have a license activated, then this tab shows information on the license, including the total number of devices it allows you to manage and the number of devices remaining.

2 Click **Browse**, and then open the license file.

3 Click **Apply** > **Close**.

Notes:

- While licensed devices are available, newly discovered devices will be automatically placed in the managed state.

- Unlicensed printers remain in the discovered state. You can change the state of devices from the Devices tab.

Upgrading the Fleet Tracker
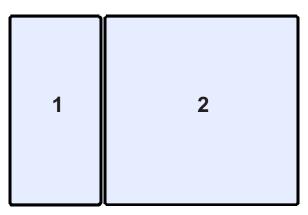
1 From the Fleet Tracker Web page, click **System Configuration**.

The Upgrades and Licensing tab appears. The Versions and Upgrades section shows the current version of the Fleet Tracker and database that you are running.

2 Click **Check for Updates**.

3 If updates are available and you want to apply them, then click **Apply Updates**.

Note: Unlike Fleet Tracker 2.0, Fleet Tracker 3.0 can be upgraded to the latest version without first installing any previous updates that were not applied.

4 Click **Close**.

Using the Fleet Tracker

Understanding the Web page

The Fleet Tracker Web page is the primary interface for monitoring devices, managing policies, and generating reports. You can visit the Web page of the Fleet Tracker by visiting its IP address in a Web browser. The Web page is highly customizable.

Use this area		To
1	Groups pane	Control the scope of the content pane, and manage these two components: • Client—Add, delete, or modify the company name, address, and contact information. • Groups—Add, delete, or modify groups or site location, address, and contact information. **Note:** When rolling up from the data collector to the LFT 3.x server, the Client address details are rolled up to the Group/Site level.
2	Content pane	Using the tabs across the top of the right pane, access specific information and configuration tasks. **Note:** All content views can be customized: columns can be reordered and added/removed and items can be sorted (ascending and descending), filtered, and grouped per column values.

The following table explains what information and settings you can access from the main content pane tabs.

Tab	Description
Devices	This lets you view the list of devices that are being monitored by the data collectors. From this view you can add new devices, delete devices, move or copy devices into groups, etc.
Users	This lets you view and delete from the list of monitored users.
Print Queues	This lets you view print queues that are being monitored by the data collectors.
Tickets	This lets you view, create, and delete tickets.
Policies	This lets you view, create, edit, and delete device and group policies. Policies allow you to specify how tickets and e-mail notifications are handled for a number of device-related events.
Inventory	This lets you view and manage your inventory. You can import your inventory by uploading a CSV file.

Tab	Description
Historical Data	This lets you view historical data.
Reports	This lets you generate, schedule, export, and view reports. You can also view and delete archived reports.
Data Collectors	This provides a list of active data collectors.

Searching the Web page

1 From the Fleet Tracker Web page, click the arrow beside the Search bar along the top of the screen to configure the Search Options.

2 Select which tabs to include in your search from the list of options.

3 Type the text you want to search for into the Search bar, and then click the search icon. The results of your search for each selected tab appear in the content pane. A "Search Results" group is also created in the Groups pane and stores the results of your most recent search until you log out.

Configuring the Fleet Tracker

Configuring server settings

From the System Configuration dialog, you can configure the Fleet Tracker server settings.

1 From the Fleet Tracker Web page, click **System Configuration** > **Server** tab.

2 Configure the following settings.

- **Bind Address** – If the Fleet Tracker server has multiple network cards (i.e., can be accessed at multiple IP addresses), specify the IP addresses where you want the Web page to be accessible. Leave this field blank to make all IP addresses accessible.

- **Session Timeout** – Specify the number of minutes a login session for the Fleet Tracker Web page should last before the connection times out.

- **Server Port** – Select if you want to receive data on the server port. Then specify which port the Fleet Tracker will listen on for rollup data and requests to view the Web page. It is highly recommended that this be set to Port 80, which is the default value.

- **Secure Port** – Select if you want to receive data that is secured using SSL encryption. Then specify which port the secure communication should occur over. It is highly recommended that this be set to Port 443, which is the default value. This option is only available if you upload a root certificate along with a signed certificate to the server.

- **Local Tracker Rollup Port** – Specify which port the Fleet Tracker will listen on for Local Tracker; it is set to port 2722 by default. This must match the port that Local Tracker is being sent on, which can be configured from the Services Monitor.

3 Click **Save**, and then click **Yes** in the prompt to restart the server that appears.

The Fleet Tracker Web page refreshes after the server has finished rebooting.

Note: The server must be rebooted in order for changes in the Server tab to take effect.

Enabling SSL for the Fleet Tracker

1 From the Fleet Tracker Web page, click **System Configuration** > **Server**.

2 Click **Create Certificate Signing Request**, enter the appropriate information, and then click **Ok**.

Note: The only required information is the IP address; however, the more information you provide, the more personalized the certificate will be.

3 Using the Save As dialog that launches, save the request (lfm.csr).

4 Using your own Certificate Authority or a trusted third-party's, create a root certificate and a signed certificate based on the certificate signing request. Alternatively, you can create a self-signed certificate using a tool like OpenSSL.

5 From the System Configuration dialog's Server tab, select the Secure Port check box, and then upload both the root and signed certificates.

Configuring system integration

Configuring e-automate connections

e-automate is a third-party application that helps customers manage common business processes, like inventory control and billing. The Fleet Tracker can be integrated with e-automate so that the application can leverage the Fleet Tracker data.

1 From the Fleet Tracker Web page, click **System Configuration** > **System Integration** tab > **e-automate** tab > ╇. A new connection is added to the list of connections.

2 In the right pane, enter the appropriate information in each tab to configure the connection.

   a In the Connection tab, enter the information that allows the Fleet Tracker to connect to e-automate.

- **Connection Name**—Type a name for the e-automate connection.
- **Username**—Type the user name that allows access to e-automate.
- **Password**—Type the password that allows access to e-automate.
- **Company ID**—Type the company ID associated with the e-automate server.
- **Server Address**—Type the IP address of the e-automate server.
- **Port**—Enter the port number on which the Fleet Tracker data is sent to e-automate.
- **Web API**—Type the Web API used with the e-automate server.
- **API Version**—Enter the Web API version number.

   b In the Group Access tab, select the groups whose data is shared with e-automate over this connection.

   c If necessary, change the meter mapping in the Mapping tab.

     Notes:

- Make sure that the default values have not been changed in e-automate. These values must match the meter fields used in e-automate for the data to be integrated properly.
- If there are meters that you do not want to be sent to e-automate, then clear the **Enabled** check box next to them.
- If you want the meter to be sent only to e-automate if it has a value other than zero, then select the **Non-Zero** check box.

3 From the Connection tab, click **Test Connection**.

   Note: If the connection is unsuccessful, then make sure that the connection parameters are correct.

4 Save the connection credentials.

5 Initiate a data transfer to e-automate:

- Click **Send data to e-automate now** to initiate a one-time data transfer.

  After the transfer is complete, the Last Transfer column is updated with the appropriate time stamp. In the Devices tab, the "e-automate update time" field is also updated for the devices from which data is sent.

     Note: To get the details on the number of successes and failures, check the LFM.log file on the server.

- Select the **Transfer Enabled** check box to schedule a recurring data transfer. Use the Transfer Time field to specify whether to send the data daily, weekly, every other week, or monthly. Then specify the hour of the day (0–23 in 24-hour time) for the transfer to occur.

6 Save the connection credentials, if necessary, and then click **Close**.

Notes:

- In order for the Fleet Tracker data to integrate correctly with e-automate, the printer assets must be configured in e-automate first. The e-automate asset serial number must match the device serial number.
- When the Fleet Tracker completes a data transfer to e-automate for a given connection, the Last Transfer column in the e-automate tab is updated. Likewise, the "e-automate update time" field in the Devices tab is updated for the devices from which data is sent.
- Failed transfers do not appear in the Last Transfer column. To identify the cause of failure, check the error logs from the LFM.log file on the server.

Configuring user access

From the System Configuration dialog, you can configure user access to the Fleet Tracker by adding or removing users, updating user information, and setting group-level access.

1 From the Fleet Tracker Web page, click **System Configuration** > **Users** tab.

2 From the Users pane, add a new user, delete a user, or select an existing user.

3 If you are adding a new user, then do the following:

    a Enter the user's general information.

    b Select a role.

       If you want the user to receive e-mail notifications, then make sure you enter the appropriate details under Contact Information. If you want the user to *only* be able to receive notifications and not log in to the Web page, clear the **Enabled** check box.

    c Select which groups you want the user to have access to in the Group Access tab. Granting access to a group also provides access to all of the child groups under it.

4 Click **Save** > **Close**.

Assigning user roles

Users can be assigned one of the following roles:

- **Super Administrator** – Super administrators have unrestricted access to all parts of the Fleet Tracker Web page except for two limitations: they cannot change their own group access or delete their user account.
- **Administrator** – Administrators have complete access to the Fleet Tracker Web page. The only restriction for administrators is that they cannot add, delete, or edit any user accounts; they can only update their own user information.
- **Technician** – Technicians can view data and manage tickets for any groups they have access to. They can also edit their own general and contact information. Technicians cannot perform any configuration tasks from the Fleet Tracker Web page.
- **Customer Manager** – Customer managers have privileges similar to technicians. They can view data and create tickets. They can also create new historical data views and generate and schedule reports; however, they cannot archive the reports or share the historical views.
- **Customer Viewer** – Customer viewers can view the data for the groups to which they are given access. However, they cannot make any configuration changes or create any new historical views, reports, or tickets.
- **API** – API users can only make calls to the Fleet Tracker Open API REST interface; they are the only users that can do this. These users cannot access the Fleet Tracker Web page. Calls made to the API by API users will only return the data for groups that they are given access to from the Fleet Tracker Web page.

The following table further illustrates the permissions of each user role. If a cell is left blank, then the role has no access.

	Super Administrator	Administrator	Technician	Customer Manager	Customer Viewer	API
System Configuration	Unlimited	Cannot edit other user accounts	Can only edit personal information	Can only edit personal information	Can only edit personal information	
Groups pane	Unlimited	Unlimited				
Devices tab	Unlimited	Unlimited	View	View	View	
Users tab	Unlimited	Unlimited		View	View	
Print Queues tab	Unlimited	Unlimited	View	View	View	
Tickets tab	Unlimited	Unlimited	View and edit; cannot delete	Unlimited	View	
Policies tab	Unlimited	Unlimited				
Inventory tab	Unlimited	Unlimited	View			
Historical Data	Unlimited	Unlimited	Unlimited	Cannot share custom views	View	
Reports tab	Unlimited	Unlimited	View, e-mail, and export reports; cannot archive reports	View, schedule, e-mail, and export reports; cannot archive reports	View	
Data Collectors tab	Unlimited	Unlimited	View			
Make API calls						Unlimited

Notes:

- Users of all roles are prohibited from changing their own user ID and role.
- Users of all roles will only have access to the data or configuration tasks for groups to which they have been given access by a super administrator.

Managing vendors

In the Fleet Tracker, vendors are organizations that are responsible for the upkeep of your devices. Most technicians who service your printers will belong to a vendor. You can manage your vendors from the System Configuration dialog so that you can assign tickets to them. Creating vendors gives you the flexibility to make sure certain maintenance tickets are always sent to the same organization or that all upkeep of a group of devices is handled by a specific organization.

Adding a vendor

1 From the Fleet Tracker Web page, click **System Configuration** > **Vendors** tab > **New Vendor**.

2 In the General Information tab, enter the appropriate information.

3 Click the **Branch Offices** tab.

4 If the branch office has not yet been added, then click **New Branch Office**, add the appropriate information, and then click **Ok**.

5 Select a branch office.

6 Click the **Technicians** tab.

7 If the technician has not yet been added, then click **Add Technician**, add the appropriate information, and then click **Ok**.

> **Note:** You must add technicians in the Users tab before you can assign them to a vendor.

8 Select a technician, and then click **Ok**.

Configuring e-mail settings

Configuring e-mail notifications

Note: Check with your e-mail provider to find the e-mail server information necessary to configure the e-mail notifications. To review the configurations used by some of the most common e-mail providers, see "Appendix A: Common E-mail Server Settings" on page 47.

1 From the Fleet Tracker Web page, click **System Configuration** > **E-mail Notifications** tab.

2 Enter the information for the e-mail server.

- **SMTP Gateway** – Type the address for your e-mail server.
- **SMTP Gateway Port** – Enter the port that e-mail notifications should be sent on. The default is port 25.
- **User ID** – Type the e-mail address that e-mail notifications will be sent from.
- **Password** – Type the password for the e-mail address.

3 If you need to add SMTP properties, then click **Advanced Settings**, configure the properties, and then click **Ok**.

> **Note:** Each SMTP property consists of a name-value pair.

4 If you want the From address in the e-mail notifications to be listed as something other than the Fleet Tracker address, type the desired From address in the "From" E-mail Address field.

5 If you want a different address to be used for replies, select the **Use a different e-mail address for "Reply-To"** check box, and then type the address in the provided field.

6 Click **Save**.

Customizing e-mail messages

The Fleet Tracker allows you to have complete control over the content and style of the e-mail messages that the server sends as notifications. By editing the Groovy Server Pages (GSP) templates on which the messages are based, you can design the notifications to suit your organization's needs.

You can:

- Add variables that tie into back-end Fleet Tracker data to populate the message with appropriate content.
- Structure your content using styles.
- Add images, like your organization's logo.
- Introduce conditional logic to create dynamic messages.

For more information and tips on customizing e-mail messages using the GSP templates, see "Appendix B: Understanding GSP e-mail templates" on page 48.

Grouping printers

Create printer groups and clients to simplify printer usage monitoring and report generation. From a functional perspective, clients and groups are no different. They vary only in their definitions. Clients are used to organize printers and groups for a single customer; you cannot nest a client under a client. Groups can be used to organize printers, clients, and other groups.

Creating a printer group

1 From the Fleet Tracker Web page, click ![icon] in the Groups panel to launch the New Group dialog.

2 Enter the appropriate general information for the new group. Then navigate to the Customer Pricing tab and enter any pricing information you want associated with the new group.

Notes:

- The Name field in the General Information tab is required.
- You can edit this information later by selecting the group and clicking ![icon].

3 Click **Save** > **Close**.

Adding printers to groups

1 From the Fleet Tracker Web page, click the **Devices** tab.

2 From the list of devices, do one of the following:

- Select one or more devices, and then click and drag the selected devices to the group in the Groups panel that you want to add the selection to.
- Select one or more devices, click **Move**, and then, from the Move Device(s) To dialog, select the group to which you want to move the selected devices.

    Note: Moving a device to a group will remove it from the group it is currently in, depending on the level of the destination group.

- Select one or more devices, click **Copy**, and then, from the Copy Device(s) To dialog, select the group to which you want to copy the selected devices.

Managing pricing and costs

Customer pricing and partner cost information can be configured at both the group and device level. Customer pricing information allows you to specify how you are charging customers for a device or group of devices. Likewise, partner cost information lets you specify the costs associated with monitoring a device or group of devices. As with policies, devices within a group inherit the group's pricing and cost information; but changes to a specific device's information will override the group information.

1 From the Fleet Tracker Web page, do one of the following:

- To edit information for a group of devices, select a group, click , and then click **Customer Pricing** or **Partner Costs**.

- To edit information for an individual device, navigate to a device, click **Customer Pricing** or **Partner Costs**, and then click **Edit**.

2 Enter the pricing or cost information. The fields are identical for both Customer Pricing and Partner Costs; the difference is that the Customer Pricing fields are associated with what you charge the customer, while the Partner Costs fields are associated with your own costs.

- **Purchase Order** – Enter the order number.

- **Acquisition Date** – Enter the date the device (or devices) was acquired.

- **Acquisition Type** – Select the type of acquisition: purchase, lease, or rental.

- **Buyout Price** – Enter the price to purchase the device(s).

- **Initial Payment** – Enter the initial payment.

- **Final Payment** – Enter the final payment.

- **Monthly Payment** – Enter the monthly payment.

- **Number of Payments** – Enter the number of payments required.

- **Schedule Event** – Select this check box to enable the event scheduling controls.

- **Expiration Notice Date** – Enter the date the contract will expire. The expiration will occur at 8:00 AM on the specified date.

- **E-mail Notification** – Select a user who should receive an e-mail notification for this event.

- **Notify Before** – Enter the number of minutes, hours, days, or weeks before the expiration that the notification should be sent.

- **BW Allowance** – Enter the number of allotted black-and-white pages.

- **BW Rate/Page** – Enter the base-level price per black-and-white page. This rate can be used if you wish to charge customers or track your costs according to per-page usage, rather than a flat monthly rate.

- **Color Allowance** – Enter the number of allotted color pages.

- **Color Rate/Page** – Enter the base-level price per color page. This rate can be used if you wish to charge customers or track your costs according to per-page usage, rather than a flat monthly rate.

- **BW Overage Rate/Page** – Enter the price per black-and-white page over the allotted number.

- **Color Overage Rate/Page** – Enter the price per color page over the allotted number.

- **Maintenance Payment** – Select the pricing model used to bill maintenance: annually, monthly, quarterly, or cost per page.

- **Maintenance Cost** – Enter the maintenance price.

3 Click **Save** > **Close**.

Managing assets

Managing devices

Managing an individual printer

1 From the Fleet Tracker Web page, click the **Devices** tab.

2 From the list of devices, click the printer you want to manage. Information about the printer appears.

3 Do any of the following:

- View information about the printer from the Device Details tab, including its location and supplies status.
- Review, create, or delete tickets associated with the device from the Tickets tab.
- Create, edit, or delete the device policy from the Policies tab.
- Update customer pricing and partner cost information for the device.
- View archived information about the device in the Historical Data tab.
- View and schedule reports for the device from the Reports tab.
- View the device log from the Log tab.

Note: Changes made to settings at the device level will override settings at the group level.

Adding a printer manually

1 From the Fleet Tracker Web page, click the **Devices** tab > **New Device**.

2 In the New Device dialog, enter the appropriate information for the printer that you want to add.

3 If necessary, add another printer, and then click **Ok**.

Devices that are added manually are automatically placed in storage state. Data is not collected for devices added manually unless they are also discovered by a data collector.

Adding an alternate printer serial number

1 From the Fleet Tracker Web page, click the **Devices** tab.

2 If the Alternate Serial Number column does not appear, then click any column menu, and then click **Columns** > **Alternate Serial Number**.

3 In the Alternate Serial Number field for any printer, click the empty cell to reveal a text box, and then enter the alternate serial number. This value is saved when you leave the text box.

Notes:

- The alternate serial number does not replace the serial number that the Fleet Tracker automatically retrieves.
- The alternate serial number appears in the ticket details in the Tickets tab.
- The alternate serial number appears in the Device Serial Number column in the Historical Data tab.

Adding custom device fields

1 From the Fleet Tracker Web page, click the **Devices** tab.

2 Click any column menu, and then click **Custom Columns** > ＋.

3 Type a name for the new custom column, and then click **Ok** > **Ok**.

You can add values for custom fields in the Devices tab. For any printer, click the custom field cell to reveal a text box, and then type the value. This value is saved when you leave the text box.

Understanding device states

In the Fleet Tracker, devices can be placed in one of five states.

- **Managed** – Devices in this state are monitored by the Fleet Tracker and the data that is collected is stored in the database. Managed devices count against your number of allotted devices as per your license. As they are discovered, devices are put into this state while your licensed devices last.

- **Unmanaged** – This state is essentially the same as managed, but it allows you to differentiate between devices you are currently charging for and those you would like to charge for in the future. Unmanaged devices also count against your number of allotted devices.

- **Discovered** – Devices in this state have been discovered by the Fleet Tracker but are not being actively monitored; any data that is collected is not stored in the database. Discovered devices do not count against your number of allotted devices. If you exceed your number of licensed devices, then newly discovered printers are put into this state.

- **Retired** – Devices in this state are no longer in use; no data is collected for them. Put devices that you want to keep in the system for historical data in this state. Retired devices do not count against your number of allotted devices.

- **Storage** – Devices in this state are not currently in use; no data is collected for them. Storage devices do not count against your number of allotted devices. You can put devices in this state that you want to keep in the system for future monitoring.

Understanding device statuses

Each device monitored by the Fleet Tracker has a device and printer status associated with it.

Device statuses

The device status refers to the current operational state of the overall device.

- **Running** – This indicates that the device is operating normally.
- **Inactive** – This indicates that the device is not active.
- **Warning** – This indicates that an error has been detected but the device is still usable.
- **Down** – This indicates that the device is not usable.
- **Unknown** – This indicates that the Fleet Tracker cannot determine the device status.
- **Testing** – This indicates that the device is in a testing state and cannot be used.

Printer statuses

The printer status refers to the current state of the printer portion of the device; multifunction printers have features beyond just printing print jobs.

- **Idle** – This indicates that the printer is idle.

- **Warmup** – This indicates that the printer is in the process of warming up.

- **Printing** – This indicates that the printer is in the process of printing a document.

- **Other** – This indicates that the printer state could be one of several miscellaneous states.

- **Unknown** – This indicates that the Fleet Tracker cannot determine the printer status.

Managing device servicing

Managing policies

A policy allows you to specify how ticket creation and e-mail notifications are handled for a number of device-related conditions and tasks. These events fall into three categories: service, maintenance, and supplies.

All devices and groups of devices inherit from the All Groups master policy, which can itself be customized as needed. When a custom policy is created for a group, it will override the policy of any parent groups to which it belongs. Likewise, if a custom policy is created at the device level, it will override the policies of any group it belongs to.

Understanding policies

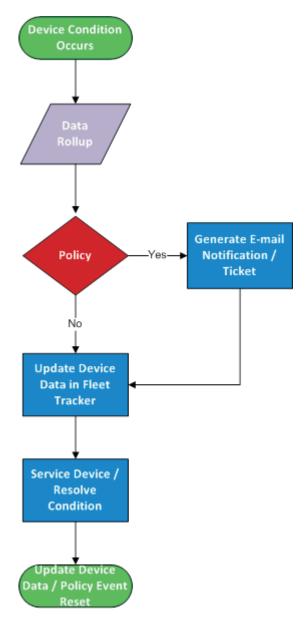There are three types of policy events.

- **Service** – This lets you specify how device conditions that require service are handled (for example, device jammed, input tray empty).

- **Maintenance** – This lets you schedule maintenance activities and specify how they are handled (for example, replace fuser, replace toner).

- **Supplies** – This lets you specify how supplies-related device conditions are handled (for example, paper out, waste toner box level alert).

For each policy event, you can configure what happens when it is triggered.

- **Event Scheduling** – This lets you schedule a maintenance activity (by date or page count). You can configure the event to recur. Event Scheduling is available only for maintenance activities because they are not triggered by device conditions.

- **Ticket Creation** – This lets you configure tickets to be created when the event is triggered. You can set the priority level of the tickets, how long after the event (or prior to, in the case of maintenance events) the ticket is created, and who the ticket is assigned to (vendor, office, or technician). You can also include any additional information as a note.

- **E-mail Notification** – This lets you configure e-mail notifications to be sent when the event is triggered. You can choose the recipients and determine how soon after the event (or prior to, in the case of maintenance events) the notifications are sent.

The device conditions that trigger policy events are assessed whenever the Fleet Tracker receives a new data rollup. Events are triggered when a change in one of the device meters or the device status, printer status, state description, or detected error state fields causes the condition to be met. The policy event is triggered the first time the condition is detected and is not retriggered until the condition is resolved. So, if the condition persists for subsequent rollups, no new e-mail notifications or tickets will be generated until the condition is reset and occurs again.

The following flowchart illustrates the life cycle of a device condition as it applies to policy events; this does not have any bearing on maintenance events.

```
         ┌─────────────────┐
         │ Device Condition│
         │     Occurs      │
         └─────────────────┘
                 │
                 ▼
           ╱─────────╲
          ╱   Data    ╲
          ╲  Rollup   ╱
           ╲─────────╱
                 │
                 ▼
           ◇─────────◇
          ╱           ╲                    ┌─────────────────┐
         ◇    Policy    ◇──Yes──▶         │ Generate E-mail │
          ╲           ╱                    │  Notification / │
           ◇─────────◇                     │     Ticket      │
                 │                         └─────────────────┘
                No                                  │
                 │                                  │
                 ▼                                  │
         ┌─────────────────┐                        │
         │  Update Device  │◀───────────────────────┘
         │ Data in Fleet   │
         │    Tracker      │
         └─────────────────┘
                 │
                 ▼
         ┌─────────────────┐
         │ Service Device /│
         │    Resolve      │
         │   Condition     │
         └─────────────────┘
                 │
                 ▼
         ┌─────────────────┐
         │ Update Device   │
         │Data / Policy Event│
         │     Reset       │
         └─────────────────┘
```

For example, say a device is under a policy that has a paper low supply event configured to generate an e-mail notification immediately when detected. If the device enters a paper low state, the Fleet Tracker detects that condition on the next rollup. This triggers the policy event: the e-mail notification is generated and sent to the specified recipients. The device data in the Fleet Tracker is also updated to reflect the device's current state. The policy event is not reset to trigger again until a rollup indicates that the low paper condition has been cleared.

Notes:

- While group polices will override any parent group polices (for example, the All Groups policy), it is possible for a device to be in multiple groups in different group hierarchies and, therefore, be under multiple active policies. If this is the case, each policy event configuration will be honored. This could cause some confusion if, say, e-mail notifications are being sent to different technicians for the same event, or multiple tickets created and assigned to the same technician for the same event, and so on.

- If the policy event condition depends on the level of a meter, the event will be triggered at or below the specified level.
- If a ticket is created because a policy event is triggered, then it must be closed manually; resolution of the device condition that caused the policy event does not automatically close the ticket.

Creating a new group policy

1 From the Fleet Tracker Web page, select the group of devices from the Groups panel for which you want to create a policy.

2 Click the **Policies** tab > **New Policy**.

3 Select the **Customize Policy** check box to enable the various policy conditions.

4 Customize the policy for the appropriate service, maintenance, and supply events.

5 Click **Ok**.

Creating a new device policy

1 From the Fleet Tracker Web page, click the **Devices** tab.

2 Locate the device for which you want to create a policy, and then click its name.

3 Click the **Policies** tab > **New Policy**.

4 Select the **Customize Policy** check box to enable the various policy conditions.

5 Customize the policy for the appropriate service, maintenance, and supply events.

6 Click **Ok**.

Editing an existing policy

1 From the Fleet Tracker Web page, click the **Policies** tab.

2 From the list of policies, select the policy you want to edit.

The policy information appears. The policy events are organized according to their types in the Service, Maintenance, or Supplies tabs.

3 Edit the policy settings for the appropriate events by clicking the event.

4 Click **Ok**.

Managing service tickets

Creating a device service ticket

In most cases, tickets will be automatically generated as a result of a group or device policy event. However, it can be beneficial in some situations to manually create service tickets. This can be done only for a single device at a time.

1 From the Fleet Tracker Web page, click the **Devices** tab.

2 Locate the device for which you want to create a ticket, and then click its name.

3 Click the **Tickets** tab > **New Ticket**.

4 Enter the appropriate information, and then click **Ok**.

Updating a service ticket

1 From the Fleet Tracker Web page, click the **Tickets** tab.

2 Locate the ticket you want to update, and then click the ticket number to see a detailed view.

3 From the General Information tab, make any necessary changes, and then click **Save**.

4 From the Technician Visits tab, add details about a new visit, or update the information of an existing visit.

5 Click **All Groups** to return to the main Tickets tab.

Managing inventory

Adding supplies to inventory

1 From the Fleet Tracker Web page, click the **Inventory** tab.

2 From the Select View menu, select **Supplies**.

3 If you want to import an existing supplies inventory, then do the following:

   a Click **Import**. The "Upload inventory" dialog appears.

   b Click **Browse**, and then open a CSV file that contains the existing supplies inventory.

   c Click **Ok**.

4 If you want to add a new supply item manually, then do the following:

   a Click **New Item**.

   b Enter the appropriate inventory and order information, and then click **Ok**.

Viewing device inventory

The Devices inventory view allows you to see your devices grouped by manufacturer and model.

1 From the Fleet Tracker Web page, click the **Inventory** tab.

2 From the Select View menu, select **Devices**.

Presenting data

The data collected by the Fleet Tracker can be presented and consumed in a number of ways:

- Historical Data—Display historical data in customizable views.
- Reports—Generate, schedule, distribute, or export reports of your choosing. Fleet Tracker reports allow you to put the information in a presentable form that is more meaningful to your audience.
- Data Collectors—View information about your active data collectors.

Viewing historical data

In the Historical Data tab, you can create flat table views to review archived data for a specified time period. In a flat table, each row represents one item, like a device, and the columns are pieces of information associated with each item, like its IP address, toner levels, status, etc.

Creating views

1 From the Fleet Tracker Web page, click the **Historical Data** tab > .

2 Enter a descriptive name for the new view.

3 Select which item you want the rows to represent. For example, make each row a different device, group, or supply.

4 Select and order which columns you want in your table by using the arrows to move items from the Available list into the Selected list.

5 If you want this view to be available to other users, then select the **Shared** check box, and then click **Ok**.

Selecting a view

1 From the Fleet Tracker Web page, click the **Historical Data** tab.

2 From the View menu, select a predefined view.

3 From the Time Period menu, select the date range that you want the view data to cover.

   Note: If you select **Custom Date Range**, then specify the range in the From/To text boxes.

4 Click to generate the historical data view.

Note: You can also export the historical data view into a CSV file. To view the **Export to CSV** option, hide the groups pane or adjust your screen resolution to 1600 x 1200 or higher.

Generating reports

1 From the Fleet Tracker Web page, click the **Reports** tab.

2 From the Generate Report tab, select a predefined report from the drop-down menu.

3 Select what you want to do with the report: schedule, view, send as e-mail, export to a CSV file.

Note: You can edit or delete scheduled reviews from the Scheduled Reports tab. You can also view and delete past reports from the Archived Reports tab.

Configuring the data collectors

Configuring the Fleet Tracker 2.0 data collector

The Fleet Tracker 2.0 was the previous MSP server component of Fleet Manager. However, it is not obsolete and can be used alongside the Fleet Tracker 3.0 as a data collector. Like the Fleet Tracker 3.0, the Fleet Tracker 2.0 can be configured through its Web page, accessible by visiting the server IP address in a Web browser.

Note: Mentions of "the Fleet Tracker" within this chapter are referring to the Fleet Tracker 2.0, unless otherwise stated.

Minimum system requirements

The minimum system requirements may vary depending on the version of the Oracle database installed on your server.

Supported operating systems:
- Windows Server 2012 R2
- Windows Server 2012
- Windows Server 2008 R2 (with 32-bit compatibility mode installed)
- Windows Server 2003 (32-bit only)
- Windows 7

Using Oracle 11g Express Edition:
- 1 processor (3GHz), 1GB of RAM in addition to the minimum RAM required by the operating system
- 60GB disk space, after operating system installation

Using Oracle 11g Standard Edition, Standard Edition One, or Enterprise Edition:
- 1 processor (3GHz), 4GB of RAM in addition to the minimum RAM required by the operating system
- 100GB disk space, after operating system installation

Note: All new installations of Fleet Tracker 2.0 use Oracle 11g.

Using Oracle 10g Express Edition:
- 1 processor (3GHz), 1GB of RAM in addition to the minimum RAM required by the operating system
- 60GB disk space, after operating system installation

Using Oracle 10g Standard Edition, Standard Edition One, or Enterprise Edition:
- 1 processor (3GHz), 2GB of RAM in addition to the minimum RAM required by the operating system
- 100GB disk space, after operating system installation

Updating the settings to monitor devices

Creating search strings

Search strings indicate to the discovery and polling agents where to look for printers, providing them with ranges of IP addresses to be scanned or excluded. The more defined ranges you use, the more efficient the scan will be. The following examples show the different ways IP ranges can be constructed in the search strings.

Examples:

- `192.168.*.*`
- `192.168.4.*`
- `192.168.4,5,8,12.*`
- `192.168.10,14,16-25.*`

Note: Search strings with several subnetworks or subnetwork ranges listed (like the last two examples) will perform most efficiently. The more subnetworks you can specify in a single search string the better.

If you know that there are no printers in the 50–75 range in subnetwork 5, then you can create the exclusion `192.168.5.50-75`, then use the discovery string `192.168.5.*`. This would scan all of subnetwork 5 except for the range specified in the exclusion, therefore making the scan more efficient.

Note: The dash (-) and the comma (,) can both be used in any of the octets.

The following is an example of a search string that is *not* valid:

`192.168.12,14,17,90.200-255,192.168.200.23-150`

Note: The `192.168.200.23-150` range needs to be added as a separate search string.

Adding a discovery string

Discovery allows the Fleet Tracker to locate any newly installed devices. Discovery searches for IP addresses to install and set up any new devices to be monitored.

Note: Discovery and poll settings apply *only* to servers.

1 From the navigation pane, locate the Administration list, and then if necessary, click ✚ to expand LFT Status.

2 From the LFT Status list, select **Discovery/Poll/pDesktop Search**.

3 From the Internet Search String column, click **Add New String**.

4 In the Host field, make sure the server name is that of the server where the Fleet Tracker is installed.

5 Type the description of the Internet Search String.

6 In the Search field, type the range of IP addresses to search.

   Note: Each search string or IP address is tied to one host. The host name must match the name of the device that the service agent (pDiscovery or pPoll) is running on.

7 Select **Enable this network printer search string**, and then click **Apply Changes** > **Done**.

   Note: If you want to set the string as an exclusion, then select **Exclude these addresses from the search**.

Editing a discovery string

1 From the navigation pane, locate the Administration list, and then if necessary, click ✚ to expand LFT Status.

2 From the LFT Status list, select **Discovery/Poll/pDesktop Search**.

3 From the Internet Search String column, select the Internet Search String you want to edit.

   Note: The initial discovery strings list is set up during the installation of the Fleet Tracker.

4 Edit the necessary details, and then click **Apply Changes** > **Done**.

Deleting a discovery string

1 From the navigation pane, locate the Administration list, and then if necessary, click ✚ to expand LFT Status.

2 From the LFT Status list, select **Discovery/Poll/pDesktop Search**.

3 From the Internet Search String column, select the Internet Search String you want to edit.

   Note: The initial discovery strings list is set up during the installation of the Fleet Tracker on the server.

4 If you want to retain the discovery string definitions, then do the following:

   a Clear the **Enable this network printer search string** check box.

   b Click **Apply Changes**.

5 Click **REMOVE this Record** > **OK**.

Adding a polling string

Poll monitors the installed devices. By default, polling occurs every five minutes. If a poll of all devices takes longer than five minutes, then the next polling will occur on the next five-minute mark.

Note: You may need to install a new polling agent to effectively monitor the current printer load.

1 From the navigation pane, locate the Administration list, and then if necessary, click ✚ to expand LFT Status.

2 From the LFT Status list, select **Discovery/Poll/pDesktop Search**.

3 From the "pPoll Print Server Masks" column, click **Add New String**.

4 In the Host field, type the server name.

5 Type the description of the polling string.

6 In the Search field, type the range of IP addresses to search.

   Note: Each search string or IP address is tied to one host. The host name must match the name of the device that the service agent (pDiscovery or pPoll) is running on.

7 Select **Enable this network printer search string**, and then click **Apply Changes** > **Done**.

   Note: If you want to set the string as an exclusion, then select **Exclude these addresses from the search**.

Setting service run intervals

You can set up service run intervals for the following service agents:

- **patchRx**—This is a software patch service for automated Fleet Tracker updates.
- **pDesktop**—This is a service loaded on Microsoft desktop computers to collect user and printer details and send the data to the pDesktop server.
- **pDiscovery**—This automatically locates devices and printers, and then registers them in the database.
- **pNTPrinters**—This collects device information from Windows NT print servers, and then updates the database.
- **pPoll**—This polls the devices registered in the database by pDiscovery and pTrap on a regular basis and automatically updates device status and changes.
- **pRollup**—This rolls up data from the Fleet Tracker to the Fleet Tracker MSP.

1 From the navigation pane, locate the Administration list, and then if necessary, click ➕ to expand LFT Status.

2 From the LFT Status list, select **Service Run Intervals**.

3 From the Service Run Intervals section, select the service you want to set up.

4 In the Host field, type the name of the service you want to edit.

5 Type the description of the service, and then select the days of the week you want to schedule the service.

6 Specify the time of day you want to start monitoring the device, and then specify how often you want the polling to occur (in minutes and seconds).

7 Specify the time of day you want to stop monitoring the device, and then click **Apply Changes** > **Done**.

Setting timeouts

Timeouts determine the maximum amount of time the agent will wait for a response from the remote device before the Fleet Tracker considers the device not responding. Timeout values should relate directly to network latency. Values may need to be increased if there is high latency so that the Fleet Tracker does not consider a device to be unresponsive when it is waiting on the network.

1 From the navigation pane, locate the Administration list, and then if necessary, click ➕ to expand LFT Status.

2 From the LFT Status list, select **Timeouts**, and then select the service you want to set up.

3 Enter the value (in milliseconds) for each timeout.

4 Enter the maximum number of workers.

This value refers to the maximum number of simultaneous threads the Fleet Tracker will use to perform a discovery or polling task.

Notes:

- The more workers, the more efficient a discovery or polling task will execute; however, more workers also means increased network traffic, which can have counterproductive effects.
- The maximum number of workers is 256; however, if you want to set more than 32 workers, contact your network administrator to ensure that the extra SNMP traffic is allowed.

5 Click **Apply Changes** > **Done**.

Monitoring devices

Monitoring print servers

1 From the navigation pane, click **Printers - Status** in the Printers list.

2 From the All Print Server Groups list, select the group that contains the print server or scroll down to the Ungrouped Printers list if it is ungrouped.

3 From the Print Servers section, click the IP address of the print server.

From here, you can perform administration tasks by clicking 📋.

Notes:

- To view the Web page of the print server, you need to have network access to the IP address.
- If you cannot find your print server, then use the search filters at the top of the page.

- To view all print servers, click **All Print Server Records** at the bottom of the All Print Server Groups section.
- A newly discovered print server will be highlighted in green for three days.

Monitoring printer groups

1 From the navigation pane, click **Printers - Status** in the Printers list.

2 From the "All Print Server Groups" section, select a printer group name to view specific printers in the group and their details.

Monitoring NT print servers

1 From the navigation pane, click **NT Printers** from the Printers list.

2 From the NT Print Servers section, select the print server you want to monitor.

3 Select the printer you want to monitor.

From here you can perform administration tasks on the printer by clicking .

Monitoring printer usage

1 From the navigation pane, locate the Reports list, and then if necessary, click ✚ to expand "Reports on Printing."

2 Do one of the following:

- For information about the use of the desktop printers, click **Desktop Printer**.
- For information about the use of the print servers, click **Print Servers**.

3 Click a column heading to sort the printers or print servers by category.

Monitoring user printing

1 From the navigation pane, locate the Reports list, and then if necessary, click ✚ to expand "Reports on Printing."

2 Click **User Printing**.

3 Click a column heading to sort the user information by category.

4 To see additional details, select a print job.

Enabling SSL

Enabling SSL for server rollup parameters

1 From the navigation pane, locate the Administration list, and then if necessary, click ✚ to expand LFT Status.

2 From the LFT Status list, click **Rollup Parameter ‑ Server**.

3 Click one of the parameter value links to go to the edit screen.

4 In the Network SSL Port Number field, enter **443** to receive the rollup data over SSL.

5 Make sure the **Rollup client enabled** check box is selected, and then click **Apply Changes** > **Done**.

Managing printer serial numbers

Entering a printer serial number manually

When the discovery agent is unable to automatically retrieve a printer serial number, the field will instead be filled with the printer MAC address. In these cases, you can manually change the serial number value to one that is more meaningful for the actual device.

1 From the navigation pane, click **Printer - Status** in the Printers list.

2 Select the server group to which the printer you want to change belongs, and then locate the printer in the list.

3 From the "Serial Number" column, click the link of the serial number you want to change.

   Note: A value in the "Serial Number" column will appear as a link only if the discovery agent was unable to automatically retrieve the printer serial number and filled the field instead with the printer MAC address.

4 In the Serial Number field, enter the serial number you want to use in place of the printer MAC address.

5 Click **Apply Changes** > **Done**.

Maintaining printers

Set up the application to manage printer services and maintenance. Before setting up Printer Maintenance, first create Vendors, Technicians, and Supplies.

Viewing maintenance records

1 From the navigation pane, locate the Asset Management list, and then if necessary, click ✚ to expand Printer Maintenance.

2 Do one of the following:

   - To view any scheduled future maintenance, click **Future Maint./Followup**.
   - To view existing maintenance records, click **Maint./Followup Records**.

Creating a maintenance record

1 Select the printer for which you want to create a maintenance record.

2 Click 🔧 > **New maintenance record** > **Maintenance** tab.

3 Enter the details in the appropriate fields.

   Note: When clicking a field name with a link, a pop-up list appears.

4 Click **Apply Changes** > **Done**.

Scheduling a future maintenance activity

For an existing maintenance record, you may set up a scheduled maintenance activity at a later date.

1 From the navigation pane, locate the Asset Management list, and then if necessary, click ✚ to expand Printer Maintenance.

2 Click **Maint./Followup Records**.

3 From the Printer column, select the name of the printer, and then select a maintenance ID number.

4 From the "Follow Up" and "Scheduled Maintenance" sections, enter the necessary details.

5 Click **Apply Changes** > **Done**.

Configuring the Services Monitor

The Services Monitor is a remote data collector component of Fleet Manager. The Services Monitor collects usage and alert data for up to 1000 printers and rolls it up to the MSP.

To ensure maximum printer efficiency, the Services Monitor provides:

- Continuous audit for 30‑day periods or more
- Snapshots and 30‑day reports containing the number and types of printers, printer meters, printer supplies levels, device status, and pages printed for each printer

Getting started

Supported operating systems

- Windows Server 2008 R2 (with 32‑bit compatibility mode installed)
- Windows Server 2003 (32‑bit only)
- Windows 7

Note: To monitor more than 1000 devices, install Services Monitor on a system with at least 4GB of RAM.

Installing the Services Monitor

Note: Make sure you are logged in to the computer as Administrator.

1 Copy the **LSM_Install_2.27.4.0.x.exe** file to your computer.

2 Launch the file, and then follow the instructions on the computer screen.

After installation, the application will automatically upgrade itself whenever updates are available. To manually upgrade the application, see .

Activating the application

The Services Monitor will remain active as long as it can successfully roll data up to a Fleet Tracker. When the Services Monitor connects to the Fleet Tracker for the first time, you will need to enter your contact information. For instructions on adding your contact information, see .

If the Services Monitor runs 90 days without a successful data rollup to the Fleet Tracker it will become inactive and run with degraded functionality. The Services Monitor will reactivate automatically if it can connect to the Fleet Tracker and successfully roll up data.

You can also manually activate the application with an activation key if connecting to the Fleet Tracker is not a possibility.

1 To access the application, open a Web browser, and then in the address field, type `http://LSM_IP_ADDRESS:2070`.

   Note: Replace `LSM_IP_ADDRESS` with the IP address of the server where the Services Monitor is installed.

2 From the Home page, click **Administration** > **Manual Activation**.

3 If necessary, update your contact information, and then type the activation key and click **Activate LSM**.

   Notes:

   - Fields in red must be specified.
   - If you are having difficulty activating, then you may be required to use a proxy server. For more information, see .
   - The application automatically searches for updates every other day. If an update is available, then the application downloads and installs it on the system.

Upgrading the Services Monitor manually

1 From your computer, access the Task Manager, and then click the **Processes** tab.

2 Select **rXpressStart.exe**, and then click **End Process**.

3 Select **rXpress.exe**, and then click **End Process**.

4 Navigate to the folder where you stored the rXpress.exe and rXpressStart.exe files, and then overwrite the old files with the new ones given to you by a Lexmark representative.

5 Click , or click **Start** > **Settings**.

6 Click **Control Panel** > **Administrative Tools** > **Services**.

7 Select **rXpress Start Service**, and then click **Start**.

8 Verify that the version number is updated.

   a From your Web browser, access the Lexmark Services Monitor.

   b From the Home page, click **Summary** > **System Status**.

   c From the Summary Report section, check the values in the Version field.

Updating contact information

After activation, your contact information is stored in the application. You can update this information at any time after activation.

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **Update Contact**.

3 Update the necessary fields, and then click **Update Contact**.

Sorting printers by column headings

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, select the column heading by which you want to sort the printers.

3 To add or remove a column, do the following:

   a Click **Configuration** > **Select Columns**.

   b From the Printer Columns page, select or clear the column headings you want to add or remove, and then click **Apply Changes**.

Configuring general settings

Entering company information

Note: The activation code is already pre-entered into the application. If you do not see an activation code, then contact your vendor.

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **General**.

3 Type the company code and site location in the fields provided.

   Note: The company code is the name that appears on the rollup host when data is rolled up to a Fleet Tracker MSP.

4 Click **Apply Changes**.

Testing rollup connection

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Administration** > **Test Rollup Connection**.

3 In the Test Rollup Connection field, check the status of the test rollup, and then click **Done**.

Configuring rollup settings

Configuring automatic rollup

Note: Rollup will not occur with a standalone Services Monitor. Fleet Tracker MSP must be installed on the rollup server.

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **General**.

3 Select **Rollup Enabled**.

4 Type the rollup host name or IP address and the rollup port number.

5 From the "Rollup time of day" drop-down menu, select the time you want the rollup to occur, and then click **Apply Changes**.

Performing manual rollup

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Administration** > **Rollup Now** > **Done**.

Enabling SSL for rollup

Rollup data is secured with DES encryption. For increased security, you can configure Services Monitor to also send rollup data over SSL.

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **General**.

3 Select **SSL**.

4 Click **Apply Changes**.

Notes:

- The LFT web interface can be slow during rollup. We recommend performing rollups when the server is not busy.
- To speed up the rollup, turn off the server rollup throttle by adding **`dataCollectorThrottle=0`** to the LFM-config.properties file on the server.

Changing the working directory

Note: Changing the working directory is *not* recommended. You can change the working directory only when necessary.

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **General**.

3 In the Working Directory field, specify the location of the working files, and then click **Apply Changes**.

Changing the language and date format

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **General**.

3 From the Date Format menu, select a date format.

4 From the Language menu, select a language, and then click **Apply Changes**.

Configuring SNMP settings

The application customizes some installations that do not use public SNMP communities. The default SNMP community name is **public**, which is set on the printer.

Note: SNMP must be enabled on a printer for it to work with the application.

Setting discovery timeouts and workers

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **SNMP**.

3 In the "SNMP Discovery Timeout (milliseconds)" field, enter the value for the discovery timeout.

    Note: To make sure all devices are discovered, set a higher value on slower networks.

4 From the "Maximum Number of Discovery Workers" menu, select the number of discovery workers.

    Note: It is recommended that more discovery workers are set on fast networks and fewer discovery workers on slow networks.

5 Click **Apply Changes**.

Configuring printer discovery and polling

Configuring a network search string

Notes:

- The default subnet is the subnet on which the software is installed.
- For information about creating effective search strings, see <u>"Creating search strings" on page 25</u>.

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **Search**.

3 In the Network Search String fields, type the range of IP addresses to search.

    Note: You can enter only one range of IP addresses in one field.

4 Do one of the following:

- To include a string in all searches, select **Enable**.
- To exclude a string from all searches, select **Enable**, and then select **Exclude**.

5 Click **Apply Changes**.

Configuring printer discovery

Scheduling automatic printer discovery

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **Schedule**.

3 From the Discovery Schedule section, select the days of the week to run the discovery searches.

4 From the "Start Time" and "End Time" menus, select the duration of the discovery searches.

5 From the "How Often to Run" menu, select the frequency of the discovery searches, and then click **Apply Changes**.

Performing manual printer discovery

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Administration** > **Discover Now**.

3 In the Discover Now field, check the status of the discovery job, and then click **Done**.

Configuring printer polling

Scheduling automatic printer polling

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **Schedule**.

3 From the Poll Schedule section, select the days of the week to run the polling searches.

4 From the "Start Time" and "End Time" menus, select the duration of the polling searches.

5 From the "How Often to Run" menu, select the frequency of the polling searches, and then click **Apply Changes**.

Performing manual printer polling

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Administration** > **Poll Now**.

3 In the Poll Now field, check the status of the poll job, and then click **Done**.

Setting up a proxy server

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **Proxy**.

3 Type your proxy server user name and password.

> **Note:** The proxy server may or may not require a user name and password. Check with your system administrator to determine if the fields are required.

4 Enter the proxy server name and port number.

5 Select **Proxy Server Enabled**, and then click **Apply Changes**.

Configuring report settings

The application stores data worth two months. On the turnover date, the application automatically e-mails the recipient the report for the current month.

Configuring the report data start day

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **Reports**.

3 From the Data Start Day menu, select the day of the month when initial meters are captured, and then click **Apply Changes** > **Done**.

Configuring the month-over-month comparison report

Because the application stores data worth only two months, the data from the previous month is deleted after a report has been sent on the specified turnover date. The report for the current month becomes the saved report, and a new report begins.

Note: Before the turnover date, an e-mail address must *already* be specified in the Email Recipient field, or the data will be lost.

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **Reports**.

3 From the "Automated Email of Month over Month" section, select your settings.

4 In the Email Recipient field, type the e-mail address, and then select **Email Reports Enabled**.

> **Note:** If you want to use the contact e-mail from the registration/contact information section, then type **$contact.email** in the Email Recipient field.

5 Click **Apply Changes**.

Configuring the meters report

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **Reports**.

3 From the "Automated Email of Meters" section, select your settings.

4 In the Email Recipient field, type the e-mail address, and then select **Email Reports Enabled**.

> **Note:** If you want to use the contact e-mail from the registration/contact information section, then type **$contact.email** in the Email Recipient field.

5 Click **Apply Changes**.

Clearing retained report data

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Administration** > **Clear All Retained Report Data**.

3 Click **OK**.

Configuring alerts

Alerts let you and other users receive e-mail notifications when the printer needs administrative attention.

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **Alerts**.

3 Select the error or alert that needs notification when it occurs, and then from the corresponding Email field, type the e-mail address to which notifications will be sent.

> **Notes:**
>
> - If you select **Toner Level Alert**, **Photo Conductor Level Alert**, or **Waste Toner Box Level Alert**, then specify the percentage at which a notification will be sent.
> - Use a comma to separate multiple e-mail addresses.
> - If you want to use the contact e-mail from the registration/contact information section, then type **$contact.email** in the Email Recipient field.

4 Click **Apply Changes**.

Configuring the e-mail settings

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **Email**.

3 In the SMTP Server field, type the SMTP server name for your company.

> **Note:** If you do not know your SMTP server, then contact your system administrator.

4 In the SMTP Port field, type the port number for your SMTP server.

The recommended port number is 25.

5 In the "From Address" field, make sure the value is **rXpress**.

6 If the SMTP server requires authentication, then from the Email Command String field, add the following string after **blat-**:

–u 'username' –pw 'password'

For example: **blat - -u 'username' –pw 'password' –to "$RECIPIENT"**…

> **Notes:**
>
> - Unless the SMTP server requires authentication, do *not* change the e-mail command string.
> - If you accidentally changed the e-mail command string, then copy this default string into the Email Command String field: **blat - -to "$RECIPIENT" -subject "$SUBJECT" -server $SMTPSERVER -f "$SMTPFROM" -port $SMTPPORT -body "$BODY" –q**

7 Click **Apply Changes**.

Exporting printer meter or volume

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Export** > **Meters/Volume**.

3 Select **Meters** or **Volume** as the file to export.

   Note: You may also select both options.

4 Select **CSV** or **XML** as the data format.

   Note: You may select only one option.

5 Click **Export Data**.

6 To return to the Home page, click **Cancel**.

Exporting Services Monitor configuration

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Export** > **Configuration**.

3 Select **File** or **Email** as the delivery method.

4 If you selected **File**, then type the full path of the location where you want to export the file, or type the name of the file to automatically export it to C:\Program Files\Lexmark\LSM. If you selected **Email**, then type the recipient e-mail address.

5 Click **Deliver Now**, then click **Done** on the confirmation page.

Importing Services Monitor configuration

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Import** > **Configuration**.

3 Click **Choose File**, then select the .ini configuration file you want to import, and then click **Open**.

4 Click **Submit**.

Viewing log files

The log file records the activities of the application.

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Administration** > **Show LSM Log**.

Managing device details

Viewing messages

The Messages page provides a history of alerts and error messages.

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, select a record under the Print Server list, and then scroll down to the Print Server Messages section.

Allowing PJL Probes

Printer Job Language (PJL) provides a method for switching parameters at the job level, such as the printer language. Depending on your printer model, you can set it to allow PJL probes during printing.

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, select a printer from the Print Server list, and then click .

3 From the Edit Device page, select **Allow PJL probe of this printer if supported**.

4 In the "Web probe printer URL" field, type the printer *Uniform Resource Locator* (URL), and then click **Apply Changes**.

Specifying the printer name, contact person, and location

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, select the record you want to edit, and then click .

3 Type the printer name, contact person, and location, and then click **Apply Changes**.

Changing the equipment number

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, select a record under the Print Server list, and then click .

3 In the Equipment Number field, type the new equipment number, and then click **Apply Changes**.

Disabling a record

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, select a record under the Print Server list, and then click .

3 Select the **Disable Record** check box, and then click **Apply Changes**.

Viewing disabled records

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Configuration** > **Select Columns**.

3 Select the **View all device entries including un-monitored devices** check box, and then click **Apply Changes**.

Deleting a record

Warning—Potential Damage: All historical information on a deleted printer will be lost.

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, select a record under the Print Server list, and then click ✖ > **OK**.

Creating a device ticket

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, select a record under the Print Server list, and then click 📝.

3 From the Problem menu, select the current problem of the device.

4 In the Details field, type the details of the problem.

5 From the Priority menu, select a priority.

6 From the Email menu, select the status of the device ticket, and then click **Submit Ticket**.

Managing the Services Monitor

Shutting down the application

1 From your Web browser, access the Lexmark Services Monitor.

2 From the Home page, click **Administration** > **Shutdown LSM**.

Removing the application

1 Launch LSM_Install_2.27.4.0.x.exe.

2 Click **Run** > **Lexmark Services Monitor** > **Remove LSM** > **Yes** > **OK**.

Configuring the Local Printer Management Agent

The Local Printer Management Agent (LPMA), like the Local Tracker, is a software service for Windows and Macintosh computers that tracks usage data for printers. The LPMA monitors local and network print queues and queries local printers for inventory and status information. This way, the LPMA collects data that the other data collectors cannot.

The LPMA collects data in two ways:

- It monitors print queues to retrieve user and print job data for local printers and network printers.
- It queries local printers to retrieve printer inventory and status data.

The LPMA is installed and locally configured on each computer from which you want to track print job and local printer data. Each of these LPMAs rolls up data to the Fleet Tracker directly. For more information about installing and configuring the LPMA locally, see the *Lexmark Fleet Tracker 3.0: Using Local Printer Management Agent* document.

Use the Users and Print Queues tabs to view the data that the LPMA collects. Use the Devices tab to view the local printer inventory data that the LPMA collects. This data is indistinguishable from the data collected by the other data collectors.

Notes:

- Fleet Tracker policy support is limited for LPMA data, as there are certain pieces of data that the LPMA is unable to retrieve. All the maintenance policy events are supported, along with the Toner Level Alert and Waste Toner Box Level Alert supplies policy events. However, the rest of the supplies events and all of the service events are not supported. If policies are configured for these events, LPMA data does not trigger them.
- For Windows systems, the LPMA supports printers locally connected by USB, parallel, or DOT4 ports. For Mac systems, the LPMA supports local printers that are connected by USB only.
- For Windows systems, the LPMA supports network-connected printers associated with standard TCP/IP, Lexmark Enhanced TCP/IP, and HP Standard TCP/IP ports. For Mac systems, the LPMA supports network-connected printers associated with standard TCP/IP ports only.

Frequently asked questions

What network ports should be open for important agents to communicate with the Fleet Tracker 2.0?

- Port 80—Always open this port so that the Fleet Tracker 2.0 Web page can be accessed.
- Port 2090—Open this port if accepting rollup data from pRollup.
- Port 443—Open this port if accepting rollup data over SSL.
- Ports 2722 and 2733—Open these ports if accepting data from Local Tracker. Also open these ports on desktops running Local Tracker so that automatic updates from Fleet Tracker 2.0 can be enabled.
- Port 2070—Open this port if using a Services Monitor.

How do I change my password?

To change your password for the Fleet Tracker 3.0:

1 From the Fleet Tracker Web page, click **System Configuration** > **Users** tab.

2 Select your user name from the list of users.

3 Change your password in the General Information tab, and then click **Save** > **Close**.

To change your password for the Fleet Tracker 2.0:

1 From the Fleet Tracker 2.0 Login page, type your user name and password, and then select **Change**.

2 Click **Login**.

3 Type your new password, and then confirm your new password by typing it again.

4 Click **Change Password** > **Done**.

What do I do if I forget my password?

When you forget your password, you should contact a super administrator who can change your password for you. Because super administrators are the only users who can edit the information of other users, it is recommended that you have at least two super administrators to avoid a situation where no super administrators are able to access the Fleet Tracker Web page. If this does happen, contact customer support.

My network uses Novell for user authentication and printing (iPrint). Will the data collectors work in this environment?

Yes. The data collectors get page count and status information directly from the printers, as long as the printers are using TCP/IP. User printing statistics can be obtained from desktops with parallel- or USB-connected printers, provided that Windows print definitions are used on the desktop (outside of Novell).

What impact will the Fleet Manager components have on the network?

The Fleet Manager components will have very little impact on network bandwidth. The SNMP probes and the returned data are a few packets at most, and the interval for polling devices and timeout settings can be customized.

Troubleshooting

Cannot install the Fleet Manager components

Make sure:

- You are logged in with administrator privileges.
- You followed the installation procedures correctly.
- You have restarted the computer after installing the database component.

If you still cannot complete the installation, then contact customer support.

Cannot access the Fleet Tracker Web page

If you cannot access the Fleet Tracker Web page, make sure that the Fleet Tracker service is running:

1 From the Fleet Tracker server, click ![Windows icon], or click **Start** > **Settings**.

2 Click **Control Panel** > **Administrative Tools** > **Services**.

3 From the Services window, check if the status of the LexmarkFleetTracker service is "Started." If not, select the service, click **Stop** if necessary, and then click **Start**.

If you cannot access the Fleet Tracker 2.0 Web page, follow the steps above and make sure that the Printer Web Service (pWeb) is started.

The Fleet Tracker 2.0 Agent is not running

1 From the Fleet Tracker 2.0 navigation pane, select **LFT Status** in the Administration list.

2 From the Application column in the LFT Agents' Status section, select the application that is not activated.

3 Click **Start Service**.

The database freezes

Restart the Fleet Tracker server.

If you still cannot start the Fleet Tracker, there may be activation or license key issues. Contact customer support.

Messages not forwarded to recipients specified in the General Print Parameters section

Printer Fault Parameters takes priority over group and global settings. If you made any changes on the Printer Fault Parameters tab, then the Fleet Tracker monitors and forwards messages based on these settings.

The data collectors cannot discover a network device

Make sure the IP address range is specified correctly in the search string. For more information on how best to define IP ranges in discovery and polling strings, see "Creating search strings" on page 25.

If the devices are not showing up as expected, then make sure that only *one* string in the given form is entered.

If unexpected devices are discovered, then the devices may be capable of providing IP services and reporting themselves as printers. Common examples include Linux computers and UNIX servers. These devices can be excluded from the discovery and polling routines by setting up the search strings as described.

The Fleet Tracker services do not start

Make sure:

- You are logged in with administrator privileges.
- You have restarted the computer after installing the database component and *before* installing the Fleet Tracker.
- All ports are opened on any firewalls/routers on the network to be monitored.

The Fleet Tracker services require that the database is running. In rare cases (sometimes after a reboot), the database may not start immediately, thus preventing the Fleet Tracker services from running.

In the Fleet Tracker version 2.27.3 or later, the services start while waiting for the database to be available. If necessary, the Fleet Tracker can also force the database to start. For more information, see the Fleet Tracker log files.

Printer does not show any information in the page count field

Try the following:

UPDATE THE PRINTER FIRMWARE TO THE LATEST VERSION

Visit the Lexmark Web site at **www.lexmark.com** to check the latest firmware version for the printer.

Services Monitor Web page does not appear correctly in Internet Explorer 9

The Services Monitor Web page was designed with earlier versions of Internet Explorer in mind, and Internet Explorer 9 processes Web pages differently than earlier versions do.

To view the page correctly, click the Compatibility View button in the address bar. This button appears if Internet Explorer 9 detects that a page is incompatible. Internet Explorer will display the page in Compatibility View in the future.

Appendices

Appendix A: Common E-mail Server Settings

E-mail providers usually recommend the following e-mail server settings for configuring outgoing e-mail with their services.

Notes:

- E-mail providers may change these settings at any time. Make sure that the configurations are still valid before implementing them in the Fleet Tracker.
- These settings may vary for your particular e-mail setup.

Gmail

- SMTP Gateway—smtp.gmail.com
- SMTP Gateway Port—465
- User ID—<account_address>
- Password—<account_password>

Gmail SMTP properties

Name	Value
mail.smtp.auth	true
mail.smtp.socketFactory.port	465
mail.smpt.socketFactory.class	javax.net.ssl.SSLSocketFactory
mail.smtp.socketFactory.fallback	false

Outlook

- SMTP Gateway—smtp.live.com
- SMTP Gateway Port—587
- User ID—<account_address>
- Password—<account_password>

Outlook SMTP properties

Name	Value
mail.smtp.starttls.enable	true
mail.smtp.port	587

Yahoo Mail

- SMTP Gateway—smtp.mail.yahoo.com
- SMTP Gateway Port—465 or 587

- User ID—<account_address>
- Password—<account_password>

Yahoo Mail SMTP properties

Name	Value
mail.smtp.auth	true
mail.smtp.socketFactory.port	465
mail.smpt.socketFactory.class	javax.net.ssl.SSLSocketFactory
mail.smtp.socketFactory.fallback	false

Appendix B: Understanding GSP e-mail templates

GSP is a presentation language, similar to JavaServer Pages (JSP), that allows for much flexibility. It lets you mix HTML and GSP tags so that you can craft dynamic e-mail content and styles for your notifications. You can modify the message templates any way you see fit and can leverage any functionality that GSP makes available.

Variables are accessed in GSP files in the following format: `${ objects.device.manufacturerName }`. In this example, `objects` is the top-level object and `device` is its child; `manufacturerName` is the actual variable, or property, in the objects.device object that is returned.

Here are some helpful tips for customizing notifications using GSP.

- Some e-mail providers, such as Gmail, may ignore HTML styles that are included in the GSP templates. But if the HTML styles are embedded inline, then they are honored.
- If you are not sure whether an object is null, use an if/else clause to check it before you display it. Or include the following logic in the variable statement: `${ ticket?.technician?.displayname }`. This ensures that if the ticket and technician objects are not null, then the display name field is returned.

For more information on GSP capabilities, see the appropriate Grails documentation, available online.

Updating GSP templates

The GSP templates used to generate e-mail messages come preconfigured on the Fleet Tracker server in the <Fleet Tracker install path>\server\webapps\ROOT\WEB-INF\grails-app\views\emails directory. To customize the e-mail notifications that the Fleet Tracker sends, update the GSP files accordingly.

1 Access the Fleet Tracker server and then browse to <Fleet Tracker install path>\server\webapps\ROOT\WEB-INF \grails-app\views\emails.

2 Open the GSP template you want to update, make the necessary changes, and then save the file.

   Note: If you need to revert to predefined templates later, make sure to keep backup copies of the templates.

If the Fleet Tracker server detects changes in the templates, then it recompiles the GSP files so that the next e-mail notification it sends uses the updated template.

There are five predefined templates that the Fleet Tracker uses to generate e-mail notifications. Each template has some specific objects associated with it and objects that are common across all templates that you can leverage to customize the content. The rest of this topic outlines what each template is used for and the data items that are available for them.

The following objects are common across all of the GSP e-mail templates:

- *dictionary*—This object is used internally to translate text strings, primarily field names, into the appropriate localized text. There are no predefined child objects; instead, they are determined by the developer and vary based on the implementation. This is an extension to the strings that appear in /i18n/index_$<language>.properties, where <language> is a language code, such as "en" or "de."
- *objects*—This object contains the "theme objects" of the e-mail (such as objects.device and objects.policy). Most of the data items that you use in the notifications are found in this object.
- *host*—This object contains the host name and host IP address of the server sending the e-mail. To access the fields, use "host.hostAddress" for the IP address and "host.hostName" for the host name.

The *PolicyDeviceEvent_<language>.gsp* template is used to generate e-mail notifications for policy events, as configured in the device policy. The following objects can be used in this template.

Object	Property	Data Type	Description
objects.device	.manufacturerName	String	Name of device manufacturer
	.modelName	String	Model name of the device
	.serialNumber	String	Serial number of the device
	.contactName	String	Name of the contact for the device
	.name	String	Friendly name of the device
	.ipAddress	String	IP address of the device
	.colorCapable	boolean	Returns true if the device is color-capable
	.accountCode	String	The client the printer belongs to
	.tickets	array of Objects	Contains all tickets associated with the device. Each Object exposes the following properties: • .details (String) • .dateCreated (Date) • .lastUpdated (Date) • .dueDate (Date) • .dueTime (Date) • .technician (Object) • .technician.displayName (String) • .ticketId (String) • .status (String) • .priority (String)
	.port	Object	Exposes: • .type (String)
	.lastDataCollection	Date	The last time rollup data was received from device
	.macAddress	String	MAC address of the device
	.dnsHostName	String	DNS host name of the device
	.assetTag	String	An optional identifier field; may be null
	.firmware	String	Current version of firmware installed on the device
	.engineCode	String	Engine firmware level of the device

Object	Property	Data Type	Description
objects.policy	.problem	String	The event that triggered the policy notification

The *PolicyGroupEvent_<language>.gsp* template is used to generate e-mail notifications for policy events, as defined in the group policy. The following objects can be used in this template.

Object	Property	Data Type	Description
objects.group	.name	String	Name of the group
	.notes	String	Informational text associated with the group
	.accountCode	String	Account code of the group
	.address1	String	The first line of the address where the group is located
	.address2	String	The second line of the address where the group is located
	.city	String	The city where the group is located
	.province	String	The province where the group is located
	.postalCode	String	The postal code for the group
	.country	String	The country where the group is located
	.email	String	The e-mail address associated with the group
	.telephone	String	The telephone number associated with the group
	.fax	String	The fax number associated with the group
	.contact	String	The name of the group contact
	.contactPhone	String	The telephone number of the group contact
	.contactEmail	String	The e-mail address of the group contact
objects.policy	.problem	String	The event that triggered the policy notification

The *CostForGroupExpiration_<language>.gsp* template is used to generate e-mail notifications for contract expiration at the group level. The *CostForDeviceExpiration_<language>.gsp* is used to generate e-mail notifications for contract expiration at the device level. The following objects can be used in both of these templates.

Object	Property	Data Type	Description
objects.costs	.purchaseOrder	String	Identifier to track the actual purchase order for the specific group or device
	.acquisitionDate	Date	Date of acquisition in MM/DD/YYYY format
	.acquisitionType	String	Type can be "Purchase," "Lease," or "Rental"
	.puchaseOption	float	Used to keep buyout price
	.initialPayment	float	Initial payment
	.finalPayment	float	Final payment
	.monthlyPayment	float	Monthly payment
	.numberOfPayments	Integer	Total number of payments
	.expirationNoticeDate	Date	Date of expiration of the contract in MM/DD/YYYY format
	.emailNotification	String	E-mail address associated with the selected user
	.bwAllowances	Integer	Number of allotted black-and-white pages
	.colorAllowances	Integer	Number of allotted color pages
	.bwRatePerPage	float	Price per black-and-white page
	.colorRatePerPage	float	Price per color page
	.bwOverage	float	Overage price per black-and-white page
	.colorOverage	float	Overage price per color page
	.maintenancePayment	String	Maintenance payment can be "Annually," Monthly," "Quarterly," or "Cost Per Page"
	.maintenanceCost	float	Maintenance cost
objects.group			An object that, along with all its child objects, is available for CostsForGroupExpiration_<language>.gsp.
objects.device			An object that, along with all its child objects, is available for CostsForDeviceExpiration_<language>.gsp.

The final GSP template available for customization is *ReportEmail_<language>.gsp,* which is used to generate messages when reports are distributed by e-mail. The Fleet Trackers lets users prints transparencies. The Fleet Tracker does not make any objects available for this template. But you can still structure the style and presentation of the e-mail using GSP as you see fit.

The following GSP example shows how to filter data by using conditional logic. The e-mail message shows information about tickets that are created or updated as a result of the device alert, as determined by the time stamps. This can be useful when a policy event triggers ticket creation, ticket changes, or e-mail notifications.

```
<g:each in="${objects.device.tickets}"
<g:if test="${ new Date().toTimestamp().toString().tokenize(".")[0] ==
it.dateCreated.toString().tokenize(".")[0]  || new
Date().toTimestamp().toString().tokenize(".")[0] ==
it.lastUpdated.toString().tokenize(".")[0] && it.status != 'statusClosed'}">
<div>
```

```
<h2>Open Tickets</h2>
<br><b>Ticket#:</b> ${ it?.ticketId }</br>
<br><b>Urgency:</b> ${ it?.priority } </br>
<br><b>Status:</b>  ${ it?.status } </br>
<br><b>Date Opened:</b> ${ it?.dateCreated } </br>
<br><b>Due Date:</b> ${ it?.dueDate } ${ it?.dueTime } </br>
<br><b>Assigned to:</b> ${ it?.technician?.displayname } </br>
<br><b>Details:</b> ${ it?.details }
</div>
</g:if>
</g:each>
```

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Glossary

% Duty	The pages printed as a percentage of the manufacturer's specified monthly duty cycle
alert	A message that notifies the operator of an abnormal condition on a device; an alert may also refer to the severity of the fault or alert (see *Critical Alert*)
average resolution	The average amount of time taken to resolve an alert
desktop	The computer that runs pDesktop (the Fleet Tracker agent) to collect printing statistics from that PC for the Fleet Tracker.
	As a report heading, this is the computer name responsible for queuing print jobs.
desktop printer	A printer that is locally connected for individual use. However, a desktop printer may be shared out with other users. A desktop printer may be a parallel-, serial-, USB-, or a network-connected printer.
device	Any network-connected equipment for output, such as printers, multifunction printers, faxes, plotters, storage devices, modems, and CD readers/writers
Downtime Cost	Corporate printing costs that place a penalty on printer downtime. These include an end-user productivity penalty and requiring additional service from technical personnel. Downtime cost is attributed only to printers, and not to individual users.
Enterprise Management Software (EMS)	Software which manages the computer operations in a company, e.g., Tivoli, HP OpenView, BMC Patrol, CA Unicenter
Errors / Job Errors	The number of errors
Groups	A defined group of printers or users, as selected by the administrator
IP Address	The network IP address
Jobs	The number of jobs printed
machine	The actual computer that submitted the print job
Monthly Duty Cycle	The recommended maximum number of pages (images) that can be printed in a month on a specific printer. Statistic is provided by the printer manufacturer.
Multifunction Printers (MFP)	The devices that provide multiple output options, such as faxing, printing, photocopying, and scanning
Network Management Software	The applications that are designed to isolate and resolve faults on the network, measure and optimize performance, manage the network topology, track resource utilization over time, initially provision and reconfigure elements, and account for network elements
network printer	An IP-connected printer with an internal print server. The Fleet Tracker shows information from the printer engine. This information is different from that shown by the print server.
Not Ready	An error relating to a printer that is not ready
NT Print Server	The NT computers that act as print servers. The Fleet Tracker shows information from the NT print server.

Overhead Cost	The printer costs sustained by the corporation whether or not the printer is being used. These costs include network management and administration, scheduled maintenance, infrastructure (floor space for printer and supply storage), electricity, asset amortization, and lease cost. Overhead cost is attributed only to printers, and not to individual users.
parallel-connected printer	A printer directly connected to a desktop computer by an IEEE parallel cable
patchRx	The software patch service for automated Fleet Tracker 2.0 updates
pDesktop	The service loaded on Microsoft desktop computers to collect user and printer data from that computer and send data to pDesktopServer; another name for the Local Tracker
pDesktopServer	The Fleet Tracker agent that receives user and printer statistics from remote pDesktop agents and loads data into database
PDiscovery	The Fleet Tracker 2.0 agent that automatically locates devices and printers and registers them in the database
pHistory	The Fleet Tracker 2.0 agent that obtains statistics of device usage and alerts; generates online reports for viewing via pWeb
pNTPrinters	The Fleet Tracker 2.0 agent that collects device information from NT Print Servers and updates the database
pPoll	The Fleet Tracker 2.0 agent that polls the devices registered in the database by pDiscovery and pTrap on a regular basis and automatically updates device status and changes
print server	The interface between the network and the print engine; a print server may be an external device or embedded in the printer
printing cost	The variable printing costs that include paper, ink, toner, and maintenance kits; in outsourced contracts, this may be the per-page cost in the contract
pRollup	The Fleet Tracker 2.0 service responsible for rolling up data from Lexmark Fleet Tracker to Lexmark Fleet Tracker MSP
pTrap	The Fleet Tracker 2.0 agent which automatically receives SNMP traps for inclusion into the database and registers new print servers into the database
pWeb	The Web browser interface for the Fleet Tracker 2.0 system
serial-connected printer	A printer directly connected to a desktop computer by an IEEE serial cable
standby time	The amount of time that the printer is in standby mode
total cost	The total cost of printing, which is the sum of Printing Cost, Overhead Cost, and Downtime Cost; for User Printing, printing cost is the total cost
uptime	The amount of time that the printer is online and available (standby time is included)
USB-connected printer	A printer directly connected to a desktop computer by an IEEE USB cable
user printer	Same as *desktop printer*: a printer locally defined for individual use, it may be a parallel-, serial-, USB-, or network-connected printer

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