Faximum

Faximum PLUS 4.1

Product Monograph

Key Features

- PLUS provides a number of programming-language-independent APIs to fax-enable applications easily
- PLUS supports detailed queued management tools providing fine-grained control far beyond that possible with products supporting only a line-printer type API
- PLUS emulates the HP Laser Jet printer with full PCL-5e and HP-GL/2 support as well as forms overlays (i.e. pre-printed forms)
- PLUS can manage broadcasts to hundreds of thousands of destinations with detailed accounting and reporting
- PLUS runs natively on a range of UNIX and Linux platforms
- PLUS can accept fax requests from Windows applications
- PLUS works equally well on networked systems and stand-alone machines
- PLUS supports both dumb character-mode terminals as well as graphical workstations and desktops
- PLUS can handle 128 fax lines per server and more with analog or digital phone lines
- PLUS can take an entire batch of invoices (or similar reports), break them into separate faxes to separate destinations, and deliver them (unlike some *lp* emulators that can only handle a single request at a time)
- PLUS supports DID trunks (and the ISDN and T1/E1 equivalents) and can either pass the DID information to the application handling the fax or to Faximum FMS for delivery to the intended user by email
- PLUS supports the newest high-performance SuperG3 fax modems increasing reliability and sharply reducing toll charges
- PLUS provides web-based administration making it easy to configure and manage without having to use cryptic shell commands or edit configuration files

Synopsis

The Faximum PLUS fax server software product is a robust mature fax server software product designed to fax-enable applications.

The Faximum PLUS product runs on a range of Linux and UNIX servers while accepting fax requests from applications running on almost any operating system (Windows, Mac OS X, IBM z/OS, etc.) that can communicate with your Linux/UNIX platform.

Faximum PLUS provides programmers with a rich set of tools to make it easy to add fax support to their applications. Multiple APIs as well as utilities for manipulating fax images make Faximum PLUS a flexible and powerful toolkit.

And for those of you who might think fax is obsolete, please see our white paper *Tyrannosaurus Fax.* (www.faximum.com/wp/).

Faximum PLUS is a product, not a fax service. You own the software, you own the server, you save the money! And with fax services charging per page, it is easy to see how Faximum PLUS can pay for itself quickly even in relatively low-volume situations.

Sending Faxes

The Line Printer Intercept (LPI)

The Faximum LPI allows applications to fax documents in exactly the same manner as they print them. The LPI looks to the application just like any other HP LaserJet printer. All the standard PCL-5e fonts and formatting commands are supported. And the application need not be running on the same system as the Faximum PLUS software. Using network printing protocols, Faximum PLUS can accept fax requests from Windows, mainframes, and other UNIX and Linux processors.

All the application need do is include the fax number within the print stream, set off using distinctive character sequence.

For example:

```
//FAX(fax=1 604 926 8182; style=invoice)
ACME Company Invoice
...etc. and etc...
```

Note that the line `//FAX(fax....)` is removed by Faximum before the fax is prepared and therefore does not appear on the fax itself.

The figures below show a more advanced example. Figure 1 represents a typical print file generated by an accounting application. Figure 2 illustrates the resulting fax generated by the Faximum Line Printer Intercept by processing the data from Figure 1 and merging it with an overlay (form).

One of the many advantages of the Faximum LPI is that it is also possible to batch together multiple invoices intended for different destinations in a single print job. The Faximum LPI will separate the pages intended for each destinations and fax them appropriately. This is far more efficient than some limited fax products which require each invoice to be a separate print job.

For detailed information on the Faximum LPI please request Applications Note #7 (or see www.faximum.com/appnotes/).

Command Line APIs

Faximum PLUS also provides a number of command line interfaces from the simplest to the most powerful.

The *fxm* command accepts simple command-line parameters describing the fax. This can range from the trivial:

```
fxm 1-604-926-8182 document.txt
```

to more complex:

```
fxm 1-604-926-8182 -S invoice -C urgent \
   -A APaccount -t PCL document
```

The *submitfax* API requires the application write out a control file that fully specifies the fax request and pass it to *submitfax*. A sample control file to send a couple of files to a list of recipients might look something like this:

```
account = marketing
class = overnight/least cost
style = corporate letterhead

dest_fax1 = 1 604 926 8182
dest_person1 = Jane Doe
dest_company1 = ACME Aggregates

dest_fax2 = 1 605 922 4400
dest_person2 = Bob Smith
dest_company2 = Zenith Gravel

file_name1 = /documents/newpricelist
file_type1 = PCL

file_name2 = /document/ordernumbers
file_type2 = ASCII

from_name = Mary Jones
from_title = Account Rep
from_dept = Sales
```

The above example shows that a single request can reference multiple documents going to multiple destinations.

For more information please refer to the Faximum PLUS *Reference Manual* (www.faximum.com/plus/).
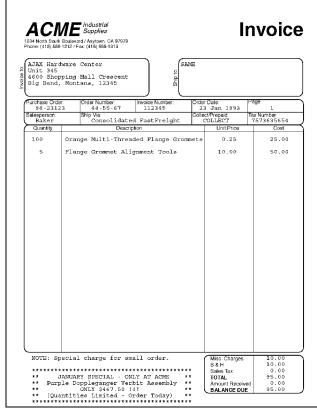

Fig 1: An Accounting Application Print File

Figure 2: The Resulting Fax (Data + Form Merged)

Queue Management Tools

Faximum PLUS provides utilities to monitor and control requests that are in the queue. These operations can be performed:

- from the command line
- under program control
- from a web browser

Transmission and Accounting Logs

Faximum PLUS logs every call, successful or not, recording:

- time and date
- user who queued the fax
- number of pages sent
- addressee of fax
- number dialled
- fax line used
- account associated with the request
- duration of call
- status of call (success or reason for failure)

It is also possible to request that whenever a fax is successfully sent (or suspended because the retry limit has been reached) that a user-specified program be called passing it the details of the request and the status information.

TIFF Image Utilities

Faximum PLUS stores fax images in standard TIFF files in compliance with the relevant IETF Internet RFC standards.

TIFF Creation

Faximum PLUS includes tools to create TIFF fax files from:

- text files
- PCL-5e print files (i.e. HP LaserJet print files)

Faximum PLUS will also work with GhostScript (available at no charge) to handle PostScript and PDF files.

Faximum PLUS can handle most eight-bit characters sets (ISO 8859/1, 8859/7, etc.). By special arrangement we can also provide support for Japanese two-byte character files using JIS and EUC encoding. Support for other multi-byte character sets is in development.

TIFF Manipulation

Faximum PLUS includes the following utilities for manipulating TIFF fax image files:

- *tiffcat* - concatenate TIFF-F files into a single multi-page TIFF-F file
- *tiffhp* - convert TIFF-F files into PCL for printing on HP (or compatible)LaserJet printers
- *tiffls* - produce a simple or detailed list of the contents of a TIFF file directory (optionally including a list of all tags and tag values)

- *tiffps* - convert TIFF-F files into PostScript for printing
- *tiffsplit* - split a multi-page TIFF-F file into multiple single-page TIFF-F files
- *tiffcompress* - copy and convert a TIFF-F file from one form of compression to another
- *tiffcut* - extract an arbitrary rectangle from a TIFF-F file as a separate TIFF-F file

TIFF Printing

Faximum PLUS includes utilities to convert TIFF-F files into either PCL-5 or PostScript print streams suitable for printing on almost any type of laser printer.

Receiving Faxes

Faximum PLUS can be configured to receive faxes and to pass them to applications to process. Along with the TIFF-F file containing the fax the application can be passed the following information about the fax:

- TSI of originating fax machine (usually the phone number of the sending fax machine)
- the number of pages
- duration of the call
- DID number (if applicable)
- fax line on which the fax was received

Administration

Many aspects of the PLUS server can be managed using a web browser.

This shows the main webadmin interface to PLUS which enables many administrative functions to be performed using a web browser.

Fax-Enabling the Desktop

Faximum PLUS is designed and optimised to fax-enable applications. While it includes tools to enable casual faxing for users connected using dumb terminals, it is not intended to fax-enable the modern office worker. For that you need the Faximum Fax Messaging Server.

Faximum FMS is specifically designed to fax-enable network desktops. It is tailored so users can send, receive, and manage fax messages as efficiently as possible from Windows, Mac, UNIX, or Linux desktops.

Both FMS and PLUS can be installed on the same server enabling the same fax modems and lines to be shared between your users and your fax-enabled applications and broadcasts.

For more information on Faximum FMS please contact *info@faximum.com* or visit www.faximum.com/fms/.

Evaluation

Download a free 30-day evaluation copies of PLUS from our website.

Pricing

All pricing assumes software and documentation is downloaded by FTP. Technical support options are described at www.faximum.com/support/policy

Faximum PLUS for Linux, SCO UnixWare, SCO OpenServer *one fax line*	$ 1,295
Faximum PLUS for IBM AIX, HP-UX, Sun Solaris on SPARC *one fax line*	2,495
Additional fax lines *(each, discounts after eight lines)*	350

Product Specifications

Fax Standards Compliance
* *Group 3 Fax (ITU T.4, T.6, T.30)*

Supported Platforms
* *HP-UX 11 [in progress]*
* *SCO OpenServer 5.x*
* *IBM AIX/6000 4.3*
* *Linux (Caldera, Red Hat, SCO, SuSE, UnitedLinux, etc.)*
* *Solaris SPARC {in progress}*
* *SCO Open Server*
* *SCO UnixWare*

CPU Requirements
* *The CPU and memory requirements of Faximum PLUS are so modest they rarely affect capacity planning of the host server. To illustrate, an early customer ran twelve fax lines sending 8,000 faxes per day on a 486/66 with 16Mb or memory. Faximum's in-house outbound fax server runs on a 486/80 with 32Mb of memory.*

Disk Space
* *3.5 - 15Mb for PLUS software (depending on O/S and options)*
* *2 Mb for every 100 pages of faxes (approx.)*

Maximum Capacity
Given the modest CPU and memory resources needed to run Faximum PLUS it is theoretically possible to run upwards of a 1000 fax lines on a single server. The wisdom, however, of committing such a significant portion of one's critical messaging infrastructure to a single server is less clear. In other words, for systems above 100 lines we recommend splitting the lines between two or more servers in order to provide some level of redundancy in case of hardware failure and not because of any capacity limitations with the software itself.

Throughput
The limiting factors on the speed of fax transmission are: the content of the fax and the capabilities of the receiving fax device. When planning we recommend using 1.5 pages per minute per fax line as the average throughput. Contact Faximum Software for more information on capacity planning and throughput estimating.

Interfaces
* *full-screen character-based interface with context sensitive on-line help*
* *command-line interface*
* *line printer intercept*

FAX Viewing
* *console device (CGA, HGA, or VGA)*
* *multi-console device (AMR UnTerminal, Sun River, MaxStation, etc.)*
* *Wyse WY-160 terminal*
* *X Windows viewer*

FAX Compatibility
* *full Group III send and receive*
* *33,600 baud send & receive (modem permitting)*

Modem Support & Data/Fax Sharing
* *works with most Class 2 and 2.x external fax modems (Multi-Tech recommended, see http://www.faximum.com/modems/)*
* *works with internal fax boards from Digi, Multi-Tech, and Patton Electronics that support T.32 (see www.faximum.com/modems/)*
* *supports DID trunks with MultiTech MultiModemDID or MT2834ZDX modem and DID-DTMF converter device such as CTPX VP_2000) -- see http://did.faximum.info/ for details*
* *ISDN lines (including Called Number Identification/DDI support) with ZyXEL 2834I Elite modem*
* *shares modem with data traffic (logins, uucp, cu ,etc.—SCO OpenServer and Multi-Tech only)*

Dialling Directory
- *multiple directories per user (shared or private)*
- *unlimited size*
- *unlimited number of groups of unlimited size*

**Printer Support
(for printing faxes)**
- *HP LaserJet (all versions and compatibles)*
- *PostScript*

Broadcast
- *limited only by disk space*

Image Format
- *received faxes stored in TIFF-F*
- *image file conversion and manipulation tools included (e.g. tiffcat, tiffcompress, tiffcut, tiffls, tiffpcl, tiffps, tiffsplit, etc.)*

**Supported File Formats
(for attachments)**
- *ASCII*
- *Western European (ISO 8859/1) (other single-byte character sets such as ISO 8859/7 etc. with special configuration)*
- *Japanese EUC (on systems with Japanese fonts)*
- *HP PCL-5e (Laser Jet emulation, including HP-GL/2)*
- *PostScript (special add-on)*
- *Sun Raster files (B&W and colour, Sun Solaris only)*
- *TIFF-F*
- *For support of HTML, Microsoft Word, and other file formats, please see the Faximum Fax Messaging Server (FMS) product specifications.*

Cover Sheets
- *multiple cover sheets per server*
- *user-definable cover sheets*
- *selectable fonts and drawing commands for coversheet creation*
- *user-definable top-of-page banners*

Fax Transmission
- *outgoing faxes previewed on the screen and/or printed prior to being sent (Wyse WY-160 or X display only)*
- *e-mail notification of status of transmitted faxes*

Scheduling
- *automatic delayed transmission based on requested priority and phone rates*
- *manual delayed transmission based on user requested time*
- *automatic load balancing among modems of the appropriate type and category*

Toll Restrictions
- *specific users may be denied access to long distance or priority transmissions (access may be restricted to certain numbers, calling areas, or times of day)*

**Intelligent Dialling/
Least-Cost Routing**
- *PBX and long distance code and account dialled automatically*
- *selection of WATS, TIE, FX, or other special phone trunks done automatically for least-cost and/or fastest transmission*
- *promotion of urgent faxes to alternate routes when least-cost route is busy*

Multi-Line Support
- *unlimited number and combination of line types (i.e. DDD, WATS, etc.) hardware permitting*
- *ability to designate certain lines as receive-only*
- *ability to specify the minimum number of lines to remain idle (for incoming calls) to prevent saturation of all lines with outgoing faxes*

Remote Fax Modem Support
> *Faximum PLUS can be used with recommended network devices to locate fax modems in remote locations in order to bypass the phone system for long distance calling and to eliminate toll charges when faxing outside of the local calling area. Contact Faximum Software for more information.*

FAX Reception and Distribution
- *received faxes automatically printed, copies, forwarded (by fax), or sent to a user based on originating fax machine ID*
- *arbitrary shell program invoked upon reception of any fax*
- *automatic routing using DID, ISDN, or T1 phone lines*

Line Printer Intercept
- *printed output from applications can be captured and broadcast by fax without intervention or programming*
- *pages intended for different locations properly will be separated from print stream and faxed to appropriate destination*

Word Processor Integration
- *faxing direct from within any application that can print to the line printer spooler*
- *fax broadcast using any word processor's mail merge facility (and Faximum's line printer intercept)*

Form Overlays
- *ability to overlay any business form (letterhead, invoice, purchase order, etc.) on any faxed document*

Accounting
- *unlimited number of accounts with optional restriction by user*
- *automatic insertion of digits in the dialled number based on account used (for PABX call-detail recording or third-party telephone accounting)*
- *detailed accounting record by user and project account for each transmitted fax*

User Licensing
- *unlimited number of users*

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