
SNMP Management

Executive Summary

The FaxPress SNMP option allows extensive network management and control functions to be executed remotely. Simple questions such as “are each of my FaxPress units alive and well?” and “What is the status of line 3?” can be answered from a central location. In addition to monitoring unit and line status, administrators can even re-configure or even re-set FaxPress units. Alarming is supported, allowing an operator to see an alarm message when the number of failed faxes rises above a pre-set threshold (of course the threshold can be reset using SNMP).

All this can be done using industry standard SNMP management console programs such as HP Openview, Sun Netmanage, Novell ManageWise (previously called Netware NMS) and IBM NetView. FaxPress can now be monitored and controlled using the same process as other network devices in an enterprise-level network.

FaxPress supports SNMP reading, writing as well as alarming (traps).

Introduction to SNMP

In the late 1970's, computer networks had grown from a simple layout of small, separate networks that were not connected to each other to larger networks that were interconnected (the Internet). The larger these networks became the more difficult they became to manage (ie. monitor and maintain), and it soon became evident that a network management protocol needed to be developed. The resulting network protocol is called the Simple Network Management Protocol (SNMP).

The way it works is actually quite simple: It exchanges network information through messages that are sent between network devices. The messages contain information about devices on the network. There are different types of messages: messages that get information (reading) about a device, messages that set information (writing) and messages called traps, which can be thought of as alarm messages about certain events.

Since each network device is unique, SNMP uses something called a MIB (Management Information Base) to define what kind of information is available for each device. There are some standard MIBs that pertain to routine information such as network status, and custom MIBs (like the FaxPress MIB) that are particular to a specific manufacturer's device.

Thus SNMP allows a network administrator to use one management console program (e.g. HP Openview) to monitor many disparate devices on the network. The administrator can zoom out and get an overall view of his entire network, including routers, servers, hubs and FaxPress units. He or she can also zoom in to look at certain parameters such as FaxPress line status. This would use the read capability of SNMP.

The administrator can also set certain values using the write capability of SNMP. For example, he or she could change a parameter on a FaxPress unit without using Castelle's FaxMain user interface.

Because Network Administrators need to be alerted as soon as possible as a problem or usage condition occurs, SNMP can be used to trigger alarms. If FaxPress or another device detects a problem, it can send an alarm (called a trap) to the console program alerting the operator that there is a possible problem.

More information on SNMP can be found on the Web at <http://www.snmp.com/FAQs/>

SNMP and FaxPress

FaxPress supports SNMP get (read) messages, SNMP set (write) messages and SNMP traps (alarms). Many devices and some "SNMP enabled" fax servers on the market support only get (read) functions, meaning that they can be monitored, but not controlled. For example, a problem with a fax server in California can be detected from the administrator's SNMP console in New York, but nothing can be done about it without SNMP write capability.

A full listing of the MIB parameters are contained in the appendix, but a summary follows.

A Sample of Variables That Can Be Monitored Via SNMP

- FaxPress model
- FaxPress serial number
- FaxPress name
- FaxPress status (same as LED lights - green/red)
- Number of lines
- Number of incoming faxes (since last reboot)
- Number of total outgoing faxes
- Number of outgoing faxes in queue
- Number of failed faxes
- Number of faxes via the Internet
- Number of current login users
- Status of individual lines

A Sample of Variables That Can Be Controlled Via SNMP

- FaxPress TCP/IP address (including network mask and gateway addresses)
- Automatic storage reclamation enable/disable
- Number of days to keep faxes
- Log file clean up parameters
- PBX pre-dial settings
- Individual line settings such as inbound/outbound and routing type
- Percentage of failed faxes (per line) before trap is sent
- Reboot flag for FaxPress (remotely reboots the unit)

Alarming Via SNMP

FaxPress can send a trap (alarm) via SNMP based on the percentage of failed fax calls during the most recent 32 calls. This alarm catches line problems, hardware problems and possible software problems. The acceptable percentage level before alarm is settable via SNMP as well.

This alarm is for each line, so a four port FaxPress could have different threshold levels and different trap messages for each line.

Requirements

The SNMP option requires FaxPress version 5.0 or above. The SNMP is an option for version 5 and can be purchased through Castelle and enabled via a Castelle-supplied password. The password is entered via SNMP, which then permanently enables individual FaxPress units. With FaxPress version 6.X, SNMP is part of the PRO Package. Enabling the PRO Package will automatically enable the SNMP capability and enable the monitoring of the FaxPress unit through the network monitoring facility.

FaxPress MIB Details

Before the SNMP client can access any FaxPress, faxpress.mib needs to be compiled into the SNMP console software.

In addition, the FaxPress SNMP functions are password protected based on the serial number of the unit. Castelle sales can provide a password for each 5.x and above level FaxPress unit. The password is entered into the GetCommunity Password field or SetCommunity Password field of the SNMP client based on the Get/Set functions. After the correct password is entered, the FaxPress will write the enable SNMP flag to the EEPROM of the FaxPress unit. The FaxPress unit needs to be rebooted at this point before SNMP is enabled.

The administrator can change the community set and get passwords if desired so that SNMP users have different get/set permissions.

Functions Supported by FaxPress MIB Through SNMP Protocol

Table C–21 FaxPress Product Group

Field Name	Type	Property	Description
FP Model	String	Read Only	FaxPress Model (3500, 3000, 1500, OfficeConnect)

Table C-21 FaxPress Product Group

Field Name	Type	Property	Description
FP NetType	String	Read Only	Network Interface Type: Ethernet (10Mb/100Mb) /Token ring
FPSerialNum	String	Read Only	The Product Serial Number
FPRevision	String	Read Only	Software Version Number (for Faxpress.out)
FPBuildDate	String	Read Only	Software Building Date (for Faxpress.out)
FPSystemName	String	Read - Write	FaxPress Name (Records in the file SERVER.CFG) Maximum 48 bytes Change takes effect even without reboot.
FPLocation	String	Read - Write	The Physical Location of FaxPress (Records in the file FPSNMP.CFG) Maximum 64 bytes
FPStatus	String	Read Only	FaxPress Status: (Green/Red) LED (On/Off)
FPContact	String	Read - Write	The Person responsible for the FaxPress (Records in the file FPSNMP.CFG) Maximum 64 bytes
FPUpTime	String	Read Only	The Duration Time since the FaxPress is Running

Table C-22 FaxPress Hardware Information Group

Field Name	Type	Property	Description
FPPcb	String	Read Only	FaxPress Board type Setting
FTotalFaxLines	Integer	Read Only	Total Number of Fax Lines
FPMemorySize	Integer	Read Only	Total Memory Size on the Board

Table C-22 FaxPress Hardware Information Group

Field Name	Type	Property	Description
FPFreeMem	Integer	Read Only	Current Total Free Memory Size on the Board
FPFSDiskSpace	Integer	Read Only	Current Free Disk Space On the File Server Side

Table C-23 FaxPress Configuration Group

Field Name	Type	Property	Description
FPNOSSetting	Integer	Read Only	FaxPress Network OS Setting: 1-NetWare 2-NT Records in EEPROM
FPWinNTConfig			Sub-Group as below
FPNetWareConfigure			Sub-Group as below
FPTcpConfig			Sub-Group as below
FPMultiProtocol	Integer	Read Only	Multi-Protocol Support: 0-Disable 1-Enable Records in EEPROM
FPKeepOutgoingJobInfo			Sub-Group as below
FPStorageInfo			Sub-Group as below

Table C-24 FaxPress Window NT Configuration Group

Field Name	Type	Property	Description
FPWinNTServerName	String	Read Only	NT Server Name which FaxPress was Installed Maximum 48 bytes (include FPWinNTShareDir)
FPWinNTShareDir	String	Read Only	NT Server Shareable Directory Name which FaxPress was Installed. Maximum 48 bytes (include FPWinNTServerName)
FPWinNTAddr	IpAddress	Read Only	NT Server IP Address
FPWinNTPasswd	String	Read Only	FaxPress's Password to Login to NT Server Maximum 48 bytes

All Records are in EEPROM. The first two records FPWinNTServerName and FPWinNTShareDir are in the same record named as FS_SERVER_NAME separated by “\”

Table C-25 FaxPress Netware Configuration Group

Field Name	Type	Property	Description
FPNetWareMode	Integer	Read Only	Netware File Server Mode: 0-Bindery 1-NDS
FPBinderyConfig			Sub-Group as below
FPNDSConfig			Sub-Group as below

Table C-26 FaxPress NetWare Bindery File Server Configuration Group

Field Name	Type	Property	Description
FPBinderyFSName	String	Read Only	NetWare v3.x File Server Name Which FaxPress was Installed. Maximum 48 bytes
FPBinderyVolume	String	Read Only	NetWare v3.x File Server's Volume name which FaxPress was installed. Maximum 48 bytes
FPBinderyRootDir	String	Read Only	NetWare v3.x File Server's Root Directory Path which FaxPress was Installed. Maximum 128 bytes
FPBinderyPasswd	String	Read Only	FaxPress's Passwrod to Login to NetWare v3.x File Server. Maximum 48 bytes

Record FPBinderyFSNAME is in EEPROM the same field FS_SERVER_NAME as in the Table 24.

Record FPBinderyPasswd is in EEPROM the same field as in the Table 24 section FPWinNTPasswd.

Record FPBinderyVolume and FPBinderyRootDir is in the field of user setting on File Server side.

Table C-27 FaxPress NetWare NDS File Server Configuration Group

Field Name	Type	Property	Description
FPNDSTreeName	String	Read Only	NetWare v4.x NDS Tree Name (Maximum 32 bytes)
FPNSContext	String	Read Only	NetWare v4.x NDS Context for FaxPress Serial Number. Maximum 128 bytes
FPNDSFSName	String	Read Only	NetWare v4.x NDS File Server Name Which FaxPress was Installed. Maximum 48 bytes
FPNSVolume	String	Read Only	NetWare v4.x NDS File Server's Volume name which FaxPress was installed. Maximum 48 bytes
FPNSRootDir	String	Read Only	NetWare v4.x NDS File Server's Root Directory Path which FaxPress was Installed. Maximum 128 bytes
FPNSPasswd	String	Read Only	FaxPress's Passwod to Login to NetWare v4.x NDS File Server

Both Records FPNDSTreeName and FPNSContext are in EEPROM.

Record FPNDSFSNAME is in EEPROM the same field FS_SERVER_NAME as in the Table 24.

Record FPNSPasswd is in EEPROM the same field as in the Table 24, section FPWinNTPasswd.

Record FPNSVolume and FPNSRootDir is in the field of user setting on File Server side.

Table C–28 FaxPress TCP Configuration Group

Field Name	Type	Property	Description
FPTcpAddr	IpAddress	Read – Write	FaxPress IP Address
FPNetMask	IpAddress	Read – Write	FaxPress Sub-Network Mask
FPGateway	IpAddress	Read – Write	FaxPress's Network Gateway IP Address

All Records are in EEPROM.

Table C–29 FaxPress Keep Outgoing Fax Jobs Configuration

Field Name	Type	Property	Description
FPKeepOutgoingJobs	String	Read – Write	FaxPress keeps outgoing fax job after sent successfully: Yes/No

Record is in the file SERVER.CFG, Change takes effect even without reboot

Table C-30 FaxPress Automatically Storage Reclamation Configuration Group

Field Name	Type	Property	Description
FPStorageReclamation	Integer	Read – Write	Automatic Storage Reclamation Setting: 1-Enable 2-Disable
FPFaxAge	Integer	Read – Write	Number of Days that older incoming faxes and notices will be deleted
FPLogAge	Integer	Read – Write	Number of months that old transaction log files will be deleted
FPPurgeTime	String	Read – Write	The Time to do the cleaning up: (example 2:00 or 23:30)

All Records are in the file ACLEAN.CFG. Change takes effect even without reboot

Table C-31 FaxPress Phone Line Entry Configuration Group (per line based)

Field Name	Type	Property	Description
FPLineIndex	Integer	Read Only	Index for each Phone Line
RemoteTermID	String	Read – Write	Remote Terminal ID shown on LED. Maximum 26 bytes
ImPrintTermID	String	Read – Write	Imprint Terminal ID shown on the headline of outgoing fax job. Maximum 26 bytes
LocalNumber	String	Read – Write	Local Phone Number for the fax phone line. Maximum 26 bytes
PbxPreDial	String	Read – Write	PBX Pre-Dial Number: one digit
DialMode	String	Read – Write	Dial Mode: Tone/Pulse
LineDirection	String	Read – Write	Line Direction Setting: Input Only/Output Only/Bi Direction/Not Connected
RoutingType	String	Read – Write	Inbound Fax Routing Type: DTMF/DID/None
RouteToUser	String	Read – Write	Inbound Fax Routing to the User Name. Maximum 48 bytes

All Records are in the file LINECH#.CFG. Maximum is 16 lines.

Table C-32 FaxPress Phone Line Total Statistics Group

Field Name	Type	Property	Description
FPInputJobs	Counter	Read – Write	Number of Incoming Faxes Received since last reboot.
FPInputJobsInQueue	Gauge	Read Only	Number of Incoming Faxes Received in Unad-dressed Queue sine last reboot.
FPOutputJobs	Counter	Read – Write	Number of Outgoing Faxes sent since last reboot.
FPOutputJobsInQueue	Gauge	Read Only	Number of Outgoing Faxes in the Queue since last reboot.
FPFailedJobs	Counter	Read – Write	Number of failed Outgo-ing Faxes since last reboot.
FPCurrentUsers	Gauge	Read Only	Number of Current Login Users

Records for Read – Write may be set to zero for initialization.

Table C-33 FaxPress Phone Line Statistics Group (per line based)

Field Name	Type	Property	Description
FPLineIndex	Integer	Read Only	Index of each phone line
FPLineCurrentStatus	String	Read Only	The current phone line Status: Idle/Receiving/Sending
FPLineInputCalls	Counter	Read – Write	Number of Receiving Calls since last reboot.
FPLineOutputCalls	Counter	Read – Write	Number of Sending Calls since last reboot.
FPLineFailedRcvCalls	Counter	Read – Write	Number of Failed Receiving Calls since last reboot.
FPLineFailedXmtCalls	Counter	Read – Write	Number of Failed Sending Calls since last reboot.
FPLineRecentFailPercentage	Integer	Read Only	The Percentage of Failed Calls during Recent 32 Calls
FPLineTrigger	Integer	Read – Write	The trigger value to sent Trap Packet for the Failed percentage Calls during Recent 32 Calls

Records for Read – Write may be set to zero for initialization. Maximum is 16 lines.

Table C-34 FaxPress Parallel Port Group

Field Name	Type	Property	Description
FPParaStatus	String	Read Only	Current Parallel Port Status: Idle/Printing/Offline
FPParaJobs	Counter	Read – Write	Number of Printed Jobs on Parallel Port since last reboot. Record may be set to zero for initialization.
FPParaTrigger	String	Read – Write	Setting Trap when Printer is not ready for printing: Enable/Disable. (Record in the file fpsnmp.cfg)

Table C-35 FaxPress Serial Port Group

Field Name	Type	Property	Description
FPSerialStatus	String	Read Only	Current Serial Port Status: Idle/Printing/Offline
FPSerialJobs	Counter	Read – Write	Number of Printed Jobs on Serial Port since last reboot. Record may be set to zero for initialization.
FPSerialTrigger	String	Read – Write	Setting Trap when Printer is not ready for printing: Enable/Disable. (Record in the file fpsnmp.cfg)

Table C-36 FaxPress Internet Faxing Statistics Group

Field Name	Type	Property	Description
FPIROutputJobs	Counter	Read – Write	Number of Sending Faxes through Internet since last reboot.
FPIRInputJobs	Counter	Read – Write	Number of Receiving Faxes through Internet since last reboot.
FPIRFailedOutputJobs	Counter	Read – Write	Number of Failed Sending Faxes through Internet since last reboot.
FPIRFailedInputJobs	Counter	Read – Write	Number of Failed Receiving Faxes through Internet since last reboot.

Records for Read – Write may be set to zero for initialization.

Table C-37 FaxPress Internet Faxing Configuration Group

Field Name	Type	Property	Description
FPIRIndex	Integer	Read Only	Index for each Internet Node
FPIRPhone-Num	String	Read Only	Destination Phone Number for Internet Node Maximum 16 bytes
FPIRIpAddress	IpAddress	Read Only	Destination FaxPress's IP Address

All Records are in the file FPROUTE.CFG

Table C-38 FaxPress SNMP protocol Configuration Group

Field Name	Type	Property	Description
FPGetCommunity	String	Read – Write	Community Name for GET Function Maximum 48 bytes
FPSetCommunity	String	Read – Write	Community Name for SET Function Maximum 48 bytes
FPTrapFlag	Integer	Read – Write	Setting Trap Flag: 0-Disable 1-Enable

All Records are in the file FPSNMP.CFG

Table C-39 FaxPress Trap Table Configuration Group

Field Name	Type	Property	Description
FPTrapIndex	Integer	Read Only	Index for each Trap Node
FPTrapAddr	IpAddress	Read – Write	Trap Node's IP Address
FPTrapCommuni- ty	String	Read – Write	Trap Node's Community Name Maximum 48 bytes

All Records are in the file SNMPTRAP.CFG. Maximum trap entries are 16.

Table C-40 FaxPress Reset Information Group

Field Name	Type	Property	Description
FPReboot	Integer	Read – Write	Reboot Fax-Press: 0-NotReboot 1-Reboot

Note: *Be careful: This will reboot the FaxPress.*

All Records are in EEPROM.

