



FOXFIRE HARDWARE REQUIREMENTS

Workstation Minimum Requirements

Windows 7 or greater **with all updates applied**

2GB of RAM if Windows 7/8, 4GB of RAM if Windows 10

1.6 GHz Processor with 1MB or greater Cache

1 GB Free Space

10/100 Ethernet Network Card

1280 x 800 or Greater Resolution

Check-In/Check-Out Stations - work efficiently with DUAL SCREENS

Workstation Recommendations

Windows 10 Professional OS with 8 GB of RAM

2.0 Ghz or greater Dual Core Processor with 2MB or greater Cache

10/100/1000 Ethernet Network Card

- Wide-Screen Monitors with aspect ratio of 16:10 (1920 x 1200) and smaller than 22" should be avoided as they significantly decrease the viewable area of documents.
- HD Monitors with aspect ratio of 16:9 (1920 x 1080) and smaller than 24" should be avoided as they significantly decrease the viewable area of documents.
- For best viewing results use a 19" monitor with aspect ratio of 4:3 or 5:4. You can also use a 24 inch Wide-Screen monitor with aspect ratio of 16:10, resolution set to 1920 x 1200 and DPI (text size) set to 120 (125%) or 144 (150%).

Touch/Tablet Monitors that support drawing/signature capture directly on the screen.

Lenovo ThinkCentre Edge 92z, M90z. The touch experience for this model is flawless and supports drawing, stylus, finger, gloved finger, credit card, and fingernail. The cost is reasonable. The screen can recline to 45 degrees, and includes a VESA mount fixed on the back. This model is user serviceable, and comes with an extra VGA port to attach a 2nd monitor for dual screen. Cannot rest palm on screen while drawing/form signing. Do not confuse with previous/other inferior models.

HP TouchSmart 610 Series or HP TouchSmart 9300 Elite all-in-one PC. The touch experience for these models is flawless and supports drawing, stylus, finger, gloved finger, credit card, fingernail. The cost is reasonable. The HP screen can recline to 60 degrees, and includes a detachable wall mount bracket on the base. Cannot rest palm on screen while drawing/form signing. Do not confuse with previous/other inferior models.

Wacom Interactive Display DTF-720. This is a regular tablet style monitor that accepts input from a radio pen and connects to your desktop. Excellent choice for palm rest capable drawing/form signing.

Any Elo Touchsystems Acoustic Pulse Recognition (APR) Touch Monitor. This is a regular monitor that accepts input from a stylus, finger, gloved finger, credit card, fingernail and connects to your desktop. Cannot rest palm on screen while drawing/form signing.

- Model 1928L 19"
- Part # E812069 Dark Grey
- Part # E060016 Beige

Fujitsu/Lenovo Convertible Tablet PC's allow for flexibility & mobility, but small screen size may not be desirable. (Radio Pen Only)

Webcams - Compatible with most modern USB webcams.



Note for Scanners/Webcams for use with RDP

Scan Redirector RDP – www.incentivespro.com/scan-redirector-rdp.html

TSScan – www.terminalworks.com/remote-desktop-scanning

TSWebcam – www.terminalworks.com/remote-desktop-webcam

Scanner Requirements - TWAIN Compatible Scanner

Virtual Machine Servers - Allocate enough virtual processors & memory and use Fixed VHD's.

WARNING: The Mainpine Fax board will not be visible to a Virtual OS.

Scanner Recommendations

At least 1 Fujitsu TWAIN Compatible Scanner with Flatbed, ADF, and Duplex for flexibility (fi-7260)

WARNING: The Fujitsu ScanSnap is NOT a TWAIN compliant scanner.

If more scanners are needed they should be Fujitsu TWAIN Compatible ADF Scanners with Duplex (fi-7160).

Server Minimum Requirements

Low Cost (up to 10 users)

Database Server (also used as an Application Server)

Windows Server 2012 R2 with all updates applied.

16 GB of RAM (about 10 GB + 0.6 GB per user)

2.0 Ghz or greater Quad Core Processor with 4MB or greater Cache

300 GB x 2 drives in RAID 1 Mirror, 7200 RPM Hard Drives or SSD (Operating System)

1 TB x 2 drives in RAID 1 Mirror, 7200 RPM Hard Drives (Data)

Microsoft SQL 2012 R2 Standard 64 bit (do not use Express)

Remote Desktop User CALs

Best Performance & Scalability (up to 30 users)

Database Server

Windows Server 2012 R2 with all updates applied.

32 GB of RAM

2.0 Ghz or greater 2 socket Quad Core Processors with 4MB or greater Cache

500 GB x 2 drives in RAID 1 Mirror 15K RPM SAS Hard Drives or SSD (Operating System)

2 TB x 4 drives in RAID 10 array, 15K RPM SAS Hard Drives (Data)

Microsoft SQL 2012 R2 Standard 64 bit (do not use Express)

Application Server

Windows Server 2012 R2 with all updates applied.

16 GB of RAM (1.5 GB + 0.6 GB per user)

2.0 Ghz or greater Quad Core Processor with 4MB or greater Cache

200 GB x 2 drives in RAID 1 Mirror, 7200 RPM Hard Drives or SSD

Remote Desktop User CALs

Steps to reduce Server Failures, Downtime, Data Loss

- Plug server in to an Uninterruptable Power Supply (UPS)
- Do not use the server as a workstation
- Do not subject the server to high temperatures
- Do not operate server in a dusty or wet environment
- Backup data from server daily and include offsite backup in plan. Veritas Backup Exec is recommended
- Regularly check the status of the RAID array, so drive failures are not missed.



Comprehensive Backup System

Symantec Backup Exec with SQL Agent (required) & Advanced Open File Option turned on.

Preventing Server Disasters

Server failures these days are few and very far between. As long as you have it connected to a battery backup, are not using your server as a desktop, are not subjecting it to high temperatures, and are not subjecting it dusty environments, your server should provide you with 5-10 years of reliable trouble free service. That being said, we recommend that you keep spare server parts on hand so that you can quickly recover from a disaster in the unlikely event hardware failure does occur. This would include spare hard drives, memory, processors, motherboards, power supplies, etc. You can buy a second hardware only server, and keep it stored for spare parts. If you cannot afford even a half hour of down time, you can setup a High Availability Server Fail environment using software like Stratus Advance High-Availability Software. In this environment, 2 servers with the same exact hardware would operate 24/7, and would be exact copies of each other. The second server's NIC would be disabled until a failure occurs. When the first server fails, the second takes over instantaneously until the first is brought back online. FoxFire EHR's Server Synchronization feature can also be used as a manual server fail. Keep in mind this may essentially double your hardware and maintenance costs, but it is very effective in providing real time server fault tolerance.

Network Minimum Requirements

10/100 Ethernet Switch with Cat5 Cabling

Network Recommendations

Gigabit Ethernet Switch & NICs with Cat5e or Cat6 Cabling

For Server 2008, you may experience better network performance and/or resolve network issues by disabling TCP Auto-tuning. From an elevated command prompt (right click command prompt then click Run As Administrator):

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netsh interface tcp set global autotuning=disabled then restart the server.
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Wireless

Wireless installations are NOT recommended as performance and reliability will be degraded. All computers should be cabled directly. If Wireless is desired for mobile devices, Cisco (not Linksys) Wireless G Access Points with dual radios & antennae's (Diversity) are highly recommended (Aironet 1230AG or better). Third party wireless utilities should be disabled, and the Wireless Zero Configuration Service should be started on all computers using wireless. A qualified Wireless Network Engineer should evaluate the service area, and select antennae's suitable for the conditions of that area. The result wireless setup should maintain at least 3 bars (> -67 dBm), > 36Mbps, and a Signal to Noise Ratio > 25 from all areas, and be able to maintain consistent ping times with no dropped packets from all areas. We recommend that you use free WIFI Coverage Site Survey software such as Ekahau HeatMapper for smaller facilities, or a High End tool such as Fluke AirMagnet Survey for large facilities to analyze the wireless coverage of your facility.

Fax Server

FoxFire EHR uses Microsoft Windows Server 2008 built in Fax Server as the Fax engine. Using XP/Windows 7 fax services as a server will not work. To ensure the highest level of speed, reliability and compatibility, we highly recommend that dedicated fax board hardware be used, in conjunction with Mainpine's free IQFSP software. The IQFSP software will enable Error Correction, Super G3 faxing, and detailed logging to Microsoft Fax Server, eliminating the need for expensive 3rd party faxing software.

Mainpine IQ Express Fax Board Models: 1 Port RF5118, 2 Port RF5120, 4 Port RF5122, 8 Port RF5124

Mainpine hardware can be purchased at:

<http://www.ifax.com/shop/hardware/analog-fax-cards/mainpine.html>

SENDING FAXES THROUGH VOIP LINES IS UNRELIABLE AND NOT SUPPORTED.

Only regular 2 wire analog POTS lines from your local telephone company should be used for faxing.

DESPITE THEIR ASSURANCES, CABLE COMPANIES (COMCAST/COX/TIME WARNER/CHARTER/OPTIMUM) ARE VOIP!



THE FAX SERVER SHOULD BE THE ONLY DEVICE ON THE LINE

Other devices may interfere with fax transmissions even if they are set for manual pickup. Setup all other Fax machines/Credit Card machines, etc. on a different line. If adding another line is not an option, you can try a line sharing device called "The Stick" that will isolate each device, preventing crosstalk issues. "The Stick" can be purchased at www.faxswitch.com. The default configuration may cause incoming reliability issues. To increase reliability, you can try connecting the Incoming Fax Server to Voice 1/2, connect the other device(s) to Fax or Modem, and disable Fax Tone Detection by dialing ##77 010 80 on a connected line. Set Fax Machine Rx Mode: Manual, Rings: 5+, Easy Receive: OFF

IF DSL IS ON THE FAX LINE, A DSL FILTER SHOULD BE USED. You may experience better reliability moving DSL to a different line.

PLEASE MAKE SURE YOU HAVE THE LATEST MAINPINE FIRMWARE!

Firmware versions prior to March 12, 2010 may experience issues with reliability. To verify, in Phone & Modem Options click the Modems tab, select the modem then click properties, then click Query Modem under Diagnostics and check the version. Contact Mainpine directly to update.

Example: Mainpine CFX34 8.15A.0.2 (March 12 2010) Polaris DP

Proximity Card Authentication

Our systems allows you to log in and out of the system without using passwords by waving a radio frequency "credential" in front a of reading device. The only supported Proximity Card Reader is the HID Omnikey 5325 CL USB Prox Reader. This is a PC/SC compliant contactless smart card reader that can read 26bit HID Prox 125 kHz formatted cards, key fobs, and tags.

HOW TO ORDER:

You can order the credentials and reader from <http://www.id-enhancements.com>

When ordering credentials, search using keyword 'HID H10301'. You will be asked to supply a facility code and a range of card numbers to match the number of credentials you order. Make sure it is already H10301 26 bit programmed!

Recommended Credentials: SEARCH using keyword 'HID H10301'

Only Purchase Genuine HID Cards!

The facility code is any number from 0 – 255. The card number can range from 0 - 65,535

HID Omnikey 5325 CL USB Prox Reader

IDE Item Code: OK-5325CLUSBPRX



HID 1346 ProxKey III H10301 26 bit Programmed Key fob

IDE Item code: PROX-FOB-III



HID 1326 ProxCard II H10301 26 bit Programmed

Clamshell Card - IDE Item code: PROX-2



HID 1391 MicroProx H10301 26 bit Programmed Tag (for adhering to objects)

IDE Item code: PROX-MICRO



HID 1346 ProxKey II H10301 26 bit Programmed Key Fob

IDE Item code: PROX-FOB (Discontinued?)



Zeiss Diagnostic Machine Software & Licensing Requirements

Humphrey Visual Field i series

- You must purchase and install the Zeiss HFA-NET license from Zeiss, and update your machine to a minimum of version 4.2.2

Newer IOL Masters with Network Jack

- You must purchase and install the Zeiss PDF Printer Software from Zeiss. If your IOL Master does not have a CD-ROM, you must purchase the USB key version of the PDF Printer Software from Zeiss.

Serial Port Connectivity (Auto-Refractors/Lensometers/Digital Phoropters)

FoxFire EHR can import values directly from most auto-refractors, lensometers, & digital phoropters. The vast majority of these devices can only transfer results via a serial cable. Without a Serial to Ethernet device, you must have a computer right next to the device in order to use the interface.

You must purchase the serial cable directly from your equipment provider. Most of the cables are proprietary, and standard serial cables usually do not work.

If your PC does not have a serial port, we recommend either adding a serial card, or using the Tripp Lite Keyspan USB to Serial Adapter Model USA-19HS. We have found that USB to Serial adapters found in stores are unreliable.

You can use a Serial to Ethernet device to extend the serial port through the Ethernet network. We highly recommend the Digi One SP. Make sure to download the latest drivers for this device at www.digi.com. Keep in mind that even with this device, procedurally it make be less work/easier to hand enter the results if the device is not in the same room or near the computer.

Diagnostic Machines That Do Not Have a Network Jack

Older diagnostic machines that do not have a network jack (such as the Zeiss IOL Master, GDX, and non i series Visual Field machines) may still be able to import results digitally using a print capture device. We highly recommend the Red Titan Print2PC USB Print Capture device.



Because this is a USB device, you will need a computer next to the diagnostic machine in order for this to work. For more information visit Red Titan on the web at <http://pcl.to/capture> or call (770) 924-1226.

If you require a Networkable solution, although not officially supported by RedTitan, you can attach the RedTitan device to a Digi AnywhereUSB2. This is a reliable USB to network converter that extends the USB ports through the network. Make sure to download the latest drivers for this device at www.digi.com

You can also try the Silent Hawk by JADTech Corporation. Although they are not as common in Ophthalmology as the Red Titan, we have used them in the past with various machines successfully. You can visit them on the web at <http://www.jadtechcorp.com/products.html> or call (310) 212-0600

Diagnostic Machines with a Video Output

FoxFire EHR includes a seamless built in Video Capture software that is Direct Show Compliant. You can capture video from any video device including ECC microscopes, ultrasounds, etc. with a Video Capture Device. We recommend Hauppauge! ImpactVCB PCI Video Capture Boards if you have a desktop computer with an available PCI slot. If your computer does not have an available PCI slot, we recommend the Hauppauge! USB-Live2 USB Video Capture Device.



Medication & Lens Rx Printing

You can use a regular ink-jet/laser printer with perforated secure paper, or purchase a dedicated Rx printer (STAR TSP847UII-24 GRY RX-US).

FoxFire Optical Equipment Requirements & Recommendations

The following pieces of equipment are compatible with FoxFire software.

Item	Make / Model	Notes
Label Printer	Dymo LabelWriter 450 Turbo Thermal Label Printer Part Number: 1752265 http://www.amazon.com/gp/product/B0027JIIKQ?psc=1&redirect=true&ref=oh_aui_detailpage_o08_s00	Dymo LabelWriter 450 prints on easy-peek, split-back D1 tape (1/4-, 3/8- or 1/2-inch sizes). Thermal printing creates labels with no ink or toner. Connect to PC or Mac and you're ready to print.
Labels	Dymo LabelWriter Labels 400 Labels/Roll Part Number: 30373 http://www.amazon.com/gp/product/B00006B9CF?psc=1&redirect=true&ref=oh_aui_detailpage_o05_s01	For outstanding results with your DYMO labelmakers, use genuine DYMO labels. They present your message clearly, stick where you want 'em and are easy to load and peel.



LabelWriter Print Server	Dymo LabelWriter USB Enet Connect PC/Mac Print Server Part Number: 1750630 http://www.amazon.com/gp/product/B001PKUUHM?psc=1&redirect=true&ref=oh_aui_detailpage_o08_s00	Gives everyone in your network access to the label printer. It is easy to setup and is both Windows and Mac network compatible.
Barcode Scanner	Symbol LS2208 Barcode Scanner Kit Includes: LS2208-SR20007R – CBA – U01-S07ZAR Cable – 20-61019-02R Stand Part Number: LS2208-SR20007R-UR http://www.amazon.com/gp/product/B003ODFZZK?psc=1&redirect=true&ref=oh_aui_detailpage_o05_s01	The LS 2200 series is the ideal, light-weight scanner for maximum productivity. The handheld scanner delivers performance at an affordable price. The kit includes barcode scanner, cable and stand.

For more information on the items listed above, please contact FoxFire at (800) 333-4176.