

Updated 10/6/2020 – djf

## **Hardware Installation Recommendations**

The following policy is intended to guide customers wishing to procure their own equipment and/or wishing to support aspects of their system locally.

### **System Administrator Requirements:**

1. Onsite person designated as "System Admin" -- does not need to be extremely technical but someone who we can address fix PC type problems. (i.e. my PC is not connecting).
2. TSH can arrange for on-site PC setup and support thru third party support companies with whom we have developed relationships.

### **Equipment to be supplied by Customer:**

1. A central computer system (Server) appropriate to the number of planned users on the system. (See below for specifications). Cloud/ASP Customers do not require a server.
2. Each end-user is to have access to a Desktop PC/MAC or laptop computer. (See below for specifications).
3. All PC's are connected to the server via a network. Printers connected to the back of an individual PC can be used with some limitations. These are typically connected using USB or parallel cables.
4. A central hub/switch with a port for each PC and printer is required. TSH recommends a 1GB TCP/IP network.
5. The network may be setup using a wireless router in which case each PC/client must have a wireless adapter installed.
6. If a wireless connection is not is use, dedicated wiring is required between each PC and the central hub. Cat 5 cable is required, terminated with an RJ45 connector.
7. One or more HP Laser Printer(s). All MDS forms are designed to work with laser printers and make use of the PCL programming conventions as implemented on HP printers. Those with integrated network cards will require an HP Jet direct network interface.
8. TSH recommends that printers be "hard wired", even though they can work over a wireless connection.

9. Dedicated Broadband internet line (DSL, Cable, T1) to allow access to TSH personnel via Internet for software support. It is best if the internet connection is secured with one or more Static IP Addresses.
10. Internet Router – this device attaches the internet line to your internal router.
11. Firewall – this prevents unauthorized access to your system and network from the internet, and at the same time facilitates access for those authorized to access the system.
12. If E-mailing from the MDS system is desired, then an e-mail server or service is required. TSH can assist in providing this capability. (Cloud/ASP Customers do not require a server.)
13. Desirable - Backup phone line and modem for emergency support in case the internet connection is down.
14. Fax support – TSH has interfaced extensively with Vsifax, an enterprise fax server. Vsifax requires a dedicated telephone line and modem or can connect via the Internet with a nominal fee per fax. Cloud/ASP. Timeshare customers do not have to provide fax service, this will be managed by TSH.

**Server Specifications:**

1. Windows Server running Windows 2012/2016/2019  
Or Linux Servers running RHEL 6/7/8 (Red Hat Enterprise Linux)
2. CPU speed of at least 2.0 Ghz
3. Dual or Quad processor configurations recommended for over 24 users
4. Memory – minimum 8 GB RAM. 16 GB over 24 users, and 32 GB over 40 users.
5. 2 x 100 GB Disks -mirrored (or equivalent). If a larger database is required, we recommend Raid V, which requires a minimum of 3 disks. SSD (Solid State Disks) are preferred and recommended.
6. Removable media backup – with sufficient capacity to back up the entire server and database. Recommend server-based snapshots and cloud backups offsite.
7. Network card (Minimum 1GB) 10Gbe or supported.
8. Dedicated Internet Connection (static ip recommended)
9. Fax Modem (If VsiFax is included with the system). Dedicated Internet if Internet based faxing is selected.)
10. UPS for Power backup with software to recognize a loss of electric power and gracefully shut down server.

***Note: VMware and Hyper-V Virtualization Platforms are supported. However, disks and memory requirements should be sized appropriately for optimal performance. Virtualization typically requires 1.5 to 2 times the memory, CPU and ram.***

**TSH Recommends RHEL7 on VMware and will provide a suitable ova/ovf file if requested.**

**Workstation Specifications:**

1. Windows PC, AMD, or Mac
2. Operating System: Windows 7, Windows 8.1, Windows 10, Mac running Parallels or VMware Fusion
3. CPU speed of 1.8 Ghz recommended
4. Memory - 2GB (the more memory the better)
5. Standard disk drive (minimum 100GB)
6. Network card (1Gbit recommended)
7. MDS-Nx software is provided by TSH (via download)

**Note: VDI (Virtual Desktop Infrastructure) on VMware or Hyper-V is supported as well. Virtualization typically requires 1.5 to 2 times the memory, CPU and ram.**

**Minimum Windows System Requirements:**

- 1.5Ghz PC Celeron (Intel I3 or Better Suggested)
- 2GB of ram (4GB Suggested))
- 1GB of free disk space (10GB Suggested)
- Microsoft Windows XP, Windows 7, Windows 8, (Windows 10 Suggested)
- 800X600 Screen Resolution (1024x768 Suggested)

**Minimum Apple / MacOS System Requirements:** We suggest multiple options however all would require access to a licensed windows system:

1. Bootcamp: This would allow you to install a Windows system directly on your Mac by allowing you to set a partition on your hard drive to allocate space for Windows ( This works with Intel based Macs)
2. Parallels: Allows you to install windows directly on Mac
3. VMWare: allows you to install a Virtual windows environment similar to Parallels, VMware Fusion
4. Windows RDP Client: Would allow you to create an RDP (Remote Desktop) to a windows computer where you can access MDS.

### **MDS-Nx Printer Support:**

\* Please note: when printing from a pdf any printer will likely work however we suggest these printer for the optimal use of our system.

### **Plain Paper Printers**

HP LaserJet (Hewlett Packard) or HP PCL Compatible Printers  
Black and White (color is not supported)  
Print speed minimum 12PPM, recommended 32PPM  
Network card (HP Jet direct interface)  
HP PCL 5 Compliant

### **Label Printers**

Zebra or Zebra ZPL Compatible Printers  
Black and White (color is not supported)  
203 dpi print resolution at speeds up to 6 ips  
Network card Ethernet interface  
ZPL /ZPL II Compliant

### **Scanner for PC use with MDS (Not MDS-WMS)**

Scan Avenger Portable Wireless Bluetooth Barcode Scanner: 3-in-1 Hand Scanners - Cordless, Rechargeable 1D and 2D Scan Gun for Inventory Management - Wireless, Handheld, USB Bar Code/QR Code Reader

Package Dimensions 7.7 x 4.3 x 3.2 inches

Item Weight 5.4 ounces

Shipping Weight 14.4 ounces (View shipping rates and policies)

ASIN B07N8MG38F

Batteries 1 Lithium ion batteries required. (included)

Note: Any Other Printers can be supported by printing via PDF, however this involves user interaction. For automatic printing, a dedicated printer server or PC workstation should be configured to relay printing requests. Cloud/ASP Users who wish to automatically print must configure (with TSH assistance) a local print server to act as a relay and provide a hostname or static ip address for the server.