

General Motors Dealer Infrastructure Guidelines



v12.1

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Section 1: Guidelines Summary

GM has adopted these infrastructure Guidelines for the dealer internal network environment in accordance with Article 5.6 of the Dealer Sales and Service Agreement. These Guidelines are designed to ensure a seamless and reliable conduit for GM to dealer data communications.

The infrastructure Guidelines are organized as follows:

- **Recommended** - The systems infrastructure components that will deliver performance and security while seeking to maximize the lifecycle of the investment. *If you are looking to purchase new systems, please adhere to the specifications outlined in the "Recommended" columns.*
- **Minimum** - The lowest acceptable systems infrastructure for conducting business with GM

Do not reference the minimum specification when purchasing a new PC, but rather use it as a comparison for hardware being transitioned from one department to another.

Section 2: Dealer IT Guidelines

PC HARDWARE

Notes: You may choose processor speeds, memory capacities, audio adapter, and hard drive capacities which exceed the Recommended specifications based on your needs and product availability.

- Only business-grade hardware that meets or exceeds the specifications listed will be supported
- Techline requires one (1) PC for every two (2) technicians and (1) MDI for every Techline PC.
- 64-bit operating systems, AMD processors, and Pentium IV or lower processors are not supported
- Techline application updates require Windows Administrative access.
- Service Programming (SPS) purposes, a dealership may be asked to purchase a USB thumb drive 2.0 (512MB or greater) to perform programming on a Radio/Navigation or Instrument Panel Cluster (IPC) system.
- GM estimates the average lifecycle for a PC is three (3) years.
- Dealerships may choose processor speeds, memory capacities, audio adapters and hard drive capacities which exceed the recommended specifications based on needs and product availability.
- For dealers looking for Electronic Parts Catalog Server Specifications: Specs for in-store server installation of the Electronic Parts Catalog can be found in GlobalConnect in the Parts section.
- For guidance or questions on the GM I.T. Guidelines, contact GMDIT at (888) 337-1010, Prompt 4.

DESKTOP PC

	RECOMMENDED SPECS Guidelines for purchasing new hardware		MINIMUM SPECS Lowest acceptable system infrastructure for PC hardware already in use at the dealership	
	GENERAL DEALERSHIP	SERVICE DEPT.	GENERAL DEALERSHIP	SERVICE DEPT.
Processor	Intel Core 2 Duo 2.5 GHz	Intel Core 2 Duo 2.5 GHz and above	Intel Pentium IV 1.3 GHz	Intel Dual Core Processors
System Memory (RAM)	2 GB RAM	2 GB or greater	1 GB RAM	2 GB RAM
Hard Disk Drive	160 GB hard drive	160 GB hard drive	80 GB hard drive	80 GB hard drive
CD ROM Drive	CD/DVD combo	CD/DVD Combo	CD/DVD combo	CD/DVD Combo
Serial Port	n/a	1 (optional USB convertor)	n/a	1
USB Ports	n/a	2 or more	n/a	2
Audio Adapter	16-Bit	16-Bit or greater	16-Bit	16-Bit
Audio Output	Speakers or headphones required	Speakers or headphones required	Speakers or headphones required	Speakers or headphones required
Video	1024 X 768 resolution, 32 bit color, 128 MB video memory	1024 x 768 resolution, 32 bit color, 128 MB video memory	1024 X 768 resolution, 32 bit color, 64 MB video memory	1024 x 768 resolution, 32 bit color, 128 MB video memory
Display	17" SVGA Monitor	17" SVGA monitor or larger	17" SVGA Monitor	17" SVGA monitor or larger
Network Adapter	Ethernet-based 100/1000Mbps (100/1000BaseT) - Optional Wireless WAN802.11g	Ethernet-based 100/1000Mbps (100/1000BaseT) - Optional Wireless WAN802.11g	Ethernet-based 100Mbps (100BaseT)	Ethernet-based 100Mbps (100BaseT)
Warranty	3-year onsite	3-year onsite	1-year onsite	1-year onsite
Operating System	Windows 7 Professional, 32 bit	Windows 7 Professional, 32 bit	Windows XP Pro, 32-bit, SP3	Vista Business, 32 bit, SP1
Printer	Networked Laser Printer	Networked Laser Printer	Black and White Laser	Black and White Laser

GM does not support Windows XP Mode / Windows Virtual PC on Windows 7 Professional.
 Certified Service Dept. Models:
 HP: Compaq 8000 Elite Ultra-slim Series and 6000 Small Form Factor Series
 Dell: OptiPlex 380 and 780 Series

LAPTOP PC

	RECOMMENDED SPECS Guidelines for purchasing new hardware		MINIMUM SPECS Lowest acceptable system infrastructure for PC hardware already in use at the dealership	
	GENERAL DEALERSHIP	SERVICE DEPT.	GENERAL DEALERSHIP	SERVICE DEPT.
Processor	Intel Core 2 Duo 2.4 GHz	Intel Core 2 Duo 2.4 GHz or above	Intel Pentium M / Centrino 1.3 GHz	Intel Dual Core
System Memory (RAM)	2 GB RAM	2 GB or greater	1 GB RAM	2 GB RAM
Hard Disk Drive	160 GB hard drive	160 GB hard drive	80 GB hard drive	80 GB hard drive
CD ROM Drive	CD/DVD combo	CD/DVD combo	CD/DVD combo	CD/DVD combo
Serial Port	n/a	1 (optional USB convertor)	n/a	1
USB Ports	n/a	2 or more	n/a	2
Audio Adapter	16-Bit	16-Bit	16-Bit	16-Bit
Audio Speaker	Speakers or headphones required	Speakers or headphones required	Speakers or headphones required	Speakers or headphones required
Video	1024 X 768 Screen Resolution, 32 bit Color, and with 128 MB of graphics memory	1024 X 768 Screen Resolution, 32 bit Color, and with 128 MB of graphics memory	1024 X 768 Screen Resolution, 32 bit Color, and with 128 MB of graphics memory	1024 X 768 Screen Resolution, 32 bit Color, and with 128 MB of graphics memory
Display	15.4" display or larger	15.4" display or larger	14.1" XGA Monitor	14.1" XGA Monitor
Network Adapter	Ethernet-based 100Mbps (100BaseT) Wireless 802.11g	Ethernet-based 100 Mbps, Wireless 802.11g	Ethernet-based 100Mbps (100BaseT) Wireless 802.11 b/g	Ethernet-based 100 Mbps, Wireless 802.11g
Warranty	3-Year Onsite	3-Year Onsite	1-Year Onsite	1-Year Onsite
Operating System	Windows 7 Professional, 32 bit	Windows 7 Professional, 32 bit	MS Windows XP Pro SP3 32 bit	Vista Business, 32 bit, SP1

Certified Service Dept. Models:

HP: Elitebook 2500p Series, Probook 6500b Series, Probook 6400b Series, Elitebook 8400p Series and Probook 5330m

Dell: Latitude E5500 Series and Latitude E6400ATG Series

Panasonic: Toughbook CF30 Series, CF52 Series and CF 53 Series

TABLET LAPTOP PC

	RECOMMENDED SPECS Guidelines for purchasing new hardware		MINIMUM SPECS Lowest acceptable system infrastructure for PC hardware already in use at the dealership	
	GENERAL DEALERSHIP	SERVICE DEPT.	GENERAL DEALERSHIP	SERVICE DEPT.
Processor	Intel Core 2 Duo 2.4 GHz	Intel Core 2 Duo 2.4 GHz or above	Intel Core 2 Duo 1.0 GHz	Intel Dual Core
System Memory (RAM)	2 GB RAM	2 GB or greater	1 GB RAM	2 GB RAM
Hard Disk Drive	120 GB	160 GB	80 GB	80 GB
CD ROM Drive	CD/DVD combo	CD/DVD combo	CD/DVD combo	CD/DVD combo
Serial Port	n/a	1 (optional USB convertor)	n/a	1
USB Ports	n/a	2 or more	n/a	2
Video	1024 x 768 resolution, 32 bit color, 128 MB video memory	1024 x 768 resolution, 32 bit color, 128 MB video memory	1024 x 768 resolution, 32 bit color, 64 MB video memory	1024 x 768 resolution, 32 bit color, 128 MB video memory
Display	12.1" TFT XGA (1280 x 800) or above with Optional Outdoor Viewable (400 nit-brighter) LCD	12.1" TFT XGA optional outdoor viewable	12.1" TFT XGA 1024 x 768	12.1" TFT XGA 1024 x 768
Network Adapter	Wireless 802.11g	Wireless 802.11 g	Wireless 802.11 b/g	Wireless 802.11 b/g
Warranty	3-Year Onsite	3-Year Onsite	1-Year Onsite	1-Year Onsite
Operating System	Windows 7 Professional, 32 bit	Windows 7 Professional, 32 bit	Windows XP Professional, SP3 32 bit	Vista Business, 32 bit, SP1

Certified Service Dept. Models:
HP: Elitebook 2700p Series
Dell: Latitude XT and XT2 models
Panasonic: CF19 Series

The Tablet Laptop runs Windows 7 for its operating system. This is not to be confused with other tablets that run alternative OS' i.e., Android and Mac OS's. These tablets will not be supported by Techline at this time.

GM EPC (Electronic Parts Catalog)

Hardware Requirements Server and PC Standalone

SERVER SPECS:

	RECOMMENDED SERVER SPECS <small>Guidelines for purchasing new</small>	MINIMUM SERVER SPECS <small>Do not reference for new hardware purchase</small>
Processor	Intel® Dual Core Xeon or better	Intel® 2 GHz Pentium D
RAM	4 GB	2 GB
Free Disk Space*	60 GB free disk space <ul style="list-style-type: none"> • 20 GB to install the catalog, • 40 GB for Q.link™ online updating. 	60 GB free disk space <ul style="list-style-type: none"> • 20 GB to install the catalog, • 40 GB for Q.link™ online updating.
Operating System	Server 2000, Server 2003, and Server 2008 "Standard" and "Enterprise" editions.	Server 2000, Server 2003, and Server 2008 "Standard" and "Enterprise" editions.

PC SPECS:

	RECOMMENDED PC SPECS <small>Guidelines for purchasing new</small>	MINIMUM PC SPECS <small>Do not reference for new hardware purchase</small>
Processor	Intel® Core2Duo, or better	Intel® 2 GHz Pentium D
RAM	4 GB	2 GB
Free Disk Space*	60 GB free disk space <ul style="list-style-type: none"> • 20 GB to install the catalog, • 40 GB for Q.link™ online updating 	60 GB free disk space <ul style="list-style-type: none"> • 20 GB to install the catalog, • 40 GB for Q.link™ online updating
Operating System	XP, Vista, and Windows 7 "Professional" and "Enterprise" editions	XP, Vista, and Windows 7 "Professional" and "Enterprise" editions

*Free Disk Space specifications apply to the GMNA edition of the GM EPC. Other editions may require more or less disk space.

PC SOFTWARE

	RECOMMENDED SPECS <small>Guidelines for purchasing new software</small>	MINIMUM SPECS <small>Lowest acceptable infrastructure for systems already in use at the dealership</small>
Word Processing	MS Word for Windows version 2010 (with current Service Pack)	MS Office Viewer
Spreadsheets	MS Excel for Windows version 2010 (with current Service Pack)	MS Office Viewer
Presentation	MS PowerPoint for Windows version 2010 (with current Service Pack)	MS Office Viewer
Web Browser	Internet Explorer, version IE8 (with current Service Pack) + Current version of Flash	Internet Explorer, version IE7 (with current Service Pack) + Current version of Flash
Java	Current version of Java J2SE™ Runtime Environment	Current version of Java J2SE™ Runtime Environment
Reader	Current version of Adobe Acrobat, Full Version	Current version of Adobe Acrobat reader
System Recovery	<p>Full Operating System Recovery Package.</p> <p>Ensure the PC manufacturer or reseller provides the necessary recovery software to restore the operating system in the event of a major software failure.</p>	<p>Full Operating System Recovery Package.</p> <p>Ensure the PC manufacturer or reseller provides the necessary recovery software to restore the operating system in the event of a major software failure.</p>
Desktop Anti-Virus	Enterprise Desktop Anti-virus solution that is updated automatically and managed through a centralized console.	Enterprise Desktop Anti-virus solution that is updated automatically and managed through a centralized console.

LOCAL AREA NETWORK (LAN) CONFIGURATION

Local Area Network	Ethernet based 100/1000Mbps (100/1000BaseT)
Data Cabling	Category 5e
Equipment Location	LAN wiring should terminate, and equipment should be housed, in a wiring closet or communications room
IP Addressing	Dynamic addressing (DHCP) should be used to ease support
Network Adapter	100/1000Mbps
Traffic Switching	Managed switch
Routers	Business-grade router

WIRELESS NETWORK

Note: Wireless networks are not required, but if utilizing wireless networks, follow security Guidelines below. Wireless networks must be segmented from the dealership's wired LAN to protect customer data.

	RECOMMENDED SPECS <small>Guidelines for implementing new systems</small>	MINIMUM SPECS <small>Lowest acceptable infrastructure for systems already in use at the dealership</small>
Network Standard	WPA2 Enterprise, 802.11i with RADIUS authentication	WPA2 PSK Compliant
Authentication & Encryption	WPA2 Enterprise, 802.11i with RADIUS authentication and AES Encryption	WPA2 Authentication w/ AES Encryption

Service Dept. Note:

The MDI Tool currently does not support RADIUS authentication; however, it is still possible to implement WPA2 Enterprise (i.e. 802.1x/802.11i) and WPA2 pre-shared key on the same network. This can be accomplished through network segmentation. This allows for a more secure WPA2 Enterprise solution that incorporates RADIUS as an authentication mechanism.

Wireless Access Points:

GM supports business grade access points only and does not support Small Office/ Home Office equipment. All access points must adhere to the Guidelines specifications above. The following access points (or equivalent) are acceptable:

- Cisco Aironet 1100 B/G Access Point (PN # AIR-AP1121G-X-K9)
- Cisco Aironet 1130 A/B/G Access Point (PN # AIR-AP1131AG-X-K9)
- Cisco 1240 A/B/G Access Point (PN# AIR-AP1242AG-X-K9)
- HP ProCurve MSM310 A/B/G (PN J9374A)
- HP ProCurve MSM 320 A/B/G (PN # J9360A)
- HP ProCurve 420 B/G (PN # J8130B)
- HP ProCurve 530 A/B/G (PN # J8986A)

Mobile and Blackberry Access:

GM has added functionality for mobile devices, such as smart phones and Blackberry devices, to access GM GlobalConnect Messenger communications. Mobile device must have Internet capabilities as well as the ability to clear caches and be JavaScript enabled to read the messages.

SECURITY

PC Virus Monitoring

Anti-Virus products should be installed on all PCs and configured to automatically perform the following:

- Download and install virus signature updates
- Actively monitor for viruses and
- Quarantine and eradicate infected files

Disaster or Attack Recovery

Essential dealership data should be backed up and verified regularly, using a backup utility or service that has the following capabilities:

- Offsite secured storage of media
- Regular daily backups

Data Network Security

Comply with all federal, state, local, and industry regulations for financial institutions, such as GLBA, PCI, etc.

Designate an employee (dealer direct possibly your PSC) to be in charge of security policies, procedures, and FTC required paperwork. The Gramm-Leach-Bliley Act (GLBA) requires that financial institutions regularly perform a Risk Assessment to identify foreseeable risks.

Security Information and Event Management: Proactive, real-time event monitoring that utilizes a SIEM (Security Information and Event Management) tool. The SIEM needs to be able to collect and collate the log data and security event data from the network in real-time, and be able to notify network administrator in the case of a security event. The purpose of a SIEM is to aid in identifying or preventing an intrusion into your network. Immediate response to a breach can greatly reduce or prevent data loss.

Note: Reactive management software is not to be confused with a proactive SIEM

Data Network Security (continued)

Implement comprehensive security measures that include:

- Fully-managed security device that continually monitors threats through Intrusion Detection System “IDS” and Intrusion Prevention System “IPS” and other mechanisms. A firewall should include the functionality listed below.
 - Filter packets and protocols
 - Antivirus Scanning
 - Perform stateful inspection of connections
 - Perform proxy operations on selected applications
 - Report traffic allowed and denied by the firewall on a regular basis (i.e. monthly)

The firewall should be able to filter packets based on the following characteristics:

- *Protocol, e.g. IP, ICMP
- Source and destination IP addresses
- Source and destination ports
- The appliance should perform real-time scanning of HTTP, SMTP, and FTP traffic for malware, spy ware, and other intrusions.
- In addition, GM recommends web filtering and monitoring websites visited to block inappropriate or entertainment orientated websites that are the most dangerous source for inadvertently downloading malicious programs.
- Protect each PC with unique passwords and a corporate anti-virus solution.
- Timely, customized reporting on (IDS and IPS) activity
- Respond to all identified threats (form reporting) immediately.

For additional information on Network Security, please reference the following resources that provide industry laws, Standards, and recommendations:

PCI Security Standards: <https://www.pcisecuritystandards.org>

Gramm-Leach-Bliley Act: <http://www.ftc.gov/privacy/privacyinitiatives/glbact.html>

STARS Standard: <http://www.starstandard.org/>

MINIMUM INTERNET BANDWIDTH

DEALER SIZE	GUIDELINE
SMALL (fewer than 200 units/yr)	512Kbps
MEDIUM (201-899 units/yr)	768Kbps
LARGE (900+ units/yr)	1.54Mbps+

Note: GM recommends that dealerships also maintain on-demand back-up Internet Connectivity.

Compliant Internet Connections

- Dedicated T-1 Line
- Dedicated Fractional T-1 Line (512Kbps, 768Kbps, 1.54Mbps+)
- Dedicated Symmetrical Digital Subscriber Line (SDSL) (512Kbps, 768Kbps, 1.54Mbps+)
- Business-grade Cable

Non-Compliant Internet Connections:

- Dial-up (any analog service)
- ADSL (Asymmetric Digital Subscriber Line)
- IDSL (ISDN (Integrated Systems Digital Network) Digital Subscriber Line)
- Wireless ("last mile" or "line of site", services that connect to your facility via wireless antenna)
- Satellite

Internet Notes

- Inefficient bandwidth may result in unreliable or slow performance and may negatively affect GM application speed and functionality.
- Internet speed and performance can be greatly impacted by virus, spyware and malware malicious infiltrations.
- Bandwidth dependant activities not related to dealer/GM communications can greatly impact Internet performance as well. Examples of these activities are non-business Internet usage, i.e. video/audio downloads/uploads, gaming, file-sharing, etc.
- DMS communication requirements can also utilize significant amounts of bandwidth. Each dealer solution should consider the overall Internet utilization requirements for each area of the dealership. Additionally, dealers should develop Internet usage Guidelines for their employees that address non-dealership business Internet usage.

GM Dealerships, not General Motors Company, are ultimately responsible for determining their own network infrastructure, security, and network configuration.

**The GM Dealer IT Guidelines are hosted on www.gmdit.com.
For questions on the Guidelines or compliance, please contact
GMDIT at (888) 337-1010, Prompt 4**