



Service Manager Bulletin

TITLE:
**VIDA Workshop System Requirements and Guidelines
for Dealers**

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“Right first time in Time”

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1 INTRODUCTION

This document describes the technical specifications and standards that need to be incorporated in the dealership network and IT infrastructure for running VIDA in a workshop process and environment.

All areas and parking spaces used by customers visiting the workshop, shall be covered by Wi-Fi (when valid in the Volvo Dealer Standard). This document is prepared as a technical guide to assist authorized Volvo dealers, importers, harbors and national sales companies to build wired and wireless infrastructure for workshops and other VIDA users.

NOTE: Wi-Fi and Networked Ethernet is not yet enabled. It is however mentioned in this document.

In VIDA, the vehicle communication methods differ depending on what diagnostic protocol a vehicle model is using. Also, the diagnostic protocols provide different possibilities in terms of how the vehicle model can be diagnosed in VIDA. There are two main groups of vehicles in VIDA, based on vehicle communication methods:

- VDS protocol-based vehicle models (used in all vehicles on the electrical platform starting with XC90 model year 2016).
- D2 and GGD protocol-based vehicle models (used by all vehicles on all other existing platforms).

VDS protocol-based vehicles support diagnostics over wireless LAN and by Ethernet cable. This delivers faster communication and a simplified connection procedure compared to previous vehicle communication methods.

2 HOW TO CONNECT VDS PROTOCOL-BASED VEHICLES TO VIDA

VDS protocol-based vehicles support diagnostics over Ethernet and Wi-Fi.

Below diagram depicts the vehicle connectivity scenarios at the workshop.

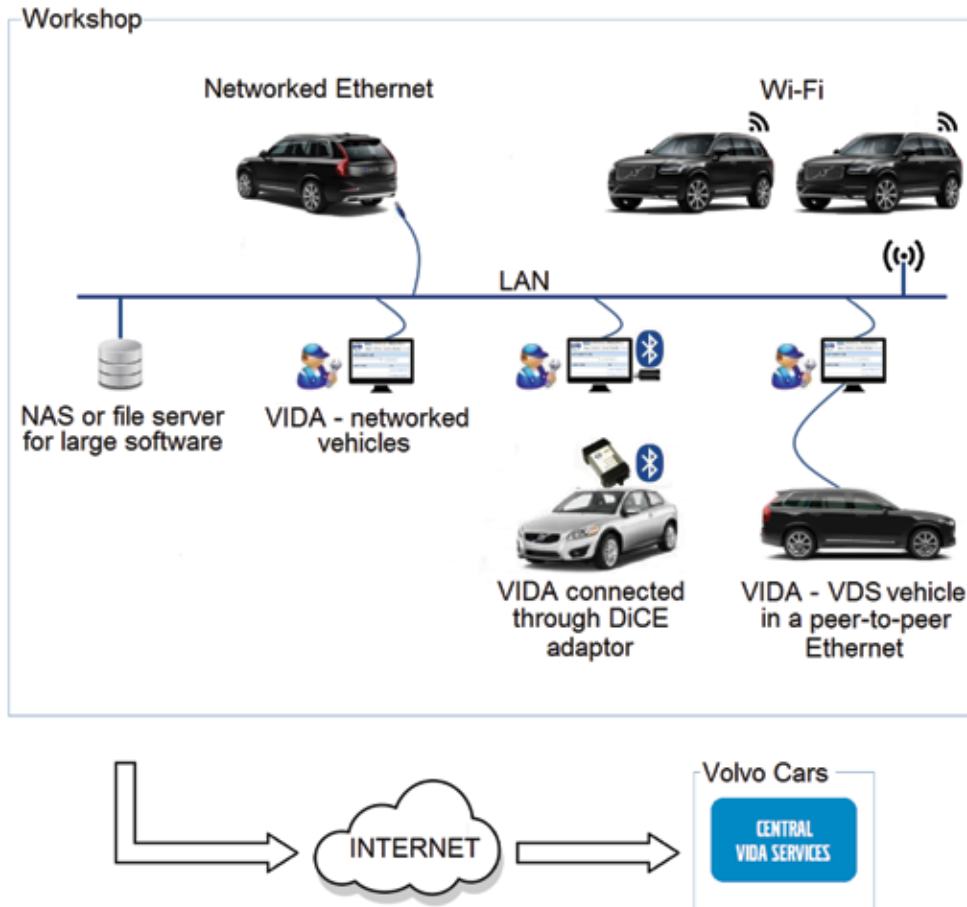


Fig. 1 Workshop diagnostic connection types

There are three different ways of connecting a VDS protocol-based vehicle to VIDA:

- Peer-to-peer, using an Ethernet cable between a VIDA workstation and a vehicle.
- Networked Ethernet, using an Ethernet cable to connect the vehicle to a LAN infrastructure, from where the vehicle is accessible from any VIDA workstation in the workshop.
- Wi-Fi connection between the vehicle and the workshop network, where the vehicle is accessible from any VIDA workstation in the workshop.

For more information, *see chapter 5 LAN and Wi-Fi requirements on page 11.*



3 CONNECTING VEHICLES FOR INFOTAINMENT USAGE (SENSUS CONNECT)

3.1 VDS protocol-based vehicles

It is important to keep in mind and distinguish that VDS protocol-based vehicles can be connected wirelessly in two different ways for two different purposes:

- The vehicle can connect wirelessly (or by wire) to the VIDA workstations in order to load software as described in *chapter 2 How to connect VDS protocol-based vehicles to VIDA on page 4*. This connection is used in the workshop for diagnostics and software download purposes.
- Also, the vehicle can connect wirelessly to a customer device such as a smartphone to provide connectivity functionality for infotainment purposes. This connection is primarily intended for the customers.

The latter will however also be applicable for workshop technicians in the following cases:

- Usage of the remote update service to download apps or map increments.
- Connecting the vehicle for fault tracing of connectivity related customer functionality.

If diagnostic communication is required in these cases, VIDA cannot reach the vehicle over a wireless connection (as the same chipset is shared between these two functionalities). VIDA will in this case have to be connected by Ethernet cable.

More information on how to connect to vehicles for infotainment purposes is found in *chapter 5.3.1 Volvo Cars Global Wi-Fi service on page 16* and *chapter 3.4 Vehicle internet connectivity requirements and general procedures on page 6*.

3.2 D2 and GGD protocol-based vehicles with Sensus Connect

Vehicles with Sensus Connect can connect wirelessly to a customer device such as a smartphone to provide connectivity functionality for infotainment purposes. This connection is primarily intended for the customers.

It will also be applicable for workshop technicians in the following cases:

- Usage of the remote update service to download apps or map increments.
- Connecting the vehicle for fault tracing of connectivity related customer functionality.

More information on how to connect to vehicles for infotainment purposes is found in *Chapter 5.3.1 Volvo Cars Global Wi-Fi service on page 16* and *chapter 3.4 Vehicle internet connectivity requirements and general procedures on page 6*.

3.3 Vehicles with Sensus Connect

Vehicles with Sensus Connect can connect wirelessly to a customer device such as a smartphone to provide connectivity functionality for infotainment purposes. This connection is primarily intended for the customers.

It will also be applicable for workshop technicians in the following cases:

- Usage of the remote update service to download apps or map increments.
- Connecting the vehicle for fault tracing of connectivity related customer functionality.



3.4 Vehicle internet connectivity requirements and general procedures

This chapter outlines the requirements and general procedures to enable connection of vehicles to the internet in order to handle customer in-car online functionalities. This makes it e.g. possible for workshops to access and work with in-car online functionalities such as remote update to restore in-car apps and map increments.

NOTE: In-car online functionalities, e.g. apps and map increments cannot be managed from VIDA.

See *chapter 4 VIDA requirements on page 8* for additional information about the necessary equipment.

3.4.1 Alternative 1: Smartphone with internet sharing

For this alternative, the workshop must use the smartphone mentioned in *chapter 4 VIDA requirements on page 8*.



Fig. 2 Illustrative example for alternative 1

General procedure:

1. Make sure the smartphone has internet connectivity.
2. Bring the smartphone into the vehicle.
3. Connect the smartphone using USB, Bluetooth or as Wi-Fi hotspot.
4. Connect the vehicle to the hot spot using Sensus Connect.

3.4.2 Alternative 2: Through workshop internet gateway

For this alternative, the workshop must have Volvo Cars Vehicle Connectivity Wi-Fi, mentioned in *chapter 5.3.1 Volvo Cars Global Wi-Fi service on page 16*.

Requirements for the Volvo Cars Vehicle Connectivity Wi-Fi:

- Has WPA2-PSK with AES-CCMP security, similar to a guest or home network.
- Provides a gateway to the internet.
- Does not require web proxy settings for connected clients.



NOTE: This Wi-Fi network is a separate network. The one that VIDA uses to connect to vehicles cannot be used.



Fig. 3 Illustrative example for alternative 2

General procedure:

1. Park the vehicle within reach of an access point providing the network.
2. Connect the vehicle to the Wi-Fi network using Sensus Connect.

NOTE: The antenna is located on the inside of the vehicle; therefore the range might be limited. For better reception, roll down one or several windows.

3.4.3 Alternative 3: Via personal SIM card

To be able to connect to the Internet via a personal SIM card, the vehicle has to be equipped with Sensus Connect and Volvo on Call.

General procedure:

1. Insert the SIM card in the SIM card reader located in the glove box. The SIM card must have an active data subscription. The SIM card must also be a mini-SIM model in order to fit into the vehicle's card reader.
2. On the center console: Press MY CAR and then select OK/MENU.
3. In the Sensus Connect menu: Select Settings and then Internet settings.
4. In the Sensus Connect menu: Select Connect through and then Car modem.
5. In the Sensus Connect menu: Press OK/MENU and enter the PIN code for the SIM card.



4 VIDA REQUIREMENTS

4.1 Mandatory specifications for VIDA workstation

Having the right infrastructure is one of the first building blocks of a retail business. Understanding Volvo Car Group Retail Infrastructure requirements and going just a few steps above and beyond those requirements could significantly improve the bottom line.

Take action to implement these four simple, yet effective methods:

- **Surge Protection** – Providing surge protection for PCs and network devices is the easiest and most effective way to extend the life of the equipment and avoid expensive downtime.
- **Network workstations using common, modern methods** – Use <http://www.starstandard.org/index.php/star-standards/dig-dealer-infrastructure-guidelines> to implement a computer network with common and standard devices and protocols. Sharing Internet connections and printers can directly improve the dealerships bottom line.
- **Provide virus protection** – Virus protection software helps prevent expensive downtime of systems.
- **Maintain reasonable and useful equipment warranty services** – When negotiating for warranty services, keep in mind that the average PC life is three years and onsite repair services are less disruptive and can be less expensive.

In the briefest of terms a Volvo Car Dealership must provide:

- An Ethernet LAN designed and built to computer industry standards
- Computers powerful enough to run Volvo Car Group retail applications attached to that network
- A method of accessing the Internet built into the LAN

NOTE: Installing and running VIDA in terminal server environments or on other operating systems than the ones listed is not supported. The functionality of VIDA cannot be guaranteed in such environments.

VIDA is delivered as a desktop application but an installation package has to be installed on the computer to get the necessary software components. You can download the VIDA Prerequisites installation package from <http://vidainstaller.volvocars.biz/client-installer/VIDASetup.exe>.

For using VIDA, the workstation requirements are as presented in the table below.

Item	Specifications for VIDA
Processor	Intel Core i5 or equivalent ¹
Memory	4 GB or more
Local free disc space	10 GB ²
Connections	2 x USB 3.0 or higher ³
Operating System	Windows 7 Professional/Enterprise or Windows 10 Professional/Enterprise. All 64-bit operating systems only ⁴ . Note: Support for Windows 7 Professional/Enterprise is planned to end starting 2019-01-01.
Browser	Microsoft Internet Explorer 11 installed on the computer
File system	NTFS



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Display resolution	Aspect ratio	Minimum resolution
	16:9 ⁵	1280 x 720
	16:10 ⁵	1280 x 800
Internet connection (internal)	1 Gb ⁶	
Bandwidth	5 Mbit/s (per Workshop VIDA client) Download ⁷ 1 Mbit/s Upload ⁷	
Local network storage	1 TB ⁸	
Smartphone	USB and Bluetooth tethering capabilities ⁹ Wi-Fi hotspot feature for Internet sharing ⁹	

¹ Names of processors are frequently changed. These are examples of what to use.

² Amount of disc space which should be available before VIDA is installed. The recommendation is based on the increase of used disk space over three years. If you have other applications, allow extra space for these according to their requirements.

³ Additional USBs may be needed for other equipment, such as mouse and keyboard.

⁴ Minimum retail infrastructure requirements for VIDA. Windows Update must be enabled and all available updates from Microsoft need to be installed.

⁵ The application is optimized for widescreen format. However, the application design is “fluid” based, i.e. the application stretches to completely occupy available screen space. This makes it possible to use smaller screens but bear in mind that it can be difficult to read wiring diagrams and other features that contain a lot of information.

⁶ An Internet connection must be available at all workshops and is used for the communication between the VIDA workstations and the VIDA central servers. This is the mandatory minimum internal network capacity.

⁷ Mandatory minimum bandwidth for acceptable performance. However, the larger the bandwidth, the better VIDA will work. In addition, the digital transformation within retailers is expected to require an increased bandwidth to secure a premium customer experience.

⁸ A shared drive enables every VIDA workstation in the network to access the data stored on it. To locally cache VIDA data, a business grade local network storage of 1 TB per customer organization (Partner ID) is needed. This can be managed by either a shared folder or a network attached storage (NAS). The NAS shall be RAID 1 capable with a minimum of 1 Gbit/s LAN port, with the capability of supporting at least 5 concurrent users. The required local network storage is expected to increase from 2018 and forward.

⁹ The vehicles need mobile Internet access in the workshop for the purpose of loading in-car apps, in the same way as the customers would provide Internet to their vehicles. Mobile Internet is normally supplied to the vehicles by means of a smartphone connected to the vehicles using USB, Bluetooth or Wi-Fi technology (by setting up a Wi-Fi hotspot). USB dongles with 3G/4G cannot be used. Hence, the workshop will need a smartphone for fault tracing of issues related to connectivity in order to be able to re-create what the customers would do. In addition, VIDA needs mobile Internet in the case of mobile fault tracing (e.g. while driving the vehicle), where the same smartphone could be utilized. Alternatively a USB dongle could be used for a VIDA workstation.



4.2 Additional software requirements

There are different plug-ins that are needed and software prerequisites that need to be fulfilled for VIDA to work properly. These are described in the sections below.

4.2.1 IsoView

IsoView is an image viewing plug-in, automatically started together with VIDA. IsoView is included in the VIDA installation and there is no additional license fee.

4.2.2 Adobe Acrobat Reader

Some functions in VIDA require the software **Adobe Acrobat Reader** in order to view .pdf files. Adobe Acrobat Reader has to be installed separately and is available for free via this link:

<http://get.adobe.com/reader/>.

4.3 Other software and software interfaces

4.3.1 TIE

TIE is used to report errors/discrepancies and to distribute information. To access TIE, Microsoft Internet Explorer 11 is required.

4.3.2 Operations and Packages

In VIDA, Operations and Packages information is used as part of the content in work list creation. Operations and Packages is integrated with VIDA and there are no separate system requirements for the Operations and Packages function.

4.3.3 Dealer Management System

Dealers can connect to their locally installed Dealer Management System (DMS) from VIDA by configuring a locally available “VIDA DMS interface end point”.

NOTE: This instruction does not cover the setup between the VIDA DMS interface implementation and the actual DMS. This is an issue for the party implementing the VIDA DMS interface.

In order for this to work the following steps must be completed:

1. The DMS vendor must have implemented the VIDA DMS interface.
2. The customer information in VIDA Admin must be updated.



5 LAN AND WI-FI REQUIREMENTS

This chapter includes the requirements for LAN and Wi-Fi (enabled when valid in the Volvo Dealer Standard). It also includes the requirements for peer-to-peer connections already used for connecting VDS protocol-based vehicles to VIDA.

5.1 LAN and Wi-Fi

5.1.1 Mandatory components for LAN and Wi-Fi

To form a local area network that works for the vehicles, the following components are mandatory for the setup:

- Access points provided by Volvo Cars through the Volvo Cars Global Wi-Fi service; in order to connect vehicles wirelessly to the LAN.
- Switch/routers; to build the infrastructure and provide wired access for vehicles to the LAN.
- DHCP server; to provide Volvo Cars access points and vehicles with IP addresses.

A detailed description of requirements on these components will follow in the chapters below.

5.1.2 Network configuration and topology

A minimum local network will consist of a switched network for VIDA workstations and vehicles with a gateway to the internet. The vehicles will connect either directly to the network through an Ethernet cable (“networked Ethernet connection”) or wirelessly through Volvo Cars access points (“Wi-Fi connection”). An example of a network with those specifications is shown in the following figure:

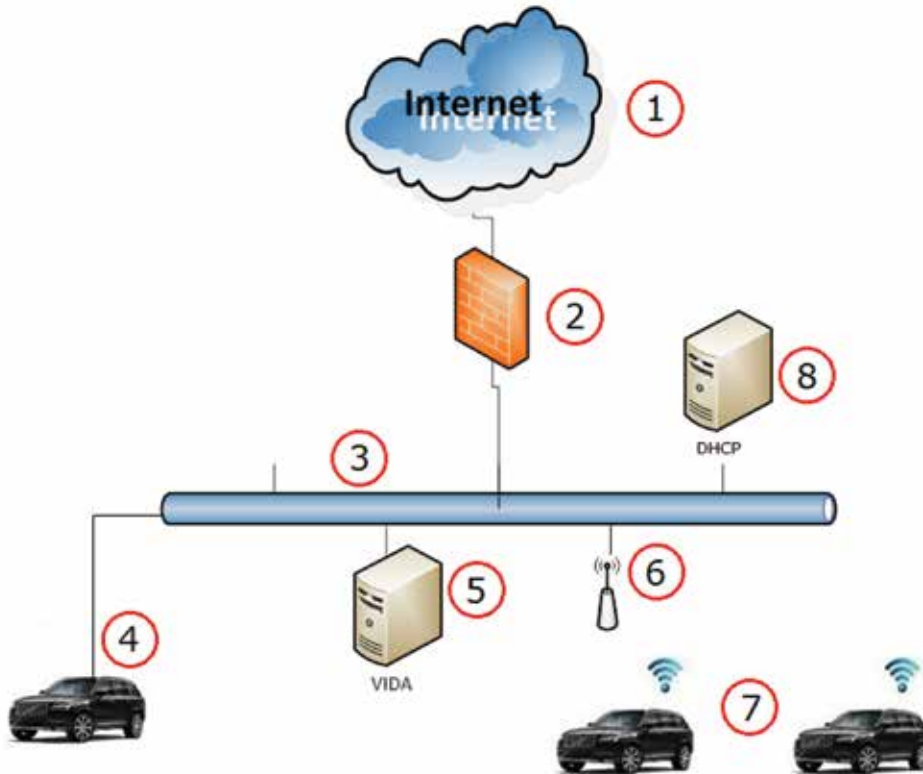


Fig. 4 Example of a minimum local network

1. Internet
2. Internet gateway and firewall
3. Network
4. Wired connection
5. VIDA station
6. Volvo Cars Access Point
7. Wi-Fi connected vehicle
8. DHCP server

Routed local networks

Infrastructure setups with a routed network or VLAN separation are possible, for example to separate wired and wireless network traffic in sub networks, or to put vehicles in a separate sub network. The access points can then be connected to one of the sub networks and the VIDA stations to the other one. An example of a routed local network is found in the figure below:

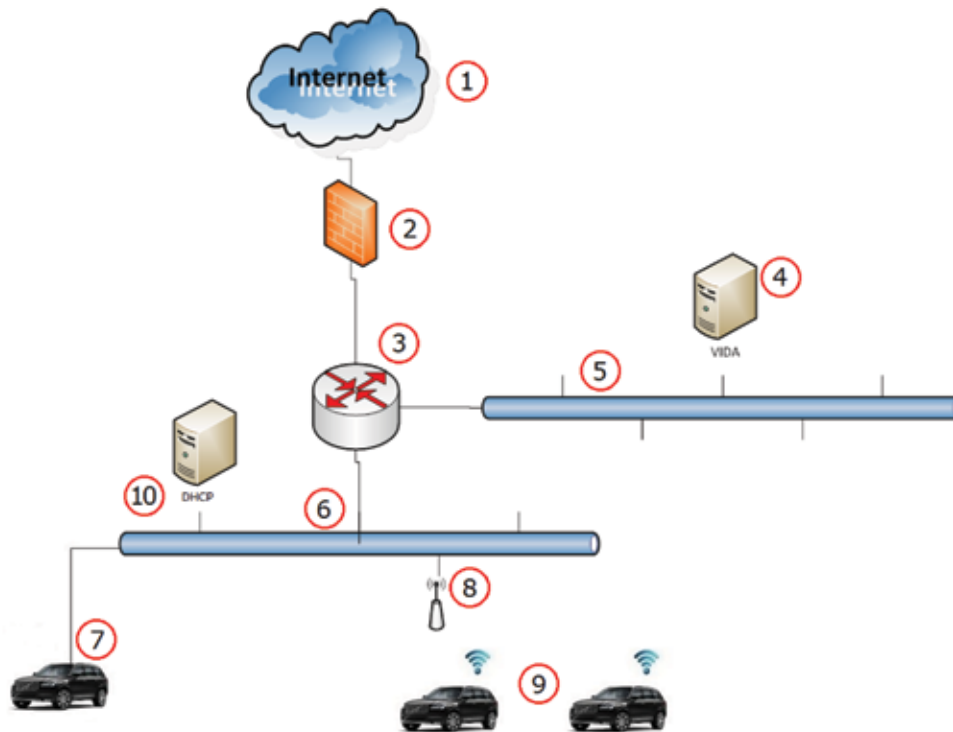


Fig. 5 Example of a routed local network

1. Internet
2. Internet gateway and firewall
3. Router
4. VIDA station
5. Sub network 1
6. Sub network 2
7. Wired connection
8. Volvo Cars Access Point
9. Wi-Fi connected vehicle
10. DHCP server

NOTE: If VIDA and vehicles exist in different sub networks, VIDA has to be configured with the broadcast domain where the vehicles exist. For more information, see *chapter 6.1.3 Internal router firewall ports on page 19*.



5.1.3 Switches and switch ports

The dealership needs to have switches with available Ethernet sockets to plug in the Volvo Cars access points as well as any networked Ethernet connected vehicle. It is highly recommended for simple installation and maintenance that the switch features PoE 802.3af standard as the Volvo Cars access points are powered this way.

The vehicles do not need PoE (and will not be harmed if PoE is unintentionally enabled).

The ports* must be configured as access ports and must be open without authentication.

* Ports to which Volvo Cars Global Wi-Fi service access points are connected must be configured as access ports, i.e. be open without requiring IEEE 802.1x authentication.

5.1.4 Port performance

Router, switches and network interface cards speed must support at least 100 Mbit/s.

5.1.5 IP address assignment

The Volvo Cars access points, as well as the vehicles connecting to the network through the Volvo Cars access points, are dependent on IP addresses. These are assigned by DHCP when connecting to the selected switch ports. Therefore each network segment where these devices are connected shall provide a DHCP service. The DHCP server must also provide IP addresses to the default-gateway and the DNS server.

In addition, the DHCP must provide a sufficient range of IP addresses to be used by the vehicles that connect to the Volvo Cars access points.

Peer-to-peer connected vehicles also need to get IP addresses. These vehicles are assigned IP addresses through address autoconfiguration ("auto-IP"). For IPv4, the vehicle and computer will get an address in the 169.254.0.0/24 range. Make sure that any VIDA computer used to connect peer-to-peer to a vehicle is set such that auto-IP is enabled (i.e. that a static IP address is *not set* on the Ethernet port).

5.1.6 Other network components

Other network components such as firewalls, routers, switches, proxy servers may exist in the network as long as the above component and topology requirements are fulfilled. Also make sure that necessary firewall rules are applied that allows internet and vehicle communication in accordance with *chapter 6.1.2 Internal gateway firewall ports on page 18* and *chapter 6.1.3 Internal router firewall ports on page 19*.



5.2 LAN

5.2.1 Ethernet connectivity requirements

VDS protocol-based vehicles can be connected directly to a VIDA workstation with a standard Ethernet cable using network connectors for a peer-to-peer connection for diagnostics and software download.

The vehicles will also (together with the introduction of wireless access) have the possibility to connect by Ethernet to the LAN.

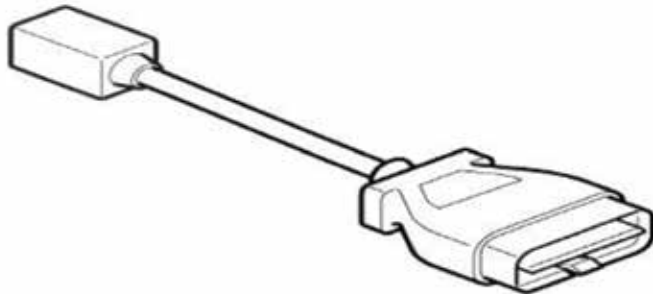
In this case the vehicle is connected to a LAN switch, usually by means of a network socket provided for this purpose. In this connection any VIDA workstation connected to the LAN can reach this vehicle.

Volvo Cars recommends to install dedicated Ethernet sockets at suitable places in the workshop where a vehicle needs to get wired access to the LAN network.

The following components are required:

Mandatory components

- VOE (Volvo OBD to Ethernet) adapters, Volvo special tool number 9513108.



*Fig. 6 VOE adapter**

* The image is showing a generation 2 adapter. Generation 1 (red and black) (9513062) should no longer be used

- Ethernet network input for each VIDA workstation for peer-to-peer connection. It can either be a PCI network card or a USB Ethernet adapter.
- Ethernet cable type CAT5, CAT5e or CAT6. There is a Volvo special tool available with part number 9513095. This cable tolerates a cold environment.



Fig. 7 Ethernet cable



Optional components

- An Ethernet cable tester (not a Volvo special tool) is not mandatory but strongly recommended.
- USB Ethernet adapters (not a Volvo special tool) for internet connection when a peer-to-peer connected vehicle occupies the VIDA workstation's Ethernet port.

NOTE: The connection may differ and depends on the manufacturer of the USB Ethernet adapter. During development phase, Volvo Cars found the following adapters to be best suited for this task and are therefore recommended.

D-link 2.0 Fast Ethernet Adapter DUB-E100

Amazon Boom 77HMUO USB 3.0 10/100/1000 Gb

There may be other adapters with similar properties, but since they are not tested by Volvo Cars they are not recommended.



Fig. 8 USB Ethernet adapter

NOTE: The peer-to-peer option needs to be available and the necessary equipment is always mandatory. The other two connectivity mechanisms (Wi-Fi and networked Ethernet) require additional equipment and configuration at the workshop.

5.3 Wi-Fi

5.3.1 Volvo Cars Global Wi-Fi service

The Volvo Cars Global Wi-Fi service is a service developed by Volvo Cars. It provides up to three wireless networks:

- Volvo Cars Diagnostic Wi-Fi (mandatory)
- Volvo Cars Guest Wi-Fi (Not available in US / Canada)
- Volvo Cars Vehicle Connectivity Wi-Fi (optional)

The vehicle will be manually connected to the Volvo Cars Diagnostic Wi-Fi by conducting a command on the vehicle's remote control key. The command is performed by pressing the lock button three times within three seconds. Once connected, the vehicle will be visible in VIDA and the system will work as if the vehicle was connected by cable.

The Volvo Cars Guest Wi-Fi is offered to give a harmonized retail experience for Volvo customers visiting the dealership. (Not Available in US / Canada)



The **Volvo Cars Vehicle Connectivity Wi-Fi** will provide access to Internet for the vehicles. The network can be used for the following:

- Demonstration of vehicle connectivity functionality in the showroom
- Sales personnel can load apps and other data to vehicles in the showroom
- Service technicians can load apps and other data into vehicles in the workshop

For more information about the Volvo Cars Vehicle Connectivity Wi-Fi, *see chapter 3.4.2 Alternative 2: Through workshop internet gateway on page 6.*

One of the mandatory components for the Volvo Cars Diagnostic Wi-Fi are the Volvo Cars access points. VCUSA, along with our vendor Capricorn, will assist the dealership with the actual mounting according to the agreed floor plan. The Volvo Cars access point controller platform is cloud-based and centrally configured and managed, also for authentication through RADIUS.

The subscription service will include wireless networks for the vehicles for workshop diagnostic and software download purposes from VIDA. The SSID for the vehicles will be broadcasted and named VCCarDW-. A local setup for wireless connections for vehicle diagnostics is not possible due to security reasons.

For more information about the Volvo Cars Global Wi-Fi service, dealers should contact their national sales company.



6 CONFIGURATION SPECIFICATIONS

6.1 Firewall and proxy configuration

6.1.1 Universal Resource Locators and DNS

VIDA will use several URLs - all will be on *.volvocars.biz. Make sure that *.volvocars.biz is not blocked by a proxy or firewall.

Service	URL	Port
VIDA Prerequisites	http://vidainstaller.volvocars.biz/client-installer	80
VIDA Production	http://vida-prod.volvocars.biz	80
VIDA Admin	http://vidaca.volvocars.biz/AdministrationWeb	80
TIE	https://tie.volvocars.biz	443
VIDA Services	http://vidaresources.volvocars.biz	80
Volvo Cars password server	https://vcamlogin.volvocars.biz	443
VIDA large SWDL	http://swdl.volvocars.biz	80

The Wi-Fi solution requires the ability to open up external URLs by DNS.

6.1.2 Internal gateway firewall ports

Both VIDA workstations and access points will have a gateway IP address configuration to reach the internet. It is recommended that vehicles connected by Ethernet to the network also have a possible route to the internet. However, this is not enabled yet.

The access points need to have a direct route through the internet firewall and will not be able to handle a proxy configuration.

The following outbound ports in an Internet firewall need to be open:

Protocol	Port number	Usage
TCP	80	For VIDA to reach central systems.
TCP	443	
TCP	7734	For access points to reach the cloud controller.
TCP	7752	
UDP	7351	
UDP	123	



6.1.3 Internal router firewall ports

For VIDA and the vehicles to be able to communicate over an internal router, any routers used in the network needs to allow communication on TCP port 13400 and UDP port 13400 as well as corresponding traffic between the sub networks. These two communication ports are essential in the communication between VIDA and the vehicles for diagnostic and software download communication.

Especially subnet directed broadcast has to be allowed through routers on TCP port 13400, as this is the way VIDA discovers vehicles on a different sub network. For best performance, subnet directed broadcast should also be supported for UDP port 13400.

There are two different methods for VIDA to discover vehicles:

1. Sequential scanning (always works)
2. Directed broadcast (better performance in LANs where routers support subnet directed broadcasts)

The broadcast IP addresses to use for subnet directed broadcast are configured in VIDA Admin. In the same place in VIDA Admin, the IP addresses for sequential scanning are also configured.

NOTE: For safety reasons, the subnet directed broadcast for DoIP mentioned above must be limited to the same physical workshop network and not across multiple locations. This way, the risk is limited that a vehicle is remotely controlled from one location to another, with unpredictable consequences. Necessary firewall rules or layer 3-based access list must be enabled to block such traffic between workshops.

NOTE: Many routers have subnet directed broadcast turned off by default, and some cannot even be turned on.

6.2 NTP sync

It is mandatory to use NTP synchronization for all the network devices and servers.

6.3 Microsoft Windows user account

In order to install VIDA, the user account for Microsoft Windows has to be set to administrator.

NOTE: It is not possible to run VIDA while logged in to the operating system with a guest account. Try to avoid having a domain policy that will override the normal rights for the supported user accounts. Some restrictions might make VIDA not work. For example, a user must have right to change the registry since VIDA requires that when adding a DiCE. It is strongly recommended that all VIDA users log in as administrators with full admin rights.



7 VEHICLE COMMUNICATION TOOLS

NOTE: Vehicle communication tools are used to perform diagnostic readouts, diagnostic fault tracing and software downloads on D2 and GGD protocol-based vehicles. For VDS protocol-based vehicles, VIDA does not need to be connected to the vehicle through a communication tool.

A vehicle communication tool transfers data from a VIDA workstation to the correct receiver in the vehicle.

VIDA supports DiCE and J2534 devices. Volvo Car Corporation recommends DiCE for vehicle communication with D2 and GGD protocol-based vehicles.

7.1 DiCE

DiCE uses a Bluetooth connection to transfer information between VIDA and the vehicle. A USB cable can be used as an alternative to the Bluetooth connection.

Please note that no third party Bluetooth dongles can be used with DiCE, only Volvo Cars DiCE equipment can be used.

Multiple DiCEs

You can have more than one DiCE connected to VIDA at the same time. This makes it possible to download software to more than one vehicle simultaneously.



8 ABBREVIATIONS

AES-CCMP – AES Counter mode CBC MAC Protocol
CAT – Category (cable)
CAN HS – Controller Area Network High Speed
CAN MS – Controller Area Network Middle Speed
D2 – Volvo Diagnostics II
DHCP – Dynamic Host Configuration Protocol
DiCE – Diagnostic Communication Equipment
DMS – Dealer Management System
DoIP – Diagnostics over IP
GGD – Generic Global Diagnostic Specification
IP – Internet Protocol
LAN – Local Area Network
NAS – Network Attached Storage
NTFS – New Technology File System
NTP – Network Time Protocol
OBD – On Board Diagnosis
PoE – Power over Ethernet
PCI – Peripheral Component Interconnect
RADIUS – Remote Authentication Dial In User Service
RAM – Random Access Memory
SSID – Service Set Identifier
TCP – Transmission Control Protocol
TIE – Technical Information Exchange
UDP – User Datagram Protocol
USB – Universal Serial Bus
URL – Universal Resource Locator
VDS – Volvo Diagnostics and Software download
VLAN – Virtual Local Area Network
WPA – Wi-Fi Protected Access



9 HISTORY LOG

9.1 320US03

The Android recommendation has been removed.

9.2 320US04

Adjustments and corrections have been made throughout the document.

Obsolete information has been removed.

9.3 320US05

Volvo Cars central Wi-Fi service is now called Volvo Cars Global Wi-Fi service.

Chapter *LAN and Wi-Fi requirements* has been rewritten.

The SSID for the vehicles has been changed.

The document has been restructured.

9.4 320US06

Clarification has been added for the network traffic between TCP port 13400 and UDP port 13400.

Information added regarding Windows 10 and that it will have full support from 1st of July 2016.

Added a note about a recommended USB Ethernet adapter to chapter Ethernet Connectivity Requirements.

9.5 320US07

Clarified what a shared drive is.

9.6 320US08

Chapter 3 and 5 have been restructured to make a logical separation between general LAN and Wi-Fi requirements and respective requirements for LAN and Wi-Fi in correlation with the vehicle communication.

Chapter *Alternative 3: Via personal SIM card* has been added.

Updates regarding recommended web browser.

Updates regarding recommended processor.

Recommended specification for VIDA used for parts and service information access only has been removed. All VIDA users are now recommended to use the same specification.

9.7 320US09

Some minor changes regarding bandwidth in the Mandatory specifications for VIDA workstation chapter have been added.



9.8 320US10

Added information that the vehicle will be manually connected to the Volvo Cars Diagnostic Wi-Fi.

Updated information regarding requirements and specifications. Also added information regarding retail infrastructure, e.g. four methods to be implemented and three terms a Volvo Car Dealership must provide. New information was taken from the Dealer Development Platform (DDP).

Erased information regarding Windows 8.

Added information that support for Windows 7 will end 2019-01-01.

The term Menu Pricing was changed to Operations and Packages

Rebuilt and clarified chapter 5.3.1 regarding Volvo Cars Global Wi-Fi Service. Rebuilt and clarified chapter 6.1.3 regarding Internal router firewall ports.

Minor grammatical changes were carried out throughout the text.



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