AVL SERVER DESCRIPTION and REQUIREMENTS

V2.0

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1. ABSTRACT

1.1 Legal Notice

1.2 About document

This document contains information about Teltonika Tavl Server, hardware and software requirements. Document describes Tavl Server architecture and components. Document contains Tavl Server support chapter.

1.3 Acronyms

Acronyms used in this document:

- DB – Data Base
- IIS – Internet Information Services
- RDC – Remote Desktop Connection
- SMPP – Short Message Peer-To-Peer Protocol
- SMTP – Simple Mail Transfer Protocol
- VPN – Virtual Private Network
- WS – Web Services

2. REQUIREMENTS

AVL Server requires hardware and software minimum configuration listed below. In average 1 device takes 1MB/day database storage space. Amount of data storage depends on data acquiring settings configured in the tracker.

2.1 Minimum hardware requirements

Business	CPU	HDD				RAM
		OS+Tavl+SQL	Database		Backup	
Small	Xeon (4 Core)	SSD (250 GB)	RAID1 (200 GB) (mdf+ldf)		RAID1 (1 TB)	8-16 GB
Standard	Xeon (8 Core)	SSD (250 GB)	RAID1+0 (1 TB) (mdf+ldf)		RAID1 (2 TB)	16-32 GB
Enterprise	Xeon (8+ Core)	SSD (250 GB)	RAID1+0 (2 TB+) (mdf)	SSD (200 GB) (ldf)	RAID1 (4 TB)	32+ GB

Small - up to 500 active devices and up to 50 TAVL system users.

Standard - from 500 and up to 2000 active devices and 50-200 TAVL system users.

Enterprise - from 2000 active devices and more than 200 TAVL system users.

2.2 Minimum software requirements

Server must meet software requirements listed below.

OS	Microsoft Windows Server <u>Standard Edition</u> 2008 R2, 2012, 2014
Database engine	Microsoft SQL Server <u>Standard Edition</u> 2008 R2, 2012, 2014 **Microsoft SQL Server management Studio** Licensing model - Per Core Windows Authentication login to SQL Database engine!
Web server	Microsoft Internet Information Services (IIS) 7.5 Should be installed before AVL Server Install.
Microsoft .NET Framework	4.5 and 3.5 SP1
Oracle Java Platform SE Development Kit (JDK)	**Newest version for Windows x86 (32bit) software**
Internet connection	At least 10Mbits **Static external IP address**
Ports forwarding must be configured on gateway router to server local IP	TCP: 80 – for Server Management web interface and TAVL tracking program connection. TCP/UDP: 4000 – for incoming data from tracking units. TCP: 4001 – for tracking unit remote configuration. TCP: 3389 – for RDC connection
Remote Desktop Connection (RDC)	Must be enabled and following information provided to Teltonika export manager: IP, Account user name, Password

ENGLISH versions of software should be installed!!!

2.3 Before installation:

Email warnings

Create SMTP no-reply account.

Information needed:
- SMTP server host
- SMTP server port
- Email address
- User name and password for login

Connection to SMTP server must be unencrypted (no SSL, no TLS).

SMS sending and warnings

If Teltonika ModemCOM/G10 will be used to send SMS from server, modem with SIM card inserted must be connected to one of the server COM ports.

If you plan to use SMPP service instead of Teltonika modem you must provide information for it configuration before installation.

Google maps

If you will use Google maps we need that you would acquire Google API code. Instruction can be received from Teltonika export manager.

3. ARCHITECTURE

TAVL server architecture is shown on figure below. TAVL server contains of Tavl DB, Tavl Data Server, Tavl SMS Server, Tavl Server, application and user interfaces.

Modules connect to server over TCP or UDP ports. GPRS data from modules is being processing by Tavl Data Server. Tavl SMS server reads all data from devices transferred by SMS and redirects it to Tavl Data Server. Tavl Server analyzes incoming traffic and performs warning functions. Warnings could be sending to user using SMS or Email.
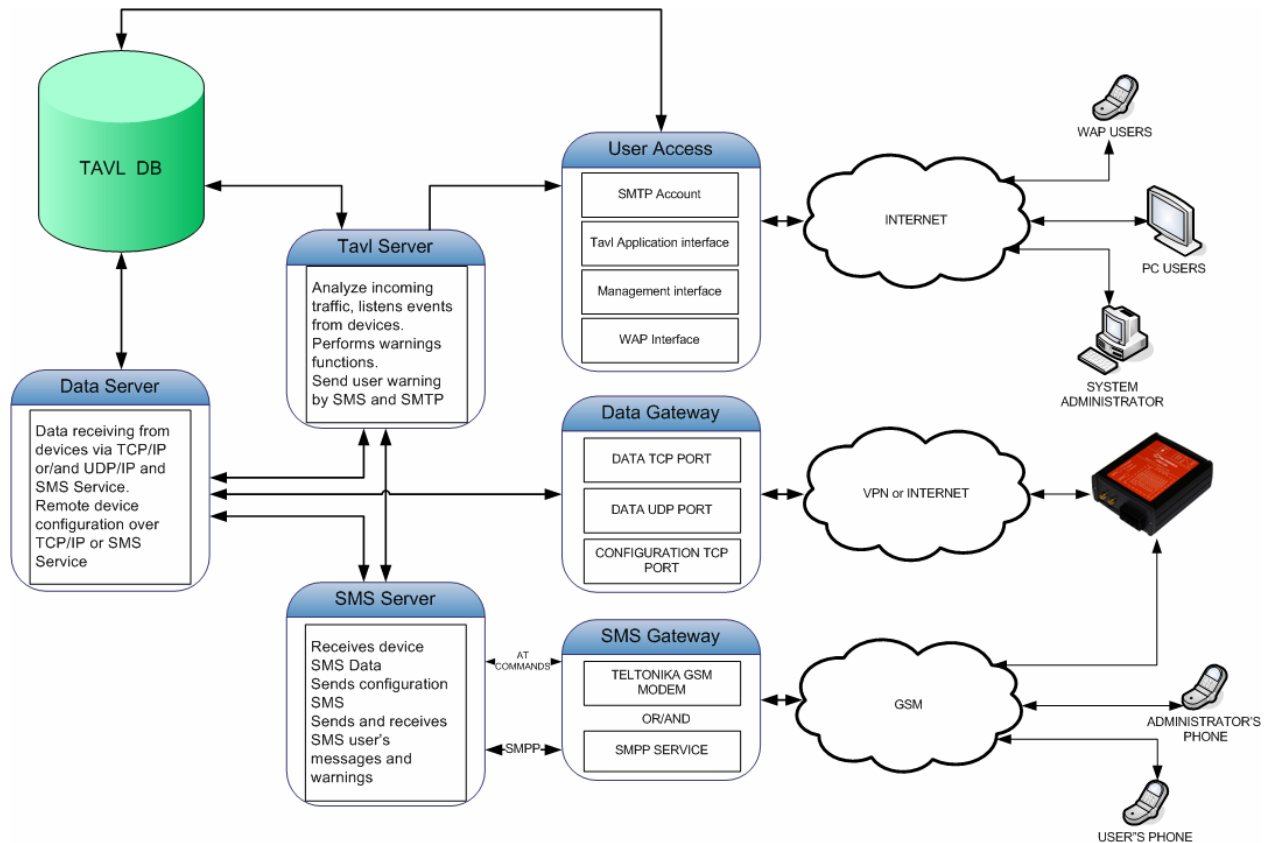
4. AVL SERVER COMPONENTS

4.1 Databases

Tavl2

Tavl2 database stores objects, modules, SIM cards, APNs, Tavl accounts information. Tavl2 also stores messages from objects (devices).

GeoDB

GeoDB stores geographic location text information (Reverse GeoCoding). GeoDB stores country, city and district information. Tavl application uses GeoDB information in Object list to display current object position. GeoDB information also used in Tavl Trip Stops reports.

4.2 Services

TAVL Data Server Service

Data server service receives data from TCP and UDP channels from modules: handles connections, decoding data and inserting it to Tavl2 database. This service is responsible of remote module's configuration. Data Server interacts with SMS Server Service and Tavl Server Service. Data Server Log can be viewed in <disk>:\AvlServer3\logs\dataserver2.log

TAVL SMS Server Service

SMS Server Service is responsible of SMS sending and receiving. SMS Server Service is an interface between server and GSM modem (AT Commands) and/or SMPP service. Logs can be viewed in <disk>:\AvlServer3\logs\SMSServer2.log.

Tavl Server Service

Tavl Server Service analyzes incoming data packets, captures events, processing – processes SMS and Email warnings. It processes serverside geofencing and other warnings. Logs can be viewed in <disk>:\AvlServer3\TavlServer\logs\.

Service Watchdog Service

It is reliability service. In case if any of Tavl server services is stopped for unknown reason or any error, Service Watchdog service automatically restart stopped service and informs server administrator about problem over SMS.

Modules can be set to send data using SMS. In case of SMS flood from modules or other sources, system administrator also will be informed by SMS about flood.

4.3 Interfaces

Tavl WebService Interface

Tavl interface provide secure access for Client Tavl Application. Located in <disk>:\AvlServer3\WebServices\TavlWebService. Accessible from http://<serverIpAddress>:<port>/tavl/ws3.0/Service.asmx.

Management

Management is web interface and it is used to manage accounts, register objects, modules, SIM cards and other by server administrators and integrators. Full management description is described in "TAVL Management User Manual". Located in <disk>:\AvlServer3\Management. Application is accessible from http://<serverIpAdress>:<port(optional)>/management.

Tavl Web

Tavl Web is simplified Tavl Client solution accessible through web. Application is accessible from http://<serverIpAddress>:<port>(optional)/Tavl/web3.

Google Maps

Tavl application supports Google Maps to display objects on it. To enable Google Maps on AVL server, you should sign up for Google Maps API. Visit http://code.google.com/apis/maps/ to sign up for Google API code.

During registration, you will be asked to enter server IP or DNS address. Note that Google Maps will be available only from IP address **OR** DNS.

Google Maps WebService located in <disk>:\AvlServer3\WebServices\GoogleMaps.

5. SUPPORT

5.1 Installation

AVL Server should be installed and maintained by Teltonika specialists only. Teltonika is not responsible for AVL Server performance if it was installed or modified (moved, reconfigured or other) by third party. Before AVL Server installation client must prepare hardware and software meeting requirements described in REQUIREMENTS section and information listed below:

- Current hardware and software configuration
- Server External IP, VPN IP (if used), Network architecture
- SMTP "tavl-noreply@somehost" type account information: server IP, port, login, password, etc (if used)
- SMPP service (if used) account information: server IP, port, login, password, etc
- Google Maps API code (if used), see Interfaces section.
- RDC connection with administrator login, password
- Server administrator contacts (direct phone number, email address, etc).

Data, configuration, and RDC ports should be opened before server installation! List of recommended ports is provided by Teltonika specialists before server installation.

5.2 Administration

- Server AVL Server automatically performs Tavl2 database back up jobs. It runs Full and Differential back up and store back up on one of Logical Disks on server.
- Server logs must be cleared regularly from <disk>:\AvlServer3\logs\ directory.