

# Extended Architecture of the Industrial Environment

## Gliffy Macro Error

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- **Name:** atb\_test\_env

For an industrial environment with a load of 400-500 simultaneous calls (from 500 thousand calls per day) and from 200 thousand chats per day, you need to prepare 7 virtual machines, which are described in paragraphs 1-6 of the table below. It is only necessary to install the operating system and leave Internet access to be able to download and install all additional software. After installation is complete, the Internet access from virtual machines can be turned off. Virtual machines 1-6 should be able to operate on the same VLAN without filtering traffic by ports (allow all). Access to the servers is provided to developers via SSH with the root user permissions for the time which is needed for the applications installation and testing.

The reservation should be provided by the capacity of virtual machines.

Object	Software	Resources (min)	Connectivity	Description
1. Webitel Server	Debian 11 Linux 64bit - basic server installation with SSH connection;  Additionally, we will install:  Nginx; SSL; Webitel Services	<ul style="list-style-type: none"><li>• 4 vCPU &gt; 2,4 GHz (Haswell generation or newer), No more than 2 virtual cores per 1 physical core</li><li>• 8Gb RAM</li><li>• 100 GB, 20 IOPS, &lt;10 ms</li><li>• 2 network interfaces &gt;= 1 GbE</li></ul>	in-out: 80/tcp, 443/tcp	SSL certificates with a trusted CA are required to provide a secure connection via HTTPS protocol and telephony in a browser.
2. PostgreS QL	Debian 11 Linux 64bit - basic server installation with SSH connection;  Additionally, we will install: Linux; PostgreSQL 14; Grafana	<ul style="list-style-type: none"><li>• 8 vCPU, &gt; 2,6 GHz (Haswell generation or newer), No more than 2 virtual cores per 1 physical core</li><li>• 16Gb RAM</li><li>• 400+ GB, 20 IOPS, &lt;8 ms</li><li>• 1 network interface &gt;= 1 GbE</li></ul>		PostgreSQL database server with configured Streaming Replication.
3. MQ & Storage Server	Debian 11 Linux 64bit - basic server installation with SSH connection;  Additionally, we will install:  Linux; Redis Server; Consul; RabbitMQ; Webitel Storage	<ul style="list-style-type: none"><li>• 4 vCPU, &gt; 2,6 GHz (Haswell generation or newer), No more than 2 virtual cores per 1 physical core</li><li>• 8Gb RAM</li><li>• 160 GB, 20 IOPS, &lt;8 ms</li><li>• 1 network interface &gt;= 1 GbE</li></ul>		Application registration server, messaging service, and call recording storage.  The call records are stored in S3 storage.
4. OpenSIPS	Debian 11 Linux 64bit - basic server installation with SSH connection;  Additionally, we will install: OpenSIPS 3;	<ul style="list-style-type: none"><li>• 4 vCPU &gt; 2,4 GHz (Haswell generation or newer), No more than 2 virtual cores per 1 physical core</li><li>• 8Gb RAM</li><li>• 60 GB, 20 IOPS, &lt;10 ms</li><li>• 2 network interfaces &gt;= 1 GbE</li></ul>	5060/tcp, 5060/udp, 5061/tcp	Telephony server
5. Media Gateway	Debian 11 Linux 64bit - basic server installation with SSH connection;  Additionally, we will install: Rtpengine;	<ul style="list-style-type: none"><li>• 8 vCPU, &gt; 2,6 GHz (Haswell generation or newer), No more than 2 virtual cores per 1 physical core</li><li>• 16Gb RAM</li><li>• 60 GB, 20 IOPS, &lt;10 ms</li><li>• 2 network interfaces &gt;= 1 GbE</li></ul>	in-out: 10000-50000/udp	Voice processing and protocol transcoding server.  In case of a load increase, it is necessary to duplicate the server.

6. FreeSWITCH	Debian 11 Linux 64bit - basic server installation with SSH connection;  Additionally, we will install:  FreeSWITCH; Webitel FlowManager;	<ul style="list-style-type: none"> <li>• 8 vCPU, &gt; 2,6 GHz (Haswell generation or newer), No more than 2 virtual cores per 1 physical core</li> <li>• 16Gb RAM</li> <li>• 160 GB, 20 IOPS, &lt;8 ms</li> <li>• 1 network interface &gt;= 1 GbE</li> </ul>		Voice applications building server.  In case of a load increase, it is necessary to duplicate the server.
7. Team	Microsoft Windows 10 / Linux 64bit  Google Chrome / Microsoft Edge (the latest or previous version)	<ul style="list-style-type: none"> <li>• 4 vCPU</li> <li>• 8Gb RAM</li> </ul>	Connection to the IS not less than 2 Mb/s per user, with delays of no more than 15-20 ms.	Employees' workplace
8. Hardware SIP Phone			Connection to the IS not less than 5 Mb/s per device, with delays of no more than 15-20 ms.  in-out: 5060/udp, 10000-20000 /udp	Hardware phone with SIP 2.0 protocol support
9. External Data Services				Integrations with external systems
10. PSTN				<b>Public Switched Telephone Network</b> is a general subscriber communication network, the access to which is provided by telephone sets, PBX, and data transmission equipment.