

Roger Access Control System 5

Application note no. 035

Document version: Rev. C

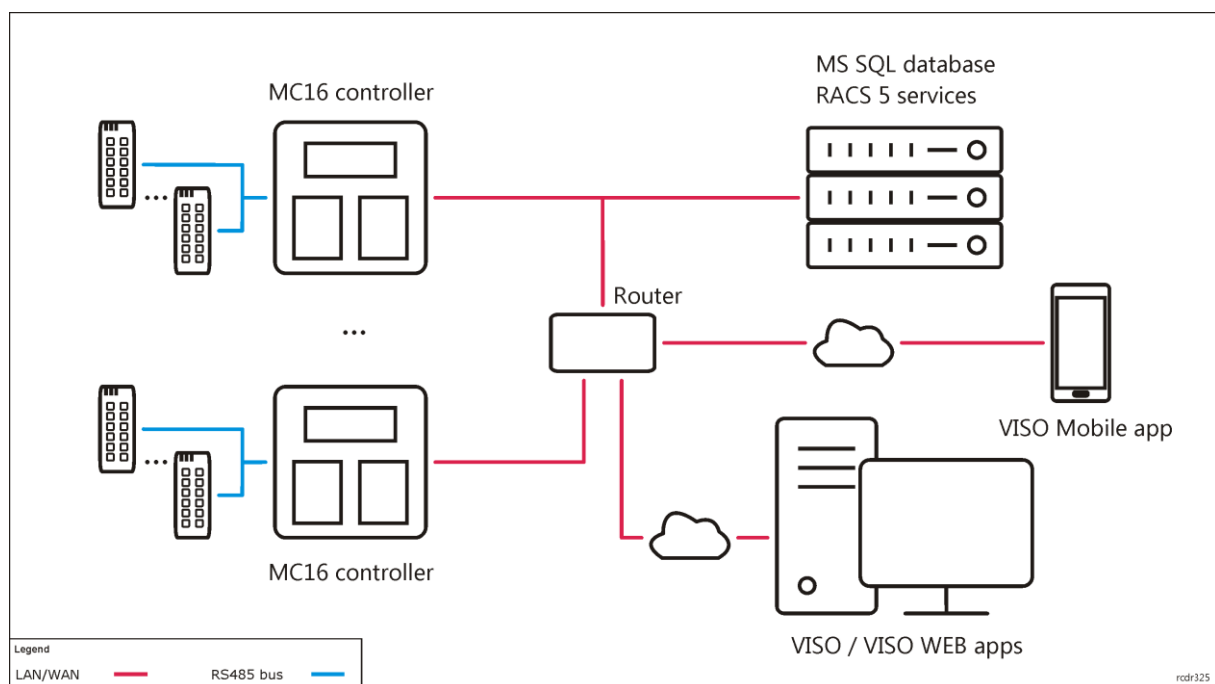
Remote management of RACS 5 system

Note: This document refers to RACS v1.5.2 up to v1.6.6

Introduction

RACS 5 system is managed and configured via Ethernet network. On the software level the communication between MC16 access controllers, MS SQL database and VISO software is provided by communication service (Windows service) which is part of RogerSVC software package. In general perspective, MC16 access controllers are designed for operation in dedicated local area network (LAN). In case of such scenario the configuration of communication is so simplified that it can be mostly based on default settings but it might be necessary to unblock ports for configurable services and MC16 communication. The system can be managed from single workstation using local database or from multiple workstation using centralized database which is explained in the AN017 Application note which is available at www.roger.pl. Additionally the system can be managed remotely using VISO, VISO WEB and VISO Mobile applications.

Note: The remote management scenario discussed in this note does not concern RACS 5 virtual controllers.



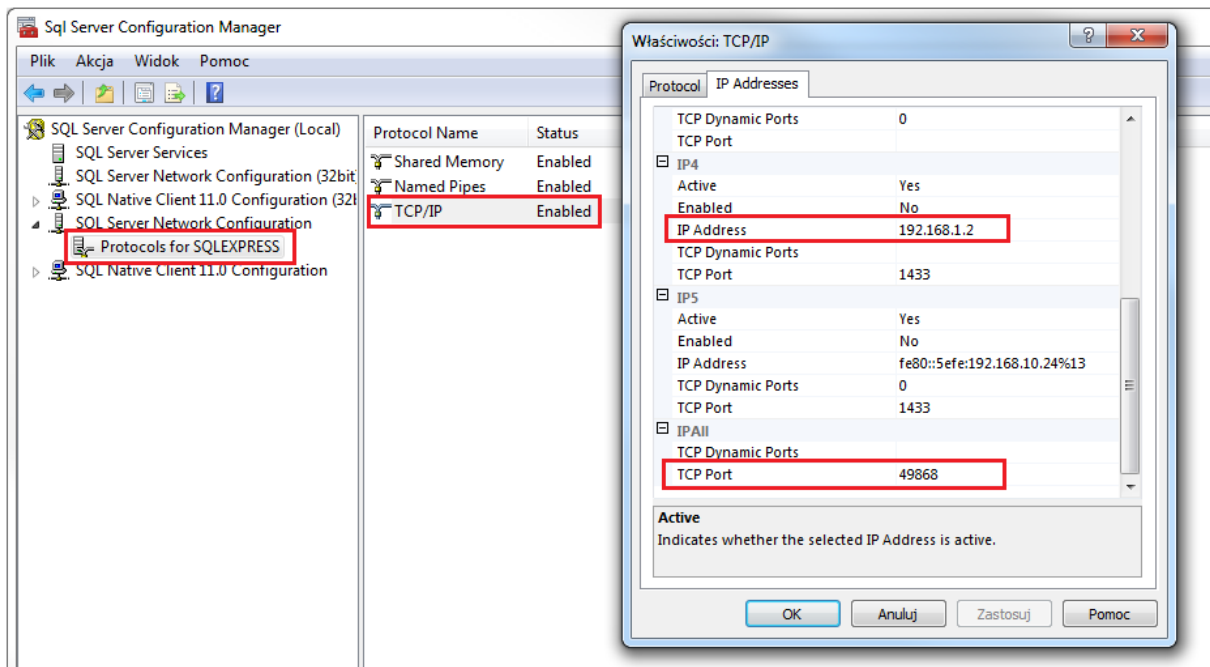
Remote management (VISO)

VISO software enables full control of RACS 5 system in regard of configuration and monitoring. Remote management as in figure above requires centralized MS SQL database and configured communication with the database and RACS 5 services. Such communication will require port forwarding as explained below or configuration of Virtual Private Network (VPN).

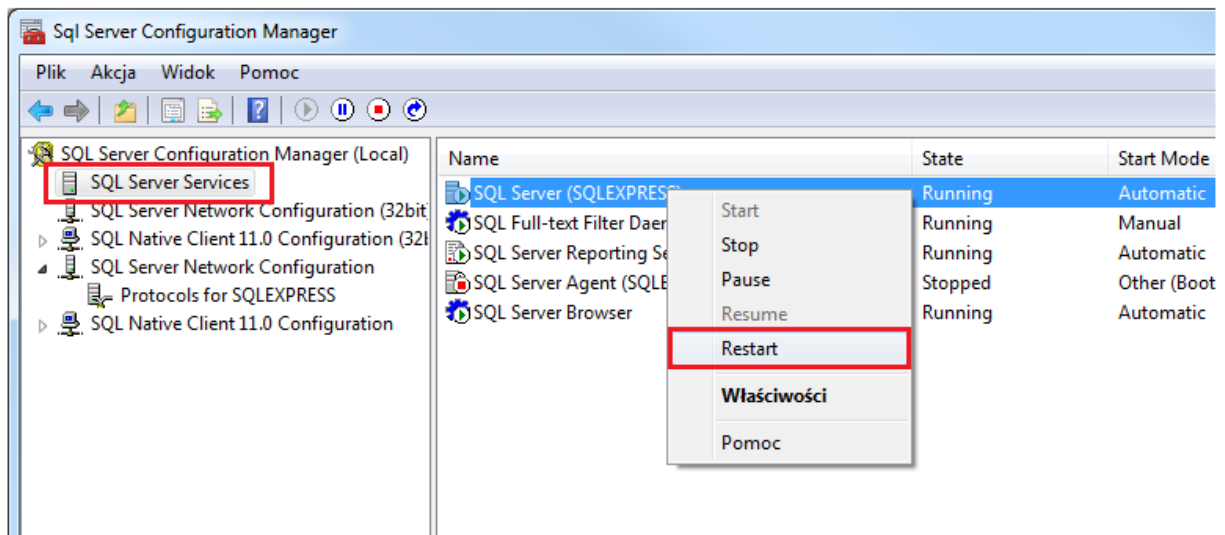
Database (LAN)

After installation of MS SQL system and creation of database with VISO software according to AN017 Application note it is necessary to define communication port for database:

- Start SQL Server Configuration Manager which is included in configuration tools of Microsoft SQL Server
- In the navigation tree expand *SQL Server Network Configuration* command and select *Protocols for SQLEXPRESS* command.
- In the opened window right click *TCP/IP* command and select *Properties* command.
- In the next window, in *IP Addresses* tab enter database port e.g. 49868 and IP address of computer with database. Close the window with *OK* button.



- According to displayed message restart database service to make new settings effective. For that purpose in the navigation tree select *QL Server Services* command, right click *SQL Server (SQLEXPRESS)* service and select *Restart* command.



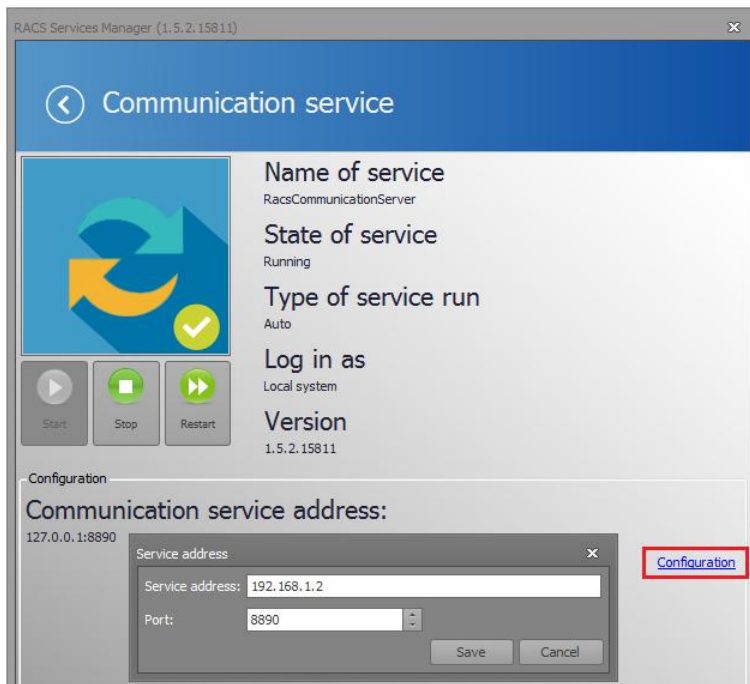
RACS 5 services (LAN)

RACS 5 system services are installed and configured within RogerSVC software package. They are installed on single computer only. Remote system management requires communication service. If VISO EX version software is applied then license service may be also required. Define service as follows:

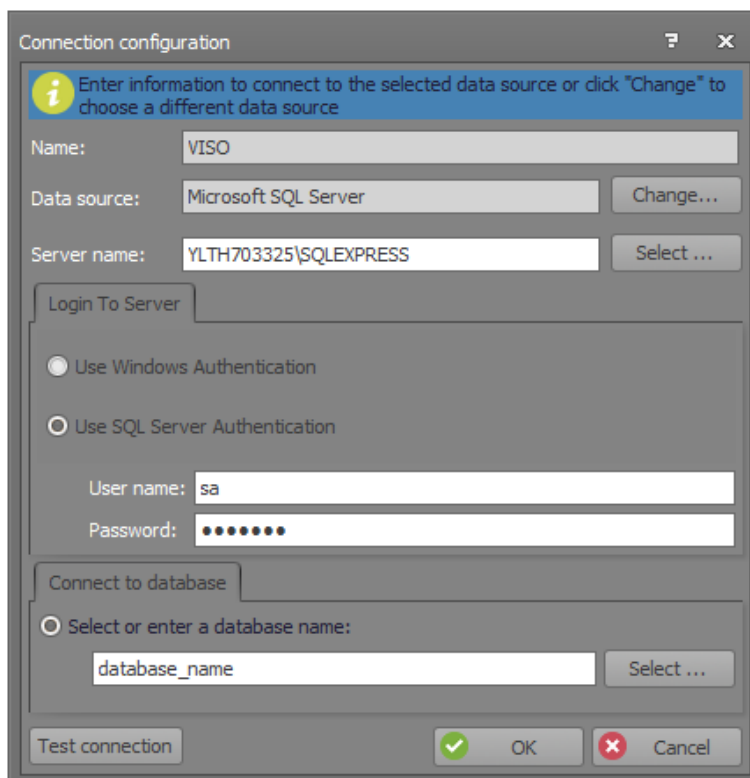
- After installation of RogerSVC, starting RACS Service Manager and double clicking its icon in Windows tray, select *Communication service* tile.



- In the opened window select *Configuration* command and enter IP address of the computer with just installed communication service and port used by the service (8890 by default). Get back to the main window of manager.



- If needed, define license service in similar way entering the same IP address and required port (by default 8891).
- Select the tile *Database connection* and then *Configure connection* command to configure the connection with previously created database as in example below.



Port forwarding by router

The access of VISO software in WAN to database and services located in LAN can be ensured by port forwarding or virtual server as in example below.

Firewall Level

MAC Filtering

URL Filtering

IP Filtering

Service Access Control

ALG

Port Forwarding

UPnP

DMZ

Port Forwarding

If a computer on the LAN is enabled for the Internet (for example, work as an FTP server), port forwarding is required so that all accesses to the external server port from the Internet are redirected to the server on the LAN.

Port Forwarding

Delete All

Add Item

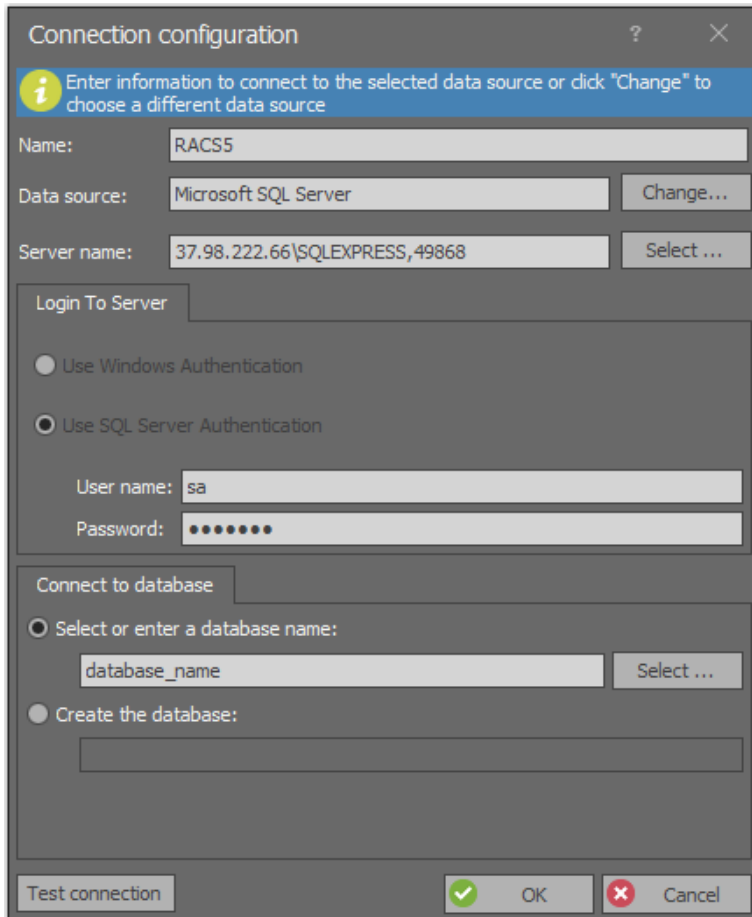
| Index | Protocol | Remote Host | Remote Port Range | Local Host | Local Port | Status | Operation |
|-------|----------|-------------|-------------------|-------------|------------|---------|---|
| 1 | TCP | | 8890 | 192.168.1.2 | 8890 | Enabled | Delete Edit |
| 2 | TCP/UDP | | 49868 | 192.168.1.2 | 49868 | Enabled | Delete Edit |
| 3 | TCP | | 8891 | 192.168.1.2 | 8891 | Enabled | Delete Edit |

VISO software (WAN)

The communication of VISO software through router with RACS 5 system located in LAN requires configuration of connection with database and communication service.

Note: For further configuration it is assumed that external IP address of router is static.

- Start VISO and in connection configuration window name the connection and select *Microsoft SQL Server* in the *Data source* field.
- In the *Server name* field enter server name preceded with router's external IP address and followed by database communication port. The external IP address of router can be read from its configuration or by means of popular web sites e.g. <http://www.myipaddress.com>.
- Enter authentication data according to settings of MS SQL Server system.
- Select previously created database of RACS 5 system.



Connection configuration

Enter information to connect to the selected data source or click "Change" to choose a different data source

Name: RACS5

Data source: Microsoft SQL Server Change...

Server name: 37.98.222.66\SQLEXPRESS,49868 Select ...

Login To Server

☐ Use Windows Authentication

☒ Use SQL Server Authentication

User name: sa

Password: ••••••

Connect to database

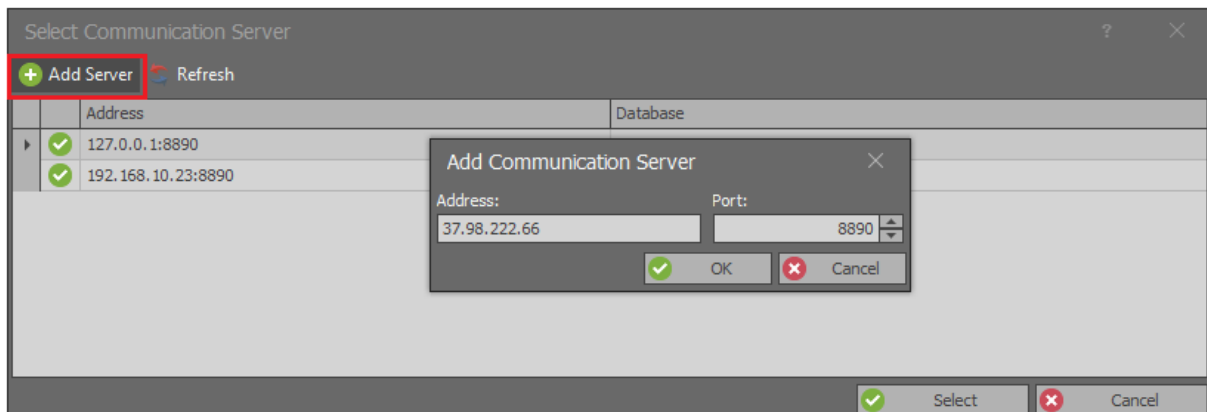
☐ Select or enter a database name:

database_name Select ...

☐ Create the database:

Test connection ✓ OK ✗ Cancel

- When VISO is started then click *Communication Server* field in the bottom bar.
- In the opened window select *Add Server* and then enter router's external IP Address as well as port of RACS 5 communication service (8890 by default).



Select Communication Server

+ Add Server Refresh

| | Address | Database |
|---|--------------------|----------|
| ✓ | 127.0.0.1:8890 | |
| ✓ | 192.168.10.23:8890 | |

Add Communication Server

Address: 37.98.222.66 Port: 8890

✓ OK ✗ Cancel

✓ Select ✗ Cancel

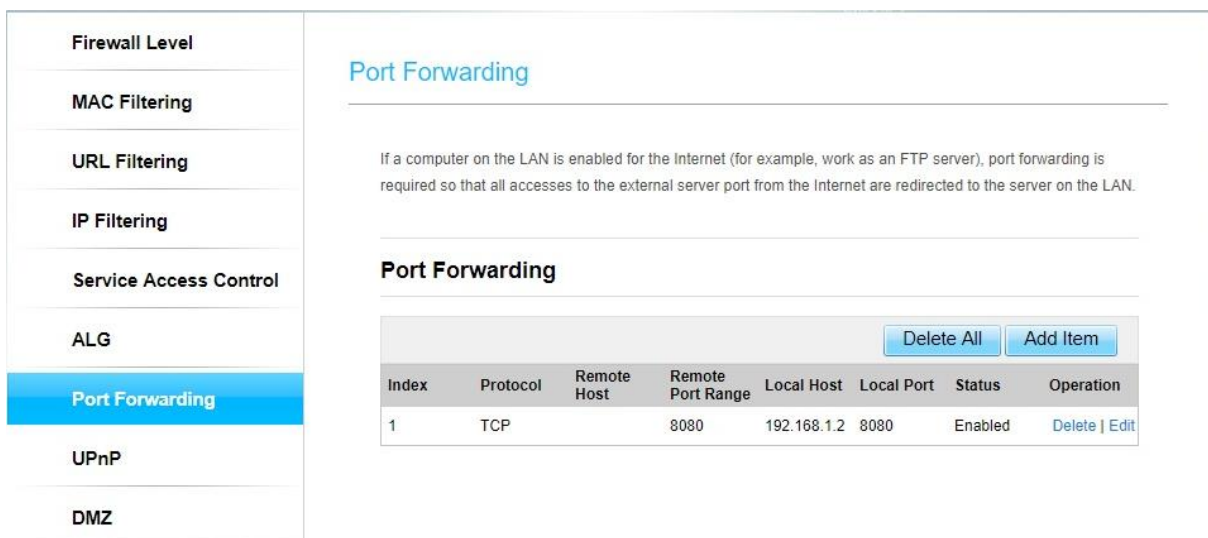
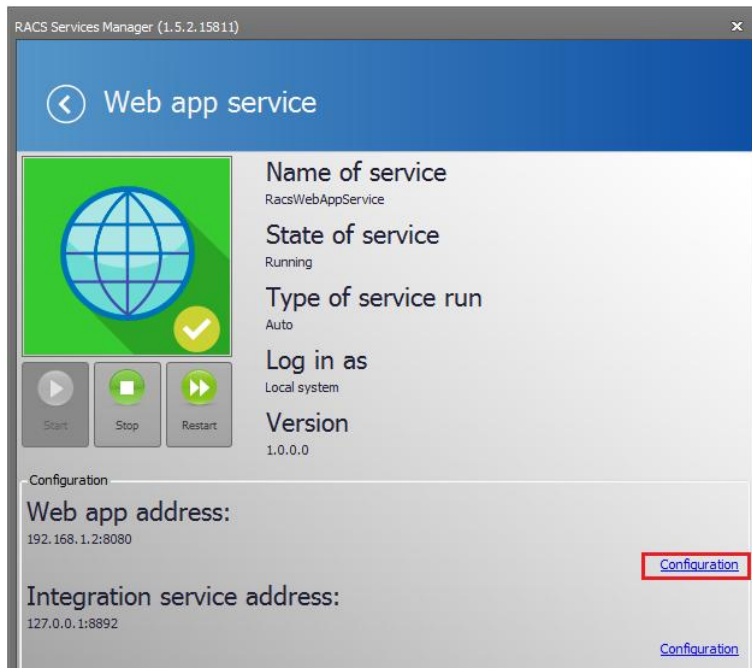
- Similarly configure connection with license server if VISO EX version is to be applied and the license service is located on the server in LAN.

Ports unblocking

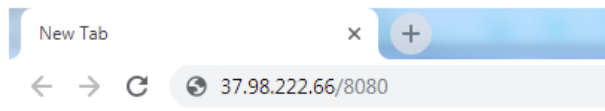
If necessary then unblock all RACS 5 applied communication ports in the firewall of server with database and services and in the firewall of computer with VISO software creating adequate inbound and outbound rules.

Remote management (VISO WEB)

VISO WEB is an application which enables management of RACS 5 system via web browser mainly in regard of user management, remote commands and available monitors. In case of remote management via VISO WEB, both local type and centralized MS SQL databases can be applied. The configuration of remote management requires configuration of VISO WEB server according to its manual and then defining connection to web app service by port forwarding as in example below or by Virtual Private Network (VPN). If the integration service is installed on the same computer as Web app service then default *Integration service address* does not have to be changed.

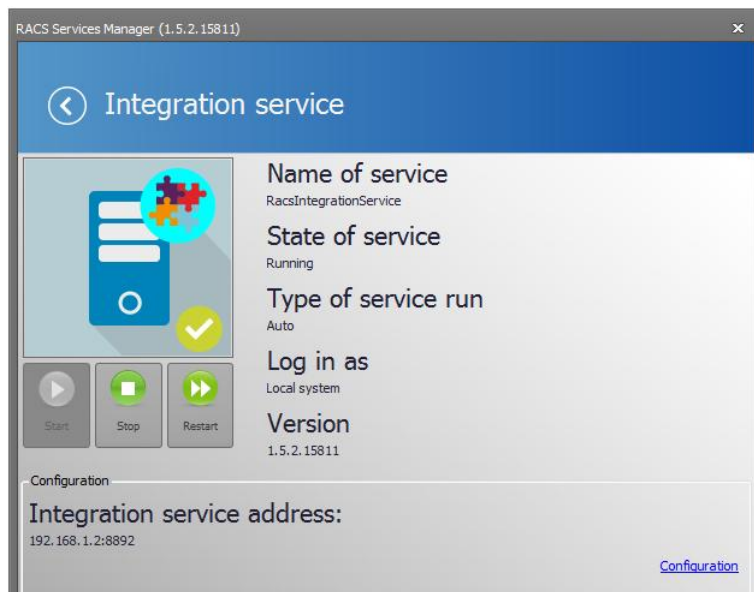


In order to communicate with RACS 5 system enter router's external IP address and forwarded port of web app service in your web browser. According to previous exemplary settings the address would be as below.



Remote management (VISO Mobile)

VISO Mobile is an application which enables management of RACS 5 system via mobile device (Android, iOS) mainly in regard of user management, remote commands and available monitors. In case of remote management via VISO Mobile, both local type and centralized MS SQL databases can be applied. The configuration of remote management requires configuration of VISO Mobile app according to its manual and then defining connection to integration service by port forwarding as in example below.



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If a computer on the LAN is enabled for the Internet (for example, work as an FTP server), port forwarding is required so that all accesses to the external server port from the Internet are redirected to the server on the LAN.

Port Forwarding

[Delete All](#)
[Add Item](#)

| Index | Protocol | Remote Host | Remote Port Range | Local Host | Local Port | Status | Operation |
|-------|----------|-------------|-------------------|-------------|------------|---------|---|
| 1 | TCP | | 8892 | 192.168.1.2 | 8892 | Enabled | Delete Edit |

In order to communicate with RACS 5 system via mobile device enter router's external IP address and forwarded port of integration service in VISO Mobile. According to previous exemplary settings the settings would be as below.

Settings

Integration server settings

Integration server IP
37.98.222.66

Integration server port
8892

Login
Admin

Password

Credential's name

General settings

Application password

Password required ☐

In case of communication problems with VISO Mobile app, enable ICMP protocol at the router as in example below.

Service Access Control

By default, access from the Internet is rejected, but those from the LAN are allowed. The integrated services can be accessed with the suitable rules of Service Access Control (SAC). The router provides access control of multiple external services. Reducing external accesses helps protect the router's performance and improves security.

Note: It is recommended that only necessary services be enabled for the LAN.

Service Access Control

| Index | Service | Access Source | IP Address Range | Action | Status | Operation |
|-------|---------|---------------|------------------|--------|----------|----------------------|
| 1 | HTTP | LAN | | Drop | Disabled | Edit |
| 2 | ICMP | LAN | | Drop | Enabled | Edit |
| 3 | ICMP | Internet | | Accept | Enabled | Edit |

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