TRBONET
Dispatch Systems

neocom software

AUTHORIZED APPLICATION PROVIDER
DIMETRA™
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TRBOnet Enterprise/PLUS

DIMETRA Express

Deployment Guide

Last revised on 26 June 2025

USA Office
Neocom Software
150 South Pine Island Rd., Suite 300
Plantation, FL 33324, USA

Sales
EMEA: +44 203 608 0598
Americas: +1 872 222 8726
APAC: +61 28 607 8325

www.trbonet.com
info@trbonet.com

Contents

1 Introduction

1.1 About This Document

The information in this guide is intended for administrators setting up evaluation and proof-of-concept deployments of DIMETRA Express Dispatch over IP solutions. The document describes the steps required to configure communication with a DIMETRA Express system.

For more comprehensive information on the Neocom TRBOnet family of radio network software tools, refer to the Documentation section of our web site.

1.2 About TRBOnet

TRBOnet is a suite of professional applications for DIMETRA digital two-way radio networks. TRBOnet manages voice and data communication paths across network endpoints. It provides a unified graphical dispatcher workbench interface for the entire range of workforce fleet management tasks.

1.3 Contacts

Region	Phone	Email & Support
EMEA	+44 203 608 0598	info@trbonet.com — general and commercial inquiries support@trbonet.com — technical support https://trbonet.com/kb/ — online knowledge base
Americas	+1 872 222 8726	
APAC	+61 28 607 8325	

2 System Components and Terms

2.1 TRBOnet Software

The TRBOnet software consists of several modules, a combination of which enables you to build enterprise dispatch solutions of different levels of complexity and redundancy. The first step in implementing the best solution is determining the topology for the customer's system; then identifying the combination of modules to implement the best customer solution.

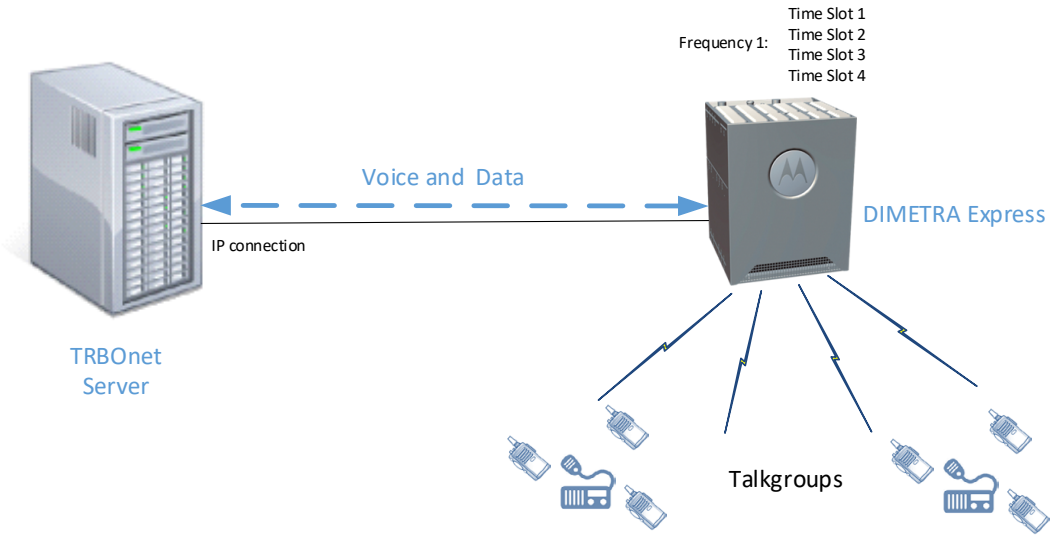
2.2 IP Connection (Wireline Connection)

TRBOnet Server can be connected to a two-way radio system via an IP connection creating a direct communications path for all voice and data information between them. The topologies can be in the form of a LAN, WAN, or VLAN and/or any combination thereof.

3 System Description

DIMETRA Express is a new flexible TETRA system. By integrating the switch and base radios in a one-box or modular system it’s now quick and easy to set up, deploy, and manage your communications. You simplify everyday operations while reducing costs and complexity over the long term.

You can quickly integrate DIMETRA Express into your network, provision multiple subscribers, and complete installation easily using browser-based apps and tools. Once it’s up and running, DIMETRA Express is easier to manage and operate through web-based network management and TRBOnet Enterprise/PLUS applications.



3.1 Notes

The notes below describe the limitations imposed on text and status messages by DIMETRA Express. Refer to Motorola Solutions, Inc. for further information.

3.1.1 Text Messages

DIMETRA Express doesn't send group text messages to TRBOnet Server. TRBOnet Server can only send group text messages, not receive them.

3.1.2 Status Messages

Status messages can only be received from radios by using ECADI.

TRBOnet Server cannot send status messages to radios.

4 Configuring DIMETRA Express

This section describes how to configure DIMETRA Express equipment, such as a DIMETRA Express controller, radios etc., using browser-based tools.

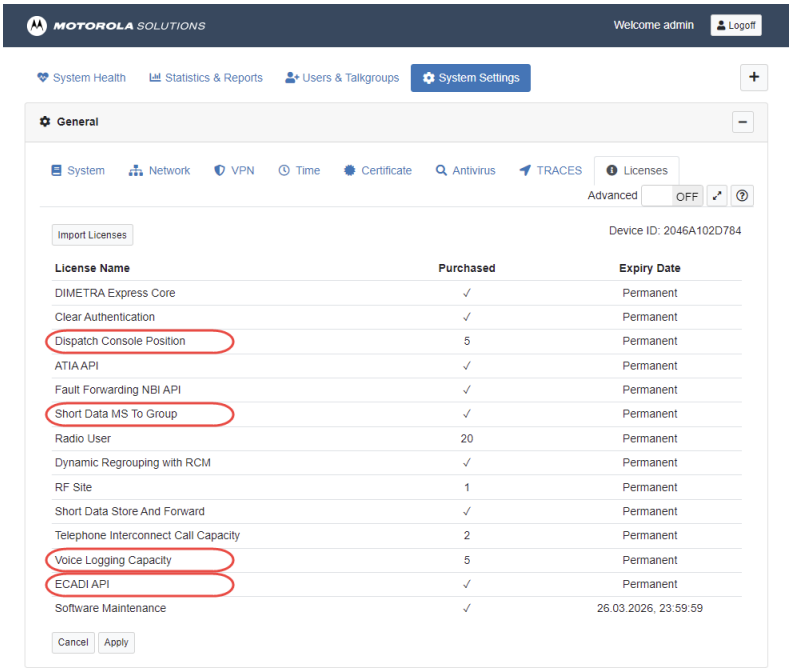
- Launch the Web browser.
- In the Address field, type the IP address of the DIMETRA Express controller.
- In the **DIMETRA Express** page, click **Network Manager**.
- Enter the credentials and click **Login**.

4.1 DIMETRA Express Controller

This section describes how to configure the DIMETRA Express controller by using the Web browser.

4.1.1 DIMETRA Express Licenses

- Go to **System Settings > General > Licenses**.



Make sure the required licenses have been enabled:

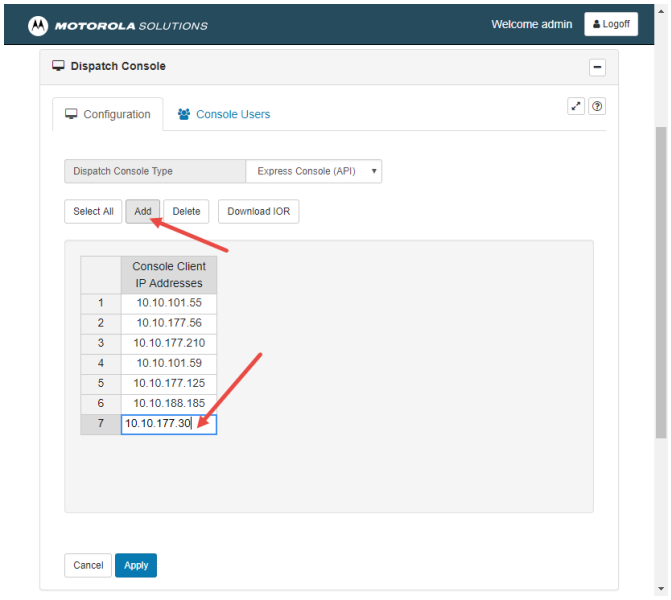
- **Dispatch Console Position**
  This is the number of simultaneous connections between TRBOnet Server and DIMETRA Express controller. Make sure you have at least one license enabled.

Note: If you want to use different dispatch console IDs, you need as many Dispatch Console Position licenses as the number of such accounts plus one license used by TRBOnet Server. Note that the number of Dispatch Console Position licenses is limited to 10.

- **Short Data MS To Group**
  If this item is enabled, you can send data messages to radio groups.
- **Voice Logging Capacity**
  This is the maximum number of voice channels being simultaneously logged.
- **ECADI API**
  Make sure this item is enabled to support Group Affiliation, Radio Check, Radio Inhibit/Uninhibit, and some other features.

4.1.2 Dispatch Console Configuration

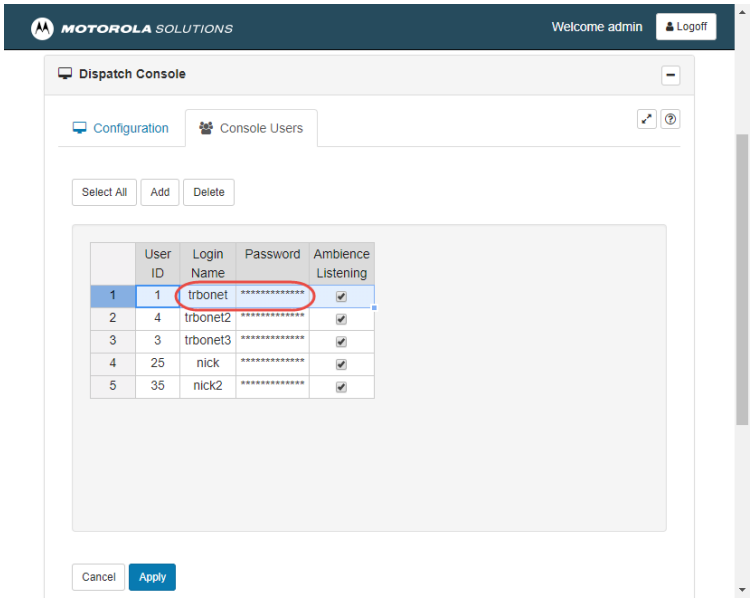
- Go to **System Settings > Dispatch Console > Configuration**.



  - Enter the IP address of the computer hosting TRBOnet Server.

Console Users

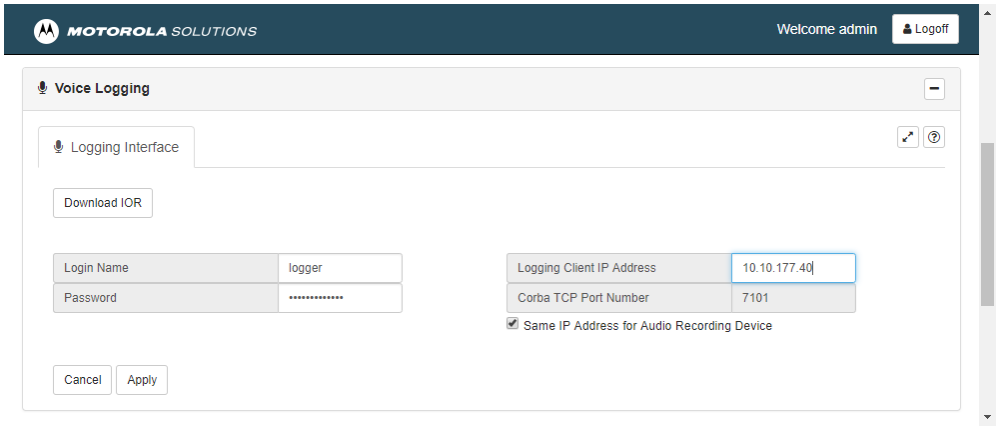
- Go to **System Settings > Dispatch Console > Console Users**.



- Add an account to the list of the console users. Specify **Login Name** and **Password** for the console user account. These Login Name and Password will then be used when configuring the Console User in TRBOnet Server (see section 5.1.2.5, Console User).

4.1.3 Voice Logging Configuration

- Go to **System Settings > Voice Logging**



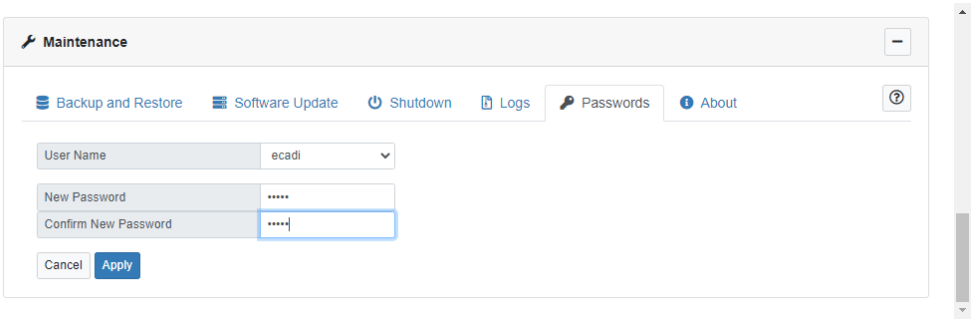
- Enter **Login Name** and **Password**. These Login Name and Password will then be used when configuring the Logging Interface in TRBOnet Server (see section 5.1.2.4, Logging Interface).
- **Logging Client IP Address**
  Enter the IP address of the Logging Client Application. Note that this must be a different IP address from the main IP address of the computer hosting TRBOnet Server. For this, you might need to configure an additional network interface.

- **Corba TCP Port Number**
  This is the TCP port number used for communication with the Logging Client application. This port number is not editable. This value must be used as **Controller Port** in TRBOnet Server (see section 5.1.2, Connecting DIMETRA Express).

4.1.4 ECADI Configuration

Setting password

- Go to **System Settings > Maintenance > Passwords**



  - **User Name**
    From the drop-down list, select **ecadi**.
  - **New Password**
    Enter a password that will be used to connect ECADI to TRBOnet.
  - **Confirm New Password**
    Confirm the password you have entered.

Downloading root certificate

- Go to **System Settings > General > Certificate**
- Click the **Download Root Certificate** link.

Installing root certificate

Note: Install the certificate on the PC where TRBOnet Server or Agent that is connected to a DIMETRA Express controller is running.

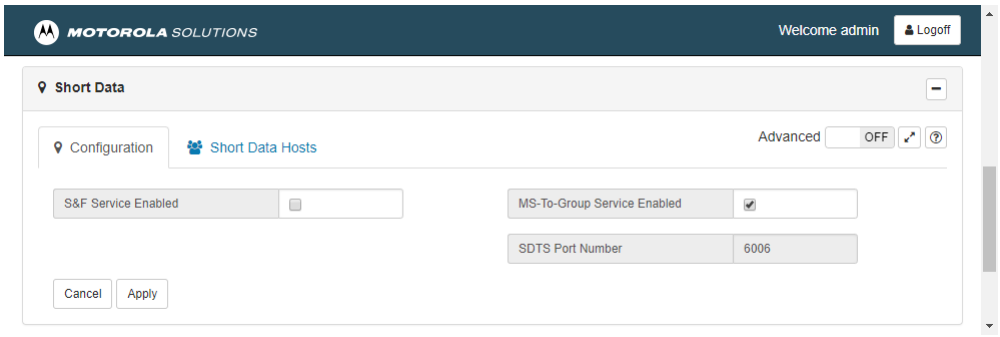
- Double-click the certificate file.
- In the **Certificate** dialog box, click **Install Certificate**.

  The Certificate Import Wizard dialog box opens.

  - **Store Location**
    Choose **Local Machine** if TRBOnet service is installed in the local system rather than under a user account.
  - **Certificate Store**
    Choose **Place all certificates in the following store**.
    Click **Browse** and then select **Trusted Root Certification Authorities**.
- After installation is complete restart the PC.

4.1.5 Short Data Configuration

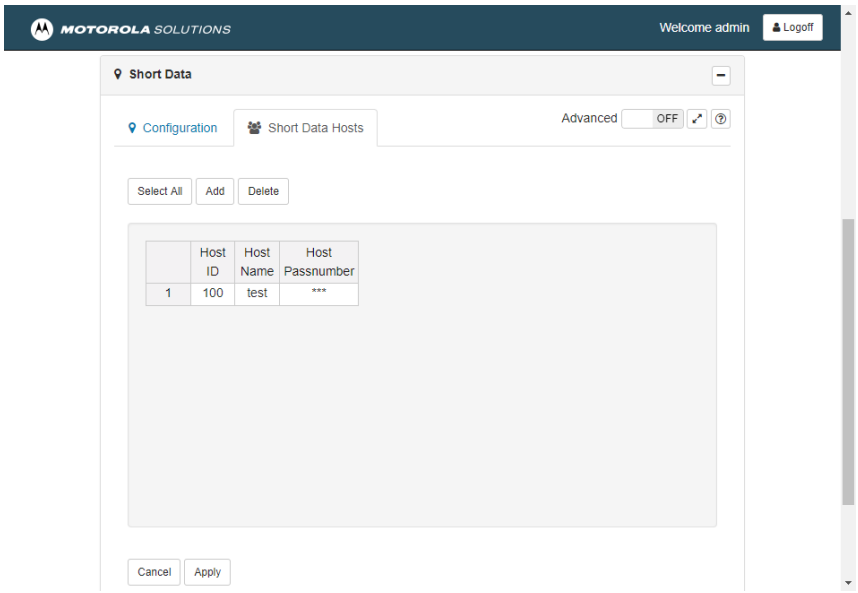
- Go to **System Settings > Short Data > Configuration**.



- **MS-To-Group Service Enabled**
  Make sure this option is enabled.
- **SDTS Port Number**
  This is the port number used by the Short Data Hosts to access the Short Data Transport Service. This port number is not editable. This value must be used as **Controller Port** in TRBOnet Server's Data Services (see section 5.1.2.2, Data Services).

Short Data Hosts

- Go to **System Settings > Short Data > Short Data Hosts**.

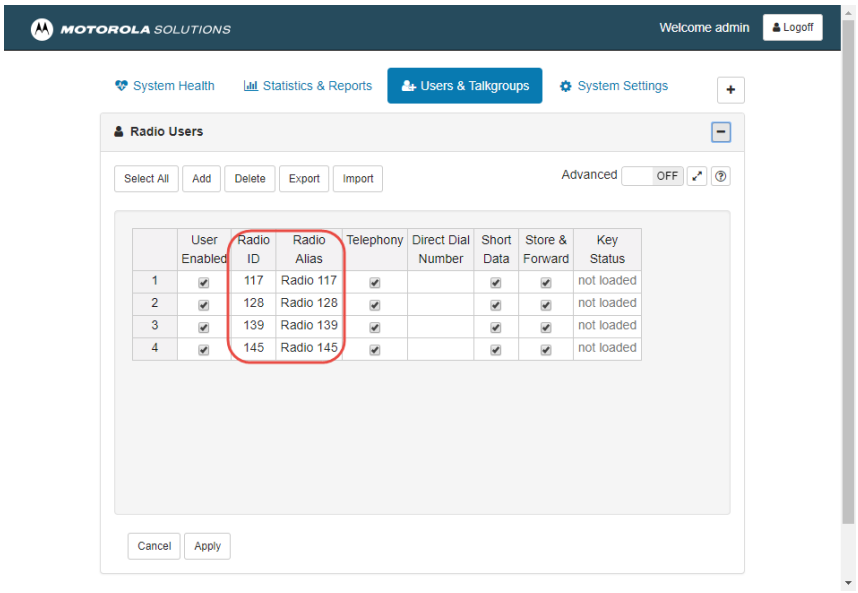


- Add a Short Data Host by specifying its **Host ID**, **Host Name**, and **Host Passnumber**.

4.1.6 Users and Talkgroups

Radio Users

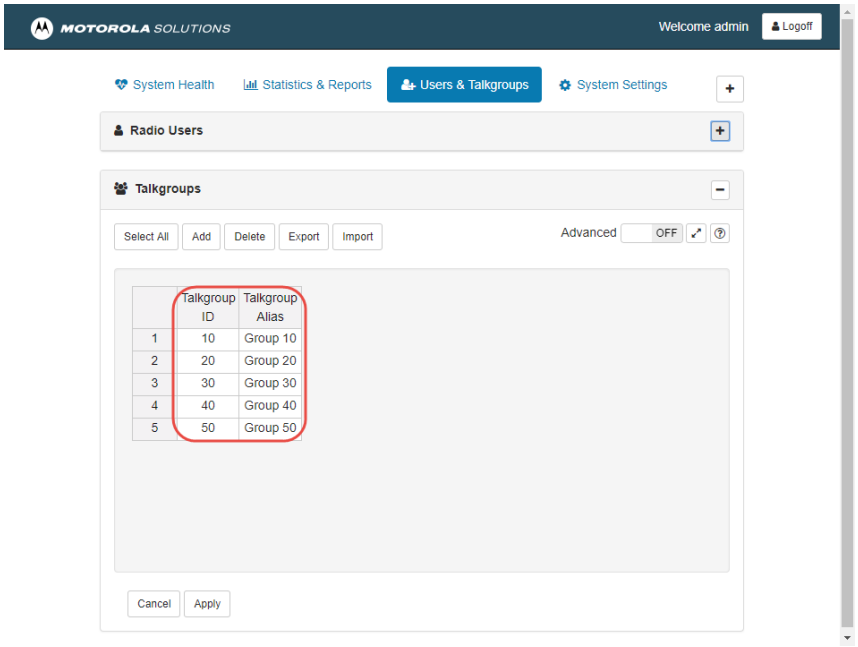
- Go to **Users and Talkgroups > Radio Users**.



  - Add required radios by specifying their **Radio ID** and **Radio Alias**.

Talkgroups

- Go to **Users and Talkgroups > Talkgroups**.



  - Add required talkgroups by specifying their **Talkgroup ID** and **Talkgroup Alias**. These talkgroups will then be added as Audio Paths in TRBOnet Server (see section 5.1.2.6, Audio Paths).

5 Configuring TRBOnet Software

This section describes how to configure TRBOnet software to work with your DIMETRA Express system.

5.1 Configuring TRBOnet Server

To start TRBOnet Server, click its shortcut on the desktop,
or click **Start > All Programs > Neocom Software > TRBOnet Server x.x**

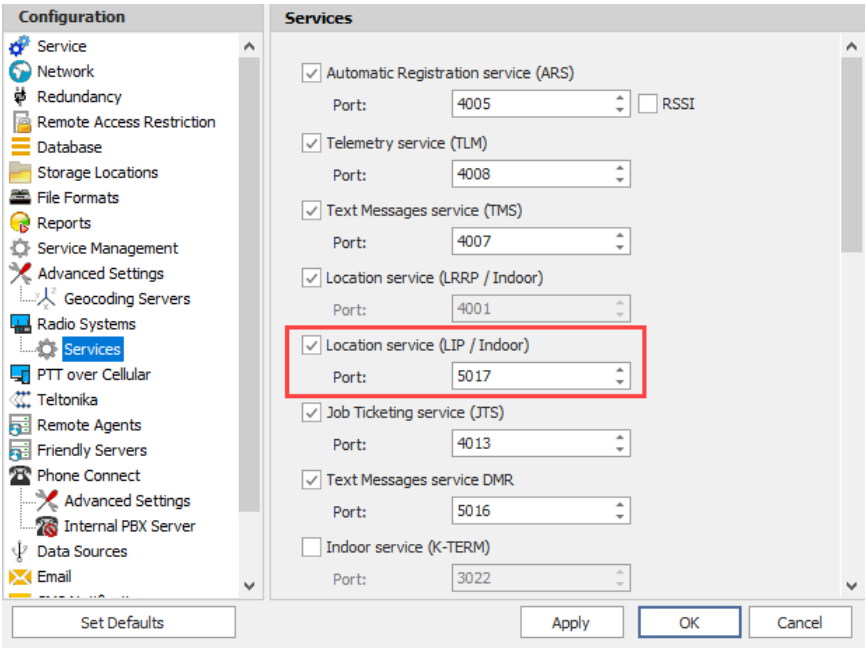
For how to configure TRBOnet Server's Database, Service, Network parameters, etc., refer to *TRBOnet Enterprise User Manual*.

5.1.1 LIP Location Service

This section describes how to configure LIP Location service in TRBOnet Server.

Note: It is strongly recommended to use LIP triggers. LIP allows Indoor and Outdoor location information to be retrieved from Dimetra Express subscribers. Configuring Online/Offline trigger in Dimetra Express subscriber codeplug will allow dispatches to monitor radio status (Radio Online/Radio offline).

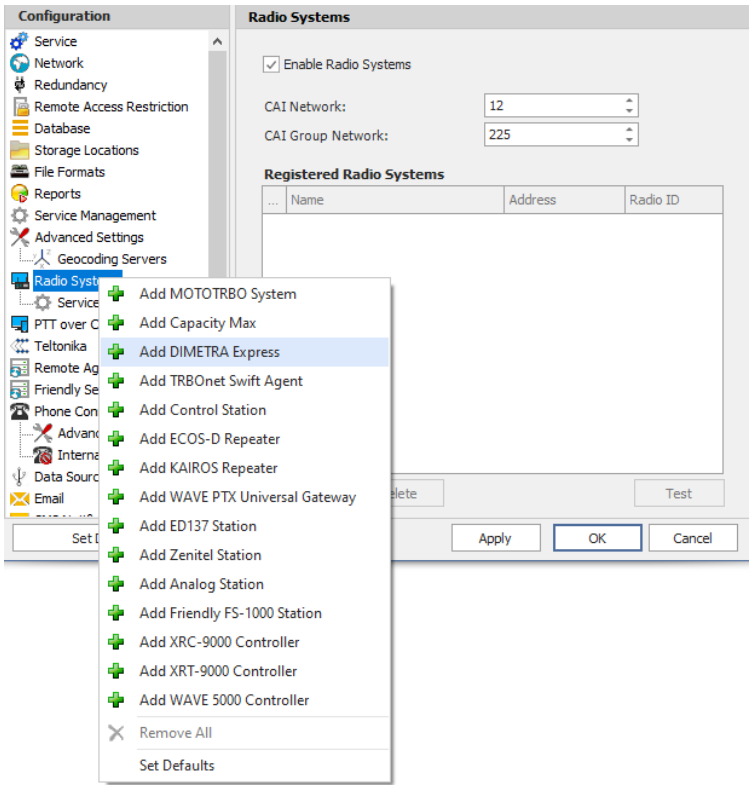
- In the **Configuration** pane, under **Radio Systems**, select **Services**:
- In the **Services** pane, make sure the **Location service (LIP / Indoor)** option is selected:



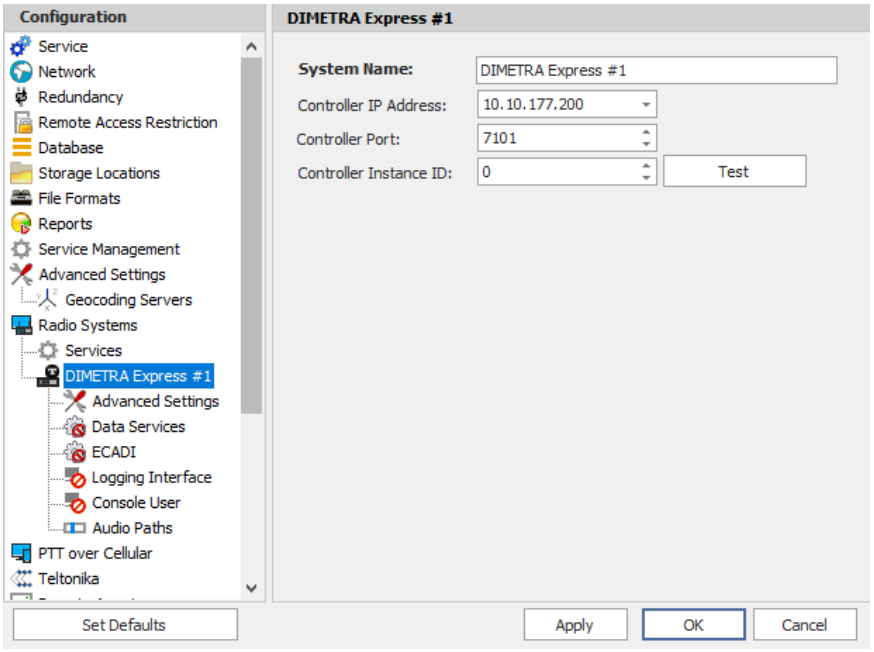
5.1.2 Connecting DIMETRA Express

This section describes how to configure TRBOnet Server for communication with the DIMETRA Express controller.

- In the **Radio Systems** pane, click **Add**.
  Or, in the **Configuration** pane, right-click **Radio Systems**.
- In the drop-down menu, click **Add DIMETRA Express**.



In the right pane, specify the connection parameters. To ensure your connection parameters match the actual configuration of your DIMETRA Express controller, you may need to use the Web browser to determine the values (see section 4, Configuring DIMETRA Express). Contact your radio network administrator, if you do not have this information.



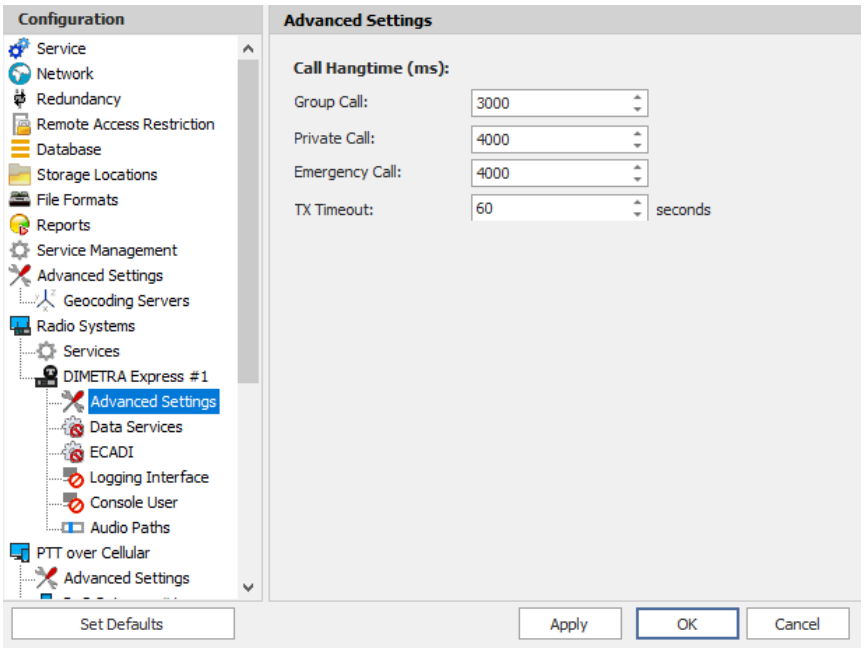
- **System Name**
  Enter a name for the DIMETRA system. This name will be displayed in the Dispatch Console.
- **Controller IP Address**
  Enter the IP address of the DIMETRA Express controller.
- **Controller port**
  Enter the DIMETRA Express controller port number. Make sure this port number is the same as that specified for DIMETRA Express controller's Voice Logging (for example, **7101**; see section 4.1.3, Voice Logging).
- **Test**
  Click this button to check the connection to your DIMETRA Express controller. If the test is successful, you'll see all required information about the controller, such as firmware and protocol version.

> Note: Do not click **Test** if the TRBOnet Server service is already running (**Configuration > Service**).

Click **Apply** after entering all the required values. A confirmation dialog will appear, prompting you to save the configuration and restart the TRBOnet Server service. You can also restart the service manually.

5.1.2.1 Advanced Settings

- In the **Configuration** pane, under the corresponding DIMETRA Express controller, select **Advanced settings**.



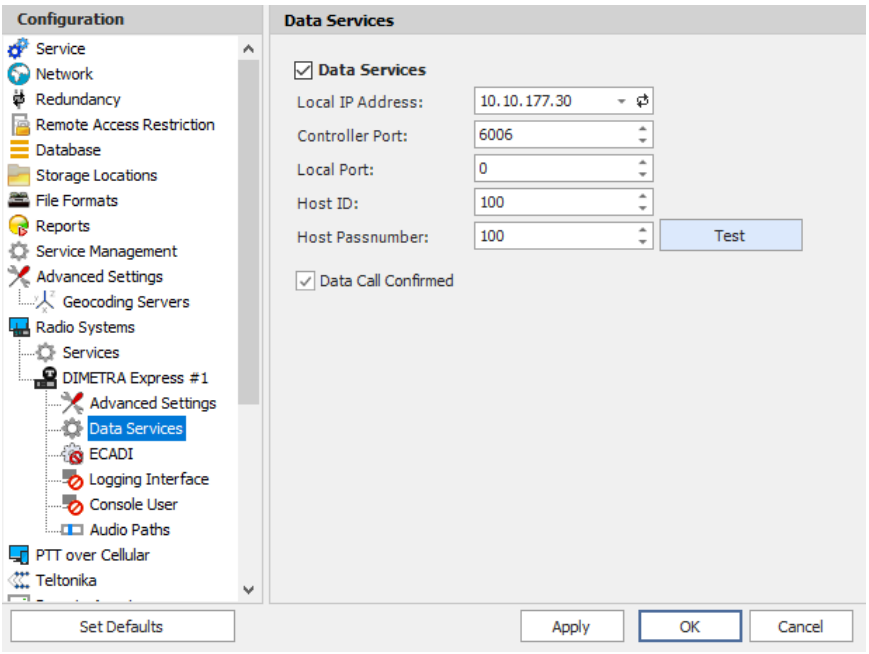
- In the **Advanced Settings** pane, specify the following advanced settings:

  Call Hangtime (ms):

  - **Group Call**
    This value sets the duration the repeater reserves the channel after the end of a group call transmission. During this time, only members of the group that the channel is reserved for can transmit.
  - **Private Call**
    This value sets the duration a radio keeps the private call setup after a user releases the PTT button. This is to avoid setting up the call again each time a user presses the PTT button to transmit. During this time, other radios can still transmit since the channel is essentially idle.
  - **Emergency Call**
    This value sets the duration the repeater reserves the channel after the end of an emergency call transmission. During this time, only members of the Group that the channel is reserved for can transmit.
  - **TX Timeout**
    Enter the time, in seconds, to be used as a voice session limit. When the dispatcher starts any voice session in the Dispatch Console, transmission will be interrupted after this TX Timeout expires.

5.1.2.2 Data Services

- In the **Configuration** pane, under the corresponding DIMETRA Express controller, select **Data Services**.

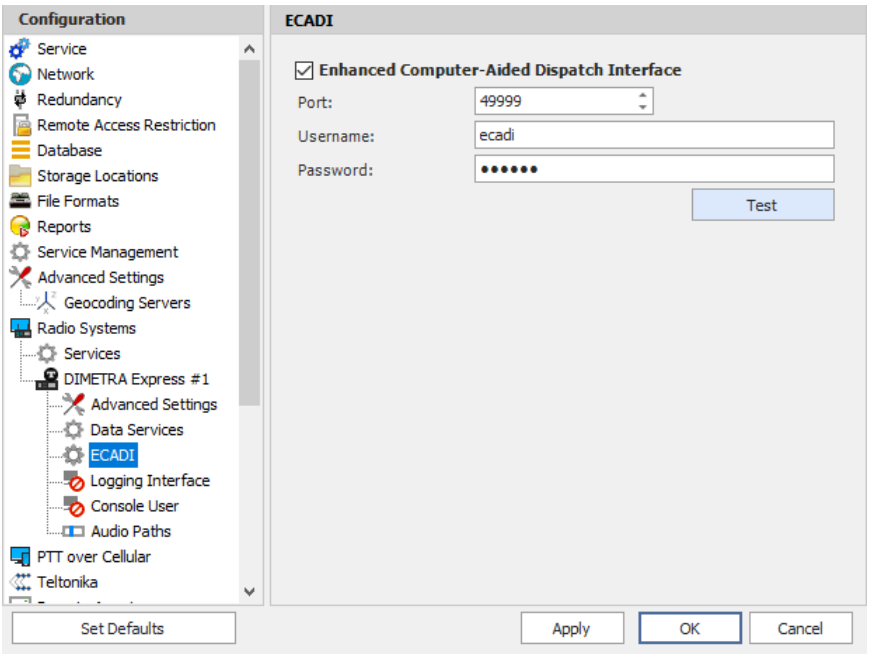


- In the **Data Services** pane, select the **Data Services** check box.
  - **Local IP Address**
    From the drop-down list, select the local network interface to be used for Data Services.
  - **Controller port**
    Enter the controller's port number to be used for Data Services. Make sure this port number is the same as that specified for DIMETRA Express controller's Short Data (for example, **6006**; see section 4.1.4, Short Data).
  - **Local Port**
    Enter the port number that will be used for connections to Data Services. The value 0 (default) means that a random port will be used.
  - **Host ID**
    Enter the Data Services Host ID.
  - **Host Passnumber**
    Enter the Data Services Passnumber.

    Note: The Host ID and Passnumber are defined in DIMETRA Express controller's Short Data Hosts page (see section 4.1.4, Short Data).
  - **Data Call Confirmed**
    Select this option to enable individual packets in data calls (ARS, GPS, and Text Message) to be confirmed.

5.1.2.3 ECADI

- In the **Configuration** pane, under the corresponding DIMETRA Express controller, select **ECADI**.

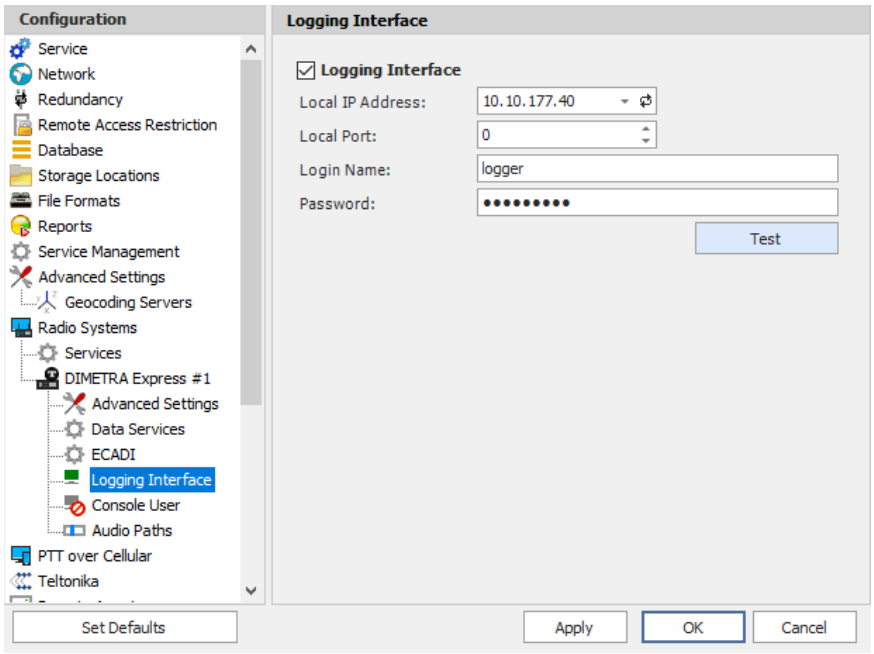


- In the **ECADI** pane, select the **Extended Computer-Aided Dispatch Interface** check box.
  - **Port**
    Leave the selected port number (**49999**).
  - **Login**
    Enter the ECADI's login.
  - **Password**
    Enter the ECADI's password.

Note: The ECADI's Password is defined in DIMETRA Express controller's Passwords page (see section 4.1.4,ECADI Configuration).

5.1.2.4 Logging Interface

- In the **Configuration** pane, under the corresponding DIMETRA Express controller, select **Logging Interface**.

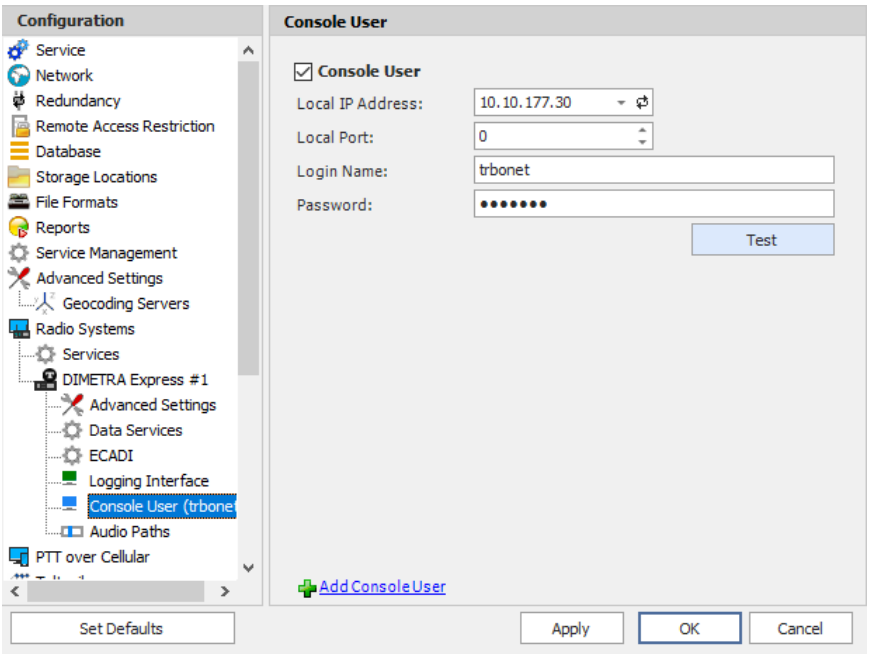


- In the **Logging Interface** pane, select the **Logging Interface** check box.
  - **Local IP Address**
    From the drop-down list, select the local network interface to be used for the Logging Interface. Note that this must be a different IP address from the main IP address of the computer hosting TRBOnet Server. For this, you might need to configure an additional network interface.
  - **Local Port**
    Enter the port number that will be used for connections to Logging Interface. The value 0 (default) means that a random port will be used.
  - **Login Name**
    Enter the Login Name for Logging Interface.
  - **Password**
    Enter the password for Logging Interface.

Note: The Login Name and Password are defined in DIMETRA Express controller's Voice Logging page (see section 4.1.3, Voice Logging).

5.1.2.5 Console User

- In the **Configuration** pane, under the corresponding DIMETRA Express controller, select **Console User**.



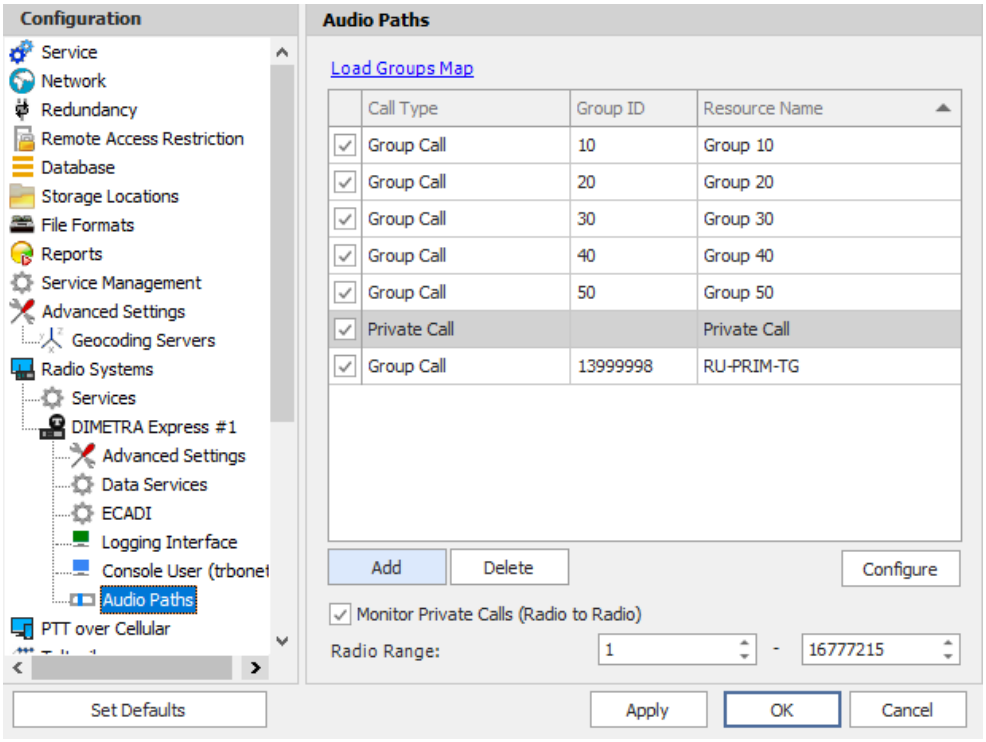
- In the **Console User** pane, select the **Console User** check box.
  - **Local IP Address**
    From the drop-down list, select the local network interface to be used for Console User.
  - **Local Port**
    Enter the port number that will be used for Console User. The value 0 (default) means that a random port will be used.
  - **Login Name**
    Enter the login name for Console User.
  - **Password**
    Enter the password for Console User.

Note: The Login Name and Password are defined in DIMETRA Express controller's Dispatch Console/Console Users page (see section 4.1.2, Dispatch Console).

5.1.2.6 Audio Paths

The Audio Paths are talk paths of the system to make and receive Voice Calls; in general, they are talk groups. TRBOnet Server requires that all audio paths of a DIMETRA Express system be registered in its configuration. If an audio path is not registered, the TRBOnet operator will not be able to receive and transmit to the corresponding talk group.

- In the **Configuration** pane, under the DIMETRA Express controller, select **Audio Paths**.



- In the **Audio Paths** pane, specify the following Audio Path-related settings:
  - Click the **Load Groups Map** link.

    As a result, the corresponding talkgroups will be loaded from the connected DIMETRA Express controller.

    Note: The talkgroups must be previously defined in DIMETRA Express controller's Talkgroups (see section 4.1.5, Users and Talkgroups, **Users and Talkgroups > Talkgroups**).

  - **Monitor Private Calls**
    Select this check box and specify the range of radios which radio-to-radio calls will be monitored.
  - To add an audio path to the system, click **Add**.
    Specify the Group ID and Resource Name.
  - To configure the selected audio path, click **Configure**.

- **Always transmit when the PTT is pressed ("Impolite" channel access)**
  Select this option so that when the PTT button is pressed, the radio will start transmitting regardless of whether the channel is free or not (that is any transmission in progress will be interrupted).

- Click **Apply** after entering all the required values. A confirmation dialog will appear, prompting you to save the configuration and restart the TRBOnet Server service. You can also restart the service manually.

5.2 Configuring TRBOnet Dispatch Console

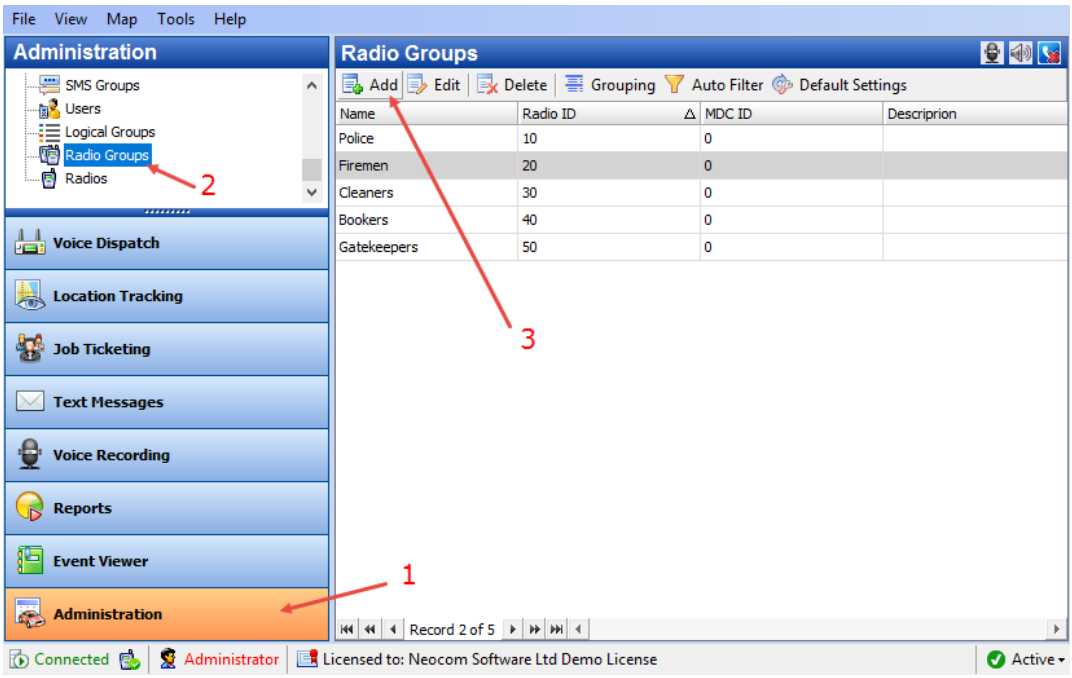
To start TRBOnet Server, click its shortcut on the desktop,
or click **Start > All Programs > Neocom Software > TRBOnet Dispatch x.x**

A dialog box will appear prompting you to enter the TRBOnet Server IP address, User Name, and Password. The default Administrator credentials are ***admin*** for the login and ***admin*** for the password.

For detailed instructions on using TRBOnet Dispatch Console, refer to *TRBOnet Enterprise User Manual*.

5.2.1 Registering Radio Groups

Go to **Administration** (1), **Radio Group** (2) to add/edit/delete Radio Groups in the system.

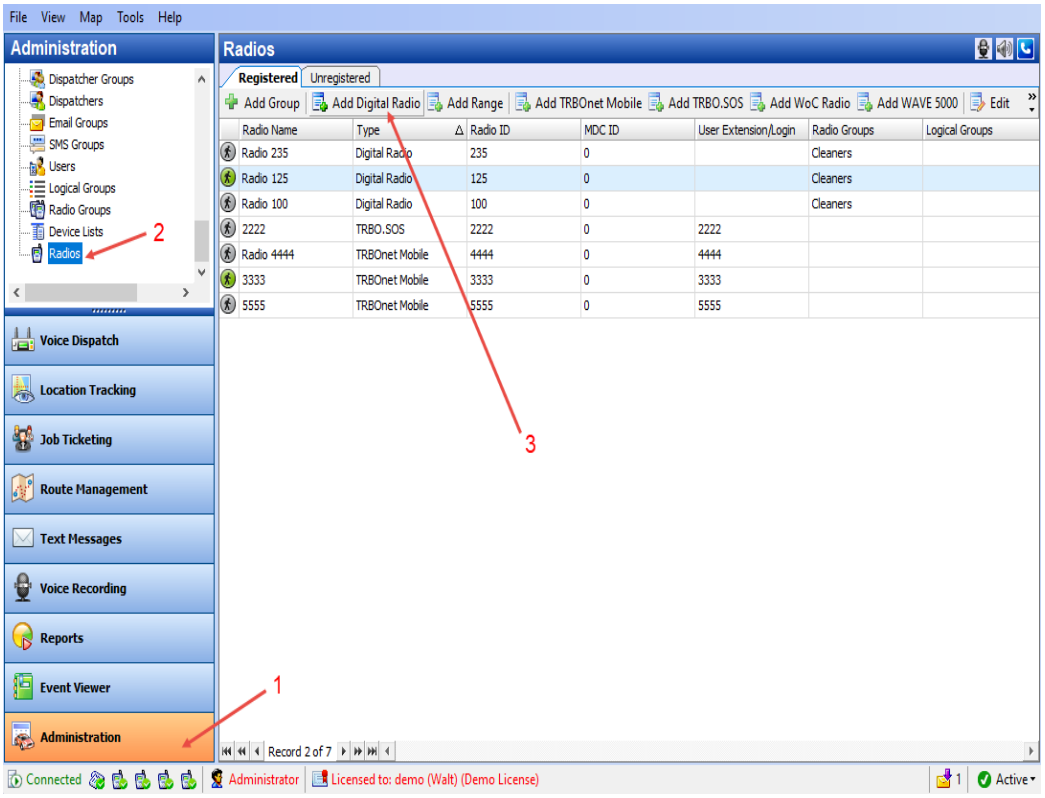


- Click **Add** (3) to add a radio group to the system:
- In the dialog box that appears, specify **Name** and **Group ID** (Radio ID) of the group you are adding.

Note: Make sure that the radio group(s) created in the Dispatch Console are present in the DIMETRA Express controller's talkgroups (see section 4.1.5, Users and Talkgroups). In addition, make sure these radio groups have been added to TRBOnet Server as Audio Paths (see section 5.1.1.5, Audio Paths).

5.2.2 Registering Radios

Go to **Administration** (1), **Radios** (2) to add/edit/delete Radios in the system.



- Click **Add Digital Radio** (3) to add a new radio.
- In the dialog box that appears, specify **Radio Name**, **Radio ID**, and **Radio Groups**, to which the radio belongs.

6 Redundant Configuration Schemes

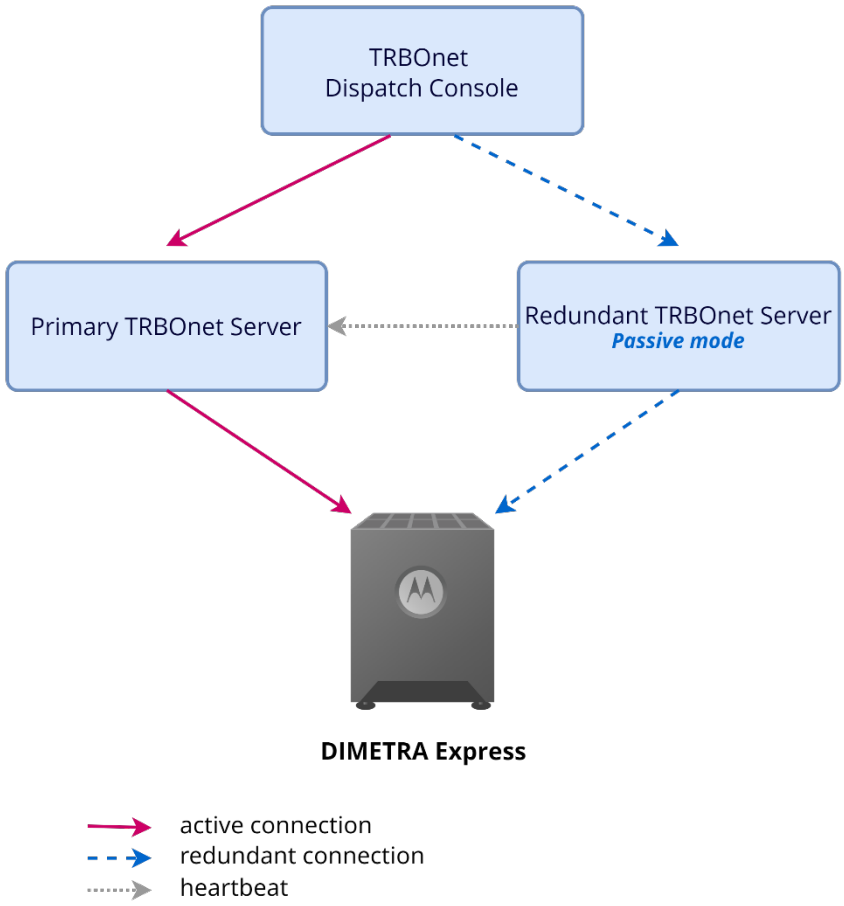
This section describes multiple redundancy schemes that can be applied when deploying a DIMETRA Express system.

Note: A DIMETRA Express controller supports only a single app connection at a time. Thus, it is strictly forbidden to connect more than one Agent/Server running in the Active mode to the same DIMETRA Express controller simultaneously.

For detailed instructions on configuring redundant TRBOnet Server/Agent, see *TRBOnet Enterprise/PLUS Redundant Server User Guide*.

6.1 Redundant TRBOnet Server in Passive Mode

The diagram below illustrates the redundant TRBOnet Server operating in Passive mode.



6.1.1 Pre-requisites

1. Both TRBOnet Servers must be hosted on a single computer due to the limitations of the Voice Logger. The Voice Logger service on a DIMETRA

Express controller supports only a single IP address input, meaning it can only connect to one computer for voice logging.

2. To run two separate instances of the TRBOnet Server on the same computer, they must be licensed as Instances through the License Server. For instructions on creating instances in the License Server, refer to the *TRBOnet License Server User Guide*. Please note that a specific license is required for the License Server.

6.1.2 Deployment of TRBOnet Servers

6.1.2.1 Primary Server

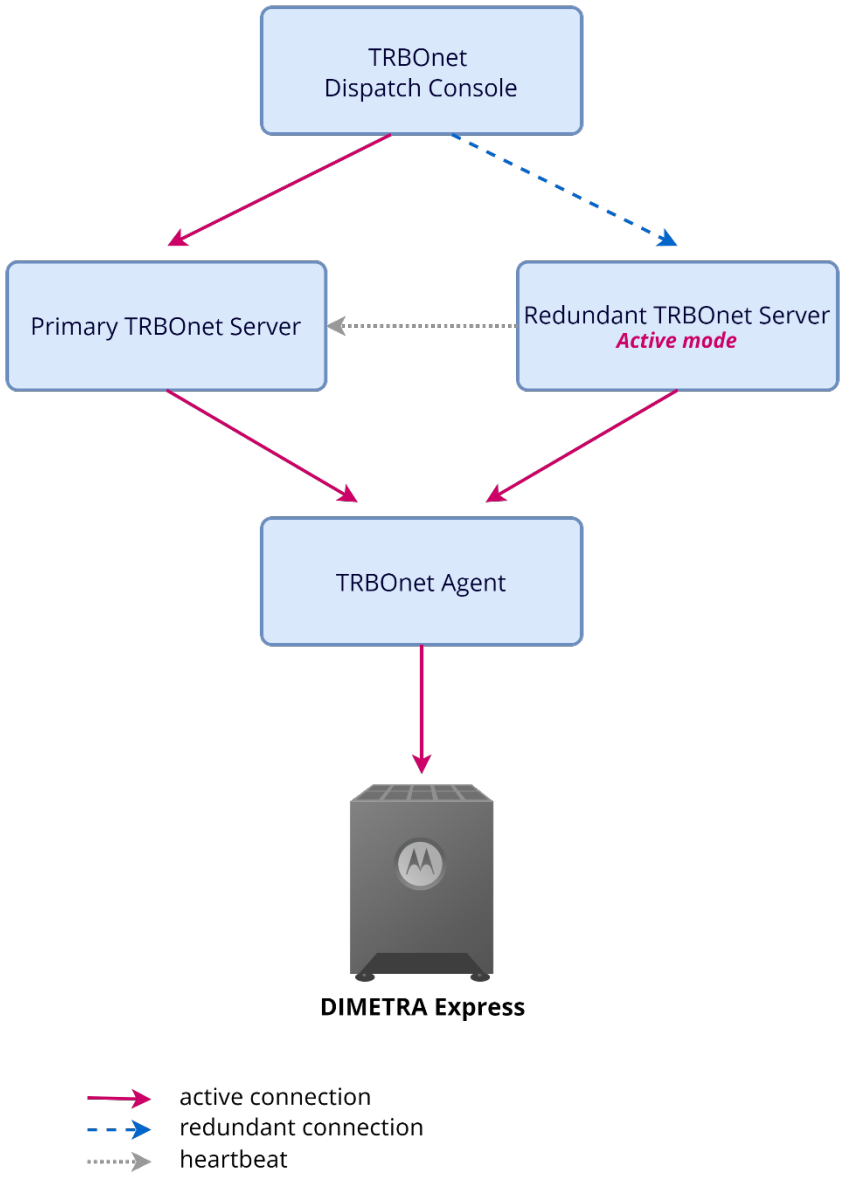
1. Add the Controller's address and specify all required nodes: Data Services, ECADI, Logging Interface, Console User, as described in section 5.1.2, Connecting DIMETRA Express.
2. Download the Audio Paths from the controller and select the required ones.
3. Save the configuration and start the Server service.

6.1.2.2 Redundant Server

1. In the **Network** section, specify a unique command port to avoid conflicts with the Primary Server.
2. In the **Redundancy** section, select **Passive** mode and enter the exact LAN address of the Primary Server (avoid using 127.0.0.1).
3. Click **Test** and verify the Primary Server is successfully connected to the Controller. Note that this may take some time, depending on the number of Console accounts and Audio Paths, as they are connected individually rather than in batches.
4. Click **Copy configuration**.
5. Back up the SQL Database of the Primary Server and restore it on the Redundant Server's SQL Server.
6. Select the restored Database.
7. Apply changes and connect TRBOnet Console.
8. Open TRBOnet Console and connect it to the Redundant Server, make sure that all settings and database records match those on the Primary Server (radios groups etc.)

6.2 Redundant TRBOnet Server in Active Mode

The diagram below illustrates the redundant TRBOnet Server operating in Active mode and connected to the DIMETRA Express controller via the TRBOnet Agent.



6.2.1 Deployment of TRBOnet Agent

1. Add the Controller's address and specify all required nodes: Data Services, ECADI, Logging Interface, Console User, as described in section 5.1.2, Connecting DIMETRA Express.
2. Download Audio Paths from the controller and select the required ones.
3. Save the configuration and start the service of the software Agent.

6.2.2 Deployment of TRBOnet Servers

TRBOnet Servers can be deployed on separate computers, with the connection to the system established via the TRBOnet Agent. The TRBOnet Server uses the TRBOnet Agent as a gateway and does not connect directly to the system.

To run two separate instances of the TRBOnet Server on the same computer, they must be licensed as Instances through the License Server. For instructions on creating instances in the License Server, refer to the *TRBOnet License Server User Guide*. Please note that a specific license is required for the License Server.

6.2.2.1 Primary Server

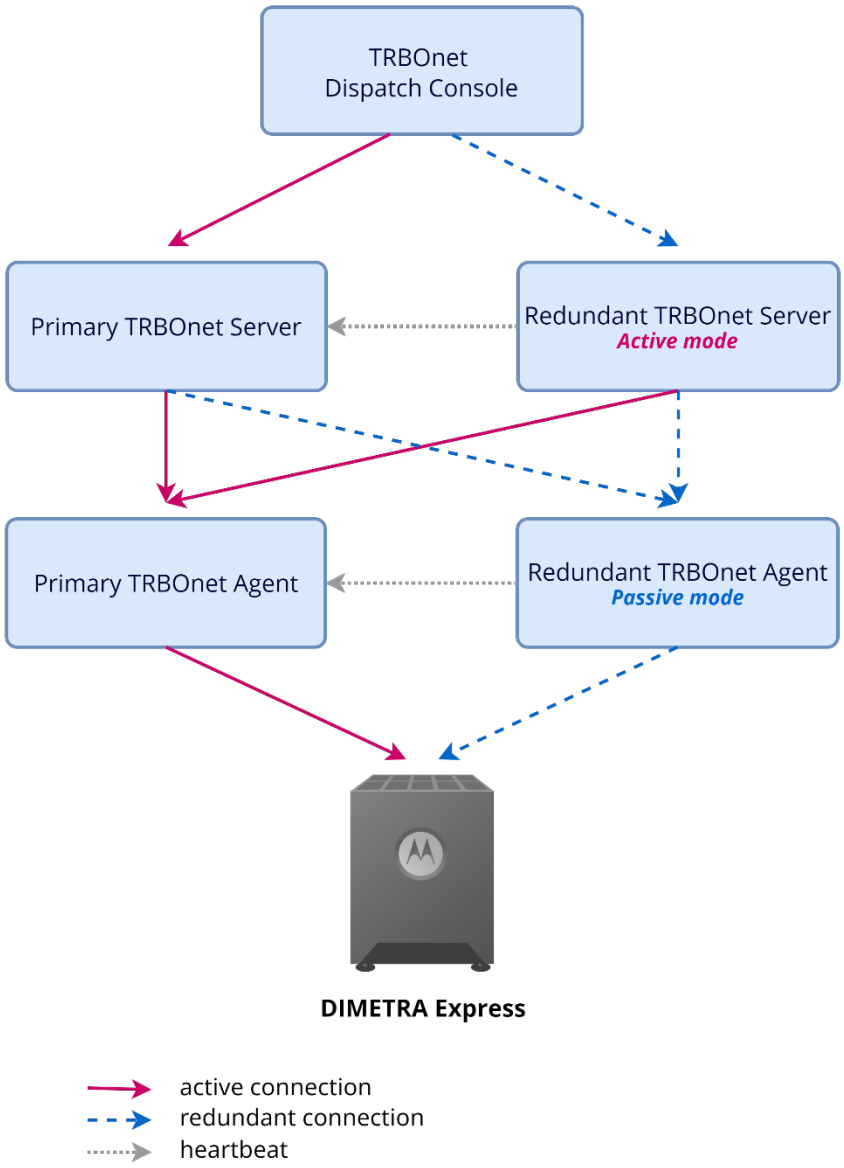
1. In the **Remote Agents** section:
   - Enter the address of the TRBOnet Agent.
   - Click **Test** to ensure the services are active.
2. Apply the changes and connect to the TRBOnet Console.
3. In the TRBOnet Console, ensure that all required settings are configured in the Administration tab, e.g., Dispatcher accounts, registered radios and their settings, Location profiles, radio groups, etc.. These settings will be saved to the TRBOnet database, which must then be copied to the Redundant Server.

6.2.2.2 Redundant Server

2. In the **Redundancy** section:
   - From the **Redundancy Mode** drop-down list, select **Active**.
   - Enter the address of the Primary TRBOnet Server.
   - Click **Test** to ensure it is available.
   - Click **Copy configuration**.
3. Verify that all settings have been copied correctly, and that the TRBOnet Agent is added to the configuration and responding to Test.
4. Back up the SQL Database of the Primary TRBOnet Server and restore it on the Redundant Server computer's SQL Server.
5. Select the restored Database.
6. Open TRBOnet Console and connect it to the Redundant Server, make sure that all settings and database records match those on the Primary Server (radios groups etc.)

6.3 Redundant TRBOnet Server in Active Mode and Redundant TRBOnet Agent in Passive Mode

The diagram below illustrates the Redundant Server operating in Active mode and connected to the DIMETRA Express controller via the Primary and Redundant Agents.



6.3.1 Pre-requisites

1. Both TRBOnet Agents must be hosted on a single computer due to the limitations of the Voice Logger. The Voice Logger service on a DIMETRA Express controller supports only a single IP address input, meaning it can only connect to one computer for voice logging.
2. To run two separate instances of TRBOnet Agent on the same computer, they must be started as instances licensed through the License Server. For

instructions on creating instances in the License Server, refer to the *TRBOnet License Server User Guide*. Please note that a specific license is required for the License Server.

6.3.2 Deployment of TRBOnet Agents

6.3.2.1 Primary Agent

1. Add the Controller's address and specify all required nodes: Data Services, ECADI, Logging Interface, Console User, as described in section 5.1.2, Connecting DIMETRA Express.
2. Download Audio Paths from the controller and select the required ones.
3. Save the configuration and start the service of the software Agent.

6.3.2.2 Redundant Agent

1. In the **Network** section, specify a unique command port to not conflict with the Primary Agent.
2. In the **Redundancy** section, select **Passive** mode and enter the exact LAN address of the Primary Agent (avoid using 127.0.0.1).
3. Click **Test** and make sure the Primary Agent is successfully connected to the Controller (this might take certain time depending on the amount of Console accounts and Audio Paths because they are connected one-by-one rather than in a batch).
4. Click **Copy configuration**.
5. Save changes and start the service.

6.3.3 Deployment of TRBOnet Servers

Unlike TRBOnet Software Agents, TRBOnet Server can be deployed on Separate computers as the connection to the system is performed via the Software Agent. TRBOnet Server uses Agents as gateways and does not connect to the system directly.

However, if you want to use the TRBOnet License Server for TRBOnet Servers too, all instances added to it must be located on Single computer. Otherwise, the License Server will not be able to license the remote instances.

6.3.3.1 Primary Server

1. In the **Remote Agents** section, add the address of the Primary TRBOnet Software Agent, test and make sure the services are shown as active.
2. In the **Remote Agents > Redundancy** section, add the address of the Redundant TRBOnet Software Agent, test, it must show that services are stopped.
3. Apply changes and connect TRBOnet Console.

4. In TRBOnet Console, make sure that you have made all required settings in Administration tab, like Dispatcher accounts, Registered radios and their settings, Location profiles, Radio groups etc.

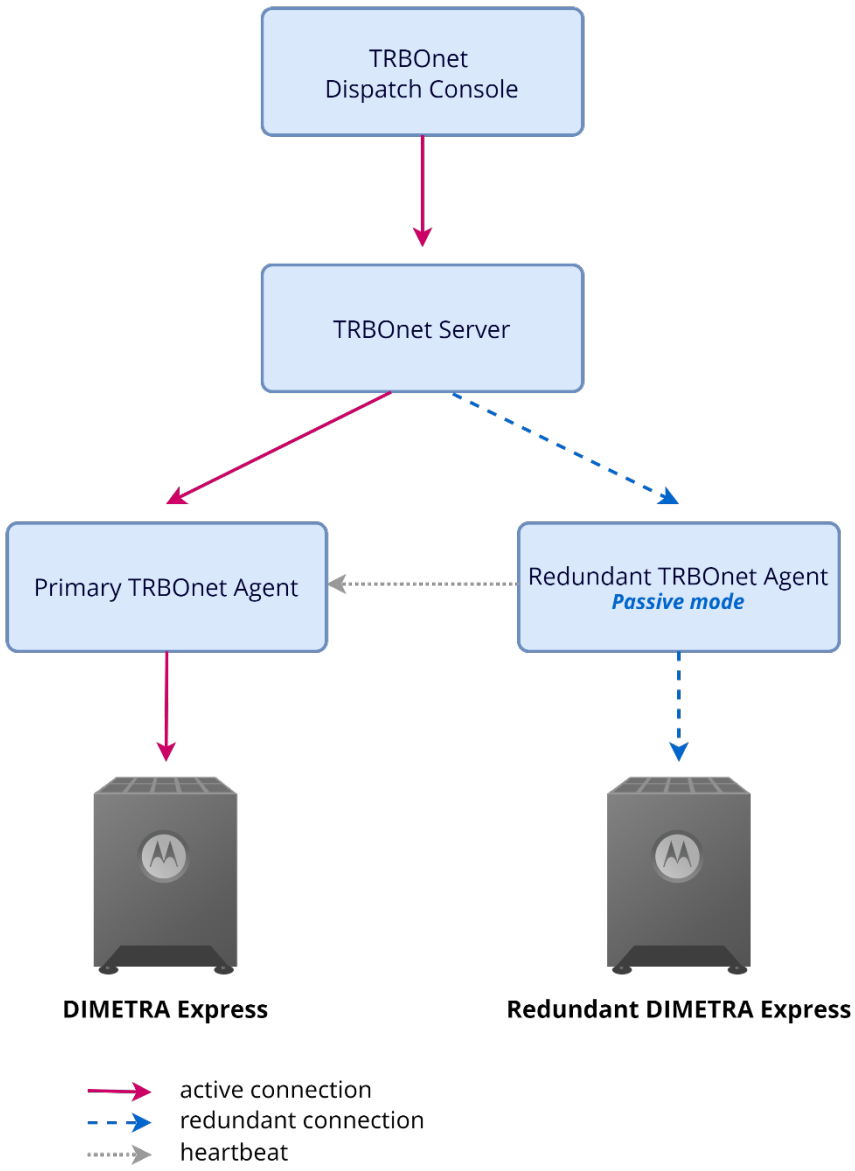
All these settings will be saved to TRBOnet Database that in turn must be copied over to the Redundant Server.

6.3.3.2 Redundant Server

1. In the **Redundancy** section, set **Redundancy Mode: Active**, and add the address of the Primary TRBOnet Server, click **Test** and make sure it is available, click **Copy configuration**.
2. Make sure that all settings of TRBOnet Server are copied over and you see both TRBOnet Software Agents added to the configuration. Primary - in the Main node and Redundant - in the Redundancy node. Both must respond to Test.
3. Back up the SQL Database of the Primary TRBOnet Server and restore it on the Redundant Server computer's SQL Server.
4. Select the restored Database.
5. Open TRBOnet Console and connect it to the Redundant Server, make sure that all settings and database records match those on the Primary Server (radios groups etc.)

6.4 Redundant TRBOnet Agent and Redundant DIMETRA Express

The diagram below illustrates operating the redundant DIMETRA Express controller connected to TRBOnet.



6.4.1 Pre-requisites

1. Both TRBOnet Agents must be hosted on a single computer due to the limitations of the Voice Logger. The Voice Logger service on a DIMETRA Express controller supports only a single IP address input, meaning it can only connect to one computer for voice logging.
2. To run two separate instances of TRBOnet Agent on the same computer, they must be started as instances licensed through the License Server. For instructions on creating instances in the License Server, refer to the

TRBOnet License Server User Guide. Please note that a specific license is required for the License Server.

6.4.2 Deployment of DIMETRA Express Controllers

- Configure the Primary DIMETRA Express Controller.
- After you have completed configuring the Primary Controller, copy the configuration to the Redundant Controller.

6.4.3 Deployment of TRBOnet Agents

6.4.3.1 Primary Agent

1. Add the Primary Controller's address and specify all required nodes: Data Services, ECADI, Logging Interface, Console User, as described in section 5.1.2, Connecting DIMETRA Express.
2. Download the Audio Paths from the controller and select the required ones.
3. Save the configuration and start the Agent's service.

6.4.3.2 Redundant Agent

1. In the **Network** section, specify a unique command port to avoid conflicts with the Primary Agent.
2. In the **Redundancy** section, select **Passive** mode and enter the exact LAN address of the Primary Server (avoid using 127.0.0.1).
3. Click **Test** and verify the Primary Agent is successfully connected to the Controller. Note that this may take some time, depending on the number of Console accounts and Audio Paths, as they are connected individually rather than in batches.
4. Click **Copy configuration**.
5. In the main node where the address of the controller is specified, input the Redundant DIMETRA Express Controller's address rather than Primary DIMETRA Express Controller's address.
6. Save changes and start the service.

6.4.4 Deployment of TRBOnet Server

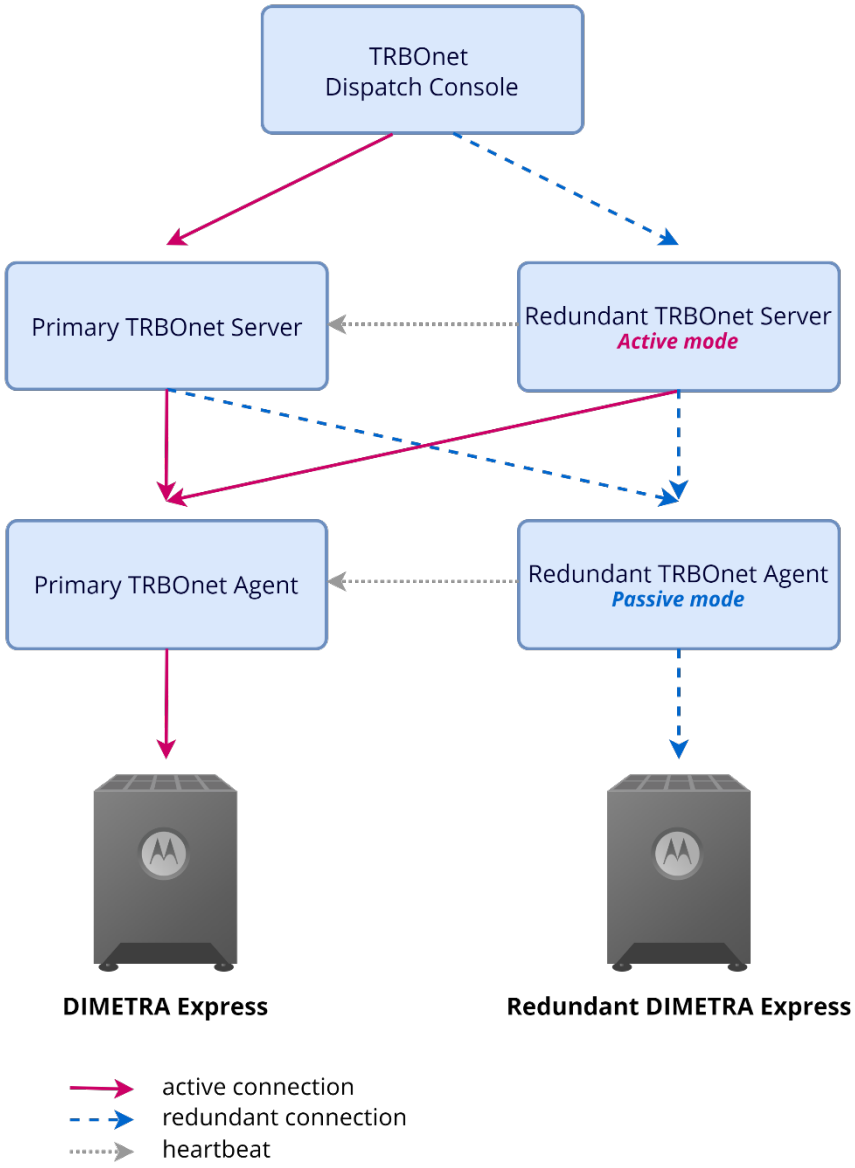
Unlike TRBOnet Software Agents, TRBOnet Server can be deployed on Separate computers as the connection to the system is performed via the Software Agent. TRBOnet Server uses Agents as gateways and does not connect to the system directly.

However, if you want to use the TRBOnet License Server for TRBOnet Server too, all instances added to it must be located on Single computer. Otherwise, the License Server will not be able to license the remote instances.

1. In the **Remote Agents** section, add the address of the Primary TRBOnet Software Agent, test and make sure the services are shown as active.
2. In the **Remote Agents > Redundancy** section, add the address of the Redundant TRBOnet Software Agent, test, it must show that services are stopped.
3. Apply changes and connect TRBOnet Console.

6.5 Redundant TRBOnet Server in Active Mode, Redundant TRBOnet Agent in Passive Mode, and Redundant DIMETRA Express

The diagram below illustrates the Redundant Server operating in Active mode and connected to the Primary and Redundant DIMETRA Express controllers via the Primary and Redundant Agents.



6.5.1 Pre-requisites

1. Both TRBOnet Agents must be hosted on a single computer due to the limitations of the Voice Logger. The Voice Logger service on a DIMETRA Express controller supports only a single IP address input, meaning it can only connect to one computer for voice logging.

2. To run two separate instances of TRBOnet Agent on the same computer, they must be started as instances licensed through the License Server. For instructions on creating instances in the License Server, refer to the *TRBOnet License Server User Guide*. Please note that a specific license is required for the License Server.

6.5.2 Deployment of DIMETRA Express Controllers

- Configure the Primary DIMETRA Express Controller.
- After you have completed configuring the Primary Controller, copy the configuration to the Redundant Controller.

6.5.3 Deployment of TRBOnet Agents

6.5.3.1 Primary Agent

1. Add the Primary Controller's address and specify all required nodes: Data Services, ECADI, Logging Interface, Console User, as described in section 5.1.2, Connecting DIMETRA Express.
2. Download Audio Paths from the controller and select the required ones.
3. Save the configuration and start the service of the software Agent.

6.5.3.2 Redundant Agent

1. In the **Network** section, specify a unique command port to not conflict with the Primary Agent.
2. In the **Redundancy** section, select **Passive** mode and enter the exact LAN address of the Primary Agent (avoid using 127.0.0.1).
3. Click **Test** and verify the Primary Agent is successfully connected to the Controller. Note that this may take some time, depending on the number of Console accounts and Audio Paths, as they are connected individually rather than in batches.
4. Click **Copy configuration**.
5. In the main node where the address of the controller is specified, input the Redundant DIMETRA Express Controller's address rather than Primary DIMETRA Express Controller's address.
6. Save changes and start the service.

6.5.4 Deployment of TRBOnet Servers

Unlike TRBOnet Software Agents, TRBOnet Server can be deployed on Separate computers as the connection to the system is performed via the Software Agent. TRBOnet Server uses Agents as gateways and does not connect to the system directly.

However, if you want to use the TRBOnet License Server for TRBOnet Servers too, all instances added to it must be located on Single computer. Otherwise, the License Server will not be able to license the remote instances.

6.5.4.1 Primary Server

1. In the **Remote Agents** section, add the address of the Primary TRBOnet Software Agent, test and make sure the services are shown as active.
2. In the **Remote Agents > Redundancy** section, add the address of the Redundant TRBOnet Software Agent, test, it must show that services are stopped.
3. Apply changes and connect TRBOnet Console.
4. In TRBOnet Console, make sure that you have made all required settings in Administration tab, like Dispatcher accounts, Registered radios and their settings, Location profiles, Radio groups etc.

All these settings will be saved to TRBOnet Database that in turn must be copied over to the Redundant Server.

6.5.4.2 Redundant Server

1. In the **Redundancy** section:
   - Set **Redundancy Mode: Active**.
   - Enter the address of the Primary Server.
   - Click **Test** and make sure it is available.
   - Click **Copy configuration**.
2. Make sure that all settings of TRBOnet Server are copied over and you see both TRBOnet Software Agents added to the configuration. Primary - in the Main node and Redundant - in the Redundancy node. Both must respond to Test.
3. Back up the SQL Database of the Primary TRBOnet Server and restore it on the Redundant Server computer's SQL Server.
4. Select the restored Database.
5. Open TRBOnet Console and connect it to the Redundant Server, make sure that all settings and database records match those on the Primary Server (radios groups etc.)

6.6 Important Notes

The SQL Databases are not synchronized between the servers automatically.

If you make any changes (in TRBOnet Console -> Administration) on the Primary Server, the Database must be copied over to the Redundant Server.

If you make any changes in Server Configurator of the Primary Server, the configuration must be copied to the Redundant Server (Test and Copy configuration).

For instructions on configuring TRBOnet Console for Redundancy see *TRBOnet Enterprise User Manual, Appendix G, Dispatch Console Configuration*.