

TRBOnet Enterprise/PLUS Redundant Server User Guide

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1 Introduction

1.1 About This Guide

This document is intended for administrators setting up evaluation and proof-of-concept deployments of MOTOTRBO Dispatch over IP solutions. The document describes the minimum steps to configure the redundant server.

1.2 About TRBOnet

TRBOnet is a suite of professional applications for MOTOTRBO 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.

For more information about TRBOnet products, refer to our [website](#).

1.3 Contacts

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

2 Overview

TRBOnet Server supports a redundant (secondary/backup) configuration which allows automatic switching from the primary to the redundant (secondary/backup) server in case of failure of the primary server.

There are two modes of running the Redundant server: Passive mode and Active mode.

2.1 General notes

- The radio system's master repeater supports up to 4 simultaneously connected Software Peers (for example, MNIS, RDAC, TRBOnet Enterprise/PLUS or TRBOnet Watch).
- The databases on both servers are not synchronized. Before making a copy of the primary server's database and deploying it on the redundant server, make sure that all the appropriate information, such as radios, radio groups, map objects, etc., have been entered into the primary server's configuration.
- The dispatch console will connect to the redundant server when one of the following happens:
 - The primary server is unavailable.
 - All radio systems are unavailable for the primary server (except for Telephone Interconnect or POC systems).
- Connection to the redundant server takes up to 2 minutes.
- The dispatch console will reconnect to the primary server when the primary server is available again and the radio system is available for it.
- It's a good practice to configure an Alarm Management rule to send emails to desired addresses whenever the primary server gets disconnected/reconnected, and/or the radio system gets disconnected/reconnected.

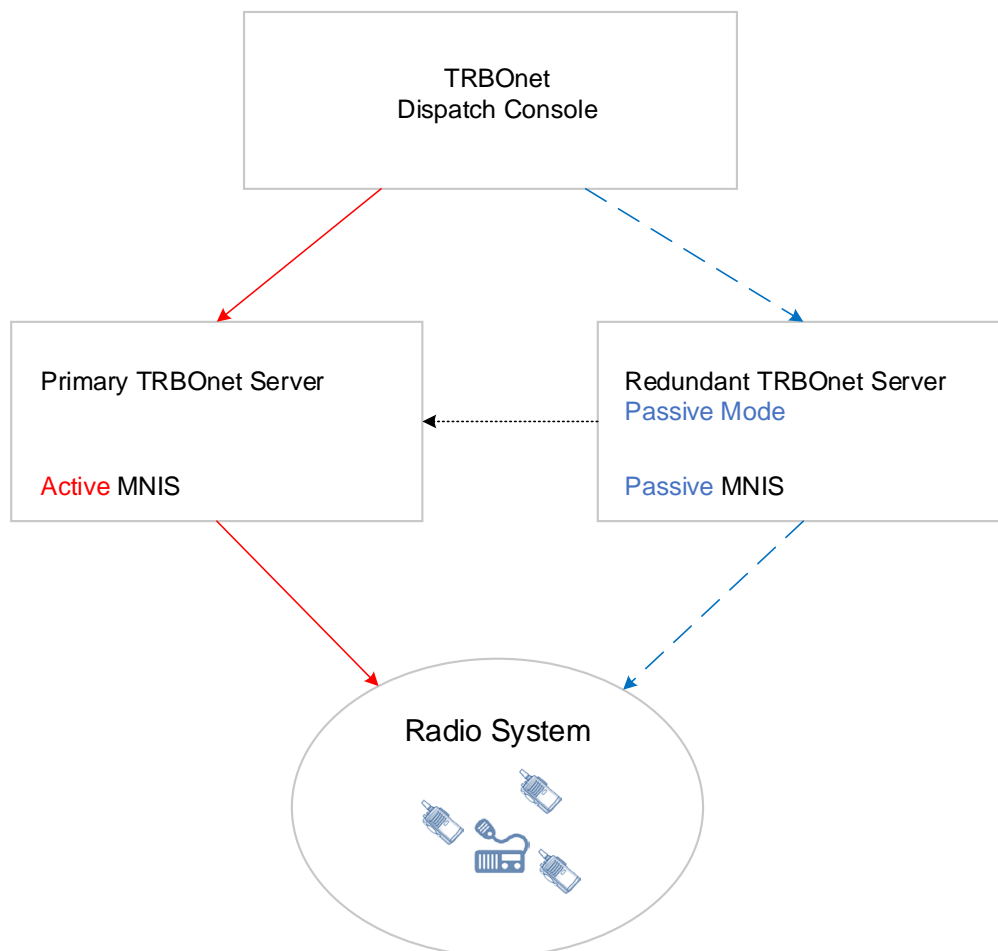
2.1.1 License notes

- The Hardware ID of a redundant server must be specified in the License. The License ID of both primary and redundant servers must match.
- When the primary server becomes unavailable (or all radio systems are unavailable for the primary server), the redundant server will start and run for a period of 7 days. Information that the Dispatch Console is connected to the redundant server is displayed in red in the status bar. In addition, a pop-up window with the remaining operating time is displayed every time the administrator is connected to the redundant sever, or once a day when a dispatcher is connected to the redundant sever.

2.2 Passive mode

The scheme below shows how the Redundant server is used in Passive mode.

In the scheme, a red solid line means a connection to the primary server. A blue dash line means a connection to the redundant server that will be established once the primary server fails. A black dotted line means a heartbeat connection between the redundant and primary servers.



- The primary and redundant servers are configured identically. Note that both servers may have equal **TRBOnet Peer ID** because the redundant server is not connected to the radio system until the primary server fails. The redundant server is constantly monitoring the primary server's status.

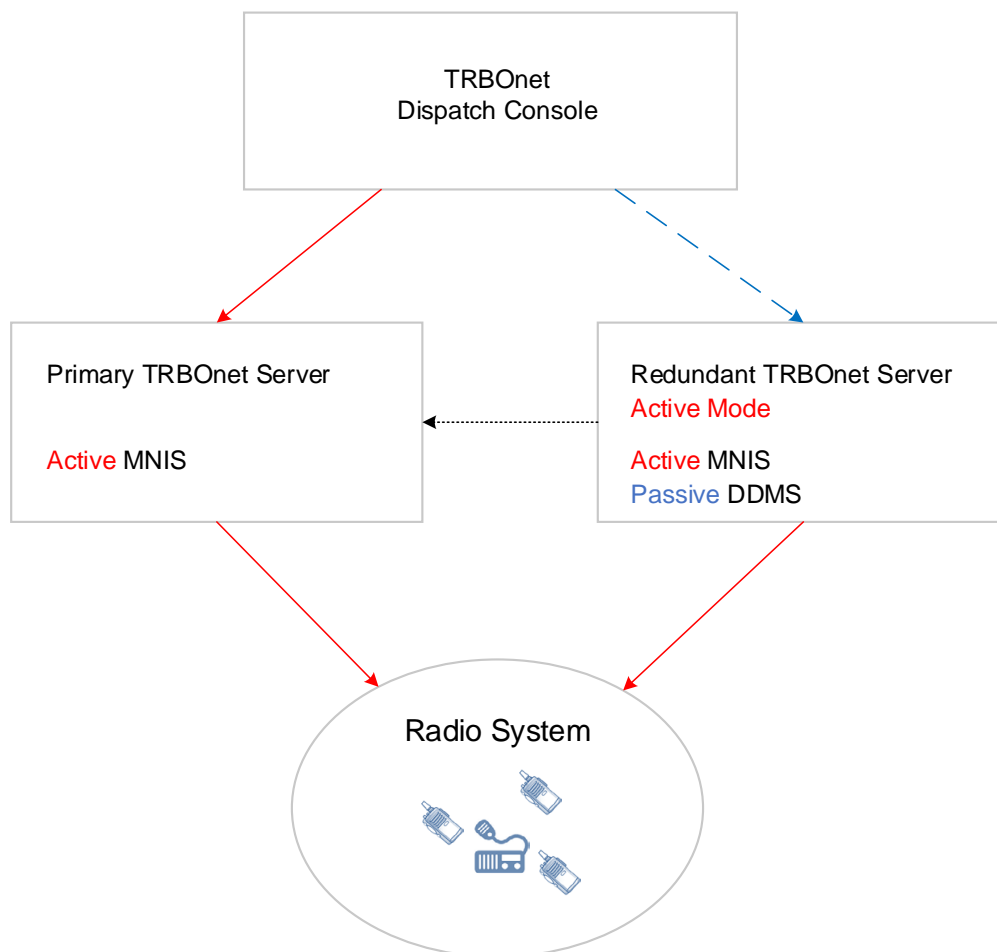
Note: In the case of Capacity Max, **TRBOnet Peer ID** is not used and some special settings are required in MOTOTRBO Radio Management for the secondary MNIS Data Gateway. For information on how to configure the secondary MNIS Data Gateway, refer to *MOTOROLA Capacity Max Installation and Configuration Guide*.

- When the primary server fails, the redundant server gets activated, starts its MNIS service, and connects to the radio system. The dispatch console will connect to the redundant server automatically.
- Once the failed primary server is back online, the dispatch console will automatically reconnect to the primary server.
- Note that the databases on both servers are not synchronized. The redundant server's database will have data only for the time period the primary server is down. Once the primary server is restored, the redundant server will stop adding data to its database. Thus, there will be no data in the primary server's database for the time period the primary server is down.

2.3 Active mode

The scheme below shows how the Redundant server is used in the Active mode.

In the scheme, a red solid line means a connection to the primary server. A blue dash line means a connection to the redundant server that will be established once the primary server fails. A black dotted line means a heartbeat connection between the redundant and primary servers.



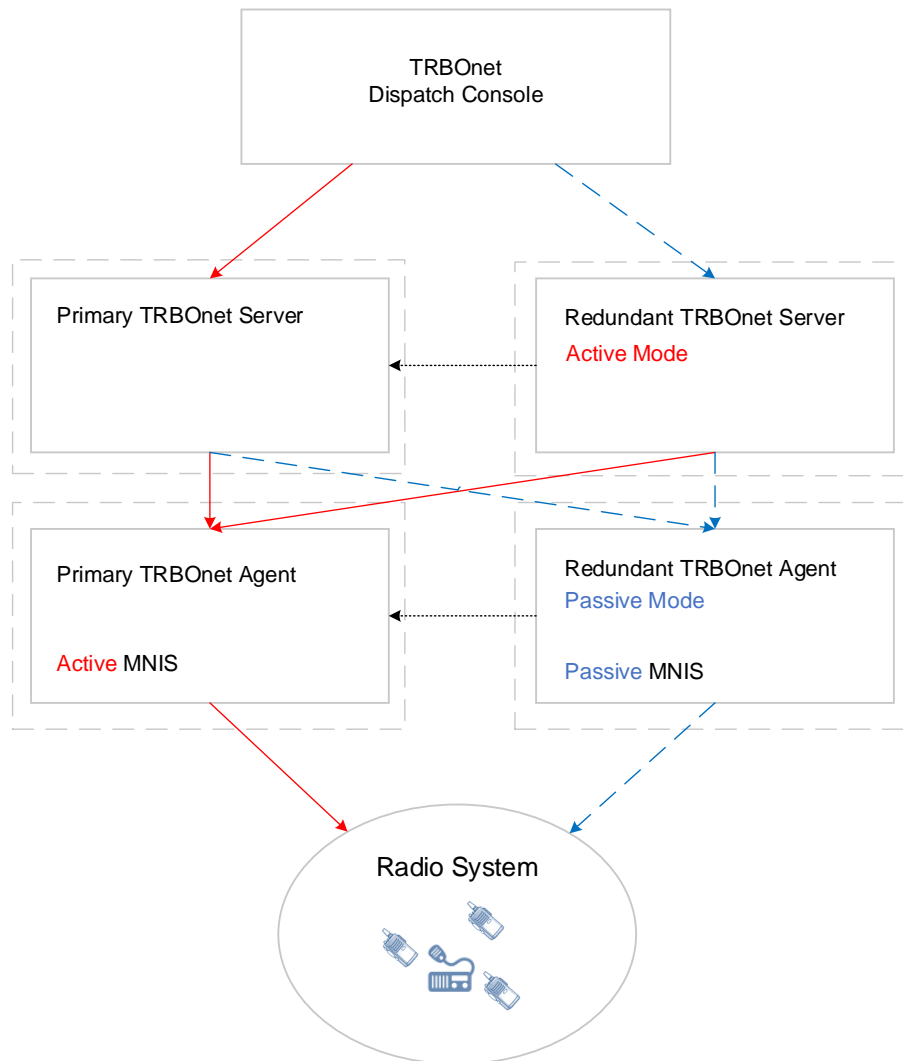
- The primary and redundant servers are configured identically, except for **TRBOnet Peer ID** which must be unique for each server. The redundant server is constantly monitoring the primary server's status.
- When the primary server fails, the dispatch console will connect to the redundant server.
- When the dispatch console connects to the redundant server, the DDMS service running for the redundant server must be manually set to the active mode (**MOTOTRBO DDMS > ARS Settings > PassiveMode** set to **OFF**). To prevent channel collisions when multiple ARS packets are transmitted at the same time, it is recommended that the **ARS Initialization Delay (min)** parameter be set to 30 min for each radio subscriber (see MOTOTRBO CPS\RM reference guide). When the dispatch console is reconnected to the primary server, the DDMS service running for the redundant server must be manually set to the passive mode (**MOTOTRBO DDMS > ARS Settings > PassiveMode** set to **ON**).
- Note that two TRBOnet Servers and two MNIS services are connected to the radio system's master repeater, thus occupying all four available peer connections. As a result, no additional software, such as TRBOnet Watch or RDAC application, can be connected in such a scheme.
- Note that the databases on both servers are not synchronized when the redundant server is active and the primary server is inactive. The redundant server's database will always have the full set of data. The primary server's database won't have data for the time period it was down.

2.4 Active mode and TRBOnet Agents

The scheme below shows how the Redundant Server is used when running in the Active mode and being connected to Radio Systems via Primary and Redundant TRBOnet Agents.

In such a scheme, one TRBOnet Server and one MNIS service are simultaneously connected to the radio system's master repeater, thus occupying only two of the four available peer connections, and consequently you can additionally connect TRBOnet Watch or an RDAC application, or an additional TRBOnet Server.

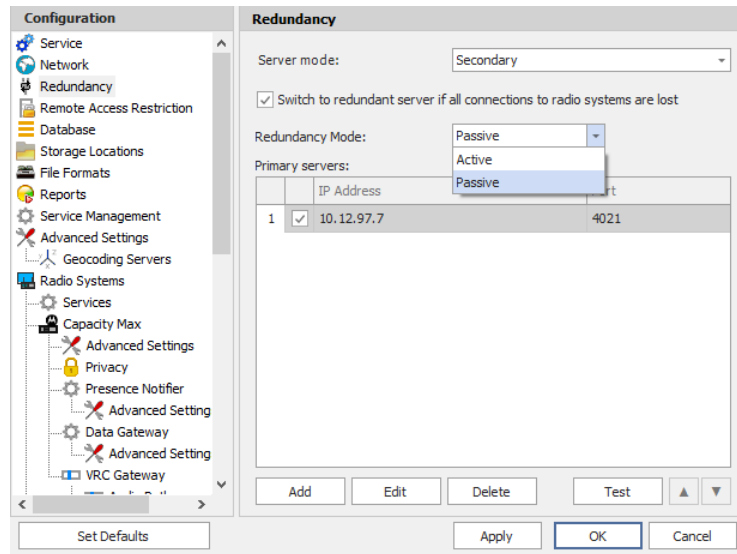
Note that in the scheme, a red solid line means a connection to the primary server. A blue dash line means a connection to the redundant server that will be established once the primary server fails. A black dotted line means a heartbeat connection between the redundant and primary servers (agents).



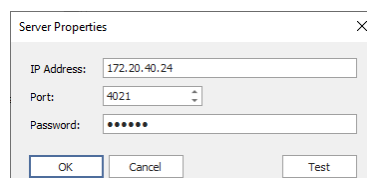
- Note that this is the only feasible solution for running the redundant server in the Active mode when a Capacity Max system is used.

3 Redundant Server Configuration

- In the **Configuration** pane, select **Redundancy**.



- In the **Redundancy** pane, specify the following settings:
 - **Server mode**
Select **Secondary**. As a result, the server will be operating as the standby server in a redundant system.
 - **Switch to redundant server if all connections to radio systems are lost**
If this option is selected, the dispatch console will be switched to the redundant sever (the one that is the backup server for this server) when all connections to the radio systems are lost.
 - **Redundancy Mode**
Select the mode for a redundant server from the drop-down list.
 - To add a primary server, click **Add**.

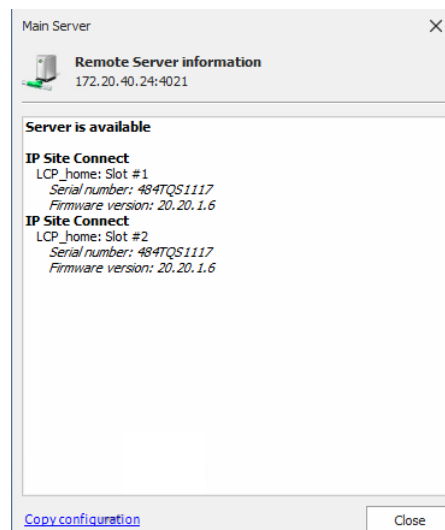


- **IP Address**
Type the IP address of the primary server.
- **Port**
Enter the same port number as specified for the Command port.
- **Password**
Enter the password that will be used to connect to this server.

3.1 Synchronizing server configurations

To copy the configuration of the primary server to the redundant server, do the following:

- In the **Redundancy** pane, click **Test**.
- In the **Main Server** dialog box that opens, click the **Copy configuration** link.

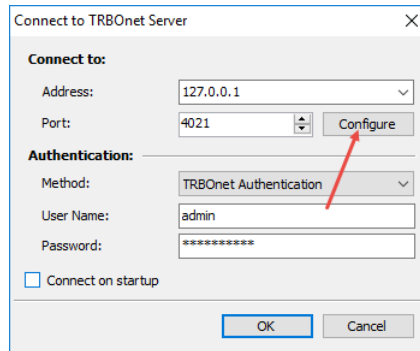


- Verify that the settings in the **Network**, **Redundancy**, and **Database** tabs are correct.

4 Dispatch Console Configuration

To add a server to the list of servers:

- Launch TRBOnet Dispatch Console to open the **Connect to TRBOnet Server** dialog box, or on the **File** menu, click **Connect to TRBOnet Server**.

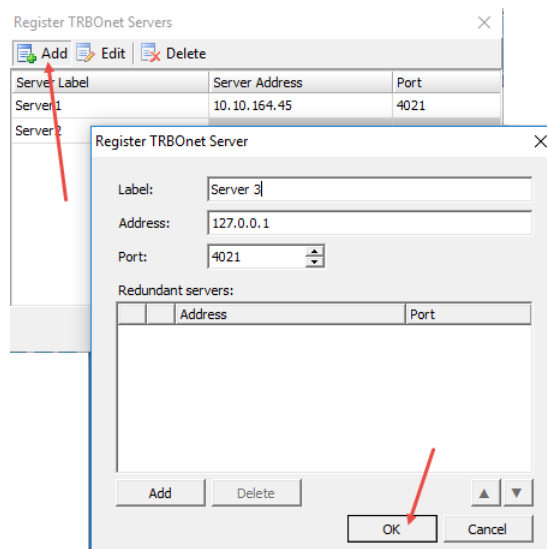


The 'Connect to TRBOnet Server' dialog box contains the following fields and controls:

- Connect to:**
 - Address: 127.0.0.1 (dropdown menu)
 - Port: 4021 (spin box)
 - Configure** button (indicated by a red arrow)
- Authentication:**
 - Method: TRBOnet Authentication (dropdown menu)
 - User Name: admin
 - Password: *****
- ☐ Connect on startup
- OK** and **Cancel** buttons at the bottom.

4.1 Adding a server

- Click **Configure** to register a new primary server:



The 'Register TRBOnet Servers' dialog box shows a list of servers and a sub-dialog for adding a new one.

Register TRBOnet Servers (Main Dialog):

- Buttons: Add, Edit, Delete
- Table:

Server Label	Server Address	Port
Server 1	10.10.164.45	4021
Server 2		

Register TRBOnet Server (Sub-dialog):

- Label: Server 3
- Address: 127.0.0.1
- Port: 4021
- Redundant servers:

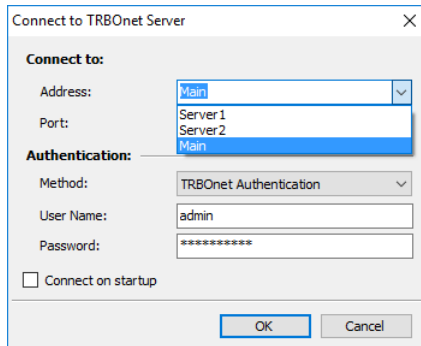
	Address	Port
- Buttons: Add, Delete, OK, Cancel

Red arrows indicate the 'Add' button in the main dialog and the 'OK' button in the sub-dialog.

- Click **Add** to add a TRBOnet Server:
 - **Label** – enter a name for the new primary server.
 - **Address** – enter the primary server's IP Address.
 - **Port** – specify the command port of the primary server.
 - **Add** – click and specify the IP address and port of the redundant (backup) server for the primary server being registered.
 - Click **OK** to save settings and close the dialog box.

5 Connecting Dispatch Console to Servers

- Go to **File > Connect to TRBOnet Server**, and from the drop-down list select the primary server you created:



- Click **OK** to connect to the primary server.

Now you are connected to the primary server. In case of a lost connection to the primary server, the Console will try to restore the connection within 30 seconds. After 30 seconds have passed, the console will change connection to the redundant server automatically. When the primary server is restored, the Dispatch Console will reconnect to the primary server automatically.