





TRBOnet Map Server User Guide

Version 1.5

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Contents

1	Introduction1			
	1.1	Abou	t This Guide1	
	1.2	Abou	t TRBOnet Map Server1	
	1.3	Conta	acts1	
2	Hare	dware a	nd Software Requirements2	
3	Inst	allation	and Operation3	
	3.1	Insta	lling and Applying License3	
	3.2	Addir	ng Map Services4	
	3.3	Addir	ng Address-by-Location Services5	
		3.3.1	Creating SQL Database6	
		3.3.2	Importing Data7	
		3.3.3	Test Request via Database7	
	3.4	Addir	ng Location-by-Address Services8	
	3.5	Insta	lling and Starting TRBOnet MapServer Service9	
		3.5.1	Test Request for Address via Service10	
		3.5.2	Test Request for Location via Service11	
4 TRBOnet Dispatch Console		spatch Console		
	4.1	Addir	ng Custom Map 12	
	4.2	Addir	ng Geocoding Services13	



1 Introduction

1.1 About This Guide

This document is intended for administrators setting up evaluation and proofof-concept deployments of MOTOTRBO Dispatch over IP solutions. The document describes the steps to configure and use TRBOnet Map Server.

1.2 About TRBOnet Map Server

TRBOnet Map Server is a software application that allows you to configure and run local Geocoding and Map Cache services, which can be used to improve the performance of the TRBOnet Enterprise/PLUS software when working with maps.

By using a local Geocoding service, TRBOnet Enterprise/PLUS will reduce the time taken to generate reports that contain address information, because the local Geocoding server returns addresses at a rate 100 times as fast compared to online Geocoding servers (roughly, 1 msec vs 100 msec).

When a local Map Cache service is used, TRBOnet Enterprise/PLUS will request map tiles via the local Map Tile server that in turn will download the map tiles only once. Thus, by using the local Map Cache service, TRBOnet Enterprise/PLUS gains the following advantages:

- Faster map download
- Minimized Internet traffic
- Reduced number of downloaded map tiles when using commercial map services
- Granted access to the maps when there is no Internet connection (all dispatchers will have access to the maps via a local Map Tile server)
- Single source update of the maps

1.3 Contacts

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



2 Hardware and Software Requirements

Component	Requirement
CPU	x64 processor with a clock speed of at least 2 GHz
Memory	4 GB and more according to the increase in database size
HDD	10 MB for installation files + 200 GB for data storage
Supported OS	Windows 7/8.x/10, Windows Server 2008/2012/2016
Software	.NET Framework 4.6.2 or later, MS SQL Server Express 2008 Edition or higher
Internet connection	Required for address-to-coordinates conversions, map tile downloads and updates



3 Installation and Operation

3.1 Installing and Applying License

- Install TRBOnet Map Server to the desired folder on the PC.
- Apply the license file.

Go to the TRBOnet Map Server installation folder (default path is C:\Program Files (x86)\Neocom Software\TRBOnet Map Server) and paste the license file to that folder.

Note: The administrator privileges may be required depending on your system configuration.

PC > Local Disk (C:) > Program Files (x86) >	Neocom Software >	TRBOnet Map Server
Name	Date modified	Туре
	01-Jun-17 13:29	File folder
Map_Server_2017_06_01.license	01-Jun-17 13:37	LICENSE File
Map_Server_2017_06_01_INFO.txt	01-Jun-17 13:37	Text Document
Npgsql.dll	30-May-16 07:00	Application extens
NS.Common.dll	21-May-17 14:25	Application extens
🚳 NS.Map.Common.dll	21-May-17 14:25	Application extens
🚳 NS.Map.Database.dll	21-May-17 14:26	Application extens
🚳 NS.Map.Wpf.dll	21-May-17 14:26	Application extens
🔞 NS.MapServer.exe	21-May-17 14:27	Application
NS.MapServer.Objects.dll	21-May-17 14:25	Application extens
NS.MapServer.Service.exe	21-May-17 14:26	Application
NS.MapServer.Service.exe.config	20-Sep-16 12:42	XML Configuratio
NS.MapServer.Service.InstallLog	01-Jun-17 13:46	INSTALLLOG File
NS.MapServer.Service.InstallState	01-Jun-17 13:46	INSTALLSTATE File
INS.MapServer.TestClientApp.exe	21-May-17 14:26	Application
NS.MapServer.TestClientApp.exe.config	01-Nov-16 14:21	XML Configuratio
NS.MapServer.WCFClient.dll	21-May-17 14:26	Application extens
NS.MapServer.WCFService.dll	21-May-17 14:26	Application extens
🚳 protobuf-net.dll	16-Jun-16 18:38	Application extens
System.Data.SqlServerCe.dll	05-Jan-11 22:36	Application extens
System.Windows.Interactivity.dll	18-Feb-13 19:30	Application extens

Note: If you don't have a license, contact **info@trbonet.com**. Provide the HWID of the PC where TRBOnet Map Server is installed, if requested by the sales manager.

If you haven't applied the license file, when you launch TRBOnet Map Server for the first time, the following message will appear:



	x
Lock System	
This software won't run without a valid license fil Either a valid license file could not be found or yo license file is expired.	e. Dur
ОК	_

3.2 Adding Map Services

- Run TRBOnet MapServer Configurator.
- In the left pane, select **Map Services** (1).
- In the right pane, click the **Add** button (2).

Contract MapServer Configurator		_ _ ×	
رُبِيَ Uninstall Start Help		software	
Address-by-Location Services Address-by-Location Services Location-by-Address Services Location-by-Address Services License Information	Name Description Add Map Service Map service type MAPNIK Active: Yes Add Map Service Service ID: MapServer Description Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thconet/maplie/service.idag/Server/fa/fd/ Service URL: http://127.00.15080/thcone	Wap Configuration Map option: Flags: Coordinates Builder Root cache directory: C/Users/v.kulinichev/AppDatal.Lcal/Temp/MapCache Expire tiles: Newr (infinity) Tile source: MAPNIK Cr/Users/v.kulinichev/AppDatal.Lcal/Temp/MapCache Expire tiles: Newr (infinity) Cr/Users/v.kulinichev/AppDatal.Lcal/Temp/MapCache Devise tiles: Newr (infinity) Cr/Users/v.kulinichev/AppDatal.Lcal/Temp/MapCache Cr/Users/v.kulinichev/AppDatal.Lcal/Temp/MapCache Cr/Users/v.kulinichev/AppDatal.Lcal/Temp/MapCache Cr/Users/v.kulinichev/AppDatal.Lcal/Temp/MapCache/Temp/MapCache Cr/Users/v.kulinichev/AppDatal.Lcal/Temp/MapCache/Temp/Map	Base 1.0051006 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 0000.007 100 000000 100 0000.007 100 000000 100 0000.007 100 0000000 100 000000 100 00000000 100 0000000 100 0000000000000000000000000000000000
Language: ENG ~	Apply	🖺 OK 🗙 Cancel	

In the 'Add Map Service' dialog box:

- Specify Name and Service ID (3)
- Map service type

Click the **Browse** button (4).

In the 'Map Configuration' dialog box:

- **Tile source** (5) From the drop-down list, select the desired source.
- Browse to the desired **Root cash directory** (6).
- Click Apply.
- Click **Download** (7).

In the 'Bulk Tile Downloading' dialog box:

TRBOnet Map Server — User Guide



🔕 Bulk Tile Downloading			-	×
Region from: N21°57'34.96" W089°18'48.75" to S	21°57	''34.96'	" E08	39°3
Expire tiles days: 1 Redov	wnloa	d all til	es	
Zoom level: 12 Tiles to download: 1,	394,9	50		
	• •		•	• •
Show tiles preview Show tiles progress	/			
Start		Clos	se	

- Navigate to the desired area and select the zoom level.
- Click **Start** and wait while the maps are loading.

3.3 Adding Address-by-Location Services

- In the left pane, select Address-by-Location Services (1).
- In the right pane, click **Add** (2).

C TRBOnet MapServer Configurator					-	
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🖧 Network	Active	Name	Туре	Description	Accuracy	Priority
Map Services Address-by-Location Services Address-by-Location Services Location-by-Address Services Location-by-Address Services Test request for location via services License Information		1				
	+ A	id X Rem	love /	Edit	† Up	↓ Down
Language: ENG ~			6	Apply	OK 2	× Cancel

In the 'Add Service: Get Address by Location' dialog box:



Add Service: Get Address	by Location	1
Geocoding service type:	OSM	
Active:	Yes	
Name:	OSM Service 1	
Description:		٦
Accuracy:	100 [m]	
Use POI object name as address:	No ~	
Address format:	Street, city, country ~	
Use postal code:	Yes ~	
Use country name:	Yes ~	
Add deviation as part of address:	No	
Priority:	0	
Service URL:	http://127.0.0.1:8082/trbonet/service=addressresolve⪫={lat}&lon={lo	n}
	OK Cancel	

- Specify Name and Geocoding service type (OSM or GNAF).
 - Note: The OSM services can be used for almost the entire world. For Australia, it is recommended to use the GNAF services. Below, we'll consider an example of the OSM type service.

3.3.1 Creating SQL Database

In the left pane, select
 Address-by-Location Services > Service Name >
 SQL Server connection (1).



In the right pane, specify the following settings:

Server

Specify SQL Server name (2)



Database

Enter a name of the database (3).

Click Create Database (4).

3.3.2 Importing Data

In the left pane, select
 Address-by-Location Services > Service Name > Import OSM data (1).



• Click the **Browse** button (2) and navigate to the desired OSM or PBF file.

Note: You can also download required files from the Web. Click the corresponding link in the upper part.

• Click the **Import** (3) button and wait for the import process to complete.

3.3.3 Test Request via Database

This is a test request for address performed by accessing the given database.

 In the left pane, select
 Address-by-Location Services > Service Name > Test request via database (1).



🧑 TRBOnet MapServer Configurator		- • ×
رُبِيَ Uninstall Start Help		Neocom software
 Retwork Map Services Address by-location Services SQL Service 1 SQL Service 1 SQL Service 3 Of Mata Services Test request variable information Test request variables Test request variables Test request for address via services Test request for location via services 	Latitude: \$1508529 Longitude: 0076621 Get Address Display on Map Resolve address via: • Direct access to database • Direct access to database • UPT request to TR8Onet MapServer • WCF request to TR8Onet Ma	Double-click
Language: ENG ~	(E) Apply	🖹 OK 🗙 Cancel

• Enter the Latitude and Longitude of a location and click Get Address (2). Click Display on Map (3) to see the desired location in the center of the Map pane.

Or:

• Choose the **Mark the point and get the address** option (4) and doubleclick on the map.

3.4 Adding Location-by-Address Services

- In the left pane, select **Location-by-Address Services** (1).
- In the right pane, click **Add** (2).

쉱 TRBOnet MapServer Configurator 🛛 🗕 🗆 🗙						
Ininstall Start Image: Start Help					S	eocom oftware
<mark>പ്പ</mark> Network	Active	Name	Туре	Description		Priority
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 Address-by-Location Services 						
Test request for address via services						
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\circledast Test request for location via services		1				
🚍 License Information						
		/ ²				
	+ A	dd 📉 🗙 R	emove 🖊	Edit	t Up	↓ Down
Language: ENG ~			8	Apply	🖹 ОК	imes Cancel

In the 'Add Service: Get Location by Address' dialog box:



쉱 Add Service: Get I	Location by Address					
Geocoding service type:	OSM ~					
Active:	Yes ~ 1					
Name:	Get Location					
Description:	Get location by address 2					
Priority:	0					
Service URL:	$\underline{http://127.0.0.1:8081/trbonet/service=getlocation&address=\{address\}$					
Test request:						
Address: 1000 5th Ave,	New York 🗸 🗸 🗸					
Get Location	-4 3					
Query result for the address 1000 5th Ave, New York :						
<pre><place -73.9633641138519<br="" place_id='19881;
boundingbox="40.7778/
lon='>Manhattan. New York Coll Coll Manhattan. New York Coll Coll Coll Coll Coll Coll Coll Coll</place></pre>	<					

- Specify Name (2) and Geocoding service type (1) (OSM, Google, or Custom).
- To perform a test request via the selected service, enter the **Address** (3), click **Get Location** (4) and see the result below (5).

3.5 Installing and Starting TRBOnet MapServer Service

• Click the **Install** button on the toolbar.

C TRBOnet MapServer Configurator		- • ×
Install Start Help		neocom software
 Network Map Services Address-by-Location Services Test request for address via services Location-by-Address Services Test request for location via services Test request for location via services License Information 	✓ Turn on built-in HTTP server to process inco Port: 8081 Request timeout: 30 [sec] ☐ Turn on built-in Windows Communication F Protocol: HTTP Base Port: 8082 Request timeout: 30 [sec] [sec]	ming geocoding requests oundation server
Language: ENG ~	E	🖞 Apply 🖺 OK 🗙 Cancel



To start the service:

• On the toolbar, click the **Start** button.



Note: Once you have modified any settings in TRBOnet MapServer Configurator, click the **Apply** button and confirm restarting the services.

3.5.1 Test Request for Address via Service

This is a test request for address performed by successively accessing databases of all running Address-by-Location services.

• In the left pane, select Test request for address via services (1).



• Enter the Latitude and Longitude of a location and click Get Address (2). Click Display on Map (3) to see the desired location in the center of the Map pane.



Or:

• Choose the **Mark the point and get the address** option (4) and doubleclick on the map.

3.5.2 Test Request for Location via Service

This is a test request for location performed by successively accessing all running Location-by-Address services.

- In the left pane, select **Test request for location via services**.
- In the right pane, enter the **Address** and click **Get Location**. See the result below.





4 **TRBOnet Dispatch Console**

This section describes how to add Map and Geocoding services to TRBOnet Dispatch Console.

• Run TRBOnet Dispatch Console.

4.1 Adding Custom Map

• On the Maps menu, click Select Active Map (1).

TRBOnet Enterprise 5.2 / Dispatch Console	- D >			
File View Map Tools Help	_1			
Location Select Active Map	Map 🔮 🎒 🕒 Objects			
Save Online Map Data	Select Map X			
Map Content				
🚯 💌 125 🔛 Cross dias	Available Mage			
K S 235 Geocoding	Available maps			
(* S 555 Open New Map in Tab				
S 333 Open New Map in Window	THUNDERFORE Add Map			
Google Earth	THUNDERFORE			
Voice Show Radios on Google Earth	BING_ROAD Name: MapServer			
	BING_AREA Map Type: Custom Map			
Cocation Fracking	GOOGLE ROAD IIBI http://127.0.0.1:8080/thopet/mantile/service=ManServer/(z)/(s)/(s)			
🙀 Job Ticketing	GOOGLE_SATEL 3 Example: http://tile.openstreetmap.org/(z)/(x)/(y).png			
0				
Route Management	THUNDERFORE			
	<			
RFID Tracker	Add 📕 Edit			
Text Messages	Latitude: 59°56'25,95" N 1/. 10			
	Longitude: 30°16'48,01" E 09.10 OK Cancel			
🔮 Voice Recording	06.10/2017 10/00/27 Report Rep			
83	06.10.2017 18:39:39 Radio Online			
Event Viewer	05.10.2017 17:29:40 Radio Offine			
Radio Allocation	06.10.2017 17:23:00 Radio Online			
	06.10.2017 17:21:37 Radio Offine			
administration	Recent C Recent Calls Request Radio State Active Tasks Active Ro User Acti Beacons Beacon E Tag List			
🚯 127.0.0.1 🌚 🚯 🙎 Administrator 🔝 Licensed to: demo				

- In the 'Select Map' dialog box, click **Add** (2).
- In the 'Add Map' dialog box:
 - From the **Map Type** drop-down list, select **Custom Map** (3).
 - In the URL text box, enter the URL taken from TRBonet MapServer Configurator (Map services > Service > Service URL) (4).



4.2 Adding Geocoding Services

• On the Maps menu, click Geocoding (1).

File View Map Tools Help		
Location Select Active Map	Мар	🔮 🐳 🔛 Objects
Save Online Map Data	Floorplan 1 X MapServer X	i = i
Map Content	😡 🔾 👷 🏠 🗸 Filter: 🖲 🮯	💿 🛞 📅 🍸 🧝 Show Beacons:
🗆 🚰 Cast 🚔 Print	Gencoding	🗙 🛃 📴 Beacons
Geocoding		🖨 🖓 🆢 🖓 Map Objects
Open New Map in Tab	Load data from TRBOnet Server if	Geocoding services are inaccessible from local PC 🛛 🚰 🔤 Bloom
Onli Open New Map in Window	Server Name	
🛛 🥥 Onli 👝 Gazala Earth	Google	Map Server for Geocoding
Coogle Earth	Vominatim	
Onli Clark Balling Clark		Server Name: MapServer
Offline (15)		
		Get address by coordinates
		http://127.0.0.1:8081/trbonet/service=addressresolve⪫=flat}&lon=flon}
Voice Dispatch	,2	
F		3
Location Tracking		Get coordinates by address
0-0	Add Delete	http://127.0.0.1:8081/trbonet/service=getlocation&address=(address)
Job Ticketing		Test
<u> </u>	Default	4
Route Management	Deraut	
X		OK Cancel
Text Hessages	Radio State	
Soice Recording	Radio 27	🔺 🧰 Show Notes 🤯 Add Note 🔛 Extended Note 🗔 Add Message
¥,		Date V Dispatcher State
Reports	Slot 1	2/26/2019 10:52:23 AM Radio Online
ч.	Off Duty	2/26/2019 10:44:28 AM Radio Online
Event Viewer	GP5: 2/26/2019 10:53:23 AM	2/19/2019 4:50:54 PM Radio Offline
	Speed: 0.0 km/h	2/19/2019 1:22:55 PM Radio Online
Radio Allocation	Altitude: Unknown	2/19/2019 1:17:51 PM Radio Offine
v	Region: NO Latitude: 59.9406820	2/12/2012 12:45:42 PM Radio Unine
Administration	Recent C., Recent Calls Request	Padio Stata Active Tasks Active Ro. Liser Acti Rearons Rearon F. Tan Lis
-	interest and interest	teste state stat

- In the 'Geocoding' dialog box, click Add (2).
- In the 'Map Server for Geocoding' dialog box:
 - Make sure the Get address by coordinates option is selected and, in the text box below, enter the URL taken from TRBonet MapServer Configurator (Address-by-Location Services >Service > Service URL) (3).
 - Make sure the Get coordinates by address option is selected and, in the text box below, enter the URL taken from TRBonet MapServer Configurator (Location-by-Address Services >Service> Service URL) (4).