

When implementing both GeoServer and PostGIS in a production environment, you will need to allow client access to those instances so that the WMS layers and spatial datasets can be accessed from local machines. Once this is correctly setup, you can then use applications such as QGIS, Map3D and webGIS to access these spatial resources, implementing a single source of truth accessed from a centralised location.

One key requirement is that your chosen Applications Server will allow remote connections through the PORTS that both GeoServer and PostGIS are using. If you have chosen the default settings when installing these applications, then you will need to ensure PORTS 5432 (PostGIS) and PORT 8080 (GeoServer) are opened in the configuration of your Remote Server.

Configurat	ion			Assigned IP		
Protocol -		To Port	Allowed IP			
ICMP	All	All	All	0	•	
ТСР	3389	3389	All	0	•	• Assign • Delete
ТСР	443	443	All	0	•	
ТСР	21	21	All	0	•	
ТСР	8080	8080	All	0	•	
ТСР	80	80	All	0	•	
ТСР	8447	8447	All	0	•	
тср	8443	8443	All	0	•	
ТСР	5432	5432	All	0	•	

GeoServer:

When installing GeoServer ensure that you set the server instance up to run **automatically as a SERVICE**. This will ensure that GeoServer is running continually on the Server machine, and does not need to be manually Started.

To enable users to access your GeoServer instance from a client machine, you simply need to supply the IP address of the Server machine within the GeoServer URL instead of the local host URL.

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So, for example instead of using - http://localhost:8080/geoserver/web/

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Use - http://IPADDRESS:8080/geoserver/web/





Also, to ensure that users can open your WMS layers you will need to **grant Access Rights.** This is undertaken using the Service Access Rules. For example, if you wish all users to be able to access all your WMS layers, then edit the Security > Services > **Service Access Rule List** to enable users with the **Anonymous ROLE** to access the WMS feeds.

Service access rules list Manage service level security: edit, add and remove access rules Add new rule Remove selected							
<< < 1 >>> Results 1 to 2 (out of 2 items)		🔍 Search					
Rule path	Roles						
□ **	*						
wms.* ADMIN,ROLE_ANONYMOUS							
<< < 1 > >> Results 1 to 2 (out of 2 items)							

Remember, that you should create other Roles and Rules within your GeoServer instance so that you can control which users can view and edit your WMS and WFS feeds.

Now that GeoServer has been correctly installed you can use a client application, such as QGIS or Map3D to open a GeoServer WMS layer from your remote server machine.

In Map3D use the Data – Data Connections option.

Data Conne Add A Add	tions by Provider cGIS Connection cSDE Connection terprise Industry Model O ySQL Connection DBC Connection acle Connection stgreSQL Connection Ster Image or Surface Co PC Connection AP Connection DE Connection Start Connection MS Connection MS Connection	Data Connect help OSGeo FDO Provider for VMS Add a New Connection Read access to OGC WMS-based data store. Connection name: Remote GeoServer Server name or URL: 998/height=7688/srs=EPSGe277008/format=application/openlayers Version: Default version Show proxy settings Connect	~	*
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Choose Add WMS Connections and then and paste the URL into the Server Name or URL window e.g.

http://IPADDRESS:8080/geoserver/DynamicMaps/wms?service=WMS&version=1.1.0&request=GetMap&la yers=DynamicMaps:LSOA_Extra&styles=&bbox=148458.109375,8201.314453125,657897.125,660760.43 75&width=599&height=768&srs=EPSG:27700&format=application/openlayers

Press Connect and enter the username and password that you allocated within GeoServer to your users.

ner	User Name & Password X	
Jtil Jtil Sur	Enter credentials for the connection:	nicl
al C	User Name: admin Password:	
on n	Remember password	
	Login Cancel	

This will connect to the GeoServer instance on the remote server and list the WMS layers that you can access.

Add Data to Map									
Available sources in this connection. Select Items to add to the map as layers.									
Schema		Image Format	Server CS Code	Style	E ^				
🖃 📑 🎯 GeoServer We	eb Map Ser								
🗹 📦 LSOA_ 🗌 📦 LSOA_	Extra SHP	png png	EPSG:4326 EPSG:4326	<default> <default></default></default>					
<					>				
Combine into one lay	/er:								
Combined Layer Info									
Image Format Serv	er CS Code	Background							
🗌 Cache WMS data 🖉 Add to Map 👻									
Map Coordinate System									
< unknown > < unknown >									

Choose any WMS layer by ticking it and press **Add to Map**, and the WMS is then added to your Map3D map.













PostGIS:

To connect your Remote PostGIS Server, using QGIS, you will need to configure the PostGIS connection using the following parameters:

- Name Any name for the Connection (this is not the PostGIS DB Name)
- Host The IP Address of the Remote Server
- **PORT –** The PORT on that Remote Server that PostGIS is using
- Database The exact name of the PostGIS Database







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🌠 Create	New PostGIS connection	?	×						
Connect	on Information								
Name	ame TryMapthat								
Service									
Host	IP ADDRESS								
Port	5432								
Database	TryMapThat								
SSL mode	disable		•						
Authent	cation Configurations								
Username	postgres	Save	e						
Password	•••••	Sav	e						
	Test Connection		51						
Only st	ow layers in the layer registries								
Don't r	esolve type of unrestricted columns (GEOMETRY)								
Only lo	ok in the 'public' schema								
Also lis	tables with no geometry								
Use es	imated table metadata								
	OK Cancel	Help							

Remember that for your Remote server to accept connections, the PORT that PostGIS is using should be setup to allow connections. If not when you try to connect using a client application (e.g. QGIS) on a local machine, you will likely receive the following connection error message.

"Could not connect to server: Connection timed out (0x0000274C/100060) Is the server running on host IPADDRESS and accepting TCP/IP connections on Port 5432?"

Once this is resolved and you try to connect again, you may then encounter another issue when connecting, where PostGIS itself by default does not allow remote connections. You may receive the following error message, where the pg_hba.config file for PostGIS does not automatically allow remote connections.

"FATAL: no pg_hba_conf entry for host "your IP Address", user 'username', database "Database Name", SSL off."







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The reason for this is that PostGIS uses a config file called **PG_hba.config** to define which remote users can connect to the PostGIS instance. By default, it will likely only allow local connections and not connections from a remote machine.

To remedy this, you simply need to find the PG_hba.config file on the Server machine and edit it within Notepad to add a line allowing remote connections. For example;

Allow remote connections from a client machine with a **fixed IP Address**:

# TYPE	DATABASE	USER	ADDRESS	METHOD
# IP⊽4 J	local connection:	s:		
host	all	all	127.0.0.1/32	md5
# IPv6 J	local connection;	5:		
host	all	all	::1/128	md5
host	DatabaseName	all	IPADDRESS/32	md5
# Allow	replication con	nections from lo	calhost, by a user with	the
<pre># replic</pre>	cation privilege			
#host	replication	postgres	127.0.0.1/32	md5
#host	replication	postgres	::1/128	md5

Then to allow connections to PostGIS from any client machine use the following line:

# TYPE	DATABASE	USER	ADDRESS	METHOD
# IPv4	local connection	s:		
host	all	all	127.0.0.1/32	md5
# IPv6	local connection	s:		
host	all	all	::1/128	md5
host	DatabaseName	all	IPADDRESS/32	md5
host	DatabaseName	all	0.0.0/0	md5
# Allow	<pre>replication con</pre>	nections from	localhost, by a user with	the
# repli	cation privilege			
#host	replication	postgres	127.0.0.1/32	md5
#host	replication	postgres	::1/128	md5

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NOTE – Autodesk Applications, such as MAP3D and Infraworks, will always try to connect to the default **postgres** database, even if it is not the database name that you wish to connect to. Therefore, ensure that your **PG_hba.config file** has a line item that allows connections to the postgres database.

PostGIS will now accept connections from all remote PC's as long as the user enters the username and password. Follow this link for more useful info on configuring the PG_hba.config file:

https://www.postgresql.org/docs/9.5/static/auth-pg-hba-conf.html

Now that PostGIS has been correctly installed you can use a client application, such as QGIS or Map3D to open spatial layers from your remote server machine.

In Map3D use the **Data – Data Connections** option.

Setup the config as per the below. Where the **Service Name** will be the IP Address of the Server machine with a colon and then the Port Number that PostGIS is running on. E.g. 11.11.11.11.5432

× (Data Connections by Provider	? Data Connect help
×	🗛 Add ArcGIS Connection	OSGeo FDO Provider for PostgreSQL/PostGIS
	Add ArcSDE Connection	Add a New Connection
	Add Enterprise Industry Model Connection	Read/write access to PostgreSQL/PostGIS-based data store. Supports spatial data types and spatial
	Add ODBC Connection	query operations.
	🙀 Add Oracle Connection	Connection name:
	Add PostgreSQL Connection	Remote Server
	Add Raster Image or Surface Connection	Service name:
	Add SHP Connection	IPADDRESS
	Add SQL Server Spatial Connection	
	Add SQLite Connection	Login
	Add WFS Connection	Data store:
	Remote GeoServer	× .
⊢		Connect
NEC		Connect
N		
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DA		
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Choose **Login** and once the connection to the Remote Server has been made you can choose from the list of Databases in that PostGIS instance.











	Login
Data store:	
	~
Add New Data Store TryMapThat postgres	
	Connect

Choose the **Database** and press **Connect** and you will be able to open any DB table.

Add Data to Map									
Available sources in this connection. Select Items to add to the map as layers.									
Edit Coordinate Systems Refresh									
Schema	Coordinate System	^							
🗌 📦 iso_metadata	< unknown >								
iso_metadata_reference									
🗌 📦 LSOA_Extra	SOA_Extra BritishNatGrid								
pointcloud_columns									
pointcloud_formats									
🗌 📦 UndergroundUtilityLines	BritishNatGrid								
⇒ 🗌 tiger		~							
		🕰 Add to Map 👻							
Map Coordinate System									
< unknown >									
< unknown >									
< unknown >									
Disconnect from Feature Source									
To reconfigure this connection, discon	nect, and then edit the information.	Disconnect							

Select the layer e.g. the Utility Lines, and then choose to Add them to the Map.

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	1	5.246459731494	0	<null></null>	0	348811.254,312	348811.254,312	<null></null>	256	Underground U	0	, key	
	2	1.191244810351	0	<null></null>	0	348793.8842,31	348793.8842,31	<null></null>	256	Underground U	0	Sur	
	3	4.869468613064	0	<null></null>	0	348798.1947,31	348798.1947,31	<null></null>	256	Underground U	0		
	4	0.581194640914	0.021926684648	<null></null>	0	348854.8562,31	348854.8562,31	<null></null>	256	Underground U	0		
	5	5.360409518712	0.025257294171	<null></null>	0	348850.0311,31	348850.0311,31	<null></null>	256	Underground U	0		
	6	0.413605014215	0.015565436498	<null></null>	0	348846.4753,31	348846.4753,31	<null></null>	256	Underground U	0		
	7	5.076813728201	0.194851278530	<null></null>	0	348790.6934,31	348790.6934,31	<null></null>	256	Underground U	0		
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