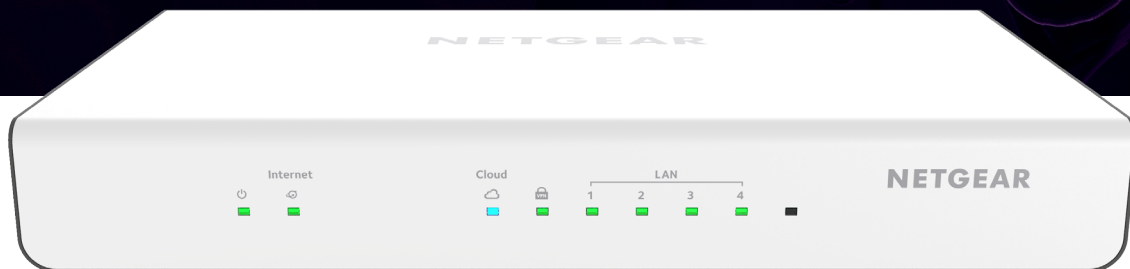


NETGEAR® Insight™
Instant VPN
Router

BR500

NETGEAR®



NETGEAR BR500

White Paper

INTRODUCTION

Many businesses today have either employees working from home or from a branch office that need to access company data in headquarters in an easy and secure way. Businesses need to enable these workers to connect to the company network as if they sat at a desk in the main office, in order to increase protection, efficiency and productivity.

To do so, a company that has offices in two locations or remote workers can connect them using a VPN (Virtual Private Network). A VPN, allows an employee to create a secure connection to his business network over the Internet, and be connected to it as if he was in the office himself. Employees can then for example use file servers and printers or any other assets which are in the remote office and not physically in the same location.

A VPN also anonymizes the user and virtually changes the user's location, an added plus if the user is traveling for business and wants to access content from home that may otherwise be blocked. It also makes all connections totally private and secure. By using a VPN for remote connections, small businesses build in a layer of security they otherwise may not have. The VPN for remote business networking keeps sensitive information private. It's an added safety measure if you already work on a secure network, but it's critical to use VPNs over open public Wi-Fi connections such as coffee shops, hotels and airports. But today's VPN solutions can be lengthy and tedious to configure, making it hard to implement in small businesses that do not have any IT expertise.

NETGEAR Business has leveraged Insight Management's intuitive and simplicity solution to implement the easiest VPN set up and configuration of the market in its new product, the "Insight Instant VPN Router" (BR500). With the Insight Instant VPN Router and NETGEAR Insight app or Cloud Portal, any business, big or small, tech savvy or not, can create a secure VPN in an instant. With the Instant VPN option* in Insight, business employees can set up a VPN in one simple step either from their home to the office or from a business site to another. Their data and their business is protected in an instant. It also allows them to rapidly access any file or device located in the office as if they were there, making collaboration easier and preventing data duplication on all sites.

To set up a VPN connection, the process is usually to create and configure a virtual interface that will be used by the VPN service to establish a link to the internet. All data that is being exchanged over this link then has to be encrypted with keys known to the end parties and finally there needs to be a mechanism by which the end parties can authenticate each other. Completing the above and creating a working setup can be daunting for many users that are not familiar with the internal workings of an IP network and even worse when security knowledge is involved.

Brokered by Insight cloud platform, BR500 nodes in each site would form a mesh topology to be securely connected with each other allowing the users of these networks to share resources and access assets across an encrypted and secure connection. Each node will generate a one-time public and private key pair at runtime. The public key is then sent over to the VPN counterpart which already has been authenticated using public key cryptography.

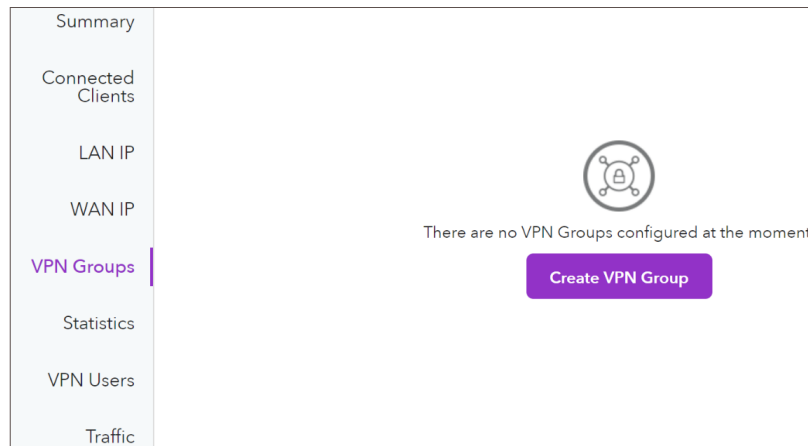
There are separate channels used for data and signaling between nodes. Signaling channel is used to exchange routing and security keys with the Insight cloud as the broker. Data packets are exchanged in a peer-to-peer fashion with no cloud involvement, and are encrypted using symmetric cryptography. Symmetric keys are exchanged using public key cryptography similar to classic TLS handshake. Message authentication codes ensure data packet integrity. Sequence numbers would prevent anti-replay attack. Finally, to utilize the bandwidth, data packets can be compressed optionally.

At no point in the process of creating a VPN connection, the user needs to know the details of the IP network or security. This is all done by Insight with minimal intervention from the user.

Screen shots below are highlighting this fast and easy process.

SITE-TO-SITE VPN

1. Click **VPN Groups < Create VPN Group**, if there are no VPN Groups that exist click “+” sign to add a new VPN.



2. When you are Creating VPN Group the user must give a **VPN Group Name** and then **save**.

Create VPN Group

A VPN Group is a collection of BR500 devices that can all communicate with each other. VPN Groups provide isolation so that devices in one group cannot communicate with devices in other groups.

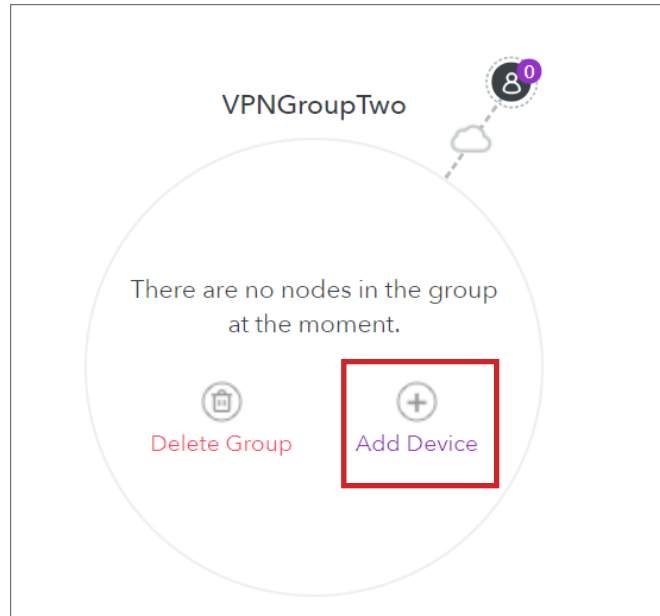
VPN Group Name

VPNGroupTwo

Cancel

Save

- On the "VPNGroup Two" Click **Add Device**



- The next screen shows available Routers. Simply select the one you intend to create a VPN tunnel between and then **save**.

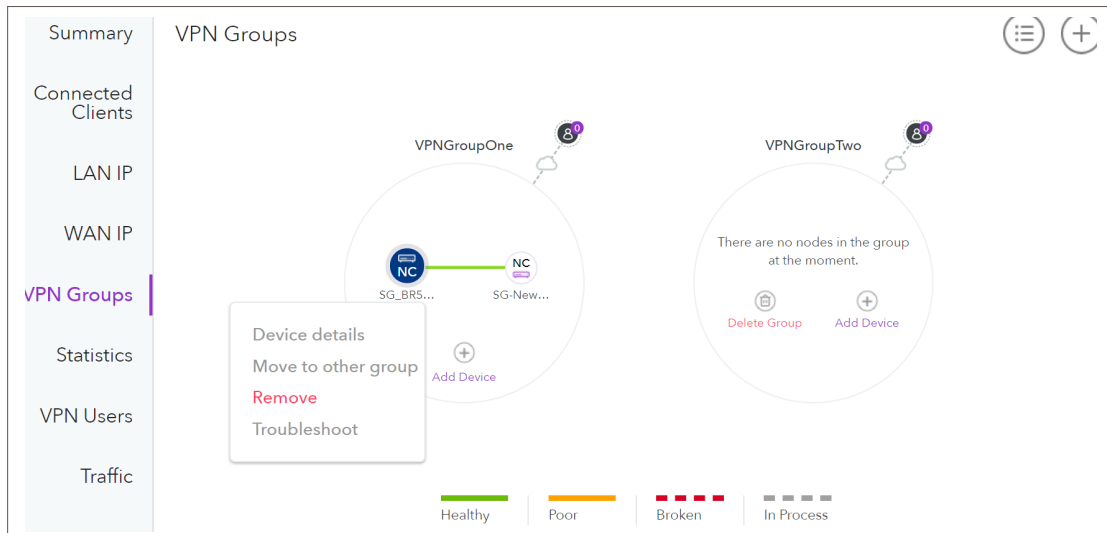
Add Devices
×

There can be at most three nodes in a group. Current group size: 0

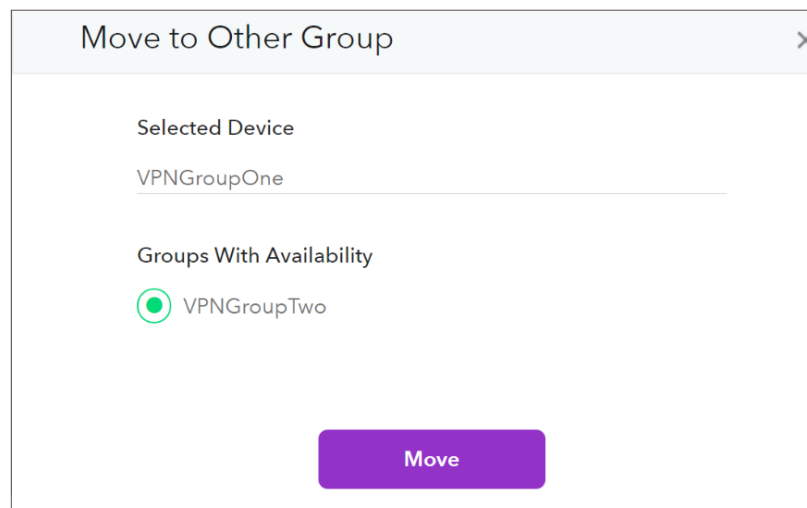
Nader's Cube		—
<input checked="" type="checkbox"/>	SG_BR5001	
Newsha's Cube		—
<input checked="" type="checkbox"/>	SG-Newsha	

Cancel
Save

5. On the **VPN Groups** tab you can see the **Device Details**, **Move to other groups**, **Remove**, and even **Troubleshoot**




6. When you click on **Move to other group** the next screen shows **Groups with Availability**, then click **Move**.





7. Troubleshoot


Troubleshoot

SG-Newsha has not connected to Insight Services. You can try following to troubleshoot.

 Ensure that the device is powered on and connected to network.


 Ensure that device has access to public internet.

 Device is Standalone mode, switch to Insight mode using device UI.

 Device is running older firmware. Please upgrade to the latest version using device UI.

Check Again

8. Statistics



Status: Connected
Last Seen: 1:57 pm today

Summary

Connected Clients

LAN IP

WAN IP

VPN Groups

Statistics

VPN Users

Traffic

Temperature

NA °C

CPU Usage

0.00%

WAN Tx Data

0.00 KB

WAN Rx Data

0.00 KB

LAN Tx Data

0.00 KB

LAN Rx Data

0.00 KB

REMOTE USER VPN

- Under VPN Users, you may view VPN User Details. Click the “+” sign adjacent to **VPN User**

Summary

Connected Clients

LAN IP

WAN IP

VPN Groups

Statistics

VPN Users

Traffic

VPN Users

<

- Enter the **email address** of the User you want to invite

Add VPN User

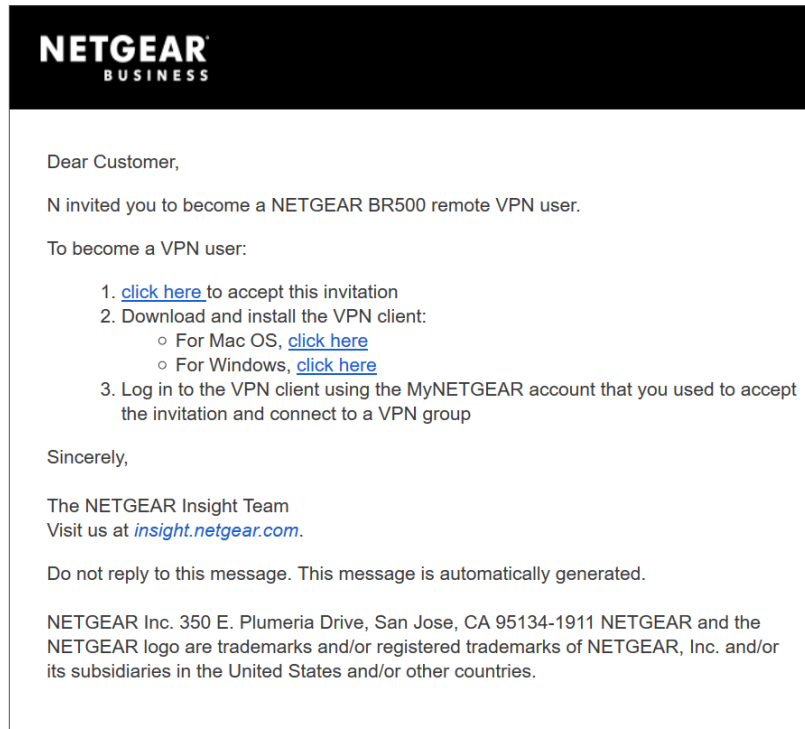
Enter an email address of a user you'd like to give access to this network. The user will receive an invitation via email.

Email Address

eodhiambo@netgear.com

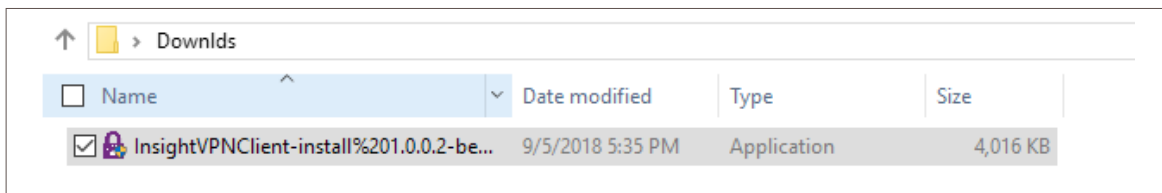
Invite

- The User you invited should receive an email with easy click VPN setup details. To accept the Invite, the User will click on **Number 1**.

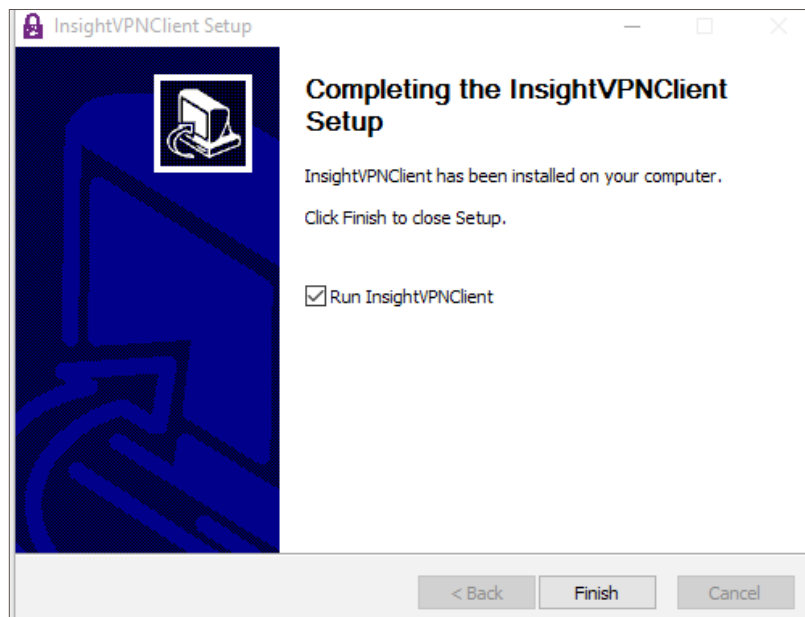


HOW TO DOWNLOAD VPN CLIENT FOR WINDOWS OR MAC

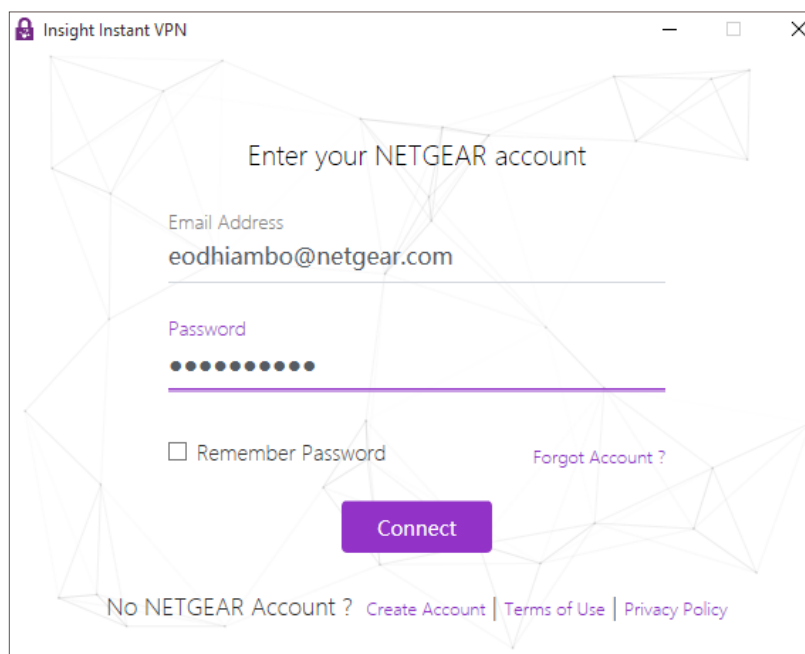
- User clicks on **Number 2** in the email to download VPN client for Windows or Mac, and then install the VPN client application



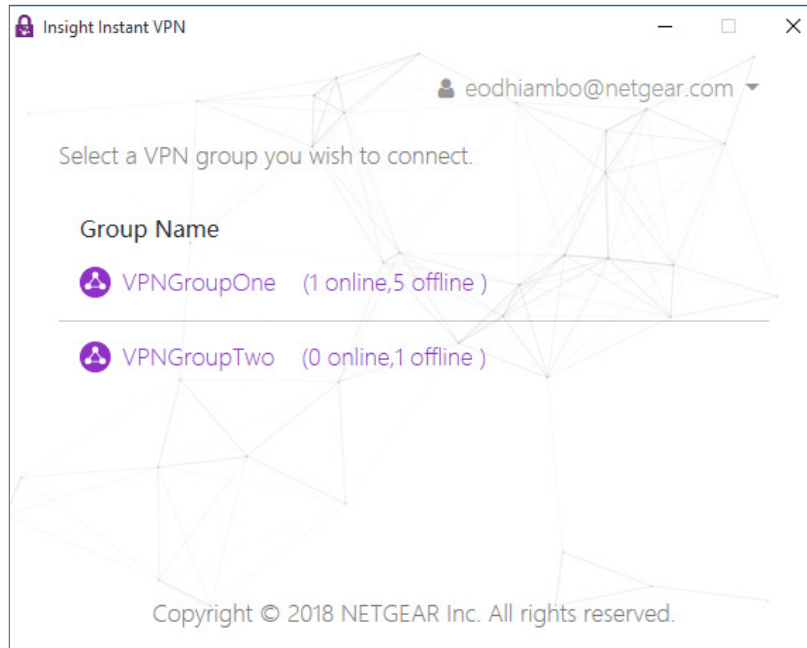
2. Double Click on the Application Insight VPN Client. This screen will complete the Setup. Make sure to check the Box **"Run InsightVPNClient"** and click **Finish**.



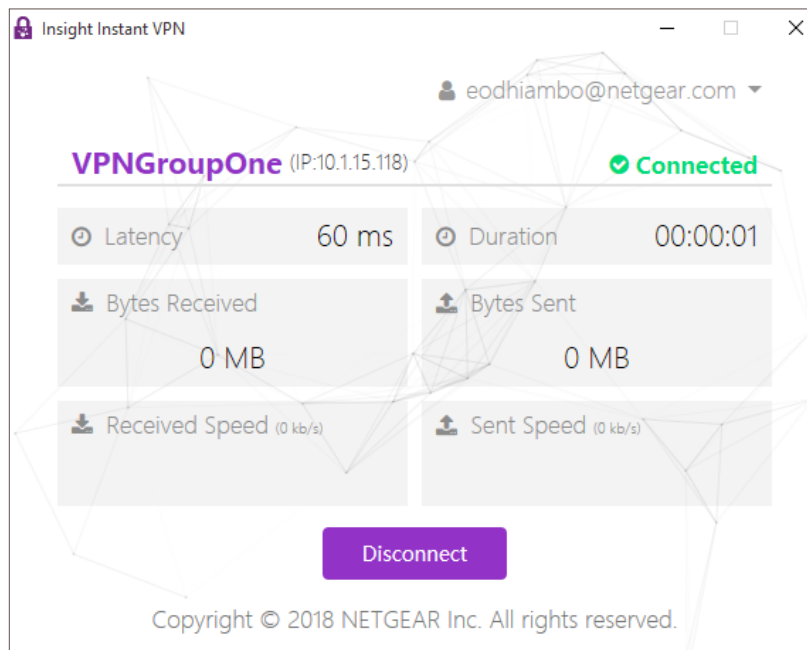
3. For User to Log in, use your Insight account Credentials then Click **Connect**. If you do not have an Insight Account go to this webpage to create an Insight Account. <https://accounts.netgear.com/login?redirectUrl=https:%2F%2Finsight.netgear.com%2F>





4. Once you are connected, User will have the Option to chooses the VPN Group to connect to




5. Remote User/Client VPN connectivity established.



6. In the VPN User Tab, you have the options to remove or re-invite VPN Users.

Summary	VPN Users +		
Connected Clients	Name	Email	Status
LAN IP	<u>alex</u>	alex95037@gmail.com	✓ Active
WAN IP	<u>NA</u>	eodhiambo@netgear.com	⌚ Pending
VPN Groups	<div>   </div> <div>Reinvite</div>		
Statistics			
VPN Users			
Traffic			

7. You may view VPN User details by clicking the User's name under the VPN User setting

Devices SG_BR5001 VPN Users Andy Jhonsan				
	Name Andy Jhonsan	Email andyjhonsan@email.com	Account Status ✓ Active	Last Log in June 28, 2018
Login History View Full Hi ▾				
Group Name	Last Login	Start Time	End Time	Duration
Dental Main	June 28, 2018	09:00 AM	10:00 AM	1 hr