Local Application software by MidNite Solar



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About the MidNite Solar Local App

The MidNite Solar Local App was designed to run on a computer that is on the same network as the Classics you intend to interface with. When used on the LAN "Local area network" the Local App and Classic do not require any set up unless you change the TCP Port of the Classic. The Local App can be used to interface with a Classic over the Internet but this is an advanced function and requires adjustments to your router and possibly an account with DynDNS.org.

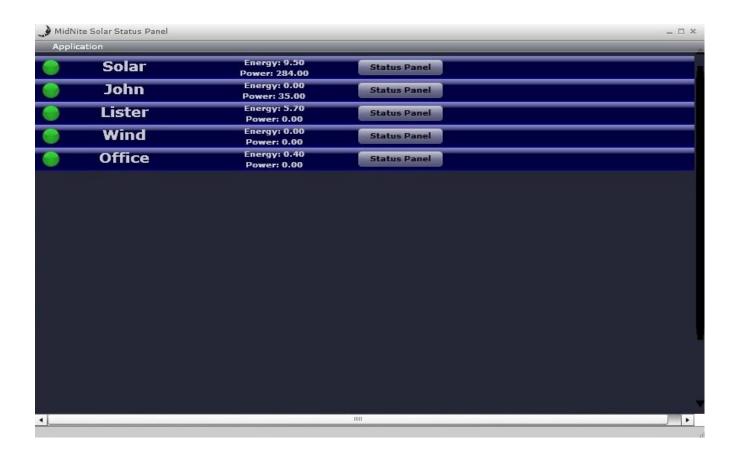
We suggest that if you are interested in interfacing with your Classics over the Internet you use My MidNite. This is a free service we offer and it is web based. Simply put all you need to do is go to HTTPS://mymidnite2.com and answer a few simple questions to create an account. You will then have access to your Classics anywhere there is Internet and a computer.

We will explain how to use the Local App over the Internet in this manual for those that prefer to use it that way. We have a router section in this manual and will document routers we are familiar with. If you do not see yours here we will not be able to tell you how to do it. You will need to consult with the router manufacturer for assistance. For assistance with any of the routers in this manual please call technical support at 360-403-7207 or email support@midnitesolar.com

To use the Local App you will need to download and install the Local App from HTTPS://mymidnite2.com To configure the Local App to work over the Internet please refer to the section "Using the Local App over the Internet".

Local App log on screen

When you open the Local App software it will automatically detect every Classic on your local network. There will be a main screen with each Classic listed. See the picture below for reference.



Each Classic will have KWH "Energy" and Power "Watts" displayed on this screen as well as a radio button labeled Status Panel you can click on. When you click on a Status Panel button for a particular Classic it will take you to the Status Panel for that Classic.

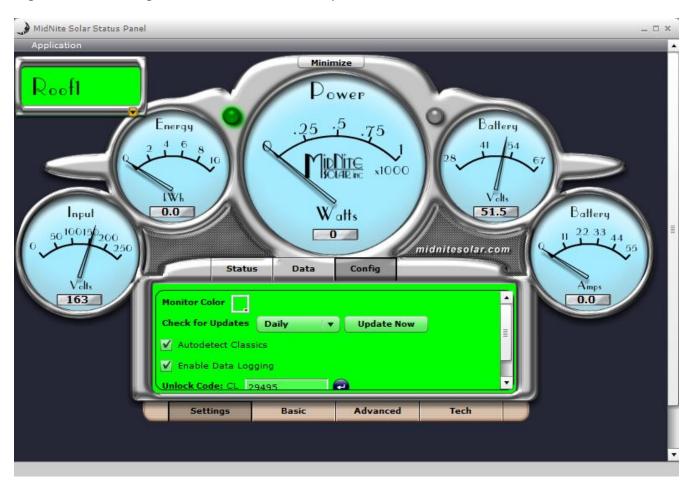
Main Status Panel



Here you will see the gauges and dashboard LED's. The Gauges are labeled and some of them range based on the Classic settings. The Power meter auto scales from 1-5kw in 1kw steps. There are LED's on each side of the Power meter. The left LED is Aux 1 and the right LED is Aux 2. There is a Minimize button above the Power meter that will take you back to the main log on screen. In the top left corner there is a box with the name of this Classic and there is a drop down arrow to allow you to jump to another Classic without going back to the log on screen. There will also be occasional icons displayed in the Power meter. You can mouse over them for a definition.

Configuration Screens

There are 4 main configuration screens in the dashboard view. The Settings menu under Configuration will allow you to set the auto detect, enter the unlock code (Classics serial #) and import/export registers. This Settings screen can be seen in the picture below.



To access this screen Click Config and then click Settings. You can see there is a radio button to manually check for updates to the Local App as well as a drop down box to set the interval at which the App will check for updates automatically.

You will also want to check autodetect Classics as well as Enable Data Logging if they are not checked already, provided you want both of these functions.



This is the second configuration screen "Basic" this is accessed by Clicking Config then Basic. To exit this menu click another menu or click the little down arrow on the top right of the frame.

Here you can set the basic functions like Classic Name, MPPT mode, Battery voltage and charging parameters etc.

You will see each section has a border and a return arrow, after changes are made click the arrow to right them to the classic.

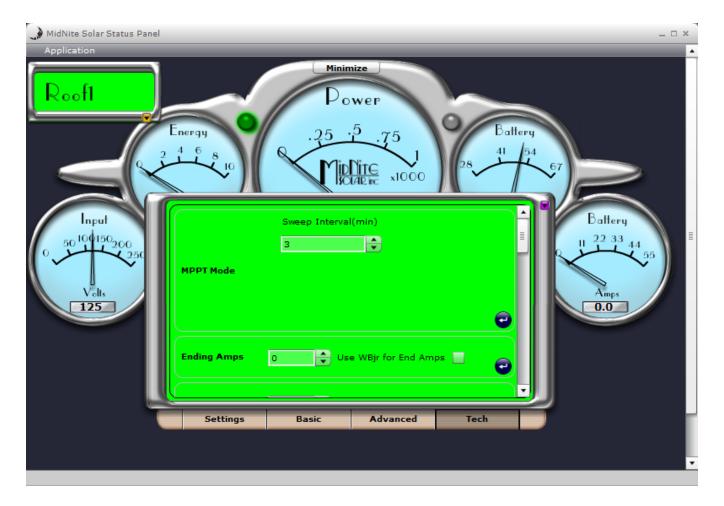
Near the bottom you will find Classic Time, This section can be slightly confusing as it appears you can set the time on your classic here. This is not the case on a factory classic. To use this function you must go into the "Tweaks" menu and disable Time Sync on your classic.



This is the third configuration screen "Advanced" this is accessed by Clicking Config then Advanced. To exit this menu click another menu or click the little down arrow on the top right of the frame.

Here you can set the more advanced functions like Aux1 and 2 functions etc. Limits, Temp comp settings and WBjr settings etc.

You will see each section has a border and a return arrow, after changes are made click the arrow to write them to the classic.



This is the fourth configuration screen "Tech" this is accessed by Clicking Config then Tech. To exit this menu click another menu or click the little down arrow on the top right of the frame.

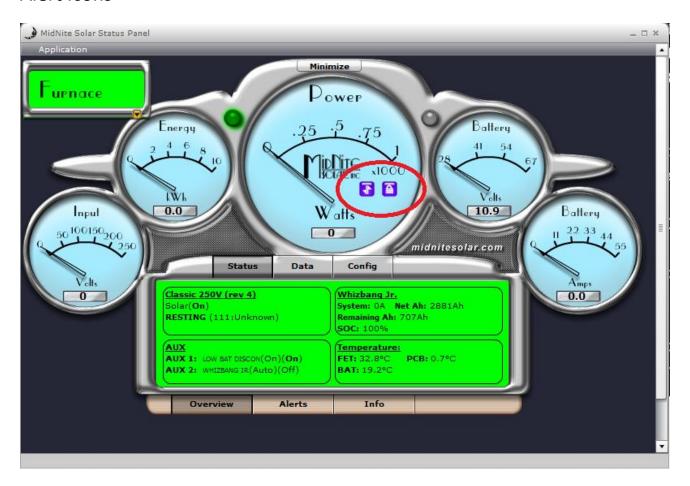
Here you can set the even more advanced functions like Sweep interval, TCP/IP settings, My Midnite, Battery and PV voltage offsets, as well as most of the tweaks available in the Classic.

A couple notes:

- 1- If you change the Modbus port from 502 then you will need to manually enter the classic as auto detect will no longer work
- 2- If you change any tcp/ip settings a reboot is required to make them take effect, this can be done by clicking "basic" and scrolling down to Bully Menu and clicking Reboot
- 3- To use My Midnite you need to enable "Web Access" so the classic will call out to the server. After clicking the return arrow to save this change you need to reboot the classic, this can be done by clicking "basic" and scrolling down to Bully Menu and clicking Reboot

You will see each section has a border and a return arrow, after changes are made click the arrow to write them to the classic.

Alert Icons



There are several Alert Icons that may show up. They will be displayed in the Power Meter as seen above. We have 3 levels of Alert's an Informational Alert will be Blue in color and is just informational. A Warning Alert will be yellow and may not need any attention. An Error Alert will be red and signifies there is a problem and the Classic has stopped charging.

Below is a list of the Alert Icons and a brief description of what they mean.

" Classic over-temperature or FETs over-temperature" The Classic is over-temperature and has gone to Resting to protect itself.



"Arc Fault" The Classic detected an Arc Fault and stopped charging.



"Ground Fault" The Classic detected a Ground Fault and stopped charging.



"Battery Voltage too high" The battery voltage is above the set point.



"Input voltage too high" The input voltage is above the Classics rating.



"DEFCON 3" Not used



"DEFCON 4" Indicates OCP, this indicates the Classic has seen a large surge current.



"Hyper VOC" The input voltage is above the operational limit.



"Current Limit reached" The current limit set point has been reached and the Classic is current



shading.

"Partial shade" The Classic is detecting the MPPT voltage to be lower than normal indicating partial



"Temperature sensor shorted" Indicates a short in the battery temperature sensor cable.



"Low Light" The Classic has determined there is not enough sunlight to continue to charge.



"Input voltage lower than output voltage" The DC input voltage is below the Battery voltage.

Connecting the Local App to a Classic directly

You may desire to connect the Computer that is running the Local App directly to the Classic either with a crossover cable or through a switch on a dedicated network/subnet. (Note that if you use a ROUTER with DHCP capabilities on this private network then you can skip the rest of this).

The Classic has DHCP enabled by default. If you plug it straight into your PC chances are it will NOT work unless you are running a Linux or Windows server on your machine. The following is the recommended way to handle this case:

First setup your PC:

Set your LAN IP address to your desired subnet. I recommend something like 192.168.13.1. Set your subnet mask to 255.255.255.0. Gateway and DNS are not required in this case.

Now on the Classic set the NET series of menus set the following:

MODE: STATIC IP: 192.168.13.100 SN: 255.255.255.0

GW: 192.168.13.1 (same as your PC)

You can skip D1 and D2. If you are on a private network/subnet you can also disable web access to reduce the traffic on your network.

Now you and the Local App should be able to access the Classic using a crossover/private network.

To test, open a console window (Windows Start->run->cmd, Mac Applications>terminal, Linux -- really?) and

ping 192.168.13.100

You should see the pings returning with a time value in the millisecond range otherwise you will see an error indicating that the IP address could not be reached.

Note that before you go mucking about changing LAN IP settings on your machine, at the very least write down all the settings that where there BEFORE you changed them. We will be unable to guide you in re-setting up your personal network if you change it according to these instructions.

Setting up the Classic to work with the Local App over the Internet

The Classic needs to be connected to the Local Network and have battery voltage applied to it to continue. Please refer to the Classic Owner's Manual for information on connecting the Classic to the Local Network. The Classic will be assigned an IP address by your router when it is connected into the router and powered.

You need to set the Classic up to use a static IP address so the router will know where to forward the ports to. On the Classic push the Main Menu button 3 times and then scroll to the right until NET is highlighted and press Enter. The Mode will be set for DHCP and highlighted. Use the up or down arrows to change it to Static and press Enter. Note if you need to change the IP address for whatever reason you can do so by scrolling to the right and changing the groups as you go being certain to press Enter when you are done. Now you will need to document this IP address for future use. As seen in the picture below this Classic has an IP address of 192.168.1.115

Please document your IP address here:

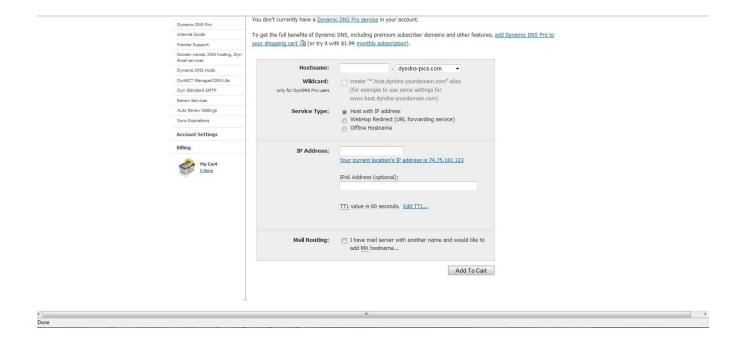


DynDNS.org set up

If you have a Static IP address please skip this section and proceed to "Setting up your Router". This is only required if you have a Dynamic IP address. To determine if you have a static or dynamic IP address please contact your internet service provider.

DynDNS.org is a service that keeps track of the ever changing IP address you have been given by your internet provider. Your router will update DynDNS anytime this IP address changes. Because we have no way of knowing what that IP address may be at any given time DynDNS also has us create a URL.

You need to go to www.dyndns.org and create a free account. There is a link near the bottom of the page under additional products for creating a free account. Click on that link and follow it to the page where you will set up your account as seen in the picture below.



You will need to enter a little info on this page in order to create your account. First you need to pick a Host Name and enter it in the box. Then you need to select the remainder of the URL from the drop down box. This can be seen in the photo above. The only other parameter you need to enter is the IP address of the system the Classic is hooked to. If you are creating this account from a computer on that same network DynDNS shows you that IP address right below the text box. If you are on a computer that is not on the same network as the Classic doing this you will need to find the IP address of the Network the Classic is on. This can be done by using a computer on that same network and going to www.whatsmyip.com. After you have filled in both fields click add to cart and continue on creating your account. You will want to document your Host Name, User Name and Password for future use.

your account. You will want to document your Host Name, User Name and Password for future use.
Host Name:
User Name:
Password:

Setting up your Router

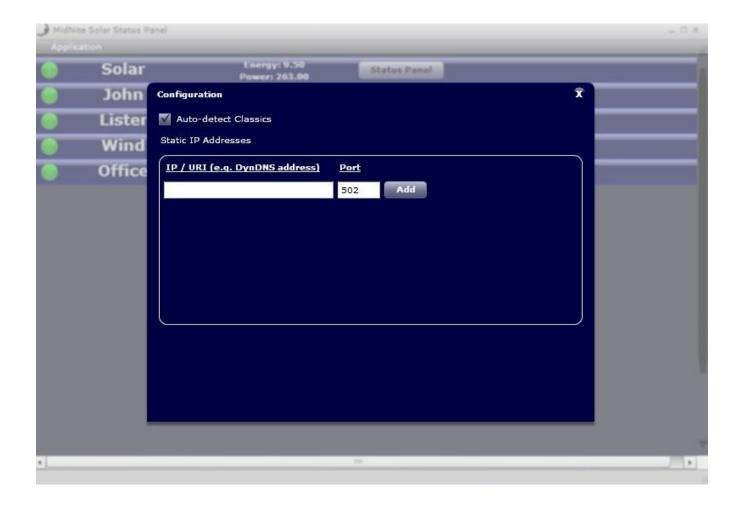
You will need to set up Port forwarding in your router. The port assigned to each Classic needs to be forwarded to the IP address of that Classic. You documented this in "Setting up the Classic to work with the Local App over the Internet". You will need to set up DDNS if you have a dynamic IP address and set up an account with DynDNS.org. These are considered advance user adjustments in your router and you will need to know how to access your router. We have included a Router section in this manual. If you do not see your router here we do not know how to set it up. We have documented every router we are familiar with. For assistance on setting your router up please contact the manufacturer of the router.

Setting up the local app to find the Classic on the internet

You will need to add a little info to the Local App in order for it to go out over the Internet and find your Classic. Please refer to the picture below.



When you open the Local App click on Application and click on Configuration as seen in the photo Above.

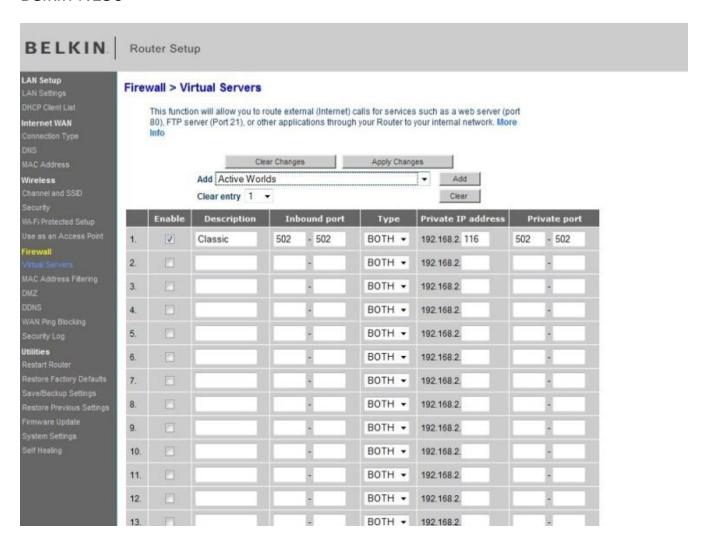


On the Configuration screen you will need to enter an IP address or URL. If you determined you had a static IP address from your Internet provider then you need to enter that address in the IP/URL field. You documented this IP address earlier in the set up process. Make sure you enter the port number you assigned this Classic and then click Add. If you have multiple Classics enter them all here now.

If you determined earlier you had a Dynamic IP address and you set up a DynDNS account you need to enter the Host Name or URL you selected when setting up the DynDNS account. Make sure you enter the port number you assigned this Classic and then click Add. If you have multiple Classics enter them all here now.

After you enter all of your Classics on this screen close it out with the X in the top right and restart the Local App.

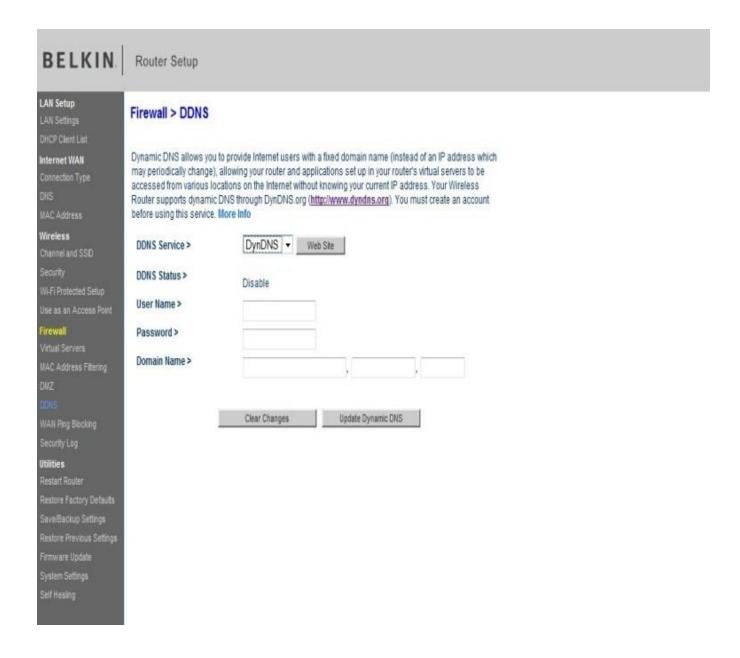
Belkin N150



The Belkin N150 has a default IP address of 192.168.2.1 The default password is blank.

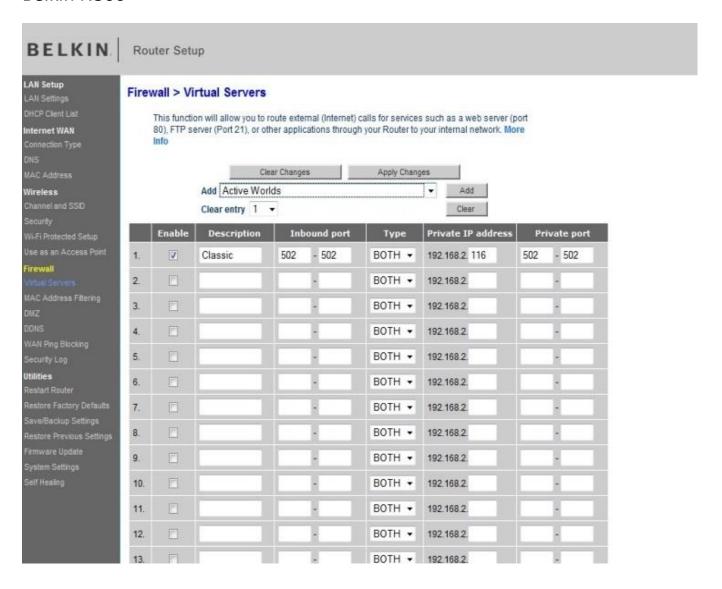
You will need to access 2 portions of the routers programming, Port forwarding under Firewall > Virtual Servers. And DDNS under Firewall > DDNS.

Click on Virtual Servers under Firewall this will bring you to the Port Forwarding screen as seen above. Check the Enable box and fill in a Description for this port. Enter the port number assigned to the Classic in the 2 inbound boxes as well as the 2 private ports. Enter the IP address that you have documented from earlier when you set the Classic. Save your changes and continue on to the DDNS part of setup if required.



Click on DDNS under Firewall as seen above. Select DynDNS in the drop down box. Fill in your username, password and URL or Domain Name. This data would have been documented in the section of the manual on Setting up a DynDNS account. Leave all the other fields in default setting. When you are done click "Update Dynamic DNS".

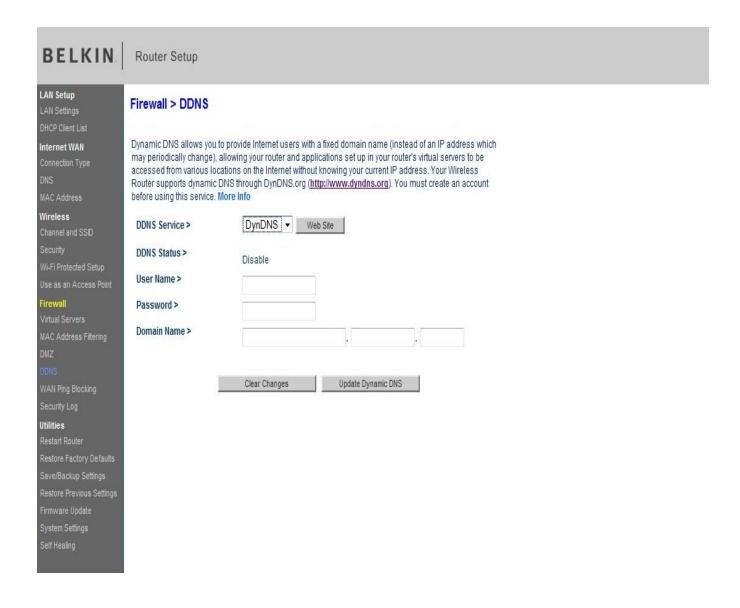
Belkin N300



The Belkin N300 has a default IP address of 192.168.2.1 The default password is blank.

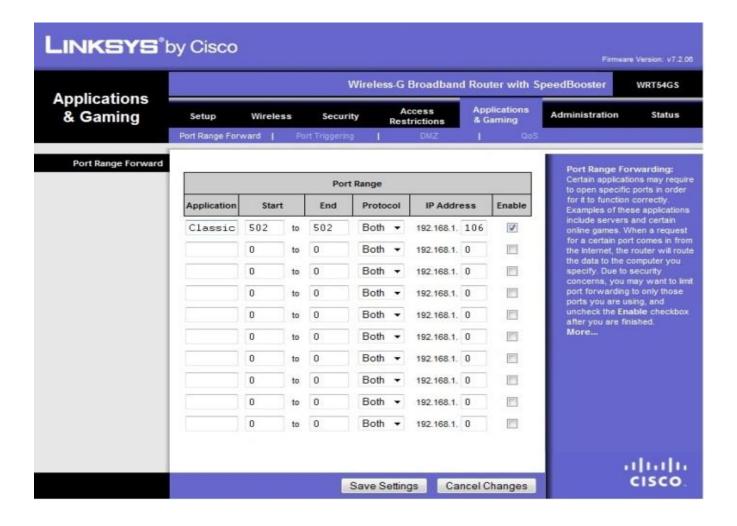
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Click on Virtual Servers under Firewall this will bring you to the Port Forwarding screen as seen above. Check the Enable box and fill in a Description for this port. Enter the port number assigned to the Classic in the 2 inbound boxes as well as the 2 private ports. Enter the IP address that you have documented from earlier when you set the Classic. Save your changes and continue on to the DDNS part of setup if required.



Click on DDNS under Firewall as seen above. Select DynDNS in the drop down box. Fill in your username, password and URL or Domain Name. This data would have been documented in the section of the manual on Setting up a DynDNS account. Leave all the other fields in default setting. When you are done click "Update Dynamic DNS".

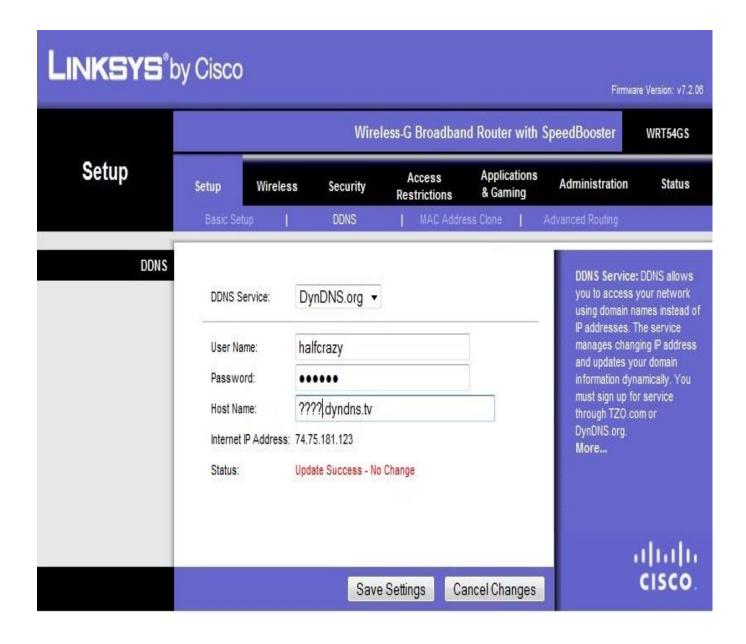
Linksys WRT54GS



The Linksys WRT45GS has a default IP address of 192.168.1.1 The default username and password is admin for both.

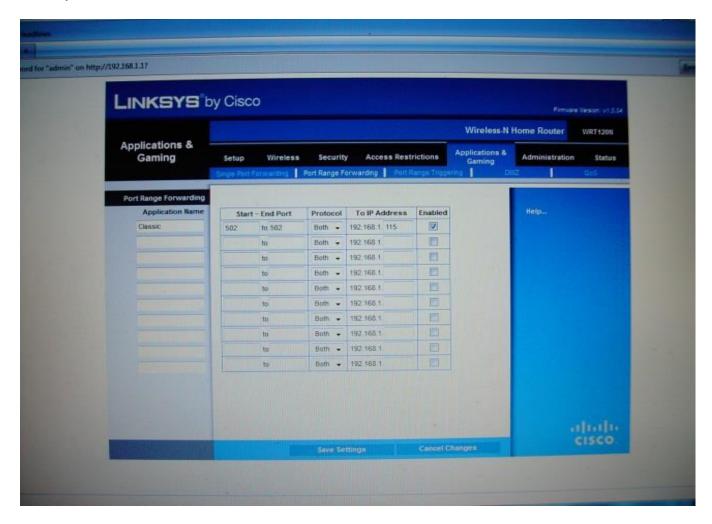
You will need to access 2 portions of the routers programming, Port Range forwarding under Applications and Gaming and DDNS under Setup. Follow the steps below to complete setup.

You will need to set port forwarding for each Classic. Click Application & Gaming and then click Port Range forward. Enter a name in the Application field this can be just Classic or you could use a name for it like wind or solar this is for your reference only. Enter the port the Classic is set to in the Start and End boxes. Enter the Static IP address of each Classic this would have been documented in the section on Setting up the Classic for the Network. Check the box that says Enable for each Classic on the system. Click save settings and wait for the router to tell you it updated successfully.



Select DynDNS.org in the drop down box. Fill in your username and password as well as the host name in the fields. This data would have been documented in the section of the manual on Setting up a DynDNS account. When you are done click save settings and make sure the router comes back and tells you Update success in red under Status.

Linksys WRT120N



The Linksys WRT120N has a default IP address of 192.168.1.1 The default username and password is admin for both.

You will need to access 2 portions of the routers programming, Port Range forwarding under Applications and Gaming and DDNS under Setup. Follow the steps below to complete setup.

You will need to set port forwarding for each Classic. Click Application & Gaming and then click Port Range forward. Enter a name in the Application field this can be just Classic or you could use a name for it like wind or solar this is for your reference only. Enter the port the Classic is set to in the Start and End boxes. Enter the Static IP address of each Classic this would have been documented in the section on Setting up the Classic for the Network. Check the box that says Enable for each Classic on the system. Click save settings and wait for the router to tell you it updated successfully.



Select DynDNS.org in the drop down box. Fill in your username and password as well as the host name in the fields. This data would have been documented in the section of the manual on Setting up a DynDNS account. Leave all the other fields in default setting. When you are done click save settings and make sure the router comes back and tells you Update success under Status.

Linksys E1200



The Linksys E1200 has a default IP address of 192.168.1.1 The default username and password is admin for both.

You will need to access 2 portions of the routers programming, Port Range forwarding under Applications and Gaming and DDNS under Setup. Follow the steps below to complete setup.

You will need to set port forwarding for each Classic. Click Application & Gaming and then click Port Range forward. Enter a name in the Application field this can be just Classic or you could use a name for it like wind or solar this is for your reference only. Enter the port the Classic is set to in the Start and End boxes. Enter the Static IP address of each Classic this would have been documented in the section on Setting up the Classic for the Network. Check the box that says Enable for each Classic on the system. Click save settings and wait for the router to tell you it updated successfully.



Select DynDNS.org in the drop down box. Fill in your username and password as well as the host name in the fields. This data would have been documented in the section of the manual on Setting up a DynDNS account. Leave all the other fields in default setting. When you are done click save settings and make sure the router comes back and tells you Update success under Status.

NetGear N150-WNR1000



The NetGear N150-WNR1000 has a default IP address of 192.168.1.1 The default username is admin and the password is password.

You will need to access 2 portions of the routers programming, Port Range forwarding under Applications and Gaming and DDNS under Setup. Follow the steps below to complete setup.

Click on port forwarding in the advanced menu on the left side of the screen. On the screen that comes up (See Picture above) check port forwarding and then click "Add Custom Service".



You will need to give each forwarded port a name in the box named "Service Name". This name is not important to the router it is there for your reference. You could use Classic or a name like Wind or Solar for this.

Enter the port number assigned to the Classic in the "Starting Port" and "Ending Port" boxes. Enter the Static IP address of the Classic this would have been documented in the section on Setting up the Classic for the Network. Click Apply.

Repeat this process for each Classic by Clicking "Add Custom Service" and entering the data for each Classic.



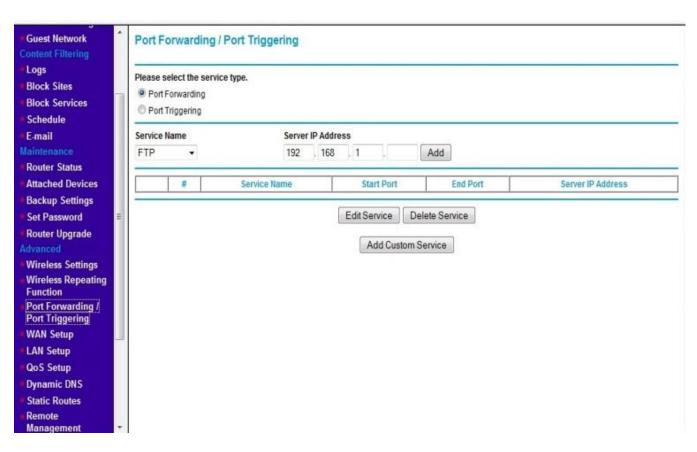
In the Advanced Menu on the left side of the screen click "Dynamic DNS". On the screen that opens check the box labeled "Use a Dynamic DNS Service". Select DynDNS from the drop down box labeled "Service Provider".

Fill in the Host Name, User Name and Password that you have from DynDNS. You documented this earlier in the section on setting up a DynDNS account.

Click apply to save these settings.

NetGear N300-WNR2000





The NetGear N300-WNR2000 has a default IP address of 192.168.1.1 The default username is admin and the password is password.

You will need to access 2 portions of the routers programming, Port Range forwarding under Applications and Gaming and DDNS under Setup. Follow the steps below to complete setup.

Click on port forwarding in the advanced menu on the left side of the screen. On the screen that comes up (See Picture above) check port forwarding and then click "Add Custom Service".



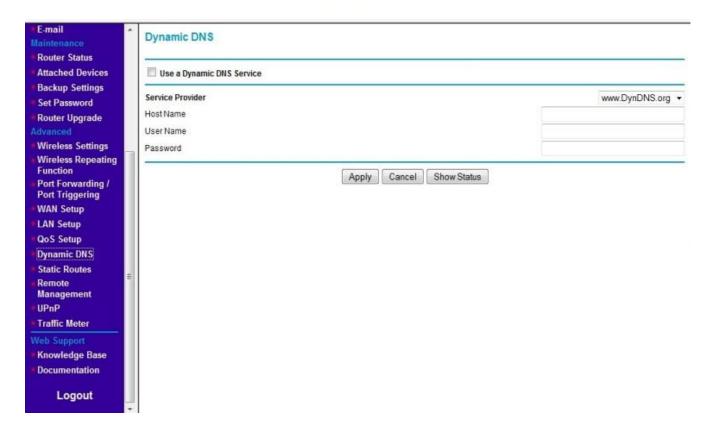
Guest Network Content Filtering	*	Ports - Custom Services				
* Logs * Block Sites * Block Services * Schedule * E-mail Maintenance * Router Status		Service Name Protocol Startling Port Ending Port Server IP Address	TCP/UDP • (1~65534) (1~65534) 192 . 168 . 1			
Attached Devices Backup Settings Set Password Router Upgrade			Apply Cancel			
Wireless Settings Wireless Repeating Function Port Forwarding / Port Triggering						
WAN Setup LAN Setup QoS Setup Dynamic DNS Static Routes						
Remote Management UPnP						

You will need to give each forwarded port a name in the box named "Service Name". This name is not important to the router it is there for your reference. You could use Classic or a name like Wind or Solar for this.

Enter the port number assigned to the Classic in the "Starting Port" and "Ending Port" boxes. Enter the Static IP address of the Classic this would have been documented in the section on Setting up the Classic for the Network. Click Apply.

Repeat this process for each Classic by Clicking "Add Custom Service" and entering the data for each Classic.





In the Advanced Menu on the left side of the screen click "Dynamic DNS". On the screen that opens check the box labeled "Use a Dynamic DNS Service". Select DynDNS from the drop down box labeled "Service Provider".

Fill in the Host Name, User Name and Password that you have from DynDNS. You documented this earlier in the section on setting up a DynDNS account.

Click apply to save these settings.

NetGear N600-WNDR3700



The NetGear N600-WNDR3700 has a default IP address of 192.168.1.1 The default username is admin and the password is password.

You will need to access 2 portions of the routers programming, Port Range forwarding under Applications and Gaming and DDNS under Setup. Follow the steps below to complete setup.

Click on port forwarding in the advanced menu on the left side of the screen. On the screen that comes up (See Picture above) check port forwarding and then click "Add Custom Service".



You will need to give each forwarded port a name in the box named "Service Name". This name is not important to the router it is there for your reference. You could use Classic or a name like Wind or Solar for this.

Enter the port number assigned to the Classic in the "Starting Port" and "Ending Port" boxes. Enter the Static IP address of the Classic this would have been documented in the section on Setting up the Classic for the Network. Click Apply.

Repeat this process for each Classic by Clicking "Add Custom Service" and entering the data for each Classic.



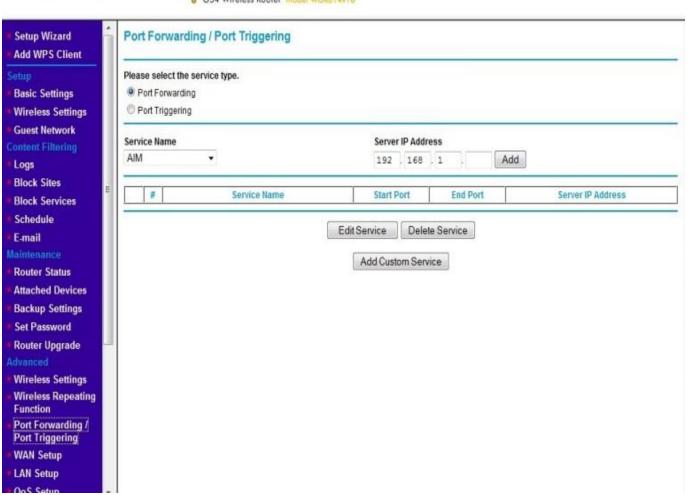
In the Advanced Menu on the left side of the screen click "Dynamic DNS". On the screen that opens check the box labeled "Use a Dynamic DNS Service". Select DynDNS from the drop down box labeled "Service Provider".

Fill in the Host Name, User Name and Password that you have from DynDNS. You documented this earlier in the section on setting up a DynDNS account.

Click apply to save these settings.

NetGear G54-WGR614





The NetGear G54-WGR614 has a default IP address of 192.168.1.1 The default username is admin and the password is password.

You will need to access 2 portions of the routers programming, Port Range forwarding under Applications and Gaming and DDNS under Setup. Follow the steps below to complete setup.

Click on port forwarding in the advanced menu on the left side of the screen. On the screen that comes up (See Picture above) check port forwarding and then click "Add Custom Service".



You will need to give each forwarded port a name in the box named "Service Name". This name is not important to the router it is there for your reference. You could use Classic or a name like Wind or Solar for this.

Enter the port number assigned to the Classic in the "Starting Port" and "Ending Port" boxes. Enter the Static IP address of the Classic this would have been documented in the section on Setting up the Classic for the Network. Click Apply.

Repeat this process for each Classic by Clicking "Add Custom Service" and entering the data for each Classic.



Setup Wizard Add WPS Client	Ports - Custom Services				
Setup Basic Settings Wireless Settings Guest Network Content Filtering	Service Name Service Type Starting Port Ending Port Server IP Address	TCP/UDP → (1~65635) (1~65635) 192 . 168 . 1			
Block Sites Block Services Schedule E-mail Maintenance Router Status	=	Apply Cancel			
Attached Devices Backup Settings Set Password Router Upgrade Advanced					
Wireless Settings Wireless Repeating Function Port Forwarding / Port Triggering WAN Setup LAN Setup QoS Setup					

In the Advanced Menu on the left side of the screen click "Dynamic DNS". On the screen that opens check the box labeled "Use a Dynamic DNS Service". Select DynDNS from the drop down box labeled "Service Provider".

Fill in the Host Name, User Name and Password that you have from DynDNS. You documented this earlier in the section on setting up a DynDNS account.

Click apply to save these settings.