

Networking FAQ

This page will contain all you need to know about setting up for a LAN event. If you have any questions regarding this, please contact Wintermute.

Q. - How do I make my computer part of a network?

A. - There are two common ways. The first is through a modem and telephone line. When you dial up and connect to the internet you are, in fact, dialling into another computer. This computer either has direct access to the internet or is itself part of a network that is connected to the internet. The second is when you connect computers directly to one another using NICs (Network Interface Cards), for example in an office to share files and printers.

Q. - What is a LAN? What is the difference between a LAN and a WAN?

A. - LAN stands for Local Area Network, WAN stands for Wide Area Network. In essence they are the same thing, computers connected together, the difference is how far apart those computers are. Networks contained within a single office or building are usually considered LANs while networks that extend over several buildings or connect offices in different cities are considered WANs.

Q. - Ethernet, TCP/IP, what does it all mean and why do I need them all?

A. - There are a plethora of protocols associated with networking and they can be very confusing. This isn't the time or the place for a detailed explanation of the science of networking but here is how to think about it: The protocols are built up in layers, each one dependent on the one below it, and each one using the simpler functionality of the layer below to provide more advanced functionality to the layer above. Ethernet is the protocol that operates over the physical wires connecting the computers. TCP/IP (actually two layers) uses the services provided by the Ethernet protocol to pass messages between specific computers. In turn applications on your computer use the services provided by TCP/IP to implement their own protocols (for example the HTTP used for the world wide web is a protocol built on top of TCP/IP).

Q. - Does it matter what operating system I am using?

A. - No, we generally use Windows 2000 for our servers, but any Windows operating system should be okay to connect to them. Some are easier to configure than others, and the more recent the better.

Q. - Can I prepare anything now, to make it easier when I get there?

A. - You can buy a network card (also call NIC or Network Interface Card) and install it. We use TCP/IP over an Ethernet - that means you need an Ethernet PCI card with the TCP/IP protocol installed. Make sure your card has an RJ45 connector (a rectangular hole with a slot on one side) rather than the older co-ax connector (round like a TV socket). For best results on all networks get a 10/100 card. If you are not sure what all of that means or don't know what sort of card to buy, don't worry. We will have network cards available for purchase at the event and will assist you in setting up your computer correctly.

Q. - What does 10/100 MBaseT mean?

A. - 10/100 means the piece of hardware will run at either speed, 10mbps or 100mbps. In more understandable terms 10mbps is 1.2 megabytes per seconds and 100mbps is 12mb per second. Base T refers to the network topology - basically the wire joins to the network making a T shape.

Q. - What speed is the network used for Lanarchy?

A. - We use 10/100 Switches throughout our network. When you think that your average 56k modem takes 40 minutes to an hour to transfer 12 meg, our network transferring it in one second is pretty quick.

Q. - What is the difference between a Hub and a Switch?

A. - A hub will take its 100mpbs speed and spread it across all the ports it has, so if it

is a 16 port hub, each port will run at less than 6 mbps when they are all in simultaneous use. A switch can send data to each port concurrently at 100mbps.

Q. - I want to make my own network at home, what do I need?

A. - You will need a network card for each computer, a hub or switch with enough ports for how ever many computers you will want to connect up and finally some network cables.

Q. - Can I make my own network cables?

A. - Yes, you will need to buy a bag of RJ45 connectors, some Cat 5e network cable and a crimping tool to attach the RJ45's onto the cable.

Q. - What is Cat 5e?

A. - Cat 5 is short for 'Category 5 Cable', Cat 5 is the minimum required for 100mbps networks. Cat 5e is enhanced Cat 5 and should be better shielded and more reliable over longer distances. There are two types of cable: solid core and flexible core (also know as patch cable). Solid core will work for distances up to about 100m and is suitable for permanent network configurations (where it can be fixed to a wall), while flexible core will only work up to lengths of about 10m-15m, but is cheaper and easier to manipulate.

Q. - Does it matter what order the wires go into the RJ45 Connector?

A. - Not really, as long as they match each end. So if one connector goes, blue - blue/white - green - green/white - orange etc. then so should the connector at the other end.

Q. - Can I connect two computers without using a hub or switch?

A. - Yes but the cable you need has to be different. The 1st and 3rd wire should cross, as should the 2nd and 6th. So, if at one end the colours are laid out Bl - Bl / Wh? - Br - Br / Wh? - Gr - Gr / Wh? - Or - Or / Wh? then the connector on the other end should be Br - Gr / Wh? - Bl - Br / Wh? - Gr - Bl / Wh? - Or - Or / Wh?.

Q. - Once I have all the cables plugged in, how do I setup Windows?

A. - The easiest way is to run the Home Networking Wizard available on all recent versions of Windows. To simplify things it is best to ensure all your computers are in the same 'workgroup', the default on Windows 98/Me is usually 'MSHOME'. For Windows 2000 it is 'WORKGROUP'. If you have one computer that is connected to the internet and you want to share that connection between all computers on the network then set up that one first using Internet Connection Sharing (on ME, 2000 and XP), this will install various useful 'behind the scenes' services like DHCP.

Q. - What is DHCP? What IP addresses should I use?

A. - Before computers on a network can talk to each other they need to be able to identify each other, and for this they need to have an IP address. An IP address is four numbers, all between 0 and 255, separated by dots. All computers on the internet have a unique IP address. There is a range of IP addresses set aside specifically for LANs, they are of the form '192.168.xxx.yyy'. You can use any numbers you want instead of xxx and yyy as long as all the computers on the network have a unique address (though it is recommended that you use the same xxx number for all of them, otherwise the computers won't be able to see each other). In order to alleviate the hassle of setting each computer's IP address individually you can use DHCP (Dynamic Host Control Protocol). One computer on your network is the DHCP server and this supplies all the other computers with a unique IP address when they connect.

Q. - I've made a cable but the computer it is connected to can't access the network, what is wrong?

A. - Check that the light on the hub is lit or not. If it isn't lit that would signify that your cable is faulty. You may need to cut the RJ45's off and try again, taking great care not to damage the wires inside and ensuring the colours are in the right order. If the light is lit then try opening a command/DOS prompt and using the 'ping' command - type 'ping 192.168.0.xxx' where xxx is one of the other computers on your network (to find

network addresses type the command 'ipconfig' on Windows 2000/XP or use winipcfg on 98/ME). If the ping command succeeds then you likely have something wrong in your Windows configuration - check IP addresses and workgroup names, reboot all the computers starting with the DHCP server), if you get a lot of 'host unreachable' errors then it suggests a hardware issue of some kind, usually a faulty cable but check your network card settings to see if any errors are reported. One common networking hurdle to overcome in Windows XP is the built in firewall, this will allow you to access the network but will prevent you from connecting to any online games. Refer to your documentation to find out how to turn the firewall off or enable the specific ports required by your game.

Q. - I've tried everything and it still doesn't work, what else could be wrong?

A. - You will probably be best off going through your networking wizard to check everything is set up correctly. If you still having problems contact Wintermute for some help.

Q - I have a question not answered above, how can I find out the answer?

A - [Click here to register on our forum](#) and then [click here to be taken to our Networking forum](#). Post whatever problem or question you have and we will try and get it answered within 24 hours.