



Whitepaper

Using NetSupport Over A Wide Area Network

NetSupport Limited recognise that most corporate networks comprise of a number of small networks that are connected together in order to provide end users with access to network resources. NetSupport Manager incorporates features that allow a NetSupport Manager installation on one network to be used to remotely manage computers on another interconnected network.

Wide Area Networks Overview

Overview

A Local Area Network (LAN) is a group of computers and associated devices that share a common communications line and typically share the resources within a small geographic area (for example, within an office building).

What is a Wide Area Network (WAN)? A WAN is a geographically dispersed telecommunications network. Typically a WAN would provide for connectivity between a number of LAN's.

Using NetSupport Manager in its default configuration will enable you to remotely manage computers on a remote LAN if connectivity to that remote LAN is provided by a WAN.

However there are some configuration changes that are required to allow a NetSupport Manager Control to browse for NetSupport Manager Clients on remote LAN's. The configuration changes required are dependant on the network transport that you will be using with NetSupport Manager. The two most common transports that are used over WAN's are TCP/IP and IPX. As these two network transports have very different addressing schemes we will examine each transport separately.

Configuring the NetSupport Manager Control for IP Subnet Browsing

Before we can configure NetSupport Manager to browse on a remote IP subnet we need to understand how IP addresses are made up and in particular what an IP Broadcast Address is.

IP Addresses

An IP address is made up of 4 bytes, each byte being made up of eight bits, which can have a value of 1 or 0. This gives possible IP addresses of 0.0.0.0 to 255.255.255.255.

Each IP address is also split into two portions, a network portion, which identifies the network the device is on, and the local or host portion, which identifies a particular device.

The subnet mask defines the position of this split between the network and host portions of the address, which is associated with the address. The subnet mask is also a four byte number. Each bit in the subnet mask that is set to 1 denotes that the corresponding bit in the IP address is part of the network portion.

For example if we have an IP address of 10.10.2.21 and a subnet mask of 255.255.255.0

IP Address	10	.	10	.	2	.	21
Subnet Mask	255	.	255	.	255	.	0
IP Address In Binary	00001010	.	00001010	.	00000010	.	00010101
Subnet Mask in Binary	11111111	.	11111111	.	11111111	.	00000000
Network Portion Of IP Address	00001010	.	00001010	.	00000010	.	00000000
Host Portion Of IP Address	00000000	.	00000000	.	00000000	.	00010101
Network Portion Of IP Address	10	.	10	.	2	.	0
Host Portion Of IP Address	0	.	0	.	0	.	21

Therefore when we send an IP packet to 10.10.2.21 we are actually sending a packet to device 21 on network 10.10.2.0

In the example above you can see that on our network of 10.10.2.0 we can have 256 host addresses those being 0 to 255. However two addresses on each IP network are reserved these are the host address with all its bit set to 0, this is the network address, and the host address with all its bit set to 1, which is the broadcast address.

In our example network of 10.10.2.0

10.10.2.0 is the network address

10.10.2.255 is the broadcast address.

When an IP packet is sent to a networks broadcast address each device on the IP network will receive this packet.

It is this IP network broadcast address, which is used when configuring NetSupport Manager Control to browse on an IP subnet other than its own.

Configuring the NetSupport Control

Before you can start configuring your Control you will need to calculate the IP broadcast address for each subnet that you wish NetSupport Manager to browse, this includes the broadcast address for the local subnet on which the NetSupport Manager Control is installed.

1. Start the Control
2. From the "Tools" Menu select "Configurations".
3. Select the Configuration that you wish to modify
4. Press the "Transport and Startup Settings" Button.
5. Select the "Transport Tab"
6. Press the "Browsing Button"
7. This will display a list of broadcast addresses.
8. Press the Add Button and enter the Broadcast Address of the Network you wish to browse.
9. Repeat step 8 for each network you wish the Control to Browse.

Note 1:

You must add the broadcast address for the local subnet or your NetSupport Manager Control will not find any local Clients when you perform a browse.

Note 2:

Some network Routers will suppress broadcast packets from being transmitted across WAN links. If this is the case then even if your Control is correctly configured then you will not be able to browse the remote subnet.

Configuring a NetSupport Manager Control to Browse Remote IPX Networks

Before we can configure a NetSupport control to browse a remote IPX network we need to understand how IPX addresses are formatted.

IPX Addresses

An IPX address is made up of two portions a network portion, which denotes which network a particular device is attached to, and a node portion, which denotes the physical device on the network.

The network portion of an IPX address is an eight digit hexadecimal number valid network addresses range from 00000000 to FFFFFFFF there are no reserved IPX network numbers however each IPX network on an internetwork must have a unique network number.

The node portion of an IPX address is a 12 digit hexadecimal number this is normally the MAC (Media Access Control) address that is a unique number that is burnt into the EPROM on a network card by the network cards manufacturer

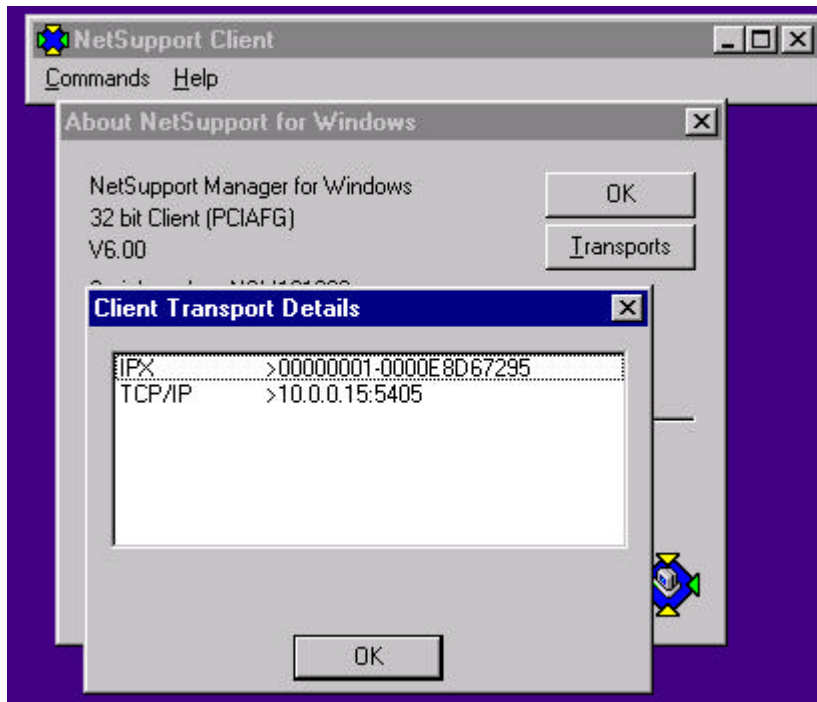
Below is an example of an IPX address

Network	Node
00000001	: 0000E8D67295

When configuring a NetSupport Manager Control to browse a remote IPX network you must know the IPX network address of the remote network.

The NetSupport Client can display the IPX network number of the IPX network to which it is attached.

1. From the "Help" menu select "About".
2. Press the "Transports" button.



The IPX address is shown in full you will need to note the network portion of this address to configure the NetSupport Control.

Configuring the NetSupport Control

Before you can start configuring you will need to have the IPX network numbers for each IPX networks that you wish NetSupport Manager to browse, this includes the IPX network number for the local network on which the NetSupport Manager Control is installed.

1. Start the control
2. From the "Tools" Menu select "Configurations".
3. Select the configuration that you wish to modify
4. Press the "Transport and Startup Settings" button.
5. Select the "Transport Tab"
6. Check the "Record Clients' Network Numbers" option.
7. In the "Use Networks:" box enter each of the IPX network numbers that you wish NetSupport Manager to browse. Note that IPX network numbers must be separated by a comma (,).

Further Information

If you have any questions or unresolved queries regarding NetSupport Manager, you can contact NetSupport Technical Support Department using the following details:

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