Agfa Software and TCP/IP

Many Agfa products make use of the TCP/IP protocol. Taipan 2.0 uses the TCP/IP protocol for all communication between the RIP / Preview Server and the RIP / Preview Pilot. Because of this, you must install and configure TCP/IP on the Taipan RIP system and on each computer that will run the RIP Pilot and/or Preview Pilot.

Agfa Mainstream 1.5 also uses the TCP/IP protocol to communicate with Mac OS workstations and in the future other Agfa and third party products that use the TCP/IP protocol will appear.

If you have not installed TCP/IP on your systems, this section will provide you with information on TCP/IP and suggestions on how to install and configure it. For more detailed information on TCP/IP configuration, please consult the documentation that came with your operating system.

There are three different types of TCP/IP software that you may have to configure, depending on your platform and system. The appropriate software, versions and required configuration information for each type are shown in the following table.

Software	Configure From	Included with	Version	Required information
Open Transport TCP/IP	TCP/IP Control Panel	Mac OS 7.5.3 Rev. 2	1.1 or later	IP Address, Subnet Mask, Router Address
Microsoft TCP/IP	Network Control Panel	Windows NT 4.0	4.00 or later	IP Address, Subnet Mask, Default Gateway
		Windows 95	4.00.950 or later	IP Address, Subnet Mask, Gateway

Before configuring TCP/IP on your Mac OS computer, Windows 95 computer or Windows NT server, you need to determine your business' TCP/IP strategy.

1. If your business already uses TCP/IP on its network: In this case, you should obtain IP addresses and TCP/IP configuration instructions from your network administrator.

2. If your business does not use TCP/IP now, but has or plans to have an Internet connection: Your Internet service provider will provide you with a range of IP addresses and with appropriate TCP/IP configuration information.

3. If your business does not use TCP/IP now, and is not connected to the Internet: A range of IP addresses has been set aside for organizations not connected to the Internet. This range of addresses begins with 192.168. Organizations can assign the other two numbers. A valid address, for example, is 192.168.1.10.

   If you fall into this category, you can use the following to configure TCP/IP on your network:

   • IP Address (Server): 192.168.1.1

   • IP Address (Clients): 192.168.1.2, 192.168.1.3, etc. (For each additional machine to be configured, increase the last digit of the IP address by one.)
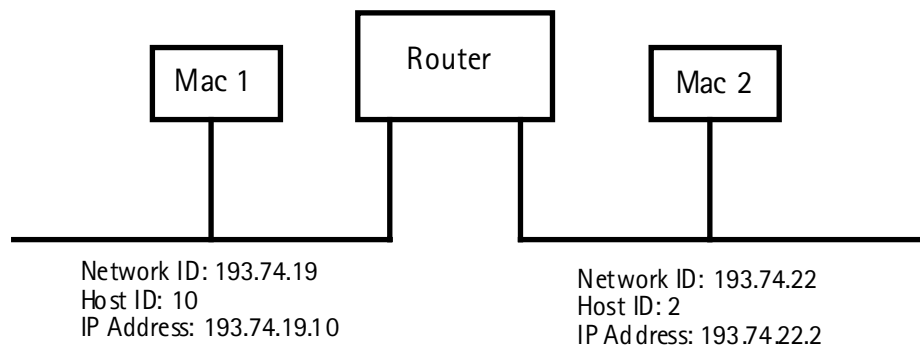
   • Subnet mask: 255.255.255.0

The three possible user modes for configuring **Open Transport TCP/IP** on your MacOS computer are: Basic, Advanced and Administrator. The Advanced user mode allows you to select a Hosts file and to set a starting and ending domain server. The Administration user mode makes it possible to lock certain settings and secure them with a password. The Basic mode only allows you to change the most basic entries: your IP address, subnet mask, router address, ...

The **Subnet Mask** separates the network ID from the host ID. An IP address is made up of four parts: xxx.xxx.xxx.xxx (e.g. 193.74.19.10). Some of these numbers represent the network ID and some represent the host ID. The most common subnet mask is the following: 255.255.255.0. This means that the first 3 parts of your IP address make up your network ID and that the last part determines your host ID. In our example that would mean that 193.74.19 is the network ID and that 10 is the host ID.

A **Router** (or Gateway) is a machine which can communicate with more than 1 network. A network is represented by its network ID.

Example: Mac 1 can communicate with Mac 2, which is located on another network, since Mac 1 and Mac 2 both know the Router address.

```
        ┌──────────┐   ┌──────────┐   ┌──────────┐
        │  Mac 1   │   │  Router  │   │  Mac 2   │
        └──────────┘   └──────────┘   └──────────┘
```

Network ID: 193.74.19
Host ID: 10
IP Address: 193.74.19.10

Network ID: 193.74.22
Host ID: 2
IP Address: 193.74.22.2

A **Name Server** (Domain Name System - DNS Server) is a computer which keeps a list of all known IP addresses and their corresponding hostnames. A Name Server provides a Hosts file for the entire network. This means that you do not need to adapt your local Hosts file. Setting up a DNS environment on Microsoft NT 4.0 is not discussed in this document because MacOS does not support the Microsoft DNS Service. MacOS however does support the DNS service on a Sun System.

To check your TCP/IP configuration we advise to execute the **"ping"** command. "Pinging" is in fact calling a remote computer using TCP/IP. To execute the ping command on Windows systems, type

```
ping "IP address of remote computer"
```

in DOS mode (e.g. c:\ping 193.74.22.10). A good ping-tool for MacOS is OTTool from Neon Software, available on http://www.neon.com.

A **DHCP (Dynamic Host Configuration Protocol) server** automatically assigns IP addresses to computers in your network.

A. Installing TCP/IP manually.

TCP/IP is installed when you install your system software. To verify that TCP/IP is installed on a MacOS computer, check if the TCP/IP Control Panel is available.

If TCP/IP is not loaded, you can add it through your operating system's installation program.

> *NOTE:* *Before attempting this configuration, consult with your network administrator. The following directions are only for networks that do not normally use TCP/IP and can be configured manually.* **If your network administrator has already configured TCP/IP on your system, do not make any changes.**

We will not discuss how to install TCP/IP using classic networking because all Agfa Software needs Open Transport (version 1.1 or higher).

Configuring TCP/IP on a MacOS computer running Open Transport.

1. Open the TCP/IP Control Panel.

2. From the Edit menu, select User Mode and set the user mode to Advanced. Click OK.

3. Choose your current network connection, for example Ethernet, from the Connect via pop-up menu.

4. Select Manually from the Configure pop-up menu.

5. Enter your IP address in the IP Address field. Each IP address should be unique.

6. Enter your subnet mask in the Subnet mask field. The subnet mask separates the network ID from the host ID (see above).

7. Enter your router address in the Router address field. If you have no TCP/IP router on your network, leave this field blank.

8. Enter your Name Server (DNS) address in the Name server address field. If you have no Name server leave this field blank.

9. Click the Options button. Make sure that "Load only when needed" is unchecked. Click OK.

10. Close the TCP/IP Control Panel. Click Save when prompted. You do not need to restart your MacOS computer.

11. If you want to know which version of Open Transport you are running click on the Info button. You should be running at least Open Transport 1.1.

1. Open the Network Control Panel.

2. Select the Protocols tab.

3. Select TCP/IP Protocol from the Network Protocol list. Click Properties.

4. Enter your IP address in the IP Address field.

5. Enter your subnet mask in the Subnet Mask field.

6. Enter your router address in the Default Gateway field. If you have no TCP/IP Router on your network you can leave the field blank.
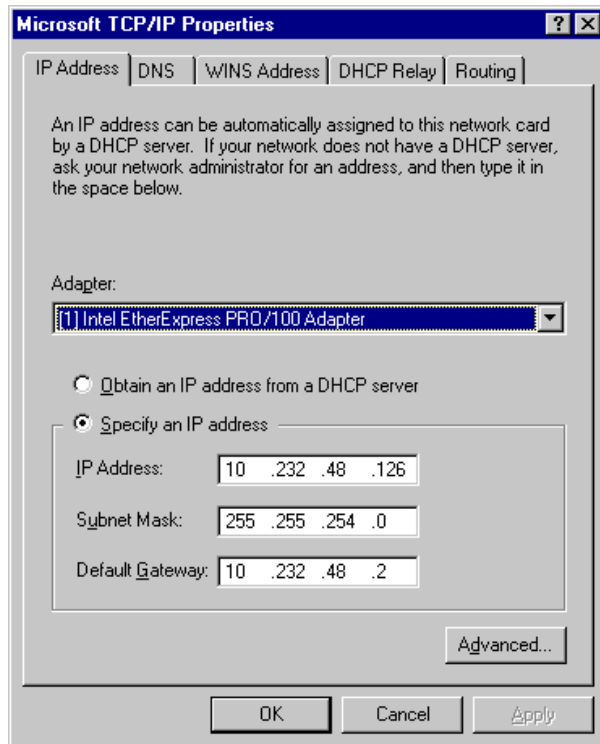
Configuring TCP/IP on a computer running Windows 95.

1. Open the Network Control Panel.

2. At the Configuration tab select Add protocol.

3. Choose Microsoft TCP/IP.

4. Highlight TCP/IP and fill in the properties (IP address and Subnet Mask).

5. Specify the Router address under the Gateway tab. If you have no TCP/IP Router on your network you can omit this step.

6. Specify the DNS server address under the DNS Configuration tab. If you have no Name server you can omit this step.
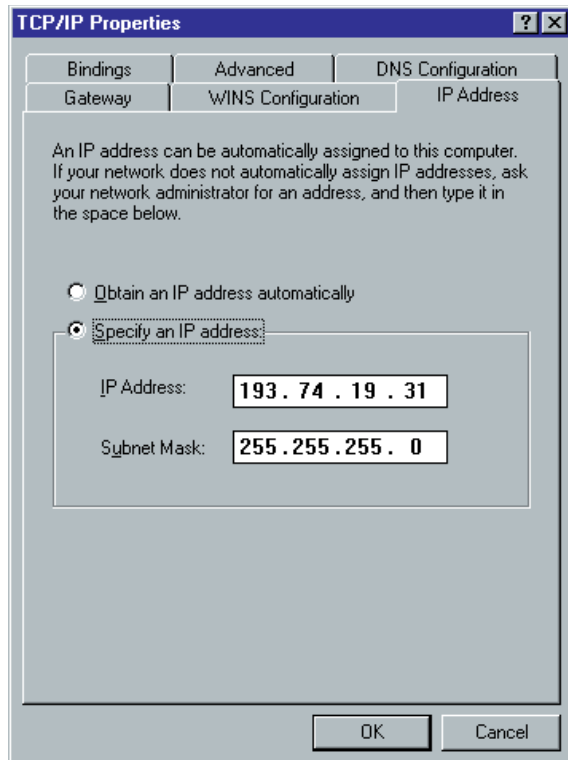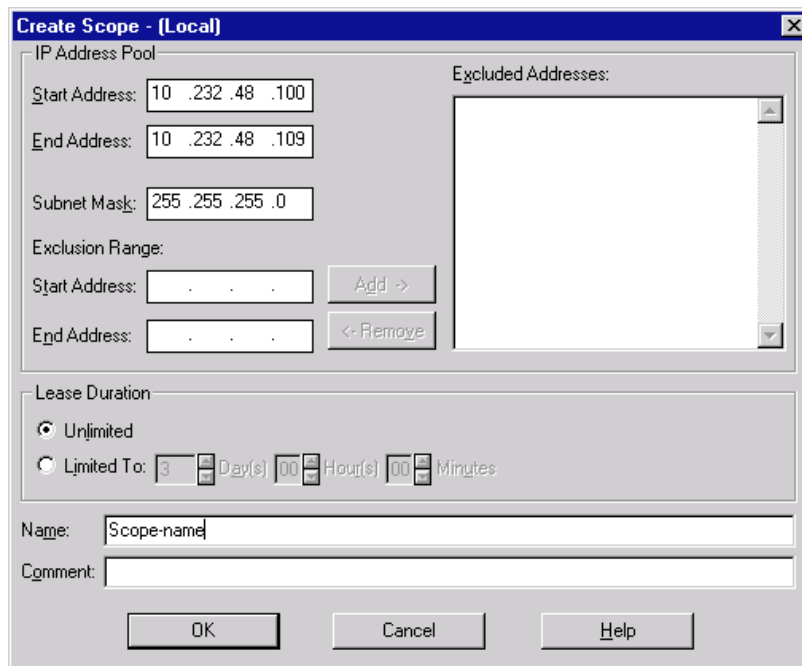
B. Using a DHCP server.

Setting up a DHCP server on a Windows NT 4.0 system.

1. Make sure TCP/IP is installed.

2. Open the Network Control Panel.

3. Install the DHCP Server service under the Services tab.

4. Restart your Windows NT machine.

5. Open the DHCP Manager which is part of the Administrative Tools.

6. Create a Scope (a pool) of IP addresses.

The scope of addresses is defined by the start IP address and End IP address.

> *Example:*
> *Start IP address = 10.232.48.100 and End IP address =10.232.48.109.*
> *Your scope will include 10 IP addresses: 10.232.48.100, 10.232.48.101,*
> *10.232.48.102, ..., 10.232.48.109.*

The static IP address of the local machine may not appear in your scope IP list. Even the static IP addresses of other machines on your network may not appear in the scope list. None of the IP addresses in the scope may have been used already. If this is the case then you can exclude this IP address using the Exclusion Range fields and adding it to the Excluded Addresses list.

You can specify a time limit if you want. It's best to set the duration to unlimited.

The last step is to assign a name to your scope. After activating the scope you are ready to set up the DHCP clients.

Highlight the scope name. Under the Scope menu option you can select view leases to check which are the already leased IP addresses for this specific scope.

Setting up the DHCP clients.

<u>1. Setting up a DHCP client on a Windows NT 4.0 system.</u>

TCP/IP is not installed yet.

       - Install TCP/IP and select obtain IP address from DHCP server.

TCP/IP is already installed.

       - Open properties for TCP/IP protocol.

       - Select obtain IP address from DHCP server.

<u>2. Setting up a DHCP client on a Windows 95 system.</u>

TCP/IP is not installed yet.

       - Install TCP/IP.

       - when there is a DHCP server on the network Windows 95 will detect it.

TCP/IP is already installed.

       - Select obtain IP Address automatically.

<u>3. Setting up a DHCP client on a MacOS system.</u>

       - Select the TCP/IP control panel.

       - Choose "Configure using DHCP Server".

       - Fill in the proper Subnet mask to distinguish the network ID form the host ID.

General Information on DHCP.

The IP Addresses are given to the clients on a "first asked first served" basis. The machine which is booted first (and therefore is the first to ask an IP address) will be given the first free IP address in the list. The second machine gets the second free IP address in the list and so on. This means that an IP address is not connected to one specific machine. You can force the DHCP server to give a specific IP address to your machine by means of reservations. Highlight your scope and select "Add Reservations" under the Scope menu option.

Disadvantages:
- *Your DHCP server must always be running. Whenever your DHCP server breaks down, no IP addresses will be given anymore to systems which are then booted up.*
- *You don't know the IP adresses of all your machines unless you check them on your DHCP manager.*

Advantages:
- *You don't have to keep track of all IP addresses.*
- *Whenever a new system is installed in your network, it will automatically receive a valid IP address.*