

# DIGITAL SIGNAGE Media Player

Model: CMP2000N



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# CMP2000N Network Signage Player Users Guide

## Table of Contents:

- I. Introduction
- II. CMP2000NSpec and Components
- III. Evaluation Kit
- IV. Playlist and Operation
  
- V. Client Device Setup
  - 1. Client board Installation
  - 2. Client Main Menu
  - 3. Client Setup Screen
  - 4. Remote Control Key Definition
  - 5. Scrolling Text Format
  
- VI. CAT Software
  - 1. CAT.exe
  - 2. Tools Tab
  - 3. Account
  - 4. Sever Setup
  - 5. Playlist Editor Description
  - 6. Client Setup
  - 7. Graphics Command ICON:
  - 8. RSS Advantage Software
  - 9. Playlist Editor
  
- VII. HTTP Server Setup
  - 1. Microsoft XP Pro IIS (Internet Information Services)
  - 2. Apache HTTP Server Installation Procedure
  
- VIII. Firewall and Anti-Virus program
- IX. Router Setup

# I. Introduction

CMP2000N is a digital media player with networking capability. Utilizing an Ethernet connection or any other type of file transfer feature, all media content files can be downloaded from host content server to multiple networked players and stored onto a CF card. You can then playback your media files repeatedly according to playlist's file sequence and pre-defined time schedule.

## II. Board Spec and Components

- CPU: 32 bits RISC and 64 bits DSP dual processors (ES6425)
- Network: IEEE 802.3 Ethernet single chip (SMC 9113)
- Memory: 16MB SDRam, 2MB Flash Rom, EEPROM
- Video Output: Composite Video/S-Video/VGA
- Audio Output: 2 channel stereo
- Storage Device: Compact Flash type I/II slot
- Power: 5V AC power adaptor input
- PCB: 4 layer design
- Others: RTC and battery, IR receiver

## III. CMP2000N Kit

- CMP2000N Network Player
- 5V AC adaptor
- Remote control
- Audio/Video cables



## IV. Playlist and Operation

### 1. Playlist:

- **Playlist** is a script text file including command, time schedule, download filename and content server IP address for CMP2000N client to execute line by line.
- **Playlist** is created by the administrator using CAT (Client Administration Tool) software.

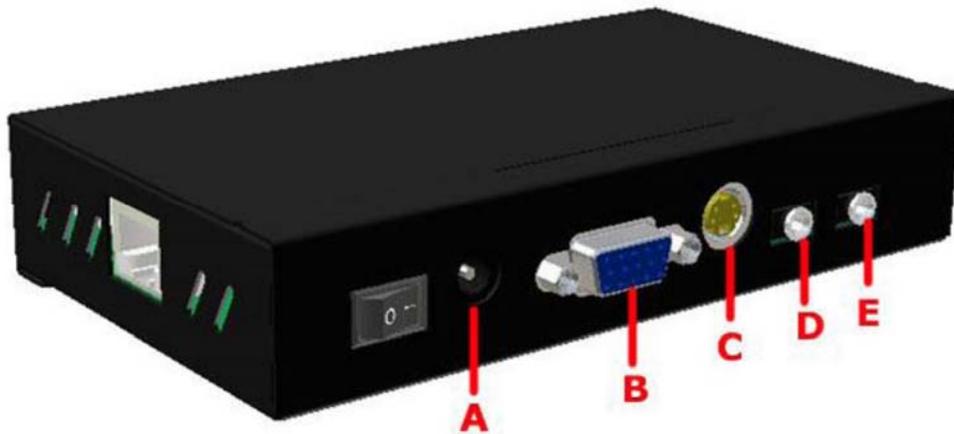
### 2. Basic Operation without CAT (Server management software):

- Pre-configure CMP2000N's network setup and save. Network setup includes username, password, server IP, client DHCP or static IP, and HTTP or FTP server's URL address to download **playlist**.
- Administrator uploads **playlist** file into the specific URL path of HTTP or FTP server
- Connect audio/video cables to any TV display, and Ethernet cable to RJ-45 connector
- Power up CMP2000N - it will load network settings from EEPROM, initialize LAN, connect to internet and download **playlist** from fixed URL and store into CF card automatically interpret **playlist** file and execute tasks including download files, playback files and time schedule. The CMP2000N will play media files repeatedly until a stop or reboot command is executed
- Administrator can update the old **playlist** with a new one, but keep the same filename for CMP2000N to load new playlist file during next power-up or pre-defined time period to visit this fixed URL

### 3. Monitoring and management Tool - CAT (Client Administration Tool)

- CAT is a Windows application software to manage multiple client devices thru LAN or internet connection
- CAT has many useful commands and editor tools to monitor and control client devices

## V. Client Device Setup



**A: Power connector**  
**C: S-Video**

**B: VGA**  
**D: Composite Video**

**E: Stereo Jack**

### 1. CMP2000N Operating Procedure

- High speed CF (Compact Flash) memory card is required. Sandisk Ultra II CF card is recommended
- Plug in CF card into CF slot
- Plug in LAN cable that connect to your LAN or internet network
- Connect video cable (RCA or S-Video) to your TV unit or VGA to your PC monitor
- Switch to right video source input channel on TV unit
- Connect audio cable to TV unit's audio connectors
- Connect 5V AC power adapter
- Switch on CMP2000N

### 2. Client Main Menu

- Display screen will show "Initializing", "Initializing LAN", "Connecting DHCP Server..", "IP Address", "CF Card" then main menu

Note: It will take a few moments while "Connecting to DHCP Server" depending on the IP assignment speed from network router

- Main menu will show the following items on left side
  - Client Local IP: xxx.xxx.xxx.xxx
  - Server IP: xxx.xxx.xxx.xxx or Host name
  - Time: 2007/06/01 15:30
  - MAC Address: xx-xx-xx-xx-xx-xx
  - Server Connection: ON or OFF or Error
  - Storage: xxxMB
- Main Menu will show the following items on the right side
  - Setup : press ENTER key to go into Client Setup screen
  - Storage : Press ENTER key to go to file folder of CF card

### 3. Client Setup Screen

- Use remote control to navigate and make necessary changes
- Press ENTER from main menu to enter CMP2000N's setup screen
- Listed options include Network, Time, AutoStart, Return to Main menu, and Save and reboot
- Press ENTER on any item to go to its screen

#### Network Setup Screen

- User Name and Password:** Use “Select” or “Goto” key to open virtual keyboard. Move cursor to any letter and press ENTER, or use '0' (zero) to erase letter. Once finished, press “Select” or “Goto” again to exit virtual keyboard mode. Press ENTER key on 'user name' or 'password' to go to next screen
- Server IP and Host Name:** Move cursor to select 'Server static IP' or 'Host Name'. Use numeric key pad of remote to input in the static IP or use virtual keyboard to type in 'Host Name'. Press ENTER to go to next page  
**Note:** If the computer running CAT is located behind a static IP, then use 'Server static IP'. If your IP is dynamic, please register your IP to be forwarded by a dynamic DNS service and type in your DDNS address into 'Host Name'. **Please see the last page for additional information**
- CMP2000N Client DHCP or Static IP:** Move cursor to select 'DHCP' or 'Static IP' and press ENTER (DHCP is recommended.)

#### Time Setup Screen

- Time Server:** Press cursor left or right to select 'time.nist.gov' or 'windows.time.com'. Press cursor down to move to next item
- Date:** you can ignore this because client board will obtain internet time during power up unless there is no internet connection
- Time:** See above
- Time Zone:** Press cursor left or right to select your local time zone
- DST (Day Saving Time):** Press cursor to select On or OFF. If On, it will add one hour
- Reboot Time:** Move cursor to select 'OFF' or type in 2 digits for daily reboot time. When time is up, client will reboot itself.
- Press ENTER on any field to go back to Setup screen

#### Auto Start Screen

- OFF:** After power up, client will do nothing and wait for server's command
- Local CF:** After power up, client will playback according to playlist file stored in the CF card or playback A-Z order files without playlist file
- Network:** Use virtual keyboard to enter network URL path. After power up, client will go to this URL path to download playlist file and execute action item listed in the playlist file. (also described on page 2 item IV)

**Return to Main Menu:** will return to main menu

**Save and Reboot:** save all the changes and reboot client

**Note-1:** Client setup settings can be modified under the “Client Setup Utility” in CAT software. You can save as “autoconfig.mia” onto CF card then insert into CF slot of CMP2000N and power up. Screen will show “Auto Updating” message and save into EEPROM. Remove CF card and delete this file to avoid reloading again.

**Note-2:** You can save as “autoconfig.mib” filename and it will also update into EEPROM except this file will be deleted afterwards.

#### 4. ESS Remote Control Key Definition

Label	Label	Remote Key Function
(ESS Remote)	(MP715 remote)	
P/N	SEARCH	Switch to main menu screen from SmartNavi screen
ZOOM	ZOOM	Switch to SmartNavi screen from main menu
ANGLE	TV MODE	Switch between S-Video/Composite Video and VGA output
GOTO	SELECT	Only available in Setup screen to <b>enter or exit</b> virtual keyboard page (use key „0” as erase key)
MUTE	MUTE	Mute/Un-mute sound
VOL UP	VOL +	Sound level control
VOL DN	VOL -	Sound level control
SHUFFLE	SHUFFLE	Adjust down scrolling text bar position
PROGRAM	EDIT/PROGRAM	Adjust up scrolling text bar position
KEY+	TITLE	Background color for scrolling text bar (8 colors)
KEY-	SUBTITLE	Foreground color for scrolling text bar (white and black)
ECHO+	REPEAT	Scrolling text transparent level (0%, 25%, 50%, 75%, 100%)
ECHO-	ANGLE/ROTATE	Scrolling text speed settings (fast, normal and slow)
SURROUND	A-B	Turn On/off Clock display on the scrolling text bar
Zoom	Zoom	Font size change on the scrolling text bar
>> FORWARD	>> FORWARD	Auto download/playback files in A-Z order from CF card or execute “playlist.mpl” file in the CF card

#### 5. Scrolling Text Format

A (\*.txt) text file can be used to store any text data including English, Chinese or Japanese. This text file data will be scrolled like stock symbol or news ticker with any photo or video file.

On the 1<sup>st</sup> line of the text file, you can program settings for the text color and position. Refer to the following example.

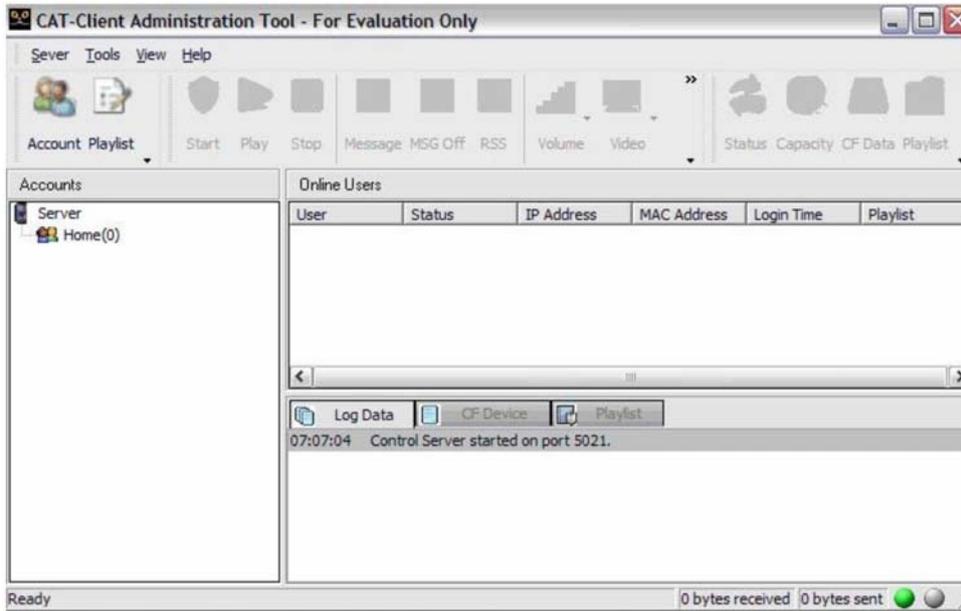
osd\_settings=[B/G color], [F/G color], [Transparent], [Speed]  
e.g. “**osd\_settings=2,1,0,0**”

1. **B/G color:** a digital number from 0 to 7 (blue, grey, red, light blue, green, yellow, magenta, orange)
2. **F/G color:** a digital number form 0 and 1 (white and black)
3. **Transparency:** 0(no transparent effect), 1(75%), 2(50%), 3(25%), 4(100%)
4. **Speed:** 0(fast), 1 (normal), 2(slow)

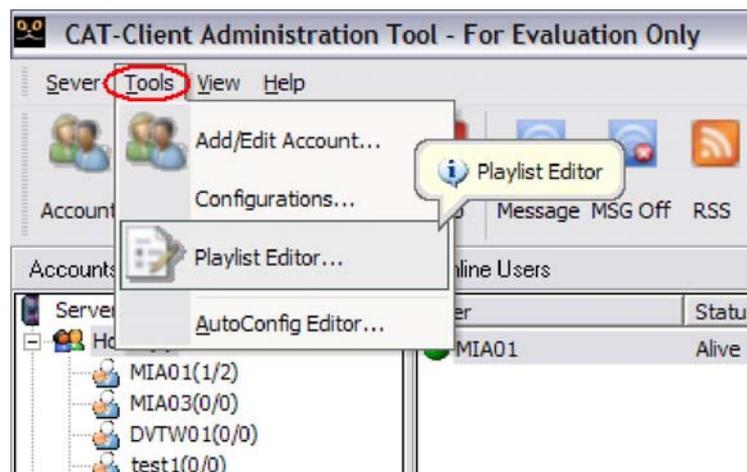
[Note]: Default setting is white text color on grey background if 'osd\_settings' line is omitted.

## VI. CAT Software

1. **CAT** (Client Administration Tool) can be executed on any Windows XP system. Click on the executable CAT.exe file and you will see the display below. Note that **Home** is the default group.



2. When click Tool tab, it will pull down 4 useful tools (see photo below). "Account and Playlist Editor" are also shown on ICON row for quick access. **Note: Version 0928 CAT and firmware will show "Playlist Commander"**.

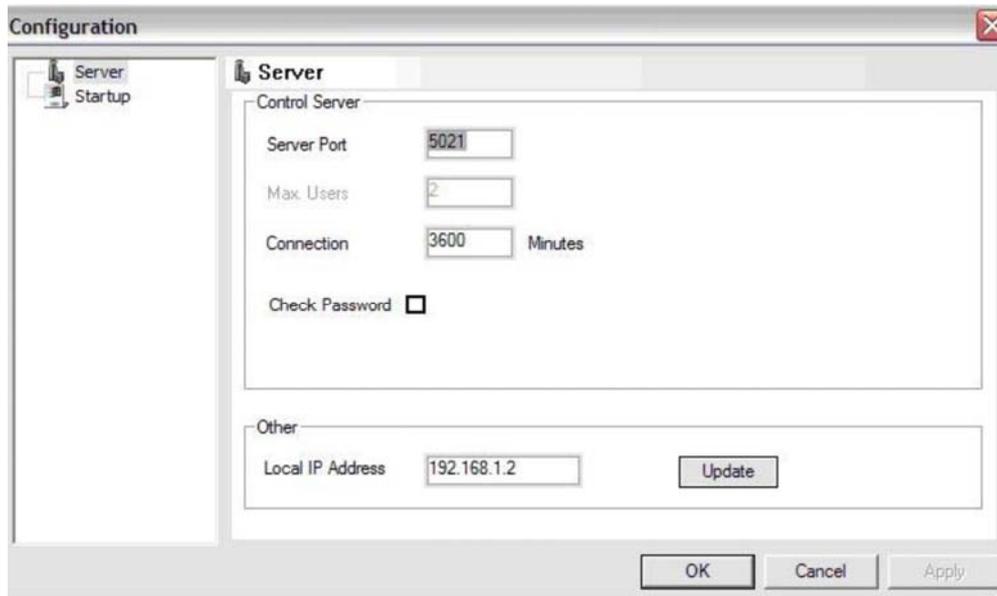


3. **Account Management** is used to create or manage group and user account names. You can create multiple groups and assign different account names. When any CMP2000N client logs into

CAT, it will go under its corresponding group if the account name is matched. Otherwise, it will be listed under default Home group.



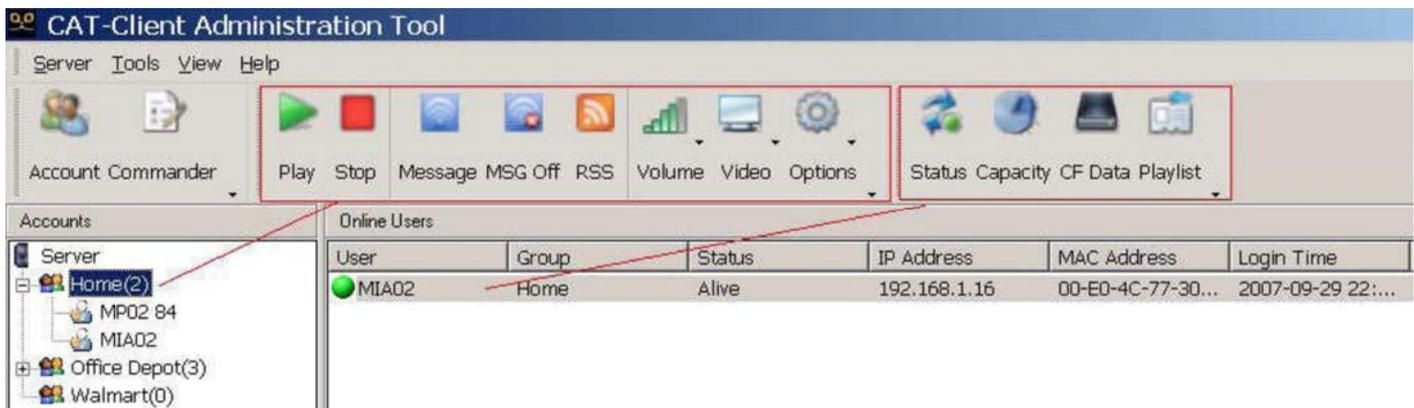
4. **Server Setup** is for administrator to make changes for CAT server. Server port 5021 is used as a port forwarding function for your network router to access CAT.



5. **Playlist Editor** is for the administrator to create a playlist and save as a new file or open and edit any existing playlist file. A detailed description is given in next chapter.
6. **Client Setup** is an editor to create or open client"s autoconfig.mia file which is used to update their setup values. Save autoconfig.mia into CF card, then plug into client device and power up. It will show "Auto Updating" message and then auto-reboot.

- a) **IP or Hostname:** Type in static IP for local LAN server or hostname for remote internet server. Example: 192.168.1.100 or [miatech.blogdns.com](http://miatech.blogdns.com)
- b) **Port:** Default is 5021 but if 5021 is already in use on server side, please reassign a different port. Make sure the port number is the same in CAT and your router
- c) **Client Account Name and Password:** Type in user name and password for this client device. After client powers up and logs into CAT server, it will go to its assigned group.
- d) **DHCP or Static IP:** Select Dynamic IP by router or fixed static IP for client device
- e) **Time Zone:** Select your local time zone
- f) **Daylight Saving:** If checked, one hour will be added
- g) **Reboot time:** If checked, client will reboot at set time
- h) **Video output:** Selecting S-Video will include composite video. You can use 'Angle' key from remote to switch at main menu
- i) **Off/Local CF/Internet URL Address:** If Internet URL Address is selected, type in URL address and playlist filename so client will download playlist and execute
- j) **Interval time for Network autostart:** check if any new playlist is updated based on this interval time.
- k) **Update Client:** This is a remote command which will send current settings to all client devices of the selected group. Client device will reboot after settings are saved into EEPROM. It will take approximately 30 seconds from reboot to re-login.

## 7. Graphics ICON:



The command group is highlighted by the left rectangle and the current active group will be highlighted by the cursor. Pressing any button on the command group will result in a command being sent to ALL client devices under the active group. In this example, if we press “Stop”, MP02 84 and MIA02 will both stop their video stream.

The rectangle highlight on the right is the client device command which will only send a command to the selected client only.

- a) **Account:** create group and account user name for group management
- b) **Commander:** Playlist commander to manage playback sequence and download playlist files
- c) **Play:** Send 'Playback' command manually to group of clients
- d) **Stop:** Send 'Stop' command manually to group of clients
- e) **Message:** Instant message editor will pop up. You can select any .txt file or manually type in text message, then send to group of clients. A news ticker type will scroll text from right to left on the bottom of client screen
- f) **Message Off:** Send “Message Off” command to group of clients
- g) **RSS:** Send RSS news ticker message to group of clients. Bundled 'RSS Advantage' software must be pre-installed along with Microsoft .net Framework 1.1 or 2.0
- h) **Volume:** There are 15 levels of volume and MUTE i) **Video:** Select from video ON or OFF to turn On/Off client's screen j) **Options:** Commands not frequently used are found here. Chose from 'Send playlist', 'Download', 'Playback', 'Format', 'Reboot' or 'Shutdown'
  - **Send Playlist:** Send playlist file only
  - **Download:** Send download command to group of clients
  - **Playback:** Same as 'Playback' Icon
  - **Format:** Send format CF card command to client. All files in CF card will be erased.
  - **Reboot:** Send reboot client command to client.
  - **Shutdown:** Send shutdown command to client. All clients will be powered OFF.
- k) **Status:** Client will send current status including time, current playback filename, music and instant message. Example: Playing [01:54:30] BATMANBEGINS\_1.DIVX(5/11,16) 0:0:6, Scrolling Text: IntoTheBlue.txt
- l) **Capacity:** Client will report CF card capacity and firmware version #.  
Example: Storage Total Size: 977MB, Free Space: 762MB. F/W version: 1.1.84.0528C
- m) **CF Data:** Client will report all the filenames on the CF card. It will display filenames on

the CF tab screen of CAT.

- n) **CF Data [Delete]:** Click the right mouse button on CF window and 'Delete' will pop up. Check all the files to be deleted before you click 'Delete'. CAT will send delete command to client to remove those checked files and update CF Data screen o) **Playlist:** Client will report current playlist file. It will display the playlist file order on the playlist tab screen of CAT

## 8. RSS Advantage Software



In order for RSS to function properly, you must install RSS software ([RssAdvantage-1.0.2.3-MIAticker.zip](#)) bundled by manufacturer and not from RssAdvantage's website. This is a RSS Feed 2.0 application that allows an administrator to manage their favorite RSS links. News tickers scrolling on the admin PC screen will be mirrored to client device as long as RSS Icon button is pressed.

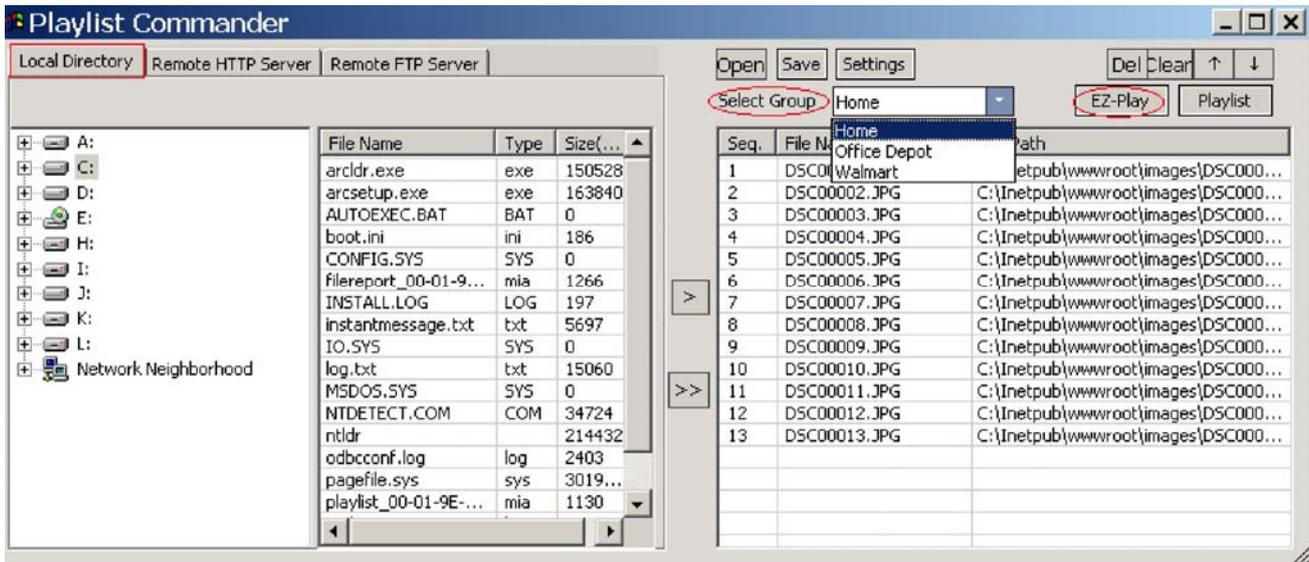
This basic version is however without some features. For example, there is no "Enable/Disable" on each individual RSS link. If you prefer to get full features, please click 'Help->About' to purchase upgrade version from here to get 10% discount.

[Note1]: RSS must be installed under [C:\Program Files](#)\RSS Advantage\Newsticker for CAT to fetch news ticker file.

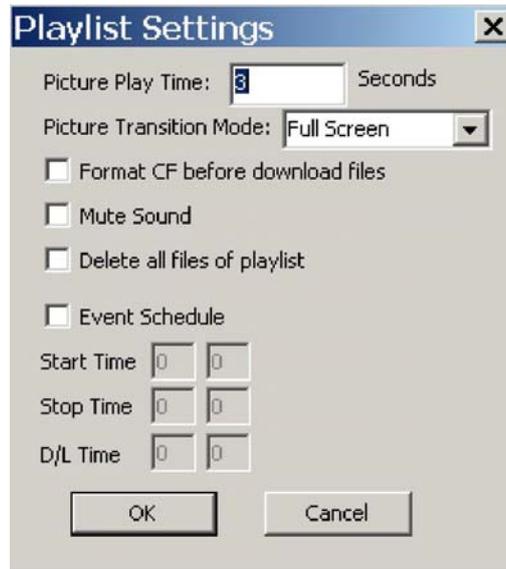
[Note2]: Microsoft .net Framework 2.0 is required for RSS Advantage to work.



## 9. Playlist Commander



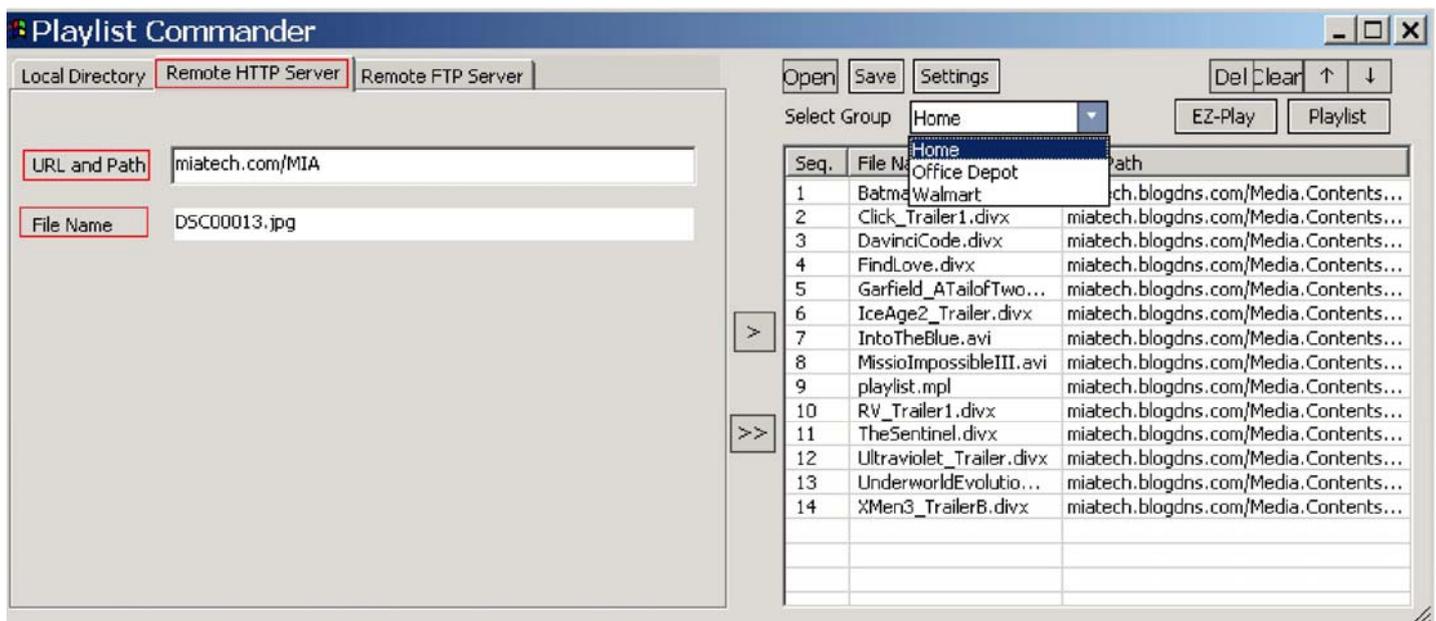
- a) **Local Directory:** Load media files from local PC directory. Once files are moved to the right window, press 'EZ-Play' on selected group and server will transfer files to clients
- b) **Remote HTTP Server:** Type URL address and filename from remote HTTP server
- c) **Remote FTP Server:** Input your FTP IP, login and password to browse an off-site server via FTP connection
- d) **Open:** Open existing playlist file
- e) **Save:** Save new playlist file or overwrite existing one
- f) **>:** Move single file to playlist window
- g) **»:** Move all files to playlist window
- h) **Select Group:** user must specify which group to execute 'EZ-Play' and 'Playlist' buttons
- i) **EZ-Play:** All media files on the right playlist window will be downloaded to client and then playback will ensue
- j) **Playlist:** Send the playlist to the group's clients without playback
- k) **Del:** Remove single file from playlist window
- l) **Clear:** Remove all files from playlist window and reset values in Setting menu
- m) **Up/Down arrows:** Move up or down on the highlight filename to proper position
- n) **Settings:** Optional settings for playlist file



- o) **Picture Play Time:** control interval time between JPEG files
- p) **Picture Transition Mode:** 3 modes (Full Screen, Random, and Cross Fade) are available for transition settings
- q) **Format CF before download files:** Set “Format CF Card” command in the playlist so that all new files in playlist will download into an formatted CF card.
- r) **Mute Sound:** All playback content will be silent
- s) **Event Schedule:** Download time, Start Time and Stop Time can be scheduled for updates on a daily basis. Note: Client’s video screen will shut off when stop time is activated.

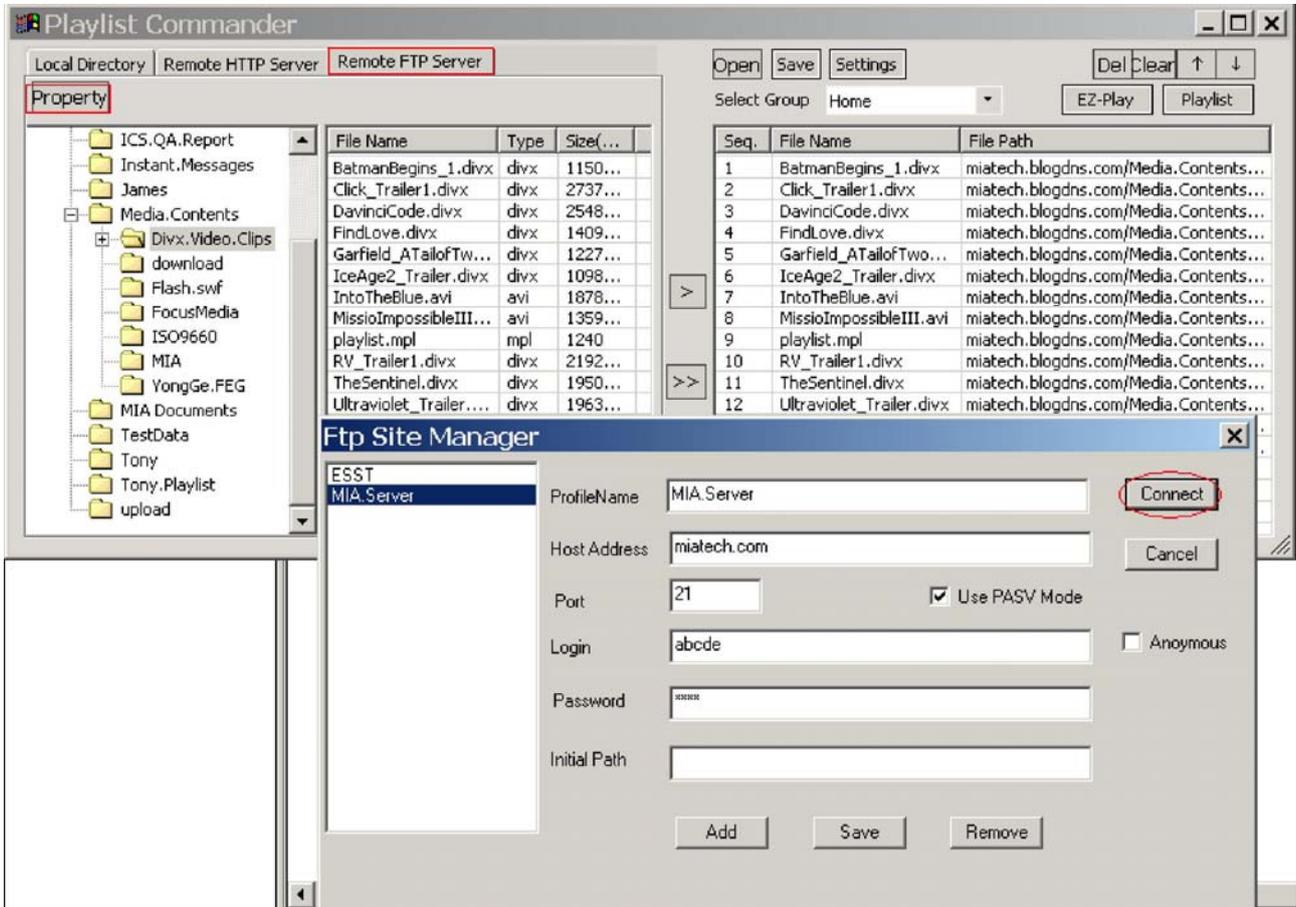
## 10. Remote HTTP Server

Another content transfer option is by Remote Http Server which is accessible via the Playlist Commander. Just type the URL path and filename and click EZ-Play or save the playlist for future use.



## 11. Remote FTP Server

This feature allows the user to access an FTP server and create a FTP playlist. Navigation will be similar to local directory but you need to enter your FTP access information in order to log in. You can click EZ-Play to execute playlist or save for future use.



## 12. Web Server Configuration

If an administrator needs to change an CMP2000Nclients network setup values, a new feature introduced on version 0928 is Web Server Configuration via Internet Explorer. This is a tool that allows the administrator to read client devices current status and re-configure server's and client's IP, username and password.

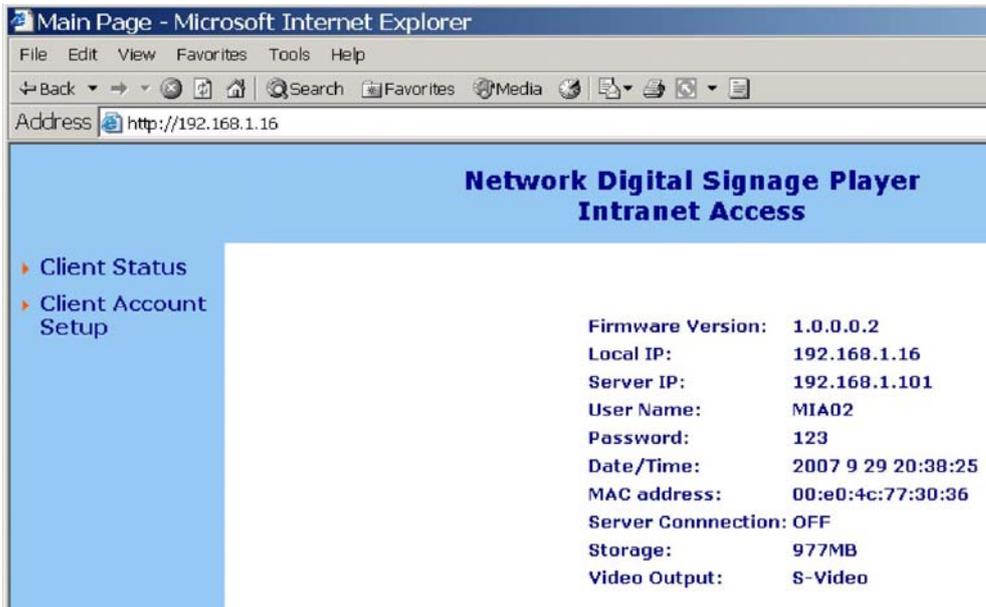
- a. To use this function, open Microsoft IE and type client's IP address (for example 192.168.1.16) on the address line.



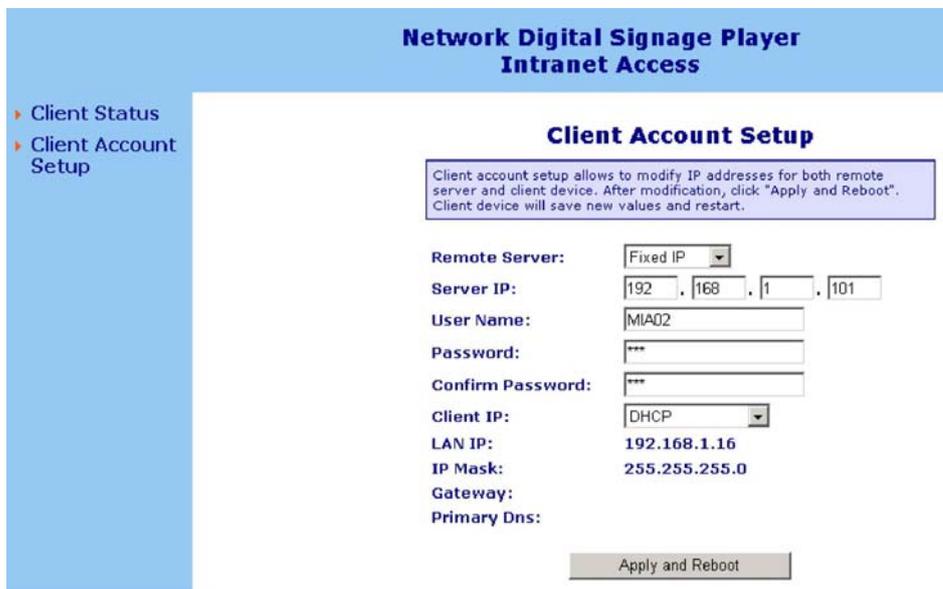
- b. If the IP address is correct, IE will open a confirmation window. Enter username and password below (Username = admin Password = admin)



- c. Internet Explorer will display the screen below if login and password are both correct. By clicking “Client Status”, it will refresh the screen.



- d. Click “Client Account Setup” and it will display the setup page.



- e. The remote server pull down menu has either a Fixed IP or Host Name selection choice. You can enter a new server IP address or a new hostname. In additional, you can also change clients account name and password.
- f. Click “Apply and Reboot” to save new setup information. Internet Explorer will send a configuration file to CMP2000Nclient and a shut down sequence will commence. After 30-60 seconds, CMP2000Nclient should have rebooted so click on “Client Status” to verify changes have been saved.

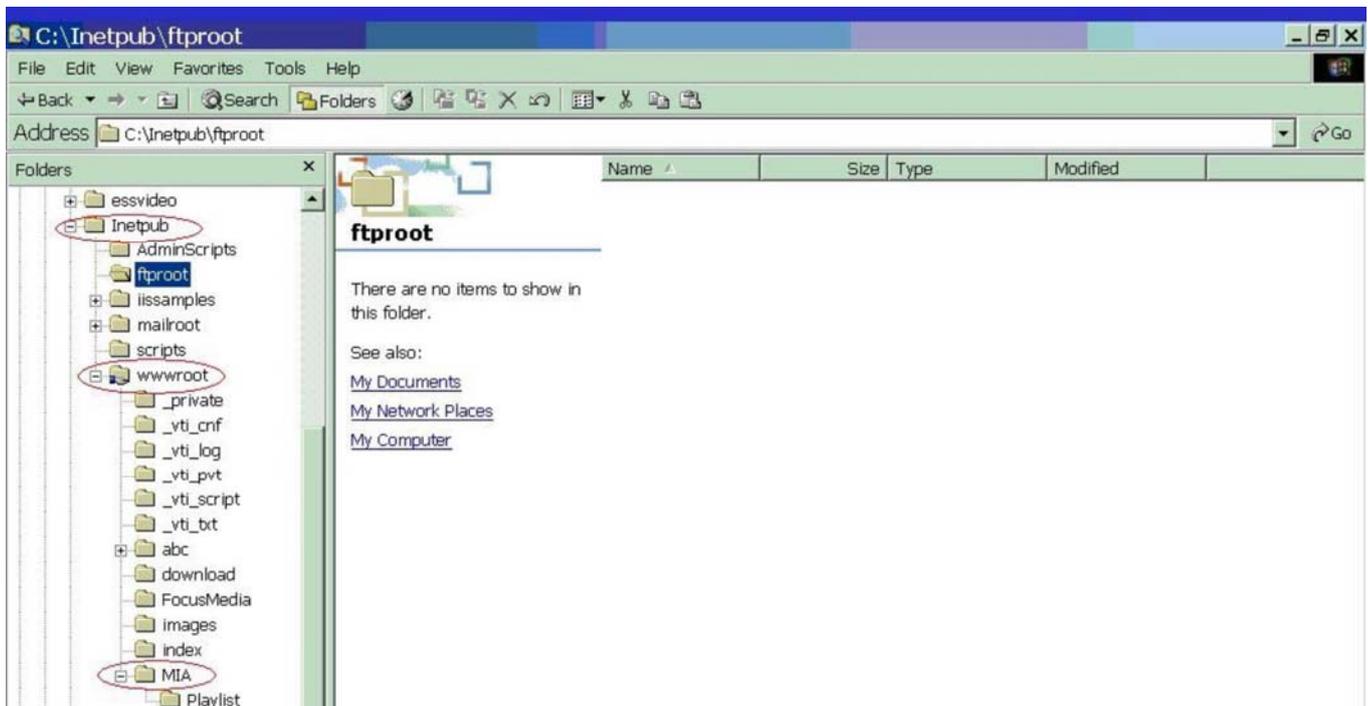


## VII. HTTP Server Setup

An alternative to deploy your media files is to use an HTTP server setup, which may increase transfer rates by up to 30%. In order to do this, you need to setup your PC as an HTTP server so that it can become a content server that transfers media files to client devices. You must use Windows XP **Professional** due to lack of IIS (Internet Information Services) support on Home edition. (Note: You can download freeware http server software from <http://httpd.apache.org/> and use it instead of IIS)

### 1. Microsoft IIS Installation Procedure

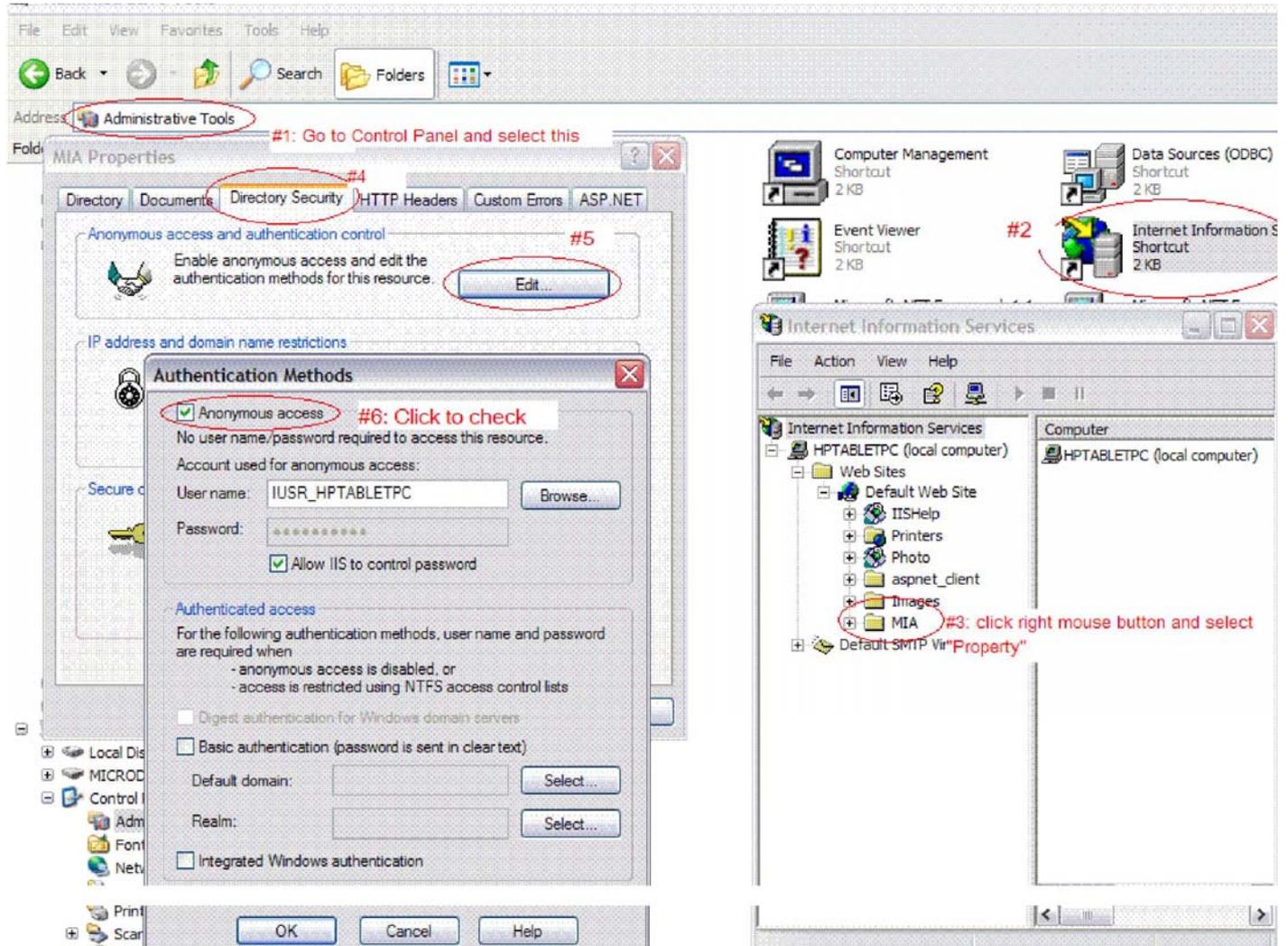
- a. Go to Control panel and select Add/Remove programs
- b. Select Add/Remove Windows Components on the left column
- c. Check "IIS (Internet Information Services)" and install - you may be asked for your Microsoft Installation disc
- d. After installation is complete, a subfolder will be created under C:\inetpub\wwwroot
- e. Additionally, you can create a subfolder to put your media files but remember to set wwwroot as a shared folder so that all the subfolders under wwwroot can be accessed



## Important note:

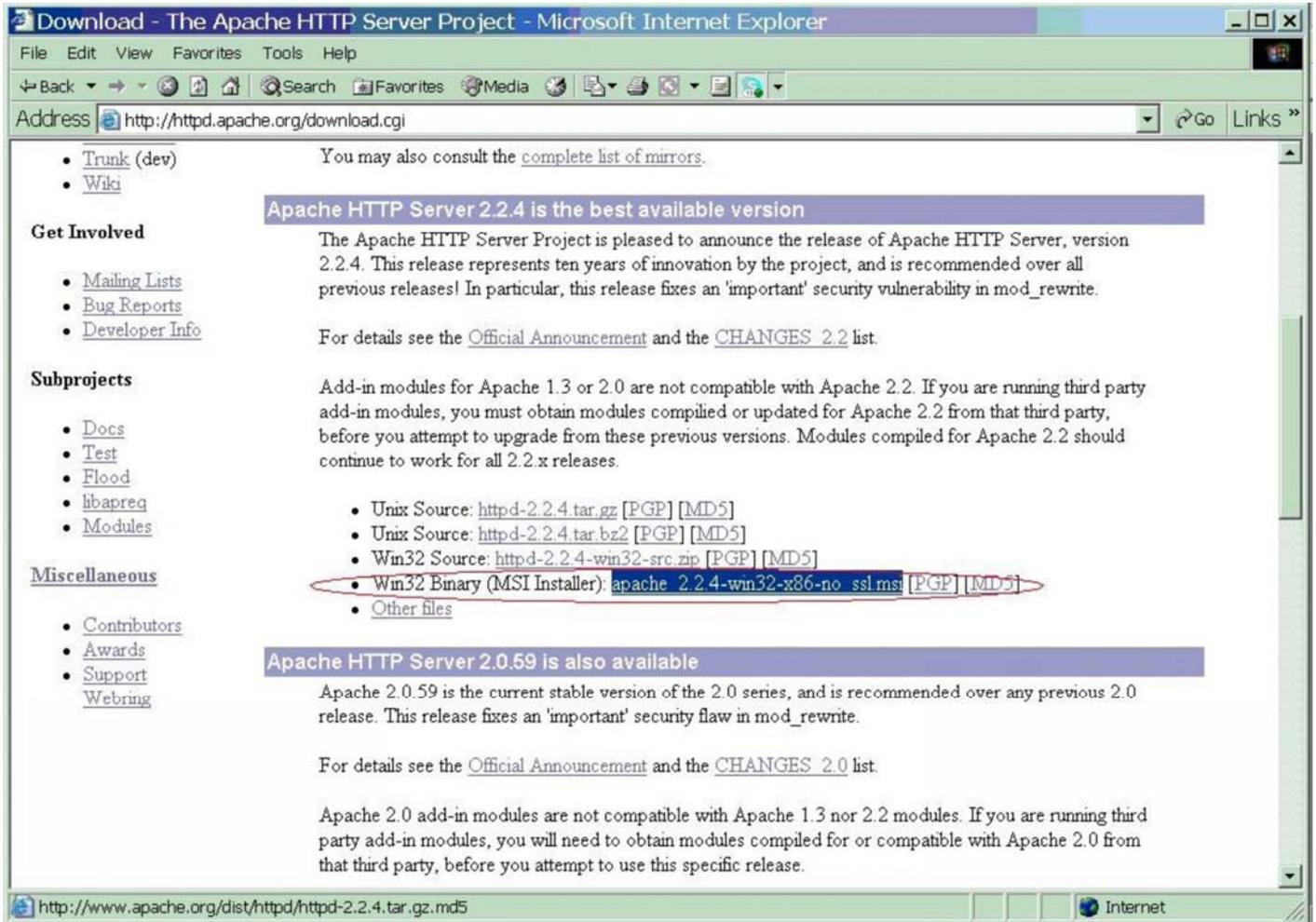
If you encounter an http download error on CAT, it's possible that the anonymous access is not checked on the IIS property.

**Procedure:** Go to Control Panel->#1.Administrative Tools->#2.IIS Shortcut-> #3. shared subfolder -> #4 property/Directory Security -> #5. Edit -> #6. Anonymous Access



## 2. Apache HTTP Server Installation Procedure:

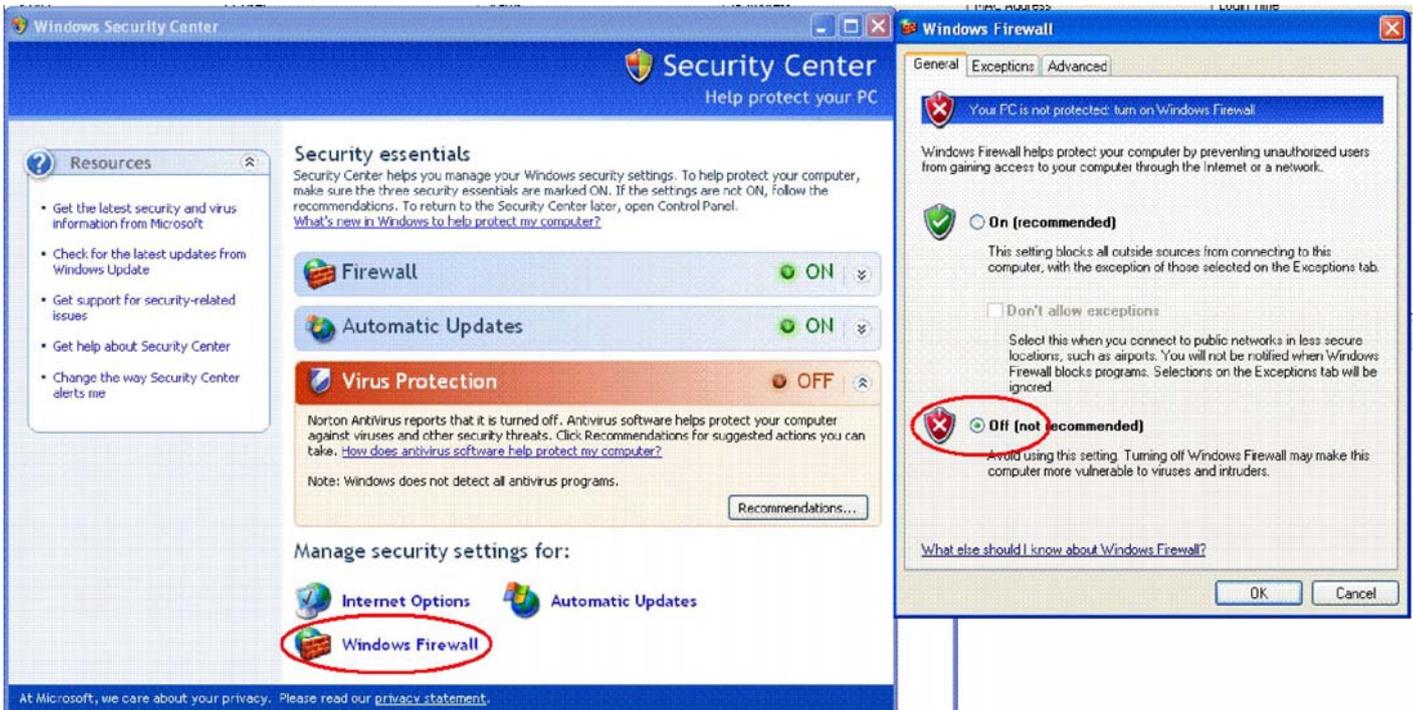
1. Go to <http://httpd.apache.org/download.cgi> and download [apache 2.2.4-win32-x86-no\\_ssl.msi](#)
2. Follow instructions to install
3. Copy content files to C:\Program Files\Apache Group\Apache\htdocs\ for download



## VIII. Firewall and Anti-Virus program Configuration

In cases where you have connection issues with your CMP2000Nclients, check your anti-virus and firewall programs.

### A. Firewall: Set Windows XP firewall to OFF



B. ZoneAlarm: If you use ZoneAlarm, add MIAICS as trusted program and IP range for clients.

**ZoneAlarm Security Suite**

INTERNET IN OUT **STOP** INTERNET TRUSTED PROGRAMS All Systems Active ? Help

**Firewall** Main Zones Expert

**Overview** Use this tab to add computers and networks to your Trusted or Blocked Zone.

**Firewall** Example: Put a computer or network you want to share with into the Trusted Zone.

**Program Control** Example: Put a computer or network you want to share with into the Trusted Zone.

**Anti-virus / Anti-spyware** Example: Put a computer that repeatedly 'pings' you into the Blocked Zone.

**E-mail Protection**

**Privacy** All traffic sources not listed here are in the Internet Zone by default. Networks are automatically added to this list.

**Identity Protection**

**IM Security**

**Parental Control**

**Alerts & Logs**

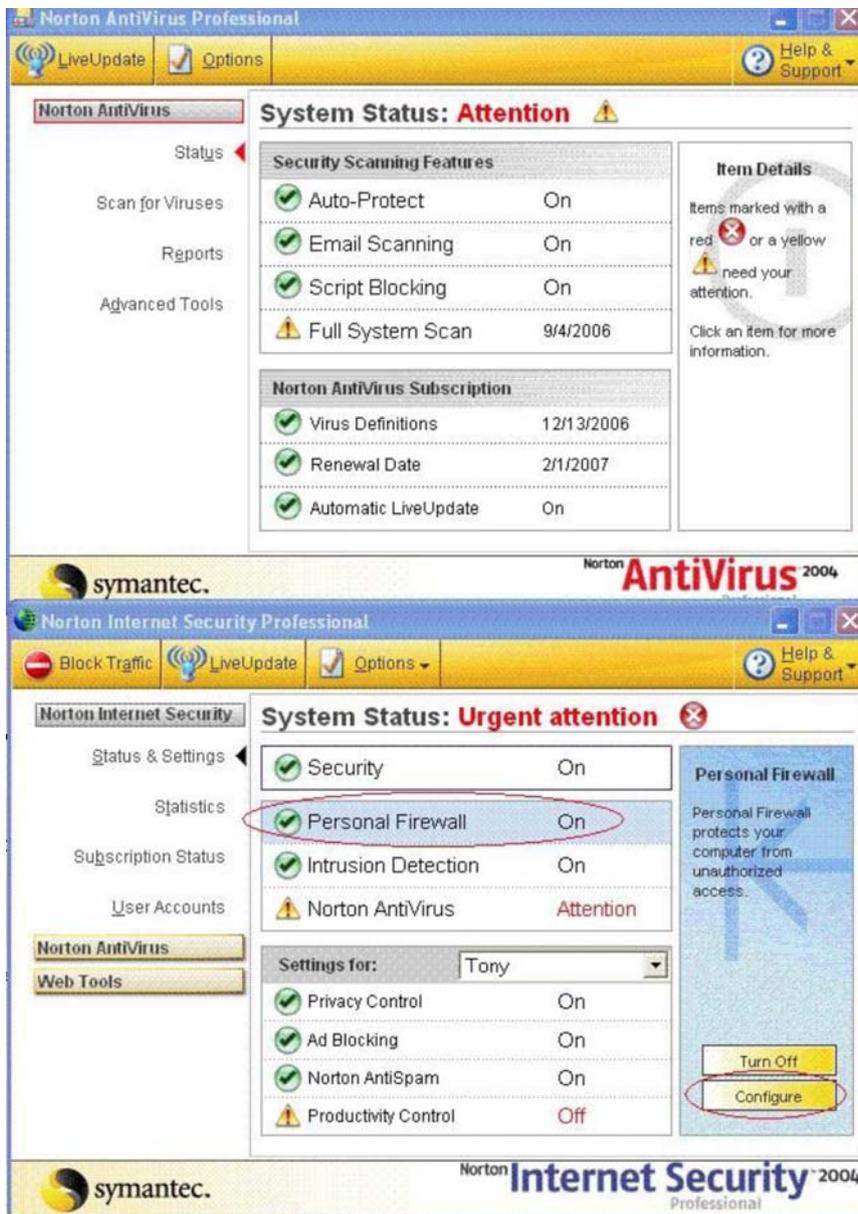
Name	IP Address / Site	Entry Type	Zone
New Network	192.168.1.0/255.255.255.0	Network	Trusted
Loopback adapter	127.0.0.1	IP Address	Trusted
VPN client zone	10.100.200.10 - 10.100.200.60	IP Range	Trusted
MIA Client Device	192.168.1.10 - 192.168.1.19	IP Range	Trusted

**Entry Detail**

Name MIA Client Device  
 Zone Trusted  
 Entry Type IP Range  
 IP Address /... 192.168.1.10 - 192.168.1.19

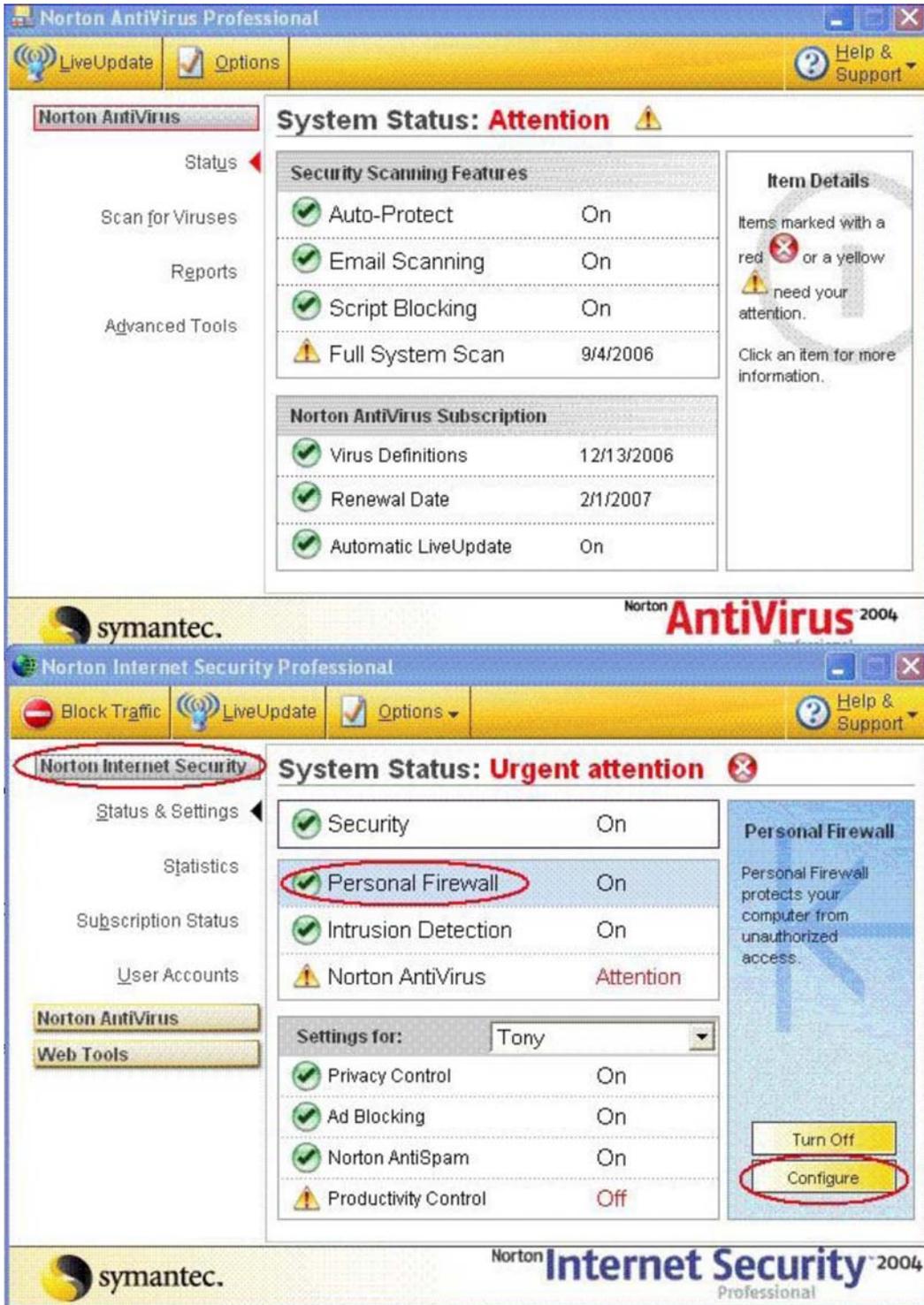
Add >> Remove  
 Edit Apply

C. Norton Anti-Virus: If you are using Norton Anti-Virus program, make sure to add MIAICS as trusted program and also set IP ranges for client devices to go thru. Easiest way is to set Personal Firewall to OFF.

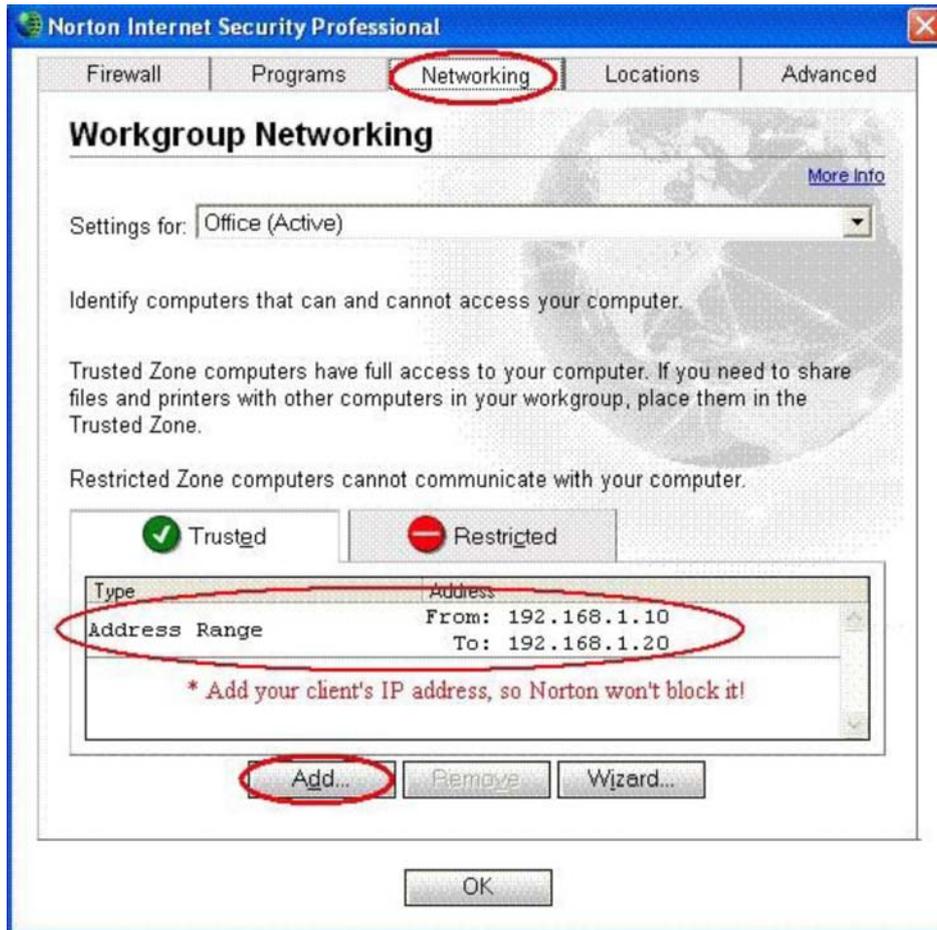








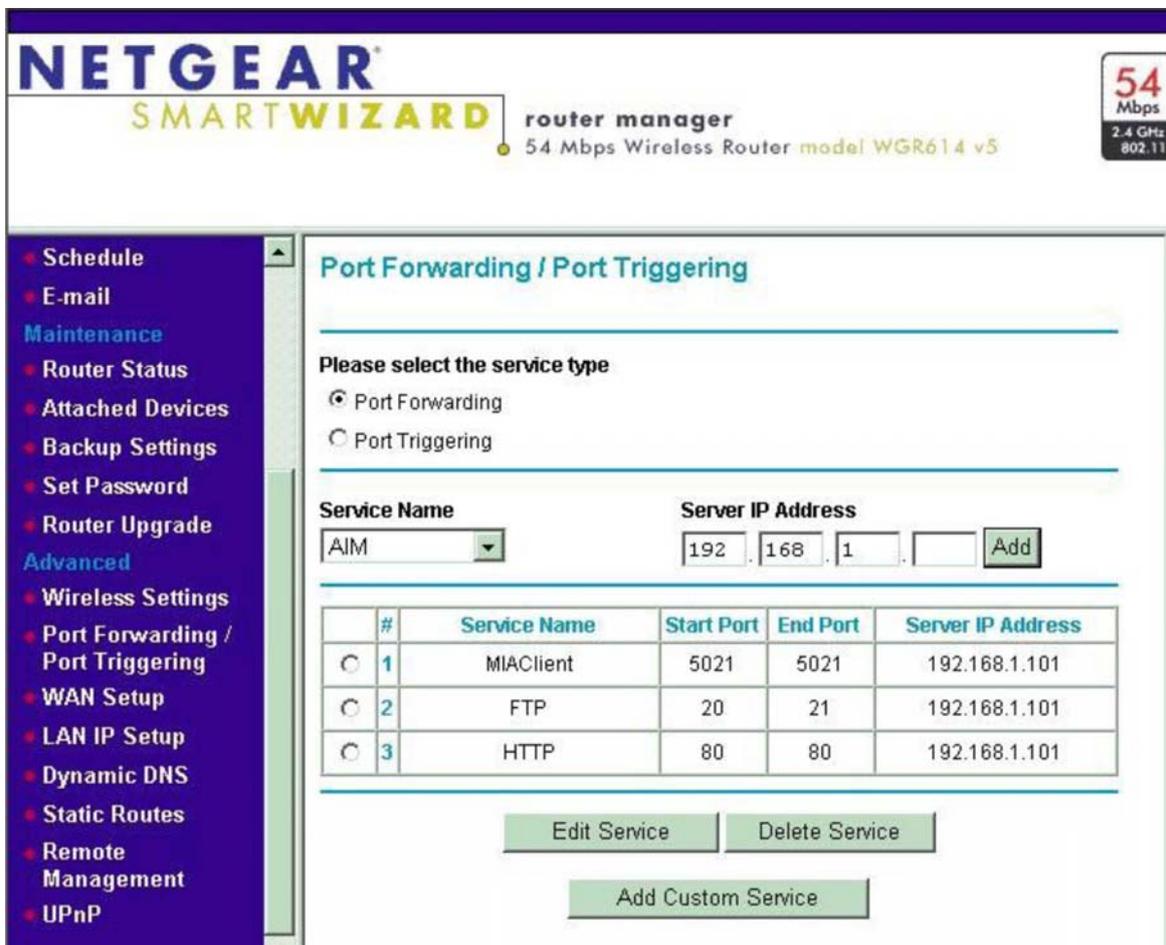






## IX. Router Setup

1. Make sure to set **DMZ** to **ON** and input the IP address to that of the PC that CAT is installed on. For example, if CAT is on an admin PC whose IP is 192.168.1.10, then turn on DMZ and set IP to 192.168.1.10. This will ensure that data and commands between Client device and CAT server can communicate with each other.
2. Make sure to enable "Port Forwarding" so that data files and be transferred.
3. The CMP2000Nuses port 80 and port 5021 so these two ports must be open.
  - Setup MIAClient to 5021 port
  - Setup FTP to 20 and 21 port
  - Setup HTTP to 80 port



The screenshot shows the Netgear SmartWizard router manager interface. The top header includes the Netgear logo, "SMARTWIZARD" branding, and "router manager" text. A badge in the top right corner indicates "54 Mbps 2.4 GHz 802.11". The main content area is titled "Port Forwarding / Port Triggering". Below the title, there are radio buttons for "Port Forwarding" (selected) and "Port Triggering". A "Service Name" dropdown menu is set to "AIM", and the "Server IP Address" is entered as "192.168.1.1" with an "Add" button. Below this is a table with three rows of port forwarding rules:

#	Service Name	Start Port	End Port	Server IP Address
1	MIAClient	5021	5021	192.168.1.101
2	FTP	20	21	192.168.1.101
3	HTTP	80	80	192.168.1.101

Below the table are buttons for "Edit Service", "Delete Service", and "Add Custom Service". A left sidebar contains navigation links for various router settings.



- Turn on DMZ server and input your PC server's IP address



Turn on DHCP and set a range (optional)

The screenshot shows the Netgear SmartWizard router manager interface for a 54 Mbps Wireless Router (model WGR614 v5). The main navigation menu on the left includes: Router Status, Attached Devices, Backup Settings, Set Password, Router Upgrade, Advanced (selected), Wireless Settings, Port Forwarding / Port Triggering, WAN Setup, LAN IP Setup (highlighted), Dynamic DNS, Static Routes, Remote Management, UPnP, Web Support (Knowledge Base, Documentation), and Logout.

### LAN IP Setup

**LAN TCP/IP Setup**

IP Address: 192 . 168 . 1 . 1  
IP Subnet Mask: 255 . 255 . 255 . 0  
RIP Direction: None  
RIP Version: Disabled

**Use Router as DHCP Server**

Starting IP Address: 192 . 168 . 1 . 10  
Ending IP Address: 192 . 168 . 1 . 101

**Address Reservation**

	#	IP Address	Device Name	Mac Address
<input checked="" type="radio"/>	1	192.168.1.11	Art	00:14:A5:0F:6D:0B
<input type="radio"/>	2	192.168.1.12	Melody_Dell9300	00:13:CE:21:EC:82
<input type="radio"/>	3	192.168.1.13	IRIS_DELL2200	00:14:A5:3D:E8:BE
<input type="radio"/>	4	192.168.1.14	HPTABLETPC	00:08:02:D2:71:52
<input type="radio"/>	5	192.168.1.10	RAINBOW	00:09:5B:49:EB:F9



**IMPORTANT!!!**

If the admin PC (computer running CAT) is assigned an IP by either a DSL or cable modem, then it will have a dynamic IP and not a static IP. That PC will have a new IP assigned arbitrarily by your modem/internet provider so if you setup an CMP2000Nclient using Static Server IP (**see section V, 3b**), you will have to manually change your IP every time your PC has its IP reassigned.

To combat this, you need to setup a DNS host name - please register your DNS host name at [www.dyndns.org](http://www.dyndns.org). Afterwards, program your user name and password in your router so that when the router powers up, it will log into dyndns.org with your host name.

The CMP2000Nclient will log into dyndns.org and obtain the router IP address of your PC server running CAT.

