

 **Whitepaper**

ActiveX Control in NetSupport Manager

NetSupport Limited recognise that it may sometimes be necessary to Remote Control a NetSupport Client from a computer where the NetSupport Control is not installed. It is now possible to Remote Control a NetSupport Manager Client using a web browser. This is achieved through an ActiveX control. All that is required is a web server and a HTML page with the embedded NetSupport ActiveX control running on the NetSupport Client computer. In order to simplify this further, NetSupport have made it possible to configure the NetSupport Client as a web server to provide this functionality.

Summary.

A computer running a NetSupport Client can be accessed remotely via a web browser using a HTML page that has the NetSupport ActiveX control embedded within it.

The web browser opens the HTML page and sees that it needs to use the NetSupport ActiveX control to view the page properly. If it already has the NetSupport ActiveX control registered it will check the version against the one in the HTML. If it does not have the NetSupport ActiveX control or if its version is older than the one in the HTML it will attempt to retrieve it from the location specified in the HTML.

Once the Control computer has the NetSupport ActiveX control it will attempt to make a connection to the NetSupport Client. The requirements for a connection here are the same as those for a normal connection. Once the connection has been made the remote control session will behave as normal.

Limitations:

- With NetSupport Manager the NetSupport ActiveX control only works with Microsoft Internet Explorer 4.00 or higher.
- OS2, DOS and Windows 3.x Clients do not support this feature

Configuring the NetSupport Client as a web server.

In order to connect to a NetSupport Client using a web browser the following must be true:

- The NetSupport Client must either be configured as a web server (see Web Extensions in the Client Configurator) or running another web server product*.
- The TCP/IP protocol must be enabled on the NetSupport Client.

*It is possible to use Internet Information Server (IIS) or another web server instead of the one provided with the NetSupport Manager Client.

To configure the NetSupport Client as a web server in order to connect to it from a web browser you must perform the following steps at the Client:

- Run the “**NetSupport Configurator**”
- Click the “**Advanced**” button
- Select the “**Master Profile**”
- Select the “**Web Extensions**” tab
- Check the “**Enable Web Extensions**” box
- Click the “**Ok**” button
- Select “**File**” and “**Exit**” to exit the “**NetSupport Configurator**”
- Choose “**Yes**” to save the changes made to the Client configuration
- Choose “**Yes**” to restart the Client to put the changes into effect

If required, it is also possible to alter the location of the NetSupport Client’s web folder and/or the TCP/IP port number that the NetSupport Client web server listens for requests, in the web extensions tab of the Client configurator.

* If the NetSupport Client’s web folder location is changed then the contents of the NetSupport Client’s old web folder must be manually copied to the new location.

The NetSupport web server.

When the web browser requests HTML from the NetSupport Client machine running the web server it is actually connecting to the NetSupport Client. The NetSupport Client looks for the requested file in its web server folder, if it isn't found it returns the error HTTP 404.

If it is found then the NetSupport Client reads the file and starts sending it to the web browser, as it does this it looks for any NetSupport HTML variables in the HTML and returns the relevant value as it goes.

NetSupport HTML Variables.

\$CLIENTNAME\$

The NetSupport Client will replace this variable with the NetSupport Client Name.

\$CLIENTADDR\$

The NetSupport Client will replace this variable with the NetSupport Client Address information required to connect to a Client.

For example: >10.0.0.1:5405

\$IPADDRESS\$

The NetSupport Client will replace this variable with the IP Address of the Client computer.

\$HSCREENRES\$

The NetSupport Client will replace this variable with the width of the Client computers display.

For example: This value would be 480 if the Client computer had a screen resolution of 640 x 480

\$VSCREENRES\$

The NetSupport Client will replace this variable with the height of the Client computers display.

For example: This value would be 640 if the Client computer had a screen resolution of 640 x 480

Connecting to a NetSupport Client from a web browser.

The NetSupport Client is accessed from a web browser by typing its IP address in the browsers Address field and specifying the HTML page to open*.

For example: 10.0.0.225/view.htm

The web browser attempts to connect to the web server at address 10.0.0.225 on port 80.

If the NetSupport Client was configured to use a different port then you would include this after the IP address

For example: 10.0.0.225:81/view.htm

* The NetSupport web server does not support a Default HTML page therefore the page to open must be specified.

How the web browser handles the NetSupport ActiveX control embedded in the HTML.

When the web browser has received the entire page, it processes it locally to determine what to do.

When the web browser detects the <OBJECT>...</OBJECT> tag in the HTML, it checks in its registry to see if it has the NetSupport ActiveX control registered with this GUID. If it has then it is loaded and created on the web page.

If the NetSupport ActiveX control is not available it checks in the object tag to see if a codebase is available, this gives the browser a HTTP address where it can download the necessary NetSupport ActiveX control.

An additional piece of information supplied is the version number. Even if the NetSupport ActiveX control is installed locally it will check its version number against the one in the web page to determine if it has the correct version, if it does not it will attempt to download and install the newer version.

The NetSupport ActiveX control.

The NetSupport ActiveX control is automatically installed and registered with the Operating System in the following ways:

- When a web browser connects to a NetSupport Client that has been configured to allow web connections and has an available codebase.
- When the NetSupport Manager Control is installed.

Download procedure for NetSupport ActiveX control.

When the NetSupport ActiveX control codebase on the NetSupport Client is higher or if the NetSupport ActiveX control is not already registered with the Operating System the cabinet file PCIAX.CAB in the NetSupport Clients web server folder is downloaded.

The file PCIAX.CAB is created solely by NetSupport Limited and is signed using a certificate and private key provided by VeriSign, this certificate simply guarantees that the binary file hasn't changed or been modified since NetSupport Limited signed it.

The web browser checks the digital certificate on the file PCIAX.CAB and if the user trusts NetSupport Limited continues with the download.

Installation and Registration of the NetSupport ActiveX control.

The file PCIAX.CAB is a Windows Cabinet file. It contains the following four files:

pciax.inf	This installs/uninstalls the necessary files.
pciax.dll	The NetSupport ActiveX control.
tcctl32.dll	NetSupport Manager TCP/IP transport DLL
pcicapi.dll	A requirement of the tcctl32.dll

The files are extracted and the pciax.inf is executed. This copies the files to one of the following locations

- SYSTEM32\PCIAX for Windows NT and 2000 machines
- SYSTEM\PCIAX for Windows 9x and ME machines.
- If the NetSupport Manager Control is already installed on the machine to this folder.

The NetSupport ActiveX control is then registered with the Operating System. It is then available.

Manually deregistering the NetSupport ActiveX control from the OS.

The NetSupport ActiveX control can be deregistered from the Operating System by executing the following:

REGSVC PCIAX /?

NetSupport ActiveX control Properties.

The NetSupport ActiveX control provides the following properties.

Name	ShowMessages
Type	Property
Syntax	<i>Object.ShowMessages = parameter</i>
Parameter	0 = Do not Display Error Messages 1 = Display Error Messages
Description	Switches on or off the displaying of the NetSupport Error messages
Dependencies	If used must be before Connect()

Name	Compress
Type	Property
Syntax	<i>Object.Compress = parameter</i>
Parameter	0 = Disable Compression 1 = Enable Compression
Description	With compression enabled data is compacted for more efficient transmission. By default Compression is disabled.
Dependencies	If used must be before Connect()

Name	Encrypt
Type	Property
Syntax	<i>Object.Encrypt = parameter</i>
Parameter	0 = Disable Encryption 1 = Enable Encryption
Description	Used to enable or disable Encryption. By default Encryption is disabled.
Dependencies	If used must be before Connect()

Name	Client
Type	Property
Syntax	<i>Object.Client = parameter</i>
Parameter	<i>">ipaddress:portnumber"</i>
Description	Sets or gets the NetSupport Client that is to be connected to.
Dependencies	None

Name	ScaleToFit
Type	Property
Syntax	<i>Object.ScaleToFit = parameter</i>
Parameter	1 = On 0 = Off
Description	Sets or gets the ScaleToFit state.
Dependencies	None

Name	ScrollBars
Type	Property
Syntax	<i>Object.ScrollBars = parameter</i>

Parameter	1 = On 0 = Off
Description	Sets or gets the ScrollBars state.
Dependencies	None

Name	SecurityKey
Type	Property
Syntax	<i>Object.SecurityKey = parameter</i>
Parameter	"Security Key" - This should be the unencrypted Security Key.
Description	Used to set a Security Key value
Dependencies	None

Name	SetAudio
Type	Property
Syntax	<i>Object.SetAudio = parameter</i>
Parameter	0 – Audio Off (Default) 1 – Talk and Listen 2 – Talk 3 – Listen
Description	Used to set the level of Audio support
Dependencies	None

Name	SetThreshold
Type	Property
Syntax	<i>Object.SetThreshold = parameter</i>
Parameter	The SetThreshold should be set to a value from 1 to 100
Description	Used to set the Microphone threshold level for the audio support
Dependencies	None

Example HTML code - view.htm

The following is the HTML code supplied with NetSupport Manager v6.10 that uses the NetSupport HTML variables and ActiveX properties and methods. It has been broken down into sections and explained.

VBScript Section:

```
<html>
<head><script LANGUAGE="VBScript">
Sub window_onLoad()
On Error Resume Next
call CTLAX.Init("*")
CTLAX.Client = "$CLIENTADDR$"
CTLAX.ShowMessages=0
call CTLAX.Connect()
if Err.Number <> 0 then
MsgBox Err.Description
Err.Clear
Else
CTLAX.ScaleToFit = 0
call CTLAX.View(2)
End if
CTLAX.ShowMessages=0
end sub
```

This sub function sets up and communicates with the NetSupport ActiveX control.

Sub window_onLoad () is a standard event that is called when the web page is loaded.

The following commands are executed during this function; CTLAX is the identifier of the control as defined in the <OBJECT> tag defined further down the HTML:

On Error Resume Next This defines what action to take when an error event takes place

CTLAX.Init("*") Initialises the control where * means use machine name

CTLAX.Client = "\$CLIENTADDR\$" Sets the address of the NetSupport Client to connect to, this is in the - ">ipaddress:portnumber " for example >10.0.0.1:5405

CTLAX.ShowMessages = 0 switches off the displaying of the NetSupport Error Messages, this will allow any error to be handled by the VBScript rather than NetSupport.

CTLAX.Connect() Attempts to connect to the NetSupport Client

If Err.Number <> 0 then this line checks to see if an error was generated by the connect method. If an error was generated then execution continues at the next line, if there was no error then execution continues from the **Else** statement.

MsgBox Err.Description Displays the error message returned by the connect method.

Err.Clear Clears the error condition.

Else Execution continues from here if no error was detected, if an error was detected then execution continues from the **End if** statement.

CTLAX.ScaleToFit = 0 Turns scale to fit off (as the control will be set to the size of the NetSupport Client's screen).

CTLAX.View(2) Views the screen in Share mode, 1 is watch, 3 is control and 0 is stop viewing.

End if this is the end of the If Statement

CTLAX.ShowMessages = 1 switches on the displaying of the NetSupport Error Messages

```
Sub CTLAX_Disconnect()  
alert "Client " & CTLAX.Client & " has disconnected!"  
end sub
```

The above sub function "CTLAX_Disconnect()", is a method provided by the NetSupport ActiveX control, this will be called if the NetSupport Client is disconnected, it simply displays a message warning the user.

```
Sub cbScaleToFit_onClick
CTLAX.ScaleToFit = cbScaleToFit.checked
end Sub
```

The above sub function "cbScaleToFit_onClick", is a property provided by the NetSupportAX control, this will be called if the Scale to Fit button on the HTML page is clicked.

```
Sub cbScrollBars_onClick
CTLAX.ScrollBars = cbScrollBars.checked
end Sub
</script>
```

The above sub function "cbScrollBars_onClick", is a property provided by the NetSupportAX control, this will be called if the Scroll Bars button on the HTML page is clicked.

HTML Section

```
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1">
<title>NetSupport Active Control - Viewing $CLIENTNAME$</title>
</head>
<body>
<div align="center"><center>
<table border="0" cellpadding="0" cellspacing="0" width="100%"
style="background-color: rgb(0,0,0); color: rgb(255,255,255)">
<tr>
<td width="100%"><p align="center"><font face="Arial"><strong>Viewing
Client <font
color="#FFFF00">$CLIENTNAME$</font> - $CLIENTADDR$</strong></font></td>
</tr>
</table>
</center></div>
<p align="center"><input type="button" value="Watch" id="button1"
name="button1"
onclick="vbscript:CTLAX.View(1)"> <input type="button" value="Share"
id="button2"
name="button2" onclick="vbscript:CTLAX.View(2)"> <input type="button"
value="Control"
id="button3" name="button3"
onclick="vbscript:CTLAX.View(3)">&nbsp; &nbsp; &nbsp; &nbsp; &nbsp; <input
TYPE="checkbox" NAME="cbScaleToFit" VALUE="ON"> <font
face="Arial"><strong>Scale to Fit</strong>
</font>&nbsp; <input TYPE="checkbox" NAME="cbScrollBars" VALUE="ON">
<strong><font
face="Arial">Scroll Bars</font></strong></p>
<p align="center">
```

Standard HTML to provide the text, Buttons and other cosmetic items above the Client View window

Object Section

```
<object ID="CTLAX" WIDTH="$HSCREENRES$" HEIGHT="$VSCREENRES$"
CLASSID="clsid:04F26A51-3DA8-11D2-B8FC-00104B4F4F6A"
standby="Please Wait.. Loading NetSupportAX Control"
codebase="http://$IPADDRESS$/PCIAX.CAB#version=6,1,0,0">
</object>
</p>
```

The above HTML informs the web browser that the web page contains an embedded binary object and it should attempt to create one locally.

The OBJECT tag has the following parameters:

- ID gives the control an identifier that we can use elsewhere on the web page.
- WIDTH and HEIGHT specify the width and height of the control, these will be replaced with the actually screen resolution of the Client machine.
- CLASSID is our GUID (Globally Unique Identifier), which is unique to our ActiveX control.
- STANDBY is some text that will be displayed while the control is loading.
- CODEBASE tells the browser where to find the control and its version if it isn't already installed.

Then the window_onLoad sub routine is executed at the beginning of the HTML and the NetSupport Clients screen should appear.

HTML Section

```
<p align="center"><img SRC="NSM5.gif" ALIGN="BOTTOM" BORDER="0" WIDTH="343"
HEIGHT="85"
NATURALSIZEFLAG="3"></p>
<b><font face="Arial">

<p align="center"><small>For further details, news and feedback visit the
Productive
Computer Insight <a
href="http://www.pci.co.uk/">website</a></small></font></b></p>

<p align="center"><font face="Arial">(C) NetSupport 2000.</font></p>
</body>
</html>
```

Standard HTML to provide the text, Buttons and other cosmetic items below the Client View window

Two other sample HTML files are supplied with NetSupport Manager these are:

- Audio.htm
This file is similar to the View.htm file, however this file also has controls to enable the Audio support in the ActiveX Control

- Viewsecure.htm
This file is similar to the View.htm file however this file demonstrates the use of the Encryption and compression properties of the ActiveX control.

Some NetSupport ActiveX Solutions

The default HTML file provided with NetSupport Manager is very simple, with a little work it would be possible to produce much more impressive results.

- You could create a HTML page with multiple views of NetSupport Clients on the one page. Reduced in size with scale to fit turned on and Watch only, it would provide a simple 'scan' of a number of NetSupport Clients.

This 'scan' page could be added to your active desktop to display a continuous dynamic display of a group of NetSupport Clients.

- Being an ActiveX control you could use the NetSupport ActiveX control with your own Visual Basic applications to allow the control of a NetSupport Client computer.
- You could have a number of ActiveX Clients and then use the error handling so that if you tried to connect to a client that was already in use you would automatically be connected to the next available client.

Further Information

If you require any further information regarding NetSupport Manager, you can contact the NetSupport Technical Support Team using the following details:

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