

Using CHIPWEB with Win2000

The approach in TCP/IP Lean appendix A 'Windows SLIP Configuration' does not work with Windows 2000 (Win2K), as the minimal modem emulation in the chapter 11 Web server (now known as CHIPWEB) is inadequate. However, Win2K does provide a good alternative, using a null modem driver, though this does necessitate a minor addition to the CHIPWEB source code

CHIPWEB modifications

Add an extra 'else if' clause to the rx_poll function in the main source file.

```
/* Rx poll: check for modem command, send response */
void rx_poll(void)
{
    if (modemflag && !txflag)
    {
        strcpy(txbuff, "OK\r\n");           // Send OK in response to modem cmd
        txin = 4;
        txout = 0;
        txflag = 1;
        modemflag = 0;
    }
    // Diagnostic; send index if '?'
    else if (rxbuff[0] == '?' && !txflag)
    {
        rxbuff[0] = rxin = 0;
        romdir.f.name[0] = 0;
        find_file();
        txflag = txi2c = 1;
    }
    else if (rxbuff[0] == 'C' && rxbuff[5] == 'T' && !txflag)
    {
        strcpy(txbuff, "CLIENTSERVER"); // Send SERVER in response to CLIENT
        txin = 12;                       // (for Win NT direct cable connection)
        txout = 0;
        txflag = 1;
    }
}
```

Win2K installation

Click Start, Settings, Control panel, Phone and modem options

Click Modems tab

If 'Communications cable between two computers' is absent

Click Add

Select 'don't detect my modem', Next

Select 'Communications cable between two computers', Next

Select COM port, Next

Click Finish

Select 'Communications cable between two computers', click Properties

Set maximum port speed to 38400, click Advanced tab

Click 'change default preferences', set port speed to 38400, flow control to 'none', OK

Click OK to return to the 'phone and modem options', OK to return to control panel.

To create the new network connection, you will need system administrator privileges. A SLIP network address of 10.1.1.1 is assumed; if this clashes with an existing address, it can be changed as necessary (CHIPWEB responds to any address that is sent down the serial link).

Click Start, Settings, Network and dialup connections, Make new connection

In the 'network connection wizard', click Next

Select 'connect directly to another computer', Next

Select Guest, Next
 Select 'Communications cable between two computers', Next
 Select 'For all users', Next
 Enter a name for the connection (e.g. CHIPWEB), Finish.
 Enter administrator name and password, select Save Password, click Properties
 For 'Communications cable between two computers', click Configure
 Set maximum speed 38400, ensure all check boxes are un-checked, click OK
 Click Options tab, un-check 'prompt for name...'
 Click Networking tab, select SLIP connection, un-check all components except TCP/IP
 Double-click TCP/IP, select 'use the following IP address', and set 10.1.1.1
 Click Advanced, un-check IP header compression, leave frame size at 1006
 Click WINS tab, un-check LMHOSTS lookup, click OK
 Acknowledge 'empty primary WINS address' warning by clicking Yes
 Click OK on TCP/IP properties, OK on CHIPWEB connection properties.

Ensure the CHIPWEB server has been powered up and connected to the COM port.

Click Connect on the 'Connect CHIPWEB' window.

If all is well, the message 'all devices are connected' should briefly appear, followed by an (optional) acknowledgement dialog box, and the appearance of the connection icons on the right of the taskbar; this process should be near-instantaneous. Once the connection is established, launch Internet Explorer, and enter any address in the new domain, (e.g. 10.1.1.2) and the CHIPWEB server should respond.

Troubleshooting

In the event of problems:

Click Start, Settings, Control panel, Phone and modem options

Double-click 'Communications cable between two computers'

Click Diagnostics tab, View Log

The diagnostic log should be similar to the following:

```
03-25-2001 16:21:23.730 - File: C:\WINNT\System32\unimdm.tsp, Version 5.0.2175 - Retail
03-25-2001 16:21:23.730 - File: C:\WINNT\System32\unimdm.dat.dll, Version 5.0.2134 - Retail
03-25-2001 16:21:23.740 - File: C:\WINNT\System32\uniplat.dll, Version 5.0.2151 - Retail
03-25-2001 16:21:23.740 - File: C:\WINNT\System32\drivers\modem.sys, Version 5.0.2134 - Retail
03-25-2001 16:21:23.740 - File: C:\WINNT\System32\modemui.dll, Version 5.0.2146 - Retail
03-25-2001 16:21:23.750 - Modem type: Communications cable between two computers
03-25-2001 16:21:23.750 - Modem inf path: mdm Hayes.inf
03-25-2001 16:21:23.750 - Modem inf section: M2700
03-25-2001 16:21:23.760 - 38400,8,N,1, ctsfl=0, rtsctl=1
03-25-2001 16:21:23.760 - Initializing modem.
03-25-2001 16:21:23.770 - Waiting for a call.
03-25-2001 16:21:23.801 - 38400,8,N,1, ctsfl=0, rtsctl=1
03-25-2001 16:21:23.801 - Initializing modem.
03-25-2001 16:21:23.801 - Dialing.
03-25-2001 16:21:23.871 - Send: CLIENT
03-25-2001 16:21:23.881 - Recv: CLIENTSERVER
03-25-2001 16:21:23.881 - Interpreted response: Connect
03-25-2001 16:21:23.881 - Connection established at 38400bps.
03-25-2001 16:21:23.881 - Error-control off or unknown.
03-25-2001 16:21:23.881 - Data compression off or unknown.
03-25-2001 16:21:53.884 - Read: Total: 530, Per/Sec: 17, Written: Total: 2414, Per/Sec: 80
03-25-2001 16:23:53.886 - Read: Total: 530, Per/Sec: 0, Written: Total: 2645, Per/Sec: 1
...etc...
```

The following can be checked:

- Connection: if there is no connection log, or the timestamps are incorrect, the CHIPWEB connection probably isn't linked to this driver (it may have been linked to a modem driver instead)

- Baud rate: should be 38400
- Client-server: if no CLIENTSERVER response, the CHIPWEB server is not responding; check the connections, and that the modifications have been implemented as described above.
- Data format: error-control and data-compression must be 'off'.

I have experienced a problem where Windows used modem controls ('AT' commands) even though the Communications Cable driver had been selected; this was diagnosed by checking the connection logs, as described above. The problem was rectified by de-installing the connections and all the modems, re-booting, re-installing the Communications Cable driver, and re-creating the connection.

Important notes

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The configuration of Windows systems is complex, and the author can not be held responsible for any loss or damage resulting from any errors or omissions. **Make sure that current network installation is well documented, and the system is adequately backed up, before attempting the steps described in this document.**

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