# D-Link Internet Servers

DP-602, DP-802, DP-692, DP-601M

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# What is D-Link’s Internet Server

- D-Link’s Internet Server basically is a NAT (Network Address Translator) device.
- It is designed for Internet Access using shared ISP account(s).
- With this device, local users with private IP address can access the Internet.

# Configuration Tools

Three configuration tools: (1) IS Admin (2) Web Browser (3) Telnet

- IS Admin -- Change IP, Discover, Test Modem/TA, Firmware upgrade, Diagnostics, and Traffic Analysis
- Telnet -- Special Application

# Configuration Tools (1) -- IS Admin

192.168.100.6
IS Admin

192.168.100.1

# Configuration Tools (2) -- Web Browser

PC — HUB — **DP-602**

192.168.100.6

192.168.100.1

http://192.168.100.1

# Configuration Tools (3) -- Telnet

PC — HUB — **DP-602**

192.168.100.6

Telnet 192.168.100.1

192.168.100.1

Telnet - 192.168.100.1

Connect Edit Terminal Help

```
Server Name       : DP-602
Model             : DP-602
Firmware Version  : 2.12
MAC Address       : 00 80 C8 77 33 10
Up Time           : 0 days, 01:22:21
Operation Mode    : LAN-to-WAN

Please Enter Password:

[Main Menu]
1 - System Configuration
2 - WAN Port 1 Configuration
3 - WAN Port 2 Configuration
4 - DHCP Server Configuration
5 - Server Address Configuration
6 - Advanced Control Configuration
7 - Display Information
8 - Tools
9 - Save Configuration
0 - Quit

Enter Selection:
```

# A Basic Setup to Work

# Basic Setup (1)

192.168.100.6
g/w:192.168.100.1
IS Admin

192.168.100.1

1. In IS Admin, setup DP-602's IP and ISP dial-up information

# Basic Setup

2. Modem Test (optional)

3. ISP Dial-up Test (optional)

4. From your PC (192.168.100.6),

- ping DP-602's LAN IP, e.g., 192.168.100.1
- ping ISP's DNS in number, e.g., 168.95.1.1
- ping ISP's DNS in domain name, e.g., dns.hinet.net

5. If every thing is OK, you have already setup the Internet Server for Internet Access.

# D-Link Internet Server Family
# - Comparison and Usage

# D-Link Internet Server Family

| Model | Ports | Features |
|---|---|---|
| DP-602 | 2*RS232 COM<br>1*10/100Mbps | Up to 256Kbps bandwidth to Internet using shared ISP account(s) |
| | | LAN public IP sharing |
| DP-802 | 1*RS232 COM<br>1*Printer port<br>1*10/100Mbps | Up to 128Kbps bandwidth to Internet using a shared ISP account |
| | | Built-in Print Server |
| | | LAN public IP sharing |
| DP-692 | 2*RS232 COM<br>10Mbps hub<br>(10*UTP +<br>1*BNC) | Up to 256Kbps bandwidth to Internet using shared ISP account(s) |
| | | Built-in 10Mbps hub |
| | | LAN public IP sharing |
| DP-601M | 1*RJ-11 phone<br>1*10/100Mbps<br>1*RS232 COM | 56Kbps bandwidth to Internet using shared ISP account |
| | | Built-in 56K v.90 modem |
| | | LAN public IP sharing |

# Panel Drawing

**DP-602**

**DP-802**

# Panel Drawing

**DP-601M**

To hub/switch

To PC when used as Modem

To phone Line

Com1&Com2 to Modem/TA

10 * 10Mbps UTP ports to PCs

BNC port to 10Base2

**DP-692**

# Two Basic Operation Modes

1. LAN To WAN
-- Sharing WAN public IP

2. LAN To LAN
-- Sharing LAN public IP

# LAN to WAN Operation mode

## -- Sharing public WAN IP(s) from ISP

# DP-602 Applications (1)

- The most commonly used Internet Server setup
- Only one ISP account and one Modem/TA is needed.
- Local Users with private IP can access the Internet with bandwidth:
  + 56 Kbps -- Modem,
  + 64 K bps -- ISDN TA PPP (1B channel), or
  + 128 Kbps -- ISDN TA ML-PPP (2 B Channels)

# DP-602 Applications (2)

- When needed, **the second Modem or TA can be added.** (Each Modem or TA needs an ISP account)
- Using two Modems/ISDN TAs, the bandwidth to Internet can be doubled. If 2 TAs with 128Kbps each are used, the bandwidth can be up to 256Kbps.
- **Traffic Control** -- determines the traffic to which WAN: (1) By User Connection (2) By Utilization (3) By Load Balance

# DP-802 Applications

- **Built-in Print Server** supports TCP/IP, NetBEUI, and AppleTalk printing protocols
- Local Users with private IP can access the Internet with 56K/64K/128Kbps bandwidth (1 WAN port)
- If both Internet access and Print Server are required, DP-802 provides an ideal solution.

# DP-692 Applications

- **DP-692 is a combination of DP-602 and a 10Mbps hub**. The BNC port can connect to 10Base2 segment directly.

- With two WAN ports, private IP users can access the Internet with various bandwidth depending on customer's need. (56Kbps ~ 256Kbps)

- Traffic Control

- For SOHO users (users less than 10), DP-692 provides a cost effective solution in that there is no need to buy extra hub.

# DP-601M Applications

- Built-in V.90 56Kbps modem
- Don’t need to worry about the compatible problem between Internet server and Modem/TA.
- The maximum bandwidth for Internet Access is 56Kbps

# LAN to LAN Operation mode

## -- Sharing a LAN global IP
## (Applies to DP-602, DP-802, DP-692, DP-601M)

# LAN global IP Sharing (1)

- **Problem:** A company already has a range of fixed global IP address. When company grows, the global IP may become insufficient
- **Solution:** DP-602/802/692/601M

# LAN Global IP Sharing (2)

Using DP-602's "LAN to LAN" operation mode, more PCs (about 30) with private IP address can share a global IP in the LAN to access the Internet.

In this mode, DP-602 LAN port has two IPs: one is global; one is private.

All Private and Public PC still can use "Network Neighborhood" to communicate each other.

# LAN Global IP Sharing (3)

If needed, more than one DP-602 can be added, which increases about 60 more private users to Internet access without the need to apply another set of global IP addresses.

# LAN Public IP Sharing -- Setup Example

Public IP (assigned by ISP):
IP: 210.68.85.x
Mask: 255.255.255.0
Gateway: 210.68.85.254
DNS: 168.95.1.1

DP-602:
Local LAN
IP address: **192.168.100.1**
Subnet Mask: 255.255.255.0
DNS IP: 168.95.1.1
Operation Mode
<u>LANtoLAN(SpecifyGlobalIP...)</u>
Global IP: **210.68.85.250**
Subnet Mask: 255.255.255.0
Gateway: **210.68.85.254**

Private IP
IP: 192.168.100.x
255.255.255.0
Gateway:
192.168.100.1
DNS:168.95.1.1

# LAN IP Sharing (5) -- Setup Example (cont'd)

- The "Operation Mode" is set to "LAN to LAN (Specify Global IP Address)"
- Private IP users (192.168.100.x) share a Global IP (210.68.85.250) to access the Internet

# ADSL Modem Support -- An example (A range of fixed IP)

- Only 8 fixed global IPs are given from ISP:
  IP:210.241.239.48 ~ 55
  mask: 255.255.255.248
  gateway: 210.241.239.49
- Only 5 are useable
- 210.241.239.54 is selected to be shared using "LAN to LAN (Specify Global IP address)" so that 192.168.100.x users can access the Internet
- 210.241.239.50~53 can be used for Web/FTP servers.

# Cable Modem Support (Dynamic IP Address)

- Cable company provides a dynamic public IP address for your local PC
- When select **<u>"LANtoLAN (Obtain Global IP Address Automatically)"</u>** , DP-602 acts as a DHCP client to get a dynamic global IP from cable company.
- Local users with private IP share the dynamic global IP address to access the Internet

# IS Manager Server

# IS Manager Server

IS Manager Server allows you to control LAN users' access to the Internet:

- **Monitor** - Time, user, destination, protocol, and state
- **Filter** - By user, by protocol, and/or by destination
- **Log** - Records who has accessed external sites
- **Statistics** - Sorts and analyzes log data
- **Time Server** - Supplies the Internet Server with the current date and time based on computer's real-time clock.

# IS Manager Server Setup

1. Install IS Manager Server program on your PC, say 192.168.100.6.
2. In ISAdmin-> Configuration -> Advanced Control-> Manager Server, set

**Manager Server IP Address = 192.168.100.6**
**Log and Filter = Yes**

# Monitor

D-Link IS Manager Server
Active Users : 1
Active Connections : 4
Time Server
2000-04-21 08:56:51
Password Lock
Time User Destination Protocol State
08:56:11 0080c848e0ed www.hinet.net 80 OK
08:56:13 0080c848e0ed www.hinet.net 80 OK
08:56:14 0080c848e0ed 168.95.1.70 80 OK
08:56:14 0080c848e0ed 168.95.1.72 80 OK
08:56:14 0080c848e0ed www.hinet.net 80 OK
08:56:15 0080c848e0ed www.hinet.net 80 OK
08:56:16 0080c848e0ed ad.hinet.net 80 OK
08:56:16 0080c848e0ed ad.hinet.net 80 OK
08:56:16 0080c848e0ed www.hinet.net 80 OK
08:56:19 0080c848e0ed www.hinet.net 80 OK
08:56:19 0080c848e0ed www.hinet.net 80 OK
08:56:19 0080c848e0ed www.hinet.net 80 OK
08:56:21 0080c848e0ed www.hinet.net 80 OK
08:56:27 0080c848e0ed www.hinet.net 80 OK
08:56:29 0080c848e0ed www.hinet.net 80 OK
08:56:43 0080c848e0ed 140.113.1.1 ICMP OK
Monitor
Trace
Display
Configure
View Log
View Statistics
List Information
Shut Down

# User Filtering Setup (1)

1. Setup local user information

# User Filtering Setup (2)

2. Define who can or cannot access the Internet

3. Apply the filtering rule

3. Other filtering rule also can be defined from **Protocol** or **Destination** point of view.

# IS Mail Server

# IS Mail Server

- IS Mail Server is a software package that lets an ordinary Internet E-mail account be shared by multiple LAN users
- IS Mail Server works with an Internet Server (i.e., DP-602/802/692/601M)
- Internet Server -- Shares single ISP account
- IS Mail Server -- Shares single ISP mail account

# IS Mail Server

# Setup example

ISP (Hinet)
|
Modem
|
DP602 (ISP account: xphiles@ms23.hinet.net)
IP=192.168.100.1
|
+ PC running IS Mail Server (192.168.100.6, jim_k6)
+ PC running Outlook express (Mail client)
(192.168.100.7, Jim224)
+ PC running Internet Mail (Mail Client)
(192.168.100.8, jim_dx66)

# Setup example
# -- IS Mail Server side

1. In IS Mail Server (192.168.100.6), setup e-mail Account in ISMailServer->Configure->E-mailAccounts->Add

E-Mail Account Address:
**xphiles@ms23.hinet.net**
E-Mail Account Login Name
**xphiles**
E-Mail Account Password:
**2alwxyz**
POP3 Server: **ms23.hinet.net**
SMTP Server: **ms23.hinet.net**

# Setup example
# -- IS Mail Server side

2. Setup Users

# Setup example
# -- IS Mail Client Side

- Mail client: Outlook Express 5.
- Incoming mail (POP3): 192.168.100.6
- Outgoing mail (SMTP): 192.168.100.6
- Note that in IS Mail Client, the POP3 and SMTP server address is IS Mail's Server Address, not ISP's address.

# How to send a mail from Internet to local user

‘jim_chen@dlink.com.tw’ sends a mail to local user Jim224:

==> To: “Jim224” <xphiles@ms23.hinet.net>

where xphiles@ms23.hinet.net is the shared ISP mail account

# How to send mail from local user to local user

1. Jim224 wants to send mail to Jim_dx66 via IS Mail Server:

==> To: jim_dx66@jim_k6

2. Jim_dx66 wants to send mail to Jim224 via IS Mail Server:

==> To: Jim224@jim_k6

where Jim224 and Jim_dx66 are users defined in IS Mail Server, and jim_k6 is the computer name of PC running IS Mail Server.

# Technical Support Tips & FAQ

# I can discover, but cannot configure

## Question:

I can discover the DP602 using ISAdmin's "Discover Server" button. However, when I pressed the "Configuration," I got an error message saying "No Response." Why?

## Answer:

To configure DP602, your PC running ISAdmin must have a same subnet IP address as DP-602's. You can use "Ping" to test.

The resolution is to change the IP address of DP602 (or change your PC's IP address) so that they are in the same subnet. If you want to change the IP address of DP602, it can be done at ISAdmin->Configuration->Change IP Address.

# Can the configuration be saved into a file?

Yes. You can do it at ISAdmin ->Diagnostics ->Save to File. The file is in plain text format.

It is useful for later reference. More importantly, by sending the .dia file to Technical Support, Engineer can quickly and exactly review the setting of customer's Internet Server.

# How to Download firmware

Step 1: ISAdmin-> Tools->Download Firmwares

Step 2: Select firmware file to download

Step 3: The progress is shown

Step 4: Download complete

# How to know the Init. String (1)

Step1: Connect your ISDN_TA to your PC directly, as follows:

ISP --- ISDN_TA --- PC

That is, no D-Link's Internet Server in between. And use Win95/98's "Dial-up Networks" to dial up to ISP. After successfully connecting to the ISP, you can find a log file in C:\Windows directory, e.g., ISDN-TA( PPP-64K ).log

# How to know the Init. String (2)

Step2: Edit the log file. Find all AT commands that was sent and concatenate them into one string, for example,

```
--- ISDN-TA(PPP-64K).log file ---
 ...
08-24-1999 15:25:53.74 - Send: ATE0Q0V1X1%A2=5<cr>
08-24-1999 15:25:53.75 - Recv: ATE0Q0V1X1%A2=5<cr>
08-24-1999 15:25:53.93 - Recv: <cr><lf>OK<cr><lf>
08-24-1999 15:25:53.93 - Interpreted response: Ok
08-24-1999 15:25:53.93 - Send: ATS7=50&K3X4<cr>
...
--- End ---
```

After concatenation, the AT commands become ATE0Q0V1X1%A2=5S7=50&K3X4 (<-Initstring)

# DMI-128E compatible problem

**Problem:** Dp602/802/692 firmware v2.00 has following compatible problem with DMI-128E, D-Link's ISDN TA.
(1) Performance is not good when using PPP.
(2) Cannot open two B channels when using ML-PPP
(3) Cannot connect to Internet again after idle time-out

**Resolution:**
(1) Please upgrade the firmware to v2.10. (Please also upgrade the ISAdmin to v2.10).
(2) Use the Initial String:
`ATE0Q0V1X1W1%A2=5S7=50&K3` For PPP (64Kbps)
`ATE0Q0V1X1W1%A2=6S7=50&K3` For ML-PPP (128Kbps)
(3) Hangup string: `+++~~~~~ATH`

# How to write the Login Script (1)

- When using “Dial-up Networks” to dial, if it needs key in something, a login script may be needed.
- In the example, you need to key in your username, password, and your choice.

```
CONNECT 115200
Annex Command Line Interpreter
Copyright (C) 1988, 1995 Xylogics,
Inc.
Checking authorization, Please wait...
HiNet username: xphiles
HiNet password: ******
Last login: Thu Sep 23 14:48:48 1999
on 168.95.69.35/44 (001:51/002:46)
Permission granted
******************************
(Welcome to HiNet)
******************************
      1. PPP ( PPP users service )
      2. SLIP ( SLIP users service )
      3. Telnet ( Telnet service )
      4. HiNet ( HiNet introduction )
      5. ( Exit )
 (Please key-in your choice ) ===> 1
```

# How to write the Login Script (2)

- Login Script:

```
Prompt   Keyin

user     xphiles
pass     2alwxyz
choice   1
```

- Case Sensitive

- Note that in Prompt String field, you just need to input substring.

# When does it need to setup the “Server Address”? (1)

The Internet Server is a NAT device. Since the IP of local PC is private, it cannot be accessed from the Internet.

If there is a requirement to access a WWW/FTP server behind DP602/802/692/601M from Internet, setting up “Server Address” is needed.

# When does it need to setup the "Server Address" (2)

In ISAdmin-> Configuration-> Server Address

**192.168.100.80 TCP WWW**
**192.168.100.21 TCP FTP**

Internet users use the following to access the WWW or FTP server:

http://163.31.235.43 to access www server at 192.168.100.80

ftp://163.31.235.43 to access FTP server at 192.168.100.21

The WAN IP can be known at: ISAdmin-> Diagnistics->Status->WAN Port 1 (2)-> IP Address

# Dial Up Schedule and Time Server

- The current Data/Time is needed when enabling the "Dial Up Schedule".
- DP-602/802/692/601M has no built-in real-time clock. It needs to go to "Time Server" to get the current Date/Time.
- IS Manager Server is a time server for DP-602/802/692/601M. The time is based on PC's real-time clock.
- Before running Dial Up Schedule, run IS Manager Server program and go to ISAdmin -> Tools -> Adjust Time.

# How does the “Traffic Control” work?

When connected with two separate modems or ISDN TAs, DP-602/DP-692 can activate two WAN ports at the same time automatically and intelligently when needed.

1. By Connection <[6],[6]> (user-based)

-- The first 6 users uses WAN1. When the 7th user comes in, WAN2 dials. When there are more users, 13th, 15th,… users will use WAN1, and 14th, 16th,… users will use WAN2.

2. By Utilization <[70%, 5],[70%, 5]> (Session-based)

-- When the traffic on WAN1 is higher than 70% and lasts for 5 seconds, the WAN2 will be opened.

3. By Load Balance (Session-based)

-- Dynamically assign to WAN which is less busy.

# Filter NetBIOS over TCP/IP

## Yes

The default is Yes. When connecting to ISP for Internet Access, setting Yes can avoid unexpected dial to Internet, since NetBIOS over TCP/IP packets will trigger the DP-602/802/692/601M to dial.

## No

When connecting to HQ Remote Access Server, local users can access HQ's PC in Network Neighborhood which is also running NetBIOS over TCP/IP.

# When does it need to set “Visible PC”?

For some applications, such as Media Player, setting up Visible PC is needed.

Please note that there can be only one PC running the application at the same time.

Visible PC IP Address
**192.168.100.10**
**192.168.100.20**

# How to open port numbers for some special applications?

- Some Application, such as Dialpad, needs to set port numbers to work.
- It needs be done using TELNET and setup "Apecial Application"

```
[Special Application]
1 - Enable                <Yes>
2 - Application Table
0 - Return to Advanced Control
Configuration

===== Application Table =====
  No.      Application Name
 ----    --------------------
  1          dialpad
======== dialpad =========
 No.   I/O   Start Port  Stop Port
---- ----- ---------- ---------
 1    IN      51200     51210
 2    OUT      7175      7175
=====================
```

# Can DP-602 connect two remote LANs?

**Question:**
Can I connect two DP602s as follows

LAN1-- DP602 -- Lmodem -- LModem -- DP602 -- LAN2

so that two LANs can be connected together( e.g., one can PING another, and vice versa)?

**Answer:**
No. The reason is that DP602 is not a router. It's only an "Internet Server," which basically is a NAT (Network Address Translator) device. Therefore, two LANs cannot connected together using two DP602 + two Leased Line Modems.

# Does D-Link's Internet Server Support Netmeeting?

**Answer:** Yes. Firmware v2.10 or later versions supports Netmeeting, including Chat, White board, Audio, and Video features. No special setting is needed.

Please note that there can be only one local user uses Audio/Video feature at one time. Chat and White board users have no such a limitation.

# THE END