BSNL DateOne ADSL HOWTO

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Revision History

Revision 0.5 2007-01-26 Revised by: ygan
Add alternate sancharnet DNS servers information.
Revision 0.4.1 2006-04-08 Revised by: ygan
Correct link to the CPE installation document.
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Add UT-Starcom-HOWTO link, DNS/POP/SMTP server info and usage information.
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Corrections in the MT880 section, added a FAQ
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Instructions to use the SmartAX MT880 builtin dialer
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Convert the HTML document to DocBook/XML

This document has instructions on HOWTO use the routers that BSNL gives out to its subscribers using the builtin PPPoE dialer in the router. Some other information on using the DataOne service has been provided

Document last updated $Date$.

1. Introduction

1.1. About this HOWTO

This document primarily has instructions on HOWTO use the routers that BSNL gives out to its subscribers using the builtin PPPoE dialer in the router. The advantage of using the builtin PPPoE dialer is that you would not have to configure PPPoE on different OSes that you use. Some other information on using the DataOne service has been provided here.

The usage information would vary from router to router based on its make and model. Please send (http://www.appaji.net/contact/) information about any other modem/router or specifics of other operating systems that you may have configured, so that I can included it here. There is a FAQ at the end of the document.

1.2. Keeping up-to-date

The latest version of this document is available at the BSNL DateOne ADSL HOWTO home page (http://www.appaji.net/stuff/dataone.html).

1.3. Document license

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2. ADSL routers for DateOne

2.1. Generic router features

2.1.1. Builtin PPPoE dialer

The routers distributed with the BSNL DateOne connections have a PPPoE dialer in the router software. The advantage of using the builtin PPPoE dialer is that you would not have to configure PPPoE on different OSes that you use on your PC, and the router faces the internet with the publicly assigned IP address. The disadvantage is that you cannot examine the traffic between the router and the external world unless the packets come to the machine connected to the machine connected to the router (e.g. PPPoE authentication traffic).

2.2. Huawei SmartAX MT800 ADSL router

2.2.1. Few (factory) default settings

- Admin interface username/password: `admin/admin`
- Router IP Address/Netmask: `192.168.1.1/255.255.255.0`

The router can be reset to its factory defaults either by selecting Save & Reboot⟶Factory Setting Reboot and clicking on Submit) or via the `Reset` pin-hole next to the power switch of the router.

2.2.2. Router as a PPPoE dialer/client

After following the instructions in this section, you should be able to use the router without a PPPoE dialer on your machine. Further sections discuss advanced features and options.

2.2.2.1. Enable networking on the PC

Enable network connectivity on your computer with the following settings:

```
IP Address: 192.168.1.2
Gateway: 192.168.1.1
Netmask: 255.255.255.0
```

2.2.2.2. Connect to the router

Connect to the administrative interface of the router via `http://192.168.1.1/` using the default username:password (`admin:admin`).

NOTE: In what follows, the configuration pages change with change in input selection. For e.g. with Connection Type⟶RFC2684 Bridged, there is no PPPoA/PPPoE entry, and it appears only after you select PPP in the Connection Type.

2.2.2.3. ATM settings

Under, SmartAX MT800⟶ATM Settings, change the following:

In the pull down menu ...

Select PVC 0 and

Set VPI/VCI: 0/35 (Default)

Operation Mode

Connection Type⟶PPP

PPPoA/PPPoE⟶PPPoE

Service Name⟶DataOne (Don't know how this name is used).

PPP

```
Username: userid@dataone (or just userid)
Password: deluser2005 (the assigned password)
Use DNS: Enable
Configured MTU: 1452
```

Click on Submit.

2.2.2.4. PPP status

Click on the icon next to Status, and in the new window that pops up, set:

PPP Status

```
Status: Always On
```

Click on Submit. And you should get ..

PPP Status

```
WAN IP Address: 59.92.138.92
Gateway IP Address: 59.92.138.1
Oper. Status: Link Up
```

Click on Close

After the above step, you should be able to use the router without a dialer on your machine. The router will dialout automatically and authenticate itself when it is powered up (the ADSL ACT LED will glow after the authentication is successful).

2.2.2.5. Connect to the world

Go to SmartAX MT800⟶Save & Reboot and select Save.

The machine can now be used to connect to the net with a networking configuration as follows:

```
IP Address: 192.168.1.abc
Gateway: 192.168.1.1
Netmask: 255.255.255.0
```

2.2.3. Other router features

2.2.3.1. SmartAX MT800 Diagnostics

SmartAX MT800⟶Advanced Functions

Diagnostics

Select `PVC-0`

Click on Submit.

Note: The above step will change the WAN IP Address (the IP address of your router as it is visible outside your network) assigned to you.

2.2.3.2. Gathering Information

This section would be useful if you want to gather some useful information to configure and use your router/connected machine in a better way (also see the section on Debian specific information). The names for various IP Address values etc. used later in the document are defined in the following `LAN Config` and `IP Route` sections.

At SmartAX MT800⟶Other Setting⟶LAN Config

- `LAN IP Address: 192.168.1.1 = router.lan.ip.addr` (This can be set to some other value like `10.0.0.1`)
- `LAN Network Mask: 255.255.255.0 = router.lan.net.mask` (If the `LAN IP Address` is set to `10.0.0.1`, you would want to change the `router.lan.net.mask` to a suitable value, like `255.0.0.0`)

At SmartAX MT800⟶Other Setting⟶IP Route

The IP Route routing table will have the routes configured for the following:

- The `WAN IP Address` of the router from PPP Status - `59.92.138.92`
- The `Gateway IP Address` for the router from PPP Status - `59.92.138.1`
- The `LAN IP Address` of the router from LAN Config - `192.168.1.1 (router.lan.ip.addr)`
- The `Gateway IP Address` for the LAN from LAN Config - `192.168.1.1 (lan.gateway.ip.addr)`
- The `Netmask` for the machines on the LAN from LAN Config - `255.255.255.0 (router.lan.net.mask)`
- The `Primary DNS server` assigned - `61.1.96.69 (dns.server.ip.pri)`
- `The Secondary DNS server` assigned - `61.1.96.71 (dns.server.ip.sec)`

2.2.3.3. Configuring DHCP

SmartAX MT800⟶Other Setting⟶DHCP Mode

- None:

  Use the following to configure networking on the machine connected to the router.

  ```
  IP Address: 192.168.1.abc
  Gateway: lan.gateway.ip.addr
  ```

`Netmask: router.lan.net.mask`

- DHCP Server:

  Edit the Table / Add to restrict the range of IPs leased out and the time duration for which they are leased out. Configure networking on the machine so that DHCP uses either broadcast mode, or uses `router.lan.ip.addr` as the DHCP server.

- DHCP Relay:

  Add the IP Address of the DHCP server (if not using broadcast mode) in `DHCP Server IP` and configure the machine connected to the router as a DHCP client.

2.2.3.4. Configuring DNS

SmartAX MT800⟶Other Setting⟶DNS

DNS Configuration⟶DNS Relay

- `Enable`

  Configure the machines to use `router.lan.ip.addr` as the DNS server.

- `Disable`

  Configure the machines to use `dns.server.ip.pri` and `dns.server.ip.sec` as the primary and the secondary DNS servers respectively.

2.2.3.5. Other functions

SmartAX MT800⟶Advanced Functions / Access Management / Statistics :

These settings can be used to control the firewall rules, RIP, QoS, port blocking. Read the manual that is bundled along with the router for information on these configuration options.

2.3. Huawei SmartAX MT880 ADSL router

2.3.1. Few (factory) default settings

- Admin interface username/password: `admin/admin`
- Router IP Address/Netmask: `192.168.1.1/255.255.255.0`

2.3.2. Router as a PPPoE dialer/client

After following the instructions in this section, you should be able to use the router without a PPPoE dialer on your machine.

2.3.2.1. Enable networking on the PC

Enable network connectivity on your computer with the following settings:

```
IP Address: 192.168.1.2
Gateway: 192.168.1.1
Netmask: 255.255.255.0
```

2.3.2.2. Connect to the router

Connect to the administrative interface of the router via `http://192.168.1.1/` using the default username:password (`admin:admin`).

2.3.2.3. WAN settings

Under SmartAX MT880, go to Home⟶WAN Settings, do the following:

In the pull down menu ...

PVC Number⟶PVC-0 and

and ...

WAN Type⟶PPP

Connection Type⟶PPPoE

VPI/VCI:⟶0/35

Under PPP, enter your user name and password.

```
Username: userid@dataone (or just userid)
Password: deluser2005 (the assigned password)
```

Click on Apply.

2.3.2.4. Diagnostics (dialing out)

Navigate to SmartAX MT880⟶Status⟶Diagnostics on the left panel.

Click on Submit. After this, a few tests will be carried out to test the connection. The first three test results should be a PASS. (The rest of the tests will either be SKIPPED or FAILED. It is safe to ignore those.

After the above step, you should be able to use the router without a dialer on your machine.

2.3.2.5. Connect to the world

At SmartAX MT880⟶Tools⟶System Settings

Click on Save & Restart

After restarting the router, the PC can be used to connect to the net with a networking configuration as follows:

```
IP Address: 192.168.1.abc
Gateway: 192.168.1.1
Netmask: 255.255.255.0
```

2.3.3. Other router features

2.3.3.1. SmartAX MT880 Diagnostics

SmartAX MT880⟶Status⟶Diagnostics

Click on Submit.

Note: The above step will change the WAN IP Address (the IP address of your router as it is visible outside your network) assigned to you.

2.3.3.2. Configuring DHCP

SmartAX MT880⟶Home⟶DHCP

2.3.3.3. Configuring DNS

SmartAX MT880⟶Home⟶DNS

2.3.3.4. Other functions

SmartAX MT880⟶Advanced / Tools :

These settings can be used to control the firewall rules, RIP, QoS, port blocking. Read the manual that is bundled along with the router for information on these configuration options.

2.4. UT Starcom UT-300R router

Varun Soundararajan has a HOWTO for configuring the UT Starcom UT-300R router (http://modembsnl.blogspot.com/). I have not had the time to incorporate instructions that Varun sent across to me in this HOWTO yet.

3. OS Specific Information

3.1. Debian specific information

3.1.1. DHCP Mode on the router

If SmartAX MT800⟶Other Setting⟶DHCP Mode is

- `None`:

  in `/etc/network/interfaces` use

```
iface eth0 inet static
    address 192.168.1.abc
    netmask router.lan.net.mask
    gateway lan.gateway.ip.addr
```

restart networking (`sudo invoke-rc.d networking restart`)

- `DHCP Server`:

  install a DHCP client (**sudo apt-get install dhcp-client** or **sudo apt-get install dhcp3-client**) and in `/etc/network/interfaces` use

  ```
  iface eth0 inet dhcp
  ```

  Modify the `/etc/dhcp/dhclient.conf` to suit your needs, and restart networking (**sudo invoke-rc.d networking restart**)

- `DHCP Relay`:

  Modify the `/etc/dhcp/dhclient.conf` to suit your needs and restart networking (**sudo invoke-rc.d networking restart**)

3.1.2. DNS Configuration on the router

SmartAX MT800⟶Other Setting⟶DNS

If DNS Configuration⟶DNS Relay is

- `Enable`:

  if the resolvconf package has not been installed (to install the `resolvconf` package, use **sudo apt-get install resolvconf**), add a `"nameserver router.lan.ip.addr"` line in `/etc/resolv.conf`.

  if the resolvconf package has been installed installed, add a `"dns-nameservers router.lan.ip.addr"` line after the `gateway` line in `/etc/network/interfaces`

  restart networking (**sudo invoke-rc.d networking restart**)

- `Disable`:

if the resolvconf package has not been installed add the following lines in `/etc/resolv.conf`:

```
nameserver dns.server.ip.pri
nameserver dns.server.ip.sec
```

if the resolvconf package has been installed installed, add a "`dns-nameservers dns.server.ip.pri dns.server.ip.sec`" line after the `gateway` line in `/etc/network/interfaces`

restart networking (**sudo invoke-rc.d networking restart**)

Install and use a small caching name server locally (like pdnsd, which is very easy to configure)

3.2. FreeBSD specific information

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3.3. Mac OS X specific information

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3.4. Windows specific information

BSNL recommends using the RASPPPoE dialer that can be downloaded from http://www.raspppoe.com (http://www.raspppoe.com/). Installation and configuration instructions are available from the same site for Windows 2000/XP/.NET (http://www.raspppoe.com/README2K.HTM), Windows 95/98/98SE/ME (http://www.raspppoe.com/README9X.HTM) and Windows NT 4.0 (http://www.raspppoe.com/READMENT.HTM).

However, note that using the router's builtin PPPoE dialer as discussed in previous sections is much more simple and safe method of using the ADSL service.

4. Frequently Asked Questions (FAQs)

Q: What are the DNS servers for DateOne?

A: The IP addresses of the DNS servers are `61.1.96.69` and `61.1.96.71`

Q: DateOne DNS servers are down. Are there any other (alternative) DNS servers on the BSNL network?

A: Other sancharnet DNS servers are `218.248.255.161` and `218.248.255.193`. You can also try using the DNS servers that are used by DIAS users (the IP addresses are `61.1.128.65` and `61.1.128.5`).

If the DataOne DNS servers are unresponsive, install a caching DNS server like pdnsd locally and use it.

Q: How do I change my DateOne password?

A: Visit http://10.240.43.216 using Internet Explorer (other browsers are not supported), logon with your current username (the `userid` part of `userid@dataone`) and password and select the option for changing the password. Note that you will be able to reach the above server only if you are logged on to the DataOne service, and you are on the BSNL network.

Q: How do I access my DateOne email?

A: Visit http://dataone.in and use your login id and password to send and receive email or to change your email account password.

Q: What are the SMTP and POP servers for DateOne?

A: The POP server for DataOne subscribers is one of `smma.sancharnet.in` (southern region), `wmma.sancharnet.in` (western region) or `nmma.sancharnet.in` (northern region) and the respective SMTP servers are `smra.sancharnet.in`, `wmra.sancharnet.in` and `nmra.sancharnet.in`.

Q: How do I check my DataOne data transfer/usage statistics?

A: Visit http://10.240.43.216 using Internet Explorer (other browsers are not supported, though success has been reported with Opera), logon with your current username (the `userid` part of `userid@dataone`) and password and select the option for checking data transfer statistics.

The DataOne Broadband Statistics (http://dobs.sourceforge.net/) script is useful to check your usage.

Note that you will be able to use the above methods only if you are logged on to the DataOne service, and you are on the BSNL network.

5. Final Words

5.1. Comments and Suggestions

Comments and suggestions regarding this document may be sent to <`giridhar@appaji.net`>. Please point out any mistakes, omissions, broken links and possible improvements so that they can be incorporated in future revisions of the document. In case you have additions and improvements that

would change major portions of the document, it would be great if you could send them as a patch against the latest DocBook/XML version.

5.2. Acknowledgements

The author of this document has the pleasure of acknowledging the following people who have contributed to this document by sending in comments and suggestions for improvements.

- The folks on #linux-india (Soumyadip Modak, Vishal Rao etc.) on irc.freenode.net for suggesting that I write this document.
- Saloni - <`salspeaks (at) yahoo.com`> for the information on using the built-in dialer of the SmartAX MT880.
- Edward Irwin <`edward_irwin (at) yahoo.com`> for the section on Windows PPPoE configuration using RASPPPoE.

6. References and Resources

- The engineering instructions document detailing the installation of the BSNL ADSL CPE (Customer Premises Equippment) is available at http://www.tnd.bsnl.co.in/eiadslcpe.pdf (http://www.tnd.bsnl.co.in/eis/new_eis/eiadslcpe.pdf).