The purpose of this document is to provide you with the necessary steps to configure a FTG-50R to used with T-DSL (German DSL Provider "T-Online"). It's not my intention to replace any official documentation nor release notes. After running a couple of setup scenarios, I thought it might be useful to share this document with you.

For this configuration I've used a FTG-50 R with 2.36 OS Version
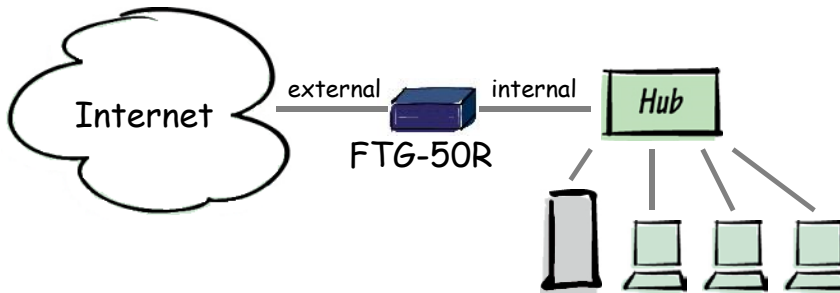
Basic Parameters

First thing to do is to provide your FortiGate with basic IP settings to be configured later on with HTTPS.

Following Chart is good to remember, when configuring the appliance.

Administrator Password:	secret

Internal Interface	IP:	192.168.10.254
	Netmask:	255.255.255.0
External Interface	IP:	*dynamically assigned by dialup*
	Netmask:	*dynamically assigned by dialup*
	Default Gateway	*dynamically assigned by dialup*
	Primary DNS Server	207.194.200.1 (T-Online DNS Server)
	Secondary DNS Server	207.194.200.129 (T-Online DNS Server)

	DHCP	If your ISP supplies you with an IP address using DHCP, no further information is required
	PPPoE – UserName *	AAAAAAAAAAAATTTTTTTTTTTTT #0001@t-online.de
	PPPoE - Password	mypass

* Your T-Online user Name consists of 4 parts. Verify the entries on your delivery note received from T-Online.

Anschluss Nr. I.e AAAAAAAAAAA
T-Online Nr., i.e. TTTTTTTTTTTTT
Mitbenutzer Suffix, i.e 0001
Domain: @t-online.de
Kennwort: mypass

The Fortigate NPG contains a DHCP server, that you can configure to automatically set the address of the computers on your internal network.

DHCP Settings	Starting IP	192.168.10.30
	Ending IP	192.168.10.50
	Netmask	255.255.255.0
	Default Route	192.168.10.254 (this is internal interface on this FTG)
	DNS IP	207.194.200.1 & 207.194.200.129

Configure Internal IP Address
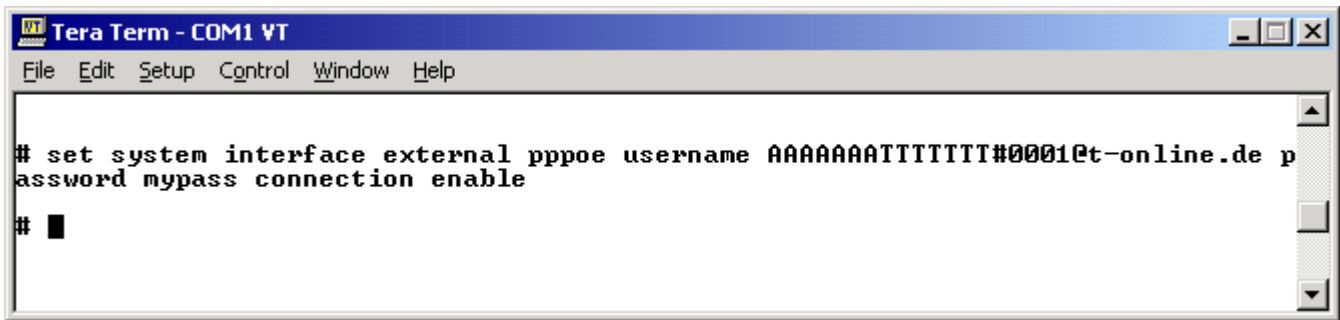
1. Connect the null modem cable with your FortiGate Box.
2. Start a terminal client to connect via COM1 or responding port (serial settings: 9600-8-N)
3. Press <return> and the login prompt appears

```
Fortigate-50 login:
```
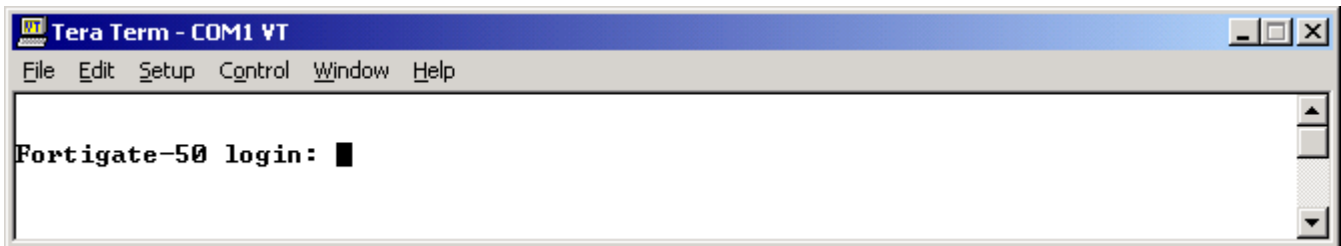
4. Type as username **admin**
5. On the password prompt just press <**return**>
6. First, assign an IP address to the internal interface

```
# set system interface internal static ip 192.168.10.254 255.255.255.0
#
```
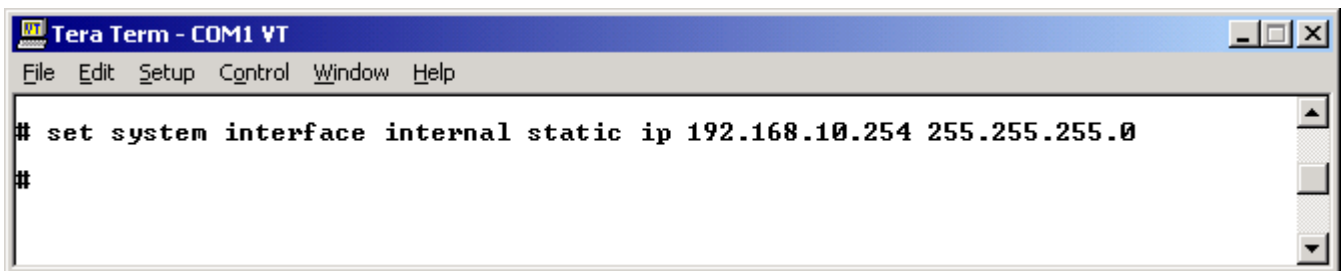
7. Set the external interface to use PPPoE. Remember the basic parameters at the beginning.
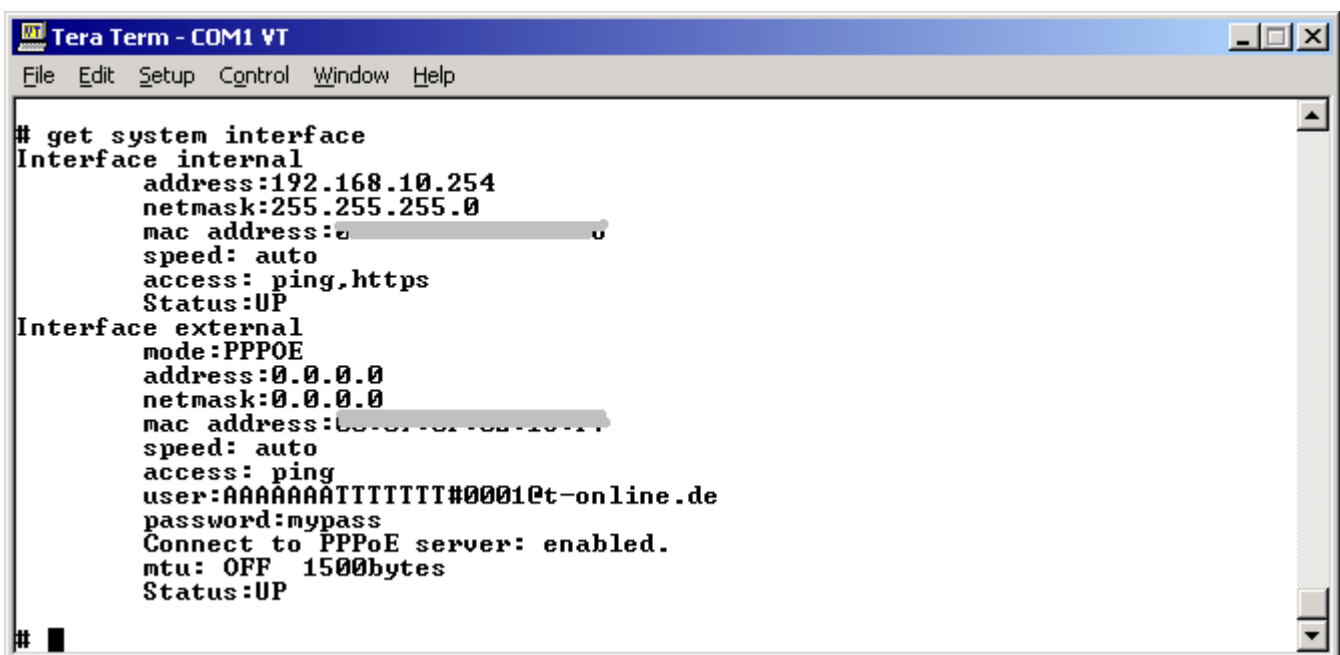
```
Tera Term - COM1 VT
File  Edit  Setup  Control  Window  Help

# set system interface external pppoe username AAAAAAATTTTTTT#0001@t-online.de p
assword mypass connection enable

#
```

8. Confirm that the addresses are correct.

```
Tera Term - COM1 VT
File  Edit  Setup  Control  Window  Help

# get system interface
Interface internal
        address:192.168.10.254
        netmask:255.255.255.0
        mac address:
        speed: auto
        access: ping,https
        Status:UP
Interface external
        mode:PPPOE
        address:0.0.0.0
        netmask:0.0.0.0
        mac address:
        speed: auto
        access: ping
        user:AAAAAAATTTTTTT#0001@t-online.de
        password:mypass
        Connect to PPPoE server: enabled.
        mtu: OFF  1500bytes
        Status:UP

#
```

Note:
External interface shows at address and netmask no IP Address. Either, this is because the appliance is not connected to the DSL Port of the NTBA or username and password don't match.

On the next page, I've added a screenshot with successful connection.

Look at the IP address. Don't worry about seeing a hidden username and password. This time I used a valid username / password combination.

```
# get system interface
Interface internal
        address:192.168.10.254
        netmask:255.255.255.0
        mac address:
        speed: auto
        access: ping,https
        Status:UP
Interface external
        mode:PPPOE
        address:217.80.228.172
        netmask:255.255.255.255
        mac address:
        speed: auto
        access: ping
        user:                    s#0001@t-online.de
        password:
        Connect to PPPoE server: enabled.
        mtu: OFF  1492bytes
        Status:UP
#
```

This is pretty much everything to do, for a successful connection to your T-DSL. However, if you want to use DHCP Service by FTG-50R, you have to enable and configure DHCP Service.

Configure DHCP Service

Basically, DHCP Service is more easier to configure by using FortiGate's Web Interface.

1. Connect to FortiGate with following URL: https://192.168.10.254 and type **admin** (no password)
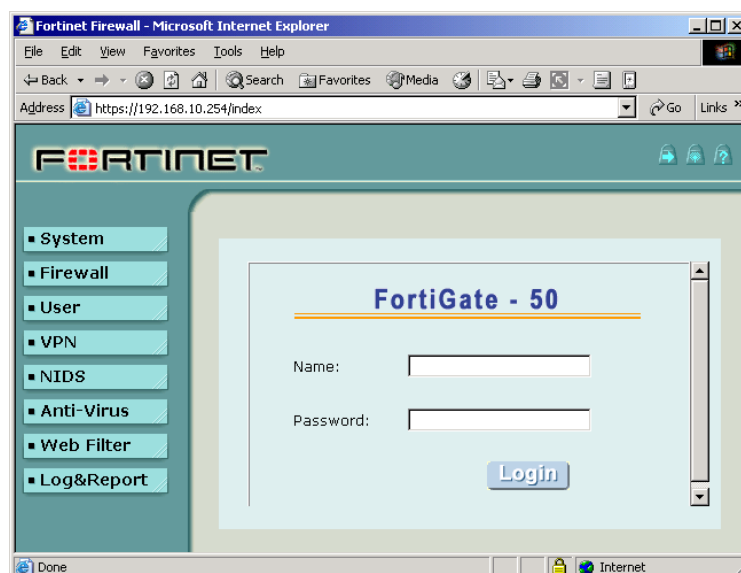
Click on **SYSTEM – NETWORK - INTERFACE**

Interface	DNS	Routing Table	Routing Gateway	DHCP

Name	IP	Netmask	Access	Modify
internal	192.168.10.254	255.255.255.0	HTTPS,PING	
external	217.80.228.172	255.255.255.255	PING	

Note: When looking at external you would see the same IP Address, which has been seen on terminal by executing the command "get system interface"

Click on **DHCP**

Insert proper values (you can use my examples) DNS Server entries are based on T-Online Service during time of this writing.

Enable DHCP:	☑	
Starting IP:	192.168.10.30	**Dynamic IP List**
Ending IP:	192.168.10.50	
Netmask:	255.255.255.0	
Lease Duration:	300	(seconds)
Domain:		
DNS IP:	207.194.200.1 207.194.200.129	
Default Route:	192.168.10.254	

Exclusion Range:

Range 1:		-	
Range 2:		-	
Range 3:		-	
Range 4:		-	
	Apply		

If you have been using a different DHCP Server first, open a command prompt on you PC and verify settings. You will have to renew the IP Address and also to flush the arp cache.

```
C:\WINDOWS\System32\cmd.exe

C:\Documents and Settings\Rainer Bemsel>ipconfig -all

Windows IP Configuration

        Host Name . . . . . . . . . . . . : hrc
        Primary Dns Suffix  . . . . . . . :
        Node Type . . . . . . . . . . . . : Unknown
        IP Routing Enabled. . . . . . . . : No
        WINS Proxy Enabled. . . . . . . . : No

Ethernet adapter Local Area Connection:

        Connection-specific DNS Suffix  . :
        Description . . . . . . . . . . . : 3Com EtherLink XL 10/100 PCI For Complete PC Management
NIC (3C905C-TX)
        Physical Address. . . . . . . . . : 00-01-02-A9-0C-F7
        Dhcp Enabled. . . . . . . . . . . : Yes
        Autoconfiguration Enabled . . . . : Yes
        IP Address. . . . . . . . . . . . : 192.168.10.34
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . : 192.168.10.254
        DHCP Server . . . . . . . . . . . : 192.168.10.254
        DNS Servers . . . . . . . . . . . : 192.168.10.254
        Lease Obtained. . . . . . . . . . : Saturday, December 20, 2003 3:45:11 PM
        Lease Expires . . . . . . . . . . : Tuesday, December 23, 2003 3:45:11 PM

C:\Documents and Settings\Rainer Bemsel>
```

In my example, have a look at DNS Servers. DNS Server has been set to my former default router. With the change to the new Gateway, I also changed DNS settings.

I will release my IP Address and renew, by connecting now to Fortigate's DHCP Service on FTG-50R.


```
Command Prompt

C:\Documents and Settings\Rainer Bemsel>ipconfig -all

Windows IP Configuration

        Host Name . . . . . . . . . . . . : hrc
        Primary Dns Suffix  . . . . . . . :
        Node Type . . . . . . . . . . . . : Unknown
        IP Routing Enabled. . . . . . . . : No
        WINS Proxy Enabled. . . . . . . . : No

Ethernet adapter Local Area Connection:

        Connection-specific DNS Suffix  . :
        Description . . . . . . . . . . . : 3Com EtherLink XL 10/100 PCI For Complete PC Management
NIC (3C905C-TX)
        Physical Address. . . . . . . . . : 00-01-02-A9-0C-F7
        Dhcp Enabled. . . . . . . . . . . : Yes
        Autoconfiguration Enabled . . . . : Yes
        IP Address. . . . . . . . . . . . : 192.168.10.34
        Subnet Mask . . . . . . . . . . . : 255.255.255.0
        Default Gateway . . . . . . . . . : 192.168.10.254
        DHCP Server . . . . . . . . . . . : 192.168.10.254
        DNS Servers . . . . . . . . . . . : 207.194.200.1
                                            207.194.200.129
        Lease Obtained. . . . . . . . . . : Saturday, December 20, 2003 9:31:56 PM
        Lease Expires . . . . . . . . . . : Wednesday, December 24, 2003 8:51:56 AM

C:\Documents and Settings\Rainer Bemsel>
```

Have a look on DNS Server, do you realize the changes?

Finally, to make sure, everything is working out the way I wanted.

I'll do an DNS Lookup to see, whether Hostname and Domains can be resolved. Try some different lookups, to see if it works.

```
C:\WINDOWS\System32\cmd.exe - nslookup

C:\Documents and Settings\Rainer Bemsel>nslookup
Default Server:  finna.radiant.net
Address:  207.194.200.1

> fortinet.com
Server:  finna.radiant.net
Address:  207.194.200.1

Non-authoritative answer:
Name:    fortinet.com
Address:  128.242.109.135

> bemsel.com
Server:  finna.radiant.net
Address:  207.194.200.1

Non-authoritative answer:
Name:    bemsel.com
Address:  212.227.109.230

>
```

I hope this short cheat sheet was useful for setting up DSL. I would appreciate any comments either via email at itsec@bemsel.com or on my guestbook at www.bemsel.com/MyPlanet/myplanet.html