



Das M2M Kochbuch

Fernzugriff mit Mobilfunk

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Kochen wir ein M2M Menu in 5 Schritten und 10 Minuten





Schritt 1: Aufsetzen des Servers

- **Öffentliche IP wird benötigt**
 - Feste IP
 - Oder dynamische mit DynDNS
- **OpenVPN Server anschließen**
 - DHCP client oder feste lokale IP
 - In die DMZ oder das lokale Netz
- **Portweiterleitung in der Firewall einrichten**
 - Standard OpenVPN UDP 1194
 - Selten wird auch TCP 80 verwenden



Schritt 2a: Server konfigurieren

net
Module

NETBOX WEB MANAGER

OpenVPN
Administration
Tunnel Configuration

IPsec Administration Configuration

PPTP Server

Dial-in Server

HB1000 NetBox Wireless Router
Software Version 3.5.0.5
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HOME INTERFACES ROUTING FIREWALL VPN SERVICES SYSTEM LOGOUT

Tunnel 1 Tunnel 2 Tunnel 3 Tunnel 4

Tunnel 1 Configuration

Operation mode: disabled client standard expert

Server port:

Type:

Network mode: routed bridged

Cipher:

Use compression:

Use keepalive:

Redirect gateway:

Protocol:

Authentication: certificate-based

Schritt 2b: Schlüssel und Zertifikate erstellen

The screenshot shows the NetBox Web Manager interface. The top navigation bar includes HOME, INTERFACES, ROUTING, FIREWALL, VPN, SERVICES, SYSTEM, and LOGOUT. The left sidebar is labeled 'NETBOX WEB MANAGER' and contains various system management options. The main content area is titled 'OpenVPN 1' and shows 'Tunnel 1 is running in server mode (configure)'. There are two radio buttons: 'Generate keys/certificates' (selected) and 'Upload pre-generated keys/certificates'. Below this, there are four input fields for 'Server certificate:', 'Private key:', 'CA root certificate:', and 'CA root key:', all of which are marked as 'missing'. A 'Create' button is located at the bottom of the form. The footer of the page includes the NetBox logo and version information: 'HB1600 NetBox Wireless Router, Software Version 3.5.0.5, © 2004-2011, NetModule AG'.

Schritt 2c: Konfigurationen für Klienten

The screenshot shows the NetBox Web Manager interface for client configuration. The top navigation bar is the same as in the previous screenshot. The left sidebar is labeled 'NETBOX WEB MANAGER' and includes 'OpenVPN' and 'IPsec' sections. The main content area is titled 'Client Networking' and includes a sub-header 'Client Networking' and a description: 'This menu can be used to configure a fixed tunnel endpoint address for each client. You may also specify a network, whose packets should get routed towards the client.' There are two dropdown menus: 'Select client:' with 'Alice' selected, and 'Client network:' with 'specify' selected. Below these are input fields for 'Network:' (10.10.0.0) and 'Netmask:' (255.255.255.0). An 'Apply' button is at the bottom. An inset screenshot in the bottom right corner shows a smaller view of the same configuration page. The footer of the page includes the NetBox logo and version information: 'HB1600 NetBox Wireless Router, Software Version 3.5.0.5, © 2004-2011, NetModule AG'.

Schritt 2d: Klientenkonfiguration speichern

The screenshot shows the 'net Module' web interface. The main navigation bar includes: HOME, INTERFACES, ROUTING, FIREWALL, VPN, SERVICES, SYSTEM, LOGOUT. The left sidebar is labeled 'NETBOX WEB MANAGER' and contains links for OpenVPN (Administration, Tunnel Configuration, Client Management), IPsec (Administration, Configuration), PPTP Server, and Dial-in Server. The main content area is titled 'Clients' and has sub-tabs for 'Networking' and 'Routes'. The 'Download' sub-tab is active, showing options for 'Download OpenVPN Client' (Windows, Linux) and 'Download Expert Mode Files'. A text input field for 'Server address/hostname' contains '138.188.32.4'. A 'Download' button is visible below the input field. At the bottom left, it says 'HB1600 NetBox Wireless Router Software Version 3.5.0.5 © 2004-2012, Heliwave AG'. The net Module logo is at the bottom right.

Schritt 3: Kundenseite konfigurieren

- **SIM Datenkarte wird benötigt**
 - Konsumer Flatrate
- **Computer anschließen**
 - Ethernetschnittstelle
 - DHCP Client oder feste IP
- **Ältere Geräte anschließen**
 - RS-232 Schnittstelle
- **Antenne anschließen**
 - Stummelantenne am Gerät
 - Oder externe Antenne



Schritt 4a: Router konfigurieren – SIM Karte

Schritt 4b: Router konfigurieren – Anbieter

Schritt 4c: Router konfigurieren – Verbindung



NETBOX WEB MANAGER

- WAN
 - Link Management
 - Connection Supervision
 - MSS / MTU
- Ethernet
 - Link Settings
 - Port Settings
 - IP Settings
- Mobile
 - Administration
 - Configuration
 - SIM
- WLAN
 - Administration
 - Configuration
 - IP Settings
- USB
 - Autorun
 - Device Server
- Serial Port
 - Settings
 - Device Server
- Digital I/O

NB1500 NetBox Wireless Router
Software Version 3.5.0.5
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HOME
INTERFACES
ROUTING
FIREWALL
VPN
SERVICES
SYSTEM
LOGOUT

Administrative Connection Status

Administrative connection status: enabled, permanent
 enabled, dial on demand
 disabled

Dial attempts: endless
 numbered

Dial on demand idle timeout: (minutes)

Application area: mobile
 stationary

Service type: 3G (UMTS) first



Schritt 4d: Router konfigurieren – Verbindung



NETBOX WEB MANAGER

- WAN
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HOME
INTERFACES
ROUTING
FIREWALL
VPN
SERVICES
SYSTEM
LOGOUT

WAN Link Management

This menu can be used to define and prioritize your WAN links. Depending on your hardware, you can choose from **Mobile** (GSM/UMTS), **WLAN**, **Ethernet** and **PPPoE**. WAN links have to be configured and enabled before adding them. In case a link goes down, the system will automatically switch over to the next link in the priority list. You can configure each link to be either established when the switch occurs or permanently in order to minimize link downtime.

Prioritization
Settings

Priority	Link Name	Establishment Mode
1st priority:	Mobile	permanent
2nd priority:	None	
3rd priority:	None	
4th priority:	None	



Schritt 4e: Router konfigurieren – VPN

The screenshot shows the NetBox Web Manager interface for configuring a VPN tunnel. The main navigation menu includes HOME, INTERFACES, ROUTING, FIREWALL, VPN, SERVICES, SYSTEM, and LOGOUT. The current page is titled 'Tunnel 1 Configuration' and features a sidebar with 'NETBOX WEB MANAGER' and various configuration options like OpenVPN, IPsec, PPTP Server, and Dial-in Server. The main content area shows the 'Tunnel 1 Configuration' page with tabs for Tunnel 1, Tunnel 2, Tunnel 3, and Tunnel 4. The 'Operation mode' section has radio buttons for disabled, client (selected), server, standard, and expert. There is also a field for 'Expert mode file (zip)' with a 'Browse...' button and an 'Apply' button at the bottom.

net
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HOME INTERFACES ROUTING FIREWALL VPN SERVICES SYSTEM LOGOUT

Tunnel 1 Tunnel 2 Tunnel 3 Tunnel 4

Tunnel 1 Configuration

Operation mode:

disabled client standard

server expert

Expert mode file (zip): Browse...

Apply

NETBOX WEB MANAGER

OpenVPN
Administration
Tunnel Configuration

IPsec
Administration
Configuration

PPTP Server

Dial-in Server

IB1600 NetBox Wireless Router
Software Version 3.5.0.5
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net
Module

Schritt 5: Service PC Einrichten

- **OpenVPN GUI installieren**
 - www.openvpn.se
- **Client Konfiguration laden**
- **OpenVPN GUI starten und verbinden**
- **Wenn Fernzugriff auf die serielle Schnittstelle benötigt wird:**
 - Install and configure VSP3
 - www.hw-group.com
- **Applikation starten**
- **...und...**



...im Server sehen, wer am Tisch sitzt.

The screenshot shows the NetBox Web Manager interface. The main navigation bar includes: HOME, INTERFACES, ROUTING, FIREWALL, VPN, SERVICES, SYSTEM, LOGOUT. The left sidebar contains: OpenVPN (Administration, Tunnel Configuration, Client Management), IPsec (Administration, Configuration), PPTP Server, and Dial-in Server. The main content area is titled 'Client Management' and features a table with columns 'Enabled', 'Client', and 'Connection info'.

Enabled	Client	Connection info
<input checked="" type="checkbox"/>	Alice	not connected
<input checked="" type="checkbox"/>	Bob	not connected
<input checked="" type="checkbox"/>	Eve	from 213.193.75.182 (10.8.0.10) since 2011-11-24 12:09:00
<input type="checkbox"/>	Client4	
<input type="checkbox"/>	Client5	
<input type="checkbox"/>	Client6	
<input type="checkbox"/>	Client7	
<input type="checkbox"/>	Client8	
<input type="checkbox"/>	Client9	
<input type="checkbox"/>	Client10	

Buttons: Apply Refresh

Footer: NB1000 NetBox Wireless Router, Software Version 3.2.0.5, © 2004-2011, netModule AG



Das war das M2M Menu

