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enterprise communications

bintec Workshop

Dynamic Host Configuration Protocol

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Purpose

This document is part of the user's guide to the installation and configuration of bintec gateways running software release 7.1.4 or later. For up-to-the-minute information and instructions concerning the latest software release, you should always read our **Release Notes**, especially when carrying out a software update to a later release level. The latest **Release Notes** can be found at www.funkwerk-ec.com.

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Guidelines and standards

bintec gateways comply with the following guidelines and standards:

R&TTE Directive 1999/5/EG

CE marking for all EU countries and Switzerland

You will find detailed information in the Declarations of Conformity at www.funkwerk-ec.com.

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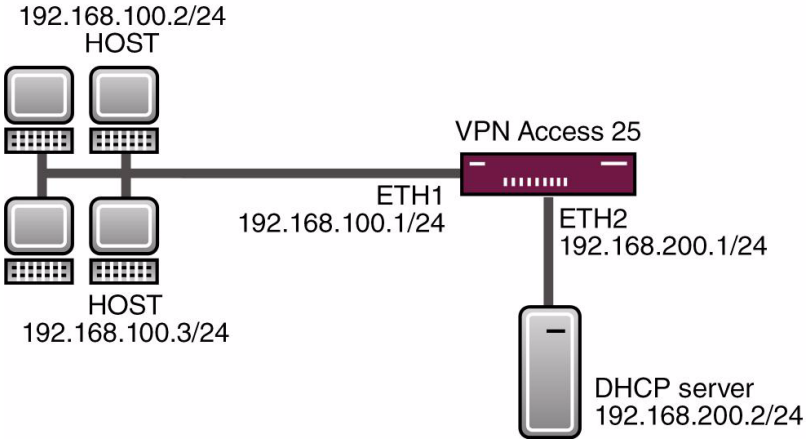
1 Introduction

The configuration of DHCP is described in the following chapters. You use the Bintec router either as DHCP server, DHCP client or DHCP relay agent. The description also includes other relationships with DHCP.

The Setup Tool is used for the configuration and in some cases the tables.

Example scenario for “Configuration as DHCP Client” on page 7



1.1 Requirements

The following are required for the configuration:

- A boot image of version 7.1.1 or later.
- An optional DHCP server.

2 Configuration

You must make settings in the following menu for configuring DHCP:

IP ➜ IP ADDRESS POOL LAN (DHCP)

2.1 Configuring the DHCP Server

If you wish to assign an IP address to the client computers in the network, you must configure the DHCP server in the Bintec router.

Go to the following menu to create a new entry for this purpose:

- Go to ***IP ➜ IP ADDRESS POOL LAN (DHCP) ➜ ADD***.

```
VPN Access 25 Setup Tool                    Bintec Access Networks GmbH
[IP][DHCP][ADD]: Define Range of IP Addresses           Head Office


     Interface                                 en0-1
     Type                                      Any
     IP Address                                192.168.100.2
     Number of Consecutive Addresses       10
     Lease Time (Minutes)                      120
     MAC Address


     Gateway
     NetBT Node Type                           not specified



          SAVE                                 CANCEL
```

The following fields are relevant:

Field	Meaning
Interface	Here you select the interface via which the IP addresses are to be distributed by DHCP.

Field	Meaning
IP Address	Enter the first IP address to be assigned by DHCP.
Number of Consecutive Addresses	For defining the size of the IP address pool.
Lease Time (Minutes)	The length of time in minutes that the client can keep the IP address.
MAC Address	Enter a MAC address if you wish to assign a fixed IP address to a certain client.
Gateway	Only enter a gateway IP address here if this differs from the router.

Table 2-1: Relevant fields in ***IP*** ➜ ***IP ADDRESS POOL LAN (DHCP)*** ➜ ***ADD***

Proceed as follows to configure the DHCP server:

- Select your LAN interface for ***INTERFACE***, e.g. *en0-1*.
- Enter the first IP address from your LAN under ***IP ADDRESS***, e.g. *192.168.100.2*.
- Set the ***NUMBER OF CONSECUTIVE ADDRESSES*** field, e.g. to *10*.
- Set the ***LEASE TIME (MINUTES)*** to *120*.
- The ***MAC ADDRESS*** remains empty.
- ***GATEWAY*** also remains empty.
- Press **SAVE** to confirm your settings.

The Setup Tool does not offer a facility for checking whether IP addresses are assigned to clients from the DHCP pool. You can, however, check who has received an IP address by activating the following table in the shell:

```
ipDhcpInUseTable
```

```
inx Address(*ro)     Phys(ro)     Expires(ro)        HwType(ro)
Id(ro)               SrcAddr(ro)  Server(ro)
```

Here you obtain all the important information concerning the issue of IP addresses from the DHCP pool.

The router not only always issues an IP address and the IP address of the gateway to the client, but also the IP address of the DNS server. Use the following menu item to determine which IP address the router assigns to the client as DNS:

- Go to ***IP*** ➜ ***DNS*** ➜ ***DHCP ASSIGNMENT***.

The following fields are relevant:

Field	Meaning
self	The router assigns its own IP address as DNS.
global	The router assigns the IP addresses as DNS, which you have configured in the ***IP*** ➜ ***STATIC SETTINGS*** menu.
none	The router issues no DNS server IP addresses with this setting.

Table 2-2: Relevant fields in ***IP*** ➜ ***DNS*** ➜ ***DHCP ASSIGNMENT***

2.1.1 Configuration as DHCP Client

The Bintec router has the possibility of obtaining its own IP address dynamically from a DHCP server at an Ethernet interface.

Go to the following menu to configure your Ethernet interface 2 to DHCP client:

- Go to ***MAIN MENU*** ➜ ***ETHERNET UNIT 2***.

```
VPN Access 25 Setup Tool                    Bintec Access Networks GmbH
[SLOT 0 UNIT 2 ETH]: Configure Ethernet Interface          Head Office

      IP Configuration            DHCP
           local IP Number
           local Netmask
           DHCP MAC address
           DHCP Hostname
           Encapsulation          none
           Mode                   Auto

      Bridging                    disabled

      Virtual Interfaces >

           SAVE                                  CANCEL

Enter string, max. length = 12 chars
```

The following fields are relevant:

Field	Meaning
IP Configuration	Select DHCP to obtain an IP address as client via the interface.
local IP Number	This is the IP address you have received from your DHCP server.
local Netmask	This is the subnetmask you have received from your DHCP server.
DHCP MAC Address	If you expect an IP address from a certain DHCP server, you can enter its MAC address here.

Table 2-3: Relevant fields in ***MAIN MENU*** ➜ ***ETHERNET UNIT 2***

Proceed as follows to configure the router as DHCP client:

- Set ***IP CONFIGURATION*** to *DHCP*.
- Press **SAVE** to confirm your settings.

Now you should receive all the important configuration parameters like IP address, gateway and DNS from your DHCP server.

2.1.2 Configuring a DHCP Relay Server

If the Bintec router for the local network does not distribute any IP addresses to the clients by DHCP, it can still forward the DHCP requests on behalf of the local network to a remote DHCP server. The DHCP server then assigns the router an IP address from its pool, which in turn sends this to the client in the local network. You can enter BootP relay servers in the following submenu:

- Go to ***IP*** ➜ ***STATIC SETTINGS***.

```
VPN Access 25 Setup Tool                    Bintec Access Networks GmbH
[IP][STATIC]: IP Static Settings                              Head Office

          Domain Name
          Primary Domain Name Server
          Secondary Domain Name Server
          Primary WINS
          Secondary WINS
          Time Protocol                     TIME/UDP
          Time Offset (sec)                 0
          Time Update Interval (sec)        86400
          Time Server
          Remote CAPI Server TCP port       2662
          Remote TRACE Server TCP port      7000
          RIP UDP port                      520
          Primary BOOTP Relay Server        192.168.200.2
          Secondary BOOTP Relay Server
          Unique Source IP Address
          HTTP TCP port                     80


             SAVE                                 CANCEL

Enter string, max. length = 35 chars
```

The following fields are relevant:

Field	Meaning
Primary BOOTP Relay Server	Enter the IP address of the first server.
Secondary BOOTP Relay Server	Enter the IP address of the second server.

Table 2-4: Relevant fields in ***IP*** ➜ ***STATIC SETTINGS***

Proceed as follows to configure the router as DHCP relay agent:

- Enter the IP address of the servers for ***PRIMARY BOOTP RELAY SERVER***, e.g. *192.168.200.2*.
- Press **SAVE** to confirm your settings.

3 Overview of Configuration Steps

DHCP Server

Field	Menu	Description
Interface	***IP → IP ADDRESS POOL LAN (DHCP) → ADD***	e.g. *en0-1*
IP Address	***IP → IP ADDRESS POOL LAN (DHCP) → ADD***	e.g. *192.168.100.2*
Number of Consecutive Addresses	***IP → IP ADDRESS POOL LAN (DHCP) → ADD***	e.g. *10*
Lease Time (Minutes)	***IP → IP ADDRESS POOL LAN (DHCP) → ADD***	e.g. *120*

DHCP Client

Field	Menu	Description
IP Configuration	***ETHERNET UNIT 2***	*DHCP*

DHCP Relay Server

Field	Menu	Description
Primary BOOTP Relay Server	***IP → STATIC SETTINGS***	e.g. *192.168.200.2*