

# Documentation

HiPath 4000 V4

IP Solutions - Serviceability / WAML Replacement

Service Documentation

A31003-H3140-S107-1-7620

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# Service Manual HiPath 4000 V5 - IP Solutions - HG 3500 V4 - Serviceability / WAML Replacement - Contents

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# 1 Feature Description

The following scenarios are intended to provide only an overview of typical usage examples for Serviceability / WAML Replacement.



The purpose of the HG 3500 V4 in this scenario is to provide LAN connectivity to **UW7** and to thus enable remote access (RAS) for the HiPath 4000 administration via **HiPath Assistant / Manager** („Serviceability“ feature).

LAN Connectivity is a feature that provides 2 Ethernet LAN ports and an ISDN link.

The board required for this purpose is the HG 3500 V4 (common gateway - CGW). This enables you to connect an external LAN to the HiPath 4000 and to initiate a data transfer over the ISDN network from any subscriber in the Atlantic LAN (ATLLAN) to the HiPath Assistant, provided the required authorizations exist.

In order to use the LAN Connectivity, after configuring the board with the appropriate AMOs, you will need to set up the WAML-specific configuration data via WBM. It is only on completing this step that the LAN Connectivity will be operational. Note that the configuration is not checked for consistency with the topology of an existing network (e.g., IP addresses) in this case.

An integrated LAN/ISDN router function in the board controls and monitors the transmission of data packets between the WAML network interfaces.

These interfaces enable:

- [SCN-LAN](#)
- [LAN-WAN Scenario with HiPath Manager](#)
- [LAN-WAN Scenario without HiPath Manager](#)
- [Signaling Survivability for IPDA](#)

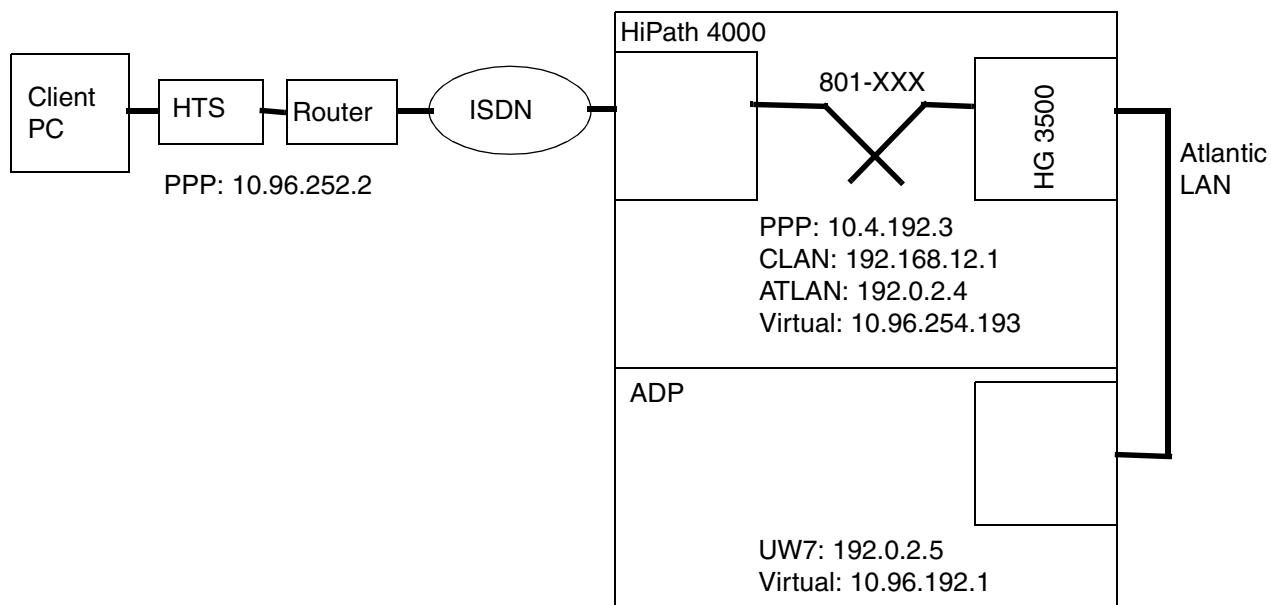


In order to enable the configuration of the HG 3550 to be restored following a SW upgrade, you must first configure a backup with HiPath Backup and Restore.

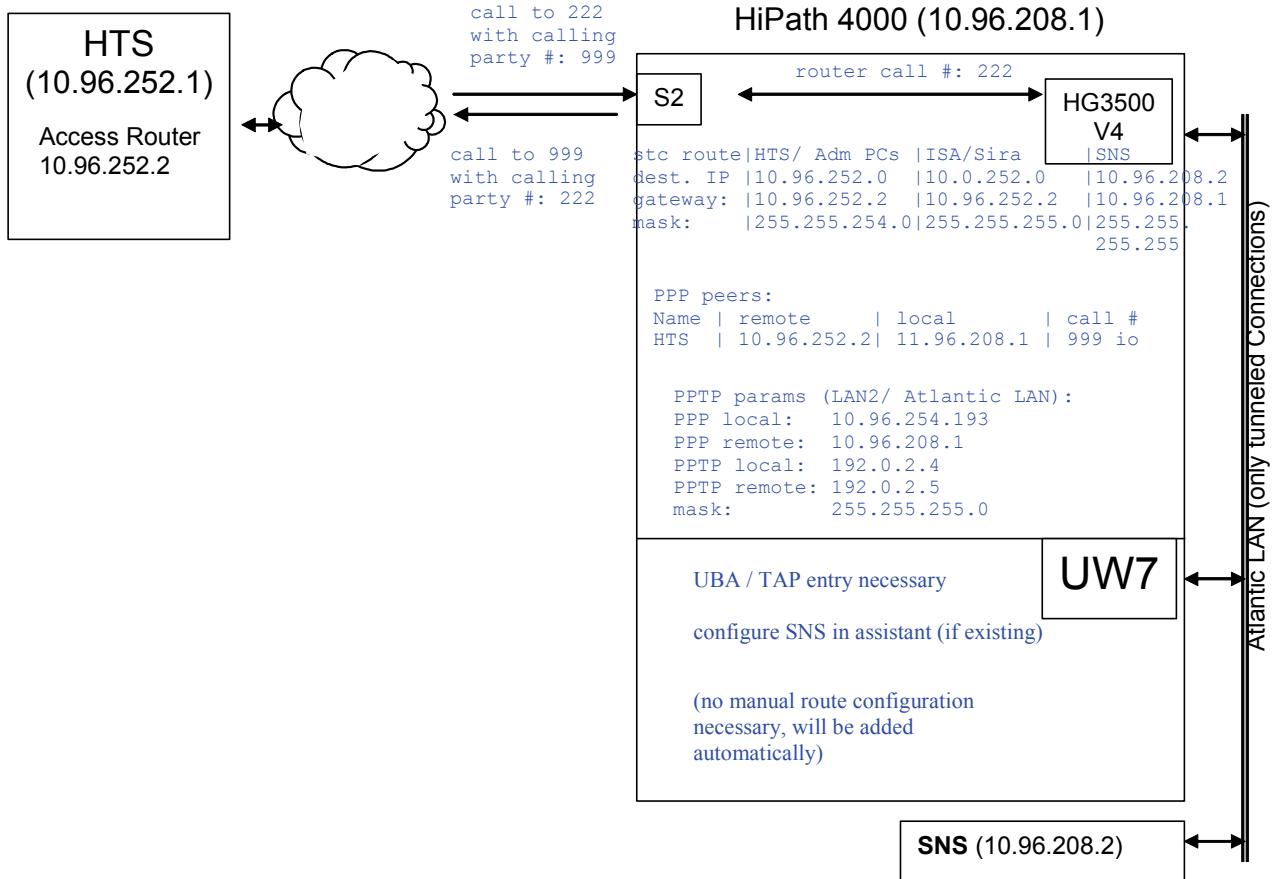
## **Feature Description**

## 2 SCN-LAN

The client PC should be able to dial in via the HTS, access router and an ISDN connection with the station number 801-123 and have access to UW7 (IP address: 192.0.2.5) via the Atlantic LAN. Only PPTP connections to UW7 are possible. The PPTP client in the gateway is configured to propose 10.96.254.193 as a virtual local IP address and 10.96.192.3 as a virtual remote IP address and to request CHAP authentication (ID: HG3550, Password: 1234). UW7 accepts the proposed IP addresses, and CHAP authentication must be configured. The assignment of these IP addresses is defined in the .



## Example: configuration



## Brief overview

The following brief overview shows which routes are required:

- HiPath 4000 - HG 3500 V4:
  - PSTN peer to the HTS
  - Static routes to:  
HTS / Admin PC,  
ISA / SIRA,  
poss. SNS products
  - PPTP tunnel on LAN 2 to UW7
- HiPath 4000 - UW7:
  - UBA / PPP links / Access from TAP (see Section 2.3, “Configuring the Assistant in HiPath 4000”; this configures the PPTP tunnel).

## 2.1 Configuring the HiPath 4000

The HG 3500 V4 is reached via the station numbers 801-XXX and is operated in mixed mode. It has the customer LAN IP address **192.168.12.1** and the Atlantic LAN IP address **192.0.2.4**.

### Setting up the CGW board and configuring the board data

- Allocate Flexama memory for CGW configuration data with the AMO DIMSU:

```
ADD-DIMSU:CGW=number;
```

- Set up board on SLOT=2 and SLOT=103 (Q2316-X / Q2324-X500 with 60 B channels, Q2316-X10 / Q2324-X510 with 120 B channels):

```
ADD-BFDAT:5,WAML,BKAN60&BKAN120;
```

```
CHANGE-BFDAT:WEITER,5,WAML,,,1;
```

```
CHANGE-BFDAT:OK,5,YES;
```

```
ADD-BCSU:IPGW,,2,103,"Q2316-x10",1,"0",5,,,,,10;
```

- Set up HG 3500 V4 board data:

```
ADD-CGWB:2,103,NORMAL,192.168.12.1,255.255.255.0;
```

- Load board data onto board:

```
RESTART-BSSU:PEN,,2,103;
```

### Configuring the CGW LAN circuit

- The used COT (e.g. 222) should be set up as follows:

```
ADD-COT:COTNO=222,COTPAR=MVLT&LWNC&DFNN&NLCR&NLRD&NTON;
```

- The used COP (e.g. 222) should be set up as follows:

```
ADD-COP:COPNO=222,PAR=SFOR,TRK=TA,TOLL=TA,DEV=LAN,  
INFO=COP_FUER_CGW_LAN;
```

- The used COS (e.g. 222) should be set up as follows:

```
ADD-COSSU:NEWCOS=222,AVCE=FBKW&QVKW,INFO="CGW-LAN";  
CHANGE-COSSU:TYPE=LCOSD,LCOSD=number,DLAUTH=1&&64;
```

- Set up new trunk (e.g. 201):

```
ADD-BUEND:TGRP=201,NAME="CGW-LAN",NO=30,TRACENO=0;
```

- Set up circuit for HG 3500 V4 LAN connectivity:

## SCN-LAN

### Configuring the Gateway

```
ADD-TDCSU:OPT=NEW,PEN=1-2-103-3,COTNO=222,COPNO=222,  
COS=222,LCOSV=number,LCOSD=number,CCT="CGW-LAN",  
PROTVAR=ECMAV2,SEGMENT=8,NNO=<virtual node number>,  
ATNTYP=TIE,NNO=number,TGRP=201,DEV=HG3500LA,BCHAN=1&&10;
```

- Set up station number of the HG3550LA:

```
ADD-WABE:CD=801,DAR=TIE,CHECK=N;
```

- Set up LCR routing code on the CGW trunk:

```
ADD-RICHT:MODE=LRTENEW,L RTE=number,LSVC=ALL,NAME="CGW-  
LAN",TGRP=201,DNNO=number;
```

- Set up outdial rule (e.g., ODR=222):

```
ADD-LODR:ODR=222,CMD=NPI,NPI=UNKNOWN,TON=UNKNOWN;  
ADD-LODR:ODR=222,CMD=ECHO,FIELD=2;  
ADD-LODR:ODR=222,CMD=END;
```

- Assign an LCR route to the LCR routing code:

```
ADD-LDAT:LROUTE=number,LSVC=ALL,LVAL=1,TGRP=201,ODR=222,LAUTH=number;  
ADD-LDPLN:LCRCONF=LCRPATT,DIPLNUM=0,LDP=801-123,LROUTE=number,  
LAUTH=number;  
ADD-LDPLN:LCRCONF=LCRADM,DIPLNUM=1,LWMPOOL=1,DIALPLN=1;
```

- In order to ensure that the configuration of the HG 3550 is retained when performing a software upgrade, you will need to configure a backup with HiPath Backup and Restore.

## Configuring the STMD with modem

```
ADD-BCSU:MTYPE=PER,LTG=1,LTU=1,SLOT=49,PARTNO="Q2217-X",1;
```

```
ADD-SBCSU:STNO=3277,OPT=FBUS,CONN=DIR,PEN=1-1-49-  
0,DVCFIG=SET600&DEE&FAX,COS1=24,COS2=24,LCOSV1=1,LCOSV2=1,LCOSD1=1,LCOSD2=1  
,DPLN=0,ITR=0,SSTNO=NO,COSX=0,SPDI=0,SPROT="SBDSS1",FPROT="SBDSS1",DPROT="S  
BDSS1",PERMACT=YES,INS=YES,ALARMMO=0,SOPTIDX=10,FOPTIDX=10,DOPTIDX=10,EXTBU  
S=YES,RCBKB=NO,RCBKNA=NO,CBKBMAX=5,HMUSIC=0;
```

```
CHANGE-COSSU:TYPE=COS,COS=24,AFAX=FBKW&QVKW,FBKW&QVKW;
```

## 2.2 Configuring the Gateway

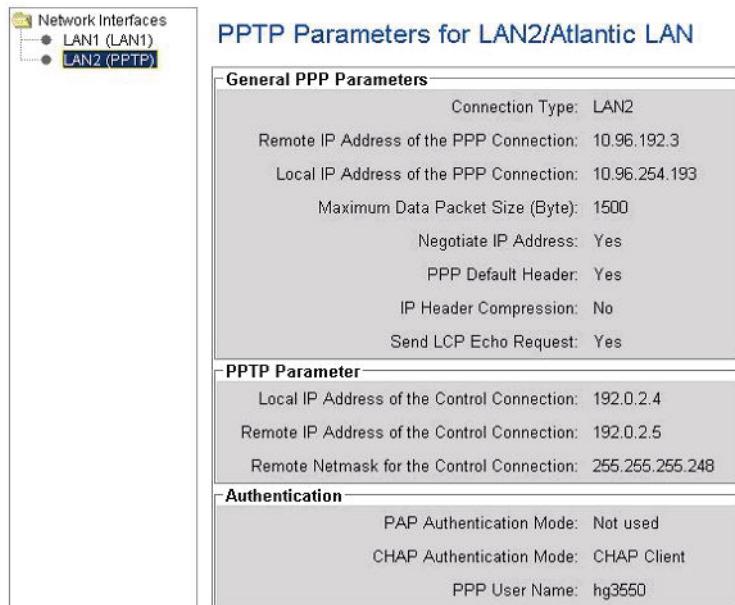
The LAN1 interface is automatically assigned the IP address of the customer LAN that was configured by using the AMO CGWB:

**Figure: LAN1/Customer LAN**



The LAN2 interface is automatically assigned the IP address of the Atlantic LAN that was configured by using the AMO CGWB: The other parameters must be configured accordingly:

**Figure: PPTP Parameters for LAN2/Atlantic LAN**



Explanations for the IP addresses:

Remote IP Address of the PPP Connection  
 (10.96.208.1)

Virtual address of the HiPath 4000 (Assistant);  
 the address is predefined by HTS.

Local IP Address of the PPP Connection  
 (10.96.254.193)

This address is always the same, except for  
 block 2 (RCC-ID;10.xxx.254.193). All systems  
 that are assigned to an RCC have the same  
 address.

## SCN-LAN

### Configuring the Gateway

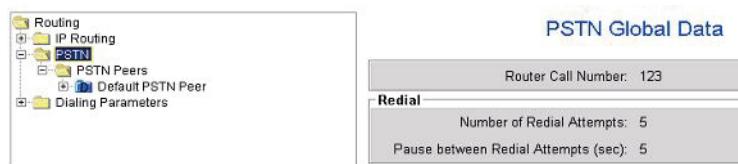
Local IP Address of the Control Connection (192.0.2.4) You should always use this address. This is the fixed WAML IP address in the Atlantic LAN

Remote IP Address of the Control Connection (192.0.2.5) You should always use this address. This is the fixed UW7 IP address in the Atlantic LAN

Remote NETMASK of the Control Connection (255.255.255.248) You should always use this net mask.

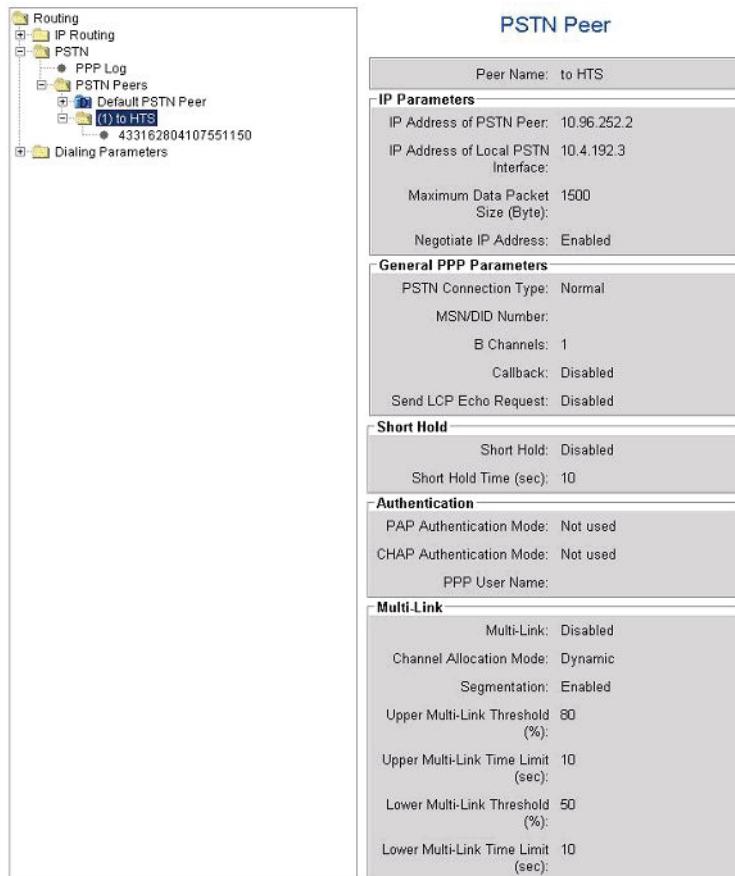
HTS dials via the router call number 801-123 as configured in AMO LDPLN:

**Figure: PSTN Global Data**



The HTS has configured the IP address 10.96.252.2 for the PPP connection.

**Figure: PSTN Peer**



#### Explanation of the IP addresses:

IP Address of PSTN Peer  
(10.96.252.2)

Virtual address of the SIRA access router. This address is always the same, except for block 2 (RCC-ID;10.xxx.252.2). All systems that are assigned to an RCC have the same address.

IP Address of Local PSTN Interface  
(11.96.208.1)

Virtual address of the HG3550. This is derived from the virtual address of the HiPath 4000 (Assistant).

- 10.X.Y.Z ... IP address of HiPath4000 Assistant <VPN IP address>
- 11.X.Y.Z ... IP address of the HG 3550 <HG IP address>

Note: The last three 3 positions of the IP address remain the same; only the first position changes from "10" to "11".

## SCN-LAN

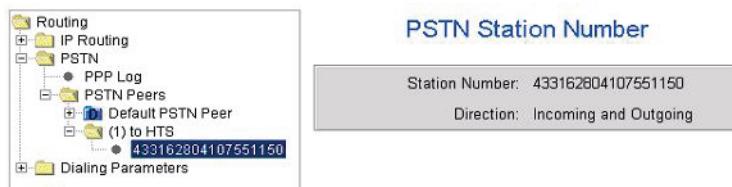
### Configuring the Assistant in HiPath 4000

#### Authentication

The CHAP configuration (Name and Password) must be configured in accordance with the HTS requirements.

The HTS transmits 433162804107551150 as the Calling Party Number. This must be configured as the station number of the PSTN partner in order to be able to identify the partner and its settings. In this case, the class of service is set to outbound and inbound, since calls in both directions are to be possible.

**Figure: PSTN Station Number**



In order to reach all IP addresses behind the HTS, the following route is required:

**Figure: Static Route**

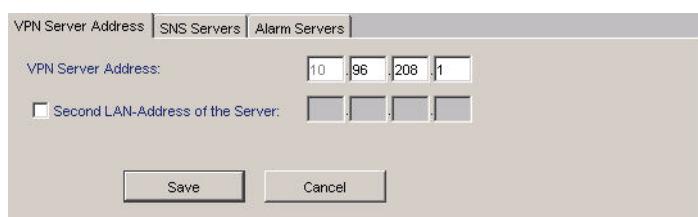


## 2.3 Configuring the Assistant in HiPath 4000

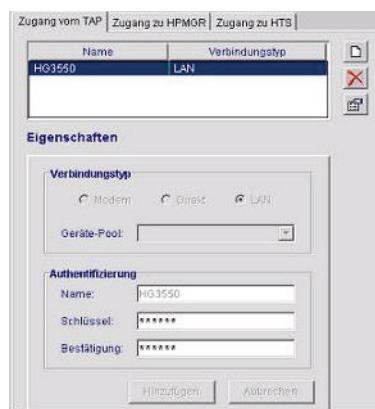
The Assistant in HiPath 4000 requires an entry in the UBA (UNIX Base Administration) so that the tunnel to the gateway can be set up. For Chap Name and Key, the same values must be specified as those configured in the gateway under LAN 2.

The VPN address of the Wizard is configured in the Assistant in **UBA | Address Management**:

**Figure: UBA - Address Management**



#### UBA | PPP Links:

**Figure: UBA - PPP Links**

The HTS addresses are enabled in the Assistant under **UBA | LAN Configuration | Firewall**:

**Figure: UBA - Firewall**

The screenshot shows a table of firewall entries:

Host / Net	Netmask	H-LAN	ADP	PPP
192.1.110.240	255.255.0.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10.98.252.0	255.255.254.0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Below the table is the 'Firewall Entry Properties' dialog box:

- Host** tab selected in the tabs above the dialog.
- General** section contains 'Name:' (radio button selected) and 'Address:' (checkbox selected).
- Access** section is partially visible below the General section.

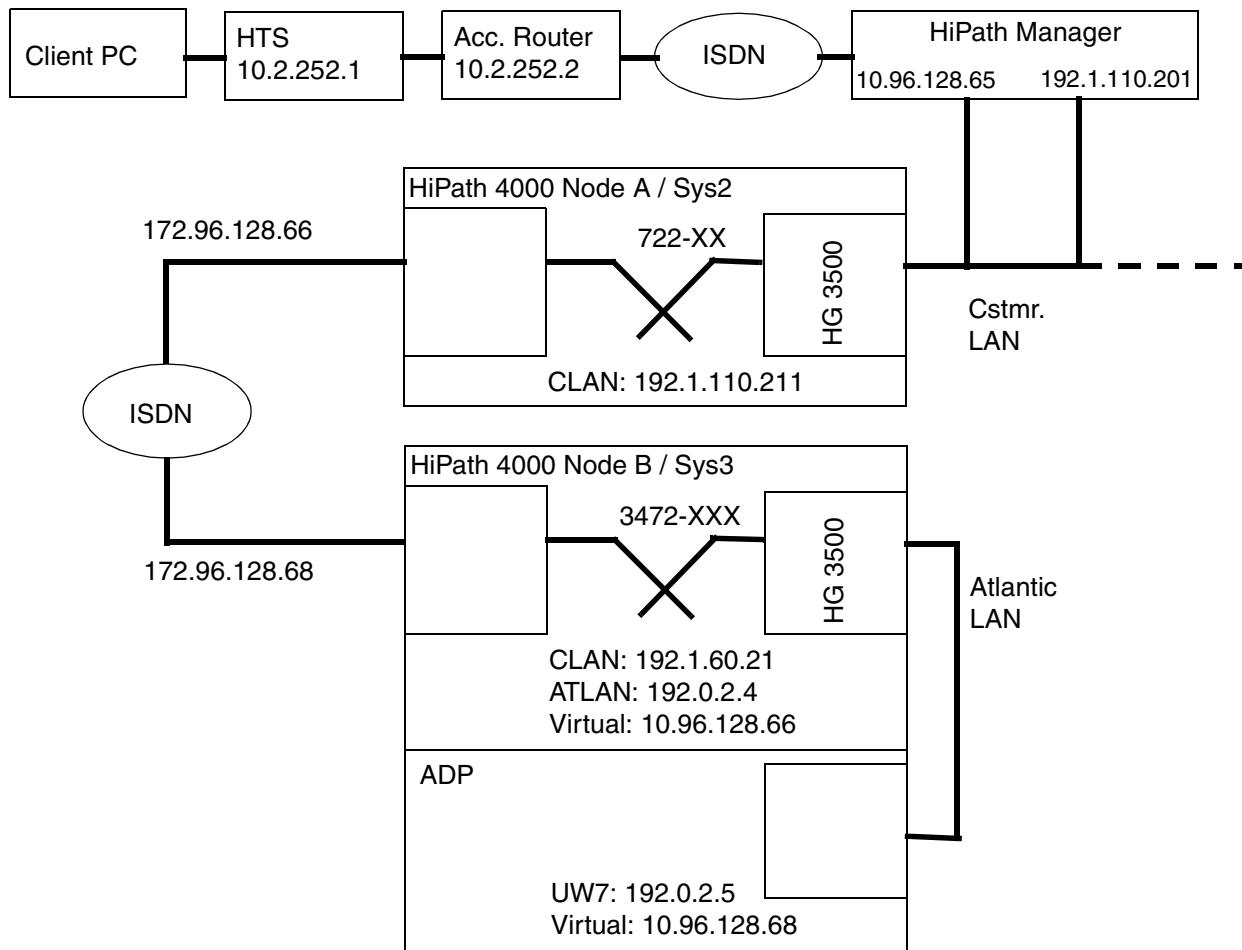


### 3 LAN-WAN Scenario with HiPath Manager

Packets with the destination IP address 10.96.128.68 from the customer LAN to HiPath 4000 node A are to be routed to UW7 (IP address 192.0.2.5) of HiPath 4000 node B. Only PPTP connections to UW7 are possible. The PPTP server in the UW7 is configured to propose 10.96.128.66 as a virtual local IP address and 10.96.128.68 as a virtual remote IP address and to request CHAP authentication (ID: HG3550, Password: 1234). UW7 accepts the proposed IP addresses, and CHAP authentication must be configured. The virtual IP addresses must be on the same network! The assignment of these IP addresses is defined in the .

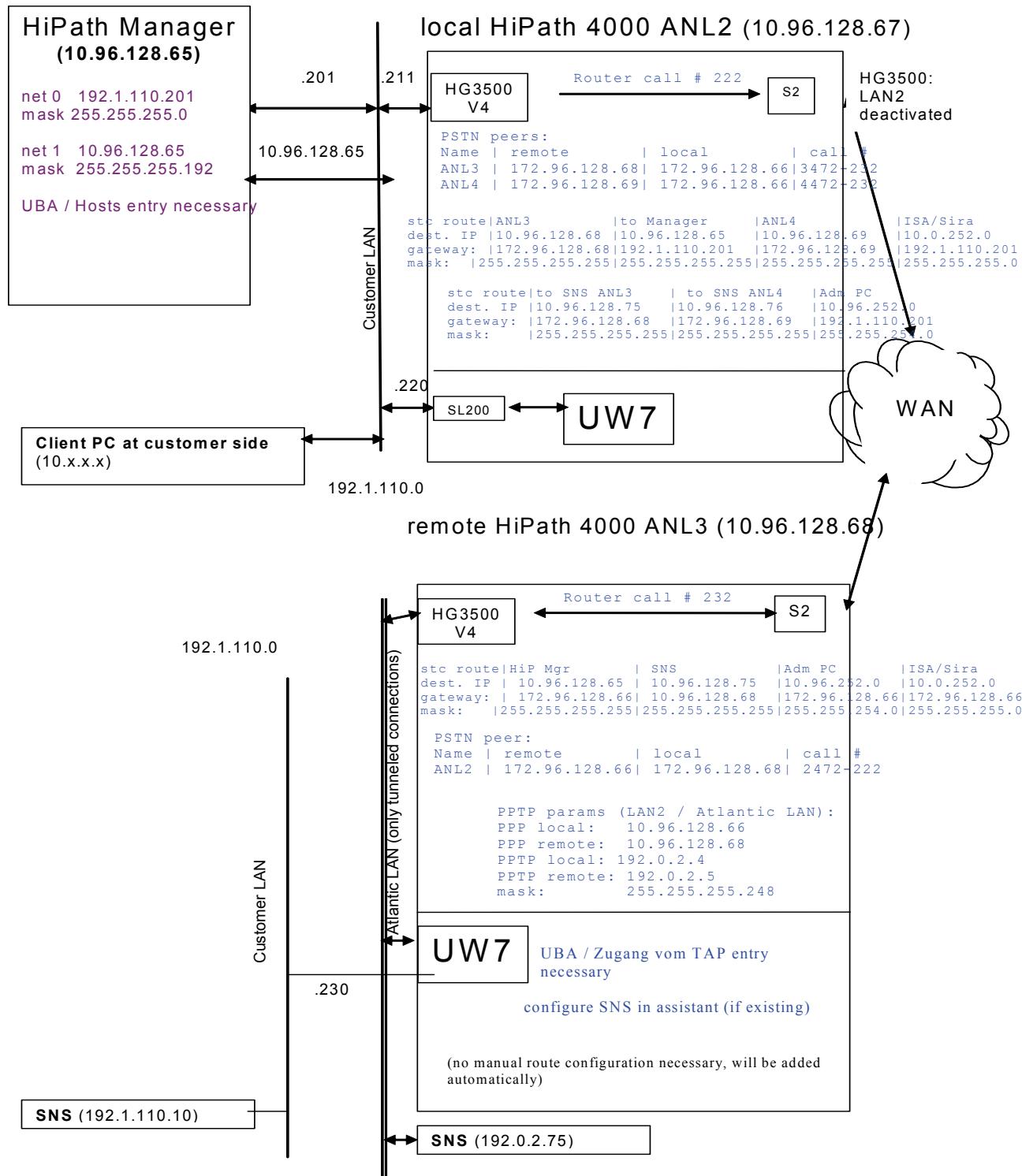
The prerequisite for the scenario with HiPath Manager is as follows:

- Installation of an additional LAN card in the HiPath Manager PC. The LAN card is configured with the VPN IP address of the HiPath Manager.
- These additional LAN interfaces of the HiPath Manager must be on the same subnet as the other LAN interface!



## LAN-WAN Scenario with HiPath Manager

### Example: configuration



## Brief overview

The following brief overview shows which routes are required:

- Manager:
  - Hosts Entry
- Local HiPath 4000 - HG 3500:
  - PSTN peer to remote HiPath 4000
  - Static routes to:  
Manager,  
Remote systems,  
HTS / Admin PC,  
ISA / SIRA,  
poss. SNS products.
- Remote HiPath 4000 - HG 3500:
  - PSTN peer to local HiPath 4000
  - Static routes to:  
Manager,  
HTS / Admin PC,  
ISA / SIRA,  
poss. SNS products.
  - PPTP tunnel on LAN 2 to UW7
- Remote HiPath 4000 - UW7:
  - UBA / PPP links / Access from TAP (see [Chapter 3, “Configuring the Assistant in HiPath 4000 Node B”](#); this configures the PPTP tunnel).

### 3.1 Configuring the Manager

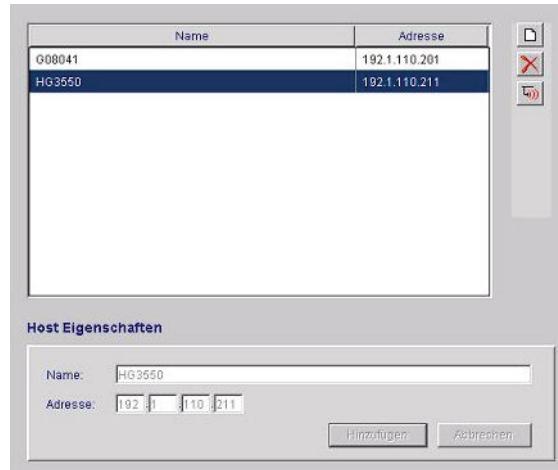
The Manager (Host) must be configured as follows so that the gateway in the HiPath 4000 node A can be reached. The IP address of the LAN1 interface of the HG 3550 is specified as the IP address.

Due to the hosts entry in the HiPath Manager, a route to the remote ADPs is created automatically. After the hosts entry, the HiPath 4000 Manager must be restarted.

## LAN-WAN Scenario with HiPath Manager

### Configuring the Manager

**Figure: UBA - Hosts**



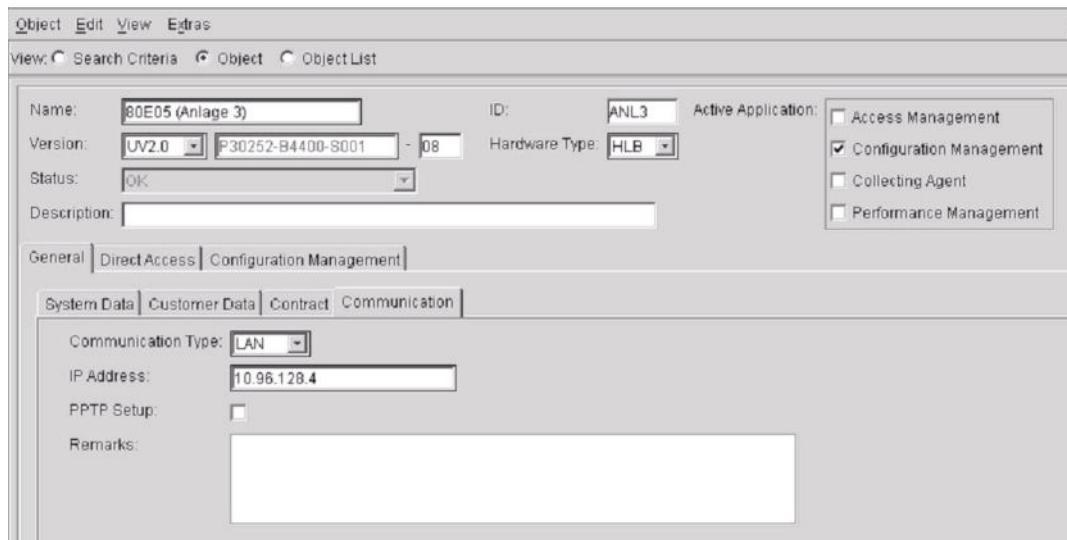
Configure the nodes in the Manager under **System Management | HIP4000 Administration**:

**Figure: Manager - HiPath 4000 Administration (Object List)**

Status	Name	ID	Versi...	Part Number	Hardware Type	Description	System Number	Equipment Number 1
OK		0001	orph					
OK	FP12 (Anlage 2)	ANL2	UV2.0	P30252-B4400-S001-01	HLB		L31903W9999XANL02	
OK	80E05 (Anlage 3)	ANL3	UV2.0	P30252-B4400-S001-08	HLB		L31903Q9999XANL03	
OK	ANL4	ANL4	UV2.0	P30252-B4400-S001-05	HLB	ANL4	L31903Q9999XANL04	
OK		0002	orph					
OK		0003	orph					
OK		0004	orph					
OK		0005	orph					

The VPN address of the Assistant is entered under Communication:

**Figure: Manager - HiPath 4000 Administration (Object)**



## 3.2 Configuring the HiPath 4000 Node A

The HG 3500 V4 is reached via the station numbers 722-XXX and is operated in mixed mode. It has the customer LAN IP address **192.1.110.211**.

### Setting up the CGW board and configuring the board data:

- Allocate Flexama memory for CGW configuration data with the AMO DIMSU:

```
ADD-DIMSU:CGW=number;
```

- Set up board on SLOT=2 and SLOT=103 (Q2316-X /Q2324-X500 with 60 B channels, Q2316-X10 / Q2324-X510 with 120 B channels):

```
ADD-BFDAT:4,WAML,BKAN60&BKAN120;
```

```
CHANGE-BFDAT:WEITER,4,WAML,,,1;
```

```
CHANGE-BFDAT:OK,4,YES;
```

```
ADD-BCSU:IPGW,,2,103,"Q2316-X10",1,"0",4,,,,,10;
```

- Set up HG 3550 V2.0 board data:

```
ADD-CGWB:2,103,NORMAL,192.1.110.211,255.255.255.0;
```

- Initiate loading of board data onto the board:

```
RESTART-BSSU:PEN,,2,103;
```

## **LAN-WAN Scenario with HiPath Manager**

*Configuring the HiPath 4000 Node B*

### **Configuring the HG 3500 V4 LAN circuit**

The configuration is the same as for [Configuring the CGW LAN circuit](#), except for the parameter „LCR digit pattern“. In this case, „498972265-XX“ must be entered for LDP in the AMO LDPLN.

### **3.3 Configuring the HiPath 4000 Node B**

The HG 3500 V4 is reached via the station numbers 722-XXX, is operated in mixed mode, and has the customer LAN IP address **192.1.60.21** and the Atlantic LAN IP address **192.0.2.4**.

#### **Setting up the CGW board and configuring the board data:**

- Allocate Flexama memory for CGW configuration data with the AMO DIMSU:  
ADD-DIMSU:CGW=number;
- Set up board on SLOT=2 and SLOT=103 (Q2316-X /Q2324-X500 with 60 B channels, Q2316-X10 /Q2324-X510 with 120 B channels):

ADD-BFDAT:4,WAML,BCHAN60&BCHAN120;

CHANGE-BFDAT:CONT,4,WAML,,,1;

CHANGE-BFDAT:OK,4,YES;

ADD-BCSU:IPGW,,2,103,"**Q2316-X10**",1,"0",4,,,,,10;

- Set up HG 3550 V2.0 board data:

ADD-CGWB:2,103,NORMAL,192.1.60.21,255.255.255.240;

- Initiate loading of board data onto the board:

RESTART-BSSU:PEN,,2,103;

### **Configuring the HG 3500 V4 LAN circuit**

The configuration is the same as for [Configuring the CGW LAN circuit](#), except for the parameter „LCR digit pattern“. In this case, „3472-XXX“ must be entered for LDP in the AMO LDPLN.

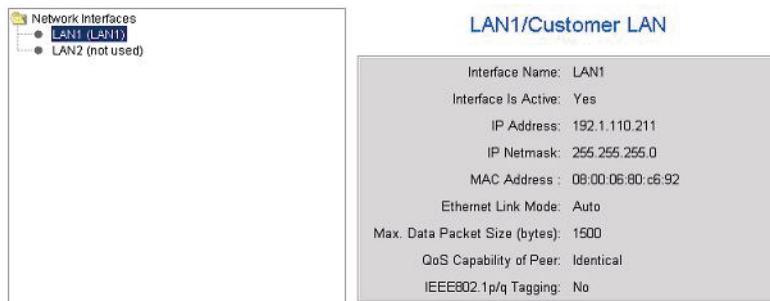
#### **3.3.1 Configuring the gateway in HIP4000 Node A**

The LAN1 interface is automatically assigned the IP address of the customer LAN that was configured by using the AMO STMIB:

## LAN-WAN Scenario with HiPath Manager

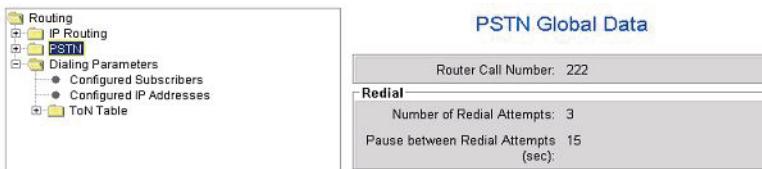
### *Configuring the HiPath 4000 Node B*

**Figure: LAN1/Customer LAN**



222 is configured as the router call number. This is transferred as the Calling Party Number for an outbound call.

**Figure: PSTN Global Data**

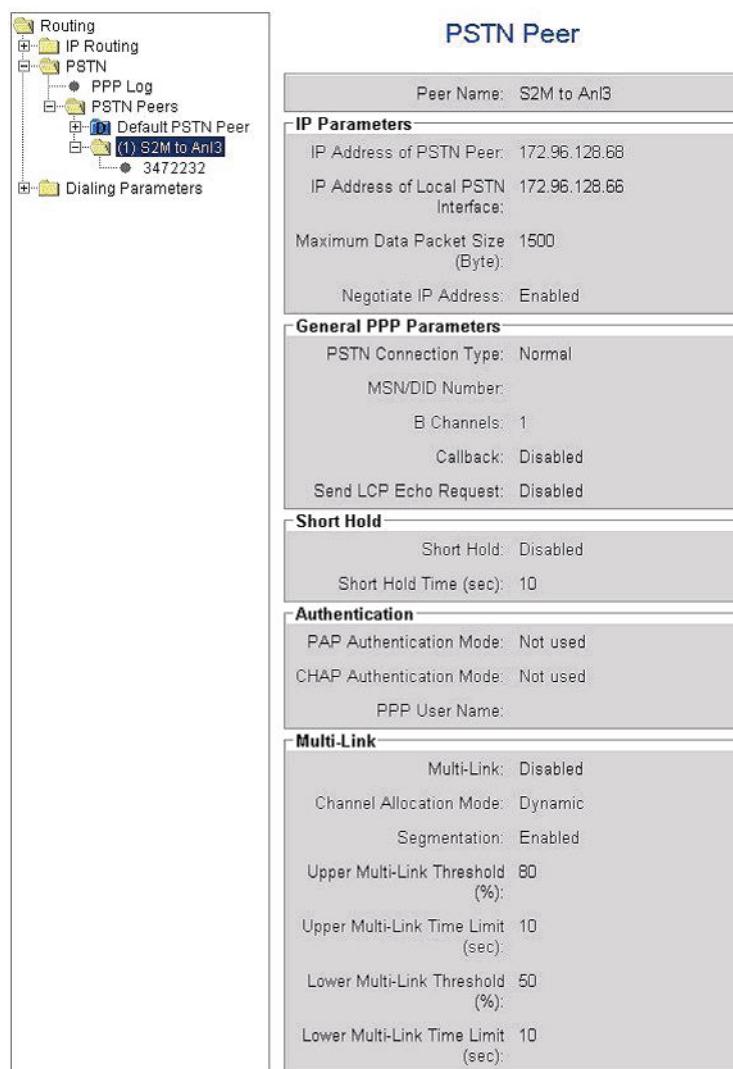


The HiPath 4000 node B is entered as the PSTN partner. The local and remote interfaces are assigned the virtual routing IP addresses 172.96.128.68 and 172.96.128.66, respectively. A corresponding entry must exist on the remote (partner) side.

## LAN-WAN Scenario with HiPath Manager

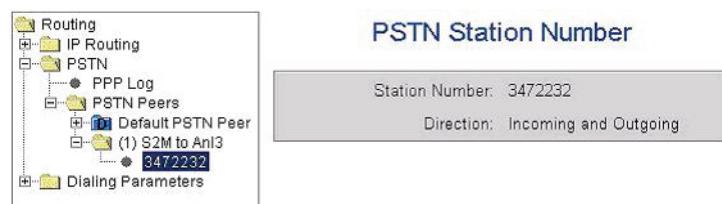
### Configuring the HiPath 4000 Node B

**Figure: PSTN Peer**



The PSTN partner HiPath 4000 node B has the station number “34722-32“. This number is entered as a station number with an outbound class of service.

**Figure: PSTN Station Number**



## LAN-WAN Scenario with HiPath Manager

### *Configuring the HiPath 4000 Node B*

In order to route the IP packets from the customer LAN with the destination IP address 10.96.128.68 to the PSTN partner HiPath 4000 node B with the IP address 172.96.128.68, a static route is required.

**Figure: Static Route - Stn3**



A static route must also be entered for access to the HTS:

**Figure: Static Route - HTS**



This route must be entered for access to the Manager.

**Figure: Static Route - Manager**



In order to access SNS products behind system 3, the following route is required (per SNS):

## LAN-WAN Scenario with HiPath Manager

### Configuring the HiPath 4000 Node B

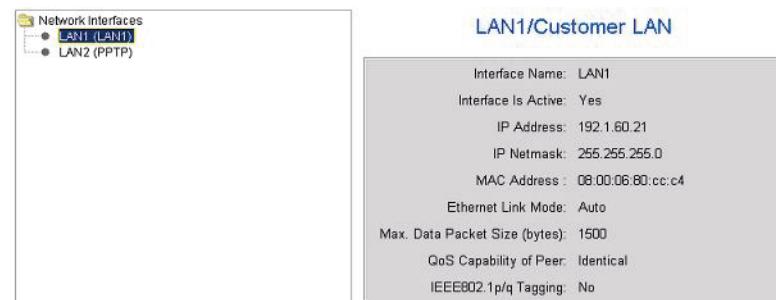
**Figure: Static Route SNS1**



### 3.3.2 Configuring the gateway in HiPath 4000 Node B

The LAN1 interface is automatically assigned the IP address of the customer LAN that was configured by using the AMO STMIB:

**Figure: LAN1/Customer LAN**

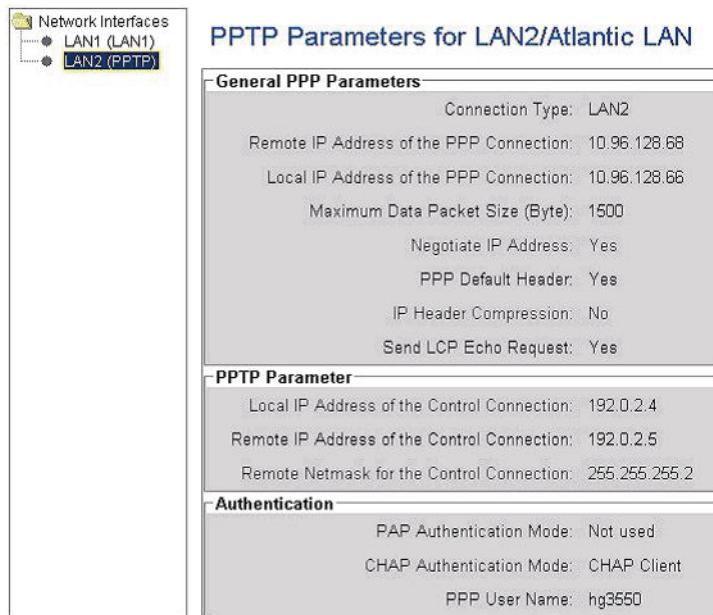


The LAN2 interface is automatically assigned the IP address of the Atlantic LAN that was configured by using the AMO STMIB. The other parameters must be configured accordingly:

## LAN-WAN Scenario with HiPath Manager

### Configuring the HiPath 4000 Node B

**Figure: PPTP Parameters for LAN2/Atlantic LAN**



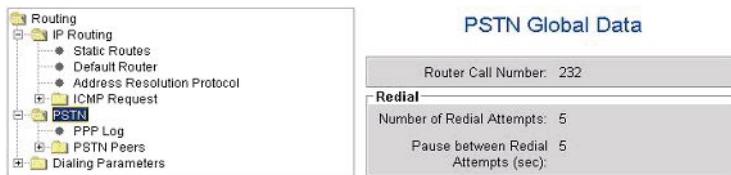
Explanation of the IP addresses:

Local IP Address of the PPP Connection (10.96.128.66) This IP address is always the one following the HiPath Manager.

For **Chap Name** and **Password**, the same values that were configured in the Assistant must also be specified here.

232 is configured as the router call number. This is transferred as the Calling Party Number for an outbound call.

**Figure: PSTN Global Data**

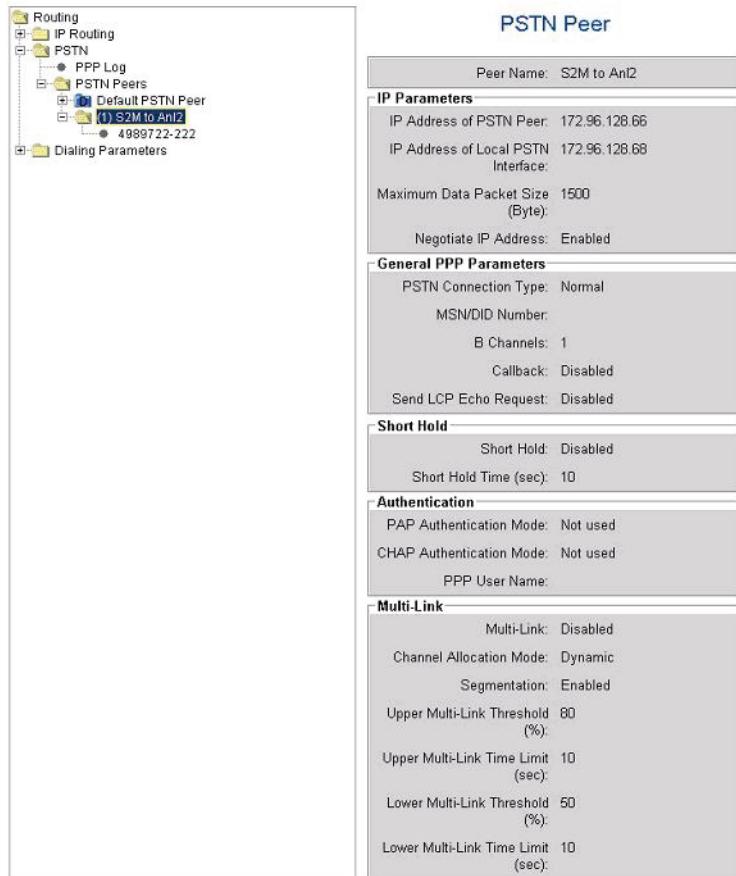


The HiPath 4000 node A is entered as the PSTN partner. The local and remote interfaces are assigned the virtual routing IP addresses 172.96.128.66 and 172.96.128.68, respectively, in accordance with the entry on the partner side.

## LAN-WAN Scenario with HiPath Manager

### Configuring the HiPath 4000 Node B

**Figure: PSTN Peer**



The PSTN partner HiPath 4000 Node B has the station number “4989722-222“, which is the router call number of the HiPath 4000 Node B and is transferred as the Calling Party Number for an inbound call. This must be configured as the station number of the PSTN partner and entered with an inbound class of service in order to be able to identify the partner and its settings.

**Figure: PSTN Station Number**



Configuring static routes to Manager, HTS / Admin PC and poss. SNS products:

**Figure: WBM - Static Routes**

Static Route Table				
Route Index	Route Name	Destination Network/Host	Destination Netmask	Route Gateway
1	to Manager	10.96.128.65	255.255.255.255	172.96.128.66
2	to HTS/Adm	10.96.252.0	255.255.254.0	172.96.128.66
3	SNS	10.96.128.75	255.255.255.255	10.96.128.68
4	ISA/Sira	10.0.252.0	255.255.255.0	172.96.128.66

### 3.3.3 Configuring the Assistant in HiPath 4000 Node B

The Assistant in HiPath 4000 Node B requires an entry in the UBA (UNIX Base Administration) so that the tunnel to the gateway can be set up. For **Name** and **Key**, the same values must be specified as those configured in the gateway under LAN 2.

**Figure: UBA - PPP Links**

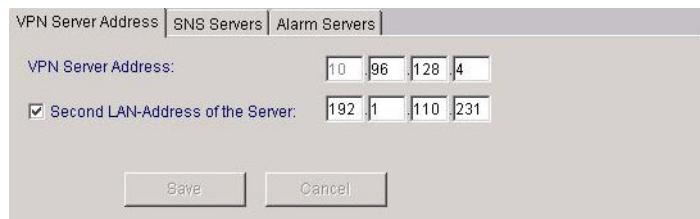


## LAN-WAN Scenario with HiPath Manager

### Configuring the HiPath 4000 Node B

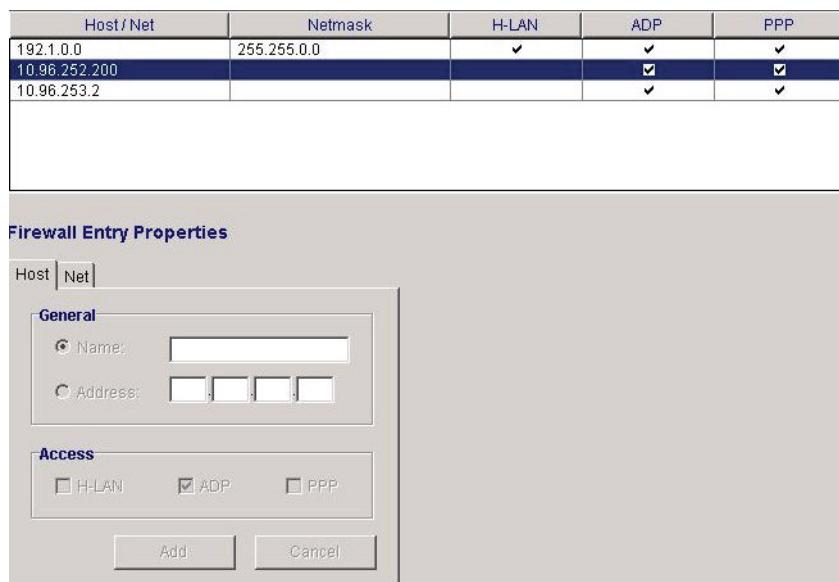
The VPN address is configured in the Assistant in Node B under **UBA | WAN Configuration | Address Management**

**Figure: UBA - Address Management**



The HTS and Admin PC are enabled in the Assistant in Node B under **UBA | LAN Connection | Firewall**:

**Figure: UBA - Firewall**



## **4 LAN-WAN Scenario without HiPath Manager**

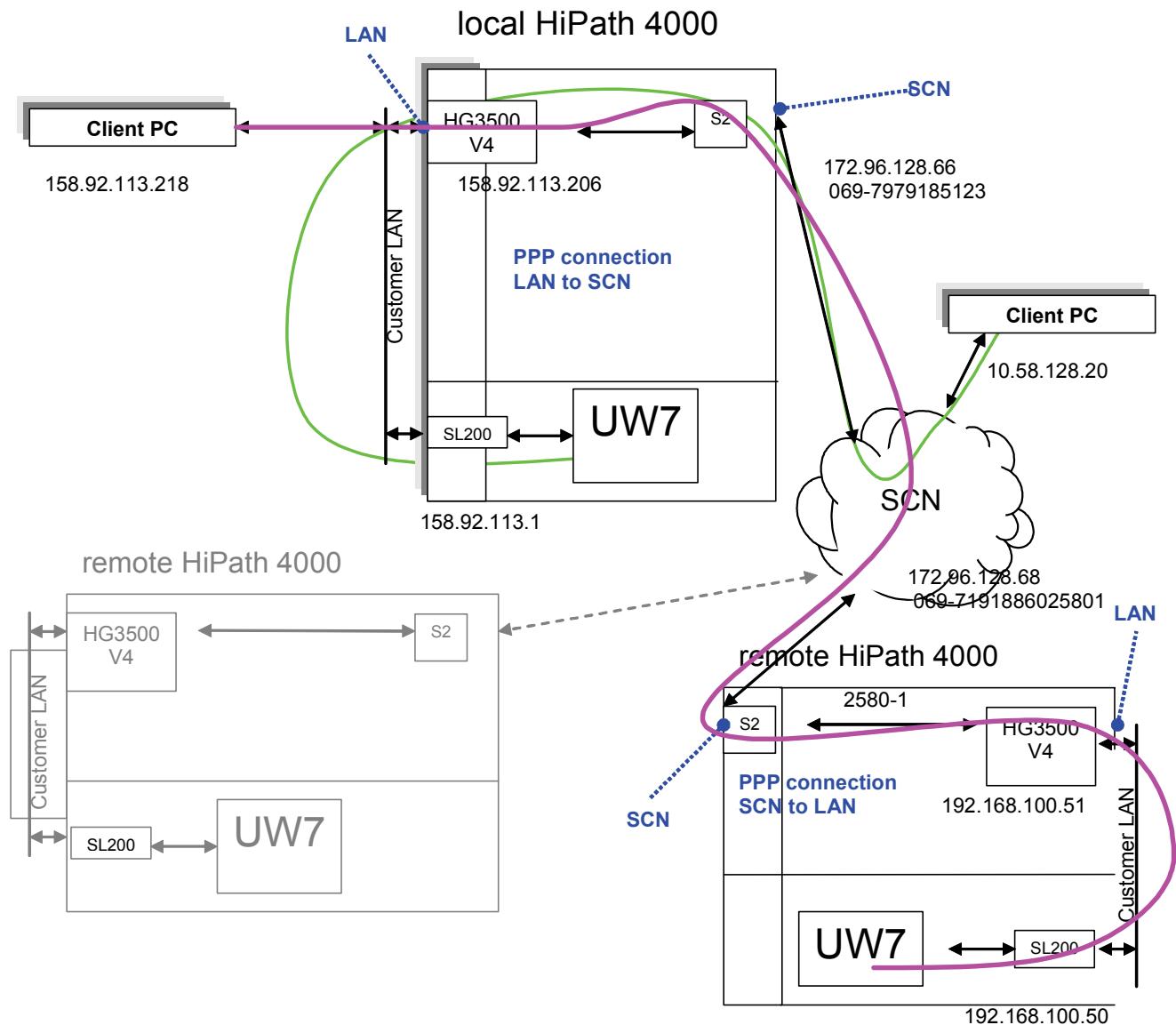
This scenario includes two variants:

1. Access from a PC with an ISDN card to the ADP of a system:  
The customer, who is responsible for self maintenance, gains direct access to the SL200 board using ISDN and via the HG 3500 (access via Assistant).
2. Access from client PC in the customer LAN System 1 to remote ADP  
The customer has two systems in different LANs. The service technician is in LAN1 and goes via the HG 3500 (in System1 / LAN1) - using ISDN - to System 2 / HG 3500 in the LAN in order to reach the SL200 board there (access via Assistant).

In both variants, no HTS and no HiPath Manager are used!

## LAN-WAN Scenario without HiPath Manager

### Example: configuration



### Brief overview

This brief overview outlines the main items involved in the required configuration. A detailed description can be found in the sections that follow.

#### Scenario with access from a PC with ISDN card to the ADP of a system

- Client PC:
  - Configure Dial-Up Connection on the client PC
- HiPath 4000

- ADP:
  - UBA/Firewall:  
Enable IP address of the PC 10.58.128.20 in the firewall.
  - UBA/Routes:  
Enter route to the HG 3500.  
Dest IP: 10.58.128.20, GW: 158.92.113.206, Netmask 255.255.255.0.
- HG 3500:
  - Set up the STMI2.IGW board as described under [Section 2.1, “Configuring the HiPath 4000”](#)
  - Configure the PSTN router call number
  - Configure PSTN peers with appropriate call numbers

### Scenario with access from client PC in the customer LAN System 1 to remote ADP

- Client PC:  
Enter permanent route to the remote ADP in System 2:  

```
route add 192.168.100.0 MASK 255.255.255.0 158.92.113.206 -p
```
- System 1 (local system):
  - ADP:  
No entry is required in the ADP.
  - HG 3500:
    - Configure the CGW board as described under [Section 2.1, “Configuring the HiPath 4000”](#).
    - Configure the PSTN router call number.
    - Configure PSTN peers with appropriate call numbers.
    - Configure static route to the remote ADP:  
Dest IP: 192.168.100.50, Mask: 255.255.255.255, GW: 172.96.128.68.
- System 2 (remote system):
  - ADP:
    - UBA/Firewall:  
Enable the IP address (or the complete net) of the client PC of the customer LAN System 1 in the firewall.

## **LAN-WAN Scenario without HiPath Manager**

*PC / ISDN card - HiPath 4000 / ADP*

- UBA/Routes:
  - Enter the route to the customer LAN of System 1.  
Dest IP: 158.92.113.0, GW: 192.168.100.51, Netmask 255.255.255.0.
- HG 3500:
  - Configure the PSTN router call number.
  - Configure PSTN peers with appropriate call numbers.
  - Configure static route to the client PC (or net) on the customer LAN of System 1.  
Dest IP: 158.92.113.0, Mask: 255.255.255.0, GW: 172.96.128.66.

### **4.1 PC / ISDN card - HiPath 4000 / ADP**

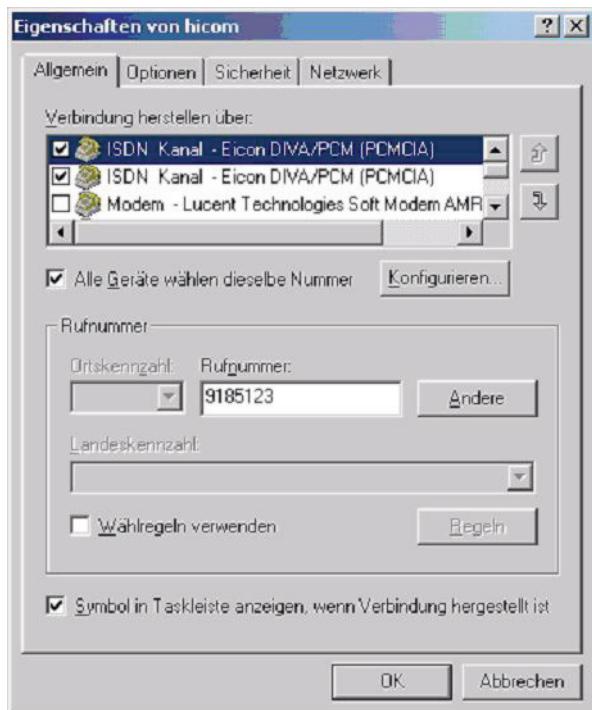
The following example shows the configuration of a scenario with „access from a PC with an ISDN card to the ADP of a HiPath 4000“.

- Configuring the [Client PC](#)
- Configuring the [HiPath 4000](#)

#### **4.1.1 Client PC**

Configure Dial-Up Connection on the client PC

**Figure: Settings | Network and Dial-up Connections**



Number to dial = Tie line access code + „extension“ of the HG 3500

## LAN-WAN Scenario without HiPath Manager

PC / ISDN card - HiPath 4000 / ADP

Figure: Modem Properties

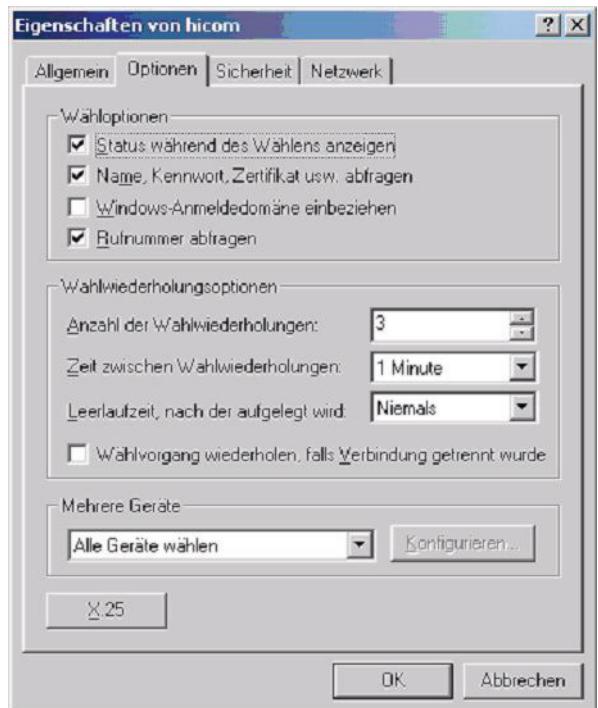


Figure: Network Properties



**Figure: HiPath Expert Access (ComWin) - Directory Entry**



When the dial-up connection has been established, you can use the Browser or HiPath Expert Access (Figure) to set up the connection to the HiPath 4000 or HiPath 4000 / Assistant via the customer LAN address of the HiPath 4000.

#### **4.1.2      HiPath 4000**

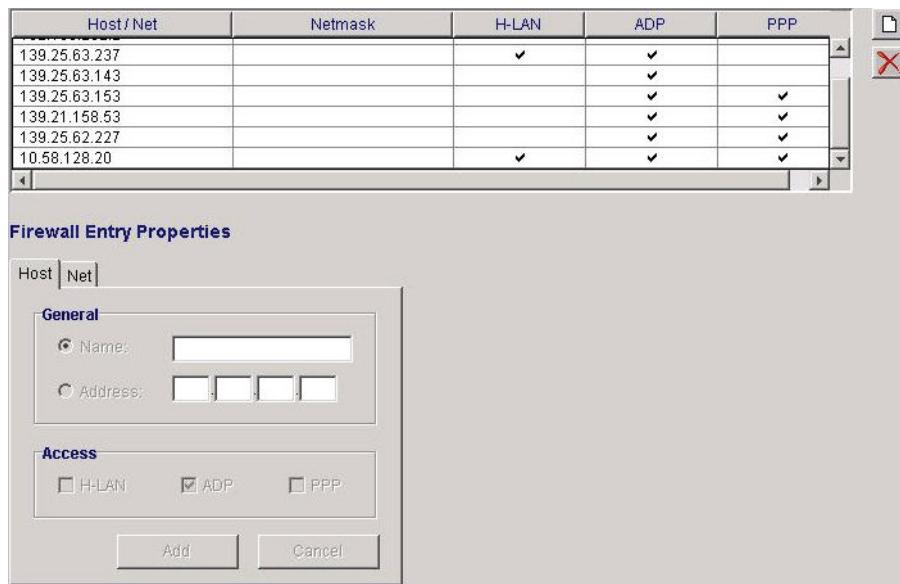
##### **ADP**

- UBA / Firewall:  
Enable IP address of the PC 10.58.128.20 in the firewall.

## LAN-WAN Scenario without HiPath Manager

PC / ISDN card - HiPath 4000 / ADP

**Figure: UBA | LAN Configuration | Firewall**



- **UBA / Routes:**

Enter route to the HG 3500.

Destination: 10.58.128.20, GW: 158.92.113.206, Netmask 255.255.255.0.

**Figure: UBA | LAN Configuration | Routes**



## HG 3500

- Configure the STMI2.IGW board as described under [Section 2.1, “Configuring the HiPath 4000”](#).
- PSTN / PSTN Global Data / Router Call Number

**Figure: WBM - PSTN Global Data**

**PSTN Global Data**

Router Call Number:	123
<b>Redial</b>	
Number of Redial Attempts:	5
Pause between Redial Attempts (sec):	5

- Configure PSTN peers with appropriate call numbers:

**Figure: WBM - PSTN Peer**

**PSTN Peer**

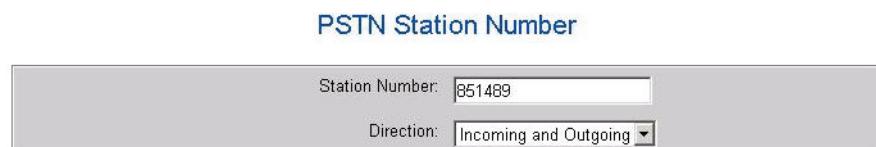
Peer Name: isdn	
PSTN Connection Type: Active	
<b>IP Parameters</b>	
IP Address of PSTN Peer: 10.58.128.20	
IP Address of Local PSTN Interface: 10.58.128.11	
Maximum Data Packet Size (Byte): 1500	
IP Address Negotiation: accept any IP address	
<b>General PPP Parameters</b>	
MSN/DID Number:	
B Channels: 1	
Callback: Disabled	
Send LCP Echo Request: Disabled	
<b>Short Hold</b>	
Short Hold: Disabled	
Short Hold Time (sec): 10	
<b>Authentication</b>	
PAP Authentication Mode: Not used	
CHAP Authentication Mode: CHAP Host	
PPP User Name: 1234	
<b>Multi-Link</b>	
Multi-Link: Disabled	
Channel Allocation Mode: Dynamic	
Segmentation: Enabled	
Upper Multi-Link Threshold (%): 100	

Configuring the dial-up connection In this case, authentication from the internal S0 station is required.

## LAN-WAN Scenario without HiPath Manager

Client PC - Remote ADP

**Figure: WBM - PSTN Station Number**



Call number that arrives at the HG 3500

## 4.2 Client PC - Remote ADP

The following example shows the configuration of a scenario with “access from the client PC on the customer LAN System 1 to remote ADP”.

- > Configuring the [Client PC](#)
- > Configuring the [System 1 \(local system\)](#):
- > Configuring the [System 2 \(remote system\)](#)

### 4.2.0.1 Client PC

- Enter permanent route to the remote ADP in System 2.

**Figure: Prompt**

```
C:\>WINNT\system32>route print
=====
Schnittstellenliste
0x1 ... 44 45 53 54 42 00 .... MS TCP Loopback interface
0x2 ... 44 45 53 54 42 00 .... NOC Extranet Access Adapter
0x3 ... 00 e0 00 c1 30 68 .... Realtek 8139-series PCI NIC
=====
Aktive Routen:
Netzwerkziel   Netzwerkmaske     Gateway      Schnittstelle  Anzahl
          0.0.0.0       0.0.0.0    158.92.113.218 158.92.113.218    1
  10.68.128.0   255.255.255.0  158.92.113.206 158.92.113.218    1
  10.96.128.0   255.255.255.0  158.92.113.206 158.92.113.218    1
        127.0.0.0       255.0.0.0    127.0.0.1      127.0.0.1    1
  158.92.113.0   255.255.255.0  158.92.113.218 158.92.113.218    1
  158.92.113.218 255.255.255.255 127.0.0.1      127.0.0.1    1
  158.92.255.255 255.255.255.255 158.92.113.218 158.92.113.218    1
  172.96.128.0   255.255.255.0  158.92.113.206 158.92.113.218    1
        192.0.2.0       255.255.255.0  158.92.113.206 158.92.113.218    1
  192.168.100.0   255.255.255.0  158.92.113.206 158.92.113.218    1
        224.0.0.0       224.0.0.0    158.92.113.218 158.92.113.218    1
 255.255.255.255 255.255.255.255 158.92.113.218                2    1
Standardgateway:      158.92.113.1
=====
Ständige Routen:
Keine
C:\>WINNT\system32>
```

Permanent routing entry on the client PC so that the address 192.168.100.50 (or the 192.168.100.x network) is routed via the HG 3500 (158.92.113.206). The entry to be made is:

```
route add 192.168.100.0 MASK 255.255.255.0 158.92.113.206 -p
```

#### **4.2.1      System 1 (local system):**

##### **ADP:**

- No entry is required in the ADP.

##### **HG 3500:**

- Set up the STMI2.IGW board as described under [Section 2.1, “Configuring the HiPath 4000”](#)
- Configure the PSTN router call number

**Figure: WBM - PSTN Global Data**

PSTN Global Data

Router Call Number:	<input type="text" value="123"/>
<b>Redial</b>	
Number of Redial Attempts:	<input type="text" value="5"/>
Pause between Redial Attempts (sec):	<input type="text" value="5"/>

Enter the call number with which the HG 3500 can be reached (tie line access code) +123.

## LAN-WAN Scenario without HiPath Manager

Client PC - Remote ADP

- Configure PSTN peers with appropriate call numbers:

**Figure: WBM - PSTN Peer**

**PSTN Peer**

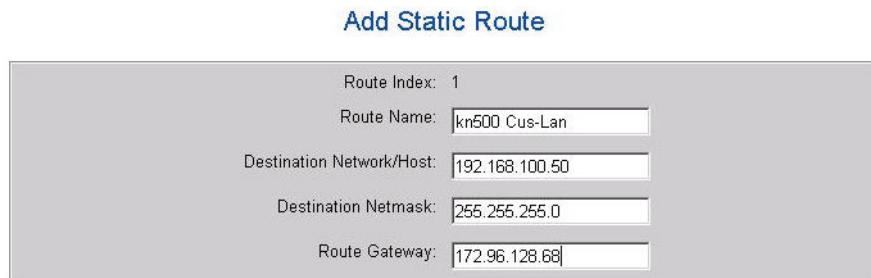
Peer Name: kn500	
PSTN Connection Type: Active	
<b>IP Parameters</b>	
IP Address of PSTN Peer: 172.96.128.68	
IP Address of Local PSTN Interface: 172.96.128.66	
Maximum Data Packet Size (Byte): 1500	
IP Address Negotiation: accept any IP address	
<b>General PPP Parameters</b>	
MSN/DID Number:	
B Channels: 1	
Callback: Disabled	
Send LCP Echo Request: Disabled	
<b>Short Hold</b>	
Short Hold: Disabled	
Short Hold Time (sec): 10	
<b>Authentication</b>	
PAP Authentication Mode: Not used	
CHAP Authentication Mode: CHAP Client and Host	
PPP User Name: 1234	
<b>Multi-Link</b>	
Multi-Link: Disabled	
Channel Allocation Mode: Dynamic	
Segmentation: Enabled	
Upper Multi-Link Threshold (%): 100	

Configuring the Dial-Up Connection to System 2:

- Enable Short Hold mode so that the ISDN connection can be set up.
- Authentication required:
- Station number:  
0 = CO code  
71918860 = CO number  
2580 = Tie line access code  
1 = Extension of the HG 3500
- Since the remote system works with Echo Field 2 and End, the tie line access code to the HG 3500 must also be entered.  
One could also work with Echo Field 1 and End instead and assign the HG 3500 the same extension as the tie line access code so that no second call number entry (with a tie line access code) would be needed in the remote system.

- Configure static route to the remote ADP  
Destination: 192.168.100.50, Mask: 255.255.255.0, GW: 172.96.128.68.

**Figure: WBM - Add Static Route**



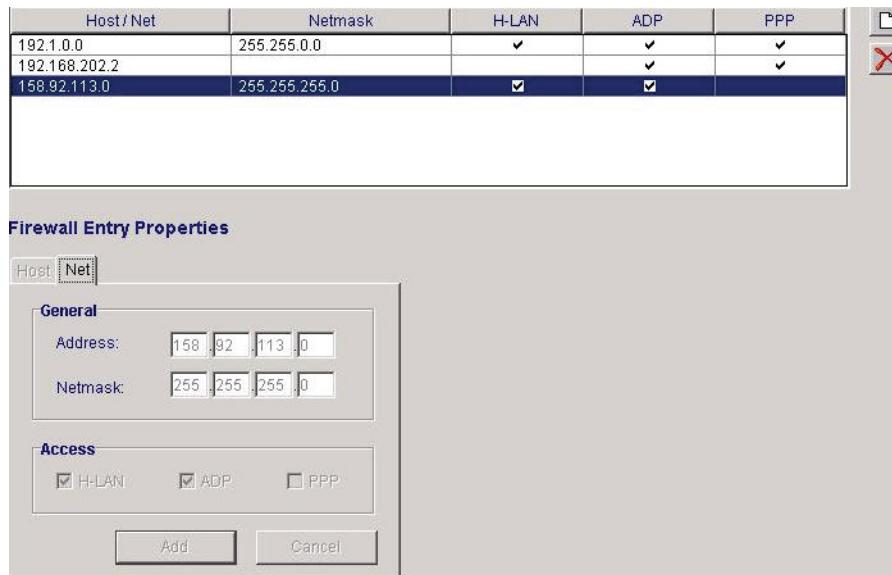
## 4.2.2 System 2 (remote system)

**ADP:**

- UBA/Firewall:

Enable the IP address (or the complete net) of the client PC of the customer LAN System 1 in the firewall.

**Figure: UBA | LAN Configuration | Firewall**



Enable the IP address (or the complete net) of the client PC 158.92.113.0 of the customer LAN of System 1 in the firewall.

- UBA / Routes:

## LAN-WAN Scenario without HiPath Manager

Client PC - Remote ADP

For the return packets, a route to the customer LAN of System 1 must be entered:  
Destination: 158.92.113.0, GW: 192.168.100.51, Netmask 255.255.255.0.

**Figure: UBA I LAN Configuration | Routes**



## HG 3500:

- Configure the STMI2.IGW board as described under [Section 2.1, “Configuring the HiPath 4000”](#).
- Configure the PSTN router call number.

**Figure: WBM - PSTN Global Data**

The screenshot shows the 'PSTN Global Data' configuration screen. It includes fields for 'Router Call Number' (set to 1), 'Number of Redial Attempts' (set to 5), and 'Pause between Redial Attempts (sec)' (set to 5).

Call number with which the HG 3500 can be reached (tie line access code) +1

- Configure the PTSN peers with appropriate call numbers

**Figure: WBM - PSTN Peer**

PSTN Peer	
Peer Name: node PSTN Connection Type: Active	
<b>IP Parameters</b> <div style="margin-left: 20px;">           IP Address of PSTN Peer: 172.96.128.66            IP Address of Local PSTN Interface: 172.96.128.68            Maximum Data Packet Size (Byte): 1500            IP Address Negotiation: accept any IP address         </div>	
<b>General PPP Parameters</b> <div style="margin-left: 20px;">           MSN/DID Number:            B Channels: 1            Callback: Disabled            Send LCP Echo Request: Disabled         </div>	
<b>Short Hold</b> <div style="margin-left: 20px;">           Short Hold: Disabled            Short Hold Time (sec): 10         </div>	
<b>Authentication</b> <div style="margin-left: 20px;">           PAP Authentication Mode: Not used            CHAP Authentication Mode: CHAP Client and Host            PPP User Name: 1234         </div>	
<b>Multi-Link</b> <div style="margin-left: 20px;">           Multi-Link: Disabled            Channel Allocation Mode: Dynamic            Segmentation: Enabled            Upper Multi-Link Threshold (%): 100         </div>	

#### Configuring the Dial-Up Connection to System 2:

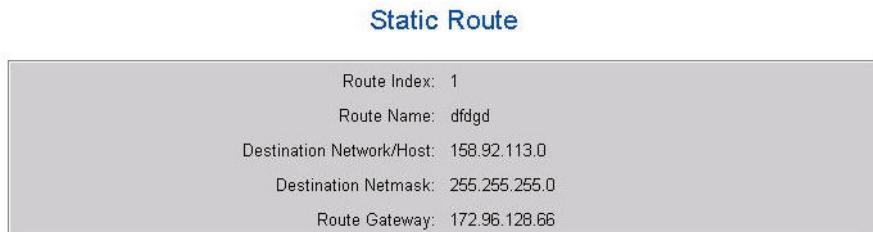
- Enable Short Hold mode so that the ISDN connection can be set up.
- Authentication required.
- Station number:
  - 050 = CO code
  - 0049 = Germany
  - 69 = Frankfurt
  - 797 = CO number
  - 123 = Extension of the HG 3500
- Since Echo Field 2 and End are being used in the system, the tie line access code to the HG 3500 is dropped.  
 One could preferably also work with Echo Field 1 and End instead and assign the HG 3500 the same extension as the tie line access code so that no second call number entry (with a tie line access code) would be needed in the remote system in order to accept the call.

## LAN-WAN Scenario without HiPath Manager

*Client PC - Remote ADP*

- Configure static route to the client PC (or net) on the customer LAN of System 1:  
Destination: 158.92.113.0, Mask: 255.255.255.0, GW: 172.96.128.66.

**Figure: WBM - Static Route**



## 5 Signaling Survivability for IPDA

Additional information on configuring Signaling Survivability can also be found in IP Distributed Architecture (IPDA) and Access Point Emergency (APE), Section 4.5.6.3, "Signaling Survivability with WAML Replacement" and Section 4.5.6.4, "External ISDN Router as the Survivability Router".

### 5.1 Signaling Survivability with WAML Replacement

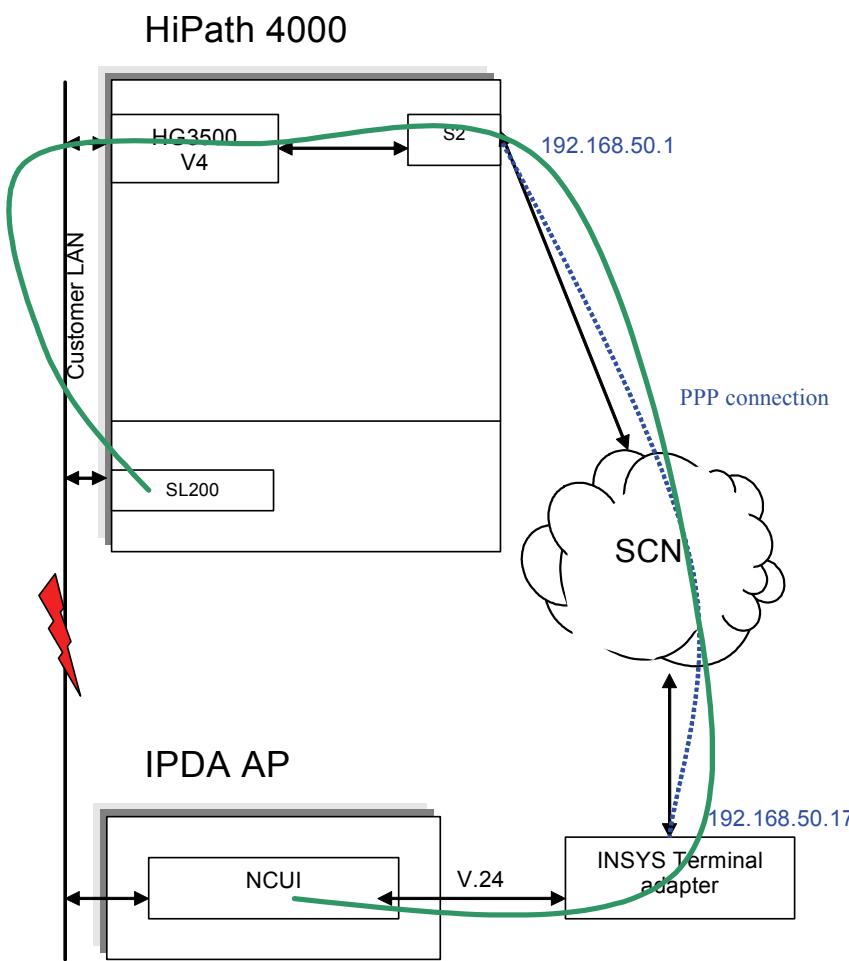


Figure 5-1 Signaling Survivability for IPDA Solution

## Signaling Survivability for IPDA Generation

### 5.2 Generation

When the IP connection between HiPath 4000 and IPDA is interrupted, signaling to the IPDA (AP3300-IP or AP 13700-IP) is sent via SL200 --> STMI --> ISDN --> INSYS Terminal Adapter (ISDN modem with V.24 port) --> NCUI (V.24).

Only data packets are transmitted via the HG 3500 V4, not voice packets!

Note that Loadware V7.011.5 is required for the Insys Pocket ISDN TA (see MSC07603).

WBM Settings:

The HG 3500 must receive a call number (555 here) and be configured in the LCR; see [Section 2.1, “Configuring the HiPath 4000”](#).

The **Destination IP** is the normal IP address of the IPDA in the customer network.

The **Route Gateway IP** is the survivability IP address of the IPDA, and the last digit thereof must be the LTU number of the IPDA, i.e., „17“ in this case.

**Figure: Static Route Table**

Route Index	Route Name	Destination Network/Host	Destination Netmask	Route Gateway
1	192.1.33.60	192.1.33.60	255.255.255.255	192.168.50.17

**Figure: Default Router**

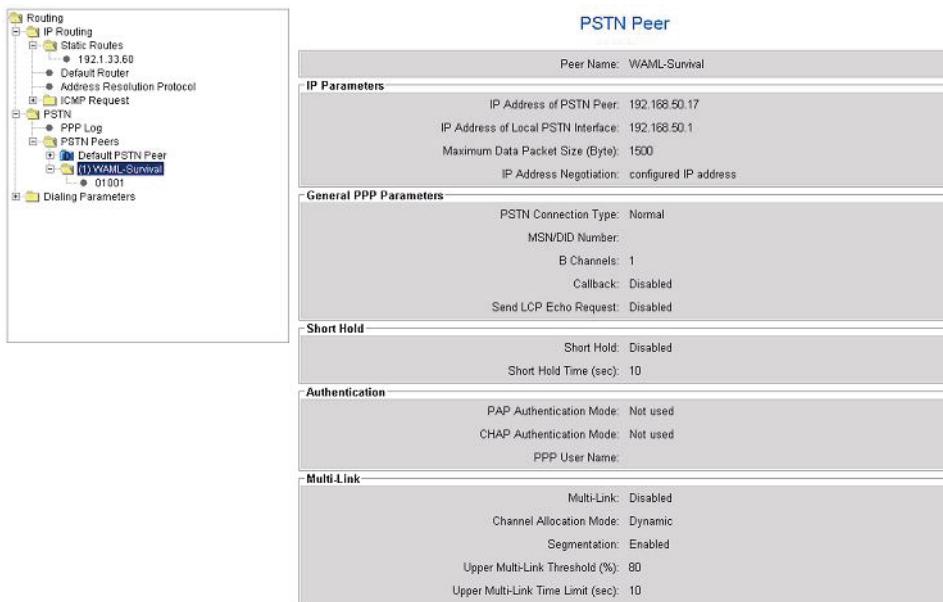
Default Router	
Default Routing via:	LAN
IP Address of Default Router:	192.1.11.254

**Figure: PSTN Global Data**

PSTN Global Data	
Router Call Number:	555
Redial	
Number of Redial Attempts:	0
Pause between Redial Attempts (sec):	5

**Number of Redial Attempts** should be set to 5 (default value).

**Figure: PSTN Peer**



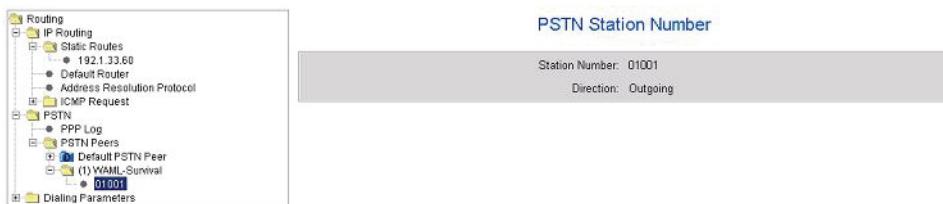
**IP Address of PSTN Peer** = Survivability Address of the IPDA

**IP address of Local PSTN Interface** = IP address of the Survivability Router; see AMO APRT

ADD-APRT:TYPE=SURV,CONF=ROUTER,ROUTERNO=1,LSADDR=<address of survivability router within LS net>;

ADD-APRT:TYPE=SURV,CONF=AP,LTU=17,ROUTERNO=1;

**Figure: PSTN Station Number**



**Station Number** = Call number of the Survivability modem (or ISDN-TA)

## **Signaling Survability for IPDA Generation**

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