

Konfigurieren eines Cisco 6400 zur Unterstützung von MUX-PPP, SNAP und Verwenden einer atm ilmi-pvc-discovery-Subschnittstelle

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Dieses Dokument beschreibt eine Beispielkonfiguration für einen Cisco 6400 Universal Access Concentrator (UAC), der MUX-PPP und Subnetwork Access Protocol (SNAP) unterstützt und eine atm ilmi-pvc-discovery-Subschnittstelle verwendet.

[Voraussetzungen](#)

[Anforderungen](#)

Für dieses Dokument bestehen keine speziellen Anforderungen.

[Verwendete Komponenten](#)

Dieses Dokument ist nicht auf bestimmte Software- und Hardwareversionen beschränkt.

Die Informationen in diesem Dokument wurden von den Geräten in einer bestimmten Laborumgebung erstellt. Alle in diesem Dokument verwendeten Geräte haben mit einer leeren (Standard-)Konfiguration begonnen. Wenn Ihr Netzwerk in Betrieb ist, stellen Sie sicher, dass Sie die potenziellen Auswirkungen eines Befehls verstehen.

Konventionen

Weitere Informationen zu Dokumentkonventionen finden Sie in den [Cisco Technical Tips Conventions](#).

Konfigurieren

In diesem Abschnitt erhalten Sie Informationen zum Konfigurieren der in diesem Dokument beschriebenen Funktionen.

Hinweis: Um weitere Informationen zu den in diesem Dokument verwendeten Befehlen zu erhalten, verwenden Sie das [Command Lookup Tool](#) ([nur registrierte](#) Kunden).

Konfiguration

In diesem Dokument wird diese Konfiguration verwendet:

Cisco 6400 NRP1

```
!  
version 12.0  
no service pad  
service timestamps debug datetime msec  
service timestamps log datetime msec  
no service password-encryption  
!  
hostname Access-6400-NRP1  
!  
enable password <password>  
!  
username <username> password 0 <password>  
username <username1> password 0 <password1>  
username <username2> password 0 <password2>  
!  
!  
!  
!  
redundancy  
  main-cpu  
    auto-sync standard  
  no secondary console enable  
ip subnet-zero  
ip domain-name cisco.com  
ip name-server 171.68.10.70  
!  
!  
!  
bridge irb  
!  
!  
process-max-time 200  
!  
interface Loopback1  
  ip address 10.1.1.1 255.255.255.0  
  no ip directed-broadcast  
!  
interface ATM0/0/0
```

```

no ip address
no ip directed-broadcast
no atm ilmi-keepalive
atm ilmi-pvc-discovery subinterface
pvc 0/16 ilmi
!
!
interface ATM0/0/0.1 multipoint
  !--- For VPI starting with number 1 (example: 1/34). no
ip directed-broadcast class-int bridgel bridge-group 1 !
interface ATM0/0/0.4 multipoint !--- For VPI starting
with number 4 (example: 4/33). no ip directed-broadcast
class-int router ! interface Ethernet0/0/1 no ip address
no ip directed-broadcast ! interface Ethernet0/0/0 ip
address 171.68.186.117 255.255.255.240 no ip directed-
broadcast ! interface FastEthernet0/0/0 no ip address no
ip directed-broadcast shutdown ! interface Virtual-
Templatel ip unnumbered Loopback1 no ip directed-
broadcast peer default ip address pool mypool ppp
authentication chap ! interface BVI1 mac-address ip
address 10.10.33.1 255.255.255.0 no ip directed-
broadcast ! ip local pool mypool 10.1.1.2 10.1.1.200 ip
classless ip route 0.0.0.0 0.0.0.0 171.68.186.113 no ip
http server ! ! vc-class atm bridgel encapsulation
aal5snap ! vc-class atm router encapsulation aal5mux ppp
Virtual-Templatel tacacs-server host 171.68.201.249
tacacs-server last-resort succeed tacacs-server
optional-passwords tacacs-server extended ! bridge 1
protocol ieee bridge 1 route ip ! line con 0 transport
input none line aux 0 line vty 0 4 password xxxxxx login
local ! end

```

Überprüfen

Dieser Abschnitt enthält Informationen, mit denen Sie überprüfen können, ob Ihre Konfiguration ordnungsgemäß funktioniert.

Bestimmte **show**-Befehle werden vom [Output Interpreter Tool](#) unterstützt (nur [registrierte](#) Kunden), mit dem Sie eine Analyse der **show**-Befehlsausgabe anzeigen können.

show atm pvc Befehlsausgabe

```

Access-6400-NRP1# show atm pvc
      VCD /                Peak Avg/Min Burst
Interface Name  VPI  VCI  Type  Encaps  SC  Kbps  Kbps  Cells  Sts
0/0/0          2    0   16   PVC     ILMI  UBR 155000          UP
0/0/0.1        7    1   34   PVC-D   SNAP  UBR 155000          UP
!--- Snap (bridge). !--- Subinterface 1 took VPI . 0/0/0.4 8 4 33 PVC-D MUX UBR 155000 UP !---
mux (ppp) !--- Subinterface 4 took VPI 4.

```

Fehlerbehebung

Dieser Abschnitt enthält Informationen zur Fehlerbehebung in Ihrer Konfiguration.

Befehle zur Fehlerbehebung

Bestimmte **show**-Befehle werden vom [Output Interpreter Tool](#) unterstützt (nur [registrierte](#) Kunden),

mit dem Sie eine Analyse der **show**-Befehlsausgabe anzeigen können.

Hinweis: Bevor Sie **Debugbefehle** ausgeben, lesen Sie [Wichtige Informationen über Debug-Befehle](#).

Debuggen von ATM-Ereignissen

Die folgende Ausgabe zeigt die Virtual Path Identifier/Virtual Channel Identifier (VPI/VCI), die der Node Route Processor (NRP) vom Node Switch Processor (NSP) lernt.

```
Access-6400-NRP1# debug atm events
ATM events debugging is on

Shut/no Shut on main ATM0/0/0 interface
Access-6400-NRP1#
*Dec 16 15:51:43.667: ATM0/0/0 nrp_sarmgr_shutdown: state=0
*Dec 16 15:51:44.515: Resetting ATM0/0/0
*Dec 16 15:51:45.015: Resetting ATM0/0/0
*Dec 16 15:51:45.015: nrp_sarmgr_config(ATM0/0/0)
*Dec 16 15:51:45.015: nrp_sarmgr_enable(ATM0/0/0)
*Dec 16 15:51:45.215: nrp_sarmgr_enable(ATM0/0/0): restarting VCs: 0
*Dec 16 15:51:45.215: nrp_sarmgr_setup_vc(ATM0/0/0): vc:2 vpi:0 vci:16
*Dec 16 15:51:45.223: %SYS-5-CONFIG-I: Configured from console by console
*Dec 16 15:51:45.667: %LINK-3-UPDOWN: Interface ATM0/0/0, changed state to up
*Dec 16 15:51:46.667: %LINEPROTO-5-UPDOWN: Line protocol on Interface ATM0/0/0,
changed state to up
*Dec 16 15:51:47.219: %LINK-3-UPDOWN: Interface BV11, changed state to up
*Dec 16 15:51:47.471: Reserved bw for 1/34 Available bw = 155000
*Dec 16 15:51:47.471: nrp_sarmgr_setup_vc(ATM0/0/0): vc:13 vpi:1 vci:34
*Dec 16 15:51:47.475: Reserved bw for 4/33 Available bw = 155000
*Dec 16 15:51:47.527: nrp_sarmgr_setup_vc(ATM0/0/0): vc:14 vpi:4 vci:33
*Dec 16 15:51:48.219: %LINEPROTO-5-UPDOWN: Line protocol on Interface BV11,
changed state to up
*Dec 16 15:51:49.019: nrp_sarmgr_teardown_vc(ATM0/0/0): vc:13 vpi:1 vci:34
*Dec 16 15:51:49.179: nrp_sarmgr_teardown_vc(ATM0/0/0): vc:14 vpi:4 vci:33
*Dec 16 15:51:49.339: PPP-ATM(Virtual-Access1) deleting vaccess on VC 14
*Dec 16 15:51:49.351: %LANE-6-INFO: ATM0/0/0: ILMI prefix add event received
*Dec 16 15:51:49.659: Reserved bw for 1/34 Available bw = 155000
*Dec 16 15:51:49.659: nrp_sarmgr_setup_vc(ATM0/0/0): vc:15 vpi:1 vci:34
*Dec 16 15:51:49.659: Reserved bw for 4/33 Available bw = 155000
*Dec 16 15:51:49.715: nrp_sarmgr_setup_vc(ATM0/0/0): vc:16 vpi:4 vci:33
*Dec 16 15:51:55.419: %LINK-3-UPDOWN: Interface Virtual-Access1, changed state to up
Access-6400-NRP1#
```

PPP-Debug-Ausgabe für einen Cisco 675 im IP-Routing-Modus

```
Success rate is 0 percent (0/5)
Access-6400-NRP1#
*Dec 16 15:38:03.439: Vi1 LCP: I CONFREQ [Open] id 42 len 14
*Dec 16 15:38:03.439: Vi1 LCP: MagicNumber 0xA60C0000 (0x0506A60C0000)
*Dec 16 15:38:03.439: Vi1 LCP: MRU 2048 (0x01040800)
*Dec 16 15:38:03.439: Vi1 IPCP: State is Closed
*Dec 16 15:38:03.439: Vi1 PPP: Phase is ESTABLISHING
*Dec 16 15:38:03.439: Vi1 LCP: O CONFREQ [Open] id 132 len 15
*Dec 16 15:38:03.439: Vi1 LCP: AuthProto CHAP (0x0305C22305)
*Dec 16 15:38:03.439: Vi1 LCP: MagicNumber 0x30995E50 (0x050630995E50)
*Dec 16 15:38:03.439: Vi1 LCP: O CONFACK [Open] id 42 len 14
*Dec 16 15:38:03.439: Vi1 LCP: MagicNumber 0xA60C0000 (0x0506A60C0000)
*Dec 16 15:38:03.439: Vi1 LCP: MRU 2048 (0x01040800)
*Dec 16 15:38:03.443: Vi1 IPCP: Remove route to 10.1.1.2
```

```

*Dec 16 15:38:03.443: Vi1 LCP: I CONFACK [ACKsent] id 132 len 15
*Dec 16 15:38:03.443: Vi1 LCP: AuthProto CHAP (0x0305C22305)
*Dec 16 15:38:03.443: Vi1 LCP: MagicNumber 0x30995E50 (0x050630995E50)
*Dec 16 15:38:03.447: Vi1 LCP: State is Open
*Dec 16 15:38:03.447: Vi1 PPP: Phase is AUTHENTICATING, by this end
*Dec 16 15:38:03.447: Vi1 CHAP: O CHALLENGE id 4 len 37 from "Access-6400-NRP1"
*Dec 16 15:38:03.451: Vi1 CHAP: I RESPONSE id 4 len 26 from "cisco"
*Dec 16 15:38:03.451: Vi1 CHAP: O SUCCESS id 4 len 4
*Dec 16 15:38:03.451: Vi1 PPP: Phase is UP
*Dec 16 15:38:03.451: Vi1 IPCP: O CONFREQ [Closed] id 5 len 16
*Dec 16 15:38:03.451: Vi1 IPCP: Address 10.1.1.1 (0x03060A010101)
*Dec 16 15:38:03.451: Vi1 IPCP: Type20 (0x900600000000)
*Dec 16 15:38:03.455: Vi1 IPCP: I CONFREQ [REQsent] id 43 len 10
*Dec 16 15:38:03.455: Vi1 IPCP: Address 10.1.1.2 (0x03060A010102)
*Dec 16 15:38:03.455: Vi1 IPCP: O CONFACK [REQsent] id 43 len 10
*Dec 16 15:38:03.455: Vi1 IPCP: Address 10.1.1.2 (0x03060A010102)
*Dec 16 15:38:03.455: Vi1 IPCP: I CONFREQ [ACKsent] id 5 len 10
*Dec 16 15:38:03.455: Vi1 IPCP: Type20 (0x900600000000)
*Dec 16 15:38:03.455: Vi1 IPCP: O CONFREQ [ACKsent] id 6 len 10
*Dec 16 15:38:03.455: Vi1 IPCP: Address 10.1.1.1 (0x03060A010101)
*Dec 16 15:38:03.463: Vi1 IPCP: I CONFACK [ACKsent] id 6 len 10
*Dec 16 15:38:03.463: Vi1 IPCP: Address 10.1.1.1 (0x03060A010101)
*Dec 16 15:38:03.463: Vi1 IPCP: State is Open
*Dec 16 15:38:03.463: Vi1 IPCP: Install route to 10.1.1.2

```

show Command-Ausgabe

```
Access-6400-NRP1# show user
```

Line	User	Host(s)	Idle	Location
* 0	con 0	idle	00:00:00	
Vi1		Virtual PPP (ATM)	00:06:45	
Interface	User	Mode	Idle	Peer Address

```
Access-6400-NRP1# show interface atm 0/0/0 accounting
```

```
ATM0/0/0
```

Protocol	Pkts In	Chars In	Pkts Out	Chars Out
Trans. Bridge	0	0	3	222
Spanning Tree	0	0	1384	65048
PPP over ATM	358	6646	605	11657

```
Access-6400-NRP1# show interface atm 0/0/0
```

```

ATM0/0/0 is up, line protocol is up
Hardware is ATM-SAR
MTU 4470 bytes, sub MTU 4470, BW 156250 Kbit, DLY 80 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ATM, loopback not supported
Keepalive not supported
Encapsulation(s): AAL5, PVC mode
2047 maximum active VCs, 3 current VCCs
VC idle disconnect time: 300 seconds
Last input 00:09:37, output 00:00:00, output hang never
Last clearing of "show interface" counters never
Queueing strategy: fifo
Output queue 0/40, 0 drops; input queue 0/75, 0 drops
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
 1307 packets input, 57832 bytes, 0 no buffer
  Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
  0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
 2876 packets output, 123055 bytes, 0 underruns
  0 output errors, 0 collisions, 3 interface resets

```

```
0 output buffer failures, 0 output buffers swapped out
Access-6400-NRP1#
Access-6400-NRP1#
Access-6400-NRP1#
```

```
Access-6400-NRP1# show interface atm 0/0/0.1
ATM0/0/0.1 is up, line protocol is up
Hardware is ATM-SAR
MTU 4470 bytes, BW 156250 Kbit, DLY 80 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ATM
0 packets input, 0 bytes
1392 packets output, 59937 bytes
0 OAM cells input, 0 OAM cells output
```

```
Access-6400-NRP1# show interface atm 0/0/0.4
ATM0/0/0.4 is up, line protocol is up
Hardware is ATM-SAR
MTU 4470 bytes, BW 156250 Kbit, DLY 80 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ATM
705 packets input, 11705 bytes
615 packets output, 9415 bytes
0 OAM cells input, 0 OAM cells output
```

```
Access-6400-NRP1# show atm vc 15
ATM0/0/0.1: VCD: 15, VPI: 1, VCI: 34
UBR, PeakRate: 155000
AAL5-LLC/SNAP, etype:0x0, Flags: 0xC20, VCmode: 0x0
OAM frequency: 0 second(s)
InARP frequency: 15 minutes(s)
InPkts: 0, OutPkts: 321, InBytes: 0, OutBytes: 13803
InPRoc: 0, OutPRoc: 321, Broadcasts: 0
InFast: 0, OutFast: 0, InAS: 0, OutAS: 0
OAM cells received: 0
OAM cells sent: 0
Status: UP
Access-6400-NRP1#
```

```
Access-6400-NRP1# show atm vc 16
ATM0/0/0.4: VCD: 16, VPI: 4, VCI: 33
UBR, PeakRate: 155000
AAL5-MUX, etype:0x9, Flags: 0xC23, VCmode: 0x0
OAM frequency: 0 second(s)
InARP DISABLED
InPkts: 6, OutPkts: 143, InBytes: 48, OutBytes: 2420
InPRoc: 3, OutPRoc: 143
InFast: 0, OutFast: 0, InAS: 3, OutAS: 0
OAM cells received: 0
OAM cells sent: 0
Status: UP
PPP: Virtual-Access1 from Virtual-Templat1
Access-6400-NRP1#
```

```
Access-6400-NRP1# show interface virtual-access 1
Virtual-Access1 is up, line protocol is down
Hardware is Virtual Access interface
Interface is unnumbered. Using address of Loopback1 (10.1.1.1)
MTU 1500 bytes, BW 100000 Kbit, DLY 100000 usec,
```

```
reliability 255/255, txload 1/255, rxload 1/255
Encapsulation PPP, loopback not set
Keepalive set (10 sec)
DTR is pulsed for 5 seconds on reset
LCP REQsent
Closed: IPCP
Bound to ATM0/0/0.4 VCD: 16, VPI: 4, VCI: 33
Cloned from virtual-template: 1
Last input 00:12:07, output never, output hang never
Last clearing of "show interface" counters 00:12:18
Queueing strategy: fifo > Output queue 0/40, 0 drops; input queue 0/75, 0 drops
5 minute input rate 0 bits/sec, 0 packets/sec
5 minute output rate 0 bits/sec, 0 packets/sec
 3 packets input, 18 bytes, 0 no buffer
Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored, 0 abort
158 packets output, 2675 bytes, 0 underruns
0 output errors, 0 collisions, 0 interface resets
0 output buffer failures, 0 output buffers swapped out
0 carrier transitions
Access-6400-NRP1#
```

[Zugehörige Informationen](#)

- [Technischer DSL-Support](#)
- [Produkt-Support](#)
- [Technischer Support - Cisco Systems](#)