

Conectando um MGX 8220 AUSM-8T1/B a um 3620 usando exemplo de configuração de troncos de IMA

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Introdução

Este documento fornece a informação de configuração para uma conexão de entrelaçamento de serviço (SIW) sobre um grupo de troncos do Inverse Multiplexing for ATM (IMA). A configuração para cada dispositivo é criada usando o comando line interface(cli). A conexão de SIW estabelece a conectividade IP entre uma interface ATM do Cisco 3620 Router e uma interface do Frame Relay do Cisco MC 3810. Os quatro grupos de tronco de IMA T1 são estabelecidos entre os módulos de serviço T1 IMA e MGX8220 AUSM-8T1/B do 3620 Router. O MGX8220 é conectado como uma prateleira do alimentador ao BPX 8600. O BPX 8600 fornece o interruptor da conexão ATM AUSM-8T1/B à conexão do Frame Relay FRSM-8T1 no mesmo MGX8220. O módulo de serviço MGX8220 FRSM-8T1 fornece a conversão de SIW de ATM (encapsulamento do aal5snap) ao Frame Relay (encapsulamento da IETF).

Este documento é pretendido ser usado como um auxílio configurando o equipamento da Cisco, mas não é um substituto para o projeto e planejar de rede adequada com seu coordenador de vendas Cisco, coordenador de sistemas, ou gerenciador de conta.

Pré-requisitos

Requisitos

Não existem requisitos específicos para este documento.

Componentes Utilizados

As informações neste documento são baseadas nestas versões de software e hardware:

- **3620:**Software - Liberação 12.1(1a)T1 do Cisco IOS ® Software.Hardware - Cisco 3620 com 8-port interface de rede T1 IMA.
- **MC3810**Software - Cisco IOS Software Release 12.0(4)T.Hardware - Cisco MC 3810 com relação do tronco multiflex T1 (MFT).
- **MGX 8220**Firmware - Versão Cisco 5.0.14 e as versões apropriadas do hardware e do firmware do módulo de serviço. Refira o [centro do software de switching WAN \(clientes registrados somente\)](#).Hardware - O módulo de serviço B do modelo Cisco AUSM é usado para o foro ATM IMA complacente. Quatro troncos t1 são usados para conectar entre o módulo de serviço 8-port AUSM-8T1/B e o módulo de IMA 8-port 3620 T1. o AUSM-8T1/B e 3620 módulos de serviço IMA T1 usam os conectores RJ48.O módulo de serviço FRSM-8T1 usa os conectores RJ48.
- **BPX 8600**Software - Software Release 9.1.18 do switch Cisco e as versões apropriadas do hardware da placa e do firmware como especificado nos [Release Note](#).Hardware - O BPX 8600 é conectado à prateleira do alimentador MGX8220 usando um conjunto de placas BNI-T3.

As informações neste documento foram criadas a partir de dispositivos em um ambiente de laboratório específico. Todos os dispositivos utilizados neste documento foram iniciados com uma configuração (padrão) inicial. Se a sua rede estiver ativa, certifique-se de que entende o impacto potencial de qualquer comando.

Convenções

Para obter mais informações sobre convenções de documento, consulte as [Convenções de dicas técnicas Cisco](#).

Configurar

Nesta seção, você encontrará informações para configurar os recursos descritos neste documento.

Nota: Para localizar informações adicionais sobre os comandos usados neste documento, utilize a Ferramenta Command Lookup (somente clientes [registrados](#)).

Diagrama de Rede

Este documento utiliza a seguinte configuração de rede:

[Roteador 3620](#)

Configurar interfaces ATM como um grupo IMA e atribua o endereço IP de Um ou Mais Servidores Cisco ICM NT à relação lógica IMA. Todo o **show command output (resultado do comando show)** está na seção de [comando show](#) deste documento. Para comandos show e a informação de Troubleshooting adicionais, refira a [pesquisa de defeitos de links IMA ATM em Cisco 2600 e 3600 Router](#).

```
r3620(config)#interface atm0/0 r3620(config-if)#ima-group 1 !-1- Add the interface to IMA group 1. r3620(config-if)#no shut r3620(config-if)#int atm0/1 r3620(config-if)#ima-group 1 !--- Each interface must be added to IMA group 1. r3620(config-if)#no shut r3620(config)#int atm0/2 r3620(config-if)#ima-group 1 r3620(config-if)#no shut r3620(config)#int atm0/3 r3620(config-if)#ima-group 1 r3620(config-if)#no shut r3620(config)#int ATM0/IMA1.10 point-to-point !--- Configure the IMA interface. r3620(config-subif)#ip add 2.2.2.1 255.255.255.0 r3620(config-subif)#ima active-links-minimum 1 r3620(config-subif)#ima differential-delay-maximum 75 r3620(config-subif)#pvc IMA-VC 10/20 r3620(config-if-at)#protocol ip 10.1.1.2 broadcast r3620(config-if-at)#encapsulation aal5snap r3620(config-if-at)#vbr-nrt 512 384 128 !--- Set the connection type.
```

Esta saída é o número mínimo de links ativo exigidos para que o grupo IMA seja operacional. O valor padrão é 1.

```
ima active-links-minimum 1
```

Esta saída é o atraso cronometrando máximo que pode existir entre os links ativo no grupo IMA. O valor padrão é 25 milissegundos (milissegundo).

```
ima differential-delay-maximum 75
```

Esta saída especifica uma conexão NON-realtime da taxa de bits de variável com uma taxa de célula de pico (PCR) de 512 kbps, de taxa de célula sustentada (SCR) de 384 kbps, e de tamanho de intermitência máxima (MBS) das pilhas 128.

```
vbr-nrt 512 384 128
```

Configurando parâmetros de modelagem de tráfego para o PCR, o SCR, e o MBS no roteador são importantes evitar a perda de dados causada por descartes no interruptor. Quando os parâmetros de modelagem de tráfego não são configurados no roteador, a explosão do roteador inicial dos dados pode ser transmitida na velocidade de porta. Neste exemplo com os quatro T1s do exame que compõem uma porta IMA, a velocidade de porta é alta. Se o interruptor não é configurado para aceitar grandes explosões iniciais, os dados estão rejeitados.

[MGX 8220 AUSM-8T1/B](#)

Emita o comando **dspfeature** do StrataCom-nível verificar que a característica IMA está permitida no módulo de serviço AUSM-8T1/B. Se o acesso do StrataCom-nível não está disponível, continue com a configuração.

```
a1.1.10.AUSMB8.a > dspfeature Channelized: Off Rate Control: On IMA feature: On
```

Se a característica IMA está ou você é incapaz de adicionar o grupo IMA, contacte o [Suporte técnico de Cisco \(clientes registrados somente\)](#) para o auxílio com possibilidade desta característica.

Adicionar as linhas no cartão AUSM-8T1/B que são incluídas no grupo IMA. O relacionamento entre o AUSM-8T1/B e 3620 linhas T1 IMA é mostrado aqui.

Verifique que a configuração da mistura de payload da porta AUSM-8T1/B IMA é a mesma que aquela da relação 3620. A mistura de payload foi desenvolvida para assegurar que o payload de célula ATM não se assemelha ao cabeçalho de célula e se está somente localmente - significativo. Especificamente, cada lado de uma interface ATM deve ter o mesmo valor da mistura de payload, mas todas as interfaces ATM na rede não exigem a mesma configuração.

```
a1.1.10.AUSMB8.a > dsports No ATM T1/E1 UNI ports currently active List of IMA groups:
===== ImaGrp PortType Conf Avail Lines configured Lines present Tol Diff Port e
rate rate Delay(ms) -----
- 14.1 UNI 14364 3591 1.2.3.4 1.2.3.4 275 Active NextPortNumAvailable: 8 a1.1.10.AUSMB8.a >
dsplpp 1 PhysicalPortNumber: 1 CellFraming: ATM CellScramble: No Scramble Plpp Loopback: No
Loopback Single-bit error correction: Disabled
```

Adicionar agora uma conexão de VBR à porta IMA com VPI 10 e VCI 20.

```
a1.1.10.AUSMB8.a > addcon 200 0 1 10 20 2
```

Entrada de usuário	Definição
addcon	Adicionar uma conexão ao AUS atual.
200	número de canal — Avalie que varia de 16 a 1015.
0	Tipo de conexão — Tipo de conexão: 0 - VCC, não zero - Identificação local do VP do VPC (1 20(UNI)/100(STI)/340(NNI))
1	número de porta — Valores que variam de 1 a 8.
10	Canal VPI — Identificador de caminho virtual: 0 - 255. <i>Deve combinar o VPI em 3620.</i>
20	Canal VCI — Identificador de canal virtual: 0 - 65535 para o VCC, * para o VPC. <i>Deve combinar o VCI em 3620.</i>
2	Tipo de serviço — Tipo de serviço: 1 - CBR, 2 - VBR, 3 - ABR, 4 - UBR. <i>Deve combinar o tipo de conexão em 3620.</i>

Configurar os valores da conexão de VBR para refletir aqueles dos 3620. Os valores de conexão não são aperfeiçoados e são usados por exemplo somente.

```
a1.1.10.AUSMB8.a > cnfupcvbr ERR : incorrect number of parameters (not enough) Syntax :
cnfupcvbr "chan_num enable pcr[0+1] cdvt[0+1] scr scr_police mbs IngPcUtil EgSrvRate EgPcUtil
clp_tag " Channel # -- Channel Number : 16 - 1015 Enable/Disable -- UPC : 1 - Disable, 2 -
Enable PeakCellRate -- PCR [0+1]: 10-PortRate(T1-3622,E1-4528,clearE1-4830), For IMA,T1-3591,E1-
4490,clrE1-4789, multiply rate by #links CDVT[0+1] -- Cell Delay Variation [0+1]: 1 - 250000
micro_secs SCR -- Sustained Cell Rate:10-PortRate(T1-3622,E1-4528,clearE1-4830), For IMA,T1-
3591,E1-4490,clrE1-4789, multiply rate by #links SCR Policing -- 1 - CLP[0] Cells, 2 - CLP[0+1]
Cells, 3 - No SCR Policing Maximum Burst -- 1 - 5000 cells IngPcUtil -- Ingress percentage util: 1
to 127. 0 for default EgSrvRate -- Egress service rate:1-PortRate(T1-3622,E1-4528,clearE1-48,
For IMA,T1-3591,E1-4490,clrE1-4789, multiply rate by #links EgPcUtil -- Egress percentage util:
1 to 127. 0 for default Clp Tagging -- CLP TAG Enable : 1 - Disable, 2 - Enable a1.1.10.AUSMB8.a
> cnfupcvbr 200 2 3622 25000 2048 1 1000 100 2633 100 2
```

```
r3a#conf t r3a(config)#cont t1 0 r3a(config-controller)#framing esf r3a(config-
controller)#linecode b8zs r3a(config-controller)#channel-group 0 timeslots 1-24 speed 64
r3a(config-controller)#no shut r3a(config-controller)#int s0:0 r3a(config-if)#ip address 2.2.2.2
255.255.255.0 r3a(config-if)#encapsulation frame-relay IETF r3a(config-if)#frame-relay map ip
2.2.2.1 100 broadcast !-- associate the DLCI to the IP address r3a(config-if)#no shut
```

MGX 8220 FRSM

Verifique as linhas existentes.

```
a1.1.9.FRSM.a > dsplns Line Conn Type Status/Coding Length XmtClock Alarm Stats Type Source
Alarm ----
Dis/dsx1B8ZS 0-110 ft LocalTim 6.2 DB-15 dsx1ESF Dis/dsx1B8ZS 0-110 ft LocalTim 6.3 DB-15
dsx1ESF Dis/dsx1B8ZS 0-110 ft LocalTim 6.4 DB-15 dsx1ESF Dis/dsx1B8ZS 0-110 ft LocalTim
LineNumOfValidEntries: 4
```

Permita a linha conectada ao roteador MC3810. Note que o enquadramento de linha e a codificação de linha para o T1 entre o FRS e o MC3810 devem combinar.

```
a1.1.9.FRSM.a > addln 1
```

Permita a porta lógica e configurar-la para o serviço do Frame Relay.

```
a1.1.9.FRSM.a > addport 1 1 2 1 24 1
```

Entrada de usuário	Definição
addport	Adicionar uma porta
1	número de porta — Os valores que variam de 1 to192 são aceitados para o T1 e o 1-2481.
1	número de linha — Avalie que varia de 1 a 8.
2	Velocidade DS0 — 1 para o 56K, 2 para 64 K
1	entalhe de começo — Timeslot principiante em 1 base.
24	número de número de slot dos timeslot DS0 atribuídos a.
1	tipo de porta — Valores 1-3, relé 1=frame, 2=FUNI mode-1a, 3=frForward

Configurar a porta lógica para usar a sinalização da interface de gerenciamento local (LMI). Este exemplo usa StrataLMI com as atualizações assíncronas permitidas e LMI aprimorado desabilitado.

```
a1.1.9.FRSM.a > cnfport 1 s 2 n
```

Entrada de usuário	Definição
cnfport	Configurar a porta
1	número de porta — Os valores que variam de 1 a 192 são aceitados para o T1 e o 1 aos 2481 para o E1.
S	Sinalização LMI — (N) um (S) trataLMI AU-

	AnnexAUNI du-AnnexDUNI an-AnnexANNI dn-AnnexDNNI. <i>Deve combinar o LMI no MC3810.</i>
2	asyn UPD/UFS — (UPD = status de atualização, UFS = status completo não solicitado) (n ou 1) = dis, (y ou 2) = en UPD, 3 = en UFS, 4 = ambo en
n	LMI aprimorado — (N ou n) desabilitação (Y ou y) permite

Indique e verifique a configuração da porta lógica.

```
a1.1.9.FRSM.a > dspports Port Ena/Speed EQServ SignalType T391 T392 N391 N392 N393 Type I Ratio
----- 6.1.1 Mod/1536 Kbps 1
StrataLMI 10 15 6 3 4 frameRel Number of ports: 1 PortDs0UsedLine1: 0x00ffffff PortDs0UsedLine2:
0x00000000 PortDs0UsedLine3: 0x00000000 PortDs0UsedLine4: 0x00000000 PortNumNextAvailable: 7
```

Adicionar a conexão e permita a tradução de uma comunicação inter-rede de serviço. Note que os valores de conexão não estão aperfeiçoados e estão usados por exemplo somente.

```
a1.1.9.FRSM.a > addchan 100 1 100 1536000 3
```

Entrada de usuário	Definição
addchan	Adicionar um canal ao FRS atual
100	número de canal — Avalie que varia de 16 a 1015.
1	número de porta — Os valores que variam de 1 a 192 são aceitados para o T1 e o 1 aos 2481 para o E1.
100	Número de DLCIs — Avalie que varia de 0 a 1023. <i>Deve combinar o DLCI no MC3810.</i>
1536000	taxa comprometida -- 0-1536000 bps para o T1; 0-2048000 bps para o E1.
3	tipo do sobrenome — Valores 1 a 5, 1=NIW 2=SIW-transparent 3=SIW-xlation 4=FUNI 5=frForward

BPX 8600

Adicionar o MGX8220 como uma prateleira do alimentador ao interruptor do BPX 8600. Emita o comando **uptrk** ativar o tronco T3.

```
b3          TRM   SuperUser          BPX 8600  9.1.18   Oct. 6 2000  10:48 GMT
TRK        Type   Current Line Alarm Status          Other End
 2.1      T3     Clear - OK                          -
```

Last Command: **uptrk 2.1** Next Command:

Verifique o tronco e cancele todos os alarmes. Uma vez que o tronco é claro dos alarmes, emita o comando **addshelf**.

```
b3          TRM   SuperUser          BPX 8600  9.1.18   Oct. 6 2000  10:54 GMT
BPX 8600 Interface Shelf Information
```

Trunk	Name	Type	Part Id	Ctrl Id	Alarm
2.1	a1	AXIS	-	-	MIN

Last Command: **addshelf 2.1 A Shelf has been added** Next Command:

Adicionar a conexão no interruptor do BPX 8600 emitindo o **comando addcon**. Os valores de conexão não são aperfeiçoados para o Frame Relay ao ATM Service Interworking e são usados por exemplo somente. Para obter mais informações sobre da configuração de conexão ATM e do Troubleshooting, refira a [configuração de conexão ATM e o Troubleshooting para as Cisco BPX 8600 series switch](#) e os [problemas de PVC do Troubleshooting ATM](#).

addcon 2.1.9.100 b3 2.1.10.200 atfr 2000/2000 * 25000/25000 1000/1000 * * * * *

Entra da de usuário	Definição
addcon	Adicionar uma conexão.
2.1.9.100	número de conexão — <feeder_trunk_slot.feeder_trunk_port.FRSM_slot.FRSM_channel>
b3	nome de nó remoto — Repita o nome para conexões local-comutadas.
2.1.10.200	número de conexão — <feeder_trunk_slot.feeder_trunk_port.AUSM_slot.AUSM_channel>
atfr	tipo de conexão — ATM (em) ao frame relay (FR)
2000/2000	PCR (0 + 1) [50/50] — taxa de célula de pico. Equivalente à taxa de informação de pico (PIR) do Frame Relay para o tráfego 0 e CLP=1 da prioridade de perda da célula (CLP). O valor padrão é 50 pés nas direções de recepção e transmissão.
100/100	%Util [100/100] — Porcentagem de utilização. O valor padrão é 100 nas direções de recepção e transmissão.
25000/25000	CDVT (0 + 1) [250000/250000] — tolerância de variação de retardo de célula. O valor padrão é 250000 nas direções de recepção e transmissão.
1000/1000	SCR [50/50] — Taxa de célula sustentável. Equivalente à taxa de informação comprometida do Frame Relay (CIR). O valor padrão é 50 pés nas direções de recepção e transmissão.
1000/1000	MBS [1000/1000] — Tamanho de intermitência máxima. Equivalente ao (Be) do tamanho de intermitência excedente do Frame Relay. O valor padrão é 1000 nas direções de recepção e transmissão.
3	Policiando [3] — O algoritmo usado para

	determinar a conformidade ao contrato de tráfego. O valor padrão é 3 para a versão 4.0 VBR.3 da especificação de gerenciamento de tráfego do foro ATM.
1280/1280	VC Qdepth [1280/1280] — Profundidade de fila de conexão virtual. Valor padrão is1280 nas direções de recepção e transmissão.
35/35	EFCI [35/35] — Indicação de congestionamento adiante explícito. Equivalente à notificação de congestionamento explícito adiante (FECN) do Frame Relay. Configurado pela fila de porta para o BXM. Valor padrão is35 nas direções de recepção e transmissão.
1/1	IBS [1/1] — Tamanho de intermitência inicial. Equivalente ao Frame Relay Cmax. Valor padrão is1 nas direções de recepção e transmissão.

comandos show

A [Output Interpreter Tool \(somente clientes registrados\)](#) oferece suporte a determinados comandos show, o que permite exibir uma análise da saída do comando show.

Comando summary:

- [show version](#)
- [show run](#)
- [show atm pvc](#)
- [mostre a relação atm0/0](#)
- [mostre a relação atm0/0 atm](#)
- [mostre a relação ATM0/IMA1](#)
- [mostre a relação ATM0/IMA1.10](#)
- [mostre a relação atm0/0 do ima](#)
- [mostre o detalhe da relação atm0/ima1 do ima](#)
- [mostre atm0/ima1 cont](#)

```
r3620#ping 2.2.2.2 Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 2.2.2.2,
timeout is 2 seconds: !!!!! Success rate is 100 percent (5/5), round-trip min/avg/max =
104/136/148 ms r3620#show version Cisco Internetwork Operating System Software IOS (tm) 3600
Software (C3620-JS-M), Version 12.1(1a)T1, RELEASE SOFTWARE (fc1) Copyright (c) 1986-2000 by
cisco Systems, Inc. Compiled Mon 03-Apr-00 11:10 by ccai Image text-base: 0x600088F0, data-base:
0x612A6000 ROM: System Bootstrap, Version 11.1(20)AA2, EARLY DEPLOYMENT RELEASE SOFTWARE (
r3620 uptime is 4 hours, 27 minutes System returned to ROM by power-on System image file is
"flash:c3620-js-mz.121-1a.T1" cisco 3620 (R4700) processor (revision 0x81) with 57344K/8192K
bytes of memory. Processor board ID 10707918 R4700 CPU at 80Mhz, Implementation 33, Rev 1.0
Bridging software. X.25 software, Version 3.0.0. SuperLAT software (copyright 1990 by Meridian
Technology Corp). TN3270 Emulation software. 16 ATM network interface(s) DRAM configuration is
32 bits wide with parity disabled. 29K bytes of non-volatile configuration memory. 16384K bytes
of processor board System flash (Read/Write) Configuration register is 0x2102 r3620#show run
Building configuration... Current configuration: ! version 12.1 service timestamps debug uptime
service timestamps log uptime service password-encryption ! hostname r3620 ! ! ! ! ! ip
subnet-zero no ip domain-lookup ! cns event-service server ! ! ! ! interface ATM0/0 no ip
address no atm ilmi-keepalive ima-group 1 no scrambling-payload ! interface ATM0/1 no ip address
no atm ilmi-keepalive ima-group 1 no scrambling-payload ! interface ATM0/2 no ip address no atm
```

```

ilmi-keepalive ima-group 1 no scrambling-payload ! interface ATM0/3 no ip address no atm ilmi-keepalive
ilmi-keepalive ima-group 1 no scrambling-payload ! interface ATM0/4 no ip address shutdown no atm ilmi-keepalive
no scrambling-payload ! interface ATM0/5 no ip address shutdown no atm ilmi-keepalive
no scrambling-payload ! interface ATM0/6 no ip address shutdown no atm ilmi-keepalive
no scrambling-payload ! interface ATM0/7 no ip address shutdown no atm ilmi-keepalive
no scrambling-payload ! interface ATM0/IMA1 no ip address no atm ilmi-keepalive ! interface ATM0/IMA1.10 point-to-point
ip address 2.2.2.1 255.255.255.0 pvc 10/20 protocol ip 2.2.2.2 broadcast encapsulation aal5snap ! ! interface ATM1/0 no ip address
shutdown no atm ilmi-keepalive no scrambling-payload ! interface ATM1/1 no ip address shutdown no atm ilmi-keepalive
no scrambling-payload ! interface ATM1/2 no ip address shutdown no atm ilmi-keepalive no scrambling-payload ! interface
ATM1/3 no ip address shutdown no atm ilmi-keepalive no scrambling-payload ! interface ATM1/4 no ip address shutdown no atm
ilmi-keepalive no scrambling-payload ! interface ATM1/5 hutdown no atm ilmi-keepalive no scrambling-payload ! interface
ATM1/6 no ip address shutdown no atm ilmi-keepalive no scrambling-payload ! interface ATM1/7 no ip address shutdown no atm
ilmi-keepalive no scrambling-payload ! ip classless no ip http server ! ! line con 0 transport input none line aux 0 line vty 0 4
login ! end r3620#show atm pvc
VCD / Peak Avg/Min Burst Interface Name VPI VCI Type Encaps SC Kbps Kbps Cells Sts
0/IMA1.10 1 10 20 PVC SNAP UBR 1500 UP r3620#show interface atm0/0 ATM0/0 is up, line protocol is up Hardware is ATM T1
MTU 4470 bytes, sub MTU 4470, BW 1500 Kbit, DLY 20000 usec, reliability 0/255, txload 1/255, rxload 1/255 Encapsulation
ATM, loopback not set Keepalive not supported Encapsulation(s): AAL5 256 maximum active VCs, 0 current VCCs VC idle
disconnect time: 300 seconds Last input never, output never, output hang never Last clearing of "show interface"
counters never Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0 Queueing strategy: Per VC
Queueing 5 minute input rate 0 bits/sec, 0 packets/sec 5 minute output rate 0 bits/sec, 0 packets/sec 0 packets
input, 0 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 0 packets output, 0 bytes, 0 underruns 0 output errors, 0 collisions, 1 interface resets
0 output buffer failures, 0 output buffers swapped out r3620#show atm interface atm0/0 Interface ATM0/0: AAL enabled:
AAL5 , Maximum VCs: 256, Current VCCs: 0 Maximum Transmit Channels: 0 Max. Datagram Size: 4496 PLIM Type: DS1,
Framing is T1 ESF, TX clocking: LINE Cell-payload scrambling: OFF 0 input, 0 output, 0 IN fast, 0 OUT fast, 0 out
drop Avail bw = 1500 Config. is ACTIVE r3620#show interface ATM0/IMA1 ATM0/IMA1 is up, line protocol is up
Hardware is ATM IMA MTU 4470 bytes, sub MTU 4470, BW 6000 Kbit, DLY 20000 usec, reliability 236/255, txload 1/255,
rxload 1/255 Encapsulation ATM, loopback not set Keepalive not supported Encapsulation(s): AAL5 256 maximum
active VCs, 1 current VCCs VC idle disconnect time: 300 seconds Last input 00:04:32, output 00:04:32, output
hang never Last clearing of "show interface" counters never Input queue: 0/75/0/0 (size/max/drops/flushes);
Total output drops: 0 Queueing strategy: Per VC Queueing 5 minute input rate 0 bits/sec, 0 packets/sec 5 minute
output rate 0 bits/sec, 0 packets/sec 41 packets input, 4548 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 493 packets output, 30688
bytes, 0 underruns 0 output errors, 0 collisions, 1 interface resets 0 output buffer failures, 0 output buffers
swapped out r3620#show interface ATM0/IMA1.10 ATM0/IMA1.10 is up, line protocol is up Hardware is ATM IMA
Internet address is 2.2.2.1/24 MTU 4470 bytes, BW 6000 Kbit, DLY 20000 usec, reliability 236/255, txload 1/255,
rxload 1/255 Encapsulation ATM 41 packets input, 4548 bytes 493 packets output,30688 bytes 438 OAM cells
input, 438 OAM cells output AAL5 CRC errors : 0 AAL5 SAR Timeouts : 0 AAL5 Oversized SDUs : 0 r3620#show ima
interface atm0/0 Interface ATM0/0 is up ifIndex 1, Group Index 1, Row Status is active Tx/Rx Lid 0/0, relative
delay 0ms Ne Tx/Rx state active/active Fe Tx/Rx state active/active Ne Rx failure status is noFailure Fe Rx
failure status is noFailure Rx test pattern 0x43, test procedure disabled IMA Link Current Counters (time
elapsed 756 seconds): 0 Ima Violations, 0 Oif Anomalies 0 Ne Severely Err Secs, 0 Fe Severely Err Secs 0
Ne Unavail Secs, 0 Fe Unavail Secs 0 Ne Tx Unusable Secs, 0 Ne Rx Unusable Secs 0 Fe Tx Unusable Secs, 0
Fe Rx Unusable Secs 0 Ne Tx Failures, 0 Ne Rx Failures 0 Fe Tx Failures, 0 Fe Rx Failures IMA Link Total
Counters (last 7 15 minute intervals): 1 Ima Violations, 3 Oif Anomalies 12 Ne Severely Err Secs, 0 Fe
Severely Err Secs 3600 Ne Unavail Secs, 0 Fe Unavail Secs 1802 Ne Tx Unusable Secs, 3602 Ne Rx Unusable
Secs 2 Fe Tx Unusable Secs, 0 Fe Rx Unusable Secs 0 Ne Tx Failures, 8 Ne Rx Failures 0 Fe Tx Failures, 0
Fe Rx Failures r3620#show ima interface atm0/imal detail Interface ATM0/IMA1 is up Group index is 1 Ne
state is operational, failure status is noFailure Active links bitmap 0xF IMA Group Current Configuration:
Tx/Rx configured links bitmap 0xF/0xF Tx/Rx minimum required links 1/1 Maximum allowed diff delay is 25ms,
Tx frame length 128 Ne Tx clock mode CTC, configured timing reference link ATM0/0 Test pattern procedure
is disabled Detailed group Information: Tx/Rx Ima_id 0x1/0x0, symmetry symmetricOperation Number of Tx/Rx
configured links 4/4 Number of Tx/Rx

```

active links 4/4 Fe Tx clock mode ctc, Rx frame length 128 Tx/Rx timing reference link 0/0
Maximum observed diff delay 0ms, least delayed link 2 Running seconds 9273 GTSM last changed
03:49:15 UTC Mon Mar 1 1993 IMA Group Current Counters (time elapsed 870 seconds): 0 Ne
Failures, 0 Fe Failures, 0 Unavail Secs IMA Group Interval(1) Counters: 0 Ne Failures, 0 Fe
Failures, 0 Unavail Secs IMA Group Interval(2) Counters: 0 Ne Failures, 0 Fe Failures, 0 Unavail
Secs IMA Group Interval(3) Counters: 0 Ne Failures, 0 Fe Failures, 0 Unavail Secs IMA Group
Interval(4) Counters: 1 Ne Failures, 1 Fe Failures, 900 Unavail Secs IMA Group Interval(5)
Counters: 0 Ne Failures, 0 Fe Failures, 900 Unavail Secs IMA Group Interval(6) Counters: 0 Ne
Failures, 0 Fe Failures, 900 Unavail Secs IMA Group Interval(7) Counters: 1 Ne Failures, 0 Fe
Failures, 900 Unavail Secs IMA Group Total Counters (last 8 15 minute intervals): 3 Ne Failures,
2 Fe Failures, 3604 Unavail Secs Detailed IMA link Information: Interface ATM0/0 is up ifIndex
1, Group Index 1, Row Status is active Tx/Rx Lid 0/0, relative delay 0ms Ne Tx/Rx state
active/active Fe Tx/Rx state active/active Ne Rx failure status is noFailure Fe Rx failure
status is noFailure Rx test pattern 0x43, test procedure disabled IMA Link Current Counters
(time elapsed 61 seconds): 0 Ima Violations, 0 Oif Anomalies 0 Ne Severely Err Secs, 0 Fe
Severely Err Secs 0 Ne Unavail Secs, 0 Fe Unavail Secs 0 Ne Tx Unusable Secs, 0 Ne Rx Unusable
Secs 0 Fe Tx Unusable Secs, 0 Fe Rx Unusable Secs 0 Ne Tx Failures, 0 Ne Rx Failures 0 Fe Tx
Failures, 0 Fe Rx Failures IMA Link Interval(1) Counters: 0 Ima Violations, 0 Oif Anomalies 0 Ne
Severely Err Secs, 0 Fe Severely Err Secs 0 Ne Unavail Secs, 0 Fe Unavail Secs 0 Ne Tx Unusable
Secs, 0 Ne Rx Unusable Secs 0 Fe Tx Unusable Secs, 0 Fe Rx Unusable Secs 0 Ne Tx Failures, 0 Ne
Rx Failures 0 Fe Tx Failures, 0 Fe Rx Failures IMA Link Interval(2) Counters: 0 Ima Violations,
0 Oif Anomalies 0 Ne Severely Err Secs, 0 Fe Severely Err Secs 0 Ne Unavail Secs, 0 Fe Unavail
Secs 0 Ne Tx Unusable Secs, 0 Ne Rx Unusable Secs 0 Fe Tx Unusable Secs, 0 Fe Rx Unusable Secs 0
Ne Tx Failures, 0 Ne Rx Failures 0 Fe Tx Failures, 0 Fe Rx Failures IMA Link Interval(3)
Counters: 0 Ima Violations, 0 Oif Anomalies 0 Ne Severely Err Secs, 0 Fe Severely Err Secs 0 Ne
Unavail Secs, 0 Fe Unavail Secs 0 Ne Tx Unusable Secs, 0 Ne Rx Unusable Secs 0 Fe Tx Unusable
Secs, 0 Fe Rx Unusable Secs 0 Ne Tx Failures, 0 Ne Rx Failures 0 Fe Tx Failures, 0 Fe Rx
Failures r3620#show cont atm0/ima1 Interface ATM0/IMA1 is up Hardware is ATM IMA LANE client MAC
address is 0050.7305.e681 hwidb=0x62384A14, ds=0x61D6D2E0 slot 0, unit 1, subunit 1 rs8234 base
0x3C000000, slave base 0x3C000000 rs8234 ds 0x61D6D2E0 SBDs - avail 2048, guaranteed 1,
unguaranteed 2047, starved 0 Seg VCC table 3C00B800, Shadow Seg VCC Table 61D89928, VCD Table
61D9F954 Schedule table 3C016800, Shadow Schedule table 61DA5980, Size C7E RSM VCC Table
3C03EA80, Shadow RSM VCC Table 61DABC80 VPI Index Table 3C03C000, VCI Index Table 3C03E680
Bucket2 Table 3C026200, Shadow Bucket2 Table 61DA8BA4 MCR Limit Table 3C026600, Shadow MCR Table
61DAA7D0 ABR template 3C026800, Shadow template 61A738E0 RM Cell RS Queue 3C03C680 Queue TXQ
Addr Pos StQ Addr Pos 0 UBR CHN0 3C038800 0 039184A0 0 1 UBR CHN1 3C038C00 0 03918CA0 0 2 UBR
CHN2 3C039000 0 039194A0 0 3 UBR CHN3 3C039400 237 03919CA0 237 4 VBR/ABR CHN0 3C039800 0
0391A4A0 0 5 VBR/ABR CHN1 3C039C00 0 0391ACA0 0 6 VBR/ABR CHN2 3C03A000 0 0391B4A0 0 7 VBR/ABR
CHN3 3C03A400 0 0391BCA0 0 8 VBR-RT CHN0 3C03A800 0 0391C4A0 0 9 VBR-RT CHN1 3C03AC00 0 0391CCA0
0 10 VBR-RT CHN2 3C03B000 0 0391D4A0 0 11 VBR-RT CHN3 3C03B400 0 0391DCA0 0 12 SIG 3C03B800 0
0391E4A0 0 13 VPD 3C03BC00 0 0391ECA0 0 Queue FBQ Addr Pos 0 OAM 3C0FEA80 181
0391F560 182 1 UBR CHN0 3C0FFA80 0 03920560 0 2 UBR CHN1 3C100A80 0 03921560 0 3 UBR CHN2
3C101A80 0 03922560 0 4 UBR CHN3 3C102A80 40 03923560 41 5 VBR/ABR CHN0 3C103A80 0 03924560 0 6
VBR/ABR CHN1 3C104A80 0 03925560 0 7 VBR/ABR CHN2 3C105A80 0 03926560 0 8 VBR/ABR CHN3 3C106A80
0 03927560 0 9 VBR-RT CHN0 3C107A80 0 03928560 0 10 VBR-RT CHN1 3C108A80 0 03929560 0 11 VBR-RT
CHN2 3C109A80 0 0392A560 0 12 VBR-RT CHN3 3C10AA80 0 0392B560 0 13 SIG 3C10BA80 0 0392C560 0 SAR
Scheduling channels: 3 3 3 3 -1 -1 -1 -1 ATM channel number is 3 link members are 0xF, active
links are 0xF Group status is noFailure, 4 links configured, Group Info: Configured links bitmap
0xF, Active links bitmap 0xF, Tx/Rx IMA_id 0x1/0x0, NE Group status is operational, frame length
0x80, Max Diff Delay 0, 1 min links, clock mode ctc, symmetry symmetricOperation, trl 0, Group
Failure status is noFailure. Test pattern procedure is disabled SAR counter totals across all
links and groups: 603 cells output, 0 cells stripped 560 cells input, 17573739 cells discarded,
0 AAL5 frames discarded 0 pci bus err, 0 dma fifo full err, 0 rsm parity err 0 rsm syn err, 0
rsm/seg q full err, 0 rsm overflow err 0 hs q full err, 0 no free buff q err, 0 seg underflow
err 0 host seg stat q full err

[MGX 8220 AUSM-8T1/B](#)

Comando summary:

- [versão](#)
- [dspfeature](#)

- [dsplns](#)
- [dspln](#)
- [dspports](#)
- [dspmagrp](#)
- [dspmaininfo](#)
- [dspplpp](#)
- [dspmagrpcnt](#)
- [dspimaincnt](#)
- [dspimainl](#)
- [dspchans](#)
- [tstcon](#)
- [dspchan](#)

```

a1.1.10.AUSMB8.a > version ***** Cisco Systems, Inc. AXIS AUSM-8T1/E1 Card ***** Firmware
Version = 5.0.12 Backup Boot version = AU8_BT_1.0.02 AUSM8p Xilinx file = ausm8pXilinx.h VxWorks
(for Cisco Systems, Inc.) version 5.1.1-R3000. Kernel: WIND version 2.4. Made on Wed Jun 21
18:24:45 PDT 2000. Boot line: a1.1.10.AUSMB8.a > dspsfeature Channelized: Off Rate Control: On IMA
feature: On a1.1.10.AUSMB8.a > dsplns Line Conn Type Status/Coding Length XmtClock Alarm Stats
Type Source Alarm ---- ---- -----
10.1 RJ-48 dsxlESF Ena/dsxlB8ZS 0-131 ft LocalTim No No 10.2 RJ-48 dsxlESF Ena/dsxlB8ZS 0-131 ft
LocalTim No No 10.3 RJ-48 dsxlESF Ena/dsxlB8ZS 0-131 ft LocalTim No No 10.4 RJ-48 dsxlESF
Ena/dsxlB8ZS 0-131 ft LocalTim No No 10.5 RJ-48 dsxlESF Dis/dsxlB8ZS 0-131 ft LocalTim 10.6 RJ-
48 dsxlESF Dis/dsxlB8ZS 0-131 ft LocalTim 10.7 RJ-48 dsxlESF Dis/dsxlB8ZS 0-131 ft LocalTim 10.8
RJ-48 dsxlESF Dis/dsxlB8ZS 0-131 ft LocalTim LineNumOfValidEntries: 8 a1.1.10.AUSMB8.a > dspln 1
LineNum: 1 LineConnectorType: RJ-48 LineType: dsxlESF LineEnable: Enabled LineCoding: dsxlB8ZS
LineLength: 0-131 ft LineXmtClockSource: LocalTiming LineLoopbackCommand: NoLoop LineSendCode:
NoCode LineUsedTimeslotsBitMap: 0xffffffff LineLoopbackCodeDetection: codeDetectDisabled
LineBERTEnable: Disable LineNumOfValidEntries: 8 a1.1.10.AUSMB8.a > dsports No ATM T1/E1 UNI
ports currently active List of IMA groups: =====
configured Lines present Tol Diff Port e rate rate Delay(ms) -----
----- 10.1 UNI 14364 14364 1.2.3.4 1.2.3.4 275 B/w chd
NextPortNumAvailable: 8 a1.1.10.AUSMB8.a > dspsmagrp 1 IMA Group number : 1 Port type : UNI Lines
configured : 1.2.3.4 Enable : Enabled IMA Port state : B/w changed IMA Group Ne state :
operational PortSpeed (cells/sec) : 14364 GroupTxAvailCellRate (cells/sec) : 14364
ImaGroupTxFrameLength(cells) : 128 LcpDelayTolerance (IMA frames) : 1 ReadPtrWrPtrDiff (cells) :
4 Minimum number of links : 1 MaxTolerableDiffDelay (msec) : 275 Lines Present : 1.2.3.4
Observed Diff delay (msec) : 0 Clock Mode : CTC GroupAlpha : 2 GroupBeta : 2 GroupGamma : 1
GroupConfiguration : 1 IMAGrp Failure status : No Failure Timing reference link : 1
ImaGroupTxImaId : 0x0 ExpectedGroupRxImaId : 0x1 a1.1.10.AUSMB8.a > dspsmaininfo Link Group NeTx
NeRx FeTx FeRx TxLID RxID State State State State -----
----- 1 1 Active Active Active Active 0 0 2 1 Active Active Active Active 1 1 3 1
Active Active Active Active 2 2 4 1 Active Active Active Active 3 3 a1.1.10.AUSMB8.a > dspsplpp 1
PhysicalPortNumber: 1 CellFraming: ATM CellScramble: No Scramble Plpp Loopback: No Loopback
Single-bit error correction: Disabled a1.1.10.AUSMB8.a > dspsmagrpcnt 1 IMA Group number: 1 Ne
Number of failures : 0 a1.1.10.AUSMB8.a > dspsimaincnt 1 1 IMA group number : 1 Line number : 1
Icp Cells Received : 140041 Icp Errored Cells Recvd : 10 Ima Violations Count : 10 Ima OIF
anomalies : 0 Ima Ne Severely Errored Seconds : 0 Ima Fe Severely Errored Seconds : 1 Ima Ne
Unavailable Seconds : 0 Ima Fe Unavailable Seconds : 0 Ima NeTx Unusable Seconds : 1336 Ima NeRx
Unusable Seconds : 1335 Ima FeTx Unusable Seconds : 1 Ima FeRx Unusable Seconds : 1 Ima FeTx
Num. Failues : 0 Ima FeRx Num. Failures : 0 # HEC errored cells : 0 # HEC errored seconds : 0 #
Severely HEC errored seconds : 0 a1.1.10.AUSMB8.a > dspsimainl 1 1 IMA Group number : 1 Link number
: 1 ImaLink TxLid : 0x0 ImaLink RxLid : 0x0 LinkNeRxState : Active LinkNeTxState : Active
LinkNeRxFailureStatus : No Failure LinkFeRxState : Active LinkFeTxState : Active
LinkFeRxFailureStatus : No Failure LinkRelDelay : 0 LinkRxTestPattern : 255 Ne Link Tx Num
Failures : 0 Ne Link Rx Num Failures : 0 a1.1.10.AUSMB8.a > dspschans Chan Port.VPI.VCI ConnType
Service Type PCR[0+1] Q-Depth State ----
---- 200 1.10.20 VCC VBR 10 1000 Active ChanNumNextAvailable : 18 Local VpId NextAvailable : 16

```

```

a1.1.10.AUSMB8.a > tstcon 200 tstcon in progress Test passed. r3620#ping 2.2.2.2 Type escape
sequence to abort. Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds: .....
Success rate is 0 percent (0/5) a1.1.10.AUSMB8.a > dspchan 200 ChanNum: 200 RowStatus: Mod
ConnectionType: VCC ServiceType: VBR PortNum: 1 VPI: 10 VCI (For VCC): 20 Local VPId(for VPC): 0
EgressQNum: 3 IngressQDepth(cells): 1000 IngressDiscardOption: CLP hysteresis
IngressFrameDiscardThreshold 1000 IngressQCLPHigh(cells): 900 IngressQCLPLow(cells): 800
QCLPState: LOW IngressEfcThreshold(cells): 1000 UPCEnable: Enabled
PeakCellRate[0+1](cells/sec): 50 !--- PINGs set at port speed are discarded.
CellDelayVariation[0+1]: 10000 (micro secs) PeakCellRate[0](cells/sec): 14364
CellDelayVariation[0]: 250000 (micro secs) SustainedCellRate(cells/sec): 50 !--- PINGs set at
port speed are discarded. MaximumBurstSize(cells): 1000 SCRPolicing: CLP[0] CLPtagEnable:
Enabled FrameGCRAEnable: Disable ForesightEnable: Disable InitialBurstSize(cells): 0
ForeSightPeakCellRate(cells/sec): 50 MinimumCellRate(cells/sec): 50 InitialCellRate(cells/sec):
50 LocalRemoteLpbkState: Disable ChanTestType: No Test ChanTestState: Passed ChanRTDresult: 1 ms
Ingress percentage util: 100 Egress percentage util : 100 Egress Service Rate: 50
ChanOvrSubOvrRide: Enabled ChanNumNextAvailable : 17 Local VpId NextAvailable : 6 r3620#ping
2.2.2.2 Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2
seconds: ..... Success rate is 0 percent (0/5) After cnfupcvbr command is used to increase
connection parameter: a1.1.10.AUSMB8.a > dspchan 200 ChanNum: 200 RowStatus: Mod ConnectionType:
VCC ServiceType: VBR PortNum: 1 VPI: 10 VCI (For VCC): 20 Local VPId(for VPC): 0 EgressQNum: 3
IngressQDepth(cells): 1000 IngressDiscardOption: CLP hysteresis IngressFrameDiscardThreshold
1000 IngressQCLPHigh(cells): 900 IngressQCLPLow(cells): 800 QCLPState: LOW
IngressEfcThreshold(cells): 1000 UPCEnable: Enabled PeakCellRate[0+1](cells/sec): 3622
CellDelayVariation[0+1]: 25000 (micro secs) PeakCellRate[0](cells/sec): 14364
CellDelayVariation[0]: 250000 (micro secs) SustainedCellRate(cells/sec): 2048
MaximumBurstSize(cells): 1000 SCRPolicing: CLP[0] CLPtagEnable: Enabled FrameGCRAEnable: Disable
ForesightEnable: Disable InitialBurstSize(cells): 0 ForeSightPeakCellRate(cells/sec): 3622
MinimumCellRate(cells/sec): 3622 InitialCellRate(cells/sec): 3622 LocalRemoteLpbkState: Disable
ChanTestType: No Test ChanTestState: Passed ChanRTDresult: 1 ms Ingress percentage util: 100
Egress percentage util : 100 Egress Service Rate: 2633 ChanOvrSubOvrRide: Enabled
ChanNumNextAvailable : 17 Local VpId NextAvailable : 16 r3620#ping 2.2.2.2 Type escape sequence
to abort. Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds: !!!!! Success rate is
100 percent (5/5), round-trip min/avg/max = 8/13/28 ms

```

MC3810

Comando summary:

- [show version](#)
- [show run](#)
- [mostre o pvc franco](#)
- [mostre T1 0 do contr](#)
- [mostre a relação s0:0](#)
- [debugar o Frame Relay LMI](#)

```

r3a#ping 2.2.2.1 Type escape sequence to abort. Sending 5, 100-byte ICMP Echos to 2.2.2.1,
timeout is 2 seconds: !!!!! Success rate is 100 percent (5/5), round-trip min/avg/max =
104/134/144 ms r3a#show version Cisco Internetwork Operating System Software IOS (tm) MC3810
Software (MC3810-JS-M), Version 12.0(4)T, RELEASE SOFTWARE (fc) Copyright (c) 1986-1999 by cisco
Systems, Inc. Compiled Wed 28-Apr-99 21:19 by kpma Image text-base: 0x00023000, data-base:
0x00AF1324 ROM: System Bootstrap, Version 11.3(1)MA1, MAINTENANCE INTERIM SOFTWARE ROM: MC3810
Software (MC3810-WBOOT-M), Version 11.3(1)MA1, MAINTENANCE INTERIM r3a uptime is 2 hours, 51
minutes System restarted by reload System image file is "flash:mc3810-js-mz.120-4.T.bin" Cisco
MC3810 (MPC860) processor (revision 06.07) with 27648K/5120K bytes of mem. Processor board ID
09550018 PPC860 PowerQUICC, partnum 0x0000, version A03(0x0013) Channelized E1, Version 1.0.
Bridging software. X.25 software, Version 3.0.0. SuperLAT software copyright 1990 by Meridian
Technology Corp). TN3270 Emulation software. Primary Rate ISDN software, Version 1.1. MC3810 SCB
board (v05.A0) 1 Multiflex T1(slot 3) RJ45 interface(v01.K0) 1 Six-Slot Analog Voice Module
(v03.K0) 1 Analog FXS voice interface (v03.K0) port 1/1 1 3-DSP(slot2) Voice Compression
Module(v01.--) 1 Ethernet/IEEE 802.3 interface(s) 1 Serial network interface(s) 2
Serial(sync/async) network interface(s) 1 Channelized E1/PRI port(s) 1 Channelized T1/PRI

```

```
port(s) 256K bytes of non-volatile configuration memory. 8192K bytes of processor board System
flash (INTEL28F016) Configuration register is 0x2102 r3a#show run Building configuration...
Current configuration: ! version 12.0 service timestamps debug uptime service timestamps log
uptime service password-encryption ! hostname r3a enable password 7 016E2C ! enable password !
network-clock base-rate 56k ip subnet-zero no ip domain-lookup ! ! ! controller T1 0 framing esf
linecode b8zs channel-group 0 timeslots 1-24 speed 64 ! interface Ethernet0 ip address
172.16.150.53 255.255.255.0 no ip directed-broadcast ! interface Serial0 no ip address no ip
directed-broadcast no ip mroute-cache shutdown no fair-queue ! interface Serial1 no ip address
no ip directed-broadcast shutdown ! interface Serial0:0 ip address 2.2.2.2 255.255.255.0 no ip
directed-broadcast encapsulation frame-relay IETF ip mroute-cache frame-relay map ip 2.2.2.1 100
broadcast ! interface Switch0 no ip address no ip directed-broadcast encapsulation frame-relay
no fair-queue ! ip classless ip route 0.0.0.0 0.0.0.0 172.16.150.1 no ip http server ! ! ! line
con 0 transport input none line aux 0 line 2 3 line vty 0 4 exec-timeout 0 0 password 7 0236C1C
login ! ! voice-port 1/1 timeouts call-disconnect 0 ! ! endr3a#show fr pvc PVC Statistics for
interface Serial0:0 (Frame Relay DTE) Active Inactive Deleted Static Local 1 0 0 0 Switched 0 0
0 0 Unused 0 0 0 0 DLCI = 100, DLCI USAGE = LOCAL, PVC STATUS = ACTIVE, INTERFACE = Serial0:0
input pkts 140 output pkts 161 in bytes 104560 out bytes 106700 dropped pkts 0 in FECN pkts 0 in
BECN pkts 0 out FECN pkts 0 out BECN pkts 0 in DE pkts 0 out DE pkts 0 out bcast pkts 0 out
bcast bytes 0 pvc create time 02:42:19, last time pvc status changed 01:30:06 PVC Statistics for
interface Switch0 (Frame Relay DTE) r3a#show contr t1 0 T1 0 is up. Applique type is Channelized
T1 Cablelength is long gain36 0db No alarms detected. Slot 3 CSU Serial #08625843 Model TEB
HWVersion 4.70 RX level = -0DB Framing is ESF, Line Code is B8ZS, Clock Source is Line. Data in
current interval (567 seconds elapsed): 0 Line Code Violations, 0 Path Code Violations 0 Slip
Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins 0 Errored Secs, 0 Bursty Err Secs, 0
Severely Err Secs, 0 Unavail Secs Data in Interval 1: 0 Line Code Violations, 0 Path Code
Violations 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins 0 Errored Secs, 0
Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs Data in Interval 2: 0 Line Code Violations,
0 Path Code Violations 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins 0 Errored
Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs Data in Interval 3: 0 Line Code
Violations, 0 Path Code Violations 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs Data in Interval 4: 0
Line Code Violations, 0 Path Code Violations 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0
Degraded Mins 0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs Data in
Interval 5: 0 Line Code Violations, 0 Path Code Violations 0 Slip Secs, 0 Fr Loss Secs, 0 Line
Err Secs, 0 Degraded Mins 0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs
Data in Interval 6: 0 Line Code Violations, 0 Path Code Violations 0 Slip Secs, 0 Fr Loss Secs,
0 Line Err Secs, 0 Degraded Mins 0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0
Unavail Secs Data in Interval 7: 0 Line Code Violations, 0 Path Code Violations 0 Slip Secs, 0
Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins 0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err
Secs, 0 Unavail Secs Data in Interval 8: 0 Line Code Violations, 0 Path Code Violations 0 Slip
Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins 0 Errored Secs, 0 Bursty Err Secs, 0
Severely Err Secs, 0 Unavail Secs Data in Interval 9: 0 Line Code Violations, 0 Path Code
Violations 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins 0 Errored Secs, 0
Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs 0 Line Code Violations, 0 Path Code
Violations 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins 0 Errored Secs, 0
Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs Data in Interval 8: 0 Line Code Violations,
0 Path Code Violations 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins 0 Errored
Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs Data in Interval 9: 0 Line Code
Violations, 0 Path Code Violations 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0 Degraded Mins
0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs Data in Interval 10: 0
Line Code Violations, 0 Path Code Violations 0 Slip Secs, 0 Fr Loss Secs, 0 Line Err Secs, 0
Degraded Mins 0 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 0 Unavail Secs Data in
Interval 11: 7 Line Code Violations, 0 Path Code Violations 2 Slip Secs, 0 Fr Loss Secs, 2 Line
Err Secs, 0 Degraded Mins 1 Errored Secs, 0 Bursty Err Secs, 0 Severely Err Secs, 866 Unavail
Secs Total Data (last 11 15 minute intervals): 7 Line Code Violations, 0 Path Code Violations, 2
Slip Secs, 0 Fr Loss Secs, 2 Line Err Secs, 0 Degraded Mins, 1 Errored Secs, 0 Bursty Err Secs,
0 Severely Err Secs, 866 Unavail Secs r3a#show interface s0:0 Serial0:0 is up, line protocol is
up Hardware is PQUICC Serial Internet address is 2.2.2.2/24 MTU 1500 bytes, BW 1536 Kbit, DLY
20000 usec, reliability 255/255, txload 1/255, rxload 1/255 Encapsulation FRAME-RELAY IETF, crc
16, loopback not set Keepalive set (10 sec) Scramble enabled LMI enq sent 964, LMI stat recvd
966, LMI upd recvd 2, DTE LMI up LMI enq recvd 0, LMI stat sent 0, LMI upd sent 0 LMI DLCI 1023
LMI type is CISCO frame relay DTE FR SVC disabled, LAPF state down Broadcast queue 0/64,
broadcasts sent/dropped 0/0, interface broadcasts 0 Last input 00:00:04, output 00:00:04, output
```

hang never Last clearing of "show interface" counters 02:45:12 Input queue: 0/75/0 (size/max/drops); Total output drops: 0 Queueing strategy: weighted fair Output queue: 0/1000/64/0 (size/max total/threshold/drops) Conversations 0/1/256 (active/max active/max total) Reserved Conversations 0/0 (allocated/max allocated) 5 minute input rate 0 bits/sec, 0 packets/sec 5 minute output rate 0 bits/sec, 0 packets/sec 1108 packets input, 118434 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 1133 packets output, 119338 bytes, 0 underruns 0 output errors, 0 collisions, 2 interface resets 0 output buffer failures, 0 output buffers swapped out 0 carrier transitions

Nota: Como os comandos debug geram uma quantidade significativa de saída, use-os somente quando o tráfego na rede estiver baixo, para que as outras atividades do sistema não sofram efeitos adversos.

```
r3a#debug frame-relay lmi Frame Relay LMI debugging is on Displaying all Frame Relay LMI data
r3a#terminal monitor % Console already monitors r3a# 02:59:35: Serial0:0(out): StEnq, myseq 206,
yourseen 53, DTE up 02:59:35: datagramstart = 0x1C98A18, datagramsize = 13 02:59:35: FR encap =
0xFCF10309 02:59:35: 00 75 01 01 01 03 02 CE 35 02:59:35: 02:59:35: Serial0:0(in): Status, myseq
206 02:59:35: RT IE 1, length 1, type 1 02:59:35: KA IE 3, length 2, yourseq 54, myseq 206 r3a#
02:59:45: Serial0:0(out): StEnq, myseq 207, yourseen 54, DTE up 02:59:45: datagramstart =
0x1C98A18, datagramsize = 13 02:59:45: FR encap = 0xFCF10309 02:59:45: 00 75 01 01 01 03 02 CF
36 02:59:45: 02:59:45: Serial0:0(in): Status, myseq 207 02:59:45: RT IE 1, length 1, type 1
02:59:45: KA IE 3, length 2, yourseq 55, myseq 207
```

[MGX 8220 FRSM-8T1](#)

Comando summary:

- [versão](#)
- [dspfeature](#)
- [dsplns](#)
- [dspln](#)
- [dspports](#)
- [dspport](#)
- [dspchans](#)
- [dspchan](#)
- [tstcon](#)

```
a1.1.9.FRSM.a > version ***** Cisco Systems, Inc. AXIS FRSM-8P Card ***** Firmware Version =
5.0.13 Backup Boot version = FR8_BT_1.0.02 ASCFRSM Xilinx file = cbslave.h VxWorks (for Cisco
Systems, Inc.) version 5.2 Rev B. Kernel: WIND version 2.4. Made on Wed Jun 21 16:15:40 PDT
2000. Boot line: a1.1.9.FRSM.a > dsplns Channelized: On Rate Control: On a1.1.9.FRSM.a >
dsplns Line Conn Type Status/Coding Length XmtClock Alarm Stats Type Source Alarm ---- -
----- ---
-----
----- 9.1 RJ-48 dsx1ESF Ena/dsx1B8ZS 0-
131 ft LocalTim No No 9.2 RJ-48 dsx1ESF Dis/dsx1B8ZS 0-131 ft LocalTim 9.3 RJ-48 dsx1ESF
Dis/dsx1B8ZS 0-131 ft LocalTim 9.4 RJ-48 dsx1ESF Dis/dsx1B8ZS 0-131 ft LocalTim 9.5 RJ-48
dsx1ESF Dis/dsx1B8ZS 0-131 ft LocalTim 9.6 RJ-48 dsx1ESF Dis/dsx1B8ZS 0-131 ft LocalTim 9.7 RJ-
48 dsx1ESF Dis/dsx1B8ZS 0-131 ft LocalTim 9.8 RJ-48 dsx1ESF Dis/dsx1B8ZS 0-131 ft LocalTim
LineNumOfValidEntries: 8 a1.1.9.FRSM.a > dspln 1 LineNum: 1 LineConnectorType: RJ-48 LineType:
dsx1ESF LineEnable: Enabled LineCoding: dsx1B8ZS LineLength: 0-131 ft LineXmtClockSource:
LocalTiming LineLoopbackCommand: NoLoop LineSendCode: NoCode LineUsedTimeslotsBitMap: 0xfffff
LineLoopbackCodeDetection: codeDetectDisabled LineBertEnable: Disable LineNumOfValidEntries: 8
a1.1.9.FRSM.a > dspports Port Ena/Speed EQServ SignalType T391 T392 N391 N392 N393 Type AlarI
Ratio -----
----- 9.1.1
Mod/1536k 1 StrataLMI 10 15 6 3 4 frameRel No Number of ports: 1 PortDs0UsedLine1: 0x00fffff
PortDs0UsedLine2: 0x00000000 PortDs0UsedLine3: 0x00000000 PortDs0UsedLine4: 0x00000000
PortDs0UsedLine5: 0x00000000 PortDs0UsedLine6: 0x00000000 PortDs0UsedLine7: 0x00000000
PortDs0UsedLine8: 0x00000000 PortNumNextAvailable: 155 a1.1.9.FRSM.a > dspport 1 SlotNum: 9
PortLineNum: 1 PortNum: 1 PortRowStatus: Mod PortDs0Speed: 64k PortDs0ConfigBitMap(1stDS0):
0xfffff(1) PortEqueueServiceRatio: 1 PortFlagsBetweenFrames: 1 PortSpeed: 1536kbps
```

```

SignallingProtocolType: StrataLMI AsynchronousMsgs: UPD enabled T391LineIntegrityTimer: 10
T392PollingVerificationTimer: 15 N391FullStatusPollingCounter: 6 N392ErrorThreshold: 3
N393MonitoredEventCount: 4 EnhancedLmi: On PortState: Active PortSignallingState: No Signalling
Failure CLLMEnableStatus: Disable CLLMxmtStatusTimer: 0 portType: frameRelay
PortIngrPercentUtil: 100 PortEgrPercentUtil: 100 PortOversubscribed: False PortSvcStatus:
Disable PortSvcInUse: Not In-Use PortSvcShareLcn: Card-based PortSvcLcnLow: 0 PortSvcLcnHigh: 0
PortSvcDlciLow: 0 PortSvcDlciHigh: 0 PortDs0UsedLine1: 0x00ffffff PortDs0UsedLine2: 0x00000000
PortDs0UsedLine3: 0x00000000 PortDs0UsedLine4: 0x00000000 PortDs0UsedLine5: 0x00000000
PortDs0UsedLine6: 0x00000000 PortDs0UsedLine7: 0x00000000 PortDs0UsedLine8: 0x00000000
PortNumNextAvailable: 164 a1.1.9.FRSM.a > dspchans DLCI Chan EQ I/EQDepth I/EQDEThre I/EECNThre
Fst/ DE Type Alarm -----
9.1.1.100 100 2 65535/65535 32767/32767 6553/6553 Dis/Dis SIW-X No Number of channels: 1
ChanNumNextAvailable: 44 a1.1.9.FRSM.a > dspchan 100 ChanNum: 100 ChanRowStatus: Mod ChanPortNum:
1 ChanDLCI: 100 EgressQSelect: 2 IngressQDepth: 65535 IngressQDEThresh: 32767 IngressQECNThresh:
6553 EgressQDepth: 65535 EgressQDEThresh: 32767 EgressQECNThresh: 6553 DETaggingEnable: Disabled
CIR: 1536000 Bc: 5100 Be: 5100 IBS: 100 ForeSightEnable: Disabled QIR: 4000 MIR: 4000 PIR: 4000
ChanLocalRemoteLpbkState: Disabled ChanTestType: TestOff ChanTestState: Passed ChanRTDresult: 1
ms ChanType: SIW-Xlat ChanFECNmap: setEFCIzero ChanDEtoCLPmap: mapCLP ChanCLPtoDEmap: mapDE
ChanFrConnType: PVC ChanIngrPercentUtil: 100 ChanEgrPercentUtil: 100 ChanEgrSrvRate: 1536000
ChanOvrSubOvrRide: Enabled ChanNumNextAvailable: 45 a1.1.9.FRSM.a > tstcon 100 TestCon in
progress. TestCon Passed.

```

[BPX 8600](#)

Comando summary:

- [dspcds](#)
- [dspnode](#)
- [dsptrks](#)
- [dsptrkcnf](#)
- [dspcons](#)
- [dspcon](#)
- [dspchstats](#)
- [tstconseq](#)
- [dspalms](#)
- [dspcons - abit](#)
- [dspcon um pouco no alarme](#)

```

b3          TRM      SuperUser      BPX 8600  9.1.18      Sep. 22 2000 17:08 GMT

```

FrontCard		BackCard		Status	FrontCard		BackCard		Status		
Type	Rev	Type	Rev		Type	Rev	Type	Rev			
1	Empty				9	BXM-155	CDB	MM-4	BA	Standby-T	
2	BNI-T3	CJM	T3-3	BE	Active	10	BXM-155	EJB	MM-4	BA	Standby
3	BNI155E	DJR	Empty		Standby	11	BNI155E	DJR	MMF-2	AC	Standby
4	Empty				12	Empty					
5	BXM-T3	CDE	TE3-12BA		Standby	13	BXM-T3	BDY	TE3-12BA		Standby
6	ASI-T3	CDF	T3-2	BE	Standby	14	Empty				
7	BCC-3	CLM	LM-2	AC	Active	15	ASM	ACC	LMASM	AC	Active
8	BCC-3	CLM	LM-2	AC	Standby						

```

Last Command: dspcds b3          TRM      SuperUser      BPX 8600  9.1.18      Sep. 22 2000 17:08
GMT

```

BPX 8600 Interface Shelf Information

Trunk	Name	Type	Part Id	Ctrl Id	Alarm
-------	------	------	---------	---------	-------

2.1 a1 AXIS - - MIN

Last Command: **dspnode** b3 TRM SuperUser BPX 8600 9.1.18 Sep. 22 2000
17:09 GMT

TRK Type Current Line Alarm Status Other End
2.1 T3 Clear - OK a1(Axis)

Last Command: **dsprtrks** b3 TRM SuperUser BPX 8600 9.1.18 Sep. 22 2000
17:09 GMT

TRK 2.1 Config T3 [96000 cps] BNI-T3 slot: 2
Transmit Rate: 96000 VPC Conns disabled: --
Subrate data rate: -- Line framing: PLCP
Line DS-0 map: -- coding: --
Statistical Reserve: 1000 cps recv impedance: --
Idle code: 7F hex cable type:
Max Channels/Port: -- length: 0-225 ft.
Connection Channels: 2027 Pass sync: Yes
Traffic: V,TS,NTS,FR,FST,CBR,VBR,ABR Loop clock: No
SVC Vpi Min: -- HCS Masking: Yes
SVC Channels: -- Payload Scramble: No
SVC Bandwidth: -- cps Frame Scramble: --
Restrict CC traffic: No Virtual Trunk Type: --
Link type: Terrestrial Virtual Trunk VPI: --
Routing Cost: 10 Deroute delay time: 0 seconds

Last Command: **dsprtrkcnf 2.1** b3 TRM SuperUser BPX 8600 9.1.18 Sep. 22
2000 17:09 GMT

Local Channel	Remote NodeName	Remote Channel	State	Type	Route Avoid COS O
2.1.9.100	b3	2.1.10.200	Ok	atfr	
2.1.10.200	b3	2.1.9.100	Ok	atfr	

Last Command: **dsprcons** b3 TRM SuperUser BPX 8600 9.1.18 Sep. 22 2000
17:09 GMT

Conn: 2.1.9.100 b3 2.1.10.200 atfr Status:OK
PCR(0+1) % Util CDVT(0+1) FBTC SCR MBS PLC
2000/2000 100/100 25000/25000 y 1000/1000 1000/1000 3

Path: Route information not applicable for local connections

b3 BNI-T3 : OK b3 BNI-T3 : OK
Line 2.1 : OK Line 2.1 : OK
OAM Cell RX: Clear NNI : OK
NNI : OK

Conn: 2.1.9.100 b3 2.1.10.200 atfr Status:OK
PCR(0+1) % Util CDVT(0+1) SCR MBS
2000/2000 100/100 25000/25000 1000/1000 1000/1000

Policing VC Qdepth EFCI IBS
3 1280/1280 35/35 1/1

Last Command: **dsprcon 2.1.9.100** b3 TRM SuperUser BPX 8600 9.1.18 Sep. 22

2000 17:13 GMT

Local Channel	Remote NodeName	Remote Channel	State	Type	Route Avoid COS O
2.1.9.100	b3	2.1.10.200	Ok	atfr	
2.1.10.200	b3	2.1.9.100	Ok	atfr	

This Command: **dspchstats 2.1.10.200 Channel stats is not supported Enter channel: b3**

TRM SuperUser BPX 8600 9.1.18 Sep. 22 2000 17:10 GMT

Conn:	2.1.9.100	b3	2.1.10.200	atfr	Status:OK
PCR(0+1)	% Util	CDVT(0+1)	SCR	MBS	
2000/2000	100/100	25000/25000	1000/1000	1000/1000	

Policing	VC Qdepth	EFCI	IBS
3	1280/1280	35/35	1/1

This Command: **tstconseq 2.1.9.100 Not allowed on feeder trunk endpoints Channel: !--** When no corresponding connection exists on the FRSM or AUSM:

b3 TRM SuperUser BPX 8600 9.1.18 Sep. 22 2000 21:46 GMT

Alarm summary (Configured alarm slots: None)

Connections Failed: None
 TRK Alarms: None
 Line Alarms: None
 Cards Failed: None
 Slots Alarmed: None

Connection A-bit/AIS Alarms: 2 Missing Cards: None

Remote Node Alarms: None Interface Shelf Alarms: 1 Minor ASM Alarms: None Last Command: **dspalms**

b3 TRM SuperUser BPX 8600 9.1.18 Sep. 22 2000 21:46 GMT

Local Channel	Remote NodeName	Remote Channel	State	Local A-bit	Remote A-bit
2.1.9.100	b3	2.1.10.200	Ok	Failed	Failed
2.1.10.200	b3	2.1.9.100	Ok	Failed	Failed

Last Command: **dspcons -abit b3** TRM SuperUser BPX 8600 9.1.18 Sep. 22 2000 21:47 GMT

Conn:	2.1.9.100	b3	2.1.10.200	atfr	Status:OK
PCR(0+1)	% Util	CDVT(0+1)	FBTC	SCR	MBS PLC
2000/2000	100/100	25000/25000	y	1000/1000	1000/1000 3

Path: Route information not applicable for local connections

b3 BNI-T3 : OK b3 BNI-T3 : OK
 Line 2.1 : OK Line 2.1 : OK
 OAM Cell RX: Clear NNI : **Rmt Segment Failure** NNI : **Rmt**

Segment Failure Last Command: **dspcon 2.1.9.100 !---** After the frame relay side has been configured on the MGX 8220 FRSM: b3 TRM SuperUser BPX 8600 9.1.18 Sep. 22 2000 21:55 GMT Conn: 2.1.9.100 b3 2.1.10.200 atfr Status:OK PCR(0+1) % Util CDVT(0+1) FBTC SCR MBS PLC 2000/2000 100/100 25000/25000 y 1000/1000 1000/1000 3 Path: Route information not applicable for local connections b3 BNI-T3 : OK b3 BNI-T3 : OK Line 2.1 : OK Line 2.1 : OK OAM Cell RX: Clear NNI : **Rmt Segment Failure** NNI : **OK** Last Command: **dspcon 2.1.9.100 !---** When both frame relay and ATM sides have been configured on the MGX 8220 FRSM !--- and AUSM: b3 TRM SuperUser BPX 8600 9.1.18 Sep. 22 2000 21:58 GMT Conn: 2.1.9.100 b3 2.1.10.200 atfr Status:OK PCR(0+1) % Util CDVT(0+1)

FBTC SCR MBS PLC 2000/2000 100/100 25000/25000 y 1000/1000 1000/1000 3 Path: Route information not applicable for local connections b3 BNI-T3 : OK b3 BNI-T3 : OK Line 2.1 : OK Line 2.1 : OK OAM Cell RX: Clear NNI : OK NNI : OK Last Command: **dspon 2.1.9.100**

[Informações Relacionadas](#)

- [Configuração de IMA e guia de Troubleshooting AUSM/B](#)
- [Configurações de amostra da entrelaçamento de serviço do ATM para Frame Relay](#)
- [Troubleshooting de Links ATM no IMA 7x00 Port Adapter](#)
- [Soluções de Switching de WAN Cisco – Documentação Cisco](#)
- [Manual para novos nomes e cores para produtos de switching de WAN](#)
- [Centro de software - Software de switching WAN \(clientes registrados somente\)](#)
- [Suporte Técnico e Documentação - Cisco Systems](#)