Linux FAQ für PrimuX Karten

Diese FAQ behandelt häufige Fragen, die im Zusammenhang mit den Anwendungen Asterisk, Trixbox und Hylafax, sowie den Tools chan_capi, capi4linux und mISDN immer wieder auftreten. Zudem wird die Problematik eines falsch gelinkten CAPIs erläutert.

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Hylafax

Welche Linux Pakete müssen installiert sein?

Folgende Pakete sollten installiert sein:

- Kernel Sourcen
- make Befehl
- glibc (inkl. devel)
- gcc
- zlib (inkl. devel)
- gcc-c++
- libstdc++ (inkl. devel)
- libtiff

Dies ist nur eine Sammlung gängiger Empfehlungen. Nicht jedes Paket ist bei jeder Linux Distribution verfügbar bzw. notwendig. Sollten bei der Installation von Hylafax und/oder capi4hylafax Probleme auftreten, so könnte es aber daran liegen, dass eines der oben genannten Pakete nicht installiert ist.

Welche Hylafax Version soll ich verwenden?

Aktuell wurde die Version 4.3.4 unter SuSe 10.2 mit Kernel 2.6.18.2 getestet. Sie finden aktuelle Hylafax Versionen unter <u>www.hylafax.org</u>.

Wozu benötige ich capi4hylafax?

Hylafax funktioniert grundsätzlich nur mit analogen Modems. Deswegen verwendet man zusätzlich das Tool capi4hylafax, welches die Nutzung sowohl von passiven als auch von aktiven ISDN-Controllern, die über einen faxfähigen CAPI-Treiber gemäß CAPI-Spezifikationen verfügen, ermöglicht.

Welche capi4hylafax Version soll ich verwenden?

Im Internet gibt es verschiedene Versionen. Für die Tests wurde die Version 01.03.00 (Build 05.08.12) verwendet. Diese finden Sie unter <u>www.avm.de/ftp/tools/capi4hylafax.linux/</u>. <u>ACHTUNG</u>: damit diese Version funktioniert, müssen Sie einen zusätzlichen Patch installieren (siehe Abschnitt *Wie wird capi4hylafax installiert*).

In welcher Reihenfolge soll installiert werden?

Installieren Sie zuerst den PrimuX-Treiber. Danach installieren Sie Hylafax und anschließend capi4hylafax (inkl. Patch).

Wie wird Hylafax installiert?

Entpacken Sie das komprimierte Hylafax Archiv (Befehl: tar –xzvf hylafax-x.x.x.tar.gz). Wechseln Sie anschließend in das entpackte Verzeichnis (cd hylafax-x.x.x) und geben Sie dort den folgenden Befehl ein:

configure

Hier können Sie z.B. das Papierformat (Option 13) auf A4 setzen. Anschließend wird die Installation mit den folgenden Befehlen fortgesetzt:

make make install faxsetup

Sollten Sie sich bei einer der Einstellungen im Faxsetup nicht sicher sein, übernehmen Sie die Default-Einstellungen (Änderungen der Konfiguration sind auch nach der Installation möglich). Die letzte Frage ("Do you want to run faxaddmodem to configure a modem?") <u>muss</u> jedoch mit einem "no" beantwortet werden.



Wie wird capi4hylafax installiert?

Entpacken Sie das komprimierte capi4hylafax Archiv (Befehl: tar –xzvf capi4hylafax-xx.xx.tar.gz). Die Version 01.03.00 (Build 05.08.12 hat leider einen kleinen Bug). Zur Behebung dieses Bugs finden Sie auf unserer Homepage <u>www.primuxisdn.de</u> im Bereich Download einen passenden Patch.

Nach erfolgreichem Download der Patchdatei, muss diese entpackt werden. Dann kopieren Sie die entpackte Datei capi4hylafax.diff in das capi4hylafax-Verzeichnis. Wechseln Sie anschließend in das entpackte Verzeichnis (cd capi4hylafax-xx.xx.xx) und geben Sie dort folgenden Befehl ein:

patch -p1 <capi4hylafax.diff

Nach erfolgreichem Patchvorgang können Sie capi4hylafax mit den folgenden Befehlen installieren:

configure make install

Es öffnet sich ein kleines Programm, in welchem man die nötigen Parameter anpassen kann.

Outgoing MSN: geben Sie hier die MSN ein, die zur Versendung eines Faxes verwendet werden soll.

Incoming MSN: Hier geben Sie die MSN ein, für die Faxe entgegen genommen werden sollen. Sollen mehrere MSN angegeben werden, werden diese durch Kommata getrennt.

DDI Parameter: Verwendet man einen ISDN-Anlagenanschluss mit Durchwahlen, müssen diese Parameter gesetzt werden.

DDIOffset: geben Sie hier die Stammnummer ein DILength: geben Sie hier die Länge der Durchwahlziffern ein IncomingDDI: hier kann eine Liste von Durchwahlziffern eingegeben werden, auf die reagiert werden soll

Faxnumber: geben Sie hier die Faxnummer ein, die auf dem Faxheader mit angezeigt werden soll.

FaxIdentifier: Der hier eingegebene Eintrag wird ebenfalls im Faxheader mit angezeigt (z.B. der eigene Firmenname)

NumberPrefix: Wird ein Amtspräfix benötigt (z.B. wenn die PrimuX-Karte am internen Bus einer Telefonanlage angeschlossen ist), muss dieses hier eingetragen werden.

Nach Einstellung der Parameter werden die Daten gespeichert und das Programm beendet.

Faxversand und -empfang mit c2faxsend bzw. c2faxrecv

Nach erfolgreicher Installation und Konfiguration des PrimuX-Treibers, von Hylafax sowie von capi4hylafax, können Sie Faxe versenden und empfangen. Mit c2faxsend können Dateien im TIFF-, SFF oder G3-Format versendet werden.

Faxversand

Mit dem folgenden Befehl können Sie ein Fax an die Faxnummer "01234123456" mit dem Inhalt der Datei bild.tif aus dem aktuellen Verzeichnis senden.

c2faxsend -- f TIFF -- d 01234123456 -- v bild.tif

Faxempfang

Für den Faxempfang verwendet man c2faxrecv. Mit dem Befehl

c2faxrecv –f TIFF –v

wird das Programm gestartet. Es lauscht auf den konfigurierten MSN auf eingehende Faxe. Erfolgreich empfangene Faxe werden im Verzeichnis /var/spool/hylafax/recvq gespeichert.



Faxversand mit sendfax

Da es mit dem c2faxsend-Befehl nur möglich ist, Dateien im TIFF-, SFF oder G3-Format zu verwenden, verwendet man normalerweise sendfax zum Faxen. Hiermit können auch andere Formate wie Postscript oder auch PDF versendet werden. Mit dem folgenden Befehl können Sie ein Fax an die Faxnummer "01234123456" versenden:

sendfax -n -d 01234123456 test.pdf

Beim Faxen mit sendfax erhalte ich die Meldung "Can not reach server at host "localhost", port 4559.". Was kann ich tun?

Wahrscheinlich erscheint dieselbe Meldung auch wenn Sie "faxstat" eingeben. Sie bedeutet, dass der Dienst hfaxd nicht gestartet wurde. Man kann diesen Dienst jetzt manuell starten, indem man in das Verzeichnis /etc/init.d wechselt und den Befehl ./hylafax start eingibt. Grundsätzlich ist es aber empfehlenswert, dass Hylafax beim Booten automatisch gestartet werden soll. Dies kann man z.B. bei SuSe über Yast einrichten:

Yast starten System auswählen Runlevel-Editor starten "Expertenmodus" auswählen Dienst "hylafax" auswählen Der Dienst soll in den Runleveln 3 & 5 gestartet werden "Anwenden/Zurücksetzen" -> Dienst aktivieren Runlevel-Editor beenden, die Änderungen werden dabei gespeichert

Ab sofort wird der Dienst bei jedem Neustart des Systems automatisch gestartet.

Wie richte ich mehrere Controller ein?

Mit dem vorgefertigten Installationsscript von capi4hylafax lässt sich nur der erste Controller konfigurieren. Bei einer PrimuX S0 stellt dies kein Problem dar, weil es hier nur einen Controller gibt. Bei z.B. den PrimuX Multi-S0 Adaptern gibt es jedoch mehrere Controller (z.B. PrimuX 4S0 -> 4 Controller), die man manuell konfigurieren muss, damit sie berücksichtigt werden. Hierzu muss man direkt in die Konfigurationsdatei

/var/spool/hylafax/etc/config.faxCAPI bzw. /etc/config.faxCAPI

wechseln und diese bearbeiten. Die Standardkonfigurationsdatei würde folgendermaßen aussehen (Kommentare wurden nicht berücksichtigt):

SpoolDir: FaxRcvdCmd: PollRcvdCmd: FaxReceiveUser: FaxReceiveGroup: LogFile: LogTraceLevel: LogFileMode:	/var/spool/hylafax /var/spool/hylafax/bin/faxrcvd /var/spool/hylafax/bin/pollrcvd fax dialout /tmp/capifax.log 4 0600
{ HylafaxDeviceName: RecvFileMode: FAXnumber: LocalIdentifier: MaxConcurrentRecvs:	faxCAPI 0600 +49.2225.839630 "Testfax 1" 2
# outgoing params	
Outgoing Controller: OutgoingMSN: SuppressMSN: NumberPrefix:	1 839630 0
USEISDINFAXSERVICE:	U



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Im Folgenden finden Sie ein Beispiel für eine Konfiguration einer PrimuX 2S0:

SpoolDir:	/var/spool/hylafax
FaxRcvdCmd:	/var/spool/hylafax/bin/faxrcvd
PollRcvdCmd:	/var/spool/hylafax/bin/pollrcvd
FaxReceiveUser:	fax
FaxReceiveGroup:	dialout
LogFile:	/tmp/capifax.log
LogTraceLevel:	4
LogFileMode:	0600

{

# Controller 1, B-Channel 1		
HylafaxDeviceName: faxCAPI11		
RecvFileMode:	0600	
FAXnumber:	+49.2225.707-11	
LocalIdentifier:	"Testfax"	
MaxConcurrentRecvs:	1	

outgoing params

Outgoing Controller: OutgoingMSN: SuppressMSN:	1 0
NumberPrefix:	
UseISDNFaxService:	0
RingingDuration:	0
# incoming params	
{	
Controller:	1
AcceptSpeech:	1
UseDDI:	1
DDIOffset:	11
DDILength:	2
IncomingDDis:	
IncomingMSNs:	
AcceptGlobalCall:	1
}	
}	
{	
# Controller 1, B-Chani	nel 2
HylafaxDeviceName:	faxCAPI12
RecvFileMode:	0600
FAXnumber:	+49.2225.707-12
LocalIdentifier:	"Testfax"



MaxConcurrentRecvs: 1 # outgoing params Outgoing Controller: 1 OutgoingMSN: SuppressMSN: 0 NumberPrefix: UseISDNFaxService: 0 RingingDuration: 0 # incoming params Controller: 1 AcceptSpeech: 1 UseDDI: 1 DDIOffset: 12 DDILength: 2 IncomingDDis: IncomingMSNs: AcceptGlobalCall: 1 } } # Controller 2, B-Channel 1 HylafaxDeviceName: faxCAPI21 RecvFileMode: 0600 FAXnumber: +49.2225.707-13 "Testfax" LocalIdentifier: MaxConcurrentRecvs: 1 # outgoing params Outgoing Controller: 2 OutgoingMSN: SuppressMSN: 0 NumberPrefix: UseISDNFaxService: 0 RingingDuration: 0 # incoming params { Controller: 2 AcceptSpeech: 1 UseDDI: 1 DDIOffset: 13 DDILength: 2 IncomingDDis: IncomingMSNs: AcceptGlobalCall: 1 } } # Controller 2, B-Channel 2 HylafaxDeviceName: faxCAPI22 RecvFileMode: 0600 +49.2225.707-14 FAXnumber: "Testfax" Localldentifier: MaxConcurrentRecvs: 1

outgoing params



7

Outgoing Controller:	2
OutgoingMSN:	
SuppressMSN:	0
NumberPrefix:	
UseISDNFaxService:	0
RingingDuration:	0
# incoming parame	
{	
Controller:	2
AcceptSpeech:	1
UseDDI:	1
DDIOffset:	14
DDILength:	2
IncomingDDis:	
IncomingMSNs:	
AcceptGlobalCall:	1
1	•
ſ	
}	

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Asterisk

Welche Linux Pakete müssen installiert sein?

Nach dem Motto 'lieber eines zu viel als zuwenig' wurde eine Liste der gängigen Paketempfehlungen zusammengestellt. Demnach sollten folgende Pakete installiert sein:

- Linux Kernel Sourcen
- Openssl (inkl. devel)
- readline (inkl. devel)
- make Befehl
- bison Library
- termcap
- newt (inkl. devel)
- ncurses (inkl. devel)
- glibc (inkl. devel)
- gcc
- zlib (inkl. devel)

Dies ist wie gesagt nur eine Sammlung gängiger Empfehlungen. Nicht jedes Paket ist bei jeder Linux Distribution verfügbar bzw. notwendig. Sollten bei der Installation von Asterisk und/oder chan_capi Probleme auftreten, so könnte es aber daran liegen, dass eines der oben genannten Pakete nicht installiert ist.

Welche Asterisk Version soll ich verwenden?

Aktuell wurde die Version 1.4.1 unter SuSe 10.2 mit Kernel 2.6.18.2 getestet (Stand 07.2007). Sie finden aktuelle Asterisk Versionen unter <u>www.asterisk.org</u>. Zwingend notwendig für die Installation ist im Prinzip nur das Asterisk Archiv. Die Archive *Addons* und *Sounds* enthalten zusätzliche Asterisk spezifische Dateien. Die Installation dieser Archive ist optional.

Die Archive Zaptel und Libpri werden für den Betrieb mit PrimuX <u>nicht benötigt</u> und sollten daher <u>nicht installiert</u> werden!

In welcher Reihenfolge soll installiert werden?

Installieren Sie zuerst Asterisk. Danach installieren Sie den PrimuX Treiber und anschließend chan_capi-cm (siehe Abschnitt chan_capi).

Wie wird Asterisk installiert?

Entpacken Sie das komprimierte Asterisk Archiv und öffnen Sie dann die Datei readme. Dort finden Sie eine Anleitung zur Installation von Asterisk. Die Standard Neuinstallation besteht aus der Befehlsfolge:

./configure make install make samples

Sollten bei der Ausführung von *configure* oder *make install* Probleme auftreten (z.B. aufgrund eines nicht installierten Pakets), so sollten Sie nach erfolgter Problembehebung die Installation von Asterisk zuerst mit *make clean* starten, nicht direkt mit *configure*. Damit werden Reste der zuvor getätigten Installation gelöscht.

Wie kann ich meine PrimuX Karte in Asterisk einbinden?

Um Asterisk an ISDN anzubinden, benötigt man einen entsprechenden "Channel Treiber", der auf dem vorhandenen PrimuX CAPI aufsetzt. Empfehlenswert und daher für den Testaufbau verwendet wurde chan_capi-cm (<u>http://www.chan-capi.org</u>). Weitere Informationen finden Sie im Kapitel über chan_capi.

Wie muss die Datei extensions.conf konfiguriert werden um ISDN nutzen zu können?

Nachdem Asterisk, PrimuX CAPI und chan_capi (siehe Abschnitt chan_capi) installiert sind, können Sie mit Asterisk Rufe über die PrimuX Karte empfangen bzw. ausgehende Rufe tätigen. Dazu müssen Sie die Datei /etc/asterisk/extensions.conf anpassen. Folgende Einträge sind vorzunehmen:

Der Dialstring hat folgendes Format:



Dial(CAPI/g<Gruppe>/[<Absenderufnummer>:]<Zielrufnummer>[/<Parameter>]) oder Dial(CAPI/contr<Controller>/[< Absenderufnummer >:]< Zielrufnummer >[/< Parameter >]) Dial(CAPI/<Interface Name>/[< Absenderufnummer >:]< Zielrufnummer >[/< Parameter >])

Beispiel:

Angenommen Sie verwenden eine PrimuX 2S0 NT Karte. Controller 1 ist als TE konfiguriert und mit dem ISDN direkt verbunden. Die MSN für diesen Anschluss lautet 4711. Controller 2 ist als NT konfiguriert und mit einem ISDN Telefon verbunden. Das Telefon hat die MSN 4712. Es gibt einen externen Teilnehmer mit der Rufnummer 040123456. Zusätzlich wird der Parameter b für "Early B3 Connect" verwendet.

Der Dialstring für einen Ruf zum Telefon mit der MSN 4712 lautet dann:

Dial,CAPI/contr2/4712/b # Auf Controller 2 wird ein Ruf an 4712 abgesetzt

Der Dialstring für einen Ruf zum externen Teilnehmer 040123456 lautet:

Dial,CAPI/contr1/040123456/b # Auf Controller 1 wird ein Ruf an 040123456 abgesetzt

Diese Strings müssen nun entsprechend in die extensions.conf eingetragen werden. Eine einfache extensions.conf könnte somit wie folgt aussehen:

[general] static=yes writeprotect=no

[default] exten => 040123456, 1, Dial, CAPI/contr1/040123456/b

[capi-in] exten => 4711,1,Wait,1 ; Wait a second, just for fun exten => 4711,2,Answer ; Answer the line exten => 4711,3,DigitTimeout,5 ; Set Digit Timeout to 5 seconds exten => 4711,4,ResponseTimeout,10 ; Set Response Timeout to 10 seconds exten => 4711,5,BackGround(demo-congrats) ; Play a congratulatory message exten => 4711,6,BackGround(demo-instruct) ; Play some instructions

exten => 4712,1,Dial,CAPI/contr2/4712/b

Im Abschnitt [default] werden die Nummern definiert, die von den internen Teilnehmern angerufen werden können. In diesem Fall ist die Durchwahl 040123456 definiert, welche einen externen Ruf an eben jene Nummer über Controller 1 (also über die externe ISDN Leitung) absetzt.

Im Abschnitt [capi-in] wird geregelt was passiert, wenn ein externer Ruf eingeht. Hier bekommt der Anrufer eine Ansage abgespielt (4711,1 bis 4711,6) und hat die Möglichkeit über die definierte Durchwahl 4712 den internen Anschluss 4712 an Controller 2 (NT Port) anzurufen. Der Name capi-in für diesen Abschnitt ergibt sich aus der Definition *context* in der *capi.conf* (siehe Abschnitt chan_capi).



chan_capi

Was ist chan_capi und woher bekomme ich es?

chan_capi ist ein ISDN CAPI Channel Treiber für Asterisk. Sie finden de aktuelle Version (Stand Ø.2007 Version 1.0.1) unter dem Link <u>http://www.chan-capi.org</u>.

Wie wird chan_capi installiert?

Installieren Sie chan_capi so wie in der Datei INSTALL (finden Sie im entpackten chan_capi Ordner) beschrieben, mit den Befehlen

make make install make install config

Nach erfolgreicher Installation muss die Datei /etc/asterisk/modules.conf geändert werden. Die Zeile load => chan_capi.so muss hinzugefügt werden.

Zusätzlich muss im Abschnitt [global] die Zeile chan_capi.so=yes hinzugefügt werden.

Wie ist chan_capi zu konfigurieren?

Um chan_capi zu konfigurieren öffnen Sie die Datei /etc/asterisk/capi.conf. Folgende Änderungen/Einstellungen sind vorzunehmen:

Jeder Controller bekommt einen eigenen Definitionsblock mit einem eindeutigen, selbst zu wählenden Namen (in diesem Fall [ISDN1]). Der Definitionsblock hat folgenden Inhalt:

[ISDN1]	;this example interface gets name 'ISDN1' and may be any
	;name not starting with 'g' or 'contr'.
ntmode=no	;if isdn card operates in nt mode, set this to yes
isdnmode=msn	;'MSN' (point-to-multipoint) or 'DID' (direct inward dial)
	;when using NT-mode, 'DID' should be set in any case
incomingmsn=*	;allow incoming calls to this list of MSNs/DIDs, * = any
;defaultcid=123	;set a default caller id to that interface for dial-out,
	this caller id will be used when dial option 'd' is set.
;controller=0	;ISDN4BSD default
;controller=7	;ISDN4BSD USB default
controller=1	;capi controller number to use
group=1	;dialout group
;prefix=0	set a prefix to calling number on incoming calls
softdtmf=on	;enable/disable software dtmf detection, recommended for AVM cards
relaxdtmf=on	;in addition to softdtmf, you can use relaxed dtmf detection
accountcode=	;Asterisk accountcode to use in CDRs
context=capi-in	;context for incoming calls
;holdtype=hold	;when Asterisk puts the call on hold, ISDN HOLD will be used. If
	;set to 'local' (default value), no hold is done and Asterisk may
	;play MOH.
;immediate=yes	;DID: immediate start of pbx with extension 's' if no digits were
	; received on incoming call (no destination number yet)
	;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE
	; info like REDIRECTINGNUMBER may be lost, but this is necessary for
	; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.
;echosquelch=1	;_VERY_PRIMITIVE_ echo suppression
echocancel=yes	;EICON DIVA SERVER (CAPI) echo cancelation
	;(possible values: 'no', 'yes', 'force', 'g164', 'g165')
echocancelold=yes	use facility selector 6 instead of correct 8 (necessary for older eicon drivers)
;echotail=64	;echo cancel tail setting



bridge=yes	;native bridging (CAPI line interconnect) if available
;callgroup=1	;Asterisk call group
;language=de	;set language for this device (overwrites default language)
devices=2	;number of concurrent calls on this controller
	;(2 makes sense for single BRI, 30 for PRI)

Die Bedeutung der einzelnen Einstellungen ist in der chan_capi Dokumentation erläutert. Wichtig sind folgende Punkte:

ntmode:	Verwenden Sie einen Controller im NT Modus, muss dieser Wert auf yes gesetzt werden, ansonsten auf no (auskommentieren nicht vergessen, der Eintrag ist in der Grundeinstellung mit einem Semikolon auskommentiert)
isdnmode:	Verwenden Sie den Controller im NT Mode, sollte dieser Wert auf alle Fälle auf DID gesetzt werden. Im TE Mode ergibt sich die Einstellung aus dem verwendeten Telefonanschluss (MSN bei Mehrgeräteanschluss, DID bei Anlagen- oder Primärmultiplexanschluss)
controller:	Geben Sie hier den Controller an, für den der aktuelle Definitionsblock gelten soll
softdtmf=off	Um die DTMF Erkennung der Karte zu nutzen setzen Sie diesen Wert auf off.
context:	Hier geben Sie den Namen an welchen Sie später für den Definitionsblock für eingehende Rufe in der extensions.conf benutzen.
echocancel:	Zur Aktivierung der Echo Cancellation setzen Sie diesen Wert auf yes (auskommentieren nicht vergessen, der Eintrag ist in der Grundeinstellung mit einem Semikolon auskommentiert)
echocancelold:	Diese Einstellung ist nicht mehr relevant.
bridge:	Wenn Sie LineInterconnect nutzen möchten, setzen Sie diesen Wert auf yes.

Beispielkonfiguration

Als Beispiel sei hier eine Konfiguration für eine PrimuX 2S0NT gezeigt. Controller 1 ist als TE konfiguriert und mit dem ISDN Netz (Mehrgeräteanschluss) verbunden, Controller 2 ist als NT konfiguriert und mit einem ISDN Telefon verbunden.:

[general] nationalprefix=0 internationalprefix=00 rxgain=0.8 txgain=0.8 language=de ;ulaw=yes ; interface sections	;set default language ;set this, if you live in u-law world instead of a-law
	this events interface acts name "ISDN4" and may be any
	name not starting with 'g' or 'contr'.
ntmode= no	if isdn card operates in nt mode, set this to yes
isdnmode=msn	;'MSN' (point-to-multipoint) or 'DID' (direct inward dial)
	;when using NT-mode, 'DID' should be set in any case
incomingmsn=*	;allow incoming calls to this list of MSNs/DIDs, * = any
;defaultcid=123	;set a default caller id to that interface for dial-out,
	this caller id will be used when dial option 'd' is set.
;controller=0	(ISDN4BSD default
;controller=/	;ISDIN4BSD USB default
	dialout group
prefix=0	set a prefix to calling number on incoming calls
softdtmf=off	;enable/disable software dtmf detection, recommended for AVM cards
relaxdtmf=off	in addition to softdtmf, you can use relaxed dtmf detection
accountcode=	;Asterisk accountcode to use in CDRs
context=capi-in	;context for incoming calls
;holdtype=hold	;when Asterisk puts the call on hold, IS DN HOLD will be used. If
	;set to 'local' (default value), no hold is done and Asterisk may
	;play MOH.
;immediate=yes	;UIU: Immediate start of pbx with extension 's' if no digits were
	; receive a on incoming call (no destination number yet)



 info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/lelox which does not send SETUP or SENDING-COMPLETE. ;echosancel=yes ;EICON DIVA SERVER (CAPI) och cancelation ;(possible values: no', yes', roce', g164', g165') ;echocancelde' ;echoc cancel tail setting pridge-yes ;native bridging (CAPI line interconnect) if available ;caligroup=1 ;Asterisk cali group ;language=de ;set language for this device (overwrites default language) devices=2 ;number of concurrent calls on this controller ;(Z makes sense for single BR), 30 for PRI) [ISDN2] this example interface gets name 'ISDN1' and may be any ;name not starting with 'g' or 'contr'. ntmode=yes ;if iadn card operates in nt mode, set this to yes isdmode=idd ;MSN (point-to-multipoint) or DID (direct inward dial) ;when using NT-mode, 'DID' should be set in any case incomingmsn=" allow incoming calls to this its of MSNS/DIDs,* a may ;defaultcid=123 ;set a default caller id to that interface for dial-out, this caller id will be used when dial option 'd' is set. ;controller=0 ;SDN4BSD USB default ;controller=1 ;caligoutgroup ;ontext to calling number on incoming calls soft a prefix to calling number on incoming calls soft dialout group ;prefix=0 ;set to 'local' (default value), no hold is done and Asterisk may ;play MOH. ;indevice=1/NRSNUHMER may be lost, but this is necessary for ; received on incoming call (no destination number yet) MSN: start ptox on CONNECT_IND and domt wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; rec		;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE.
 chrosqueth=1 chros		; info like REDIRECTINGNUMBER may be lost, but this is necessary for
iechosqueich=1 :_VERY_PRIMITIVE_echo supression echocancel=yes ;EICON DIVA SERVER (CAPI) echo cancelation ;[possible values: 'no', yes', 'force', 'g164', 'g165') ;echotail=64 ;echo cancel tail setting bridge=yes ;native bridging (CAPI line interconnect) if available ;callgroup=1 ;Asterisk call group ;language=de ;set language for this device (overwrites default language) devices=2 ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI) [ISDN2] ;this example interface gets name 'ISDN1' and may be any ;name not starting with 'g' or 'contr'. ntmode=yes ;if idon card operates in nt mode, set this to yes isdnmode=did ;'MSN' (point-to-multipoint) or 'DID' (direct inward dial) ;when using NT-mode, 'DID' should be set in any case incomingmsn=* ;allow incoming calls to this list of MSNs/DIDs, * = any ;defaultcid=123 ;set a default caller id to that interface for dial-out, ;this caller id will be used when dial option 'd' is set. ;controller=0 ;ISDN4BSD default ;controller=2 ;capi controller number to use group=1 ;dialout group ;prefix=0 ;set a prefix to calling number on incoming calls softdtmf=off ;in addition to softdtmf, you can use relaxed dtmf detection accountcode= ;Asterisk puts the call on hold, ISDN HOLD will be used. If ;set to 'local' (default value), no hold is done and Asterisk may ;play MOH. ;inditype=hol ;when Asterisk puts the call on hold, ISDN HOLD will be used. If ;set to 'local' (default value), no hold is done and Asterisk may ;play MOH. ;inmediate=yes ;DID: immediate start of pix with extension 's' if no digits were ; received on incoming calls out to set in corr in calling number on incoming calls soft three, PRIMITIVE_ echo suppression ; into ike REDIRECTINGNUMBER may be lost, but this is necessary for ; infoilke REDIRECTINGNUMBER may be lost, but this is necessary for ; infoilke REDIRECTINGNUMBER may be lost, but this is necessary for ; indivers/bycheco which does not send SETUP or SENDING-COMPLETE. ; infoilke REDIRECTINGNUMBER may be lost, but this is necessar		; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.
echocancel=yes :ELCON DIVA SERVER (CAPI) echo cancelation :(possible values: 'no', ves', 'force', 'fif4', 'g165') :echocancelold=yes :echotail=64 :pidge=yes :native bridging (CAPI line interconnect) if available :caligroup=1 :Asterisk call group :partieve for concurrent calls on this controller :(2 makes sense for single BRI, 30 for PRI) :ISDN2] :this example interface gets name 'ISDN1' and may be any :name not starting with 'g' or 'contr'. ntmode=yes :if isdn card operates in nt mode, set this to yes :isdnmode=idi :'MSN' (point-to-multipoint) or 'DID' (direct inward dial) :when using NT-mode, 'DID' should be set in any case incomingmsn=* :glalow incoming calls to this list of MSNs/DIDs, * = any :jefaulticia=12 :controller=0 :ISDN4BSD default :controller=7 :ISDN4BSD default :controller=7 :ISDN4BSD default :controller=7 :ida/utfn=df ::n addition to softctmf, you can use relaxed dtmf detection accountcode= :Asterisk accountcode to use in CDRs :context for incoming calls :holdtype=hold :when Asterisk puts the call on hold is done and Asterisk may ::play MOH. :immediate=yes :DID: immediate start of pbx with extension 's' if no digits were : received on incoming calls :holdtype=hold :when Asterisk puts the call on hold. ISDN HOLD will be used. If :set to 'cocal' (default value), no hold is done and Asterisk may ::play MOH. :immediate start of pbx with extension 's' if no digits were : info like REDIRECTINGNUMBER may be lost, but this is necessary for : info like REDIRECTINGNUMBER may be lost, but this is necessary for : info like REDIRECTINGNUMBER may be lost, but this is necessary for : info like REDIRECTINGNUMBER may be lost, but this is necessary for : cho	;echosquelch=1	;_VERY_PRIMITIVE_ echo suppression
ichocancelold=yes ::cehocancelold=yes :echocancelold=yes ::cehocancel tail setting bridge=yes :native bridging (CAPI line interconnect) if available :callgroup=1 :Asterisk call group :language=de :set language for this device (overwrites default language) devices=2 :number of concurrent calls on this controller :(2 makes sense for single BRI, 30 for PRI) [ISDN2] this example interface gets name 'ISDN1' and may be any :name not starting with 'g' or 'contr'. ntmode=yes :if idon card operates in in mode, set this to yes isdmmode=did :'MSN (point-to-multipoint) or 'DID (direct inward dial) :when using NT-mode, :DID 'should be set in any case incomingmsn=* :allow incoming calls to this list of MSNs/DIDs, * = any :controller=0 :ISDN4BSD default controller=7 :ISDN4BSD USB default controller=7 :capi controller number to use group=1 :cadidiout group :prefix=0 :set a prefix to calling number on incoming calls :sonttroller=4 :softdmf=off :prelaydmf=off :naddition to softdmf, you can use relaxed dmf detection :controller=1 :controller acade addit done and Aster	echocancel=yes	;EICON DIVA SERVER (CAPI) echo cancelation
:echocancelold=yes ;use facility selector 6 instead of correct 8 (necessary for older eicon drivers) :echocancel tail setting pridge=yes ;rative bridging (CAP1 line interconnect) if available ;rative bridging (CAP1 line interconnect) if available ;ranguage=de ;set language for this device (overwrites default language) devices=2 ;rumber of concurrent calls on this controller ;ianguage=de ;set anguage for this device (overwrites default language) incomingment ;is example interface gets name 'ISDN1' and may be any inname not starting with 'g' or 'contr'. number of porter inward dial) innomigment ;if isdn card operates in nt mode, set this to yes isdnmode=vdd ;MSN (point-o-multipoint) or 'DD' (direct inward dial) ;when using NT-mode, 'DID' should be set in any case ;incomingment ;allow incoming calls to this list of MSNs/DIDs, * = any ;default/caller id unit interface for ala-out, ;centroller=0 ;ISDN4BSD default ;controller number to use ;controller=1 ;capi controller number to use ;context for incoming calls ;ontext for incoming calls ;set a prefix to calling number on incoming calls ;ontext for incoming calls ;bottext in addition to softdmf, you can use relaxed		;(possible values: 'no', 'yes', 'force', 'g164', 'g165')
 iechotalie64 iecho cancel tail setting bridge=yes ianguage=de iset language for this device (overwrites default language) devices=2 inumber of concurrent calls on this controller i(2 makes sense for single BRI, 30 for PRI) [ISDN2] this example interface gets name 'ISDN1' and may be any iname not starting with g' or 'contr. Intmode=yes if isch card operates in n toode, set this to yes isdnmode=did 'MSN' (point-to-multipoint) or 'DD' (direct inward dial) iwhen using NT-mode, 'DID' should be set in any case incomingmsn=" iallow incoming calls to this list of MSNs/DDs, * = any :defaultcid=123 set a default caller id to that interface for dial-out, this caller id will be used when dial option 'd' is set. :controller=7 :ISDN4BSD default :controller=7 :Gal controller number to use group=1 :defaultion to softdmf, you can use relaxed dtmf detection accountcode= Asterisk accountcode to use in CDRs context for incoming calls soft tori iconing calls :context for incoming calls :pinditype=hold :when Asterisk puts the call on hold, ISDN HOLD will be used. If :set to 'local' (default value), no hold is done and Asterisk may :piaWOH. :immediate=yes :DID: immediate start of pbx with extension 's' if no digits were : received on incoming call (no destination number yet) :MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. : info like REDIRECTINGUMBER may be lost, but this is necessary for : drivers/pbx/telco wh	;echocancelold=yes	;use facility selector 6 instead of correct 8 (necessary for older eicon drivers)
bridge=yes inative bridging (CAPI line interconnect) if available (callgroup-1 :Asterisk call group ;language=de ;set language for this device (overwrites default language) devices=2 :number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI) [ISDN2] :this example interface gets name 'ISDN1' and may be any ;name not starting with g' or 'contr. ntmode=yes :if isch card operates in nt mode, set this to yes ischmode=did ;'MSN' (point-to-multipoint) or 'DID' (direct inward dial) ;when using NT-mode, DID' should be set in any case incomingmsn=* ;allow incoming calls to this list of MSNs/DIDs, * = any ;defaultcid=123 :set a default caller id to that interface for dial-out, ;this caller id will be used when dial option 'd' is set. ;controller=0 :ISDN4BSD default controller=7 :capic controller number to use group=1 :dialout group ;rentx=0 :set a prefix to calling number on incoming calls softdtm=cff :enable/disable software dtmf detection, recommended for AVM cards relaxdtmf=off :in addition to softdtmf, you can use relaxed dtmf detection accountcode= ;Asterisk puts the call on hold, ISDN HOLD will be used. If ;set to 'local' (default value), no hold is done and Asterisk may ;play MOH. ;immediate=yes :play mode: start of pbx with extension 's' if no digits were ; received on incoming call (on destination number yet) ;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ; echocancel=yes : EICON DIVA SERVER (CAPI) echo cancelation ;(possible values: 'no', 'yes', 'force', 'g164', 'g165') ;echocanceld=yes :use facility selector 6 instead of	;echotail=64	;echo cancel tail setting
<pre>;caligroup=1 ;Asterisk cali group ;language=de ;set language for this device (overwrites default language) devices=2 ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI) [ISDN2] ;this example interface gets name 'ISDN1' and may be any ;name not starting with 'g' or 'cont'. ntmode=yes ;if isdn card operates in nt mode, set this to yes isdnmode=did 'MSN' (point-to-multipoint) or 'DID' (direct inward dial) ;when using NT-mode, 'DID' should be set in any case incomingmsn=* ;allow incoming calls to this list of MSNs/DIDs, * = any ;defaultcid=123 ;set a default caller id to that interface for dial-out, this caller id will be used when dial option 'd' is set. ;controller=0 ;ISDN4BSD default controller=2 ;capi controller number to use group=1 ;dialout group ;prefix=0 ;set a prefix to calling number on incoming calls context=capi-in ;context for incoming calls context=capi-in ;context for incoming calls context=capi-in ;context for incoming calls ;holdtype=hold ;when Asterisk puts the call on hold, ISDN HOLD will be used. If ;set to 'local' (default value), no hold is done and Asterisk may ;play MOH. ;immediate=yes ;DID: immediate start of ptx with extension 's' if no digits were ; received on incoming call (no destination number yet) ;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGUMBER may be lost, but this is necessary for ; drivers/pbx/te(co which does not send SETUP or SENDING-COMPLETE. ; info like REDIRECTINGUMMER may be lost, but this is necessary for ; drivers/pbx/te(co which does not send SETUP or SENDING-COMPLETE. ; echosquelch=1 ;_VERY_PRIMITIVE_echo suppression ; echocancel=yes ; inative bridging (CAPI) echo cancelation ; (possible values; 'no', 'yes', 'force', 'g164', 'g165') ; echocancel=yes ; native bridging (CAPI) lene interconnect) if available ; echo cancel tail setting bridge=yes ; native bridging (CAPI) line interconnect) if available ; ealgroup=1 ; Asterisk end of corrert as and of correct 8 (necessary fo</pre>	bridge=yes	;native bridging (CAPI line interconnect) if available
<pre>set language for this device (overwrites default language) devices=2 ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI) [ISDN2] this example interface gets name 'ISDN1' and may be any ;name not starting with 'g' or 'contr'. ntmode=yes if isdn card operates in nt mode, set this to yes isdnmode=did ;WSN '(point-to-multipoint) or 'DID' (direct inward dial) ;when using NT-mode, 'DID' should be set in any case incomingmsn=" ;allow incoming calls to this list of MSNs/DIDs, * = any jeta default caller id to that interface for dial-out, this caller id will be used when dial option 'd' is set. ;controller=0 ;ISDN4BSD default controller=7 ;ISDN4BSD USB default controller=7 ;ISDN4BSD USB default controller=7 ;ISDN4BSD USB default controller=7 ;able/disable software dtmf detection, recommended for AVM cards group=1 ;dialout group ;refix=0 ;set a prefix to calling number on incoming calls softdmf=off ;enable/disable software dtmf detection, recommended for AVM cards relaxdtmf=off ;enable/disable software dtmf detection, recommended for AVM cards relaxdtmf=off ;enable/disable software dtmf detection, recoived on incoming calls ;holdtype=hold ;when Asterisk puts the call on hold, ISDN HOLD will be used. If ;set to 'local' (default value), no hold is done and Asterisk may ;play MOH. ;immediate=yes ; received on incoming call (no destination number yet) ;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not sen</pre>	;callgroup=1	;Asterisk call group
devices=2 ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI) [ISDN2] ;this example interface gets name 'ISDN1' and may be any intmode=yes ;if isdn card operates in nt mode, set this to yes isdnmode=did ;'MSN' (point-to-multipoint) or 'DID' (direct inward dial) ;when using NT-mode, 'DID' should be set in any case incomingmsn=* ;allow incoming calls to this list of MSNs/DIDs, * = any ;defaultcid=123 ;set a default caller id to that interface for dial-out, ;this caller id will be used when dial option 'd' is set. ;controller=0 ;ISDN4BSD default ;controller=7 ;ISDN4BSD USB default ;controller=7 ;ISDN4BSD USB default ;controller=2 ;capi controller number to use group=1 ;dialout group ;prefix=0 ;set a prefix to calling number on incoming calls ;ontext for incoming calls ;ontext for incoming calls ;holdtype=hold ;when Asterisk accountcode to use in CDRs ;ontext for incoming calls ;mot diation to softdtmf, you can use relaxed dtmf detection ;ontext for incoming calls ;when Asterisk accountcode to use in CDRs ;holdtype=hold ;when Asterisk puts the call on hold, ISDN	;language=de	set language for this device (overwrites default language)
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[ISDN2]this example interface gets name 'ISDN1' and may be any name not starting with 'g' or 'contr'.ntmode=yesif isdn card operates in nt mode, set this to yesisdnmode=did'MSN' (point-to-multipoint) or 'DID' (direct inward dial) when using NT-mode, 'DID' should be set in any caseincomingmsn=*;allow incoming calls to this list of MSNs/DIDs, * = any set a default caller id to that interface for dial-out, this caller id will be used when dial option 'd' is set.;controller=0;ISDN4BSD default controller=7controller=7;ISDN4BSD USB defaultcontroller=6;est a prefix to calling number on incoming calls softdtmf=dfsoftdtmf=df;enable/disable software dtmf detection, recommended for AVM cardsrelaxdtmf=off;in addition to softdrmf, you can use relaxed dtmf detection accountcode=checkt=capi-in;context for incoming calls;holdtype=hold;when Asterisk puts the call on hold, ISDN HOLD will be used. If set to 'iccal' (default value), no hold is done and Asterisk may ;play MOH.;immediate=yes;DID: immediate start of pbx with extension 's' if no digits were ; received on incoming call (no destination number yet) (MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for drivers/pbx/leico which does not send SETUP or SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for drivers/pbx/leico which does not send SETUP or SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for drivers/pbx/leico which does not send SETUP or SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for <b< td=""><td></td><td>;(2 makes sense for single BRI, 30 for PRI)</td></b<>		;(2 makes sense for single BRI, 30 for PRI)
name not starting with 'g' or 'contr'.intmode=yes;if isdn card operates in nt mode, set this to yesisdnmode=did;'MSN' (point-to-multipoint) or 'DID' (direct inward dial)imcomingmsn=*;allow incoming calls to this list of MSNs/DIDs, * = anyidefaulticid=123;set a default caller id to that interface for dial-out,;timis caller id will be used when dial option 'd' is set.;controller=0;ISDN4BSD defaultcontroller=7;ISDN4BSD USB defaultcontroller=7;iset a prefix to calling number on incoming callssoftdtmf=df;enable/disable software dtmf detection, recommended for AVM cardsrelaxdtmf=off;in addition to softdtmf, you can use relaxed dtmf detectionaccountcode=;Asterisk accountcode to use in CDRscontext=capi-in;context for incoming calls;context for incoming calls;set to 'local' (default value), no hold is done and Asterisk may;play MOH.;jplay MOH.;immediate=yes;DD: immediate start of pbx with extension 's' if no digits were; received on incoming call (no destination number yet); info like REDIRECTINQNUMBER may be lost, but this is necessary for; drivers/pbx/leto which does not send SETUP or SENDING-COMPLETE.; info like REDIRECTINGNUMBER may be lost, but this is necessary for; drivers/pbx/leto which does not send SETUP or SENDING-COMPLETE.; info like REDIRECTINGNUMBER may be lost, but this is necessary for; chosquelch=1; VERY_PRIMITIVE_ echo suppressionechocancelelyees;ElCON DIVA SERVER (CAPI) echo cancelation; cohocancelelyees; altive	[ISDN2]	;this example interface gets name 'ISDN1' and may be any
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isdnmode=did ;'MSN' (point-to-multipoint) or 'DID' (direct inward dial) ;when using NT-mode, 'DID' should be set in any case incomingmsn=" ;allow incoming calls to this list of MSNs/DIDs, * = any ;defaultcid=123 ;set a default caller id to that interface for dial-out, ;this caller id will be used when dial option 'd' is set. ;controller=0 ;ISDN4BSD default controller=7 ;ISDN4BSD USB default controller=7 ;ISDN4BSD USB default controller=7 ;ist a prefix to calling number on incoming calls softdtmf=df ;enable/disable software dtmf detection, recommended for AVM cards relaxdtmf=off ;in addition to softdtmf, you can use relaxed dtmf detection accountcode= ;Asterisk accountcode to use in CDRs context for incoming calls ;holdtype=hold ;when Asterisk puts the call on hold, ISDN HOLD will be used. If ;set to 'local' (default value), no hold is done and Asterisk may ;play MOH. ;immediate=yes ;DID: immediate start of pbx with extension 's' if no digits were ; received on incoming call (no destination number yet) ;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco Ginstead of correct 8 (necessary for older eicon drivers) ;echocanceleJeyes ;atelity selector 6 instead of correct 8 (necessary for older eicon drivers) ;echocanceled=yes ;native bridging (CAPI line interconnect) if available ;callgroup=1 ;Asterisk call group ;language=de ;set language for this device (overwrites default language) devices=2 ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)	ntmode=yes	;if isdn card operates in nt mode, set this to yes
:when using NT-mode, 'DID' should be set in any caseincomingmsn=*:allow incoming calls to this list of MSNs/DIDs, * = any:defaultcid=123:set a default caller id to that interface for dial-out, :this caller id will be used when dial option 'd' is set.:controller=0:ISDN4BSD USB default:controller=1:capi controller number to usegroup=1:dialout group:prefix=0:set a prefix to calling number on incoming callssoftdtmf=off:enable/disable software dtmf detection, recommended for AVM cardsrelaxdtmf=off:in addition to softdtmf, you can use relaxed dtmf detectionaccountcode=:Asterisk accountcode to use in CDRscontext=capi-in:context for incoming calls:holdtype=hold:when Asterisk puts the call on hold, ISDN HOLD will be used. If:play MOH.:set to 'local' (default value), no hold is done and Asterisk may :play MOH.:jmmediate=yes:DI: immediate start of pbx with extension 's' if no digits were : received on incoming call (no destination number yet) :MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE.:echosquelch=1:_VERY_PRIMITIVE_ echo suppressionechocancel=yes:EICON DIVA SERVER (CAPI) echo cancelation :(possible values: 'no', yes', 'force', 'g165'):echocanceled=yes:antity bridging (CAPI line interconnect) if available:catligroup=1:Asterisk call group:anguage=de:set anguage for this device (overwrites default language) devices=2:anguage for this device (overwrites default language) :devices=2:set anguage for this device (overwrites default language) </td <td>isdnmode=did</td> <td>;'MSN' (point-to-multipoint) or 'DID' (direct inward dial)</td>	isdnmode=did	;'MSN' (point-to-multipoint) or 'DID' (direct inward dial)
incomingmsn=" ;allow incoming calls to this list of MSNs/DIDs, * = any ;defaultcid=123 ;set a default caller id to that interface for dial-out, ;this caller id will be used when dial option 'd' is set. ;controller=0 ;ISDN4BSD default ;controller=7 ;ISDN4BSD USB default controller=2 ;capi controller number to use group=1 ;dialout group ;prefix=0 ;set a prefix to calling number on incoming calls softdtnf=off ;enable/disable software dtmf detection, recommended for AVM cards relaxdtmf=off ;in addition to softdtmf, you can use relaxed dtmf detection accountcode= ;Asterisk accountcode to use in CDRs context=capi-in ;context for incoming calls ;holdtype=hold ;when Asterisk puts the call on hold, ISDN HOLD will be used. If ;set to 'local' (default value), no hold is done and Asterisk may ;play MOH. ;immediate=yes ;DID: immediate start of pbx with extension 's' if no digits were ; received on incoming call (no destination number yet) ;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/teloo which does not send SETUP or SENDING-COMPLETE. ; UCERY_PRIMITIVE_echo suppression echocancelelyes ;EICON DIVA SERVER (CAPI) echo cancelation ;(possible values: 'no', 'yes', 'force', 'g164', 'g165') ;echocancelold=yes ; echo cancel tail setting bridge=yes ;native bridging (CAPI line interconnect) if available ;callgroup=1 ;Asterisk call group ;language=de ;set language for this device (overwrites default language) devices=2 ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)		;when using NT-mode, 'DID' should be set in any case
;defaultcid=123 ;set a default caller id to that interface for dial-out, ;this caller id will be used when dial option 'd' is set. ;controller=0 ;ISDN4BSD default ;controller=7 ;ISDN4BSD USB default controller=2 ;capi controller number to use group=1 ;dialout group ;prefix=0 ;set a prefix to calling number on incoming calls softdtmf=off ;enable/disable software dtmf detection, recommended for AVM cards relaxdtmf=off ;in addition to softdtmf, you can use relaxed dtmf detection accountcode= ;Asterisk accountcode to use in CDRs context=capi-in ;context for incoming calls ;holdtype=hold ;when Asterisk puts the call on hold, ISDN HOLD will be used. If ;set to 'local' (default value), no hold is done and Asterisk may ;play MOH. ;immediate=yes ;DID: immediate start of pbx with extension 's' if no digits were ; received on incoming call (no destination number yet) ;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ; use facility selector 6 in stead of correct 8 (necessary for older eicon drivers) ;echocanie=64 ;use facility selector 6 in stead of correct 8 (necessary for older eicon drivers) ;echocanie=64 ;use facility selector 6 in stead of correct 8 (necessary for older eicon drivers) ;echocanie=64 ;use facility selector 6 in stead of correct 8 (necessary for older eicon drivers) ;echocanie=64 ;ect language for this device (overwrites default language) ;language=de ;set language for this device (overwrites default language) ;language=de ;set language for this device (overwrites default language) ;devices=2 ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)	incomingmsn=*	;allow incoming calls to this list of MSNs/DIDs, * = any
;this caller id will be used when dial option 'd' is set.;controller=0;ISDN4BSD default;controller=7;ISDN4BSD USB default;controller=2;capi controller number to usegroup=1;dialout group;prefix=0;set a prefix to calling number on incoming callssoftdtmf=off;enable/disable software dtmf detection, recommended for AVM cardsrelaxdtmf=off;in addition to softdtmf, you can use relaxed dtmf detectionaccountcode=;Asterisk accountcode to use in CDRscontext=capi-in;context for incoming calls;holdtype=hold;when Asterisk puts the call on hold, ISDN HOLD will be used. If;set to 'local' (default value), no hold is done and Asterisk may;play MOH.;immediate=yes;DID: immediate start of pbx with extension 's' if no digits were; info like REDIRECTINGNUMBER may be lost, but this is necessary for; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.; info like REDIRECTINGNUMBER may be lost, but this is necessary for; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.; info like REDIRECTINGNUMBER may be lost, but this is necessary for; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.; info like REDIRECTINGNUMBER may be lost, but this is necessary for; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.; info like REDIRECTINGNUMBER may be lost, but this is necessary for; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.; unto the active struct of instead of correct 8 (necessary for older eicon drivers);echocancel	;defaultcid=123	;set a default caller id to that interface for dial-out,
;controller=0;ISDN4BSD default;controller=7;ISDN4BSD USB defaultcontroller=2;capi controller number to usegroup=1;dialout group;prefix=0;set a prefix to calling number on incoming callssofttmf=off;enable/disable software dtmf detection, recommended for AVM cardsrelaxdtmf=off;in addition to softdtmf, you can use relaxed dtmf detectionaccountcode=;Asterisk accountcode to use in CDRscontext-capi-in;context for incoming calls;holdtype=hold;when Asterisk puts the call on hold, ISDN HOLD will be used. If;set to 'local' (default value), no hold is done and Asterisk may;play MOH.;immediate=yes;DID: immediate start of pbx with extension 's' if no digits were; received on incoming call (no destination number yet);MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE.; info like REDIRECTINGNUMBER may be lost, but this is necessary for; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.; icchosquelch=1;_VERY_PRIMITIVE_echo suppressionechocancel=yes;EICON DIVA SERVER (CAPI) echo cancelation;(possible values: 'no', 'yes', 'force', 'g164', 'g165');echo cancelal=64;echo cancel tail settingbridge=yes;native bridging (CAPI line interconnect) if available;callgroup=1;Asterisk call group;language=de;set language for this device (overwrites default language);eto same for single BRI, 30 for PRI)		;this caller id will be used when dial option 'd' is set.
;controller=7;ISDN4BSD USB defaultcontroller=2;capi controller number to usegroup=1;dialout group;prefix=0;set a prefix to calling number on incoming callssoftdtmf=off;enable/disable software dtmf detection, recommended for AVM cardsrelaxdtmf=off;in addition to softdtmf, you can use relaxed dtmf detectionaccountcode=;Asterisk accountcode to use in CDRscontext=capi-in;context for incoming calls;holdtype=hold;when Asterisk puts the call on hold, ISDN HOLD will be used. If;set to 'local' (default value), no hold is done and Asterisk may;play MOH.;immediate=yes;DID: immediate start of pbx with extension 's' if no digits were; received on incoming call (no destination number yet);MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE.; echosquelch=1;_VERY_PRIMITIVE_echo suppressionechocancel=yes;EICON DIVA SERVER (CAPI) echo cancelation;(possible values: 'no', 'yes', 'force', 'g164', 'g165');echo cancel tail settingbridge=yes;native bridging (CAPI line interconnect) if available;caligroup=1;Asterisk call group;language=de;set language for this device (overwrites default language)(devices=2;number of concurrent calls on this controller;(2 makes sense for single BRI, 30 for PRI)	;controller=0	;ISDN4BSD default
controller=2 group=1;capi controller number to use ;dialout group;prefix=0;set a prefix to calling number on incoming calls softdtmf=offsoftdtmf=off;enable/disable software dtmf detection, recommended for AVM cards relaxdtmf=offaccountcode=;Asterisk accountcode to use in CDRs context=capi-incontext=capi-in;context for incoming calls;holdtype=hold;when Asterisk puts the call on hold, ISDN HOLD will be used. If ;set to 'local' (default value), no hold is done and Asterisk may ;play MOH.;immediate=yes;DID: immediate start of pbx with extension 's' if no digits were ; received on incoming call (no destination number yet) ;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.;echosquelch=1;_VERY_PRIMITIVE_ echo suppression (possible values: 'no', 'yes', 'force', 'g164', 'g165');echocancelold=yes;native bridging (CAPI line interconnect) if available ;callgroup=1pridge=yes ;native bridging (CAPI line interconnect) if available ;callgroup=1;language=de ;callgroup=1;set ind group ;(Asterisk call group ;language=de;extersk call group ;language=de;set language for this device (overwrites default language) (current calls on this controller ;(2 makes sense for single BRI, 30 for PRI)	;controller=7	;ISDN4BSD USB default
group=1;dialout group;prefix=0;set a prefix to calling number on incoming callssoftdtmf=off;enable/disable software dtmf detection, recommended for AVM cardsrelaxdtmf=off;in addition to softdtmf, you can use relaxed dtmf detectionaccountcode=;Asterisk accountcode to use in CDRscontext=capi-in;context for incoming calls;holdtype=hold;when Asterisk puts the call on hold, ISDN HOLD will be used. If;set to 'local' (default value), no hold is done and Asterisk may;play MOH.;immediate=yes;DID: immediate start of pbx with extension 's' if no digits were;received on incoming call (no destination number yet);MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE.;info like REDIRECTINGNUMBER may be lost, but this is necessary for;drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.;info like REDIRECTINGNUMBER may be lost, but this is necessary for;drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.;uifo like REDIRECTINGNUMBER may be lost, but this is necessary for;drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.;info like REDIRECTINGNUMBER may be lost, but this is necessary for;drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.;info like REDIRECTINGNUMBER may be lost, but this is necessary for;drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.;info like REDIRECTINGNUMBER;use facility selector 6 instead of correct 8 (necessary for	controller=2	;capi controller number to use
;prefix=0 ;set a prefix to calling number on incoming calls softdtmf=off ;enable/disable software dtmf detection, recommended for AVM cards relaxdtmf=off ;in addition to softdtmf, you can use relaxed dtmf detection accountcode= ;Asterisk accountcode to use in CDRs context=capi-in ;context for incoming calls ;holdtype=hold ;when Asterisk puts the call on hold, ISDN HOLD will be used. If ;set to 'local' (default value), no hold is done and Asterisk may ;play MOH. ;immediate=yes ;DID: immediate start of pbx with extension 's' if no digits were ; received on incoming call (no destination number yet) ;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ; uechosquelch=1 ;_VERY_PRIMITIVE_ echo suppression echocancel=yes ;EICON DIVA SERVER (CAPI) echo cancelation ;(possible values: 'no', 'yes', 'force', 'g164', 'g165') ;echocancelold=yes ;use facility selector 6 instead of correct 8 (necessary for older eicon drivers) ;echotail=64 ;echo cancel tail setting bridge=yes ;native bridging (CAPI line interconnect) if available ;callgroup=1 ;Asterisk call group ;language=de ;set language for this device (overwrites default language) ;language=de ;set language for this device (overwrites default language) devices=2 ;umber of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)	group=1	;dialout group
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relaxdtmf=off ;in addition to softdtmf, you can use relaxed dtmf detection accountcode= ;Asterisk accountcode to use in CDRs context=capi-in ;context for incoming calls ;holdtype=hold ;when Asterisk puts the call on hold, ISDN HOLD will be used. If ;set to 'local' (default value), no hold is done and Asterisk may ;play MOH. ;immediate=yes ;DID: immediate start of pbx with extension 's' if no digits were ; received on incoming call (no destination number yet) ;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ;echosquelch=1 ;_VERY_PRIMITIVE_ echo suppression echocancel=yes ;EICON DIVA SERVER (CAPI) echo cancelation ;(possible values: 'no', 'yes', 'force', 'g164', 'g165') ;echocancelold=yes ;use facility selector 6 instead of correct 8 (necessary for older eicon drivers) ;echotail=64 ;echo cancel tail setting bridge=yes ;native bridging (CAPI line interconnect) if available ;callgroup=1 ;Asterisk call group ;language=de ;set language for this device (overwrites default language) devices=2 ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)	softdtmf=off	enable/disable software dtmf detection, recommended for AVM cards
accountcode=;Asterisk accountcode to use in CDRscontext=capi-in;context for incoming calls;holdtype=hold;when Asterisk puts the call on hold, ISDN HOLD will be used. If;set to 'local' (default value), no hold is done and Asterisk may;play MOH.;immediate=yes;DID: immediate start of pbx with extension 's' if no digits were; received on incoming call (no destination number yet);MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE.; info like REDIRECTINGNUMBER may be lost, but this is necessary for; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.;echosquelch=1;_VERY_PRIMITIVE_ echo suppressionechocancel=yes;EICON DIVA SERVER (CAPI) echo cancelation;(possible values: 'no', 'yes', 'force', 'g164', 'g165');echotail=64periodpridge=yes; native bridging (CAPI line interconnect) if available;callgroup=1;Asterisk call group;language=de;set language for this device (overwrites default language)devices=2;number of concurrent calls on this controller;(2 makes sense for single BRI, 30 for PRI)	relaxdtmf=off	;in addition to softdtmf, you can use relaxed dtmf detection
context=capi-in;context for incoming calls;holdtype=hold;when Asterisk puts the call on hold, ISDN HOLD will be used. If;set to 'local' (default value), no hold is done and Asterisk may;play MOH.;immediate=yes;DID: immediate start of pbx with extension 's' if no digits were; received on incoming call (no destination number yet);MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE.; info like REDIRECTINGNUMBER may be lost, but this is necessary for; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.; icconcel=yes; EICON DIVA SERVER (CAPI) echo cancelation;(possible values: 'no', 'yes', 'force', 'g164', 'g165');echocancelod=yes;echotail=64bridge=yes;native bridging (CAPI line interconnect) if available;callgroup=1;Asterisk call group;language=de;set language for this device (overwrites default language);devices=2;number of concurrent calls on this controller;(2 makes sense for single BRI, 30 for PRI)	accountcode=	;Asterisk accountcode to use in CDRs
 ;holdtype=hold ;when Asterisk puts the call on hold, ISDN HOLD will be used. If ;set to 'local' (default value), no hold is done and Asterisk may ;play MOH. ;immediate=yes ;DID: immediate start of pbx with extension 's' if no digits were ; received on incoming call (no destination number yet) ;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ;echosquelch=1 ;_VERY_PRIMITIVE_ echo suppression echocancel=yes ;EICON DIVA SERVER (CAPI) echo cancelation ;(possible values: 'no', 'yes', 'force', 'g164', 'g165') ;use facility selector 6 instead of correct 8 (necessary for older eicon drivers) ;echotail=64 ;echo cancel tail setting bridge=yes ;native bridging (CAPI line interconnect) if available ;callgroup=1 ;Asterisk call group ;language=de ;set language for this device (overwrites default language) quevices=2 ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI) 	context=capi-in	;context for incoming calls
;set to 'local' (default value), no hold is done and Asterisk may ;play MOH.;immediate=yes;DID: immediate start of pbx with extension 's' if no digits were ; received on incoming call (no destination number yet) ;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.;echosquelch=1;_VERY_PRIMITIVE_ echo suppression (possible values: 'no', 'yes', 'force', 'g164', 'g165');echocancelold=yes;EICON DIVA SERVER (CAPI) echo cancelation ;(possible values: 'no', 'yes', 'force', 'g164', 'g165');echotail=64;echo cancel tail setting bridge=yes ;native bridging (CAPI line interconnect) if available ;callgroup=1 ;language=de ;asterisk call group;language=de (werkers=2);set language for this device (overwrites default language) ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)	;holdtype=hold	;when Asterisk puts the call on hold, ISDN HOLD will be used. If
;immediate=yes;play MOH.;immediate=yes;DID: immediate start of pbx with extension 's' if no digits were received on incoming call (no destination number yet) ;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. info like REDIRECTINGNUMBER may be lost, but this is necessary for drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.;echosquelch=1;_VERY_PRIMITIVE_ echo suppression (possible values: 'no', 'yes', 'force', 'g164', 'g165');echocancelold=yes ;echotail=64;use facility selector 6 instead of correct 8 (necessary for older eicon drivers) ;echo cancel tail setting bridge=yes ;native bridging (CAPI line interconnect) if available ;callgroup=1 ;language=de devices=2;et language for this device (overwrites default language) ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)		;set to 'local' (default value), no hold is done and Asterisk may
;immediate=yes ;DID: immediate start of pbx with extension 's' if no digits were ; received on incoming call (no destination number yet) ;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ;echosquelch=1 ;_VERY_PRIMITIVE_ echo suppression echocancel=yes ;EICON DIVA SERVER (CAPI) echo cancelation ;(possible values: 'no', 'yes', 'force', 'g164', 'g165') ;echocancelold=yes ;use facility selector 6 instead of correct 8 (necessary for older eicon drivers) ;echotail=64 ;echo cancel tail setting bridge=yes ;native bridging (CAPI line interconnect) if available ;callgroup=1 ;Asterisk call group ;language=de ;set language for this device (overwrites default language) devices=2 ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)		;play MOH.
 ; received on incoming call (no destination number yet) ;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE. ; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ; VERY_PRIMITIVE_ echo suppression ; VERY_PRIMITIVE_ echo suppression ; EICON DIVA SERVER (CAPI) echo cancelation ; (possible values: 'no', 'yes', 'force', 'g164', 'g165') ; echocancelold=yes ; echo cancel tail setting bridge=yes ; native bridging (CAPI line interconnect) if available ; callgroup=1 ; Asterisk call group ; language=de ; set language for this device (overwrites default language) ; devices=2 ; number of concurrent calls on this controller ; (2 makes sense for single BRI, 30 for PRI) 	;immediate=yes	;DID: immediate start of pbx with extension 's' if no digits were
;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE.; info like REDIRECTINGNUMBER may be lost, but this is necessary for; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.;echosquelch=1;_VERY_PRIMITIVE_ echo suppressionechocancel=yes;EICON DIVA SERVER (CAPI) echo cancelation;(possible values: 'no', 'yes', 'force', 'g164', 'g165');echocancelold=yes;echotail=64bridge=yes;native bridging (CAPI line interconnect) if available;callgroup=1;Asterisk call group;language=de;ext language for this device (overwrites default language);ext language for single BRI, 30 for PRI)		; received on incoming call (no destination number yet)
; info like REDIRECTINGNUMBER may be lost, but this is necessary for ; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE. ;_VERY_PRIMITIVE_ echo suppression echocancel=yes ;EICON DIVA SERVER (CAPI) echo cancelation ;(possible values: 'no', 'yes', 'force', 'g164', 'g165') ;echocancelold=yes ;echotail=64 ;echo cancel tail setting bridge=yes ;native bridging (CAPI line interconnect) if available ;callgroup=1 ;Asterisk call group ;language=de ;set language for this device (overwrites default language) devices=2 ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)		;MSN: start pbx on CONNECT_IND and don't wait for SETUP/SENDING-COMPLETE.
; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.;echosquelch=1;_VERY_PRIMITIVE_ echo suppressionechocancel=yes;EICON DIVA SERVER (CAPI) echo cancelation;(possible values: 'no', 'yes', 'force', 'g164', 'g165');echocancelold=yes;echotail=64bridge=yes;native bridging (CAPI line interconnect) if available;callgroup=1;Asterisk call group;language=de;set language for this device (overwrites default language)devices=2;number of concurrent calls on this controller;(2 makes sense for single BRI, 30 for PRI)		; info like REDIRECTINGNUMBER may be lost, but this is necessary for
;echosquelch=1;_VERY_PRIMITIVE_ echo suppressionechocancel=yes;EICON DIVA SERVER (CAPI) echo cancelation ;(possible values: 'no', 'yes', 'force', 'g164', 'g165');echocancelold=yes;use facility selector 6 instead of correct 8 (necessary for older eicon drivers);echotail=64;echo cancel tail settingbridge=yes;native bridging (CAPI line interconnect) if available;callgroup=1;Asterisk call group;language=de;set language for this device (overwrites default language)devices=2;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)		; drivers/pbx/telco which does not send SETUP or SENDING-COMPLETE.
echocancel=yes;EICON DIVA SERVER (CAPI) echo cancelation ;(possible values: 'no', 'yes', 'force', 'g164', 'g165');echocancelold=yes;use facility selector 6 instead of correct 8 (necessary for older eicon drivers);echotail=64;echo cancel tail settingbridge=yes;native bridging (CAPI line interconnect) if available;callgroup=1;Asterisk call group;language=de;set language for this device (overwrites default language)devices=2;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)	;echosquelch=1	;_VERY_PRIMITIVE_ echo suppression
;(possible values: 'no', 'yes', 'force', 'g164', 'g165');echocancelold=yes;echotail=64bridge=yes;callgroup=1;language=de;set language for this device (overwrites default language);number of concurrent calls on this controller;(2 makes sense for single BRI, 30 for PRI)	echocancel=yes	;EICON DIVA SERVER (CAPI) echo cancelation
;echocancelold=yes ;echotail=64;use facility selector 6 instead of correct 8 (necessary for older eicon drivers) ;echo cancel tail settingbridge=yes ;callgroup=1 ;language=de devices=2;native bridging (CAPI line interconnect) if available ;set language for this device (overwrites default language) ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)		;(possible values: 'no', 'yes', 'force', 'g164', 'g165')
;echotail=64;echo cancel tail settingbridge=yes;native bridging (CAPI line interconnect) if available;callgroup=1;Asterisk call group;language=de;set language for this device (overwrites default language)devices=2;number of concurrent calls on this controller;(2 makes sense for single BRI, 30 for PRI)	;echocancelold=yes	;use facility selector 6 instead of correct 8 (necessary for older eicon drivers)
bridge=yes;native bridging (CAPI line interconnect) if available;callgroup=1;Asterisk call group;language=de;set language for this device (overwrites default language)devices=2;number of concurrent calls on this controller;(2 makes sense for single BRI, 30 for PRI)	;echotail=64	;echo cancel tail setting
;callgroup=1 ;Asterisk call group ;language=de ;set language for this device (overwrites default language) devices=2 ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)	bridge=yes	;native bridging (CAPI line interconnect) if available
;language=de ;set language for this device (overwrites default language) devices=2 ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)	;callgroup=1	;Asterisk call group
devices=2 ;number of concurrent calls on this controller ;(2 makes sense for single BRI, 30 for PRI)	;language=de	;set language for this device (overwrites default language)
;(2 makes sense for single BRI, 30 for PRI)	devices=2	;number of concurrent calls on this controller
		;(2 makes sense for single BRI, 30 for PRI)

chan_capi reicht als abgehende MSN die Nummer weiter, die von der Anwendung oder einem angeschlossenen Endgerät (NT Mode) übergeben wird.



Ein erster Testlauf

Nach der Installation von chan_capi können Sie einen ersten Testlauf von Asterisk durchführen. Verbinden Sie Controller 1 der PrimuX Karte mit dem ISDN, starten Sie Asterisk (asterisk –vvvc) und rufen Sie die Nummer des ISDN Anschlusses an (in diesem Beispiel sei 4711 die MSN des ISDN Anschlusses). Sie sollten eine Ansage von Asterisk hören.

Achtung: Sollten Sie bei der Installation den Befehl make samples nicht ausgeführt haben, kann der Testlauf nicht funktionieren, da die extensions.conf Datei fehlt.

Ein Beispiel für eine einfache extensions.conf (gehört in den Ordner /etc/asterisk) sähe so aus: [general] static=yes writeprotect=no

[default] exten => s,1,Wait,1; Wait a second, just for fun exten => s,2,Answer ; Answer the line exten => s,3,DigitTimeout,5 ; Set Digit Timeout to 5 seconds exten => s,4,ResponseTimeout,10 ; Set Response Timeout to 10 seconds exten => s,5,BackGround(demo-congrats) ; Play a congratulatory message exten => s,6,BackGround(demo-instruct) ; Play some instructions [capi-in] ; Wait a second, just for fun exten => 4711,1,Wait,1 exten => 4711,2,Answer ; Answer the line

exten => 4711,3,DigitTimeout,5 ; Set Digit Timeout to 5 seconds exten => 4711,4,ResponseTimeout,10 ; Set Response Timeout to 10 seconds exten => 4711,5,BackGround(demo-congrats) ; Play a congratulatory message exten => 4711,6,BackGround(demo-instruct) ; Play some instructions

Mit dieser Konfiguration erreichen Sie, dass Asterisk bei einem eingehenden Ruf eine Ansage abspielt.



Trixbox

Was ist Trixbox und wie wird es installiert?

Trixbox ist eine auf Asterisk basierende Telefonsoftware (entstand aus Asterisk@Home). Die aktuelle Version (Stand 07.2007 Version 2.2.3) finden Sie unter <u>www.trixbox.org</u> Hier finden Sie auch eine Installationsanweisung.

WICHTIG! Nach der Installation, müssen noch folgende Schritte durchgeführt werden: amportal Stopp yum –y kernel-devel

Mit diesen Befehlen wird Asterisk beendet und die für die spätere Installation, des PrimuX Treiber benötigten Header Dateien werden installiert.

Wie integriere ich den PrimuX CAPI Treiber?

Ein aktuelles Linux CAPI finden Sie auf unserer Homepage unter <u>www.primuxisdn.de</u>. Da Sie unter Trixbox aber normalerweise nur eine Konsole zur Verfügung haben, können Sie das CAPI auch direkt über die wget Funktion herunterladen. Wechseln Sie dafür in ein beliebiges Verzeichnis oder erstellen Sie eines z.B. mit

mkdir capi

und wechseln Sie dann in dieses Verzeichnis mit

cd capi

Geben Sie jetzt folgenden Befehl ein:

wget http://www.gintern.de/download/primux/primux-x.y.zzzz.tar.bz2

Dabei ist x.y.zzzz durch die aktuelle Versionsnummer zu ersetzen. Sie finden diese auf unserer oben genannten Homepage. Für diesen Test wurde die Version 3.6.4725 verwendet.

Die geladene Datei wird dann mit folgendem Befehl entpackt:

tar xfj primux-x.y.zzzz.tar.bz2

Nach dem Entpacken starten Sie die CAPI Installation mit dem Befehl

./setup.sh

Wie kann ich meine PrimuX Karte in Asterisk einbinden?

Damit die PrimuX Karten von der Trixbox genutzt werden können, benötigt man chan_capi. Information zur Installation und Konfiguration von chan_capi finden Sie im Kapitel über chan_capi.

Wie konfiguriere ich die Trixbox?

Auf der Trixbox Homepage gibt ausführliche Anleitungen für die Konfiguration der integrierten Asterisk PBX. Sie können sich aber auch an unseren Informationen aus dem Kapitel Asterisk orientieren und die Trixbox manuell über die Dateien capi.conf und extensions.conf (vor)konfigurieren.



Fragen zu capi4linux und mISDN

Müssen die capi4linux utils installiert sein?

Nein! Auf vielen Linux Systemen ist in der Standardinstallation kein capi4linux installiert. Das führt dazu, dass die Anwendungsprogramme wie chan_capi oder capi4hylafax nicht kompiliert werden können, weil die benötigten capi*.h Dateien fehlen. Dass es viele Linux-CAPI-Anwendungen vorkompiliert gibt, macht die Sachlage nicht einfacher, denn niemand weiß dann genau, mit welchem Stand dieser Dateien sie nun kompiliert wurden.

Aus diesem Grund werden bei Installation des PrimuX CAPIs entsprechende, zur PrimuX libcapi20 passende include Dateien mitinstalliert.

Müssen bereits installierte capi4linux utils wieder deinstalliert werden?

Nein! Eine bereits vorhandene capi4linux Installation wird bei der Installation des PrimuX CAPI gesichert und durch die PrimuX eigenen, zur PrimuX libcapi20 passenden include Dateien ersetzt. Sollte das PrimuX CAPI wieder deinstalliert werden, so werden die ursprünglichen capi4linux Dateien zurück gesichert.

Können/Sollen die capi4linux utils nachträglich nachinstalliert werden?

Nein! Nachdem durch die PrimuX CAPI Installation die zur PrimuX libcapi20 passenden include Dateien installiert wurden, raten wir dringend davon ab, nachträglich noch einmal die capi4linux utils zu installieren.

Muss/Soll mISDN installiert werden?

Nein! mISDN ist nicht notwendig.

Probleme mit einer falsch gelinkten libcapi20

Wenn es im System eine Datei libcapi20.a (statische Bibliothek) und eine libcapi20.so (dynamische Bibliothek) gibt, werden Programme standardmäßig mit der statischen Variante gelinkt. Dies ist bei den meisten vorkompilierten Programmen (sog. Binaries) der Fall. Bei der Installation des PrimuX Treibers werden alle vorhandenen libcapi20 Dateien (die per Definition nicht von PrimuX sind) gesichert und gelöscht und lediglich eine (PrimuX) libcapi20.so installiert. Werden die Programme jetzt gelinkt, wird die dynamische Variante verwendet, weil es keine statische Version (mehr) gibt.

Ein fertiges Binary kann auch verwendet werden, solange die Ausgabe des 'Idd <programname>' Befehls zeigt, dass das Binary die libcapi20.so benötigt. Dann wird zur Laufzeit die PrimuX Version verwendet, da keine andere Version dieser Datei verfügbar ist. Wenn in der Ausgabe libcapi20 überhaupt nicht vorkommt, dann ist das Modul statisch mit libcapi20.a gelinkt worden (oder beschädigt...). Es besteht dann keine Möglichkeit das Modul neu zu linken, sondern man muss das gesamte Modul (also z.B. chan_capi oder capisuite oder capi4hylafax) im Quellcode besorgen, konfigurieren und kompilieren.